

## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL635 - WIGGINS FORK

HUNT AREAS: 67-69, 127

PREPARED BY: GREG ANDERSON

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	6,052	5,410	5,500
Harvest:	1,092	974	900
Hunters:	2,628	2,500	2,450
Hunter Success:	42%	39%	37%
Active Licenses:	2,714	2,644	2,550
Active License Success	40%	37%	35%
Recreation Days:	17,778	18,492	16,500
Days Per Animal:	16.3	19.0	18.3
Males per 100 Females:	12	29	
Juveniles per 100 Females	25	29	

Trend Based Objective ( $\pm 20\%$ ) 5,500 (4400 - 6600)

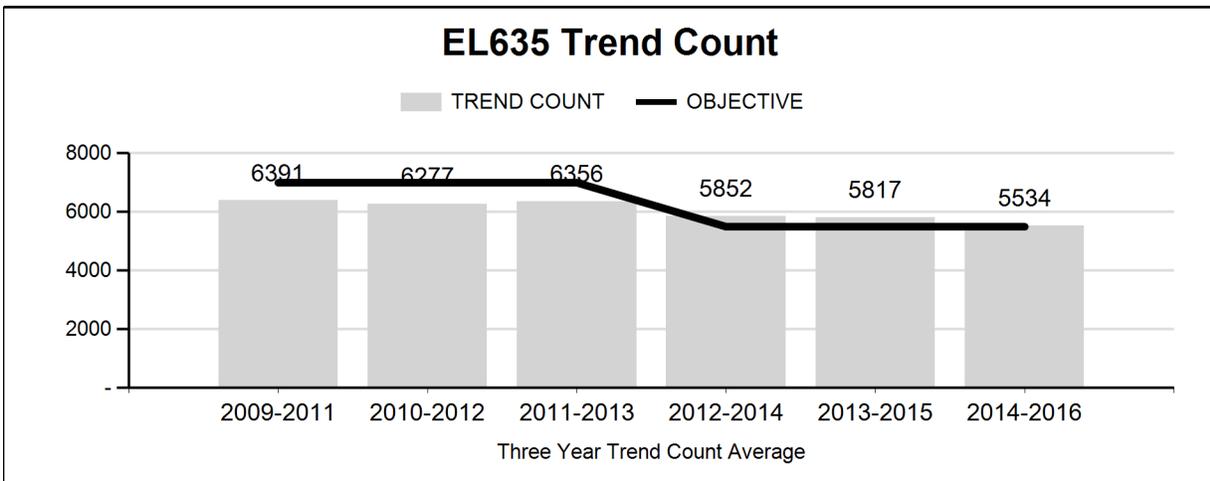
Management Strategy: Recreational

Percent population is above (+) or (-) objective: -1.6%

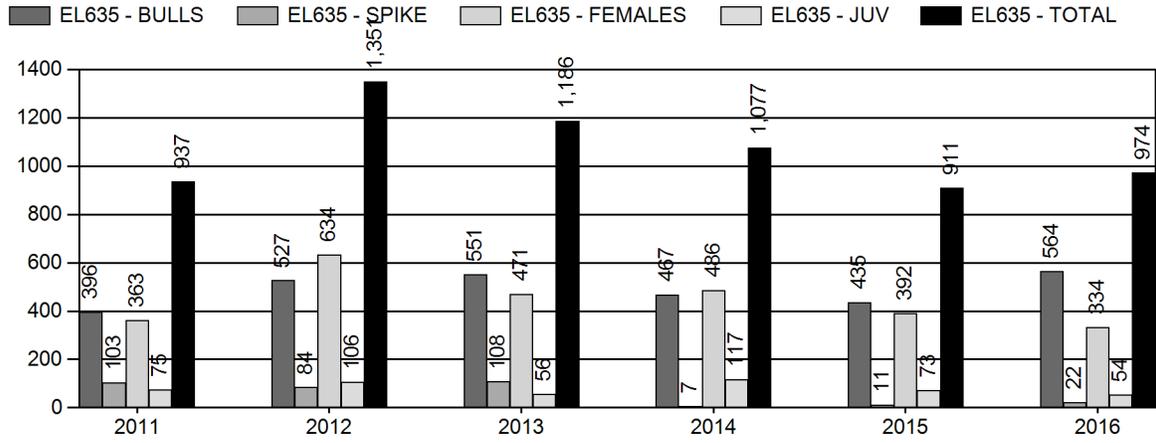
Number of years population has been + or - objective in recent trend: 5

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

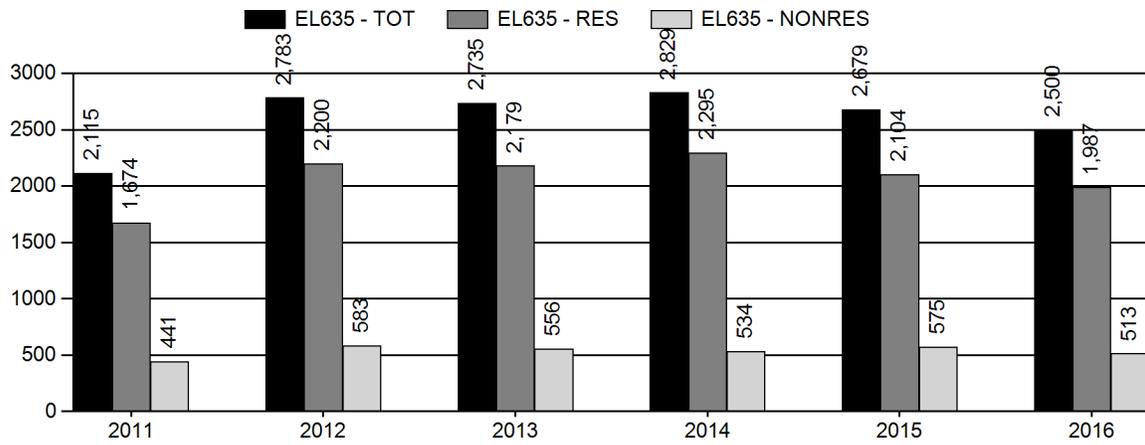
	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	0%	0%
Males $\geq 1$ year old:	0%	0%
Juveniles ( $< 1$ year old):	0%	0%



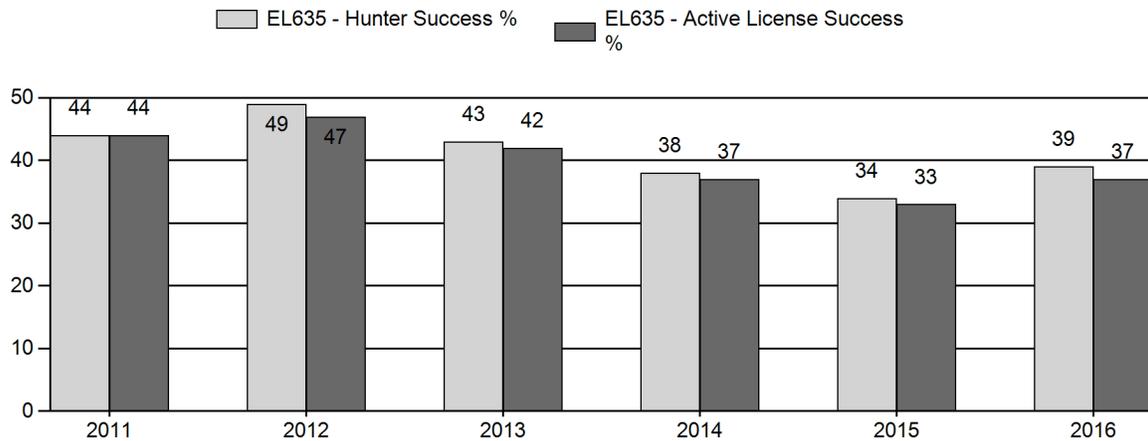
# Harvest



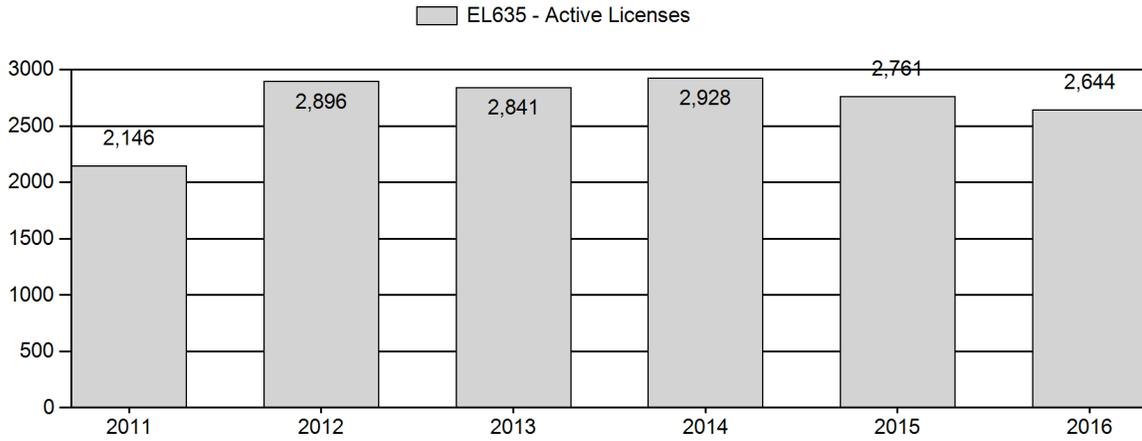
# Number of Hunters



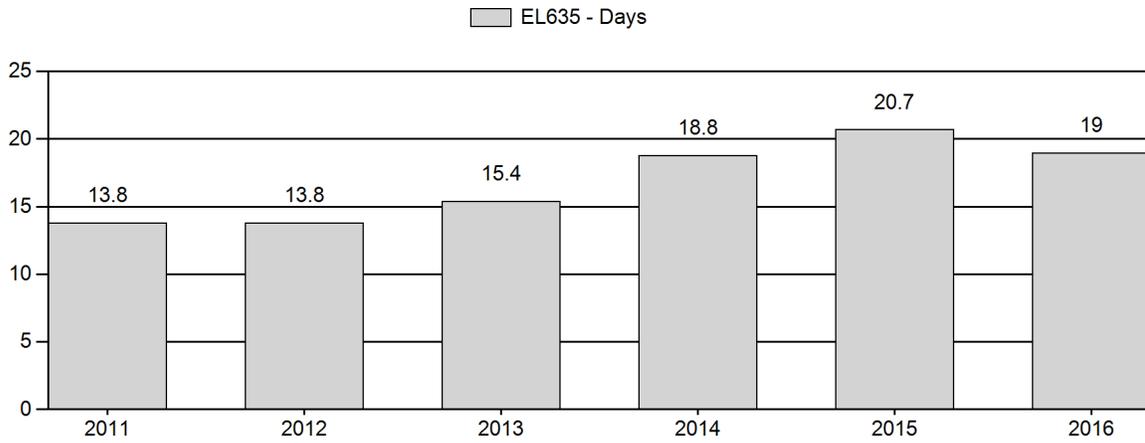
# Harvest Success



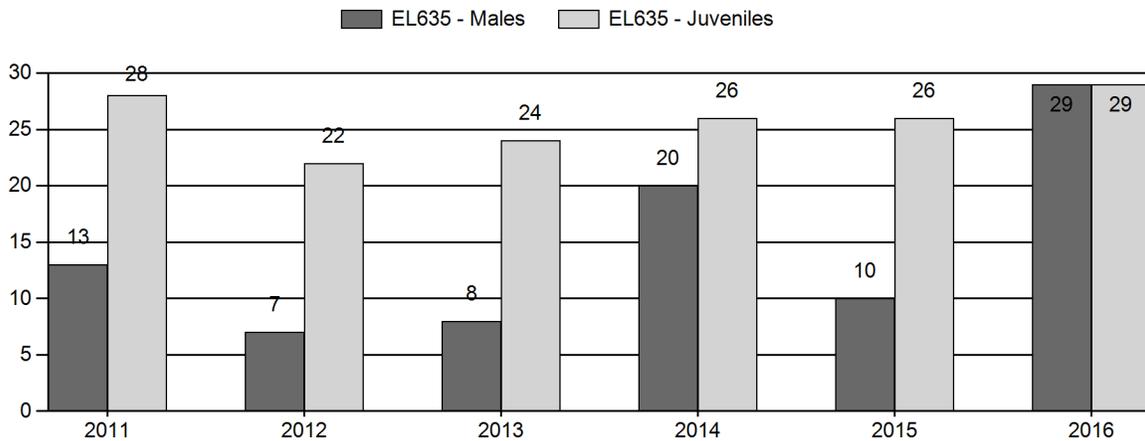
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL635 - WIGGINS FORK

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	9,083	202	28	230	9%	1,802	71%	498	20%	2,530	321	11	2	13	± 1	28	± 2	25
2012	0	138	22	160	6%	2,143	77%	463	17%	2,766	0	6	1	7	± 0	22	± 0	20
2013	0	135	23	158	6%	1,881	76%	451	18%	2,490	0	7	1	8	± 0	24	± 0	22
2014	0	304	256	560	14%	2,817	69%	720	18%	4,097	0	11	9	20	± 0	26	± 0	21
2015	0	120	166	286	8%	2,741	73%	705	19%	3,732	0	4	6	10	± 0	26	± 0	23
2016	0	311	480	791	18%	2,731	63%	804	19%	4,326	0	11	18	29	± 0	29	± 0	23

**2017 HUNTING SEASONS  
WIGGINS FORK ELK (EL 635)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
67		Oct. 1	Oct. 10		General	Antlered elk
67		Oct. 11	Oct. 31		General	Antlered elk, spikes excluded
67	4	Nov. 1	Dec. 15	150	Limited quota	Antlerless elk
67	6	Nov. 15	Dec. 15	400	Limited quota	Cow or calf valid west of the Wiggins Fork and west of the East Fork downstream from the confluence with the Wiggins Fork
67, 68, 69	9	Sep. 1	Sep. 30	125	Limited quota	Any elk, archery only
68		Oct. 1	Oct. 10		General	Antlered elk
68		Oct. 11	Oct. 31		General	Antlered elk, spikes excluded
68	6	Nov. 1	Nov. 30	150	Limited quota	Cow or calf
69		Oct. 1	Oct. 31		General	Any elk
69	6	Oct. 1	Nov. 30	50	Limited quota	Cow or calf
127		Oct. 1	Oct. 31		General	Any elk
127		Nov. 1	Dec. 31		General	Antlerless elk
Archery 67, 68, 69	All	Sep. 15	Sep. 30			Valid in the entire area(s)
127	All	Sep. 1	Sep. 30			Valid in the entire area(s)

Hunt Area	Type	Quota change from 2016
67	4	-50
68	6	-50
69	6	-50
<b>Total</b>		<b>-150</b>

### **Management Evaluation**

**Current mid-winter trend count management objective: 5,500**

**Management strategy: Recreational**

**2016 trend count: 5,410**

**Most recent 3-Year running average trend count: 5,534**

### **Management Issues**

The Wiggins Fork elk herd is managed based on a winter trend count. The trend count management objective has been in place since 2002. The original, 2002, objective sought to maintain 6,000 to 7,000 wintering elk in the herd. The number of elk was determined by multiplying an annual trend count by a constant sightability factor to calculate a population estimate. Over time, the extra step of calculating an estimate confused the public. In response, the objective was reviewed in 2014 and the Department decided to base a new objective on actual trend count numbers eliminating the use of a sightability factor and population estimate. The new objective set in 2014 is to maintain a mid-winter count of 5,500 elk in the herd unit with a recreational management strategy. Annual trend counts are conducted each January to assess the population.

The Wiggins Fork elk herd occupies the upper Wind River drainage west of the Wind River Reservation (WRR). There is good documentation elk wintering in the herd unit migrate into a number of other northwest Wyoming elk herd units in the summer and early fall. Given the amount of interchange with neighboring herd units, the number of elk present can vary significantly throughout the hunting season. Seasons structured to reduce the elk population generally need to include antlerless elk harvest after mid-November to allow elk to migrate into the herd unit from neighboring areas.

For the past 3 hunt seasons, limitations in hunt areas 67 and 68 have included a ‘spikes excluded’ restriction. This was originally put in place at the request of area outfitters for the 2014 season. At the time, there was no apparent management or biological necessity to have the limitation as the population, recruitment, and bull harvest were all relatively stable and indicative of a healthy elk herd. Despite the lack of necessity, the Department agreed to implement the restriction for up to 3 years in areas 67 and 68. In the 5 years prior to the ‘spikes excluded’ restriction, spikes constituted on average 18% of the male harvest in these areas. In 2015 and 2016 with the ‘spikes

excluded' restriction, spikes constituted 2% of the male harvest in areas 67 and 68 (by youth hunters). Classification data reveals the spike/cow ratio averaged 7/100 in the 5 years prior to having 'spikes excluded'. From 2014 through 2016 the spike/cow ratio averaged 9/100. This is a minimal increase and within the range of variability for the ratio data. From 2011 through 2013 an average of 71% of area 67 hunters were satisfied/very satisfied. In contrast, from 2014 through 2016 with the 'spikes excluded' restriction only 60% of area 67 hunters were satisfied/very satisfied. Interestingly, hunter satisfaction decreased during the 'spikes excluded' seasons despite nearly identical adult bull harvest in the herd unit when compared to the 3 years prior to 'spikes excluded'. In the fall of 2016, a total of 102 hunting parties were asked about their preference regarding the 'spikes excluded' restriction. Of the contacts, 36% preferred to keep the 'spikes excluded' restriction, 31% preferred to remove the restriction, and 32% indicated no preference. Despite information indicating no need to restrict yearling bull harvest there was significant opposition to removing the restriction for the 2017 season. In particular, Dubois area outfitters expressed a strong desire to maintain the spikes excluded limitation. Outfitters circulated a petition requesting the restriction remain in effect and collected over 300 signatures supporting their viewpoint. As a compromise to provide recreational opportunity and satisfy a large group of publics requesting continuation of the 'spikes excluded' restriction, the 2017 season in hunt areas 67 and 68 will include 10 days of unrestricted antlered elk harvest followed by a 'spikes excluded' restriction for the remainder of the season. This will allow unrestricted recreational opportunity for the first part of the season when more hunters are present. It will also limit harvest of yearling bulls later in the season when elk are migrating into the herd unit from adjacent hunt areas where managers and publics have concerns about bull numbers and quality.

### **Habitat/Weather**

Herbaceous vegetation production was quite high throughout the herd unit in both 2015 and 2016. Following 2 years of extreme drought, vegetation production increased significantly in 2014 and remained quite good in 2015 and 2016. In 2016 production averaged 451 lbs/acre across monitoring sites on elk winter range. This was much lower than 639 lbs/acre in 2015, but still above the 5-year average of 440 lbs/acre. Although no vegetation monitoring is conducted at high elevation summer range, it appeared vegetation growth was good on summer and transitional ranges as well. Fall weather was warm and dry throughout much of the hunting season. The combination of abundant feed and mild, fall weather resulted in elk entering winter in excellent body condition. Snowfall in December forced elk onto low elevation winter ranges. Unusually deep snow and colder than average temperatures resulted in bull elk remaining on lower elevation winter ranges throughout the winter. Winter conditions continued to be very harsh through February with much of the winter range completely snow covered. A number of long-time residents of the area have commented they cannot recall a year with as much low elevation snow cover as this year.

### **Field/Harvest Data/Population**

Trend counts to estimate the wintering population are conducted each January. Trend count numbers declined from 1997 through 2003. From 2004 through 2007, the population appeared to stabilize. Winter count numbers fluctuated year-to-year but did not indicate any consistent population trends. In 2008, personnel counted a significantly higher number of elk (5,504). This was the highest count since 1998. In 2009 and 2010, personnel again counted a significantly

greater number of elk; 6,110 and 6,023 respectively (Fig. 1). In 2011 the trend count increased significantly again to 7,039. Following a liberal season in 2012, the trend count declined to 5,768. The count increased again in 2013 by 500 elk to 6,260 followed by a decline to 5,528 in 2014 (Fig. 1). The 2016 count of 5,410 was quite close to the 2014 and 2015 counts and indicates the herd has been fairly stable over the past 3 years.

The trend count objective includes sub-objectives for 3 areas in the herd unit. The sub-objectives were set to recognize reasonably well-defined, spatially segregated elk groups wintering in the area. The sub-groups include the East Fork, Dunoir/Spring Mountain, and South Dubois groups. While there is a significant amount of interchange, elk from the three groups tend to segregate themselves on winter range and utilize different spring/fall migration routes. Since elk in the three sub-groups are subjected to different demographic influences, sub-objectives were set for each of the three groups (Table 1). One of the sub-groups (East Fork) has been below objective for the past decade. The 2015 count for this group was the highest in over 15 years but the 2016 count of 1,591 was similar to the 4 year period prior to 2015. This herd sub-unit continues to remain below the desired objective. The Dunoir/Spring Mtn sub-group has been above objective for the past 7 years. Liberal cow harvest in November and December has been structured to target this sub-group. The South Dubois segment has historically been above objective. However, personnel counted significantly fewer elk in the this sub-group each of the past 2 years. The sub-herd is currently at objective.

Between 2006 and 2009, recruitment in this herd unit was well below historic levels (Fig. 2). Despite low recruitment between 2006 and 2009, the number of elk counted still increased. In 2010 and 2011 recruitment increased significantly and likely contributed to some of the trend count increase. Since 2012, recruitment increased annually and the calf/cow ratio was 29/100 in 2016. This was the highest recruitment in over 5 years.

Figure 1. Wiggins Fork Elk trend count

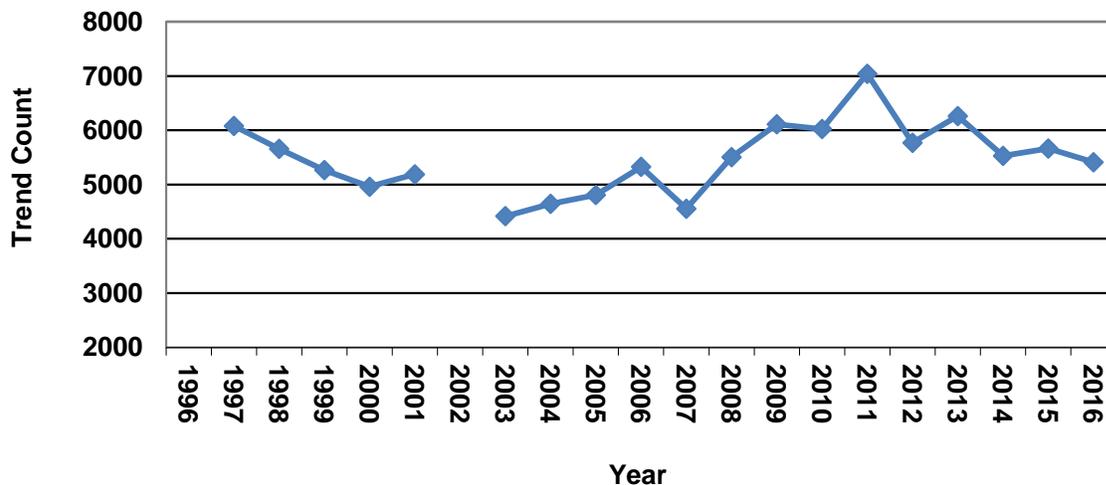
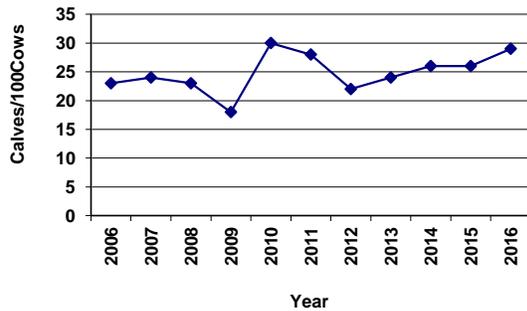


Table 1. Trend count numbers from sub-groups in the Wiggins Fork Elk Herd Unit.

Year	East Fork	Dunoir/Spring Mountain	South Dubois	Wiggins Fork Herd Unit	
	Objective: 2,200 Count	Objective: 2,200 Count	Objective: 1,100 Count	Objective: 5,500 Count	3 Year Average
1998	2154	2457	1046	5657	
1999	2180	2109	977	5266	
2000	1883	2014	1061	4958	5294
2001	2100	1818	1269	5187	5137
2002	nc	nc	nc	nc	5073
2003	1857	1666	895	4418	4803
2004	1832	1601	1211	4644	4531
2005	1669	1807	1331	4807	4623
2006	1623	2297	1406	5326	4926
2007	1478	1634	1441	4553	4895
2008	1294	2620	1590	5504	5128
2009	1457	3186	1467	6110	5389
2010	1930	2704	1389	6023	5879
2011	1765	3680	1594	7039	6391
2012	1834	2580	1354	5768	6277
2013	1713	3022	1525	6260	6356
2014	1620	2551	1357	5528	5852
2015	2118	2497	1048	5663	5817
2016	1591	2715	1104	5410	5534

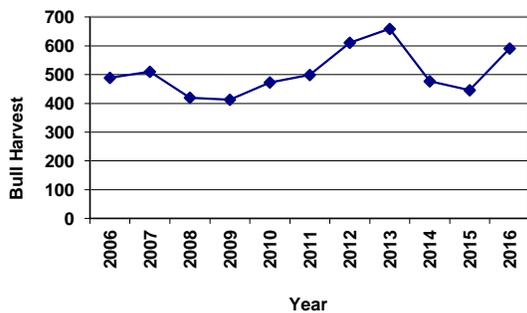
Figure 2. Ten year recruitment history in the Wiggins Fork Elk Herd.



Unfortunately, bull/cow ratio data for this herd are very unreliable. Classification surveys have typically been conducted on the ground throughout the DAU. Since mature bulls generally winter in timber at the fringes of the winter ranges, the number of bulls seen is quite low and mature bull/cow ratios for the herd are not considered accurate. Starting in 2014 personnel used

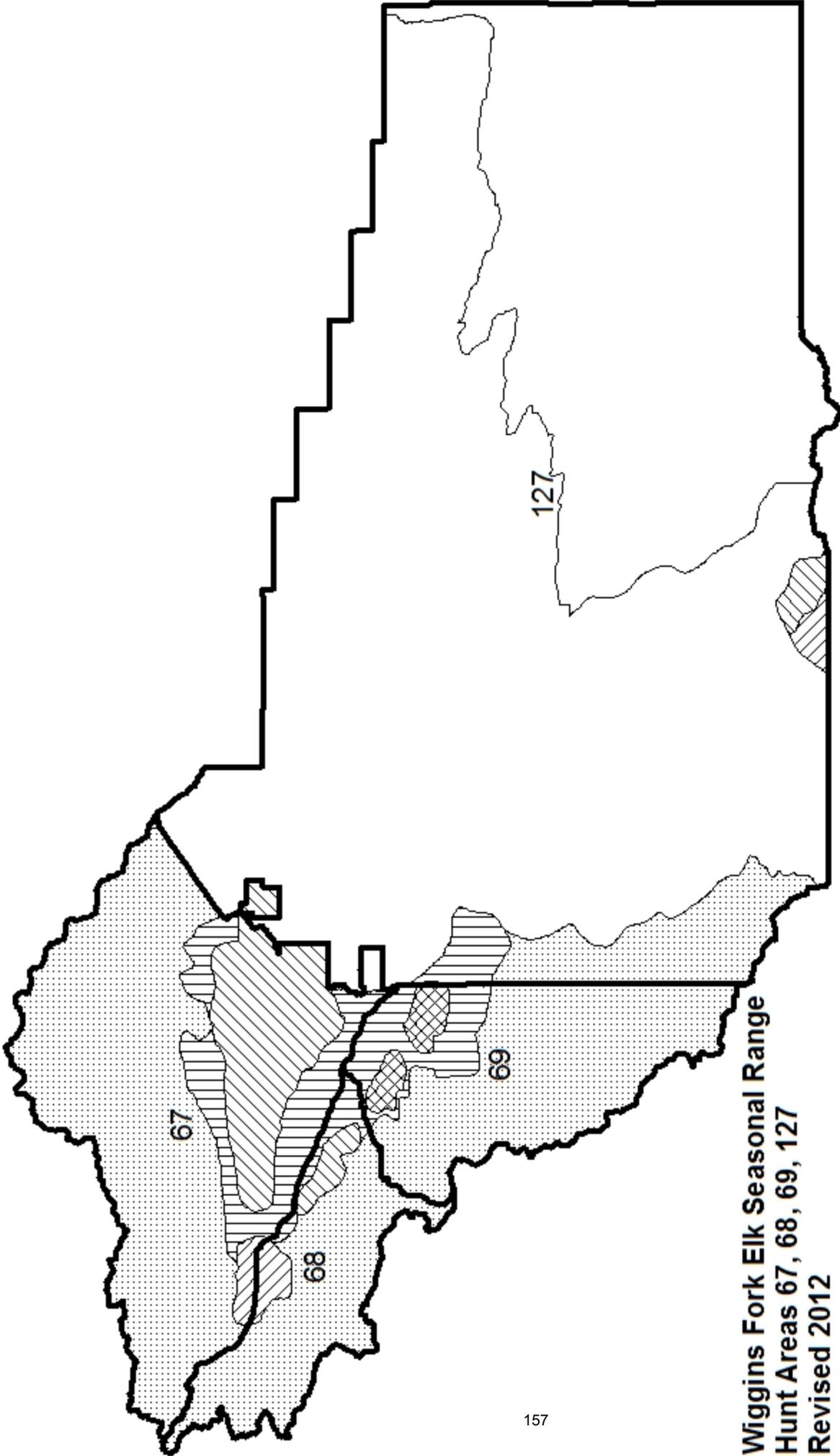
aerial trend count video to classify elk. This methodology did yield a significant increase in the mature bull/cow ratio each of the past 3 years. That said the mature bull/cow ratio is still artificially low due to poor sightability. There was a significant increase in the bull/cow ratio in 2016. The mature bull/cow ratio of 18/100 was the highest recorded in the herd unit. As mentioned previously, aerial classifications appear to have contributed to better bull/cow ratios over the past 3 years. In 2016 the ratio was much higher than normal because large bull groups were wintering at lower elevations in more open areas due to unusually deep snow at their typical wintering sites in timbered mountainous areas. Regardless of fluctuations in the mature bull/cow ratio, bull harvest has not declined over the past 10 years (Fig. 3). Antlered elk harvest in both 2012 and 2013 was unusually high for the herd unit. The high bull harvest in 2013 is not indicative of any demographic changes in the population. Instead, the high harvest can be directly linked to environmental conditions. Heavy snows in late September forced elk (including bulls) onto winter range where they were extremely vulnerable to harvest throughout the general, October season. Likewise, the decreased bull harvest in 2014 and 2015 is certainly tied to more typical hunting conditions throughout the fall. Bull harvest increased again in 2016. Over the past 5 years bull harvest in the herd unit has been at near record levels for 3 of them. It should be noted 2 of the most recent 3 years of high harvest occurred prior to the implementation of the ‘spikes excluded’ restriction.

Figure 3. Antlered elk harvest in the Wiggins Fork Elk Herd.



### Management Summary

The 2016 trend count indicates the Wiggins Fork elk population is at objective. The population appears to have been fairly stable over the past 4 years with slight declines in the East Fork and South Dubois herd segments. Given the small declines in these herd segments and to maintain the population at objective, cow licenses targeting each segment will be reduced. To provide recreational opportunity and satisfy a large group of publics requesting continuation of the ‘spikes excluded’ restriction, the 2017 season in hunt areas 67 and 68 will include 10 days of unrestricted antlered elk harvest followed by a ‘spikes excluded’ restriction for the remainder of the season. With small reductions in cow harvest, the population should remain stable and at objective in 2017.



**Wiggins Fork Elk Seasonal Range  
Hunt Areas 67, 68, 69, 127  
Revised 2012**

- CRUWIN
- CRUWYL
- OUT
- SSF
- WIN
- WYL



## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL637 - SOUTH WIND RIVER

HUNT AREAS: 25, 27-28, 99

PREPARED BY: STAN HARTER

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	2,696	2,469	2,600
Harvest:	644	652	575
Hunters:	2,114	2,030	1,850
Hunter Success:	30%	32%	31%
Active Licenses:	2,175	2,069	1,880
Active License Success	30%	32%	31%
Recreation Days:	16,130	15,552	14,500
Days Per Animal:	25.0	23.9	25.2
Males per 100 Females:	27	35	
Juveniles per 100 Females	30	33	

Trend Based Objective (± 20%) 2,600 (2080 - 3120)

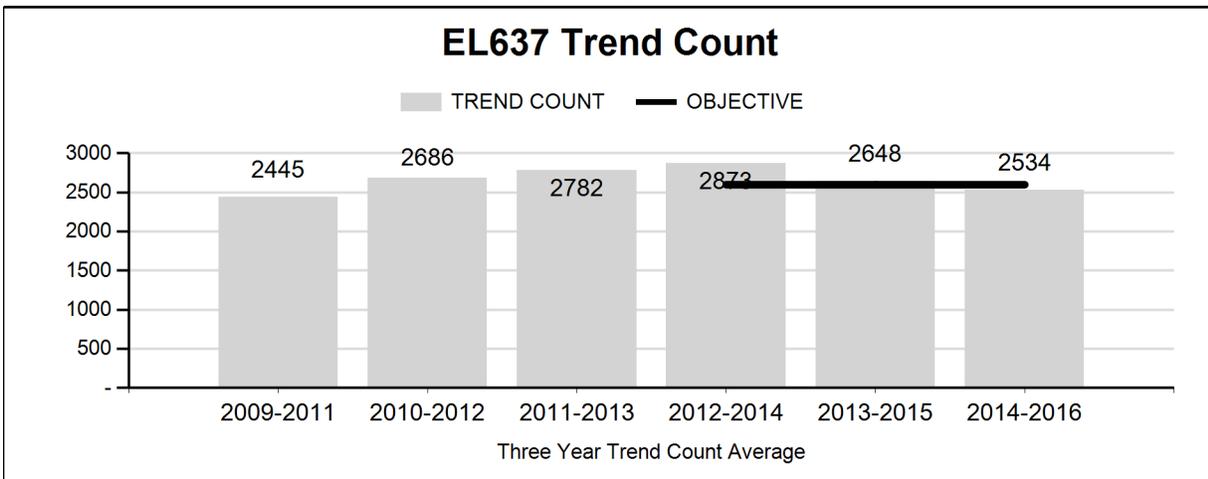
Management Strategy: Recreational

Percent population is above (+) or (-) objective: -5.0%

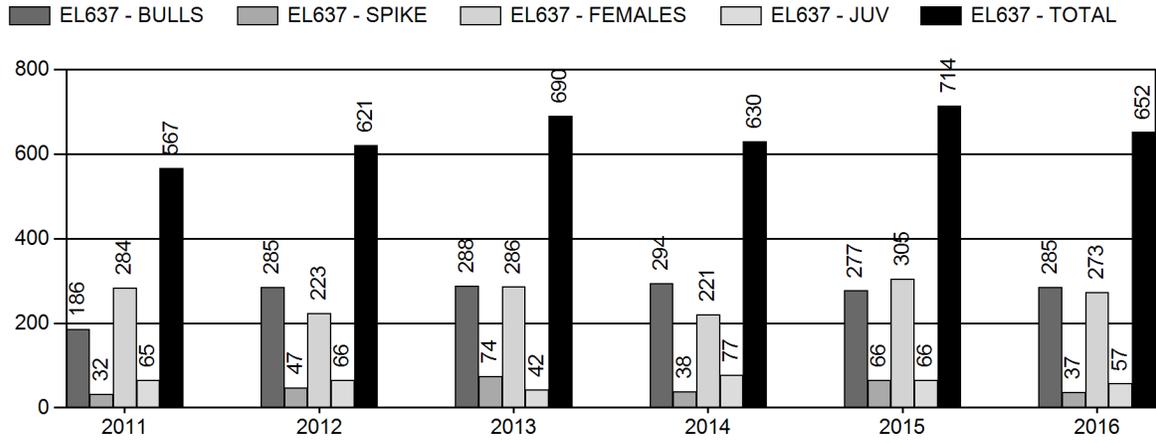
Number of years population has been + or - objective in recent trend: 1

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

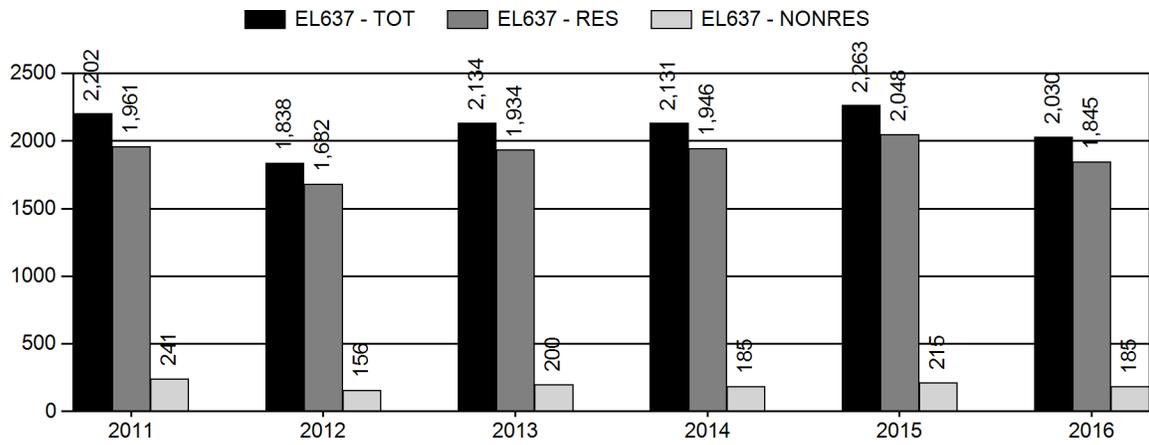
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



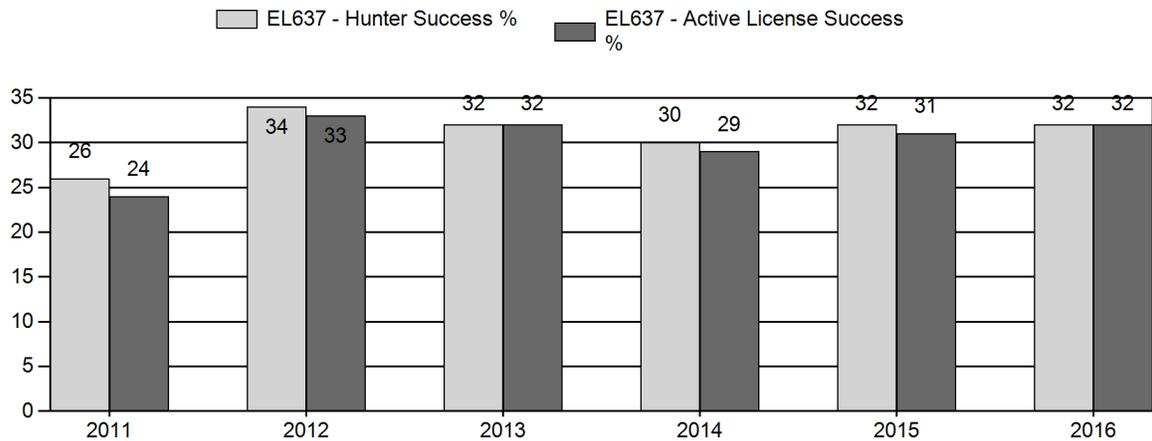
# Harvest



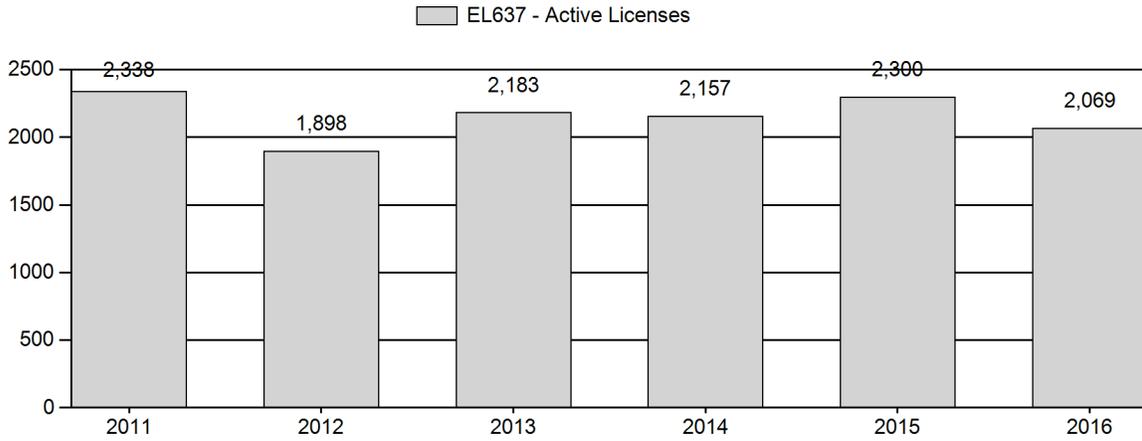
# Number of Hunters



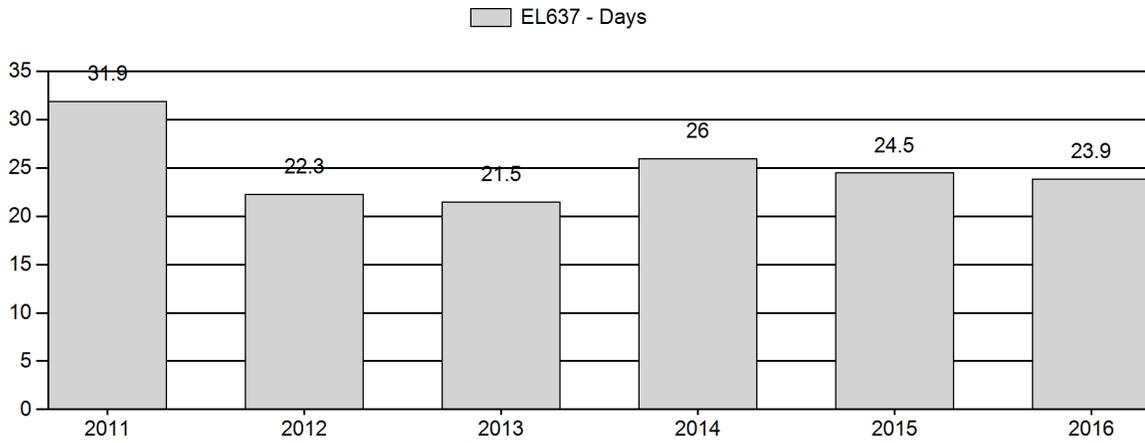
# Harvest Success



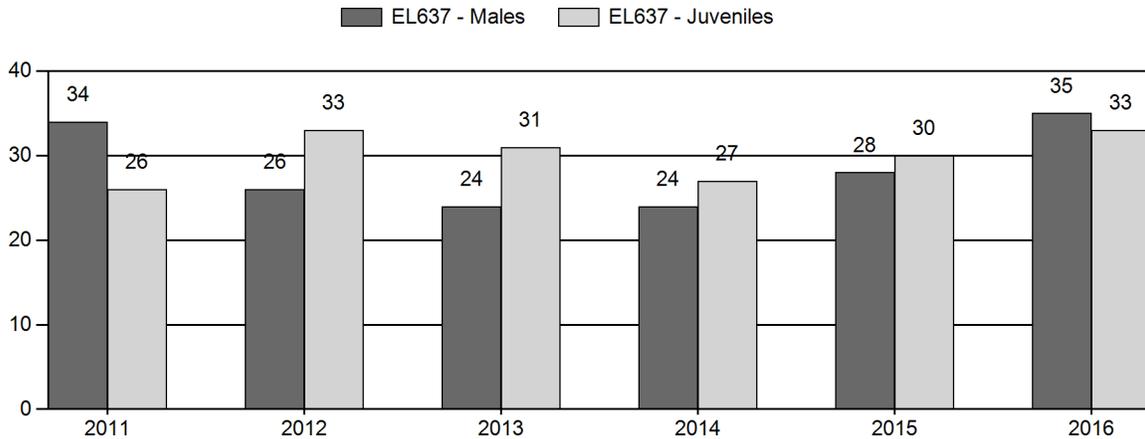
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL637 - SOUTH WIND RIVER

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	0	179	299	478	21%	1,397	62%	365	16%	2,240	0	13	21	34	± 2	26	± 1	19
2012	0	183	356	539	16%	2,066	63%	691	21%	3,296	0	9	17	26	± 1	33	± 1	27
2013	0	165	228	393	16%	1,623	65%	499	20%	2,515	0	10	14	24	± 0	31	± 0	25
2014	0	149	226	375	16%	1,550	66%	420	18%	2,345	0	10	15	24	± 0	27	± 0	22
2015	0	181	288	469	18%	1,650	63%	502	19%	2,621	0	11	17	28	± 0	30	± 0	24
2016	0	158	352	510	21%	1,472	60%	487	20%	2,469	0	11	24	35	± 0	33	± 0	25

**2017 HUNTING SEASONS  
South Wind River Elk Herd Unit (EL 637)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
25, 27	1	Oct. 1	Oct. 31	200	Limited quota	Any elk
25, 27	1	Nov. 1	Nov. 20			Antlerless elk
25	4	Oct. 15	Nov. 20	150	Limited quota	Antlerless elk
25	6	Nov. 1	Nov. 20	100	Limited quota	Cow or calf
27	4	Oct. 1	Nov. 20	75	Limited quota	Antlerless elk
28		Oct. 1	Oct. 6		General	Any elk
28		Oct. 7	Oct. 22		General	Antlered elk
28	4	Nov. 1	Nov. 20	200	Limited quota	Antlerless elk
99	1	Oct. 1	Oct. 31	150	Limited quota	Any elk
99	1	Nov. 1	Nov. 20			Antlerless elk
99	4	Oct. 1	Nov. 20	175	Limited quota	Antlerless elk
<b>Archery</b>		Sept. 1	Sept. 30			Valid in the entire area(s)

Hunt Area	License Type	Quota Change from 2016
25	4	-50
27	4	-25
99	1	-25
99	4	-25
<b>Herd Unit Total</b>	<b>1</b>	<b>-25</b>
	<b>4</b>	<b>-100</b>

**MANAGEMENT EVALUATION**

**Current Mid-Winter Trend Count Management Objective: 2,600**

**Management Strategy: Recreation (15 – 29 bulls/100 cows)**

**2016 Mid-winter Trend Count: 2,469**

**Most Recent 3-year Running Average Trend Count: 2,534**

**Herd Unit Issues/Population**

The management objective for the South Wind River Elk Herd Unit was changed in 2014 to a mid-winter trend count of 2,600 elk, based on a running 3-year average. Trend count data vary due to annual changes in snow depth, light and wind conditions during flights, and condition of habitats each winter. A key factor in our ability to detect elk in winter is the variability and extent of winter habitats, which range from mixed aspen/conifer/sagebrush habitats to open sagebrush/grassland habitats. The 2016 trend count/classification survey was completed in January and February 2017, with a total of 2,469 elk

observed. Survey conditions were very favorable, with good to excellent snow cover in most areas and few issues with wind; as such we believe this to be a good trend count. However, increased wolf activity in several portions of Hunt Areas 25 and 28, along with increased snow in all hunt areas, led to distribution shifts we observed in a few locations and may have led to missed groups of elk.

### **Weather**

Precipitation from October 2015 through September 2016 was markedly higher than the 30 year average. The growing season precipitation (April-June 2016) was also notably higher than the 30 year average, while the high elevation spring- summer -fall range growing season precipitation was equal to the 30 year average. In May, over Mothers' Day Weekend, a large storm delivered very heavy rainfall most of the South Wind River herd unit, and caused landscape-wide runoff and flooding. The majority of the growing season precipitation fell in this one weekend. Also of note, during the month of July there was zero measurable precipitation, and June and July temperatures were higher than average.

Winter 2016-17 has been characterized by colder than average temperatures following a mild fall, with the temperature from November-February averaging 23.6° Fahrenheit, which is considered below normal for this time period in the Lander area. So far, 61" of snowfall has been recorded in Lander mostly after December 1, 2016. This is 11.4" above the 30 year average. Above average snowfall for Lander and the surrounding foothills likely causes some concern for wintering wildlife, with most elk observed in open sagebrush habitats and many in lower elevations than normally observed. However, if the snow melts gradually, it will benefit vegetation production in the coming growing season. Snow water equivalents for the South Pass, Deer Park, and Townsend Creek SnoTel sites recorded February 1, 2017 were 227%, 245%, and 185% of the official mean for those respective sites.

### **Habitat**

Precipitation was above average during the spring of 2016 which provided good early forage production across the herd unit. Above average temperatures, and very low precipitation amounts from June-August likely caused lower vegetation production than the previous two years. Recently developed "Rapid Habitat Assessments" will be implemented for the South Wind River mule deer herd unit to develop a baseline from which to gauge overall habitat condition across the landscapes. These assessments should also be useful for evaluating habitat conditions for South Wind River elk.

### **Field Data**

Classification flights were conducted in mid-January and a second flight in February 2017 with a Bell Jet Ranger 206 helicopter in Areas 25, 27, and 28. Personnel from the Pinedale Region surveyed Area 99 in early-February 2017, also with a Bell Jet Ranger 206 helicopter. A total of 2,469 elk were counted and classified. However, we likely missed groups in the Farson area where winter has been worse than in the Lander area. We have not seen any large groups wintering in the portion Area 25 south of the Sweetwater River in a several years, despite awareness of expanding elk numbers there during other seasons. The observed post-season calf/cow ratio of 33J/100F and bull ratio of 35M/100F were above the previous 5-year average.

### **Harvest Data**

Weather during fall 2016 hunting seasons was once again mild in the South Wind River Herd Unit, with above average temperatures and below average snowfall. The biggest snow event occurred over the last few days of the November antlerless elk seasons.

Total harvest was only slightly below average in 2016, mostly likely due to mild weather, despite complaints from many hunters of low elk numbers and purported and documented increased wolf activity. Total bull harvest dropped to 322 in 2016, with a slight increase to 285 adult bulls harvested, but with a decrease in yearling bull take with only 37 spikes harvested. Antlerless harvest dropped to 330 cows and calves, near the previous 5-year average. Based on harvest survey results, total harvest dropped about 9% in 2016 to 652 elk, just above the previous 5-year average. Hunter success rates have remained fairly stable, with the 2016 success rate of 32% also being just above the 5-year average. Hunter effort data indicate hunters were better able to find elk compared with the previous 5 years (23.9 days/harvest in 2016 vs. an average of 25.0 days per harvest since 2011).

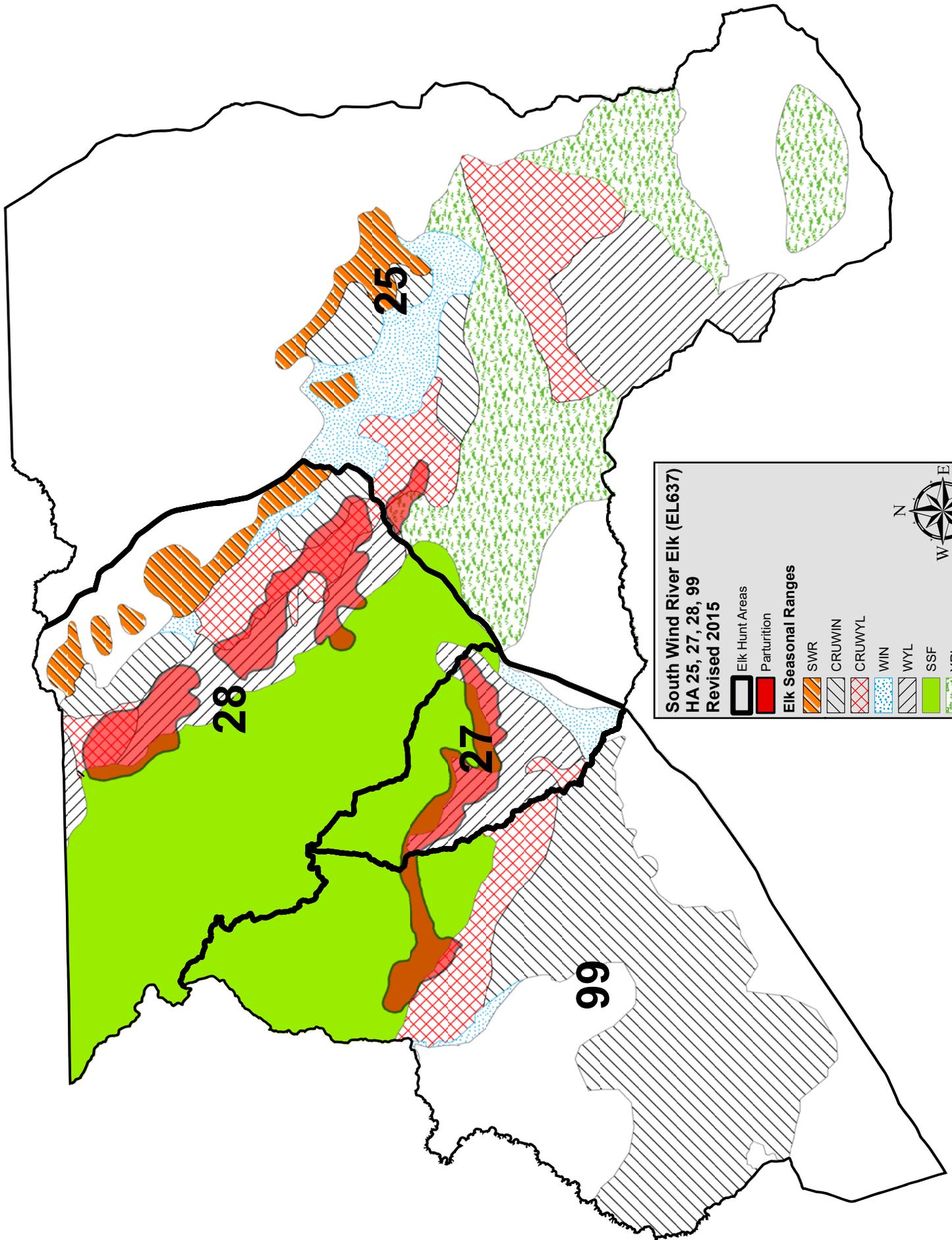
### **Management Summary**

With the 2016 mid-winter and 3-year running average trend counts being nearly the same as the objective, the 2017 seasons are designed to maintain this population at the current level. Elk hunters will again be allowed to harvest “any elk” for the first part of the general license season in hunt area 28 (October 1–6), shifting to antlered only for the remainder of the season (October 7–22). This season structure in 2016 resulted in a 15% decrease in hunter numbers (which was not expected with opening day on Saturday) and minimal change in harvest, and seems to have contributed to less pressure on adult bulls, which may lead to improved bull quality over time. Regardless of reason, we observed 198 branch-antlered bulls in Area 28 in the January 2017 classification survey/trend count, the second highest since 1994.

With increased snow loads and fewer elk observed in Areas 27 and 99, we are making small reductions in license numbers for those license types specific to those hunt areas. In addition, we are making a slightly larger reduction in Hunt Area 25 Type 4 licenses for similar reasons, along with hunter crowding concerns, which are compounded with private land access and opening day coinciding with opening day of general deer season in deer Hunt Area 94. With South Wind River elk being at objective, there is less need for intensive female elk harvest, and license numbers have remained nearly the same as they were before the objective review in 2014, prior to which the herd was considered well above objective. Changes in elk distribution in Hunt Area 28 have been documented over the last 2 winters due to snow depths in 2016-17, coupled with wolf presence and potentially due to heavy hunting pressure at the end of the November hunting season. As such, a few groups of elk have become acclimated to spending substantial time in and around rural subdivisions and agricultural lands just outside Lander. Having elk close to town has become very popular with many people; yet concerns have also been raised over increasing damage to fences, agricultural interests, and elk/vehicle collisions. Discussions and landowner meetings are planned regarding the potential for additional late cow seasons, and other counter measures to reduce elk conflicts.

Beginning in 2015, we extended the hunt area 25 boundary southerly to encompass the Cyclone Rim area and south to the Rocky Crossing Road. This was popular with many hunters and met with few complaints. We will continue to monitor elk numbers, distribution, and other metrics to determine if this boundary move is successful or if elk begin to avoid this area and move across the boundary where hunting pressure is often lower in that portion of Hunt Area 100.

We expect the 2017 seasons outlined above should result in a harvest of at least 575 elk with lower cow harvest. If calf recruitment remains near the average and winter losses are minimal, this harvest should maintain the population at objective.



**South Wind River Elk (EL637)**  
**HA 25, 27, 28, 99**  
**Revised 2015**

**Elk Hunt Areas**

- 25
- 27
- 28
- 99

**Parturition**

- Red solid fill

**Elk Seasonal Ranges**

- SWR: Orange diagonal lines
- CRUWIN: Grey diagonal lines
- CRUWYL: Red cross-hatch
- WIN: Blue dotted
- WYL: Grey diagonal lines
- SSF: Green solid fill
- YRL: Green dotted
- OUT: White

**Legend**

- 25
- 27
- 28
- 99
- SWR
- CRUWIN
- CRUWYL
- WIN
- WYL
- SSF
- YRL
- OUT

**North Arrow**

N  
E  
S  
W

## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL638 - GREEN MOUNTAIN

HUNT AREAS: 24, 128

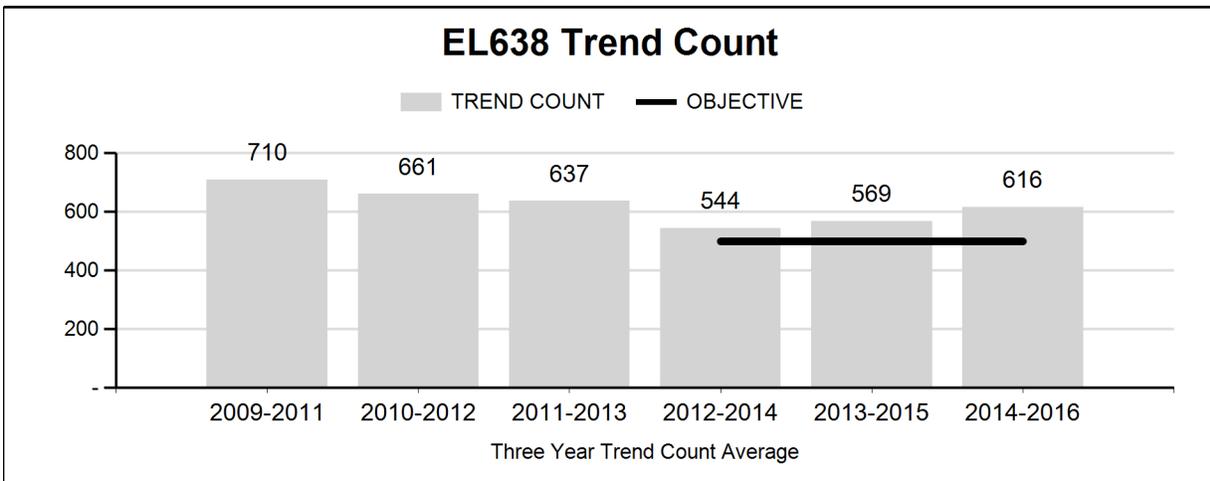
PREPARED BY: STAN HARTER

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	605	734	650
Harvest:	252	192	230
Hunters:	645	505	535
Hunter Success:	39%	38%	43%
Active Licenses:	652	511	500
Active License Success	39%	38%	46%
Recreation Days:	3,617	3,437	3,500
Days Per Animal:	14.4	17.9	15.2
Males per 100 Females:	38	23	
Juveniles per 100 Females	45	31	

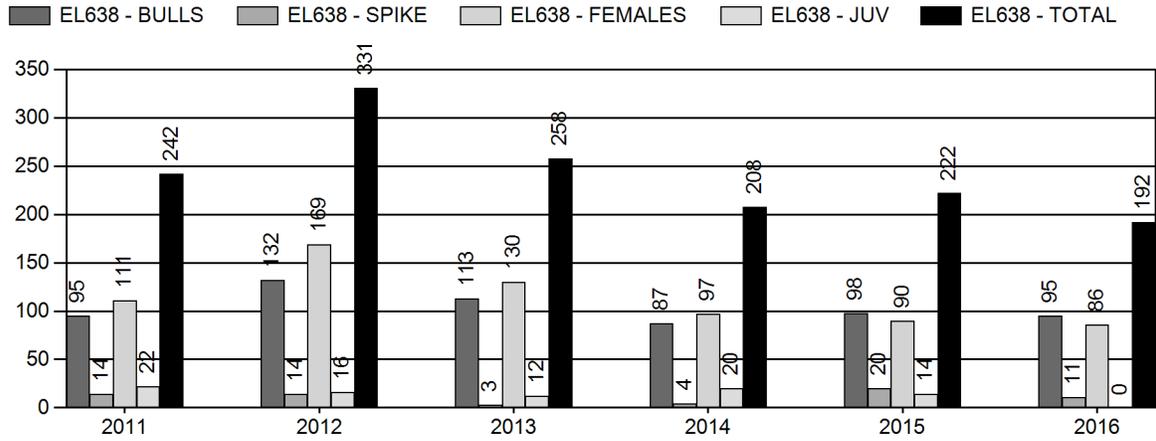
Trend Based Objective ( $\pm 20\%$ ) 500 (400 - 600)  
 Management Strategy: Recreational  
 Percent population is above (+) or (-) objective: 47%  
 Number of years population has been + or - objective in recent trend: 2

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

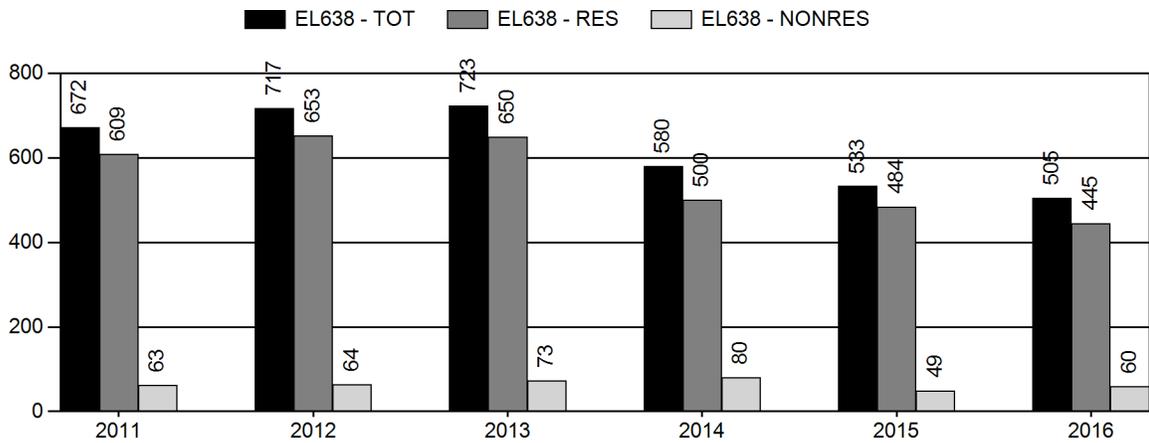
	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	0%	0%
Males $\geq 1$ year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



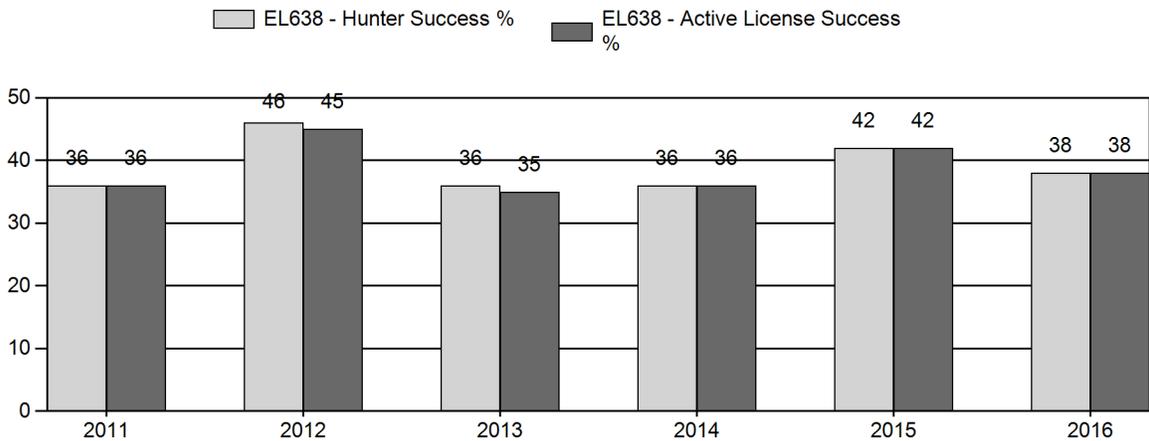
# Harvest



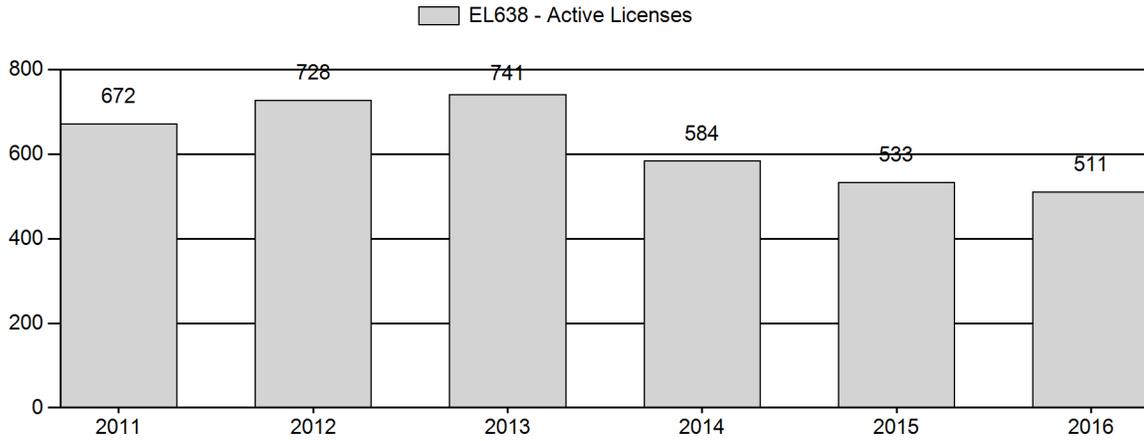
# Number of Hunters



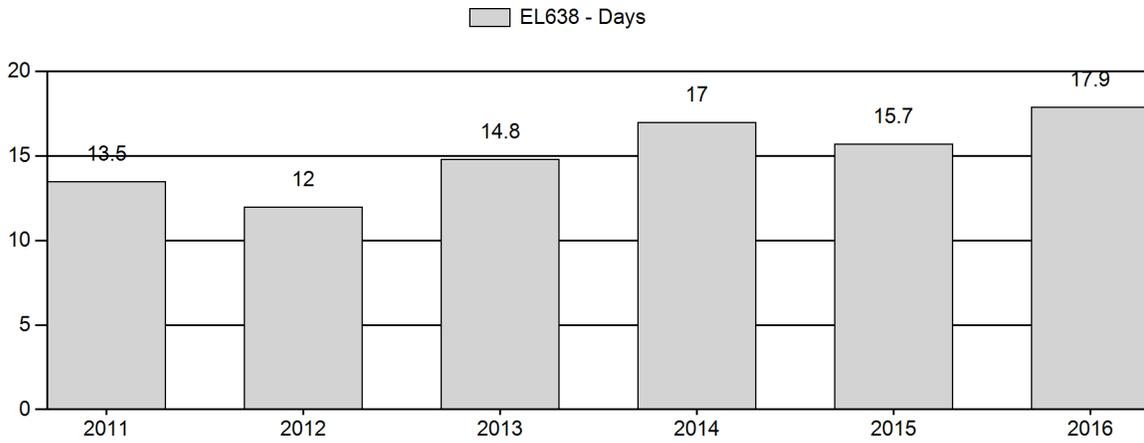
# Harvest Success



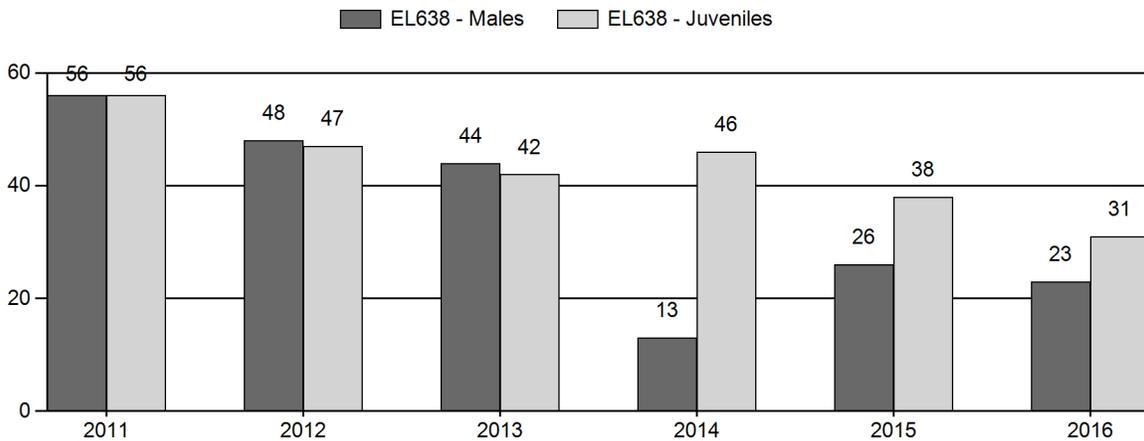
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL638 - GREEN MOUNTAIN

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	0	47	127	174	26%	313	47%	176	27%	663	0	15	41	56	± 0	56	± 0	36
2012	0	49	111	160	24%	336	51%	158	24%	654	0	15	33	48	± 0	47	± 0	32
2013	0	41	99	140	24%	319	54%	135	23%	594	0	13	31	44	± 0	42	± 0	29
2014	0	19	12	31	8%	243	63%	111	29%	385	0	8	5	13	± 0	46	± 0	41
2015	0	73	44	117	16%	444	61%	167	23%	728	0	16	10	26	± 0	38	± 0	30
2016	0	64	45	109	15%	478	65%	147	20%	734	0	13	9	23	± 0	31	± 0	25

**2017 HUNTING SEASONS  
Green Mountain Elk Herd Unit (EL 638)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
24	1	Oct. 1	Oct. 14	150	Limited quota	Any elk
24	1	Nov. 1	Nov. 30			Antlerless elk
24	4	Oct. 1	Oct. 14	75	Limited quota	Antlerless elk
24	4	Nov. 1	Nov. 30			Antlerless elk
24	5	Nov. 1	Nov. 30	150	Limited quota	Antlerless elk
128		Oct. 1	Oct. 14		General	Antlered elk
Archery		Sept. 1	Sept. 30			Valid in the entire area(s)

Hunt Area	License Type	Quota Change from 2016
24	1	-25
24	4	+25
24	5	+25
<b>Herd Unit Total</b>	<b>1</b>	<b>-25</b>
	<b>4</b>	<b>+25</b>
	<b>5</b>	<b>+25</b>

**MANAGEMENT EVALUATION**

**Current Mid-Winter Trend Count Management Objective: 500**

**Management Strategy: Recreation (15 – 29 bulls/100 cows)**

**2016 Mid-Winter Trend Count: 734**

**Most Recent 3-year Running Average Trend Count: 616**

**Herd Unit Issues/Population**

The management objective for the Green Mountain Elk Herd Unit was changed in 2014 to a mid-winter trend count of 500 elk, based on a running 3-year average. Trend count data vary due to annual changes in snow depth, light and wind conditions during flights, and condition of habitats each winter. A key factor in our ability to detect elk in winter is the extreme variability and extent of winter habitats, which range from mixed aspen/conifer/sagebrush habitats to open sagebrush/grassland habitats. The 2016 trend count/classification survey was completed in February 2017, with a total of 734 elk observed.

## **Weather**

Precipitation information for Green Mountain elk is based on one weather station located near Jeffrey City, which indicates precipitation from October 2015 through September 2016 was markedly higher than the 30 year average. The growing season precipitation (April-June 2016) was slightly above the thirty year average, while the high elevation SSF seasonal range average precipitation (May- July 2016) was below the 30 year average. A large storm in May 2016, over Mothers' Day weekend delivered much of that month's precipitation in a single weekend causing heavy runoff and flooding events. The majority of the annual precipitation came during April and May with no measurable precipitation falling in July. Temperatures through the summer were above average.

Winter 2016-2017 has been characterized by above normal snowfall with slightly above average temperatures for the November-April time period in the Jeffrey City area. A total of 46" of snowfall was recorded in Jeffrey City from November 2016 through April 2017, 8.4" above the 30-year average for those months. The above average snowfall for Jeffrey City and the surrounding area caused some concern for wintering wildlife, with most elk observed in open sagebrush habitats away from Green and Crooks Mountains in February. However, open country snow dissipated between storms, and concurrent with spring rainfall, the increase in precipitation should benefit vegetation production in the growing season.

## **Habitat**

Growing season precipitation was nearly average during the spring/early summer of 2016 which provided good forage across the herd unit for mule deer does in early parturition. Above normal temperatures and very low precipitation amounts from June-August likely caused lower vegetation production than the previous two years, possibly leading to the reduced calf/cow ratio of 31J/100F observed this winter. Recently developed "Rapid Habitat Assessments" will be implemented for the Sweetwater mule deer herd unit to develop a baseline from which to gauge overall habitat condition across the landscapes. These assessments should also be useful for evaluating habitat conditions for the Green Mountain elk herd.

## **Field Data**

The 2016 trend count/classification survey was conducted in mid-February 2017 using a Bell 206 Jet Ranger helicopter, with new snow providing the best observation conditions in several years. We observed 734 elk in Hunt Area 24, with most elk found in the lower elevations away from Green Mountain and Crooks Mountain, placing the annual trend count 47% over the mid-winter trend count objective of 500 elk. No elk were observed in Hunt Area 128 this year. The 3-year trend count average of 616 is 23% above objective. Fewer bulls were observed this year than in 2015, but since some bull groups were observed in timbered areas even though snow was deeper than usual on and around Green and Crooks Mountains, we believe we missed seeing some groups of bulls. The resulting post-season calf/cow ratio of 31J/100F is considered fair, but is 31% below the previous 5-year average. The number of calves observed was about average, but the number of females (478) was the second highest observed since 1994, partly due to lower harvest in 2016. The observed bull/cow ratio of 23M/100F was 39% below average. At least 17 more branch-antlered bulls were observed during mule deer classification surveys flown in December 2016, than during the actual elk survey in February 2017. Overall, the size/age of mature bulls observed seems to have diminished over the last few years, perhaps the result of high hunting pressure on mature bulls in a highly accessible area.

### **Harvest Data**

In 2016, a total of 192 elk were harvested in the Green Mountain herd unit, the lowest total since 2004. Warm weather with minimal snowfall throughout the hunting season seems the likely culprit for such low harvest levels. Hunter success increased in Area 24 this year, with 61% for the Type 1 any elk season, 31% and 42% respectively for Type 4 and Type 5 antlerless elk hunters (50% overall – below the long-term average of 58%). Fall 2016 was abnormally warm with little snow during the elk hunting season, which seemed to cause hunters difficulty in locating elk. Changes were made to the season structure in 2016 to address the burgeoning number of elk observed in Hunt Area 24, by focusing harvest there rather than allowing most hunters the opportunity to hunt in Hunt Area 128 in November. Elk numbers in Area 128 have been relatively stable over the past several years, lessening the need to focus additional harvest there. Type 5 hunters were still allowed to hunt both areas as they were listed that way in the application information prior to setting seasons, but will be limited to Area 24 in 2017. Hunters with antlerless license types in neighboring Rattlesnake Hills Area 23 were also allowed to hunt in Area 128 in the 2016 season, but only 2 cow elk were harvested by a small number of hunters taking advantage of that opportunity. Hunters with Area 24 Type 1 and 4 were allowed to hunt for antlerless elk in November, if unsuccessful in October, but this resulted in minimal additional harvest according to the “date of harvest” data provided by the harvest survey and field checks. Complaints about hunter crowding were minimal during the 2016 seasons. Concurrent with lower hunter success, the number of days/animal harvested increased in 2016 to 17.9 days/elk killed, 3.5 days per animal longer than the previous 5-year average.

### **Management Summary**

Over the last decade or so, various management strategies have been implemented to attempt population reduction in the Green Mountain herd unit with varying results. Increases in licenses available in Area 24 did not achieve desired increases in harvest as illustrated in Figure 1, but certainly led to many complaints about crowded hunter densities, prompting reductions in licenses beginning in 2014. With the population remaining well above objective, we increased the number of Type 4 and Type 5 licenses in Area 24 for the 2017 season, cautiously hoping to increase female harvest without re-creating hunter crowding problems.

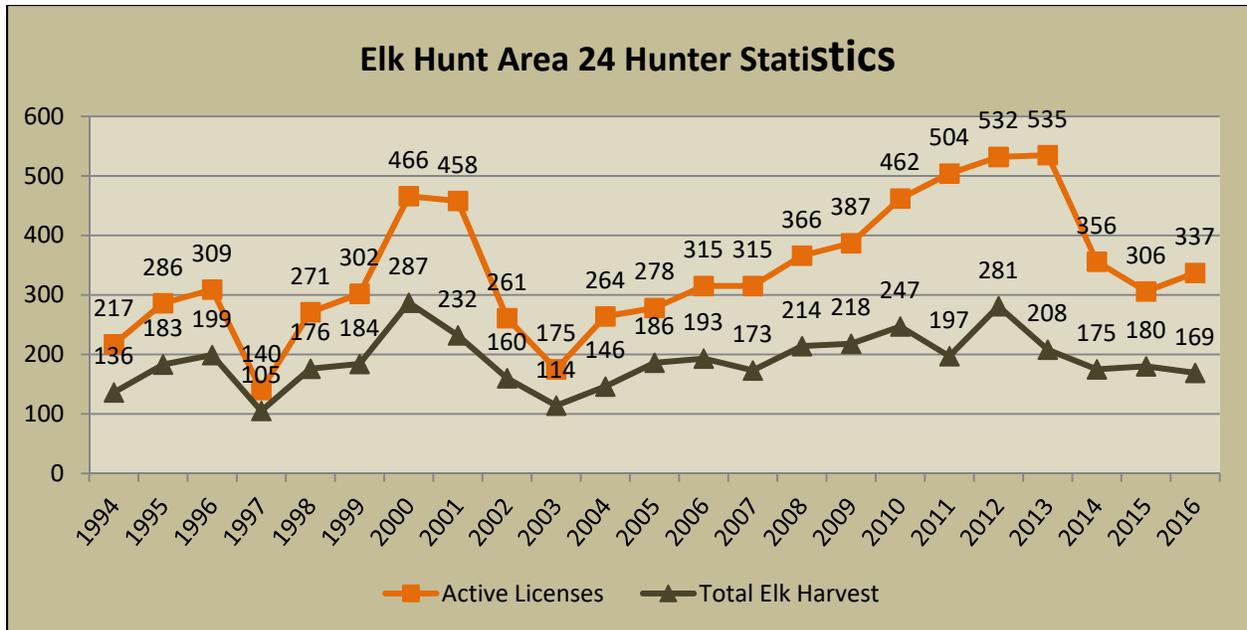


Figure 1. Comparison of elk license numbers and elk harvest trends in Elk Hunt Area 24, 1994-2016.

All of the elk observed during the mid-February 2017 trend count were in Hunt Area 24. In response to declining bull numbers and bull/cow ratios over the last 6 years, we reduced the number of Type 1 licenses to 150, attempting to reduce pressure on mature bulls, yet maintain opportunity for hunters to harvest bulls following the recreational management strategy.

We are refocusing our emphasis on harvesting female elk where the most elk are, by increasing the number of Type 4 licenses to 75 and Type 5 licenses to 150 valid only in Hunt Area 24, and allowing Area 24 Type 1 and 4 hunters who are not successful in October to hunt for antlerless elk in November in only Hunt Area 24. But, November harvest from Type 1 and 4 hunters was very low in 2016, with few successful hunters checked in the field and no Type 1 or 4 hunters reporting a November date of harvest via harvest surveys.

We will maintain the General License season in Hunt Area 128 as an “antlered elk” season again in 2016 in response to observed high hunter densities in portions of the hunt area, which prompted some concerns from area landowners, especially in the west half of the hunt area. Harvest of antlerless elk in Area 128 will continue with late-season opportunities but with only Area 23 (Rattlesnake Elk Herd Unit) hunters continuing to have the ability to hunt in Area 128 from mid-November to mid-December, mostly targeting elk that move off the Rattlesnake Hills into the Gas Hills/Beaver Rim area. The expected 2017 harvest should consist of about 230 elk, mostly from Area 24, and move the herd closer to objective, which will be reviewed again in 2018.

**Green Mountain Elk (EL638)**

**HA 24, 128**

**Revised 2015**

 Elk Hunt Areas

 Parturition

**RANGE**

 CRUWYL

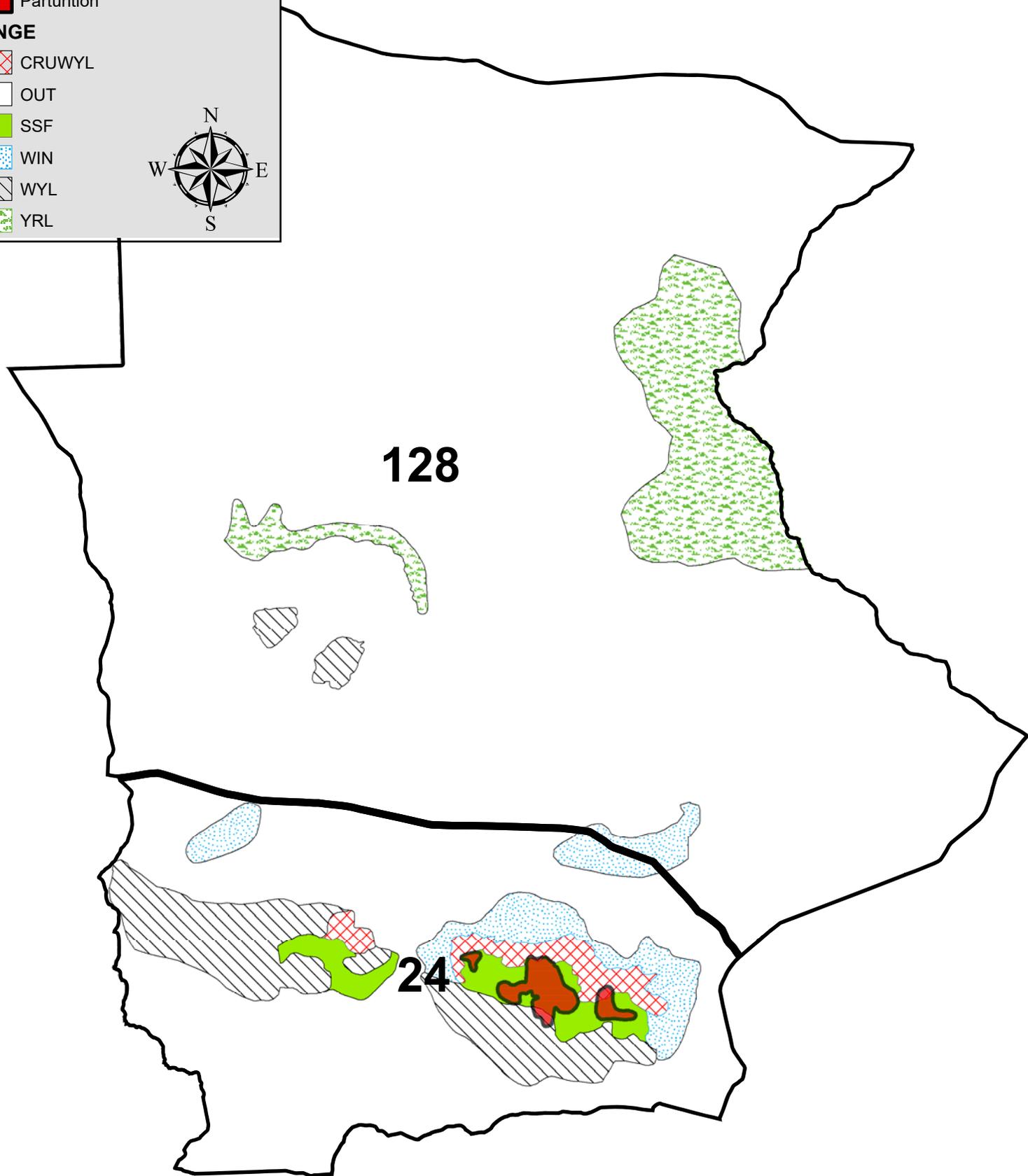
 OUT

 SSF

 WIN

 WYL

 YRL





## 2016 - JCR Evaluation Form

SPECIES: Elk  
 HERD: EL639 - FERRIS  
 HUNT AREAS: 22, 111

PERIOD: 6/1/2016 - 5/31/2017  
 PREPARED BY: GREG HIATT

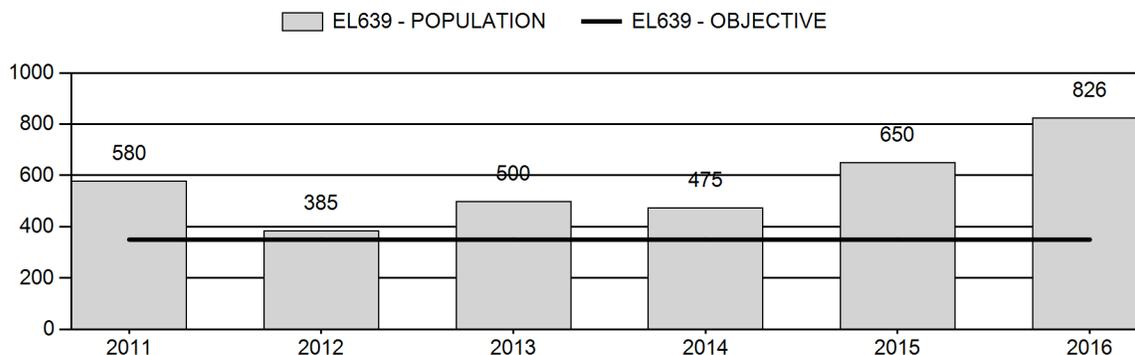
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Population:	518	826	800
Harvest:	124	194	215
Hunters:	234	273	380
Hunter Success:	53%	71%	57 %
Active Licenses:	245	278	380
Active License Success:	51%	70%	57 %
Recreation Days:	1,695	1,324	2,970
Days Per Animal:	13.7	6.8	13.8
Males per 100 Females	52	60	
Juveniles per 100 Females	36	36	

Population Objective ( $\pm 20\%$ ) : 350 (280 - 420)  
 Management Strategy: Special  
 Percent population is above (+) or below (-) objective: 136%  
 Number of years population has been + or - objective in recent trend: 36  
 Model Date: None

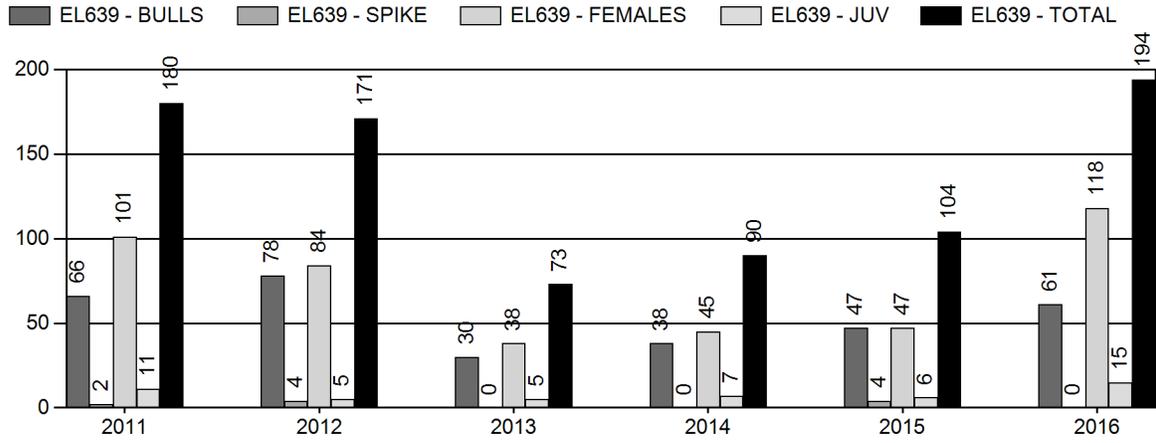
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	0%	0%
Males $\geq 1$ year old:	0%	0%
Total:	0%	0%
Proposed change in post-season population:	-8%	-3%

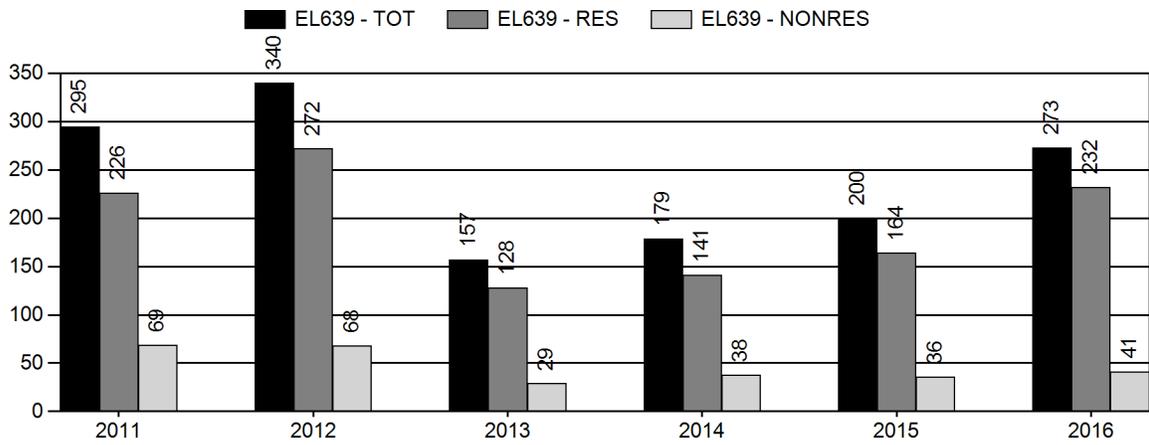
## Population Size - Postseason



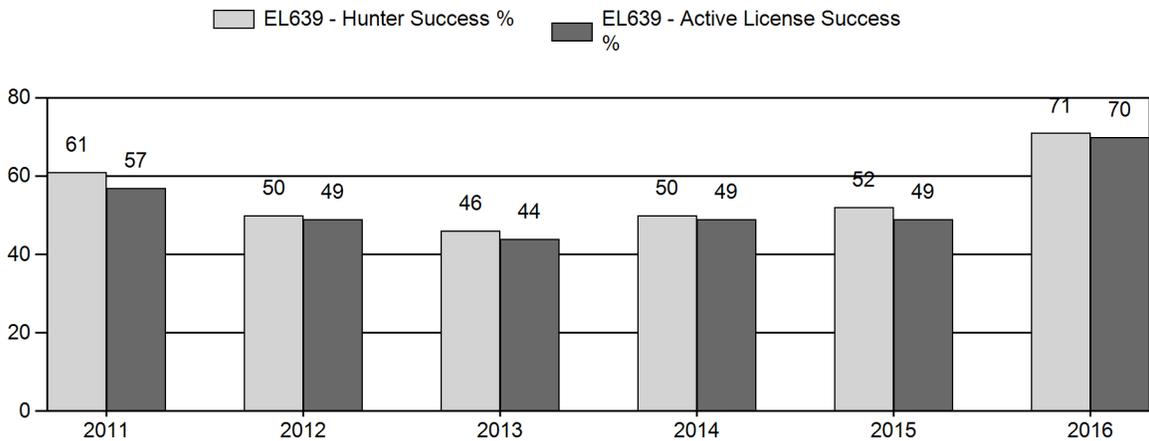
# Harvest



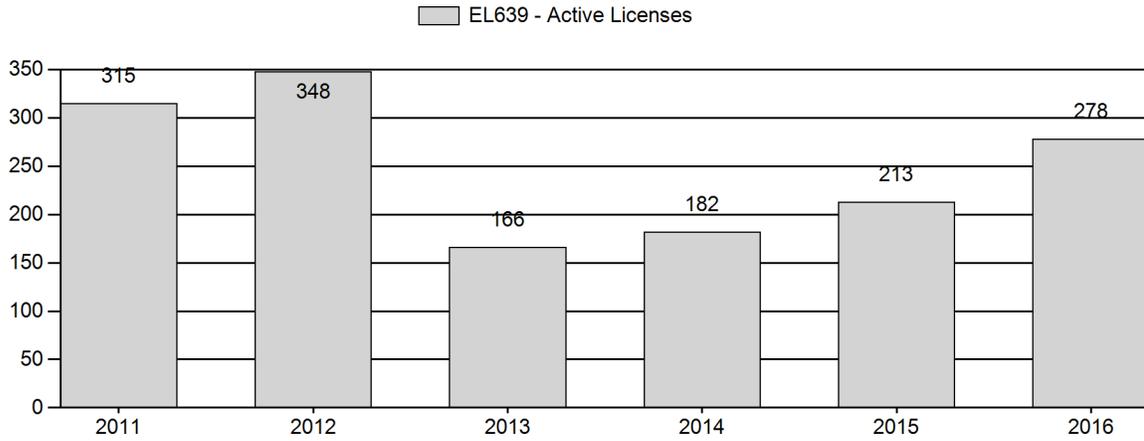
# Number of Hunters



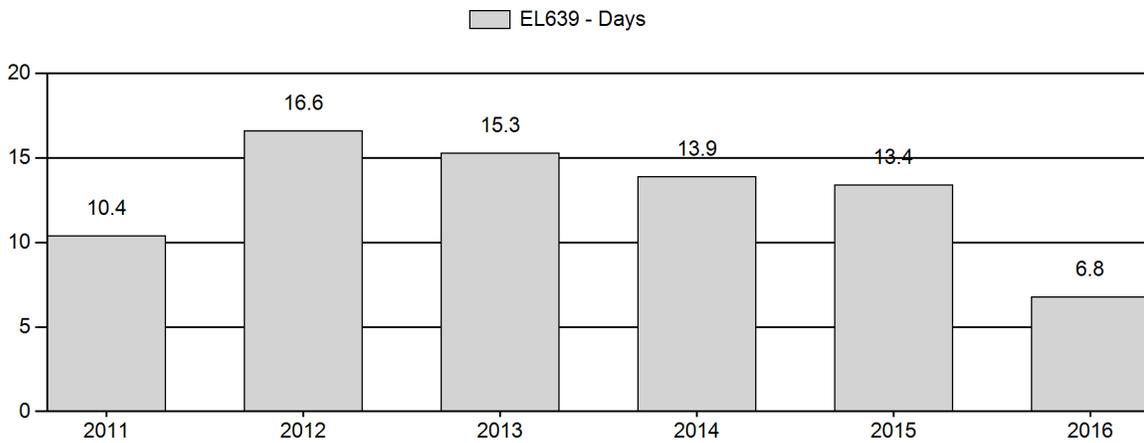
# Harvest Success



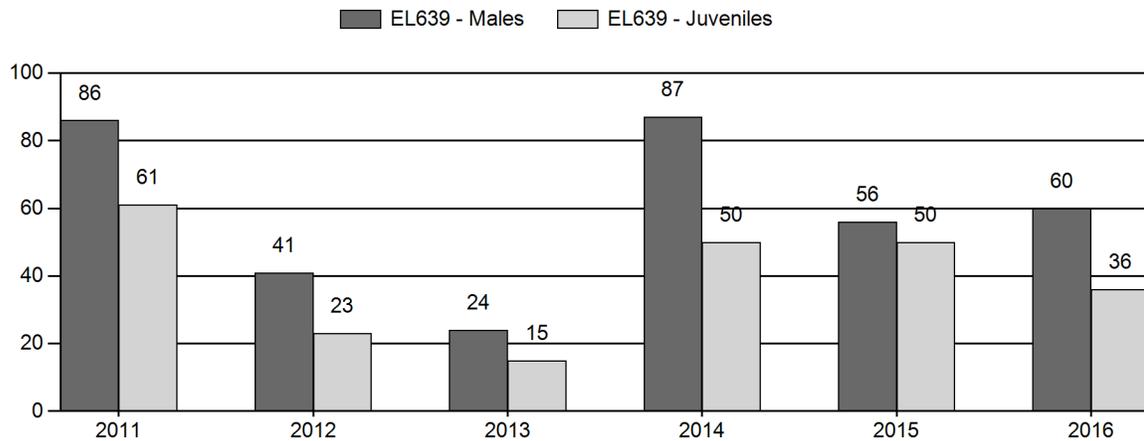
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL639 - FERRIS

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	580	23	87	110	35%	128	41%	78	25%	316	474	18	68	86	± 10	61	± 8	33
2012	385	25	50	75	25%	182	61%	42	14%	299	237	14	27	41	± 3	23	± 2	16
2013	500	34	49	83	17%	353	72%	54	11%	490	176	10	14	24	± 1	15	± 0	12
2014	475	39	112	151	37%	174	42%	87	21%	412	400	22	64	87	± 5	50	± 3	27
2015	650	55	108	163	27%	291	49%	145	24%	599	420	19	37	56	± 2	50	± 2	32
2016	826	70	184	254	31%	420	51%	152	18%	826	0	17	44	60	± 0	36	± 0	23

**2017 HUNTING SEASONS  
FERRIS ELK HERD (EL639)**

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
22	1	Oct. 8 Nov. 1	Oct. 31 Jan. 31	40	Limited quota	Any elk Antlerless elk
	6	Oct. 8 Nov. 1	Oct. 31 Jan. 31	50	Limited quota	Cow or calf valid in the Muddy Creek drainage Cow or calf valid in the entire area
111	1	Oct. 10	Oct. 31	40	Limited quota	Any elk Antlerless elk valid off the Wyoming Game and Fish Commission's Morgan Creek Wildlife Habitat Management Area
	1	Nov. 1	Jan. 31			
	4	Oct. 10	Oct. 31	50	Limited quota	Antlerless elk Antlerless elk valid off the Wyoming Game and Fish Commission's Morgan Creek Wildlife Habitat Management Area
	4	Nov. 1	Jan. 31			
	6	Nov. 1	Jan. 31	150	Limited quota	Cow or calf valid off the Wyoming Game and Fish Commission's Morgan Creek Wildlife Habitat Management Area
7	Nov. 10	Jan. 31	150	Limited quota	Cow or calf valid off the Wyoming Game and Fish Commission's Morgan Creek Wildlife Habitat Management Area	
Archery 22, 111		Sep. 1	Sep. 30			Valid in the entire area(s)

Hunt Area	License Type	Quota change from 2016
22	1	0
	6	+25
111	1	0
	4	+25
	6	0
	7	+25
<b>Herd Unit Total</b>	<b>1</b>	<b>0</b>
	<b>4</b>	<b>+25</b>
	<b>6</b>	<b>+25</b>
	<b>7</b>	<b>+25</b>

### Management Evaluation

**Current Postseason Population Management Objective: 350**

**Management Strategy: Special**

**2016 Postseason Population Estimate: ~826**

**2017 Proposed Postseason Population Estimate: ~800**

### **Herd Unit Issues**

The management objective for the Ferris Elk Herd Unit is a post-season population objective of 350 elk. The management strategy is “special” management, with bull:cow ratios allowed to exceed 30:100 and the proportion of branch-antlered bulls expected to exceed 66 percent of the antlered harvest. The population objective and management strategy were last publicly reviewed in 2012. All affected major landowners strongly endorsed keeping the population objective of 350 elk.

Access is a major issue with this herd unit. While there are large blocks of accessible, public land, refuges created by several large ranches that are either closed to hunting or greatly limit hunter numbers have prevented harvest from most of the elk in this herd unit, particularly in Area 111. As license quotas are increased to reduce elk numbers to objective, the lack of hunter access to these animals leads to over-harvest of public land areas while still preventing the harvest necessary to reach the population objective.

### **Weather**

Improved precipitation which arrived in the latter half of 2014, following severe drought conditions in 2012 and 2013, continued through 2015 and into spring of 2016. Record precipitation was received in 2015, producing exceptional vegetative growth, improving calf survival. Condition of elk going into the 2016-17 winter is expected to have been excellent. The 2016-17 winter had numerous periods of bitter cold with significant snowfall, continuing through at least February. Most groups of elk seen during the February trend count were in crucial winter ranges well off the mountain ranges, indicative of heavy snow cover.

## **Habitat**

While no herbaceous habitat transects are established within occupied habitats of this herd unit, herbaceous forage production appeared to be exceptional due to the increased precipitation. Two shrub transects have been established within this herd unit, primarily to monitor mule deer winter forage. One of these, on the Morgan Creek WHMA, was burned in the 2012 fires and the second was not read in 2016.

Over the past several years the Rawlins BLM has implemented prescribed burns in the Seminoe and Ferris Mountains, partly to address conifer encroachment while also rejuvenating decadent aspen, mountain mahogany and bitterbrush stands. In the summer of 2012, two large wildfires in the Seminoe Mountains and the eastern Ferris Mountains burned thousands of acres. These prescribed burns and the recent wildfires have benefited elk as herbaceous forage reclaims burned areas.

The Seminoe Fire burned over 3,800 acres in the Seminoe Mountains including areas within Morgan Creek WHMA. As in other years following the fire, the Rawlins BLM coordinated and funded aerial application of Plateau® to inhibit cheatgrass spread on BLM and WGFD managed areas within the fire perimeter. The wildfire enveloped several previously planned prescribed burns, although not with the desired prescriptions.

Plans for additional prescribed fires in the Ferris and Seminoe Mountains, particularly on the Morgan Creek WHMA, have been accelerated to take advantage of the secure fire breaks provided by the 2012 wildfire.

## **Field Data**

Obtaining reliable classification samples from small populations is difficult because, statistically, the majority of the population must be included in the sample to have any confidence in the resulting ratios. Ratios collected for this herd can be further skewed because elk in this herd are not distributed randomly among the winter bands. Missing any of a handful of bachelor bull herds will significantly under-estimate bull:cow ratios. Failure to classify even one of the large cow/calf bands will greatly over-estimate bull:cow ratios, as happened in 2011 and 2014. Without reliable, consistent herd ratios, spreadsheet modeling for this small herd does not work.

Conditions during a helicopter trend count in February 2017 were near ideal, with good snow cover and most elk being found well off the mountain ranges. All 826 elk counted were also classified, yielding the largest sample ever collected from this herd. As with most recent surveys, elk numbers were skewed between the two hunt areas, with only 267 being found in Area 22 and 559 in Area 111, where access is limited to large portions of the area. Of the elk found in Area 111, 164 were in the checkerboard in the southern portion, where there is almost no hunter access. Only 395 were in the northern portion of Area 111.

Calf production dropped to 36:100, after remaining high at 50:100 in 2014 and 2015, but was still well above record low ratios recorded in 2012 and 2013. Calf production was highest in Area 111 at 38:100, compared to 31:100 in Area 22. The essentially un hunted segment of the population in the Haystack Mountains in southern Area 111 had calf production at 44:100.

Since most bull groups appear to have been located, as well as all major cow/calf groups, the bull:cow ratio of 60:100 from the 2016 classification sample is probably a realistic estimate of herd composition, and exceeded the special management criterion. Distribution of antlered elk was highly skewed, with 46 percent in Area 22, yielding a ratio of 104:100. The bull:cow ratio in Area 111 was 44:100, but 58 percent of those were in the unhunted checkerboard. The bull:cow ratio for the accessible northern portion of Area 111 was only 23:100, and two-thirds of those were spikes. Many bull groups in this herd unit are known to winter along the border between Areas 22 and 111, and it appears most were on ridges in Area 22 when the count was flown. Subtracting the unhunted elk in the checkerboard, the ratio for the remaining portion of the herd was 48:100, near the upper limit for special management.

The spike:cow ratio declined slightly to 17:100, despite high calf production in 2015. Spikes were almost twice as common in Area 111 as in Area 22.

### **Harvest Data**

Hunter success for Type 1 licenses remained high for both areas, but was within ranges seen in recent years. Success was lower for bull hunters in Area 111, again indicating many of the bulls counted there were not available during the hunting season. Eighteen percent of the successful Type 1 hunters in Area 22 harvested antlerless elk, the highest proportion since 1999. None of the Type 1 hunters in Area 111 chose to do so.

Beginning in 2010, Type 6 licenses in Area 22 were restricted to the Muddy Creek drainage for the first portion of the 5-week season to address damage concerns on irrigated hayfields. Initial success for hunters with these licenses was high, at 72 percent, but has steadily declined and was only 21 percent in 2013, 25 percent in 2014 and 19 percent in 2015. The average number of days hunted per elk harvested on these licenses began at 5 days in 2010 and steadily rose to 11 days in 2015. But this trend reversed in 2016, with success for these hunters rising to 77 percent and the days per elk declining to 5.3.

To address a problem of inadequate harvests resulting from poor license sales, most of the antlerless licenses in Area 111 were converted into reduced price cow/calf licenses beginning in 2009. To address crowding issues in the Seminole Mountains and to direct harvest to the segments of the herd protected by ranches with limited access during the fall hunt, those cow/calf licenses were not valid on the Morgan Creek WHMA. Seasons were extended through January to offer hunters opportunity to harvest antlerless elk in early winter when they are often found in winter ranges on accessible public lands. Success for hunters with these licenses dropped off each year since, yielding only 33 percent success in 2015, but this trend also reversed in 2016. While success for the 111 Type 4 hunters remained low, success for the Type 6 and 7 hunters rose to 66 and 59 percent respectively. Increased harvest is attributed to harsher winter conditions that moved more elk north to public lands, and addition of the staggered of the Type 7 season.

### **Population**

Past efforts to model this herd using spreadsheet modeling failed, largely due to widely fluctuating bull:cow ratios. As a result, population estimates and harvest recommendations have been based on winter trend counts. In years when counting conditions were not favorable,

estimates of herd size are made using the most recent reliable trend count, adding annual calf production and subtracting harvest for each intervening year. Ideal conditions during the 2015 count yielded a count of 599 elk, still well above objective and little different from numbers seen in 2009, despite large increases in antlerless license quotas and seasons extended through January. This year's count of 826 elk was the highest recorded for this herd, exceeding the 2015 count by 38 percent and twice the 2014 count. All of the surplus elk are still in Area 111 where access is limited. A total of 164 elk were found in the Haystack Mountains in the checkerboard in the southern portion of Area 111 where landowners do not allow public access. In Area 22 where most lands are accessible to hunters, numbers have been successfully reduced and remain low.

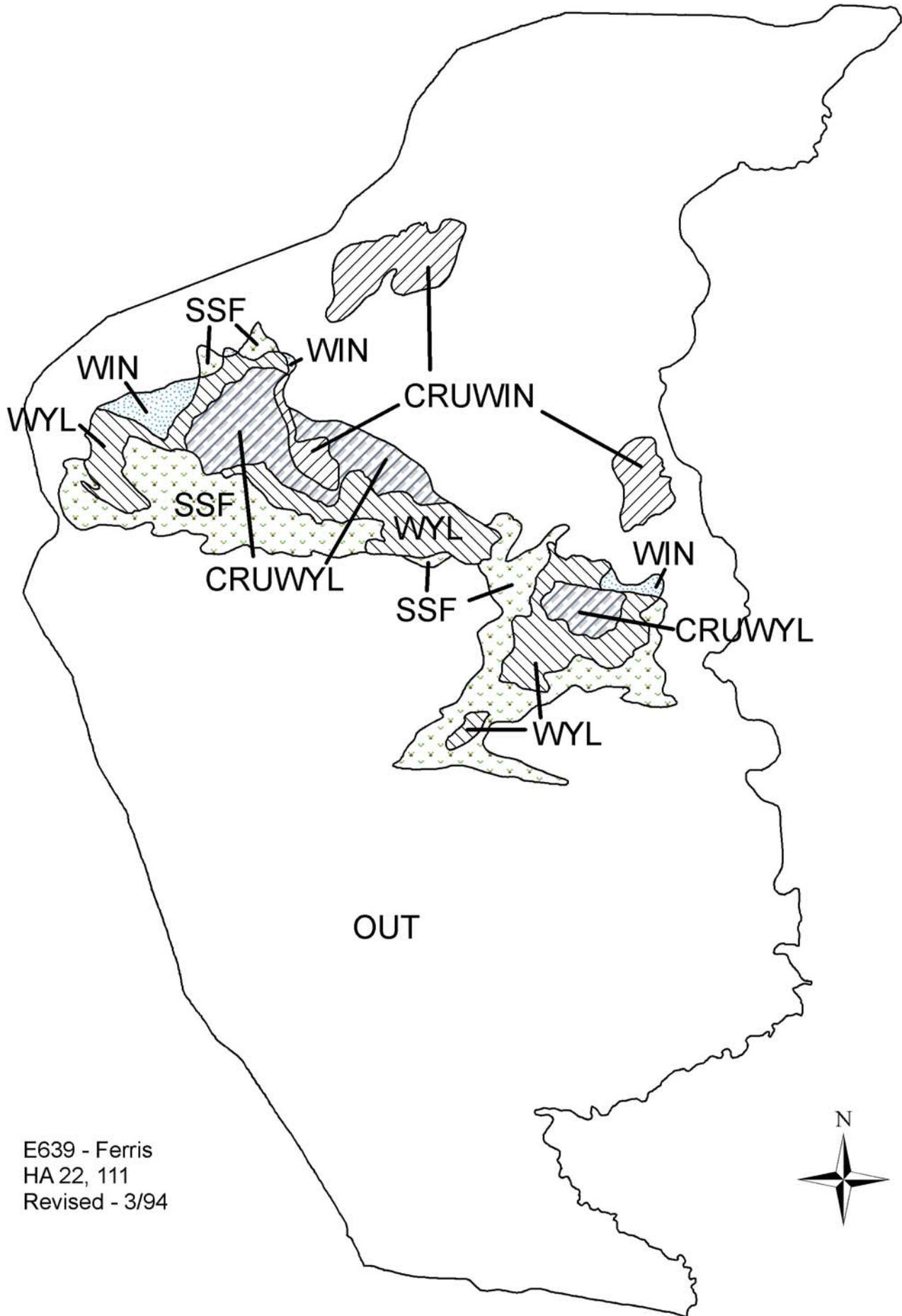
## **Management Evaluation**

License quotas were reduced in 2013 in response to the low 2012 trend count, poor hunter success and exceptionally low calf production, intended to maintain herd reduction while providing reasonable chances of success for hunters applying for such tags. This was the proper response for Area 22, but elk numbers were still above objective in Area 111 and quotas for that area have been increased each subsequent year. The high bull:cow ratio seen in Area 22 is probably skewed by bulls from Area 111 wintering in 22. More than 30 percent of the bulls in the herd classification are in the checkerboard in Area 111 and unavailable to hunters. As a result, Type 1 quotas were not increased. Quotas for cow/calf licenses were increased by 75 in 2017, with 25 more in Area 22 on the Muddy Creek drainage, 25 more Type 4 tags in Area 111, and an additional 25 Type 7 licenses for the late hunt in Area 111.

Expected harvest from the 2017 seasons would be about 215 elk, with roughly 74 percent being antlerless. About 80 percent of the harvest should come from Area 111. Assuming normal calf production and improved hunter success, the herd should be reduced to approximately 800 elk in 2017. Achieving this harvest will largely depend upon gaining managed access to addition tracts of deeded lands within Area 111.

Comments from several major landowners indicated they want elk harvested from this herd, but do not want public hunters on their lands. This herd offers an unusual opportunity where large portions of summer/fall habitats are on private lands with limited or no public access, but many winter ranges are on accessible public lands. Hence a strategy was initiated with an emergency regulation in 2012 and continued in the following years to allow hunters to pursue antlerless elk as late as January, where most of the elk are expected to be on public land. The intent is to achieve harvest of the reproductive segment of most of the elk herd, not just the segments which are publicly available in the fall. This same strategy is repeated in the 2017 seasons. Barring changes in access across private lands, elk occupying the Haystack Mountains in checkerboarded lands in Area 111 will continue to be unavailable to most hunters, and will thwart efforts to reduce this herd towards objective.

All 2017 license types are consistent with the application booklets. Opening dates in both areas are consistent with the application booklets. Closing dates are the same as in the 2016 season. Archery seasons coincide with local deer archery seasons and archery seasons in neighboring elk areas.



E639 - Ferris  
 HA 22, 111  
 Revised - 3/94

## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL643 - SHAMROCK

HUNT AREAS: 118

PREPARED BY: GREG HIATT

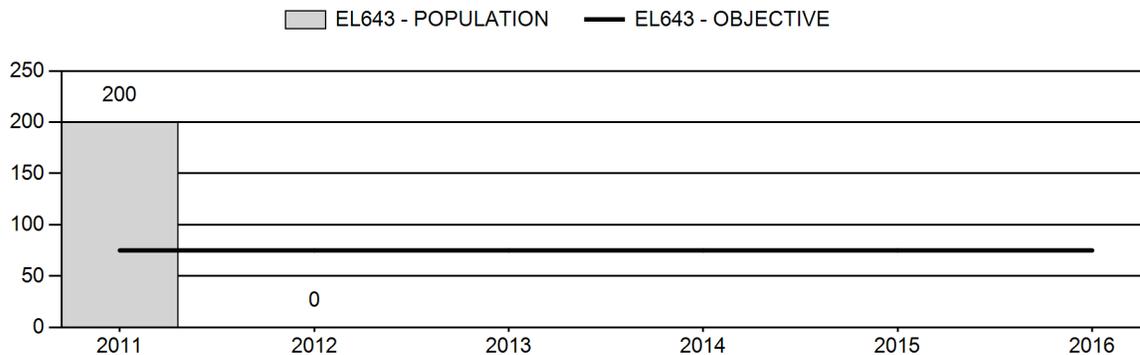
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Population:	40	N/A	N/A
Harvest:	49	86	85
Hunters:	88	113	120
Hunter Success:	56%	76%	71 %
Active Licenses:	93	119	120
Active License Success:	53%	72%	71 %
Recreation Days:	490	533	460
Days Per Animal:	10	6.2	5.4
Males per 100 Females	0	0	
Juveniles per 100 Females	0	0	

Population Objective ( $\pm$ 20%) :	75 (60 - 90)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

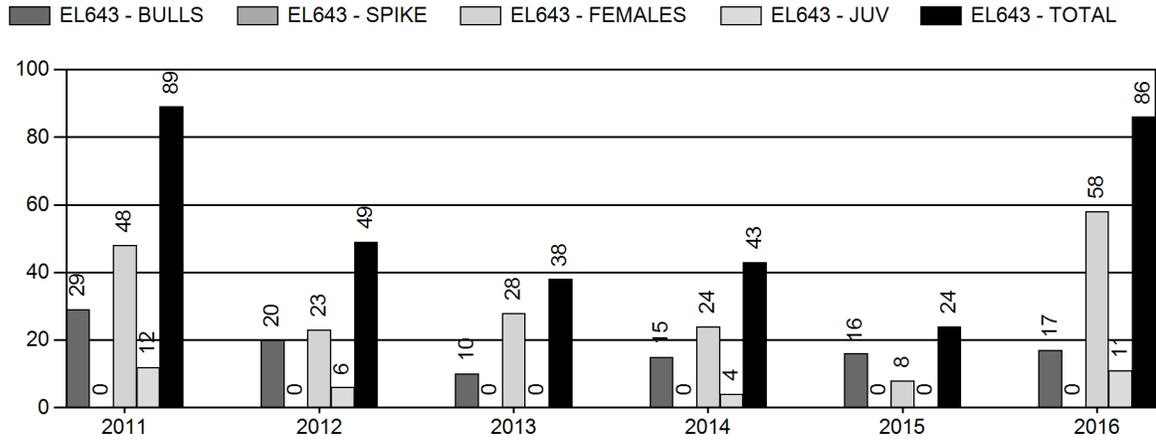
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq$ 1 year old:	0%	0%
Males $\geq$ 1 year old:	0%	0%
Total:	0%	0%
Proposed change in post-season population:	0%	0%

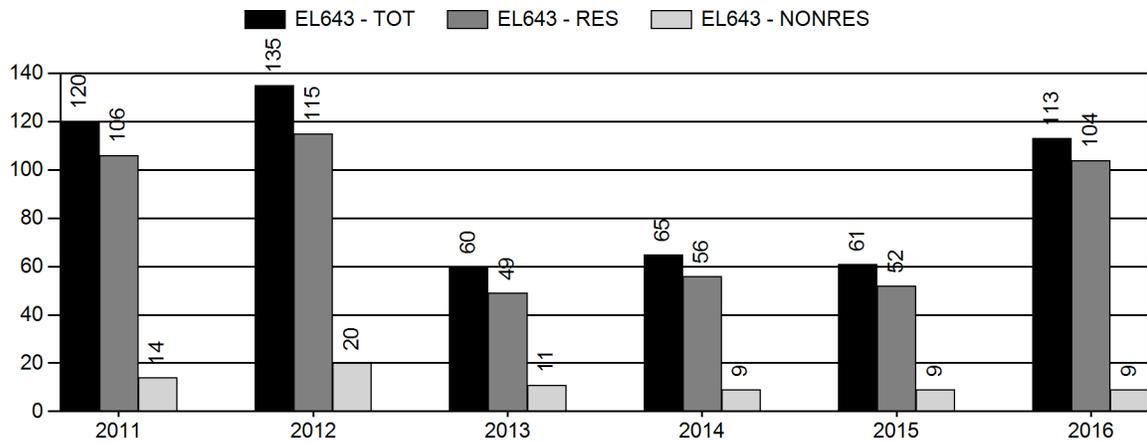
## Population Size - Postseason



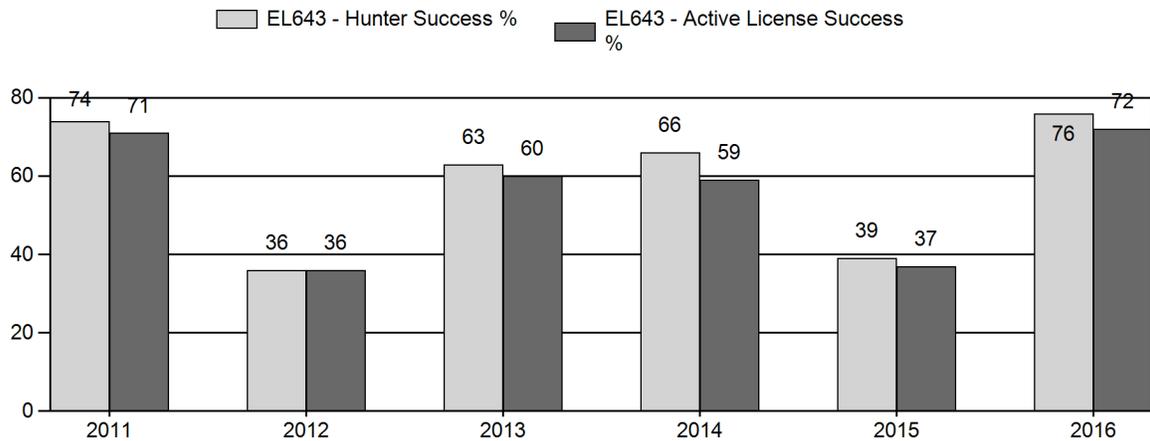
# Harvest



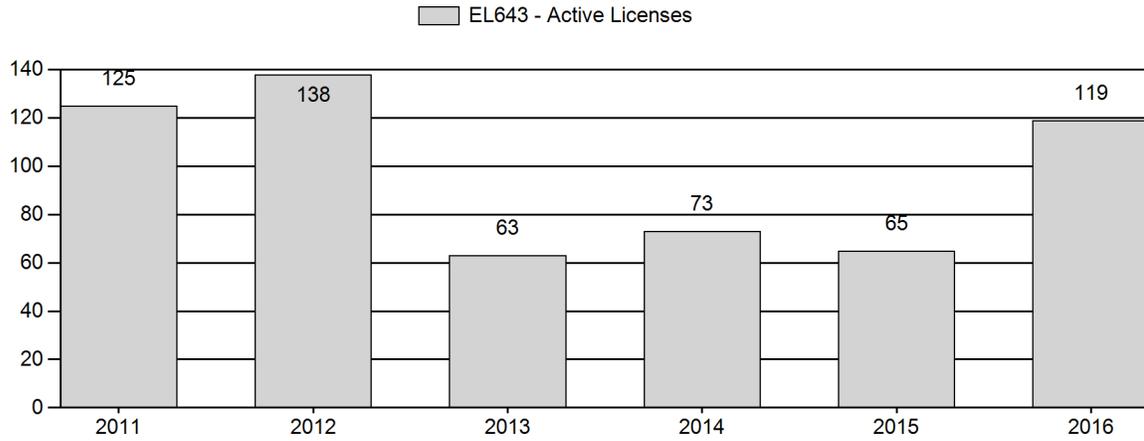
# Number of Hunters



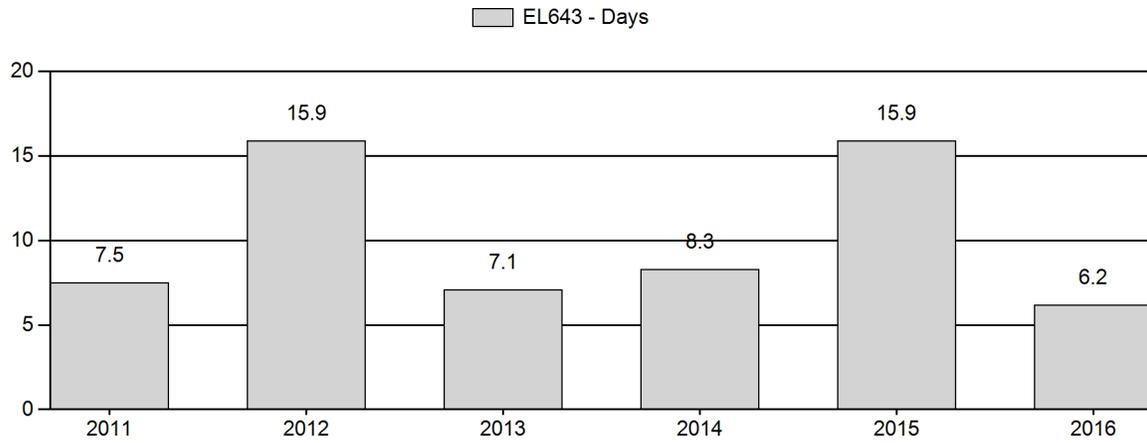
# Harvest Success



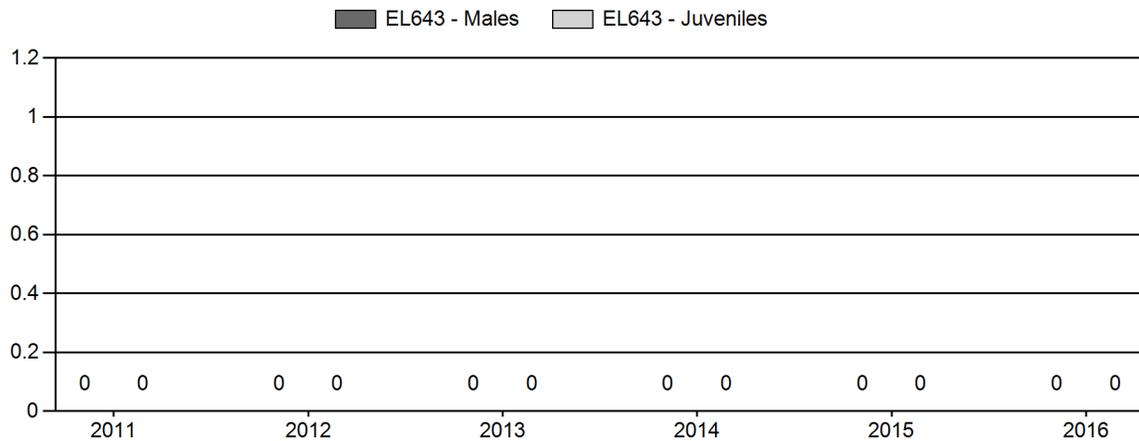
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL643 - SHAMROCK

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	200	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0
2012	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0
2013	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0
2014	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0
2015	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0
2016	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0

**2017 HUNTING SEASONS  
SHAMROCK ELK HERD (EL643)**

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
118	1	Oct. 22	Nov. 12	25	Limited quota	Antlered elk
	4	Oct. 22	Nov. 30	25	Limited quota	Antlerless elk; valid also in that portion of Area 100 east of the Bar-X Road (Sweetwater County Road 21) and south of the Luman Road (Sweetwater County Road 20)
	6	Oct. 1	Nov. 30	75	Limited quota	Cow or calf valid south of the Mineral X Road (Sweetwater County Road 63 and BLM Road 3206); and also in that portion of Area 100 east of the Bar-X Road (Sweetwater County Road 21) and south of the Luman Road (Sweetwater County Road 20)
Archery 118		Sep. 1	Sep. 30			Valid in the entire area(s)

Hunt Area	License Type	Quota change from 2016
118	1	0
	4	0
	6	0
<b>Herd Unit Total</b>	<b>1</b>	<b>0</b>
	<b>4</b>	<b>0</b>
	<b>6</b>	<b>0</b>

## **Management Evaluation**

**Current End-of-Year Population Trend Count Objective: 75**

**Management Strategy: Recreation**

**2016 Postseason Population Estimate: N/A**

**2017 Proposed Postseason Population Estimate: N/A**

## **Herd Unit Issues**

The management objective for the Shamrock Elk Herd Unit is an end-of-year trend count of 75 elk. The management strategy is recreational management. This objective and management strategy were first established in 1984, when elk were found almost exclusively in the southeastern quarter of the herd unit, and were last publicly reviewed in 2015. Change to a landowner and hunter satisfaction objective was proposed in 2015 but was met with resistance by landowners who prefer management be committed to a fixed number of elk. A new spring trend count management objective was adopted, with the first count scheduled for spring 2017.

This herd consists of bands of elk scattered in open sagebrush desert with three main areas of concentration in the southeast, southwest and the northeast corners of the herd unit. Observations have documented movement of bands of elk between these three concentration areas, as well as into Area 100 to the west, producing uncertainty on the actual numbers of elk in the population. Aerial trend counts have been attempted, but often failed to find elk in all three areas simultaneously. Snow cover is rarely adequate for good visibility of elk from an aircraft. Classification samples have been too small and inconsistent to allow for a reliable herd population model to guide management. As a result, license quotas have been based upon harvest statistics and simple assumptions of annular herd growth and harvest.

These bands of elk are highly mobile, and observations before and during the 2012 hunt suggested a significant number of elk from the southwestern portion of the herd may have moved west into more mesic habitats in the eastern portion of Area 100. This shift into Area 100 was noted again in 2014 and 2015, but may have been due to hunting pressure from cow/calf hunters rather than weather or drought.

A cow elk died of lichen toxicity just a few miles into Area 100 in September of 2012, presumably induced into consuming lichen as a result of extremely poor forage conditions that year. At least eight elk died of lichen toxicity in the eastern portion of Area 100 during the 2015-16 winter. No incidences of lichen toxicity in elk were noted in this herd, however roughly 150-200 elk wintering along the border between Areas 118 and 100 were reported to have left orange and red urine stains, indicative of lichen consumption, during both the 2014-15 and 2015-16 winters.

## **Weather**

Record precipitation was received in 2015, producing exceptional vegetation growth and, presumably, high calf survival. This was followed by good precipitation again in spring of 2016, allowing further recovery of ranges from the severe drought of 2012 and 2013. Condition of elk going into the 2016-17 winter is expected to have been excellent. The 2016-17 winter had numerous periods of bitter cold with significant snowfall, continuing through February. Despite improved condition of both animals and forage, winter losses may have been above average.

## **Habitat**

While no herbaceous habitat transects are established within this herd unit, herbaceous forage production appeared exceptional in 2015 and above average in 2016. Only one shrub transect has been established near this herd unit, on the Chain Lakes WHMA, but was not read in 2016.

Habitat losses to uranium development increased with the opening of the Lost Creek *in situ* uranium mine near the center of the herd unit, but the disturbance is not in or near crucial elk ranges. Habitat losses to gas development have slowed in portions of the herd unit due to low oil and gas prices, but recently surged on the west end of the Chain Lakes WHMA.

## **Field Data**

All classification samples for this herd have been statistically inadequate and no posthunt classification data were collected again this year. Dispersal of these elk in small bands across hundreds of square miles of sagebrush makes both aerial and ground classifications prohibitively expensive. Increased precipitation during 2015 and 2016 improved calf production in neighboring herds and production in this desert herd probably increased as well.

## **Harvest Data**

Hunter success is typically high in this herd unit due to the open terrain and limited cover, but was exceptionally poor in 2012 when large numbers of elk were reported to have moved into the southeastern portion of Area 100. Success improved when license quotas were reduced beginning in 2013, but success for Type 1 hunters was still below the long-term average. Success fell for all three license types again in 2015, to record lows for the Type 4 and Type 6 hunters. Many hunters attributed the low numbers of elk in Area 118 to movement west into the southeast portion of Area 100. To compensate, Type 4 and 6 hunters were allowed to hunt in the southern portion of Area 100 in 2016, where landowners had requested increased elk harvest. The strategy was successful, with success for these license types increasing significantly. At 77 percent success, the Type 6 hunters enjoyed the highest antlerless success ever recorded in this herd.

As would be expected with improved hunter success, the average number of days hunted per elk harvested decreased in 2016 for both antlerless license types. The effort required to harvest an antlered elk, however, rose to its highest level in 13 years, suggesting having access to a portion of Area 100 greatly simplified harvest for the antlerless elk hunters. Not surprisingly, hunter satisfaction jumped to 84 percent with the increased access to elk for harvest.

With the increase in the Type 6 quota and despite having the option to hunt in a portion of Area 100, harvest in 2016 was more than three times that taken in 2015. The added pressure along the eastern edge of Area 100 may have prevented the border crossing seen in 2012 and 2015. Even with fewer elk to hunt, none of the Type 1 holders reported having to harvest a spike or antlerless elk.

Of 30 Type 6 license holders that responded to the harvest survey, only 5 (17 percent) reported harvesting their elk in Area 100, yet a phone survey of 53 of these 75 license holders found 63 percent reporting that they harvested their elk in Area 100. A portion of the hunters in Area 100

were also allowed to hunt in the southwestern portion of Area 118, but none reported doing so in the phone survey.

### **Population**

While initially found only in the southeastern portion of the herd unit, over the past 20 years elk have expanded into most portions of Area 118, at least for some seasons of the year. Numbers increased as well, with Department personnel being able to confirm at least 270 elk in this area prior to the 2010 hunting season. Harvests were increased, and the herd was estimated at about 200 elk following the 2011 hunt. Harvest from Type 6 licenses was most effective at reducing elk numbers in the southeast corner where elk use of private lands had been a concern.

Localized movement of elk westward into Area 100 from the southwest portion of Area 118 cannot explain all of the difficulty hunters had finding elk to harvest in the entire area in 2015. Harvest statistics indicate increased harvests in recent years have reduced elk numbers across the herd unit.

### **Management Evaluation**

Expected harvest from the 2017 season is about 85 elk, with roughly 80 percent being antlerless. In previous years, cow/calf licenses were restricted to the southeastern portion of the area to address landowner concerns about elk numbers on private lands close to Rawlins. This strategy was successful, and the restricted area for those Type 6 licenses was expanded to include all of the hunt area south of the Mineral X Road beginning in 2013, which encompasses most private lands within the checkerboard. A similar delineation for the Type 6 licenses is used in 2017.

Opening date in this hunt area has been in the third week of October since it was reopened to hunting in 1992. Recently, there have been years when significant numbers of elk moved west out of the southwestern portion of this herd unit into Area 100 before or during hunting season, reducing harvests. In an attempt to compensate for this movement, the opening date for this area was synchronized with Area 100 in 2011 and 2012, on Oct 15. The attempt failed, with a large number of elk still moving west in 2012. There simply was not enough hunting pressure in the eastern end of Area 100 to shift elk back into Area 118. Complaints about the earlier opening date were received from nearly every hunter contacted, most being upset about crowding due to the season opener coinciding with that for the deer season. Others commented on the lack of a Department presence in the field on opening day, and subsequent poor hunting behavior (chasing with vehicles, herd shooting) by some participants.

Opening date for the Type 1 and Type 4 seasons was returned to the traditional third week of October beginning in 2014, avoiding overlap with the general license deer hunt in the same area. Closing date for the Type 4 season is extended to the end of November to match the opportunity available to the Type 6 hunters. The archery season uses standardized dates and is comparable to those in neighboring areas.

To address the problem of elk dispersing into the southeastern portion of Area 100, Area 118 Type 4 and Type 6 licenses were also valid in the southeastern corner of Area 100 in 2016, bounded by the Bar-X and Luman Roads. This strategy was also intended to test the boundary change between these two herd units that was proposed in 2014. To prevent those elk residing along the herd unit boundary from avoiding harvest by moving east into Area 118, hunters with

Area 100 Type 6 licenses were also able to hunt in that portion of Area 118 south of the Mineral X Road and west of the Riner Road. The opening dates for the Area 118 Type 1 and Type 4 seasons were advanced by one day to synchronize with the Area 100 Type 6 season.

While this strategy successfully increased harvest from the southeast portion of Area 100, most of that harvest did not come from the targeted band of elk that straddle the boundary between these two herds. Instead, phone contacts with hunters discovered most elk harvested in Area 100 on Area 118 licenses came from farther west, mainly along the Tipton Road. Unfortunately, preliminary season information provided to the public at the end of 2016 already committed to a second year of the overlapping cow harvest from the corners of these two herds in 2017. As a result, the 2017 seasons for Area 118 and 100 repeat the overlap used in 2016. Hunters were advised at public meetings that this strategy had not accomplished its purpose and was unlikely to be continued in 2018.

The population objective of 75 elk adopted for this herd unit in 1984 may have been appropriate when elk were only resident in the checkerboard, primarily in the southeast corner near Rawlins. With increased elk numbers in the habitats shared with Area 100 to the west and expansion of the population into mostly public lands north of the Mineral X Road, it may be reasonable to consider a different objective, particularly since collection of adequate data to model the herd is unlikely with current budgetary restraints. Realigning herd unit and hunt area boundaries with Area 100 to the west may also improve management of elk in this portion of the Red Desert.

To address concerns over elk use on private lands, a commitment to retain the 75 objective was made in 2016, to be based upon standardized spring End-of-Year Trend counts. The first of these spring counts is scheduled to occur in 2017, in conjunction with pronghorn line transect surveys.

E643 - Shamrock  
HA 118  
Revised - 5/88

