

## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL211 - MEDICINE LODGE

HUNT AREAS: 41, 45

PREPARED BY: LESLIE SCHREIBER

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	2,705	2,495	2,500
Harvest:	683	798	800
Hunters:	1,752	1,960	2,000
Hunter Success:	39%	41%	40%
Active Licenses:	1,790	2,042	2,000
Active License Success	38%	39%	40%
Recreation Days:	13,625	15,472	15,000
Days Per Animal:	19.9	19.4	18.8
Males per 100 Females:	28	32	
Juveniles per 100 Females	48	48	

Trend Based Objective (± 20%) 2,200 (1760 - 2640)

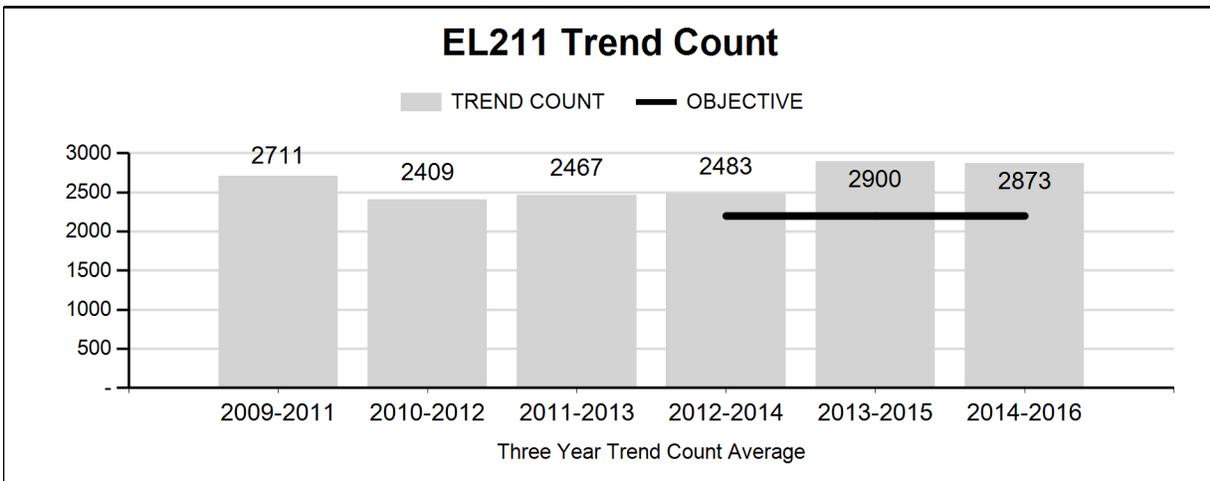
Management Strategy: Recreational

Percent population is above (+) or (-) objective: 13%

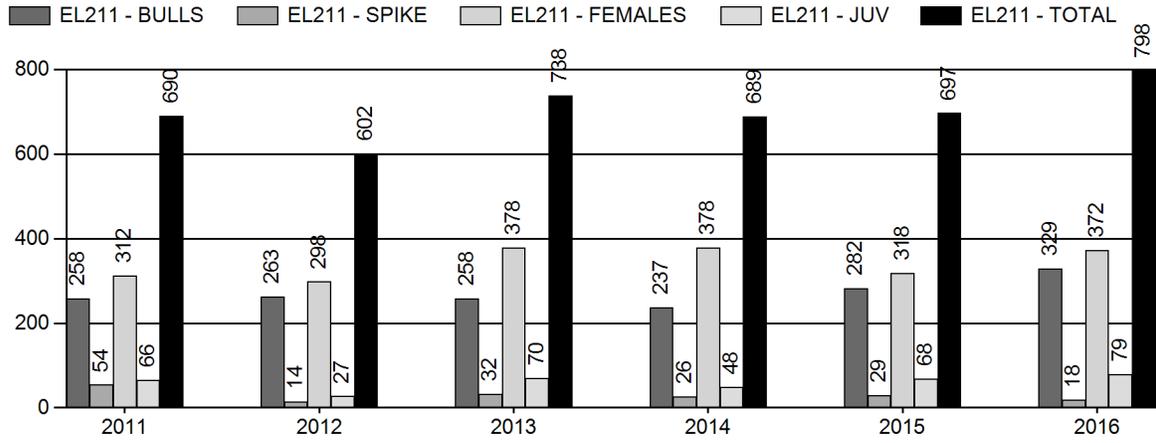
Number of years population has been + or - objective in recent trend: 7

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

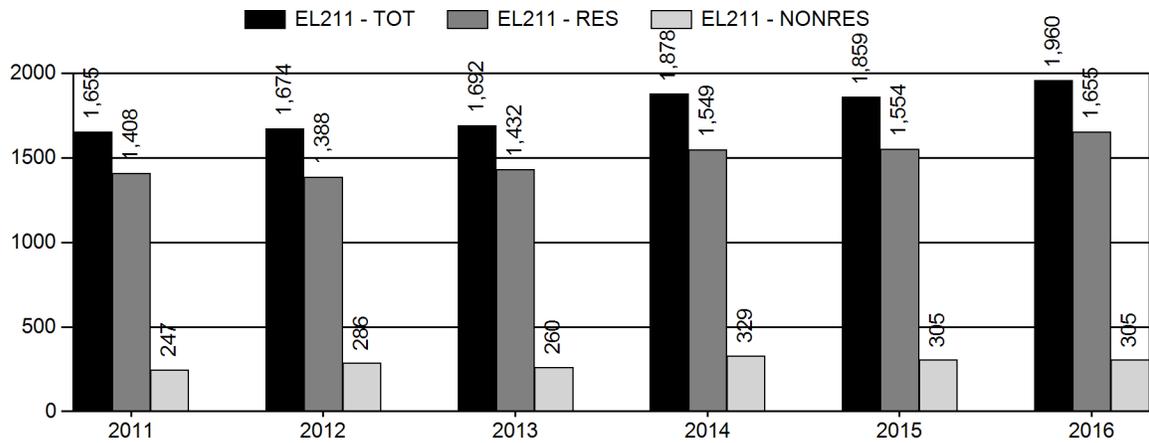
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	8%	8%
Males ≥ 1 year old:	11%	11%
Juveniles (< 1 year old):	2%	2%



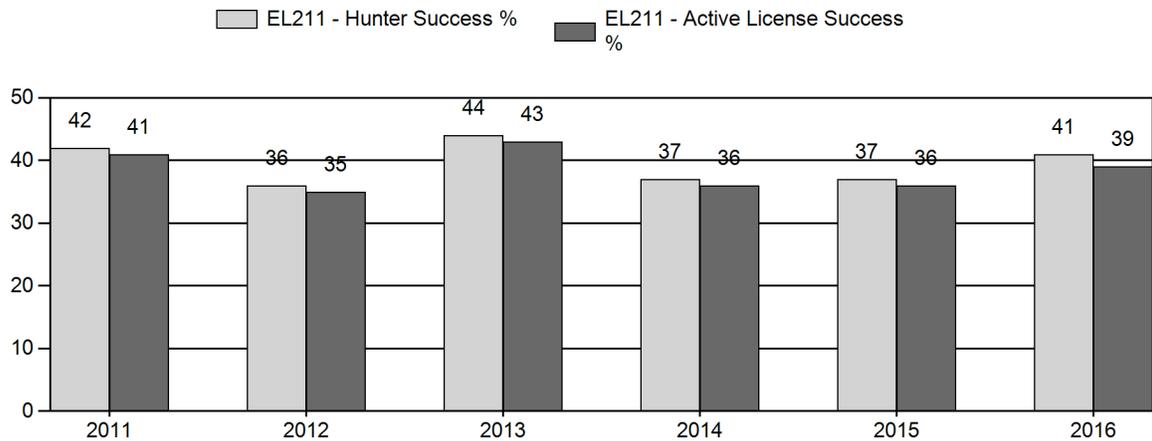
# Harvest



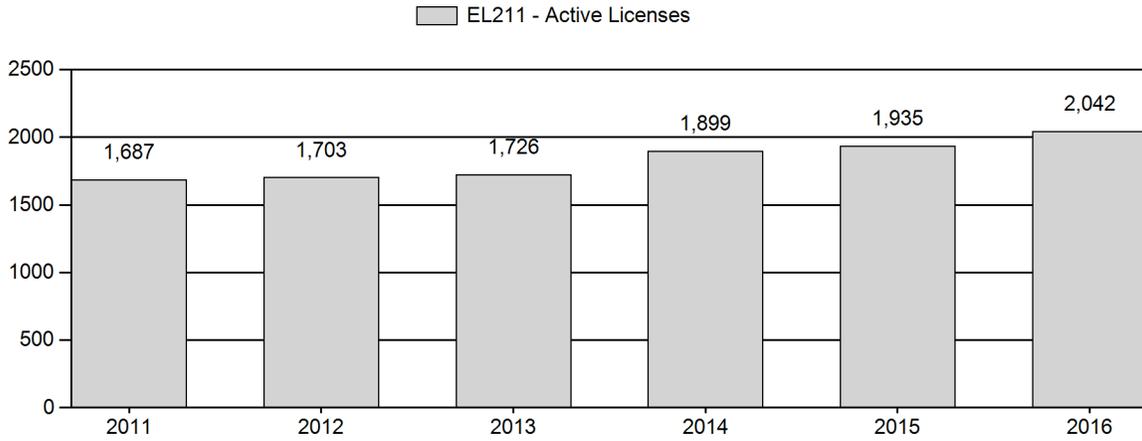
# Number of Hunters



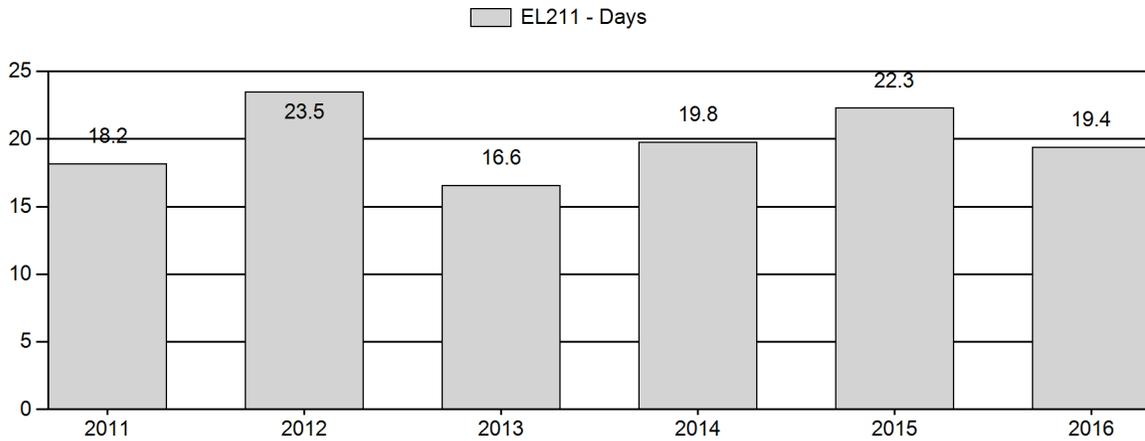
# Harvest Success



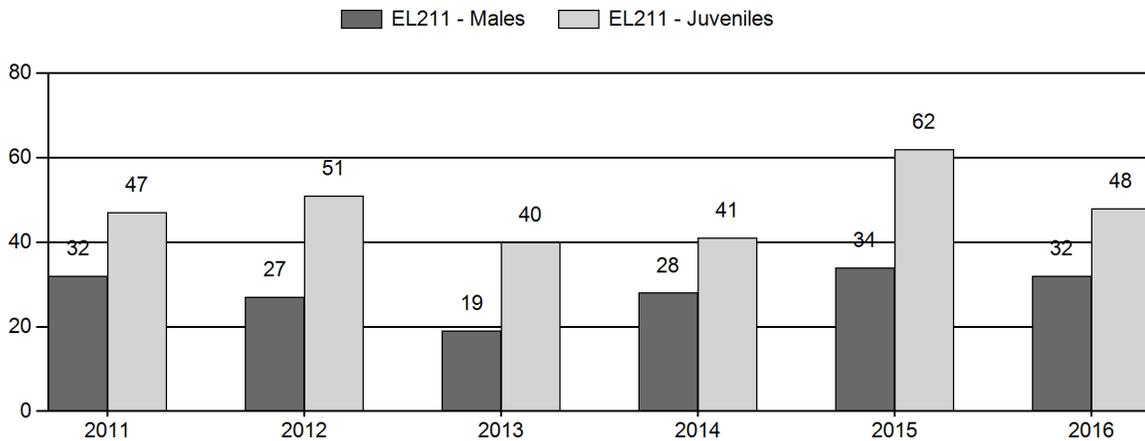
# Active Licenses



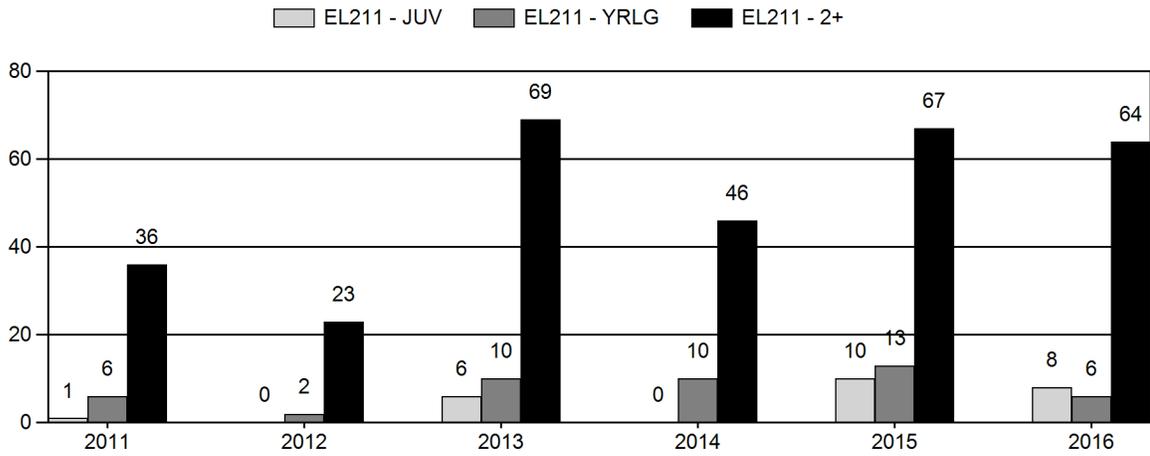
# Days per Animal Harvested



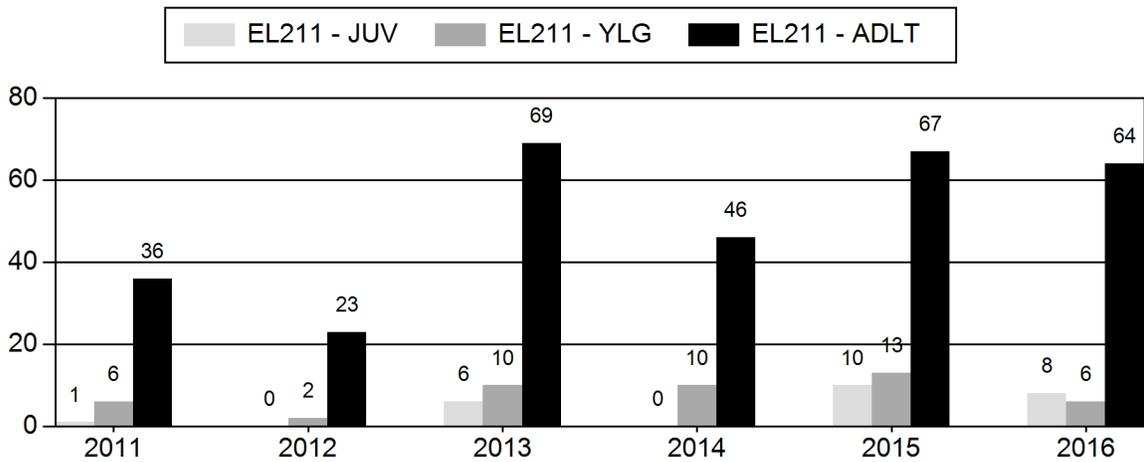
# Postseason Animals per 100 Females



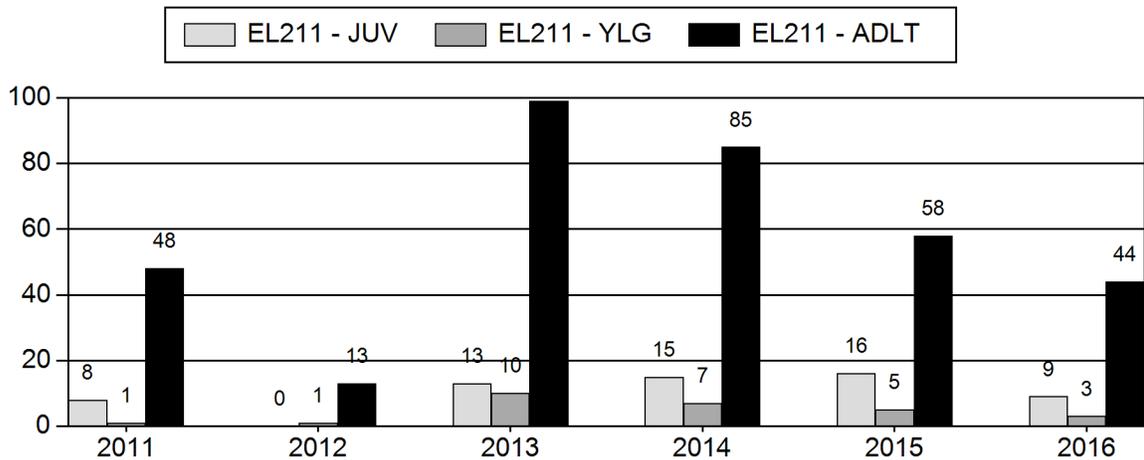
## Age Structure of Field Checked Males



## Age Structure Data (Field and Laboratory) - Male



## Age Structure Data (Field and Laboratory) - Female



**2011 - 2016 Postseason Classification Summary**

for Elk Herd EL211 - MEDICINE LODGE

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cts	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	4,500	245	215	460	18%	1,453	56%	686	26%	2,599	582	17	15	32	± 1	47	± 2	36
2012	4,600	164	177	341	15%	1,251	56%	634	28%	2,226	753	13	14	27	± 2	51	± 2	40
2013	4,200	127	186	313	12%	1,622	63%	641	25%	2,576	614	8	11	19	± 1	40	± 1	33
2014	6,712	200	242	442	17%	1,570	59%	636	24%	2,648	513	13	15	28	± 2	41	± 2	32
2015	8,296	240	364	604	17%	1,771	51%	1,102	32%	3,477	556	14	21	34	± 2	62	± 2	46
2016	0	174	275	449	18%	1,382	55%	664	27%	2,495	0	13	20	32	± 0	48	± 0	36

**2017 HUNTING SEASONS  
MEDICINE LODGE ELK HERD (EL211)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
41	1	Oct. 15	Nov. 4	375	Limited quota	Any elk
41	4	Oct. 15	Nov. 30	500	Limited quota	Antlerless elk
41	6	Dec. 1	Dec. 22	250	Limited quota	Cow or calf
41	9	Sep. 1	Sep. 30	150	Limited quota	Any elk, archery only
45	1	Oct. 15	Nov. 4	350	Limited quota	Any elk
45	4	Oct. 15	Nov. 15	225	Limited quota	Antlerless elk
45	5	Oct. 10	Nov. 4	125	Limited quota	Antlerless elk
45	6	Aug. 15	Nov. 30	250	Limited quota	Cow or calf valid off national forest
45	7	Dec. 1	Jan. 15	25	Limited quota	Cow or calf valid on or within one (1) mile of irrigated land
45	9	Sep. 1	Sep. 30	175	Limited quota	Any elk, archery only
<b>Special Archery Season Hunt Areas</b>			<b>Type</b>	<b>Season Dates</b>		<b>Limitations</b>
				<b>Opens</b>	<b>Closes</b>	
41, 45			1, 4, 5	Sep.15	Sep. 30	Valid in the entire area(s)

Hunt Area	License Type	Quota change from 2016
41	4	+100
41	9	+25
45	6	+50
45	7	-25
45	9	+25
<b>Herd Unit Total</b>	<b>4</b>	<b>+100</b>
	<b>6</b>	<b>+50</b>
	<b>7</b>	<b>-25</b>
	<b>9</b>	<b>+50</b>

**Management Evaluation**

**Current Mid-Winter Trend Count Management Objective:** 2,200

**Management Strategy:** Recreational

**2016 Trend Count:** 2,495

**Most Recent 3-year Running Average Trend Count:** 2,873

**2016 Hunter Satisfaction:** 62% Satisfied, 22% Neutral, 16% Dissatisfied

**Herd Unit Issues**

Following a marking study in the early 1980s, this herd unit was formed by combining two pre-existing herds, Trapper-Medicine Lodge and Paintrock-Ten Sleep, due to interchange of elk. The herd unit continues to be managed with hunting licenses valid for either the northern Hunt Area 41 or the southern Hunt Area 45. The post-season population objective of 3,000 elk was first

adopted in 1983. Formal internal reviews of the population objective and management goals were conducted in 1997, 2001 and 2007. During the public herd unit review process in 2016, the objective changed from a model-based postseason population objective to a mid-winter trend count objective of 2,200 elk based on a 3-year running average.

Human activities in this herd unit are rarely severe enough to affect elk survival and productivity. Bentonite mining and oil/gas development occur on the west side of the herd unit where habitats are not suitable for elk. Farming occurs near elk habitats and elk often forage on irrigated crops or pastures. Antlerless elk hunting seasons are often driven by landowner complaints. Conversely, some landowners lease hunting to outfitters and allow no public access to even hunt cow elk. During the past 10 years, lack of access to large groups of elk on private land has allowed this population to increase. Two hunter-harvested brucellosis seropositive elk were found in the Bighorn Mountains in 2016: a bull in Hunt Area 49 and a cow in Hunt Area 40. Due to the possible presence of brucellosis, management of this herd unit is focused on bringing elk numbers to or below objective. Education for hunters and field personnel collecting brucellosis blood samples has resulted in more testable samples each year.

### **Weather**

Climatic factors affect this elk herd more than human-caused factors. Survival and productivity can be affected by drought and severe winters, as evident in low calf:cow ratios. There are no transects in this area to monitor vegetative production or utilization. The winter of 2016/17 was somewhat severe with deep snow and cold temperatures. However, severe conditions in December and January did not continue into the latter part of the winter. Elk appeared to have entered the winter in good condition. Increased fall and winter precipitation, combined with prolonged periods of below average temperatures likely increased calf mortalities this winter.

### **Habitat**

The herd unit contains approximately 1,500 mi<sup>2</sup>. High-elevation summer ranges are mainly sagebrush-grassland and alpine meadows interspersed with aspen, lodgepole pine, and spruce/fir timber stands. The majority of the summer range is public land managed by the U.S. Forest Service. Steep foothills and drainages that serve as winter and spring ranges are covered with juniper, sagebrush, and grasslands. Winter ranges are mainly public land managed by the Bureau of Land Management, interspersed with private land.

### **Field Data**

During the driest years of the most recent extended drought (2001-04), calf ratios averaged 34 calves:100 cows. In years with “normal” precipitation (2009-14), 45 calves:100 cows have been observed on average. In 2015, the calf ratio vaulted to 62:100, then returned to about average (48:100) in 2016. High calf:cow ratios suggest this population can quickly increase if harvest does not keep up with production.

Bull:cow ratios can vary depending on if bull groups are located during classification surveys. For example, 19 bulls:100 cows were observed in 2013 then jumped to 28 bulls: 100 cows in 2014, and has again increased to 34 bulls:100 cows in 2015 and 32 bulls:100 cows in 2016. Annual bull ratios should not be used to annually adjust hunting licenses; rather short-term 3-5 year averages probably give a better indication to trends in bull numbers. Sample sizes for

classification surveys are calculated based on calf:cow ratios and not bull:cow ratios. Survey flight time should remain consistent, so that bull groups can be located and more accurately reflect actual conditions. Furthermore, to satisfy the mid-winter trend count protocol, each hunt area should be flown 2.5 hours for a total of 5 helicopter hours.

Management of hunting seasons allowed bull:cow ratios to increase. These Hunt Areas changed from general license hunting to limited quota in 1979 and 1983, for the northern and southern Hunt Areas, respectively. From 1975 to 1984, an average of 9 bulls:100 cows was observed with most of those being yearling bulls. Bull ratios began to increase under limited quota hunting (average=13:100 between 1985-1997). Bull ratios have increased recently, except during drought years, averaging 26:100 (2007-2016). Branched antlered bulls have been observed in similar numbers to yearling bulls.

### **Harvest Data**

Following changes to Type 1 licenses, harvest statistics indicated harvesting an elk became easier. Effects of limited quota hunting began to be noticed in increased hunter success and decreased days per harvested animal by the late 1980s-early 1990s. Since the change to “any elk” Type 1 licenses, those statistics have shown less variability (range between 35-54% hunter success and 12-23 days/harvest). The number of antlerless/cow licenses can mask harvest rates of bulls when overall herd unit results are analyzed for success and effort. The number of antlerless/cow licenses being issued in the herd unit has increased over the past 15 years in an attempt to keep up with production.

More recently, the number of total licenses offered and number of hunters have increased. In 2016, 808 elk were harvested, the highest since 2001. Hunter effort is dependent upon weather and access to elk herds, but Hunt Area 45 Type 1 hunters average 15 days per harvested elk, and Hunt Area 41 Type 1 hunters average 20 days per elk. Type 1 success in Hunt Area 45 is generally higher than Type 1 success in Hunt Area 41 due to less access in Hunt Area 41.

### **Population**

This population was monitored using trend surveys until 2008. Classification survey totals were often higher than trend totals, so trend surveys were discontinued. Classification and trend survey totals suggest an increasing population since the early 1990s, except for a decline during extended drought (2000-04). Since 2004, the classification survey totals have been steadily rising. Field personnel agree with those trends.

The spreadsheet model performed poorly estimating more than 8,000 elk which did not match the perceptions of field personnel. The 2016 herd unit review process established a mid-winter trend count of 2,200 elk for the herd unit with sub-objectives of 1,300 elk for Hunt Area (HA) 41 and 900 elk for HA 45. For the 2016 flight, personnel felt they found most of the cow/calf groups in HA 41, but could not find some groups in HA 45. Our 3-year average for the Medicine Lodge herd unit is about 2,900 elk which is above the objective of 2,200. HA 41 carries this high count for the herd unit.

<b>Year</b>	<b>HA41</b>	<b>HA45</b>	<b>Herd Unit Total</b>
2007	999	819	1818

2008	1714	475	2189
2009	1519	1612	3131
2010	1794	609	2403
2011	1769	830	2599
2012	1590	636	2226
2013	1786	790	2576
2014	1663	985	2648
2015	2191	1286	3477
2016	1855	640	2495

<b>Hunt Area(Obj)</b>	<b>HA41 (1300)</b>	<b>HA45 (900)</b>	<b>Total (2200)</b>
<b>3-year average</b>	<b>1903</b>	<b>970</b>	<b>2873</b>

### Management Summary

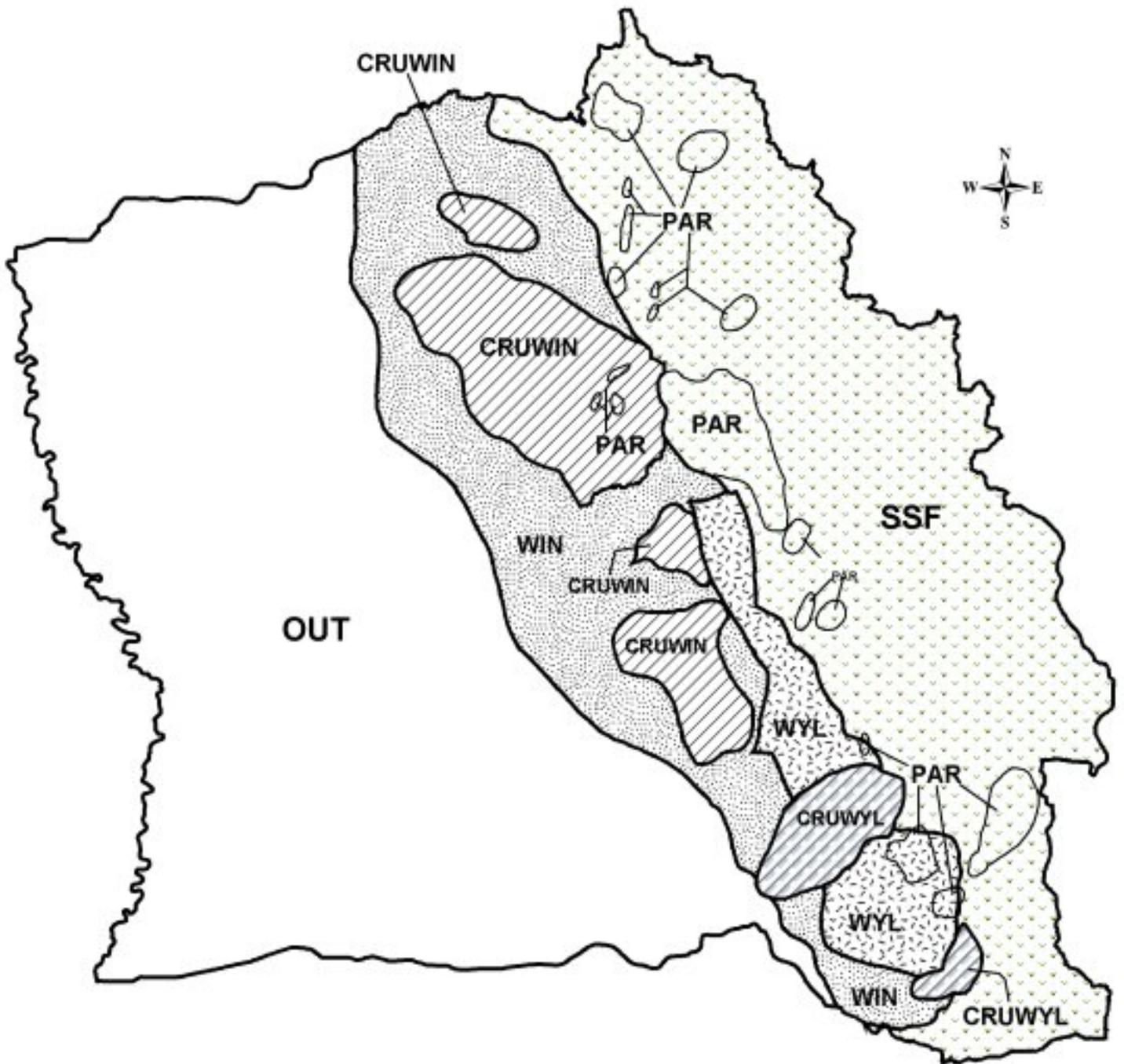
Large areas of private land that allow none to limited elk hunting make management of the northern half of this herd challenging. The “breaks” in HA 41 were removed in an effort to simplify the season and allow more days for an increased number (+100) of cow hunters to harvest an elk. In HA 45, elevated antlerless/cow license numbers and extended seasons off the Bighorn National Forest seem to be keeping elk from distributing to lower elevations where they risk comingling with livestock. In the Medicine Lodge herd unit, both Type 9 licenses (Sep. 1-30) and special archery seasons (Sep. 15-30) exist. The Type 9 quota was increased by 25 licenses in each Hunt Area in anticipation of eliminating the special archery season in 2018.

In 2012, two blood samples collected from hunter-harvested elk in Hunt Area 40 tested seropositive for brucellosis. In response, an enhanced brucellosis surveillance effort was initiated in all elk hunt areas in the Bighorn Mountains in 2013 and has occurred every year since then. We also developed a research proposal and solicited funding from the U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS). The study objectives are:

1. Evaluate movement of possible source herds to determine if elk are migrating into/near the Bighorn Mountains.
2. Evaluate movement/dispersal of migratory elk in the Bighorn Mountains with a focus on Hunt Area 40.
3. Evaluate movement and interactions of elk herds in the northern Bighorns to determine how brucellosis may spread if it becomes established.
4. Perform a landscape genetics study to further evaluate relatedness of elk herds in and around the Bighorns.

Using Native Range Capture Service, we captured 58 elk on February 16-19, 2016. Elk were capture via netgun fired from a helicopter. Once entangled, elk were hobbled, blood samples were collected, ear tags were attached, and an Advanced Telemetry System’s (ATS) GPS collar

was deployed. Elk were then released on-site. Of the 58 captured, 5 were within this herd unit. We captured another 53 elk on February 17-20, 2017 with 4 of those elk in this herd unit.



Elk (E211) -- Medicine Lodge  
 HA 41, 42, 45, 46  
 Revised 10/1999



## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL214 - GOOSEBERRY

HUNT AREAS: 62-64

PREPARED BY: BART KROGER

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	2,679	2,230	2,300
Harvest:	810	712	650
Hunters:	1,417	1,406	1,250
Hunter Success:	57%	51%	52 %
Active Licenses:	1,462	1,452	1,300
Active License Success	55%	49%	50 %
Recreation Days:	9,032	8,569	8,000
Days Per Animal:	11.2	12.0	12.3
Males per 100 Females:	19	21	
Juveniles per 100 Females	27	22	

Trend Based Objective (± 20%) 2,000 (1600 - 2400)

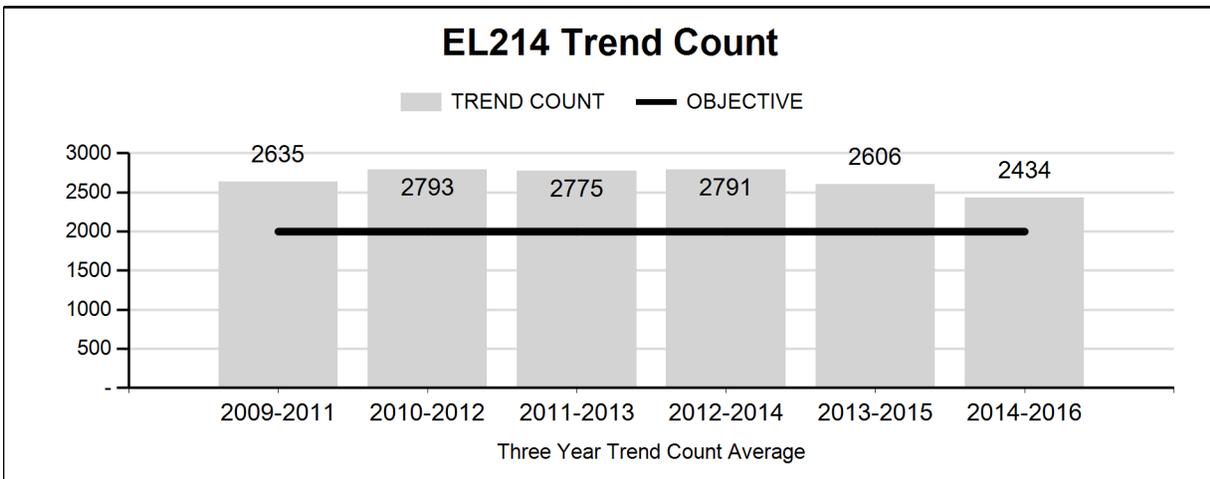
Management Strategy: Special

Percent population is above (+) or (-) objective: 12%

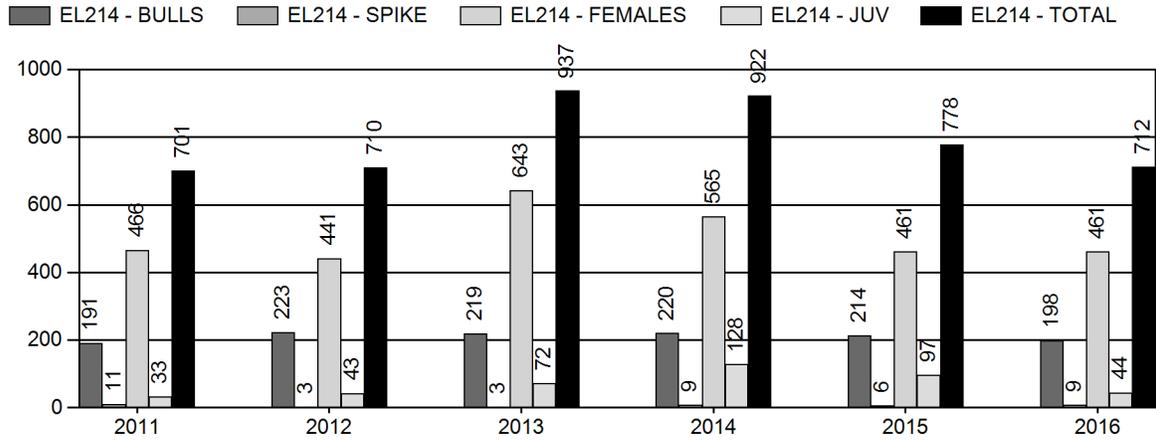
Number of years population has been + or - objective in recent trend: 8

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

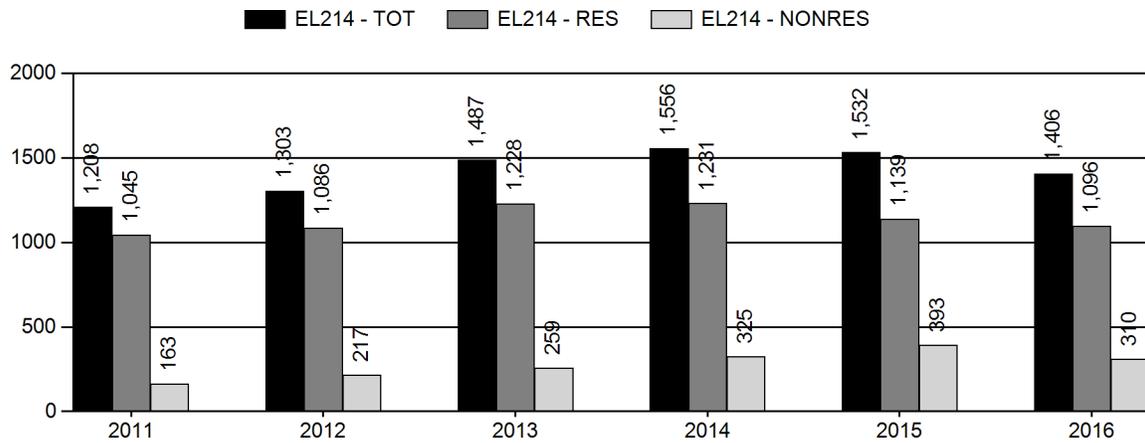
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	na%	na%
Males ≥ 1 year old:	na%	na%
Juveniles (< 1 year old):	na%	na%



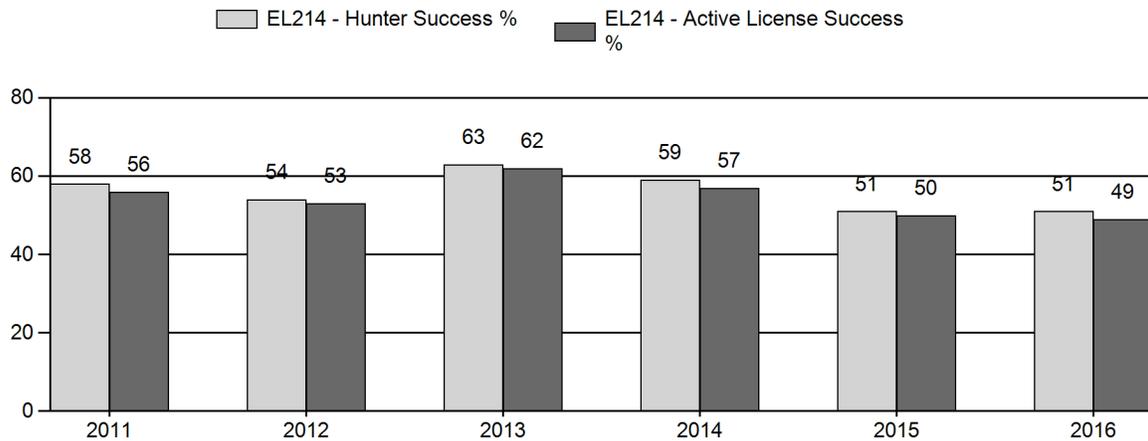
# Harvest



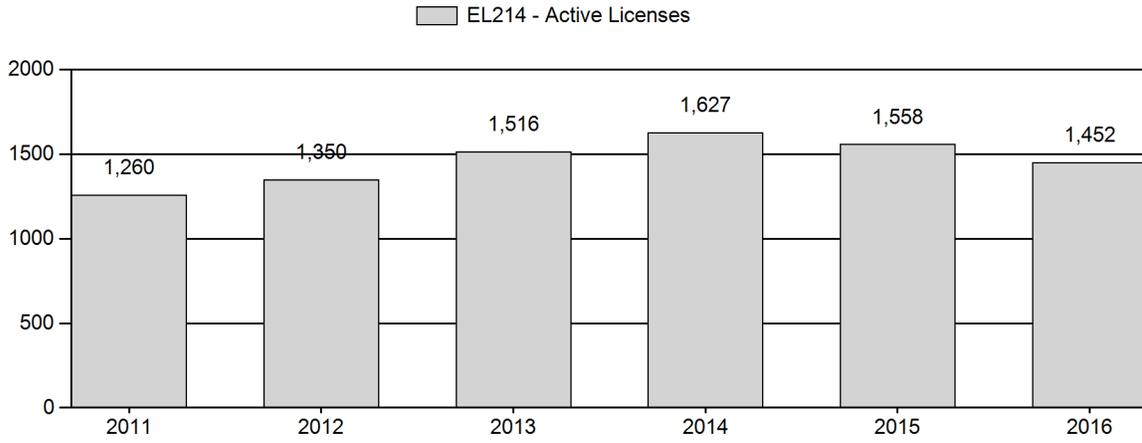
# Number of Hunters



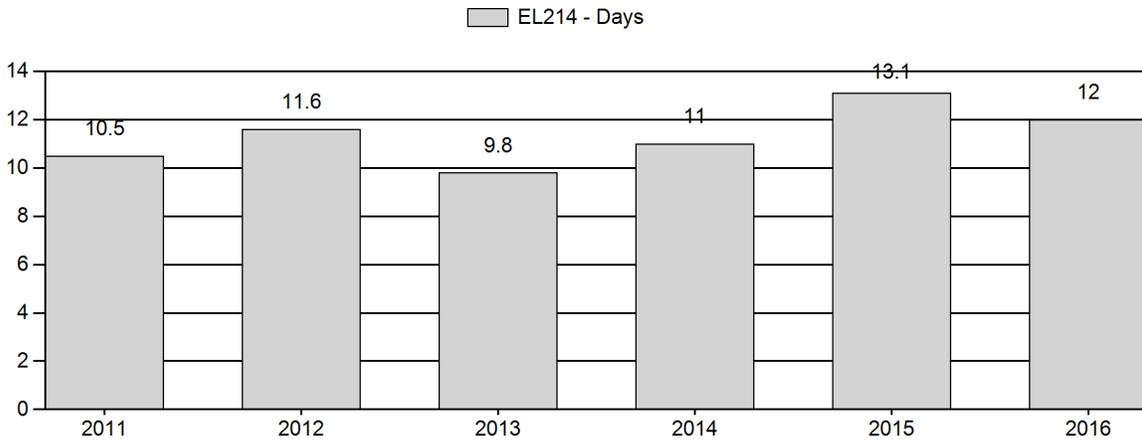
# Harvest Success



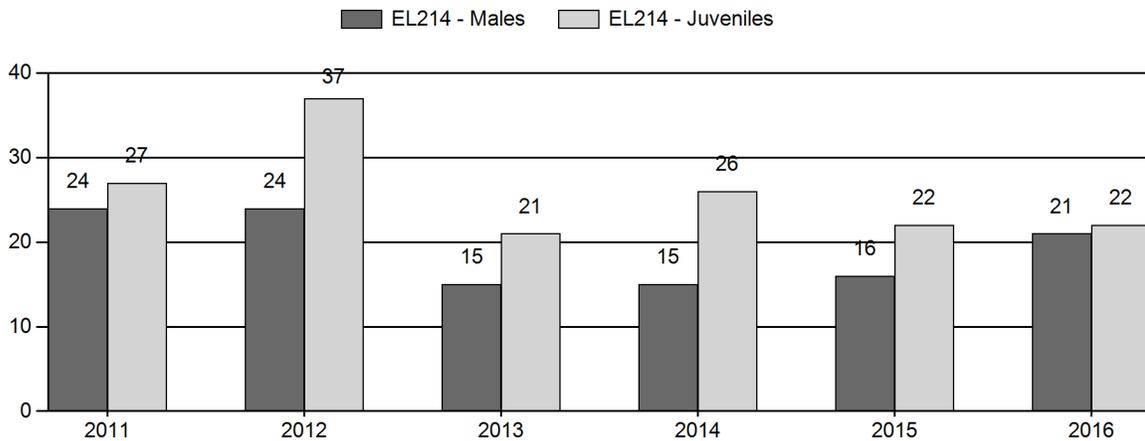
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL214 - GOOSEBERRY

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	3,400	187	196	383	16%	1,611	66%	440	18%	2,434	309	12	12	24	± 1	27	± 1	22
2012	0	221	255	476	15%	1,944	62%	724	23%	3,144	468	11	13	24	± 0	37	± 0	30
2013	0	177	127	304	11%	2,022	74%	422	15%	2,748	0	9	6	15	± 0	21	± 0	18
2014	0	138	124	262	11%	1,758	71%	461	19%	2,481	0	8	7	15	± 0	26	± 0	23
2015	0	133	106	239	11%	1,521	73%	330	16%	2,090	0	9	7	16	± 0	22	± 0	19
2016	0	138	183	321	14%	1,561	70%	348	16%	2,230	0	9	12	21	± 0	22	± 0	18

**2017 HUNTING SEASONS  
GOOSEBERRY ELK HERD (EL214)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
62	1	Oct. 1	Oct. 21	125	Limited quota	Any elk
62	4	Oct. 1	Oct. 21	75	Limited quota	Antlerless elk
62, 63	5	Oct. 22	Dec. 21	150	Limited quota	Antlerless elk
63, 64	1	Oct. 1	Oct. 21	200	Limited quota	Any elk
63	4	Oct. 1	Dec. 21	200	Limited quota	Antlerless elk
63	6	Aug. 15	Oct. 31	200	Limited quota	Cow or calf valid off national forest north of Gooseberry Creek
63	6	Nov. 1	Dec. 21			Cow or calf valid off national forest
64	2	Nov. 1	Nov. 15	100	Limited quota	Any elk
64	6	Sep. 1	Nov. 14	200	Limited quota	Cow or calf valid within the Cottonwood Creek drainage off national forest; also valid within the Grass Creek Drainage downstream of the Grass Creek/Little Grass Creek confluence
64	6	Nov. 15	Dec. 21			Cow or calf valid in the entire area
64	7	Oct. 15	Dec. 21	300	Limited quota	Cow or calf valid south of and including the Cottonwood Creek drainage

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
62, 63, 64	All	Sep. 1	Sep. 30	Valid in the entire area(s)

Hunt Area	Type	Quota change from 2016
62	5	-50
63	6	-50
64	6	-100
<b>HU Total</b>	<b>5</b>	<b>-50</b>
	<b>6</b>	<b>-150</b>

## **Management Evaluation**

**Current Mid-Winter Trend Count Objective:** 2,000

**Management Strategy:** Special

**2016 Mid-Winter Count:** 2200

**Most Recent 3-year Running Average Trend Count:** 2400

**2016 Hunter Satisfaction:** 72% satisfied, 16% neutral, 12% dissatisfied

## **Herd Unit Issues**

Hunter access to private lands, potential damage issues, brucellosis and large predator influences will continue to be major issues in managing this elk herd. The herd objective and management strategy were last revised in 2012. Efforts to develop and implement management ideas that result in more harvest and improved hunter success have and will continue to be major concerns with this elk herd. Currently, this herd unit supports two Hunter Management Areas (Pitchfork & Absaroka Front HMA's), and one large Walk-in-Area. Hunting season structures, particularly antlerless and cow/calf seasons have become very liberal over the past 10 years. License quotas and season lengths have increased dramatically, with most antlerless and cow/calf hunting seasons being 3-4 months long. Because this herd is being managed under special management, Type 1 & 2 seasons are managed conservatively to maintain good bull quality and hunter satisfaction.

## **Weather**

Winter conditions the past 3 years have not had any adverse effects on this elk herd. However, the dry summer conditions in 2012 and 2013 appeared to influence elk distribution due to decreased forage production. Because of this, some damage issues on private land were reported. Overall, forage production has increased significantly since 2014 as a result of increased moisture regimes. Snow conditions for the 2016/17 winter have been above normal through most of the winter. In early February 2017 snow conditions moderated and many winter ranges have become snow-free.

## **Habitat**

Numerous prescribed and wild fires have burned throughout this herd unit over the past 2 decades, particularly in areas 62 and 63. These fires have certainly improved forage quality and quantity for the herd. The Department initiated a 5-year rapid habitat assessment within the Grass Creek drainage of hunt area 64 that will primarily focus on the condition of aspen communities and sagebrush and riparian communities being encroached by conifers. Several aspen stands were assessed during summer 2015 and 2016 and a 120-acre treatment to remove conifers from aspen was initiated in fall 2016.

## **Field Data**

The 2014, 2015 and 2016 annual winter trend counts have been 3 of the lowest in the last 10 years, thus contributing to the 2016 3-year average count of 2400 elk. This 3-year average of 2400 elk puts this herd at objective given the  $\pm 20\%$  CI of a 2000 elk winter count goal. Calf ratios have declined in recent years, and have remained at 22:100 the past two years. The number of bulls observed during classification surveys is still inadequate for confident ratio estimates. However, the number of mature bulls observed, and the quality of some of those bulls is sufficient to say bull quality and quantity remains good.

## Harvest Data

Overall, total harvest of elk in this herd unit has declined by 24% since 2013, when 937 elk were reported harvested. Although the last four years of elk harvest have been the highest on record, the recent declining harvest trend is likely the result of fewer elk in the herd unit. Similar to harvest, % hunter success has also declined, from a high of 63% in 2013 to 51% in 2016. Hunter effort has remained mostly stable at around 10-12 days, but 2015 and 2016 had the two highest effort rates in the last 8 years. These declining harvest trends along with declining winter trend counts likely indicate a declining elk population.

## Population

Prior attempts to model this herd have failed due to inadequate bull ratios. Because of this, a winter trend count objective was established for this elk herd in 2012. Based on 3-year average trend counts between 2008 and 2014, this elk herd has stayed fairly stable at around 2700 elk counted. Hunt area count goals and trends are also monitored in order to make hunting season adjustments has needed. Winter count goals for areas 62, 63 and 64 are 600, 600 and 800 elk, respectively. Since 2014, the average winter counts have been 770 for area 62, 442 for area 63 and 1222 for area 64 (Table 1).

Table 1. Gooseberry Elk Herd Unit and Hunt Area Mid-winter trend counts, 2006-2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016	3yr. Avg.	Count Goal
HA 62	808	641	1203	1063	788	609	565	961	783	<b>770</b>	600 elk
HA 63	556	991	535	961	698	604	463	354	508	<b>442</b>	600 elk
HA 64	1897	1039	1063	410	1658	1535	1453	1275	939	<b>1222</b>	800 elk
Herd Unit	3261	2671	2801	2434	3144	2748	2481	2590	2230	<b>2434</b>	2000 elk

## Management Summary

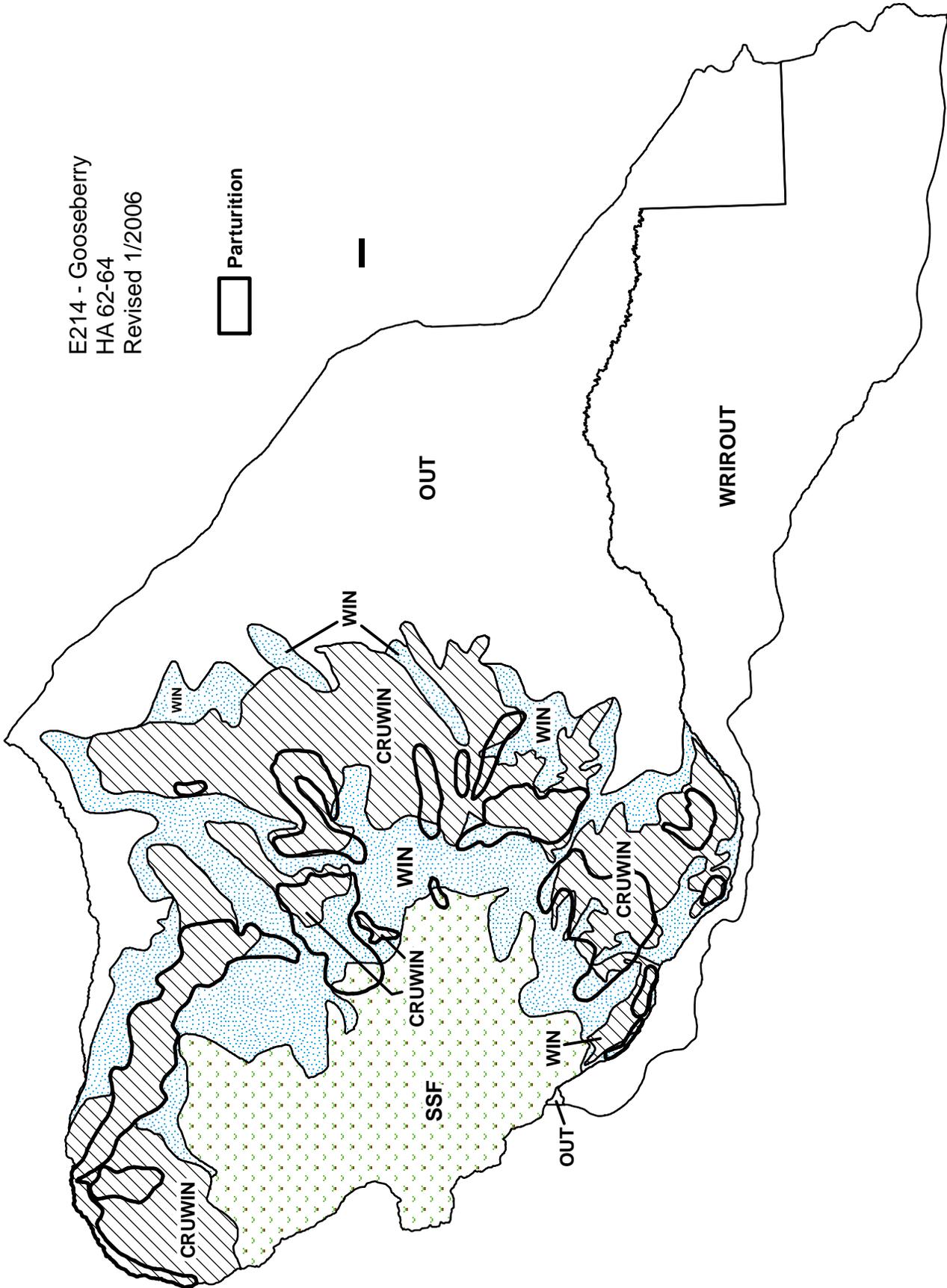
For the herd unit, hunter densities, season lengths and landowner tolerance for hunting pressure has been maximized. The herd is managed under special management criteria, but because bull ratios are inadequate, the percent of branch antlered bulls (BAB) in the male harvest is used to justify special management, which is currently at 90%. Bull harvest and quality, along with hunter satisfaction remains favorable so there is no need to change any Type 1 or Type 2 seasons or quotas. Season lengths will continue to run until late December in all hunt areas for antlerless elk. Since winter trend counts, reduced calf ratios, along with harvest statistics, indicate a declining elk population; a reduction of 150 cow/calf licenses is warranted. With a 2017 projected harvest of about 600 elk, we expect slight declines in this population to continue, which should help push this elk herd further toward objective.

A 5-year herd unit review and update of the current management goal was submitted to Wildlife Administration in 2017. It appears the current management goal of a 3-year average winter count of 2000 elk is appropriate for this herd, and is providing more efficient data needed in managing this herd. Plus, hunters and landowners are more accepting of this management approach since it provides them concrete field data that they can relate to.

**2011 - 2016 Trend Count Summary**  
for Elk Herd EL214 - GOOSEBERRY

<b>Year</b>	<b>Count Dates</b>	<b>Flight Time</b>		<b>Number Counted</b>
		<b>Hours</b>	<b>Minutes</b>	
2011	JANUARY 2012	4	0	2,434
2012	JANUARY 2013	4	50	3,144
2013	JANUARY 2014	6	40	2,748
2014	JANUARY 2015	5	50	2,481
2015	JANUARY 2016	4	25	2,590
2016	JANUARY 2017	5	45	2,230

E214 - Gooseberry  
HA 62-64  
Revised 1/2006





## 2016 - JCR Evaluation Form

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SPECIES: EIK

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

HERD: EL216 - CODY

HUNT AREAS: 55-56, 58-61, 66

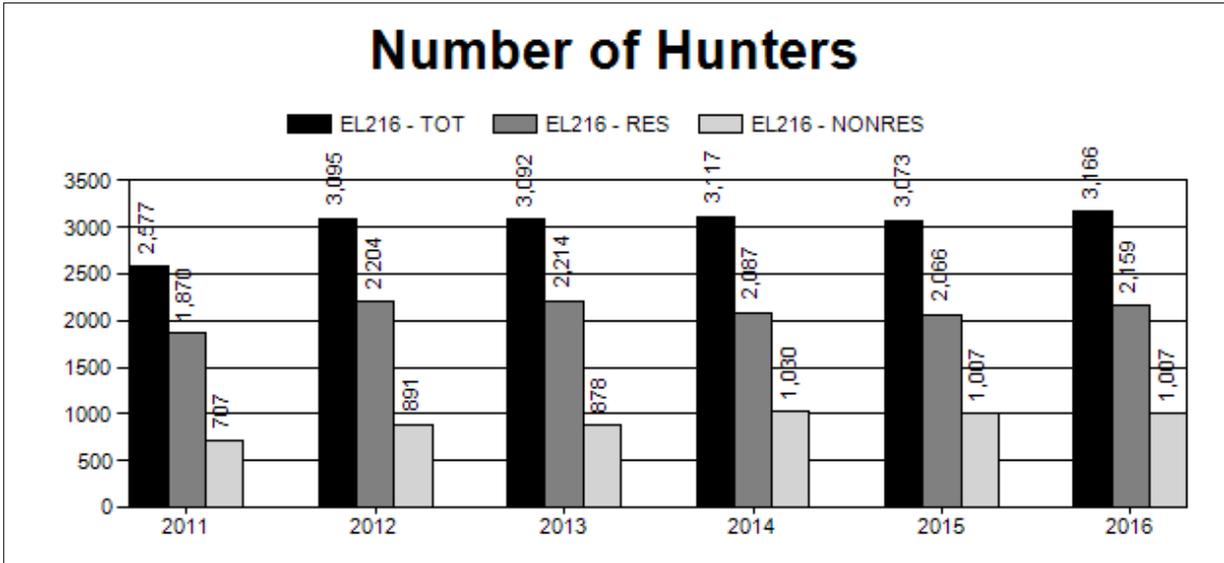
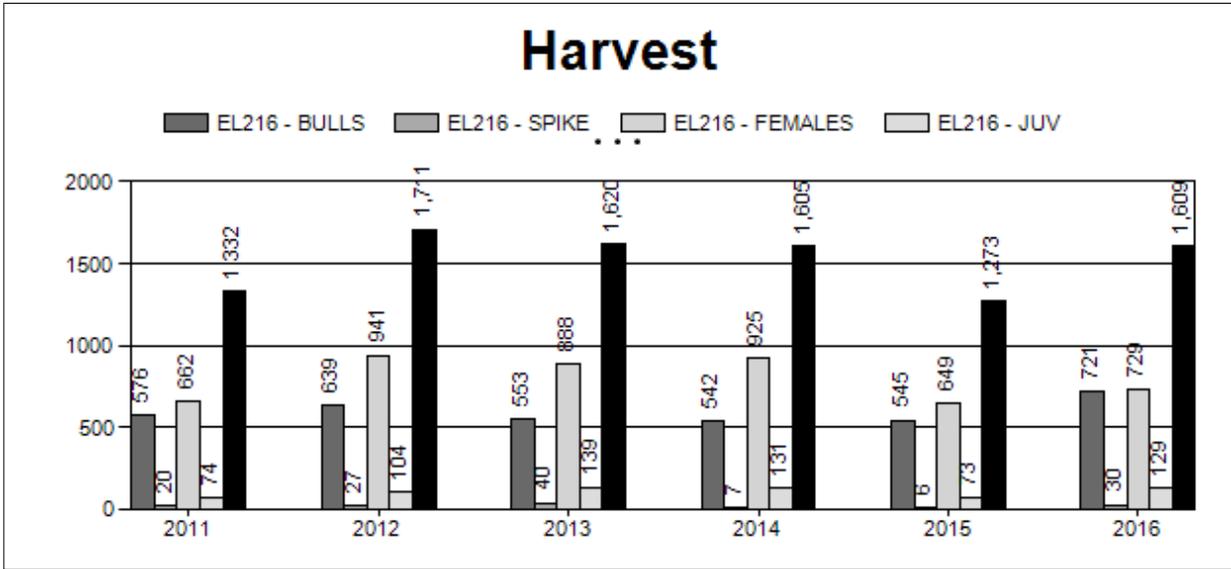
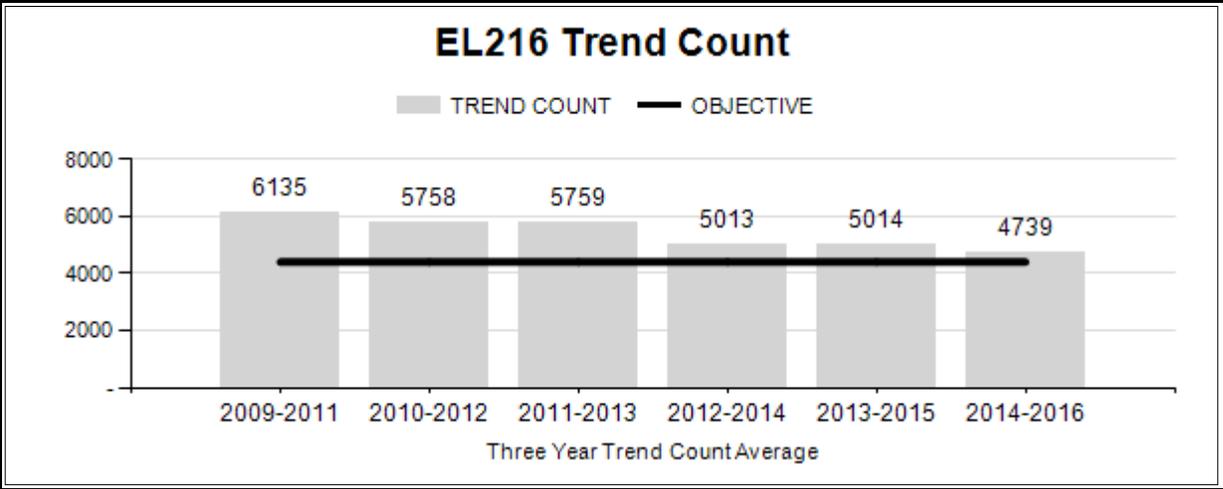
PREPARED BY: Doug McWhirter/  
Tony Mong

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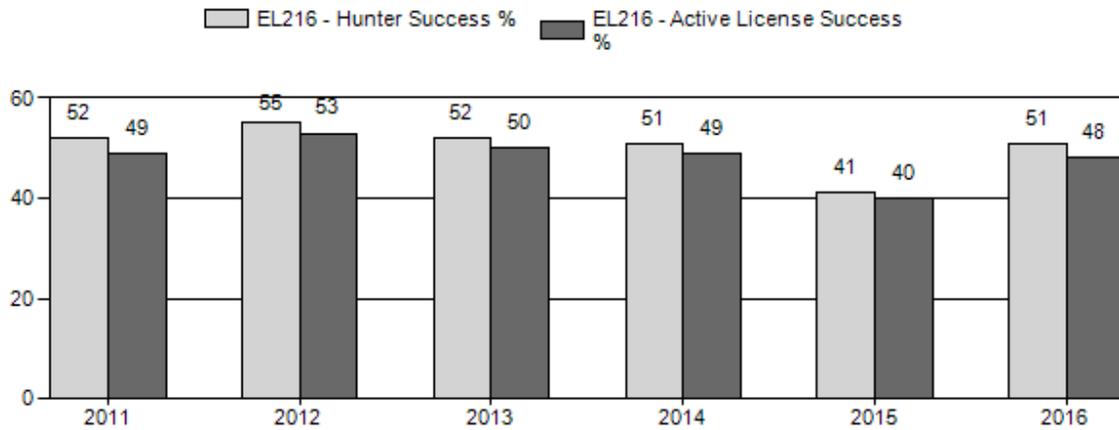
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	5,318	4,903	4,900
Harvest:	1,508	1,609	1,400
Hunters:	2,991	3,166	3,000
Hunter Success:	50%	51%	47%
Active Licenses:	3,135	3,372	3,300
Active License Success	48%	48%	42%
Recreation Days:	18,989	20,803	19,000
Days Per Animal:	12.6	12.9	13.6
Males per 100 Females:	30	48	
Juveniles per 100 Females	29	28	
 Trend Based Objective ( $\pm 20\%$ )			4,400 (3520 - 5280)
Management Strategy:			Special
Percent population is above (+) or (-) objective:			11%
Number of years population has been + or - objective in recent trend:			18

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

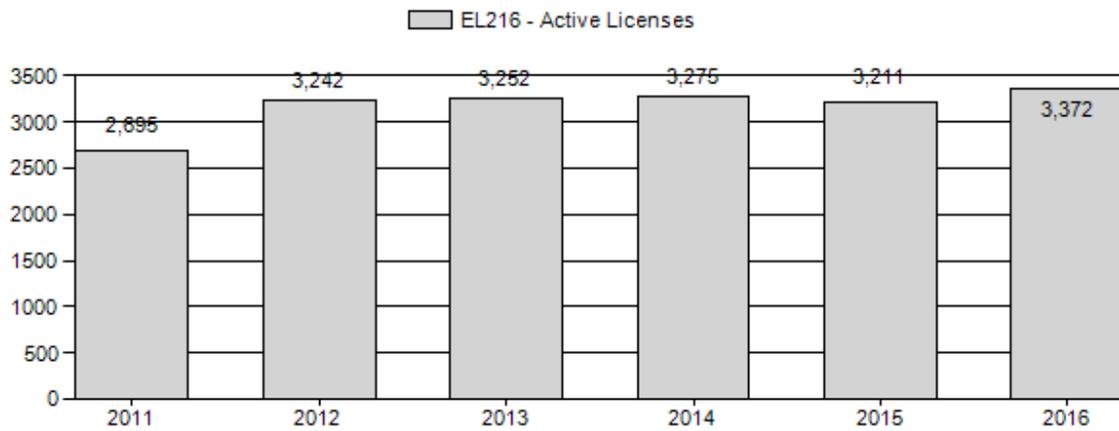
	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq$ 1 year old:	N/A%	n/a%
Males $\geq$ 1 year old:	N/A%	n/a%
Juveniles (< 1 year old):	N/A%	n/a%
Total:	N/A%	n/a%
Proposed change in post-season population:	N/A%	n/a%



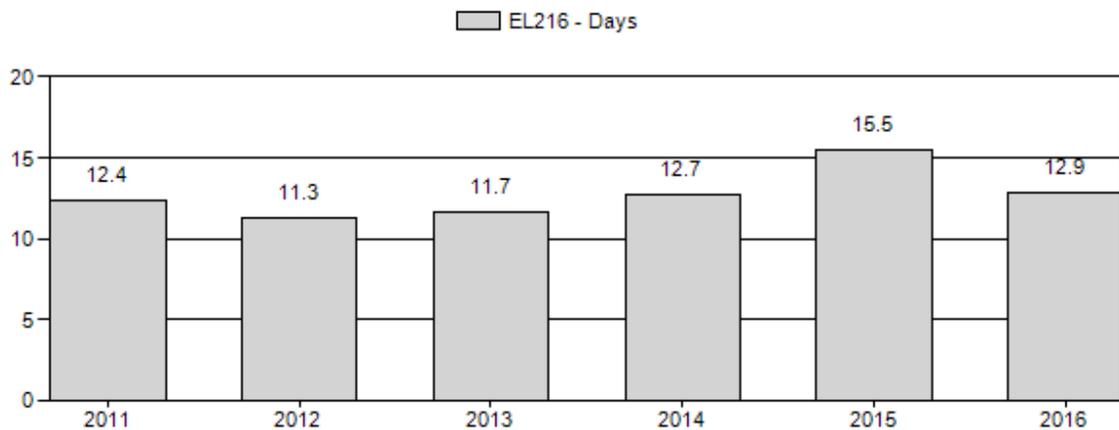
## Harvest Success



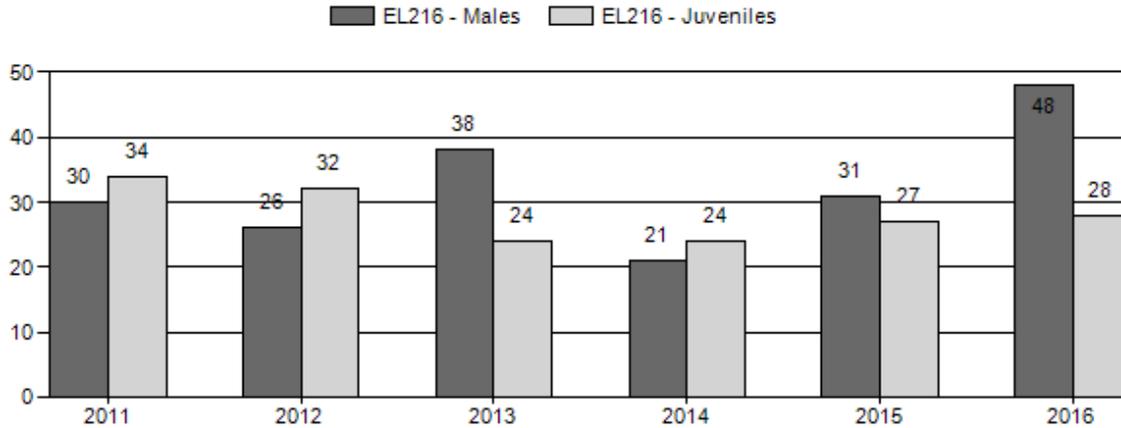
## Active Licenses



## Days per Animal Harvested



## Postseason Animals per 100 Females



### 2011 - 2016 Postseason Classification Summary

for Elk Herd EL216 - CODY

Year	Post Pop	MALES				FEMALES		JUVENILES		Males to 100 Females			Young to					
		Ylg	Adult	Total	%	Total	%	Total	%	Tot	Cls	Conf	100 Fem	Conf Int	100 Adult			
										Cls	Obj					Ylng	Adult	Total
2011	8,000	582	755	1,337	18%	4,490	61%	1,519	21%	7,346	370	13	17	30	± 0	34	± 0	26
2012	0	262	397	659	16%	2,561	63%	815	20%	4,035	388	10	16	26	± 0	32	± 0	25
2013	0	333	860	1,193	24%	3,130	62%	740	15%	5,063	377	11	27	38	± 0	24	± 0	17
2014	0	176	155	331	14%	1,604	69%	384	17%	2,319	293	11	10	21	± 0	24	± 0	20
2015	0	209	394	603	20%	1,930	63%	530	17%	3,063	372	11	20	31	± 0	27	± 0	21
2016	0	327	878	1,224	27%	2,566	57%	728	16%	4,518	290	13	34	48	± 0	28	± 0	19

### 2011 - 2016 Trend Count Summary

for Elk Herd EL216 - CODY

Year	Count Dates	Flight Time		Number Counted
		Hours	Minutes	
2011	Feb-12	8	0	7,346
2012	FEBRUARY 2013, JANUARY 2013	9	0	4,204
2013	Feb-14	9	0	5,726
2014	Jan-15	10	0	5,110
2015	FEBRUARY 2016, JANUARY 2016	8	45	4,205
2016	Jan-17	8	15	4,903

**2017 HUNTING SEASONS  
CODY ELK HERD (EL216)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
55	1	Oct. 1	Oct. 21	50	Limited quota	Any elk
55	9	Sep. 1	Sep. 30	25	Limited quota	Any elk, archery only
56		Oct. 1	Oct. 21		General	Antlered elk
56	1	Nov. 1	Dec.7	10	Limited quota	Any elk
56	4	Oct. 1	Dec. 21	150	Limited quota	Antlerless elk
56	5	Nov. 1	Dec. 21	50	Limited quota	Antlerless elk valid off national forest
56	6	Nov. 1	Dec. 21	50	Limited quota	Cow or calf
56	9	Sep. 1	Sep. 30	30	Limited quota	Any elk, archery only
58	1	Oct. 1	Nov. 30	35	Limited quota	Any elk
58	4	Oct. 1	Dec. 21	100	Limited quota	Antlerless elk
58	6	Oct. 1	Dec. 21	300	Limited quota	Cow or calf
59		Oct. 1	Oct. 21		General	Any elk
59	1	Nov. 1	Nov. 15	10	Limited quota	Any elk
59	6	Oct. 1	Dec. 21	275	Limited quota	Cow or calf
59	7	Oct. 1	Oct. 31	25	Limited quota	Cow or calf valid within the Washakie Wilderness
59	9	Sep. 1	Sep. 30	25	Limited quota	Any elk, archery only
60		Sep. 20	Oct. 22		General	Any elk
60	9	Sep. 1	Sep. 30	20	Limited quota	Any elk, archery only
61	1	Oct. 1	Oct. 31	150	Limited quota	Any elk valid within the Washakie Wilderness, also valid in that portion of Area 62 within the Washakie Wilderness south of Avalanche Creek
61	2	Oct. 15	Nov. 15	50	Limited quota	Any elk, also valid in Area 66
61	2	Nov. 16	Jan. 15			Any elk valid only in Area 66
61	4	Oct. 15	Nov. 15	50	Limited quota	Antlerless elk
61	6	Sep. 1	Nov. 24	400	Limited quota	Cow or calf valid north of and including the Rawhide Creek drainage
61	6	Nov. 1	Nov. 24			Cow or calf also valid within the Washakie Wilderness

61	6	Nov. 25	Dec. 21			Cow or calf valid in the entire area, also valid in Area 66 and that portion of Area 58 within the Dry Creek drainage
66		Aug. 15	Oct. 15		General	Any elk
66		Oct. 16	Dec. 21		General	Antlerless elk
66	6	Aug. 15	Jan. 15	350	Limited quota	Cow or calf

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
55, 56, 58, 59, 61	All	Sep. 1	Sep. 30	Valid in the entire area(s)
60	All	Sep. 1	Sep. 19	Valid in the entire area(s)

Hunt Area	License Type	Quota change from 2016
61	4	+ 50
61	6	-150
<b>Hunt Area Total</b>	<b>4</b>	<b>+50</b>
	<b>6</b>	<b>-150</b>

### **Management Evaluation**

**Current Mid-Winter Trend Count Objective: 4,400**

**Management Strategy: Special**

**2016 Mid-Winter Trend Count: 4,900**

**Most Recent 3-year Running Average Trend Count: 5,300**

**2016 Hunter Satisfaction: 66% Satisfied, 19% Neutral, 15% dissatisfied**

### **Herd Unit Issues**

The Cody Elk Herd Unit is made of migratory elk that occupy spring-summer-fall habitats in remote backcountry areas like the Thorofare and Yellowstone Park, and non-migratory elk that occupy habitats in and around the Absaroka foot hills and valleys (agricultural lands, transition and winter ranges). Calf productivity typically varies between migratory and nonmigratory elk, with lower calf ratios for migratory elk, and higher calf ratios for resident elk. To also complicate management, elk on private land can damage agricultural crops, especially when drought or human disturbance moves them to those areas. Damage situations typically exist where overabundant elk overlap with private lands, and require hunting seasons targeting those

specific elk subpopulations. Prescribing and managing hunting seasons for diverse publics often results in complicated regulations that consider many factors influencing the Cody elk herd.

### **Weather**

Weather conditions during the 2016 biological year were characterized by near normal spring-summer moisture, and very mild fall conditions. Winter started mild, but became very harsh with record cold temperatures and snowfall for December and January at levels not observed during the last 50 years in some areas of the herd unit. Elsewhere conditions were slightly above normal conditions.

### **Habitat**

See Cody regional appendix.

### **Field Data**

Classification surveys in 2016 yielded a herd unit calf:cow ratio of 28:100 (range 21:100 – 42:100), while the most recent 10-year (2006-2016) average calf:cow ratio is 29:100 cows (range 24:100 – 34:100). Recent surveys produced a yearling bull:cow ratio of 13:100 (range 10:100 – 13:100), while the average yearling bull ratio is:100 cows over the 2005-2014 period (range 7:100 - 13:100).

### **Harvest**

A total of 3,153 hunters harvested 757 bulls and 832 cows and calves totaling 1,589 elk in 2016. Bull harvest was up and cow harvest was similar compared to the most recent 5-year average of 1,508 total (n=591 bulls, n=813 cows). We decreased the antlerless elk harvest from an average of about 1100 cows to about 800 to accommodate lower calf production in the migratory segments in the past 10 years.

### **Population**

The Cody Elk Herd Unit uses a Mid-Winter Trend Count for a population objective and we track counts by hunt area and overall total (Table 1) to help guide our management.

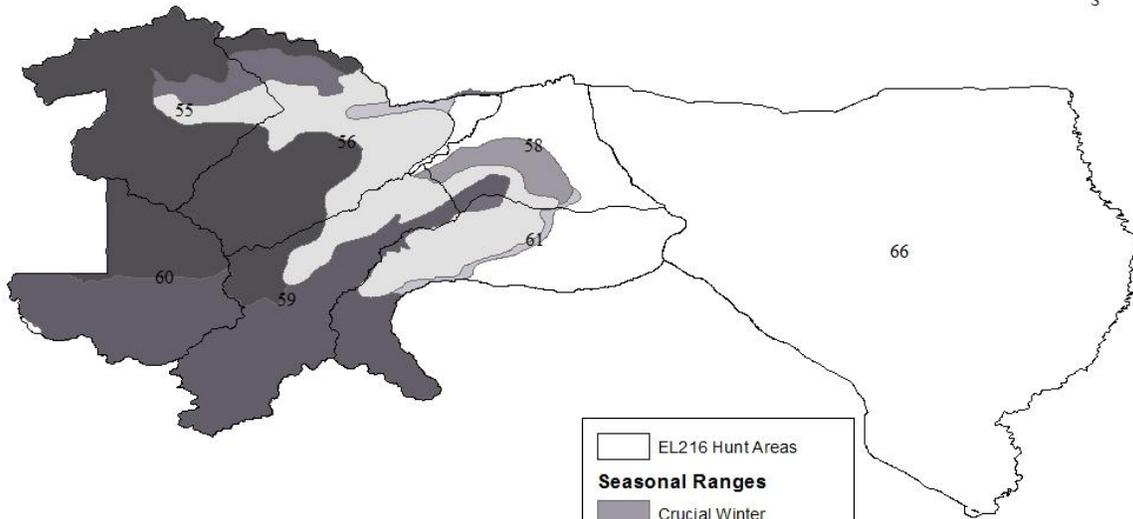
Table 1. Sub unit and herd unit winter counts.

	HA 55/56	HA 58/59	HA 61	HA 66	HU Total
<b><i>Count Goal</i></b>	<b><i>1,150</i></b>	<b><i>1,150</i></b>	<b><i>2,100</i></b>	<b><i>0</i></b>	<b><i>4,400</i></b>
2013	1,401	1,726	2,431	168	5,726
2014	1,211	1,580	2,223	96	5,110
2015	1,277	1,096	1,474	358	4,205
2016	1,299	877	2,502	225	4,903
3-year Avg	1,262	1,184	2,066	226	4,739

## **Management Summary**

Management direction for most subunits is to maintain elk at current numbers through limited cow harvest, while reducing elk-caused damage on private land through increased opportunity. In some areas of the herd unit, brucellosis transmission risk between elk and cattle influences management, e.g., late winter hunts near areas of private, Meeteetse Creek HMAP. In Hunt Area 66, we have a sub-objective of no elk that requires long liberal hunting seasons to harvest high numbers of elk, whenever possible.

EL216 Cody Elk Herd Seasonal Ranges



0 10 20 40 Miles





## 2016 - JCR Evaluation Form

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SPECIES: EIK

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

HERD: EL217 - CLARKS FORK

HUNT AREAS: 51, 53-54

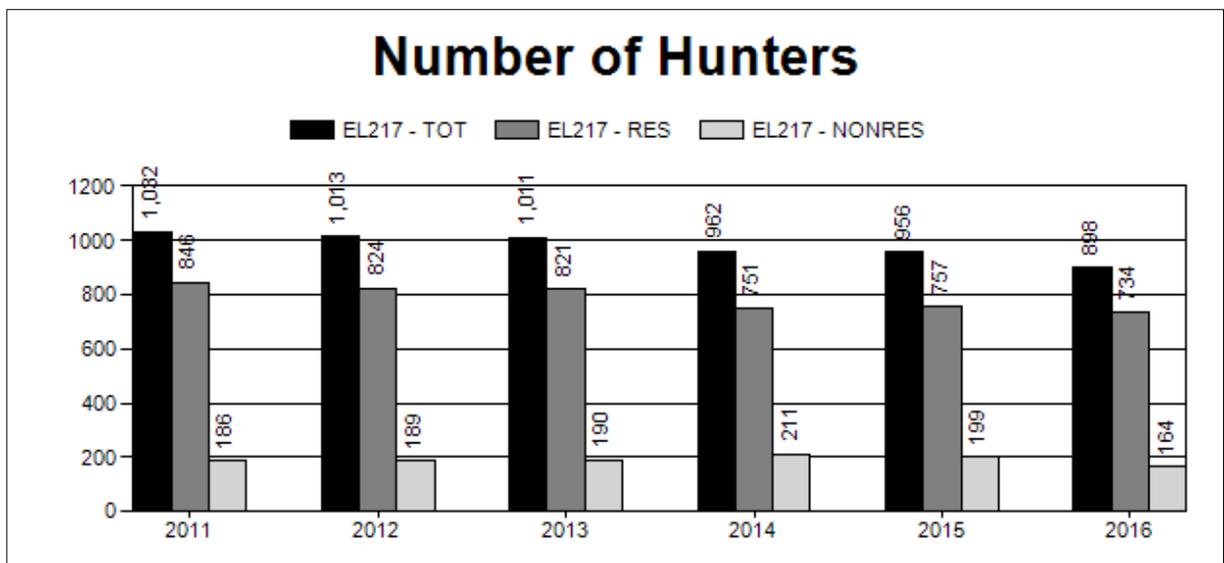
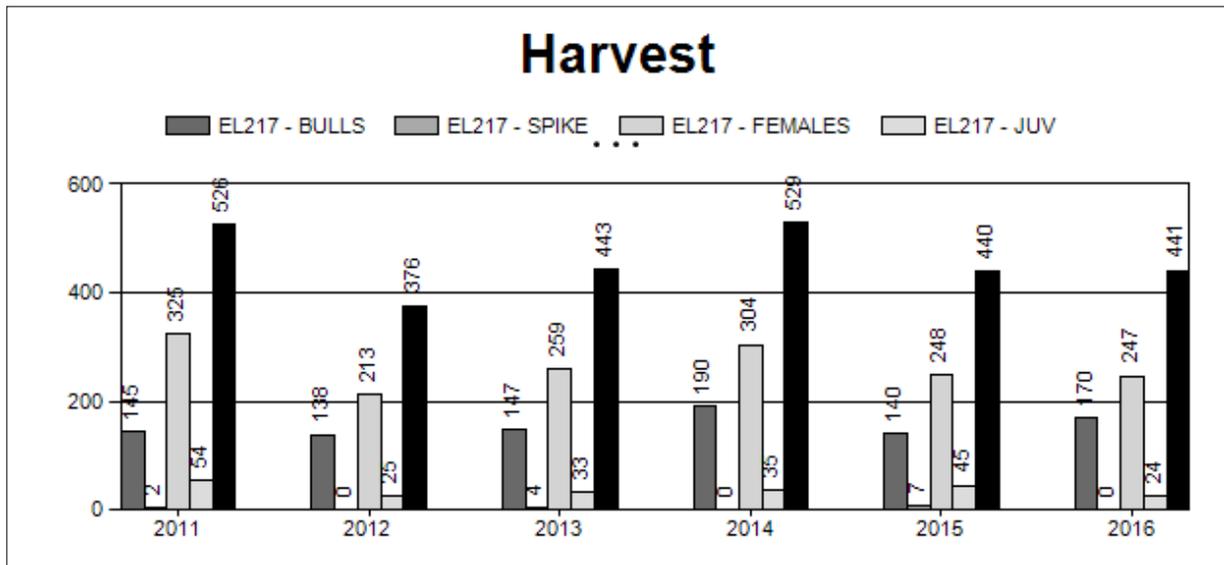
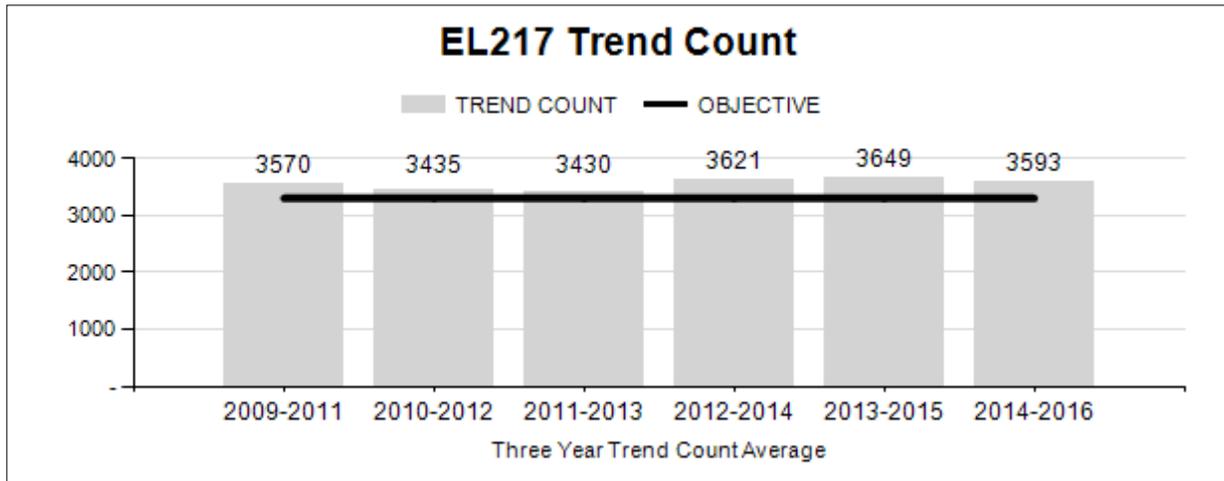
PREPARED BY: Doug McWhirter/  
Tony Mong

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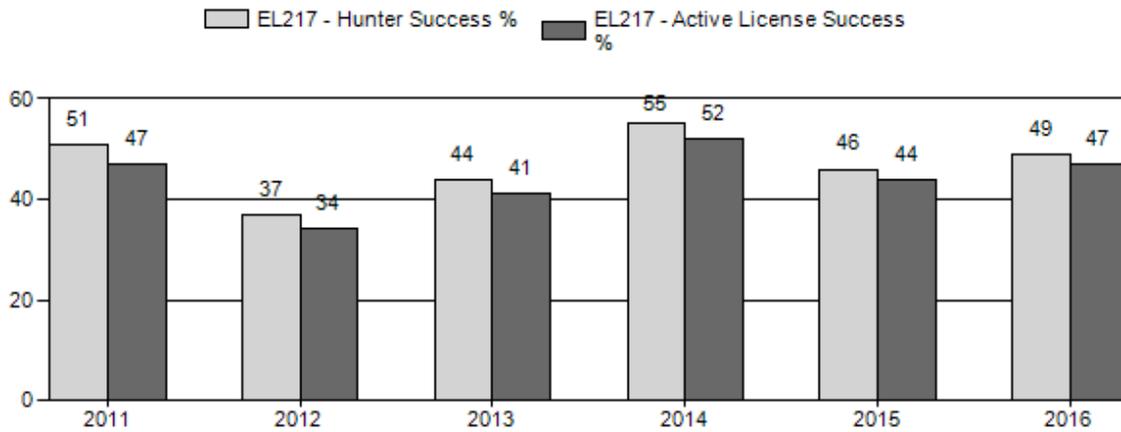
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	3,573	3,205	3,200
Harvest:	463	441	450
Hunters:	995	898	900
Hunter Success:	47%	49%	50%
Active Licenses:	1,062	938	900
Active License Success	44%	47%	50%
Recreation Days:	7,721	6,287	6,400
Days Per Animal:	16.7	14.3	14.2
Males per 100 Females:	20	80	
Juveniles per 100 Females	23	24	
 Trend Based Objective ( $\pm 20\%$ )			3,300 (2640 - 3960)
Management Strategy:			Special
Percent population is above (+) or (-) objective:			-2.9%
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):**

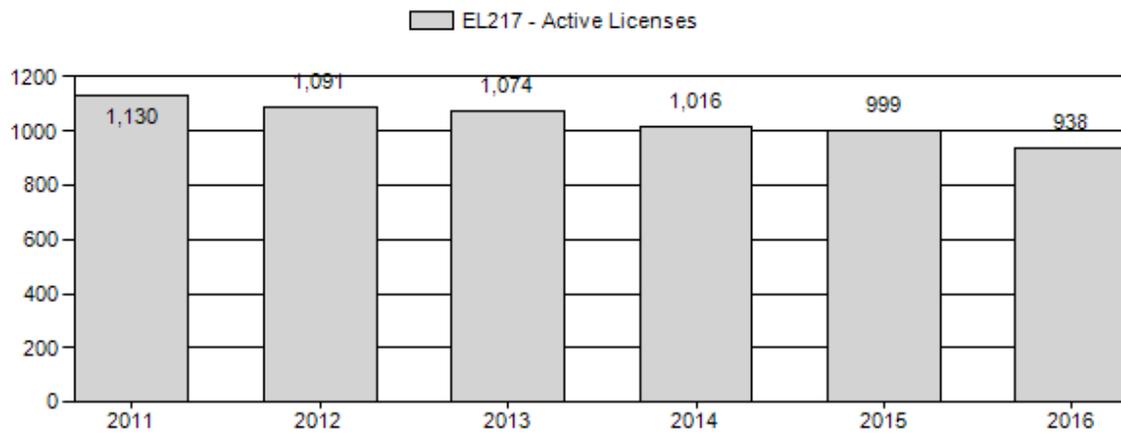
	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq$ 1 year old:	N/A%	n/a%
Males $\geq$ 1 year old:	N/A%	n/a%
Juveniles (< 1 year old):	N/A%	n/a%
Total:	N/A%	n/a%
Proposed change in post-season population:	N/A%	n/a%



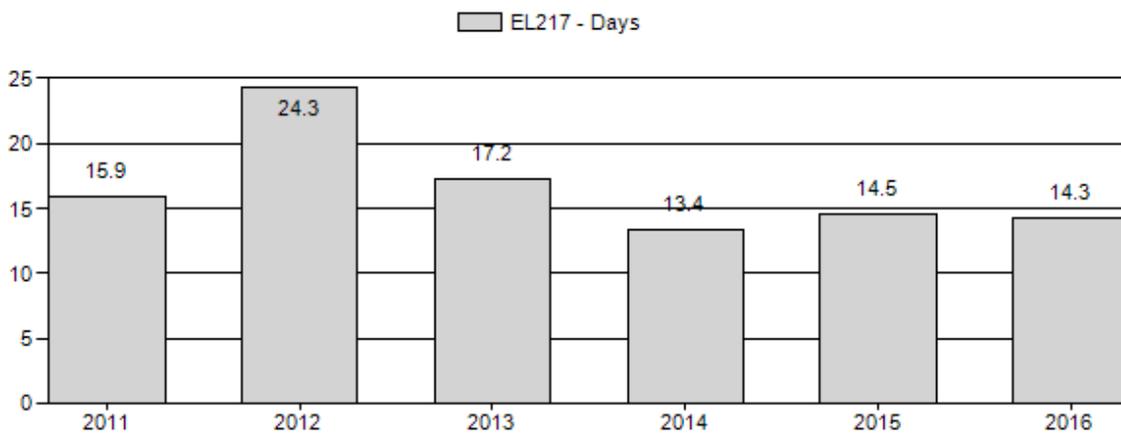
## Harvest Success



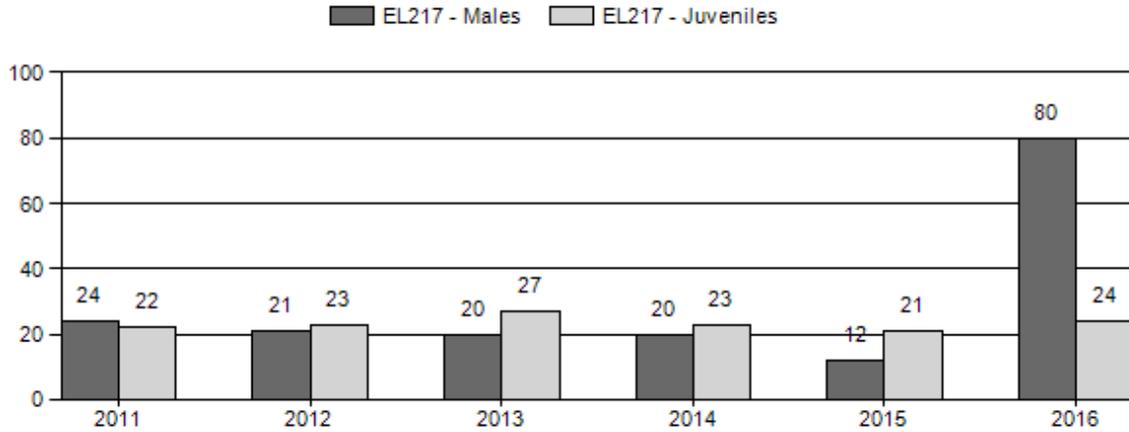
## Active Licenses



## Days per Animal Harvested



## Postseason Animals per 100 Females



### 2011 - 2016 Postseason Classification Summary

for Elk Herd EL217 - CLARKS FORK

Year	Post Pop	MALES				FEMALES		JUVENILES				Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%	Tot	Cls	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
										Cls	Obj							
2011	3,931	204	376	580	17%	2,379	68%	524	15%	3,483	283	9	16	24	± 0	22	± 0	18
2012	3,896	127	355	482	14%	2,331	69%	541	16%	3,354	287	5	15	21	± 0	23	± 1	19
2013	0	149	307	456	14%	2,252	68%	607	18%	3,315	366	7	14	20	± 0	27	± 0	22
2014	0	188	358	546	14%	2,670	70%	603	16%	3,819	288	7	13	20	± 0	23	± 0	19
2015	0	144	80	224	9%	1,857	75%	397	16%	2,478	366	8	4	12	± 0	21	± 0	19
2016	0	53	467	520	39%	647	49%	158	12%	1,325	272	8	72	80	± 0	24	± 0	14

### 2011 - 2016 Trend Count Summary

for Elk Herd EL217 - CLARKS FORK

Year	Count Dates	Flight Time		Number Counted
		Hours	Minutes	
2011	Feb-12	4	0	3,483
2012	Feb-13	5	15	3,434
2013	Feb-14	5	0	3,372
2014	Jan-15	6	0	4,058
2015	Feb-16	7	0	3,517
2016	Jan-17	5	0	3,205

**2017 HUNTING SEASONS  
CLARKS FORK ELK HERD (EL217)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
51	1	Oct. 1	Oct. 31	100	Limited quota	Any elk south and west of the Clarks Fork River
51	2	Oct. 1	Oct. 31	40	Limited quota	Any elk north and east of the Clarks Fork River
51	4	Nov. 16	Dec. 15	150	Limited quota	Antlerless elk
51	9	Sep. 1	Sep. 30	70	Limited quota	Any elk, archery only
53	1	Oct. 1	Oct. 31	10	Limited quota	Any elk
53	2	Nov. 1	Nov. 30	75	Limited quota	Any elk valid the Shoshone River drainage
53	4	Oct. 1	Dec. 15	50	Limited quota	Antlerless elk
53	6	Nov. 1	Dec. 21	200	Limited quota	Cow or calf valid in the North Fork Shoshone River drainage
53	9	Sep. 1	Sep. 30	10	Limited quota	Any elk, archery only
54	1	Oct. 1	Nov. 30	50	Limited quota	Any elk valid south of the Clarks Fork River
54	2	Oct. 1	Oct. 31	25	Limited quota	Any elk valid north of the Clarks Fork River
54	6	Sep. 1	Oct. 31	50	Limited quota	Cow or calf
54	7	Nov. 1	Dec. 21	300	Limited quota	Cow or calf
54	9	Aug. 15	Sep. 30	35	Limited quota	Any elk, archery only

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

Hunt Area	License Type	Quota change from 2016
54	7	+100
<b>Herd Unit Total</b>	<b>7</b>	<b>+100</b>

## **Management Evaluation**

**Mid-Winter Trend Count Objective: 3,300**

**Management Strategy: Special**

**2016 Mid-Winter Trend Count: 3,200**

**3-year Running Average Trend Count: 3,600**

**2016 Hunter Satisfaction:** 60% Satisfied, 18% Neutral, 22% dissatisfied

## **Herd Unit Issues**

Much of the Clarks Fork Herd Unit is characterized by migratory elk in the Sunlight Basin and Crandall Areas, while substantial numbers of non-migratory elk are found in along the Absaroka Front and Beartooth Face. Migratory elk exhibit poor productivity, while non-migratory elk have much higher productivity. Consequently, damage situations arise with non-migratory elk and require liberal management, while poor productivity requires conservative management of migratory elk.

To better manage migratory and non-migratory elk and simplify hunting regulations, hunt area boundaries were re-configured in 2014. To encompass migratory elk, the western portion of Area 50 and Area 52 were added to Area 51. Similarly, to encompass non-migratory elk the eastern portion of Area 50, the eastern portion of Area 12, and Area 65 were added to Area 54. To better define the semi-migratory elk in the Rattlesnake Creek, Trout Creek, and Dead Indian Creek drainages, the western portion of Area 121 and the Elk Creek drainage of Area 52 were added to Area 53. This change allows for more direct management of migratory and non-migratory elk and reduces complexity by eliminating 4 hunt areas and 4 license types.

## **Weather**

Weather conditions during the 2016 biological year were characterized by near normal spring-summer moisture, and very mild fall conditions. Winter started mild, but became very harsh with record cold temperatures and snowfall for December and January at levels not observed during the last 50 years in some areas of the herd unit.

## **Habitat**

Herbaceous vegetation transects are monitored on upland vegetation types in Sunlight Basin, both on the Sunlight Wildlife Habitat Management Area (WHMA) and on adjacent US.S Forest Service lands. See Cody region appendix.

## **Field Data**

Classification surveys in 2016 yielded calf:cow ratios of 24:100, about the same compared to the most recent 5-year (2006-2015) average calf:cow ratio of 23:100, while the bull ratio was 80:100, about 4 times the current 5-year average of 19:100, and is due to the severe winter concentrating bulls into areas with other portions of the herd, both migratory and nonmigratory segments.

## Harvest Data

Bull harvest improved in 2016 with 170 bulls taken in the herd unit during 2016, more than the 153 bulls harvested in 2015, and higher than the 5-year average (2011-2015) of 155 bulls. Although calf production has not improved in the migratory segment, harvest levels have been conservative enough to allow bull numbers and subsequent harvest to improve. The antlerless elk harvest in 2016 of 273, and was lower than the 5-year average (2011-2015) of 308 and the 293 antlerless harvest in 2016.

## Population

The Clark's Fork Herd Unit uses a Mid-Winter Trend Count for a population objective and we track counts by hunt area and overall total (Table 1) to help guide our management.

Table 1. Sub unit and herd unit winter counts.

	Hunt Area 51	Hunt Area 53	Hunt Area 54	Herd Unit Total
Count Goal	1,800	600	900	3,300
2013	1,414	610	1,348	3,372
2014	1,914	638	1,506	4,058
2015	*	662	1,518	*
2016	760	458	1987	3205
3-year Average	1337	586	1670	3593

\* No trend count data for Hunt Area 51 in 2015, 2012-2014 average was 1,790

## Management Summary

We will continue with the current management structure that accommodates the migratory and nonmigratory segments of this population. We will have conservative bull seasons, with little antlerless harvest in Hunt Area 51 (migratory segment). In addition we will continue to maintain current elk numbers in Hunt Area 53 (migratory segment) through limited cow harvest and reduce elk numbers in Hunt Area 54 (nonmigratory segment) through increased cow harvest opportunity. The 2016 seasons should result in post-season population slightly above the objective of 3,300 observed elk on winter range.

EL217 Clark's Fork Elk Herd Seasonal Ranges

