

# TABLE OF CONTENTS

<b>SPECIES</b>	<b>HERD UNIT</b>	<b>PAGE</b>
<b><u>PRONGHORN</u></b>	Pumpkin Butte (PR309) - Area 23.....	1
	Crazy Woman (PR318) - Area 22 & 113.....	4
	Hazelton (PR320) - Areas 20 & 102.....	7
	Leiter (PR321) - Areas 10, 15 & 16.....	9
	North Black Hills (PR339) - Areas 1, 2, 3, 18 & 19.....	11
	Gillette (PR351) - Area 17.....	14
	Middle Fork (PR352) - Area 21.....	17
	Beckton (PR355) - Area 109.....	19
<b><u>MULE DEER</u></b>	Powder River (MD319) - Areas 17, 18, 23, & 26.....	21
	Pumpkin Buttes (MD320) - Areas 19, 29, & 31.....	24
	North Bighorn (MD321) - Areas 24, 25, 27, 28, 50, 51, 52 & 53 .....	26
	Appendix - North Bighorn Mule Deer Hunter Survey .....	29
	Upper Powder River (MD322) - Areas 30, 32, 33, 163 & 169.....	31
<b><u>WHITE TAILED DEER</u></b>	Powder River (WT303) - Areas 17 - 19, 23 - 33, 163 & 169.....	35
<b><u>ELK</u></b>	Fortification (EL320) - Area 2.....	40
	North Bighorn (EL321) - Areas 35, 36, 37, 38, 39 & 40.. .....	42
	South Bighorn (EL322) - Areas 33, 34, 47, 48, 49 & 120 .....	46
	Rochelle Hills (EL344) - Areas 113 & 123 .....	49
<b><u>MOOSE</u></b>	Bighorn Moose (MO313) - Areas 1, 34, & 42.....	51
<b><u>APPENDICES</u></b>		
APPENDIX A	Landowner Survey-Sheridan Biologist District.....	54
APPENDIX B	Landowner Survey-Gillette Biologist District.....	63
APPENDIX C	Landowner Survey-Buffalo/Kaycee Biologist District.....	71



**PRONGHORN**

For formatting purposes,  
this page left blank intentionally.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2019 - 5/31/2020

HERD: PR309 - PUMPKIN BUTTES

HUNT AREAS: 23

PREPARED BY: ERIKA PECKHAM

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	20,346	13,850	12,775
Harvest:	2,335	2,959	2,650
Hunters:	2,530	2,883	2,800
Hunter Success:	92%	103%	95 %
Active Licenses:	2,678	3,128	3,100
Active License Success:	87%	95%	85 %
Recreation Days:	8,552	7,846	8,000
Days Per Animal:	3.7	2.7	3.0
Males per 100 Females	47	51	
Juveniles per 100 Females	78	61	

Population Objective (± 20%) : 18000 (14400 - 21600)

Management Strategy: Private Land

Percent population is above (+) or below (-) objective: -23.1%

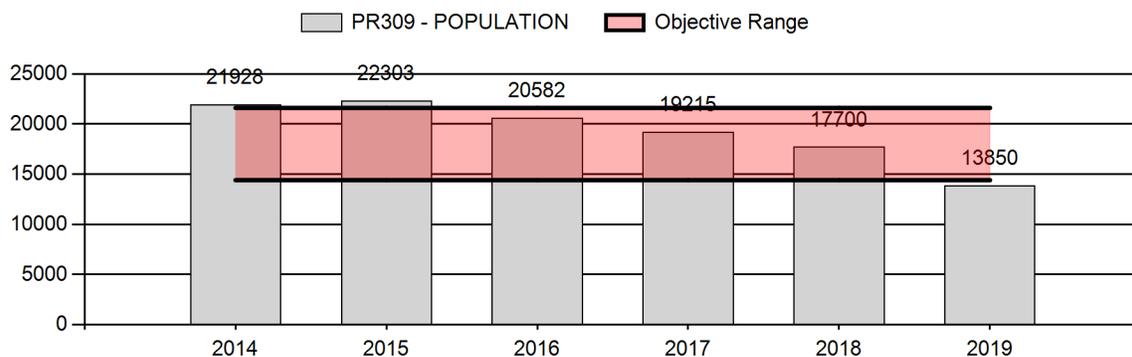
Number of years population has been + or - objective in recent trend: 5

Model Date: 2/3/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	12.2%	15.6%
Males ≥ 1 year old:	36.6%	50.9%
Total:	-14.0%	-16.8%
Proposed change in post-season population:	-6.0%	-7.8%

## Population Size - Postseason



**2020 HUNTING SEASONS  
PUMPKIN BUTTES PRONGHORN HERD (PR309)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
23	1	Aug. 15	Sept. 30	Oct. 1	Oct. 31	550	Any antelope
23	2	Aug. 15	Sept. 30	Oct. 1	Oct. 31	1,600	Any antelope valid on private land
23	6	Aug. 15	Sept. 30	Oct. 1	Oct. 31	400	Doe or fawn
23	7	Aug. 15	Sept. 30	Oct. 1	Oct. 31	1,200	Doe of fawn valid on private land

**2019 Hunter Satisfaction:** 92% Satisfied, 7% Neutral, 1% Dissatisfied

**2020 Management Summary**

1.) License numbers and season structure remain unchanged from 2019. The tiered season structure with private land Type 2 and Type 7 licenses has worked well to improve the quality of public land hunting. Type 1 and Type 6 hunter success was 93%. This number of licenses seems to be in line with what the herd can support. With this license issuance, the herd is predicted to be 22% below objective with a high buck ratio (51 in 2019), which fits well with the private land management strategy parameters.

2.) The management objective was internally reviewed during the current bio-year. The postseason population objective of 18,000 ( $\pm 20\%$ ) pronghorn and private land management strategy was last brought for public review in 2015. The 2019 post-season population estimate is around 13,900 pronghorn. This estimate is derived from a spreadsheet model that is considered a fair model, given there are no survival estimates for the herd. Currently the model shows that this herd is 23% below objective and is therefore not within the management objective range. Prior to this year, the herd was estimated to be near objective. Total number of pronghorn observed during the classification survey was markedly lower than in 2018. This could be due to pronghorn distribution as a result of a high moisture year. It is possible that pronghorn were utilizing different areas due to an increase in forage and water availability. Additionally, there could be variability in observers from year to year. Comments have not been received from hunters or landowners expressing concern with a major decrease. It is likely that this model is inaccurate given the increase in hunter numbers, harvest and hunter success and corresponding decrease in hunter effort. Pooled hunter success was 103%. After considering all available information concerning the population, land access, weather and habitat data from the past five years, local managers believe the current management strategy is appropriate and will be retained.

3.) Line transect surveys are conducted every 3 to 4 years in this herd, which provide an independent population estimate. The last survey occurred in 2016 and yielded an estimate of around 10,500 pronghorn. At the time, the spreadsheet model had a population estimate of 15,250

pronghorn. This line transect estimate is pulling the population estimate down. This herd is scheduled for a line transect survey in 2020.

4.) Landowner Survey Summary. As this is a predominantly private land area, landowner surveys are considered. Response to the survey this year was low (n=10). Results indicate that 9 respondents were satisfied with the current pronghorn numbers and would like to keep the same season for 2020.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2019 - 5/31/2020

HERD: PR318 - CRAZY WOMAN

HUNT AREAS: 22, 113

PREPARED BY: CHEYENNE STEWART

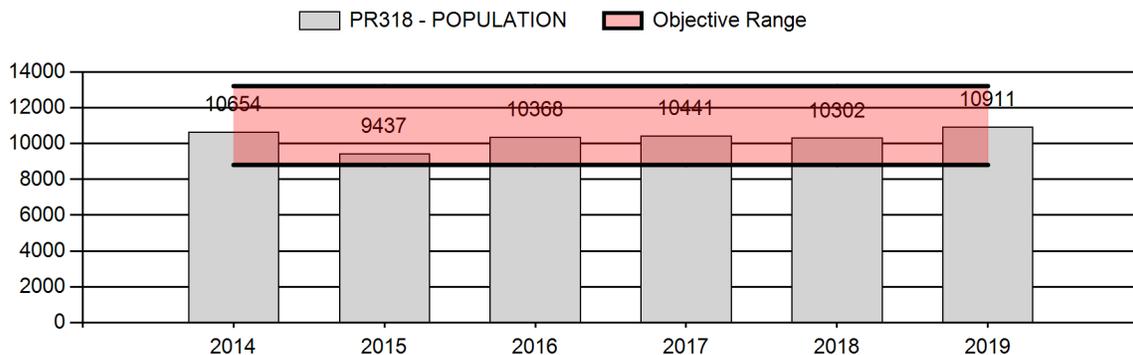
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	10,240	10,911	10,302
Harvest:	1,750	1,551	1,693
Hunters:	1,897	1,802	1,850
Hunter Success:	92%	86%	92%
Active Licenses:	2,063	1,935	2,050
Active License Success:	85%	80%	83%
Recreation Days:	6,410	6,055	6,400
Days Per Animal:	3.7	3.9	3.8
Males per 100 Females	51	53	
Juveniles per 100 Females	82	70	

Population Objective (± 20%) :	11000 (8800 - 13200)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-0.8%
Number of years population has been + or - objective in recent trend:	0
Model Date:	3/9/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	10%	11%
Males ≥ 1 year old:	38%	40%
Total:	12%	13%
Proposed change in post-season population:	-14%	-14%

## Population Size - Postseason



**2020 Hunting Seasons  
Crazy Woman Pronghorn Herd Unit (PR318)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
22	1	Aug. 15	Sep. 30	Oct. 1	Oct. 31	1000	Any antelope
22	6			Sep. 1	Sep. 30	600	Doe or fawn valid on private land north of Crazy Woman Creek
22	6	Aug. 15	Sep. 30	Oct. 1	Oct. 31		Doe or fawn valid in the entire area
113	1	Aug. 15	Sep. 30	Oct. 1	Oct. 31	175	Any antelope
113	2	Aug. 15	Sep. 30	Oct. 11	Oct. 31	175	Any antelope
113	6	Aug. 15	Sep. 30	Oct. 1	Oct. 31	200	Doe or fawn

**2019 Hunter Satisfaction:** 84% Satisfied, 7% Neutral, 9% Dissatisfied

**2020 Management Summary**

**1.) Hunting Season Evaluation:** The current season structure has resulted in very stable annual population and harvest metrics over the last decade. This trend continued in 2019 with slightly lower success rates (86%) but good hunter satisfaction (84%), and landowner satisfaction (60%). The population model corroborates the field data, estimating the population at objective with stability in recent years. Fawn ratios can fluctuate annually, however fawn ratios have been slightly depressed since 2016. Some hunter crowding on public lands is status quo and mitigated by not increasing the quota. We assume that hunter success rates and satisfaction are lower for public land hunters due to crowding. All licenses sold out in the first draw, with over 300 more applicants for 22-6 licenses than the total quota. It does not seem viable to raise the quota to match the increased demand without having negative impacts on hunter success due to increased total hunters afield.

**2.) Management Objective Review:** Scheduled for 2023.

**3.) Line Transect Survey:** In June 2019 we conducted a line transect (LT) survey. The survey was completed over 12 hours in two days using a Husky Aviat supplied by Flightline LFS, Inc (Gillette) and one observer. The observations violated the model assumption of greatest probability of detection in the A band. The A and B bands were binned for analysis with a Hazard/Hermite parameter estimator function, but the problem was not entirely resolved. The resulting population estimate ( $18,865 \pm 2,338$ ) is assumed to be an extreme over-estimation based on the wide detection function shoulder. Additionally, the detection probability did not increase with cluster size. Long-term trends in other population metrics including hunter success, landowner surveys, total number classified, classification ratios, and previous LT survey results also suggest that the 2019 LT estimate is inflated. Due to our lack of confidence in the result, we did not include it in the population model. We plan to repeat the survey as soon as possible.

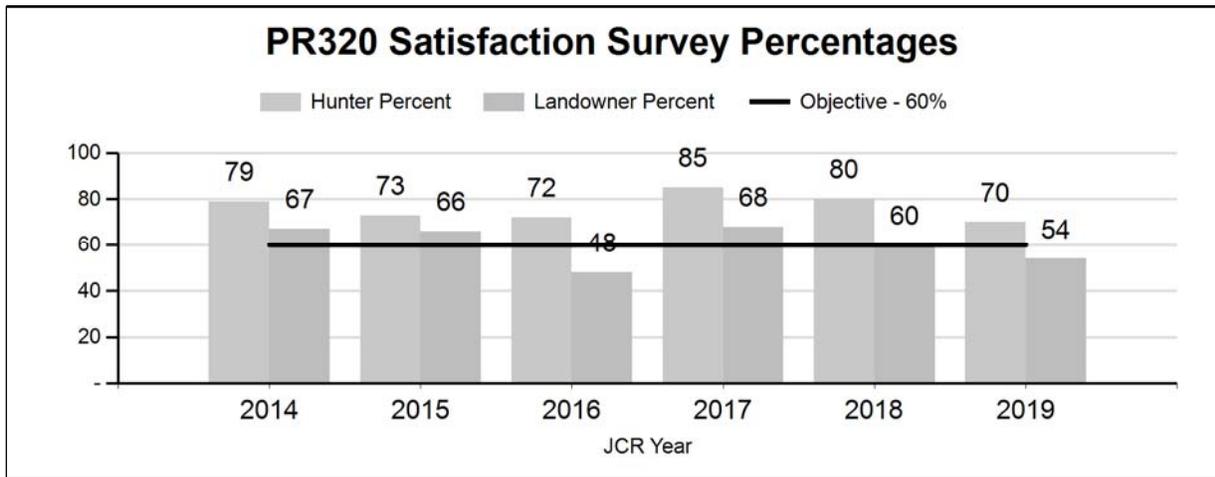
**4.) Anecdotal Observations:** The increase in license applications is correlated with an increase in the non-resident Region C deer quota in 2019. Many hunters attempt to harvest both species, so it is likely that the increase in the non-resident deer quota affected pronghorn license applications. With ample moisture over the summer and fall, pronghorn appeared to be in smaller groups and more dispersed during our classifications and during the first couple weeks of the hunting season. In some areas this behavior made it appear that overall numbers may be down.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn  
 HERD: PR320 - HAZELTON  
 HUNT AREAS: 20, 102

PERIOD: 6/1/2019 - 5/31/2020  
 PREPARED BY: CHEYENNE STEWART

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Hunter Satisfaction Percent	78%	70%	70%
Landowner Satisfaction Percent	62%	54%	60%
Harvest:	1,279	1,094	1,150
Hunters:	1,502	1,345	1,400
Hunter Success:	85%	81%	82%
Active Licenses:	1,667	1,503	1,600
Active License Success:	77%	73%	72 %
Recreation Days:	6,051	4,996	5,500
Days Per Animal:	4.7	4.6	4.8
Males per 100 Females:	77	64	
Juveniles per 100 Females	84	76	
Satisfaction Based Objective			60%
Management Strategy:			Private Land
Percent population is above (+) or (-) objective:			2%
Number of years population has been + or - objective in recent trend:			1



**2020 Hunting Seasons  
Hazelton Pronghorn Herd Unit (PR320)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
20	1	Aug. 15	Oct. 14	Oct. 15	Nov. 15	500	Any antelope
20	6	Aug. 15	Oct. 14	Oct. 15	Nov. 15	500	Doe or fawn
102	1	Aug. 15	Oct. 14	Oct. 15	Nov. 15	400	Any antelope
102	6			Sep. 1	Sep. 30	400	Doe or fawn valid on private land
102	6	Aug. 15	Oct. 14	Oct. 15	Nov. 15		Doe or fawn valid in the entire area

**2019 Hunter Satisfaction:** 71% Satisfied, 11% Neutral, 19% Dissatisfied

**2019 Landowner Satisfaction:** 29% Above, 54% At, 18% Below Desired Levels

**2020 Management Summary**

**1.) Hunting Season Evaluation:** Managing for both landowner satisfaction and hunter satisfaction in this unit can be difficult due to conflicting objectives. Landowners often desire liberalized seasons to mitigate agricultural damages while public land hunters complain that an over-allocation of licenses has resulted in unacceptable levels of crowding on public lands. We do not know how hunter success and satisfaction rates differ between primarily public and private land hunters, and we assume that the number of dissatisfied hunters is driven by crowding on public lands. While landowner satisfaction was below objective (60%), when asked about season structure 62% of respondents preferred that the season dates and quotas remain unchanged. We believe that maintaining the current season structure and quota is the most appropriate way to mitigate hunter dissatisfaction while providing landowners with appropriate opportunity to manage damages, including the September doe/fawn license valid on private land.

**2.) Management Objective Review:** Scheduled for 2023.

**3.) Landowner Survey:** The annual landowner survey was mailed out January 10, 2020 with a February 1 deadline for return. Twenty-eight landowners from hunt areas 20 and 102 responded, which is slightly lower than the previous five year average ( $n=35$ , 2014-2018). Landowner satisfaction (54%) was lower than objective (60%), however there was no general consensus regarding the population status, with five respondents reporting the population being below desired levels and eight reporting the population being above desired levels.

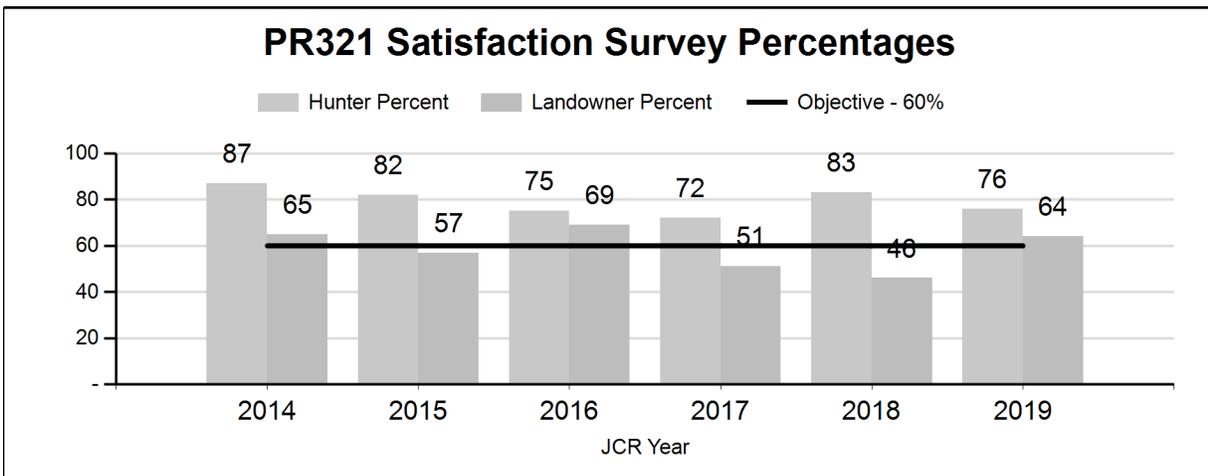
**4.) Anecdotal Observations:** With ample moisture over the summer and fall, pronghorn appeared to be in smaller groups and more dispersed during our classifications. In some areas this behavior made it appear that overall numbers may be down.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn  
 HERD: PR321 - LEITER  
 HUNT AREAS: 10, 15-16

PERIOD: 6/1/2019 - 5/31/2020  
 PREPARED BY: TIM THOMAS

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Hunter Satisfaction Percent	80%	76%	75%
Landowner Satisfaction Percent	58%	64%	70%
Harvest:	1,781	1,797	1,625
Hunters:	2,136	2,348	2,100
Hunter Success:	83%	77%	77%
Active Licenses:	2,356	2,529	2,300
Active License Success:	76%	71%	71%
Recreation Days:	7,085	8,020	7,000
Days Per Animal:	4.0	4.5	4.3
Males per 100 Females:	55	49	
Juveniles per 100 Females	69	65	
Satisfaction Based Objective			60%
Management Strategy:			Private Land
Percent population is above (+) or (-) objective:			10%
Number of years population has been + or - objective in recent trend:			1



**2020 HUNTING SEASONS  
LEITER PRONGHORN HERD (PR321)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
10	1	Aug. 15	Sep. 30	Oct. 1	Oct. 14	300	Any antelope
	6	Aug. 15	Sep. 30	Oct. 1	Oct. 31	400	Doe or fawn
15	1	Aug. 15	Sep. 30	Oct. 1	Oct. 14	600	Any antelope
	6	Aug. 15	Sep. 30	Oct. 1	Nov. 30	800	Doe or fawn
16	1	Aug. 15	Sep. 30	Oct. 1	Oct. 14	600	Any antelope
	6	Aug. 15	Sep. 30	Oct. 1	Oct. 31	300	Doe or fawn

**Management Evaluation**

**Hunter / Landowner Management Objective:** 60% Satisfaction

**Secondary Management Objective:** Observed ratio of 30 bucks:100 does minimum

**Management Strategy:** Private Land

**2019 Hunter Satisfaction Estimate:** 76%

**2019 Landowner Satisfaction Estimate:** 64%

**2020 Management Summary**

1.) This herd unit is primarily private land, with very limited public land access. Private land concerns drive hunting season strategies. Based on responses from an annual survey, most landowners felt they were at (64%) or above (31%) desired levels of pronghorn on their property. Only two landowners (5%) felt they had too few pronghorn. As such, we maintained licenses at the 2019 level, except for Area 16 Type 6 licenses.

We received a few comments from landowners and outfitters that pronghorn numbers seemed lower in 2019. This could have been a distribution issue as there was plentiful forage and water throughout the summer and early fall. Hunter success was only 65% on Area 16 Type 6 licenses. In response, we reduced the quota from 400 to 300 licenses. Even with difficult access and limited public lands, hunter satisfaction remained relatively high at 76%.

2.) We observed 49 bucks:100 does during August classification surveys. This is well above the secondary management objective and supports the proposed level of buck harvest.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2019 - 5/31/2020

HERD: PR339 - NORTH BLACK HILLS

HUNT AREAS: 1-3, 18-19

PREPARED BY: ERIKA PECKHAM

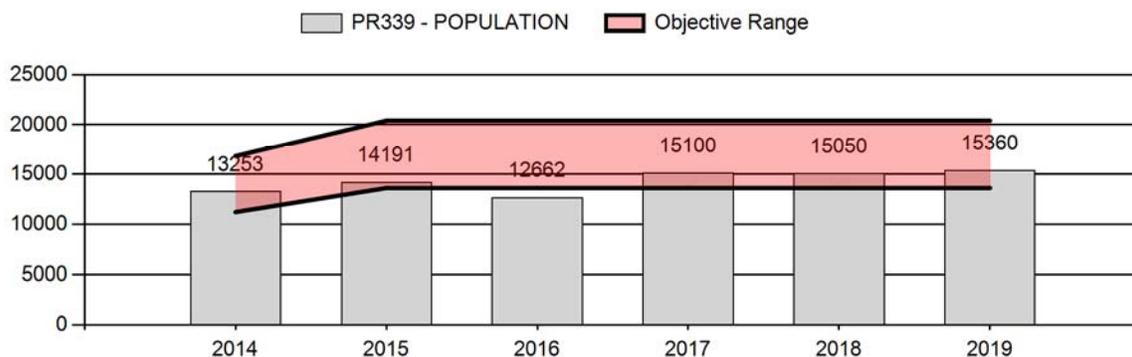
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	14,051	15,360	15,200
Harvest:	1,192	1,363	1,200
Hunters:	1,302	1,595	1,450
Hunter Success:	92%	85%	83 %
Active Licenses:	1,473	1,809	1,600
Active License Success:	81%	75%	75 %
Recreation Days:	4,364	5,790	5,500
Days Per Animal:	3.7	4.2	4.6
Males per 100 Females	44	79	
Juveniles per 100 Females	77	70	

Population Objective (± 20%) :	17000 (13600 - 20400)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-9.6%
Number of years population has been + or - objective in recent trend:	5
Model Date:	2/21/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females :: 1 year old:	6.4%	5.2%
Males :: 1 year old:	31.4%	22.9%
Total:	-9.8%	6.7%
Proposed change in post-season population:	-1%	8.4%

## Population Size - Postseason



## 2020 HUNTING SEASONS

### NORTH BLACK HILLS PRONGHORN HERD (PR339)

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
1	1	Aug. 15	Sept. 30	Oct. 1	Nov.20	250	Any antelope
1	6	Aug. 15	Sept. 30	Oct. 1	Nov.20	150	Doe or fawn
2	1	Aug. 15	Sept. 30	Oct. 1	Nov.20	200	Any antelope
2	6	<u>Aug. 15</u>	Sept. 30	Oct. 1	Nov. 20	200	Doe or fawn
3	1	Aug. 15	Sep. 30	Oct. 1	Nov. 20	200	Any antelope
3	6	Aug. 15	Sep. 30	Oct. 1	Nov. 20	100	Doe or fawn
18	1	Aug. 15	Sep. 30	Oct. 1	Oct. 20	200	Any antelope
18	6	Aug. 15	Sep. 30	Oct. 1	Oct. 20	50	Doe or fawn
19	1	Aug. 15	Sep. 30	Oct. 1	Oct. 20	300	Any antelope
19	7	Aug. 15	Sep. 30	Oct. 1	Oct. 20	150	Doe or fawn valid on private land

**2019 Hunter Satisfaction:** 79% Satisfied, 11% Neutral, 10% Dissatisfied

### **2020 Management Summary**

1.) License numbers remained the same in all but Hunt Area 3. The late winter of 2018/2019 in this area was extreme and resulted in high levels of winterkill. Satisfaction was low in this hunt area (63% satisfied) and numerous comments from both hunters and landowners echo what the data illustrates. Other hunt areas did not experience the severity in snow depth and winter conditions and consequently pronghorn numbers did not seem to be as adversely affected. With this license issuance, the herd is predicted to be within 10% of the objective. The 2019 buck ratio (79:100) was much higher than the 5-year average (44:100) which is within the recreational management strategy parameters. The Hunt Areas 1, 2 and 3 archery season opener was moved to August 15th due to public comments and to the standardize the opener across the state.

2.) The management objective was internally reviewed during the current bio-year. The postseason population objective of 17,000 ( $\pm 20\%$ ) pronghorn and recreational management strategy was last brought for public review in 2015. The 2019 post-season population estimate is 15,360 pronghorn. This estimate is derived from a spreadsheet model that is considered a fair model, given that there are no survival estimates for the herd. Currently the model shows that this herd is within 10%

of objective. After considering all available information concerning the population, land access, weather and habitat data from the past five years, local managers believe the current population objective and management strategy is appropriate and will be retained.

3.) A line transect survey was flown in June 2019. This survey resulted in an end of year population estimate of 9,250 pronghorn. This is a realistic estimate and aligns well with the spreadsheet model.

4.) Landowner Survey Summary - As this is a predominantly private land herd, landowner surveys are also considered. 55% of respondents feel that pronghorn numbers are where they would like to see them (n=31). The remaining respondents were evenly split on believing that there were too few or too many.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2019 - 5/31/2020

HERD: PR351 - GILLETTE

HUNT AREAS: 17

PREPARED BY: ERIKA PECKHAM

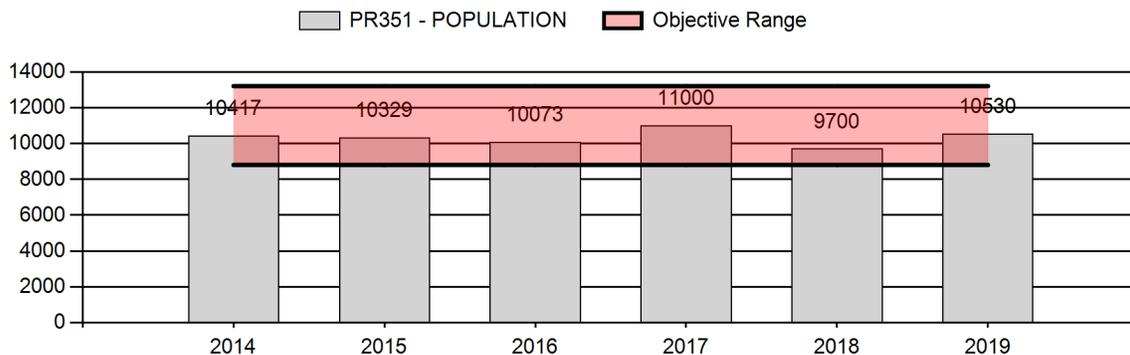
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	10,304	10,530	10,180
Harvest:	1,084	1,120	1,135
Hunters:	1,246	1,326	1,300
Hunter Success:	87%	84%	87 %
Active Licenses:	1,322	1,383	1,350
Active License Success:	82%	81%	84 %
Recreation Days:	4,321	4,492	4,500
Days Per Animal:	4.0	4.0	4.0
Males per 100 Females	48	52	
Juveniles per 100 Females	59	54	

Population Objective (± 20%) :	11000 (8800 - 13200)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-4.3%
Number of years population has been + or - objective in recent trend:	4
Model Date:	1/22/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	6.1%	5.0%
Males ≥ 1 year old:	37.8%	40%
Total:	10.25%	11.1%
Proposed change in post-season population:	-5.2%	-3.3%

## Population Size - Postseason



**2020 HUNTING SEASONS  
GILLETTE PRONGHORN HERD (PR351)**

Hunt Area	Type	Archery Dates		Dates of Seasons		Quota	License	Limitations
		Opens	Closes	Opens	Closes			
17	1	Aug.15	Sep. 30	Oct. 1	Oct. 31	1,100	Limited quota	Any antelope
17	6	Aug.15	Sep. 30	Oct. 1	Oct. 31	250	Limited quota	Doe or fawn

**2019 Hunter Satisfaction:** 84% Satisfied, 7% Neutral, 9% Dissatisfied

**2020 Management Summary**

1.) Type 1 license issuance remained the same. The reduction of type 6 licenses (-150) was in response to a *Mycoplasma bovis* outbreak. Although this disease was not documented herd-wide, there was a large geographic area that experienced significant mortality. An aerial survey, in conjunction with on the ground documentation revealed an estimated 500 pronghorn that were lost due to this disease outbreak. The overall number of licenses seems to be in line with what the herd can support. With this license issuance, the herd is predicted to be within 7% of objective with a buck ratio within the recreational management parameters. . The archery season was moved to August 15<sup>th</sup> from September 1<sup>st</sup>. This is due to public comments and be consistent with adjacent hunt areas.

2.) The management objective was internally reviewed during the current bio-year. The postseason population objective of 11,000 ( $\pm 20\%$ ) pronghorn and recreational management strategy was last brought for public review in 2015. The 2019 post-season population estimate is about 10,550 pronghorn. This estimate is derived from a spreadsheet model that is considered a fair model given there are no survival estimates for the herd. Annual population estimates for the last several years have hovered around the 11,000 mark. For unknown reasons, the observed fawn ratio has been fairly low the last few years. Even with the low fawn production, the herd supports the current season structure, with the population estimate never deviating too far from the objective of 11,000 pronghorn. After reviewing the population, land access, weather and habitat data from the past five years, local managers believed that the current management objective and management strategy is appropriate and will be retained.

**3) Line Transect**

The last line transect was flown in 2016 and estimated there to be around 6,600 pronghorn. This was lower than what was estimated in the spreadsheet model at this time (9,500). This herd is scheduled for a line transect survey in 2020.

|

#### 4.) Landowner Survey Summary

As this is a predominantly private land herd landowner surveys are considered. 67% of respondents (n=24) are satisfied with the current number of pronghorn. Of the remaining respondents they are evenly split as to whether there are too few or too many.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2019 - 5/31/2020

HERD: PR352 - MIDDLE FORK

HUNT AREAS: 21

PREPARED BY: CHEYENNE STEWART

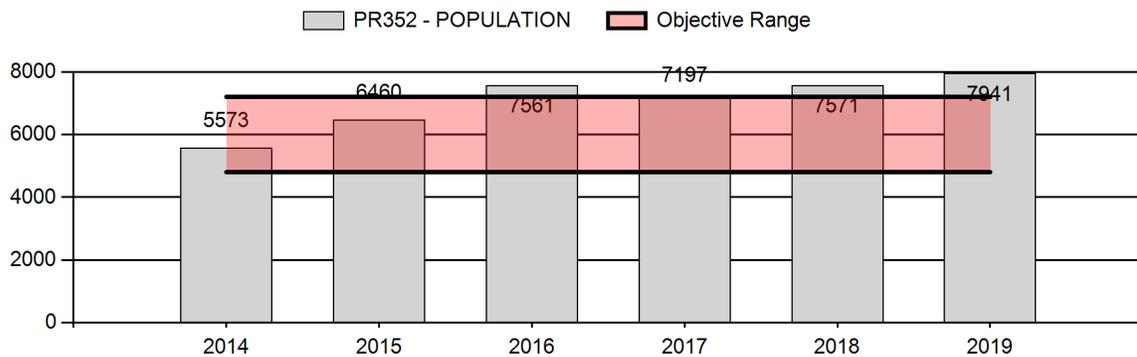
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	6,872	7,941	8,922
Harvest:	618	575	578
Hunters:	689	771	775
Hunter Success:	90%	75%	75 %
Active Licenses:	767	847	800
Active License Success:	81%	68%	72 %
Recreation Days:	2,842	2,293	2,300
Days Per Animal:	4.6	4.0	4.0
Males per 100 Females	53	47	
Juveniles per 100 Females	85	64	

Population Objective (± 20%) :	6000 (4800 - 7200)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	32%
Number of years population has been + or - objective in recent trend:	2
Model Date:	2/21/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	6%	5%
Males ≥ 1 year old:	18%	16%
Total:	7%	6%
Proposed change in post-season population:	7%	7%

## Population Size - Postseason



**2020 Hunting Seasons  
Middle Fork Pronghorn Herd Unit (PR352)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
21	1	Aug. 15	Oct. 14	Oct. 15	Oct. 31	500	Any antelope
21	6	Aug. 15	Oct. 14	Oct. 15	Oct. 31	400	Doe or fawn

**2019 Hunter Satisfaction:** 72% Satisfied, 16% Neutral, 12% Dissatisfied

**2020 Management Summary**

**1.) Hunting Season Evaluation:** The current season structure has been effective at maintaining the population at objective while aiming to reduce damage on private land and hunter crowding on public land. We continue to struggle to classify an adequate sample size of pronghorn, however we have line transect survey data to inform our population models. Our population model estimates the population is currently within objective. A decrease in hunter satisfaction (72%) and success (75%) is likely due to increased number of hunters and active licenses, which can increase pressure on limited public lands. Some hunter crowding on public lands is status quo and mitigated by not increasing the quota. Limited success on the Type 6 license (55%) is concerning, however we are not decreasing this quota because sustained harvest is needed maintain this population at objective. Seven of nine landowner survey respondents support maintaining the same season structure as last year.

**2.) Management Objective Review:** Scheduled for 2023.

**3.) Anecdotal Observations:** With ample moisture over the summer and fall, pronghorn appeared to be in smaller groups and more dispersed during our classifications. In some areas this behavior made it appear that overall numbers may be down.

## 2019 - JCR Evaluation Form

SPECIES: Pronghorn

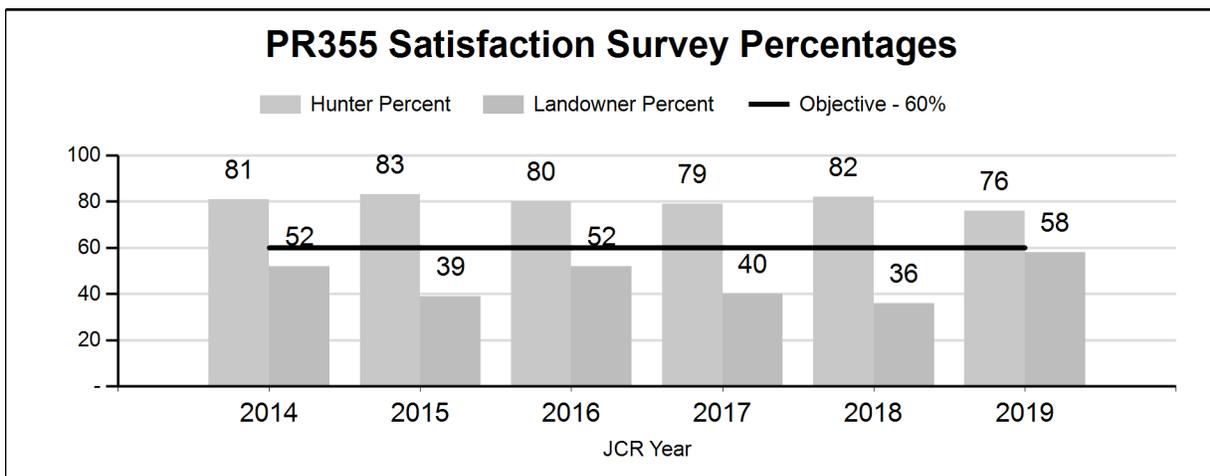
PERIOD: 6/1/2019 - 5/31/2020

HERD: PR355 - BECKTON

HUNT AREAS: 109

PREPARED BY: TIM THOMAS

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Hunter Satisfaction Percent	81%	76%	80%
Landowner Satisfaction Percent	44%	58%	60%
Harvest:	381	376	380
Hunters:	492	517	500
Hunter Success:	77%	73%	76%
Active Licenses:	553	593	600
Active License Success:	69%	63%	63%
Recreation Days:	1,852	1,927	1,900
Days Per Animal:	4.9	5.1	5
Males per 100 Females:	31	23	
Juveniles per 100 Females	57	74	
Satisfaction Based Objective			60%
Management Strategy:			Private Land
Percent population is above (+) or (-) objective:			7%
Number of years population has been + or - objective in recent trend:			5



**2020 HUNTING SEASONS  
BECKTON PRONGHORN HERD (PR 355)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
109	1	Aug. 15	Sep. 14	Sep. 15	Nov. 30	350	Any antelope
	6	Aug. 15	Sep. 14	Sep. 15	Nov. 30	400	Doe or fawn

**Management Evaluation**

**Hunter / Landowner Management Objective:** 60% Satisfaction

**Secondary Management Objective:** Observed ratio of 30 bucks:100 does minimum

**Management Strategy:** Private Land

**2019 Hunter Satisfaction Estimate:** 76%

**2019 Landowner Satisfaction Estimate:** 58%

**2020 Management Summary**

1.) This herd unit is primarily private land, with very limited public land access. Hunting season strategies are driven by private land concerns. Based on responses from an annual survey, most landowners felt they were at (58%) or above (38%) desired levels of pronghorn on their property. Only one landowner (4%) felt they had too few pronghorn. Hunter participation on the Type 6 license was only ~75% and success was only about 52%. Additional licenses with the restrictive access will not significantly increase harvest. As such, we maintained licenses at 2019 levels. Even with difficult hunter access and limited public lands, hunter satisfaction has remained relatively high (i.e. 76%).

2.) We observed 23 bucks:100 does during August classification surveys, below the secondary management objective. Even though we are below the desired buck to doe ratio, we maintained Type 1 licenses to address desires of landowners to reduce pronghorn numbers.

# **MULE DEER**

For formatting purposes,  
this page left blank intentionally.

## 2019 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2019 - 5/31/2020

HERD: MD319 - POWDER RIVER

HUNT AREAS: 17-18, 23, 26

PREPARED BY: ERIKA PECKHAM

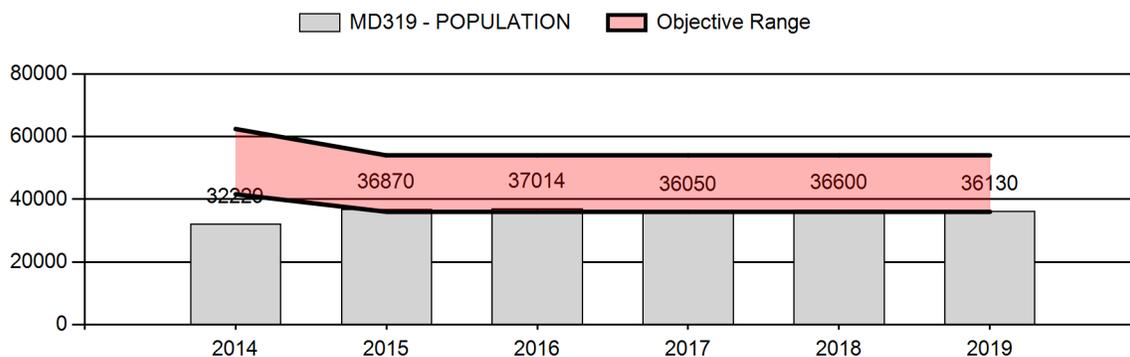
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	35,753	36,130	36,275
Harvest:	2,890	3,017	2,945
Hunters:	4,075	4,334	4,350
Hunter Success:	71%	70%	68 %
Active Licenses:	4,227	4,470	4,500
Active License Success:	68%	67%	65 %
Recreation Days:	15,221	16,749	16,900
Days Per Animal:	5.3	5.6	5.7
Males per 100 Females	47	38	
Juveniles per 100 Females	69	69	

Population Objective (± 20%) :	45000 (36000 - 54000)
Management Strategy:	Private Land
Percent population is above (+) or below (-) objective:	-19.7%
Number of years population has been + or - objective in recent trend:	3
Model Date:	2/18/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	3.7%	3.9%
Males ≥ 1 year old:	24.5%	24.9%
Total:	-8%	-9.2%
Proposed change in post-season population:	3.2%	.4%

## Population Size - Postseason



**2020 HUNTING SEASONS  
POWDER RIVER MULE DEER HERD (MD319)**

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
17	Gen	Sep.1	Sept. 30	Oct. 1	Oct. 20		Antlered mule deer or any white-tailed deer
17	7	Sep. 1	Sept. 30	Oct. 1	Oct. 20	50	Doe or fawn valid on private land
18	Gen	Sep. 1	Sept. 30	Oct. 1	Oct. 20		Antlered mule deer or any white-tailed deer
18	7	Sep. 1	Sept. 30	Oct. 1	Oct. 20	100	Doe of fawn valid on private land
23	Gen	Sep. 1	Sept. 30	Oct. 1	Oct. 14		Antlered deer off private land, any deer on private land
26	Gen	Sep. 1	Sept. 30	Oct. 1	Oct. 14		Antlered deer off private land, any deer on private land
23, 26	7			Sep. 1	Dec. 15	2,000	Doe or fawn valid on private land

**2019 Hunter Satisfaction:** 80% Satisfied, 11% Neutral, 9% Dissatisfied

**2020 Management Summary**

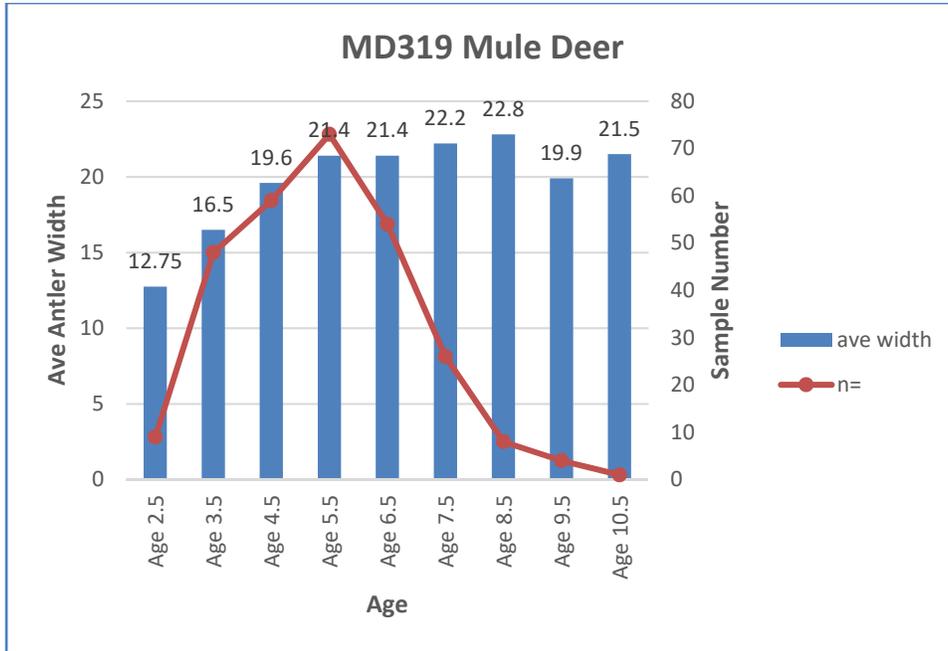
**1.) Hunting Season Evaluation:** License issuance remains the same for the 2020 hunting season. Type 7 licenses are available to address depredation concerns even though the population is below objective. The only change to season structure was to allow an extra month of harvest in Hunt Areas 23 and 26 on the Type 7 licenses. The population is predicted to remain 20% below objective.

**2.)** In 2019, we collected antler spread measurements from 287 adult bucks resulting in an average spread was 20" (Figure 1). The average did not vary much by hunt area.

**3)** As this herd unit is comprised of primarily private land, a landowner survey is mailed out annually to gauge sentiments on the number of deer. Herd wide responses (n=73) indicate that 52% of respondents feel deer numbers are lower than they would like, 40% were satisfied with numbers, and the remainder feels numbers are too high. In years past, there has been a disparity in responses depending on which side of the Powder River the response came from. The responses in 2019 indicated that most landowners felt similarly throughout the herd unit.

**4)** The Powder River Mule Deer Herd was a targeted herd for CWD sampling in 2019. We collected samples at check stations, opportunistic field checks and game processing establishments (N=334). Thirty-four mule deer tested positive, resulting in a prevalence rate of 10.2%. Prevalence rate for 294 adult bucks was 10.9%.

- 5) Research: In November 2019, a large movement study was initiated through Secretarial Order 3362 and the Mule Deer Initiative in the Pumpkin Buttes and Powder River herd units with 85 radio-collars deployed in close proximity to Interstates 90 and 25. Hall Sawyer (West Inc., Laramie) is managing the study. The goal is to document movement in relation to the interstates and to document adult doe survival.



**Figure 1.** Age of harvested mule deer bucks from the Powder River Mule Deer Herd Unit in relation to antler spread. Deer were harvested during the 2019 hunting season. Yearling harvest is excluded as managers don't consistently collect teeth from yearlings during field checks.

## 2019 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2019 - 5/31/2020

HERD: MD320 - PUMPKIN BUTTES

HUNT AREAS: 19, 29, 31

PREPARED BY: CHEYENNE STEWART

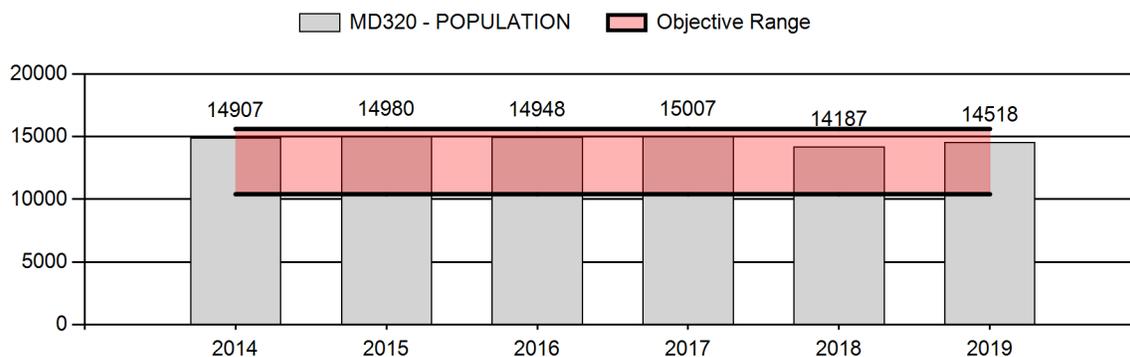
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	14,806	14,518	14,492
Harvest:	644	716	657
Hunters:	999	1,112	1,000
Hunter Success:	64%	64%	66 %
Active Licenses:	1,015	1,123	1,050
Active License Success:	63%	64%	63 %
Recreation Days:	3,749	3,926	3,800
Days Per Animal:	5.8	5.5	5.8
Males per 100 Females	43	39	
Juveniles per 100 Females	67	65	

Population Objective (± 20%) :	13000 (10400 - 15600)
Management Strategy:	Private Land
Percent population is above (+) or below (-) objective:	12%
Number of years population has been + or - objective in recent trend:	0
Model Date:	3/4/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	1%	1%
Males ≥ 1 year old:	20%	19%
Total:	5%	5%
Proposed change in post-season population:	1%	0%

## Population Size - Postseason



**2020 Hunting Seasons  
Pumpkin Buttes Mule Deer Herd Unit (MD320)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
19	Gen	Sep. 1	Sep. 30	Oct. 1	Oct. 20		Antlered mule deer or any white-tailed deer
19	7	Sep. 1	Sep. 30	Oct. 1	Oct. 20	50	Doe or fawn valid on private land
29	Gen	Sep. 1	Sep. 30	Oct. 1	Oct. 14		Antlered deer off private land; any deer on private land
31	Gen	Sep. 1	Sep. 30	Oct. 1	Oct. 10		Antlered deer

**2020 Region C nonresident quota: 2,500**

**2019 Hunter Satisfaction:** 77% Satisfied, 14% Neutral, 9% Dissatisfied

**2020 Management Summary**

**1.) Hunting Season Evaluation:** The current season structure has resulted in very stable annual population and harvest metrics over the last five years. This trend continued in 2019, even with slightly more hunters and active licenses due to the Region C quota increase. We do not have a reliable population estimate, however the population model corroborates the field data, estimating the population at objective with stability in recent years. Some hunter crowding on public lands is status quo and mitigated by managing the nonresident quota. Season structure remains unchanged in order to maintain current population and harvest rates.

**2.) Management Objective Review:** Scheduled for 2023.

**3.) Chronic Wasting Disease Management:** This is a Tier 2 herd unit, scheduled for targeted surveillance in 2020.

**4.) Research:** In November 2019, a large movement study was initiated through Secretarial Order 3362 and the Mule Deer Initiative in the Pumpkin Buttes and Powder River herd units with 85 radio-collars deployed in close proximity to Interstates 90 and 25. Hall Sawyer (West Inc., Laramie) is managing the study. The goal is to document movement in relation to the interstates and to document adult doe survival. The I-25 underpass trail camera work north of Kaycee continues to record deer using existing structures to cross the interstate, however we have not documented any crossings by radio-collared deer.

## 2019 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2019 - 5/31/2020

HERD: MD321 - NORTH BIGHORN

HUNT AREAS: 24-25, 27-28, 50-53

PREPARED BY: TIM THOMAS

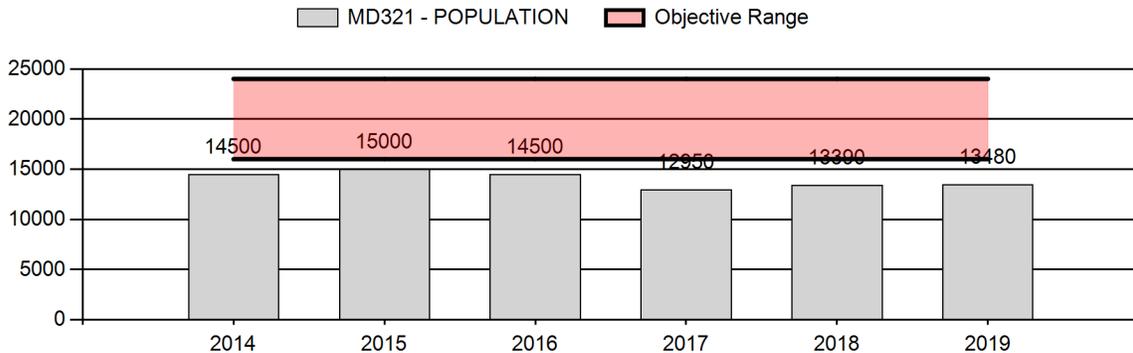
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	14,068	13,480	14,400
Harvest:	1,366	1,146	975
Hunters:	3,309	2,901	2,900
Hunter Success:	41%	40%	34%
Active Licenses:	3,421	3,021	3,050
Active License Success:	40%	38%	32 %
Recreation Days:	16,167	14,489	14,500
Days Per Animal:	11.8	12.6	14.9
Males per 100 Females	31	33	
Juveniles per 100 Females	73	60	

Population Objective (± 20%) :	20000 (16000 - 24000)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-32.6%
Number of years population has been + or - objective in recent trend:	10
Model Date:	3/12/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	2%	2%
Males ≥ 1 year old:	32%	27%
Total:	8%	6%
Proposed change in post-season population:	2%	10%

## Population Size - Postseason



**2020 HUNTING SEASONS  
NORTH BIGHORN MULE DEER HERD (MD321)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
24	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered mule deer or any white-tailed deer
24	7			Sep. 1	Dec. 15	250	Doe or fawn valid on private land
25	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer three (3) points or more on either antler or any white-tailed deer
27	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered mule deer or any white-tailed deer
28	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer or any white-tailed deer
50	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer or any white-tailed deer
51	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer or any white-tailed deer
51	6	Sep. 1	Sep. 30	Oct. 15	Nov. 15	150	Doe or fawn valid on or within one-half (1/2) mile of irrigated land
52	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer or any white-tailed deer
52	6	Sep.1	Sep. 30	Oct. 15	Nov. 30	25	Doe or fawn valid on or within one-half (1/2) mile of irrigated land
53	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer or any white-tailed deer

**Nonresident Region R Quota:** 600  
**Nonresident Region Y Quota:** 1,800

### **Management Evaluation**

**Postseason Population Management Objective:** 20,000

**Management Strategy:** Recreational

**2019 Proposed Postseason Population Estimate:** ~ 13,500

**2019 Hunter Satisfaction:** 64% Satisfied; 20% Neutral; 16% Dissatisfied

### **Management Summary**

1.) This herd continues to be below the postseason population objective based on simulation population modeling. We selected the Time Specific Juvenile – Constant Adult Survival spreadsheet model since it had the best fit, the lowest AIC value and reasonably modeled the perceived population dynamics of this herd.

Some hunters have commented on perceived low quality and quantity of mule deer, especially on public lands. For several years we have utilized conservative season strategies (i.e. 10 days, antlered mule deer only) on predominately public land hunt areas, while having more liberal seasons in predominately private lands hunt areas. We continued these season strategies for 2020.

Due to public demand, we instituted a 3-point antler point restriction in Area 25. We plan to maintain that season structure for two years (2020-2021). We want to be clear that while this strategy will likely increase the total number of bucks, primarily through reduced harvest, it will not increase “trophy quality”. We believe, based on several years of age / antler structure (i.e. maximum points and width) comparison, low quality habitat is limiting productivity as well as “trophy quality” antler development.

To simplify regulations, we increased the Area 51 Type 6 licenses and eliminated the Type 7 licenses, for no net change in available doe or fawn licenses.

2.) We collected samples from 54 mule deer (39 adult males, 9 yearling males, and 6 females) to test for chronic wasting disease (CWD). There were two positives, one adult buck each from Hunt Areas 27 and 50, for a prevalence rate in adult bucks of 5.2%. From 2014-2019, we collected 402 samples from 232 adult males, 44 yearling males and 67 females. Prevalence was 8.2% (95% CI = 4.6-12.5%) for adult males, 0% (95% CI = 0-8.0%) for yearling males, and 3.0% (95% CI = 0.4-10.4%) for adult females. To date, we have not detected CWD in Hunt Areas 25 and 53.

We continue to encourage landowners to maintain or increase harvest to reduce white-tailed deer densities. These recommendations have primarily been to control deer numbers and reduce browsing pressure on shrub communities. Reducing deer density may aid in limiting CWD.

## **Appendix A. North Bighorn Mule Deer Movement and Habitat Use Study**

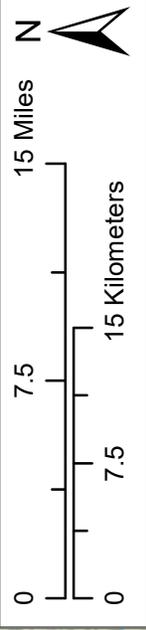
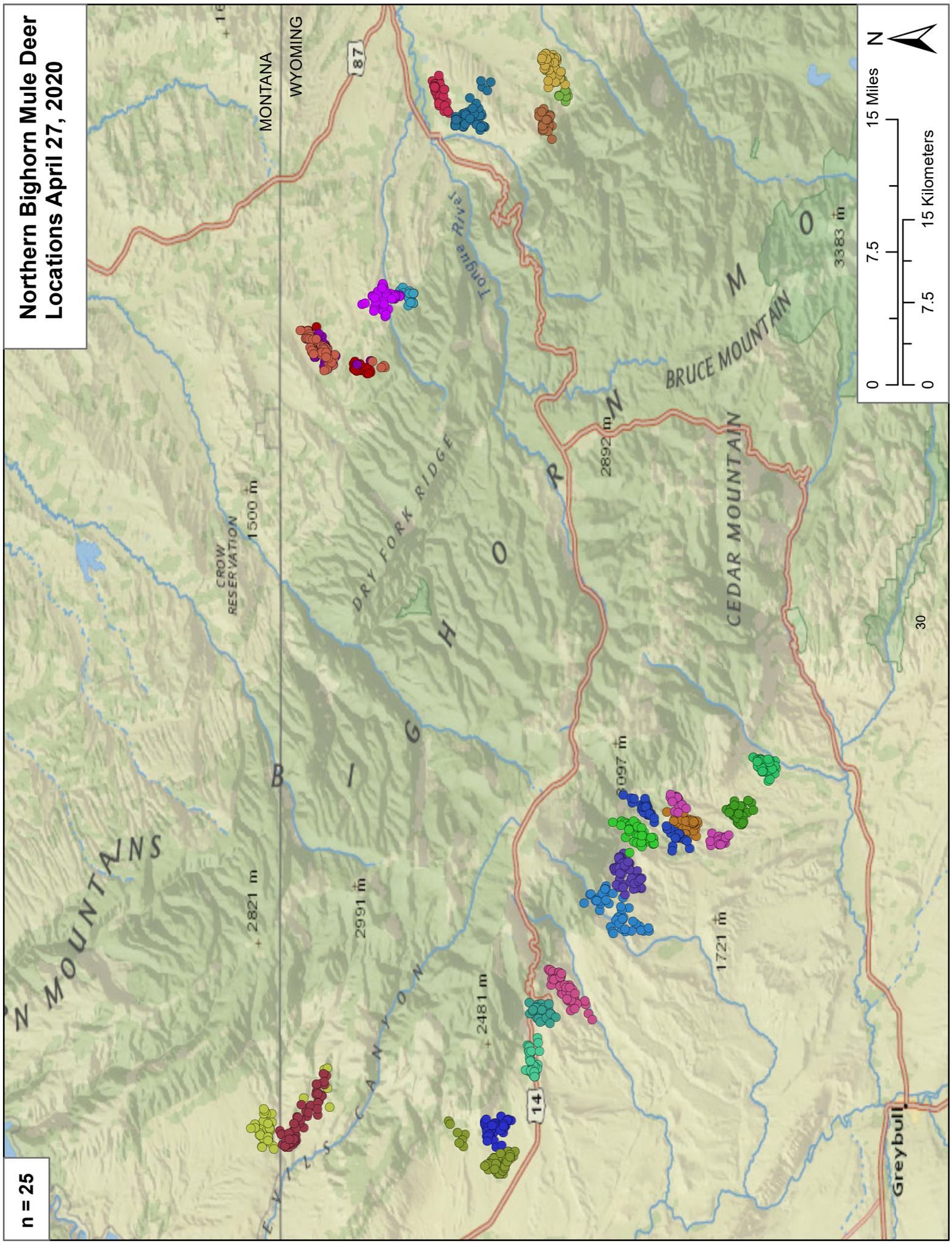
The WGFD, in collaboration with the Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming, Wyoming Migration Initiative, Sheridan County Land Trust, The Nature Conservancy, and the US Forest Service, initiated a study of mule deer movement and habitat use of migratory deer. The objectives are to: 1) Identify mule deer movements; 2) Identify season ranges and habitat use; 3) Identify potential habitat improvements and conservation opportunities; and 4) Document crude vital rates.

Initial project planning began in the summer of 2019. Sufficient funding was secured, and a graduate student was accepted by January 2020. In early March, the first 25 deer were captured and equipped with Telonics GPS collars. Two deer have died so far – one was predated by a mountain lion; the other was an older female that appeared to die from starvation/malnutrition.

Attached is a map of movement relocations from March 5 – April 27, 2020. Migration to higher elevations had not begun by April 27.

# Northern Bighorn Mule Deer Locations April 27, 2020

n = 25



## 2019 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2019 - 5/31/2020

HERD: MD322 - UPPER POWDER RIVER

HUNT AREAS: 30, 32-33, 163, 169

PREPARED BY: CHEYENNE STEWART

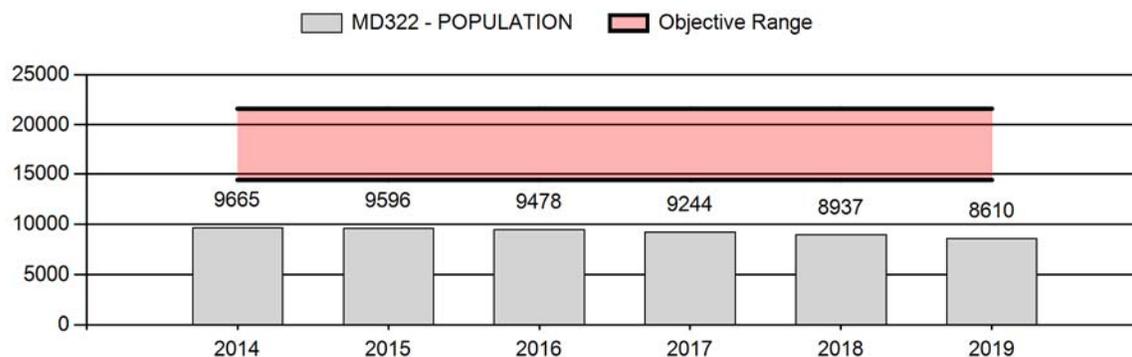
	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Population:	9,384	8,610	8,250
Harvest:	839	640	750
Hunters:	1,395	1,189	1,300
Hunter Success:	60%	54%	58 %
Active Licenses:	1,410	1,197	1,300
Active License Success:	60%	53%	58 %
Recreation Days:	5,740	5,036	5,500
Days Per Animal:	6.8	7.9	7.3
Males per 100 Females	44	32	
Juveniles per 100 Females	72	61	

Population Objective (± 20%) :	18000 (14400 - 21600)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-52.2%
Number of years population has been + or - objective in recent trend:	10
Model Date:	3/4/2020

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ;; 1 year old:	1%	1%
Males ;; 1 year old:	27%	33%
Total:	7%	8%
Proposed change in post-season population:	8%	9%

## Population Size - Postseason



**2020 Hunting Seasons  
Upper Powder River Mule Deer Herd Unit (MD322)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
30	Gen	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered deer off private land; any deer on private land
32	Gen	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered mule deer or any white-tailed deer
33	Gen	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered deer off private land; any deer on private land
163	Gen	Sep. 1	Sep. 30	Oct. 15	Oct. 21		Antlered mule deer or any white-tailed deer
169	Gen	Sep. 1	Sep. 30	Oct. 15	Oct. 21		Antlered mule deer or any white-tailed deer

**2020 Region Y nonresident quota:** 1800 licenses

**2019 Hunter Satisfaction:** 64% Satisfied, 16% Neutral, 20% Dissatisfied

**2020 Management Summary**

**1.) Hunting Season Evaluation:** This herd has been below the population objective for more than a decade, however we have not had a reliable population estimate until this year. We have, however maintained the population within the 30-45 bucks per 100 does special management strategy. In an attempt to increase deer numbers, we have maintained a conservative season structure, with short seasons and limited doe/fawn harvest opportunity. Conversely, we have very liberal seasons for species that compete with, or prey on, mule deer. We believe that the population has reached carrying capacity, although we do not know what the limiting factors are. We are also seeing increased Chronic Wasting Disease (CWD) prevalence. Because of these two factors, we continued the current season structure with a minor change. We removed the 33-6 license because it is no longer needed to address damage it was established for. The season is notwithstanding landowner requests for further reductions of mule deer harvest and some requests for closing the season entirely. We believe that maintaining harvest will provide additional resource availability to non-harvested deer as well as mitigate the spread of CWD. While counter-intuitive, increasing harvest of both sexes may increase the health and productivity of the population, however we do not think the public would support that management strategy at this time.

**2.) Management Objective Review:** Scheduled for 2023. Mule Deer Initiative Herd.

**3.) Chronic Wasting Disease Management:** This is a Tier 2 herd unit, scheduled for targeted surveillance in 2023. We collected a sufficient sample size of hunter harvested adult male bucks from 2017 – 2019 ( $n = 198$ ) to have high confidence in the prevalence estimate (16.7%) under a Tier 2 framework. Not reducing harvest opportunity is partially a CWD management action.

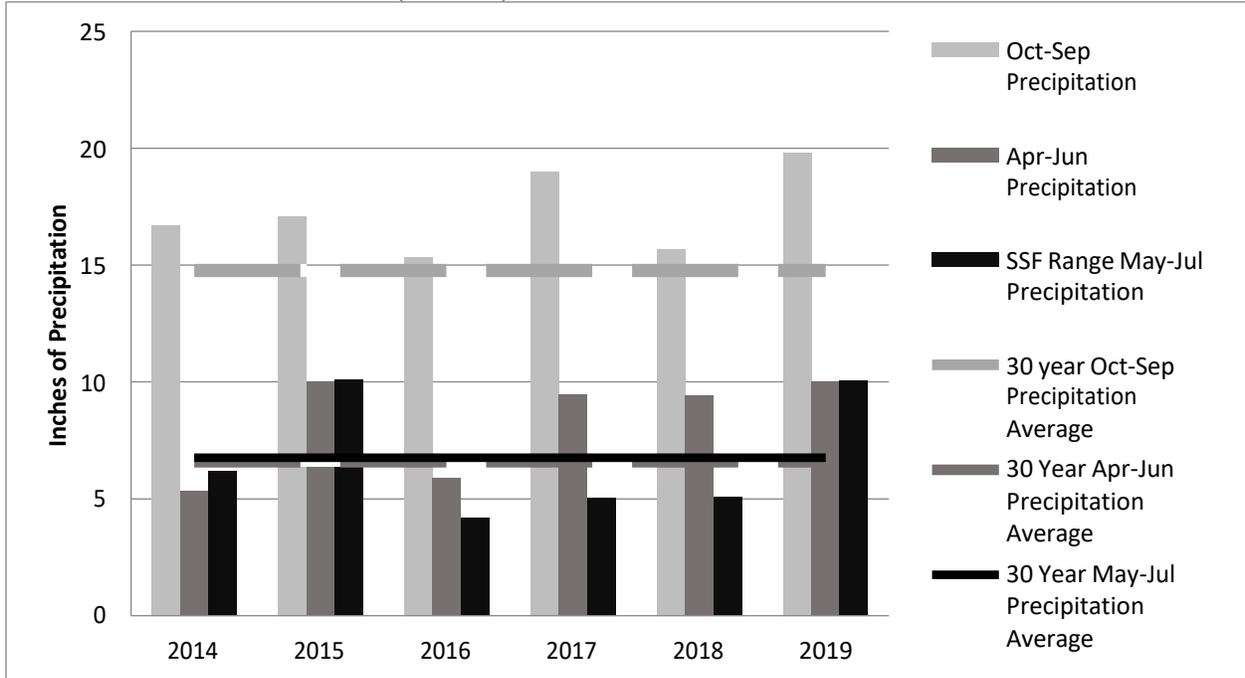
**4.) Sightability Survey:** In February of 2020, we conducted a sightability survey. The survey was completed over 69 hours using two Bell Jet Rangers supplied by Bighorn Airways (Sheridan) and Helicopter Solutions MT, Inc (Laurel, MT) and two observers per aircraft. An abundance estimate of 8,512 mule deer (95% CI=7,627 – 9,397, SE=451.53) was derived from the data analysis in the PopR program. This estimate was incorporated into the population model.

**5.) Research:** We are in year two of three for field data collection in the on-going ecology research project. We have not completed any analysis to date. Some notable yet anecdotal observations include depressed pre-winter nutritional condition over two years, low adult doe survival, and high numbers of CWD detections. The I-25 underpass trail camera work continued to record deer using existing structures to cross the interstate, however we have not documented any crossings by radio-collared deer.

**6.) Habitat Projects:** A number of mule deer habitat improvement projects have been completed since the unit was designated as a Mule Deer Initiative herd. These projects have included cheatgrass treatments, removing conifers from encroaching curl-leaf mahogany and aspen stands, harrowing decadent Silver sagebrush, and planting curl-leaf mahogany, deciduous browse trees, and native grasses and forbs. In 2019, 788 acres of encroaching conifers were removed from curl-leaf mahogany stands in the Poker Creek, Gardner Mountain, and Slip Road areas. Work in 2019 also included 192 acres of conifer removal from aspen stands in the upper Middle Fork Crazy Woman drainage near the Hazelton road. More information is available in the WGFD Strategic Habitat Plan annual reports.

**7.) Weather:** Precipitation over the water year (October 2018 through September 2019), growing season (April through June 2019), high elevation spring-summer-fall (SSF) seasonal ranges (May through July 2019), and winter range (November 2019 through March 2020) were all greater than the 30-year averages for those periods (Figure 1; PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>, created 4 Feb 2004). Winter temperatures (28.8°F) were similar to the 30-year average (28.4°F) with 49.7 inches of snow accumulation (30-year average is 32.04 inches). Above average snow accumulation (15.5 inches; 8.09 inches is 30-year average) and below average temperatures (22.1 ° F; 25.8 °F is 30-year average) in February 2020 could have had negative impacts on wintering deer. The snow water equivalent measured at Powder River Pass, Beartrap Meadow, Middle Powder, and Grave Springs SNOTEL sites on April 9th, 2020 were 116%, 164%, 106%, and 108% of the official mean for those respective sites. Based on winter conditions, we expect good spring 2020 forage production. All winter precipitation, snowfall accumulation, and temperature data were acquired from the Kaycee NWS COOP Station 485055-5.

**Figure 1.** Seasonal precipitation from 2014 – 2019 in the Upper Powder River mule deer herd unit (MD322).



# **WHITE-TAILED DEER**

For formatting purposes,  
this page left blank intentionally.

## 2019 - JCR Evaluation Form

SPECIES: White tailed Deer

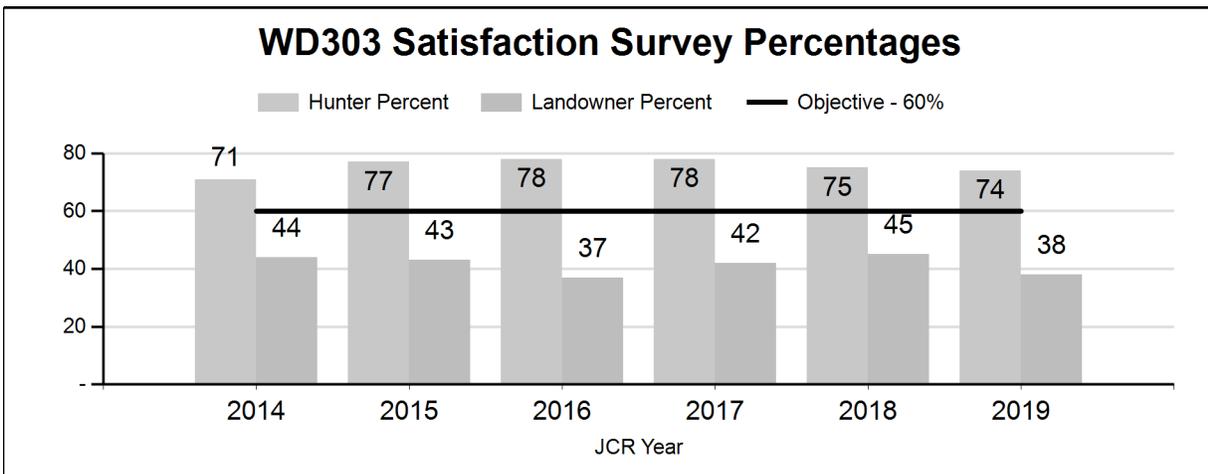
PERIOD: 6/1/2019 - 5/31/2020

HERD: WD303 - POWDER RIVER

HUNT AREAS: 17-20, 23-33, 163, 169

PREPARED BY: TIM THOMAS

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Hunter Satisfaction Percent	76%	74%	75%
Landowner Satisfaction Percent	42%	38%	50%
Harvest:	6,093	5,975	6,200
Hunters:	8,106	8,336	8,500
Hunter Success:	75%	72%	73%
Active Licenses:	9,442	9,480	9,700
Active License Success:	65%	63%	64%
Recreation Days:	36,346	39,577	40,000
Days Per Animal:	6.0	6.6	6.5
Males per 100 Females:	39	37	
Juveniles per 100 Females	70	76	
Satisfaction Based Objective			60%
Management Strategy:			Private Land
Percent population is above (+) or (-) objective:			-4%
Number of years population has been + or - objective in recent trend:			10



**2020 HUNTING SEASONS  
POWDER RIVER WHITE-TAILED DEER HERD (WD303)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
17	GEN	Sep. 1	Sep. 30	Oct. 1	Oct. 20		Antlered mule deer or any white-tailed deer
17	GEN			Nov. 1	Nov. 30		Any white-tailed deer
17	7	Sep. 1	Sep. 30	Oct. 1	Oct. 20	50	Doe or fawn valid on private land
17	8	Sep. 1	Sep. 30	Oct. 1	Nov. 30	250	Doe or fawn white-tailed deer
18	GEN	Sep. 1	Sep. 30	Oct. 1	Oct. 20		Antlered mule deer or any white-tailed deer
18	7	Sep. 1	Sep. 30	Oct. 1	Oct. 20	100	Doe or fawn valid on private land
18	8	Sep. 1	Sep. 30	Oct. 1	Oct. 31	200	Doe or fawn white-tailed deer valid on private land
19	GEN	Sep. 1	Sep. 30	Oct. 1	Oct. 20		Antlered mule deer or any white-tailed deer
19	GEN			Nov. 1	Nov. 15		Any white-tailed deer
19	7	Sep. 1	Sep. 30	Oct. 1	Oct. 20	50	Doe or fawn valid on private land
19	8	Sep. 1	Sep. 30	Nov. 1	Nov. 15	75	Doe or fawn white-tailed deer
23	GEN	Sep. 1	Sep. 30	Oct. 1	Oct. 14		Antlered deer off private land; any deer on private land
23	GEN			Nov. 1	Nov. 30		Any white-tailed deer
23, 26	3	Sep. 1	Sep. 30	Nov. 1	Nov. 30	400	Any white-tailed deer
23, 26	7			Sep. 1	Dec. 15	2,000	Doe or fawn valid on private land
24	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered mule deer or any white-tailed deer
24	GEN			Nov. 1	Nov. 30		Any white-tailed deer
24	3	Sep. 1	Sep. 30	Nov. 1	Nov. 30	450	Any white-tailed deer
24	7			Sep. 1	Dec. 15	250	Doe or fawn valid on private land
24	8			Sep. 1	Dec. 15	3,000	Doe or fawn white-tailed deer

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
25	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer three (3) points or more on either antler or any white-tailed deer
26	GEN	Sep. 1	Sep. 30	Oct. 1	Oct. 14		Antlered deer off private land; any deer on private land
26	GEN			Nov. 1	Nov. 30		Any white-tailed deer
27	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered mule deer or any white-tailed deer
27	GEN			Nov. 1	Nov. 30		Any white-tailed deer
27	8			Sep. 1	Sep. 30	1,200	Doe or fawn white-tailed deer valid on private land
27	8	Sep. 1	Sep. 30	Oct. 15	Dec. 15		Doe or fawn white-tailed deer valid in the entire area
28	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 24		Antlered mule deer or any white-tailed deer
28	GEN			Oct. 25	Nov. 30		Any white-tailed deer
29	GEN	Sep. 1	Sep. 30	Oct. 1	Oct. 14		Antlered deer off private land; any deer on private land
29	GEN			Nov. 1	Nov. 30		Any white-tailed deer
29	GEN			Dec. 1	Dec. 15		Antlerless white-tailed deer
29	8			Sep. 1	Sep. 30	700	Doe or fawn white-tailed deer valid on private land
29	8	Sep. 1	Sep. 30	Oct. 1	Dec. 15		Doe or fawn white-tailed deer valid in the entire area
30	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered deer off private land; any deer on private land
30	GEN			Nov. 1	Nov. 30		Any white-tailed deer

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
30	GEN			Dec. 1	Dec. 15		Antlerless white-tailed deer
30	8			Sep. 1	Sep. 30	500	Doe or fawn white-tailed deer valid on private land
30	8	Sep. 1	Sep. 30	Oct. 15	Dec. 15		Doe or fawn white-tailed deer valid in the entire area
31	GEN	Sep. 1	Sep. 30	Oct. 1	Oct. 10		Antlered deer
32	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered mule deer or any white-tailed deer
32	GEN			Nov. 1	Nov. 15		Any white-tailed deer
32, 163	8	Sep. 1	Sep. 30	Oct. 15	Nov. 15	50	Doe or fawn white-tailed deer
33	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 31		Antlered deer off private land; any deer on private land
33	GEN			Nov. 1	Nov. 15		Any white-tailed deer
33	GEN			Nov. 16	Dec. 15		Antlerless white-tailed deer
33	8			Sep. 1	Sep. 30	500	Doe or fawn white-tailed deer valid on private land
33	8	Sep. 1	Sep. 30	Oct. 15	Dec. 15		Doe or fawn white-tailed deer valid in the entire area
163	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 21		Antlered mule deer or any white-tailed deer
163	GEN			Nov. 1	Nov. 15		Any white-tailed deer
169	GEN	Sep. 1	Sep. 30	Oct. 15	Oct. 21		Antlered mule deer or any white-tailed deer
169	GEN			Nov. 1	Nov. 15		Any white-tailed deer

**Nonresident Region C Quota:** 2,500  
**Nonresident Region Y Quota:** 1,800

### **Management Evaluation**

**Hunter / Landowner Management Objective:** 60% Landowner / Hunter Satisfaction

**Secondary Management Objective:** 20 bucks:100 does observed minimum

**Management Strategy:** Private Land

**2019 Hunter Satisfaction:** 75% Satisfied; 15% Neutral; 10% Dissatisfied

**2019 Landowner Satisfaction:** 38% Satisfied; 52% Above Desired; 11 Below Desired

### **2020 Management Summary**

1.) We manage this white-tailed deer herd based on hunter and landowner satisfaction. Hunter satisfaction has consistently been high, averaging 76% from 2014-2019. There are liberal season strategies in most hunt areas, providing good hunting opportunity. Hunters can hunt white-tailed deer for up to 106 days depending on the hunt area and license type.

We received 133 survey responses from landowners on their perception of white-tailed deer numbers on their property. Most landowner dissatisfaction resulted from too many deer (52%). Only 11% of landowners felt they had too few deer. Due to the varying degrees of access to private land, where most white-tailed deer reside, and refuges provided by rural subdivisions, we are not confident we will ever satisfy some landowners.

We increased Area 18 Type 8 licenses in response to landowner desires. We increased Area 23,26 Type 3 and Area 24 Type 3 licenses to provide additional opportunity to harvest bucks. We opened Area 23, 26 Type 8 on September 1 to address damages issues. To simplify regulations, we eliminated the Area 24 “Unlimited” license and replaced it with a quota of 3,000 Type 8 licenses, which should meet expected demand based on previous year’s sales (e.g. 2,289 licenses sold in 2019). We eliminated the Area 33 Type 6 licenses to limit harvest of mule deer.

2.) We collected 388 samples from hunter harvested white-tailed deer in 2019 for chronic wasting disease (CWD) testing. Of the 199 adult males tested, 51 were positive for a prevalence rate of 25.6%. Of the 189 adult females tested, 23 tested positive for a prevalence rate of 12.2%.

The majority of tested animals came from Hunt Area 24 (n=226; 58%), which has the highest white-tailed harvest. Prevalence rate for harvested males was 15.5% and 10.9% for harvested females.

Since 2014, we tested 352 adult males, with a prevalence rate of 24.1% (95% CI = 15.8-29%), and 380 adult females, with a prevalence rate of 11.1% (95 CI = 7.3-14.6%). We continue to encourage landowners to maintain or increase whitetail harvest to reduce deer densities where feasible. These recommendations have primarily been to control deer numbers and to reduce browsing pressure on shrub communities. Reducing deer density may aid in limiting CWD.

**ELK**

## 2019 - JCR Evaluation Form

SPECIES: Elk  
 HERD: EL320 - FORTIFICATION  
 HUNT AREAS: 2

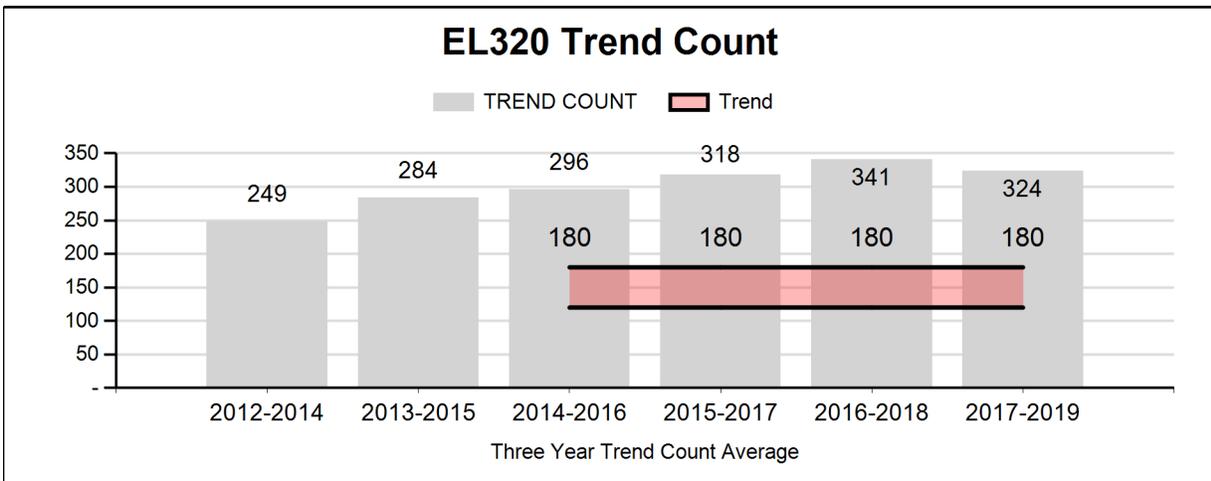
PERIOD: 6/1/2019 - 5/31/2020  
 PREPARED BY: ERIKA PECKHAM

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Trend Count:	320	261	320
Harvest:	94	48	107
Hunters:	129	66	125
Hunter Success:	73%	73%	86 %
Active Licenses:	133	69	155
Active License Success	71%	70%	69 %
Recreation Days:	466	181	375
Days Per Animal:	5.0	3.8	3.5
Males per 100 Females:	37	38	
Juveniles per 100 Females	65	54	

Trend Based Objective ( $\pm 20\%$ ) 150 (120 - 180)  
 Management Strategy: Private Land  
 Percent population is above (+) or (-) objective: 74%  
 Number of years population has been + or - objective in recent trend: 11

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

	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	12.6%	16.5%
Males $\geq 1$ year old:	0%	10%
Juveniles (< 1 year old):	4%	1%



**2020 HUNTING SEASONS  
FORTIFICATION ELK HERD (EL320)**

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
2	1			Oct. 21	Nov. 1	60	Any Elk
2	4			Sep. 18	Sep. 27	80	Antlerless elk
2	4			Oct. 21	Nov. 1		Antlerless elk
2	6			Sep. 18	Sep. 27	20	Cow or calf
2	6			Oct. 21	Nov. 1		Cow or calf

**2019 Hunter Satisfaction:** 86% Satisfied, 14% Neutral, 0% Dissatisfied

**2020 Management Summary**

**1.) Hunting Season Evaluation:** License quotas and hunting seasons were modified from the 2019 hunting season during the annual landowner coordination meeting. This is a predominantly privately accessed herd and there is concern from numerous landowners that elk numbers are too high. It is difficult to issue enough licenses given the controlled access. It was decided to add 30 Type 4 licenses in addition to implementing an early season. This will allow for more harvest, while also spreading hunters out. Bulls have not been harvested since 2018; therefore, 60 Type 1 licenses were added to address the potential for bull ratios becoming skewed.

This herd has a trend count objective of 150 elk. License quotas will be inadequate to begin reducing this herd to objective. The number of licenses is what the ranches allowing hunting access can accommodate.

**2.)** In 2019, portions of this hunt area were enrolled in the Access Yes program. The program was well received by hunters and landowners alike. Hunting access to the primary ranch allowing hunter access will again be administered through the Access Yes program. HMA permits will be limited to hunters holding Type 4 and Type 6 licenses. The ranch will charge Type 1 hunters a trespass fee.

## 2019 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2019 - 5/31/2020

HERD: EL321 - NORTH BIGHORN

HUNT AREAS: 35-40

PREPARED BY: TIM THOMAS

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Trend Count:	5,830	5,575	5,250
Harvest:	1,588	1,635	1,700
Hunters:	4,579	5,050	5,100
Hunter Success:	35%	32%	33%
Active Licenses:	4,819	5,245	5,350
Active License Success	33%	31%	32%
Recreation Days:	34,880	36,102	36,750
Days Per Animal:	22.0	22.1	21.6
Males per 100 Females:	24	28	
Juveniles per 100 Females	43	26	

Trend Based Objective (± 20%) 4,350 (3480 - 5220)

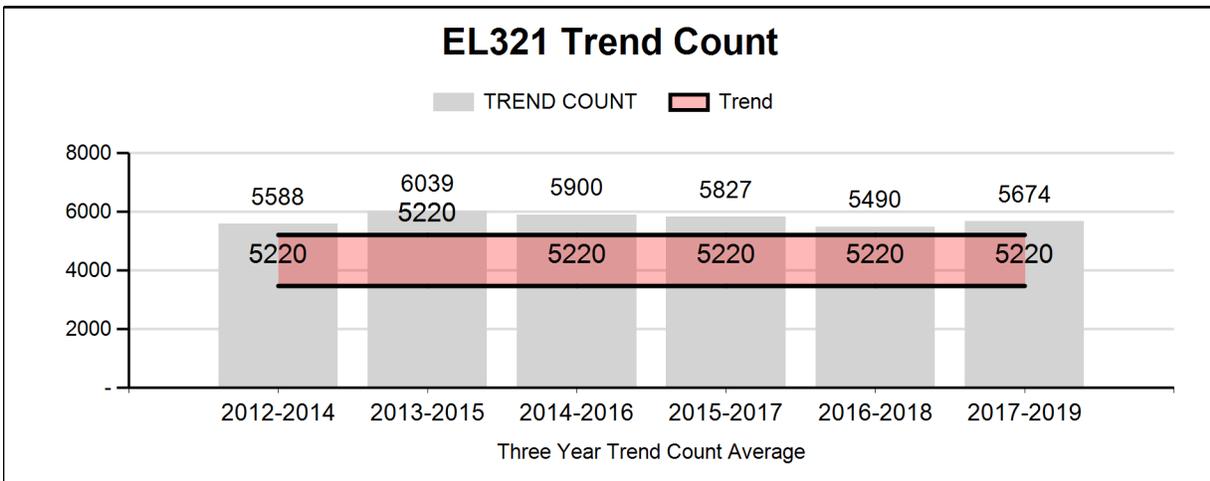
Management Strategy: Special

Percent population is above (+) or (-) objective: 28%

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

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

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	20%	22%
Males ≥ 1 year old:	35%	32%
Juveniles (< 1 year old):	5%	5%



**2020 HUNTING SEASONS  
NORTH BIGHORN ELK HERD (EL321)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
35	1	Sep. 15	Sep. 30	Oct. 15	Nov. 5	150	Any elk
35	4	Sep. 15	Sep. 30	Oct. 15	Dec. 31	250	Antlerless elk
35	6			Aug. 15	Oct. 14	350	Cow or calf elk valid on private land
35	6	Sep. 1	Sep. 30	Oct. 15	Dec. 15		Cow or calf elk valid off national forest
35	9			Sep. 1	Sep. 30	75	Any elk, archery only
36	GEN	Sep. 15	Sep. 30	Oct. 15	Nov. 5		Antlered elk
36	4	Sep. 15	Sep. 30	Oct. 15	Dec. 31	300	Antlerless elk
36	6			Oct. 1	Oct. 14	250	Cow or calf valid off national forest north of Rock Creek
36	6	Sep. 15	Sep. 30	Oct. 15	Nov. 5		Cow or calf valid in the entire area
36	9			Sep. 1	Sep. 30	50	Any elk, archery only
37	GEN	Sep. 15	Sep. 30	Oct. 15	Nov. 5		Any elk
37	6			Sep. 15	Sep. 30	700	Cow or calf valid off national forest
37	6	Sep. 15	Sep. 30	Oct. 1	Dec. 31		Cow or calf valid in the entire area
37	9			Sep. 1	Sep. 30	150	Any elk, archery only
38	1			Oct. 15	Nov. 5	400	Any elk
38	1			Nov. 6	Nov. 15		Antlerless elk
38	4			Oct. 1	Oct. 10	550	Antlerless elk
38	4			Oct. 15	Nov. 15		Antlerless elk
38	6			Nov. 16	Dec. 31	25	Cow or calf valid off national forest; the Wyoming Game and Fish Commission's Kerns and Amsden Creek Wildlife Habitat Management Areas shall be closed
38	9			Sep. 1	Sep. 30	250	Any elk, archery only

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
39	1			Oct. 15	Nov. 4	200	Any elk
39	1			Nov. 5	Nov. 15		Antlerless elk
39	4			Oct. 1	Oct. 10	150	Antlerless elk
39	4			Oct. 15	Nov. 15		Antlerless elk
39	9			Sep. 1	Sep. 30	75	Any elk, archery only
40	1			Oct. 15	Nov. 4	225	Any elk
40	4			Oct. 15	Nov. 30	200	Antlerless elk
40	5			Oct. 1	Oct. 10	50	Antlerless elk
40	5			Oct. 15	Nov. 30		Antlerless elk
40	6			Sep. 1	Oct. 14	100	Cow or calf valid off national forest
40	6			Oct. 15	Nov. 30		Cow or calf valid in the entire area
40	9			Sep. 1	Sep. 30	100	Any elk, archery only

### **Management Evaluation**

**Mid-Winter Trend Management Objective:** 4,350

**Management Strategy:** Special

**2019 Mid-Winter Trend Count:** 5,575

Area 35 = 805; Area 36 = 371; Area 37 = 1,706; Area 38 = 1,191; Area 39 = 597; Area 40 = 905

**2017-2019 3-year Running Average Mid-Winter Trend Count:** 5,674

**2019 Hunter Satisfaction:** 63% Satisfied; 19% Neutral; 18% Dissatisfied

### **2020 Management Summary**

1.) We are currently ~28% over the winter trend count objective. In recent years, liberal hunting seasons were designed to increase harvest with the intent of reducing this elk population. We have been successful increasing harvest over the past several years, likely retarding growth of this herd. We maintained liberal season strategies for 2020. Antlerless and cow/calf licenses have relatively low participation and success rates. Adding additional licenses will not significantly increase harvest. We decreased Area 38 Type 6 licenses as the damage situation this license was intended to address has abated. We increased Area 39 Type 4 licenses to address an increase of elk observed in this area.

2.) We tested 78 hunter harvested elk in 2019 for Chronic Wasting Disease (CWD). Two elk, one each from Areas 35 and 37, tested positive, for a prevalence rate of 2.6%. Between 2014-2019, we tested 169 hunter harvested elk with five positives, for a prevalence rate of 3.0% (95% CI = 0.9-6.8%). We have not detected CWD in Hunt Areas 36, 38, 39 or 40 (n=83). We also had three positive female elk from Area 37 this year that were euthanized for exhibiting clinical signs of disease.

3.) We tested 589 blood samples from hunter harvested elk from the Bighorn Mountains (Hunt Areas 33-41, 45, 47-49, and 120) for exposure to the bacterium *Brucella abortus*. Of those, 271 samples (46%) were from this herd unit. For the third year in a row, there were zero seropositive elk. We will continued to monitor hunter harvested elk for brucellosis for the foreseeable future.

The epidemiological study of elk movement, initiated in February 2016, is winding down. There are less than 40 GPS collars still “on the air”. No new collars are planned to be deployed. The remaining collars will quit functioning over the next 1-2 years.

## 2019 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2019 - 5/31/2020

HERD: EL322 - SOUTH BIGHORN

HUNT AREAS: 33-34, 47-49, 120

PREPARED BY: CHEYENNE STEWART

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Trend Count:	4,344	3,527	4,200
Harvest:	1,842	1,717	1,800
Hunters:	3,774	3,804	3,800
Hunter Success:	49%	45%	47%
Active Licenses:	3,917	3,907	3,900
Active License Success	47%	44%	46%
Recreation Days:	27,070	23,748	25,000
Days Per Animal:	14.7	13.8	13.9
Males per 100 Females:	29	23	
Juveniles per 100 Females	31	26	

Trend Based Objective (± 20%) 3,300 (2640 - 3960)

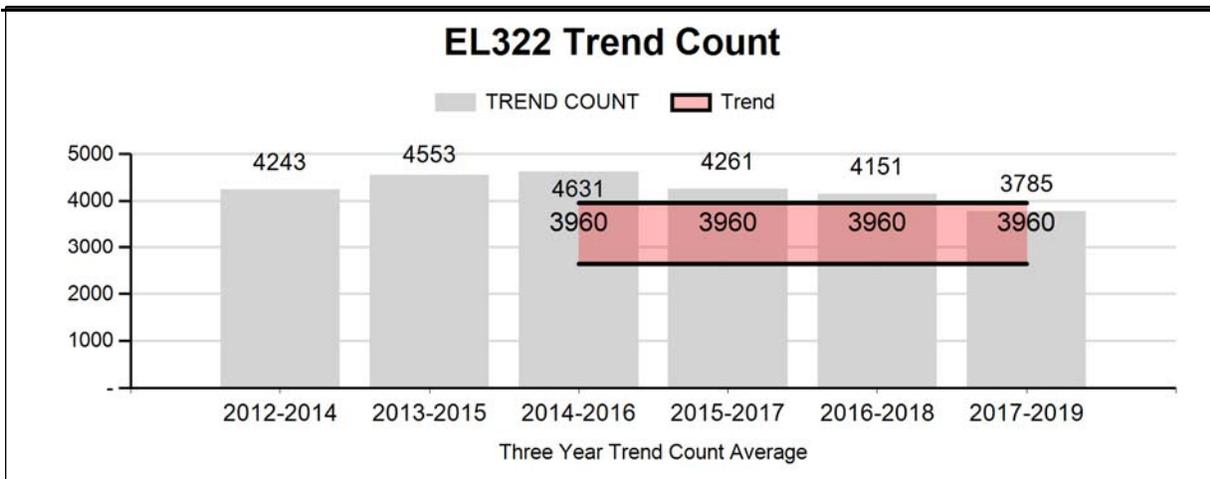
Management Strategy: Private Land

Percent population is above (+) or (-) objective: 7%

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

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

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



**2020 Hunting Seasons  
South Bighorn Elk Herd Unit (EL322)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
33	1	Sep. 1	Sep. 30	Oct. 9	Oct. 31		Any elk
33	1			Nov. 1	Dec. 31		Antlerless elk
33	4			Aug. 15	Sep. 30		Antlerless elk valid on private land east of Buffalo Creek and the Bar C Road (B.L.M. Road 6214)
33	4	Sep. 1	Sep. 30	Oct. 9	Dec. 31		Antlerless elk valid in the entire area
33	6	Sep. 1	Sep. 30	Nov. 1	Dec. 31		Cow or calf
34	1	Sep. 1	Sep. 30	Oct. 15	Nov. 15		Any elk
34	1			Nov. 16	Dec. 31		Antlerless elk
34	6			Aug. 15	Oct. 14		Cow or calf valid on private land north of the North Fork Powder River
34	6	Sep. 1	Sep. 30	Oct. 15	Dec. 31		Cow or calf valid off national forest
47	1	Sep. 1	Sep. 30	Oct. 9	Oct. 31	150	Any elk
47	1			Nov. 1	Nov. 30		Antlerless elk
47	6	Sep. 1	Sep. 30	Oct. 9	Nov. 30	100	Cow or calf
48	1	Sep. 1	Sep. 30	Oct. 9	Oct. 31	375	Any elk
48	1			Nov. 7	Dec. 15		Antlerless elk
48	4	Sep. 1	Sep. 30	Oct. 9	Oct. 31	100	Antlerless elk
48	4			Nov. 7	Dec. 15		Antlerless elk
48	6	Sep. 1	Sep. 30	Oct. 9	Oct. 31	600	Cow or calf
48	6			Nov. 7	Dec. 15		Cow or calf
49	1	Sep. 1	Sep. 30	Oct. 9	Oct. 31	350	Any elk
49	1			Nov. 7	Dec. 21		Antlerless elk
49	4	Sep. 1	Sep. 30	Oct. 9	Oct. 31	100	Antlerless elk
49	4			Nov. 7	Dec. 21		Antlerless elk
49	6			Sep. 1	Oct. 31	850	Cow or calf
49	6			Nov. 7	Dec. 21		Cow or calf

120	1	Sep. 1	Sep. 30	Oct. 9	Oct. 31	125	Any elk
120	1			Nov. 1	Dec. 15		Antlerless elk
120	4	Sep. 1	Sep. 30	Oct. 9	Dec. 15	75	Antlerless elk
120	6	Sep. 1	Sep. 30	Oct. 9	Dec. 15	75	Cow or calf

**2019 Hunter Satisfaction:** 63% Satisfied, 19% Neutral, 19% Dissatisfied

## 2020 Management Summary

**1.) Hunting Season Evaluation:** According to the latest three-year average, this herd unit reached the trend count objective for the first time since the objective was set in 2016. The average was skewed down, due to a low trend count in 2017 so the herd was likely still above objective. This population has low fidelity to winter ranges and lots of interchange between hunt areas, which makes annual trend counts highly variable and makes it difficult to determine if we have reached our hunt area sub-objectives. No changes were made in hunt areas 33, 34, and 120 because our season structure appeared to provide enough harvest to maintain or reduce the population. License quotas were reduced in hunt area 47 to lessen harvest on this segment of the herd. Since 2017, this hunt area has been below its winter trend count goal of 200 elk, along with very poor hunter success on type 6 licenses, with a 5-year average of 23%. Type 1 quotas were also decreased in hunt area 47 to lessen harvest and reduce leftover license sales to applicants in an area with very limited hunter access. A later opening date for hunt area 49 type 6 licenses was implemented to address landowner concerns that the August 15 opening date forced elk into large groups before the archery season begins, thus reducing hunter opportunity on accessible public lands.

**2.) Management Objective Review:** Scheduled for 2021.

**3.) Brucellosis Monitoring:** In 2019 we tested 168 blood samples from hunter harvested elk in this herd unit for exposure to the bacterium *Brucella abortus*. No new seropositive elk have been detected in this unit in the last three years. The Bighorn Mountains Elk Movement Study, initiated in February 2016, is winding down. The remaining GPS collars ( $n < 40$ ) will last 1-2 more years with no new collar deployments planned. More information is available on the Brucellosis in Wyoming Wildlife page of the WGF D website.

## 2019 - JCR Evaluation Form

SPECIES: Elk

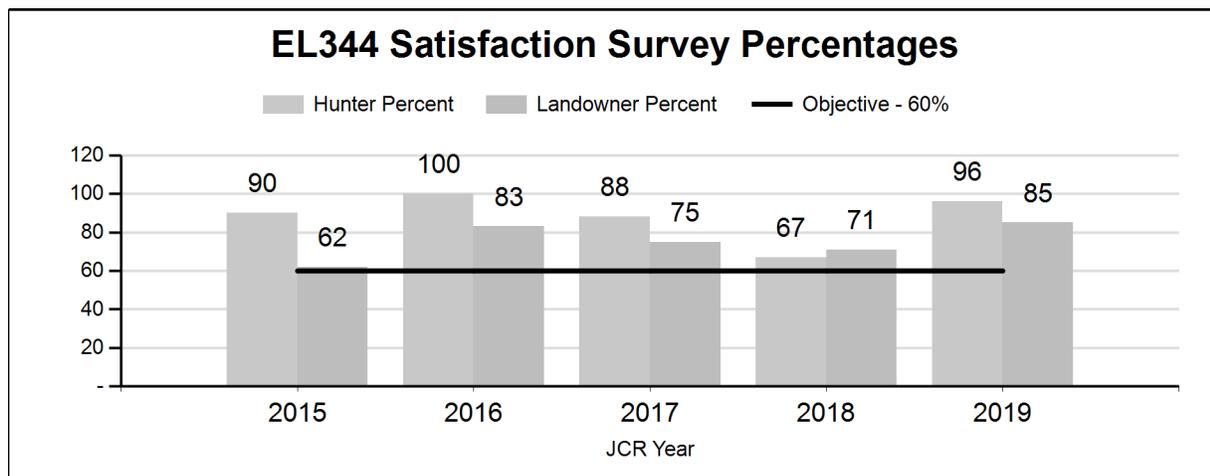
PERIOD: 6/1/2019 - 5/31/2020

HERD: EL344 - ROCHELLE HILLS

HUNT AREAS: 113, 123

PREPARED BY: ERIKA PECKHAM

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Hunter Satisfaction Percent	87%	96%	60%
Landowner Satisfaction Percent	70%	85%	60%
Harvest:	105	71	150
Hunters:	121	78	225
Hunter Success:	87%	91%	67 %
Active Licenses:	128	78	220
Active License Success:	82%	91%	68 %
Recreation Days:	540	397	750
Days Per Animal:	5.1	5.6	5
Males per 100 Females:	53	0	
Juveniles per 100 Females	45	0	
Satisfaction Based Objective			60%
Management Strategy:			Private Land
Percent population is above (+) or (-) objective:			30%
Number of years population has been + or - objective in recent trend:			5



**2020 HUNTING SEASONS  
ROCHELLE HILLS ELK HERD (EL344)**

Hunt Area	Hunt Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
113							Closed
123	1	Sept. 1	Sept. 9	Sept. 10	Oct. 10	100	Any elk
123	4	Sept. 1	Sept. 9	Oct. 20	Nov. 30	75	Antlerless elk
123	6	Sept. 1	Sept. 9	Oct. 20	Nov. 30	75	Cow or calf

**2019 Hunter Satisfaction:** 96% Satisfied, 0% Neutral, 4% Dissatisfied

**2020 Management Summary**

1.) **Hunting Season Evaluation:** License issuance was modified from the 2019 hunting season in both hunt areas. Hunt Area 123 is a predominantly private access hunt. The season structure is coordinated on an annual basis with participating landowners. Although elk numbers in this hunt area remain high, and are increasing, landowner satisfaction is also high, with the majority of landowners satisfied with the number of elk. The license issuance and hunting season structure for 2020 are designed to work with landowners allowing hunting to ensure a quality hunting experience in a limited public land hunt area. Hunt Area 113 has a fair amount of public land and has historically rotated with no hunting, cows only, and cows and bulls in a given year.

This herd has a satisfaction objective, with the goal of having at least 60% hunter and 60% landowner satisfaction. Both the 2019 harvest data (96% satisfaction) and landowner satisfaction survey (85% satisfaction) show that we are meeting these objectives.

2) The Hunt Area 126 general license season will be valid in the Raven Creek portion of Hunt Area 123 from September 1<sup>st</sup> to September 30<sup>th</sup> to address damage concerns that occur in late summer.

**MOOSE**

## 2019 - JCR Evaluation Form

SPECIES: Moose

PERIOD: 6/1/2019 - 5/31/2020

HERD: MO313 - BIGHORN

HUNT AREAS: 1, 34, 42

PREPARED BY: TIM THOMAS

	<u>2014 - 2018 Average</u>	<u>2019</u>	<u>2020 Proposed</u>
Trend Count:	127	219	210
Harvest:	28	14	28
Hunters:	32	15	30
Hunter Success:	88%	93%	93%
Active Licenses:	32	15	30
Active License Success	88%	93%	93%
Recreation Days:	306	117	250
Days Per Animal:	10.9	8.4	8.9
Males per 100 Females:	86	78	
Juveniles per 100 Females	48	43	

Trend Based Objective ( $\pm 20\%$ ) 110 (88 - 132)

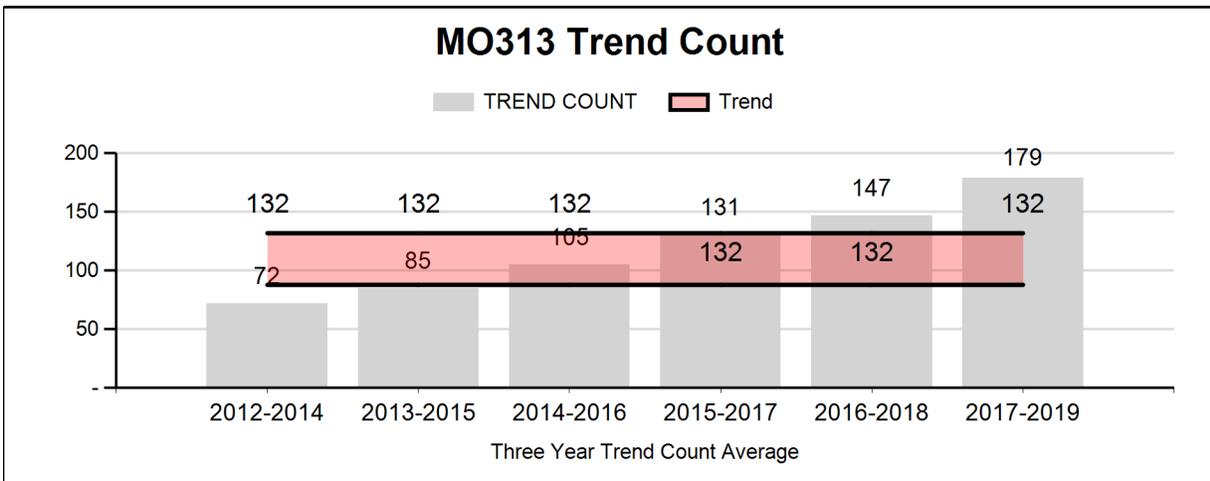
Management Strategy: Special

Percent population is above (+) or (-) objective: 99%

Number of years population has been + or - objective in recent trend: 6

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

	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	0%	0%
Males $\geq 1$ year old:	14%	25%
Juveniles ( $< 1$ year old):	0%	0%



**2020 HUNTING SEASONS  
BIGHORN MOOSE HERD (MO313)**

Hunt Area	Type	Archery Dates		Season Dates		Quota	Limitations
		Opens	Closes	Opens	Closes		
1	1	Sep. 15	Sep. 30	Oct. 1	Oct. 31	10	Any moose, except cow moose with calf at side
34	1	Sep. 15	Sep. 30	Oct. 1	Oct. 31	10	Any moose, except cow moose with calf at side
42	1	Sep. 15	Sep. 30	Oct. 1	Oct. 31	10	Any moose, except cow moose with calf at side

**Management Evaluation**

**Current Trend Count Management Objective:** 110 ± 20% (88-132)

**Management Strategy:** Special

**2019 Trend Count:** 219 moose (Area 1 = 113; Area 34 = 51; Area 42 = 55)

**2017-2019 Running Average:** 179 (Area 1 = 86; Area 34 = 49; Area 42 = 44)

**2020 Management Summary**

1.) We manage this herd on a Trend Count objective. We are currently over the 3-year running average of 110 moose (± 20%). In response to the increased number of moose observed across the herd unit, we increased Type 1 licenses in all hunt areas.

There is an ongoing research project with approximately 58 females currently collared. Collars started dropping off in March, 2020, with more dropping off through 2020 and 2021. Due to the large investment we have in each collared moose, managers were reluctant to hunt females until the majority of collars have dropped. Managers are starting discussions with various publics in anticipation of antlerless harvest in 2021 to address this increasing population.

2.) All Wyoming moose herds are managed for a high bull to cow ratio (i.e. 50-70 bulls:100 cows), preferably with a diverse age structure. In Area 1, managers generally observed lower than desired bull:cow ratios, averaging 44 bulls:100 cows over the past five years. In Area 34, we observed an average of 87 bulls:100 cows over the past five years, although sample sizes were small. In Area 42, managers observed higher than desired bull:cow ratios four of the past five years, averaging 82 bulls:100 cows.

Hunters, on average, harvested mature bulls the past three years. Approximately 37% of the harvested males were five years or older based on the 3-year running average, slightly below the desired 40% threshold. The 3-year running average of harvested bulls median age was 4.0

years, at the desired minimum ( $\geq 4$  years old). A 14-year old bull was harvested in 2020. These data suggest we have maintained a good age structure in this population.

3.) In 2015, we adopted a trend count management objective. We established a herd unit objective as well as sub-objectives for each hunt area. We also established secondary management objectives based on observed bull to cow ratios and age of harvested bulls. We conducted an internal 5-year management objective review in 2020. While we currently exceed our trend count management objective, we don't accurately know how that objective, or our current counts, relates to an actual population estimate. We initiated a research project to provide such insight (see below). As such, we did make any changes to the current primary or secondary management objectives.

4.) Collars from the Bighorn Moose Study began falling off in March and will continue through at least 2021. This study, initiated in March 2017, is looking at moose movement and seasonal habitat use. A master's thesis for this project should be completed by the end of 2021.

5) The University of Wyoming initiated a research project in January 2020 looking at using fecal DNA for a modified mark/recapture technique to generate an independent population estimate. The results of this study may inform managers how the current management objective relates to an independent population estimate.

# APPENDICES

# **Appendix A**

## **Summary of 2019 Landowner Survey**

### **Perceived Status of Big Game Populations and Suggested Hunting Season Strategies**

#### **Sheridan Biologist District**

**Pronghorn Antelope Areas 10, 15, 16, 109**

**White-tailed and Mule Deer Areas 23, 24, 26**

**Elk Areas 37, 38, 129**

**May 2020**

Prepared by:

**Timothy P. Thomas**  
**Certified Wildlife Biologist**  
Sheridan Wildlife Biologist  
Wyoming Game & Fish Department

It is imperative that the Wyoming Game & Fish Department (WGFD) works closely with landowners to manage wildlife populations, specifically deer and pronghorn antelope, in areas that are predominately private lands. In order to gauge landowner perceptions and opinions in an effective and efficient manner, some WGFD managers conducted an annual survey of landowners who historically have allowed hunting on their property. This survey was sent out in early January with a requested return date of early February. We solicited perceived population status of big game herds and suggestions for 2020 hunting season strategies. A total of 173 landowners within the Sheridan Biologist District were queried on their perceptions of pronghorn antelope, mule deer, white-tailed deer and elk populations on their properties, as well as what hunting season adjustments they would suggest for the 2020 seasons.

Landowners were given the opportunity to choose between three options based on their perception of big game populations (i.e. below, at, or above "desired" levels) for their property. "Desired population" is a measure of landowner acceptance or tolerance of wildlife, and not necessarily correlated to the post-season population management objective established by the WGFD. Landowners were given three options for suggested season strategies (i.e. more conservative, same, or more liberal). Landowners were given the opportunity to provide any additional comments. Attached is a copy of the survey sent to landowners.

Surveys were mailed to 173 landowners with self-addressed, stamped envelopes. Eight surveys were returned as undeliverable. Fifty-eight useable surveys were returned for a response rate of 35% [ $58/(173-8)=.351$ ]. Results are provided below. Not all landowners responded to each question or for all species. Some landowners are credited with a response in more than one hunt area. Therefore, total responses may exceed the number of actual survey returns.

## Pronghorn Antelope

**Table 1.** Summary of survey results for pronghorn antelope grouped by hunt area and herd unit.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
<b>10</b>	3	8	1	2	10	0
<b>15</b>	0	12	7	0	15	4
<b>16</b>	0	3	3	0	5	1
<b>SubTot (n=37)</b>	3 (8%)	23 (62%)	11 (30%)	2 (5%)	30 (81%)	5 (13%)
<b>109 (n=24)</b>	1 (4%)	14 (58%)	9 (38%)	1 (4%)	18 (75%)	5 (21%)
<b>2019 (n=61)</b>	4 (6%)	37 (61%)	20 (33%)	3 (5%)	48 (77%)	10 (16%)
<b>2018 (n=61)</b>	6 (10%)	26 (43%)	29 (47%)	4 (7%)	33 (54%)	14 (39%)
<b>2017 (n=64)</b>	5 (8%)	30 (47%)	29 (45%)	3 (5%)	35 (55%)	26 (41%)
<b>2016 (n=58)</b>	1 (2%)	36 (62%)	21 (36%)	1 (2%)	43 (74%)	14 (24%)
<b>2015 (n=60)</b>	2 (3%)	30 (50%)	28 (47%)	0 (0%)	41 (71%)	17 (29%)
<b>2014 (n=68)</b>	2 (3%)	41 (60%)	25 (37%)	1 (1%)	37 (62%)	22 (37%)
<b>2013 (n=71)</b>	5 (7%)	35 (49%)	31 (44%)	4 (6%)	40 (56%)	27 (38%)
<b>2012 (n=74)</b>	7(9%)	46 (62%)	21 (28%)	1 (1%)	48 (69%)	20 (30%)
<b>2011 (n=41)</b>	5 (12%)	19 (46%)	17 (41%)	2 (5%)	25 (61%)	14 (34%)
<b>2010 (n=53)</b>	5 (9%)	26 (49%)	22 (42%)	1 (2%)	36 (68%)	16 (30%)
<b>2009 (n=58)</b>	10 (17%)	29 (50%)	19 (33%)	4 (7%)	40 (69%)	14 (24%)
<b>2008 (n=29)</b>	5 (17%)	11 (38%)	13 (45%)	2 (7%)	16 (55%)	11 (38%)
<b>2007 (n=53)</b>	5 (9%)	27 (51%)	21 (40%)	0 (0%)	35 (66%)	18 (34%)
<b>2006 (n=36)</b>	2 (6%)	18 (50%)	16 (44%)	1 (3%)	21 (60%)	13 (37%)
<b>2005 (n=39)</b>	6 (15%)	20 (51%)	13 (33%)	2 (5%)	22 (58%)	14 (37%)
<b>2004 (n=37)</b>	3 (8%)	26 (70%)	8 (22%)	1 (3%)	37 (73%)	9 (24%)
<b>2003 (n=54)</b>	9 (17%)	29 (54%)	16 (30%)	2 (4%)	38 (75%)	11 (21%)
<b>2002 (n=55)</b>	15 (27%)	31 (56%)	9 (16%)	7 (13%)	36 (69%)	9 (17%)
<b>2001 (n=57)</b>	19 (33%)	32 (58%)	5 (9%)	8 (15%)	40 (77%)	4 (8%)
<b>2000 (n=56)</b>	25 (45%)	28 (50%)	3 (5%)	13 (23%)	38 (68%)	5 (9%)

**Leiter Herd Unit** (hunt areas 10, 15, and 16): We received 37 responses from landowners in this herd unit, similar to 2018. Most responses (92%) indicated the pronghorn population is at or above desired levels. Most landowners suggested maintaining (81%) or liberalizing (13%) the current season strategy. The current population simulation estimates this population relatively high and harvest the past 5 years is the highest in 30+ years. Most pronghorn within this herd unit occur on private lands, with limited opportunities for public land hunting. Some hunting opportunity is provided on a Walk-In Area and small scattered parcels of public lands.

**Beckton Herd Unit** (hunt area 109): We received 24 responses from landowners in this herd unit, similar to recent years. All but one landowner indicated the population was at or above desired levels on their property. The pronghorn population has likely at least stabilized in recent years as harvest has increased. This population will likely never be reduced to desired levels for some landowners due to limited access and urban development which hinders safe hunting opportunities. All except one landowner favored maintaining (75%) or liberalizing (21%) season strategies, similar to responses in recent years.

## Mule Deer

**Table 2.** Summary of survey results for mule deer grouped by hunt area and herd unit.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
23	12	9	2	10	11	2
26	9	3	1	5	7	1
<b>SubTot (n=36)</b>	21 (58%)	12 (33%)	3 (8%)	15 (42%)	18 (50%)	3 (8%)
<b>24 (n=24)</b>	12 (48%)	11 (44%)	2 (8%)	10 (40%)	15 (60%)	0 (0%)
<b>2019 (n=60)</b>	33 (54%)	23 (38%)	5 (8%)	25 (41%)	33 (54%)	3 (5%)
<b>2018 (n=60)</b>	15 (25%)	37 (62%)	8 (13%)	10 (17%)	42 (70%)	8 (13%)
<b>2017 (n=67)</b>	25 (37%)	34 (51%)	8 (12%)	12 (18%)	45 (67%)	10 (15%)
<b>2016 (n=68)</b>	26 (38%)	38 (50%)	8 (12%)	19 (28%)	40 (59%)	9 (13%)
<b>2015 (n=70)</b>	25 (36%)	38 (54%)	7 (10%)	14 (20%)	43 (62%)	12 (17%)
<b>2014 (n=74)</b>	30 (40%)	36 (49%)	8 (11%)	17 (24%)	46 (64%)	9 (12%)
<b>2013 (n=74)</b>	35 (47%)	32 (43%)	7 (10%)	23 (31%)	38 (51%)	13 (18%)
<b>2012 (n=75)</b>	35 (47%)	29 (39%)	11 (15%)	23 (31%)	42 (57%)	9 (12%)
<b>2011 (n=62)</b>	28 (45%)	26 (42%)	8 (13%)	11 (17%)	43 (69%)	8 (13%)
<b>2010 (n=59)</b>	27(46%)	20 (34%)	12 (20%)	13(22%)	36(61%)	10(17%)
<b>2009 (n=59)</b>	27 (46%)	20 (34%)	12 (20%)	13 (22%)	36 (61%)	10 (17%)
<b>2008 (n=28)</b>	4 (14%)	19 (68%)	5 (18%)	1 (4%)	24 (86%)	3 (11%)
<b>2007 (n=59)</b>	20 (34%)	33 (56%)	6 (10%)	10 (17%)	39 (66%)	10 (17%)
<b>2006 (n=41)</b>	15 (37%)	15 (37%)	11 (27%)	5 (12%)	27 (65%)	9 (22%)
<b>2005 (n=46)</b>	7 (16%)	23 (51%)	15 (33%)	4 (9%)	27 (59%)	15 (33%)
<b>2004 (n=48)</b>	12 (25%)	21 (44%)	15 (31%)	7 (8%)	27 (56%)	14 (29%)
<b>2003 (n=65)</b>	15 (24%)	34 (55%)	13 (21%)	8 (12%)	42 (65%)	15 (23%)
<b>2002 (n=65)</b>	31(48%)	23 (35%)	11 (17%)	16 (25%)	37 (59%)	10 (16%)
<b>2001 (n=79)</b>	38 (48%)	34 (43%)	7 (9%)	19 (25%)	47 (62%)	10 (13%)
<b>2000 (n=67)</b>	22 (32%)	38 (57%)	7 (11%)	15 (24%)	45 (71%)	3 (5%)

**North Bighorn Herd Unit** (hunt area 24): We received 24 responses from landowners in this herd area. Eleven respondents (44%) thought the population was at desired levels while 12 (48%) thought the population was below desired levels and two respondents (8%) thought the population. This is a change from recent years where most landowners felt the population was at or above desired levels. Current population simulations estimate the population is below the post-season population management objective as established by the WGFD. Most landowners (60%) suggested maintaining current season strategies (i.e. 30 September archery season, 17-day general deer season in October and limited doe/fawn permits) while the other respondents suggested more conservative (40%) season structure.

**Powder River Herd Unit** (hunt areas 23, 26): We received 36 responses from landowners within these hunt areas. Most respondents (58%) thought the population was below desired levels, while 33% thought the population was at or above desired levels. Only three landowners (8%) felt the population was above the desired level. This is a switch from recent years, suggesting the population has declined. Current population simulations estimate the population is below the post-season population management objective as established by the WGFD. Most landowners (50%) still favored maintaining the current season structure (i.e. 30 day September archery season, 14-day general deer season in October and an extended doe/fawn season), while 42% suggested more conservative season strategies.

## White-tailed Deer

**Table 3.** Summary of survey results for white-tailed deer grouped by hunt area and herd unit.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
23	2	9	9	2	12	6
24	0	3	21	0	8	16
26	1	2	8	1	5	5
<b>2019 (n=55)</b>	3 (5%)	14 (25%)	38 (69%)	3 (5%)	25 (45%)	27 (49%)
<b>2018 (n=61)</b>	6 (8%)	23 (38%)	33 (54%)	6 (10%)	27 (44%)	28 (46%)
<b>2017 (n=59)</b>	5 (8%)	14 (24%)	40 (68%)	1 (2%)	32 (54%)	26 (44%)
<b>2016 (n=55)</b>	1 (2%)	17 (31%)	37 (67%)	0	27 (49%)	28 (51%)
<b>2015 (n=65)</b>	7 (11%)	22 (34%)	36 (55%)	3(5%)	36 (56%)	25 (39%)
<b>2014 (n=61)</b>	3 (5%)	22 (36%)	36 (59%)	4 (7%)	32 (55%)	22 (38%)
<b>2013 (n=47)</b>	6 (9%)	19 (29%)	41 (62%)	5 (8%)	28 (42%)	33 (50%)
<b>2012 (n=72)</b>	3 (4%)	18 (25%)	51 (71%)	0	30 (41%)	42 (59%)
<b>2011(n=63)</b>	2(3%)	19(30%)	42(67%)	0	26(41%)	37(59%)
<b>2010 (n=55)</b>	2(4%)	16(29%)	37(67%)	0	23(42%)	32(58%)
<b>2009 (n=53)</b>	4 (7%)	19 (36%)	30 (57%)	1(2%)	29 (55%)	23 (43%)
<b>2008 (n=26)</b>	5 (19%)	8 (31%)	13 (50%)	2 (8%)	12 (46%)	12 (46%)
<b>2007 (n=48)</b>	8 (17%)	14 (29%)	26 (54%)	3 (6%)	22 (46%)	23 (48%)
<b>2006 (n=36)</b>	4 (11%)	11 (31%)	21 (58%)	1 (3%)	19 (53%)	16 (44%)
<b>2005 (n=40)</b>	3 (8%)	11 (28%)	26 (65%)	2 (5%)	20 (51%)	17 (44%)
<b>2004 (n=37)</b>	2 (5%)	11 (30%)	24 (65%)	0	14 (38%)	23 (62%)
<b>2003 (n=57)</b>	6 (10%)	14 (25%)	37 (65%)	4 (7%)	25 (45%)	27 (48%)
<b>2002 (n=58)</b>	11 (19%)	19 (33%)	28 (48%)	7 (13%)	28 (50%)	21 (37%)
<b>2001 (n=68)</b>	13 (19%)	30 (44%)	25 (37%)	6 (9%)	45 (66%)	17 (25%)
<b>2000 (n=58)</b>	11 (19%)	21 (36%)	26 (45%)	6 (10%)	31 (53%)	21 (37%)

**Powder River Herd Unit** (hunt areas 23, 24, 26): We received 55 responses from landowners in these hunts areas. The majority (95%) thought the white-tailed deer population was at or above desired levels, 5while only three landowners (8%) felt the population was below desired levels. Favorable environmental conditions have allowed this population to remain at relatively high levels despite record harvest levels. All but three landowners suggested maintaining or liberalizing current season strategies. During the 2019 season, hunters could harvest any white-tailed deer for up to 91 days, including the 30-day September archery season, with additional time allowed for doe/fawn harvest, depending on hunt area. Similar season strategies were approved for 2020.

Numerous landowners have expressed concern and frustration with the number of white-tailed deer, especially in the Bighorn area. It is common to see several hundred deer in one field. Some landowners in these areas have committed to increasing access for hunters to harvest antlerless deer. The number of deer – vehicle collisions has also increased, most notably along Big Goose Road and Highway 87/335 from Sheridan to Bighorn.

## Elk

**Table 4.** Summary of survey results for elk.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
37	0	7	7	0	8	6
38	0	4	1	3	2	0
<b>Sub Tot (n=19)</b>	0 (0%)	11 (58%)	8 (42%)	3 (16%)	10 (53%)	6 (32%)
<b>129 (n=11)</b>	4 (36%)	6 (55%)	1 (9%)	1 (9%)	9 (82%)	1 (9%)
<b>2019 (n=30)</b>	4 (13%)	17 (57%)	9 (30%)	4 (13%)	19 (63%)	7 (23%)
<b>2018 (n=31)</b>	6 (19%)	18 (58%)	7 (23%)	7 (23%)	20 (64%)	4 (13%)
<b>2017 (n=34)</b>	4 (12%)	20 (59%)	10 (29%)	6 (18%)	19 (56%)	9 (26%)
<b>2016 (n=31)</b>	3 (10%)	20 (64%)	8 (26%)	3 (10%)	22 (71%)	6 (19%)
<b>2015 (n=28)</b>	2 (7%)	17 (61%)	9 (32%)	1 (4%)	22 (79%)	5 (18%)
<b>2014 (n=31)</b>	8 (26%)	17 (55%)	6 (19%)	4 (13%)	23 (74%)	4 (13%)
<b>2013 (n=35)</b>	12 (34%)	15 (43%)	8 (23%)	4 (12%)	18 (55%)	11 (33%)
<b>2012 (n=27)</b>	10 (37%)	10 (37%)	7 (26%)	2 (8%)	13 (50%)	11 (42%)
<b>2011 (n=20)</b>	7 (35%)	8 (40%)	5 (25%)	4 (20%)	11 (55%)	5 (25%)
<b>2010 (n=19)</b>	10(53%)	5(26%)	4(21%)	7(37%)	7(37%)	5(26%)
<b>2009 (n=19)</b>	10 (53%)	5 (26%)	4 (21%)	7 (37%)	7 (37%)	5 (26%)
<b>2008 (n=12)</b>	6 (50%)	3 (25%)	3 (25%)	1 (8%)	10 (83%)	1 (18%)
<b>2007 (n=16)</b>	5 (31%)	6 (38%)	5 (31%)	2 (13%)	8 (50%)	5 (31%)
<b>2006 (n=20)</b>	8 (40%)	7 (35%)	5 (25%)	5 (25%)	8 (40%)	7 (35%)
<b>2005 (n=18)</b>	4 (22%)	10 (56%)	4 (22%)	4 (22%)	9 (50%)	5 (28%)
<b>2004 (n=12)</b>	3 (25%)	9 (75%)	0	0	10 (83%)	2 (17%)
<b>2003 (n=17)</b>	5 (31%)	9 (56%)	2 (13%)	3 (21%)	9 (64%)	2 (14%)
<b>2002 (n=20)</b>	4 (20%)	12 (60%)	4 (20%)	1 (5%)	16 (80%)	3 (15%)
<b>2001 (n=23)</b>	6 (26%)	12 (52%)	5 (22%)	4 (17%)	14 (61%)	5 (22%)
<b>2000 (n=10)</b>	3 (30%)	4 (40%)	3 (30%)	1 (10%)	7 (70%)	2 (20%)

**North Bighorn Herd Unit** (hunt areas 37, 38): We received 19 responses from landowners in these hunt areas, similar to previous years. Most of the respondents (74%) were landowners in hunt area 37. Most landowners (58%) thought the elk populations were at desired levels, while the rest (42%) thought elk numbers were above desired levels. No landowners thought elk numbers were below desired levels. Most landowners supported similar (53%) or more liberal (32%) season strategies. Some landowners think the seasons are too long, hence 16% suggested more conservative seasons.

**Hunt Area 129:** We received responses from 11 landowners in this hunt area, fewer than recent years. Area 129 encompasses all lands in Campbell, Johnson, and Sheridan counties outside an established elk hunt area. This area was established in 2001 to address expanding elk numbers outside established hunt areas and herd units. Responses were mixed, with some landowners desiring more elk while others want longer seasons so they can kill more elk and reduce their numbers. The WGFD has no plans to actively manage elk in these areas. Most (82%) landowners favored maintaining the current season structure (i.e. 61-days general license any elk; 30-days general license antlerless elk; and additional cow/calf licenses for 91 days).

Sheridan Regional Office  
700 Valley View Drive  
Sheridan, Wyoming 82801

January 8, 2020

Dear Landowner:

Please take a moment to consider the following survey. We would like you to think about the antelope, deer and elk hunting seasons for 2020. Although it is still very early in the year, we would like to get a feeling for what direction you think we should head this fall. Your input, along with game surveys, harvest estimates and hunter input, will be used to set 2020 seasons.

Please think about what you saw this past summer and hunting season, and what is showing up on your property for the winter. Naturally, this winter will play a big part in big game survival and the setting of hunting seasons this spring; however, we would like to get your opinion now.

If you have any questions, please contact one of the below listed department personnel.

<i>Sheridan Biologist</i>	<i>Buffalo Game Warden</i>	<i>Sheridan Game Warden</i>	<i>Dayton Game Warden</i>
<b>Tim Thomas</b>	<b>Jim Seeman</b>	<b>Ryan Kenneda</b>	<b>Dustin Shorma</b>
<b>672-7418</b>	<b>684-5223</b>	<b>672-2790</b>	<b>655-9495</b>

Please return this questionnaire to my attention at the Sheridan Regional Office on or before **February 1, 2019**. You can also e-mail your response to me at the e-mail address below.

Thank you for your continued support and assistance in managing Wyoming's wildlife resources.

Sincerely,

Tim Thomas  
Sheridan Wildlife Biologist  
(307) 672-7418 (office) / (307) 752-0659 (cell)  
[Tim.Thomas@wyo.gov](mailto:Tim.Thomas@wyo.gov)

**NAME:** \_\_\_\_\_ (optional)

**ANTELOPE HUNT AREA(S) (HA) for YOUR RANCH:** \_\_\_\_\_, \_\_\_\_\_

Overall for your area, is the antelope population:

- |          |          |                            |
|----------|----------|----------------------------|
| HA _____ | HA _____ |                            |
| _____    | _____    | Less than desired levels   |
| _____    | _____    | At or near desired levels  |
| _____    | _____    | Higher than desired levels |

For the 2020 season, would you like to see antelope hunting seasons:

- |          |          |  |
|----------|----------|--|
| HA _____ | HA _____ |  |
| _____    | _____    | More conservative with fewer licenses and/or shorter seasons |
| _____    | _____    | About the same as this year                                  |
| _____    | _____    | More liberal with more licenses and/or longer seasons        |

**MULE DEER HUNT AREA(S) for YOUR RANCH:** \_\_\_\_\_, \_\_\_\_\_

Overall for your area, is the mule deer population:

- |          |          |                            |
|----------|----------|----------------------------|
| HA _____ | HA _____ |                            |
| _____    | _____    | Less than desired levels   |
| _____    | _____    | At or near desired levels  |
| _____    | _____    | Higher than desired levels |

For the 2020 season, would you like to see mule deer hunting seasons:

- |          |          |  |
|----------|----------|--|
| HA _____ | HA _____ |  |
| _____    | _____    | More conservative with fewer licenses and/or shorter seasons |
| _____    | _____    | About the same as this year                                  |
| _____    | _____    | More liberal with more licenses and/or longer seasons        |

**Would you like your name included on a list of landowners allowing **FREE** access for **DOE/FAWN ONLY** hunting for deer and/or antelope for the 2020 hunting season?**

YES     NO   
  Antelope   
  Mule Deer   
  White-tailed Deer

(Check all that apply)

Contact Name: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Restrictions (e.g. dates): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Appendix B**

**Summary of  
2019 Landowner Survey**

**Perceived Status of Deer and Pronghorn Populations  
And Suggested Hunting Season Strategies**

**Gillette Biologist District**

May 2020

**Prepared by:**

Erika Peckham  
Gillette Wildlife Biologist  
**Wyoming Game & Fish Department**

## Overview

Questionnaire surveys of landowners within the Gillette Biologist District have been conducted after each hunting season from 1996 through 2019. Landowners completed the surveys and returned them with their coupon forms either separately or with their landowner coupons to their local game warden by March 1<sup>st</sup> of the following year.

The questions asked for each of the surveys were essentially the same with only slight variation between the first survey and subsequent surveys. Landowners were asked if the pronghorn and deer herds on their ranches were below desired levels, at desired levels, or above desired levels. They were also asked if they thought that next year's hunting season should be more conservative, about the same, or more liberal than the previous hunting season. Overall, it appears that the response rate is declining when comparing years past.

A brief summary of the 2019 responses relative to the 2020 hunting season is as follows.

### Pronghorn Questionnaire Responses

#### Area 1

- 56% of respondents think that pronghorn are at desired levels with the remainder split evenly.
- 81% of respondents desire the same season for 2020.

#### Area 3

- 40% of respondents believe that numbers are below objective, 25% feel that they are above objective.
- 60% of landowners favor the same season for 2020

#### Area 17

- 67% of landowners feel that antelope numbers are where they should be.
- 75% of landowners favor the same season for 2020.

#### Area 18

- 50% of landowners think that pronghorn numbers on their property are at desired levels.
- 60% of landowners favor the same season for 2020.

#### Area 19

- 50% of respondents felt that antelope were at or above desired numbers.
- 67% of respondents wanted the same or a more liberal season for 2020.

#### Area 23

- 90% of landowners surveyed believe that pronghorn numbers on their property are at desired levels.
- 90% of landowners favor the same or more liberal season for 2020.

#### Area 24

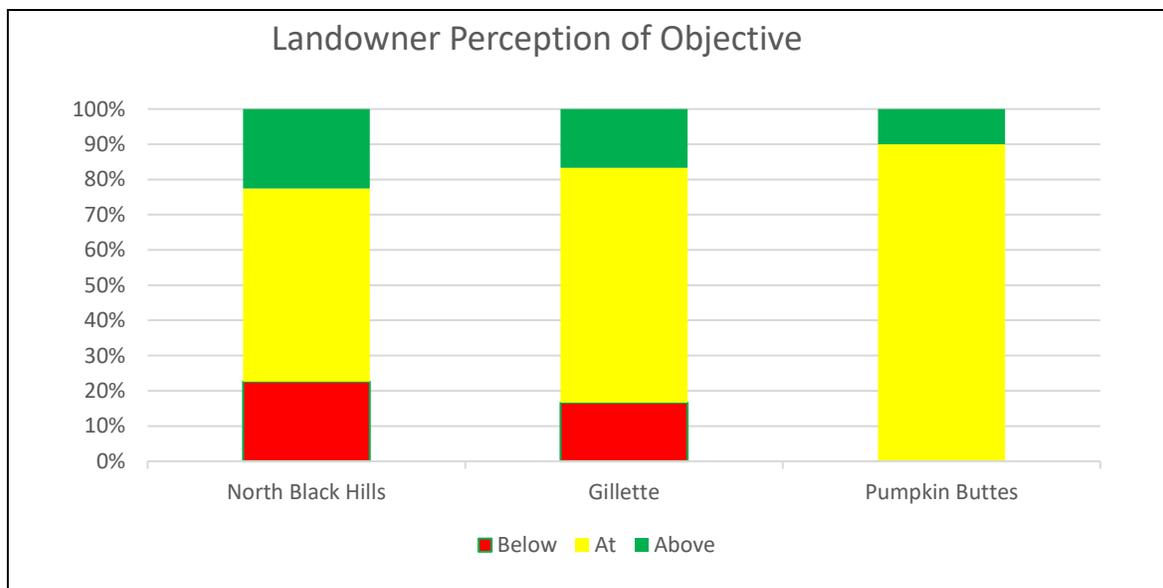
- 70% of landowners surveyed believe that pronghorn numbers on their property are above desired levels with the remainder of respondents split on their opinion.
- 90% wanted the same season or a more liberal season for 2020.

#### Area 27

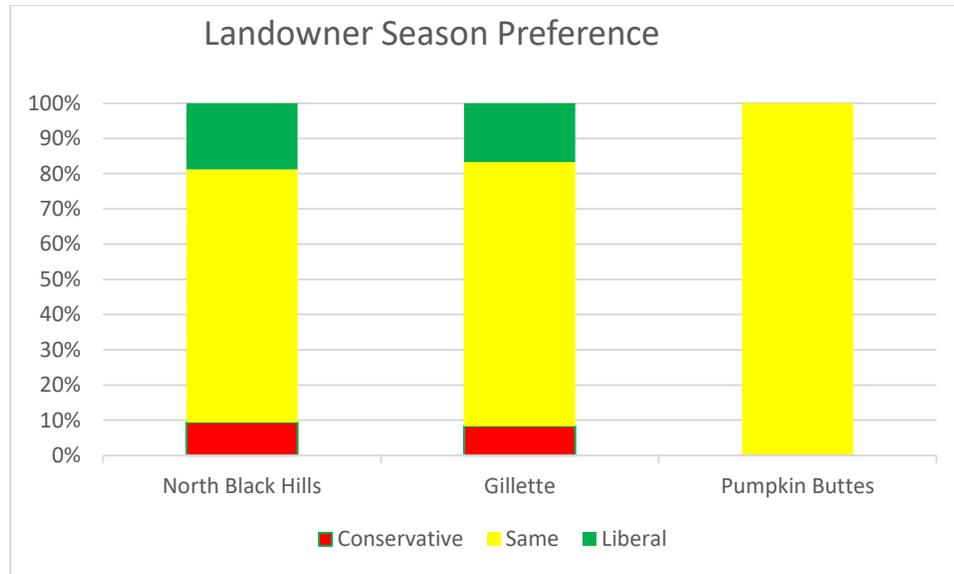
- The 1 respondents wanted a more liberal season for 2020.

## Overall Pronghorn Survey Results

- Sample size of 78 landowners answered the portion on pronghorn (some incomplete, only answering either the portion regarding population or season and not both, some not indicating hunt area).
- 64% of total respondents think that pronghorn numbers on their property are at desired levels with 17% indicating that pronghorn numbers on their property are below desired levels and 19% indicating that pronghorn numbers on their property are above desired levels.
- Most (78%) favor the same season for 2020 with 20% favoring a more liberal and 9% favoring a more conservative season for 2020. Responses were fairly similar as compared to the 2018 season responses.



**Figure 1.** 2019 landowner survey results by herd unit regarding pronghorn herd size compared to herd objective.



**Figure 2.** 2019 landowner survey results by herd unit regarding desired 2020 pronghorn hunting seasons.

**Table 1.** 2019 landowner survey results, and results by year 1997-2019

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
1	3	9	3	0	13	3
3	1	2	2	1	3	1
17	4	16	4	2	18	4
18	1	3	1	1	3	1
19	2	3	1	1	4	1
23	0	9	1	0	9	1
24	1	7	2	1	5	4
27	0	0	1	0	0	1

YEAR	Below	At	Above	Conserv.	Same	Liberal
*2019	13(17%)	50(64%)	15(19%)	7(9%)	56(71%)	16(20%)
2018	13(13%)	64(65%)	21(22%)	9(10%)	68(74%)	15(16%)
2017	14(14%)	59(60%)	26(26%)	9(9%)	64(66%)	24(25%)
2016	16(25%)	34(54%)	13(21%)	9(15%)	39(66%)	11(19%)
2015	20(29%)	42(62%)	6(9%)	8(12%)	53(79%)	6(9%)
2014	22(26%)	49(58%)	13(16%)	19(23%)	49(61%)	13(16%)
2013	31(47%)	29(44%)	6(9%)	32(48%)	29(44%)	5(8%)
2012	72(44%)	82(50%)	11(6%)	47(29%)	103(64%)	11(7%)
2011	30 (37%)	47 (57%)	5 (6%)	25 (32%)	49 (62%)	5 (6%)
2010	30 (33%)	45 (49%)	16 (18%)	21 (23%)	52 (57%)	18 (20%)
2009	19 (18%)	60 (56%)	29 (27%)	15 (14%)	72 (66%)	22 (20%)
2008	7 (6%)	55 (50%)	48 (44%)	9 (8%)	60 (56%)	39 (36%)
2007	7 (6%)	58 (48%)	55 (46%)	4 (3%)	69 (57%)	46 (39%)
2006	14 (11%)	58 (44%)	61 (46%)	6 (5%)	74 (56%)	53 (40%)
2005	6 (10%)	22 (35%)	34 (55%)	4 (7%)	31 (53%)	23 (40%)
2004	28 (16%)	86 (50%)	59 (34%)	12 (7%)	98 (57%)	63 (36%)
2003	30 (17%)	105 (60%)	43 (24%)	11 (6%)	109 (62%)	56 (32%)
2002	24 (18%)	78 (58%)	33 (24%)	17 (13%)	80 (59%)	38 (28%)
2001	27 (21%)	74 (59%)	25 (20%)	23 (18%)	73 (58%)	30 (24%)
2000	50 (40%)	58 (46%)	17 (14%)	33 (27%)	65 (52%)	26 (21%)
1999	48 (46%)	37 (35%)	20 (19%)	30 (29%)	47 (46%)	25 (25%)
1998	49 (37%)	64 (48%)	21 (16%)	31 (23%)	73 (54%)	31 (23%)
1997	68 (49%)	60 (43%)	11 (8%)	56 (41%)	63 (46%)	18 (13%)

\*Note-Totals of Hunt Area may not equal total for 2019. This is due to some landowners not reporting what area they are in or answering only portions of the survey. Their opinions were factored into the total, but not by Hunt Area.

### Deer Questionnaire Responses

#### Area 1

- 55% believe deer numbers on their property are at desired levels.
- 89% favor the same season for 2020.

#### Area 3

- 67% feel that deer are at desired numbers.
- 80% favor the same season for 2020.

#### Area 10

- There was 1 respondent and they were content with the management of the deer.

#### Area 17

- 42% of respondents felt that the deer were where they would like to see them.
- 56% favor a similar season for 2020.

Area 18

- 55% of respondents felt that deer were below where they would like to see them.
- 55% favor a more conservative season for 2020.

Area 19

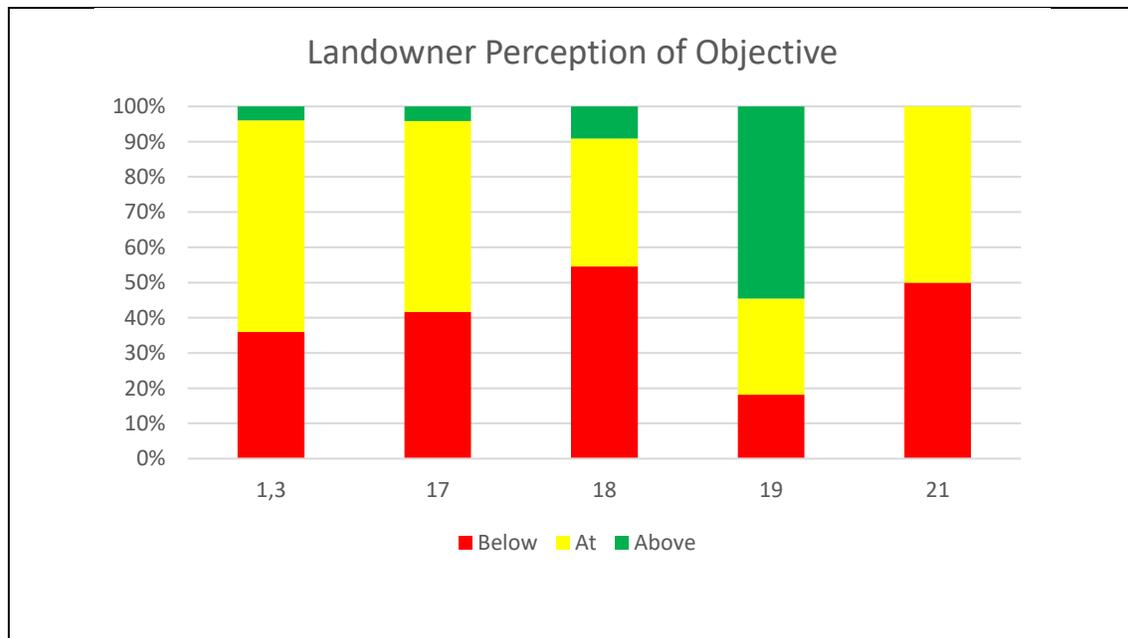
- 55% believe deer numbers on their property are above desired levels.
- 82% favor the same or a more liberal season for 2020.

Area 21

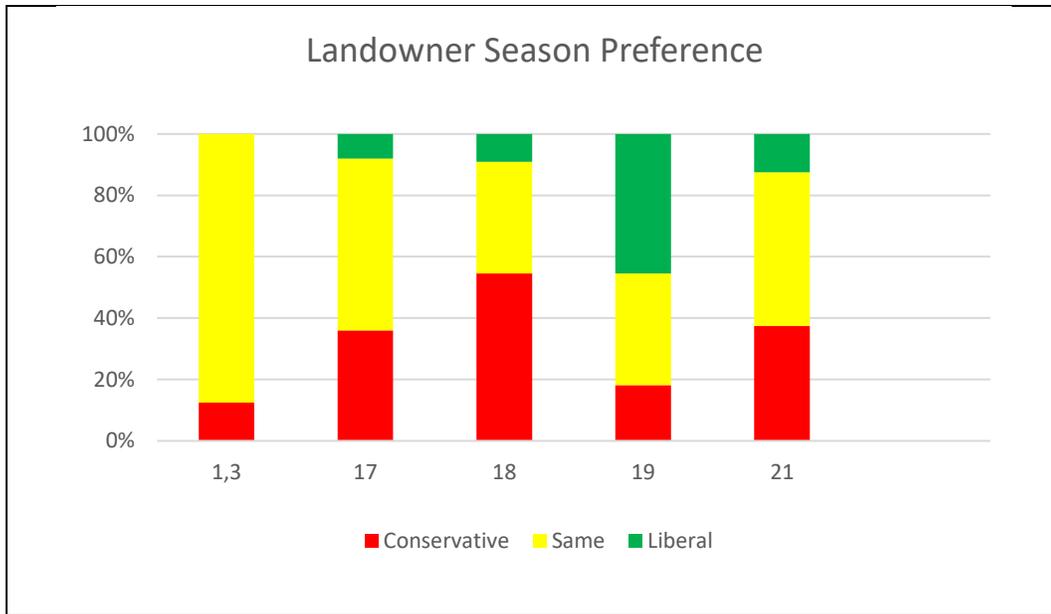
- 88% of respondents felt that deer numbers were at or below objective.
- 50% of respondents desired the same season for 2020.

**Overall Deer Survey Results**

- 83 landowners answered the deer portion of the survey (some incomplete, only answering either the portion regarding population or season and not both, some not indicating hunt area).
- Most (51%) think that deer numbers are at desired levels with 37% of the respondents indicating that the herds are below desired levels and 12% indicating that herds are above desired levels.
- Most (59%) favor the same season for 2020, with 29% desiring a more conservative season, and the remaining 12% indicating the need for a more liberal season.



**Figure 3.** 2019 landowner survey results by hunt area regarding deer herd size compared to herd objective.



**Figure 4.** 2019 landowner survey results by hunt area regarding desired 2020 deer hunting seasons.

**Table 2.** Summary of responses by landowners regarding deer population levels and opinions for deer hunting seasons 1997– 2019 and summary of 2019.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
1	7	11	1	2	17	0
3	2	4	0	1	4	0
10	0	1	0	0	1	0
17	10	13	1	9	14	2
18	6	4	1	6	4	1
19	2	3	6	2	4	5
21	1	1	0	1	0	1

<b>YEAR</b>	<b>Population</b>			<b>Season</b>		
<b>2019</b>	31(37%)	42(51%)	10(12%)	24(29%)	49(59%)	10(12%)
<b>*2017</b>	36(35%)	56(54%)	12(11%)	26(26%)	60(60%)	14(14%)
<b>*2016</b>	26(39%)	35(53%)	5(8%)	18(28%)	40(61%)	7(11%)
<b>*2015</b>	27(36%)	39(51%)	10(13%)	20(28%)	44(60%)	9(12%)
<b>*2014</b>	39(49%)	33(42%)	7(9%)	33(43%)	37(49%)	6(8%)
<b>*2013</b>	43(65%)	23(35%)	0	37(57%)	23(35%)	5(8%)
<b>*2012</b>	106(66%)	46(29%)	8(5%)	80(52%)	65(42%)	8(5%)
<b>2011</b>	52 (71%)	20 (28%)	1 (1%)	41 (59%)	27 (39%)	1 (1%)
<b>2010</b>	56 (57%)	38 (39%)	4 (4%)	40 (51%)	49 (41%)	8 (8%)
<b>2009</b>	64 (57%)	43 (38%)	5 (4%)	50 (45%)	58 (52%)	6 (5%)
<b>2008</b>	28 (26%)	72 (67%)	7 (7%)	17 (16%)	78 (72%)	13 (12%)
<b>2007</b>	22 (18%)	83 (66%)	20 (16%)	13 (10%)	88 (70%)	24 (19%)
<b>2006</b>	24 (18%)	75 (57%)	32 (24%)	14 (11%)	77 (58%)	41 (31%)
<b>2005</b>	18 (19%)	54 (56%)	25 (26%)	14 (14%)	60 (61%)	25 (25%)
<b>2004</b>	52 (29%)	98 (55%)	29 (16%)	30 (17%)	117 (67%)	29 (16%)
<b>2003</b>	57 (30%)	110 (58%)	23 (12%)	34 (19%)	108 (61%)	35 (20%)
<b>2002</b>	43 (32%)	76 (56%)	17 (13%)	30 (22%)	84 (62%)	22 (16%)
<b>2001</b>	44 (35%)	65 (52%)	17 (13%)	34 (27%)	74 (59%)	18 (14%)
<b>2000</b>	38 (29%)	73 (57%)	18 (14%)	34 (26%)	66 (51%)	30 (23%)
<b>1999</b>	30 (29%)	56 (55%)	16 (16 %)	26 (25%)	56 (55%)	20 (20%)
<b>1998</b>	60 (47%)	63 (49%)	6 (5%)	51 (39%)	65 (50%)	15 (11%)
<b>1997</b>	64 (47%)	56 (41%)	16 (12%)	57 (42%)	61 (45%)	18 (13%)

\*Note-Totals of Hunt Area may not equal total for 2019. This is due to some landowners not reporting what area they are in or answering only portions of the survey. Their opinions were factored into the total, but not by Hunt Area.

## **APPENDIX C**

### **2019 Buffalo / Kaycee Landowner Survey**

**May 8, 2020**

Prepared by Cheyenne Stewart  
Buffalo Wildlife Biologist  
Wyoming Game & Fish Department

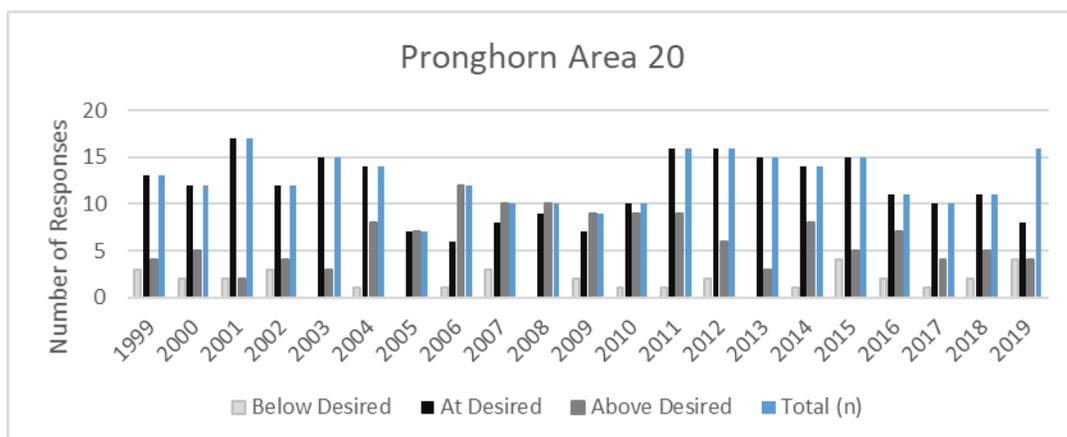
Sixty-two responses were received from 151 surveys mailed to landowners in the Buffalo Wildlife Biologist district. Not all landowners responded to each question or for each species and some landowners did not provide enough information to identify what hunt areas their responses applied to. Conversely, some responses applied to more than one hunt area because of landownership patterns. Reported responses may therefore differ from the number of actual surveys returned. Areas with less than 5 responses are not included.

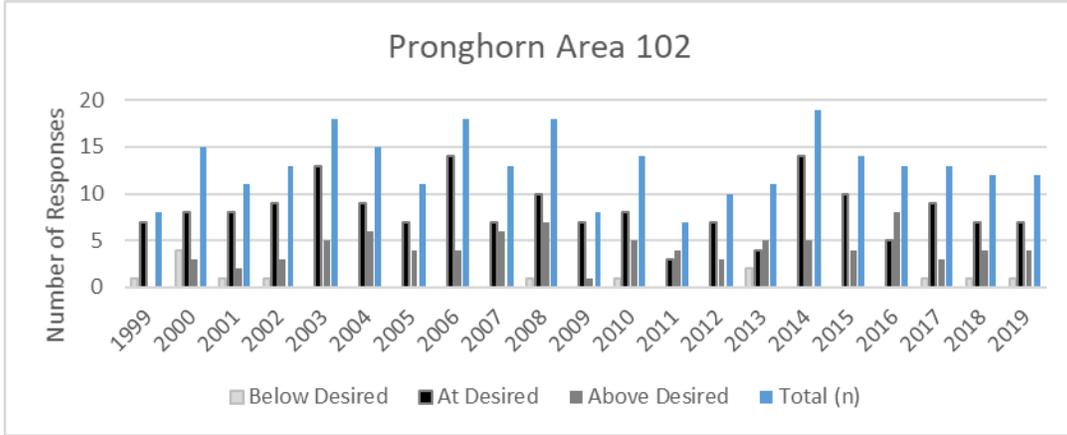
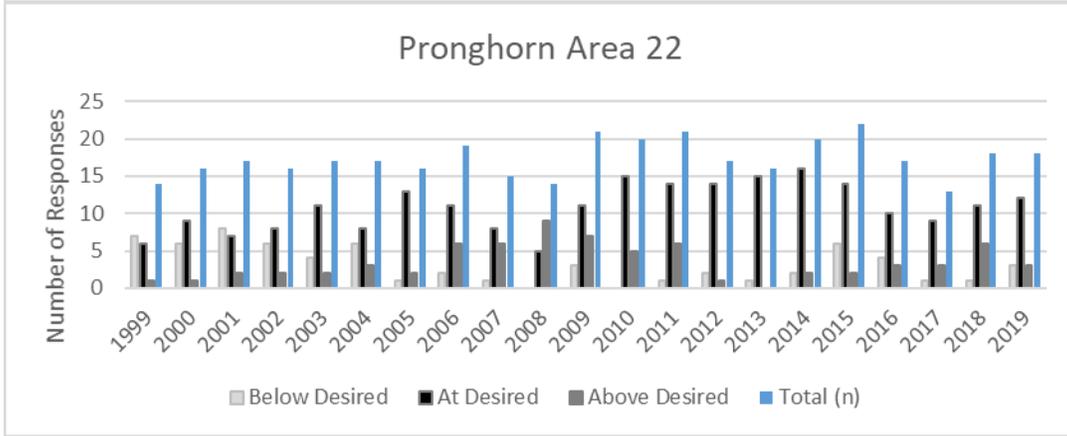
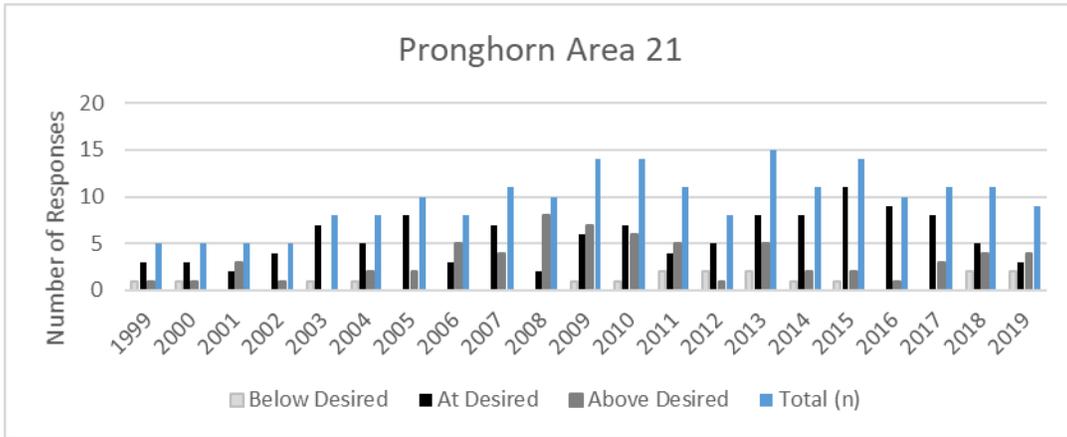
NAME &/or RANCH NAME: \_\_\_\_\_

Species	Hunt Area(s) (circle all that apply)	Overall for your area, are animal numbers: (circle one)	Please rate your satisfaction with the number on your property: (circle one)	For next year, would you like to see the season: (circle one)				
Antelope	20	Below desired levels	Very Satisfied	More conservative/fewer licenses				
	21	At desired levels	Satisfied	About the same as last year				
	102	Above desired levels	Neutral	More liberal/more licenses				
	113		Dissatisfied					
Mule Deer	27 32	Below desired levels	Very Satisfied	More conservative/fewer licenses				
	29 33	At desired levels	Satisfied	About the same as last year				
	30 163	Above desired levels	Neutral	More liberal/more licenses				
	31 169		Dissatisfied					
White-tailed Deer	27 32	Below desired levels	Very Satisfied	More conservative/fewer licenses				
	29 33	At desired levels	Satisfied	About the same as last year				
	30 163	Above desired levels	Neutral	More liberal/more licenses				
	31 169		Dissatisfied					
Elk	33	Below desired levels	Very Satisfied	More conservative/fewer licenses				
	34	At desired levels	Satisfied	About the same as last year				
	35	Above desired levels	Neutral	More liberal/more licenses				
	36 129		Dissatisfied					
Write-in if you have input for a Hunt Area not listed above:								
<table border="1" style="width:100%; height:20px;"> <tr> <td style="width:25%;"></td> <td style="width:25%;"></td> <td style="width:25%;"></td> <td style="width:25%;"></td> </tr> </table>								
COMMENTS:								

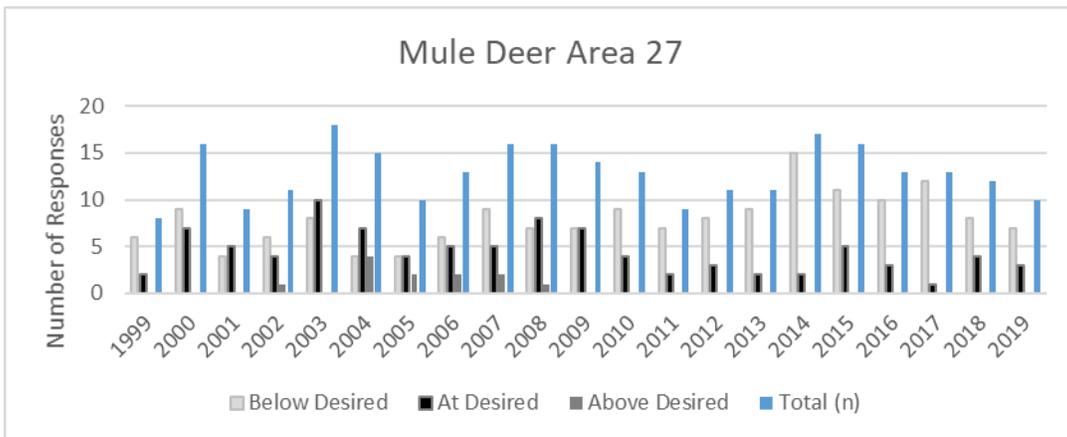
Figure 1. Landowner survey mailed to landowners in the Buffalo Wildlife Biologist District.

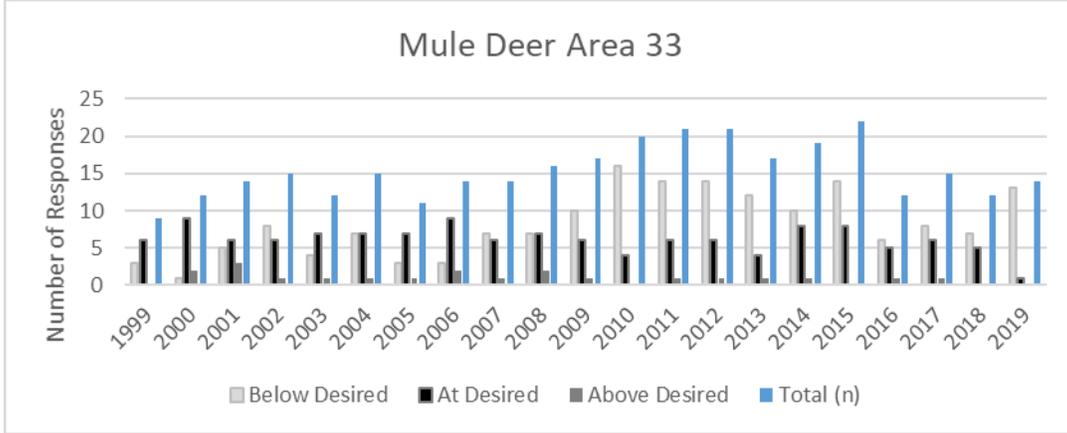
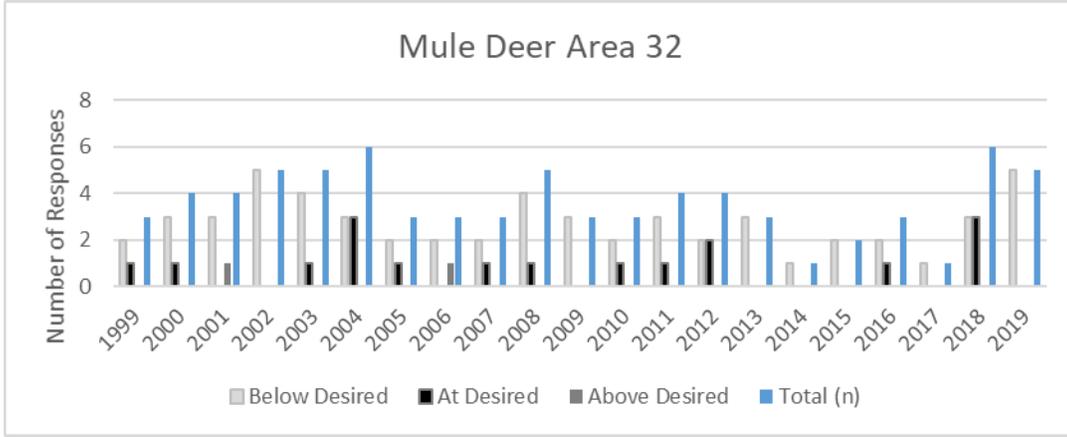
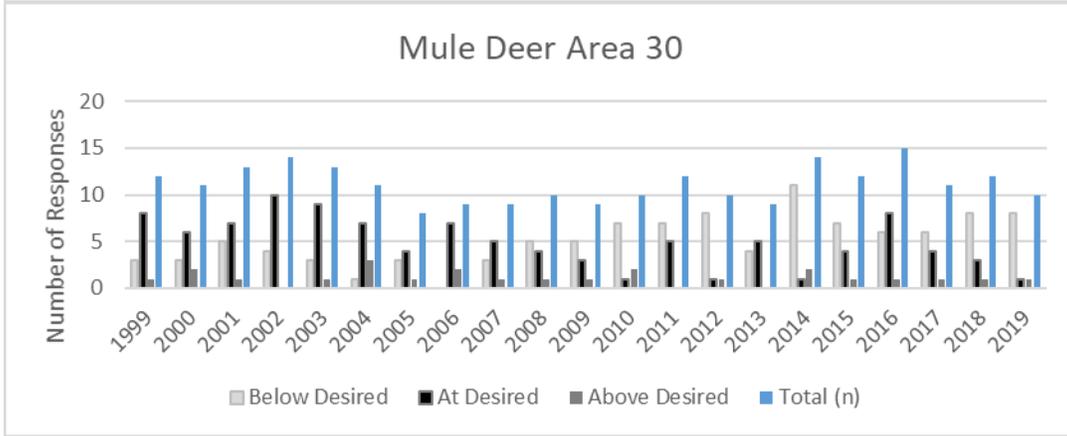
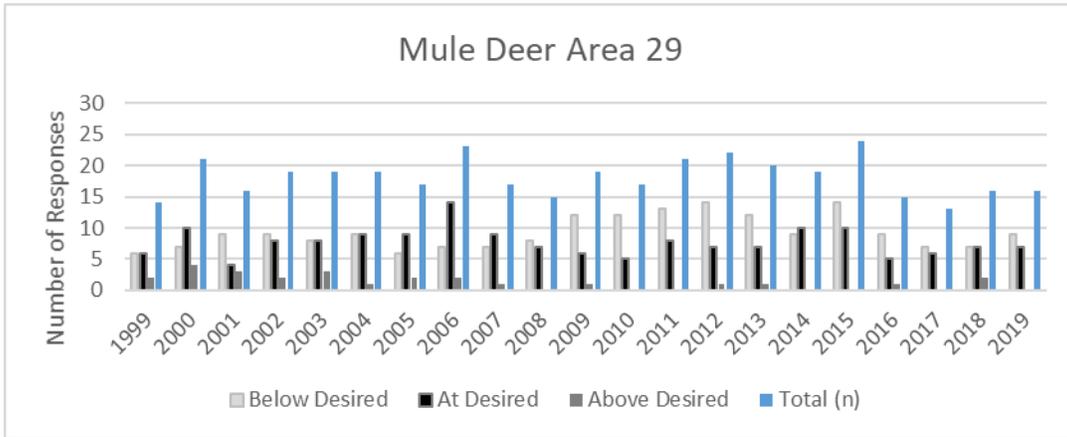
### Pronghorn





**Mule Deer**





**White-tailed Deer**



**Elk**

