

PRONGHORN

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2015 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2015 - 5/31/2016

HERD: PR309 - PUMPKIN BUTTES

HUNT AREAS: 23

PREPARED BY: ERIKA PECKHAM

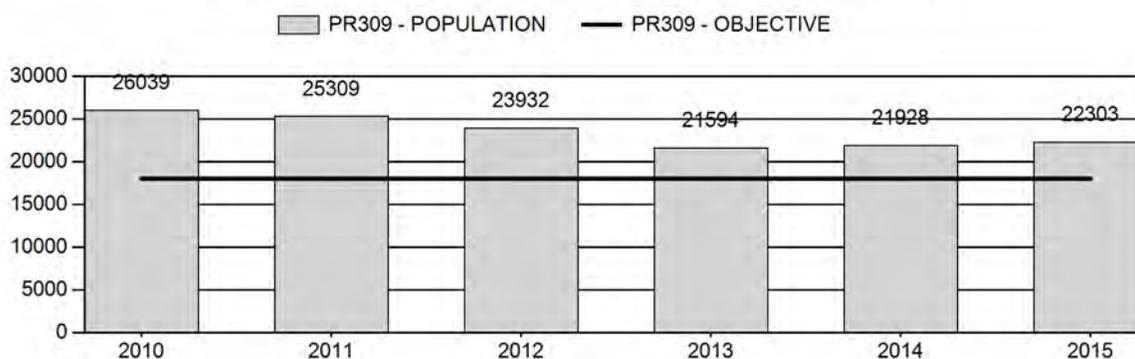
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	23,760	22,303	22,471
Harvest:	2,381	2,241	2,075
Hunters:	2,600	2,547	2,400
Hunter Success:	92%	88%	86%
Active Licenses:	2,703	2,695	2,500
Active License Success:	88%	83%	83%
Recreation Days:	8,597	10,533	9,500
Days Per Animal:	3.6	4.7	4.6
Males per 100 Females	52	50	
Juveniles per 100 Females	69	88	

Population Objective (± 20%) :	18000 (14400 - 21600)
Management Strategy:	Private Land
Percent population is above (+) or below (-) objective:	24%
Number of years population has been + or - objective in recent trend:	3
Model Date:	02/15/2016

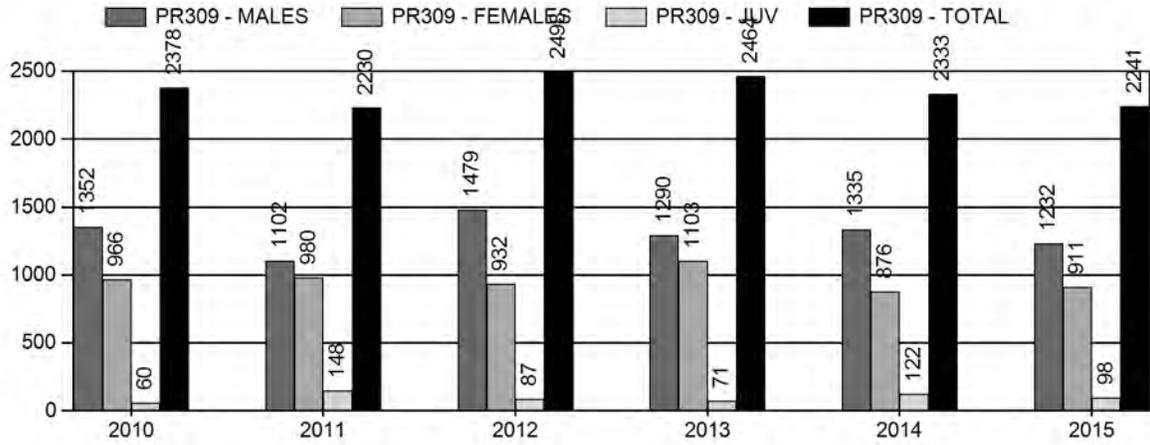
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	9.7%	8.4%
Males ≥ 1 year old:	26.8%	19.5%
Juveniles (< 1 year old):	0%	.9%
Total:	10%	8.4%
Proposed change in post-season population:	-2.7%	.75%

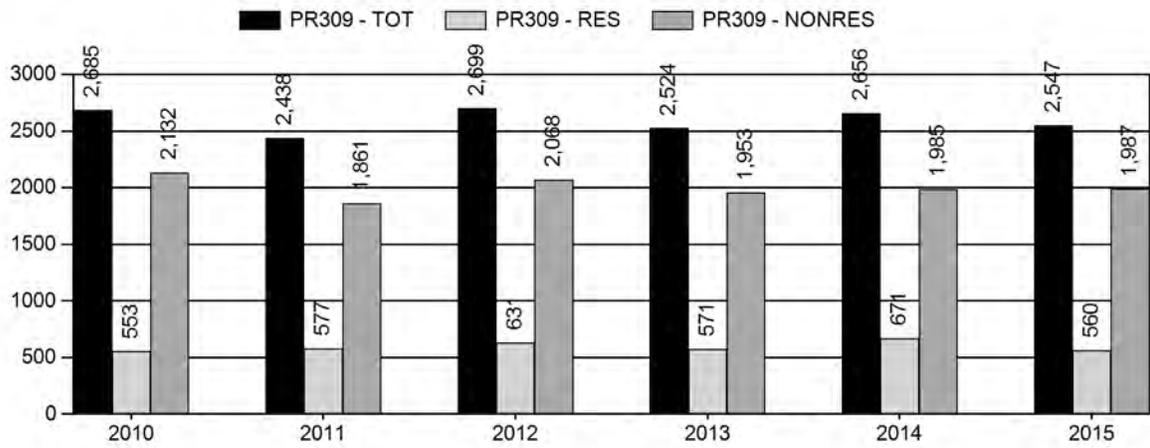
Population Size - Postseason



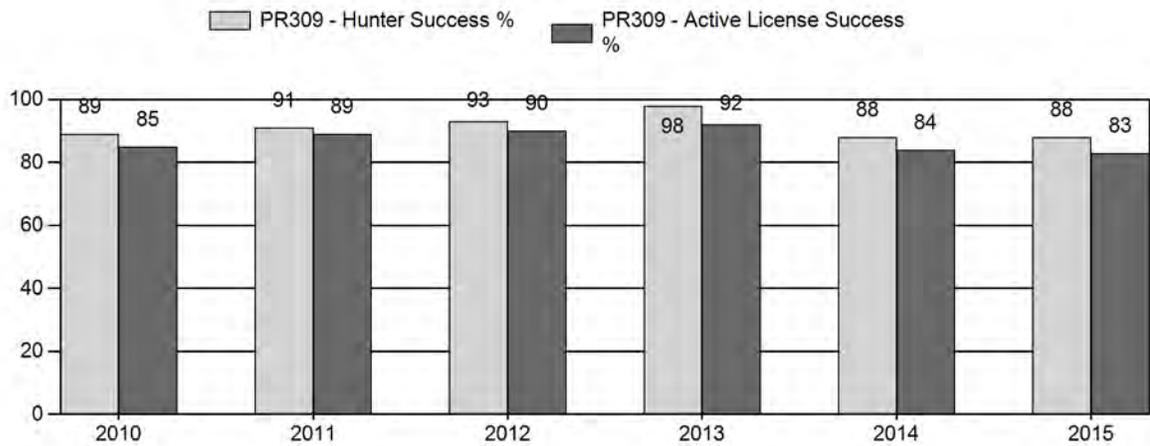
Harvest



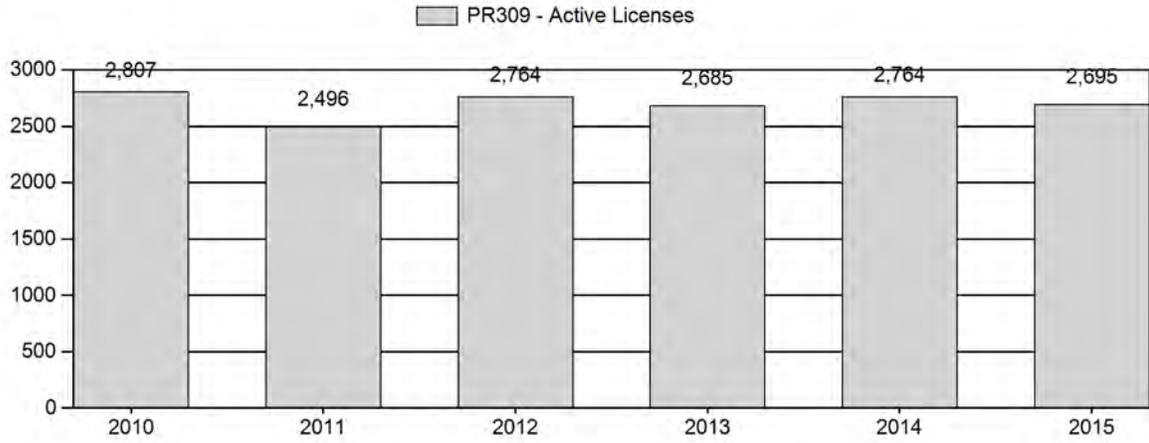
Number of Hunters



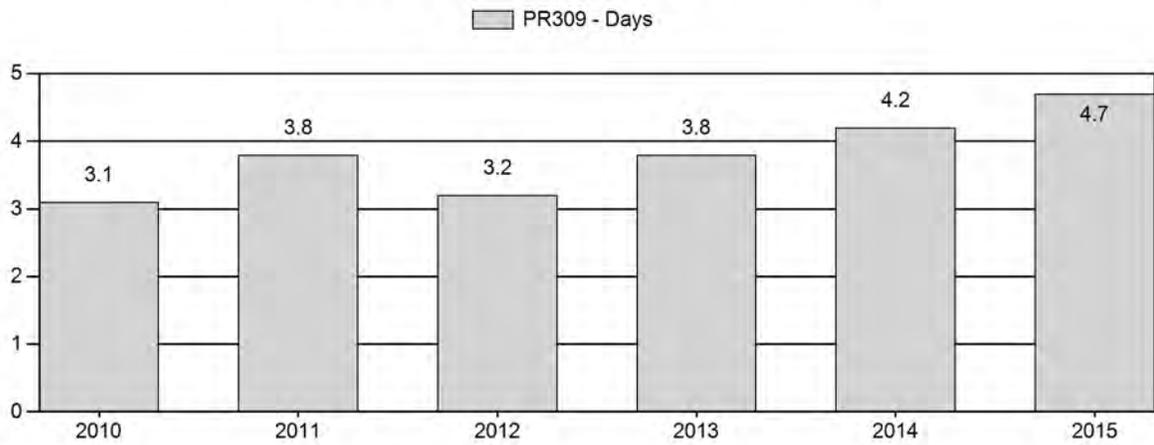
Harvest Success



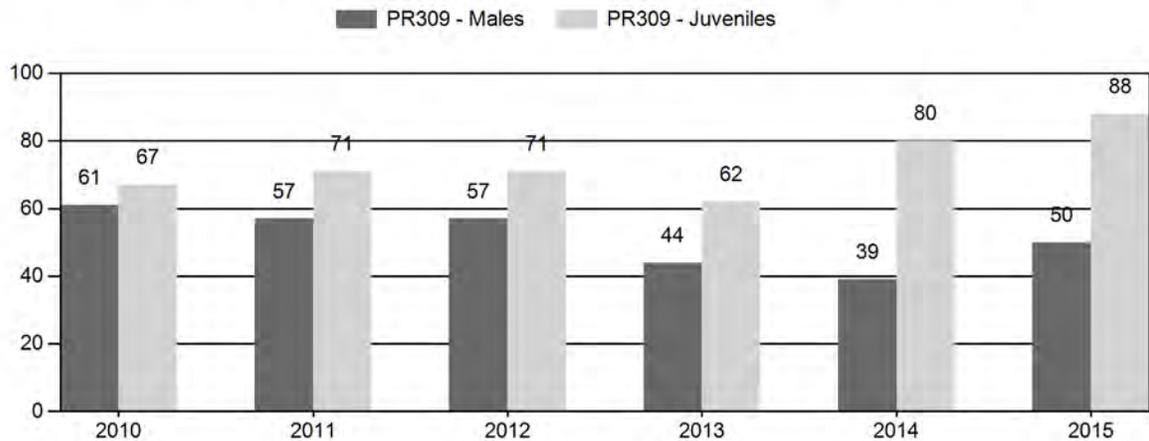
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR309 - PUMPKIN BUTTES

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	28,655	248	536	784	27%	1,294	44%	867	29%	2,945	2,740	19	41	61	± 4	67	± 5	42
2011	27,762	172	284	456	25%	796	44%	563	31%	1,815	2,713	22	36	57	± 5	71	± 6	45
2012	26,685	195	188	383	25%	672	44%	479	31%	1,534	2,748	29	28	57	± 6	71	± 7	45
2013	24,305	183	317	500	22%	1,129	49%	695	30%	2,324	2,050	16	28	44	± 4	62	± 5	43
2014	24,494	134	199	333	18%	853	46%	682	37%	1,868	2,097	16	23	39	± 4	80	± 6	58
2015	24,769	239	290	529	21%	1,063	42%	935	37%	2,527	2,866	22	27	50	± 4	88	± 6	59

**2016 HUNTING SEASONS
PUMPKIN BUTTES PRONGHORN HERD (PR309)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
23	1	Oct. 1	Oct. 31	400	Limited quota	Any antelope
23	2	Oct. 1	Oct. 31	1,400	Limited quota	Any antelope valid on private land
23	6	Oct. 1	Oct. 31	300	Limited quota	Doe or fawn
23	7	Oct. 1	Oct. 31	1,000	Limited quota	Doe or fawn valid on private land

Special Archery Season Hunt Areas	Opening Date	Limitations
23	Aug. 15	Refer to Section 2 of this Chapter

SUMMARY OF CHANGES IN LICENSE NUMBERS

Hunt Area	Type	Quota change from 2015
23	1	-1,350
	2	+1,400
	6	-1,000
	7	+1,000
Herd Unit Total	1	-1,350
	2	+1,400
	6	-1,000
	7	+1,000

Management Evaluation

Current Postseason Population Management Objective: 18,000

Management Strategy: Private Lands

2015 Postseason Population Estimate: ~22,300

2016 Proposed Postseason Population Estimate: ~22,200

2015 Hunter Satisfaction: 83% Satisfied, 8% Neutral, 9% Dissatisfied

Herd Unit Issues

The postseason population objective for the Pumpkin Buttes Pronghorn Herd Unit is 18,000 pronghorn. The management strategy is private lands management. The objective and

management strategy were last reviewed and updated in 2015. The postseason management objective of 18,000 pronghorn was maintained by the Wyoming Game and Fish Commission while the management strategy was changed from recreational management to private lands management.

The primary issue with achieving adequate harvest in this herd is hunter access, as most of the pronghorn are found on private lands. A second issue, related to the first, is that accessible public lands have been very heavily hunted in past years. Hunters have complained about the crowded conditions compared to the number of available pronghorn on public lands. There have also been problems with hunters trespassing onto private lands. During the 2015 season setting process the concept of lowering the number of licenses valid on public lands while adding any antelope and doe/fawn reduced price antelope license types that would only be valid on private land was proposed for 2016. This proposal was well received and therefore was implemented in 2016.

During the early to mid-2000's, extensive coal bed methane development occurred in the herd unit and resulted in a network of roads and other development associated with the infrastructure required to support coal bed methane extraction. This development has tapered off and in some portions of this herd unit wells are being abandoned and reclaimed. Proper reclamation will be integral in keeping habitat intact. Portions of this herd unit have also experienced increased activity pertaining to conventional oil well drilling and production, with many wells transitioning from the planning to development stage. In the southern part of this herd unit there is also uranium mining that is occurring. Although this herd unit has experienced various forms of energy development, it still contains excellent pronghorn habitat.

Weather

Weather throughout 2014 and into 2015 was optimal for rangeland conditions in this area. The growing season commenced with plentiful rainfall and ideal conditions to produce ample forage in the majority of this herd unit. The winter of 2014-2015 was moderate with not much for snow accumulation, or prolonged snow cover. The winter of 2015-16 was also mild to moderate with minimal snow and frequent above average temperatures. The Palmer Drought Index indicates that throughout 2015, the conditions in the Powder River drainage were mostly "mid-range" interspersed with 4 months of "moderately moist". During the majority of these two winters, the ground was open, with minimal snowpack. As a result over winter survival was likely high.

Habitat

The Schoonover Wyoming Big Sage habitat transect is located within this herd unit. The utilization is typically very light on this transect however this year the hedging score for this transect was noticeably higher than the ten year average. In the fall of 2015 the transect survey showed the average leader growth to be 3.8 cm, which was also higher than the ten year average for leader growth on this transect.

Field Data

This herd has the potential for rapid growth as has been seen in years past. Historically there have been years where 80+ fawns per 100 does have been classified, though in the more recent

past this has not been the case. In 2015 the fawn to doe ratio was 88, up from 80 in 2014. Previous to these two years, fawn ratios were in the 60's and low 70's for several years which resulted in a lower population. The buck ratio is typically fairly high in this herd unit. Classifications in 2015 yielded an observed buck ratio of 50, which is fairly consistent with the preceding 5-year average of 52. As this is a predominantly private land areas, landowner post-seasons surveys are considered. Sixty percent of respondents felt that the pronghorn numbers were at objective while 83% of hunters reported being either "very satisfied" or "satisfied".

Harvest

In 2015 there were 3,050 licenses available, 1,750 Type 1 any antelope and 1,300 Type 6 doe/fawn licenses. Both license types were sold out by the close of the season. Hunter success in this herd unit has averaged 92% over the preceding 5 years. In 2015 the overall success rate was 88%. It is felt that in 2014 and 2015 this hunt area received more pressure from hunters unfamiliar with the predominantly private land around Gillette than was typical. A high volume of non-resident hunter phone calls were received, with numerous people stating that they didn't draw where they typically do. As there were plentiful licenses after the draw, people noticed this and likely purchased licenses without having access to private land. In years past, licenses have not always sold out, and it is probable that in 2015 there were a fair number of people that were unable to harvest an animal due to very limited public access.

Population

The "Constant Juvenile – Constant Adult Mortality Rate" (CJCA) spreadsheet model was chosen to use for the post season population estimate of this herd (AIC value 151). The model appears to generally represent the population and trend of a peak population around 2006 and then declining. The model is considered a fair model. The 2015 post-season population estimate was 22,300.

The last line transect survey was conducted in this herd unit in June of 2013, which resulted in an estimated population of 14,300 pronghorn at that time (end of biological year). Line transects were also flown in 2006 and 2009, with estimates of 32,900 and 18,000, respectively. Unfortunately, there is not information present to calculate the Standard Error for the 2006 line transect. This line transect estimate is of little use to this model, except to evaluate the model on the point estimates. With continued mild winters coupled with good forage production, this herd will likely trend upwards unless stabilized by hunter harvest or disease.

Management Strategy

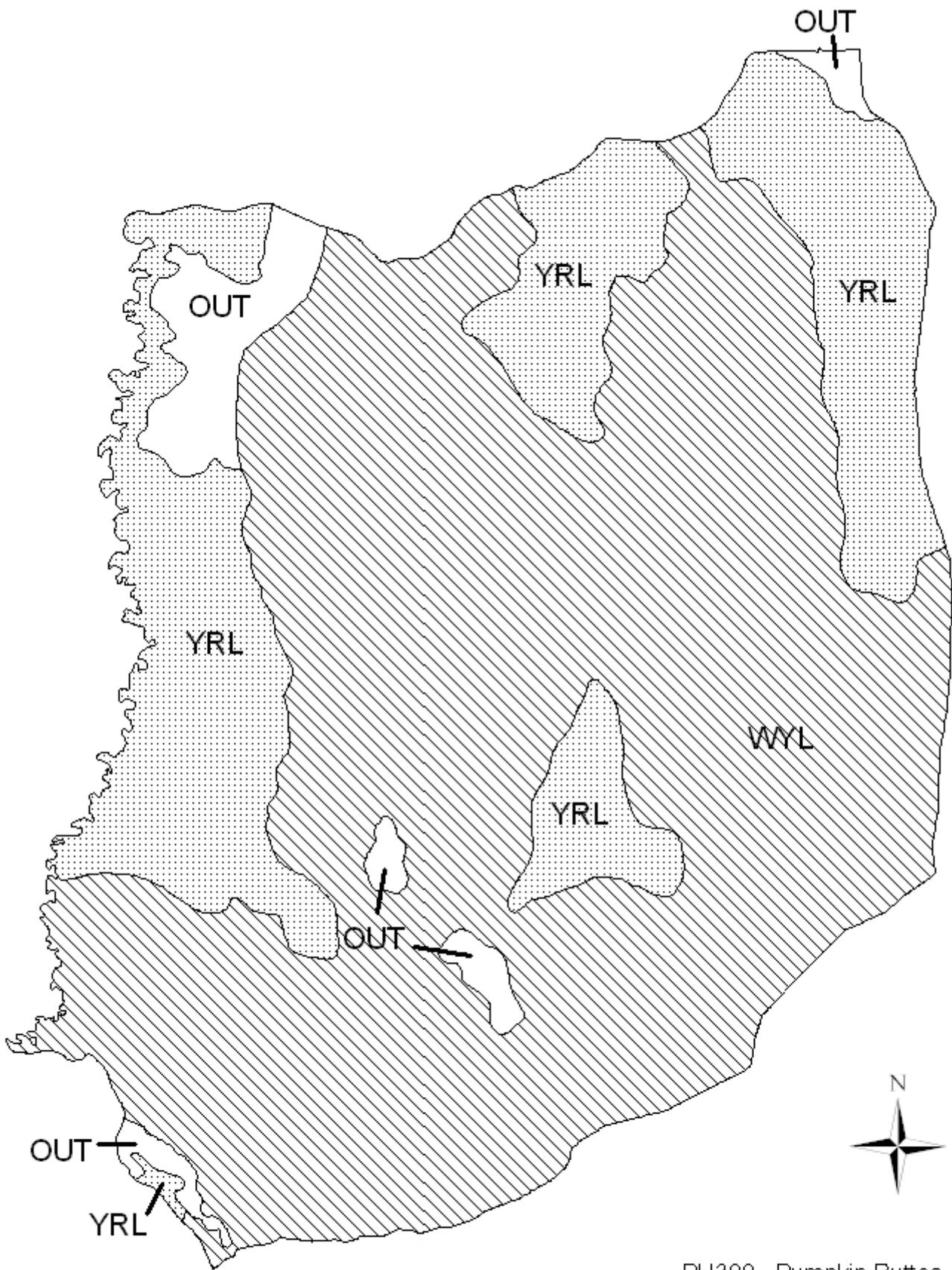
This herd has experienced an increase in pressure the last two hunting seasons. As previously stated, hunter phone calls and inquiries were very high in both 2014 and 2015 and licenses were sold out by the close of the season. Although this herd unit is designated as being predominantly private lands it seems there are a certain number of people that either disregard this or are unaware of this. Hunter comments for this area are usually centered on the lack of public land.

For the 2016 hunting season Type 2 any antelope and Type 7 doe/fawn antelope licenses valid only on private land were added while the number of Type 1 and Type 6 licenses allowing harvest on public land were greatly reduced. It is anticipated that having the majority of licenses in this hunt area as Type 2 and Type 7 licenses will allow for harvest of animals on private land

to attempt and keep this herd near the objective. Having a lesser number of Type 1 and Type 6 licenses will limit the number of public land hunters and thereby provide a higher quality hunt for those that purchase these licenses.

The traditional season in this hunt area has been the entire month of October. This season time and length seems to be adequate to allow a reasonable harvest. The majority (60%) of landowners that responded to the survey indicated that they feel pronghorn numbers are either around where they should be or are higher than they would like to see. According to both the model and field observations and data, this population peaked in 2006 at ~31,300 animals.

If we attain the projected harvest of 2,200 and near normal fawn recruitment, it is projected by the model that the population will slightly decrease.



PH309 - Pumpkin Buttes
HA 23
Revised - 3/87

2015 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2015 - 5/31/2016

HERD: PR318 - CRAZY WOMAN

HUNT AREAS: 22, 113

PREPARED BY: DAN THIELE

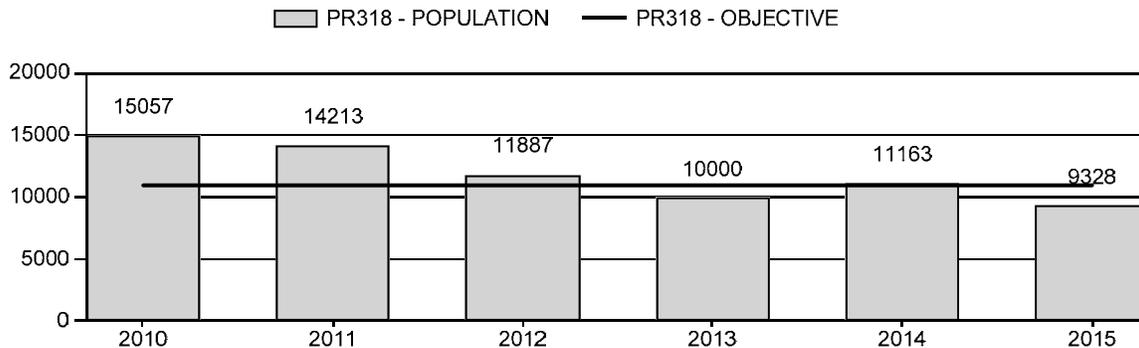
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	12,464	9,328	10,067
Harvest:	1,836	1,801	1,800
Hunters:	1,876	1,985	2,000
Hunter Success:	98%	91%	90%
Active Licenses:	2,105	2,091	2,100
Active License Success:	87%	86%	86%
Recreation Days:	6,673	6,834	6,500
Days Per Animal:	3.6	3.8	3.6
Males per 100 Females	59	47	
Juveniles per 100 Females	84	91	

Population Objective ($\pm 20\%$) :	11000 (8800 - 13200)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-15.2%
Number of years population has been + or - objective in recent trend:	1
Model Date:	2/10/2016

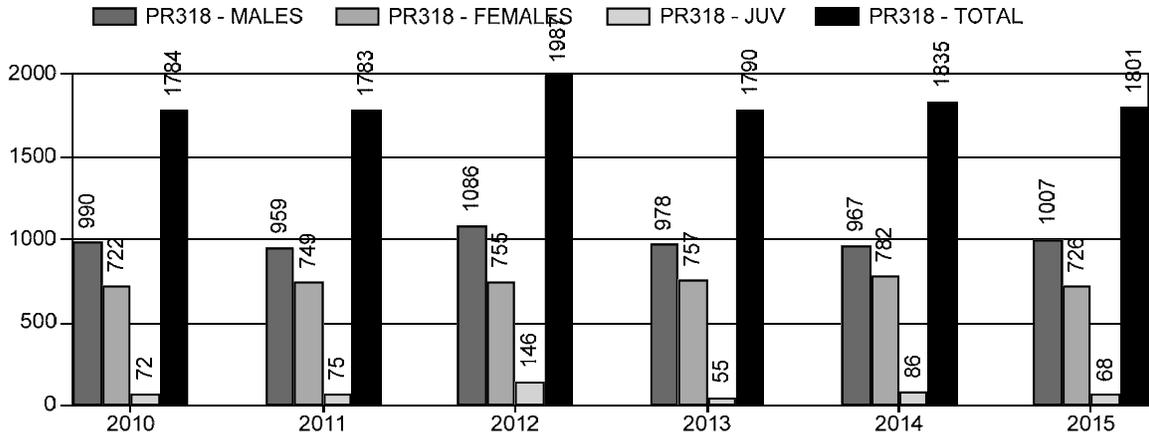
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	15%	14%
Males ≥ 1 year old:	35%	37%
Juveniles (< 1 year old):	1%	1%
Total:	14%	14%
Proposed change in post-season population:	-8%	-8%

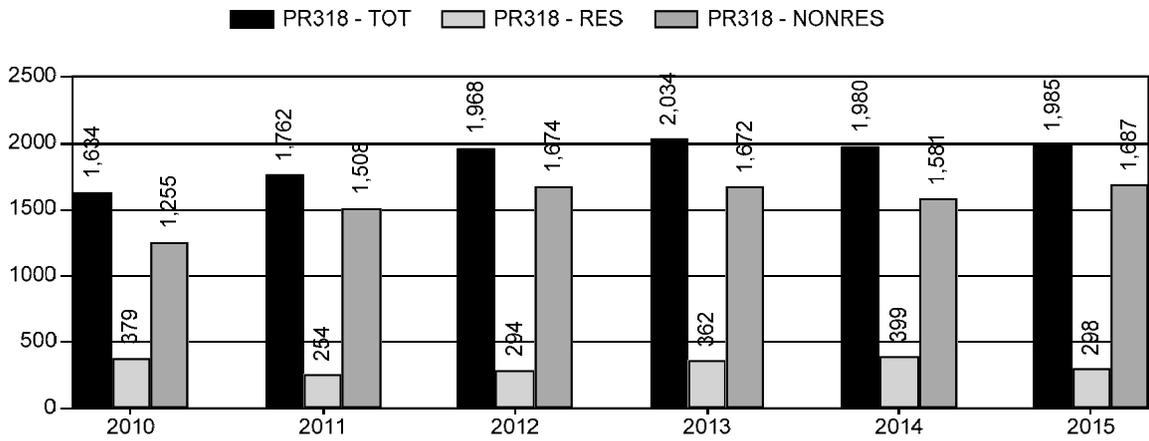
Population Size - Postseason



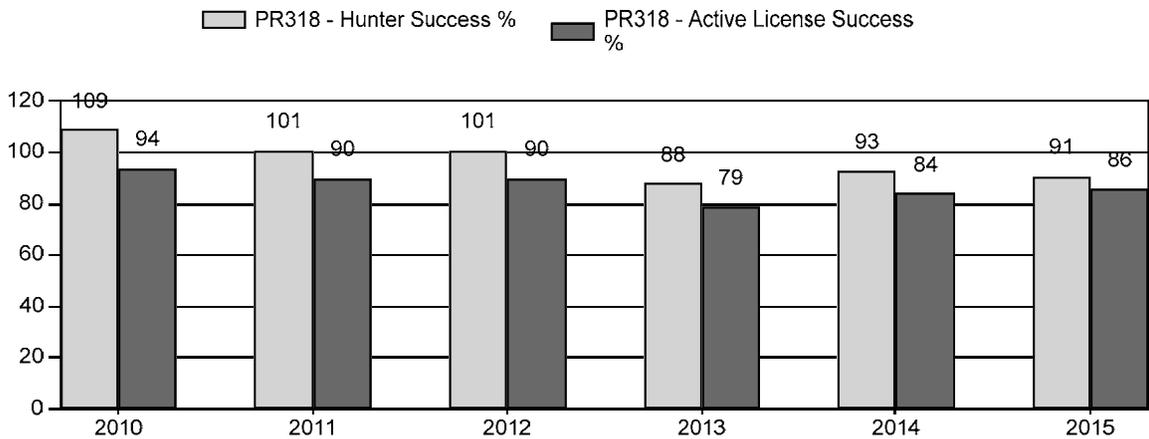
Harvest



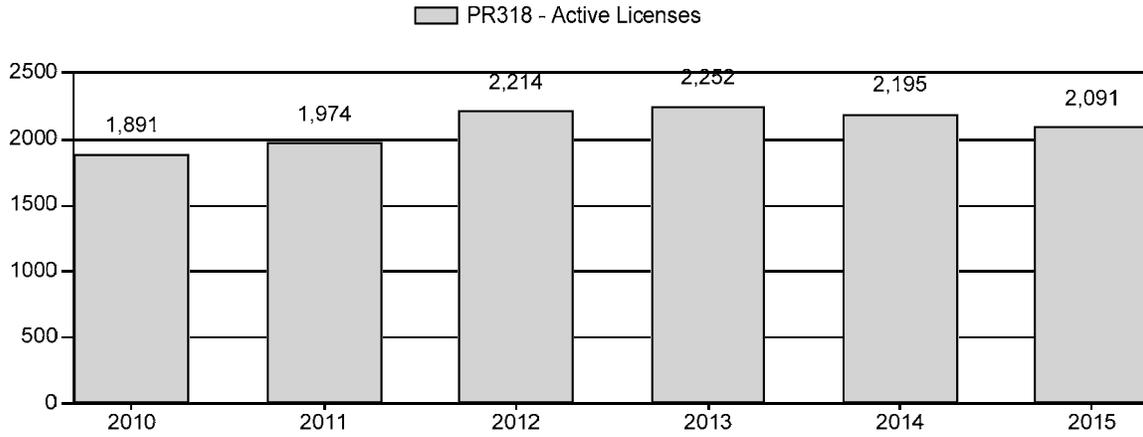
Number of Hunters



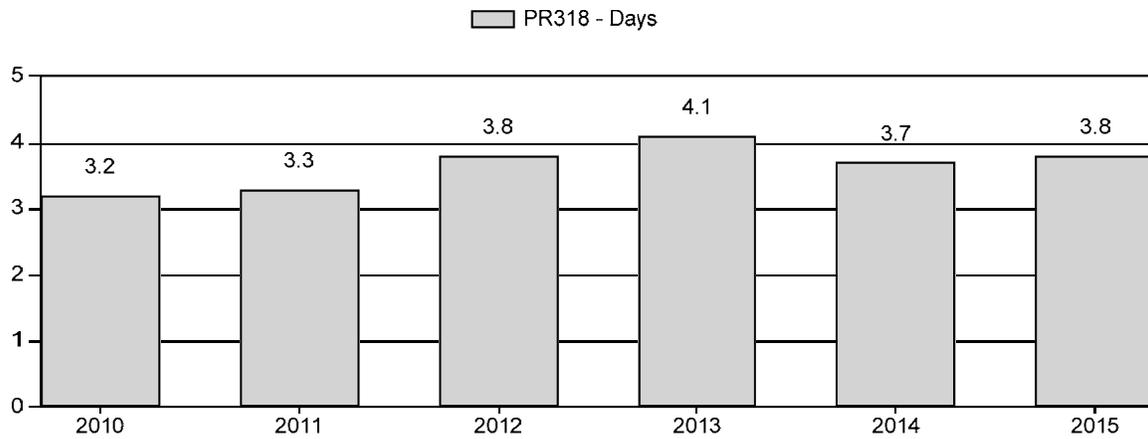
Harvest Success



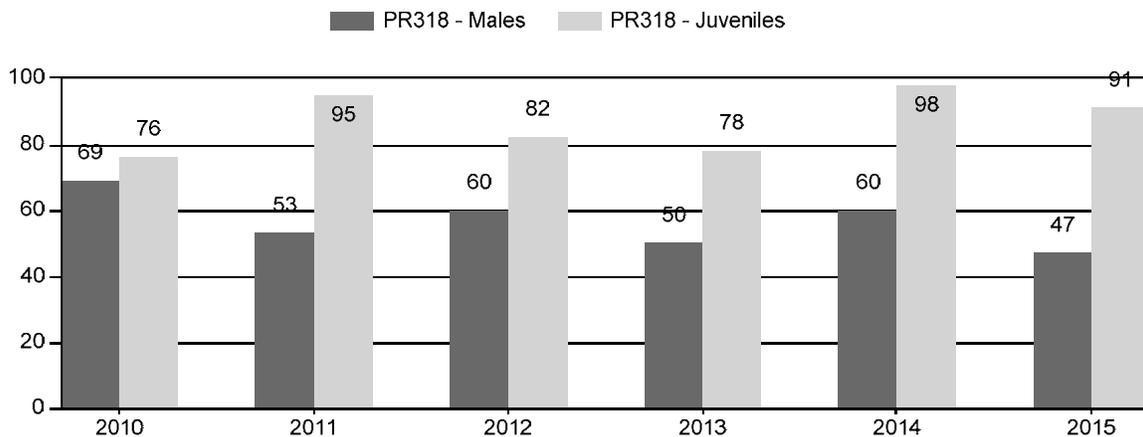
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR318 - CRAZY WOMAN

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	17,019	153	808	961	28%	1,392	41%	1,054	31%	3,407	2,727	11	58	69	± 4	76	± 5	45
2011	16,175	100	395	495	21%	936	40%	888	38%	2,319	3,889	11	42	53	± 4	95	± 7	62
2012	14,073	172	371	543	25%	911	41%	743	34%	2,197	3,069	19	41	60	± 5	82	± 6	51
2013	11,969	64	344	408	22%	818	44%	635	34%	1,861	2,745	8	42	50	± 5	78	± 6	52
2014	13,181	124	321	445	23%	743	39%	727	38%	1,915	3,790	17	43	60	± 5	98	± 8	61
2015	11,309	173	294	467	20%	989	42%	901	38%	2,357	3,311	17	30	47	± 4	91	± 6	62

**2016 HUNTING SEASONS
CRAZY WOMAN PRONGHORN HERD (PR318)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
22	1	Oct. 1	Oct. 31	1000	Limited quota	Any Antelope
22	6	Sept. 1	Sept. 30	800	Limited quota	Doe or fawn valid on private land north of Crazy Woman Creek
22	6	Oct. 1	Oct. 31		Limited quota	Doe or fawn valid in the entire area
113	1	Oct. 1	Oct. 31	150	Limited quota	Any antelope
113	2	Oct. 11	Oct. 31	150	Limited quota	Any antelope
113	6	Oct. 1	31	200	Limited quota	Doe or fawn

Special Archery Season Hunt Areas	Season Dates	
	Opens	Closes
22, 113	Aug. 15	Sep. 30

SUMMARY OF CHANGES IN LICENSES NUMBERS

Hunt Area	Type	Quota change from 2015
22		No change
113		No change
Herd Unit Total		No change

Management Evaluation

Current Postseason Population Management Objective: 11,000

Management Strategy: Recreational

2015 Postseason Population Estimate: ~9,300

2016 Proposed Postseason Population Estimate: ~10,100

Herd Unit Issues

The Crazy Woman Pronghorn Herd Unit post-season population objective was reviewed in 2013 and revised to 11,000 pronghorn. The management strategy remains recreational management.

Area 22 is largely private land with limited public land hunting opportunities. Therefore, access to hunt is largely determined by landowners. Increased outfitter leasing of ranches typically results in more restrictive access. Area 113 contains a large amount of inaccessible public land. Even with the expansive outfitting industry, at the herd unit level hunters are finding hunting

opportunity and surprisingly good success. This may be due in part to GPS technology that allows hunters to readily identify public and private land boundaries.

Weather

Weather in the area of the Crazy Woman Herd Unit during 2015 was very favorable for the second year in a row. May precipitation was double the normal followed by above normal June precipitation (132%). The Palmer Drought Index for Climate Division 5 (Powder, Little Missouri and Tongue drainages) showed “mid-range” conditions for May 2015 but improved to “moderately moist” in July and remained so for the rest of the biological year. For the calendar year, precipitation was normal but produced excellent forage growth due to the favorable rainfall during the growing season. Winter weather was very mild with moderate temperatures and limited snowfall.

Habitat

There is one Wyoming big sagebrush transect in this herd unit. Production measured in September 2015 averaged 5.3 cm per leader compared to 2.2 cm per leader in 2014 and a five year average of 1.9 cm per leader. Winter utilization during the 2015-16 winter was light (less than 5% of leaders browsed) as pronghorn and mule deer were dispersed over winter/yearlong range. Winter conditions were mild so above average pronghorn mortality was not observed. Complete shrub monitoring results are available in the appendix, Shrub Monitoring Report for the Sheridan Region.

Field Data

Classifications in 2015 yielded a fawn ratio of 91:100 and a buck ratio of 47:100. Fawn production and survival was excellent due to the abundant 2014 and 2015 precipitation and mild winter weather. The fawn ratio was down from the six year high of 98:100 in 2014 and compares to the five year average of 84:100. The 2014 fawn ratio was the highest since 1989. Buck ratios in this herd often exceed the 60:100 threshold designated for special management although high buck ratios are not managed for. Buck ratios equaled or exceeded 60:100 in three of the past six years. The 2015 buck ratio was 47:100, the lowest for the six year period and well below the five year average of 59:100. Buck ratios at the hunt area scale were similar with Area 22 at 48:100 and Area 113 at 45:100.

The annual postseason landowner survey was conducted following the hunting season with responses showing that 55% of landowners at the herd unit scale are satisfied with current pronghorn numbers. The five year trend shows a strong indication that this population is decreasing, reflecting the trend of the population model. A line transect survey flown in 2010 produced an end of year population estimate of 13,163 pronghorn, the highest estimate to date. Hunter satisfaction was high with Areas 22 and 113 hunters reporting 85% and 86% positive responses, respectively.

Harvest Data

The 2015 harvest survey reported the third highest total harvest for the six year period and fifth highest since 1985. Total harvest was stable while buck harvest increased 4% and doe/fawn harvest decreased 8% to equal the lowest doe/fawn harvest of the six year period. Hunter

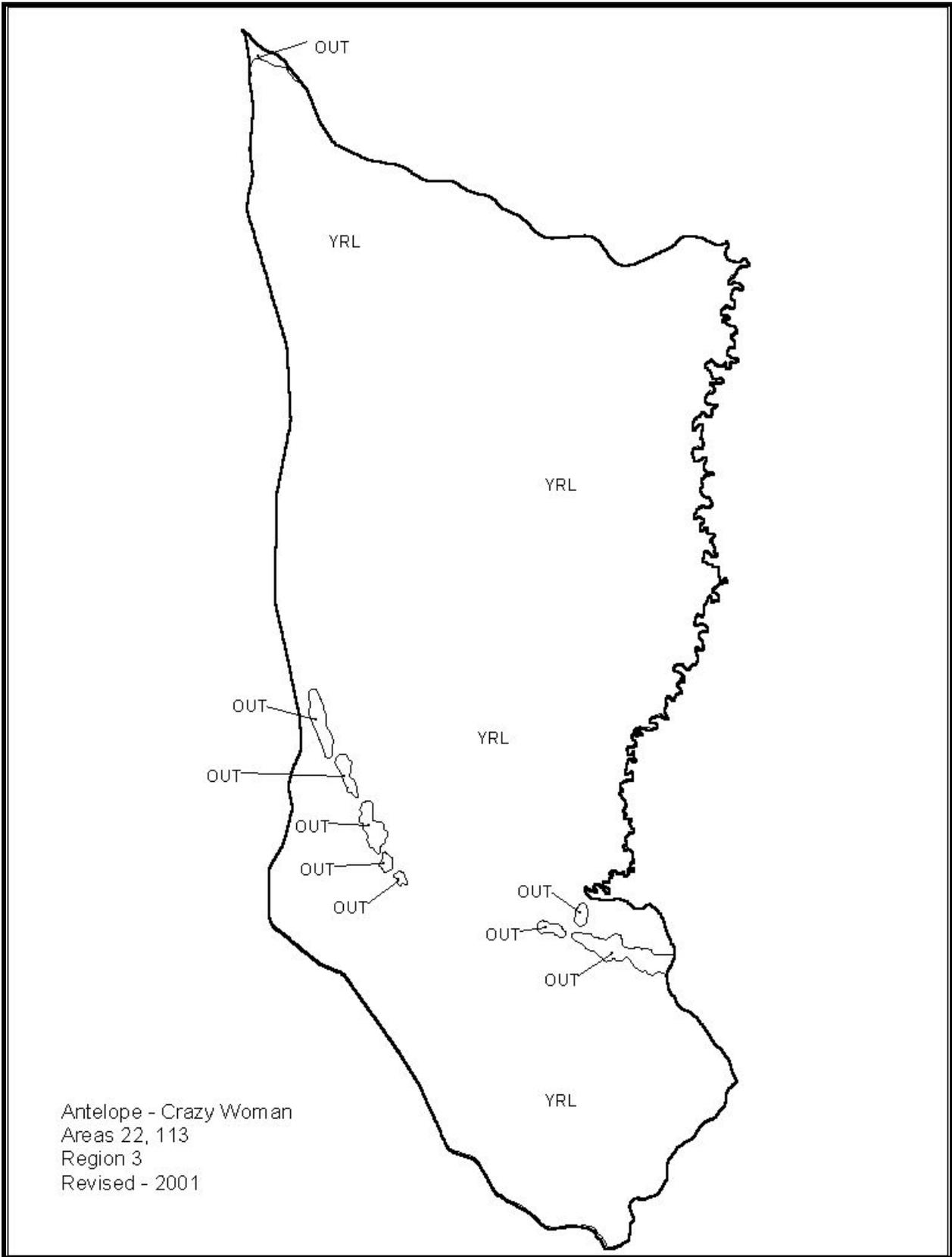
numbers remained very high as all license types sold out for the second year in a row. Interest in hunting northeast Wyoming hunt areas has increased as license quotas have become more conservative in other areas of the state. Ninety-one percent of licenses were used in the field resulting in 91% hunter success. Hunter success decreased two percentage points from 2014 while active license success increased two percentage points. Active license success has trended slightly downward over the six year period. Hunter effort (3.8 days/harvest) was similar to 2014 and slightly higher than the five year average of 3.6 days/animal. Multiple hunter comments were again received from Area 113 hunters complaining about the lack of access to the large parcels of landlocked public land.

Population

This population is estimated at 9,300 pronghorn, 15% below the objective of 11,000 pronghorn. This population objective corresponds closely with the 55% of responding landowners who are satisfied with the current population. Nearly 64% of Area 22 landowners who responded were satisfied with pronghorn numbers whereas a majority (56%) of Area 113 landowners thought numbers were too low. The population estimate was generated with the EXCEL spreadsheet model. The Semi-Constant Juvenile/Semi-Constant Adult (SCJ/SCA) model was chosen as it produced the lowest AIC value (65) and results are consistent with harvest and landowner survey trends. The model attempts to track four line transect surveys over the last 10 years. The model indicates this population has decreased about 47% from its 2005 high of just over 17,000 pronghorn and about 20% since 2012. It's probable this population is higher than estimated based on the continued high harvest and estimated high harvest percentages. Widely fluctuating buck ratios due to inadequate classification samples and conversion from aerial to ground surveys likely complicate modeling efforts. The model is considered a fair model due to inadequate classification samples and lack of independent survival estimates.

Management Summary

The population model is considered a fair model as the population trend and estimate appear reasonable. Harvest data, landowner surveys and WGFDD field observations confirm the decreasing trend represented in the model. Hunter interest has increased substantially in the last two years resulting in all license types selling. In Area 22, even with the high hunter numbers and limited public land hunting opportunity, hunters have experienced high hunter success. The 2015 license quota reductions in Area 113 helped reduce hunter access problems and increase hunter satisfaction and success. Hunter satisfaction increased from 67% in 2014 to 86% in 2015 while active license success increased from 78% in 2014 to 86% in 2015. Even so, numerous hunter comments were received about the lack of public access to land locked BLM lands. A reduction in the Area 22 quotas was considered but the very high 2014 and 2015 fawn ratios should maintain a stable segment of the population in Area 22. More conservative seasons will be warranted if the population continues to decrease. If projected harvest is achieved a postseason population of 10,100 pronghorn is projected.

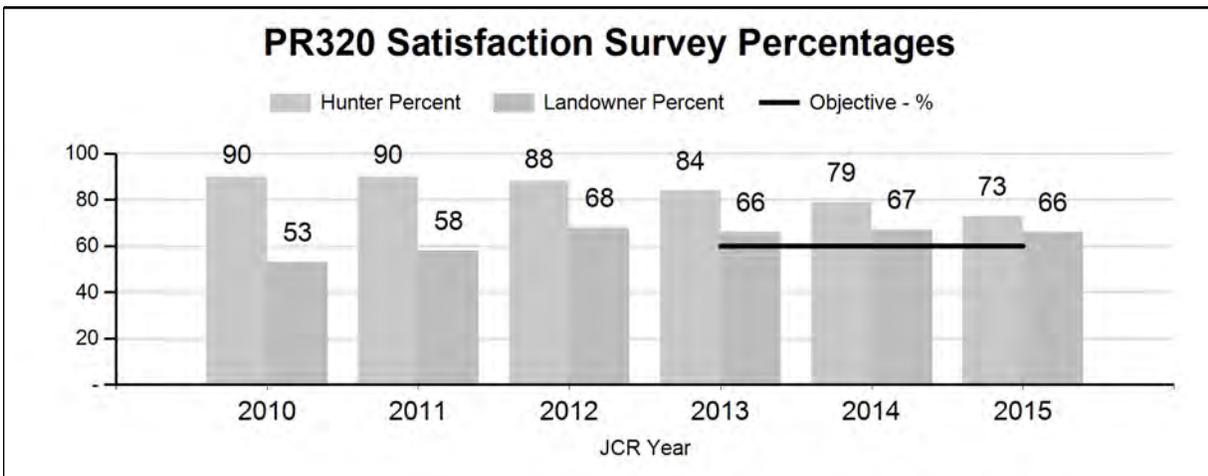


2015 - JCR Evaluation Form

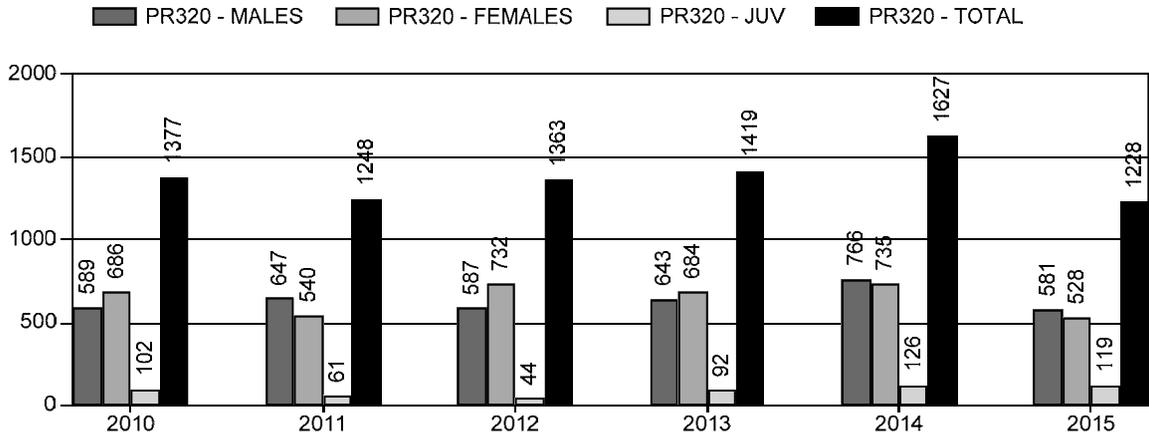
SPECIES: Pronghorn
 HERD: PR320 - HAZELTON
 HUNT AREAS: 20, 102

PERIOD: 6/1/2015 - 5/31/2016
 PREPARED BY: BUFFALO

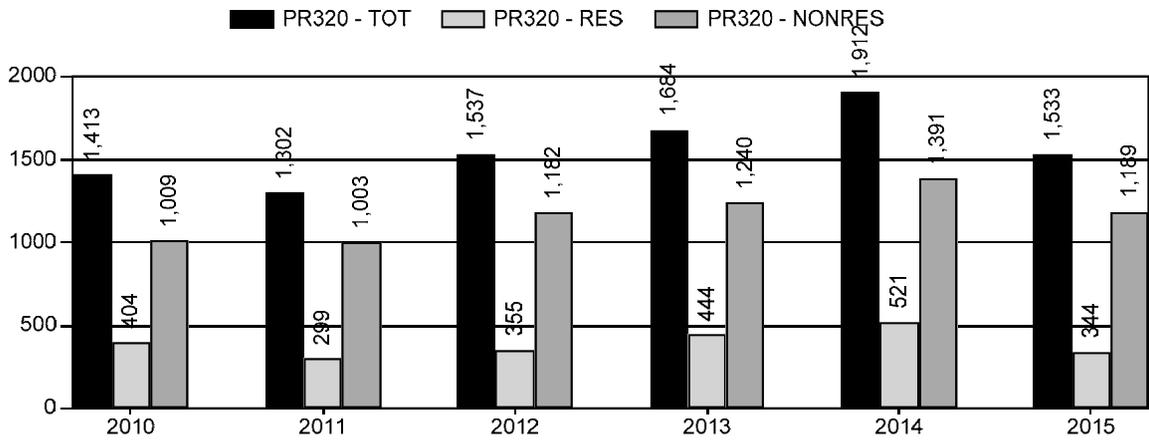
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Hunter Satisfaction Percent	86%	73%	85%
Landowner Satisfaction Percent	62%	66%	60%
Harvest:	1,407	1,228	1,200
Hunters:	1,570	1,533	1,400
Hunter Success:	90%	80%	86%
Active Licenses:	1,766	1,718	1,600
Active License Success:	80%	71%	75%
Recreation Days:	6,290	6,971	6,000
Days Per Animal:	4.5	5.7	5
Males per 100 Females:	69	82	
Juveniles per 100 Females	86	88	
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:			0



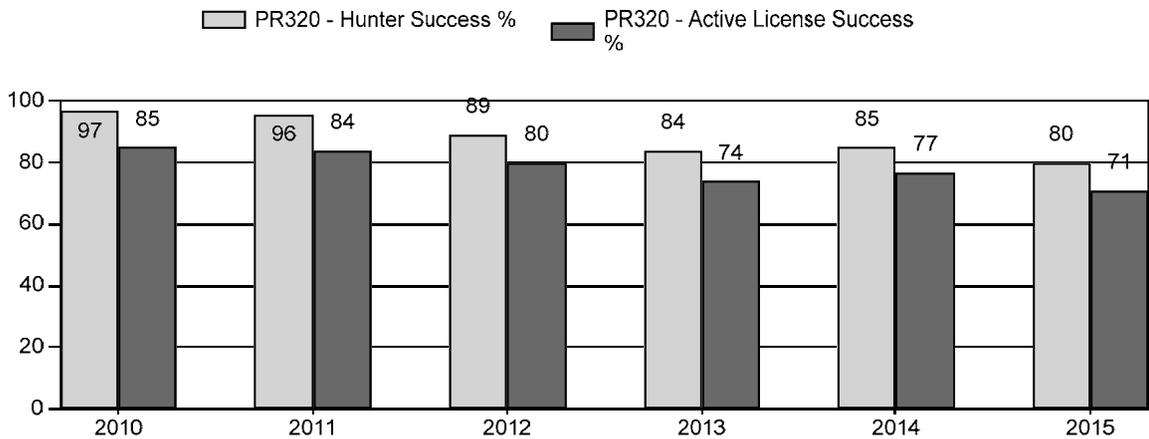
Harvest



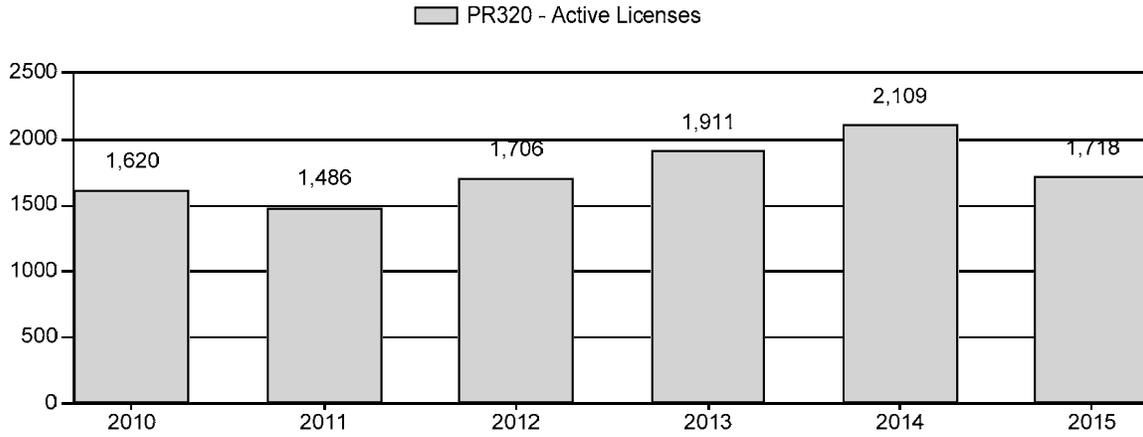
Number of Hunters



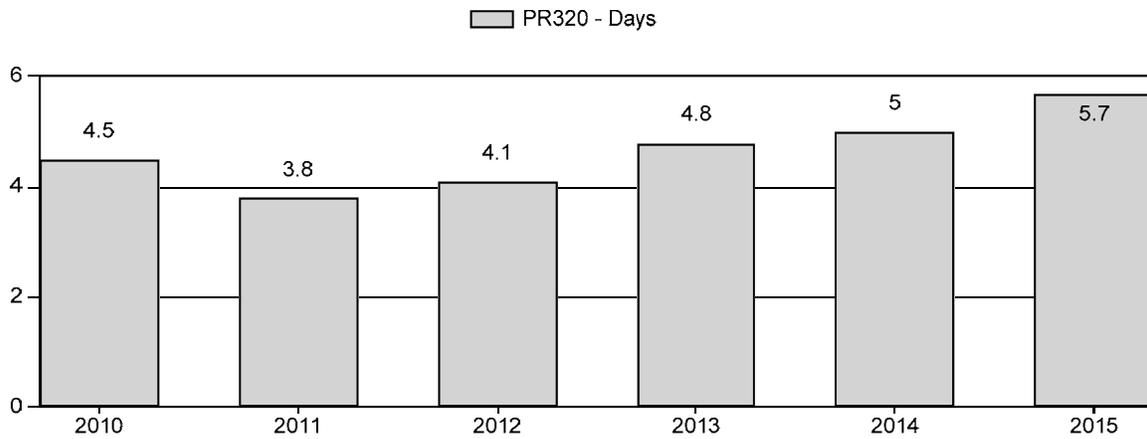
Harvest Success



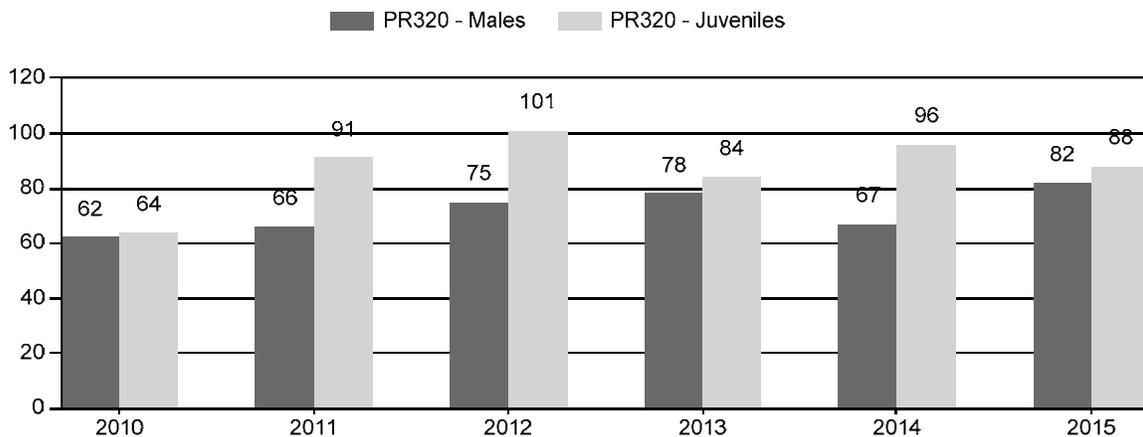
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR320 - HAZELTON

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	6,275	161	601	762	27%	1,225	44%	786	28%	2,773	3,715	13	49	62	± 12	64	± 14	40
2011	6,727	117	362	479	26%	730	39%	666	36%	1,875	5,339	16	50	66	± 12	91	± 14	55
2012	5,718	253	512	765	27%	1,020	36%	1,032	37%	2,817	4,949	25	50	75	± 9	101	± 10	58
2013	0	211	430	641	30%	817	38%	688	32%	2,146	5,131	26	53	78	± 0	84	± 0	47
2014	0	198	465	663	25%	993	38%	949	36%	2,605	3,080	20	47	67	± 0	96	± 0	57
2015	0	193	426	619	30%	753	37%	663	33%	2,035	2,905	26	57	82	± 0	88	± 0	48

**2016 HUNTING SEASONS
HAZELTON PRONGHORN HERD (PR320)**

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

Special Archery Season Hunt Areas	Season Dates	
	Opens	Closes
20, 102	Aug. 15	Oct. 14

SUMMARY OF CHANGES IN LICENSES NUMBERS

Hunt Area	Type	Quota change from 2015
20	1	-100
	6	-200
102		No change
Herd Unit Total	1	-100
	6	-200

Management Evaluation

Current Postseason Population Management Objective: 60% Landowner/Hunter Satisfaction

Management Strategy: Private Lands

2015 Landowner Satisfaction Survey: 62%

2015 Hunter Satisfaction Survey: 73%

2015 Postseason Population Estimate: ~5,900 (unreliable population model)

2016 Proposed Postseason Population Estimate: ~4,350

2015 Hunter Satisfaction: 73% Satisfied, 12% Neutral, 15% Dissatisfied

Herd Unit Issues

The Buffalo (Hunt Area 102) and Upper Powder River (Hunt Area 20) Pronghorn Herd Units were combined in 2013, adopting a landowner and hunter satisfaction post-season population

objective and a private lands management strategy. This year, the herd was renamed to “Hazelton” to provide for the maintenance of historical herd data in the JCR program.

This herd unit is predominately private land with limited public land hunting opportunity resulting in a disproportionate amount of hunting pressure on accessible public land. Subdivisions, restrictive access to private land and landlocked public land aggravates this situation. In recent years several ranches have changed ownership resulting in reduced hunting access. Typically, traditional ranching operations are bought by nonresident landowners with more conservative hunting philosophies. Increased outfitter leasing of ranches reduces the number of hunters a given ranch will take. These factors contribute to high buck ratios, difficulty in placing hunters and attaining needed harvest. Additionally, pronghorn are often displaced from ranches that allow hunting to neighboring ranches that take limited numbers of hunters, or no hunters.

Habitat is a combination of sagebrush grassland and grassland habitat with interspersed irrigated hay meadows. With the exception of the southern one-third of Area 20, sagebrush habitat is scattered at best. The population is characterized by high densities of pronghorn with high fawn ratios and high buck ratios. The Area 102 segment is somewhat immune from effects of drought because of the occurrence of irrigated meadows interspersed throughout much of the herd unit. Complaints of crop depredation are common in Area 102.

Weather

Weather in the area of the Hazelton Herd Unit during 2015 was very favorable for the second year in a row. May precipitation was double the normal followed by above normal June precipitation (132%). The Palmer Drought Index for Climate Division 5 (Powder, Little Missouri and Tongue drainages) showed “mid-range” conditions for May 2015 but improved to “moderately moist” in July and remained so for the rest of the biological year. For the calendar year, precipitation was normal but produced excellent forage growth due to the favorable rainfall during the growing season. Winter weather was very mild with moderate temperatures and limited snowfall.

Habitat

There are no established habitat transects in this herd unit. However, in two adjacent herd units production for two Wyoming big sagebrush transects measured in September 2015 averaged 5.3 cm and 4.7 cm per leader compared to 2.7 cm and 1.9 cm per leader in 2014, respectively. Winter utilization during the 2015-16 winter was light (less than 5% of leaders browsed) as pronghorn and mule deer were dispersed over winter/yearlong range. Winter conditions were mild so above average pronghorn mortality was not observed. Complete shrub monitoring results are available in the appendix, Shrub Monitoring Report for the Sheridan Region.

Field Data

Classifications the last five years show fawn ratios exceeding 80:100 suggesting this herd may be increasing even with the increased harvest through 2014. It should be noted, however, that with the elimination of aerial classifications in Area 20, fawn ratios showed a notable increase suggesting inaccessible areas with lower fawn productivity are not being represented in the sample. The buck ratio fluctuated, increasing from 67:100 in 2014 to 82:100 in 2015. The

classifications should be viewed with caution as the survey sample has been statistically inadequate.

Sixty-six percent of responding landowners surveyed following the hunting season indicated that numbers were acceptable while 24% thought numbers were too high. These results were nearly identical to the 2014 survey results. Results for both hunt areas were similar. The landowner survey over the past several years shows a trend suggesting numbers are stable in both hunt areas.

Hunters responding to the 2015 hunter satisfaction survey reported low hunter satisfaction for Area 20 (66%) and high satisfaction for Area 102 (81%). In Area 20, 21% of hunters expressed some level of dissatisfaction reflecting the 65% active license success.

Harvest Data

Total harvest (1,228) decreased following increases the last three years due to a 25% reduction in license numbers. Total harvest dropped to the lowest level of the six year period. Even with a 20% reduction in hunter numbers, hunter success (80%) and active license success (71%) decreased to the lowest levels for the six year period. Furthermore, hunter effort reached a six year high at 5.7 days per animal harvested. Hunters in Area 20 experienced particularly difficult hunting as they averaged 65% active license success and 6.0 days per animal harvested. Both areas offer very limited public land hunting opportunity and even though pronghorn densities are high, securing private land access ensures a successful hunt. There appears to be increased interest in hunting in this part of Wyoming as license quotas have been reduced in other areas of the state. Hunters unsuccessful in the license draw pick up leftover licenses in northeast Wyoming and take their chances on public lands. Private land access is essential to achieving harvest objectives. All license types sold out before the October 15th openers

Population

This herd has a 2015 post-season population estimate of 5,900 pronghorn, up slightly from the 2014 estimate due to the high fawn ratio. The population estimate was generated with the EXCEL spreadsheet model. The semi-constant juvenile/semi-constant adult (SCJ/SCA) option was chosen as it produced the lowest AIC value (68), although none of the models produced a realistic population estimate. Modeling efforts are complicated by the fact that no herd unit wide line transect estimate is available for a given year. The model suggests a steadily decreasing population from a high of nearly 14,000 pronghorn in 2005. This model trend is supported by the harvest data showing lower hunter success and higher hunter effort, although the low population estimate is incapable of supporting this level of continued harvest. Modeling into 2016 suggests the projected harvest will continue to decrease this population. Conversely, the high fawn ratios the last five years and private land access would suggest it is not possible to decrease this population to the extent modeled by hunting alone. Therefore, the model is considered a poor model and warrants an abundance estimate with which to align the model. A more accurate population estimate is desirable but not immediately necessary to manage this herd. The population is now managed under a landowner and hunter satisfaction objective which is appropriate for this private land herd. The landowner satisfaction survey results showed 66% of respondents are satisfied with the postseason population. Hunter satisfaction has easily exceeded the 60% objective for the three years the new objective has been in place.

Management Summary

The 2016 hunting season includes continuation of the Area 102 September Type 6 season to address landowner concerns with depredation to irrigated hay meadows. This season has increased in popularity and corresponds to a doe/fawn white-tailed deer season because landowners deal with high numbers of both species. A reduction in Area 20 Type 1 and Type 6 license quotas was made to account for low active license success (65%) and increased hunter effort (6.0 days per animal harvested). The license reduction amounts to an additional herd unit decrease of 14% after the 25% decrease in 2015.

License quotas will be more than adequate to address depredation and herd growth potential if hunter access is available. The opportunity to manage for a lower population is reasonable given depredation concerns and limited sagebrush habitat in the two hunt areas. Private land access will ultimately determine the level of harvest achieved in these hunt areas.

A harvest of 1,200 pronghorn is projected for the 2016 hunting season if access improves and hunter success increases. An unreliable postseason population of 4,350 pronghorn is projected.

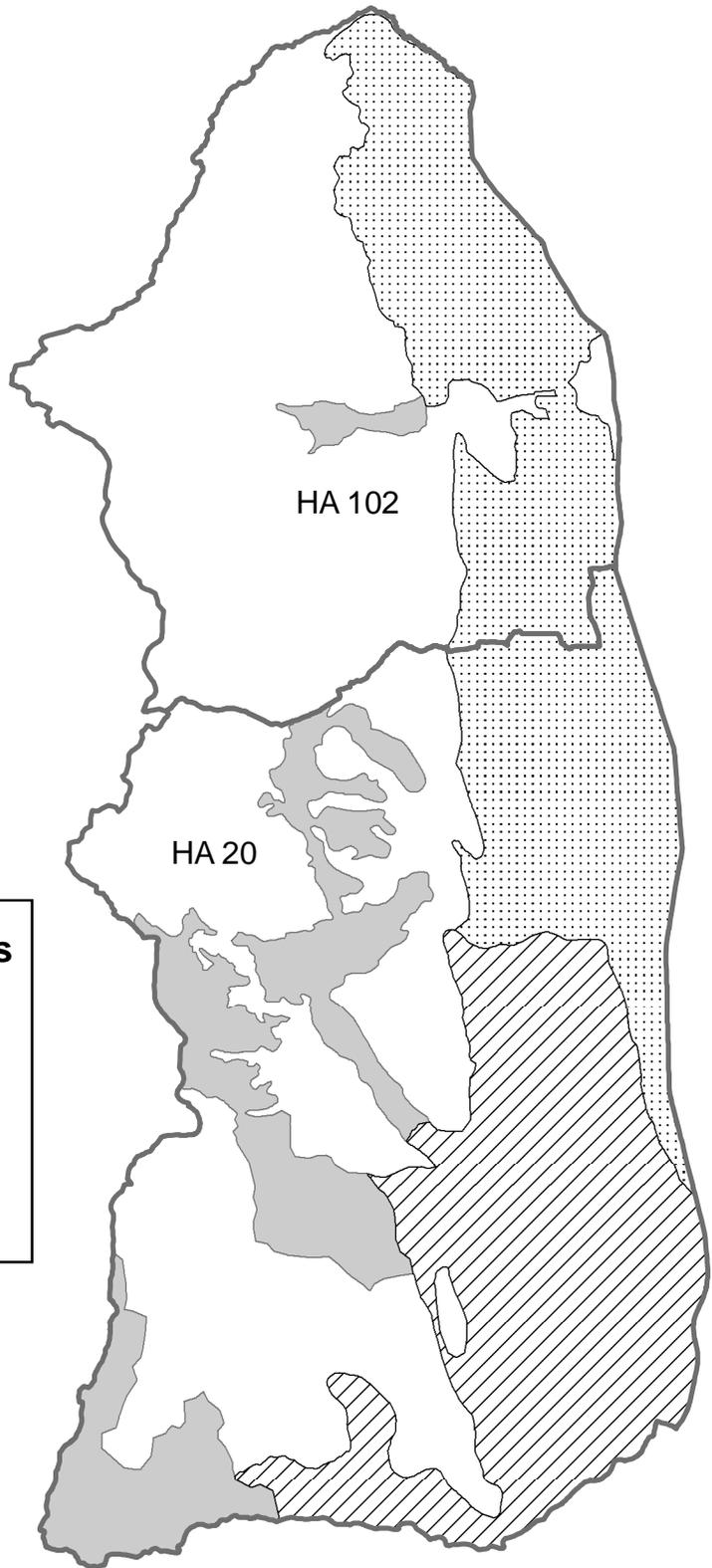


PR-320 - Hazelton
HA's 20, 102
Revised 7/15

Hazelton Seasonal Ranges

RANGE

	OUT
	SSF
	WYL
	YRL

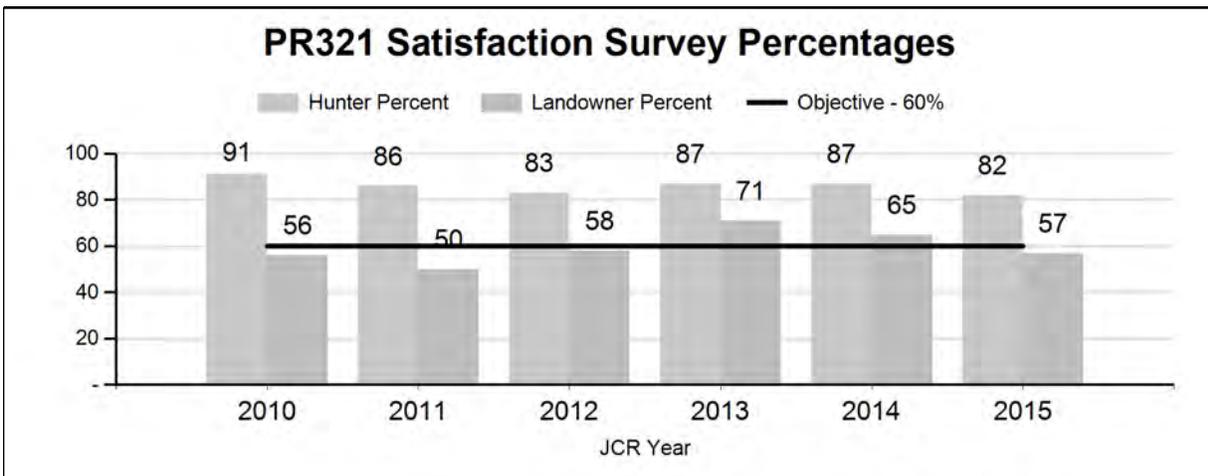


2015 - JCR Evaluation Form

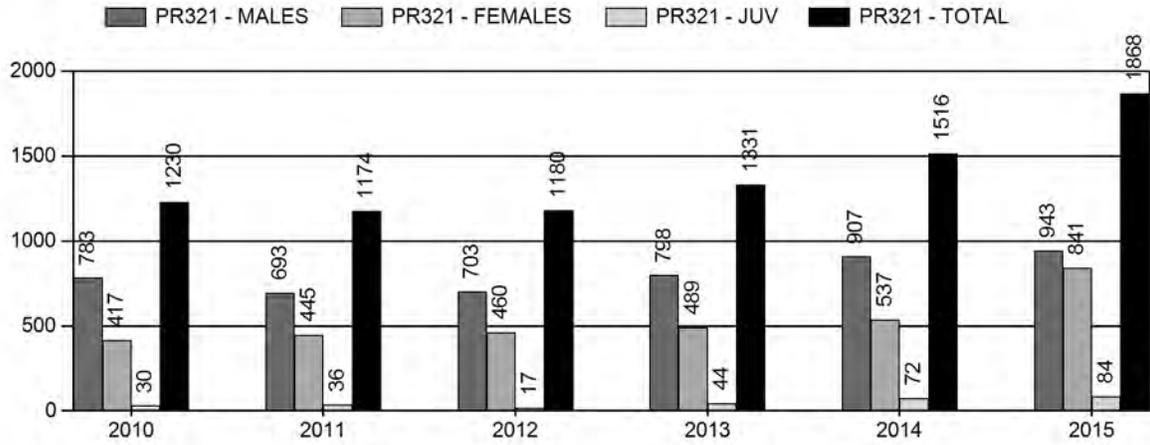
SPECIES: Pronghorn
 HERD: PR321 - LEITER
 HUNT AREAS: 10, 15-16

PERIOD: 6/1/2015 - 5/31/2016
 PREPARED BY: TIM THOMAS

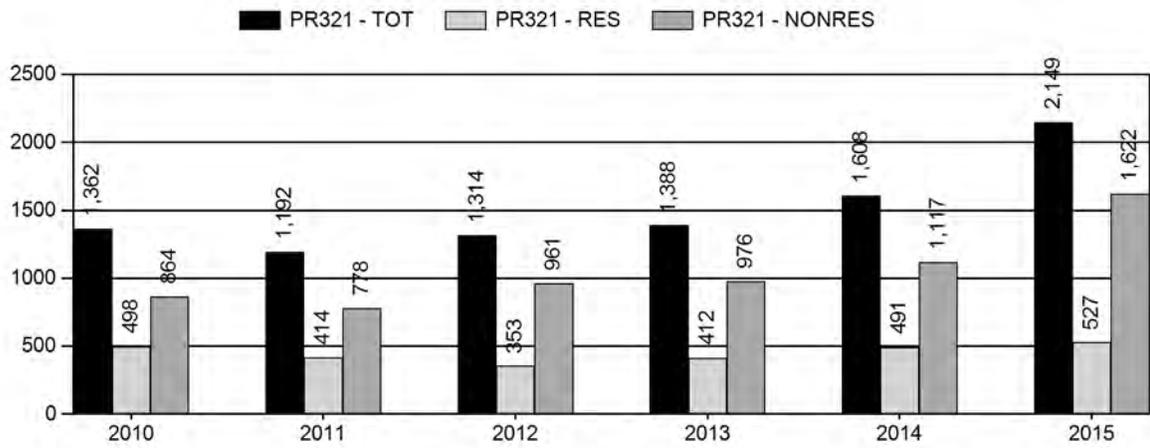
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Hunter Satisfaction Percent	87%	82%	85%
Landowner Satisfaction Percent	61%	57%	60%
Harvest:	1,286	1,868	1,900
Hunters:	1,373	2,149	2,200
Hunter Success:	94%	87%	86%
Active Licenses:	1,575	2,384	2,500
Active License Success:	82%	78%	76%
Recreation Days:	4,677	6,972	7,100
Days Per Animal:	3.6	3.7	3.7
Males per 100 Females:	57	57	
Juveniles per 100 Females	70	72	
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:			3



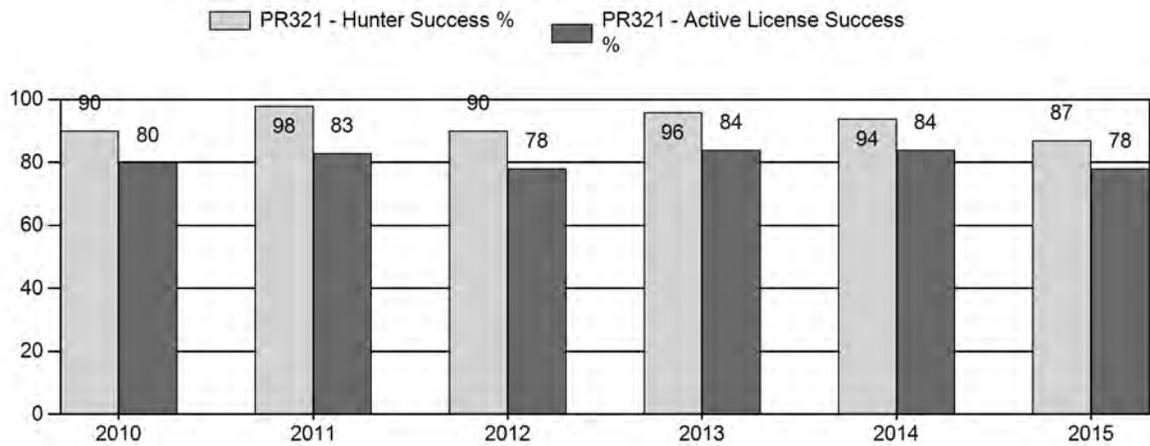
Harvest



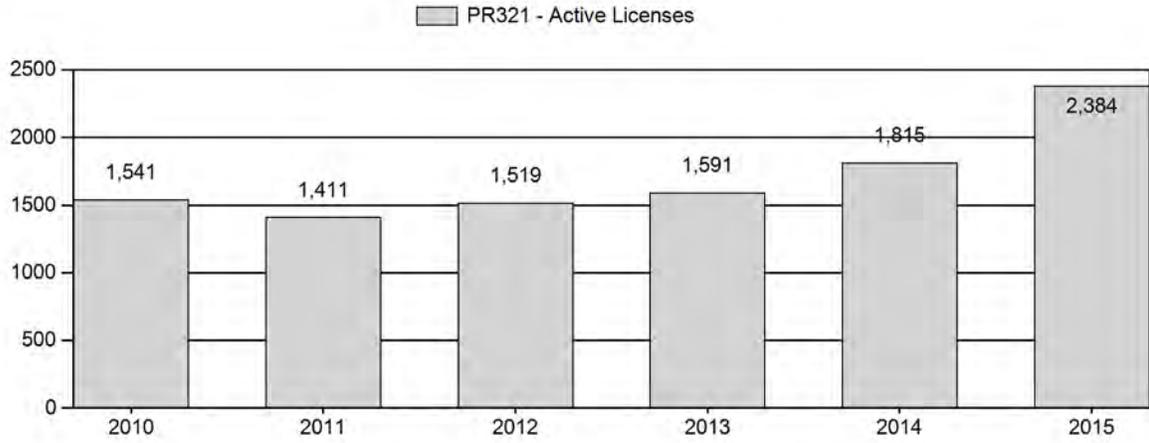
Number of Hunters



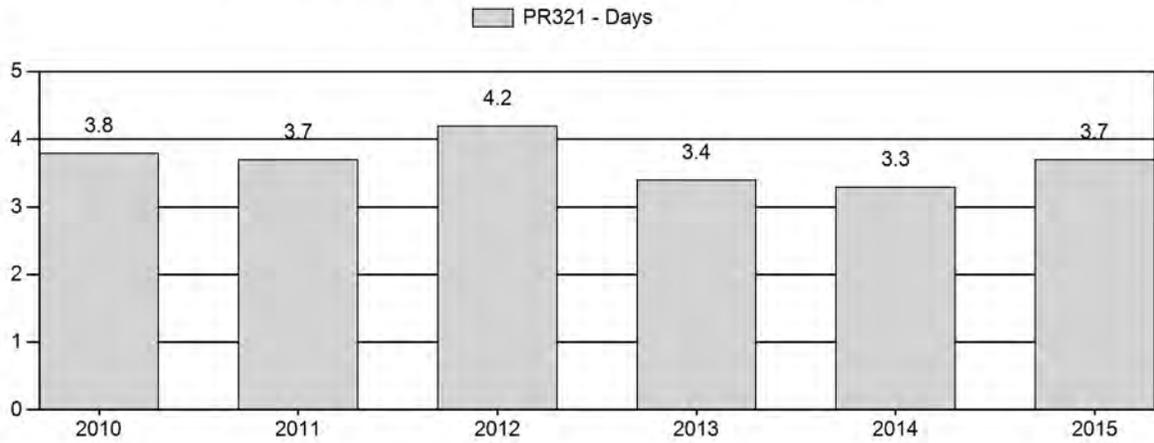
Harvest Success



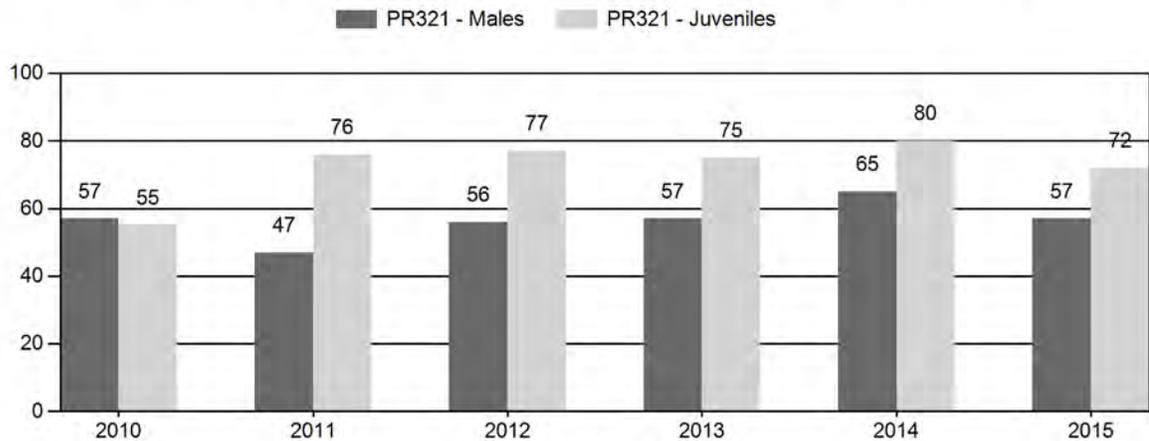
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR321 - LEITER

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	5,003	211	437	648	27%	1,128	47%	617	26%	2,393	3,211	19	39	57	± 12	55	± 12	35
2011	4,818	69	200	269	21%	567	45%	430	34%	1,266	4,180	12	35	47	± 16	76	± 22	51
2012	4,770	148	245	393	24%	697	43%	536	33%	1,626	4,367	21	35	56	± 15	77	± 19	49
2013	6,789	130	263	393	24%	694	43%	522	32%	1,609	4,498	19	38	57	± 16	75	± 19	48
2014	6,677	165	255	420	26%	650	41%	520	33%	1,590	3,783	25	39	65	± 17	80	± 21	49
2015	0	193	283	476	25%	832	44%	601	31%	1,909	2,534	23	34	57	± 0	72	± 0	46

**2016 HUNTING SEASONS
LEITER PRONGHORN HERD (PR321)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
10	1	Oct. 1	Oct. 14	300	Limited quota	Any antelope
	6	Oct. 1	Oct. 31	400	Limited quota	Doe or fawn
15	1	Oct. 1	Oct. 14	600	Limited quota	Any antelope
	6	Oct. 1	Nov. 15	600	Limited quota	Doe or fawn
16	1	Oct. 1	Oct. 14	600	Limited quota	Any antelope
	6	Oct. 1	Oct. 31	400	Limited quota	Doe or fawn

Special Archery Season Hunt Areas	Opening Date	Limitations
10, 15, 16	Aug. 15	Refer to Section 2 of this Chapter

Hunt Area	Type	Quota change from 2015
10	1	+ 50
	6	+ 100
Herd Unit Total	1	+ 50
	6	+ 100

Management Evaluation

Current Hunter / Landowner Management Objective: 60% Satisfaction

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

Management Strategy: Private Land

2015 Hunter Satisfaction Estimate: 82%

2015 Landowner Satisfaction Estimate: 57%

Most Recent 3-year Running Average Hunters Satisfaction Estimate: 85%

Most Recent 3-year Running Average Landowner Satisfaction Estimate: 64%

Herd Unit Issues

The management objective for the Leiter Pronghorn Herd Unit is Hunter and Landowner Satisfaction Objective at 60% or higher, with a secondary objective of 30 or more bucks observed per 100 does. The management strategy is Private Land Management. The Leiter Pronghorn Herd Unit was created in 2014 when the Clearmont (PR308) and Ucross (PR353) Pronghorn Herd Units were combined. The objective and management strategy were last revised in 2014.

Industrial scale oil and gas development and outfitting in the herd unit have resulted in restricted hunting access to some private lands. There are very few public land hunting opportunities in

this herd unit. The restricted access has made it difficult to attain adequate harvest to regulate pronghorn populations in portions of this herd.

Due to very limited access for pronghorn hunting, we try to balance license allocation between meeting desires of landowners and hunter demand, and having too many leftovers licenses, which may give potential hunters the impression there are lots of hunting opportunities in this herd unit.

Weather

The spring and early summer of 2015 was generally warm and wet, resulting in good conditions for forage production in the Sheridan Region. Conditions generally became warmer and drier as you went south and east, which is consistent with normal weather patterns, but were still favorable during most of the summer. The fall of 2015 was generally warm and open well into November. The 2015-16 winter was mostly open, with short periods of cold and snowy conditions followed by periods of warm weather. Record El Nino conditions existed in the Pacific Ocean during 2015-16, influencing intermountain west weather patterns. Overall, adults entered the winter in good condition and likely survived the winter well. Fawns likely saw average to above average over-winter survival.

Habitat

There are three habitat transects located in this herd unit. All of the habitat transects monitor annual growth and utilization of Wyoming big sagebrush communities.

The SR – Buffalo Creek Divide habitat transect is located in the north-central portion of this herd unit on State Trust Lands accessed by the SR-Buffero Creek Road (Sheridan County Road 86). This transect has not been read since 2014.

The Coal Creek habitat transect is located in the central portion of this herd unit, just north of U.S. Highway 14 near Ucross. It is located on State Trust Land accessed by the Coal Creek Road (Sheridan County Road 195). This transect has not been read since 2014.

Petrified Tree habitat transect is located in the south-central portion of this herd unit on BLM land. This transect is accessed off of the Tipperary Road east of Buffero. This transect has not been read for several years.

Field Data

In August, we conducted herd classification surveys using ground survey techniques. Designated routes were driven along county roads and all observed pronghorn were classified. Starting in 2011, we moved away from aerial classification surveys to ground classification surveys to reduce risk for employees and reduce costs associated with aircraft rentals. In 2015, we classified 1,909 pronghorn, well below the desired sample size of 2,534 pronghorn at the 90% confidence level.

Fawn production, as measured by observed fawn:doe ratios, has equalled or exceeded 70 fawns per 100 does during the past five years, suggesting this herd has the potential to increase quickly under favorable conditions. This year, we observed 72 fawns:100 does, higher than the long-term

(n=34 years) average of 70 fawns:100 does. We did observe some chronic diarrhea (scours) in fawns during classifications, which could have increased over summer mortality due to dehydration, resulting in the observed decline in the fawn ratio from the 2014.

Observed buck to doe ratios averaged 57 bucks:100 does. The buck to doe ratio has averaged 55 bucks:100 does over the long-term (n=34 years). Restricted access to private lands, and very limited accessible public lands, reduces our ability to obtain additional buck harvest, which could easily be sustained in this herd unit based on the observed buck to doe ratio.

Hunter satisfaction has remained high, with 82% of surveyed hunters (n=285) satisfied (48%) or very satisfied (34%), suggesting those hunters who do obtain access to private lands experience a quality hunt. For the first time, resident hunters have a slightly higher satisfaction level (88%) than nonresident hunters (81%). This could be a function of the increase in demand by nonresident hunters, resulting in hunters new to this herd unit having a difficult time finding access for hunting. Satisfaction was similar between hunt areas, with Area 10 the lowest (79.5%) and Area 15 the highest (83.5%).

The high hunter satisfaction level partially reflects Department personnel efforts to advise perspective hunters of the limited access opportunities and the need to make arrangements for access prior to purchasing a license. There is some very limited public land and PLPW Walk-In Area and Hunter Management Area access in this herd unit, which may give some hunters higher than deserved hope of a quality pronghorn hunt.

Harvest Data

In 2015, we sold all allocated licenses in this herd unit. We increased available licenses in 2015 in response to increased demand for pronghorn hunting. We again saw an increase in demand for antelope licenses in 2015, especially for leftover licenses. We sold 52% (n=748) Type 1 licenses through the draw process and 48% (n=702) as leftover licenses. For Type 6 licenses, we sold 15% (n=194) Type 6 licenses through the draw process and 85% (n=1,106) as leftover licenses. Nonresident hunters continue to dominate the hunting ranks in this herd unit, with 63% of Type 1 hunters and 82% of Type 6 hunters nonresidents. In 2014, nonresidents purchased 68% of the licenses sold (60% of Type 1 licenses; 80% of Type 6 licenses). Type 1 licenses in Hunt Area 10 were the only area with more resident hunters.

In 2015, an estimated 2,149 hunters harvested an estimated 1,868 pronghorn, the highest harvest in 30+ years. While hunter numbers increased 34%, harvest only increased 19% over the 2014 harvest. Hunters average about 96% success over the past 10 years, compared to 87% success in 2015. Success by individual license was 78%. Hunter effort, as measured by the number of days hunted per animal harvested, was 3.7 days/animal, a slight increase over the past 2 years and comparable to 3.6 days/animal over the past 10 years. Access has varied over the past 10 years, with changes in ownership of several large ranches influencing hunter access.

Population

The 2015 postseason population estimate was ~11,800 pronghorn, with the population trending slightly downward, likely influenced by the high harvest the past couple of years. This population likely peaked in recent years in about 2006 at an estimated ~18,000 pronghorn. The population is thought to have declined and stabilized near the current population. A line transect

survey was conducted during June 2013, which resulted in an end-of-biological-year population estimated of 13,256 pronghorn.

The “Time-Specific Juvenile – Constant Adult Survival Rate” (TSJ,CA) spreadsheet model was chosen to estimate the post-season population for this herd. This model had the highest relative Akaike information criterion (AIC) value (145) but the best fit (38) of the three possible models. The population dynamics of this model appear reasonable and consistent with the dynamics observed in the field. The model aligns very well with all but one line transect estimate. While we have limited population dynamic data available for this herd, the model does align well with the line transect estimates, so we consider this a “good” model.

Landowners, hunters and Department field personnel have noted an increase in this population over the past couple of years. Of landowners (n=37) who responded to an annual survey, 57% (n=28) indicated the population was at or near desired levels and most (73%, n=27) suggested similar season strategies for 2015. No landowners thought they had fewer than desired numbers of pronghorn.

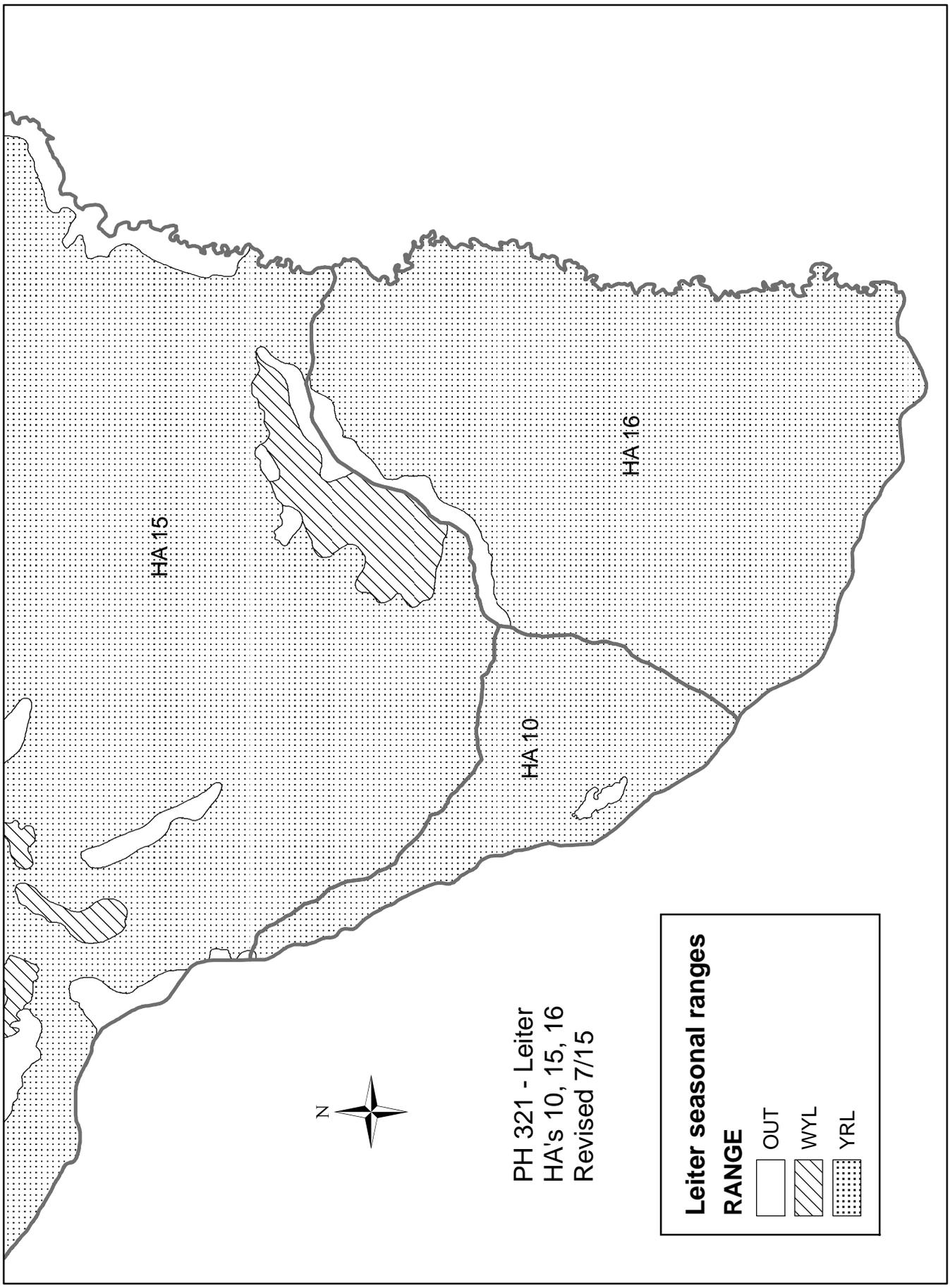
Management Summary

The regular hunting season traditionally runs two weeks (October 1 – 14) for Type 1 licenses, and four weeks (October 1 – 31) for Type 6 licenses since the 2003 season. An archery pre-season generally runs August 15 – September 30. In response to requests from landowners in Hunt Area 15, we extended the Area 15 - Type 6 (doe or fawn antelope) season to November 15 for the 2016 hunting season.

Hunters in this herd unit are able to purchase two Type 1 (any antelope) licenses and four Type 6 (doe or fawn antelope) licenses, which allows hunters the opportunity to harvest multiple animals. There is limited pronghorn hunting on scattered State Trust and BLM land, as well as one Walk-In Area and one Hunter Management Area. We observe high buck numbers, as measured by buck:doe ratios, observing 57 bucks:100 does during this year’s classification surveys. High buck to doe ratios are likely a function of limited access to private lands where the majority of pronghorn occur.

Since we had not sold all of the available licenses since 2006, we reduced the license allocation for the 2014 season to better reflect demand and available opportunity on private lands. This reduction was intended to reduce the perception that there was lots of opportunity because of hundreds of leftover licenses. We saw a significant increase in demand for pronghorn licenses in 2014, selling all but 131 Type 6 licenses. We increased licenses for the 2015 season. We again saw significant increase in demand for licenses and sold all of these licenses. The increase in demand for licenses was likely due to reduced licenses across most of Wyoming resulting in a shift in hunters, and increased hunter numbers due to improved economic conditions in the midwest.

We project a harvest of approximately 1,900 pronghorn in 2016, resulting in an estimated post-season population of about 10,500 pronghorn. These predictions assume near normal fawn production and survival, as well as similar license sales and success rates for the 2015 hunting season.



2015 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2015 - 5/31/2016

HERD: PR339 - NORTH BLACK HILLS

HUNT AREAS: 1-3, 18-19

PREPARED BY: ERIKA PECKHAM

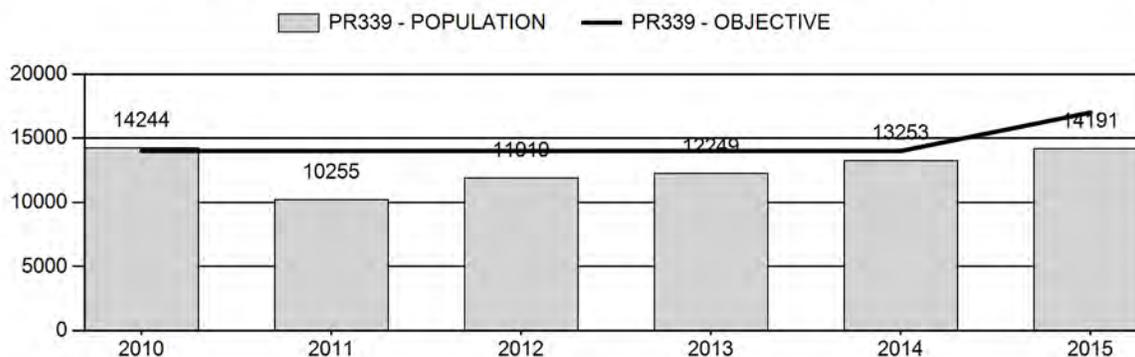
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	12,384	14,191	14,025
Harvest:	815	1,124	1,470
Hunters:	945	1,175	1,500
Hunter Success:	86%	96%	98%
Active Licenses:	1,069	1,332	1,550
Active License Success:	76%	84%	95%
Recreation Days:	3,622	4,222	4,800
Days Per Animal:	4.4	3.8	3.3
Males per 100 Females	39	37	
Juveniles per 100 Females	71	90	

Population Objective (± 20%) :	17000 (13600 - 20400)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-16.5%
Number of years population has been + or - objective in recent trend:	4
Model Date:	02/23/2016

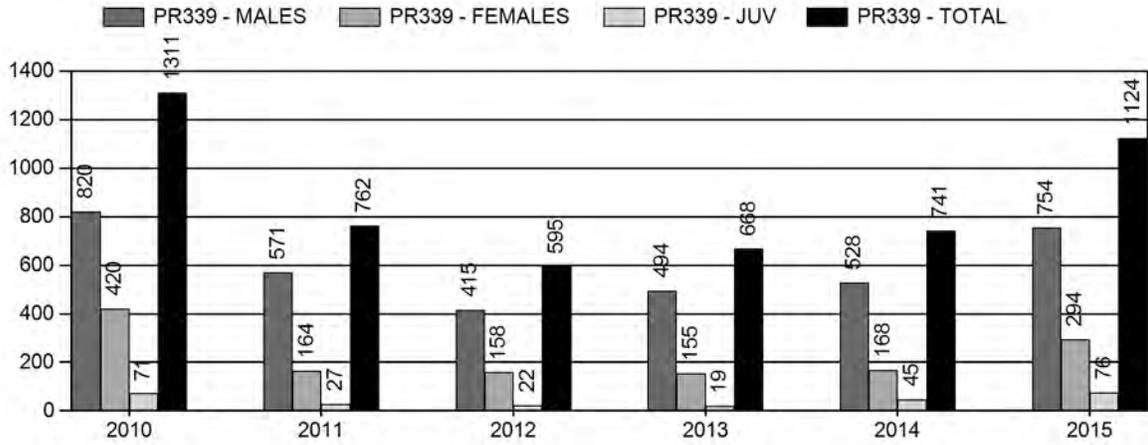
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	6.2%	5.7%
Males ≥ 1 year old:	31.2%	37.5%
Juveniles (< 1 year old):	0%	1.3%
Total:	8.9%	9.4%
Proposed change in post-season population:	.6%	-1.2%

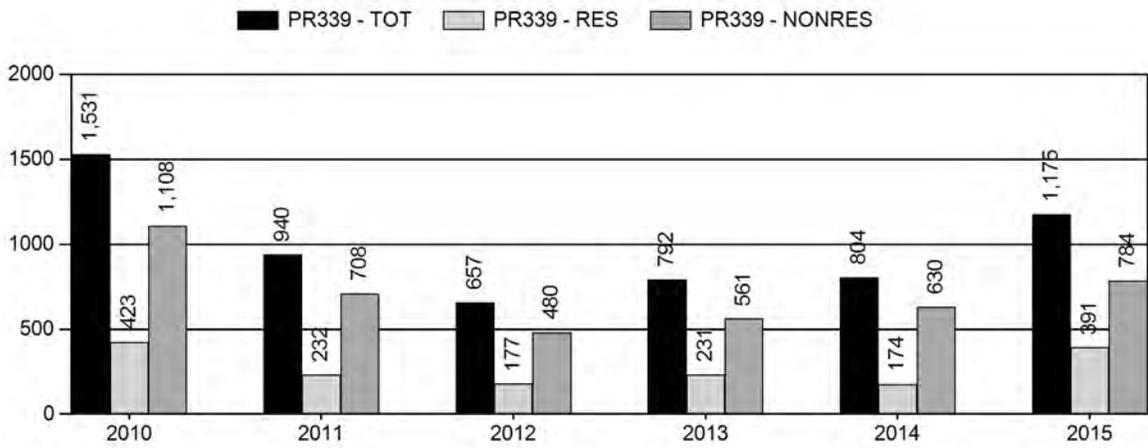
Population Size - Postseason



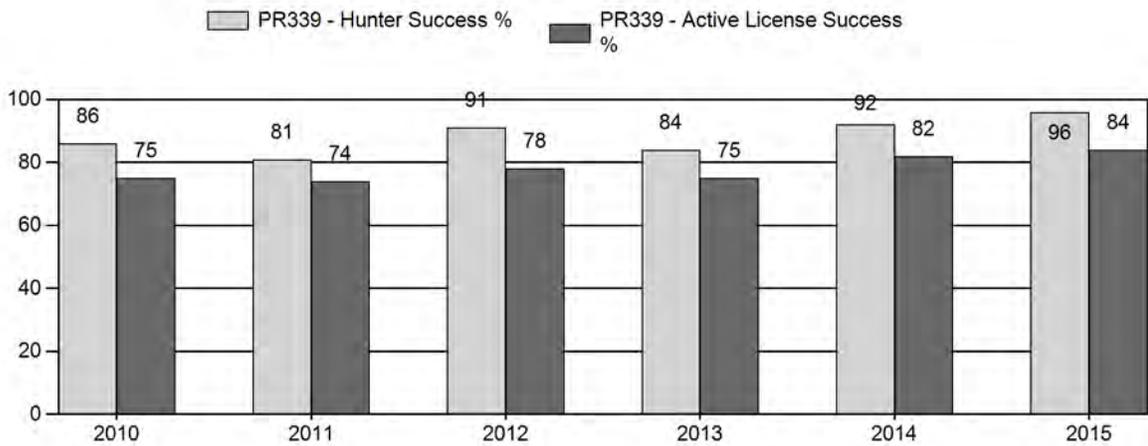
Harvest



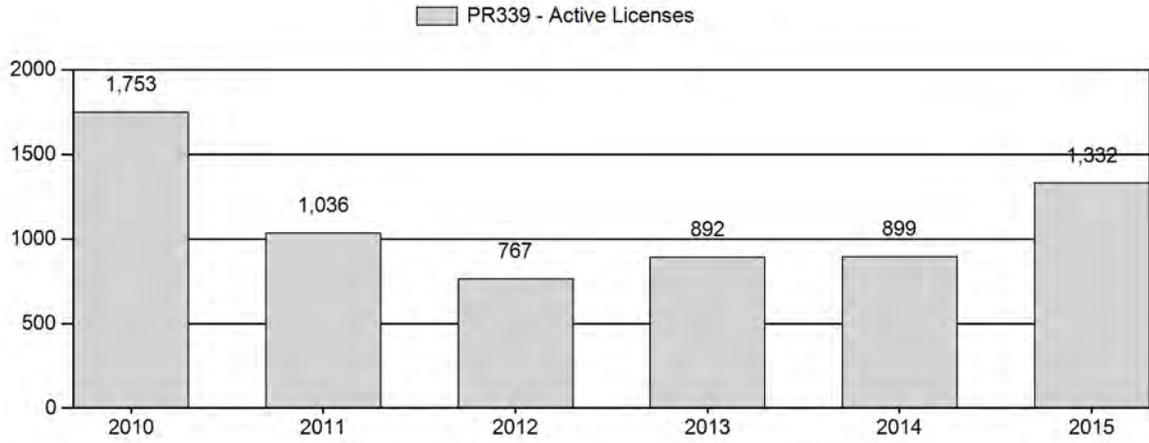
Number of Hunters



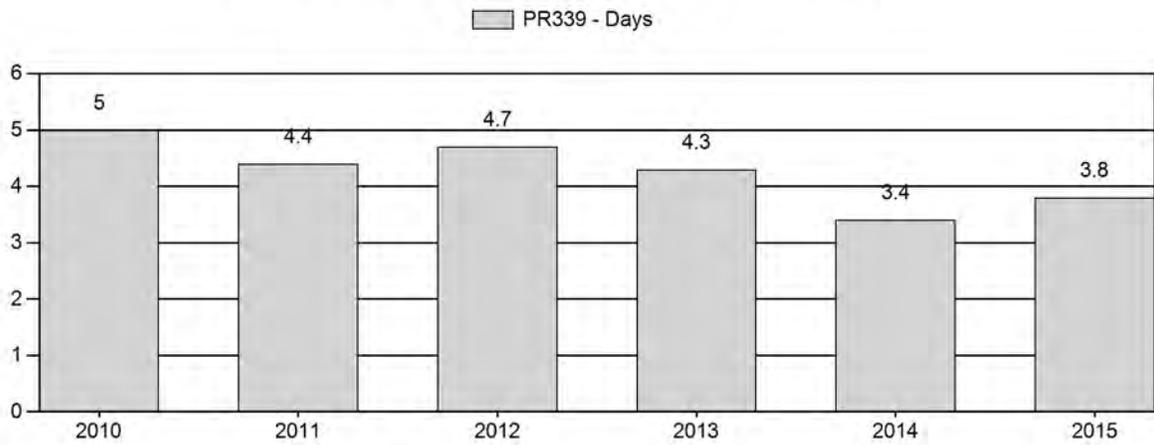
Harvest Success



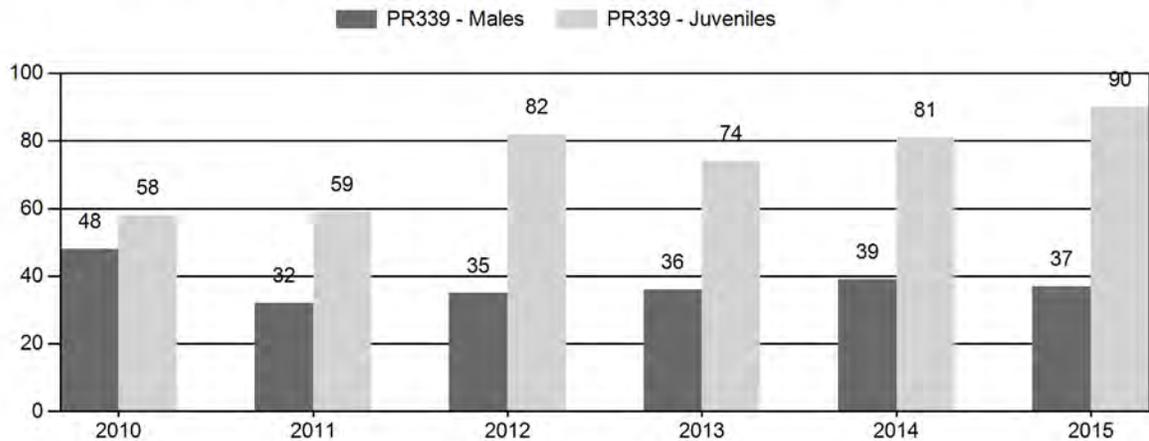
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR339 - NORTH BLACK HILLS

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	15,686	103	320	423	23%	874	48%	511	28%	1,808	1,761	12	37	48	± 4	58	± 5	39
2011	11,093	51	137	188	17%	595	52%	353	31%	1,136	1,662	9	23	32	± 4	59	± 6	45
2012	12,574	31	148	179	16%	513	46%	419	38%	1,111	2,330	6	29	35	± 5	82	± 8	61
2013	12,984	75	229	304	17%	841	48%	621	35%	1,766	1,878	9	27	36	± 4	74	± 6	54
2014	14,069	125	258	383	18%	993	45%	808	37%	2,184	2,247	13	26	39	± 4	81	± 6	59
2015	15,427	143	271	414	16%	1,118	44%	1,004	40%	2,536	2,673	13	24	37	± 3	90	± 6	66

**2016 HUNTING SEASONS
NORTH BLACK HILLS PRONGHORN HERD (PR339)**

Hunt Area	Type	Dates of Opens	Seasons Closes	Quota	License	Limitations
1	1	Oct. 1	Nov. 20	300	Limited quota	Any antelope
1	6	Oct. 1	Nov. 20	200	Limited quota	Doe or fawn
2	1	Oct. 1	Nov. 20	200	Limited quota	Any antelope
2	6	Oct. 1	Nov. 20	200	Limited quota	Doe or fawn
3	1	Oct. 1	Nov. 20	300	Limited quota	Any antelope
3	6	Oct. 1	Nov. 20	150	Limited quota	Doe or fawn
18	1	Oct. 1	Oct. 20	150	Limited quota	Any antelope
19	1	Oct. 1	Oct. 20	300	Limited quota	Any antelope
19	6	Oct. 1	Oct. 20	150	Limited quota	Doe or fawn valid on private land

Hunt Special Archery Season Hunt Areas	Opening Date	Limitations
1-3	Sep. 1	Refer to Section 2 of this Chapter
18, 19	Aug. 15	Refer to Section 2 of this Chapter

SUMMARY OF CHANGES IN LICENSE NUMBERS

Hunt Area	Type	Quota change from 2015
1	1	+50
1	6	+100
3	1	+150
3	6	+75
18	1	+50
Herd Unit Total	1	+250
	6	+175

Management Evaluation

Current Postseason Population Management Objective: 17,000

Management Strategy: Recreational

2015 Postseason Population Estimate: ~14,200

2016 Proposed Postseason Population Estimate: ~14,000

2015 Hunter Satisfaction: 87% Satisfied, 6% Neutral, 7% Dissatisfied

Herd Unit Issues

The management objective for the North Black Hills Pronghorn Herd Unit is a post-season population of 17,000 pronghorn. The management strategy is recreational management. The objective and management strategy were last reviewed in 2015. The population objective was increased from 14,000 to 17,000. During times when the population hovered around the past objective, the majority of people felt that the number of pronghorn were below where they would like to see them. One other consideration is in regards to changing from the past Pop2 model to the EXCEL spreadsheet model. Although the trends in both models were similar, the shift to the EXCEL model led to a population estimate that was shifted upwards.

The 2015 post-season population estimate was about 14,200. Currently, the population is estimated to be below the management objective. Beginning in 2007 this population started a decline. Issues related to adverse winter and spring weather, and low fawn production were observed in this herd, particularly from 2009-2011. Heavy spring snows and cold spring temperatures in 2009 & 2010 likely reduced fawn and adult survival, particularly in Areas 18 and 19. Pronghorn numbers in Areas 18 and 19 still appear to be suppressed, with other hunt areas experiencing good fawn production and survival, resulting in increasing numbers. The last line transect survey was conducted in this herd unit was in June of 2014 producing an end of biological year population estimate of 9,400.

Weather

Weather conditions throughout 2015 and into 2016 were very favorable to big game populations in this area. The winters of 2014-2015 and 2015-16 were mild to moderate and did not see much for snow accumulation. During the majority of these two winters, the ground was open in many areas, with minimal snowpack. As a result over winter survival was likely high. The spring and summer of 2015 saw excellent range conditions in this herd unit with timely rainfall throughout much of the growing season. The Palmer Drought Index indicates that throughout 2015 the Powder River Drainage and Belle Fourche Drainage alternated between moderately, very, and extremely moist.

Habitat

In the North Black Hills Herd Unit, leader production estimates were taken on two Wyoming big sagebrush transects, Cow Creek and Stewart Road. Average leader production measured during the fall of 2015 was 5.3 and 6.3 cm, respectively. Cow Creek and Stewart leader production were considerably higher than the ten year average for those respective sites. Precipitation in the Gillette area was 18.77 inches, which was slightly higher than the ten year average.

Field Data

Classification surveys in 2015 showed an increase in the fawn to doe ratio at 90:100, up from 81 in 2014. This is markedly improved from the preceding 5 year average of 71:100. It is important to note that 2008-2011 experienced four consecutive years of the poorest fawn ratios on record, or at least since 1981. Three of these years had fawn ratios that were in the fifties. Another significant finding of the classification surveys was that Hunt Area 18 seemed to suffer more so, with 2008-2010 experiencing fawn ratios of 35, 32 and 28:100, respectively. This is likely why Hunt Area 18 has not recovered as quickly as the surrounding hunt areas. The aforementioned adverse weather conditions had a large impact on the productivity, and consequently on the fawn to doe ratios of this herd in that time span. Buck to doe ratios since 2011 have been in the thirties with the observed ratio in 2015 coming in at 37. Previous to that the buck ratios fluctuated from the 40-60:100 mark, never dipping below 40:100. As there is a fair amount of private land in this herd unit landowner surveys are considered. The 2015 survey was evenly split, indicating that 48% of respondents felt that the herd was below objective and 48% felt that it was at objective. Hunter survey responses indicated that 80% were either “very satisfied” or “satisfied”. Hunt Areas 1, 2 and 3 have an archery opening date of September 1st. This is different than many of the surrounding Hunt Areas which open on August 15th. This opening date of September 1st was what the majority of landowners in these areas desired in the past. On the 2015 survey a question was included to assess whether this date was still what landowners wanted. Of those that responded, 79% expressed interest in staying with the September 1st archery opener date.

Harvest

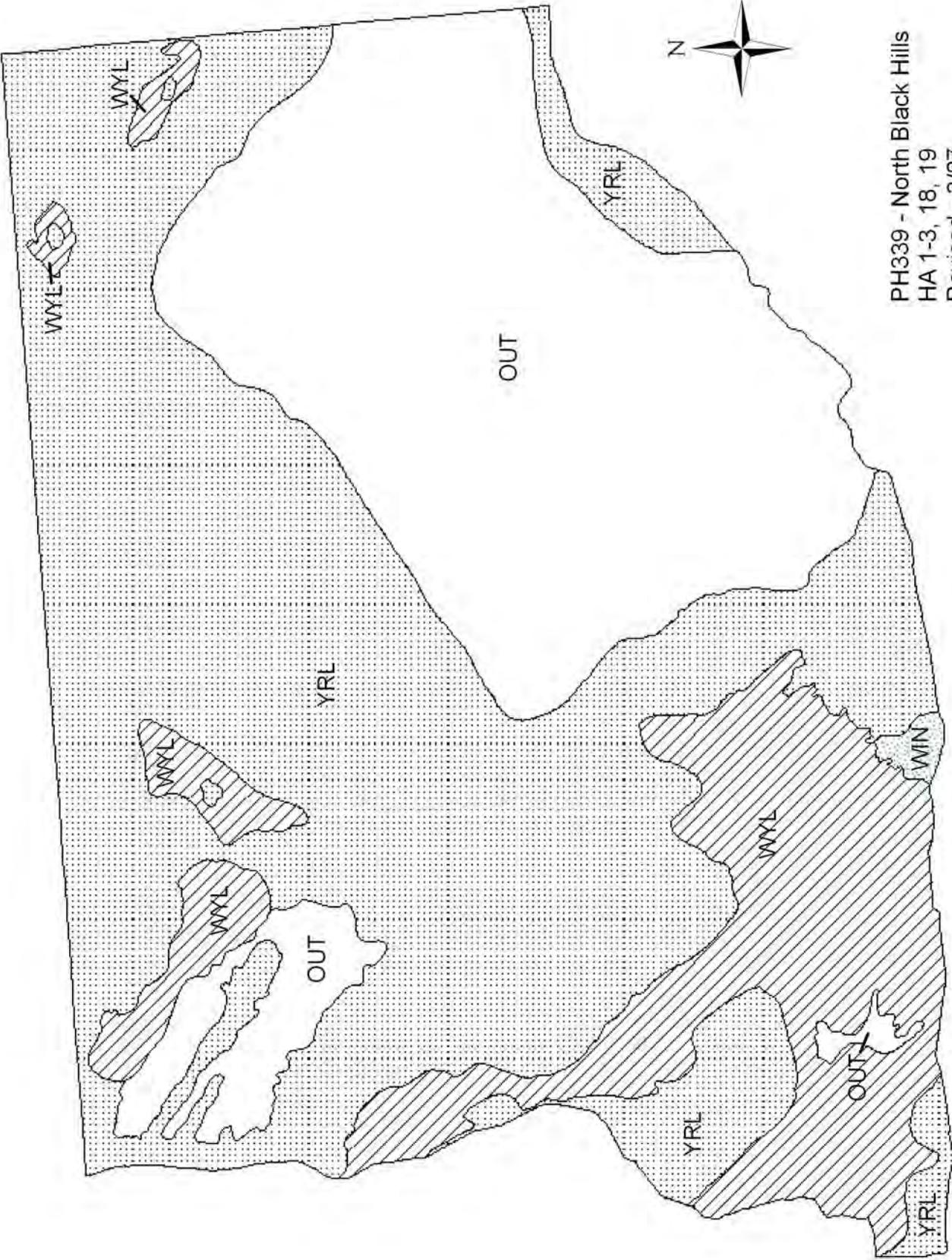
In 2015 there were 1,525 licenses available, 1,000 Type 1 any antelope and 525 Type 6 doe/fawn antelope licenses. All licenses were sold by the season’s close. Days per harvested animal increased to 3.8, up slightly than 2014 but still lower than the preceding 5-year average of 4.4. Overall hunter success was up to 96% which is the highest it has been since 2007 when the population was near its peak.

Population

The “Semi-Constant Juvenile – Semi-Constant Adult” (SCJ-SCA) spreadsheet model was chosen to use for the post season population estimate of this herd. This model aligns very well with the independent line transect survey estimates. It should be noted that juvenile and adult survivals were changed in 2009 and 2010 to .3 and .7 respectively due to the poor winter and spring conditions. As stated earlier, field data and observations show that this is a reasonable assumption. This model had the lowest relative AIC (169) and appeared to most accurately represent what was occurring on the ground (Fair Model). We conducted line transect surveys in 1995, 1997, 1999, 2002, 2004, 2008, 2012 and 2014 which provided independent population estimates that were similar to the model estimates. The model currently predicts a slight decrease in post-season population. However, with continued favorable weather conditions and improving fawn to doe ratios, it seems that this herd should continue in an upward trend.

Management Strategy

The traditional season in this hunt area has been the entire month of October and part of November in Hunt Areas 1, 2 and 3, and from October 1 to October 20 in Areas 18 and 19. The season time and length seem to be adequate to allow a reasonable harvest. The numbers of Type 1 and Type 6 licenses were both increased by 250 and 175 respectively. Licenses were greatly reduced in the recent past, however as this herd is trending upwards, it was felt that numbers warranted higher license issuance in most hunt areas. The one exception to this is Hunt Area 18, which still appears to be slower to rebound. If we attain the projected harvest of 1,470 and near normal fawn recruitment, the population will decrease only slightly. Based on the population model, we predict a 2015 post-season population of about 14,000.



PH339 - North Black Hills
 HA 1-3, 18, 19
 Revised - 3/87

2015 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2015 - 5/31/2016

HERD: PR351 - GILLETTE

HUNT AREAS: 17

PREPARED BY: ERIKA PECKHAM

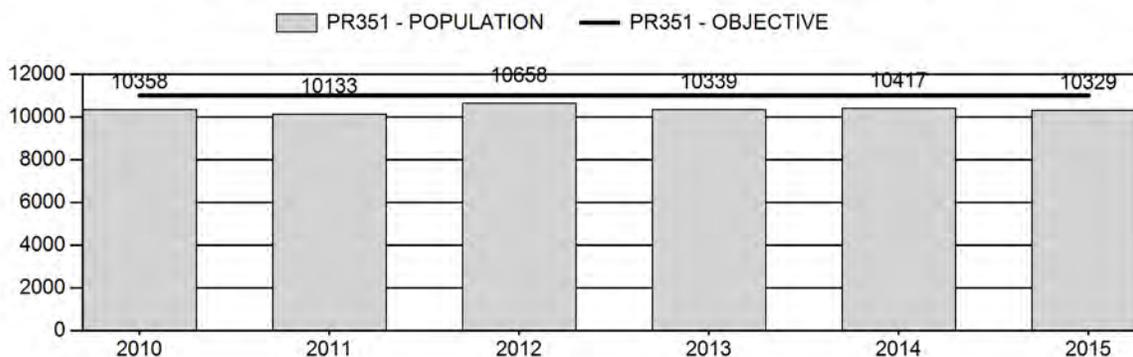
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	10,381	10,329	10,800
Harvest:	1,080	988	1,040
Hunters:	1,217	1,242	1,240
Hunter Success:	89%	80%	84 %
Active Licenses:	1,309	1,290	1,300
Active License Success:	83%	77%	80 %
Recreation Days:	3,888	4,628	4,400
Days Per Animal:	3.6	4.7	4.2
Males per 100 Females	44	41	
Juveniles per 100 Females	58	73	

Population Objective (± 20%) :	11000 (8800 - 13200)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-6.1%
Number of years population has been + or - objective in recent trend:	2
Model Date:	2/4/2016

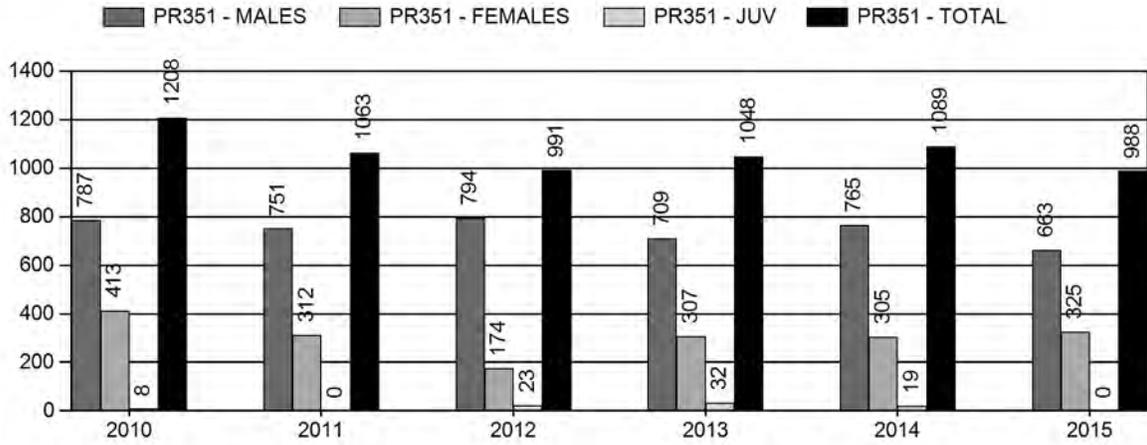
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	5.9%	7.1%
Males ≥ 1 year old:	34.5%	39.1%
Juveniles (< 1 year old):	0%	.4%
Total:	8.8%	9.5%
Proposed change in post-season population:	-9.6%	-9.5%

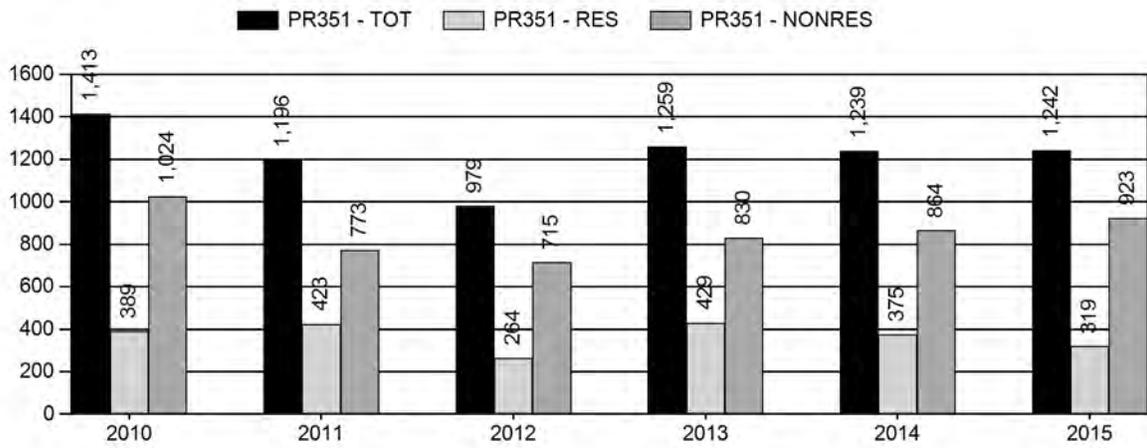
Population Size - Postseason



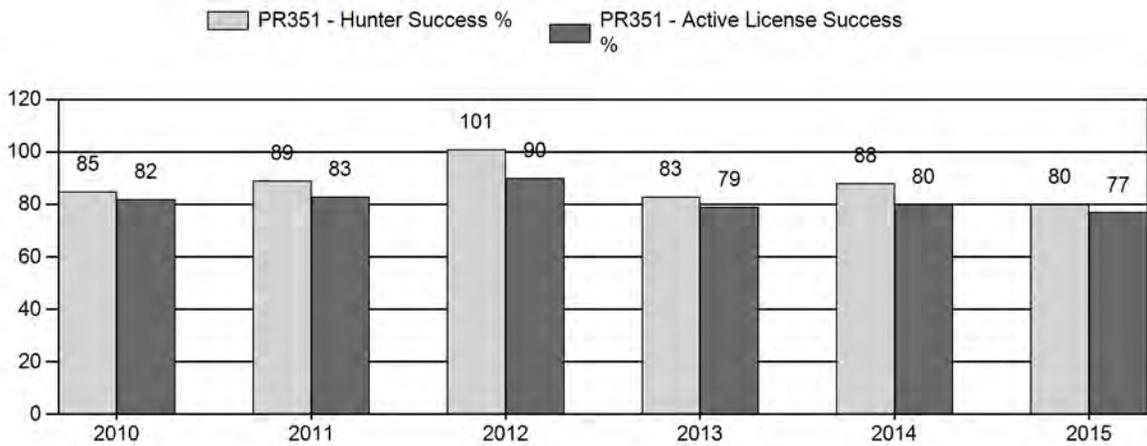
Harvest



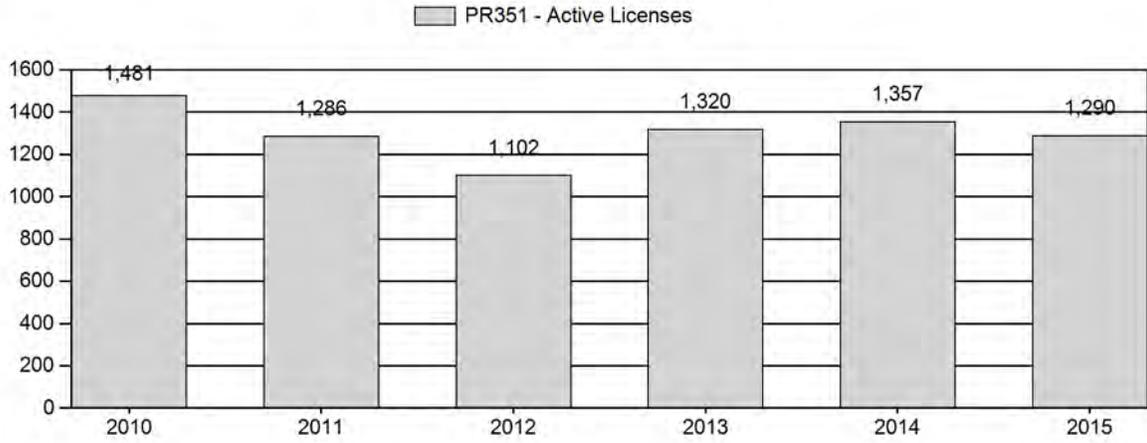
Number of Hunters



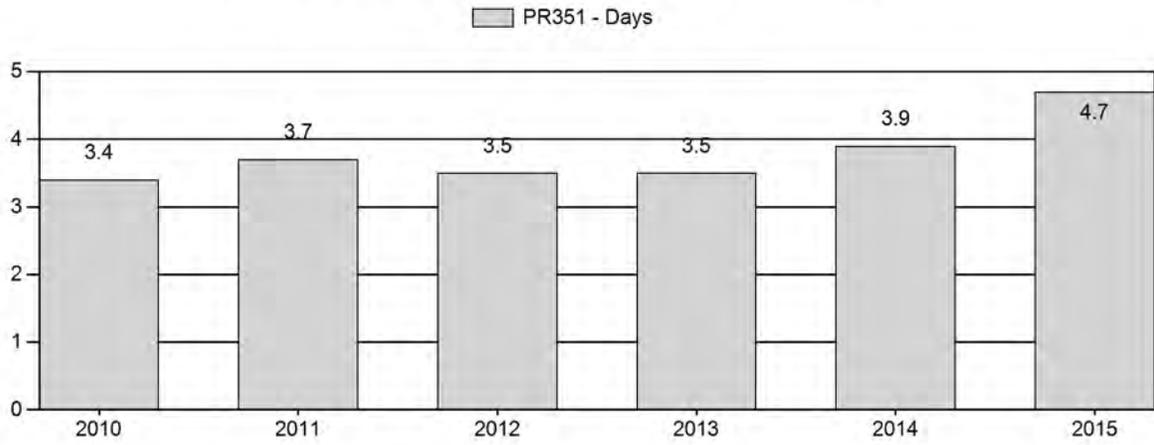
Harvest Success



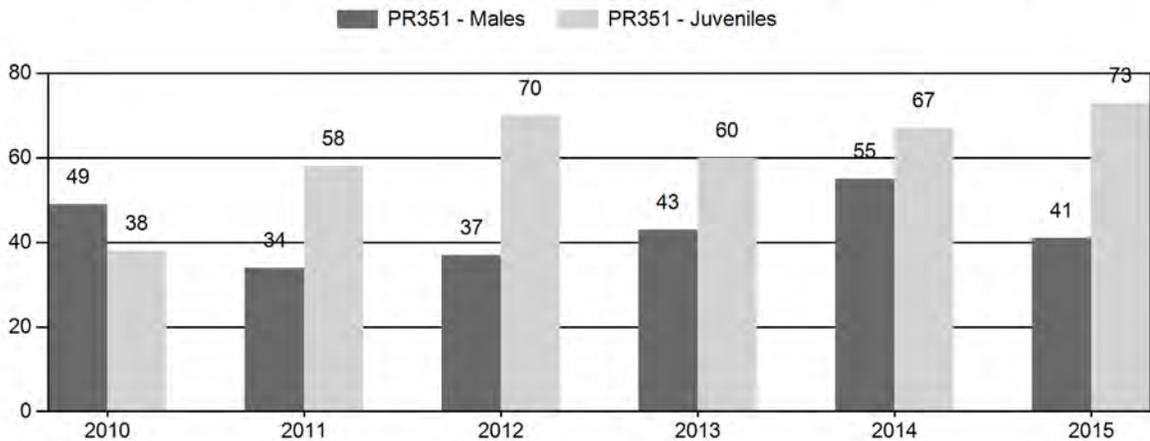
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR351 - GILLETTE

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	11,687	112	437	549	26%	1,126	54%	429	20%	2,104	1,920	10	39	49	± 4	38	± 3	26
2011	11,302	75	301	376	18%	1,111	52%	640	30%	2,127	1,639	7	27	34	± 3	58	± 4	43
2012	11,758	78	214	292	18%	779	48%	545	34%	1,616	1,970	10	27	37	± 4	70	± 6	51
2013	11,492	175	235	410	21%	950	49%	574	30%	1,934	1,758	18	25	43	± 4	60	± 5	42
2014	11,615	245	299	544	25%	983	45%	661	30%	2,188	1,811	25	30	55	± 4	67	± 5	43
2015	11,416	174	226	400	19%	971	47%	706	34%	2,077	2,297	18	23	41	± 4	73	± 5	51

**2016 HUNTING SEASONS
GILLETTE PRONGHORN HERD (PR351)**

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
17	1	Oct. 1	Oct. 31	1,100	Limited quota	Any antelope
17	6	Oct. 1	Oct. 31	400	Limited quota	Doe or fawn

Hunt Special Archery Season Hunt Areas	Opening Date	Limitations
17	Sep. 1	Refer to Section 2 of this Chapter

SUMMARY OF CHANGES IN LICENSE NUMBERS

Hunt Area	Type	Quota change from 2015
17	1	No Change
17	6	No Change

Management Evaluation

Current Postseason Population Management Objective: 11,000

Management Strategy: Recreational

2015 Postseason Population Estimate: ~10,300

2016 Proposed Postseason Population Estimate: ~10,800

2015 Hunter Satisfaction: 71% Satisfied, 15% Neutral, 14% Dissatisfied

Herd Unit Issues

The postseason population objective for the Gillette Pronghorn Herd Unit is 11,000 pronghorn. The management strategy is recreational management. The objective and management strategy were last reviewed in 2015. No changes were made to the previous management objective and management strategy.

In years when pronghorn numbers are above objective, the largest issue with achieving adequate harvest in this herd is hunter access. There is very little publicly accessible land in this herd unit.

In the past, this herd unit experienced fairly intensive coal bed methane development. The increased traffic was an issue with hunting, however in recent years, development and activity

has tapered off substantially. The more pressing issue in this herd unit will be proper reclamation. Currently, energy development and associated activity in this herd unit is low.

Weather

Weather throughout 2014 and into 2015 was optimal for rangeland conditions in this area. As a whole, the growing season commenced with plentiful rainfall and ideal conditions to produce ample forage. The winter of 2014-2015 was moderate with not much for snow accumulation, or prolonged snow cover. The winter of 2015-16 was mild with minimal snow and frequent above average temperatures. During the majority of these two winters, the ground was open, with minimal snowpack. As a result over winter survival was likely high. The Palmer Drought Index indicates that throughout 2015, the conditions in the Powder River drainage were “mid-range” to “moderately moist”.

Habitat

The SA creek habitat transect is located within this herd unit. The utilization is typically very light on this transect. In the fall of 2015, the transect survey showed the average sagebrush leader growth to be 6.2 cm, which is slightly above the 10 year average leader growth for this transect. It should be noted that various stands of sagebrush in this area appeared to be stressed with overall low vigor. It is unknown for certain what may be the cause of this but is speculated that it may be related to the previous prolonged drought as stressed appearing sagebrush has been noted throughout the general area.

Field Data

Beginning in 2010, this herd has been below objective, with licenses having been reduced accordingly. In 2015 the fawn to doe ratio was slightly improved at 73, which was up from a ratio of 67 in 2014. As this is a predominantly private lands area, landowner surveys are considered. The 2015 survey indicates that 71% of respondents feel that the herd was where they would like to see it. Hunters' response to the survey indicates that 63% were either “very satisfied” or “satisfied”. This seems fairly low, considering that harvest success was around 80%.

Harvest Data

In 2015 there were 1,500 licenses available, 1,100 Type 1 any antelope and 400 Type 6 doe/fawn antelope licenses. Both license types were sold out by the close of the season. Hunter success in this herd unit has averaged 89% over the preceding 5 years. The overall success rate in 2015 was 80% and hunters averaged 4.7 days to harvest an animal, up from the preceding years. Total harvest of 988 pronghorn was slightly below the five year average of 1,035. It is felt that this area received more pressure from hunters unfamiliar with the area than is typical in both 2014 and 2015. A high volume of non-resident hunter phone calls were received, with numerous people stating that they didn't draw where they typically do. As there were plentiful licenses after the draw, people noticed this and likely purchased licenses without having access to private land. It is possible that this brought down the hunter success and adds another factor to consider when making comparisons to past years success rates.

Population

The “Constant Juvenile – Constant Adult Mortality Rate” (CJCA) spreadsheet model was chosen to use for the post season population estimate of this herd. Although this model did not have the lowest relative AIC (188), they were all fairly close and this one appeared to most accurately represent what was occurring on the ground, and made best use of the available information. We conducted line transect surveys in 1995, 1998, 2000, 2002, 2008 and 2013 which provided independent population estimates that were similar to the model estimates. With the exception of the 2002 line transect population estimate, the model projections were in line with the line transect surveys. The 2002 line transect was an outlier and appeared to vastly overestimate the population. Due to this discrepancy, it was felt that the 2002 line transect estimate be removed from the model. This removal appeared to improve the model (Fair Model).

The 2015 post-season population estimate was about 10,300, a slight increase from the 2014 post-season estimate. Fawn production was incredibly poor prior to the population drop that hit a low in 2011. From 2008-2010 fawn ratios ranged from 38-43 fawns per 100 does. This was likely in response to several unfavorable winters and drought conditions preceding and partially during this time span. Additionally, the population hit a high point in 2006. In 2007 the population started a decline, hitting a low in 2011 at an estimate of 9,800 individuals. High numbers, above objective, followed by difficult winters and drought likely contributed to this precipitous drop. The observed fawn:doe ratio for 2015 was 73:100. This is the first time the fawn:doe ratio has exceeded 70:100 since 2007, with the preceding 5 year average of 59:100.

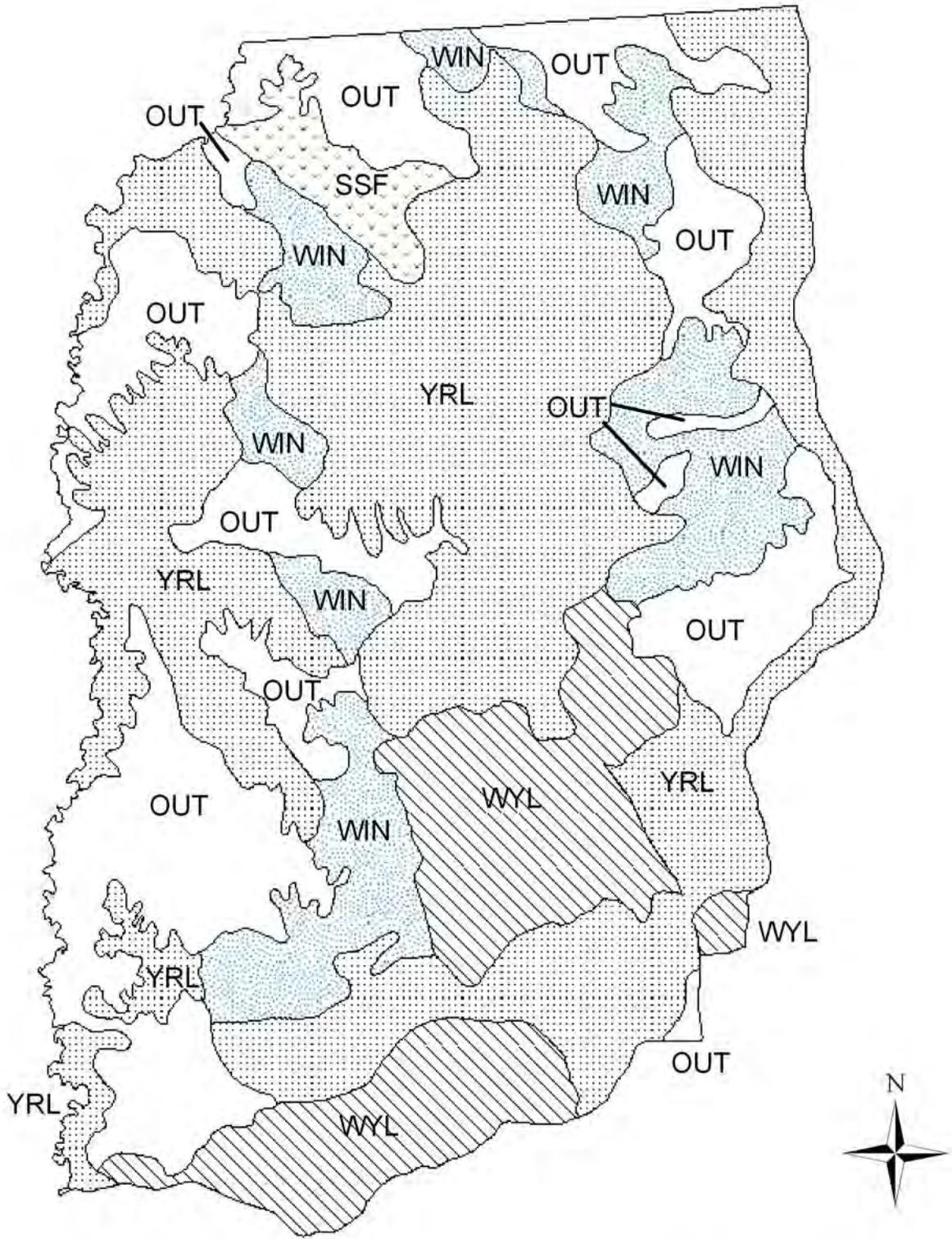
The last line transect survey was conducted in this herd unit in June 2013, which resulted in an estimated end of biological year population of 8,300 pronghorn at that time.

Management Strategy

Having adequate licenses available is imperative to keep harvest up on this herd when numbers warrant. In 2015 there were 1,500 licenses available, 1,100 Type 1 and 400 Type 6. Both Type 1 and Type 6 licenses were sold out before the close of the season. In speaking with hunters, it seemed that many people who had historically drawn licenses in other hunt areas did not draw them this year. It is thought that this may have been a factor in increased license sales for this hunt area.

The traditional season in this hunt area has been the entire month of October. This season time and length seems to be adequate to allow a reasonable harvest. The number of licenses available for 2016 was unchanged. All respondents on the landowner survey within this herd unit felt that a similar or more liberal season as last year would be in line with their observations of antelope.

If we attain the projected harvest of 1,040 and slightly improved fawn recruitment the population is anticipated to grow slightly and is projected to be close to objective. Based on the population model, we predict a 2016 post-season population of about 10,800.



PH351 - Gillette
 HA 17
 Revised - 3/87

2015 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2015 - 5/31/2016

HERD: PR352 - MIDDLE FORK

HUNT AREAS: 21

PREPARED BY: DAN THIELE

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	5,890	8,210	8,245
Harvest:	867	520	525
Hunters:	1,041	565	600
Hunter Success:	83%	92%	88 %
Active Licenses:	1,121	645	650
Active License Success:	77%	81%	81 %
Recreation Days:	4,218	2,661	2,600
Days Per Animal:	4.9	5.1	5.0
Males per 100 Females	59	77	
Juveniles per 100 Females	83	89	

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

Management Strategy: Recreational

Percent population is above (+) or below (-) objective: 37%

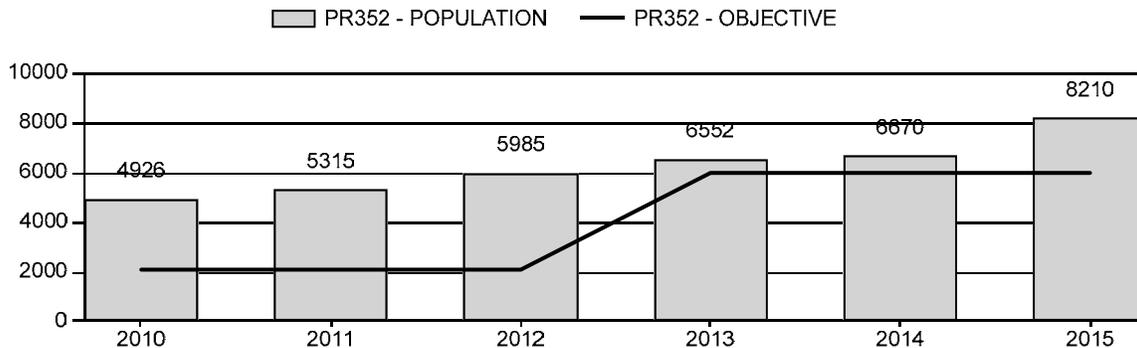
Number of years population has been + or - objective in recent trend: 4

Model Date: 2/5/2016

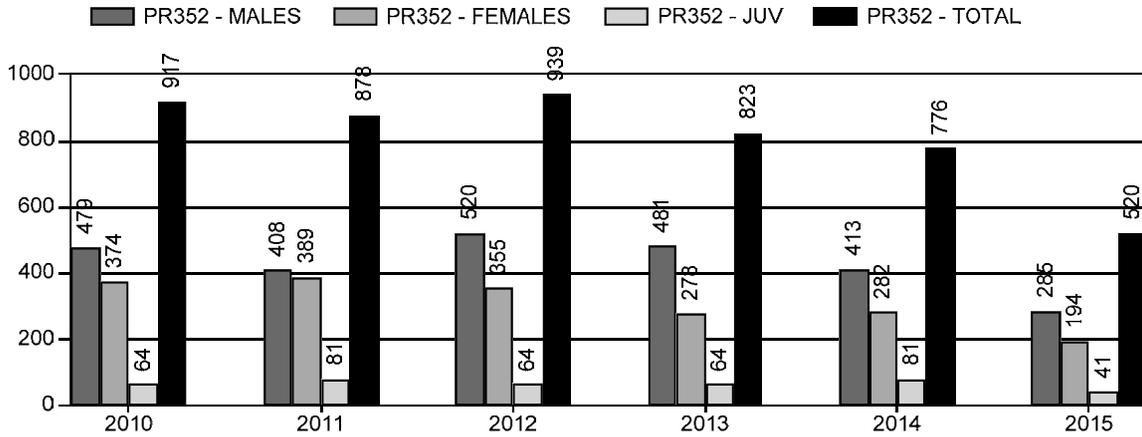
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	6%	5%
Males ≥ 1 year old:	19%	13%
Juveniles (< 1 year old):	2%	2%
Total:	7%	6%
Proposed change in post-season population:	+2%	0%

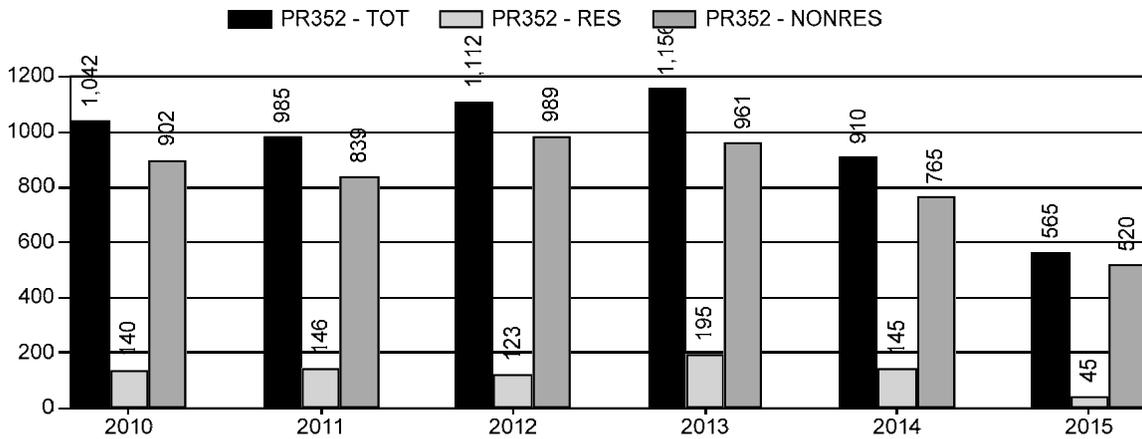
Population Size - Postseason



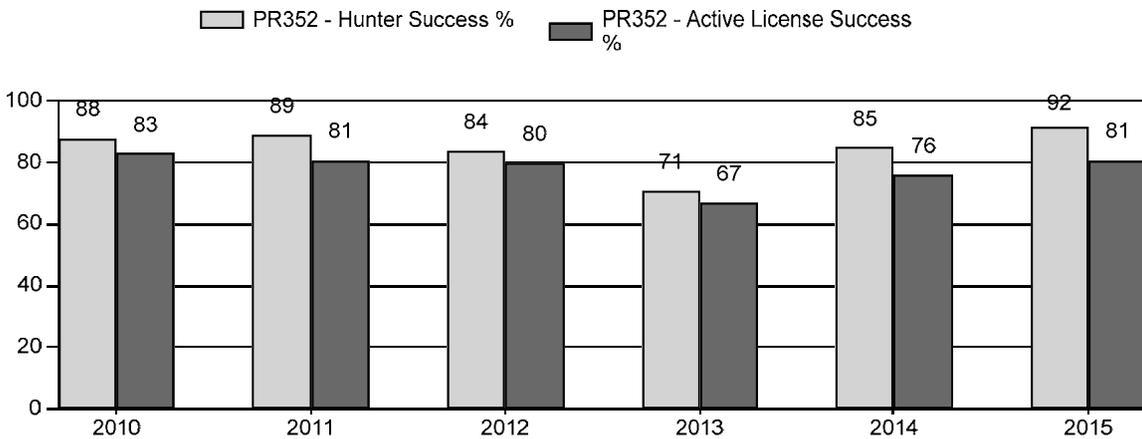
Harvest



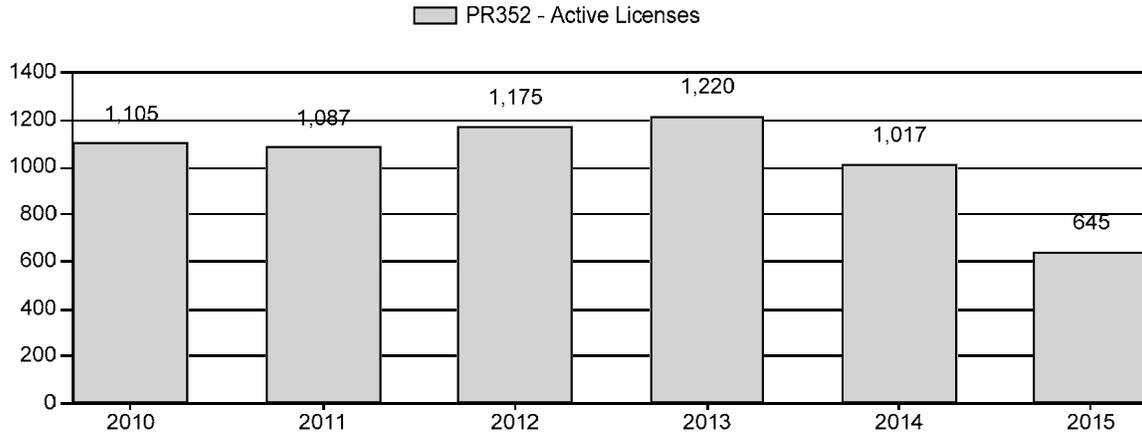
Number of Hunters



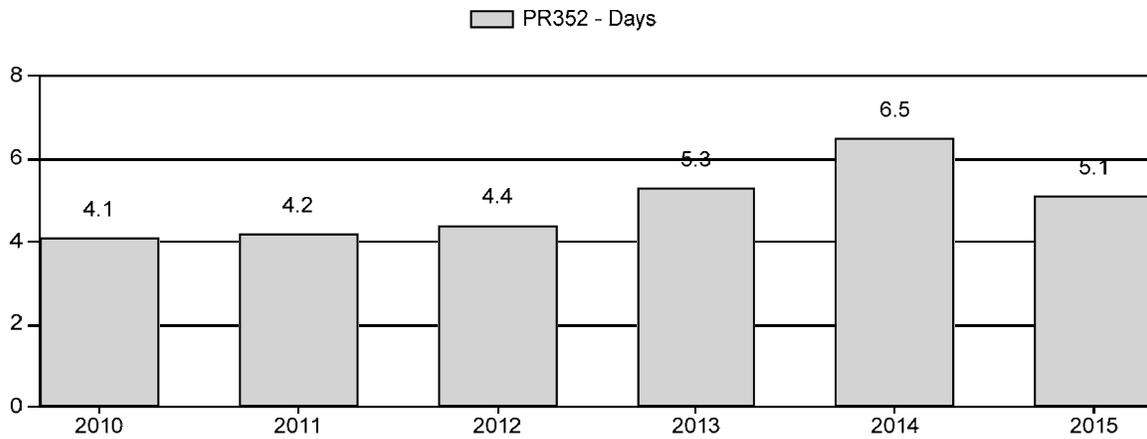
Harvest Success



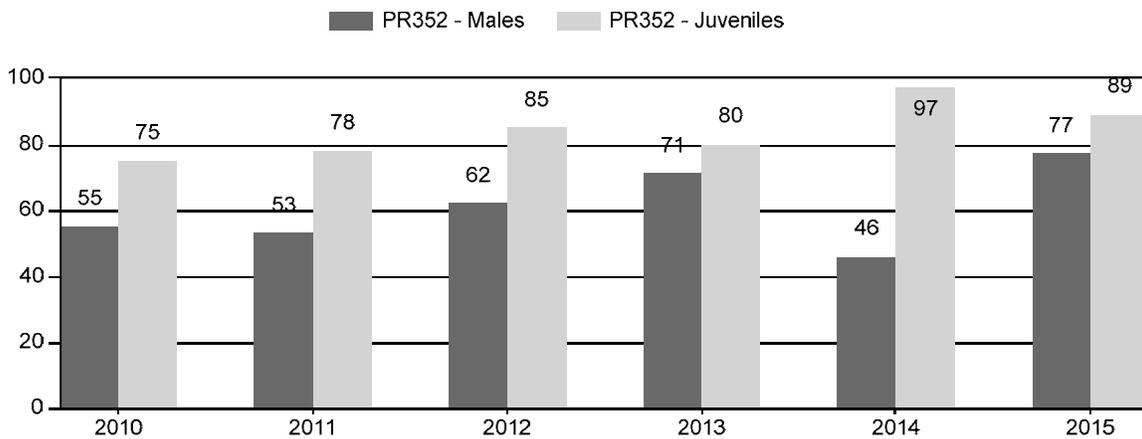
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR352 - MIDDLE FORK

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	5,935	73	137	210	24%	379	43%	283	32%	872	2,196	19	36	55	± 7	75	± 9	48
2011	6,281	39	130	169	23%	321	43%	249	34%	739	2,305	12	40	53	± 8	78	± 10	51
2012	7,018	84	142	226	25%	362	40%	309	34%	897	2,824	23	39	62	± 8	85	± 10	53
2013	7,257	85	280	365	28%	513	40%	412	32%	1,290	2,490	17	55	71	± 7	80	± 8	47
2014	7,524	43	122	165	19%	355	41%	346	40%	866	3,317	12	34	46	± 7	97	± 11	67
2015	8,782	96	162	258	29%	336	38%	298	33%	892	3,123	29	48	77	± 10	89	± 11	50

**2016 HUNTING SEASONS
MIDDLE FORK PRONGHORN HERD (PR352)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
21	1	Oct. 15	Oct. 31	450	Limited quota	Any Antelope
21	6	Oct. 15	Oct. 31	300	Limited quota	Doe or fawn

Special Archery Season Hunt Area	Season Dates	
	Opens	Closes
21	Aug. 15	Oct. 14

SUMMARY OF CHANGES IN LICENSES NUMBERS

Hunt Area	Type	Quota change from 2015
21		No change
Herd Unit Total		No change

Management Evaluation

Current Postseason Population Management Objective: 6,000

Management Strategy: Recreational

2015 Postseason Population Estimate: ~8,200 (unreliable population model)

2016 Proposed Postseason Population Estimate: ~8250

2015 Hunter Satisfaction: 83% Satisfied, 7% Neutral, 10% Dissatisfied

Herd Unit Issues

The Middle Fork Pronghorn Herd Unit post-season population objective was reviewed in 2013 and revised to 6,000 pronghorn. The management strategy remains recreational management.

Area 21 extends from Interstate Highway 25 west to the Bighorn Mountain divide. Antelope densities are highest in the eastern section of the hunt area and lower on the mountain slope. The southeast corner of the hunt area and the mountain slope have large amounts of public land but the majority of the hunt area is private. Many public lands are inaccessible due to landownership patterns. Hunting on private land is controlled by outfitters and landowners who charge trespass fees and take a limited number of hunters. This causes a disproportionate amount of hunting pressure on accessible public lands. In many cases, the outfitted hunting which takes place on private land limits access as well as the ability to achieve adequate doe/fawn harvest. Private lands are under hunted and outfitters are doing little to manage this pronghorn population.

Weather

Weather in the area of the Middle Fork Herd Unit during 2015 was very favorable for the second year in a row. May precipitation was double the normal followed by above normal June precipitation (132%). The Palmer Drought Index for Climate Division 5 (Powder, Little Missouri and Tongue drainages) showed “mid-range” conditions for May 2015 but improved to “moderately moist” in July and remained so for the rest of the biological year. For the calendar year, precipitation was normal but produced excellent forage growth due to the favorable rainfall during the growing season. Winter weather was very mild with moderate temperatures and limited snowfall.

Habitat

There is one Wyoming big sagebrush habitat transect in this herd unit. Production measured in September 2015 averaged 4.7 cm per leader compared to 3.6 cm per leader in 2014 and a 5 year average of 2.7 cm. Above normal 2015 precipitation provided for above normal shrub growth and excellent herbaceous forage production. Winter conditions were normal so above average pronghorn mortality was not observed. Utilization during the 2015-16 winter was light (less than 5% of leaders browsed) as pronghorn and mule deer were dispersed over winter/yearlong range. Complete shrub monitoring results are available in the appendix, Shrub Monitoring Report for the Sheridan Region.

Field Data

Preseason classification efforts again failed to achieve an adequate sample. The survey yielded a fawn ratio of 89:100, the second highest ratio for the six year period and above the five year average of 83:100. Mild winters and a second consecutive year of excellent spring precipitation is credited for the high 2015 ratio. The buck ratio rebounded from 46:100 in 2014 to 77:100 in 2015. The large variation could be due to inadequate classification samples. The five year average is 59:100.

Postseason landowner surveys indicate that the population has decreased over the last five years. In 2015, 79% of landowners were satisfied with pronghorn numbers while 14% reported there were too many pronghorn. The last line transect survey was flown in 2012 resulting in an end of year population estimate of 4,200 pronghorn, well below the 6,200 pronghorn estimated in 2006. The hunter satisfaction survey showed 83% of hunters in 2015 were either satisfied or very satisfied, up from 78% in 2014. The reduction in license quotas combined with high fawn ratios the last two years likely contributed to the favorable response.

Harvest Data

Harvest for the six year period peaked in 2012 at 939 pronghorn which was also the highest harvest since at least 1985. The 2012 buck harvest matched the 1985 high of 520 bucks. Doe/fawn harvest reached a new high in 2011. Harvest decreased 33% in 2015 due to a 40% decrease in licenses. The Type 1 and Type 6 license quotas were each reduced 200 licenses in 2015 due to lower pronghorn numbers, low hunter success and an increasing trend in hunter effort. Both license types sold out in the draw. The adjustments resulted in improved active

license success (81%) and reduced hunter effort (5.1 days per harvest in 2015 vs. 6.5 days per harvest in 2014). It is worth noting the harvest survey reported no resident harvest on 67 Type 1 and three Type 6 licenses. This discrepancy is due to sampling variability.

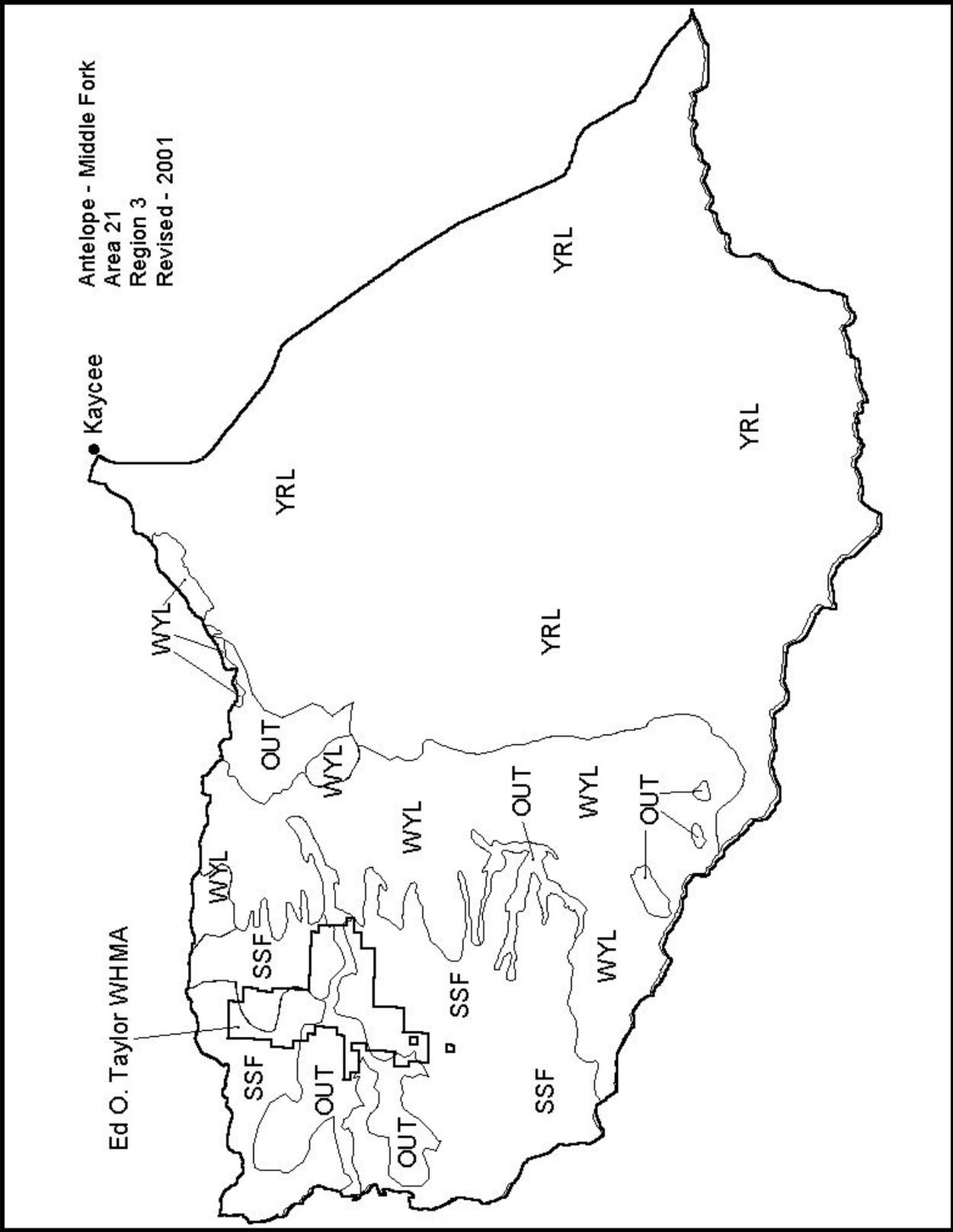
Population

This population is estimated at about 8,200 pronghorn putting this herd well above the revised population objective. The population estimate was generated with the EXCEL spreadsheet model. The Semi-Constant Juvenile/Semi-Constant Adult (SCJ/SCA) model was chosen as it produced the lowest AIC value (113). The model attempts to track eight end-of-year population estimates generated by line transect surveys over the last 20 years, the last obtained in 2012. The 2006 (6,375 \pm 1,949) estimate was the highest to date but the model does not align though its confidence interval. The 2012 estimate (4,194 \pm 630) was 35% lower with a much narrower confidence interval. This was the first of the surveys flown using the one observer technique. The model indicates this population has more than doubled since 2007 and shows little influence from the record high harvest of recent years. This is highly unlikely. Inadequate classification samples and the fluctuating buck ratios likely contribute to the questionable results. It is more likely this population decreased through 2013 and then increased the last two years with the high fawn ratios, although much less than the model suggests.

The population model's increasing trend conflicts with the harvest data, landowner surveys and field observations which suggest a stable to decreasing population. Harvest data clearly showed decreasing hunter success and increasing hunter effort through 2014, reflective of tougher hunting conditions due to lower pronghorn numbers. Given that record harvest did not dampen the model's growth rate it is difficult to put much credibility in the outputs. Therefore, the model is considered a poor model.

Management Summary

No changes are proposed for 2016 after license quotas were adjusted last year to address low hunter success and high hunter effort. Harvest and active license success are expected to remain stable for the upcoming hunting season. If expected harvest is achieved a postseason population estimate of 8,250 pronghorn is projected. However, managers expect this population to actually remain stable with this level of harvest.



2015 - JCR Evaluation Form

SPECIES: Pronghorn

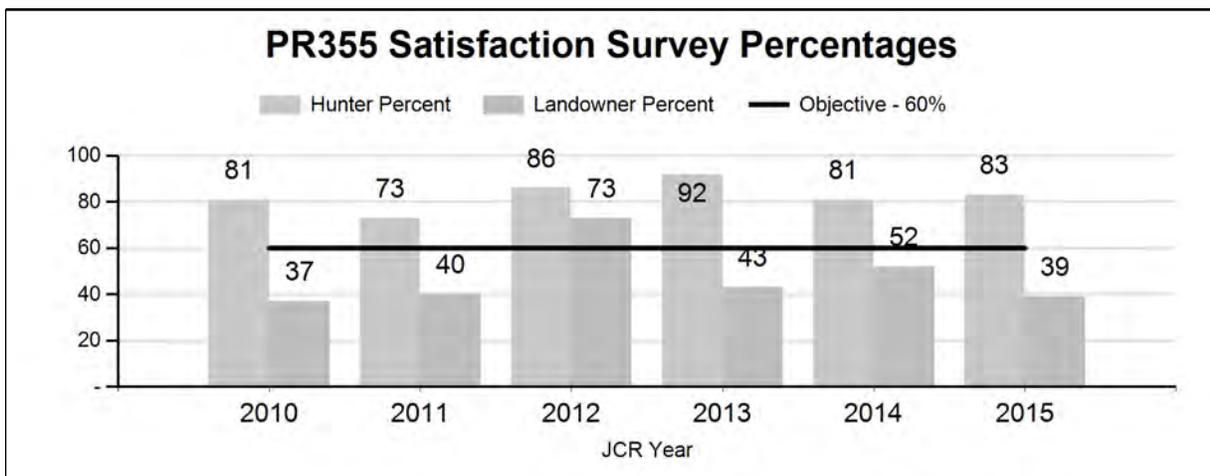
PERIOD: 6/1/2015 - 5/31/2016

HERD: PR355 - BECKTON

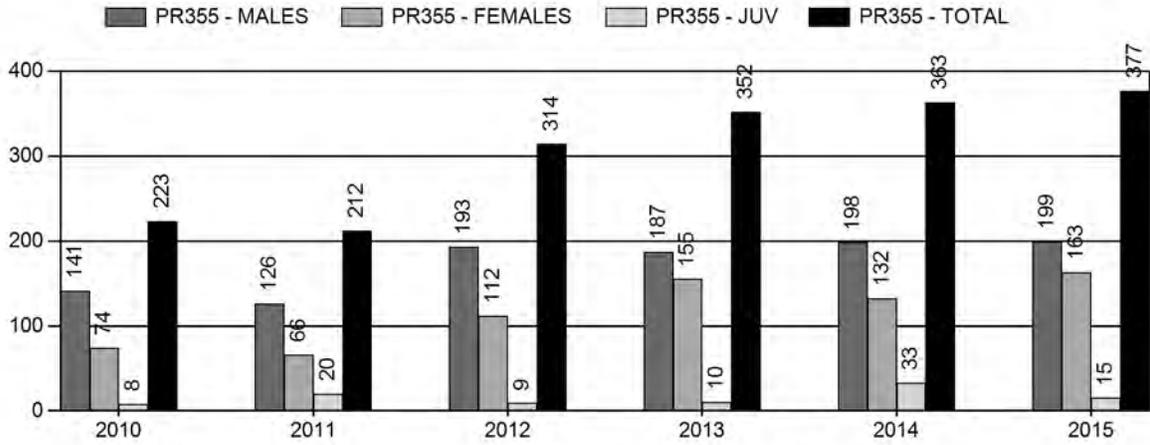
HUNT AREAS: 109

PREPARED BY: TIM THOMAS

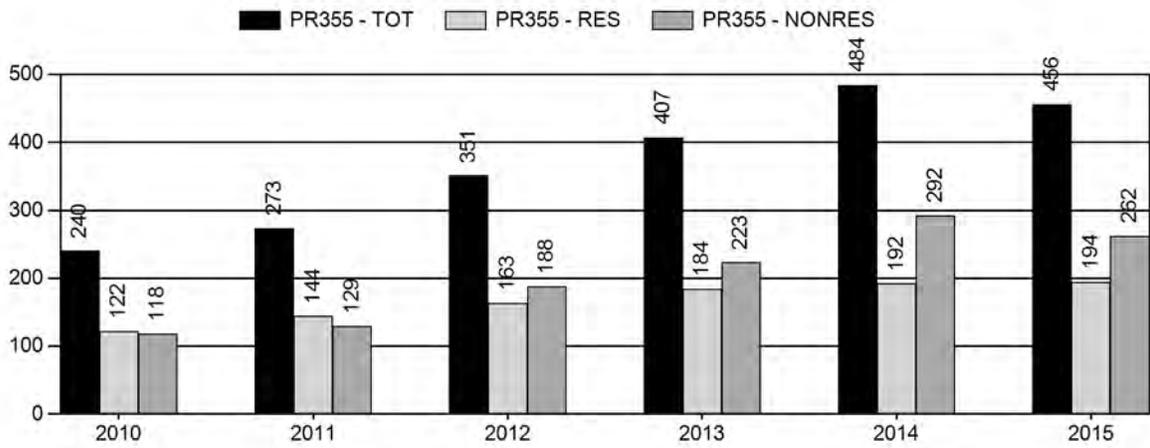
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Hunter Satisfaction Percent	82%	83%	83%
Landowner Satisfaction Percent	50%	39%	50%
Harvest:	293	377	400
Hunters:	351	456	475
Hunter Success:	83%	83%	84%
Active Licenses:	399	535	550
Active License Success:	73%	70%	73%
Recreation Days:	1,303	2,231	2,300
Days Per Animal:	4.4	5.9	5.8
Males per 100 Females:	43	22	
Juveniles per 100 Females	48	39	
Satisfaction Based Objective			60%
Management Strategy:			Private Land
Percent population is above (+) or (-) objective:			1%
Number of years population has been + or - objective in recent trend:			10



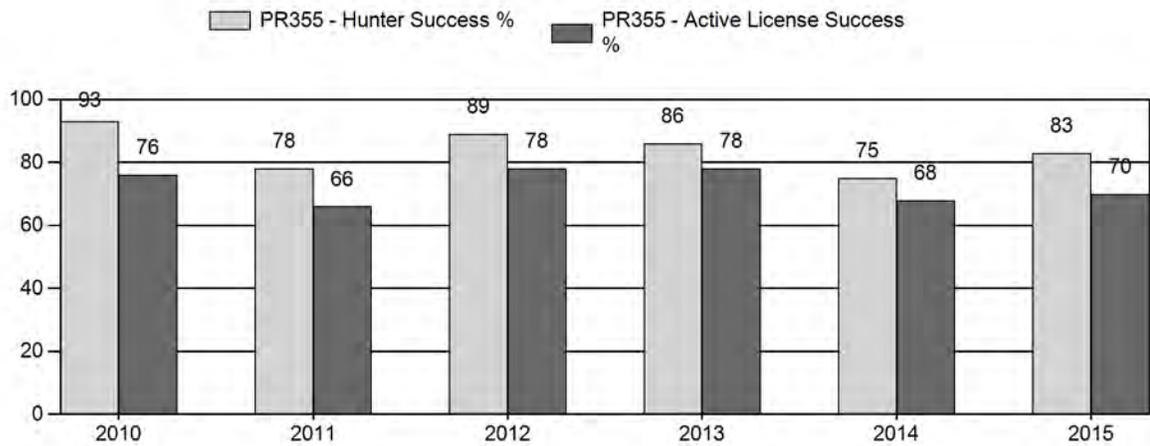
Harvest



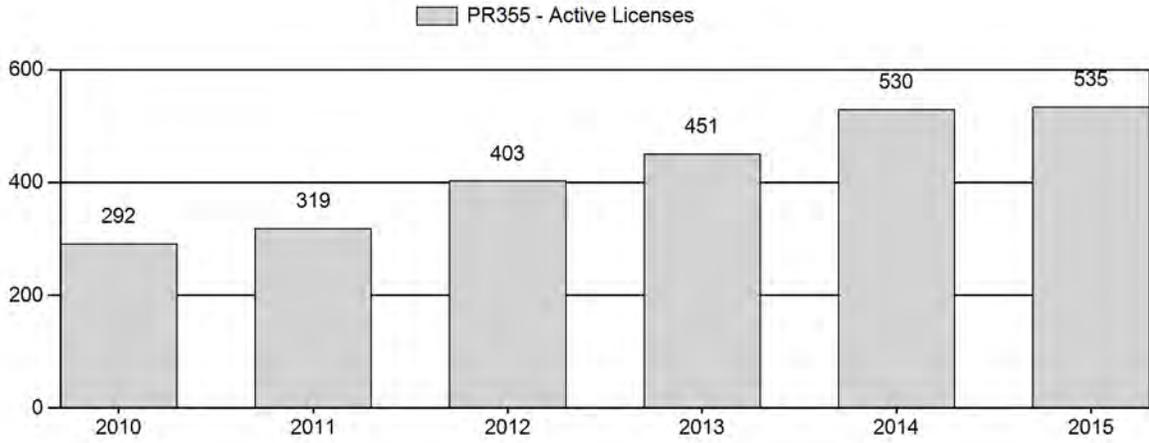
Number of Hunters



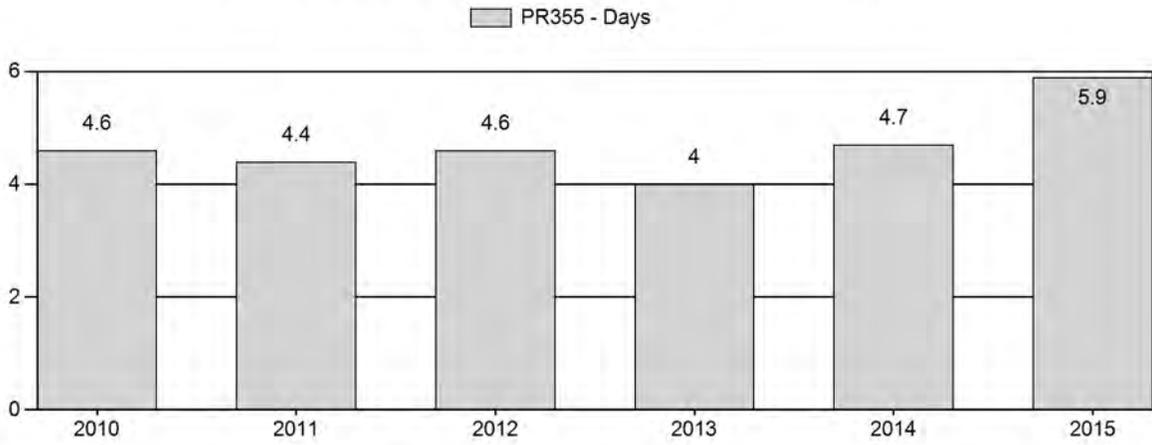
Harvest Success



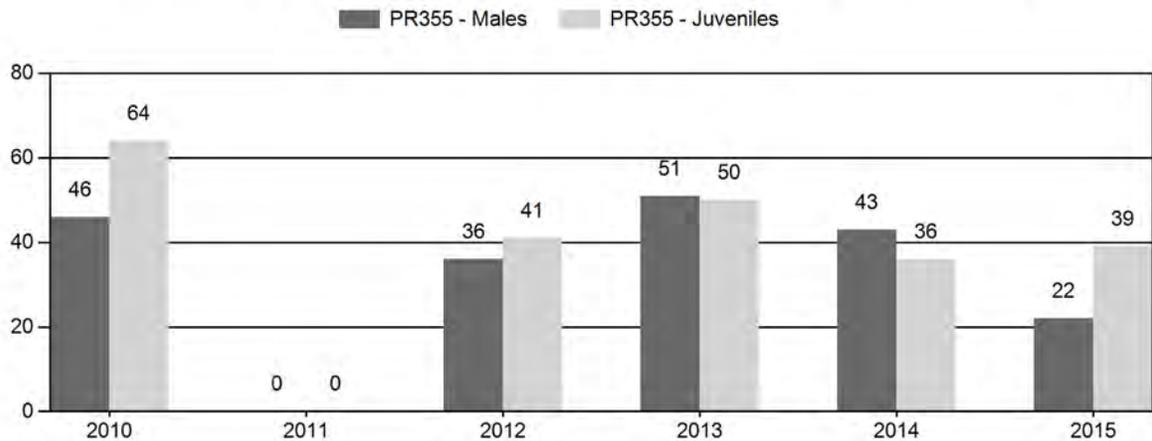
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR355 - BECKTON

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	1,459	12	32	44	22%	95	48%	61	30%	200	969	13	34	46	± 13	64	± 16	44
2011	1,523	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2012	1,428	18	34	52	20%	145	56%	60	23%	257	623	12	23	36	± 9	41	± 9	30
2013	1,851	16	38	54	25%	105	50%	53	25%	212	792	15	36	51	± 13	50	± 13	33
2014	1,521	7	16	23	24%	53	56%	19	20%	95	815	13	30	43	± 17	36	± 15	25
2015	0	8	12	20	14%	92	62%	36	24%	148	660	9	13	22	± 0	39	± 0	32

**2016 HUNTING SEASONS
BECKTON PRONGHORN HERD (PR355)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
109	1	Sep. 15	Nov. 30	350	Limited quota	Any antelope
	6	Sep. 15	Nov. 30	350	Limited quota	Doe or fawn

Special Archery Season Hunt Areas	Opening Date	Limitations
109	Aug. 15	Refer to Section 2 of this Chapter

Hunt Area	Type	Quota change from 2015
109	6	+ 50
Herd Unit Total	6	+ 50

Management Evaluation

Current Hunter / Landowner Management Objective: 60% Satisfaction

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

Management Strategy: Private Land

2015 Hunter Satisfaction Estimate: 83%

2015 Landowner Satisfaction Estimate: 39%

Most Recent 3-year Running Average Hunters Satisfaction Estimate: 85%

Most Recent 3-year Running Average Landowner Satisfaction Estimate: 45%

Herd Unit Issues

The Beckton Pronghorn Herd Unit is located west of Interstate Highway 90, north of South Piney Creek and off national forest, along the foothills of the Bighorn Mountains. This herd unit contains the towns of Story, Big Horn, Sheridan, Ranchester and Dayton, as well as significant rural-residential development.

The management objective for the Beckton Pronghorn Herd Unit is a Hunter and Landowner Satisfaction Objective at 60% or higher, with a secondary objective of 30 or more bucks observed per 100 does. The management strategy is Private Land Management. The objective and management strategy were last revised in 2014.

The majority of this herd unit is private lands, much of it developed as rural residential areas or small acreage ranchettes. There are few public land hunting opportunities available in this herd unit. The restricted access has made it difficult to attain adequate harvest to regulate pronghorn populations in portions of this herd unit. Rural residential development limits safe hunting opportunities in portions of this herd unit.

Weather

The spring and early summer of 2015 was generally warm and wet, resulting in good conditions for forage production in the northwest portion of the Sheridan Region. Conditions generally became warmer and drier as you went south and east, which is consistent with normal weather patterns, but were still favorable during most of the summer. The fall of 2015 was generally warm and open well into November. The 2015-16 winter was mostly open, with short periods of cold and snowy conditions followed by periods of warm weather. Record El Nino conditions existed in the Pacific Ocean during 2015-16, influencing intermountain west weather patterns. Overall, adults entered the winter in good condition and likely survived the winter well. Fawns likely saw average to above average over-winter survival.

Habitat

There are no habitat transects within or near this herd unit. This herd unit is located along the foothills of the Bighorn Mountains and contains open rangeland dominated by short-grass prairie and big sagebrush, dry land and irrigated crop lands, and numerous rural subdivisions.

Field Data

Fawn production, as measured by the observed fawn:doe ratio, has exceeded 60 fawns per 100 does only once (i.e. 2010) in the past 13 years, suggesting this herd is not likely to grow quickly, even with limited harvest. In 2015 we classified 148 pronghorn, about 50% more than in 2014, but still well below desired sample size of 660 at the 90% confidence level. Low samples sizes continues to be partly a function of lack of effort due to competing work demands. With such a low sample size, it is difficult to make reasonable extrapolations based on these data. While we have continued to increase harvest in this herd unit, the population appears to have at least remained steady and distribution continues to expand. This suggests the low observed doe:fawn ratio may be biased and not representative of the true population.

The observed buck to doe ratio can be highly variable between years in this herd unit, likely due to bias associated with small sample sizes. While we are confident we have sufficient bucks to maintain adequate breeding of females as well as provide the current level of buck harvest in this herd unit, we did observe only 22 bucks:100 does, the lowest observed buck:doe ratio in 25 years in this herd unit. Based on the 3-year running average we are over the minimum of 30 males:100 females to satisfy the secondary management objective in this herd unit. We will monitor buck numbers closely over the next year and make efforts to increase samples size during the 2016 classification surveys.

Hunter satisfaction has remained high, with 83% of surveyed hunters (n=82) satisfied or very satisfied in 2015. The high hunter satisfaction level reflects Department personnel efforts to advise perspective hunters of the limited access opportunities and the need to make arrangements for access prior to purchasing a license.

Nonresident hunter satisfaction rebounded to 87.5% in 2015 after decreasing significantly in 2014 (77%). We saw a significant increase in the demand for leftover antelope licenses in 2014. We believe the decrease in satisfaction that year was due to hunters purchasing licenses for this herd unit without either talking with regional personnel or securing access to hunt private lands.

We again saw an increase for demand in licenses in 2015 but it appears more hunters talked to regional personnel and were advised of realistic hunting opportunities.

Harvest Data

We have sold all available licenses in this herd unit for the past 3 years, something we had not done since 2005. We maintained license numbers in 2015 to monitor the participation rate. The participation rate for Type 1 licenses did increase from 2014 (75%) to 2015 (85%).

An estimated 456 hunters harvested an estimated 377 pronghorn, the highest harvest ever in this herd unit. Harvest increased 4% in 2015 compared to 2014, despite a 6% decrease in hunters. Hunters success was 83%, similar to the past 10 year mean of 86%. Hunters with a Type 1 (any antelope) license had a higher success rate (73%) than Type 6 (doe or fawn) license holders (67%). Hunter effort, as measured by the number of days hunted per animal harvested, was 5.9 days/animal, a significant increase from recent years in effort required to harvest an antelope.

We continue to harvest relatively high buck numbers from this herd unit, with a record 199 bucks harvested this year. During the past 10 years, we have averaged 160 bucks harvested each year, and 1,598 bucks total. This is 50% more than the total buck harvest during the previous 23 years of hunting in this herd unit. We may be reducing buck numbers below desired levels with the current rate of buck harvest.

The improved success rate may have been reflective of less first-time or naïve hunters in this herd unit in 2015. Managers made great efforts to provide realistic expectations to potential license purchasers during pre-season conversations. Favorable habitat conditions in 2015 resulted in pronghorn scattered across the herd unit through the entire summer and fall, possibility accounting for the increased effort required to find antelope that weren't concentrated in the usual spots.

Population

We changed the management objective for this herd unit from a postseason population objective to a hunter / landowner satisfaction objective. Due to this herd's small size, both in numbers and geographically, we have never flown a line transect survey in this herd unit. A trend count was last conducted in May 1999, when 382 pronghorn were counted and resulted in an estimated 1,500 pronghorn (25% sightability estimated).

We do have a spreadsheet population simulation model for this herd unit. We only have harvest and classification data from this herd unit. Classification data is collected somewhat sporadically in this herd unit, and is likely biased due to low sampling effort and small sample sizes. Modeling parameters, specifically juvenile survival rates, are set wider than recommended to make this model work.

The "Time-Specific Juvenile – Constant Adult Survival Rate" (TSJ,CA) spreadsheet simulation model was chosen to estimate the post-season population for this herd. This model had the highest relative Akaike information criterion (AIC) value (146), but had the best fit (37) of the three possible models. It also seemed to better model manager's perceptions of population dynamics in this herd unit. Since we have limited management data, small survey sample size,

sporadic data collection, and no independent population estimate for this herd unit, we consider this a “poor” population model.

Landowners who responded (n = 23) to an annual survey indicated pronghorn populations were ‘at’ (39%) or ‘above’ (61%) desired levels (Fig 1); and suggested similar (67%) or more liberal (33%) hunting season strategies as in recent years.

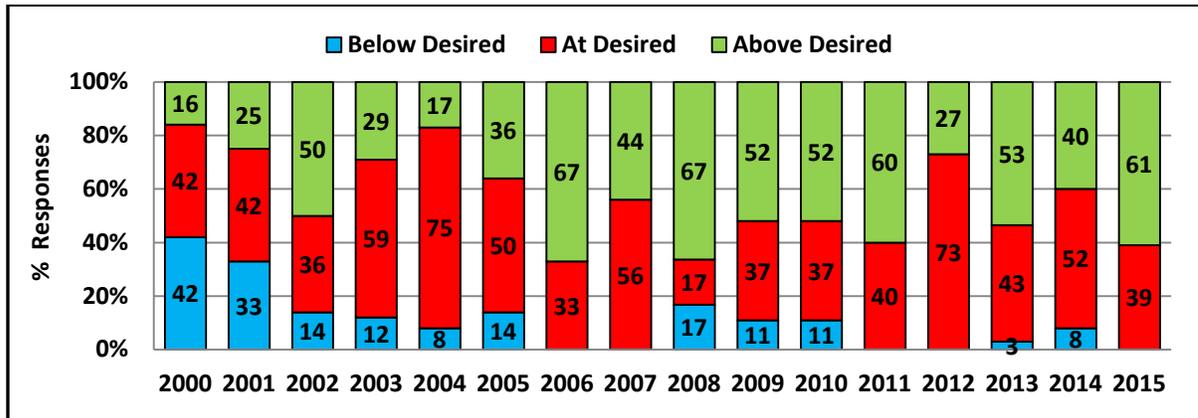


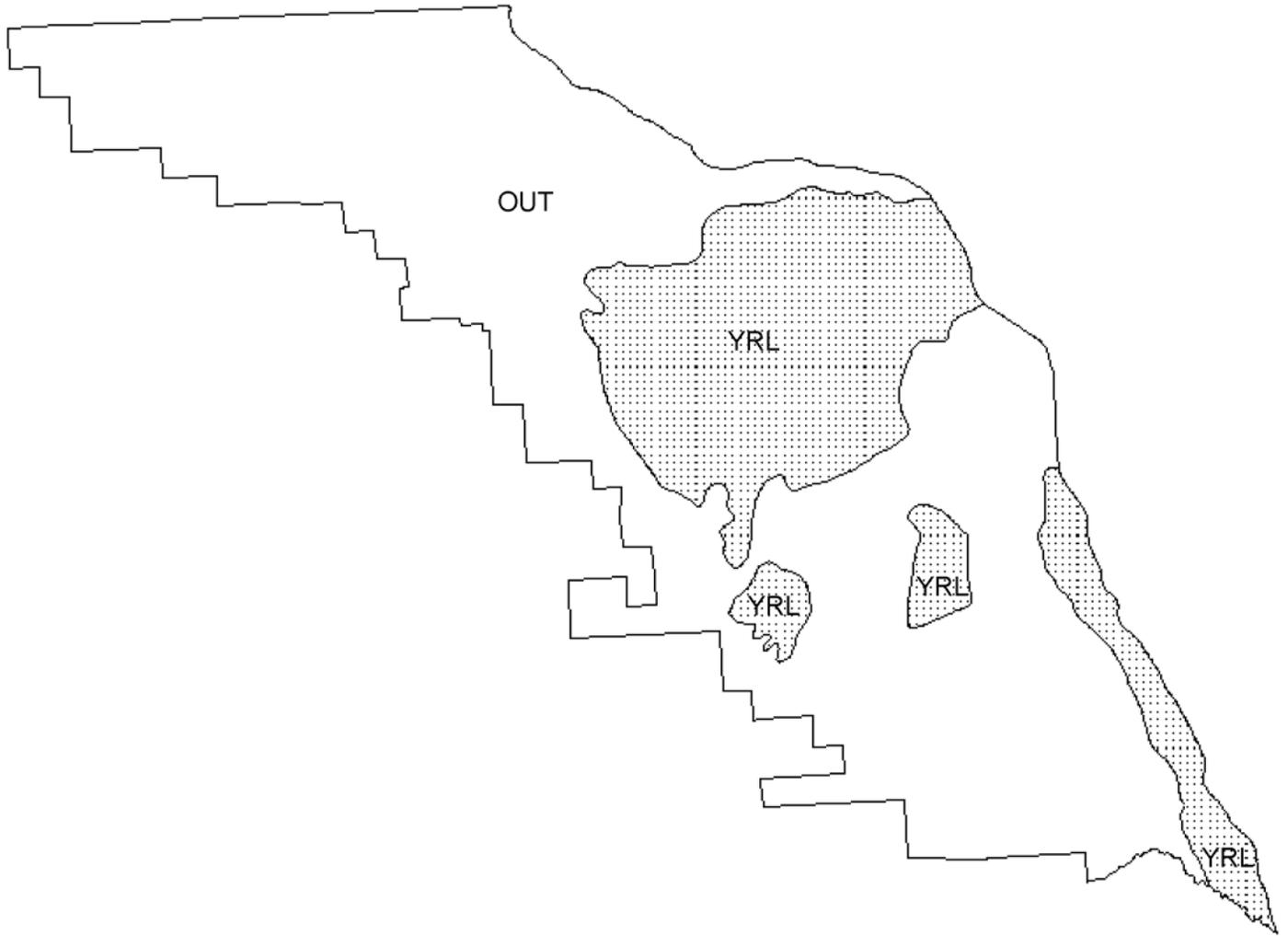
Figure 1. Relative landowner perceptions of pronghorn antelope populations on their property in the Beckton Antelope Herd Unit, by percentage. Desired level is a subjective expression of individual landowner tolerance of pronghorn. Sample sizes some years were as low as 6 responses.

Management Summary

The regular hunting season in this herd unit traditionally runs 10 weeks (September 15 – November 30) for both Type 1 and Type 6 licenses, with an archery pre-season August 15 – September 14. Hunters in this herd unit are able to purchase two Type 1 (any antelope) licenses and four Type 6 (doe or fawn antelope) licenses, which allows hunters the opportunity to harvest multiple animals. There is limited pronghorn hunting on scattered State Trust Lands, as well as three Walk-In Areas and one Hunter Management Area. We commonly observe high buck numbers, as measured by buck:doe ratios, averaging 44 bucks:100 does over the long-term (n=30 years). This is likely a function of limited access to private lands where the majority of pronghorn occur. We may be reducing buck numbers due to recent high harvest rates.

We project a harvest of approximately 400 pronghorn in 2016, resulting in an estimated post-season population of about 1,950 pronghorn. These predictions assume near normal fawn production and survival, as well as similar license sales and success rates for the 2015 hunting season. Due to limited access to private land, our ability to manage this population towards desired objectives (i.e. higher landowner satisfaction) with hunting is very limited.

We increased Type 6 licenses for 2016. We have some concern about buck harvest as well as our ability to place additional buck hunters so we maintained those licenses (i.e. Type 1) at current levels. The additional Type 6 licenses should help any landowner looking to increase doe harvest to control populations.



PH355 - Beckton
HA 109
Revised - 4/87