

TABLE OF CONTENTS

Mule Deer

Page Number

Sublette (MD 104) – Areas 130, 131, 138-142, 146, 150-156.....1

Elk

Hoback (EL104) – Areas 86, 8713

Piney (EL106) – Areas 92, 94.....21

Upper Green (EL107) – Areas 93,95,96.....33

Pinedale (EL108) – Areas 97,98.....43

Moose

Sublette (MO104) – Areas 3,4,5,10,20-25.....53

Bighorn Sheep

Darby Mountain (BS 121) Area 24.....63

2016 - JCR Evaluation Form

SPECIES: Mule Deer

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

HERD: MD104 - SUBLETTE

HUNT AREAS: 130-131, 138-142, 146, 150-156, 162

PREPARED BY: DEAN CLAUSE

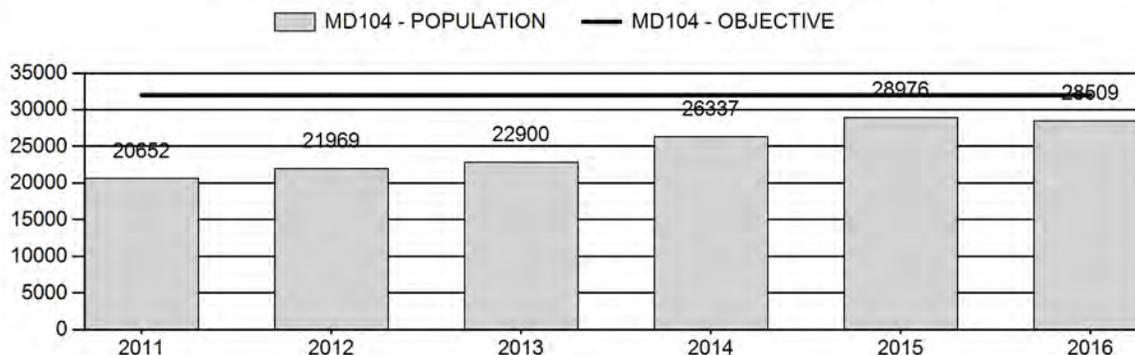
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Population:	24,167	28,509	20,000
Harvest:	1,477	2,302	1,000
Hunters:	4,181	5,040	3,800
Hunter Success:	35%	46%	26%
Active Licenses:	4,202	5,047	3,800
Active License Success:	35%	46%	26%
Recreation Days:	24,116	27,579	25,000
Days Per Animal:	16.3	12.0	25
Males per 100 Females	38	41	
Juveniles per 100 Females	67	61	

Population Objective (± 20%) :	32000 (25600 - 38400)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-10.9%
Number of years population has been + or - objective in recent trend:	0
Model Date:	2/26/2017

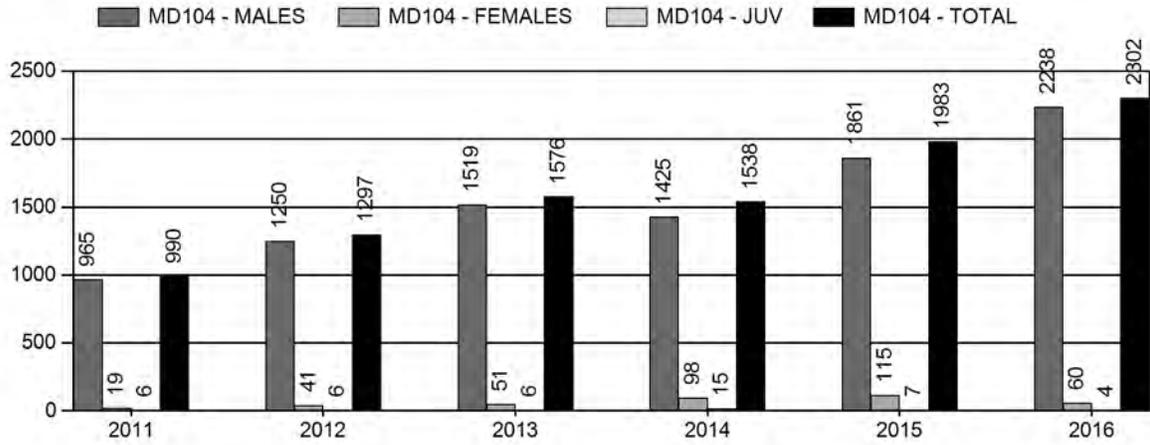
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0.5%	0.2%
Males ≥ 1 year old:	31%	20%
Total:	7%	5%
Proposed change in post-season population:	2%	-30%

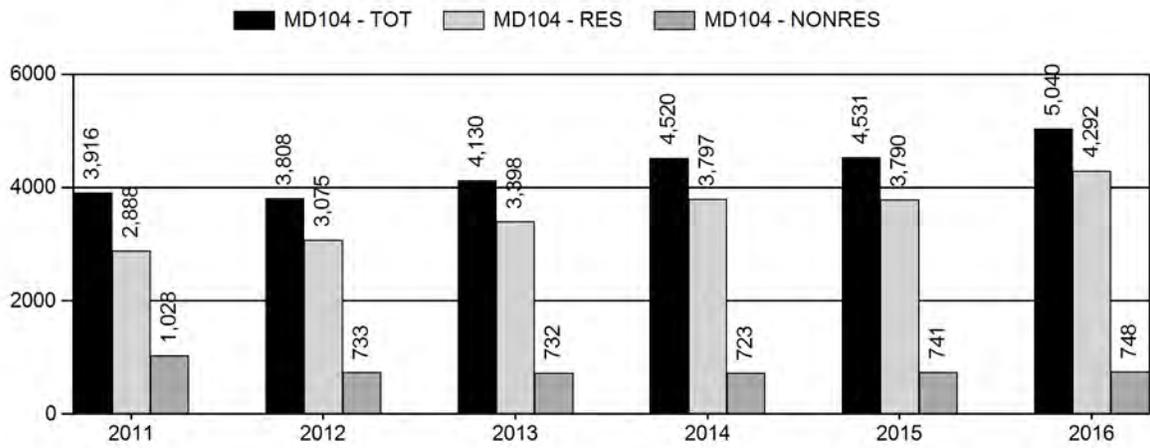
Population Size - Postseason



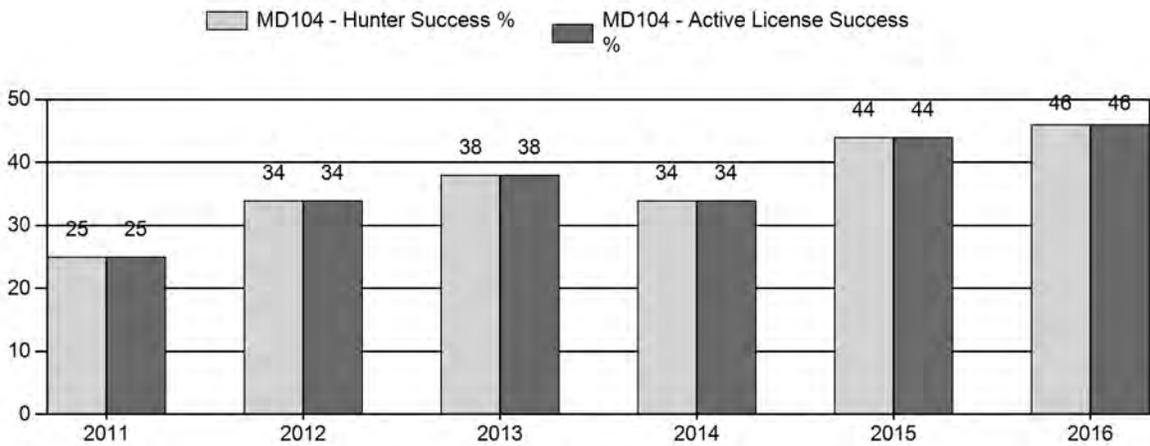
Harvest



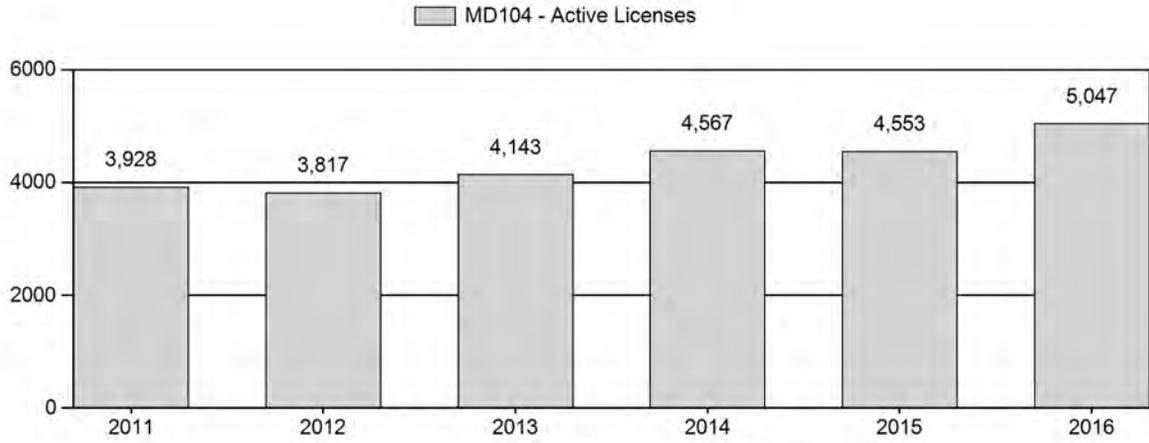
Number of Active Licenses



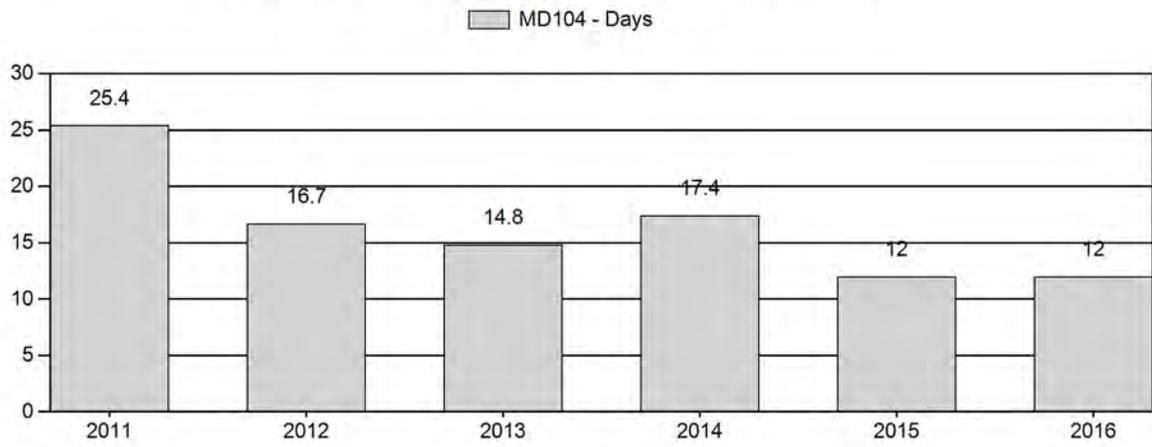
Harvest Success



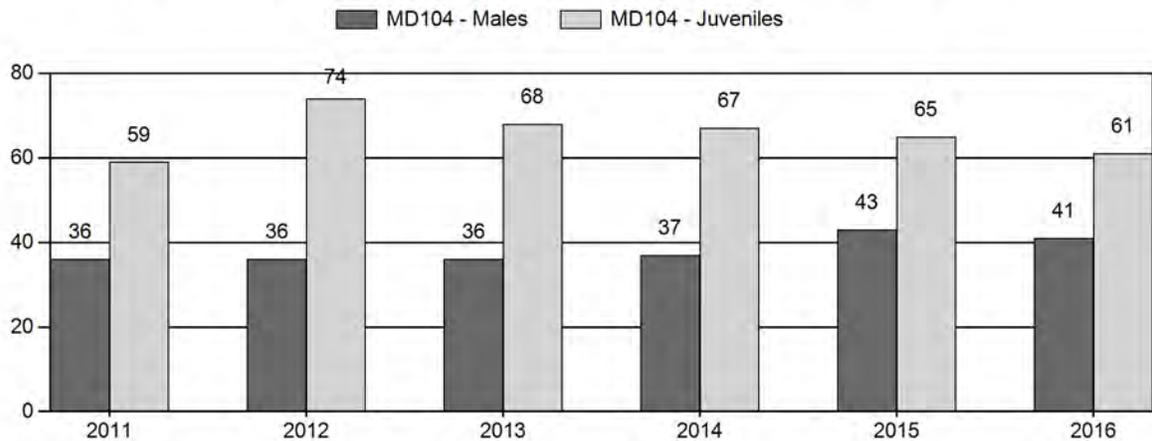
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Mule Deer Herd MD104 - SUBLETTE

Year	Post Pop	MALES						FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females			Young to				
		Ylg	2+ Cls 1	2+ Cls 2	2+ Cls 3	UnCls	Total	%	Total	%	Total			%	Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	20,652	173	0	0	0	894	1,067	18%	2,985	51%	1,747	30%	5,799	1,141	6	30	36	±1	59	±2	43
2012	21,969	357	0	0	0	890	1,247	17%	3,498	48%	2,598	35%	7,343	1,626	10	25	36	±1	74	±2	55
2013	22,900	575	0	0	0	895	1,470	18%	4,044	49%	2,745	33%	8,259	1,436	14	22	36	±1	68	±2	50
2014	26,337	620	514	483	144	0	1,761	18%	4,699	49%	3,167	33%	9,627	1,420	13	24	37	±1	67	±2	49
2015	28,976	766	585	490	217	0	2,058	21%	4,768	48%	3,106	31%	9,932	1,463	16	27	43	±1	65	±2	46
2016	28,509	660	646	647	231	5	2,189	20%	5,285	49%	3,207	30%	10,681	1,248	12	29	41	±1	61	±1	43

2017 Seasons - Sublette Mule Deer (MD104)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
130		Oct. 1	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
130	1	Oct. 15	Oct. 31	20	Limited quota	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
130	6	Oct. 1	Oct. 31	25	Limited quota	Doe or fawn valid on private land within Sweetwater County
131		Oct. 1	Oct. 6		General	Antlered mule deer four (4) points or more on either antler or any white-tailed deer
138		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
138, 139, 140, 142, 143	3	Oct. 1	Nov. 30	50	Limited quota	Any white-tailed deer
139		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
140		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
						white-tailed deer
141	1	Oct. 1	Oct. 21	80	Limited quota	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
141	1	Oct. 22	Oct. 31			Antlered mule deer three (3) points or more on either antler or any white-tailed deer on national forest
142		Sept. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
146		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
150		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
151		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
151		Oct. 4	Oct. 31		General	Antlerless white-tailed deer
152		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
152		Oct. 4	Oct. 31		General	Antlerless white-tailed deer
153		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
154		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
155		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
						either antler or any white-tailed deer
156		Sep. 15	Oct. 6		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
Archery						
130,131, 141		Sept. 1	Sept. 30			Refer to Section 2 of this Chapter
138-140, 142,146, 150-156		Sept. 1	Sept. 14			Refer to Section 2 of this Chapter

REGION H NON-RESIDENT QUOTA - 600 LICENSES

Summary of Changes in License Numbers

Hunt Area	License Type	Quota Changes from 2016
130	1	-5
141	1	-20
Region H		-200
Herd Unit Total	1	-25
	Region H	-200

Management Evaluation

Current Postseason Population Management Objective: 32,000

Management Strategy: Special

2016 Postseason Population Estimate: ~28,500

2017 Proposed Postseason Population Estimate: ~20,000

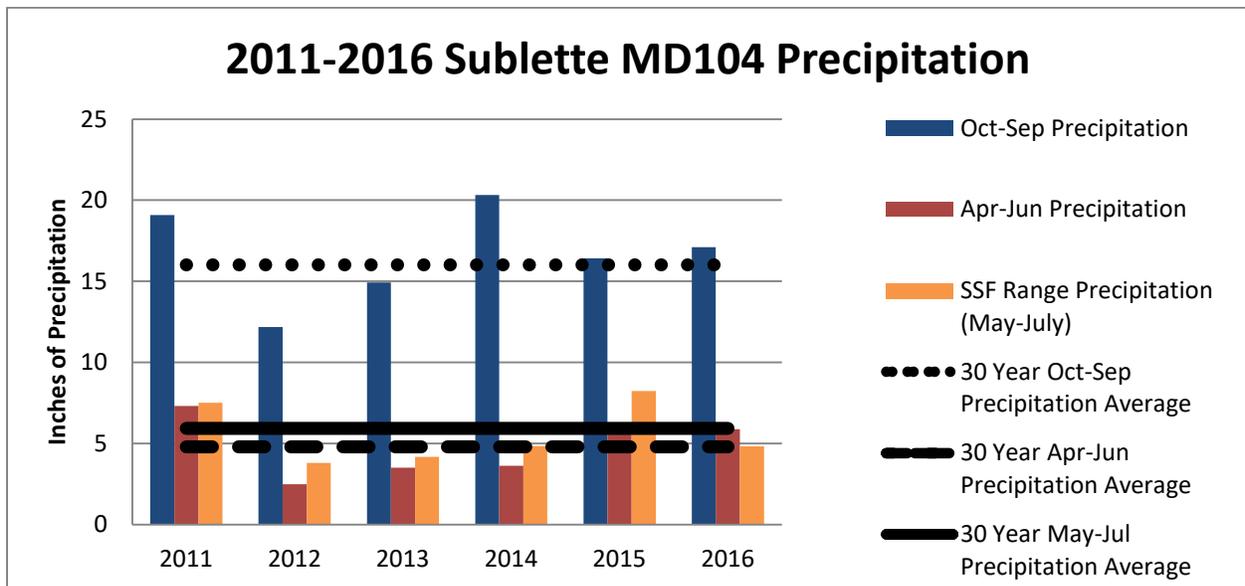
The Sublette Mule Deer Herd Unit is very large and contains habitat throughout Teton, Sublette, Lincoln and Sweetwater Counties. This deer herd contains 16 hunt areas (130, 131, 138-142, 146, 150-156, 162) and is managed under special status which mandates postseason buck:100 doe ratio that range between 30 to 45:100. With the recent findings of seasonal deer movements outside the Steamboat Herd Unit, managers consolidated the Sublette and Steamboat herd units into one, referred to as the Sublette Herd Unit (MD104). This recommendation to consolidate herd units (eliminating the Steamboat Herd Unit) was approved by the WYGF Commission in 2014. A population objective of 32,000 deer with a “special” management buck ratio objective of 30 to 45 bucks: 100 does, same as past objectives identified for the Sublette Herd, was also approved to provide future management direction for the Sublette Herd.

Herd Unit Issues

Winter survival, habitat condition and quality on winter ranges, and habitat loss (direct and indirect) from gas and residential development are the primary issues the influencing population

dynamics in this herd unit. During the past 10 years, this deer herd experienced two winters that resulted in above normal fawn mortality (> 50% loss). Winter conditions experienced in 2016-17 will result in another above average deer die-off. Prior to this winter, the 2010-11 winter fawn mortality estimates exceed 70%. Winter fawn mortality averages estimate around 30% on most years when winter severity is moderate to average. Current annual growth on key winter browse species has varied among years, but the overall habitat conditions remain poor with some improved on certain years. Gas field development has and will continue to impact deer numbers within this herd unit. The Pinedale Anticline gas field development overlaps with crucial winter range located on the Mesa, where annual population estimates indicate deer numbers have declined by roughly 40% from 2001 – 2016. Studies have demonstrated that deer avoid areas with intensive winter gas development, resulting in less forage available for wintering deer within and adjacent to gas development.

Weather



Precipitation

Overall precipitation from October 2015 through September 2016 was slightly above average when averaged across the entire herd unit. The general characteristics included a relatively dry winter followed by average spring precipitation. Fortunately, growing season (April through June) precipitation was above average which resulted in good vegetation production across all ranges.

Winter Severity

The 2016-2017 winter has been extreme with below average temperatures and above average snow on winter ranges. Snow crusting has also resulted from temperature extremes creating difficult foraging conditions. The mule deer fawn and adult mortality from the 2016-17 was high with an estimated fawn loss of 85% and adult loss near 35%. This extreme winter follows three winters of mild conditions resulting in good over-winter survival for fawns and adults. High elevation mountain ranges have received above average snow levels.

Habitat

Sagebrush and other shrubs produced good leader growth in 2016 which provided a good quantity of forage on winter ranges. However, many shrubs are under snow and largely unavailable on extreme winters. Current snow conditions do not indicate deer will leave winter ranges early, but weather in the next two months can significantly impact those conditions.

Habitat Significant Events

Habitat treatments were conducted at several locations in 2016 throughout the herd unit. The Sublette Mule Deer Mitigation project implemented its first year of treatments including 1,600 acres of sagebrush mowing, 210 serviceberry and chokecherries were planted and a livestock exclusion fence was constructed. Other treatments include 640 acres of aspen treatments, 1,000 willow cuttings planted for riparian restoration and 6 miles of fences converted to wildlife friendly at Rolling Thunder Ranch; 2,443 acres of cheatgrass sprayed on the Wind River front; and the 34,000 acre Cliff Creek Wildfire in the Hoback basin. More detailed information can be obtained by reading the Pinedale Region report in the 2016 Strategic Habitat Plan (SHP) Annual Report.

Habitat Monitoring

Winter Range Shrub transects were not monitored in 2016 by Department personnel, but monitoring associated with past and future treatments was conducted throughout the herd unit and is discussed in more detail in the 2016 SHP Report.

Rapid Habitat Assessments

In 2015, Department personnel initiated the Rapid Habitat Assessment methodology to survey important mule deer habitats. This method strives to capture large-scale habitat quality metrics to better understand how the habitat is providing for the current population of mule deer. The overall end result of this effort will be to provide a standardized habitat component to discussions about how mule deer objectives should or should not be adjusted based on the general concept of carrying capacity. This data will be summarized prior to the objective review in 2019 for this herd, incorporating 2015-2019 data at that time. In 2016, 14 Aspen (2,559 acres) and 7 Rangeland (7,491 acres) Assessments were completed throughout the herd unit by personnel in the Jackson and Pinedale Regions.

Field Data

Postseason herd composition (classification) counts in early December 2016 totaled 10,681 deer. The number of deer counted has incrementally increased during previous year's surveys (9,932 deer in 2015, 9,627 deer in 2014 and 8,259 in 2013 and 7,343 in 2012). Snow cover was present on most areas surveyed during 2016, with deer distribution occupying all traditional winter habitats. Survey effort and timing to conduct these herd composition counts has remained similar on all years.

The postseason 2016 total buck:100 doe ratio of 41:100 is higher than the previous 5-year average of 38:100 and is meeting management goals for this herd unit. Yearling buck:100 doe ratio in 2016 were decent at 12:100 indicating good fawn survival during the past year. Adult buck ratios vary annually based on yearling buck recruitment and buck harvest levels. Mild winter conditions during the past three years have produced good buck recruitment, resulting in higher total buck and adult buck ratios during 2015 and 2016.

The 2016 fawn: 100 doe ratio of 61:100 was lower to that observed in 2015 and has shown a downward trend since 2012. The previous 5-year average fawn: 100 doe ratio is 67:100. Good fawn production, along with winter survival are important for population growth and sustainability in this herd unit. Fawn production and recruitment through the winter has been sporadic in this herd and appears to influence population trend the most.

Harvest Data

The 2016 harvest was approximately 2,300 total deer (2,200 bucks and 100 does/fawns), higher than the 2015 harvest of approximately 2,000 deer (1,900 bucks and 100 does/fawns). Since the low harvest reported in 2011, harvest has gradually increased within this herd. Similar to harvest rates, hunter success has also shown increasing trends with a reported success of 46% in 2016 compared to the average success rate of 35% during the previous 5-year period. Hunter effort has shown a declining trend in recent years at 12 days/harvest during both 2015 and 2016, compared to the 5-year average of 16 days/harvest. The hunting seasons in 2011-2016 were more conservative compared to previous years, as all doe/fawn harvest opportunities were eliminated (except for youth), season lengths were slightly shortened, and limited quota licenses (including non-resident quotas) were reduced. Harvest and hunter effort trends correlate well with estimated population trends. When this deer population declines, as in 2011, harvest rates and hunter participation decrease, and hunter effort increases. The opposite trend (increase harvest rates, hunters, and reduced hunter effort) is apparent with a population increase as harvest metrics have shown in recent years. Harvest rates vary among hunt areas, as hunting pressure and harvest is highest in Hunt Areas 142, 152, and 154, partially attributed to higher deer densities and little to no wilderness area limitations for non-resident hunters.

Population

The WGFD changed modeling techniques for all of big game herd units in July, 2012. The new spreadsheet model designed by the Colorado Division of Wildlife uses harvest, sex/age ratios, and survival data. With the consolidation of data from the Steamboat Herd (Hunt Area 131) with the Sublette Herd Unit data a new model was incorporated, resulting in a slightly higher 2013 postseason population estimate of roughly 1,700 more deer compared to the previous model. The Time-Specific Juvenile and Constant Adult Survival (TSJ,CA) Model exhibits the best overall fit compared to the other models (Fit = 101 and Relative AICc = 202) resulting in a 2016 postseason population estimate of approximately 28,500 deer. The TSJ,CA model appears to track male:female ratios very well and represent population trends quite well, although local managers feel that actual population estimates derived from this model are inflated above actual deer numbers in this herd. This 2016 population estimate is 11% below the desired objective of 32,000 for this herd unit.

Management Summary

The combination of variable reproductive rates, fawn survival, natural gas development on the Mesa winter complex, and habitat conditions are the primary factors regulating population trends in the Sublette herd unit. The winter/spring losses (fawns and adults) during 2010-11 dropped this population to one of lowest levels ever documented. In addition to years with large winter die-off, other population setbacks have been common in this herd and are primarily attributed to poor fawn survival and poor forage conditions on winter ranges. Overall habitat conditions remain poor, but conditions have improved in recent years. Although the current management

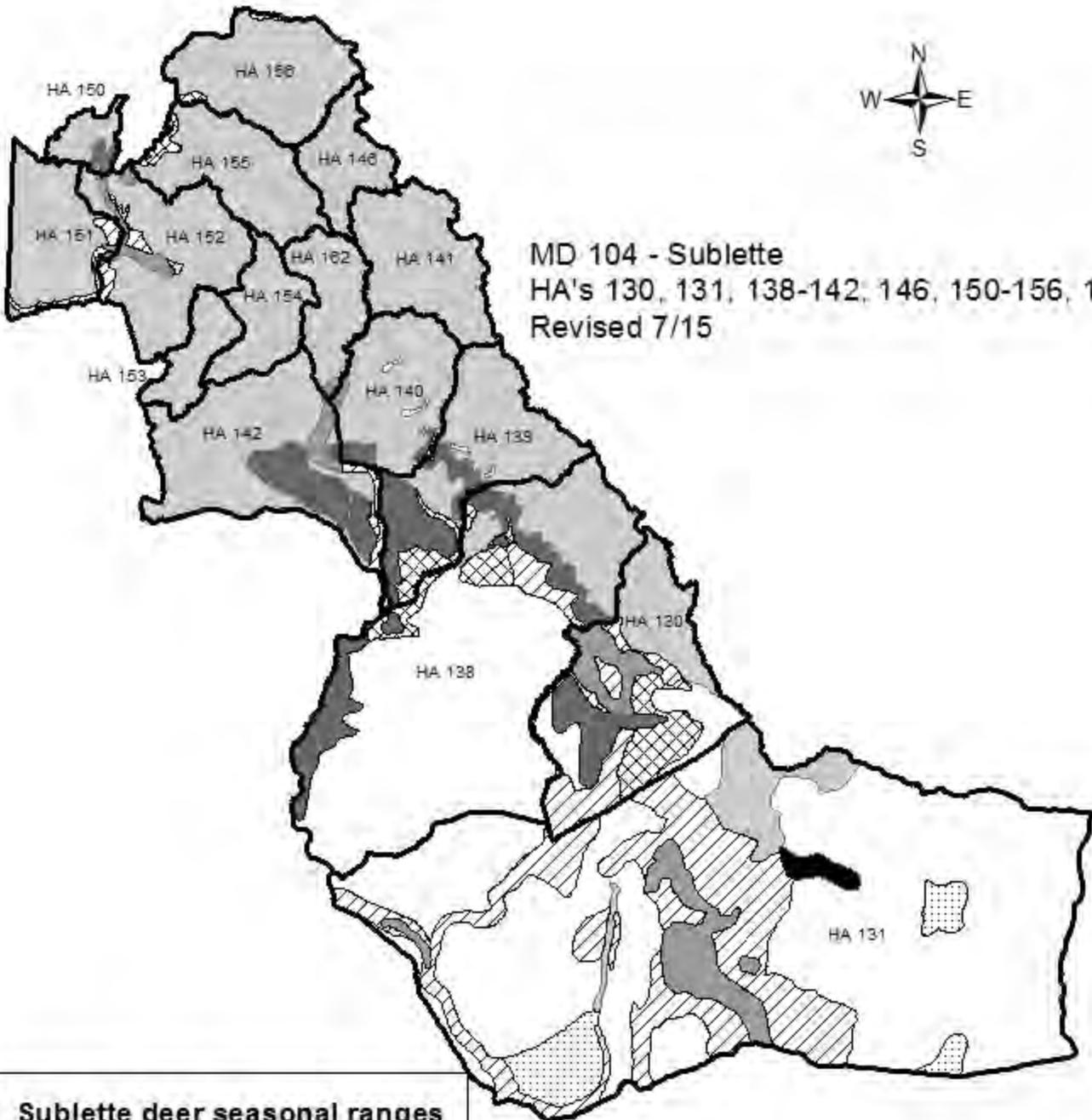
direction is for maximum population growth (no female harvest), female harvest may be necessary at some point in the future to offset degradation of crucial winter habitats and poor survival rates as this population increases. Population estimates indicate the population is roughly 11% below the objective of 32,000 and has shown continuous growth during the past four years, primarily attributed to good overwinter survival due to mild winters. Buck ratios are meeting herd goals (special status; 30-45 bucks:100 does) with trophy buck quality being maintained. Overall hunter satisfaction has been good within this herd in recent years.

With the severe winter conditions (deep snow accumulations and below normal temperatures) experienced during the 2016-17 winter, little forage (browse) was available on much the traditional winter ranges and deer were forced to search and move into habitats not typically used in the winter. Spring data collection efforts such as change-in-ratio surveys, deer mortality documentation, and survival of collared deer estimate fawn loss near 85% and adult loss near 35% from this 2016-17 winter. Although harvest strategies in this herd is already very conservative in allowing primarily buck harvest, some hunting season modifications were made to further reduce harvest rates and maintain adequate buck ratios.

An antler point regulation on mule deer was established for all hunt areas within this herd unit, restricting harvest to bucks with three (3) points or more on either antler in an effort to help maintain buck ratios above 30:100. A general license deer season for most hunt areas will open on September 15 and close October 6 (shortened by 1 day). Doe/fawn harvest opportunities will be the same as in 2012-2016, as only youth hunters will be allowed to harvest doe/fawn deer in general seasons. There will be the same white-tailed deer season of 50 limited quota (Type 3) licenses valid for any white-tailed deer, October 1 – November 30 in Areas 138-140, and 142. Limited quota (Type 1) licenses in hunt areas 141 are reduced to 80 licenses valid for the month of October. Limited quota (Type 1) licenses in hunt area 130 are reduced to 20 licenses with an October 15 to October 31 season. A total of 25 limited quota doe/fawn licenses (Type 6) in Area 130 are available to address damage concerns on private lands near Farson valid in October. The Nonresident Region H quota is reduced to 600 licenses (reduction of 200). The 2016 season is projected to harvest approximately 1,000 deer (950 bucks, 50 doe/fawns).



MD 104 - Sublette
HA's 130, 131, 138-142, 146, 150-156, 162
Revised 7/15



Sublette deer seasonal ranges

RANGE

-  CRUWIN
-  CRUWYL
-  OUT
-  SSF
-  SWR
-  WIN
-  WYL
-  YRL

2016 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL104 - HOBACK
 HUNT AREAS: 86-87

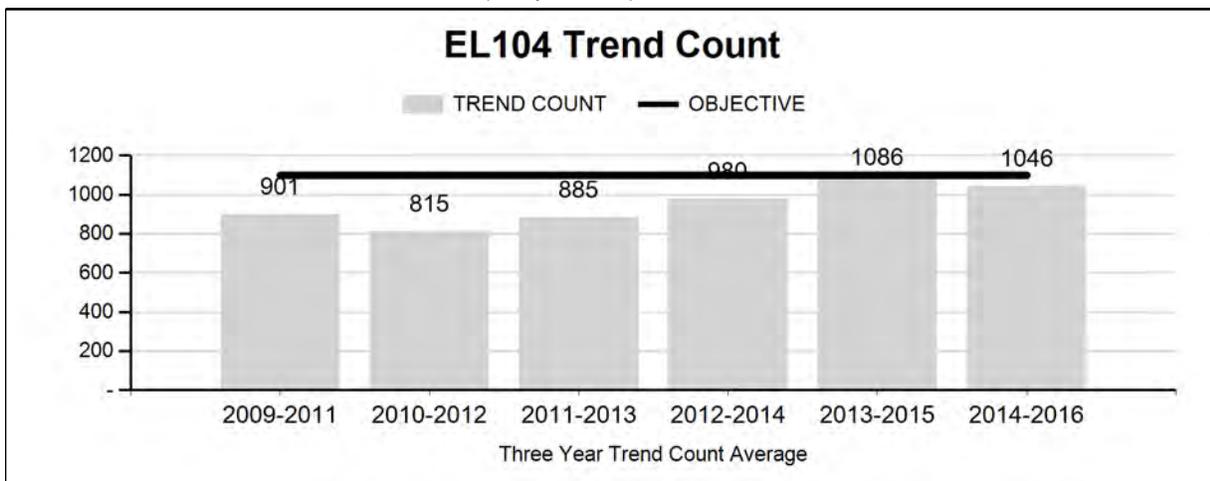
PERIOD: 6/1/2016 - 5/31/2017
 PREPARED BY: DEAN CLAUSE

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	973	928	1,000
Harvest:	208	283	200
Hunters:	750	804	740
Hunter Success:	28%	35%	27%
Active Licenses:	755	816	740
Active License Success	28%	35%	27%
Recreation Days:	5,192	5,235	5,100
Days Per Animal:	25.0	18.5	25.5
Males per 100 Females:	17	16	
Juveniles per 100 Females	31	28	

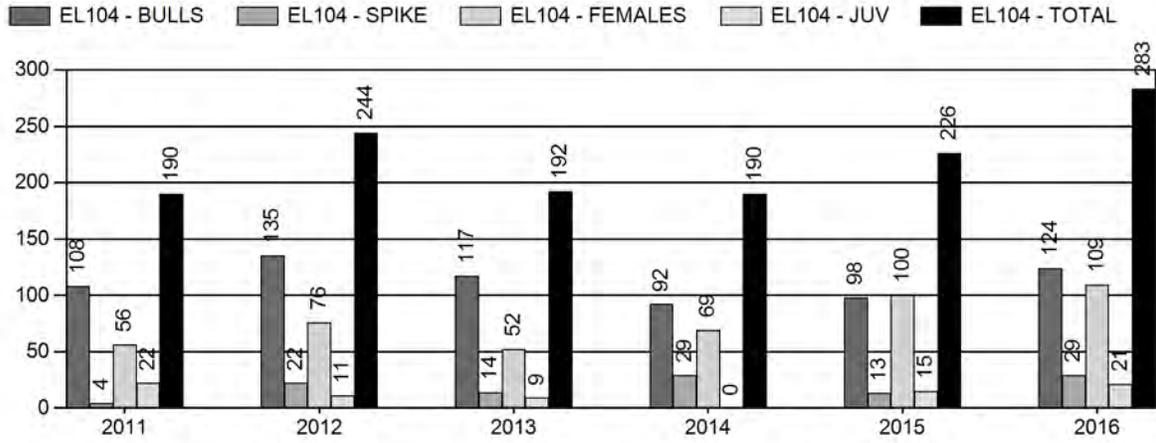
Trend Based Objective ($\pm 20\%$) 1,100 (880 - 1320)
 Management Strategy: Recreational
 Percent population is above (+) or (-) objective: -15.6%
 Number of years population has been + or - objective in recent trend: 0

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

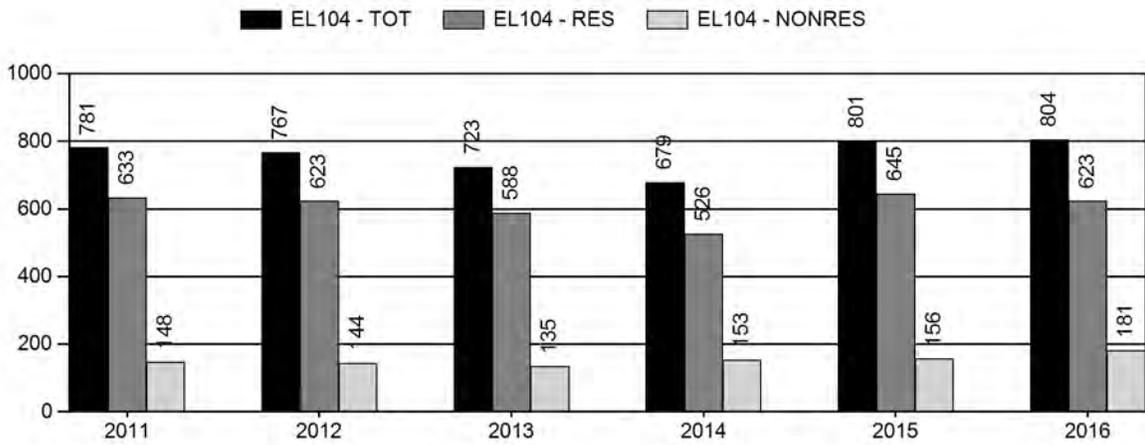
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



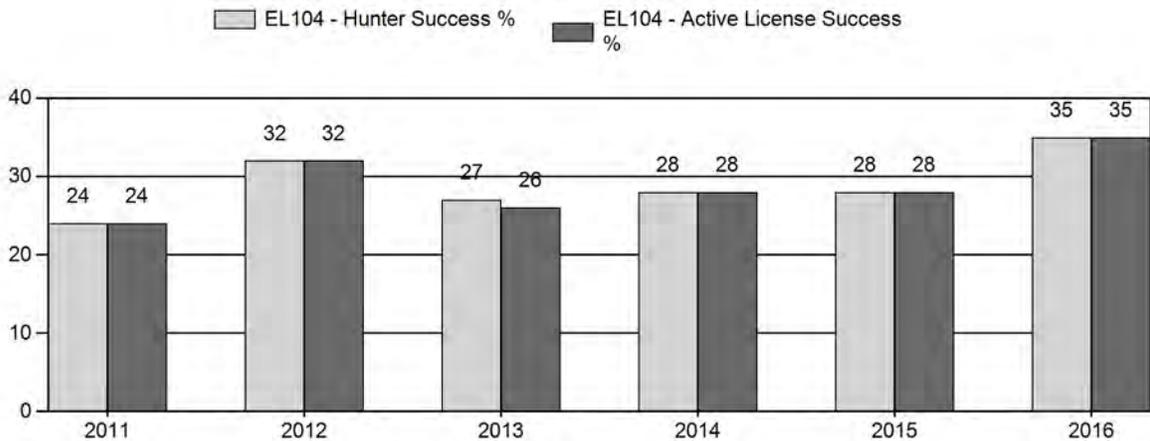
Harvest



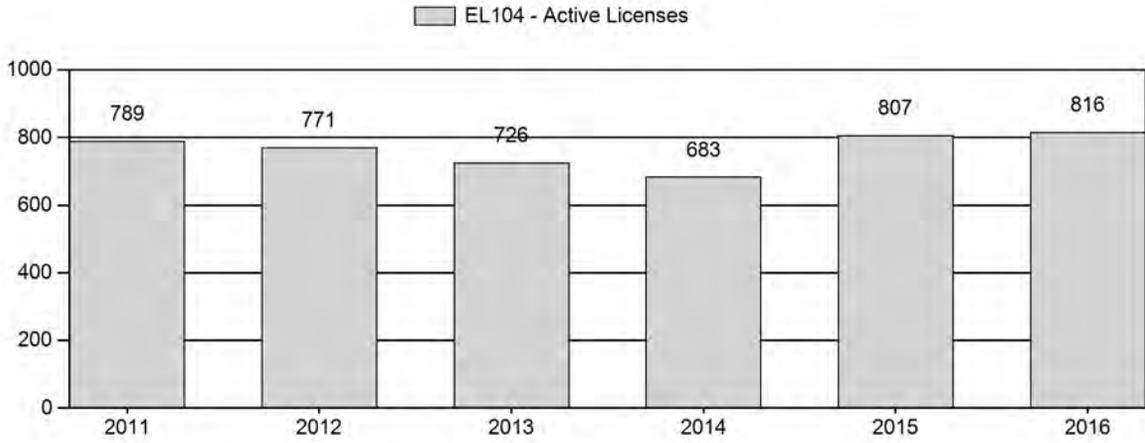
Number of Hunters



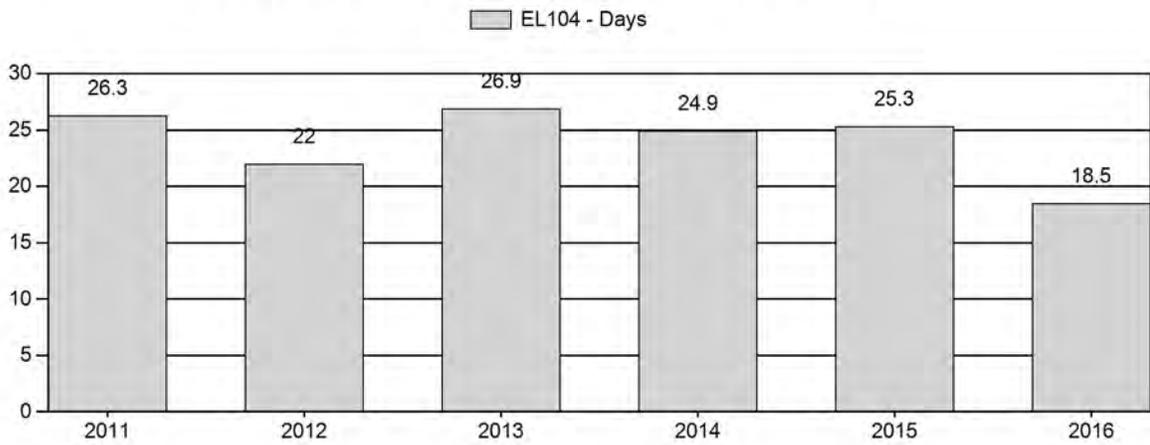
Harvest Success



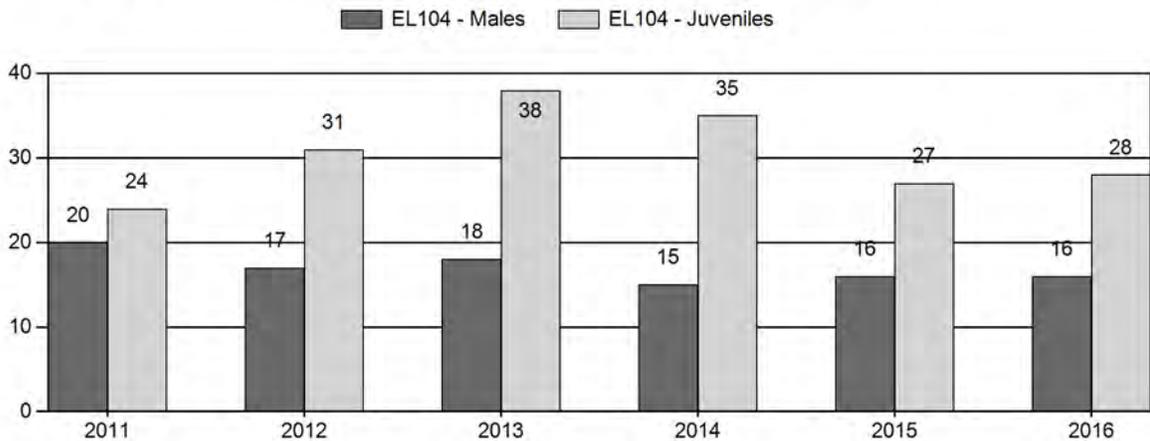
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Elk Herd EL104 - HOBACK

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	823	45	69	114	14%	573	70%	135	16%	822	204	8	12	20	±0	24	±0	20
2012	0	20	70	90	11%	533	68%	164	21%	787	264	4	13	17	±0	31	±0	26
2013	0	55	54	109	11%	617	64%	235	24%	961	349	9	9	18	±0	38	±0	32
2014	0	42	62	104	10%	689	66%	244	24%	1,037	325	6	9	15	±0	35	±0	31
2015	0	39	64	103	11%	640	70%	173	19%	916	291	6	10	16	±0	27	±0	23
2016	0	33	71	104	11%	642	69%	182	20%	928	251	5	11	16	±0	28	±0	24

2017 Seasons – Hoback Elk Herd Unit (EL104)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
86		Sep. 26	Oct. 31		General	Any elk
86		Nov. 1	Nov. 5		General	Antlerless elk
87		Oct. 15	Oct. 31		General	Any elk valid south of U.S. Highway 191
87		Oct. 15	Oct. 21		General	Any elk valid north of U.S. Highway 191
87		Oct. 22	Oct. 31		General	Antlered elk valid north of U.S. Highway 191
87		Nov. 1	Nov. 5		General	Antlerless elk valid south of U.S. Highway 191
87	6	Dec. 1	Jan. 31	75	Limited quota	Cow or calf valid south and east of Dell Creek, north and east of U.S. Highway 191, and west of the North Fork of Fisherman Creek
Archery Seasons						
86		Sept. 1	Sept. 25			Refer to Section 2 of this Chapter
87		Sept. 1	Sept. 30			Refer to Section 2 of this Chapter

Summary of Changes in License Numbers

Area	Type	Changes from 2016
		No Changes
Herd Unit Total		No Changes

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,100

Management Strategy: Recreational

2016 Trend Count: 928

Most Recent 3-year Running Average Trend Count: 1,046

The Hoback Herd Unit encompasses approximately 341 square miles of occupied elk habitat almost entirely within Sublette County. Hunt Areas 86 (Monument Ridge) and 87 (Raspberry Ridge) make up the Hoback Herd Unit. This herd unit is managed under a mid-winter trend objective of 1,100 ($\pm 20\%$) with a herd estimate derived from a 3-year trend count average on feedgrounds and native range combined. This herd is managed under “recreational” management.

Herd Unit Issues

Managers believe a very high proportion (>90%) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. Elk are annually documented moving into and out of this herd unit resulting in annual winter trend counts that can vary from year to year. In addition, the Dell Creek feedground has struggled to maintain elk numbers near the winter quota of 400 elk. Low elk numbers at Dell Creek feedground can partially be attributed to the close proximity of this feedground to the Fall Creek herd unit where more liberal elk harvest strategies occur. Elk depredation on private land haystacks and cattle feed lines north of Hwy 191 continue to be a problem in most winters.

Weather

Elk in this herd unit experience the coldest winter temperatures compared to all other herd units in western Wyoming. These climatic conditions likely result in higher feedground dependence by elk, even on low snow years. Heavy snow loads typically make native forage unavailable on most winters.

Habitat

Diverse spring, summer and fall habitats from low elevation willow bottoms and sagebrush/grasslands, to aspen and mixed conifer, to high elevation tall forb, white-bark pine, and alpine habitat make this herd unit rich for a wide array of wildlife. Due to the heavy snow accumulations and cold temperatures during winter, over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit. Therefore winter and other seasonal habitats do not limit population growth in this herd.

Field Data

The 2016 postseason trend count of 928 elk observed on Department-operated elk feedgrounds and native winter ranges showed a decrease from the past three year period, but an increase compared to the low trend counts from 2010-2012 (Table 1). Very few elk (n=9) were counted away from established feedgrounds in Areas 86 and 87, which is typical for this herd unit due to deep snow conditions. Snow conditions were above normal this past winter (2016-17) and over 99% of the documented elk numbers were from feedground locations.

Table 1. Herd Composition Counts in the Hoback Herd Unit, 2007-2016

Location	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Dell Creek F.G.	311	345	298	228	205	171	242	294	330	314
McNeel F.G.	591	687	701	596	613	544	706	728	693	605
N.W.R.	38	23	44	13	4	72	99	85	81	9
Herd Unit Total	940	1055	1043	837	822	787	1047	1107	1104	928

The 2016 postseason ratios of 16 bulls:100 cows:28 calves, shows a similar bull ratio calf ratio compared to the 5-year average bull:cow:calf ratios of 17:100:31. The 2016 bull:cow ratio is at the low end for the management goals for this herd unit.

Harvest Data

Additional antlerless harvest opportunities were available in 2008 through 2011 in Area 86 and the southern portions of Area 87, and then re-instated back into the 2015 and 2016 seasons. Liberal seasons were designed to help reduce elk numbers from surrounding herd units, as many of these animals move into the Hoback during the spring/summer/fall period. The 2016 harvest survey indicated a total harvest of approximately 283 elk (153 bulls and 130 cows/calves). This is an increase over the 2015 harvest and likely due to higher antlerless harvest in Area 86 and the south portion of Area 87. The 2016 hunter success was 35% and days/harvest was 18, much improved over the 5-year average of 28% success and 25 days/harvest.

Population

Starting in 2012, a mid-winter trend count was used to manage this herd unit instead of hand-derived population model estimates. This is an extremely “leaky” herd unit and as a result, a functional computer simulation model has never been developed. The post hunt population trend objective for this herd is 1,100 elk ($\pm 20\%$). The 2014-2016 mid-winter 3-year trend count average is 1046 elk, which is right at the management goal for this herd objective.

Management Summary

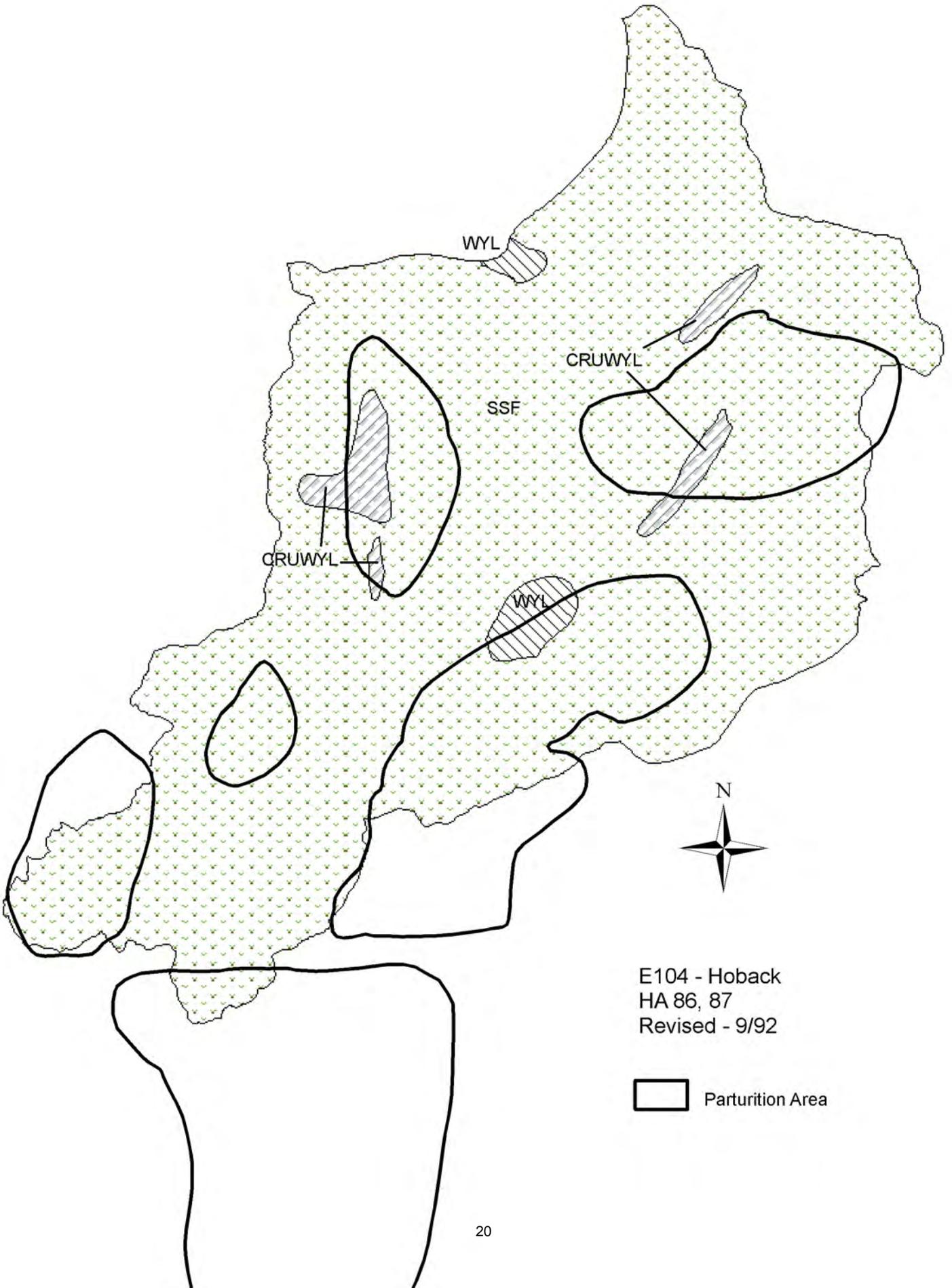
The Hoback Herd Unit is extremely “leaky” in regards to elk moving in and out of the herd on a seasonal basis. Fluctuations of up to 200+ animals between annual winter counts are common. Radio collared (GPS) elk and harvest data from elk tagged at Franz (located in the Piney herd unit), McNeel, and Dell Creek feedgrounds have documented animal movements between herd units. Ear tag data has documented 29% to 43% harvest outside the herd unit where those elk were tagged. Radio collared elk movements outside the herd units from where the animals was collared are as follows; McNeel at 0%, Dell Creek at 63%, and Franz at 89%.

Since 2008, hunting seasons were designed to increase harvest on antlerless within the Hoback herd unit as well as surrounding herd units. In 2012 seasons were changed to reduce female harvest in response to low elk numbers during the winter of 2011-2012. Additional harvest opportunities were provided in 2015 and 2016 as elk numbers approached objective levels. Currently, adequate bull:cow:calf ratios are being maintained. The most recent mid-winter 3-year trend average was 1,046 elk, placing the population at the objective of 1,100 elk for this herd. Elk numbers have continued to increase at the Dell Creek Feedground since female harvest opportunities have been shortened in recent years in the north portion of Area 87. Mortalities estimated near 100+ elk were documented on or near feedgrounds within this herd unit during

the 2015-16 winter due to wolf depredations, contributing to the lower elk numbers documented this past winter 2016-17. If wolf caused mortalities continue in upcoming years, as experienced in 2015-16, hunter harvest opportunities may need to be reduced to maintain population objectives in this herd unit.

The 2017 hunting seasons for this herd unit will provide a similar season for bull harvest and a slightly shorter season for female and calf harvest in most of the herd unit compared to 2016. The general license season north of U.S. Highway 191 in Area 87 will be one week (Oct. 15 – Oct 21) of “any” elk hunting followed by one week (Oct. 22 – Oct. 31) of “antlered” elk. The general license season for Area 87 south of U.S. Highway 191 is “any” elk from Oct. 15 – Oct. 31 followed by a Nov. 1 – Nov. 5 season for antlerless elk. A total of 75 limited quota Type 6 (cow/calf) licenses will again be available in a portion of Area 87, valid from Dec. 1 – Jan. 31, in an effort to reduce damage to privately stored hay crops.

The 2017 season in Area 86 offers general license, “any” elk hunting from September 26 through October 31, with additional harvest opportunities for antlerless elk available from Nov. 1 – Nov. 5. The 2017 hunting seasons are projected to harvest approximately 220 elk (120 bulls, 100 cows/calves).



E104 - Hoback
HA 86, 87
Revised - 9/92

 Parturition Area

2016 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL106 - PINEY
 HUNT AREAS: 92, 94

PERIOD: 6/1/2016 - 5/31/2017
 PREPARED BY: GARY FRALICK

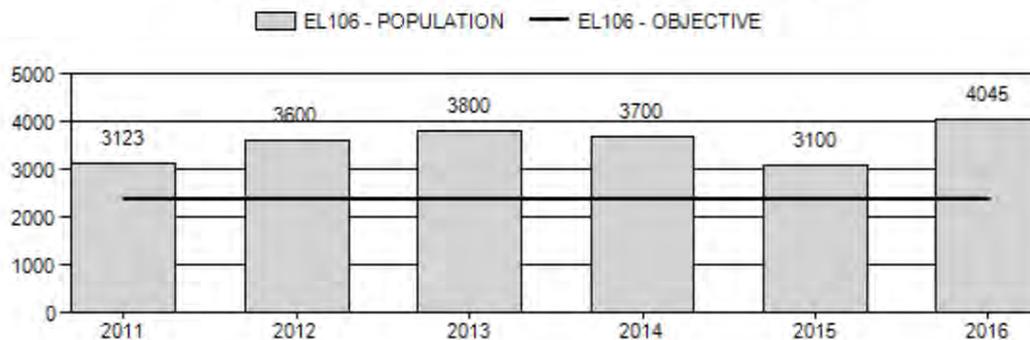
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Population:	3,465	4,045	3,500
Harvest:	1,000	945	1,128
Hunters:	3,279	3,074	3,132
Hunter Success:	30%	31%	36%
Active Licenses:	3,432	3,259	3,132
Active License Success:	29%	29%	36%
Recreation Days:	28,268	23,784	25,386
Days Per Animal:	28.3	25.2	22.5
Males per 100 Females	37	41	
Juveniles per 100 Females	33	34	

Population Objective ($\pm 20\%$): 2400 (1920 - 2880)
 Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: 69%
 Number of years population has been + or - objective in recent trend: 70
 Model Date: 3/17/2017

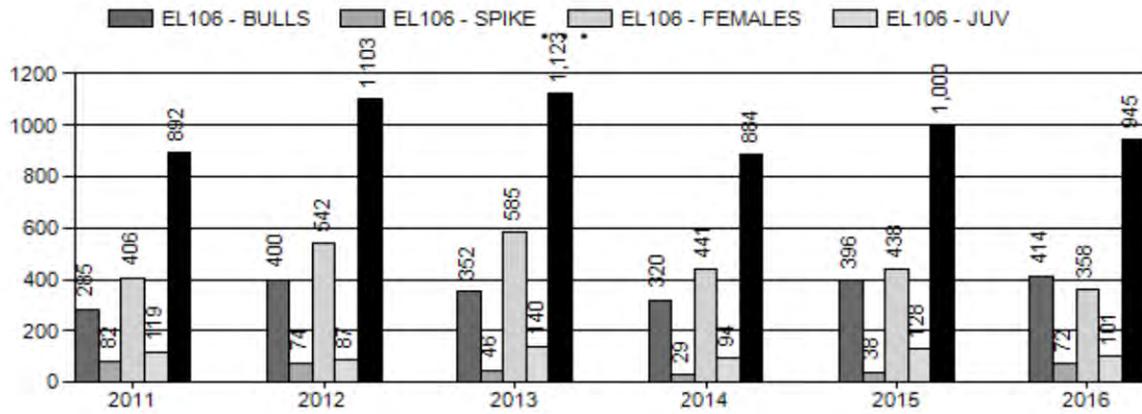
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	15%	21%
Males ≥ 1 year old:	33%	34%
Total:	20%	24%
Proposed change in post-season population:	-7%	-12%

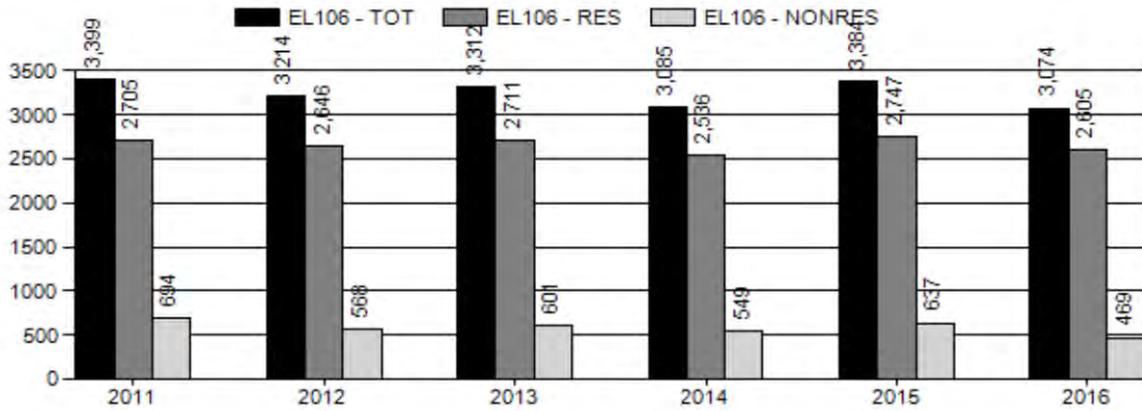
Population Size - Postseason



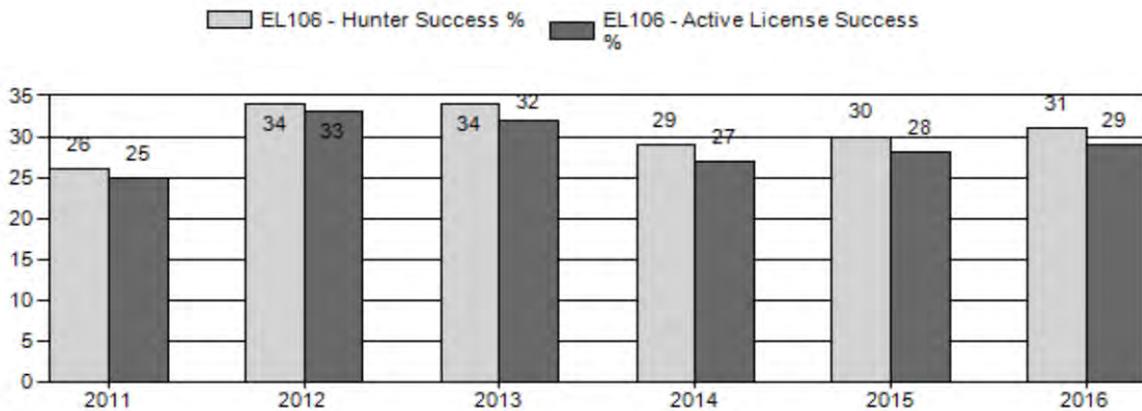
Harvest



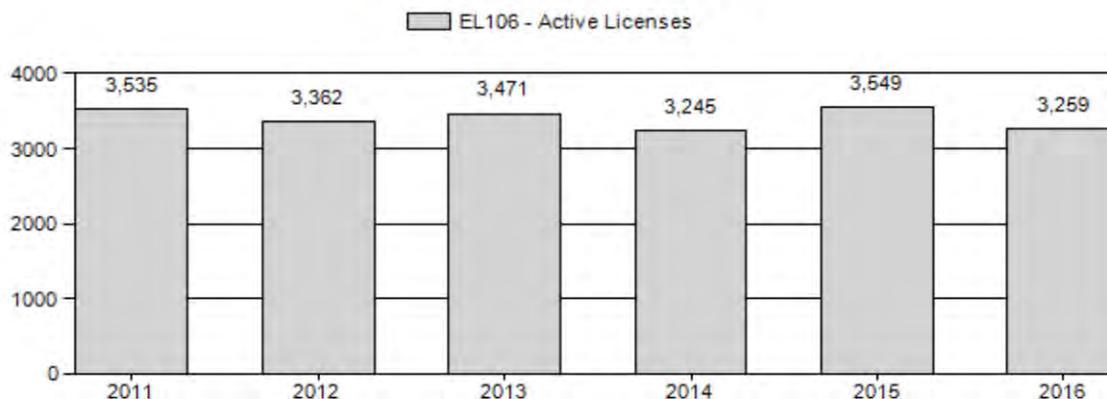
Number of Hunters



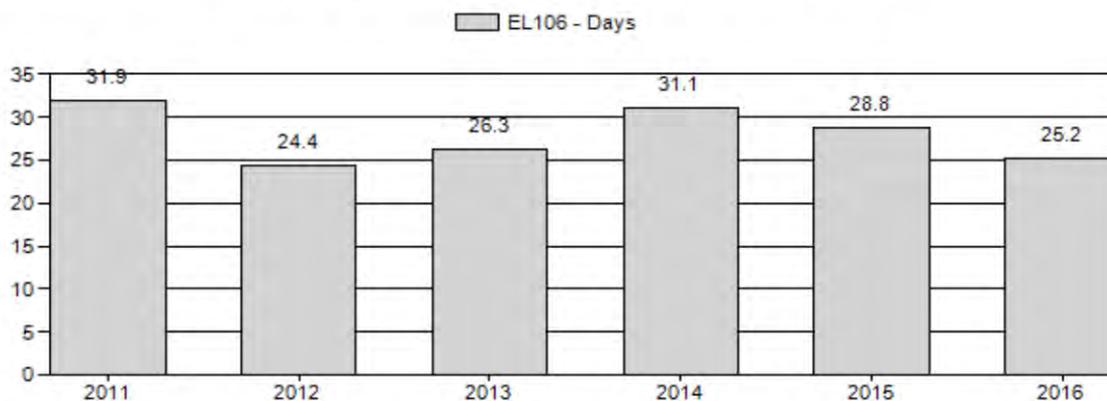
Harvest Success



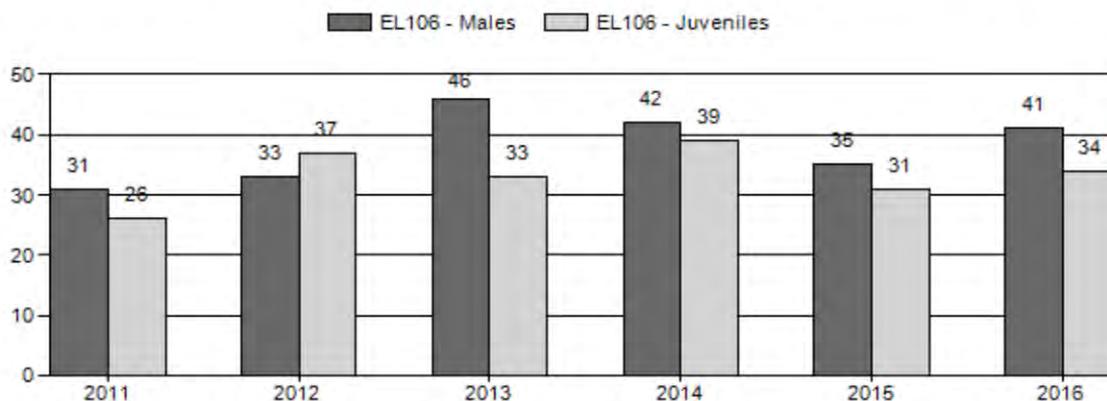
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Elk Herd EL106 - PINEY

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls Cls Obj	Males to 100 Females				Young to			
		Ylg	Adult	Total	%	Total %	Total	%	Ylng		Adult	Total	Int	Conf	100 Fem	Conf Int	100 Adult	
2011	3,123	217	302	519	20%	1,660	64%	425	16%	2,604	369	13	18	31	± 1	26	± 1	20
2012	3,600	261	306	567	19%	1,705	59%	639	22%	2,911	454	15	18	33	± 1	37	± 1	28
2013	3,800	240	380	620	26%	1,337	56%	443	18%	2,400	613	18	28	46	± 2	33	± 1	23
2014	3,700	157	458	615	23%	1,476	55%	579	22%	2,670	595	11	31	42	± 1	39	± 1	28
2015	3,100	152	297	449	21%	1,273	60%	396	19%	2,118	524	12	23	35	± 1	31	± 1	23
2016	4,000	229	431	660	23%	1,600	57%	551	20%	2,811	0	14	27	41	± 1	34	± 1	24

2017 HUNTING SEASONS
PINEY ELK HERD UNIT (EL106)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
92		Oct. 15	Oct. 31		General	Any elk
		Nov. 1	Nov. 12		General	Antlerless elk
	6	Oct. 1	Nov. 23	400	Limited quota	Cow or calf
	6	Nov. 24	Jan. 31			Cow or calf valid north of Wyoming Highway 354 and Sublette County Road 112, east of Sublette County Road 115, and south of South Beaver Creek
94		Oct. 15	Oct. 31		General	Any elk
		Nov. 1	Nov. 12		General	Antlerless elk
	6	Oct. 1	Oct. 31	400	Limited quota	Cow or calf
	6	Nov. 1	Nov. 23		Limited quota	Cow or calf valid north of Middle Piney Creek
	7	Nov. 1	Nov. 30	100	Limited quota	Cow or calf valid north of Middle Piney Creek
92, 94		Sep. 1	Sep. 30			Archery only Refer to Section 2 of this Chapter

SUMMARY OF PROPOSED CHANGES BY LICENSE NUMBER

Area	License Type	Quota Change from 2016
92	Type 6	+100
94	Type 6	+100
Herd Unit Total	Type 6	+ 200 licenses

Management Evaluation

Current Postseason Population Management Objective: 2,400

Management Strategy: Recreational

2016 Postseason Population Estimate: ~4,000

2017 Proposed Postseason Population Estimate: ~3,500

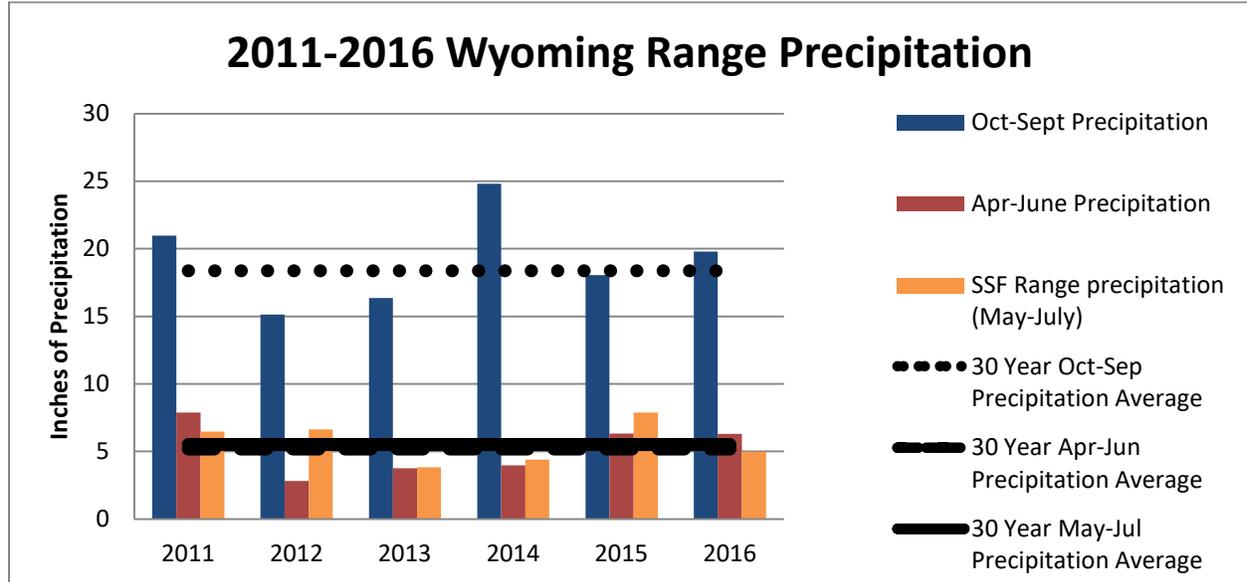
The population objective for Piney elk herd is 2400 elk. The management strategy is recreational management. The objective and management strategy was revised in 2011. The current population estimate is 4000 elk.

Herd Unit Issues

Since 2005 sustained population reduction has been difficult to achieve. Hunting opportunities are the most liberal in western Wyoming. Management strategies have emphasized hunter opportunity by promoting antlerless elk harvest with November hunting seasons and issuance of limited quota cow/calf only licenses.

While both hunt areas continue to support winter elk numbers at or above Commission-established feedground quotas, Area 94, and specifically the Bench Corral feedground supports the highest increase in elk. Hunting seasons over the last 10 years have continually targeted elk that spend the winter on the Bench Corral feedground. By focusing hunting pressure in Hunt Area 94, north of Middle Piney Creek, the desired result of reducing elk numbers on this feedground to levels closer to 700 or 800 have been unattainable.

Weather



Precipitation

Overall precipitation from October 2015 through September 2016 was slightly above average when averaged across the entire herd unit. The general characteristics included a relatively dry winter followed by average spring precipitation. Fortunately, growing season (April through June) precipitation was above average which resulted in good vegetation production across all ranges.

Winter Severity

The 2016-2017 winter has been extreme with below average temperatures and above average snow on winter ranges. Snow crusting has also resulted from temperature extremes creating difficult foraging conditions. The mule deer fawn and adult mortality will likely be very high when change in ration classifications are conducted in spring 2017. This extreme winter follows three winters of mild conditions resulting in good over-winter survival for fawns and adults. High elevation mountain ranges have received above average snow levels. The Snow Water Equivalent of the Upper Green River Basin has registered 192%, the Upper Bear River Basin has registered 169%, and the Lower Green River Basin has registered 161% compared to the 1981-2010 median as of February 27, 2017.

Weather conditions during the 2016 were ideal for forage production beginning in early spring and continuing through fall. By late summer the moisture regime had changed frequent precipitation scenario that persisted into the fall hunting season. Drought conditions in the early portion of the summer abated by late fall as persistent snow storms began to deposit snowpack in the Wyoming and Salt Mountain Ranges. By mid winter snow conditions on winter ranges had changed significantly. Little to no snow had accumulated on core winter ranges. These conditions persisted throughout the remainder of the winter. By late winter 2016 snowpack in western Wyoming watersheds were estimated to be significantly above normal. For additional

weather and precipitation data please visit the following websites:

<http://www.ncdc.noaa.gov/temp-and-precip/time-series> and

<http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html>.

Habitat

Winter range browse plants have been measured each spring and fall to assess production and utilization since the late 1990s. Growing conditions improved in 2016 on winter ranges because of moisture regimes in early spring and throughout the growing seasons. Improved growing conditions were due to spring and summer rains which have a different effect on shrubs than winter snowpack due to rates of infiltration. Leader production on Wyoming big sagebrush and black sagebrush were the species most notably improved compared to the 2013 leader growth. However, average leader growth was still less than a half inch for Wyoming big sagebrush sites and less than two inches for mountain shrubs. For additional site specific information, please refer to the 2015 Annual Report Strategic Habitat Plan Accomplishments, for the Pinedale Region habitat improvement project summaries (<http://wgfd.wyo.gov/web2011/wildlife-1000708.aspx>).

Field Data

Population reduction has been difficult to achieve. Management strategies have emphasized the harvest of antlerless elk with November hunting seasons and issuance of limited quota cow/calf licenses. Hunt Area 94, and specifically the Bench Corral feedground, has supported the highest increase in elk throughout the herd unit. Consequently, hunting opportunities, especially for antlerless elk in Area 94 where trend counts continue to remain high, have continued to be liberal in order to affect the desired population reduction. Limited quota Type 6 cow/calf licenses have focused harvest on the antlerless segment of the population since these license holders typically account for at least 35% of the antlerless harvest in the herd unit. Limited quota Type 7 cow/calf licenses have been designed to harvest elk that migrate to the Bench Corral feedground.

Elk numbers on feedgrounds in Area 92 have generally been near the desired Commission-established quota over the last 6 years (Appendix A). As a result hunting structure has been designed to maintain elk numbers near these quotas by implementing general license any elk hunting in October and extending unused general licenses into November for antlerless elk only. In addition, the issuance of limited quota type 6 cow or calf only licenses have proven to be supported and popular with the hunting public.

Harvest Data

Hunter success was estimated at 30% in 2015 and 2016, respectively. A total of 1000 elk were taken in 2015. During the current year, 934 elk were estimated to have been harvested. The slight difference in harvest levels between 2015 and 2016 was insufficient to affect the desired population reduction. There were somewhat similar numbers of antlered elk harvested between years in 2015 (N=434 bulls) and 2016 (N=477 bulls), which did not significantly affect a decrease in the annual bull: cow ratio in the posthung 2016 population.

Despite some of the most liberal elk hunting seasons in western Wyoming the number of cow elk harvested over the last 3-years exhibited a decrease in the 2016 harvest. During the three period from 2014-2016, an estimated 441 elk, 438 elk, and 361 antlerless elk were taken during those three years, respectively. In 2014, a total of 94 calves were taken, while in 2015 an estimated 128 calf elk were harvested by hunters in this herd. An estimated 97 calves were harvested in 2016. .

General license hunters accounted for 59% and 76% of the total elk harvest, in 2015 and 2016, respectively. General licenses were successful in harvesting 64% and 52% of the total number of antlerless elk taken in the 2015 and 2016 hunting seasons, respectively. Limited quota Type 6 and 7 license holders accounted for 36% and 48% of the total antlerless elk harvest in 2015 and 2016, respectively. The majority of the antlerless harvest occurs in late October and through November, and affirms the management strategy to promote antlerless harvest when elk are more likely to be present at lower elevation and accessible to hunters. Antlerless harvest over the last 5 years has not resulted in the desired downturn in the total number of elk counted during the annual trend count. However, antlerless hunting is an essential component of the elk management strategy and will continue to manage the reproductive segment of the population and emphasize cow harvest with limited quota licenses holders during the months of October and November.

Population

The population trend is decreasing, but only slightly. The “Constant Juvenile and Adult Survival – CJ,CA Model” spreadsheet model was chosen for the post season population estimate. This model provides the best model alignment with low AICc value of 444 and fit of 453. This model also tracks reasonably with observed bull:cow ratios, bull harvest percentages, and annual population dynamics.

Management Summary

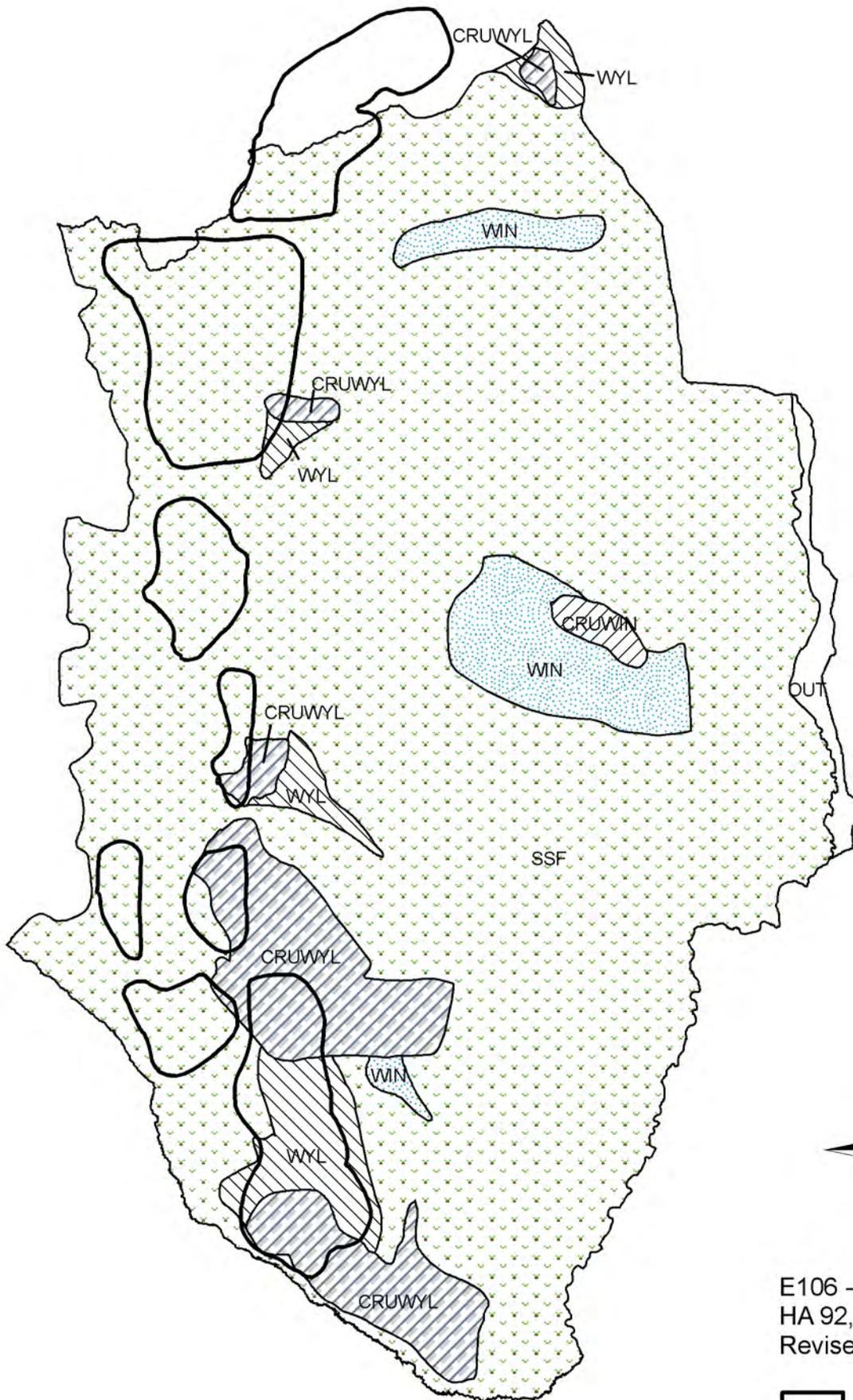
The 2017 hunting seasons are designed to reduce the Piney elk toward the objective of 2400 elk, but at a slightly lower rate. The emphasis to harvest adult female elk in both hunt areas will continue for the 9th consecutive year by opening the limited quota antlerless elk hunting on October 1. The number of days for the November portion of the general antlerless elk hunting season will be from November 1 to November 12. This season structure will allow general license hunter to maximize the November segment of the hunt to harvest elk that have moved to lower, more accessible areas. The number of Type 6 will be increased in 2017 to account for the higher number of elk counted during the 2016 trend count, and increasing above the trend count objective of 2400 elk. As a result, the number of limited quota Type 6 licenses available since 2016 will decrease from 600 to 800 additional cow/calf licenses. A total of 400 Type 6 licenses will be issued in Hunt Areas 92 and 94, respectively. The number of Type 7 licenses will remain at 100 licenses.

A substantial change first initiated in 2014, and implemented in 2015 and 2016, that focuses harvest on antlerless elk north of Middle Piney Creek, will be continued in 2017. Limited quota

Type 7 cow/calf only licenses will be valid north of Middle Piney Creek from November 1 – 30. This hunt is designed to focus harvest on that segment of the population that spends the winter on the Bench Corral feedground. For the 5th consecutive year, hunters will be permitted to harvest up to three elk in this herd. An additional harvest strategy is proposed for 2017 that will focus harvest on elk north of Middle Piney Creek in Area 94 by allowing Area 94 Type 6 hunters to hunt in this restricted portion of the area from November 1 – November 23.

The 2017 hunting seasons are projected to harvest approximately 1130 elk. The 2017 posthunt trend should result in an approximate count of 2900 elk.

Appendix A. Piney Elk Herd, posthunt herd composition data, 2011-2016.										
2011	Adult Males	Yrlng Males	Total Males	Cows	Calves	Total	Ratio:100 Females			
							Adult Males	Yrlng Males	Total Males	Calves
92 JFG	64	69	133	443	170	746				
92 FFG	113	25	138	197	63	398				
92 NR	29	2	31	1	1	33				
94 FFG	6	8	14	138	51	203				
94 NPF	0	0	0	0	0	0				
94 BCFG	78	110	188	881	140(100)	1309				
94 NR	12	3	15	N/A	N/A(203)	218				
TOTAL	302	217	519	1660	425(303)	2907	18	13	31	26
2012										
92 JFG	14	61	75	391	228	694				
92 FFG	885	41	126	218	79	423				
92 NR	71	2	73	0	0	73				
94 FFG	30	25	55	137	47	239				
94 NPF	0	0	0	0	0	0				
94 BCFG	65	121	186	959	284	1429				
94 NR	41	11	52	0	1(14)	67				
TOTAL	306	261	567	1705	639(14)	2925	18	15	33	37
2013										
92 JFG	35	61	96	493	173	762				
92 FFG	106	40	146	138	47	331				
92 NR	55	9	64	2	0(27)	93				
94 FFG	NA	NA	NA	NA	65(226)	291				
94 NPF	0	0	0	0	0	0				
94 BCFG	113	118	231	703	156	1090				
94 NR	71	12	83	1	2(110)	196				
TOTAL	380	240	620	1337	443(363)	2763	28	18	46	33
2014										
92 JFG	51	20	71	257	83	411				
92 FFG	40	20	60	NA	NA(415)	475				
92 NR	77	9	86	5	0(27)	118				
94 FFG	29	18	47	237	87	371				
94 NPF	0	0	0	0	0	0				
94 BCFG	207	84	291	NA	75(1034)	1400				
94 NR	54	6	60	22	4(250)	336				
TOTAL	458	157	615	521	249(1726)	3111	NA	NA	NA	NA
2015										
92 JFG	44	22	66	319	172	557				
92 FFG	22	7	29	136	25	190				
92 NR	41	0	41	1	1	43				
94 FFG	40	37	77	266	76	419				
94 NPF	0	0	0	0	0	0				
94 BCFG	147	73	220	488	100	808				
94 NR	43	13	56	63	22(30)	276				
TOTAL	337	152	489	1273	396(135)	2293	26	12	38	31
2016										
92 JFG	43	58	101	438	124	663				
92 FFG	119	40	159	271	88	518				
92 NR	13	1	14	0	1	15				
94 FFG	22	30	52	285	73	410				
94 NPF	0	0	0	0	0	0				
94 BCFG	211	88	299	599	262	1160				
94 NR	23	12	35	7	3(200)	245				
TOTAL	431	229	660	1600	551(200)	3011	27	14	41	34



E106 - Piney
 HA 92, 94
 Revised - 12/88

 Parturition Area

2016 - JCR Evaluation Form

SPECIES: Elk

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

HERD: EL107 - UPPER GREEN RIVER

HUNT AREAS: 93, 95-96

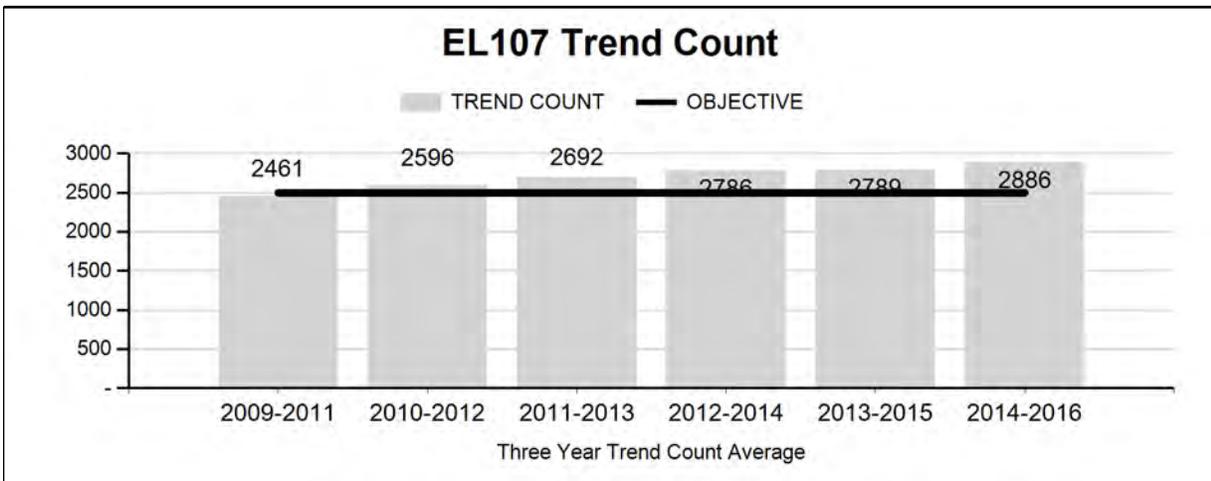
PREPARED BY: DEAN CLAUSE

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	2,731	3,079	2,900
Harvest:	419	454	500
Hunters:	1,208	1,312	1,400
Hunter Success:	35%	35%	36%
Active Licenses:	1,297	1,414	1,400
Active License Success	32%	32%	36%
Recreation Days:	10,483	10,646	10,800
Days Per Animal:	25.0	23.4	21.6
Males per 100 Females:	27	34	
Juveniles per 100 Females	33	33	

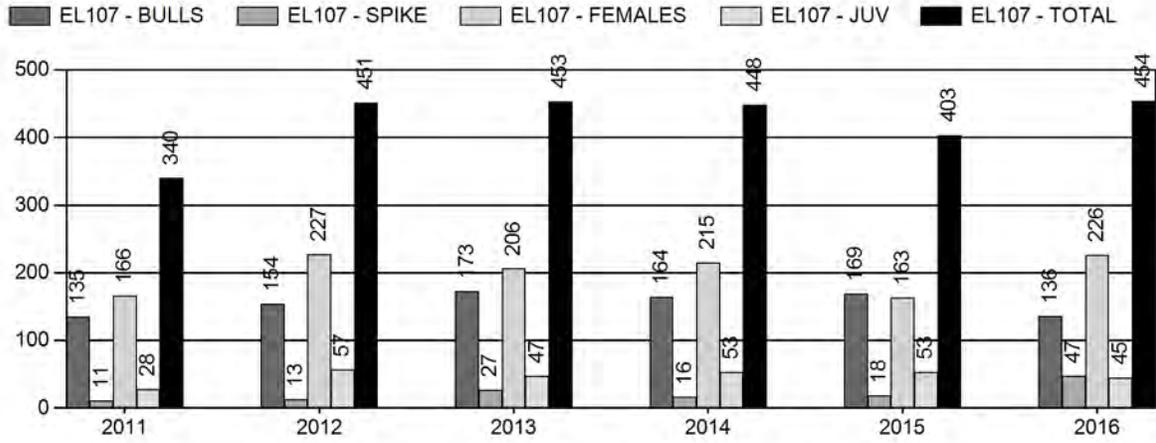
Trend Based Objective ($\pm 20\%$) 2,500 (2000 - 3000)
 Management Strategy: Recreational
 Percent population is above (+) or (-) objective: 23%
 Number of years population has been + or - objective in recent trend: 1

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

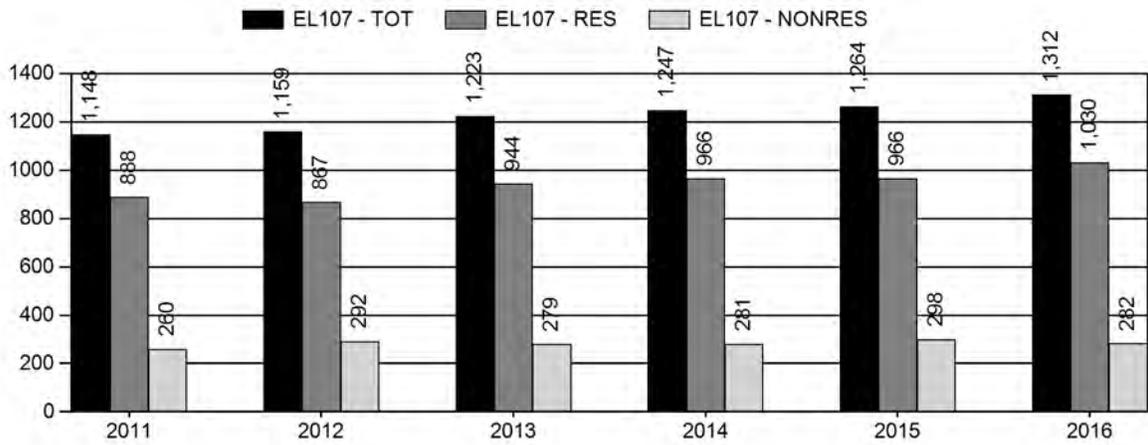
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



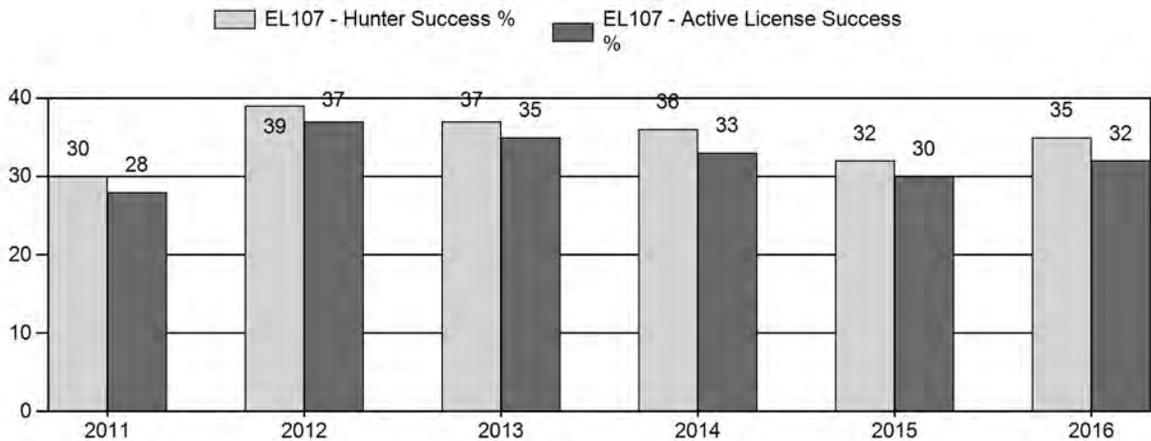
Harvest



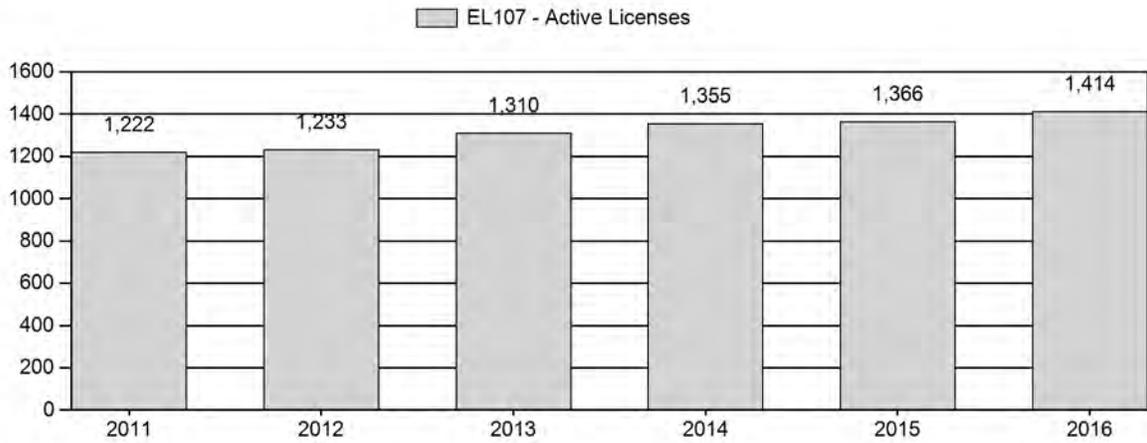
Number of Hunters



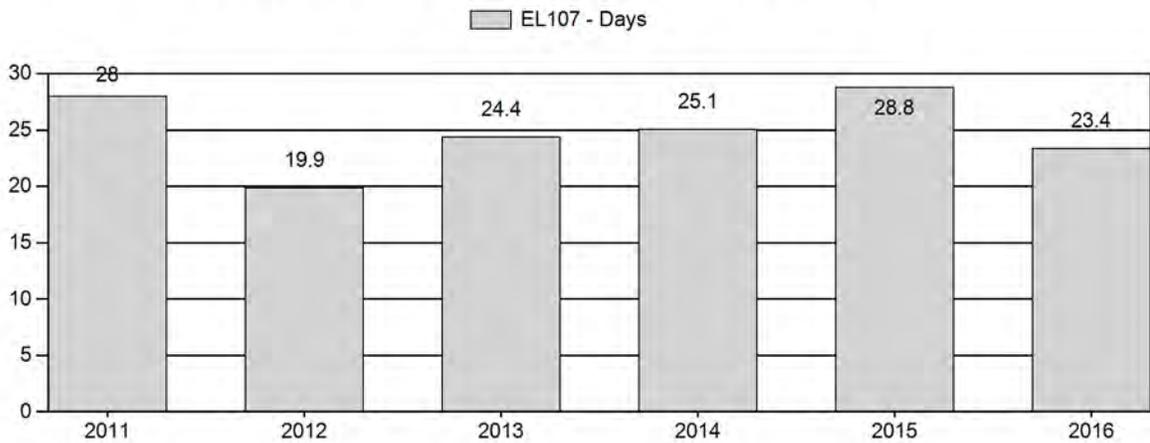
Harvest Success



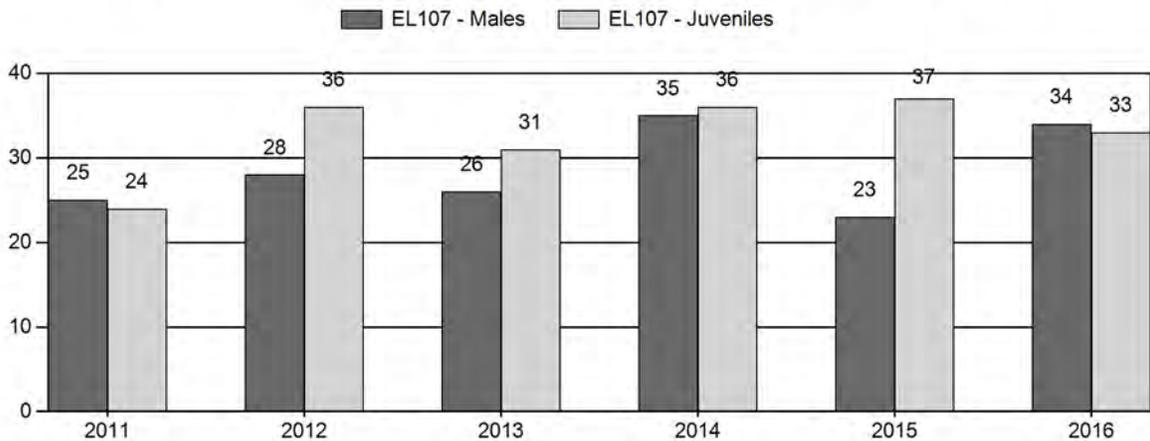
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Elk Herd EL107 - UPPER GREEN RIVER

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
2011	2,621	159	270	429	17%	1,736	67%	417	16%	2,582	274	9	16	25	±0	24	±0	19
2012	0	180	278	458	17%	1,649	61%	599	22%	2,706	441	11	17	28	±0	36	±0	28
2013	0	208	254	462	17%	1,777	64%	548	20%	2,787	364	12	14	26	±0	31	±0	24
2014	0	155	425	580	20%	1,676	58%	610	21%	2,866	478	9	25	35	±0	36	±0	27
2015	0	86	292	378	14%	1,649	63%	611	23%	2,638	401	5	18	23	±0	37	±0	30
2016	0	235	389	624	20%	1,840	60%	615	20%	3,079	406	13	21	34	±0	33	±0	25

2017 Seasons – Upper Green River Elk Herd Unit (E107)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
93	1	Oct. 1	Oct. 31	175	Limited quota	Any elk
93	1	Nov. 1	Nov. 20			Antlerless elk
93	6	Oct. 1	Nov. 20	275	Limited quota	Cow or calf
95	1	Oct. 15	Nov. 5	200	Limited quota	Any elk
95	2	Oct. 1	Nov. 5	30	Limited quota	Any elk valid within the Green River drainage upstream from the outlet of Lower Green River Lake, including that portion east and south of Mill Creek
95	4	Oct. 15	Nov. 5	150	Limited quota	Antlerless elk
95	5	Oct. 1	Oct. 14	25	Limited quota	Antlerless elk valid within the Green River drainage upstream from the outlet of Lower Green River Lake, including that portion east and south of Mill Creek
95	5	Oct. 15	Nov. 5			Antlerless elk valid in the entire area
95	6	Oct. 15	Nov. 5	75	Limited quota	Cow or calf
96		Oct. 15	Oct. 31		General	Any elk
96	1	Oct. 1	Oct. 31	200	Limited quota	Any elk
96	1	Nov. 1	Nov. 30			Antlerless elk

96	6	Oct. 1	Nov. 30	275	Limited quota	Cow or calf
96	7	Dec. 1	Jan. 31	30	Limited quota	Cow or calf valid west of the elk fence and south of New Fork Lakes Road
Archery Seasons						
93, 95, 96		Sept. 1	Sept. 30			Refer to Section 2 of this Chapter

Summary of Changes in License Numbers

Area	Type	Changes from 2016
93	6	+25
96	6	+75
Herd Unit Total	6	+100

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 2,500

Management Strategy: Recreational

2016 Trend Count: 3,079

Most Recent 3-year Running Average Trend Count: 2,886

The Green River Herd Unit encompasses approximately 837 square miles of occupied elk habitat, almost entirely within Sublette County. Hunt Area 93 (Waterdog Lakes), Area 95 (Green River), and Area 96 (New Fork) make up the Green River Herd Unit. This herd unit is managed under a mid-winter trend objective of 2,500 ($\pm 20\%$) with a herd estimate derived from 3-year trend count average on feedgrounds and native range combined. This herd is managed under “recreational” management, with a management objective for a bull: 100 cow ratio of 15 to 29 bulls:100 cows.

Herd Unit Issues

Managers believe a very high proportion (>90 %) of elk are typically counted in this herd unit and are located on feedgrounds during most winters. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. Large carnivores (wolves and grizzly bears) have reduced hunter participation in the northern portion of this herd unit, and are likely impacting elk productivity/survival. Lack of public access on private lands in Area 93 is limiting harvest and compromising female harvest goals within this herd.

Weather

Three elk feedgrounds (Green River Lakes, Black Butte, and Soda Lake) are located within this herd unit to winter animals that otherwise would not be able survive the harsh winter conditions. Heavy snow loads typically make most native forage unavailable on most winters.

Habitat

Roughly 43 square miles of native winter range have been identified in this herd unit in the upper Green River drainage near Pinyon Ridge and Osborn Mountain where recent trends documenting fewer elk. Since over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit, winter and other seasonal habitats do not limit population growth in this herd.

Field Data

The 2016 trend count was 3,079 elk, showing an increase compared to 2015. Documented elk trends have been fairly consistent since 2012, with an overall increasing trend in the past 10 years (Table 1). Snow conditions were above normal throughout this herd unit during the 2016-17 winter, resulting in higher feedground counts and very few elk located on native winter range. Winter conditions, habitat conditions, wolf activity, and timing of classification surveys have resulted in fluctuating trend count data on all three feedgrounds and native winter ranges in past years (Table 1).

Table 1. Trend Counts in the Upper Green River Herd Unit, 2007-2016.

<u>Location</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Green River Lakes F.G	615	591	0	606	532	572	627	630	675	667
Black Butte F.G	815	1072	959	405	751	847	475	477	750	904
Soda Lake F.G.	714	650	0	1417	1144	1103	1492	1663	1017	1478
<u>N.W.R.</u>	<u>220</u>	<u>268</u>	<u>1344</u>	<u>71</u>	<u>155</u>	<u>184</u>	<u>193</u>	<u>96</u>	<u>271</u>	<u>30</u>
Herd Unit Total	2364	2581	2303	2499	2582	2706	2787	2866	2713	3079

Composition counts during 2016 revealed a bull:cow:calf ratio of 34:100:33. This 2016 documented bull:cow ratio was higher and the calf:cow ratio was the same compared to the 5-year average of 27:100:33. The higher bull:cow ratio in 2016 is most likely attributed to a higher proportion of bulls wintering on feedgrounds due to above average snow accumulations and below average temperatures. Good calf productivity/survival in 2015 resulted in improved yearling bull ratios, contributing to the higher overall bull ratio in 2016. The 2016 bull:cow ratio of 34:100 is above the recreational management goals for this herd, while the 5-year average of 27:100 is within this goal.

Harvest Data

The 2016 harvest report indicated total elk harvest of approximately 450 elk (180 bulls and 270 cows/calves), slightly higher than the 2015 harvest of 400 (190 bulls and 210 cows/calves). During 2016, 32% of the hunters were successful in harvesting an elk, same as the past 5-year average. The 2016 hunter effort of 23 days/harvest was slightly lower than the 5-year average of 25 days/harvest. License quotas and seasons in 2014-2016, along with total harvest rates, have remained similar during these three years.

Population

Since 2012 a mid-winter trend count has been utilized to manage this herd unit instead of hand-derived population model estimates. This is an extremely “leaky” herd unit and as a result, a functional computer simulation model has never been developed. The mid-winter trend objective for this herd is 2,500 elk ($\pm 20\%$). The 2014-2016 3-year trend average is 2,886 elk, which is within this herd objective.

Disease

During late winter (March –April) in 2014 and 2015 calf loss has occurred on or near the Soda Lake feedground due to disease and wolf predation. Investigations concluded the presence of *Fusobacterium necrophorum* from many of the carcasses, the bacterium responsible for foot rot and necrotic stomatitis in elk. Foot rot is a term used for infection of the bacteria when it enters cuts and other openings around the hooves; necrotic stomatitis is the descriptive term for infection of the same bacteria in the mouth. This infectious disease is not uncommon to feedgrounds in west central Wyoming, with occasional outbreaks documented when certain winter and spring conditions increase the prevalence of the disease. Conditions with above average snowfall and above average temperatures create wet conditions causing the bacteria to thrive resulting in infections to elk. Freeze and thaw cycles during these winter conditions cause crusted snow and jagged ice, resulting in a higher than normal abrasions and opportunities for bacterial infections. The weakened condition of elk with this disease also makes animals more susceptible to predation as several wolf documented elk mortalities were recorded. Elk (mainly calves) losses on the Soda Lake feedground were estimated around a total of 160 elk during the 2014 -2015 feeding season. No elk losses from foot rot or necrotic stomatitis were documented during the 2015-2016 feeding season.

Management Summary

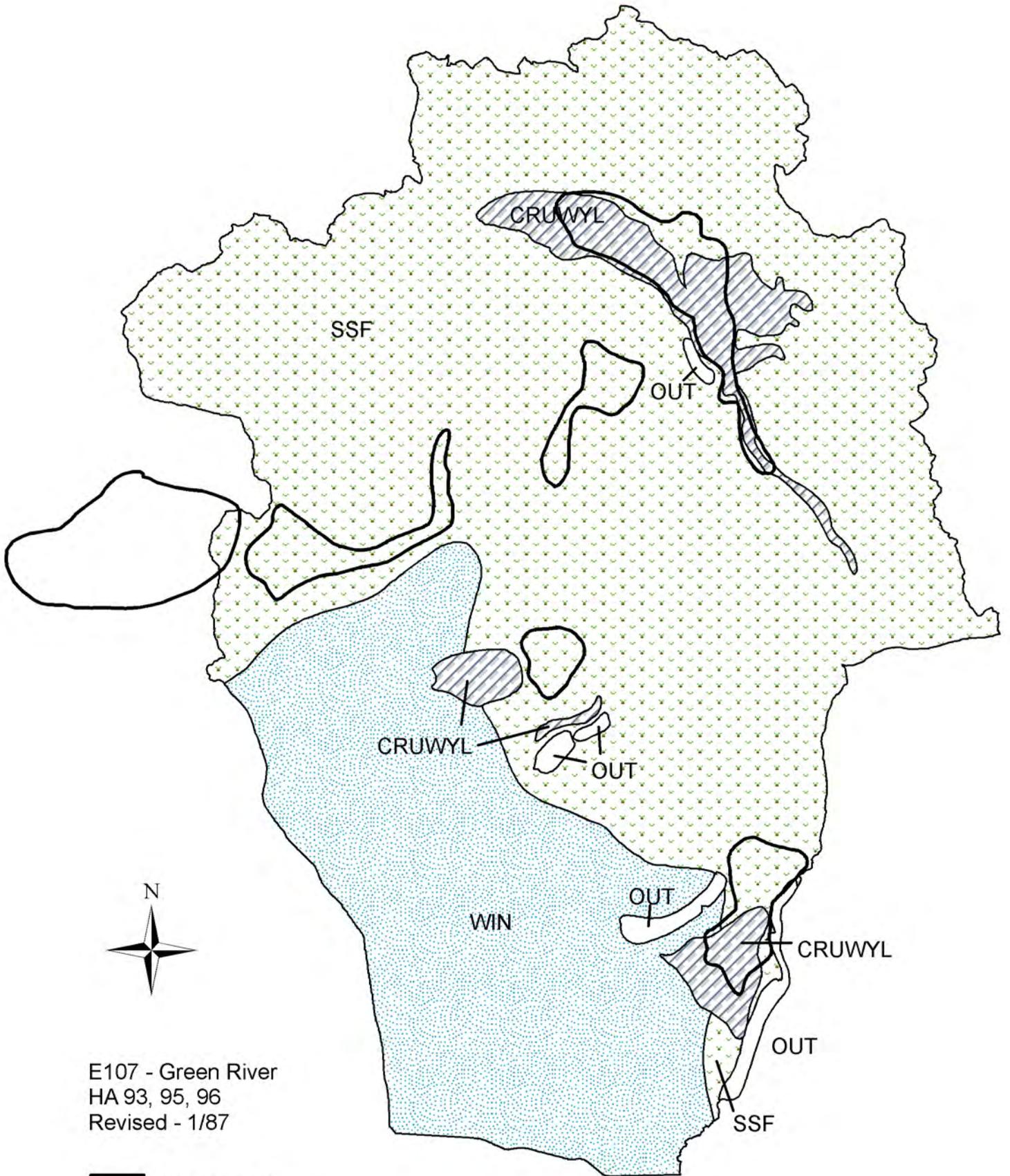
This is an extremely leaky herd unit, and as a result, a functional computer simulation model has not been developed. Overall, the data collected annually in this herd unit has indicated a slow population increase since 2003, but more stable in recent years. The current trend count of 3,079 is slightly above the management objective for this herd unit, although the 3-year trend average is within that objective. The 2009 - 2013 seasons were designed to increase antlerless harvest which has been somewhat successful at achieving that goal. Hunter participation has declined in portions of this herd unit, specifically the northern portions of Areas 93 and 95. Limited access onto or through private lands in portions of Areas 93 and 96 has also compromised harvest goals within this herd unit. Predation from wolves and bears as well as recent disease outbreaks (necrotic stomatitis) has likely helped slow population growth in recent years.

The 2017 seasons for the Upper Green River Herd Unit are designed to maintain past bull harvest and increase antlerless elk harvest in Area 93 and 96. The same October 1 – November 20 seasons with a slight increase in Type 6 limited quotas licenses (175 Type 1 and 275 Type 6) will be available in Area 93.

In Area 95, the season length (October 15 – November 5) and limited quota licenses (200 Type 1, 30 Type 2, 150 Type 4, 25 Type 5, and 75 Type 6) will remain the same in 2017.

The 2017 General season in Area 96 will remain same with an October 15 – 31 “any” elk season. Limited quotas licenses will remain the same for Type 1 (n=200), while Type 6 licenses will increase by 75 (n=275). The Area 96 season will be lengthened by 10 days running to the end of November (October 1 to November 30) for limited quota license holders to provide additional antlerless harvest opportunities. The Type 7 licenses (n=30) remain the same for 2017, only valid in that portion of Area 96 west of the elk fence and south of New Fork Lake Road from December 1 – January 31, to address damage and livestock co-mingling on private lands.

A projected harvest of 550 elk (200 bulls, 350 cows/calves) for 2017 should result in a post season trend count of approximately 2,900 elk.



E107 - Green River
 HA 93, 95, 96
 Revised - 1/87

 Parturition Area

2016 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL108 - PINEDALE
 HUNT AREAS: 97-98

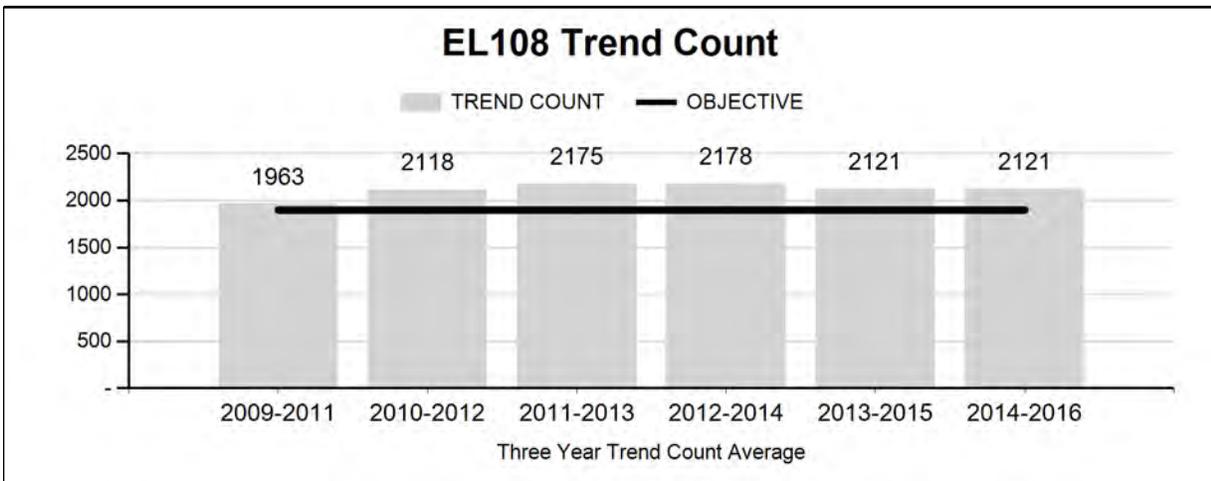
PERIOD: 6/1/2016 - 5/31/2017
 PREPARED BY: DEAN CLAUSE

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	2,151	2,133	2,000
Harvest:	508	638	700
Hunters:	1,473	1,660	1,750
Hunter Success:	34%	38%	40%
Active Licenses:	1,540	1,732	1,750
Active License Success	33%	37%	40%
Recreation Days:	10,491	11,303	11,300
Days Per Animal:	20.7	17.7	16.1
Males per 100 Females:	22	26	
Juveniles per 100 Females	29	29	

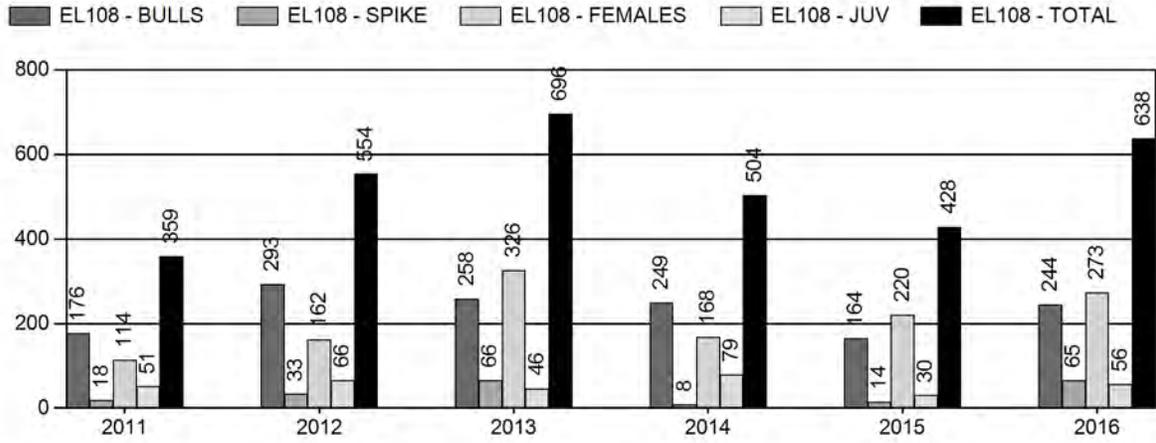
Trend Based Objective (± 20%) 1,900 (1520 - 2280)
 Management Strategy: Recreational
 Percent population is above (+) or (-) objective: 12%
 Number of years population has been + or - objective in recent trend: 0

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

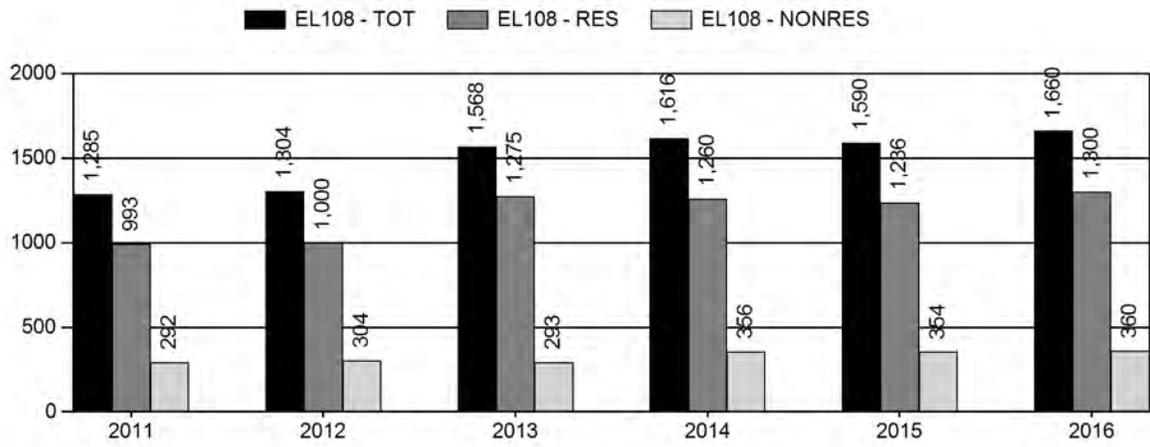
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



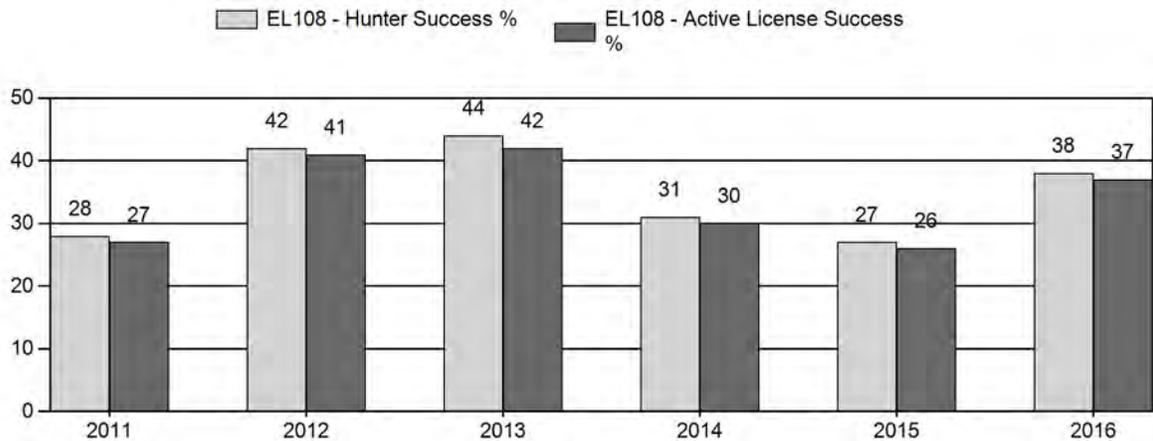
Harvest



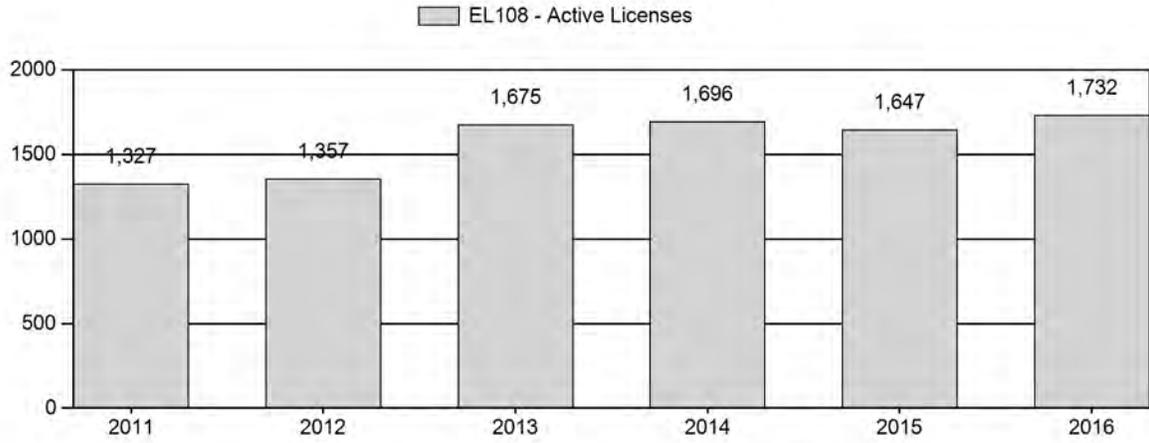
Number of Hunters



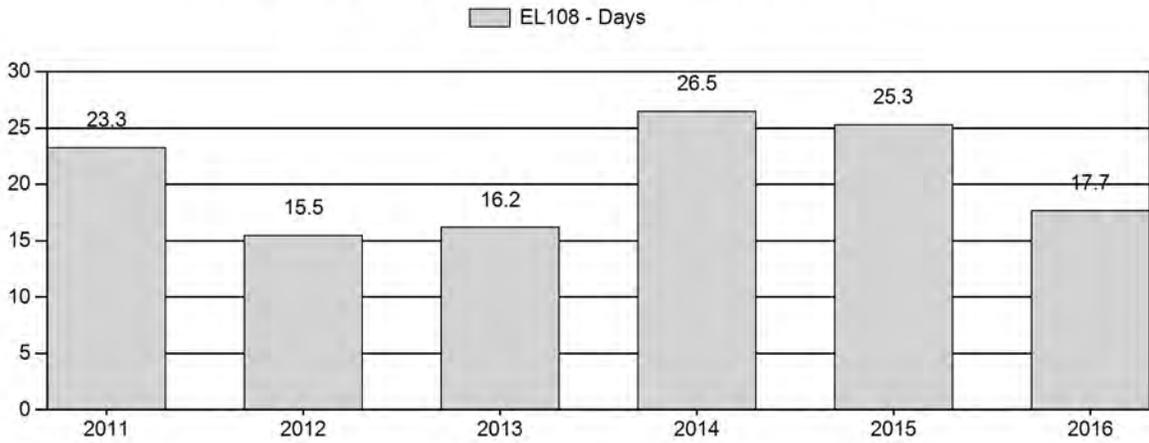
Harvest Success



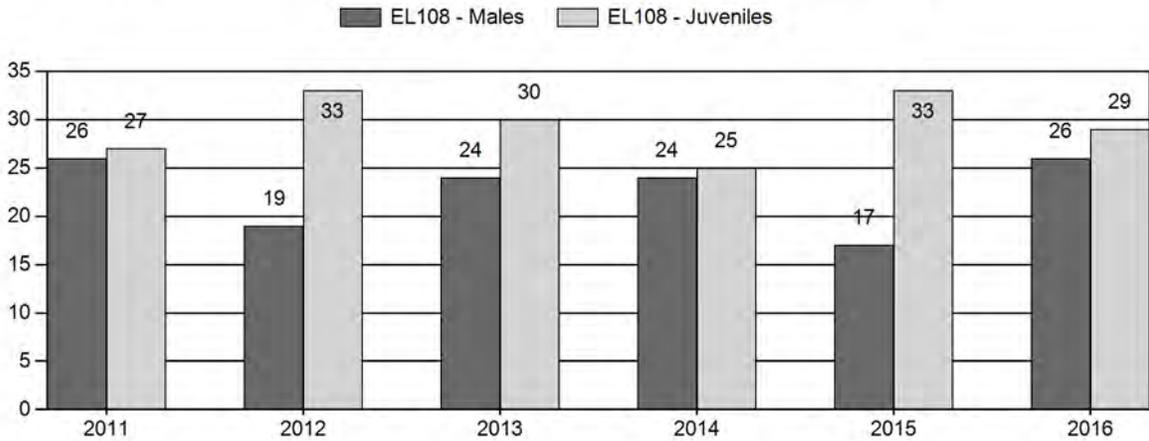
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Elk Herd EL108 - PINEDALE

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
2011	2,168	144	219	363	17%	1,401	66%	374	17%	2,138	296	10	16	26	± 0	27	± 0	21
2012	0	120	149	269	13%	1,404	66%	457	21%	2,130	368	9	11	19	± 0	33	± 0	27
2013	0	158	174	332	16%	1,383	65%	418	20%	2,133	334	11	13	24	± 0	30	± 0	24
2014	0	133	207	340	16%	1,429	67%	356	17%	2,125	260	9	14	24	± 0	25	± 0	20
2015	0	77	165	242	12%	1,386	67%	453	22%	2,081	333	6	12	17	± 0	33	± 0	28
2016	0	159	199	358	17%	1,375	64%	400	19%	2,133	335	12	14	26	± 0	29	± 0	23

2017 Seasons – Pinedale Elk Herd Unit (EL108)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
97		Oct. 1	Oct. 15		General	Any elk
97		Oct. 16	Nov. 12			Antlerless elk
97	1	Sep. 20	Oct. 31	225	Limited quota	Any elk
97	1	Nov. 1	Nov. 20			Antlerless elk
97	6	Sep. 20	Nov. 20	175	Limited quota	Cow or calf elk
98		Oct. 1	Oct. 15		General	Any elk
98		Oct. 16	Nov. 12			Antlerless elk
98	1	Sep. 20	Oct. 31	350	Limited quota	Any elk
98	1	Nov. 1	Nov. 20			Antlerless elk
98	1	Nov. 21	Jan. 31			Antlerless elk valid between Scab Creek and the East Fork River drainage, excluding Irish Canyon Creek and Muddy Creek Drainages
98	4	Sep. 20	Nov. 20	75	Limited quota	Antlerless elk
98	4	Nov. 21	Jan. 31			Antlerless elk valid between Scab Creek and the East Fork River drainage, excluding Irish Canyon Creek and Muddy Creek Drainages
98	6	Sep. 20	Nov. 20	300	Limited quota	Cow or calf elk
98	6	Nov. 21	Jan. 31			Antlerless elk valid between Scab Creek and the East Fork River drainage, excluding Irish Canyon Creek and Muddy Creek Drainages

Archery Seasons					
97,98		Sep. 1	Sep. 19		Refer to Section 2 of this Chapter

Summary of Changes in License Numbers

Area	Type	Changes from 2016
97	6	+50
Herd Unit Total	6	+50

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,900

Management Strategy: Recreational

2016 Trend Count: 2,133

Most Recent 3-year Running Average Trend Count: 2121

The Pinedale Herd Unit encompasses approximately 2,474 square miles of which only 522 square miles are considered occupied elk habitat. Only a small portion of this herd unit is located in Sweetwater County, while the majority lies in Sublette County. Hunt Area 97 (Pinedale) and Area 98 (Boulder) make up the Pinedale Herd Unit. This herd unit is managed under a mid-winter trend objective of 1,900 ($\pm 20\%$) with the herd estimate derived from the 3-year trend count of elk on feedgrounds and native ranges combined. This herd is managed under “recreational” management.

Herd Unit Issues

Managers believe a very high proportion (>90%) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. Well over half of the Forest Service lands are designated as Wilderness (Bridger Wilderness) where access is limited to foot or horseback travel. The remaining Forest Service lands outside wilderness have moderate vehicle and trail access. Hunting opportunities for self-guided non-resident sportsmen is limited because non-residents are required by law to have a licensed guide or outfitter while hunting in designated wilderness areas. Lack of public access on private lands in Area 98 along Scab and Silver Creeks provides a “refuge” for elk, limiting antlerless harvest and compromising the ability to achieve harvest goals.

Weather

Three elk feedgrounds (Fall Creek, Scab Creek, and Muddy Creek) are located within this herd unit to winter animals that otherwise would not be able survive the harsh winter conditions. Feedgrounds also reduce depredation to stored hay and reduce risk of disease transmission to livestock (primarily brucellosis).

Habitat

Roughly 32 square miles of crucial native winter range have been identified in this herd unit, wintering approximately 100-150 elk. Since over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit, winter and other seasonal habitats do not limit population growth in this herd.

Field Data

The 2016 elk trend count of 2,133 was similar to trend counts during the past 3 years (2013-2015). The 2012 trend count was the highest documented in the past 10 years (Table 1). As with most years, greater than 90% of the trend count came from elk on feedgrounds. Above normal snow levels and lower than normal temperatures experienced during this 2016-17 winter should have resulted in very high elk attendance at feedgrounds and few elk on native ranges, which did occur in Area 97 but not in Area 98. Roughly 200+ elk stayed in the Cottonwood and Pocket Creek areas (Area 98) throughout December of 2016 and January 2017, where a late hunting season was in place to discourage elk and cattle co-mingling. It appeared as snow accumulation increased these elk were somewhat trapped and possibly accustomed to wintering in this area due to the two previous mild winters? Repeated ground efforts to move these elk to adjacent feedgrounds failed and eventually 100 elk were moved to the Muddy Creek feedground with the use of a helicopter.

Table 1. Herd Composition Counts in the Pinedale Elk Herd Unit, 2007-2016

Location	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fall Creek F.G	494	527	0	554	655	675	660	704	656	828
Scab Creek F.G	776	754	600	780	806	912	727	850	668	553
Muddy Creek F.G.	376	510	422	467	557	522	499	488	571	643
<u>N.W.R.</u>	<u>68</u>	<u>154</u>	<u>766</u>	<u>161</u>	<u>120</u>	<u>144</u>	<u>247</u>	<u>106</u>	<u>186</u>	<u>109</u>
Herd Unit Total	1714	1944	1788	1962	2138	2253	2133	2148	2081	2133

Herd composition counts in 2016 documented a bull:cow:calf ratio of 26:100:29. Compared to the previous 5-year average bull:cow:calf ratio of 22:100:29, the bull ratios increased (due to an improved yearling bull ratio) and calf ratios remained the same.

Harvest Data

With the termination of the 5-year Test and Removal Pilot Project after the 2009-10 winter, seasons were modified in 2010 to increase female harvest opportunities. Type 4 and Type 6 licenses were added, and general license hunters were allowed to harvest “any” elk instead of “antlered” elk. Since 2010, seasons have been designed to incrementally increase antlerless harvest, and starting in 2013 bull harvest opportunities have been shortened. The 2016 harvest survey reported approximately 640 total elk taken (310 bulls and 330 cows/calves), an increase from approximately 425 elk taken in 2015 and 500 elk in 2014. Good hunting conditions and favorable weather attributed to the improved harvest of both cows and bulls during 2016. During the 2016 hunting season hunter success was improved at 37% and it took an average of 18 days

to kill an elk, a decrease of 3 days from the past 5-year average. Difficult hunting conditions were experienced in 2014 and 2015, due to warm and mild weather. Early October snow during the 2013 season resulted in much better harvest as days/harvest was 16 and the hunter success rate was 42%.

Population

Starting in 2012, a mid-winter trend count has been utilized to manage this herd unit instead a hand-derived population model estimates. This is a somewhat “leaky” herd unit and as a result, a functional computer simulation model has not been developed, which may also be attributed to high bull harvest annually reported in this herd unit. The mid-winter trend objective for this herd is 1,900 elk ($\pm 20\%$). The 2014-2016 3-year trend average is 2,121 elk, which is within the herd objective.

Management Summary

Trend counts in this herd unit indicate elk declined from 2004-2007, recovered during 2008, stabilized in 2009 and 2010, increased in 2011 and 2012, and then stabilized in 2013 and 2014. The 2015 trend counts indicate a declining elk population, but conditions were especially mild during the 2015-16 winter. In 2016 the trend count increased slightly, but comparable to the past several years. Recent counts indicate bull:cow:calf ratios are adequate, although the bull ratio of can vary significantly based on annual harvest rates due to very liberal bull seasons within this herd unit. The bull harvest annually reported for this herd unit is questionable as managers are confident that >90% elk are counted (classified) and reported bull harvest rates range from 50% to 60% on most years. Documented elk numbers in 2016 are currently within the management objectives. Female harvest rates are very dependent on weather and forage to move elk to lower elevations by late October.

The harvest objectives for the 2017 seasons are the similar to 2016, except a modest increase antlerless elk licenses in Area 97. Limited quota Type 1 licenses in Area 97 will remain at 225 from Sept. 20 – Nov. 20, valid for antlerless elk from Nov 1. – Nov. 20. Type 6 licenses will increase to 175 (+50), valid from Sept. 20 – Nov. 20 for antlerless elk.

In Area 98, the quota for Type 1 licenses will remain at 350 with a Sept. 20 – Nov. 20 season, valid for antlerless elk from Nov 1. – Nov. 20. Limited quota Type 4 licenses will remain at 75 and Type 6 licenses will remain at 300 with a Sept. 20 – Nov. 20 season. Similar to past years, antlerless harvest opportunities will be provided for unused limited quota licenses (Type 1, 4, and 6) from Nov. 21 – Jan 31 between Scab Creek and the East Fork drainage to address damage and cattle co-mingling issues.

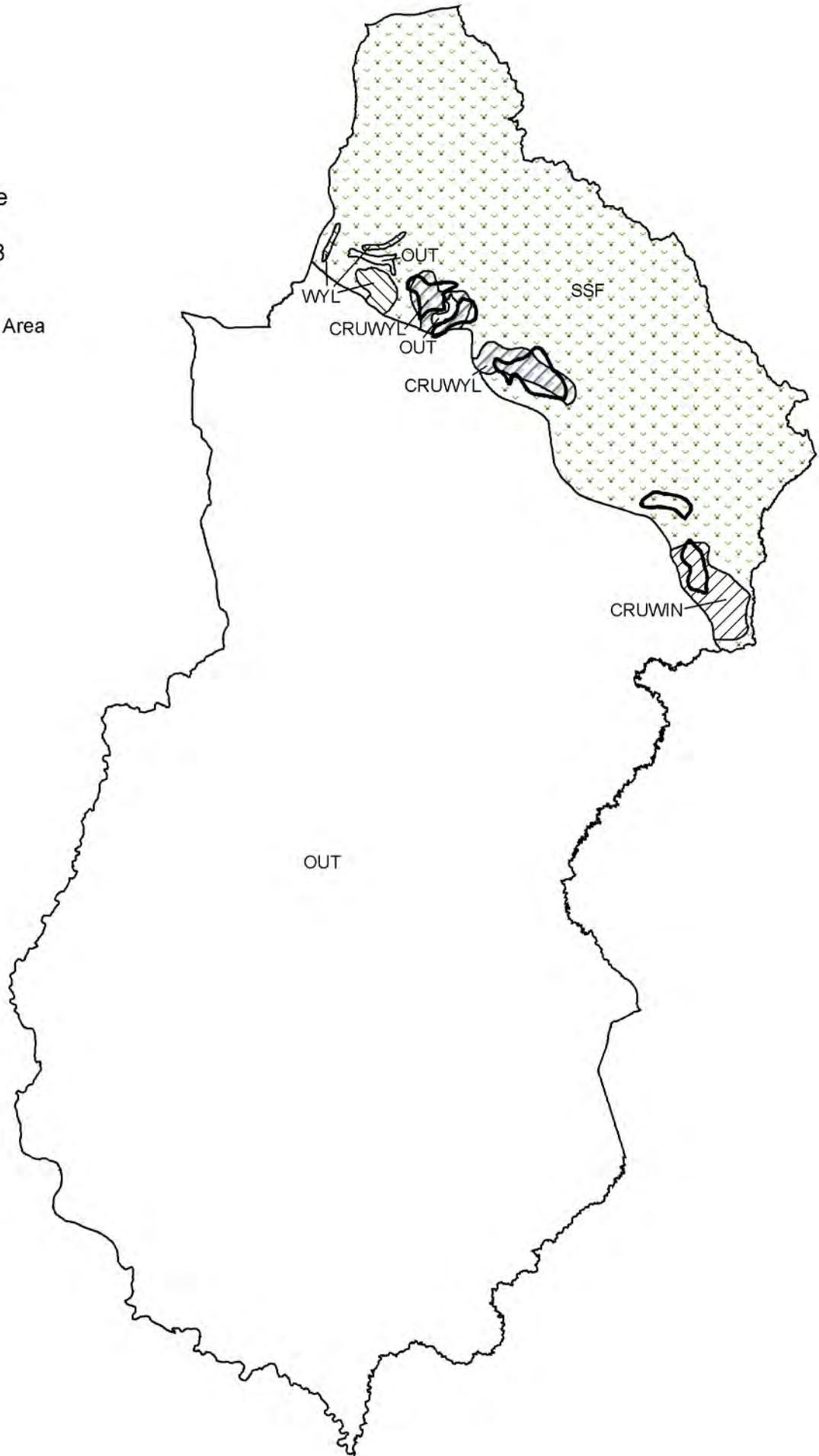
General license seasons in both Area 97 and 98 will have a closing date similar to 2016 and align with other general license seasons closure dates within the region. The general license season in both Areas will be Oct.1 – Oct. 15 valid for “any” elk as in past years and Oct. 16 – Nov. 12 for “antlerless” elk.

A predicted harvest of approximately 300 bulls, 350 cow/calves (650 total elk) during 2017 is anticipated with average fall weather. This season should result in a postseason 2017 trend count estimate of approximately 2,000 elk.



E108 - Pinedale
HA 97, 98
Revised - 12/88

 Parturition Area



2016 - JCR Evaluation Form

SPECIES: Moose

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

HERD: MO105 - SUBLETTE

HUNT AREAS: 3-5, 10, 20-25

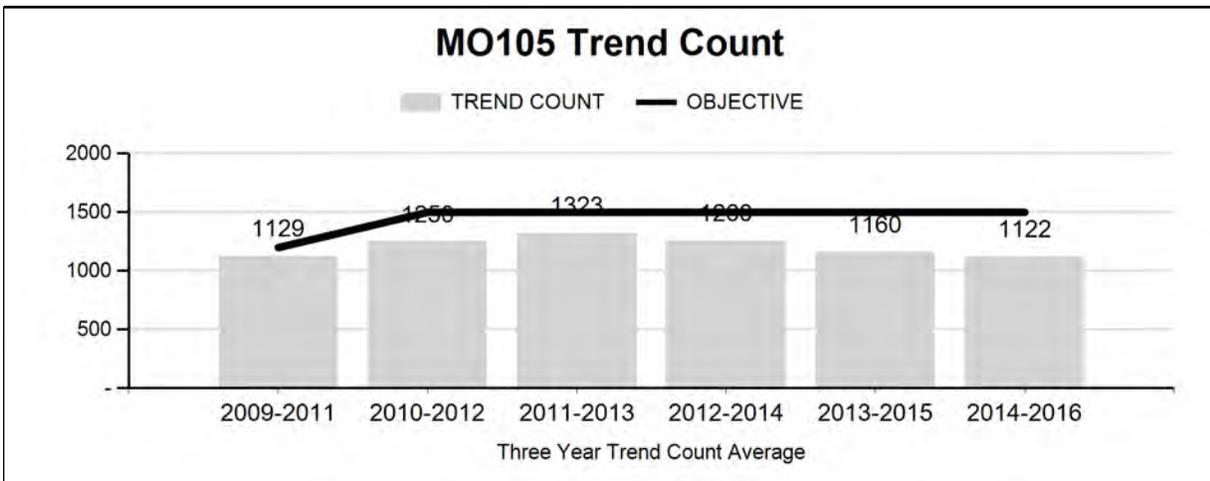
PREPARED BY: DEAN CLAUSE

	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	1,209	1,287	1,300
Harvest:	214	186	155
Hunters:	242	202	170
Hunter Success:	88%	92%	91 %
Active Licenses:	242	202	170
Active License Success	88%	92%	91 %
Recreation Days:	1,859	1,676	1,400
Days Per Animal:	8.7	9.0	9.0
Males per 100 Females:	66	63	
Juveniles per 100 Females	40	41	

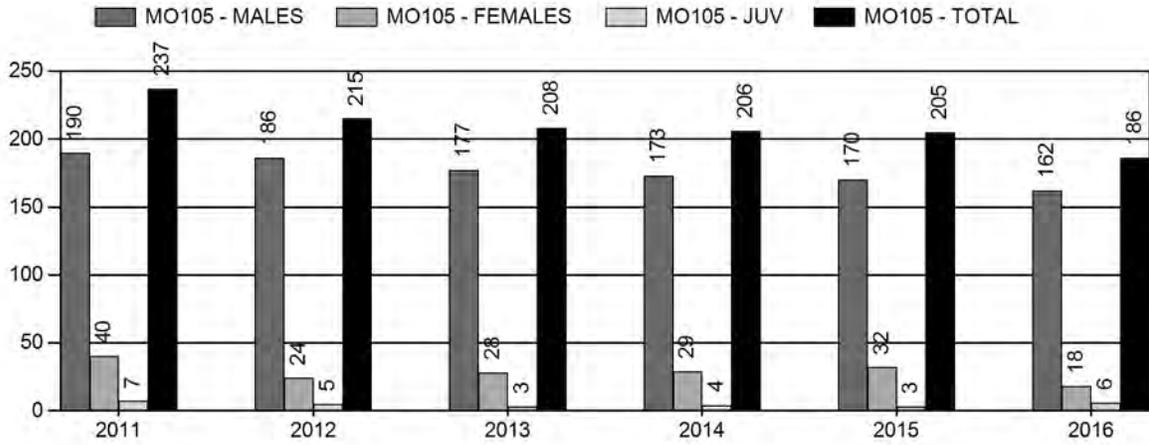
Trend Based Objective ($\pm 20\%$) 1,500 (1200 - 1800)
 Management Strategy: Special
 Percent population is above (+) or (-) objective: -14.2%
 Number of years population has been + or - objective in recent trend: 0

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

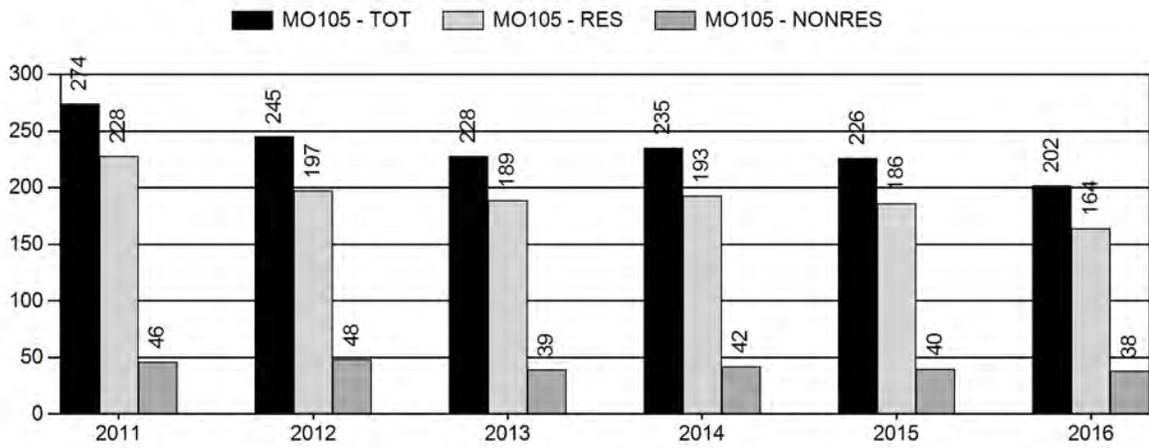
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



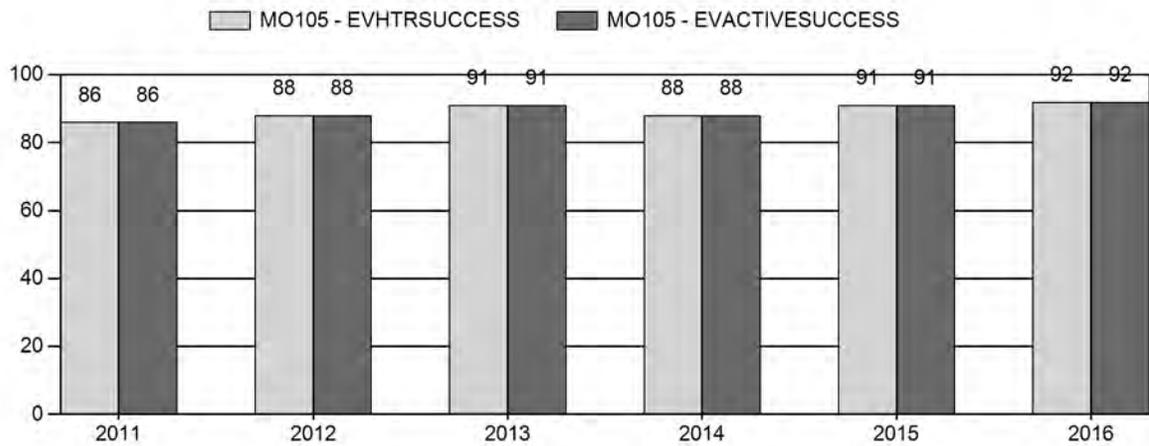
Harvest



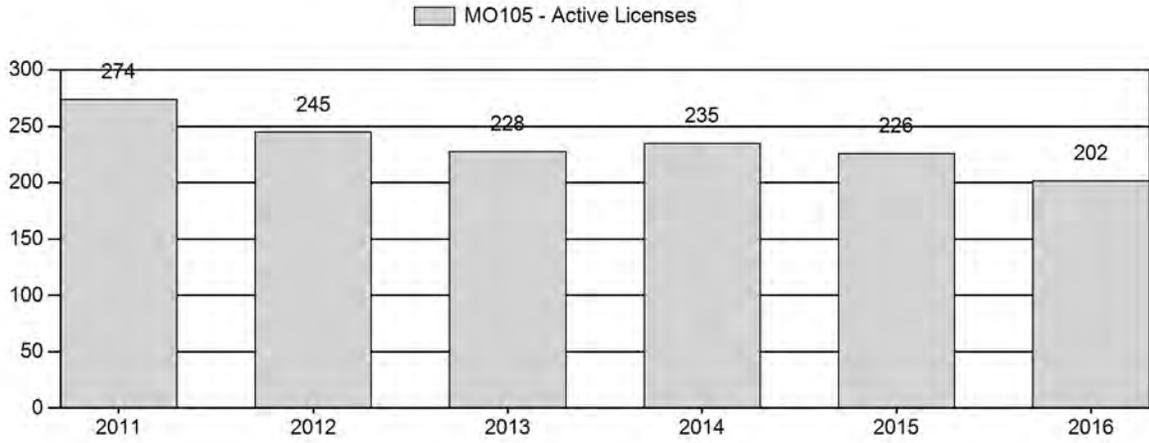
Number of Active Licenses



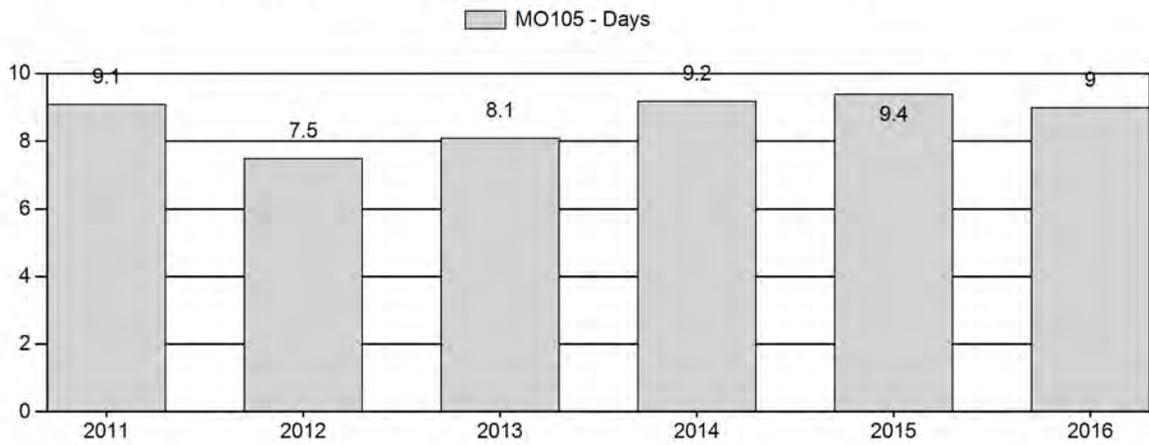
Harvest Success



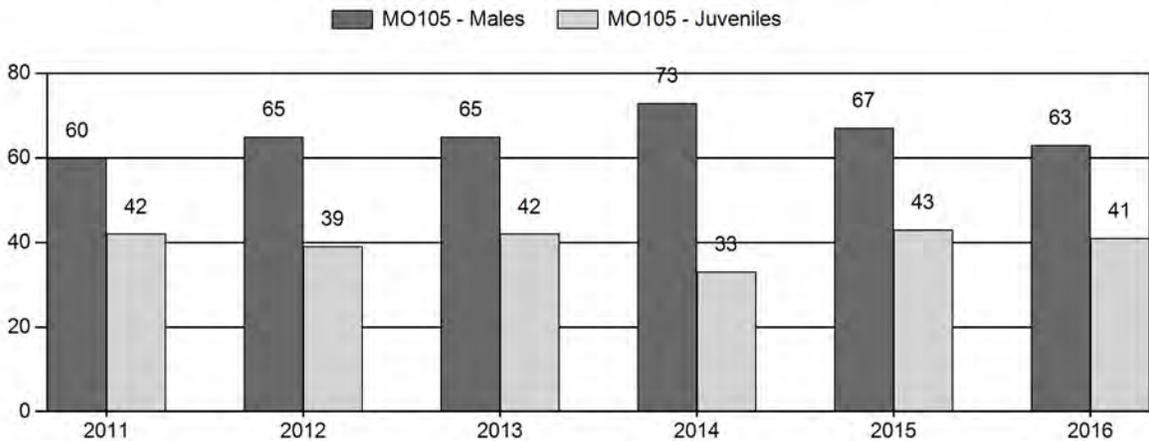
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Moose Herd MO105 - SUBLETTE

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
2011	5,000	0	377	377	30%	625	49%	262	21%	1,264	1,016	0	60	60	± 4	42	± 3	26
2012	0	0	413	413	32%	632	49%	247	19%	1,292	1,118	0	65	65	± 0	39	± 0	24
2013	0	0	435	436	31%	669	48%	282	20%	1,387	909	0	65	65	± 0	42	± 0	26
2014	0	0	380	380	35%	518	48%	173	16%	1,071	800	0	73	73	± 0	33	± 0	19
2015	0	0	314	314	32%	469	48%	202	21%	985	886	0	67	67	± 0	43	± 0	26
2016	0	0	390	390	31%	620	49%	255	20%	1,265	830	0	63	63	± 0	41	± 0	25

2017 Seasons – Sublette Moose Herd Unit (MO105)

Hunt Area	Type	Season Dates			Quota	License	Limitations
		Opens	Closes				
3	1	Sep. 20	Oct. 31	10	Limited quota	Antlered moose	
4	1	Sep. 20	Oct. 31	10	Limited quota	Antlered moose	
4	4	Sep. 20	Oct. 31	5	Limited quota	Antlerless moose, except cow moose with calf at side	
5	1	Oct. 1	Oct. 31	25	Limited quota	Antlered moose	
10	1	Sep. 15	Oct. 31	10	Limited quota	Antlered moose, also valid in Area 21	
20	1	Sep. 15	Oct. 31	15	Limited quota	Antlered moose	
21	1	Sep. 15	Oct. 31	5	Limited quota	Antlered moose, also valid in Area 10	
22	1	Oct. 1	Oct. 31	5	Limited quota	Antlered moose	
23	1	Sep. 15	Oct. 31	15	Limited quota	Antlered moose	
24	1	Sep. 15	Oct. 31	20	Limited quota	Antlered moose	
25	1	Oct. 1	Oct. 31	45	Limited quota	Antlered moose	
25	4	Oct. 1	Oct. 31	5	Limited quota	Antlerless moose, except cow moose with calf at side	
Archery Seasons							
3, 4		Sep. 1	Sep. 19			Refer to Section 2 of this Chapter	
5, 22, 25		Sep. 1	Sep. 30			Refer to Section 2 of this Chapter	
10, 20, 21, 23, 24		Sep. 1	Sep. 14			Refer to Section 2 of this Chapter	

Summary of Changes in License Numbers by Hunt Area	License Type	Quota Changes from 2016
5	4	-10 (deleted license type)
10	1	-5
22	1	-5
23	1	-5
24	1	-5
24	4	-5 (deleted license type)
25	4	-5
MO105 Totals	1	-20
	4	-20

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,500

Management Strategy: Special

2016 Trend Count: 1,287

Most Recent 3-year Running Average Trend Count: 1,122

The Sublette Moose Herd Unit encompasses approximately 3,306 square miles of occupied moose habitat that lies within portions of Lincoln, Sublette, and Teton Counties. The Wyoming Range and Salt River Range Mountains, along with a portion of the Wind River and Gros Ventre Mountains lie within this herd unit. A total of 10 Hunt Areas (Areas 3, 4, 5, 10, 20, 21, 22, 23, 24, & 25) make up the Sublette Herd Unit. A mid-winter trend objective of 1,500 ($\pm 20\%$) moose is the management objective for this herd unit. This herd unit is also under a “special” management strategy to maintain an average harvest age of 4 years for bulls as a measure to maintain “trophy” harvest opportunities.

Herd Unit Issues

Undetermined moose deaths have been documented within this herd unit during past years. The significance of these spring mortalities are currently unknown, and it appears other factors besides hunter harvest is slowing population growth. A study is currently being conducted within a portion of this herd unit to document moose demographics, body condition, and survival rates to help managers better understand issues and problems within this moose population. Preliminary findings from this study have indicated lower than expected adult female survival, fluctuating pregnancy rates, and normal calf survival rates. Factors such as habitat conditions, disease, parasites, predation, etc. may be attributing to limited population growth in this herd and research findings may help identify problems and issues associated with this moose population.

Weather

Although winter snow accumulations influence winter counting conditions as trend data increase on low elevation ranges during winters with above average snow depths, little is known about the other affects climate has on this moose herd. Recent weather trends have been drier and warmer, with sporadic periods of harsh winter conditions. Both the 2014-15 and 2015-16 winters have had below normal snow levels at lower basin elevations, while the 2016-17 winter experienced above average snow accumulations throughout the herd unit.

Habitat

The main plant community associations in this herd unit are willow, sagebrush, mixed shrub, aspen, conifer, and alpine communities from low to high elevations (6,500 to 12,500 feet). Moose in this herd unit can be found on both private lands and public land managed by the U.S. Forest Service and Bureau of Land Management (BLM) throughout the year. During the winter, most moose migrate to lower elevation willow riparian, aspen, or mixed shrub dominated habitats associated with lower elevations. Roughly 700 square miles of native winter range have been identified in this herd unit, which encompasses all types of land ownership (private, public, and state trust land).

The 2016 Annual Report Strategic Habitat Plan Accomplishments, Jackson and Pinedale Region sections can be located on the WGFD website or at either the Jackson or Pinedale Game & Fish Regional Office which provides detailed summaries of habitat work within the Sublette Herd Unit.

Field Data

The 2016 postseason counts resulted in more moose observed compared to the 2014 and 2015 postseason classification surveys (Table 1). Snow accumulations were well above average at the time of this survey and for the 2016-17 winter, resulting in a higher trend count. Snow conditions were below normal during both the 2014-15 and 2015-16 winters resulting in lower trend counts in 2014 and 2015. High concentrations of moose at lower elevations (Areas 4 and 25) and fewer moose at higher elevation habitats is typical during winter surveys on all years, see Table 1. Trend counts are influenced by winter snow depths. On heavy snow years, moose vacate higher elevation forested habitats where observability is limited and move to lower elevation willow habitats. Budgeted survey time limits the coverage of forested habitats, concentrating survey efforts to lower elevation habitats where moose congregate and observability is good. Overall, trend counts increased from 2009 -2013, declined in 2014 and 2015, and increased in 2016.

Table 1. Trend counts by Hunt Area for the Sublette Moose Herd Unit, 2007-2016.

Hunt Area	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
3	19	11	56	18	38	21	24	22	32	20
4	244	271	212	261	320	319	346	224	235	366
5	76	106	48	100	44	82	79	34	73	33
10	11	7	13	10	8	4	0	10	31	16
20	39	19	10	16	28	13	32	65	49	36
21	10	22	4	30	23	18	11	7	17	23
22	17	28	30	23	27	49	47	17	13	2
23	50	28	60	46	26	52	55	37	32	17
24	0	0	0	0	0	0	0	0	0	0
25	729	788	503	679	754	742	806	664	517	774
Total	1195	1280	936	1183	1268	1300	1400	1080	999	1287

Postseason classification surveys for 2016 produced a bull:100 cow ratio of 63:100, slightly lower than the previous 5-year average of 66:100. The 2016 calf: 100 cow ratio of 41:100 was similar to than the 5-year average of 40:100. During the previous 5-year periods the observed

bull:cow ratio has ranged from 60:100 to 73:100 and calf:cow ratio ranged from 33:100 to 43:100.

Harvest Data

A total of 186 moose (162 bulls and 24 cows/calves) were harvested in 2016. Harvest has continued to decline slightly during the years, as managers continue to make adjustments in licenses quotas. The total number of licenses issued declined from 630 in 2002 to 210 in 2015, a total decrease of 420 (67%). These reductions by license type since 2002 equates to declines of 87% (230 to 30) of cow/calf (Type 4) licenses and 55% (400 to 180) of bull (Type 1) licenses. Compared to the previous 5-year averages, hunter success was higher at 92%, and hunter effort remained similar at 9 days per animal harvested.

A total of 106 teeth representing approximately 57% of the reported 2016 harvest were aged using cementum annuli analysis. The 2016 tooth age results from the WGFD lab showed an average age of 4.0 (derived from 60% of reported harvest) for bulls and 2.4 (derived from 50% of reported harvest) for cows. Average age of harvest for 2016 remained similar for bulls and declined for cows compared to the 2015 (Figure 1). The low sample sizes used to derive female ages in recent years results in erratic and unreliable trends. The 10-year average (2007-2016) age of harvest for this herd unit is approximately 4.0 years for both bulls and cows.

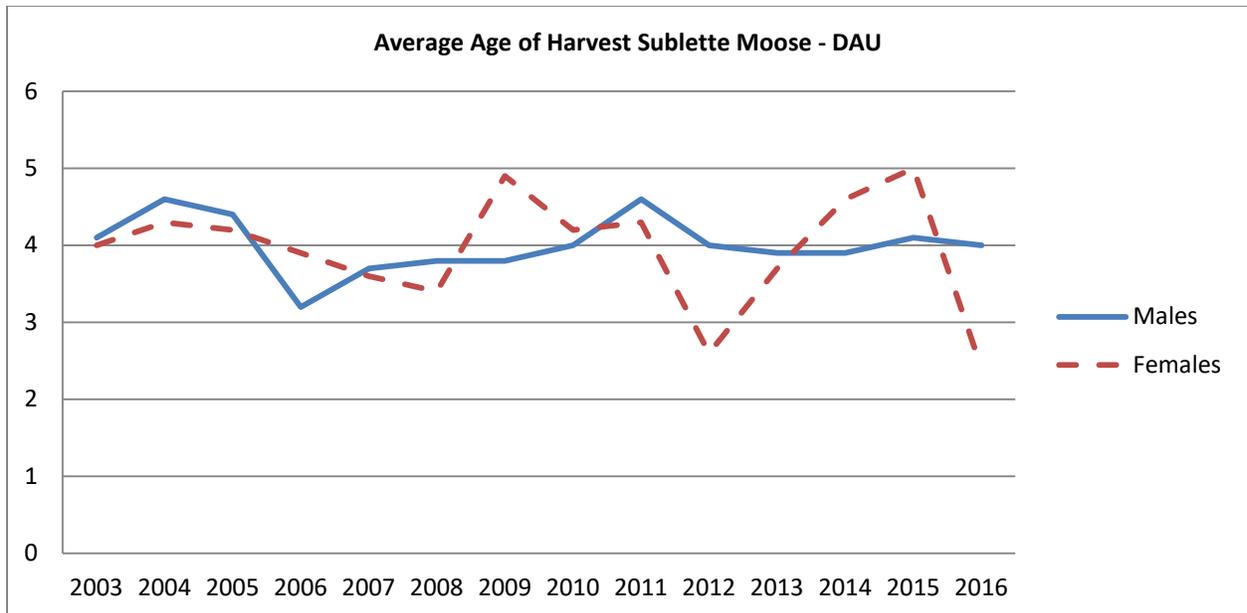


Figure 1. Average age of harvested male and female moose, Sublette Herd Unit, 2003-2016.

Population

Starting in 2013, a mid-winter trend count was approved as the management objective for this herd unit instead post-hunt population estimates. The mid-winter trend objective for this herd is 1,500 moose (± 20%). The 2016 mid-winter trend count was 1,287 moose and the most recent 3-year average (2014-2016) trend is 1,122 moose.

Past population modeling efforts for this herd have typically produced estimates higher, usually ~75% higher, than what annual trend counts document. Maintaining comparable classification

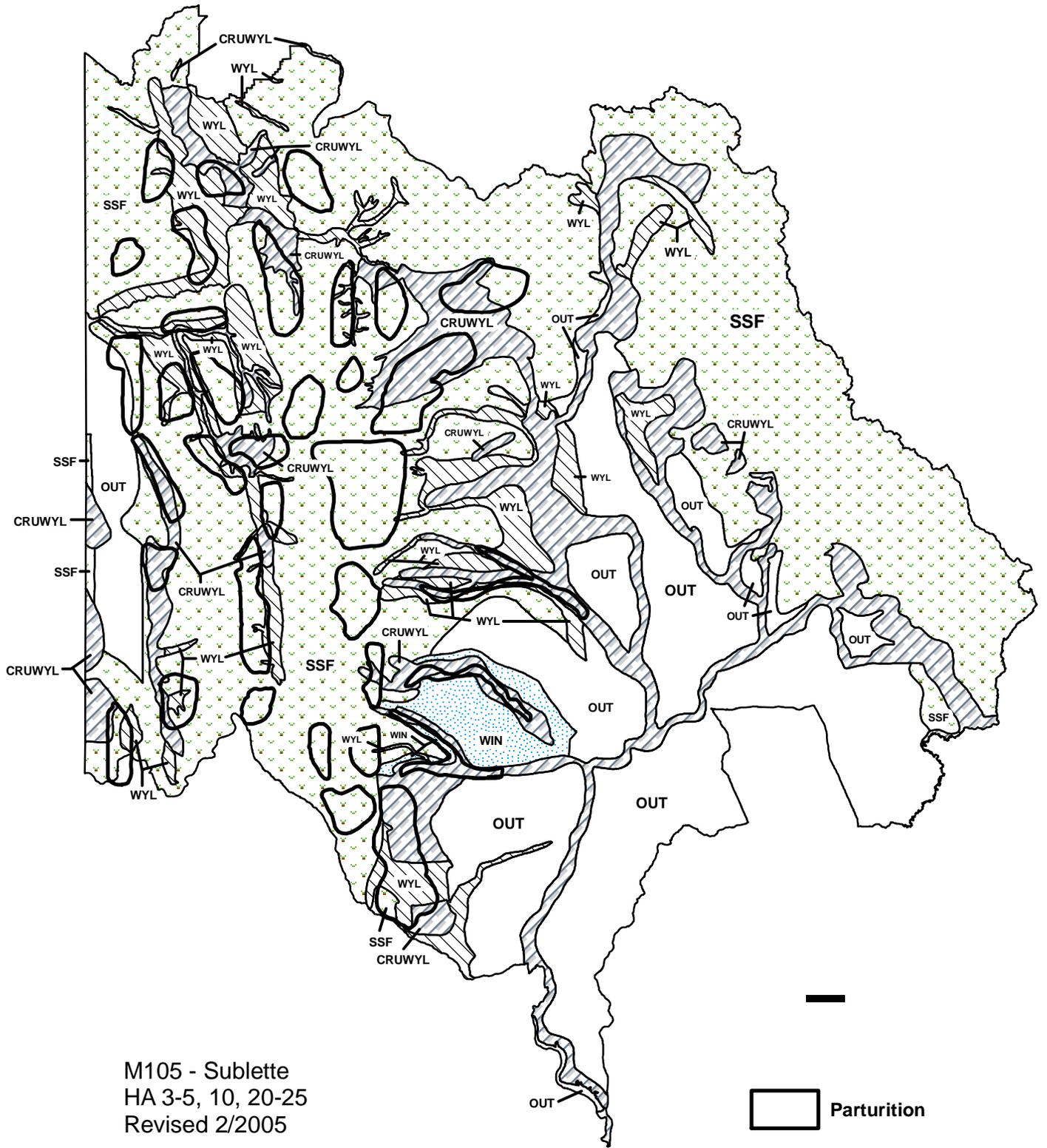
survey efforts (flight time) compared to past years will provide managers a reliable data set that will reflect population trends in this herd unit. These mid-winter trend counts do not reflect the actual moose population, as not all areas with wintering moose are surveyed and not all moose are observed in those areas that are surveyed.

Management Summary

Data for this herd unit suggest this postseason moose population declined during the late 1990's, stabilized in 2004 and 2005, then slowly increasing through 2013. During 2014 calf:cow and bull:cow ratios fluctuated more than usual, as reproductive rates dropped to 33 calves:100 cows, and male ratios increased to 73 bulls:100cows. In 2015 and 2016 calf and bull ratios returned to average levels. Local managers believe the lower trend counts in 2014 and 2015 is attributed to poor counting conditions due to mild winter conditions and not reflective of a declining moose population, which is confirmed by the higher documented trend count in 2016. Harvest success remains high and hunter satisfaction appears good in most hunt areas. In addition, average age of harvested males is adequate and hunter reported antler widths average 37 inches, suggesting bull quality is being maintained in this herd unit. Since 2009 trend data suggest the population is stable or slowly increasing.

The license changes made for the 2017 season continue to be conservative as the 3-year mid-winter trend average is below the management objective (1200 -1800 moose) and herd growth has been stable in recent years. A reduction of 20 Type 1 licenses from four hunt areas (Areas 10, 22, 23 and 24) along with reducing 20 Type 4 licenses from three hunt areas (Areas 5, 24, and 25) for a total reduction of 40 licenses for the 2017 season. The reduction in Type 4 licenses results in elimination of all antlerless moose harvest opportunities in Area 5 and Area 24, leaving Type 4 licenses only available in Area 4 and Area 25.

A total of 160 Type 1 (antlered) and 10 Type 4 (antlerless) licenses are available for 2017. Harvest for 2017 is estimated at 144 bulls and 9 cows/calves for a total harvest of 153 moose. Given average reproduction and survival, this harvest should result in a 2017 mid-winter trend count near 1,300 - 1,350 moose.



M105 - Sublette
 HA 3-5, 10, 20-25
 Revised 2/2005

2016 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS121 - DARBY MOUNTAIN

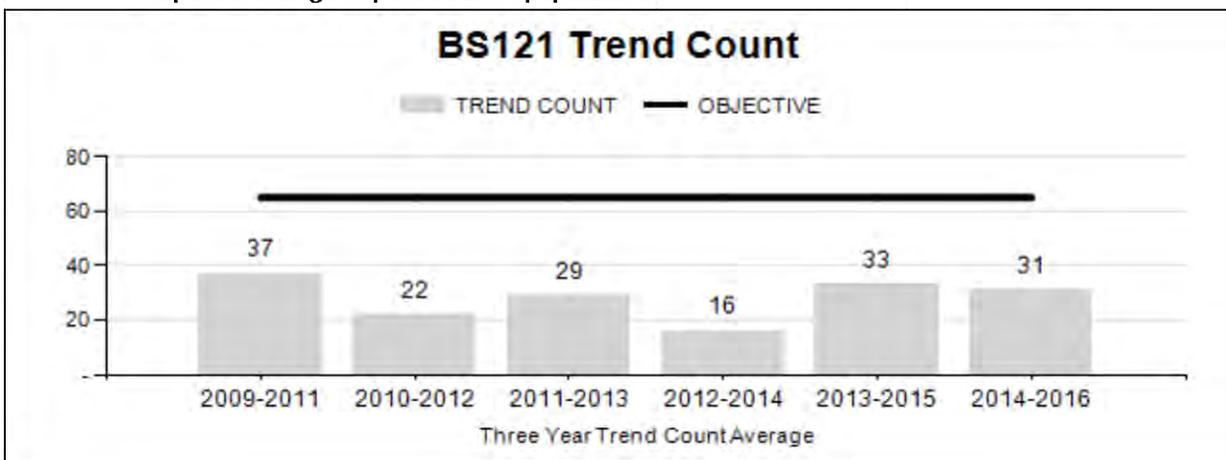
HUNT AREAS: 24

PREPARED BY: GARY FRALICK

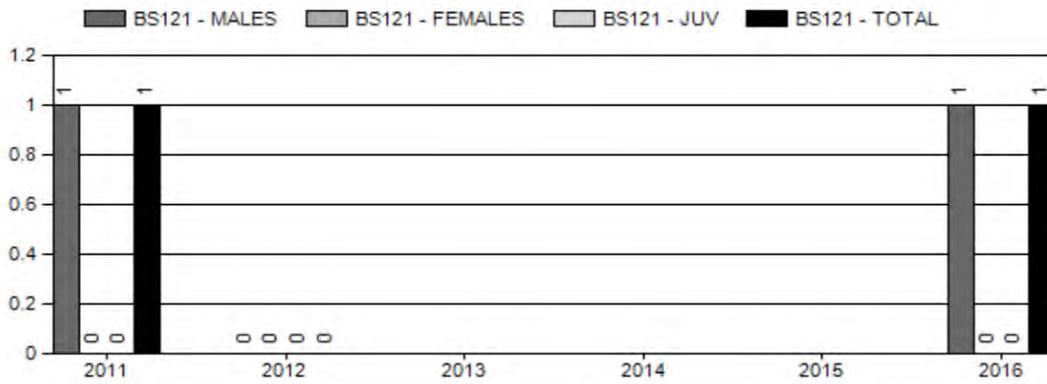
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	28	39	55
Harvest:	0	1	1
Hunters:	0	1	1
Hunter Success:	0%	100%	100 %
Active Licenses:	0	1	1
Active License Success	0%	100%	100 %
Recreation Days:	0	2	5
Days Per Animal:	0	2	5
Males per 100 Females:	56	210	
Juveniles per 100 Females	50	70	
Trend Based Objective ($\pm 20\%$)			65 (52 - 78)
Management Strategy:			Special
Percent population is above (+) or (-) objective:			-40%
Number of years population has been + or - objective in recent trend:			3

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

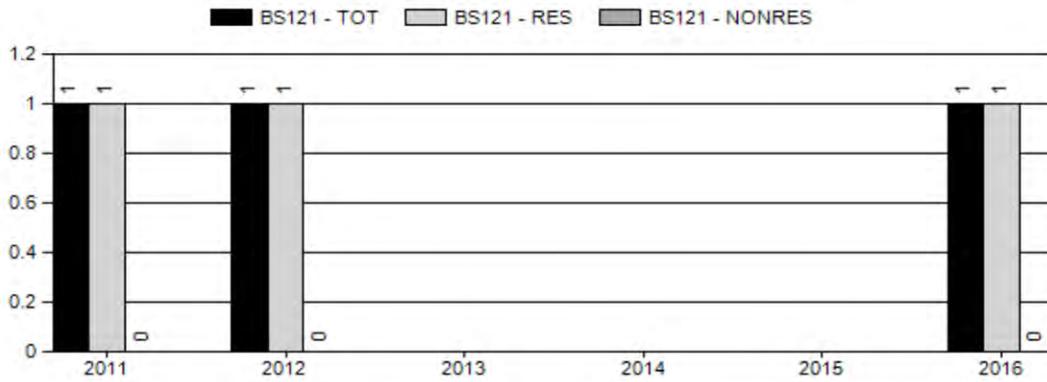
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%



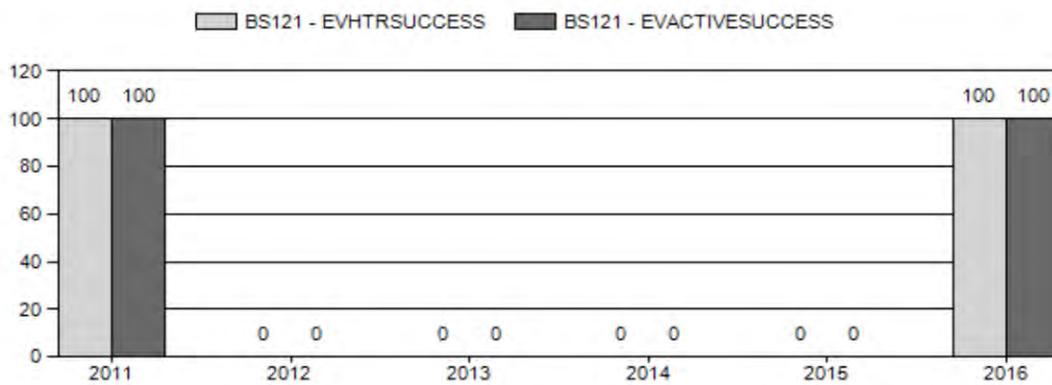
Harvest



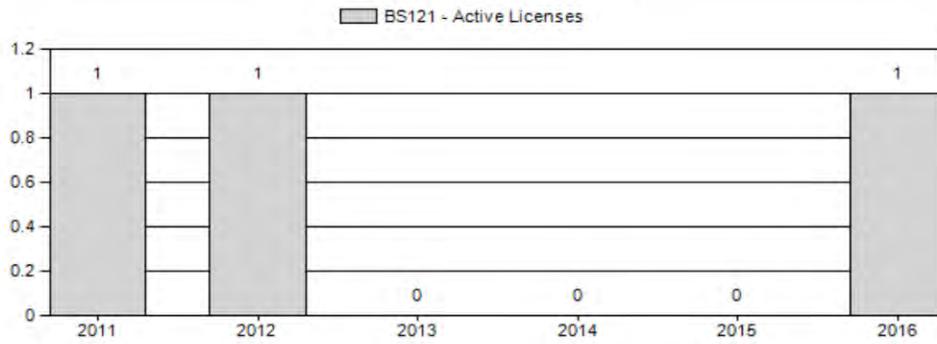
Number of Active Licenses



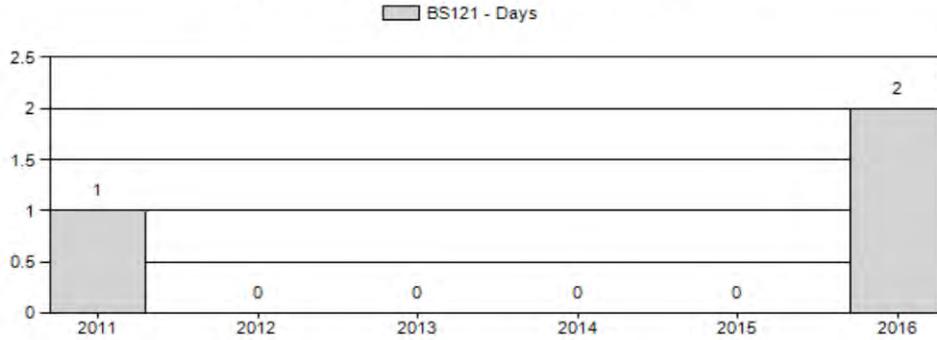
Harvest Success



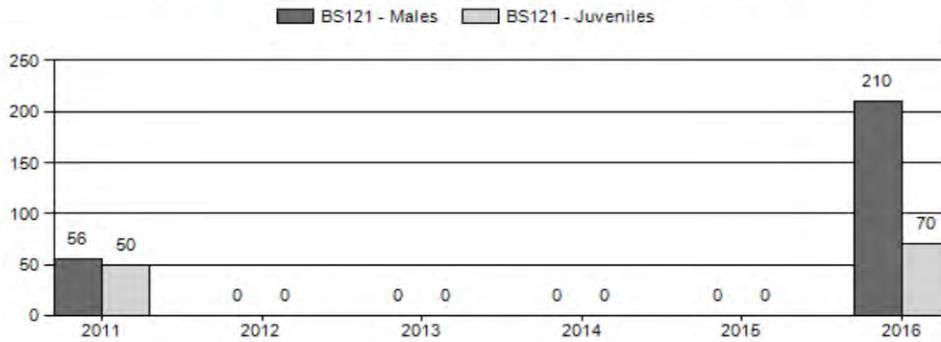
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Bighorn Sheep Herd BS121 - DARBY MOUNTAIN

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
2011	60	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0
2012	60	0	5	5	100%	0	0%	0	0%	5	0	0	0	0	±0	0	±0	0
2013	60	0	0	0	0%	0	0%	0	0%	0	0	0	0	±0	0	±0	0	
2014	60	0	0	0	0%	0	0%	0	0%	0	0	0	0	±0	0	±0	0	
2015	75	3	7	10	18%	28	51%	17	31%	55	0	1	25	36	±0	61	±0	45
2016	0	2	20	22	56%	10	26%	7	18%	39	0	10	200	210	±0	70	±0	23

**2017 HUNTING SEASON
DARBY MOUNTAIN HERD UNIT - BHS121**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
24	1	Sep. 1	Oct. 31	1	Limited quota	Any ram (1 resident)
Archery		Aug. 15	Aug.31			Refer to Section 3 of this Chapter

Summary of Changes in License Number

Area	License Type	Quota change from 2016
24	1	No Change
Herd Unit Total	1	No Change

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 65

Management Strategy: Recreational

2016 Mid-Winter Trend Count: 39

Most Recent 3-Year Running Average Trend Count: 31

The Darby Mountain bighorn sheep herd mid-winter trend objective is 65 sheep. The objective was established in 2016. The 2017 hunting season will be the second year of hunting since the season was closed in 2012. During the period from 2012 to 2015 the

season was closed due to concerns over the general absence of trophy class rams in the population.

On-ground and aerial surveys were conducted in April through July 2015. The 2015 surveys resulted in a minimum of 55 different sheep being observed.

Herd Unit Issues

In 1981 the Wyoming Game and Fish Department and U.S. Forest Service reintroduced bighorn sheep (*Ovis canadensis*) into the Wyoming Mountain Range, west of Big Piney, Wyoming. The last wild sheep occupied this range in the early 1960s. Competition with domestic sheep and illegal harvest were believed responsible for their extirpation. Prior to the transplant, domestic sheep were removed from allotments on Fish Creek and Darby Mountain, which provided the best historic bighorn sheep habitat. In January 1981, 35 Rocky Mountain sheep were transplanted from the Whiskey Basin Habitat Unit near Dubois, Wyoming to Fish Creek Mountain. In January 1987, another 25 bighorn sheep were transplanted from Whiskey Basin to the Fish Creek Mountain site. Funding assistance for this relocation effort was provided by the Foundation for North American Wild Sheep (FNAWS).

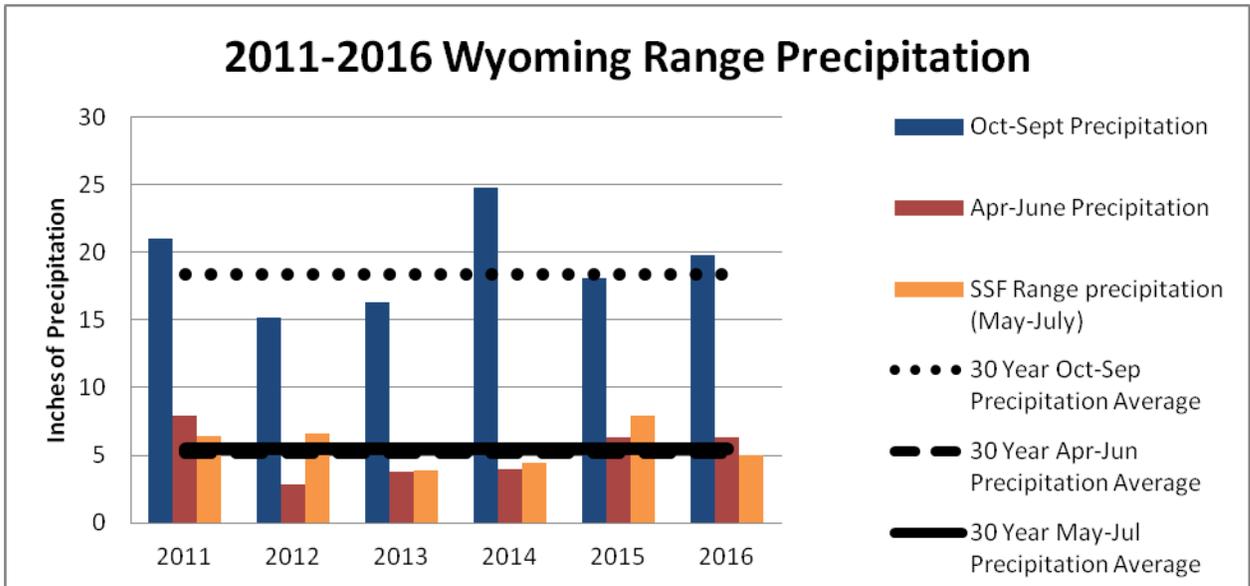
The estimated herd size in mid-winter 1988 was 110 sheep. However, the actual count on 20 February 1988 was 70 sheep and poor weather prevented completion of the survey. A comprehensive on-ground and aerial survey was conducted from 20 June - 14 July 1988 in approximately a 90 square mile area around Fish Creek Mountain. These surveys resulted in a post-lambing count of a minimum of 124 sheep consisting of 56 ewes, 28 lambs and 40 rams in the herd. In 1988 the first hunt was conducted in Hunt Area 24, based primarily on the results of the previous survey. Four permits were issued with 3/4 curl restrictions and four rams were harvested. The population is estimated to have increased to a maximum of approximately 150 sheep in 1994. The department continued to issue four permits for 3/4 curl rams from 1988 through 1997.

Forage production and availability studies on Fish Creek and Darby Mountain winter ranges, (prior to the 1981 re-introduction) suggested a combined capacity for 150 to 175 sheep in most winters. Other potential wintering sites were identified north and east of Fish Creek Mountain. Since 1981 individuals and small groups of sheep that typically number less than 15 individuals have been observed wintering near Star Hill, above the Middle Piney Creek summer homes, the hydrographic divide between the Greys River and Green River drainages in Box Canyon Creek in Greys River drainage, and the windblown ridge tops in the Straight Creek drainage west of Mount Schidler. Fish Creek Mountain and Darby Mountain continue to support the largest concentrations of wintering sheep.

Most summer observations have occurred within the 90 square mile core area around Fish Creek Mountain. However, since 1994 a few sub legal rams and small ewe-lamb groups have been observed on summer range outside the core area. Summer dispersal of bighorn

sheep have been documented along the crest of the Wyoming Mountain Range in the vicinity of the headwaters of South Cottonwood Creek, McDougal Peak, Gunsight Pass, Middle Piney Creek, Straight Creek, North Piney Creek and Roaring Fork drainages as well. This dispersal has resulted in bighorn sheep and domestic sheep mingling on summer ranges in several active sheep allotments.

Weather



Weather conditions during the 2016 were ideal for forage production beginning in early spring and continuing through fall. By late summer the moisture regime had changed frequent precipitation scenario that persisted into the fall hunting season. Drought conditions in the early portion of the summer abated by late fall as persistent snow storms began to deposit snowpack in the Wyoming and Salt Mountain Ranges. By mid winter snow conditions on winter ranges had changed significantly. Significant snowfall and subsequent accumulations occurred on core winter ranges through early February. These conditions persisted throughout the remainder of the winter. By late winter 2017 snowpack in western Wyoming watersheds were estimated to be significantly above normal. For additional weather and precipitation data please visit the following websites: <http://www.ncdc.noaa.gov/temp-and-precip/time-series> and <http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html>.

Habitat

Sagebrush and other shrubs produced good leader growth in 2016 which provided a good quantity of forage on winter ranges. However, many shrubs are under snow and largely unavailable on extreme winters. Current snow conditions do not indicate deer will leave winter ranges early, but weather in the next two months can significantly impact those conditions.

Winter range browse plants have been measured each spring and fall to assess production and utilization since the late 1990s. Growing conditions improved in 2016 on winter ranges because of moisture regimes in early spring and throughout the growing seasons. Improved growing conditions were due to spring and summer rains which have a different effect on shrubs than winter snowpack due to rates of infiltration. For additional site specific information, please refer to the 2016 Annual Report Strategic Habitat Plan Accomplishments, for Pinedale Region habitat improvement project summaries (<http://wgfd.wyo.gov/web2011/wildlife-1000708.aspx>).

Field Data

2016 Post-hunt Survey

An aerial survey was conducted in February 2017 from a Bell 47 Turbine helicopter. The area surveyed encompassed the crest of the Wyoming Range from Marten Creek southward to Box Canyon. Fish Creek and Darby Mountains were not surveyed because of time and fuel constraints. These areas typically support substantial numbers of bighorn sheep. A total of 39 sheep were observed. The age/sex classification of the sheep observed during this survey is as follows: 22 adult rams, 2 yearling rams, 10 ewes, and 7 lambs.

No mountain goats (*Oreamnos americanus*) were observed along the crest of the Wyoming Range during this survey. Approximately one (1) hour of survey time was completed.

2015 Post-hunt Survey

An aerial survey was conducted on April 2, 2015 from a Bell 47 Turbine helicopter. The primary survey area encompassed the crest of the Wyoming Mountain Range and Bighorn Sheep Hunt Area 24. The objective of the survey was to document the location and age/sex characteristics of bighorn sheep.

The survey was initiated on the north at Mount McDougal and terminated on the south along the crest of the Wyoming Range at Cheese Pass and Fish Creek and Darby Mountains. All suitable bighorn sheep habitat was surveyed within the required budgetary constraints and as weather conditions permitted safe fly conditions. Incidental observations of other species were recorded as noted. No mountain goats (*Oreamnos americanus*) were observed along the Wyoming Range crest during this survey. Approximately 6 hours of survey time were completed.

A total of 55 sheep were observed. The age/sex classes were: 7 adult rams; 3 yearling rams; 28 ewes, and 17 lambs were observed. The observed age/sex ratios were noted as follows: 36 rams:100 ewes:61 lambs.

Bighorn sheep were observed in three primary locations. Those locations were: the crest of the Wyoming Range from Marten Creek south to Box Canyon Creek; Fish Creek Mountain to include Middle Piney Creek; and, Darby Mountain. A total of three (n=3) sheep were observed in Marten Creek and 16 sheep observed in Box Canyon Creek. Two rams (n=2) were observed in Straight Creek and one ewe and one lamb were observed in Middle Piney Creek. A total of 27 sheep were observed on Fish Creek Mountain, while five adult rams were noted on Darby Mountain.

Harvest

One license valid for any ram was issued annually during the period from 2008 to 2012. A total of four rams were harvested from 2008 – 2011. In 2012, the one licensed hunter observed very few sheep and could not find a mature ram older than 5 years of age after 15 total days of hunting. The lack of mature rams observed by the hunter is consistent with Department field surveys over the past five years.

The first license issued since 2013 was awarded to a resident hunter in 2016. This hunter harvested a mature ram that was estimated at 8 years old.

Population

The population has stabilized at approximately 60 - 75 sheep. Systematic surveys, typically conducted from a helicopter in winter, have resulted in fewer than 60 sheep observed. Summer on-ground surveys conducted in August have identified the Box Canyon and Fish Creek Mountain areas as locations that typically support the highest aggregations of sheep.

The population objective was evaluated for the first time since 1991. Since that time the Darby Mountain herd objective was 150 sheep. The population objective was revised in 2016 based on public and federal agency input and approval by the Wyoming Game and Fish Commission. The current population objective for the Darby Mountain herd is 65 sheep (Appendix A).

Disease Surveillance

For the first time in the management history of the herd a research effort was initiated in February 2017 to evaluate the health of the Darby Mountain herd. A total of 8 sheep were captured and radio-collared (Table 1). Biological samples were collected that will result in diagnostic results for presence of respiratory pathogens. The primary respiratory pathogens of concern are: *Mannheimia haemolytica*, *Mycoplasma ovipneumoniae*, *Bibersteinia trehalosi*, and *Pasteurella multocida* (Appendix A).

Capture operations ensued on January 25, 2017. Sheep were captured using a Hughes 500 helicopter and net deployed from a Coda net-gun. Sheep were transported via long-line from the capture site to the Middle Piney Creek parking area. Biological samples were collected that included nasal, tonsil, and ear swabs, serology, and fecal samples.

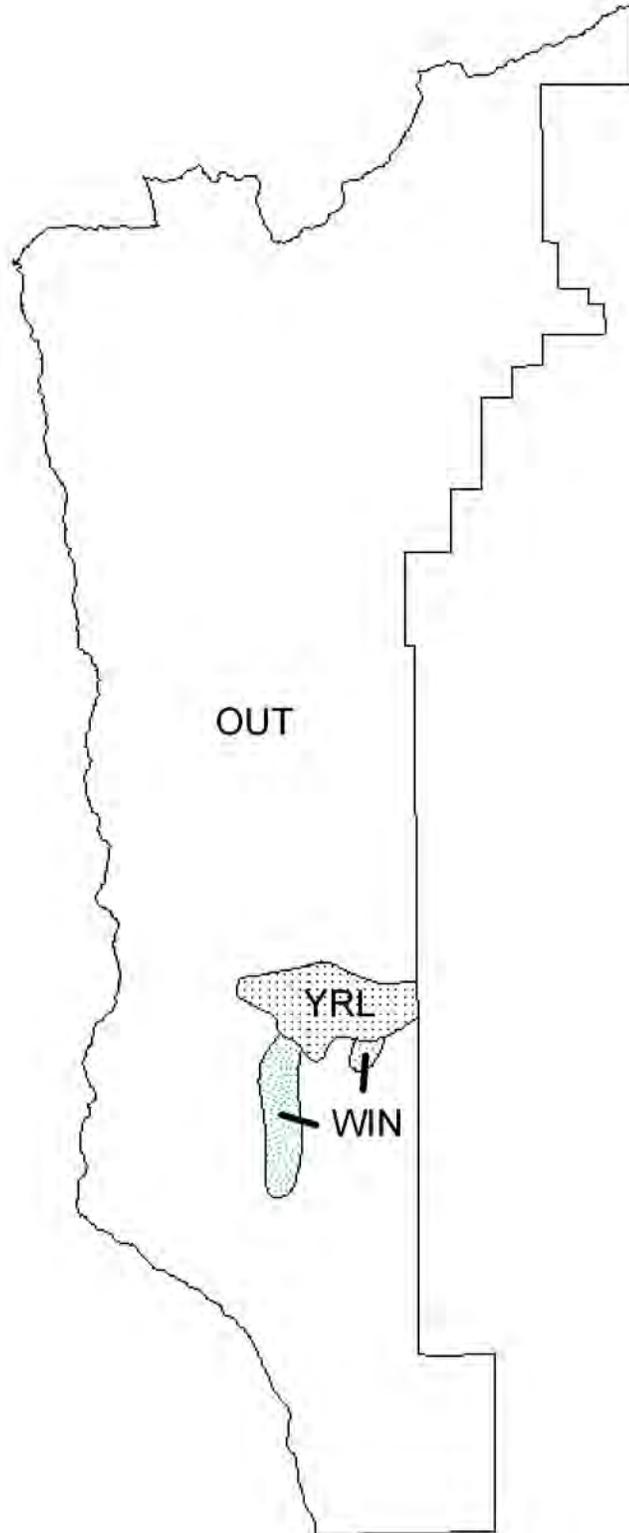
A total of six ewes and two rams were captured to assess general health, vigor, and exposure to respiratory pathogens (Table 1). All sheep were outfitted with Telonics RECON 4560-4 radio-collars and ear-tagged. After tissue and biological samples were collected all sheep were transported back to the respective capture sites.

Table 1. A summary of bighorn sheep captured in February and tested for respiratory pathogens, Darby Mountain bighorn sheep herd, 2017.

Freq	Ear Tag	Capture Date	Capture Location		Sex	Age	Pregnancy Status
			Easting (UTM)	Northing (UTM)			
151.770	Yellow 10	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	6	NA
151.870	Yellow 11	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	5	NA
151.900	Yellow 15	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	2	NA
151.930	NA	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	4	NA
151.940	NA	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	3	NA
151.950	Yellow 14	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	4	NA
151.970	Yellow 16	25-Jan	532,903 Straight Cr	4,716,857	Male	2	NA
151.980	Yellow 21	25-Jan	532,903 Straight Cr	4,716,857	Male	3	NA

Management Summary

The 2017 bighorn sheep hunting season for Hunt Area 24 will be remain opened to hunting for the second consecutive year. A total of one (1) limited quota license will be issued for any ram. This hunting season will result in the harvest of one adult ram 2+-years old. The projected number of sheep that should be counted in the posthunt 2017 population trend count is approximately 55 sheep.



BHS 121- Darby Mtn.
HA 24
Revised 7/02