

## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL531 - IRON MOUNTAIN

HUNT AREAS: 6

PREPARED BY: LEE KNOX

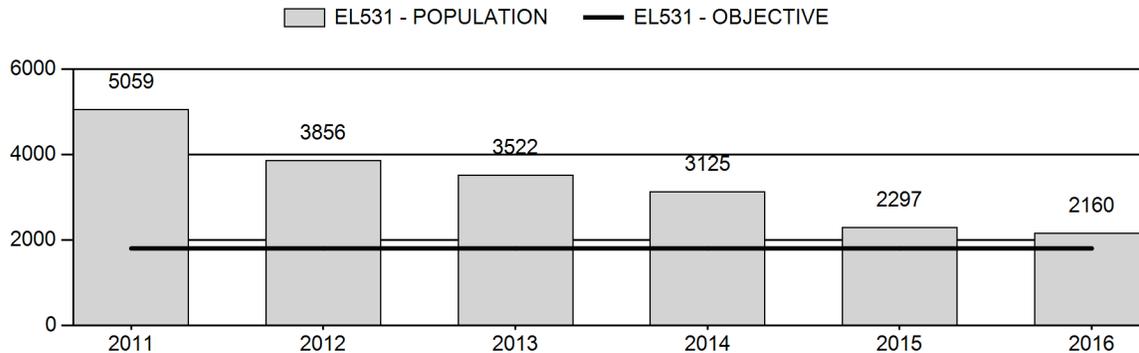
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Population:	4,032	2,160	1,970
Harvest:	849	523	585
Hunters:	1,754	1,394	1,300
Hunter Success:	48%	38%	45%
Active Licenses:	1,815	1,432	1,500
Active License Success:	47%	37%	39%
Recreation Days:	10,804	9,374	9,100
Days Per Animal:	12.7	17.9	15.6
Males per 100 Females	33	26	
Juveniles per 100 Females	52	54	

Population Objective ( $\pm$ 20%) :	1800 (1440 - 2160)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	20%
Number of years population has been + or - objective in recent trend:	1
Model Date:	4/15/2017

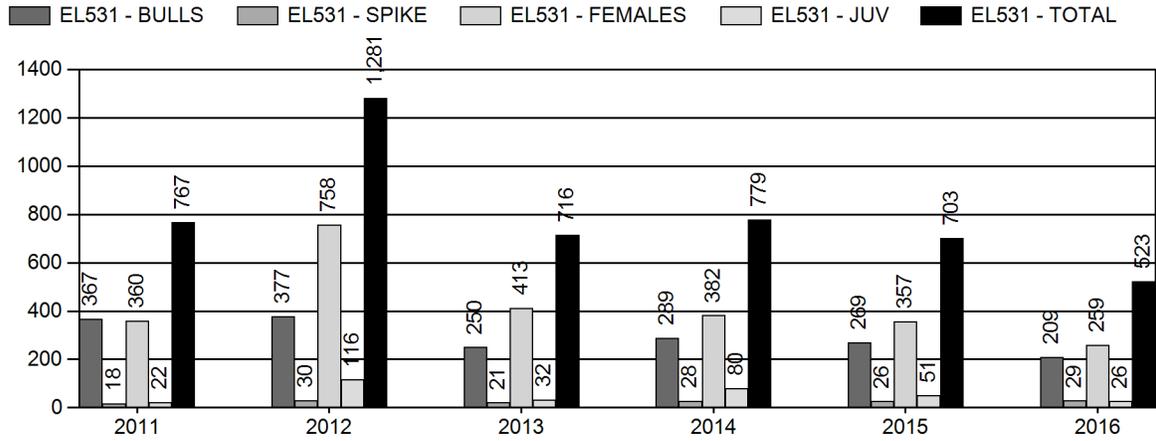
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq$ 1 year old:	15%	12%
Males $\geq$ 1 year old:	30%	26%
Total:	13%	14%
Proposed change in post-season population:	5%	4%

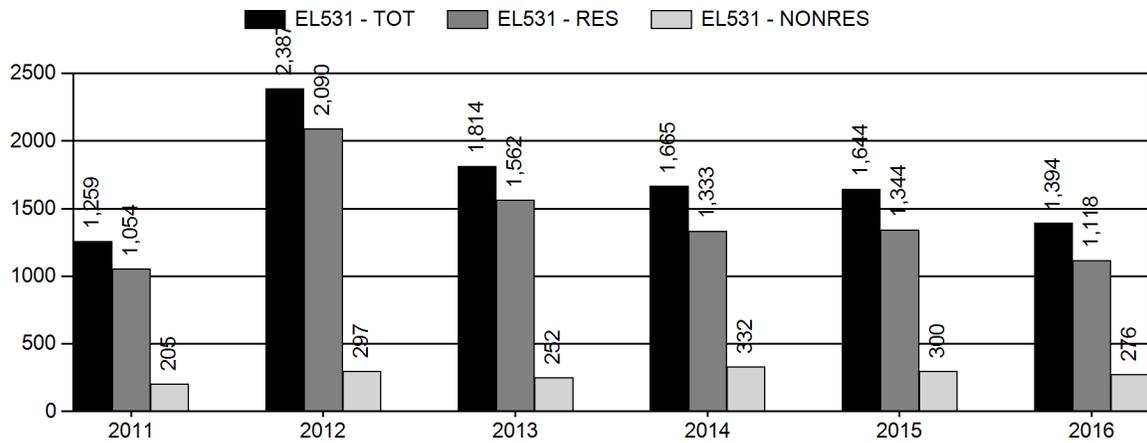
## Population Size - Postseason



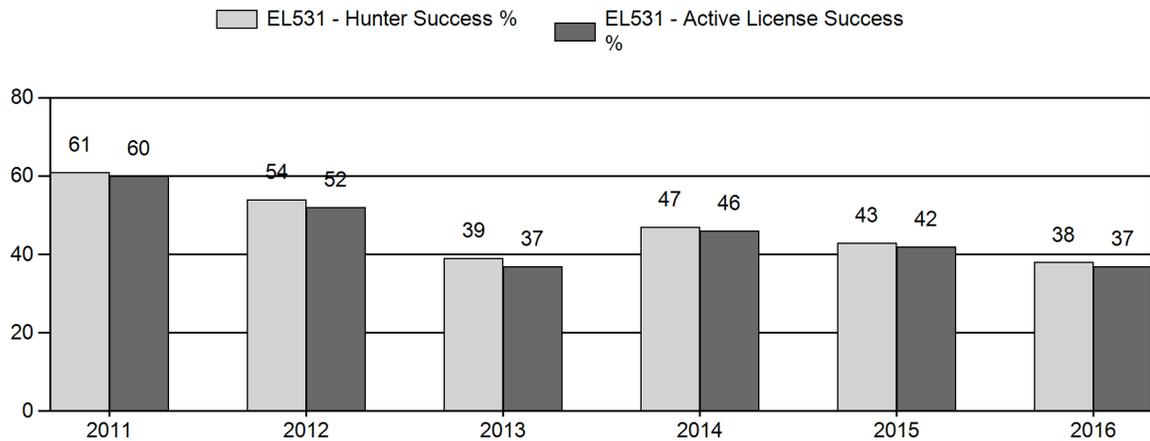
# Harvest



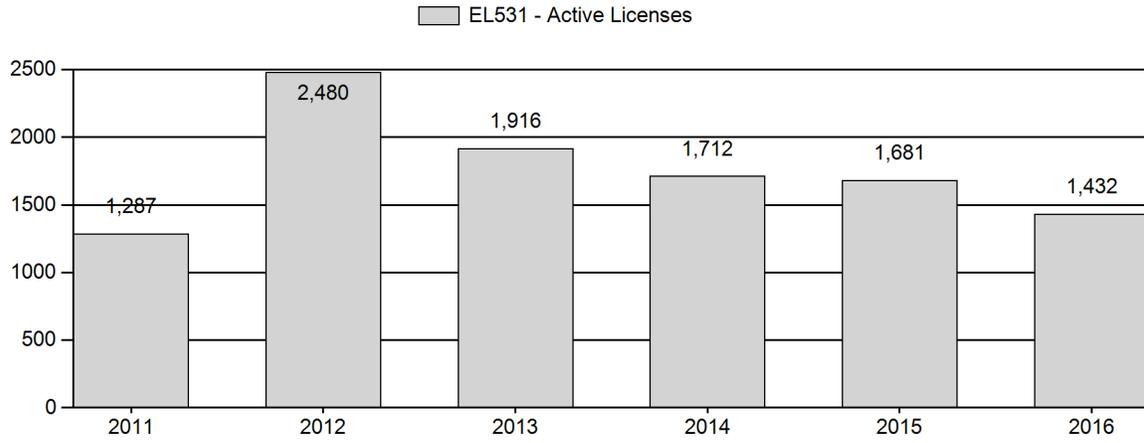
# Number of Hunters



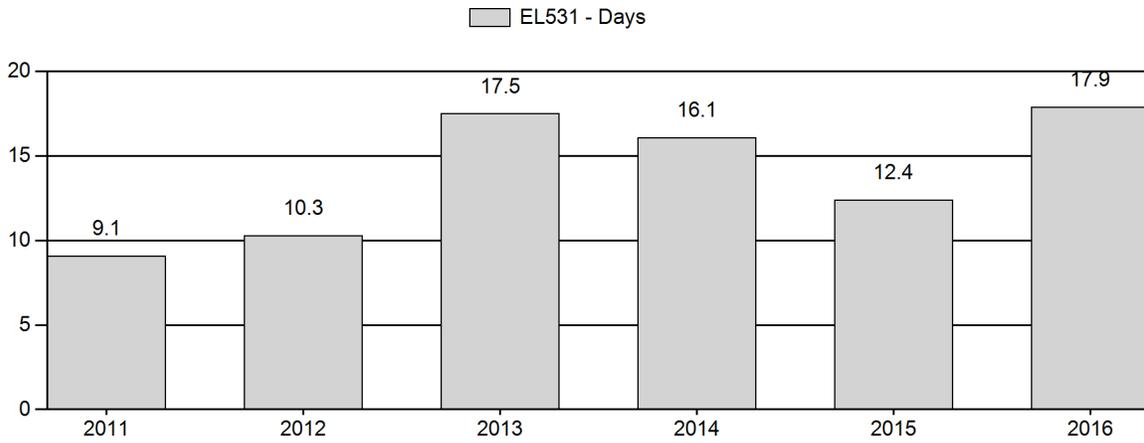
# Harvest Success



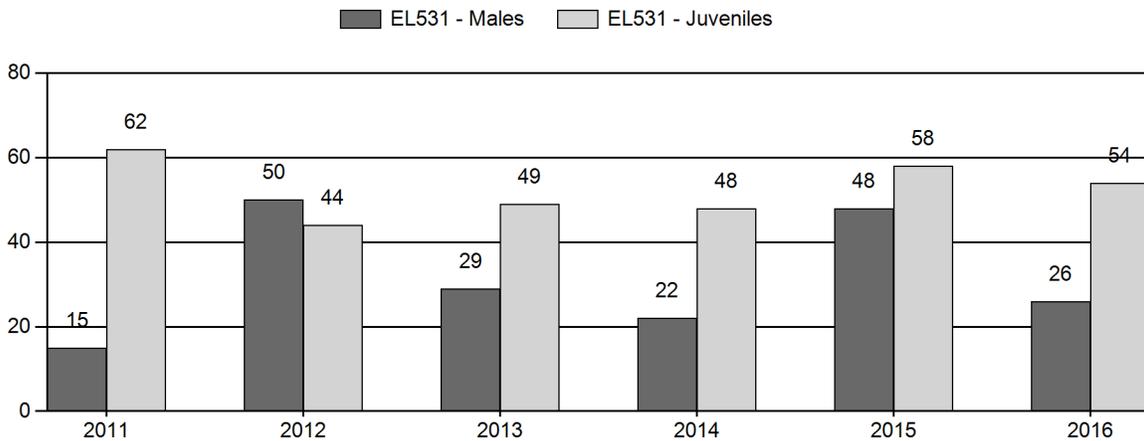
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL531 - IRON MOUNTAIN

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	CIs Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	5,059	20	16	36	9%	235	56%	145	35%	416	646	9	7	15	± 3	62	± 8	54
2012	3,856	52	46	98	26%	196	51%	87	23%	381	617	27	23	50	± 8	44	± 7	30
2013	3,522	75	86	161	16%	557	56%	273	28%	991	707	13	15	29	± 3	49	± 4	38
2014	3,125	44	67	111	13%	499	59%	238	28%	848	671	9	13	22	± 3	48	± 4	39
2015	3,070	152	142	294	23%	616	49%	355	28%	1,265	743	25	23	48	± 4	58	± 4	39
2016	2,160	123	50	173	15%	657	55%	357	30%	1,187	631	19	8	26	± 2	54	± 4	43

**2017 HUNTING SEASONS  
IRON MOUNTAIN ELK (EL531)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
6		Oct. 1	Oct. 31		General	Any elk valid off national forest
		Nov. 1	Nov. 30		General	Antlerless elk valid off national forest
	1	Oct.15	Oct. 31	75	Limited quota	Any elk
		Nov.1	Jan. 31		Limited quota	Unused Area 6 Type 1 licenses valid for antlerless elk
	4	Nov. 1	Jan. 31	50	Limited Quota	Antlerless elk
	6	Aug. 15	Jan. 31	1100	Limited Quota	Cow or calf valid off national forest
	Archery					Refer to Section 3 of Chapter 7

Hunt Area	License Type	Changes from 2016
6	1	0
	4	-50
	6	0
<b>Herd Unit Totals</b>		<b>-50</b>

**MANAGEMENT EVALUATION**

**Current Postseason Population Management Objective:** 1,800 (1,440-2,160)

**Management Strategy:** Recreational

**2016 Postseason population Estimate:** ~ 2,200

**2017 Proposed Postseason Population Estimate:** 2,000

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

The management objective for the Iron Mountain Elk herd unit is a post-season population objective of 1,800 elk. The management strategy is recreational management which requires maintaining a post hunt bull ratio of 15 to 29:100 cows. The objective and management strategy was reviewed in 2016.

## **Herd Unit Issues**

The Iron Mountain elk herd unit includes hunt area 6 (combined hunt areas 5 and 6 for 2014 season) which is composed of mostly private lands, except for the Pole Mountain National Forest segment, which is managed under a limited quota license to maintain hunt quality. Urban sprawl and nontraditional landowners are increasing in the herd unit, as well as growing stone quarries in parts of Rogers canyon and between I-80 and Wyoming Highway 287. This herd unit continues to be a concern with landowners due to large wintering herds, sometimes exceeding 800 elk. Many of the landowners in the herd unit outfit bull elk hunts to some degree on their property, and bull quality and quantity are a concern. The 2016 post-season population estimate was 2,200 with the population trending downward from a high of 5,000 in 2011.

## **Weather**

Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were above average at all elevations throughout southeast Wyoming. No significant prolonged periods of extreme heat or cold temperatures were observed, or extreme or prolonged periods of snow loading in lower elevation winter ranges. Timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Weather patterns most likely had a positive influence on all big game species. For specific meteorological information for the Iron Mountain herd unit the reader is referred to the following link: <http://www.ncdc.noaa.gov/cag/>.

## **Habitat**

Forage availability continued to improve in 2016 with an increase in amounts of precipitation received and the timeliness of when it was received. Precipitation received in April, May, and early June resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs. While early season growing conditions were optimal, late summer and fall precipitation were lacking. A significant die-off of sagebrush and antelope bitterbrush did occur in portions of the Laramie Range due to a rapid freeze event that occurred in November 2014. The die-off was widespread, from the Front Range of Colorado to the Eastern Plains of Montana. The severity of the die-off is unknown at this time, and whether or not the shrubs will recover. Affected shrubs did not show any significant signs of re-sprouting in summer 2015.

One prescribed burn was completed on the Iron Mountain Ranch in late March 2015, impacting 2,500 acres of mixed mountain shrub habitats. Initial herbaceous and woody plant response following treatment was excellent, as expected with the above average precipitation that fell in spring 2015. Previous prescribed burns completed within the Iron Mountain herd unit continue to outperform untreated habitats, particularly in shrub annual leader production.

Cheatgrass continues to be a major threat to native rangelands and big game ranges, particularly at all elevations below 6,500. Its presence ties the hands of habitat managers limiting habitat enhancement options, and may result in reduced carrying capacities of rangelands if it is the predominant specie.

The limited number of habitat transects that have been established throughout the Laramie Region have not provided sufficient data to make reliable assumptions of habitat quantity or

quality and consequently heavily influence population management for any particular big game species.

### **Field Data**

A total of 1,187 elk were classified, exceeding the estimated classification objective of 631. Bull ratios declined to 26:100 in 2016 from 54:100 in 2015. This is more likely an effect of survey effort than an actual decline. This herd has been very productive and continues to be with 54 calves: 100 cows. After changing the license issuance from limited quota to general, hunter numbers have been on a steady decline from a high of 2,480 hunters in 2012 to 1,400 in 2016.

### **Harvest Data**

Elk harvest appears to be stabilizing after changing to a general season strategy in 2012. However, harvest declined to 530 in 2016 from 700 in 2015. With the lack of a HMAP or a Hunt Management Coordinator, cow elk harvest declined by an estimated 100 cows. Both the Type 1 and Type 4 licenses remain very popular with the public. Type 1 license drawing odds are less than 10% for residents and nonresidents' need 5 or more preference points. Hunter success increased on the Type 1 license from 45% in 2015 to 70% in 2016, mostly due to increase in antlerless harvest. The Type 4 licenses have always been a more difficult hunt and success remains low at 19%. Harvest was poor with only 15 elk harvested on the 100 Type 4 licenses in 2016.

### **Population**

This is the third year that we have collected adequate classification data for the model not to crash. The "Constant Juvenile and Adult Survival" model was selected for this herd and had an AIC score of 380 and a best FIT of 266. It did not have the lowest AIC score, but considering the lack of data the more complicated models are not appropriate for this herd unit. This model predicts the population declining from a high of 5,000 in 2011 to the current population estimate of 2,200 in 2016. This model has a tendency to jump around each time an additional year of data is added and although the population trend may be accurate, the population estimate is most likely not. This model is ranked Poor for a variety of reasons including: little data available; ratio data, if available, considered highly biased because of poor sample sizes or an inability to survey the entire area; herd unit closure issues apparent; results not biologically defensible.

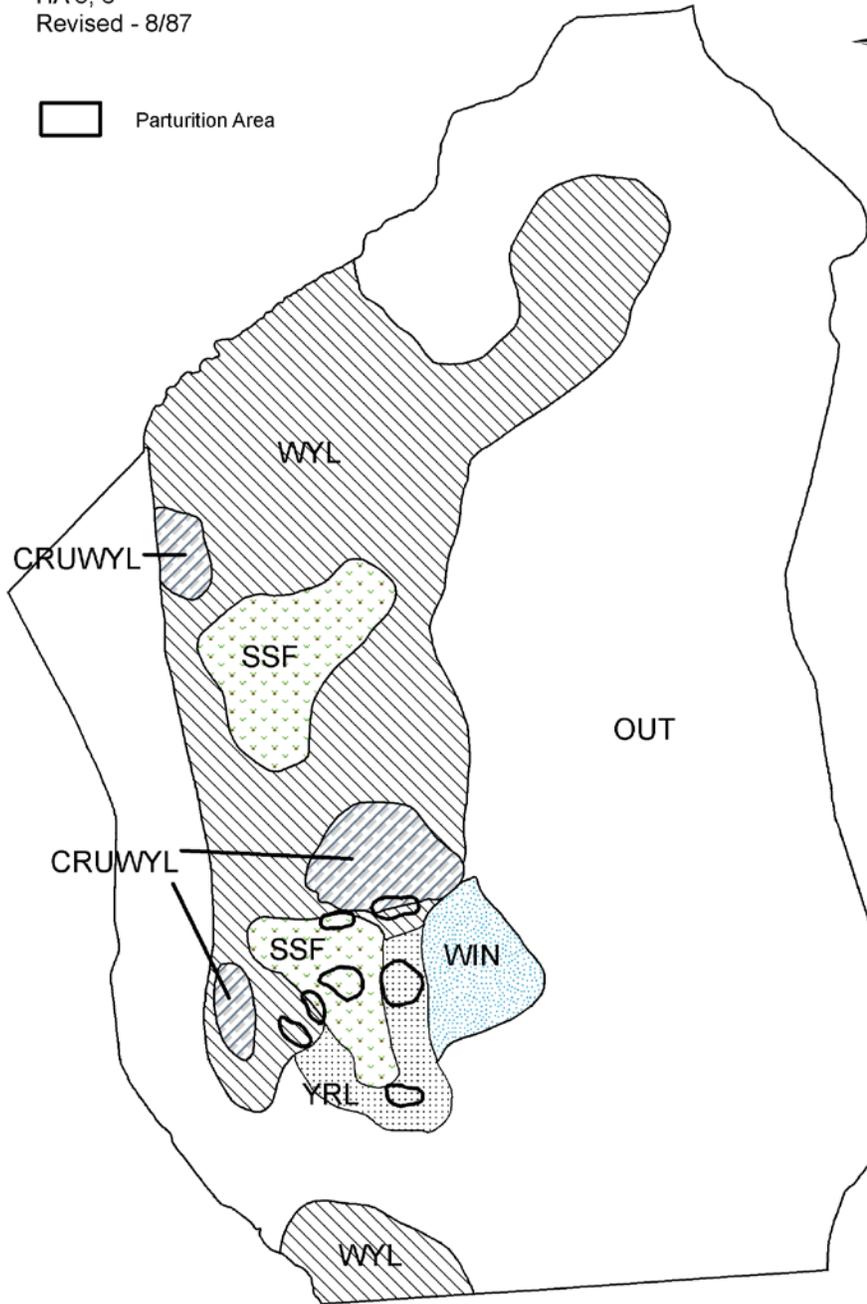
### **Management Summary**

The 2016 general season structure and Type 6 licenses are working well to bring the herd to objective, and will remain status quo. The Type 4 licenses were decreased by 50 licenses to address low hunter success. If we harvest a minimum of 650 elk, the population will continue to decline towards the objective.

E531 - Iron Mtn.  
HA 5, 6  
Revised - 8/87



 Parturition Area



## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL533 - SNOWY RANGE

HUNT AREAS: 8-12, 110, 114, 125

PREPARED BY: WILL SCHULTZ

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Population:	7,942	7,100	6,200
Harvest:	1,965	2,041	2,000
Hunters:	5,935	5,937	5,930
Hunter Success:	33%	34%	34 %
Active Licenses:	6,184	6,254	6,200
Active License Success:	32%	33%	32 %
Recreation Days:	46,698	49,189	48,000
Days Per Animal:	23.8	24.1	24
Males per 100 Females	24	42	
Juveniles per 100 Females	45	49	

Population Objective (± 20%) : 6000 (4800 - 7200)

Management Strategy: Recreational

Percent population is above (+) or below (-) objective: 18%

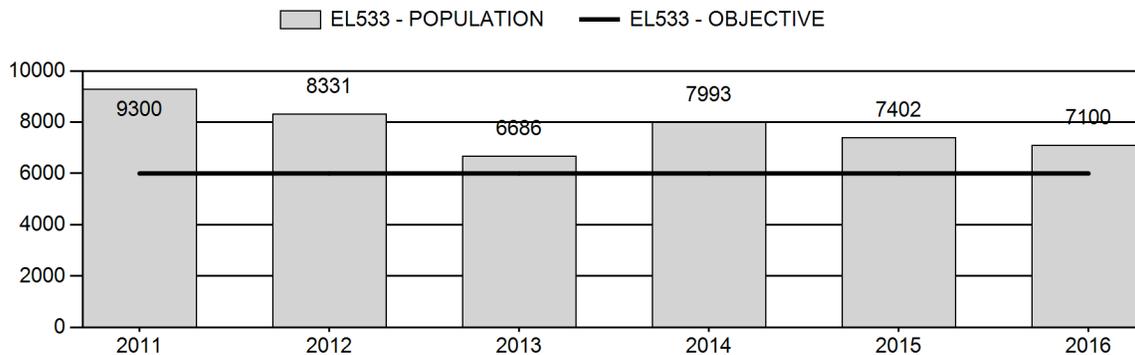
Number of years population has been + or - objective in recent trend: 25

Model Date: 02/16/2017

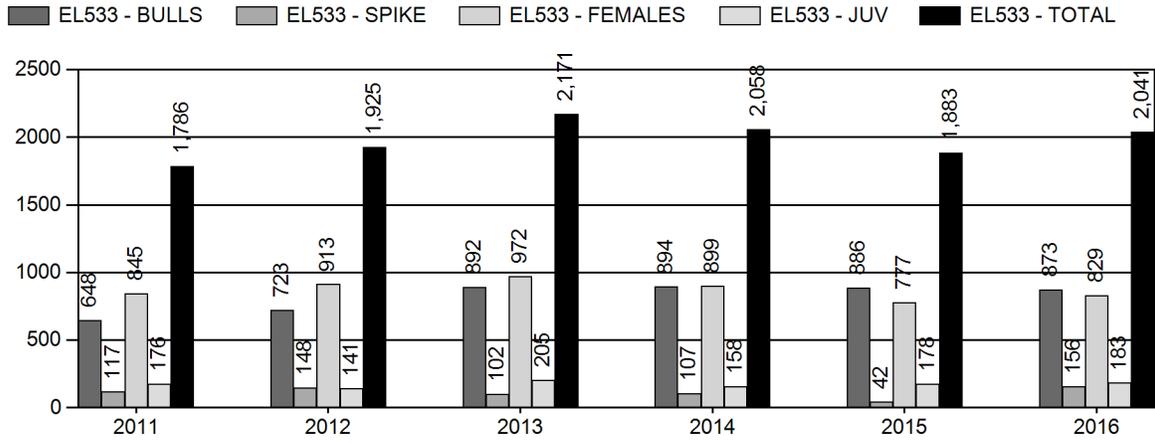
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	17%	18%
Males ≥ 1 year old:	64%	69%
Total:	23%	26%
Proposed change in post-season population:	-9%	-18%

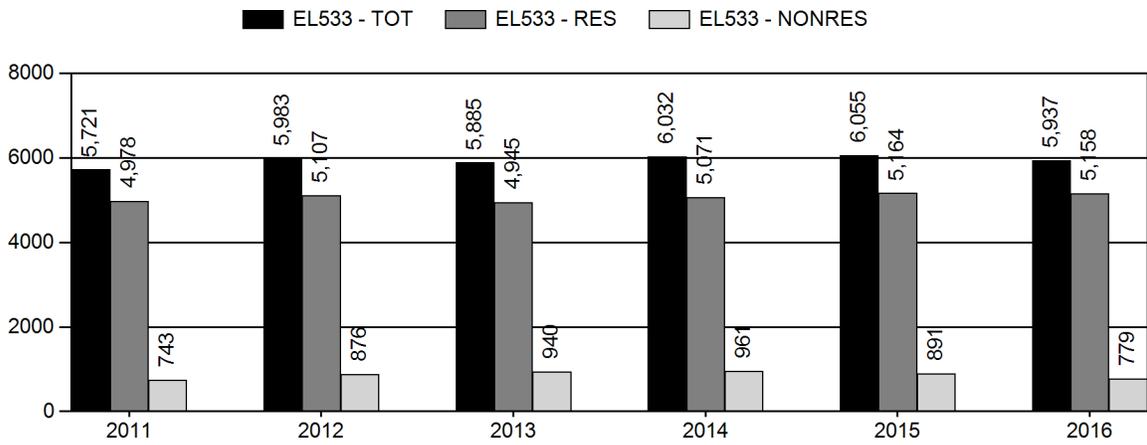
## Population Size - Postseason



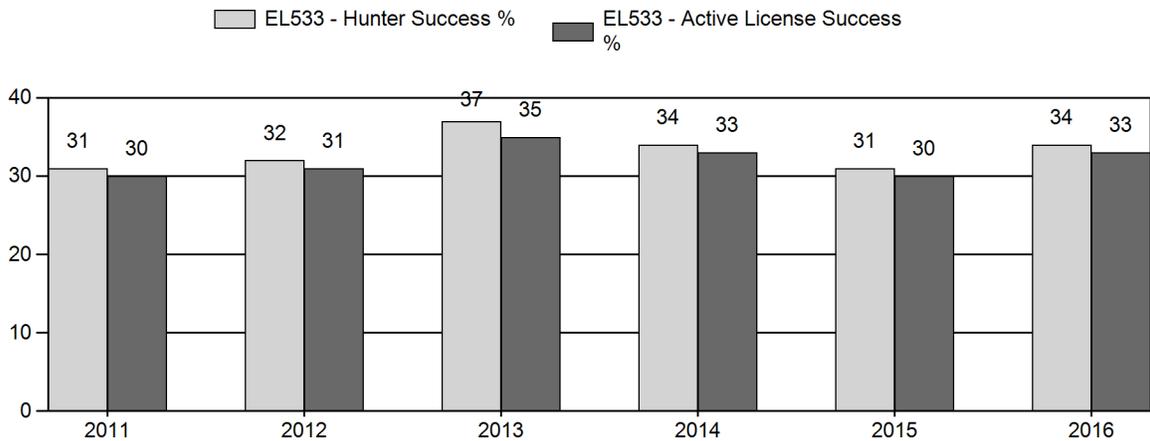
# Harvest



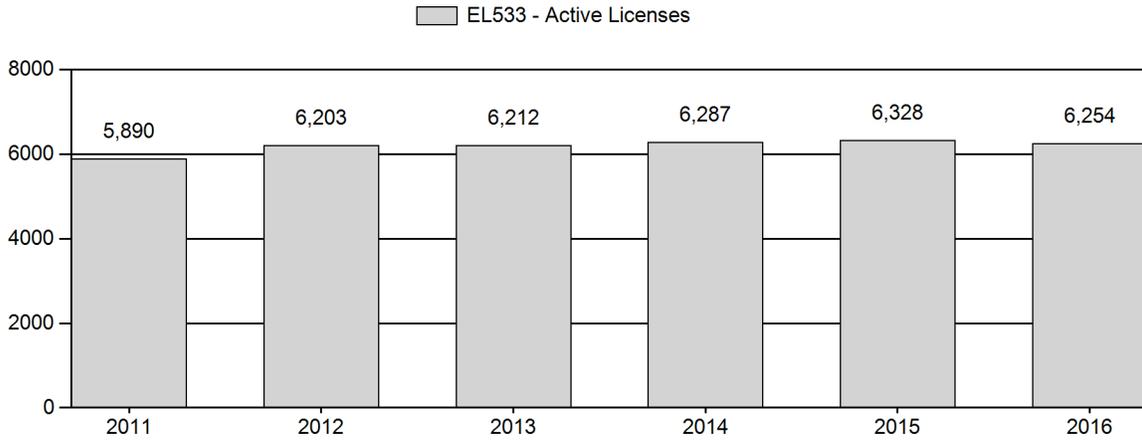
# Number of Hunters



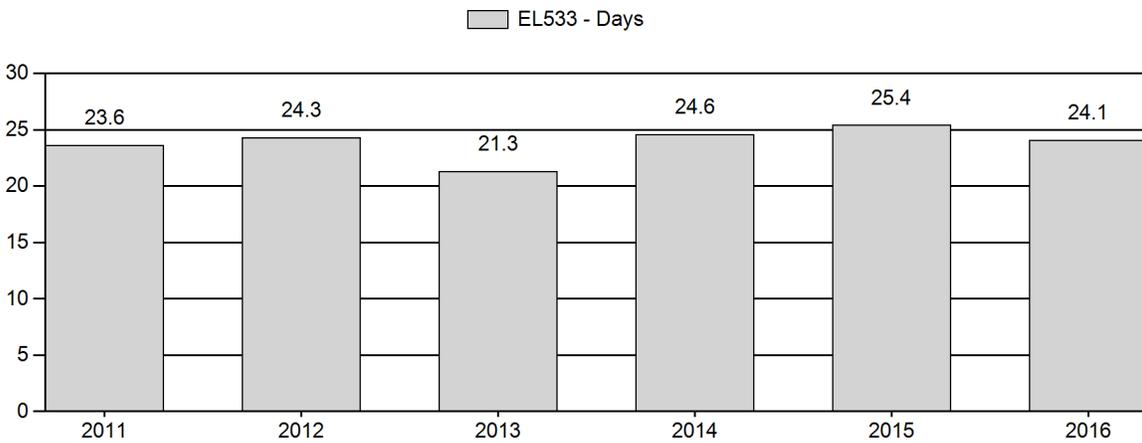
# Harvest Success



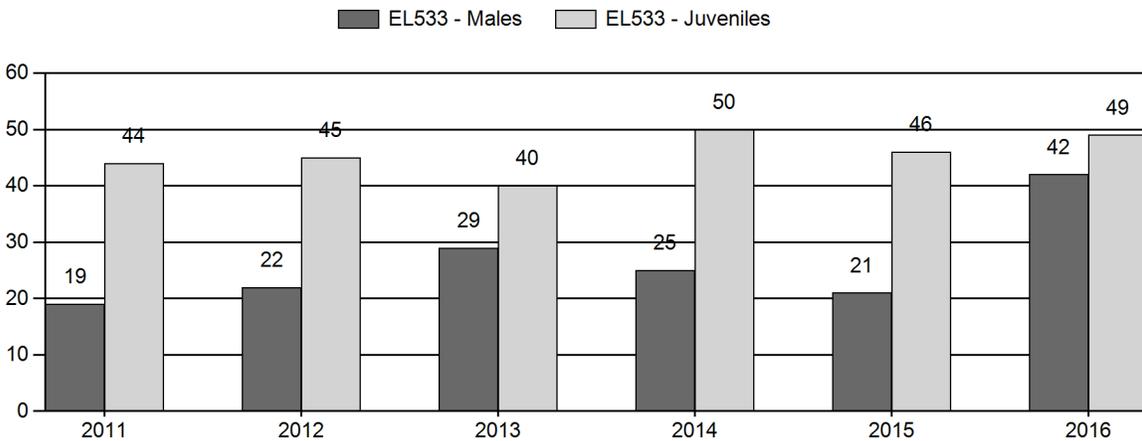
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL533 - SNOWY RANGE

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylg	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	9,300	145	109	254	12%	1,308	61%	576	27%	2,138	639	11	8	19	± 1	44	± 2	37
2012	8,331	252	218	470	13%	2,181	60%	990	27%	3,641	664	12	10	22	± 1	45	± 2	37
2013	6,686	292	456	748	17%	2,539	59%	1,023	24%	4,310	646	12	18	29	± 1	40	± 1	31
2014	7,993	259	148	407	14%	1,609	57%	800	28%	2,816	640	16	9	25	± 1	50	± 2	40
2015	7,402	206	190	396	13%	1,885	60%	876	28%	3,157	693	11	10	21	± 1	46	± 2	38
2016	7,100	242	470	712	22%	1,697	52%	837	26%	3,246	657	14	28	42	± 2	49	± 2	35

**2017 HUNTING SEASON RECOMMENDATIONS  
SNOWY RANGE ELK (EL533)**

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
8	1	Oct. 1	Jan. 31	100	Limited quota	Any elk
	6	Aug. 15	Jan. 31	100	Limited quota	Cow or calf
9		Oct. 15	Oct. 31		General	Any elk
	6	Aug. 15	Sep. 30	150	Limited quota	Cow or calf valid on private land
		Oct. 1	Dec. 31			Cow or calf
		Jan. 1	Jan. 31			Cow or calf valid off national forest
10		Oct. 15	Oct. 31		General	Any elk
	6	Aug. 15	Sep. 30	200	Limited quota	Cow or calf valid on private land
		Oct. 1	Nov. 30			Cow or calf
		Dec. 1	Jan. 31			Cow or calf valid off national forest
11	1	Oct. 1	Oct. 31	150	Limited quota	Any elk
	4	Oct. 1	Nov. 14	300	Limited quota	Antlerless elk
	6	Aug. 15	Jan. 31	50	Limited quota	Cow or calf valid off national forest and off the Wyoming Game and Fish Commission's Wick Wildlife Habitat Management Area
	9	Sep. 1	Sep. 30	50	Limited quota	Any elk, archery only
12		Oct. 15	Oct. 31		General	Any elk
	6	Oct. 1	Nov. 14	150	Limited quota	Cow or calf
		Nov. 15	Jan. 31			Cow or calf valid west of Wyoming Highway 130
12, 13, 15, 110	7	Aug. 15	Jan. 31	100	Limited quota	Cow or calf valid on private land
110		Oct. 15	Oct. 31		General	Any elk
	6	Oct. 1	Nov. 14	50	Limited quota	Cow or calf
114	1	Oct. 1	Jan. 31	50	Limited quota	Any elk
	6	Aug. 15	Jan. 31	200	Limited quota	Cow or calf
125	1	Oct. 1	Dec. 31	200	Limited quota	Any elk
		Jan. 1	Jan. 31			Valid for antlerless elk
	6	Oct. 1	Jan. 31	200	Limited quota	Cow or calf
					Archery	Refer to Section 3 of Chapter. 7

Hunt Area	License Type	Quota change from 2016
8	1	-50
10	6	-200
12, 13, 15, 110	7	+25
114	6	+75
<b>Herd Unit Total</b>	<b>1</b>	<b>-50</b>
	<b>6</b>	<b>-125</b>
	<b>7</b>	<b>+25</b>

### **Management Evaluation**

**Current Management Objective: 6,000 (4,800 – 7,200)**

**Management Strategy: Recreational**

**2016 Postseason Population Estimate: 7,100**

**2017 Proposed Postseason Population Estimate: 6,200**

**2016 Hunter Satisfaction: 60% Satisfied, 23% Neutral, 17% Dissatisfied**

Elk in The Snowy Range herd unit are managed toward a postseason population objective of 6,000. The population was estimated using a spreadsheet model developed in 2012 and updated in 2016. The herd is managed for recreation opportunity. The objective was last reviewed in 2013.

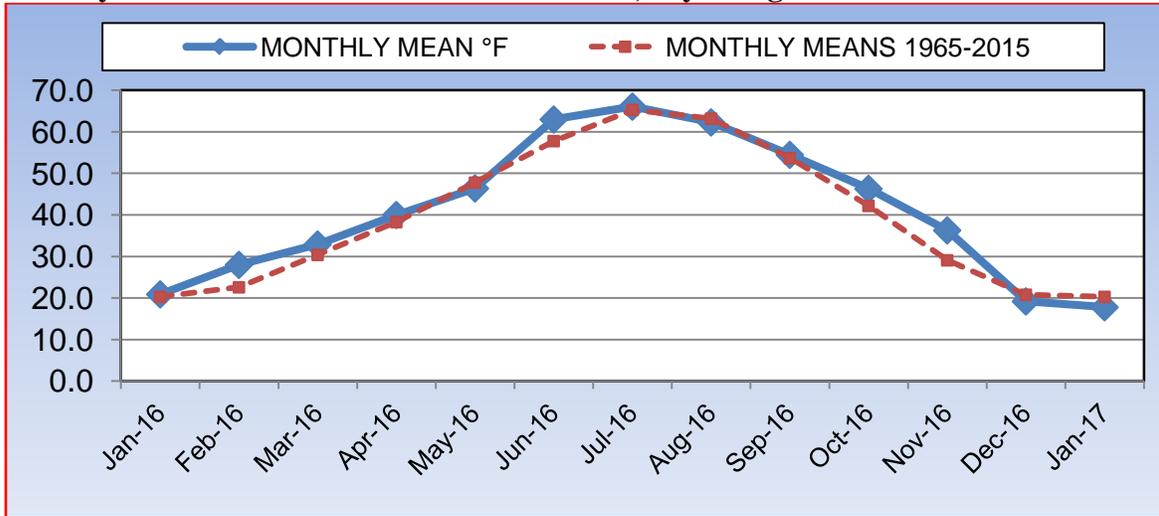
### **Herd Unit Issues**

The Snowy Range herd unit covers a large portion of south central Wyoming. Issues here include development in the form of agricultural and residential, invasive and noxious plants, forestry and range management, and travel management in important elk habitat.

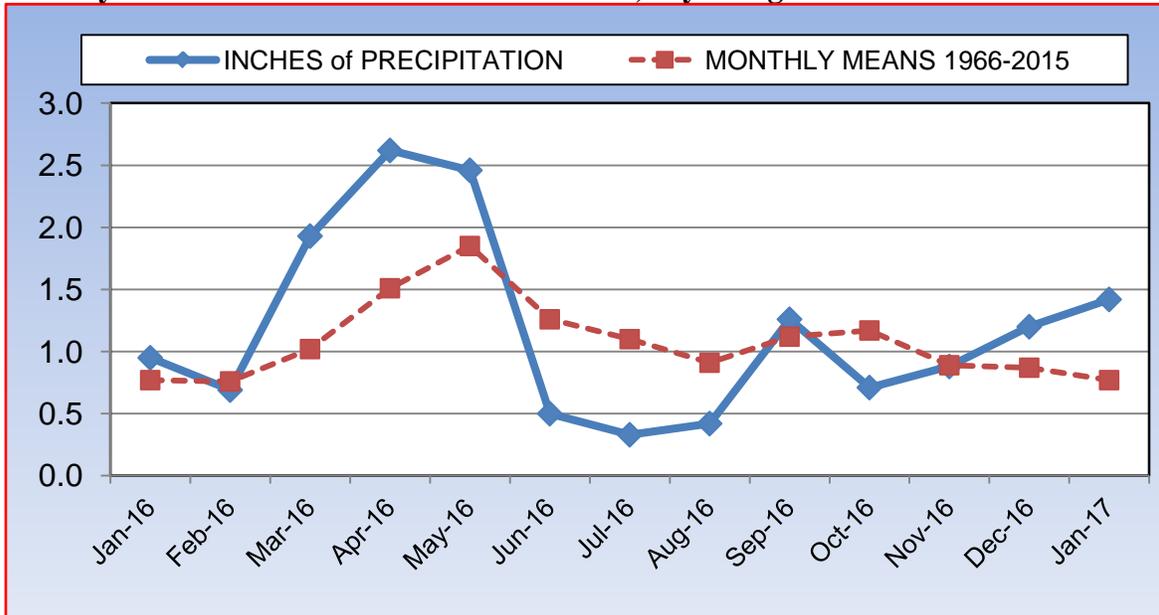
### **Weather**

Temperature and precipitation data was obtained for the National Oceanic and Atmospheric Administration's (NOAA) climatic Division 10 (Upper Platte), <https://www.ncdc.noaa.gov/cag/> to illustrate weather conditions thus far, during bio-year 2016 (Figures 1 and 2). These figures also include data from January - May of bio-year 2015 to describe the weather conditions immediately preceding bio-year 2016. Monthly mean temperatures in bio-year 2016 were slightly warmer than the 50-year monthly means during some months but otherwise similar to the 50-year monthly means. Precipitation in April of 2016, primarily received in the form of very moist snow was 174% of the 50-year monthly mean. Following the wetter than average spring of bio-year of 2015, the summer of bio-year 2016 was drier than average. Otherwise, relatively favorable weather conditions were experienced in Division 10 throughout the remainder of bio-year 2016.

**Figure 1. January 2016 - January 2017 mean monthly temperatures and 50-year monthly means for NOAA climatic Division 10, Wyoming.**



**Figure 2. January 2016 - January 2017 mean monthly precipitation and 50-year monthly means for NOAA climatic Division 10, Wyoming.**



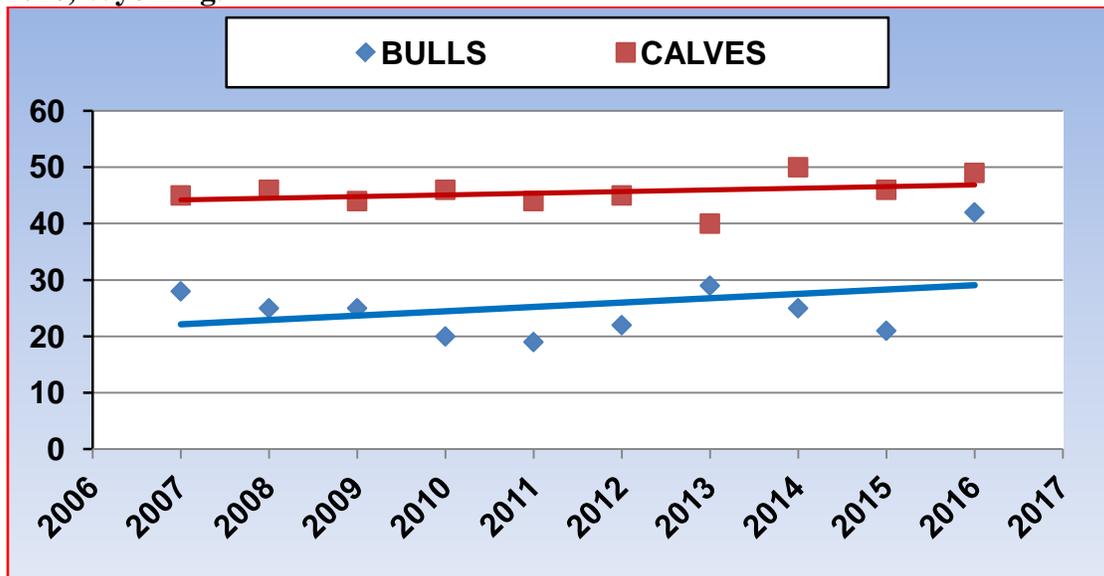
## Habitat

Habitat conditions continued to improve in 2016 with increased amounts of timely precipitation being received at higher elevations in the herd unit. Precipitation received in April and May resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Cheatgrass continued to impact native rangelands, particularly on south facing aspects and in areas of high fire severity associated with the 11,000 acre Squirrel Creek Wildfire of 2012. During habitat assessments conducted during the summer 2016, aspen regeneration in areas burned by wildfire was excellent, and showed little sign of browsing by wildlife or livestock. This may be due to the fact that the areas which recently burned have a high road density and are heavily utilized by motorized recreationists; resulting in displacement of elk from these preferred habitats. The limited number of habitat transects established throughout the Laramie Region have not provided sufficient data to make reliable inferences about habitat quantity or quality.

## Field Data

In 2016, we classified elk from a helicopter in conjunction with local mule deer classifications. A postseason classification sample of 3,246 elk produced ratios of 42 bulls and 49 calves per 100 cows in this herd unit. The significantly higher annual bull ratio was attributed to both deep snow conditions pushing bulls out of hiding cover, and less cow/calf groups being observed. However, the past 10 years of bull and calf ratio data indicated both ratios have been increasing in trend (Figure 3). High calf ratios continued to provide for an excellent recruitment rate in this herd unit.

**Figure 3. Bull and calf ratios per 100 cows in the Snowy Range elk herd unit, 2007-2016, Wyoming.**



### **Harvest Data**

The 2016 harvest survey data indicated 5,937 active licensed hunters harvested 2,041 elk, which was an 8% increase in harvest from 2015. The total harvest success rate of 34% was a 3% increase from 2015. Branch antlered bulls accounted for 85% of the male harvest in 2016 and 43% of the overall harvest. The proportion of spikes in the male harvest for the entire herd unit increased from 5% in 2015 to 15% in 2016 as a result of removing the spikes excluded limitation in the general season hunt areas. Antlerless elk accounted for 50% of the total 2016 elk harvest. Harvest rates, days per harvest, and harvest success rates under the current liberal hunting season structure continued to be considered acceptable. In 2016, 21% of the branch bull harvest was attributed to archery; while in 2015, 22% of the branch bull harvest was attributed to archery.

### **Population**

In 2016, we continued to use the CJ,CA spreadsheet model to simulate Snowy Range herd unit population dynamics. The other 2016 models in the spreadsheet model suite had either higher AICc scores or were not biologically realistic (i.e. 50,000 elk in 1993). Without other information such as an independent abundance estimate or historical survival data to incorporate into the model, accuracy of estimates will continue to be unknown. We rated this model as poor, and biologically defensible in our evaluation. This rating was based on criteria identified in the user's guide for the WGFD spreadsheet model (Morrison 2012).

The 2016 postseason population estimate for the Snowy Range herd unit was 7,100 elk. A decreasing trend in the annual estimate continued with CJ,CA model and was considered to be consistent with the observations by field managers. We considered the 2016 postseason population estimate produced by the CJ,CA spreadsheet model to be somewhat plausible.

### **Management Summary**

The hunting seasons in the Snowy Range herd unit continued to provide opportunities to reduce the overall elk population in 2017. Elk numbers appear to be declining towards the management objective.

### **Literature Cited**

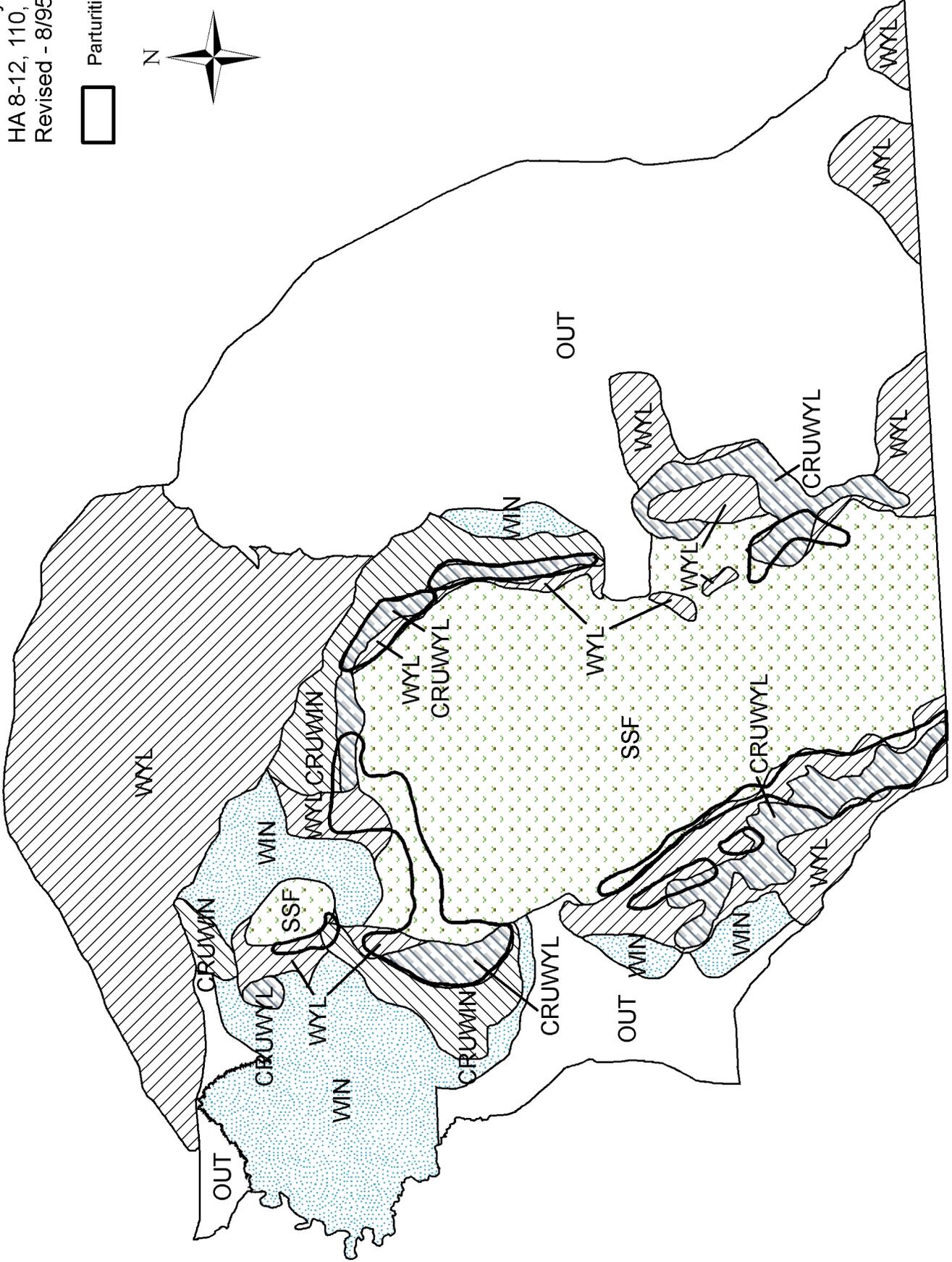
Morrison, T. 2012. User Guide: Spreadsheet Model for Ungulate Population data  
Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming,  
Laramie. USA. 41 pp.

### **Bibliography of Herd Specific Studies**

Reeve, A.F., F.G. Lindzey, and S.H. Anderson. 2003. Elk population in Wyoming: 1978-2001. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming, Laramie, Wyoming. USA. 138pp.

E533 - Snowy Range  
HA 8-12, 110, 114, 125  
Revised - 8/95

Parturition Area



## 2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL534 - SHIRLEY MOUNTAIN

HUNT AREAS: 16

PREPARED BY: WILL SCHULTZ

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	352	2,301	2,000
Harvest:	364	293	400
Hunters:	599	623	800
Hunter Success:	61%	47%	50 %
Active Licenses:	627	639	800
Active License Success	58%	46%	50 %
Recreation Days:	4,741	5,136	6,000
Days Per Animal:	13.0	17.5	15
Males per 100 Females:	40	49	
Juveniles per 100 Females	43	44	

Trend Based Objective (± 20%) 800 (640 - 960)

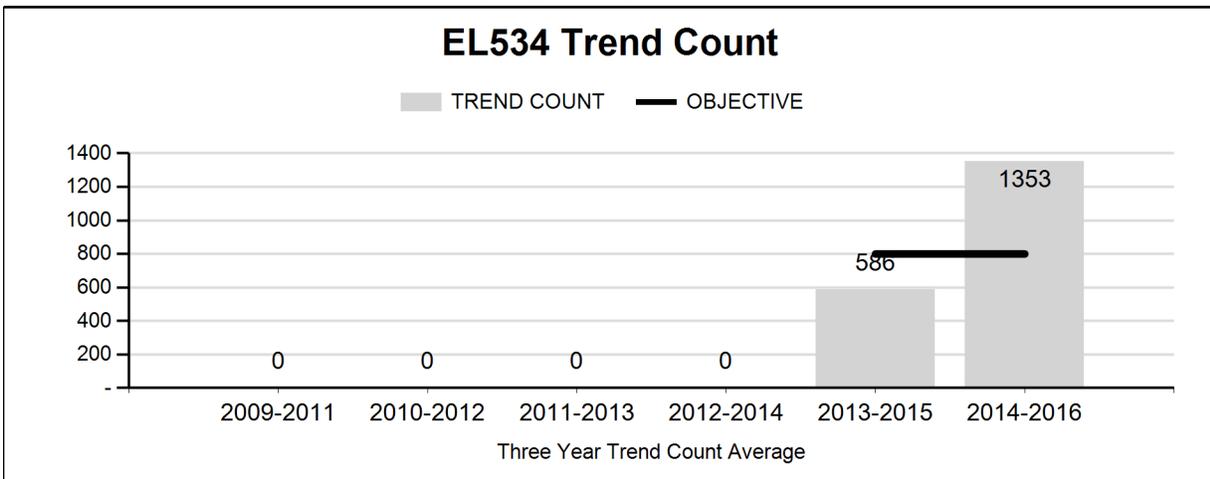
Management Strategy: Special

Percent population is above (+) or (-) objective: 188%

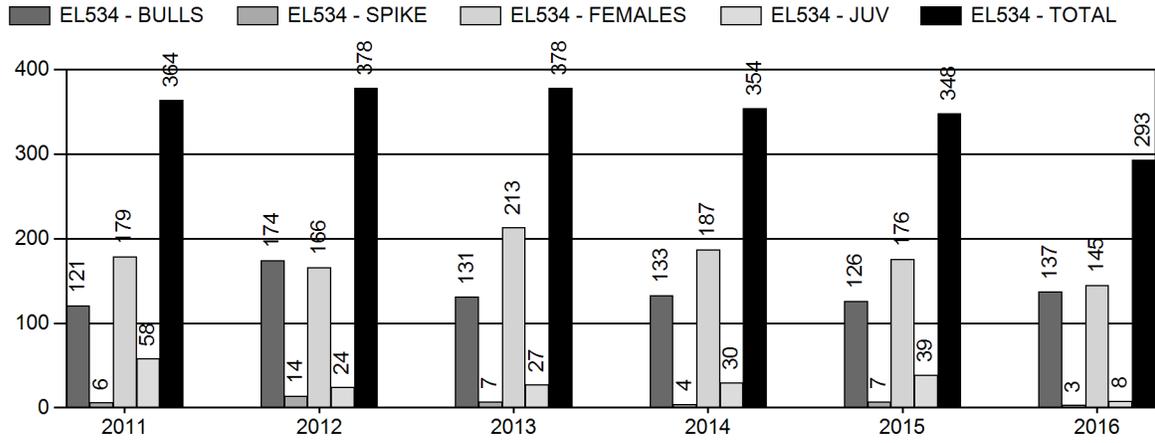
Number of years population has been + or - objective in recent trend: 25

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

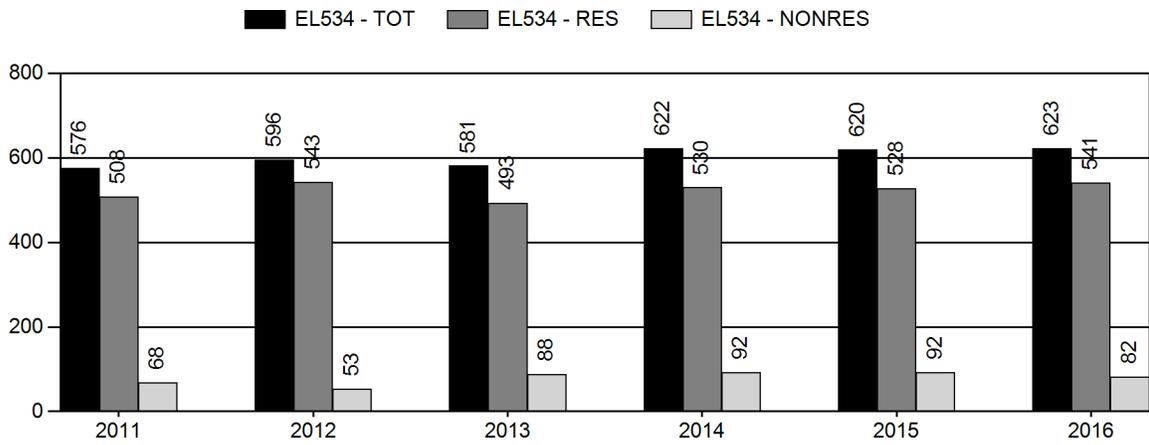
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%



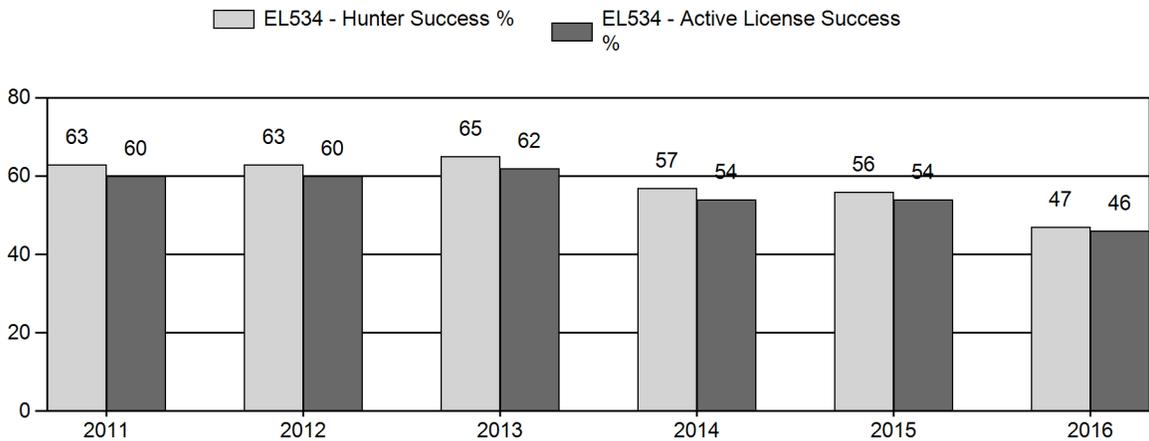
# Harvest



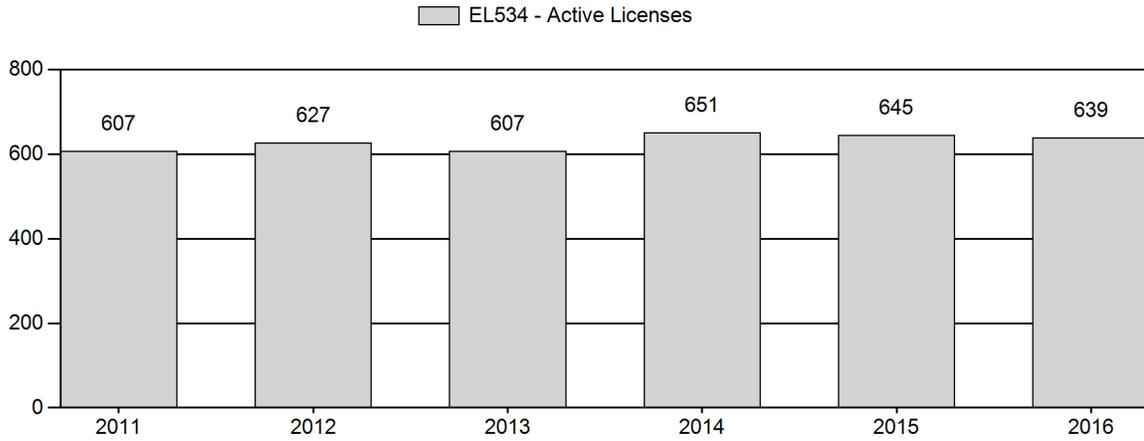
# Number of Hunters



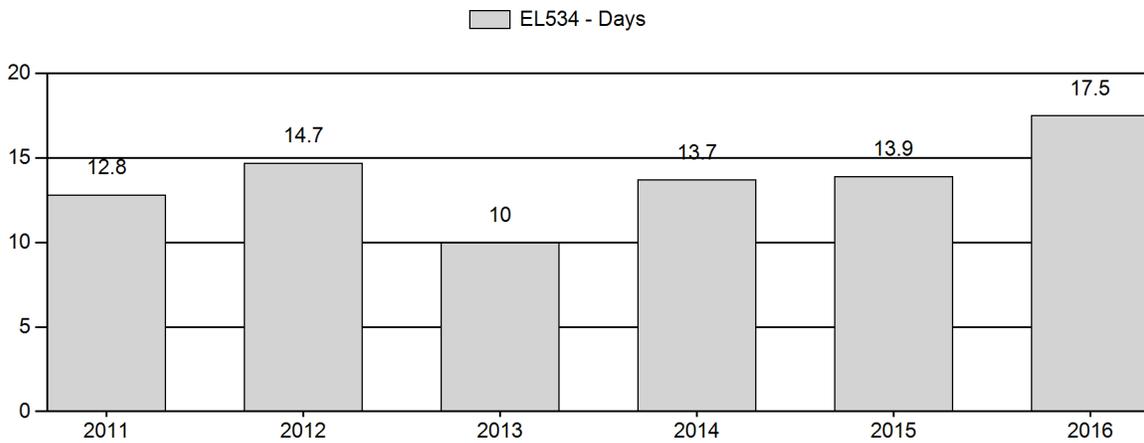
# Harvest Success



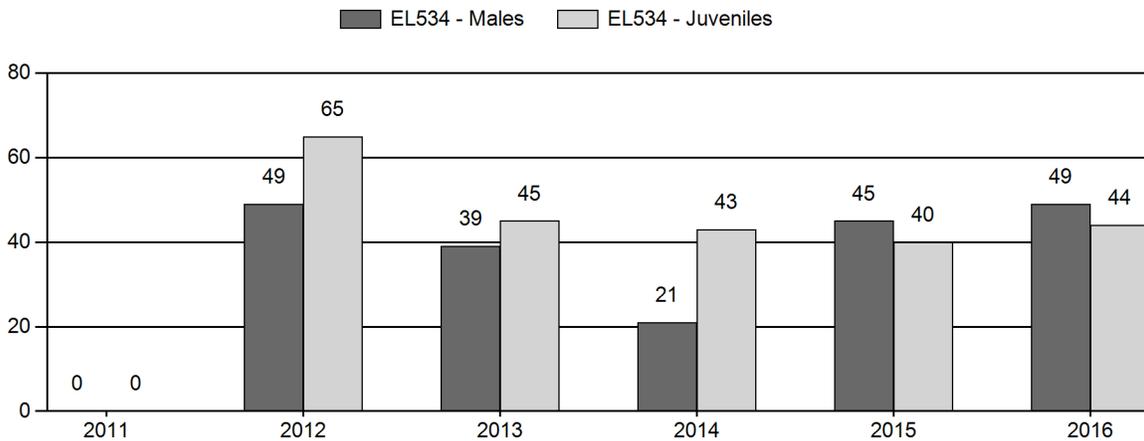
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2011 - 2016 Postseason Classification Summary

for Elk Herd EL534 - SHIRLEY MOUNTAIN

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	1,200	0	0	0	0%	0	0%	0	0%	0	500	0	0	0	± 0	0	± 0	0
2012	880	8	32	40	23%	81	47%	53	30%	174	420	10	40	49	± 11	65	± 13	44
2013	1,462	52	90	142	21%	365	54%	165	25%	672	568	14	25	39	± 4	45	± 4	33
2014	767	14	47	61	13%	294	61%	127	26%	482	395	5	16	21	± 2	43	± 4	36
2015	0	86	342	428	24%	948	54%	383	22%	1,759	596	9	36	45	± 0	40	± 0	28
2016	0	160	422	582	25%	1,196	52%	523	23%	2,301	634	13	35	49	± 0	44	± 0	29

**2017 HUNTING SEASON RECOMMENDATIONS  
SHIRLEY MOUNTAIN ELK (EL534)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
16	1	Oct. 1	Oct. 31	150	Limited quota	Any elk
	1	Dec. 1	Jan. 31			Antlerless elk
	2	Nov. 1	Nov. 30	50	Limited quota	Any elk
	2	Dec. 1	Jan. 31			Antlerless elk
	4	Sep. 1	Sep. 30	300	Limited quota	Antlerless elk valid on the Hanna Draw Hunter Management Area (HMA permission slip required)
	4	Oct. 1	Jan. 31			Antlerless elk valid in the entire area
	6	Aug. 15	Sep. 30	300	Limited quota	Cow or calf valid on private land
	6	Sep. 1	Sep. 30			Cow or calf valid on the Hanna Draw Hunter Management Area (HMA permission slip required)
	6	Oct. 1	Jan. 31			Cow or calf valid in the entire area
Archery	Sep. 1	Sep. 30			Refer to license type and limitations in Section 3 of Chapter 7	

Hunt Area	License Type	Quota change from 2016
16	6	+100
<b>Herd Unit Total</b>	<b>6</b>	<b>+100</b>

### **Management Evaluation**

**Current Mid-Winter Trend Count Management Objective: 800 (640-960)**

**Management Strategy: Special**

**2016 Trend Count: 2,301**

**Most Recent 3-year Running Average Trend Count: 1,353**

**2016 Hunter Satisfaction: 73% Satisfied, 20% Neutral, 17% Dissatisfied**

Elk in the Shirley Mountain herd unit are managed toward a mid-winter trend count of 800. The management strategy was changed in 2015 from recreational management to special management. The management objective was reviewed in 2015 and changed from a postseason population objective of 800 elk to a mid-winter trend count of 800 elk.

### **Herd Unit Issues**

Wind energy developments are a relatively new land use in this herd unit. There are currently 2 wind farms in this herd unit and there is interest in developing more wind farms. Our ability to manage elk numbers through harvest is difficult because a large portion of the elk habitat in this herd unit is owned by one landowner who provides a very limited amount of access. Elk damage in this herd unit is minimal. Interchange of elk with adjacent herd units may compromise the closed population assumption for this herd unit. Annual population monitoring efforts and results have been highly variable.

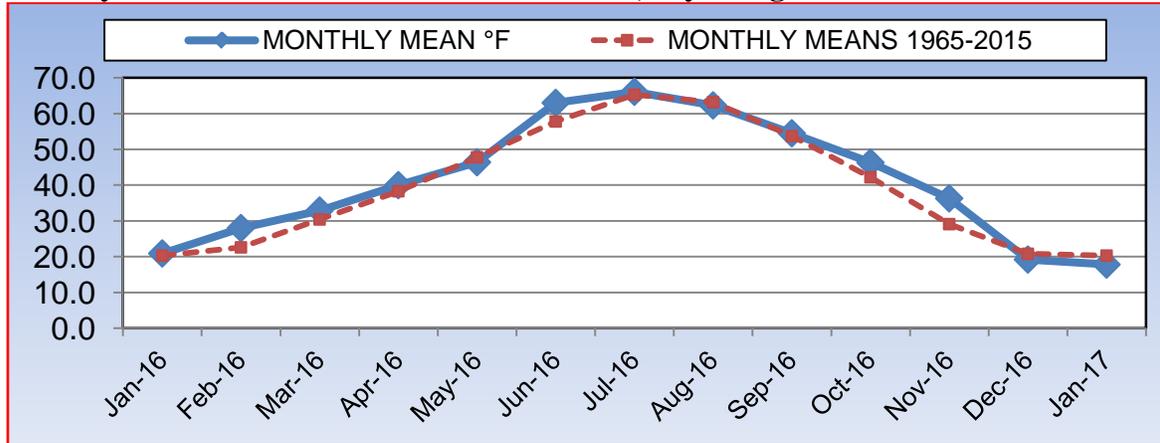
### **Weather**

Temperature and precipitation data was obtained for the National Oceanic and Atmospheric Administration's (NOAA) climatic Division 10 (Upper Platte), <https://www.ncdc.noaa.gov/cag/> to illustrate weather conditions thus far, during bio-year 2016 (Figures 1 and 2). These figures also include data from January - May of bio-year 2015 to describe the weather conditions immediately preceding bio-year 2016. Monthly mean temperatures in bio-year 2016 were slightly warmer than the 50-year monthly means during some months but otherwise similar to the 50-year monthly means. Precipitation in April of 2016, primarily received in the form of very moist snow was 174% of the 50-year monthly mean. Following the wetter than average spring of bio-year of 2015, the summer of bio-year 2016 was drier than average. Otherwise, relatively favorable weather conditions were experienced in Division 10 throughout the remainder of bio-year 2016.

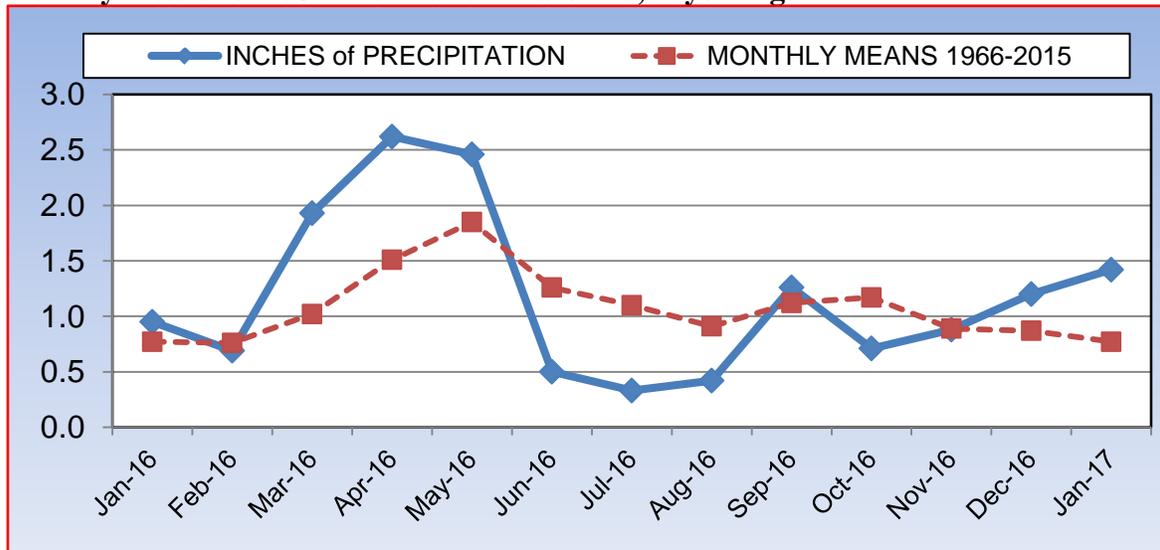
### **Habitat**

Positive trends in habitat conditions were observed in bio-year 2016 due to adequate amounts of late spring precipitation being received in this herd unit. The limited number of habitat transects that have been established within this herd unit do not provide sufficient data to make reliable inferences about habitat quantity or quality. Most shrub-steppe habitat in this herd unit is decadent and in need of treatments designed to improve the nutritional value.

**Figure 1. January 2016 - January 2017 mean monthly temperatures and 50-year monthly means for NOAA climatic Division 10, Wyoming.**



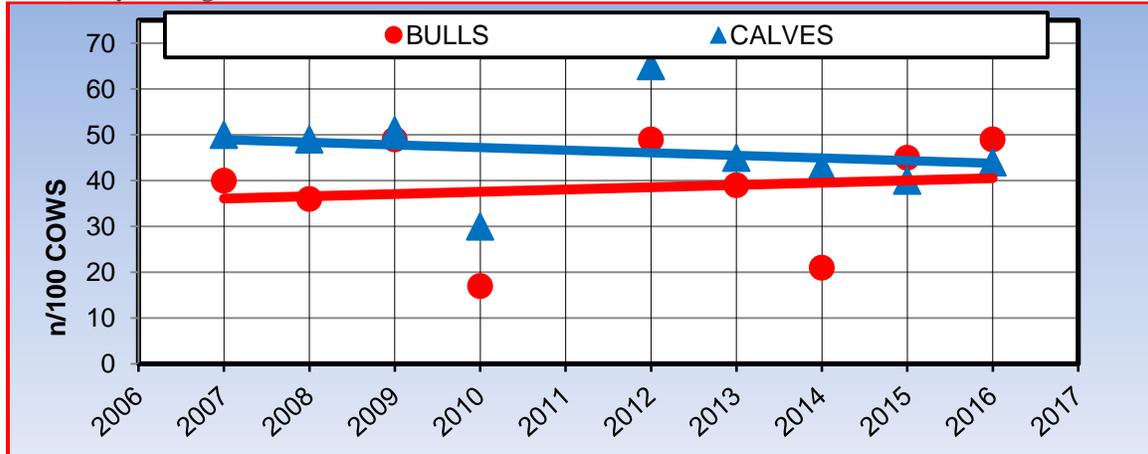
**Figure 2. January 2016 - January 2017 mean monthly precipitation and 50-year monthly means for NOAA climatic Division 10, Wyoming.**



**Field Data**

Postseason sex and age classifications were conducted in conjunction with a mid-winter trend survey in January of 2017. The results were a total of 49 bull and 44 calves per 100 cows, from a sample of 2,301 elk. Figure 3 illustrates how the 2016 postseason ratios compared to previous classification results during the past 10-years.

**Figure 3. Shirley Mountain elk herd unit bull and calf ratios per 100 cows, 2007-2016, Wyoming.**



In previous years, the collection of classification data varied annually in methodology, primarily due to no dedicated survey flight budget for this herd. With the change in management objective type from a postseason population objective, to a mid-winter trend count objective, a dedicated budget for annual helicopter surveys has been established. This should result in more consistent sampling for trend, sex, and age data collection.

### **Harvest Data**

Preliminary elk harvest survey data indicated 623 active licensed hunters' harvested 293 elk in 2016, with an overall success rate of 47%. The 2016 harvest success decreased 9% from 2015 when the same number of licenses were issued. The 2016 branch bull harvest (n=137) was a 7% increase from 2015. Antlerless harvest (n=217) decreased 29% in 2016. Overall, harvest in 2016 was relatively less successful with less elk being harvested and more days being expended for each elk harvested.

### **Population**

In 2015, we reviewed the management objective and converted from a population management objective of 800 elk postseason, to a mid-winter trend count objective of 800 elk postseason. The spreadsheet model which was previously used to develop the annual population estimate for elk in this herd unit did not function adequately enough to provide managers with a reliable estimate. This was the primary reason for changing from a population based management objective to a mid-winter trend count objective. Maintaining sustainable numbers of elk in the Shirley Mountain herd unit, while also maintaining bulls ratios within the special management parameters, is the ultimate management objective. Improving our monitoring techniques is keystone to insuring we are meeting these management objectives. Replacing the spreadsheet model derived population estimate with the mid-winter trend count as our management benchmark will provide for a more accurate assessment of annual elk numbers in the is herd unit.

A mid-winter trend count survey was completed in January of 2017 (Figure 4). A total of 2,301 elk were observed in the herd unit. This sample size was relatively similar to the sample (n=1,759) observed last year. Both of these latest surveys' sample sizes are substantially greater when compared to previous helicopter surveys, covering relatively the same area in the herd unit. In 2010 we observed 691 elk and in 2013 we observed 672 elk during helicopter classification surveys. It would appear we have significantly under estimated the number of elk wintering in this herd unit.

### **Management Summary**

The 2017 hunting season recommendations were prescribed with the continued objectives of maintaining bull ratios within the special management parameters and reducing elk numbers toward the trend count objective of 800 elk. Access in the Beer Mug HMA was similar to the 2016 season. Access in the Hanna Draw HMA increased with a September period for Type 4 and Type 6 licensed hunters. We retained the same number of Type 1, 2, and 4 licenses for the 2017 hunting season but increased the number of type 6 licenses in an attempt to improve the overall antlerless elk harvest rate.

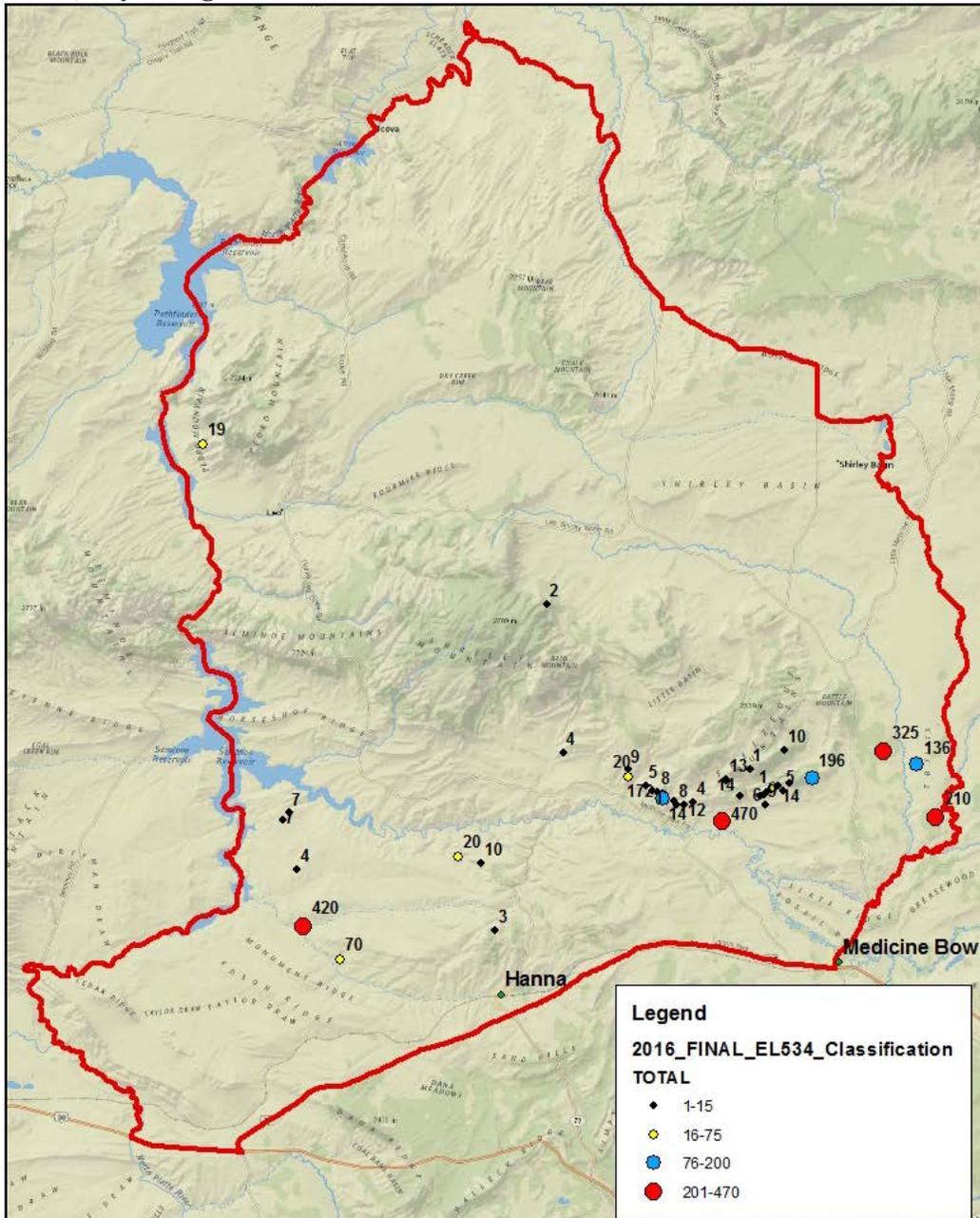
### **Literature Cited**

None

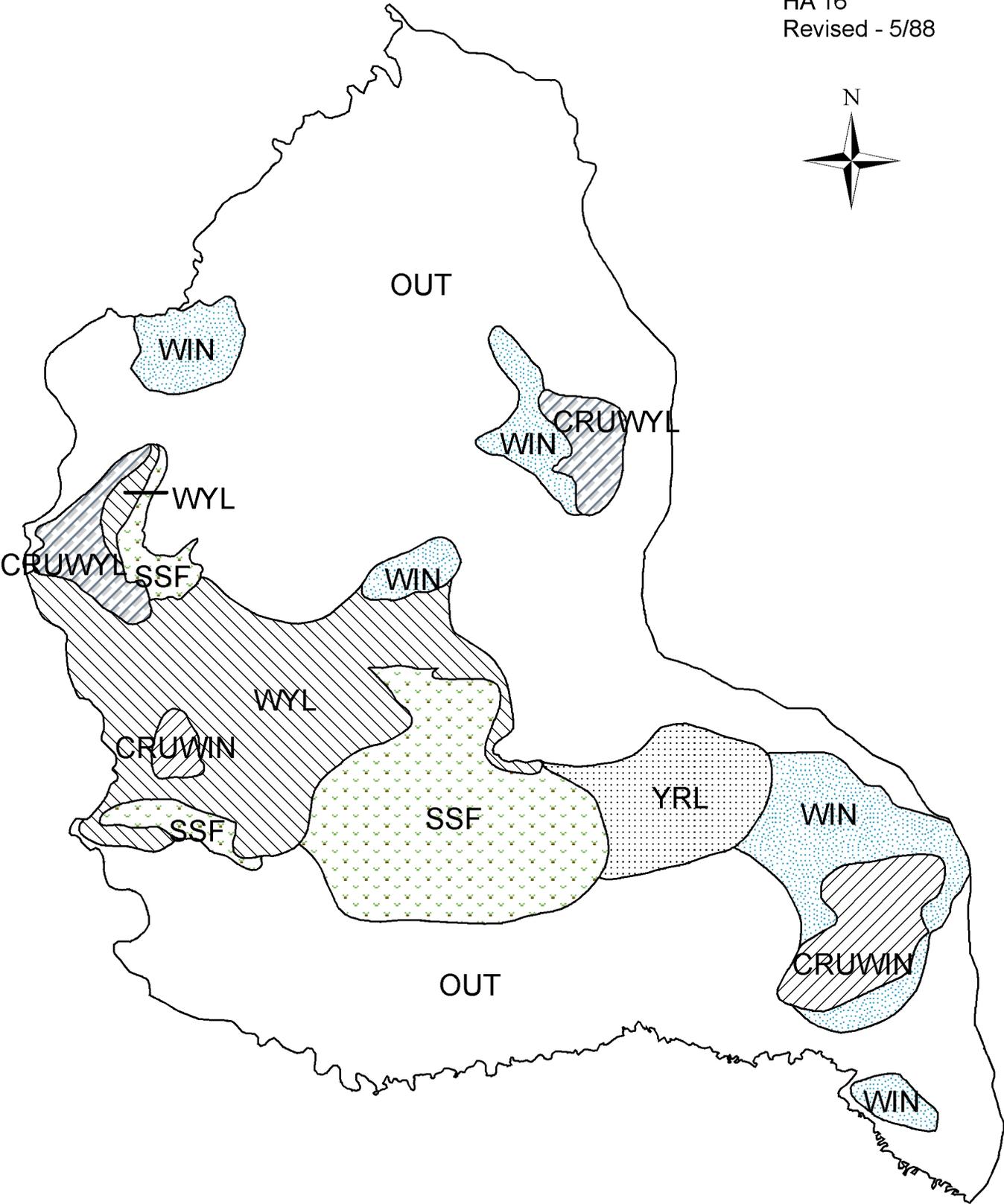
### **Bibliography of Herd Specific Studies**

None

**Figure 4. 2016 Mid-winter trend count observations in the Shirley Mountain elk herd unit, Wyoming.**



E534 - Shirley Mtn.  
HA 16  
Revised - 5/88





## 2016 - JCR Evaluation Form

SPECIES: Elk

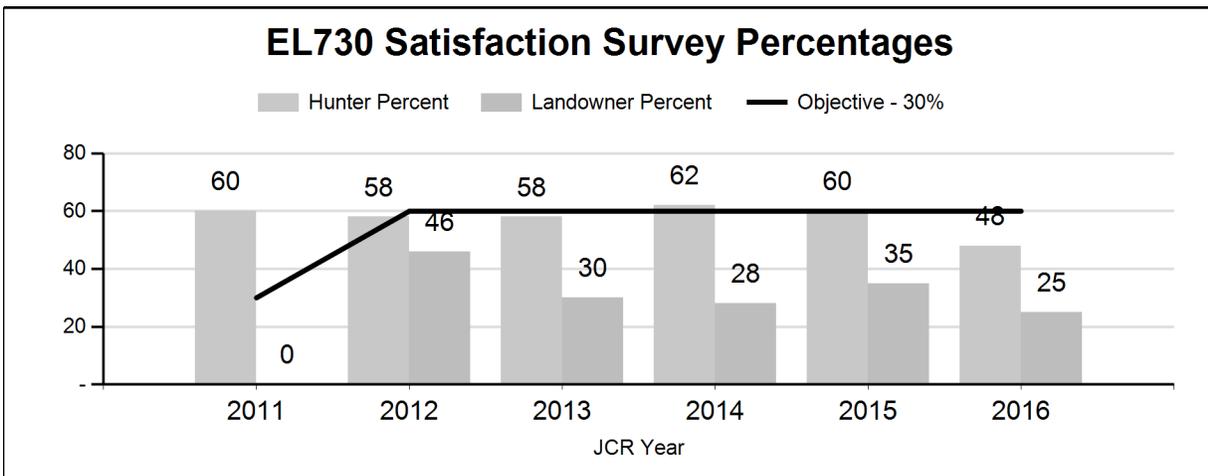
PERIOD: 6/1/2016 - 5/31/2017

HERD: EL730 - RAWHIDE

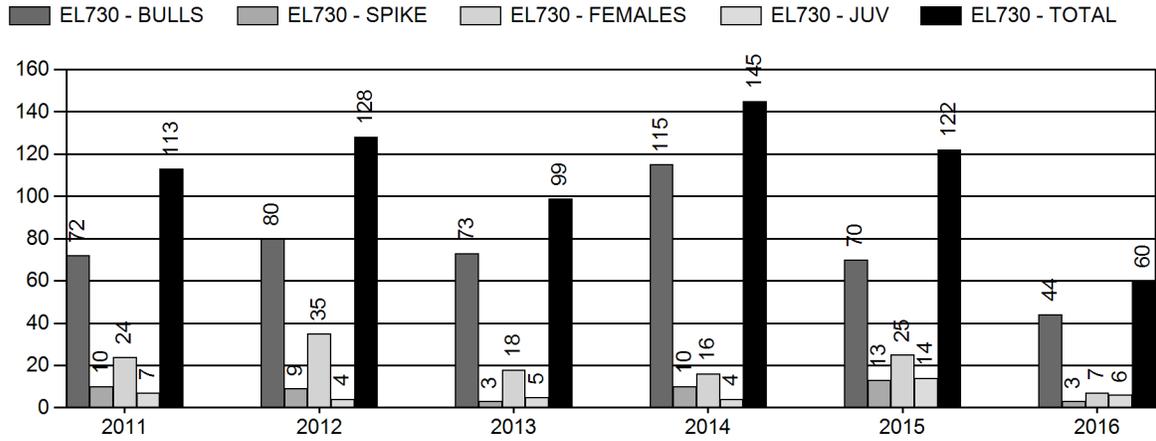
HUNT AREAS: 3

PREPARED BY: MARTIN HICKS

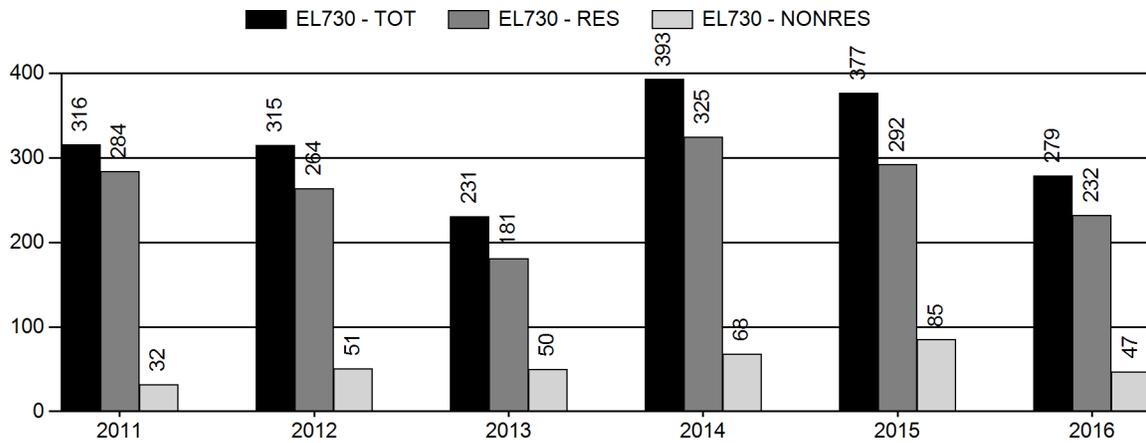
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Hunter Satisfaction Percent	59%	48%	60%
Landowner Satisfaction Percent	37%	25%	30%
Harvest:	121	60	75
Hunters:	326	279	295
Hunter Success:	37%	22%	25%
Active Licenses:	345	292	305
Active License Success:	35%	21%	25%
Recreation Days:	2,430	1,892	1,900
Days Per Animal:	20.1	31.5	25.3
Males per 100 Females:	52	0	
Juveniles per 100 Females	61	0	
Satisfaction Based Objective			60%
Management Strategy:			Special
Percent population is above (+) or (-) objective:			-24%
Number of years population has been + or - objective in recent trend:			5



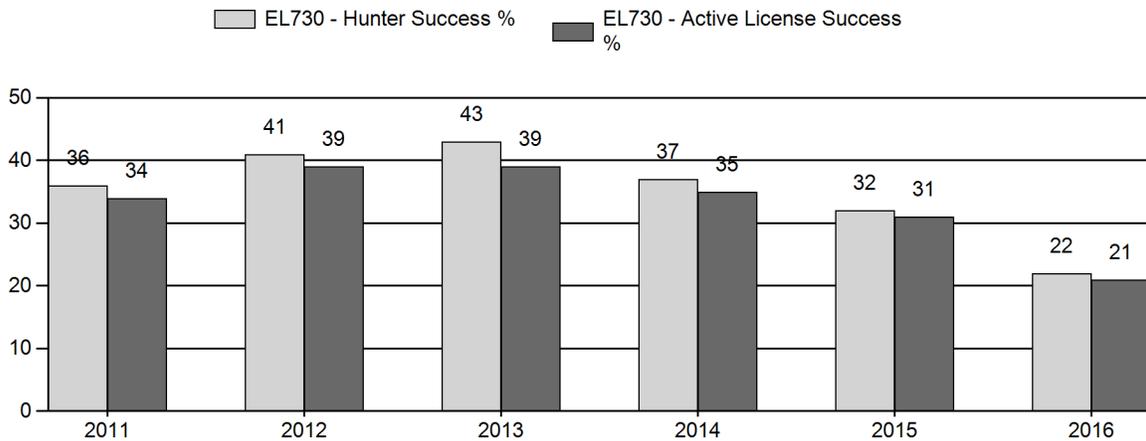
# Harvest



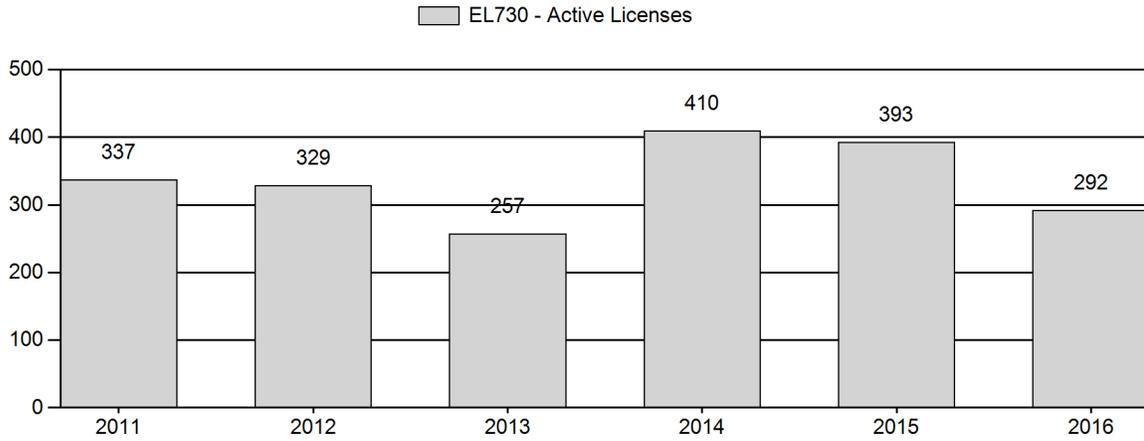
# Number of Hunters



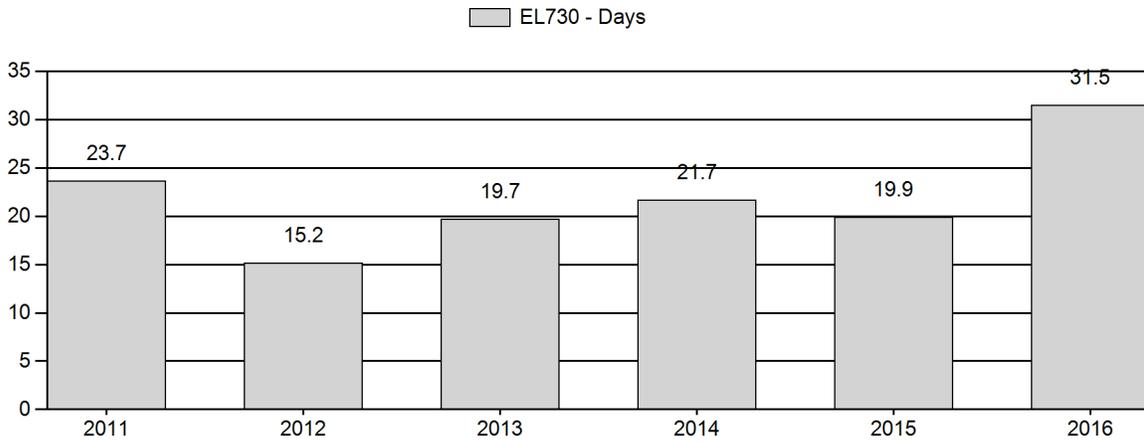
# Harvest Success



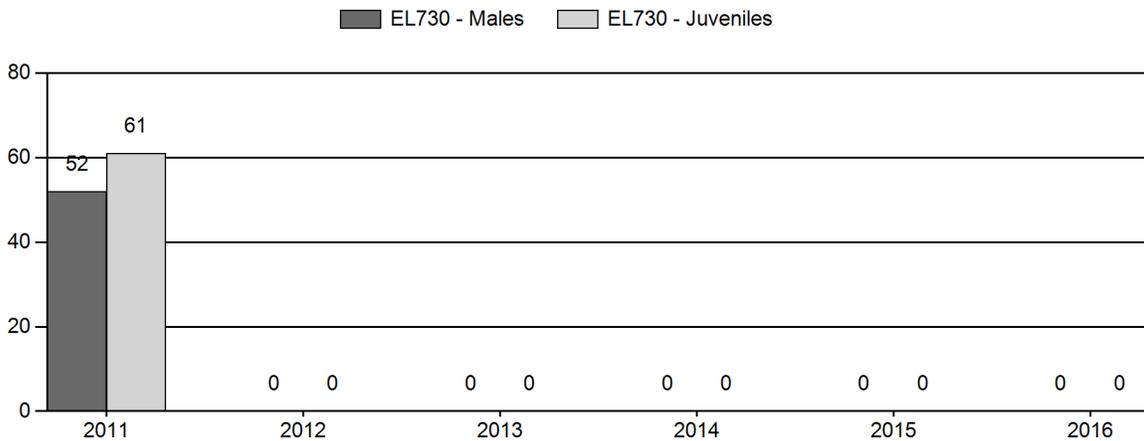
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



**RAWHIDE ELK HERD (730)  
2017 HUNTING SEASONS**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
3	Gen	Sept. 15	Oct. 14		General	Any elk
		Oct. 15	Jan. 31			Any elk south of U.S. Highway 26
3	6	Aug. 15	Nov. 30	200	Limited quota	Cow or calf
3	6	Dec. 1	Jan. 31			Cow or calf elk south of U.S. Highway 26

Special Archery Season Hunt Areas	Opening Date	Closing Date	Limitations
3	Sept. 1	Sept. 14	Refer to Section 2 of this Chapter

Hunt Area	Type	Quota change from 2016
3	6	0

**Management Evaluation**

**Current Hunter/Landowner Satisfaction Management Objective:** 60% landowner/hunter satisfaction: bull quality; Target goal:  $\geq$  61% branch antlered bulls in harvest survey

**Management Strategy:** Special

**2016 Hunter Satisfaction Estimate:** 47%

**2016 Landowner Satisfaction Estimate:** 25%

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

**Most Recent 3-year Running Average Landowner Satisfaction Estimate:** 29%

**2016 Bull Quality:** 93% branch antlered bulls in harvest survey

**Most Recent 3-year Running Average Bull Quality:** 90% branch antlered bulls in harvest survey

**Management Issues**

The management objective for this herd was changed in 2012 from a post-season population objective of 40 elk to a nonnumeric population objective based on landowner and hunter satisfaction and the percentage of branch antlered bulls in the harvest. The management strategy was changed from recreational to special. We will follow trends over time to make management decisions based on constituent satisfaction and bull harvest parameters. There is not a working model for this herd unit due to our inability to collect adequate population data. The herd objective will be reviewed during the 2017 season setting process.

This herd unit has been difficult to manage based on our inability to collect adequate herd composition data along with field harvest data. Based on field personnel and landowner

observations we estimate there are over 400 elk in the Rawhide Elk Herd, with the population expanding south of the North Platte River into Goshen, Platte and Laramie Counties. There have been several public meetings to address the increasing population, and as a result the herd boundary was expanded south to the Colorado border for the 2012 season. Additionally the portion of Area 3 north of U.S. Highway 26 was changed to a general season for the 2014 season (the southern portion was changed to a general in 2011).

During the 2017/18 winter 20 elk within or adjacent to the Wyoming Guard Camp will be captured and fitted with GPS radio collars that will be deployed for three years to look at habitat selection. The goal is to further identify seasonal ranges, document calving areas and map movement patterns. This is a cooperative research project with the National Guard Camp.

### **Weather**

Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were above average at all elevations throughout southeast Wyoming during spring months then became dry and hot from July through November. Timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Generally speaking weather patterns most likely had a positive influence on all big game species. For specific meteorological information for the Rawhide herd unit the reader is referred to the following link: <http://www.ncdc.noaa.gov/cag/>

### **Habitat**

Forage availability continued to improve in 2016 with an increase in amounts of precipitation received and the timeliness of when it was received. Precipitation received in April, May, and early June resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs. Cheatgrass continues to be a major threat to native rangelands and big game ranges, particularly at all elevations below 6,500'. Its presence ties the hands of habitat managers limiting habitat enhancement options, and may result in reduced carrying capacities of rangelands if it is the predominant species. This herd unit is comprised of a mix of native rangelands, CRP, dryland and irrigated croplands.

Areas burned by wildfires within the last 10 years have responded mostly favorably due to reduction in conifers and enhancement of herbaceous plant communities. Cheatgrass continues to be a major threat to native rangelands and big game ranges in this herd unit. Some portions of burned areas are predominantly cheatgrass, and will likely remain in that state unless treated with herbicides.

### **Field/Harvest Data**

Harvest success and effort has fluctuated around 35% and 21 days per harvest for the past five years. Harvest is driven by access and if hunters are limited to public land, success decreases and effort increases. Finding elk in this herd unit can be difficult due to landownership patterns. Access is restricted to the Broom Creek HMA north of US Hwy 26 and is dependent on crop damage south of US Hwy 26. A majority of landowners do not want elk south of the highway and are willing to allow access. In 2011 elk were plentiful and hunters were successful. In 2012 the severe drought displaced elk and they were not found in traditional places (i.e. alfalfa fields).

In 2014, 2015 and 2016 above average spring and summer precipitation re-distributed elk which increased forage production and as a result elk were not dependent upon irrigated crops. Elk that were traditionally found within Whalen Canyon appear to have re-distributed to other areas of the herd unit. The percent of branched antlered bulls in the harvest survey was 93%, an increase from 2015. Hunters and landowners have made the observations that there are fewer trophy quality bulls within the Rawhide Hills, Haystack Range, and Wildcat Hills. Our ability to manage this segment of the population is limited due to access and adult bulls within the harvest will likely remain high. The high percentage of branch antlered elk is indicative of the quality of bulls and the amount of private land that provides sanctuaries to allow bulls to reach maturity.

Active license numbers have fluctuated around 400 for the past five years. Starting in 2011 that portion of Hunt Area 3 south of U.S. Highway 26 became a general season. After several public meetings over the past three years coupled with a landowner survey it was decided to convert that portion of Area 3 north of US Hwy 26 from a limited quota area to a general hunt area. However, in 2015 and 2016 landowners north of U.S. Hwy 26 voiced their concern that elk were no longer in their traditional areas and therefore damage issues have decreased.

Since this herd unit changed to a satisfaction management evaluation and the percent of branch antlered bulls in the harvest we no longer collect classification data.

#### **Landowner/Hunter Satisfaction Survey Results**

The landowner satisfaction survey results (Appendix A) showed that 25% of the landowners were satisfied elk were at or about at desired levels, 12% indicated elk were above desired levels and 63% indicated the elk population was below desired levels. There were 25 surveys returned for a 39% return rate, slightly higher than 2016, which had a return rate of 35%. A follow up reminder letter was mailed a week prior to the due date, which helped to increase the sample size. In 2018 an electronic survey will be sent out via email in hopes to further increase the sample size. The return rate exceeded the 25% threshold required for the satisfaction survey. Based on the past three years of surveys landowners are still not pleased with the number of elk. Based on input from the field, meeting and survey comments, the majority of landowners south of US Hwy 26 want to reduce elk and the majority north of the highway wants to see more elk and manage for trophy bulls. Bringing their satisfaction up to 60% continues to be a challenge. The hunter satisfaction survey indicated that 47% were satisfied with their hunt which was a decrease from 2015. This is not a surprise given the lack of access and conversations with hunters in the field that are frustrated with the lack of access and elk.

#### **Management Summary**

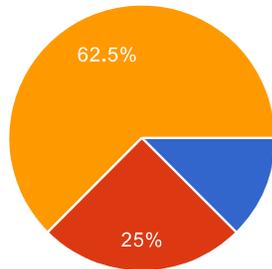
In summary, the 2017 season is designed to reduce elk numbers particularly in the southern portion of the herd unit. We hope to attain a harvest of 75 elk.

# 25 responses

[View all responses](#) [Publish analytics](#)

## Summary

Please indicate your satisfaction level with the current elk population.



Above Desired Levels	<b>3</b>	12.5%
At or About at Desired Levels	<b>6</b>	25%
Below Desired Levels	<b>15</b>	62.5%

### Additional Comments:

Elk herd was on farming pivot. They ruined several drip hoses on irrigation equipment. Game & Fish was called, but didn't remove them. Overall, herd too large for area.

No elk have been seen. Did not hunt elk last year.

We were starting to get a couple little herds on the ranch-now, I haven't seen any the last 2 years.

Well, here at my place we haven't seen any elk around for 7 or 8 years. The neighbor, just 2 1/2 miles to the north of us which is Glen Southwire, he doesn't let any of the neighbors hunt. Not mentioning he trespassing on every gate and he can come onto you whenever he wants. He wants hunters that will pay him to let them hunt for 5 or 10 thousand dollars or maybe even more. Not much of a neighbor.

We do not have any elk and this is alright.

What Fucking elk!! You wanted them gone and you got your wish! Thanks Dave Stenson 534-5731

Lee Lamb Landowner

The general draw would have been nice, if non-residents could have gotten it. All I've gotten is a bunch of resident TRESPASSERS who leave gates open (sneaking in) and littering beer cans. I had 2 bulls shot off of me illegal. Not good management or profit for me. Very disappointing. As

you know, our place , is in the Rawhide Buttes and is elk capitol of this area. I'm sure you'll keep it the same. Glenn Southwick.

Working for me like it is

I don't think there is more than 40 head in the whole north part of Area 3. I am real unhappy the way you manuvered us into a general area. Then switched so that our out of state hunters have to draw just as before. You've proven once again that any trust placed in the department is unwarranted. Lee Denny

Martin, I haven't been hunting in a number of years but I do like seeing them around but they have been scarce in recent years. Also I let a volunteer fireman in every year and I'd like to see them get something. Thanks for asking H Stroh

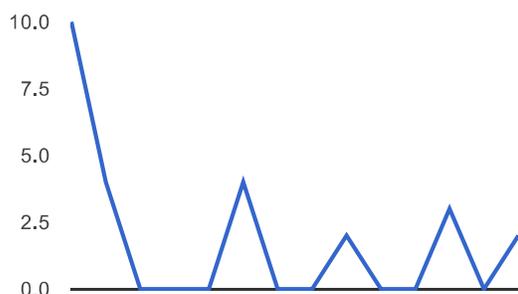
Not seeing any above Hartville

Generally it is fairly easy to find elk in area 3. However, the past 2 years finding a mature bill (or any bull) has been difficult.

We prefer to see and hunt local elk-but realize too many will cause fence problems.

would rather not have ANY elk here. Have enough trouble in Area 7. Amy

### Number of daily responses



E730 Rawhide Elk Herd Unit Seasonal Range Map

