

2018 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2018 - 5/31/2019

HERD: EL211 - MEDICINE LODGE

HUNT AREAS: 41, 45

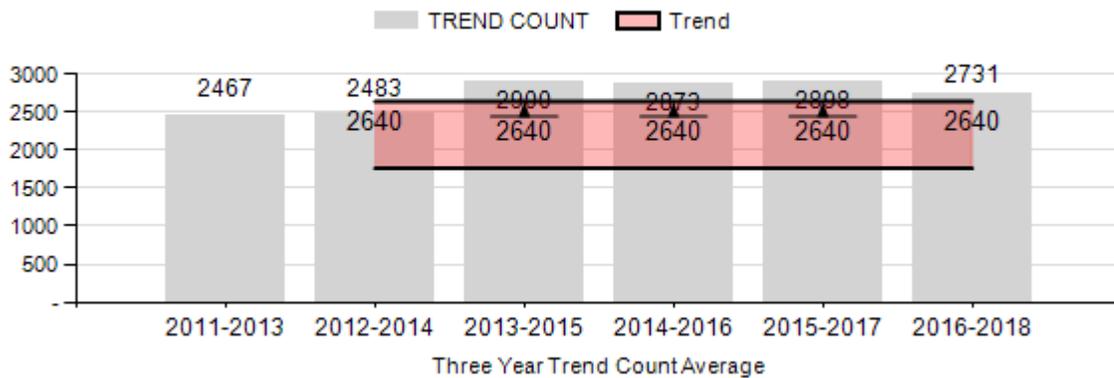
PREPARED BY: SAM STEPHENS

	<u>2013 - 2017 Average</u>	<u>2018</u>	<u>2019 Proposed</u>
Trend Count:	2,783	2,977	2,800
Harvest:	765	927	1,100
Hunters:	1,890	0	2,200
Hunter Success:	40%	0%	50 %
Active Licenses:	1,938	2,061	2,300
Active License Success	39%	45%	48 %
Recreation Days:	14,013	14,112	14,100
Days Per Animal:	18.3	15.2	14.1
Males per 100 Females:	27	32	
Juveniles per 100 Females	46	52	
Trend Based Objective (± 20%)			2,200 (1760 - 2640)
Management Strategy:			Recreational
Percent population is above (+) or (-) objective:			35%
Number of years population has been + or - objective in recent trend:			8

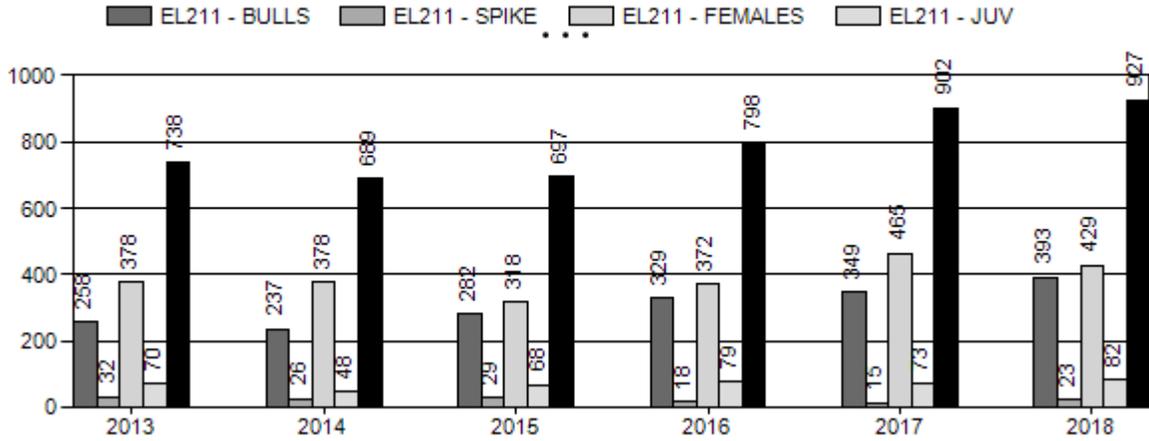
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	20%	25%
Males ≥ 1 year old:	30%	30%
Juveniles (< 1 year old):	8%	10%
Total:	20%	10%
Proposed change in post-season population:	20%	25%

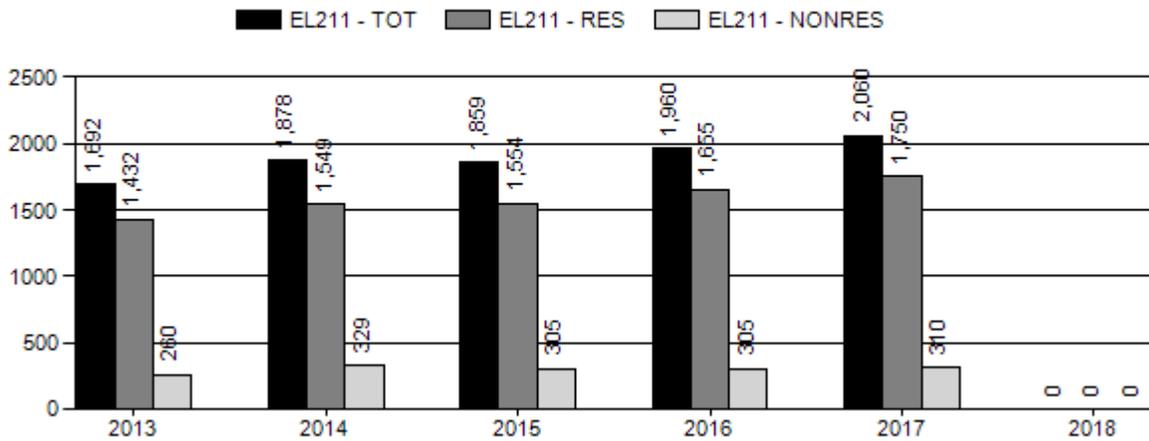
EL211 Trend Count



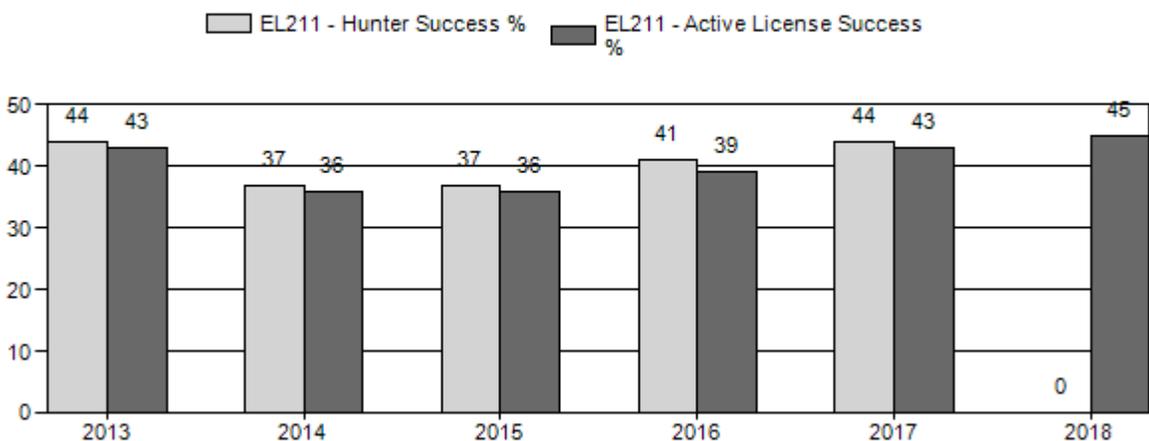
Harvest



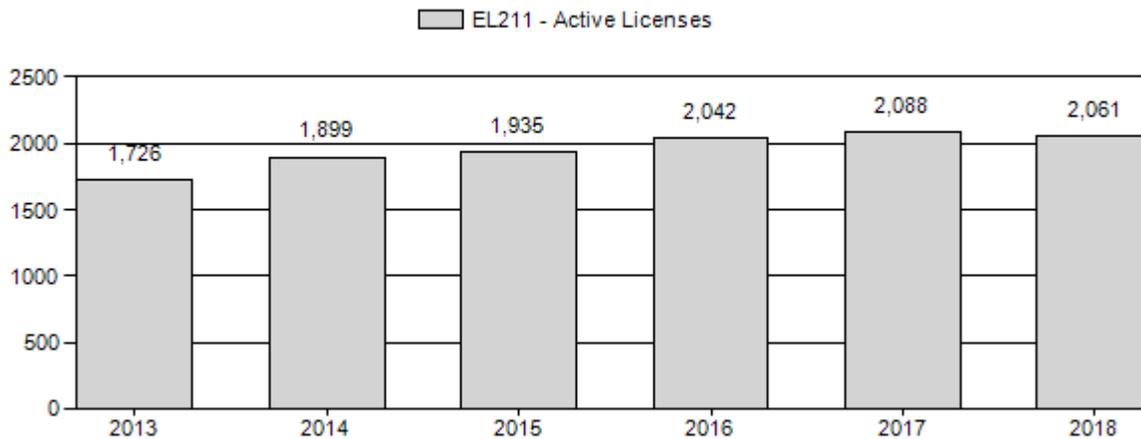
Number of Hunters



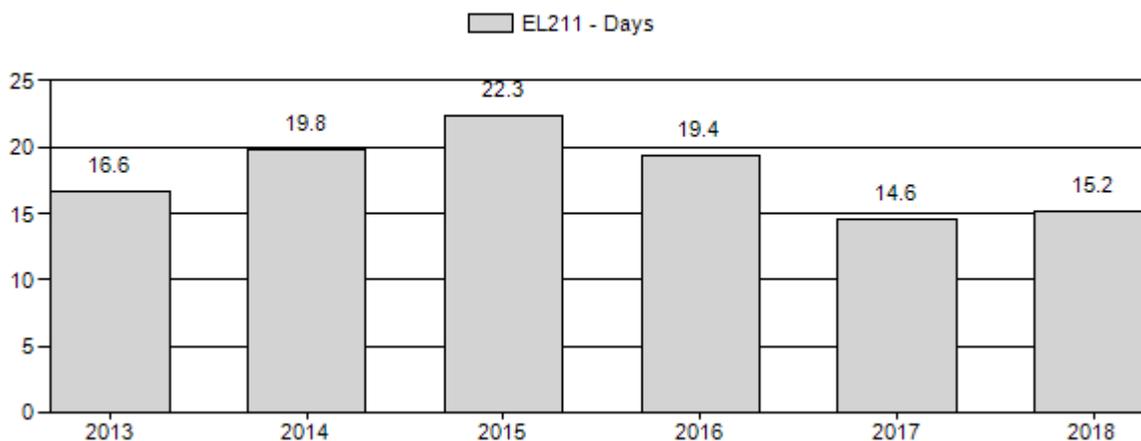
Harvest Success



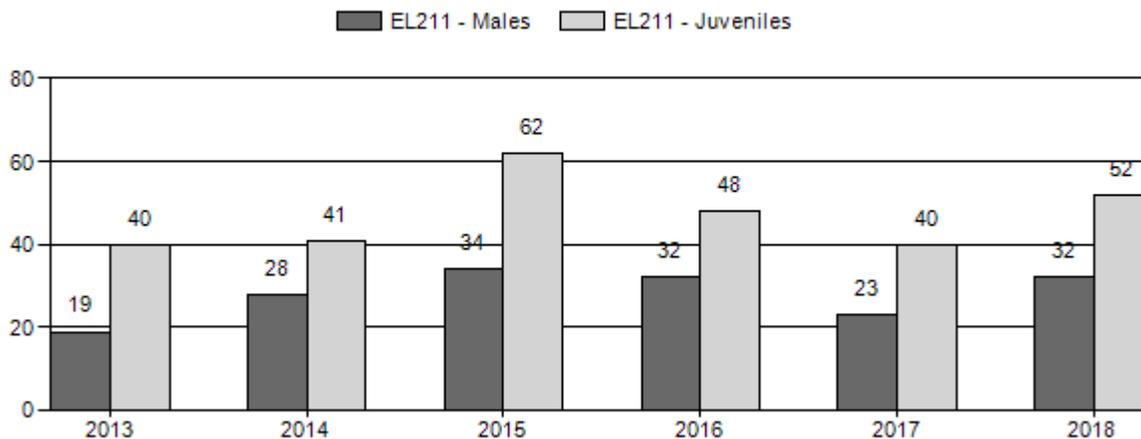
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2013 - 2018 Postseason Classification Summary

for Elk Herd EL211 - MEDICINE LODGE

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
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	657	13	20	32	±0	48	±0	36
2017	0	154	227	381	14%	1,673	61%	667	25%	2,721	518	9	14	23	±0	40	±0	32
2018	0	146	372	518	17%	1,617	54%	842	28%	2,977	0	9	23	32	±0	52	±0	39

**2019 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	Nov. 15	Dec. 21	300	Limited quota	Cow or calf
41	9	Sep. 1	Sep. 30	125	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	175	Limited quota	Cow or calf valid off national forest
45	9	Sep. 1	Sep. 30	150	Limited quota	Any elk, archery only

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
41, 45	1, 4, 5	Sep.15	Sep. 30	Valid in the entire area(s)

Hunt Area	License Type	Quota change from 2018
41	6	+50
Herd Unit Total	6	+50

Management Evaluation

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

Management Strategy: Recreational

2018 Trend Count: ~3,000

Most Recent 3-year Running Average Trend Count: ~2,700

2018 Hunter Satisfaction: 71% Satisfied, 16% Neutral, 14% Dissatisfied

Herd Unit Issues

The Medicine Lodge elk herd unit was formed by combining two pre-existing herds, Trapper-Medicine Lodge and Paintrock-Ten Sleep, after a marking study in the early 1980's identified an interchange of elk. We continue to manage the herd unit with hunting licenses valid for either the northern Hunt Area 41 or the southern Hunt Area 45. The trend-count objective of 2,200 elk based on a 3-year running average was established in 2016. Previously, the post-season population objective was 3,000 elk based on a model. Human activities in this herd unit are rarely severe enough to affect elk survival and productivity. Farms near elk habitat draw foraging elk in on irrigated crops and pastures. Antlerless elk hunting seasons are often driven by landowner complaints though growing concern regarding competition with mule deer and habitat degradation warrants some concern. Limited access to large groups of elk on private land allows this population to increase. We are studying and collaring elk in the Bighorn Mountains after elk

blood samples tested seropositive for brucellosis in 2012. Zero samples tested seropositive in 2018. Educating hunters and field personnel collecting brucellosis samples results in more testable samples every year.

Weather

Temperature and precipitation data referenced in this section were summarized for the Bighorn Basin (Climate Division #4) by the National Oceanic and Atmospheric Administration at <https://www.ncdc.noaa.gov/cag/divisional/time-series>. Thirty-year averages constitute that spring 2018 experienced warmer temperatures and above normal precipitation. Temperatures and precipitation for summer months were both above average. During the fall of 2018, precipitation was significantly below normal and temperatures above normal. Temperatures were above normal for December and January, turning colder than average in February. Precipitation was near normal for December and January. The Medicine Lodge Elk Herd Unit experienced a milder than normal winter of 2018-19 although survival likely remained static since winter conditions are rarely severe enough to impact population growth in this herd unit.

Habitat

The herd unit contains approximately 1,500 mi² of which about half is occupied by elk. High-elevation summer ranges managed by the Bighorn National Forest are mainly sagebrush-grassland and alpine meadows interspersed with aspen, lodgepole pine, and spruce/fir timber stands. Steep foothills and drainages that serve as winter and spring ranges are covered with juniper, sagebrush, and grasslands. Winter ranges are mainly managed by the Bureau of Land Management (BLM), interspersed with private land. Two WGFD Wildlife Habitat Management Areas (Medicine Lodge and Renner) are located within this herd unit. Concern, regarding over-grazing of the Medicine Lodge WHMA by wintering elk has been expressed by WGFD and BLM officials. Long-term over-grazing of this WHMA and adjacent rangelands would likely reduce the productivity and viability of these winter ranges. Additionally, impacts to curl-leaf mahogany stands have been documented within hunt area 41 by elk in severe winters. As these mixed mountain shrub resources also serve as important forage for wintering mule deer, inter-specific competition should be considered as we see the Medicine Lodge elk population increase while the germane mule deer population (Paintrock Mule Deer Herd) declines. While carrying capacity of this herd unit is relative, dynamic, and often subjective, habitat condition and herd dynamics indicate an elk population which is ostensibly unsustainable.

Field Data

We conducted a 5-hour helicopter survey in January to collect elk classification data. Bull ratios are often times reported at lower than actual levels due to their proclivity for higher elevations, where it's more difficult and time-intensive to survey from the air. In 2018 we saw a sharp increase in our bull ratio, which can be attributed to more amenable flight conditions. The 2018 bull ratio is 32 bulls:100 cows which is higher than the 5-year-average (27:100). However, annual bull ratios are not used to adjust hunting licenses; rather short-term 5-year-averages better represent trends in bull numbers. The 2018 calf ratio is 52 calves:100 cows which is higher than the 5-year-average (46:100). High calf ratios in Hunt Area 41 suggest this population increases quickly if production outpaces harvest. Additionally it could be that liberal cow harvest could attribute to a post-season calf ratio, higher than what you would see prior to hunting season. In 2018, we classified a total of 2,977 elk which puts our three year running average at 2,731.

Historical management of hunting seasons, in addition to large-scale habitat shifts, helped increase bull ratios. Hunt Area 41 and 45 changed from general license hunting to limited quota in 1979 and 1983, respectively. From 1975 to 1984, bull ratios averaged 9:100. Under limited quota hunting, bull ratios increased to an average of 13:100 between 1985 and 1997.

Harvest Data

About 46% of hunters were successful at harvesting an elk (n=927) in 2018, an increase compared to the 2013-17 average (41%; n=765). Hunters averaged 15.2 days per harvest in 2018 which is below the five year average (18.5 days). We advise caution in interpreting these metrics, as the antlerless quota can mask bull harvest rates when overall herd unit results are analyzed for success and effort. Areas 45 and 41 type 1 licenses saw significant increases in success of 59% (50% avg) and 52% (38% avg) success respectively. The number of antlerless/cow licenses issued has increased over the past 15 years in an attempt to curb population growth. Hunter effort and subsequent harvest is dependent upon weather and access to elk herds.

Population

The 2016 public herd unit review established a mid-winter trend count of 2,200 elk for the Medicine Lodge herd unit with sub-objectives of 1,300 elk for Hunt Area 41 and 900 elk for Hunt Area 45. Prior to 2016, field personnel had little confidence in the spreadsheet model which estimated more than 8,000 elk. The summarized 3-year-average trend count for the herd unit (n=2,731 elk) is above objective. Specifically, Hunt Area 41 is above objective (n=1,912) and Hunt Area 45 is at objective (n=819; Figure 1).

Management Summary

Recreational elk management in the Medicine Lodge Herd Unit consists of liberal quotas applied to both Type 1 and 9 (ANY ELK) and types 4, 5, and 6 (ANTLERLESS ELK). Trophy quality in the herd unit is well known and has resulted in a high demand for any elk licenses. Hunters who leave the road on foot or horseback have success in finding and often harvesting trophy bulls. Broken terrain and road-less/wilderness areas give sanctuary to bull elk during the any elk seasons and allow managers to allocate a high number of licenses without significantly impacting the bull quality and ratio. Conversely managing to reduce the population with increased female harvest has been a historic challenge. Increased harvest rates, decreased hunter effort, and a steady increase in the aerial trend count average indicate that the Medicine Lodge Elk Herd continues to reproduce at a rate difficult to keep up with. The current abundance paired with exceptionally high calf ratios justify liberalizing harvest in an attempt to reduce the population size. Multiple harvest strategies have been tried to increase the relatively low antlerless hunter success. Prior to 2017, multiple opening dates were utilized with little success. Since then, our harvest strategy has been to keep seasons open longer which has resulted in a steady increase to antlerless harvest. In 2019 we propose to allow 41 type 6 hunters to begin hunting on November 15th, which gives them an additional two weeks to fill the tag. Hunt area 41 winters the majority of the Medicine Lodge Elk Herd where landowner complaints and habitat degradation are a growing concern. Landowners in Hunt Area 41 who grant hunters access, would prefer to take hunters in the month of November. Moving the opening date of the 41 type 6 license is also an attempt to allow an additional 300 hunters to access these private lands. Currently the hunter success for the 41 type 6 license sits below 50% (2014-18 average

39%). Granting hunters an additional 15 days should increase the success rate and subsequent cow harvest.

2018 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2018 - 5/31/2019

HERD: EL214 - GOOSEBERRY

HUNT AREAS: 62-64

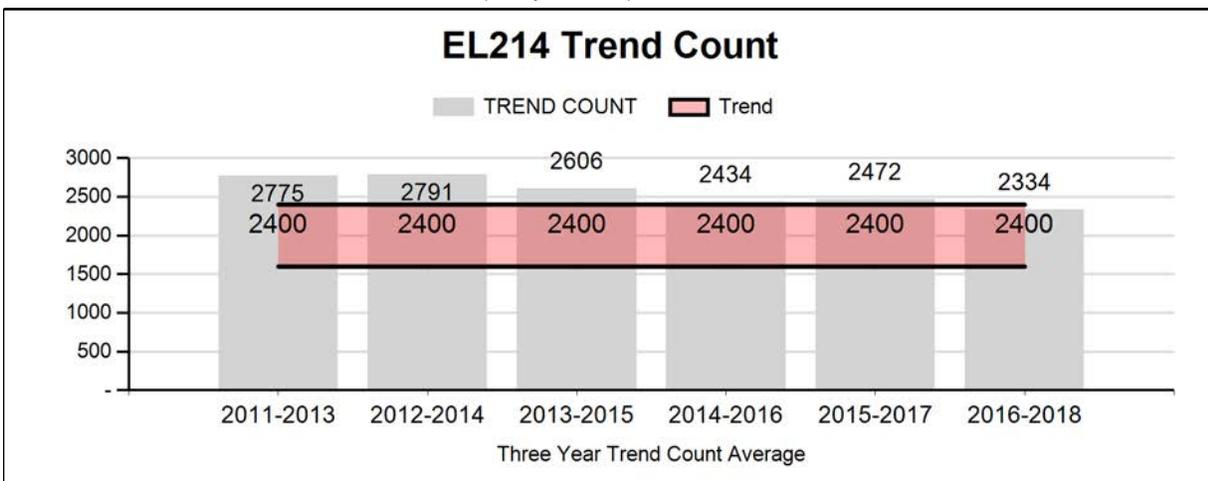
PREPARED BY: BART KROGER

	<u>2013 - 2017 Average</u>	<u>2018</u>	<u>2019 Proposed</u>
Trend Count:	2,529	2,176	2,200
Harvest:	799	632	650
Hunters:	1,450	1,178	1,150
Hunter Success:	55%	54%	57%
Active Licenses:	1,491	1,234	1,250
Active License Success	54%	51%	52%
Recreation Days:	9,143	7,375	7,250
Days Per Animal:	11.4	11.7	11.2
Males per 100 Females:	18	30	
Juveniles per 100 Females	23	18	

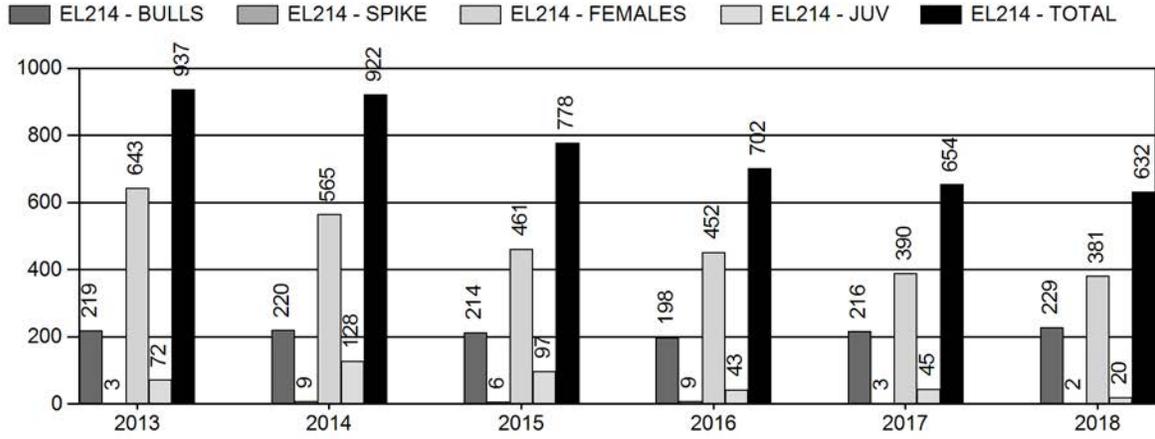
Trend Based Objective ($\pm 20\%$) 2,000 (1600 - 2400)
 Management Strategy: Special
 Percent population is above (+) or (-) objective: 9%
 Number of years population has been + or - objective in recent trend: 10

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

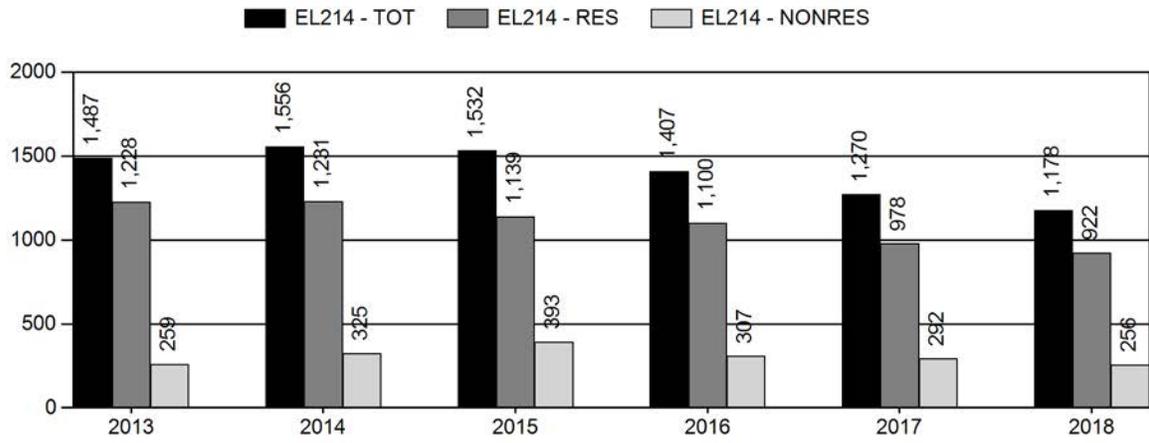
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	na%	na%
Males ≥ 1 year old:	na%	na%
Juveniles (< 1 year old):	na%	na%



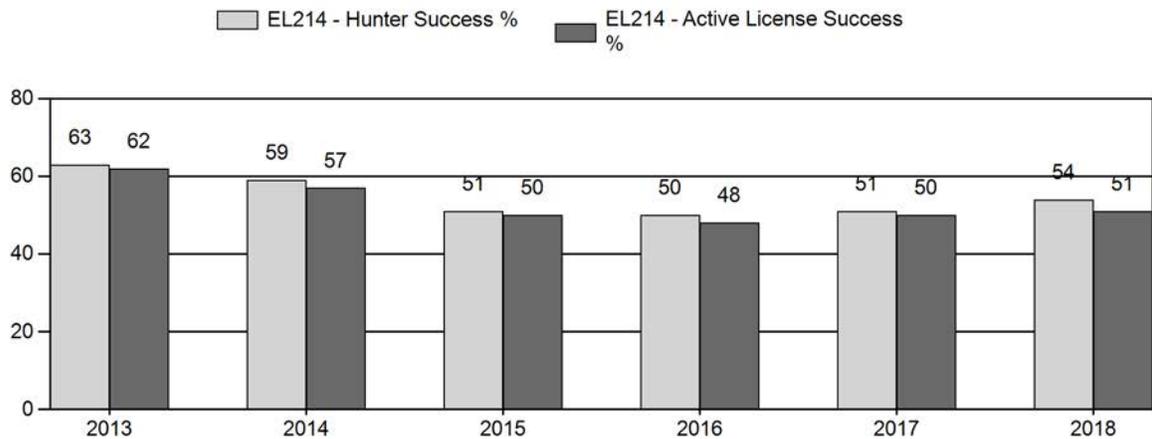
Harvest



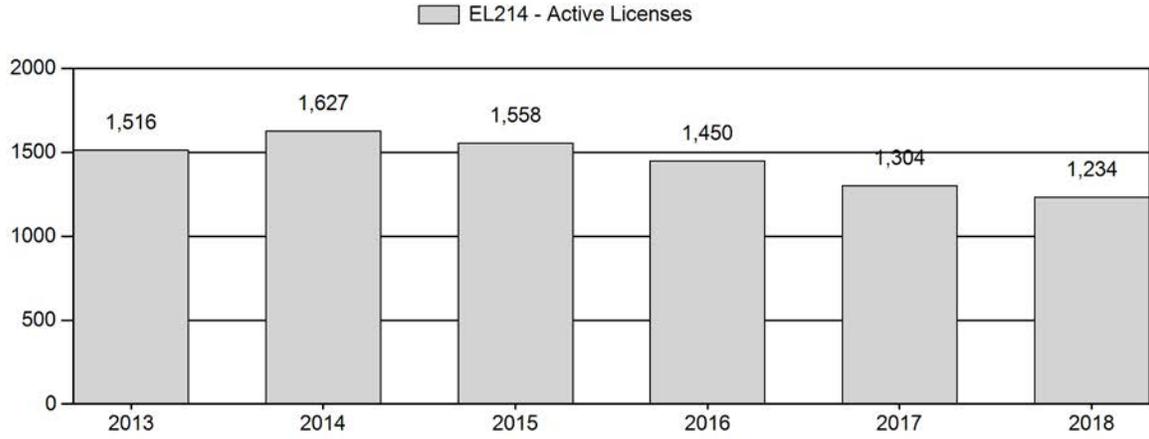
Number of Hunters



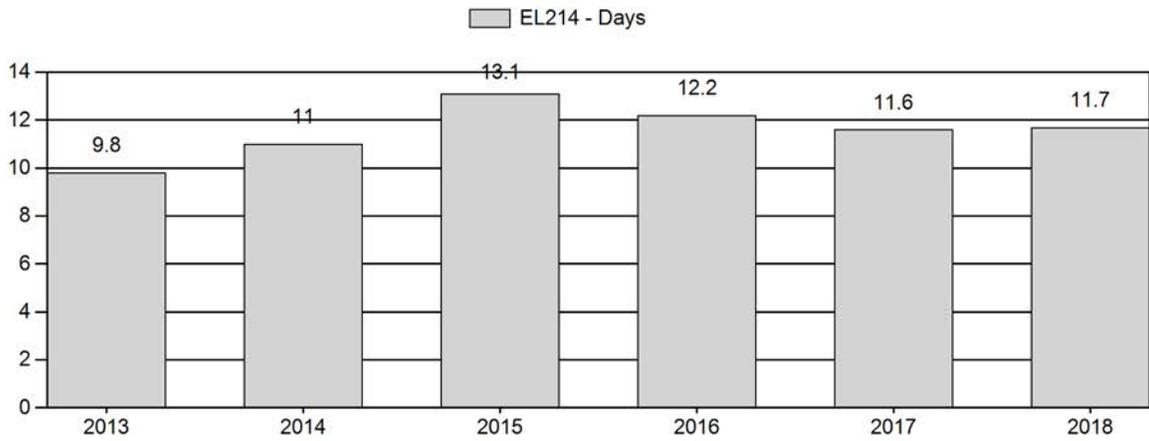
Harvest Success



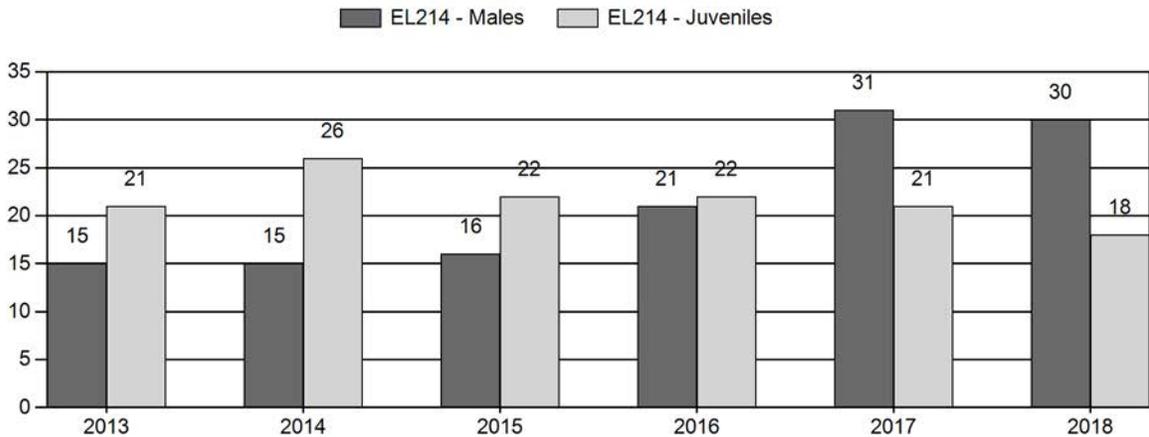
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2013 - 2018 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	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
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	0	75	220	295	20%	953	66%	199	14%	1,447	0	8	23	31	± 0	21	± 0	16
2018	0	93	298	391	20%	1,304	68%	231	12%	1,926	0	7	23	30	± 0	18	± 0	14

2013 - 2018 Trend Count Summary
for Elk Herd EL214 – GOOSEBERRY

Flight Time				
Year	Count Dates	Hours	Minutes	Number Counted
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
2017	JANUARY 2018	6	0	2,597
2018	JANUARY 2019	6	0	2,176

**2019 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	2	Oct. 1	Oct. 21	25	Limited quota	Any elk valid within the Washakie Wilderness, also valid in that portion of Area 64 within the Washakie Wilderness
63	4	Oct. 1	Dec. 21	200	Limited quota	Antlerless elk
63	6	Aug. 15	Oct. 31	100	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	75	Limited quota	Any elk, also valid in Area 63
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 2018
HU Total	1,2,4,5,6,7	No changes

Management Evaluation

Current Mid-Winter Trend Count Objective: 2,000

Management Strategy: Special

2018 Mid-Winter Count: 2,200

Most Recent 3-year Running Average Trend Count: 2,300

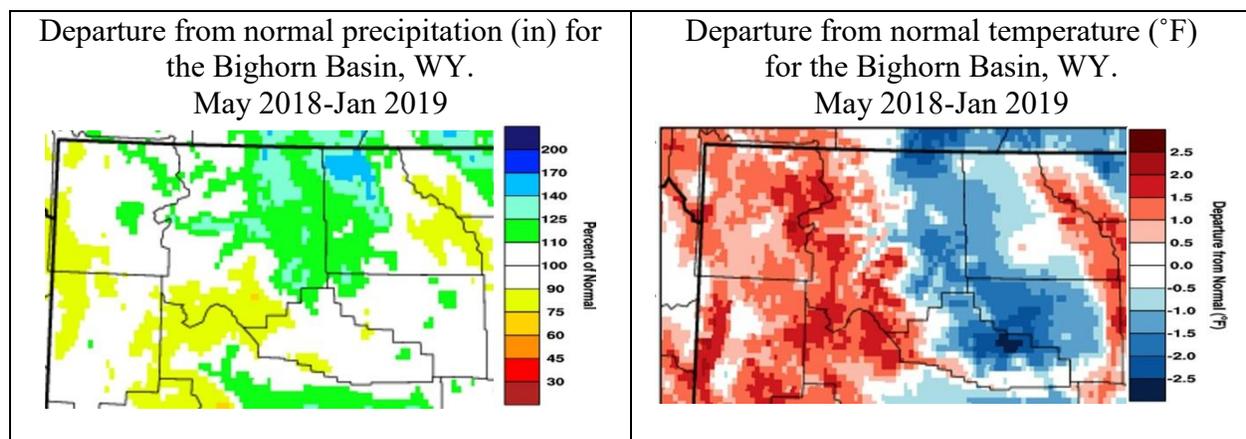
2018 Hunter Satisfaction: 66% satisfied, 17% neutral, 17% dissatisfied

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. Currently, this elk herd is meeting its 3-year average mid-winter count goal of 2000 ($\pm 20\%$) elk ($N=2,300$ for 2018). The number of elk counted since 2012 has declined by about 500 elk based on the 3-year running average. 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. Hunting season structures, particularly antlerless and cow/calf seasons have and continue to be very liberal. 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 6 years have not had any adverse effects on this elk herd. Below normal precipitation occurred in this herd unit during 2018. Most precipitation during the 2018 bio-year occurred during the spring and early summer, and then fell below average during the late summer and fall periods. Above normal temperatures were mostly widespread through the herd unit during the year. Currently winter temperatures and snowfall have been about normal for the herd unit.



Habitat

Numerous prescribed and wild fires have burned throughout this herd unit over the past 2 decades. 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 that will primarily focus on the inventory and condition of aspen, sagebrush and riparian communities being encroached upon by conifers. A 120-acre treatment to remove conifers from several aspen stands was completed in 2018 in the Grass Creek drainage. Other aspen treatment projects will be implemented in 2019 within the Gooseberry and Cottonwood Creek drainages.

Field Data

Calf ratios for this elk herd have averaged 21:100 cows since 2013, ranging from 18:100 in 2018 to 26:100 in 2014. Calf ratios do vary widely between hunt areas, mainly due to predator influences associated with those hunt areas. These low calf ratios in recent years has helped in reducing this elk herd. Yearling bull ratios have declined the past 10 year from a high of 13:100 in 2010 to a low of 7:100 in 2018. The number of bulls observed during classification surveys is inadequate for confident ratio estimates. However, the number of mature bulls harvested, and the quality of bulls observed during classification and trend flights suggest bull quantity and quality

remains good. However, recent field contacts with some hunters have indicated bull quality is declining in areas with high hunter concentrations.

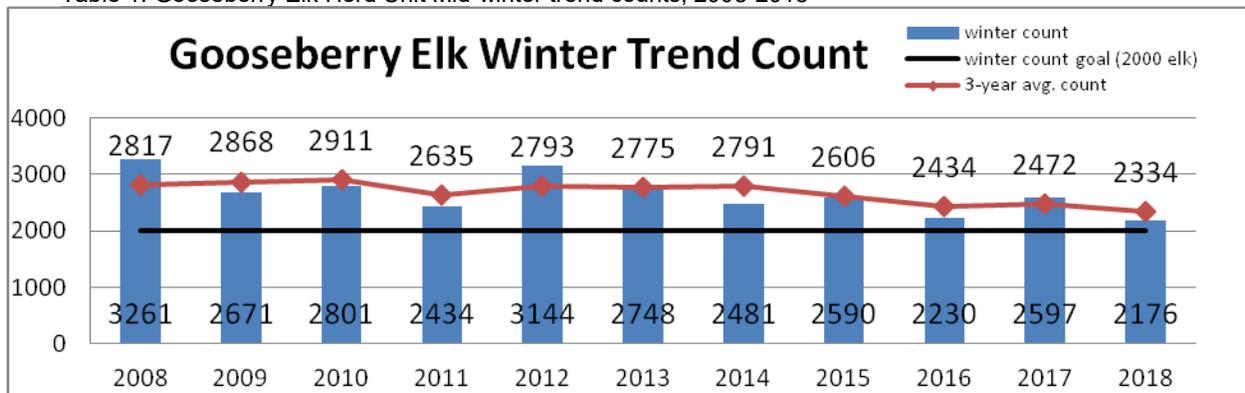
Harvest Data

Since 2013, the total harvest of elk in this herd unit has declined by 33%, whereas total hunters have declined by only 22%. Although the last seven 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 mostly trended downward, from a high of 63% in 2013 to 52% in 2018. 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 fewer elk in the 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 stayed fairly stable at around 2800 elk. Starting in 2015, 3-year average counts started to decline, and for 2018 the 3-year average is around 2300 elk (Table 1). Hunt area count goals and trends are also monitored in order to make hunting season adjustments has needed. Winter count goals for Hunt Areas 62, 63 and 64 are 600, 600 and 800 elk, respectively. Both Hunt Areas 62 and 64 are still above their winter count goals, with Area 62 at 650 elk and Area 64 at 1300 elk based on 2018 3-year averages. Hunt Area 63 fell below its winter count goal starting in 2015 and is currently at 400 elk for its 2018 3-year average.

Table 1. Gooseberry Elk Herd Unit Mid-winter trend counts, 2008-2018



Management Summary

For the herd unit, bull harvest and quality, along with hunter satisfaction continues to remain mostly favorable. In addition, with overall elk numbers declining in recent years and winter count goal being met in 2018, we feel there are no season changes warranted for 2019. Our intent is to keep this elk herd within winter count goal levels by continuing antlerless and cow/calf hunting in all hunt areas, while at the same time monitoring bull numbers and quality. With a 2019 projected harvest of about 650 elk, we expect slight declines in this population to continue, but still remaining within winter count goal levels.

2018 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2018 - 5/31/2019

HERD: EL216 - CODY

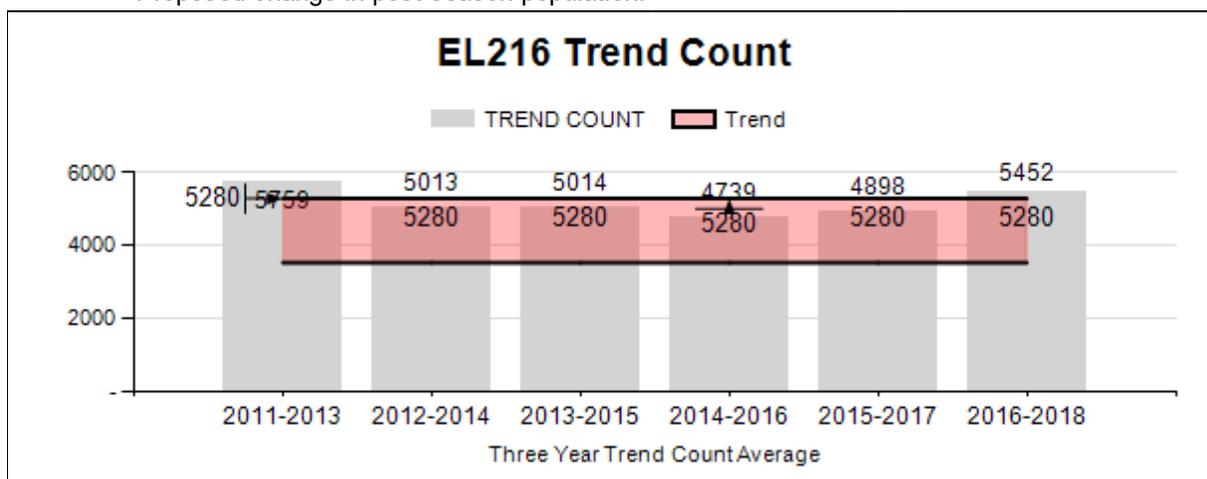
HUNT AREAS: 55-56, 58-61, 66

PREPARED BY: TONY MONG

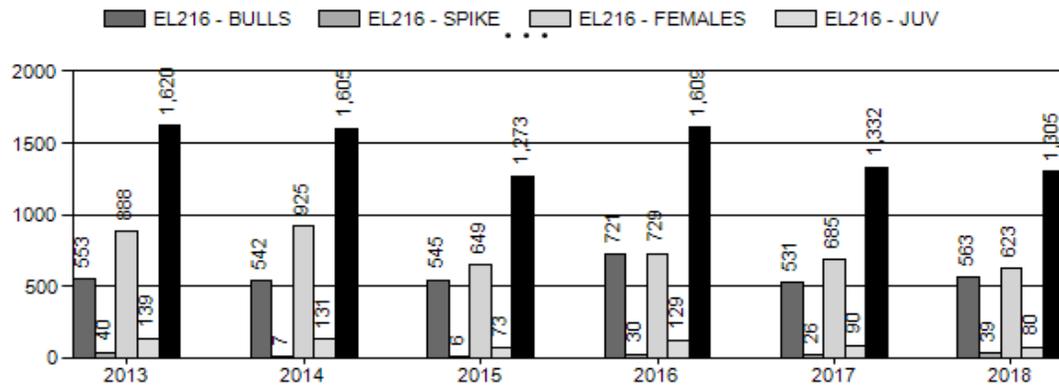
	<u>2013 - 2017 Average</u> ▲	<u>2018</u>	<u>2019 Proposed</u>
Trend Count:	5,106	5,868	5,000
Harvest:	1,488	1,333	1,500
Hunters:	3,102	3,099	3,300
Hunter Success:	48%	43%	45%
Active Licenses:	3,273	3,260	3,500
Active License Success	45%	41%	43%
Recreation Days:	20,196	23,355	24,000
Days Per Animal:	13.6	17.5	16
Males per 100 Females:	36	38	
Juveniles per 100 Females	24	17	
Trend Based Objective (± 20%)			4,400 (3520 - 5280)
Management Strategy:			Special
Percent population is above (+) or (-) objective:			33%
Number of years population has been + or - objective in recent trend:			1

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

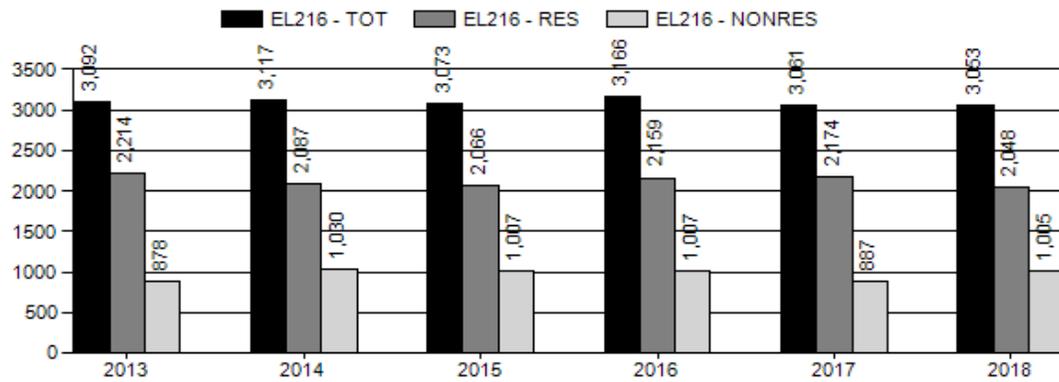
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	n/a%	n/a%
Males ≥ 1 year old:	n/a%	n/a%
Juveniles (< 1 year old):	n/a%	n/a%
Total:	n/a%	n/a%
Proposed change in post-season population:	n/a%	n/a%



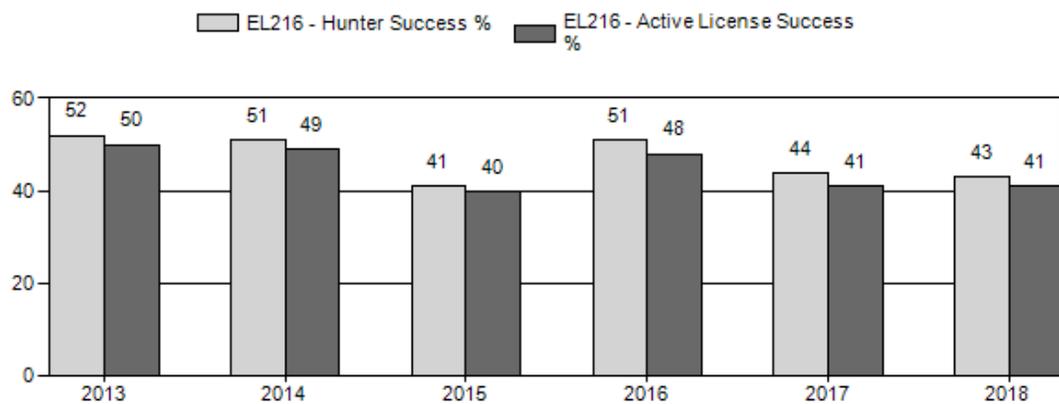
Harvest



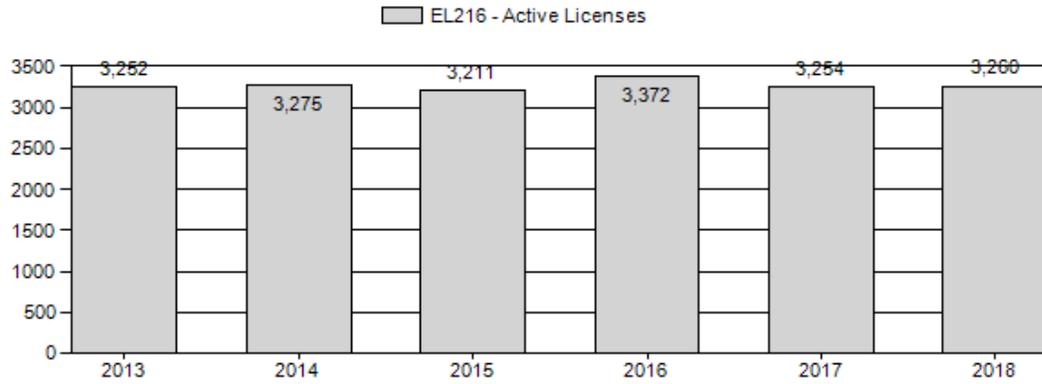
Number of Hunters



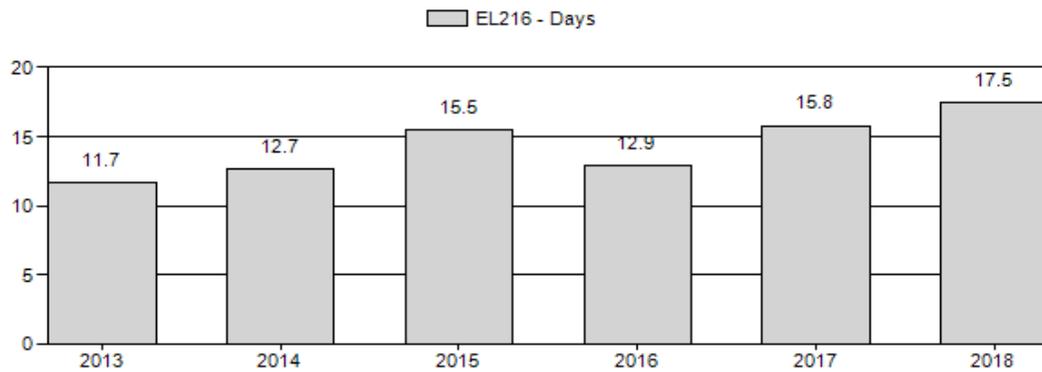
Harvest Success



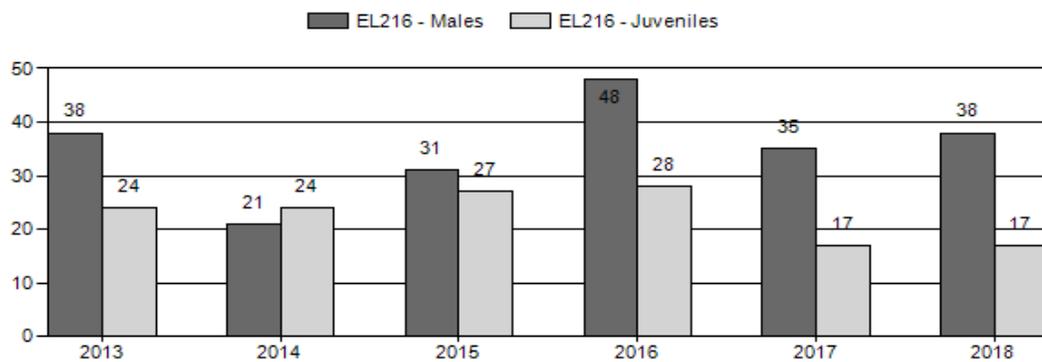
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2013 - 2018 Postseason Classification Summary																			
for Elk Herd EL216 - CODY																			
Year	MALES				FEMALE		JUVENIL		Tot		Cls		Males to 100 Females				Young to		
	Ylg	Adult	Total	%	Total	%	Total	%	Cls	Obj	Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult		
2013	333	860	1,193	24%	3,130	62%	740	15%	5,063	377	11	27	38	± 0	24	± 0	17		
2014	176	155	331	14%	1,604	69%	384	17%	2,319	293	11	10	21	± 0	24	± 0	20		
2015	209	394	603	20%	1,930	63%	530	17%	3,063	372	11	20	31	± 0	27	± 0	21		
2016	327	878	1,224	27%	2,566	57%	728	16%	4,518	290	13	34	48	± 0	28	± 0	19		
2017	205	735	940	23%	2,697	66%	449	11%	4,086	0	8	27	35	± 0	17	± 0	12		
2018	120	508	628	24%	1,667	65%	285	11%	2,580	0	7	30	38	± 0	17	± 0	12		

2013 - 2018 Trend Count Summary				
for Elk Herd EL216 - CODY				
Year	Count Dates	Flight Time		Number Counted
		Hours	Minutes	
2013	Feb-14	9	0	5,726
2014	Jan-15	10	0	5,110
2015	Feb-16, Jan-16	8	45	4,205
2016	Jan-17	8	15	4,903
2017	Jan-18	13	30	5,586
2018	Jan-19	12	30	5,868

**2019 HUNTING SEASONS
CODY ELK HERD (EL216)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
55	1	Oct. 1	Oct. 31	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	5	Oct. 1	Dec. 21	50	Limited quota	Antlerless elk valid off national forest
56	6	Oct. 1	Dec. 21	200	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	6	Oct. 1	Dec. 21	200	Limited quota	Cow or calf
59		Oct. 1	Oct. 21		General	Antlered elk
59	1	Nov. 1	Nov. 15	10	Limited quota	Any elk
59	6	Oct. 1	Dec. 21	200	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	Antlered 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	Nov. 1	Dec. 21	150	Limited quota	Antlerless elk
61	6	Nov. 1	Nov. 24	200		Cow or calf valid within the Washakie Wilderness
61	6	Nov. 25	Dec. 21			Cow or calf valid in the entire area
61	7	Sep. 1	Dec. 21	350	Limited quota	Cow or calf valid north of and including the Rawhide Creek drainage
66		Aug. 15	Oct. 15		General	Any elk
66		Oct. 16	Dec. 21		General	Antlerless elk, any elk in that portion of Area 66 in Big Horn County

66	6	Aug. 15	Jan. 15	600	Limited quota	Cow or calf
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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	Type	Quota change from 2018
55		No Change
56	4	-150
56	6	+150
58	6	-200
59	7	-75
60		No Change
61	4	+100
61	6	-50
61	7	+200
66	6	+100
Total		+75

Management Evaluation

Current Mid-Winter Trend Count Objective: 4,400

Management Strategy: Special

2018 Mid-Winter Trend Count: 5,868

Most Recent 3-year Running Average Trend Count: 5,480

2018 Hunter Satisfaction: 61% Satisfied, 21% Neutral, 18% dissatisfied

Herd Unit Issues

The Cody Elk Herd Unit is comprised of migratory elk that occupy spring-summer-fall habitats in remote backcountry areas like the Thorofare and Yellowstone National Park (YNP), and non-migratory elk that occupy habitats in and around the Absaroka foothills and valleys (agricultural lands, transition and winter ranges). Large groups of elk have been congregating during the winter in hunt area 61, with a group of at least 2800 elk seen during classification flights in January. Calf productivity typically varies between migratory and nonmigratory elk, with lower calf ratios for migratory elk, and higher calf ratios for resident elk. To further complicate management, elk can cause damage to agricultural crops on private land and these elk are known to carry brucellosis. Damage situations typically exist where overabundant elk overlap with private lands, managers must adapt hunting regulations to target those specific elk subpopulations. However, we have situations in this herd where access to hunt “problem” elk on private land is very difficult or non-existent. In addition, large concentrated populations of elk near cattle operations can increase the possibility of cattle becoming infected with brucellosis. Prescribing and managing hunting seasons for diverse publics often results in complicated regulations that must take into account many different objectives and factors influencing the Cody elk herd.

Weather

The weather conditions during the 2017/18 winter were fairly mild but the cold temps and snow hung on late into the spring which may have made early migrations difficult (Figures 1 and 2). The 2018/19 winter had been relatively mild until mid-February. We saw an increase in snow and a severe decrease in temperatures during the later part of February (Figure 3). Average precipitation levels in most of the herd unit were relatively normal throughout the year and winter weather did not start until October in the high country and was relatively mild throughout the winter months. January classification flights revealed a high proportion of open ridges throughout the area with very little snow in the higher elevation areas.

Figure 1. Percent of normal precipitation for Park County from January to March 2018 to show the increased precipitation during the later part of 2017/18 winter.

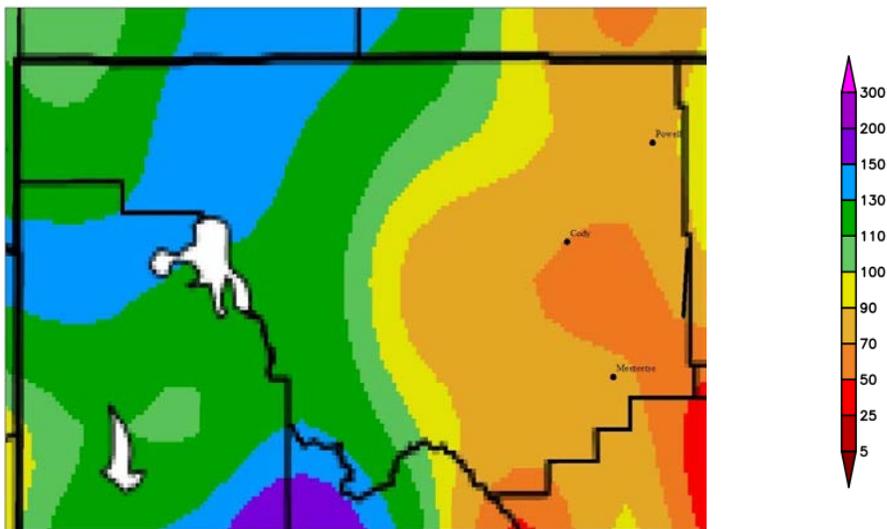


Figure 2. Departure from normal temperature for Park County from January to March 2018.

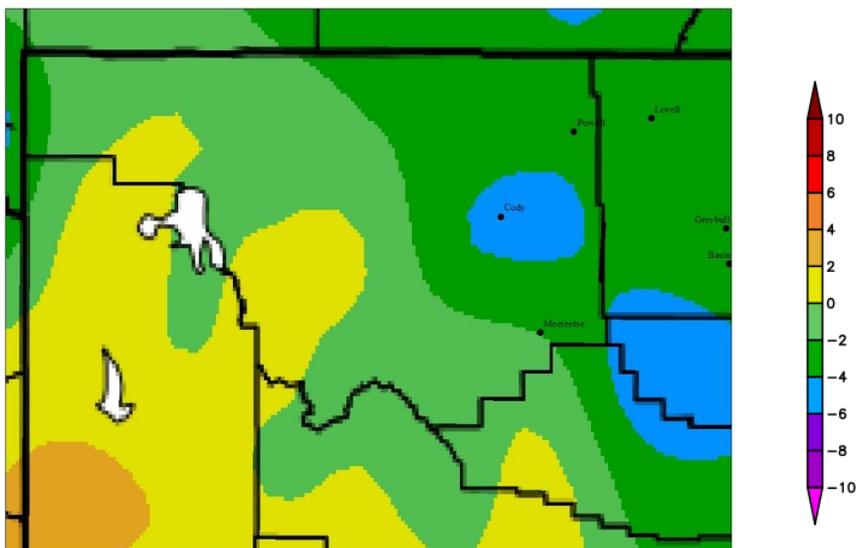
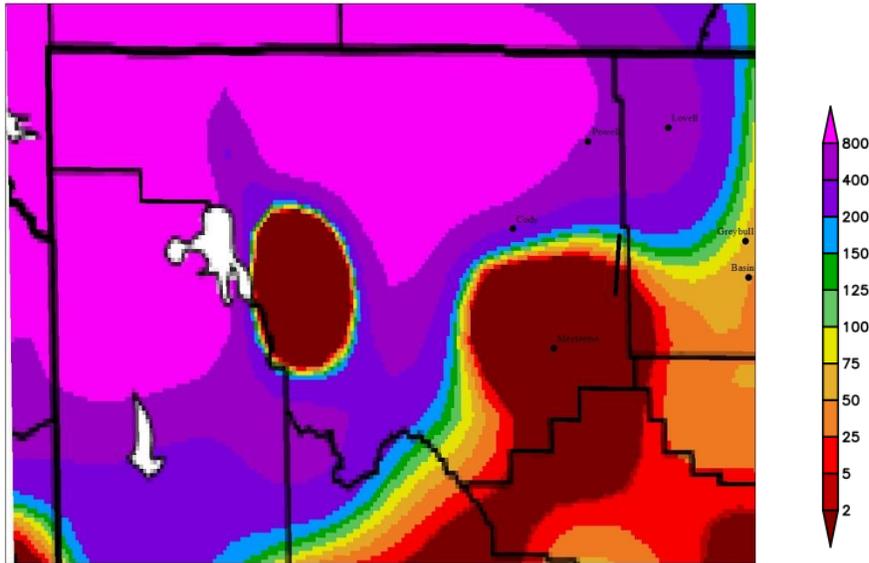


Figure 3. Percent of Normal Precipitation for Park County for February 21 to 27 2019.



Habitat

See Cody regional appendix.

Field Data

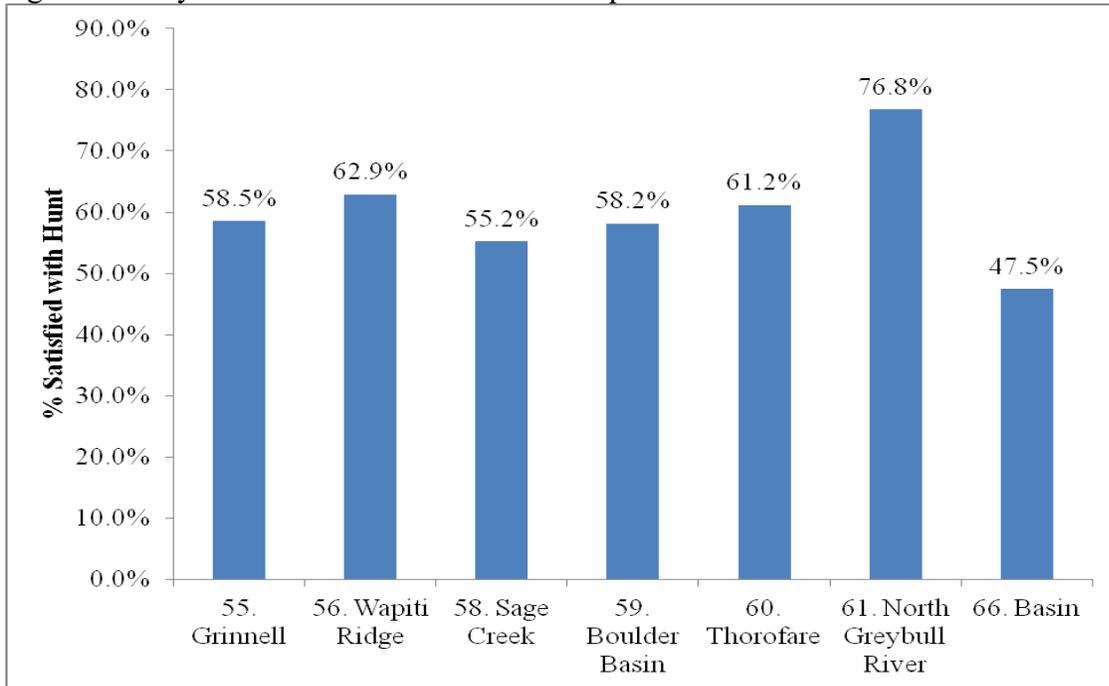
The winter classification of elk in the Cody elk herd is challenging because of the variability between migratory and non-migratory elk and sampling bull ratios most years makes yearly comparisons difficult. Herd unit wide calf ratios over the last 10 years have been relatively stable, except for 2017 and 2018, ranging from 17:100 to 34:100 with an average of 26:100. However, 2017 and 2018 classifications have resulted in one of the lowest calf ratios recorded for this herd and the lowest since 2005 (17 calves per 100 cows both years). We observed consistently low calf ratios among the hunt areas with Hunt Area 55 having a calf ratio of 14:100, Hunt Area 56 having a calf ratio of 19:100 cows, Hunt Area 61 at 16:100 and Hunt Area 59 at 18:100. In Hunt Area 58 we typically only observe bulls. The variation in bull ratios from year to year for this herd makes the data difficult to interpret and use. Over the last 10 years bull ratios have ranged from 14:100 to 48:100 and this year we saw a higher ratio (38:100) compared to the previous 10-year average of 30:100. The ability to count bulls during the short flight period is driven by weather conditions that are highly variable among years. We need to conduct more research with trail cameras as a data collection method for bull ratios in the Cody herd.

Harvest

Hunting in the Cody elk herd is a mix of early general seasons, limited quota cow licenses and late season limited quota bull elk licenses. Bull harvest is driven by weather conditions in the higher elevations and Yellowstone National Park. When the weather, migration timing and hunter numbers coincide harvest in our general areas increases. In 2018 we saw a fairly mild fall with a little to no snow falling prior to November. Hunter numbers (3,099) were similar compared to the previous 5-year average of 3,109 and decreased hunter success was most likely due to warmer temperatures and very little snowfall. Cow harvest also fell off from normal high

average success from a 10-year average of 49% to 40% in 2018. The 2018 bull harvest was similar to the previous 10-year average of 600 and a slight increase over the previous year (2017: 685; 2018: 623). Hunter satisfaction for 2018 was slightly below the previous 5-year average of 63.7%. Satisfaction is variable among hunt areas with Hunt Area 66 having the lowest satisfaction of 48% and Hunt Area 61 having the highest satisfaction at 77% (figure 4).

Figure 4. Cody elk herd hunter satisfaction comparison between hunt areas in 2018.



Population

The Cody Elk Herd Unit uses a 3-year average 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. We have seen a large increase in the number of elk we are counting in Hunt Area 61 over the last 2 years which is driving the overall trend count average for the herd. There is indication from collars deployed on winter range in the Dubois area that we have had elk move from there to Hunt Area 61. However, there was not a noticeable decrease in numbers in the Dubois area that would indicate a large portion of that herd switching winter ranges.

Table 1. Sub unit and herd unit winter counts from 2013 to 2018.

	Hunt Areas 55/56	Hunt Areas 58/59	Hunt Area 61	Hunt Area 66	Herd Unit Total
<i>Count Goal</i>	<i>1,150</i>	<i>1,150</i>	<i>2,100</i>	<i>0</i>	<i>4,400</i>
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	1,184	2,502	225	5,847
2017	1,083	1,039	3,464	45	5,631
2018	923	1,005	3,940	Unk.	5,868
3-year Average	1,102	1,076	3,302	-	5,570

Management Summary

The 2019 hunting seasons are an effort to increase cow harvest on resident elk in Hunt Area 56, decrease cow harvest in hunt area 58, decrease cow harvest on the Thorofare portion of the herd and focus and increase harvest on cows wintering in Hunt Area 61. In Hunt Area 56 managers are seeing a resident herd that stabilized somewhat but is still larger than we would like to have in the low elevation areas. In order to try and increase the opportunity on that portion of the herd we are moving the opening date to October 1, which should allow for harvest to occur on the resident elk and decrease pressure on the migrant elk. The HA 58/59 count block 3-year trend count average dropped below the trend objective of 1,150 in 2017 and 2018 and we have seen a significant decrease in harvest success on the 58 Type 6 license. Hunters in the field as well as field personnel are having difficulty finding cow elk in Hunt Area 58. These two factors led to the decrease in Hunt Area 58 Type 6 licenses. In an effort to try and reduce overall pressure on cow elk that reside in the Thorofare during the summer we are decreasing the 59 Type 6 licenses and allowing only bull harvest in Hunt Areas 59 and 60 during the general hunt. With the large increase in total elk counted in Hunt Area 61 during the last two winters an effort is being made to increase harvest on that portion of the herd through season dates discussions with outfitters hunting in the area. We do not believe there is enough access to the large groups of elk to increase licenses on a large basis and are exploring options to target those cow elk earlier in the season in different Hunt Areas. The 2019 hunting season structure should allow us to focus harvest where we are having issues and reduce harvest in areas where we are seeing decreased numbers of elk.

2018 - JCR Evaluation Form

SPECIES: EIK

PERIOD: 6/1/2018 - 5/31/2019

HERD: EL217 - CLARKS FORK

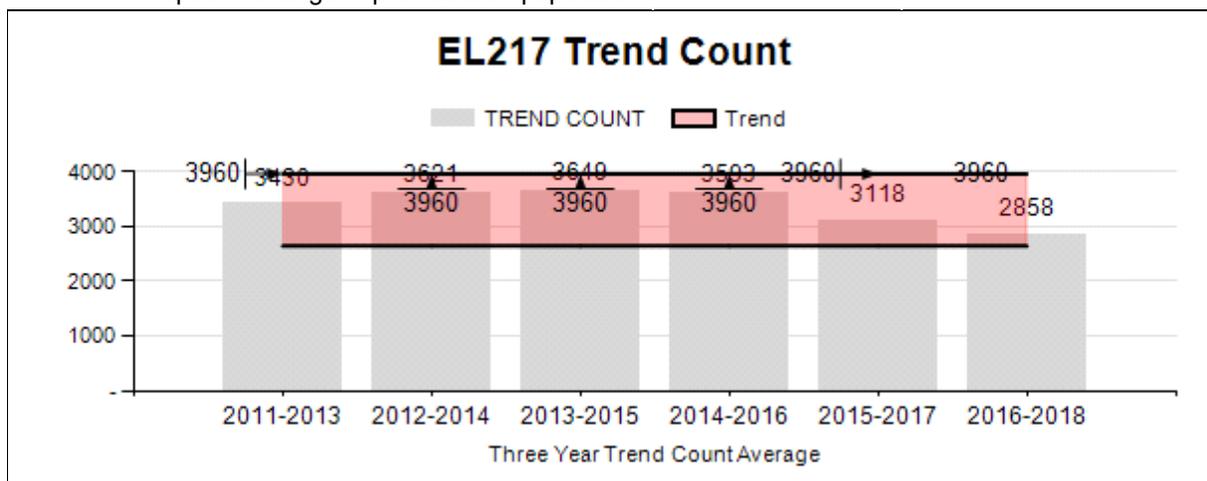
HUNT AREAS: 51, 53-54

PREPARED BY: TONY MONG

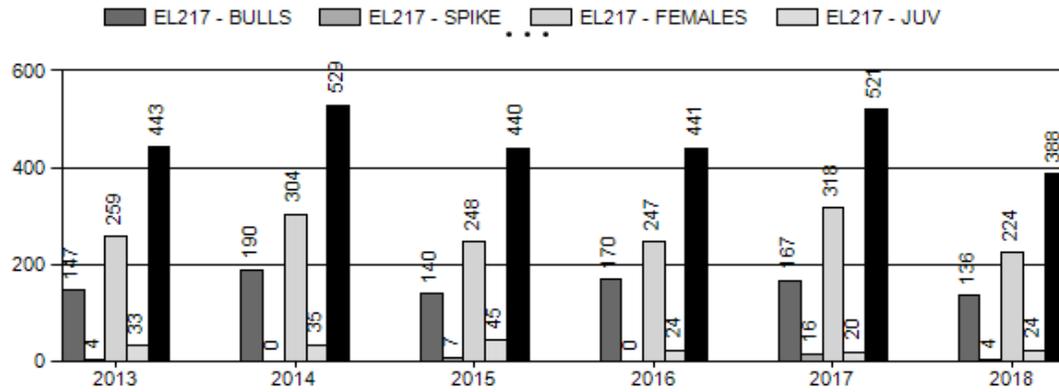
	<u>2013 - 2017 Average</u> ▲	<u>2018</u>	<u>2019 Proposed</u>
Trend Count:	3,357	2,737	2,900
Harvest:	475	382	350
Hunters:	943	998	985
Hunter Success:	50%	38%	36 %
Active Licenses:	994	1,042	1,000
Active License Success	48%	37%	35 %
Recreation Days:	6,663	8,017	8,200
Days Per Animal:	14.0	21.0	23.4
Males per 100 Females:	24	19	
Juveniles per 100 Females	23	16	
Trend Based Objective (± 20%)			3,300 (2640 - 3960)
Management Strategy:			Special
Percent population is above (+) or (-) objective:			-17.1%
Number of years population has been + or - objective in recent trend:			0

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

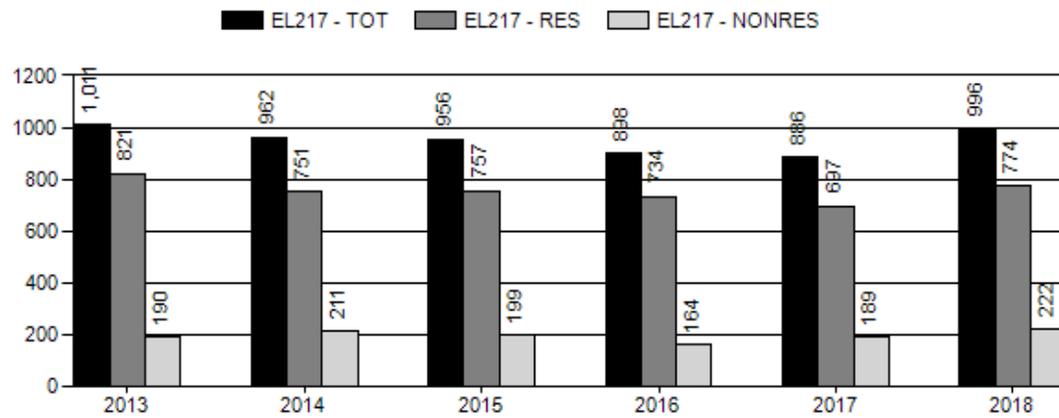
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	n/a%	n/a%
Males ≥ 1 year old:	n/a%	n/a%
Juveniles (< 1 year old):	n/a%	n/a%
Total:	n/a%	n/a%
Proposed change in post-season population:	n/a%	n/a%



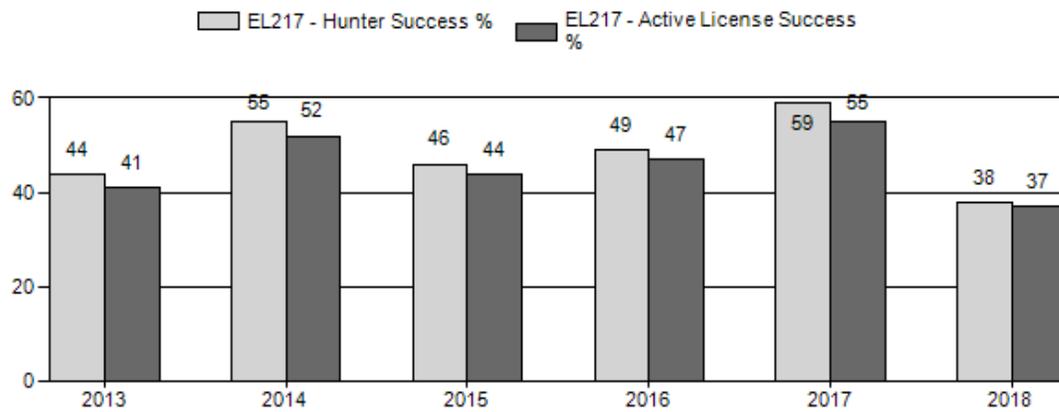
Harvest



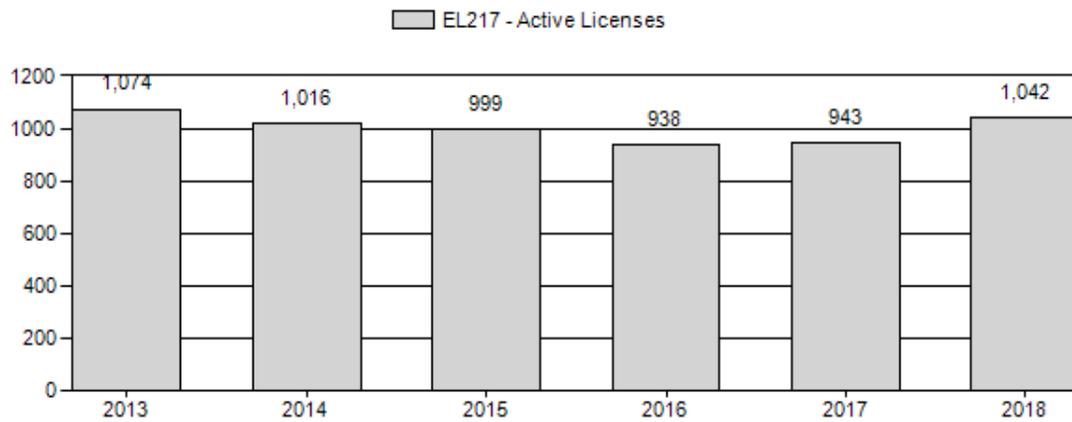
Number of Hunters



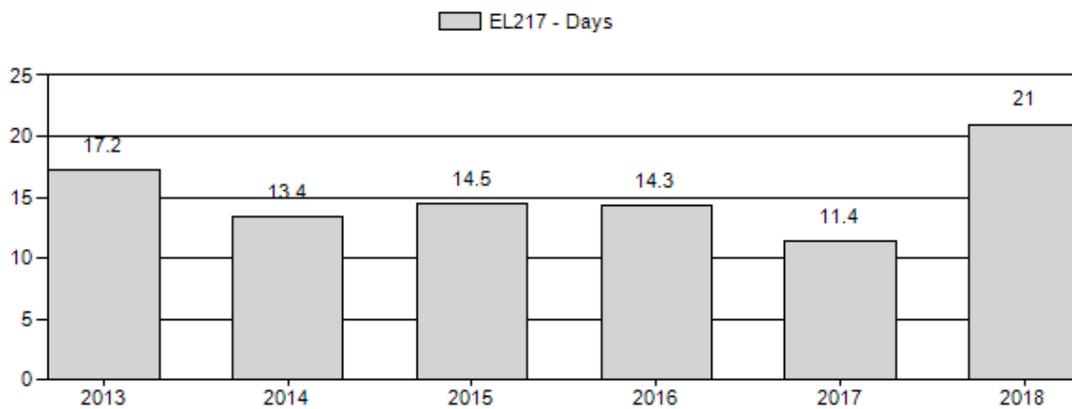
Harvest Success



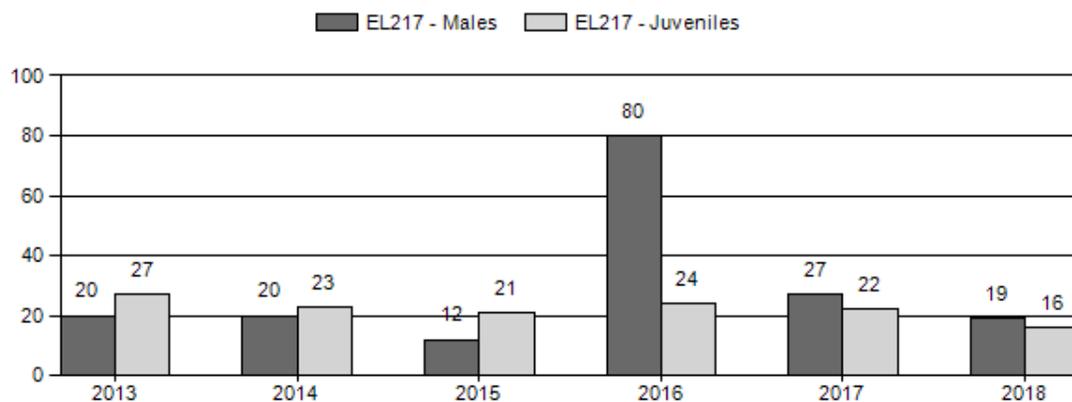
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2013 - 2018 Postseason Classification Summary																	
for Elk Herd EL217 - CLARKS FORK																	
Year	MALES				FEMALE		JUVENIL				Males to 100 Females				Young to		
	Ylg	Adult	Total	%	Total	%	Total	%	Tot	Cls	Yng	Adult	Total	Conf	100 Fem	Conf Int	100 Adult
									Cls	Obj				Int			
2013	149	307	456	14%	2,252	68%	607	18%	3,315	366	7	14	20	± 0	27	± 0	22
2014	188	358	546	14%	2,670	70%	603	16%	3,819	288	7	13	20	± 0	23	± 0	19
2015	144	80	224	9%	1,857	75%	397	16%	2,478	366	8	4	12	± 0	21	± 0	19
2016	53	467	520	39%	647	49%	158	12%	1,325	272	8	72	80	± 0	24	± 0	14
2017	186	296	482	18%	1,762	67%	389	15%	2,633	0	11	17	27	± 0	22	± 0	17
2018	144	235	379	14%	2,034	74%	324	12%	2,737	0	7	12	19	± 0	16	± 0	13

2013 - 2018 Trend Count Summary				
for Elk Herd EL217 - CLARKS FORK				
Flight Time				
Year	Count Dates	Hours	Minutes	Number Counted
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	Jan-18	10	30	2,633
2018	Jan-19	4	20	2,737

**2019 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	50	Limited quota	Any elk valid in the Shoshone River drainage
53	4	Oct. 1	Dec. 15	50	Limited quota	Antlerless elk
53	6	Oct. 15	Dec. 21	200	Limited quota	Cow or calf valid in the North Fork Shoshone River drainage
53	7	Sep. 1	Dec. 21	25	Limited quota	Cow or calf valid on private land
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	Sep. 30	200	Limited quota	Cow or calf valid on private land
		Oct. 1	Oct. 31		Limited quota	Cow or calf
54	7	Nov. 1	Nov. 24	350	Limited quota	Cow or calf
		Nov. 25	Dec. 21		Limited quota	Cow or calf valid east of Wyoming Highway 120
54	9	Sep. 1	Sep. 30	35	Limited quota	Any elk, archery only

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	

Hunt Area	Type	Quota change from 2018
51		No Change
53	7	-25
54		No Change
Total		-25

Management Evaluation

Current Mid-Winter Trend Count Objective: 3,300

Management Strategy: Special

2018 Mid-Winter Trend Count: 2,737

Most Recent 3-year Running Average Trend Count: 2,858

2018 Hunter Satisfaction: 55% Satisfied, 21% Neutral, 24% Dissatisfied

Herd Unit Issues

Managing the Clark's Fork elk herd is complicated by the mix of migratory and non-migratory elk found in the herd unit and difficulty in consistently finding bull elk while classifying in the winter. 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. Typically there is a clear difference between the productivity of the migratory elk and the growing number of non-migratory elk in the herd unit. Migrants are characterized by low calf ratios whereas non-migratory elk typically have much higher productivity. Because of this, management is focused on dealing with damage situations with non-migratory elk and conservative management of migratory elk to allow for quality bulls. Another issue facing the Clark's Fork elk is the elk that move into the Heart Mountain area during the November to March time frame. These elk are moving into the agricultural fields north and east of Heart Mountain causing damage issues and are typically difficult to harvest because of the presence of houses and the mix of private land. More access to the areas in and around Heart Mountain may allow for more opportunity to decrease the number of elk causing damage and deter elk from moving into the agricultural fields.

Weather

The weather conditions during the 2017/18 winter were fairly mild but the cold temps and snow hung on late into the spring which may have made early migrations difficult (Figures 1 and 2). The 2018/19 winter had been relatively mild until mid-February. We saw an increase in snow and a severe decrease in temperatures during the later part of February (Figure 3). Average precipitation levels in most of the herd unit were relatively normal throughout the year and winter weather did not start until October in the high country and was relatively mild throughout the winter months. January classification flights revealed a high proportion of open ridges throughout the area with very little snow in the higher elevation areas.

Figure 1. Percent of normal precipitation for Park County from January to March 2018 to show the increased precipitation during the later part of 2017/18 winter.

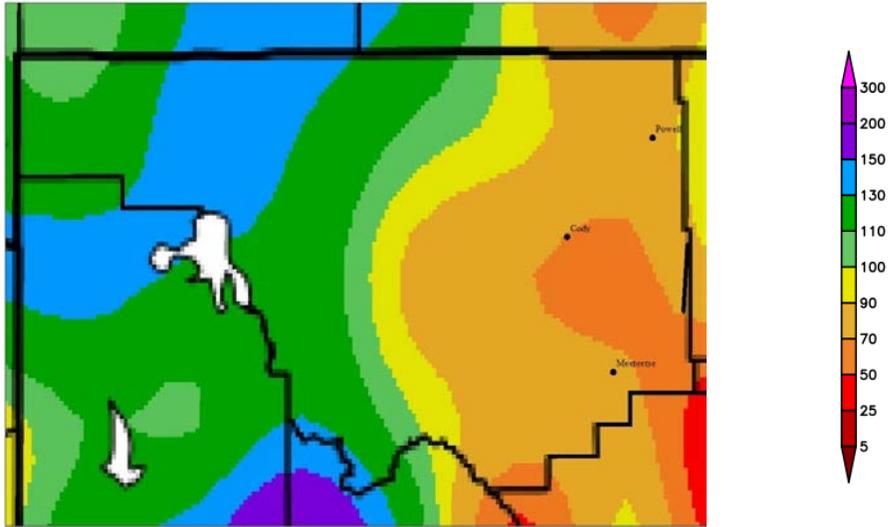


Figure 2. Departure from normal temperature for Park County from January to March 2018.

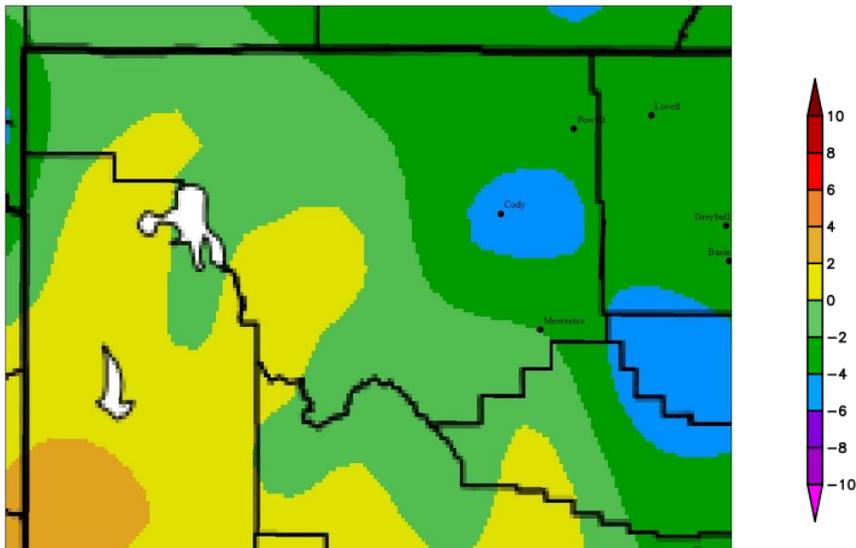
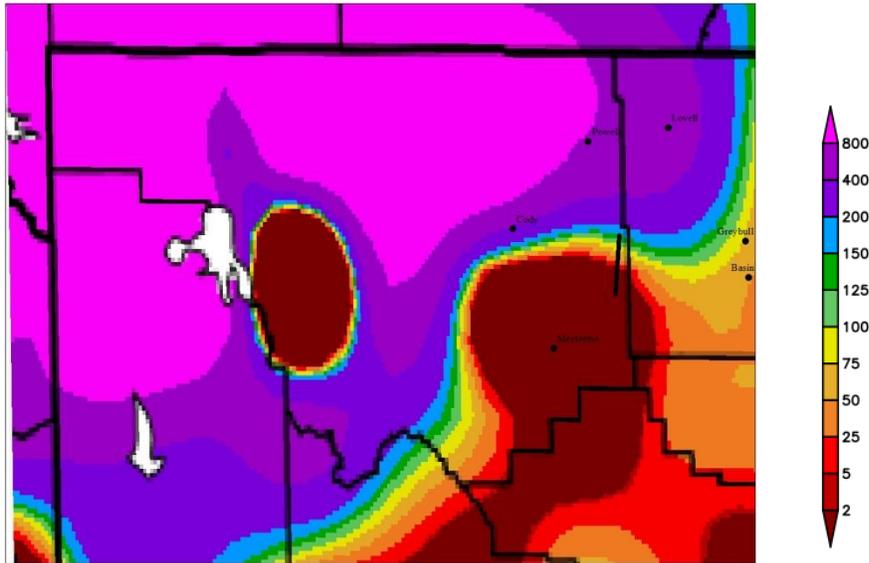


Figure 3. Percent of Normal Precipitation for Park County for February 21 to 27 2019.



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 U.S. Forest Service lands. See Cody region appendix.

Field Data

The winter classification of elk in the Clark's Fork herd is challenging because of the variability in calf ratios between migratory and non-migratory elk and bull elk ratios between years. Herd unit wide calf ratios over the last 10 years have been relatively stable ranging from 21:100 cows to 27:100 with an average of 23:100. We saw the lowest herd calf ratio in 2018 at 16 driven by the lower ratios we found in the non-migratory portion of the herd (Hunt Areas 53, 54). The variation in bull ratios from year to year for this herd makes the data difficult to interpret and use. Over the last 10 years bull ratios have ranged from 8:100 to 80:100 and are driven by the visibility of bulls during the flights not by actual numbers of bulls in the herd, the 2018 classification was on the lower end at 18:100 cows. Bull visibility is typically driven by weather conditions, including snow, wind and winter conditions, which is highly variable between years. We need to begin to incorporate trail camera data into our traditional data collection methods for bull elk ratios in the Clark's Fork herd.

Harvest Data

Bull harvest across the herd unit since 2010 has been relatively stable to increasing with an average of 151 harvested (range = 136 to 190, 136 in 2018). Overall we saw a decrease in cow harvest (224 compared to the previous 5-year average of 471), increase in days to harvest (21 days compared to the previous 5-year average of 14) and lower success rates (37% compared to the previous 5-year average of 51%), this may be attributed to the milder fall and winter weather allowing elk to remain at higher elevations longer into the hunting season.

Population

The Clark's Fork Herd Unit uses a 3-year average 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. We are seeing a slight decreasing trend over the last 4 years.

Table 1. Sub unit and herd unit winter counts.

	Hunt Area 51	Hunt Area 53	Hunt Area 54	Herd Unit Total
<i>Count Goal</i>	<i>1,800</i>	<i>600</i>	<i>900</i>	<i>3,300</i>
2013	1,414	610	1,348	3,372
2014	1,914	638	1,506	4,058
2015	1,337	662	1,518	3,517
2016	760	458	1,987	3,205
2017	967	291	1,375	2,633
2018	1,004	400	1,333	2,565
3-year Average	910	383	1,565	2,801

Management Summary

The 2019 hunting seasons will allow us to continue to manage the migratory portion of the herd conservatively and attempt to deal with damage issues as they arise with the non-migratory portion of the herd especially east of Wyoming Highway 120. Last year we had a change in language to the 54 Type 6 licenses to decrease conflicts between archery hunters that have limited public lands to hunt and potentially keep more elk off private land and on public lands for better opportunity. The license was successful during the overlapping archery portion of the season however; it was too restrictive after the archery season ended. The 2019 hunting seasons will open the license to allow hunting throughout Hunt Area 54 during the entire month of October. In addition the change in dates of the 54 type 6 license coupled with the area restriction on the 54 type 7 license will help to decrease pressure on the migrating portion of the herd and focus pressure on problem elk in and around Heart Mountain.