2017 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2017 - 5/31/2018

HERD: PR615 - RED DESERT

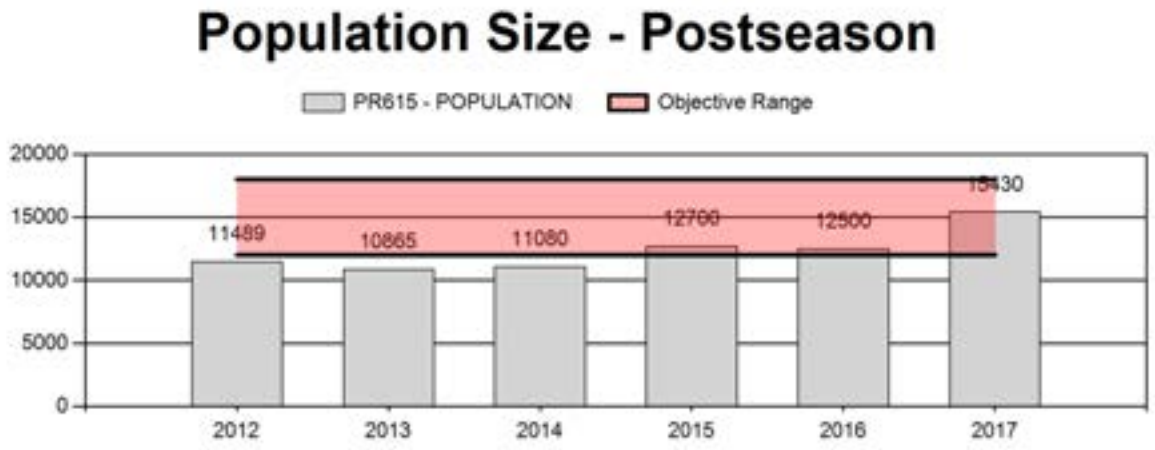
HUNT AREAS: 60-61, 64 | PREPARED BY: GREG HIATT

	2012 - 2016 Average	2017	2018 Proposed
Population:	11,727	15,430	14,960
Harvest:	487	253	305
Hunters:	507	264	315
Hunter Success:	96%	96%	97%
Active Licenses:	553	286	345
Active License Success:	88%	88%	88%
Recreation Days:	1,624	713	915
Days Per Animal:	3.3	2.8	3
Males per 100 Females	57	64	
Juveniles per 100 Females	51	61	

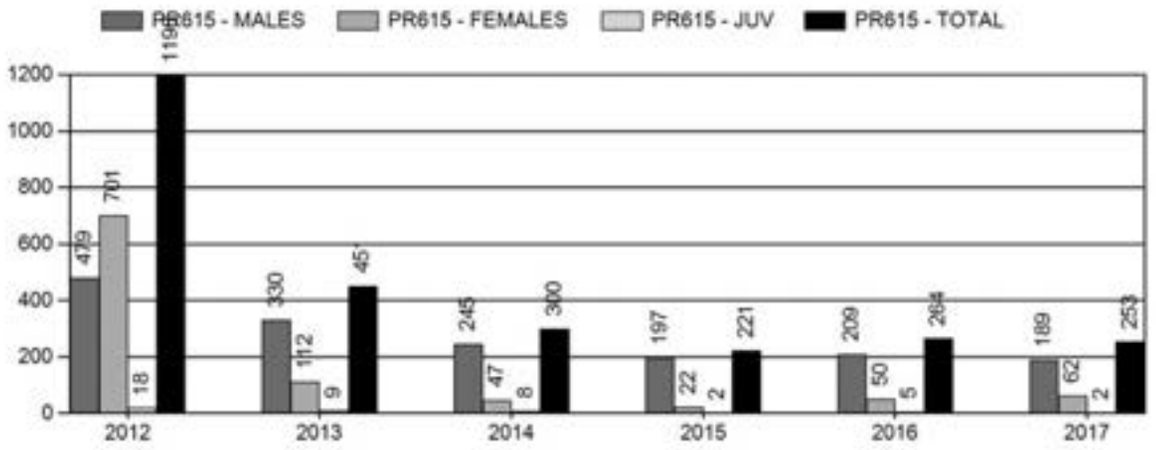
Population Objective (± 20%) :	15000 (12000 - 18000)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	3%
Number of years population has been + or - objective in recent trend:	1
Model Date:	02/24/2018

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

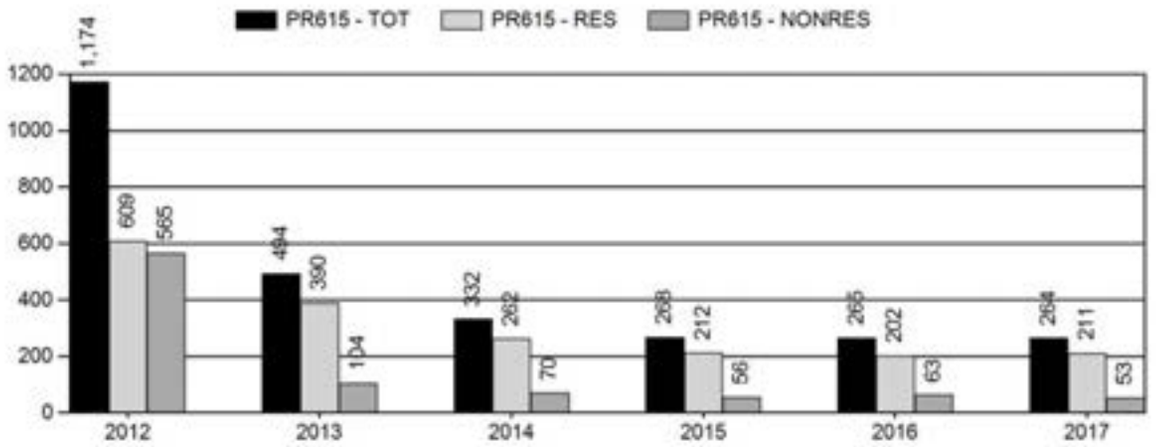
	JCR Year	Proposed
Females ≥ 1 year old:	0.7%	1.9%
Males ≥ 1 year old:	5.4%	5.6%
Total:	1.9%	2.6%
Proposed change in post-season population:	0.7%	3.0%



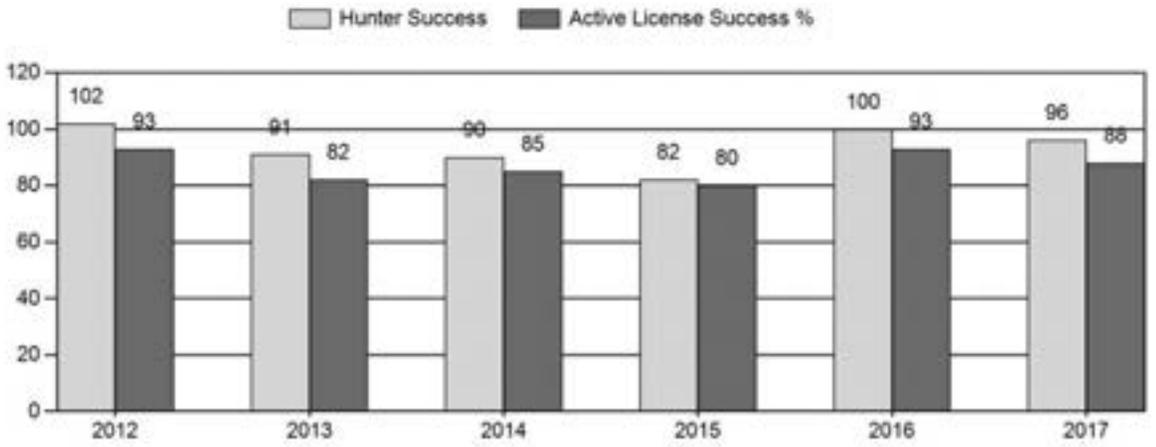
Harvest



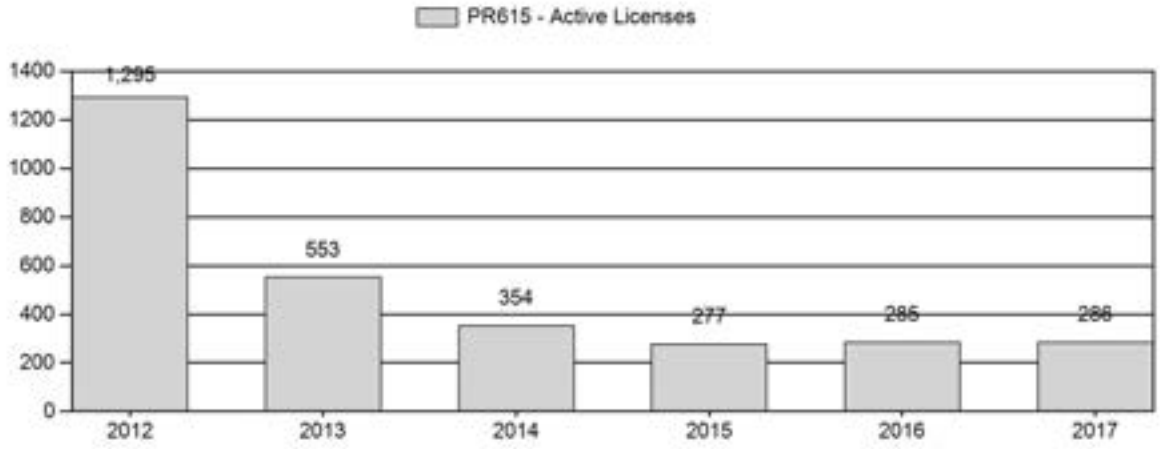
Number of Active Licenses



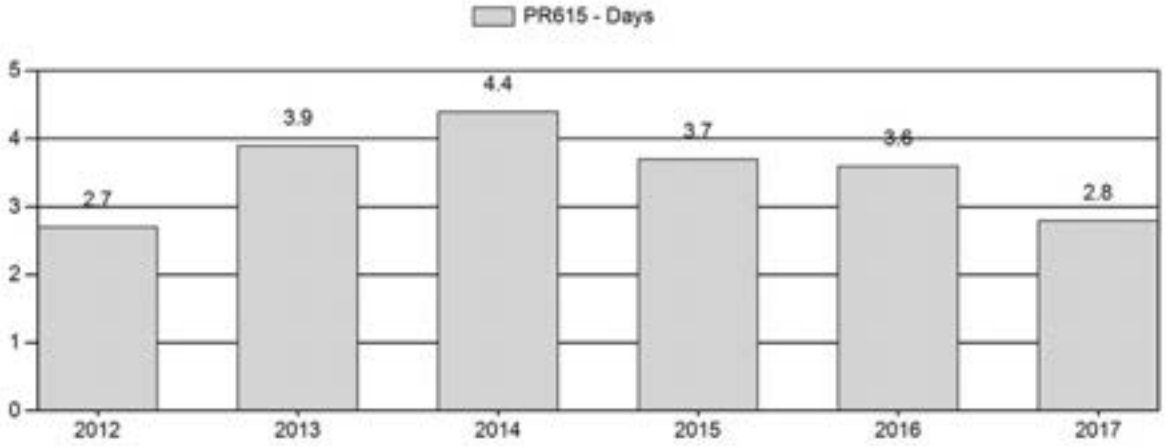
Harvest Success



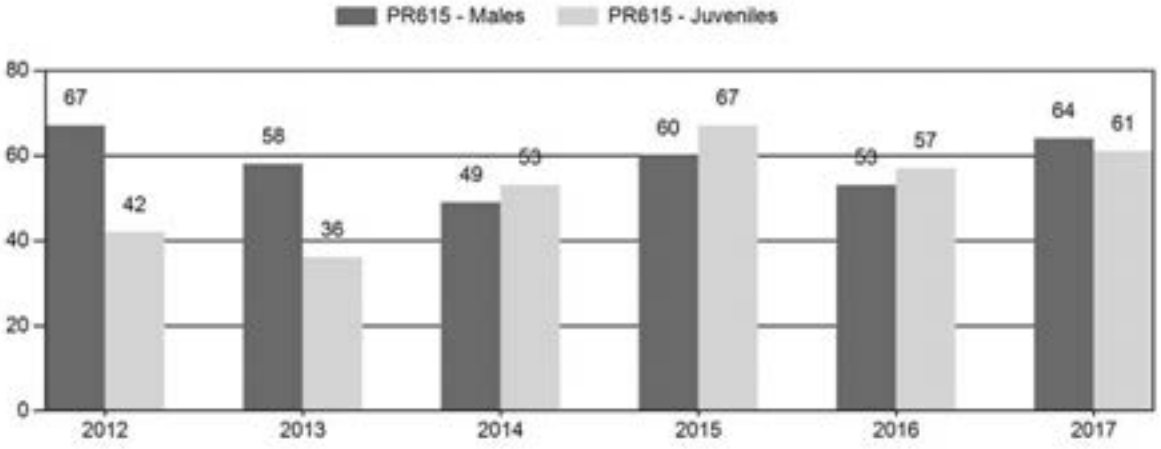
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR615 - RED DESERT

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	12,798	177	888	1,065	32%	1,600	48%	667	20%	3,332	2,161	11	56	67	± 4	42	± 3	25
2013	11,361	66	809	875	30%	1,517	52%	539	18%	2,931	1,629	4	53	58	± 3	36	± 3	23
2014	11,410	110	519	629	24%	1,285	49%	686	26%	2,600	1,535	9	40	49	± 3	53	± 4	36
2015	12,940	257	697	954	26%	1,585	44%	1,063	30%	3,602	2,267	16	44	60	± 3	67	± 4	42
2016	12,775	265	728	993	25%	1,873	48%	1,067	27%	3,933	1,756	14	39	53	± 3	57	± 3	37
2017	15,708	166	695	861	28%	1,347	44%	827	27%	3,035	2,198	12	52	64	± 4	61	± 4	37

2018 HUNTING SEASONS
RED DESERT PRONGHORN HERD (PR615)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	License	Limitations
60	1	Sep. 15	Oct. 31	75	Limited quota	Any antelope
	6	Sep. 15	Oct. 31	50	Limited quota	Doe or fawn
61	1	Sep. 8	Oct. 31	100	Limited quota	Any antelope
	6	Sep. 8	Oct. 31	50	Limited quota	Doe or fawn
64	1	Sep. 15	Oct. 31	150	Limited quota	Any antelope
	6	Sep. 15	Oct. 31	75	Limited quota	Doe or fawn
Archery						
60, 64		Aug. 15	Sep. 14			Refer to Section 2 of this Chapter
61		Aug. 15	Sep. 7			Refer to Section 2 of this Chapter

Hunt Area	License Type	Quota change from 2017
60	1	+25
	6	+25
61	1	0
	6	+25
64	1	+50
	6	+50
Herd Unit Total	**1**	**+75**
	6	**+100**

<u>Management Evaluation</u>
Current Postseason Population Management Objective: 15,000
Management Strategy: Special
2017 Postseason Population Estimate: 15,400
2018 Proposed Postseason Population Estimate: 14,950

Herd Unit Issues

The Red Desert pronghorn herd is managed toward a post-hunt population of 15,000 pronghorn, an objective last reviewed in 2015. Population size is estimated using a spreadsheet model developed in 2012 and last updated in 2018. The herd is in special management, with harvest quotas designed to maintain pre-hunt buck:doe ratios above 60:100.

Historically, access in this herd unit has been good. Much of the unit is public land, and hunters have been able to acquire access to most private lands in the checkerboard. The seasonal distribution map for the herd has not been updated for many years, and it is likely there are crucial winter habitats, particularly in Area 60, that have not yet been delineated.

Habitat issues in this herd unit include continued gas field development, coalbed natural gas development, opening of an *in situ* uranium mine with other mines proposed and possible development of shale oil. Many miles of sheep-tight fences exist in the herd unit, impeding pronghorn movements and migrations, and increasing losses during severe winters.

Weather

The 2016-17 winter had numerous periods of bitter cold with significant snowfall, continuing through February, and was exceptionally severe west of this herd unit. Distribution of pronghorn seen during a line transect survey in May 2017 suggests high losses seen in the western portion of the state during that winter extended as far east as the west half of Area 60. In contrast, the 2017-18 winter has been cold but with little snowfall, leaving most winter ranges largely open, and losses during this winter are expected to be near average.

Habitat

Only one shrub transect has been established in this herd unit, on the Chain Lakes WHMA, but was not read in 2017. Many sagebrush plants that had appeared dead from drought in 2013 produced small but viable sprouts of green growth following high precipitation in 2015 and 2016. Shrub production presumably improved with good spring moisture in 2017. While no herbaceous habitat transects are established within occupied habitats of this herd unit, herbaceous forage production appeared to be above average due to the increased precipitation.

Habitat losses to uranium development have increased with opening of the Lost Creek *in situ* uranium mine in Area 61, but are not in or near crucial pronghorn ranges. Habitat losses to gas development have slowed in most fields due to low oil and gas prices. Use of telemetry data from collared pronghorn does has led to proposals to modify some problem fences within the checkerboard.

Field Data

Classification sample size decreased in 2017, almost 10 percent less than the 5-year average. All of the decrease in sample came from Areas 61 and 64, with Area 60 having a slight increase.

With continued moisture, fawn production improved to 61:100 in 2017 and was well above the five-year average of 51:100. Fawn production improved in both Area 61 and Area 64, declining slightly in Area 60.

The herd buck:doe ratio increased to 64:100 in 2017 and met the special management criterion of 60:100, having failed to meet it in three of the previous five years. All of the increase was in the supply of adult bucks, with the yearling buck:doe ratio declining slightly, presumably a result of lower fawn production in 2016 and reduced fawn survival in the 2016-17 winter. Both Areas 60

and 64 met this criterion, at 74:100 and 65:100. The supply of bucks in Area 61 declined slightly, to 57:100, due to a reduced supply of yearling bucks. Both Area 60 and 64 showed increased numbers of adult bucks, whereas this ratio remained stable in Area 61.

Harvest Data

Hunter success declined in 2017, but was still better than reported from 2012 through 2015. Hunter effort declined to its lowest level since 2012. Following three years with statistically the poorest hunting in this herd since it was delineated in 1976, 2016 and 2017 harvest data suggest the herd is recovering. Hunter success was again highest in Area 61, essentially at the same levels as 2016 for both types of licenses. Hunter success declined in Area 64, for both types. Success also declined in Area 60 for both types, to a greater extent. The average days of effort required to harvest an animal improved in Areas 61 and 64, but rose for both types of licenses in Area 60. Hunters with Type 1 licenses in each of the three areas expended more effort than doe/fawn hunters, almost double the doe/fawn average in each area. With the difficulty in drawing a Type 1 license in this herd, it appears more hunters are treating the license like a once in a lifetime opportunity and expending extra effort and time to try to find a trophy buck to harvest. Hunter satisfaction rose above 90 percent in 2017, the first time since 2012.

Population

Modeling this herd has been difficult, due to two low line transect estimates in 2001 and 2007, followed by two high estimates in 2010 and 2013. A recent line transect survey flown in May 2017 estimated 12,285 pronghorn in the herd at end-of-year. In an effort to align the model with the more recent independent estimates of herd size, a model was developed that doubles the emphasis on line transect estimates.

The Time-Specific Juvenile & Constant Adult Survival (TSJ,CA) spreadsheet model with emphasized line transect data provided the best fit with observed buck:doe ratios while falling within the confidence intervals of three of the five older line transect estimates. This model was well centered within the confidence interval of the sixth, most recent line transect estimate. It is considered a “Fair” model of the herd. Annual adult survival was predicted at 91 percent, a reasonable level. Juvenile survival rates fluctuated within the allowed range but did hover at maximum or minimum values for many years. The CJ,CA and SCJ,SCA models each had slightly lower AIC values, but both models predicted herd sizes that fell within confidence intervals of only two of the six line transect estimates and generated roughly stable buck:doe estimates that did not track the dips and rises of observed values. Fawn production in 2018 was projected to be near the five-year average and the model was run with median juvenile survival in 2018.

The model predicts the herd was 7 to 15 percent below objective from 2012-2016, but reached objective size in 2017. Assuming average fawn production and survival, the 2018 pre-hunt population should be similar to that seen in 2017. The slight increase in harvest quotas in 2018 should stabilize the herd near objective size while taking advantage of improved buck:doe ratios in two of the three areas.

Management Summary

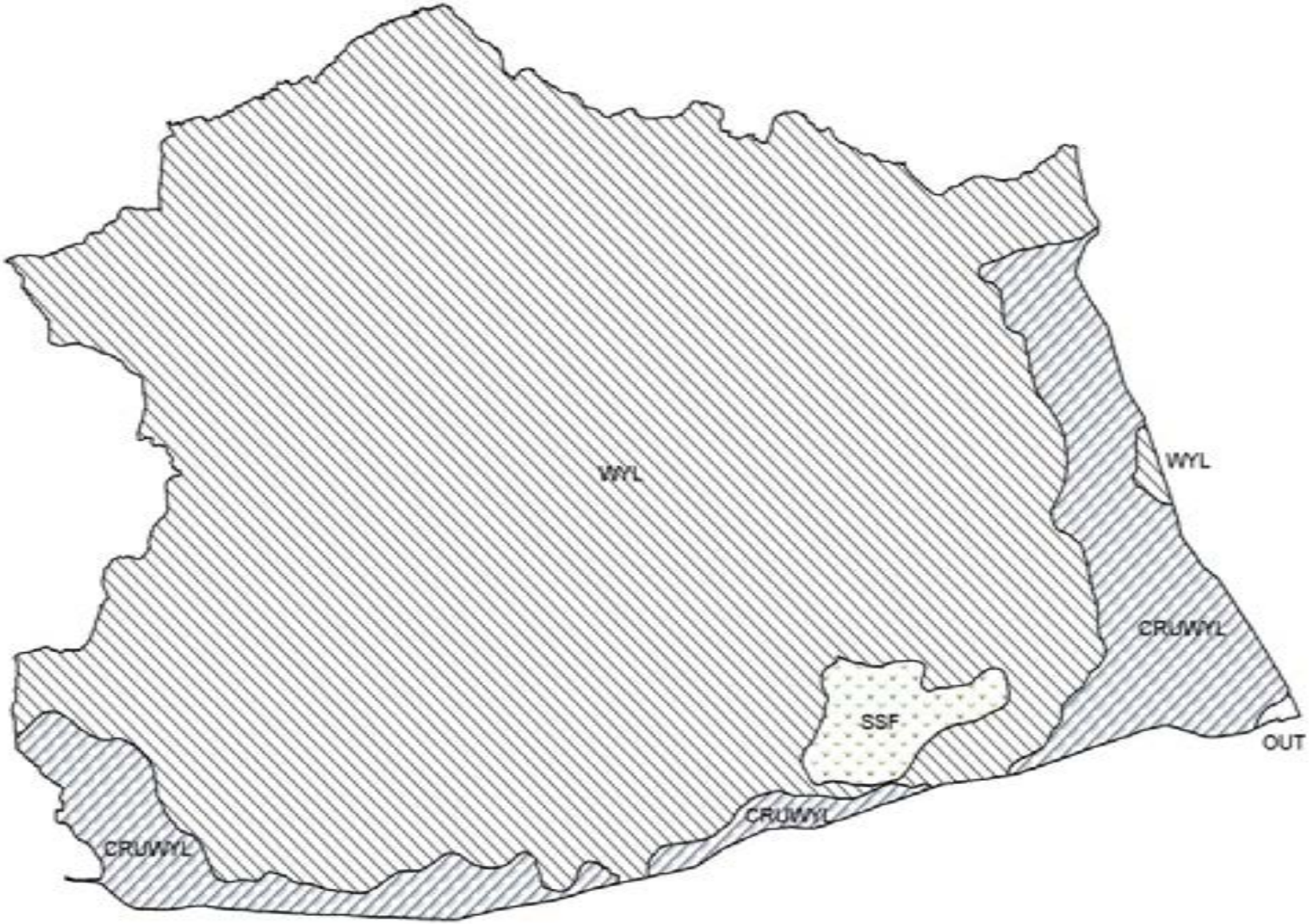
This herd was well below objective size following a record harvest and severe winter losses in 1992. Conservative harvests after that winter combined with improved fawn production and survival beginning in 2007 allowed the herd to reach and be maintained at objective size in 2010 and 2011.

According to the spreadsheet model, the combination of heavy harvests, losses to EHD and extremely poor fawn production in 2012 and 2013 significantly reduced herd size, estimated around 13,000. Improved fawn production beginning in 2015 provided the first increase in herd size in three years.

With the population estimated to be at objective size in 2017, harvests need to increase slightly, particularly for does, to maintain existing numbers. Quotas for Type 6 licenses were increased in all three areas. Both Areas 60 and 64 had buck:doe ratios that met the special management criterion and quotas for Type 1 licenses were increased in each area. The Type 1 quota in Area 61 was not increased because the buck:doe ratio in that area still failed to meet the 60:100 criterion.

With the projected harvest of roughly 245 bucks and 150 does and fawns, predicted herd size should remain stable around 15,000 pronghorn.

Opening dates are shifted by one day to stay on Saturday openers, with Area 61 opening with Area 62 and Areas 60 and 64 opening with most of the rest of the Lander Region. Closing dates are the same as in 2017.



PH615 - Red Desert
HA 60, 61, 64
Revised - 3/94

2017 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2017 - 5/31/2018

HERD: PR630 - IRON SPRINGS

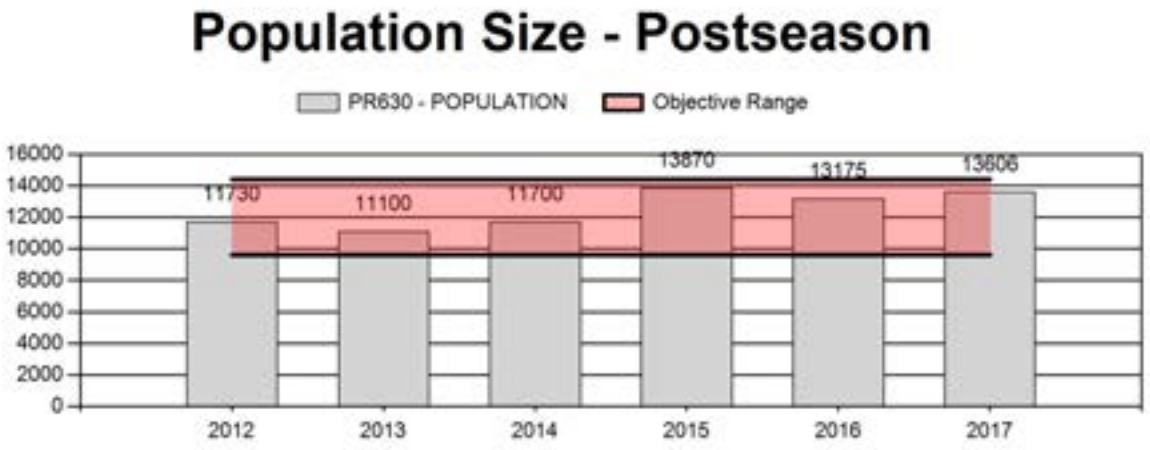
HUNT AREAS: 52, 56, 108 | PREPARED BY: GREG HIATT

	2012 - 2016 Average	2017	2018 Proposed
Population:	12,315	13,606	13,462
Harvest:	656	716	865
Hunters:	633	682	830
Hunter Success:	104%	105%	104 %
Active Licenses:	749	832	1,005
Active License Success:	88%	86%	86 %
Recreation Days:	2,242	2,440	2,940
Days Per Animal:	3.4	3.4	3.4
Males per 100 Females	47	60	
Juveniles per 100 Females	52	48	

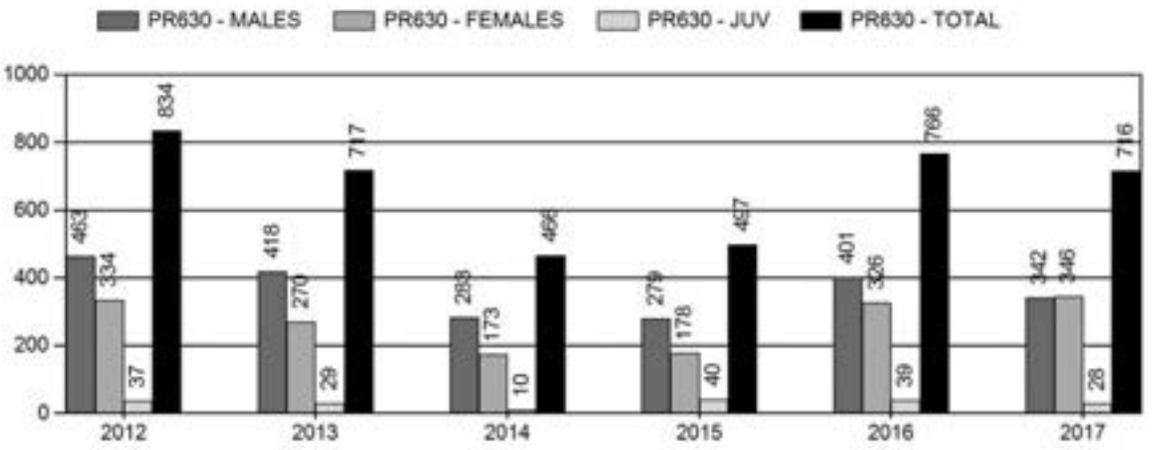
Population Objective (± 20%) :	12000 (9600 - 14400)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	13%
Number of years population has been + or - objective in recent trend:	5
Model Date:	02/26/2018

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

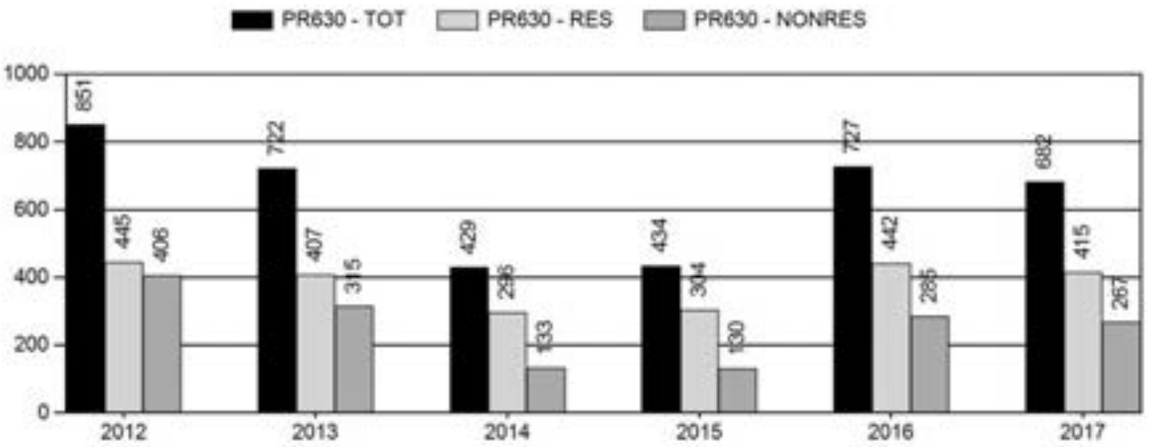
	JCR Year	Proposed
Females ≥ 1 year old:	4.7%	5.0%
Males ≥ 1 year old:	9.5%	11.0%
Total:	5.0%	6%
Proposed change in post-season population:	3.8%	1.05%



Harvest

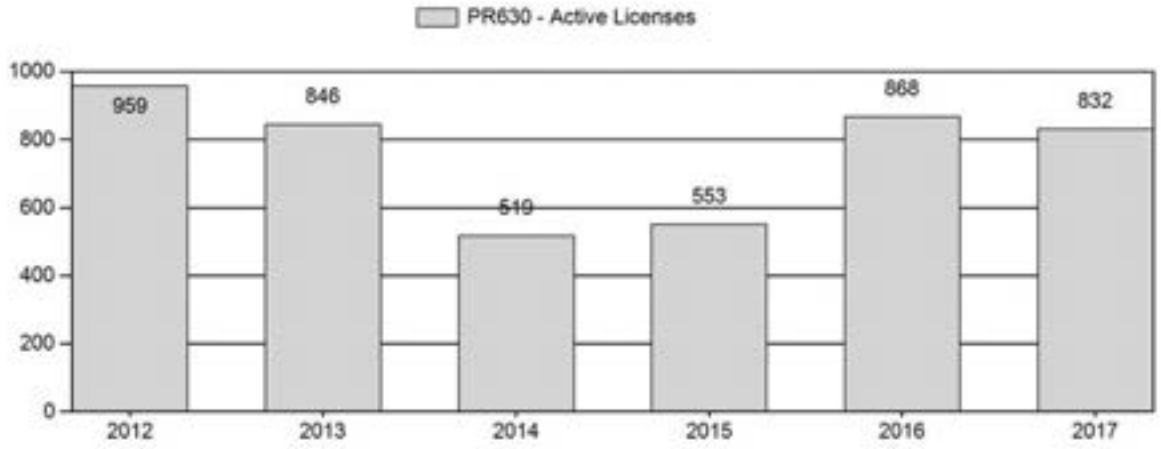


Number of Active Licenses

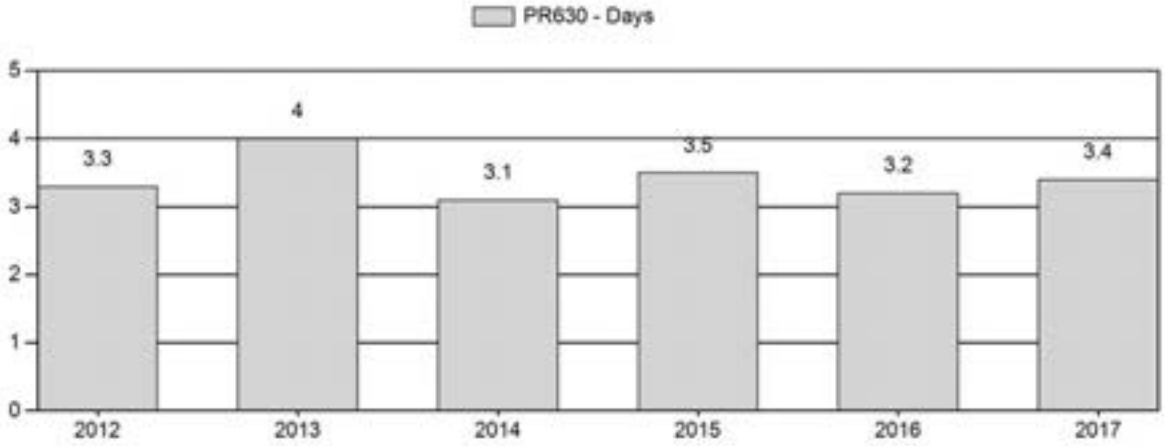


Harvest Success

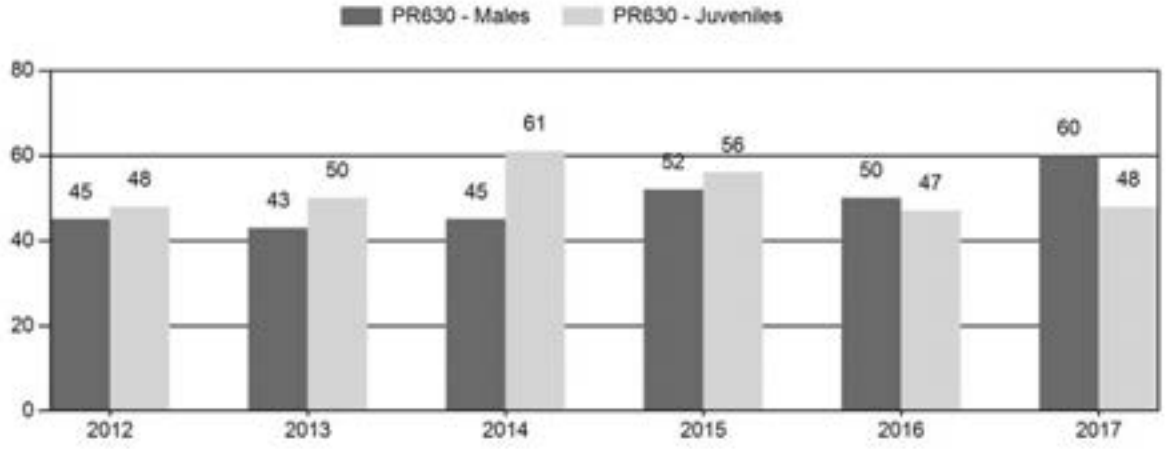
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR630 - IRON SPRINGS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	12,640	212	604	816	23%	1,801	52%	863	25%	3,480	1,295	12	34	45	± 3	48	± 3	33
2013	11,900	131	514	645	22%	1,488	52%	746	26%	2,879	1,336	9	35	43	± 3	50	± 3	35
2014	12,200	209	472	681	22%	1,518	49%	928	30%	3,127	1,823	14	31	45	± 3	61	± 4	42
2015	14,400	194	525	719	25%	1,375	48%	775	27%	2,869	1,731	14	38	52	± 4	56	± 4	37
2016	14,015	224	638	862	25%	1,730	51%	816	24%	3,408	1,436	13	37	50	± 3	47	± 3	31
2017	14,393	225	721	946	29%	1,588	48%	769	23%	3,303	1,878	14	45	60	± 4	48	± 3	30

2018 HUNTING SEASONS
IRON SPRINGS PRONGHORN HERD (PR630)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	License	Limitations
52	1	Sep. 16	Oct. 31	250	Limited quota	Any antelope
	2	Sep. 16	Nov. 14	150	Limited quota	Any antelope valid south of North Spring Creek
	6	Sep. 16	Oct. 31	200	Limited quota	Doe or fawn
	7	Sep. 16	Nov. 14	200	Limited quota	Doe or fawn valid south of North Spring Creek
56	1	Sep. 20	Oct. 31	50	Limited quota	Any antelope
108	1	Sep. 20	Oct. 31	100	Limited quota	Any antelope
	6	Sep. 20	Oct. 31	100	Limited quota	Doe or fawn
	7	Sep. 20	Nov. 30	100	Limited quota	Doe or fawn valid south of the Bridger Pass Road (B.L.M. Road 3301), east of the Continental Divide and north of the Miller Hill Road (Carbon County Road 505W)
Archery						
52		Aug. 15	Sep. 15			Refer to Section 2 of this Chapter
56, 108		Aug. 15	Sep. 19			Refer to Section 2 of this Chapter

Hunt Area	License Type	Quota change from 2017
52	1	+100
	2	0
	6	+50
	7	+50
56	1	0
108	1	0
	6	0
	7	0

Herd Unit Total	**1**	**+100**
	2	**0**
	6	**+50**
	7	**+50**

<u>Management Evaluation</u>
Current Postseason Population Management Objective: 12,000
Management Strategy: Recreation
2017 Postseason Population Estimate: 13,600
2018 Proposed Postseason Population Estimate: 13,450

Herd Unit Issues

The Iron Springs pronghorn herd is managed toward a post-hunt population size of 12,000 pronghorn, an objective last publicly reviewed in 2015. Population size is estimated using a spreadsheet model developed in 2012 and updated in 2017. The herd is in recreational management, with harvest quotas designed to maintain pre-hunt buck:doe ratios below 60:100.

Construction of the proposed Chokecherry and Sierra Madre wind farms, consisting of roughly 1,000 turbines and the associated road networks, could have significant impacts on important habitats in large portions of Areas 56 and 108, as well as the north portion of Area 52. Construction of several large, trans-continental powerlines would cross important winter habitats at the north edge of Area 56.

Access remains an issue in this herd unit, particularly in the checkerboard in association with the proposed Chokecherry and Sierra Madre wind farms. Private landowners have denied recreational access to the vast majority of Area 56 and a significant portion of Area 108 in preparation of the wind farms. The Walk-In program has opened access to large blocks of private land in Area 52 during some years, which helped address concerns over large numbers of pronghorn residing on irrigated croplands during summer and fall, but enrollment has declined as pronghorn numbers were reduced and native range response to increased precipitation reduced damage concerns. High pronghorn numbers during the winter have also been a concern on private lands in a portion of Area 108, but landowner consent for hunter access and addition of the Type 7 licenses with an extended season appears to be addressing that issue.

The seasonal distribution map was last revised in March 1994 and no changes have been made since that review. Observations during winters since 1994 indicate consideration should be given to delineating crucial winter ranges south of Saratoga, southeast of Chokecherry Knob and near Fort Steele. Fences continue to pose barriers to pronghorn movements throughout much of the herd unit, increasing mortality during tough winters. Sheep-tight fences may also contribute to low fawn survival in pastures with limited water sources during dry summers. Through cooperation between landowners and the BLM, and funding through WLCI, several miles of sheep-tight fence have been replaced with wildlife-friendly fencing during recent years.

Small acreages of crucial winter range have been lost to subdivision of deeded lands, primarily in the southern portion of the herd, and along Interstate Highway 80 in Area 56. Increased

subdivision of these habitats, especially if these tracts are fenced, could seriously degrade the quality and utility of some winter ranges and migration routes. Development, partitioning, and fencing of these lands could have more deleterious effects on pronghorn migrations and habitat than some energy developments. Segregating land ownership among dozens of owners also deters recreational use of those divided lands and inter-mixed public lands.

Losses to EHD were confirmed in the South Ferris herd immediately north of Area 56 in late summer 2013 and the disease probably struck pronghorn in this herd as well. A mule deer fawn died of EHD at the southern tip of Antelope Area 108 so it is likely the disease spanned at least through the northern half of the Iron Springs herd unit. This disease may recur if drought conditions return.

Weather

Record precipitation in 2015 produced exceptional vegetative growth, and improved fawn survival in many herds in the southern part of the state, and was followed by another wet spring in 2016 and good spring moisture in 2017. The increase in fawns recorded in other herds was not seen in this herd, in either of the past three years. Many of the does in this herd give birth in high elevation, mesic habitats near the interface with forested habitats. All three years had cold, wet, late spring storms that may have increased fawn losses due to hypothermia.

Condition of pronghorn going into the 2017-18 winter is expected to have been good because of improved forage production. The 2017-18 winter had numerous periods of bitter cold, continuing through February, but much of the winter range was open and available. Winter losses are expected to be near average.

Habitat

This herd unit overlaps most of the western half of the Platte Valley Mule Deer herd, and habitats for pronghorn suffer the same low productivity due to overused, decadent shrubs and drought. Treatments designed to improve habitat for mule deer through the Platte Valley Habitat Partnership are likely to improve habitats for pronghorn as well. Recent tebuthiuron treatments on top of Miller Hill in Area 108 and prescribed burns in Area 52 should improve summer ranges for pronghorn, at least in the short term.

Oil and gas drilling activity has tapered off because of low energy prices, but a successful shale oil well a few miles to the east in Area 50 may lead to increased interest within the herd unit. Proposed strip mining of coal in Kindt Basin in Area 56 could damage winter habitats, but is unlikely to occur in the near future because of more competitive coal reserves elsewhere in the state and conflict with the Chokecherry wind farm. Increased interest in developing coalbed methane resources in southern Wyoming may lead to proposals to develop well fields to extract the methane from these coal seams.

Ground breaking for construction of the 1,000 turbine Chokecherry and Sierra Madre wind farms occurred in 2017, with extensive road and pad preparation. Erection of the first phase of turbines is expected in 2018, along with road and pad preparation for the second phase. Planned revegetation of the massive road network necessary for this project is likely to improve summer

forage for pronghorn, but will permanently remove browse in winter ranges and provide avenues for expansion of noxious weeds, as seen in gas fields to the west. Disturbance during construction will reduce pronghorn use of many habitats. Wind turbines have been shown to reduce soil moisture in their wind shadow and the large number of turbines in arid habitats may remove the benefits gained from revegetation of roads and pads.

Field Data

Classification sample size decreased slightly in 2017 but was still larger than the previous five-year average. Total sample size exceeded the statistically desired sample. Classification sample size increased in Area 52, declined slightly in Area 108, and was nearly insignificant in Area 56.

Despite record precipitation in 2015, and good spring precipitation in 2016 and 2017, fawn production declined to 56 fawns:100 does in 2015, and only 47:100 in 2016 and 48:100 in 2017. Fawn crops during the past two years were among the lowest recorded in this herd in twenty years. Fawn production was lowest in Area 56 at only 15:100, but the sample was extremely small and limited to the southwestern portion of the area. Production declined in Area 52 to 54:100, below average, but within the normal range for this area. Fawn production in Area 108 actually improved slightly, but was still only 38:100. Many of the does in Area 108 fawn at higher elevations, as do some in Area 52, and late spring storms may have increased fawn losses to hypothermia in these habitats.

The buck:doe ratio increased in 2017 to 60:100, slightly exceeding the upper limit for recreational management. All of the increase was in the supply of adult bucks, with yearling buck:doe ratios remaining fairly stable over the past four years. Both Areas 52 and 108 recorded increases in this ratio, at 65:100 and 48:100, but only Area 52 had a buck:doe ratio that exceeded the recreational maximum. Sample size in Area 56 was again too small to be useful, but if access continues to be denied after the wind project is constructed, buck:doe ratios will be expected to remain artificially high in Area 56 and may cause the herd ratio to exceed the maximum for recreational management without providing any extra bucks for hunters to harvest.

The yearling buck:doe ratio was 14:100 for this herd, within the normal range. As is typical, yearling recruitment was highest in Area 52 which usually has the larger fawn crops. Until 2017, buck:doe ratios for this herd over the past ten years have been less than would be desired in areas with large blocks of public land.

Harvest Data

Overall hunter success declined again to 86 percent in 2017, and was slightly below the five-year average for this herd. The average number of days hunted for each pronghorn harvested increased slightly and was at the five-year average. Hunter success was highest in Area 52 at 89 percent, and lowest in Area 56, which has limited access, at 79 percent. For individual license types, success was surprisingly highest, at 92 percent, for the Type 7 hunters in Area 52 who are limited to largely private lands in the southern half of that area. Hunter success was poorest for Type 6 hunters in Area 108, at only 71 percent. This also is surprising, because the Type 7 hunters in that area were limited to only a small portion of Area 108 and yet enjoyed 89 percent

success. The Type 6 hunters could have asked to hunt the same lands as the Type 7s and enjoyed higher success, but were apparently unwilling to do so.

The average number of days of effort necessary to harvest an animal was lowest in Area 56 for the sixth straight year. Being restricted to a few scattered sections of accessible public land reduces hunter opportunity and apparently effort. This average was highest for Type 1 hunters in Area 108, suggesting pronghorn were less available in this portion of the herd unit, despite the blocks of public land available.

Population

Prior to 2015, the spreadsheet model and a line-transect survey flown in spring of 2012 indicated this herd was roughly 17 percent below the 12,000 objective. A line-transect survey flown in June 2015, however, estimated there were approximately 16,850 pronghorn in the herd. Incorporating that estimate, along with the 2015 and 2016 classification and harvest data, the current model now predicts this herd was about 10 percent above objective in 2016.

After adding 2017 data, the SCJ,SCA spreadsheet model still provided the best fit with observed buck:doe ratios for this herd and all four line-transect estimates. The model was modified to allow lower survival rates in the 2003-04 and 2007-08 winters. It behaved predictably when 2017 classification and harvest data were added and is considered a “Fair” model of the herd. Annual adult survival is predicted at 95 percent, a reasonable value. Juvenile survival rates were low but acceptable, at 41 percent. The CJ,CA and TSJ,CA models each had higher AICc values, but the TSJ,CA model had better fit with observed buck:doe ratios. Both models predicted herd size below objective, despite the 2015 line-transect estimate. Fawn production in 2018 was projected near the 5-year average and the model was run using a median juvenile survival in 2018. The model estimates the herd was about 13 percent above objective in 2017 and that the projected harvest in 2018 will produce a slight decline in herd size.

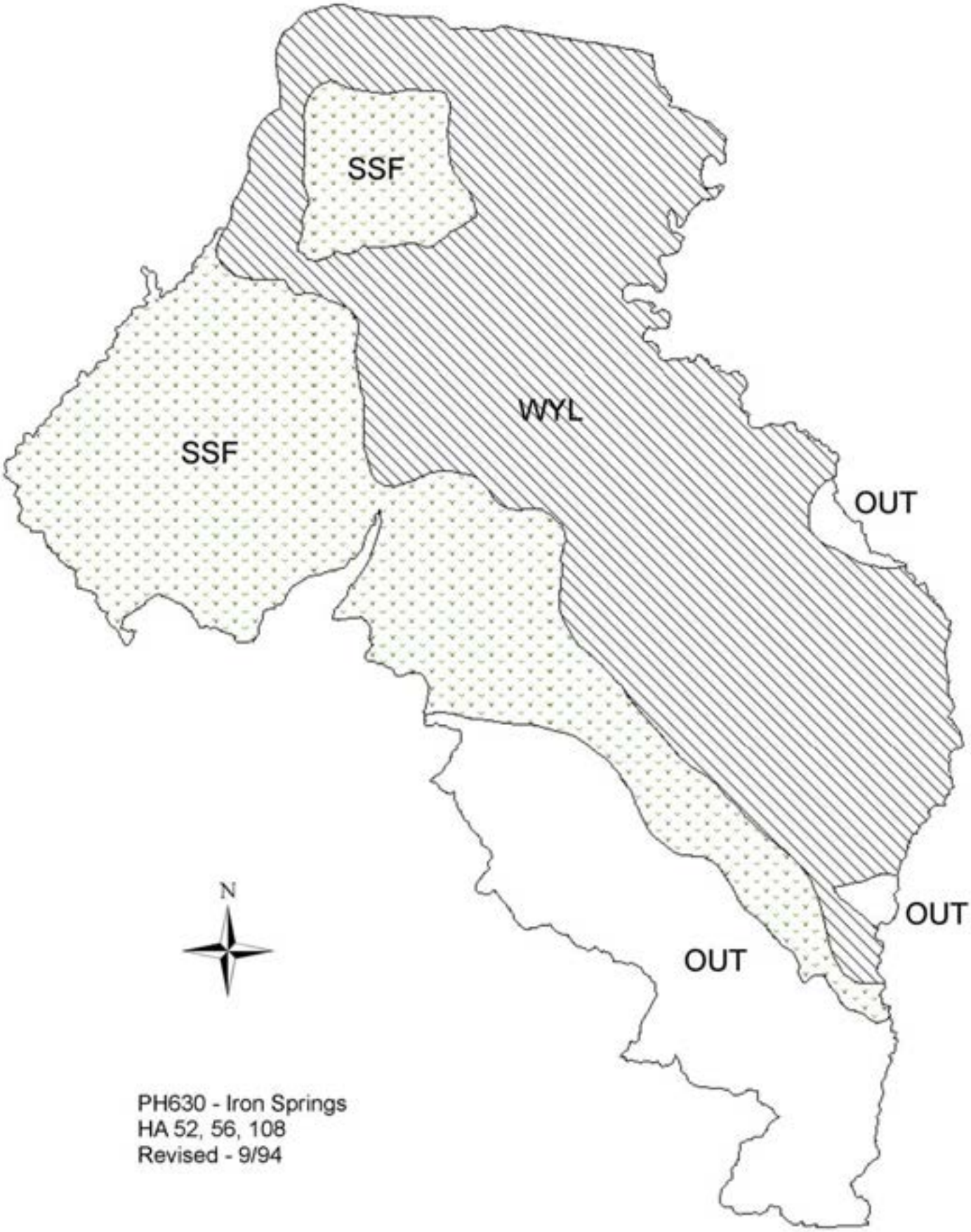
Management Evaluation

With the population estimated to be 13 percent above objective and the slow rate of growth seen in the past six years, no drastic changes in harvest quotas are necessary. Quotas for 2018 are unchanged in Area 56 and Area 108. Quotas for Type 1, Type 6 and Type 7 licenses in Area 52 are increased to take advantage of the improved supply of bucks in that area and the higher fawn production.

If fawn production and survival are near predicted levels, the expected harvest of roughly 435 bucks and 430 does and fawns from the 2018 license quotas should provide a slight decrease in herd size. If either fawn production or survival is lower than average, or if winter losses are above average in 2017-18, the herd should move closer to objective size.

Opening dates for licenses in Area 52 are the same as in the past five years and coincide with seasons in neighboring Areas 50 and 51. As in the previous five years, the Type 2 and 7 licenses in the southern portion of this area are valid for an additional two weeks into November. The season in area 52 entirely overlaps local deer and elk general license seasons. Opening dates for

areas 56 and 108 are the same as in the previous 19 years and coincide with neighboring areas 53 and 55 of the Baggs herd. Closing dates for Areas 56 and 108 are again extended to the end of October, except for the Type 7 licenses in Area 108, which extend to the end of November. Archery seasons use standardized opening dates and close the day before the regular season opens for each area.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PH630 - Iron Springs
HA 52, 56, 108
Revised - 9/94

2017 - JCR Evaluation Form

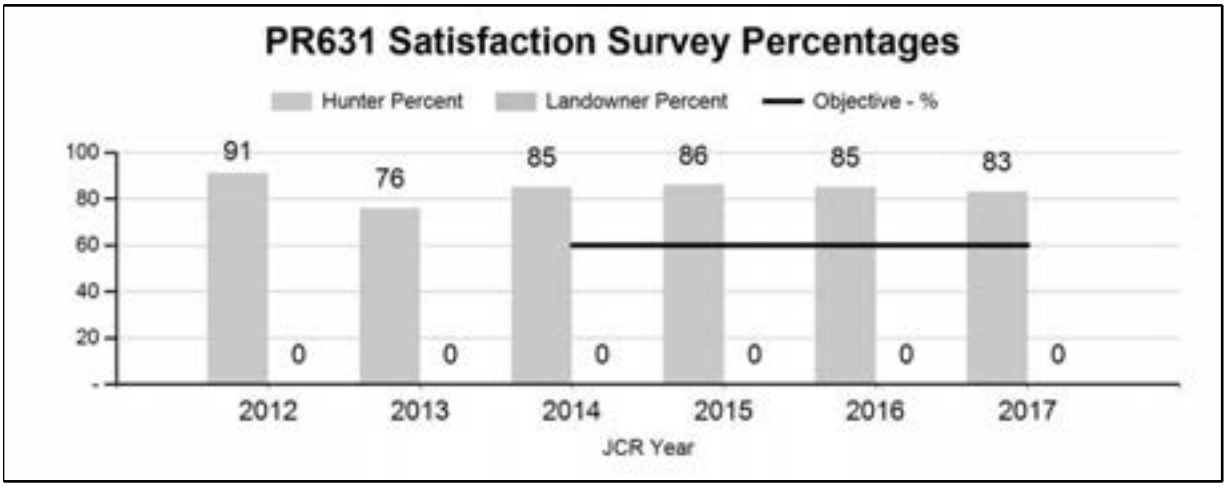
SPECIES: Pronghorn
HERD: PR631 - WIND RIVER
HUNT AREAS: 84

PERIOD: 6/1/2017 - 5/31/2018

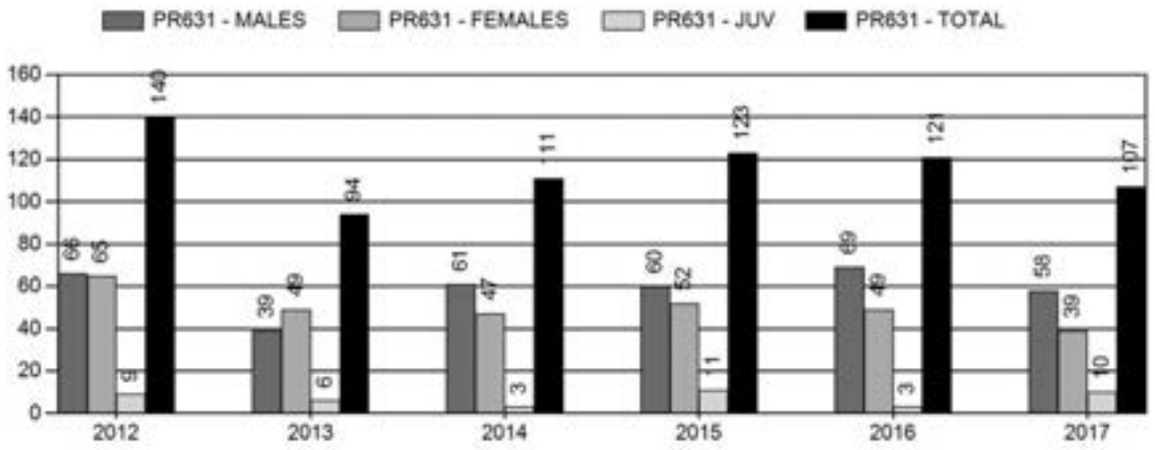
PREPARED BY: GREG ANDERSON

	2012 - 2016 Average	2017	2018 Proposed
Hunter Satisfaction Percent	85%	83%	85%
Landowner Satisfaction Percent	0%	0%	0%
Harvest:	118	107	110
Hunters:	119	126	130
Hunter Success:	99%	85%	85%
Active Licenses:	151	150	150
Active License Success:	78%	71%	73%
Recreation Days:	635	573	580
Days Per Animal:	5.4	5.4	5.3
Males per 100 Females:	32	19	
Juveniles per 100 Females	32	55	

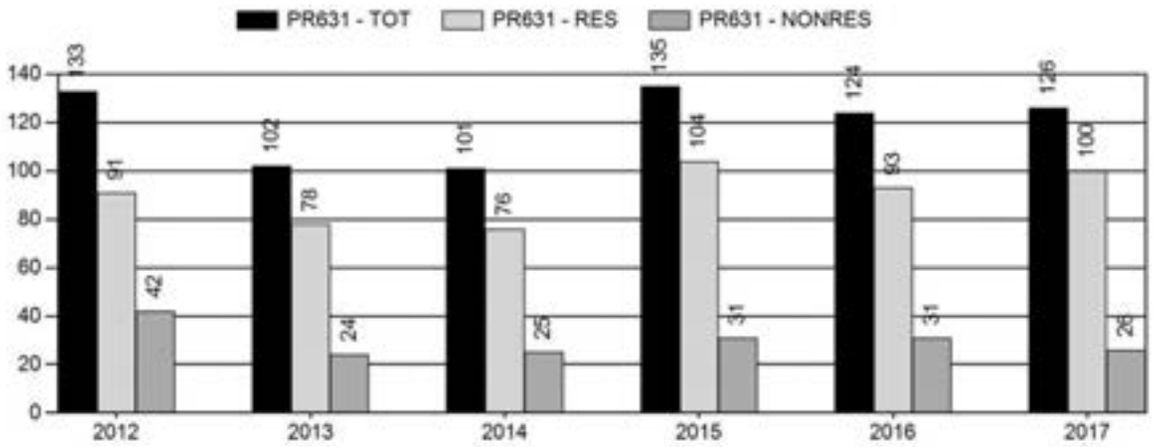
Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0



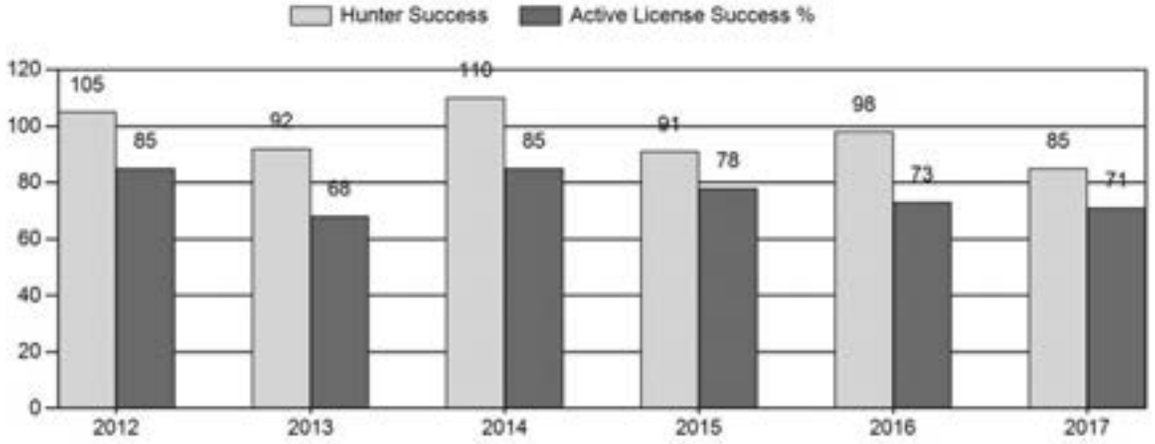
Harvest



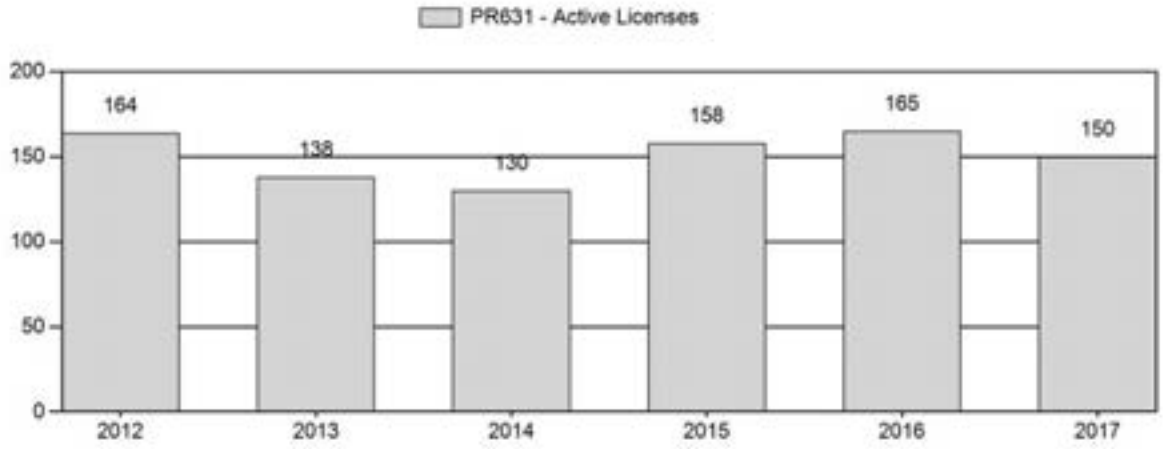
Number of Active Licenses



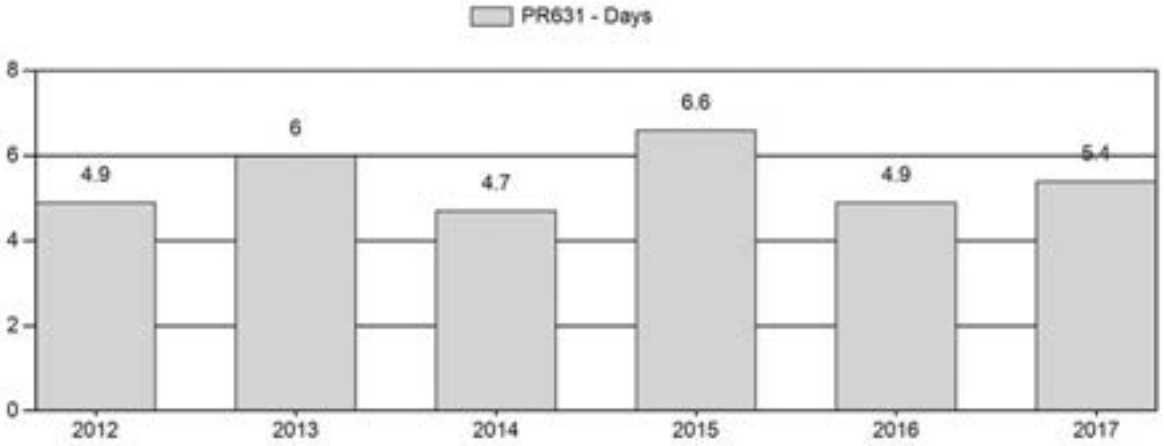
Harvest Success



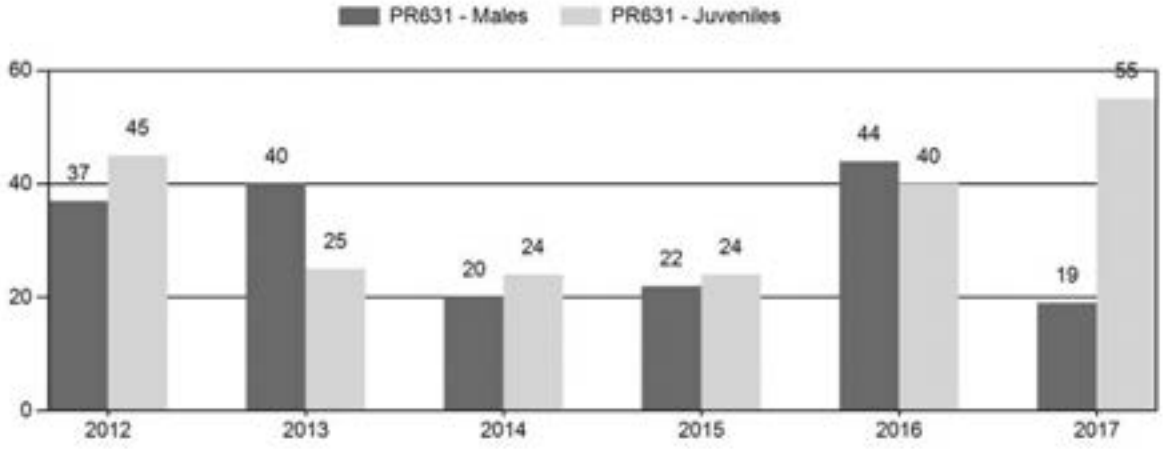
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR631 - WIND RIVER

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	0	7	29	36	20%	97	55%	44	25%	177	0	7	30	37	± 0	45	± 0	33
2013	0	7	14	21	24%	52	60%	13	15%	86	0	13	27	40	± 0	25	± 0	18
2014	0	7	15	22	14%	110	70%	26	16%	158	0	6	14	20	± 0	24	± 0	20
2015	0	6	21	27	15%	120	68%	29	16%	176	0	5	18	22	± 0	24	± 0	20
2016	0	16	39	55	24%	124	54%	49	21%	228	0	13	31	44	± 0	40	± 0	27
2017	0	7	13	20	11%	104	57%	57	31%	181	0	7	12	19	± 0	55	± 0	46

2018 HUNTING SEASONS
WIND RIVER PRONGHORN (PR 631)

Hunt Area	Type	Season Dates Opens	Closes	Quota	License	Limitations
84	1	Sep. 15	Oct. 22	100	Limited quota	Any antelope
84	6	Sep. 15	Oct. 22	75	Limited quota	Doe or fawn
Archery						
84		Aug. 15	Sep. 14			Refer to section 2 of this chapter

Hunt Area	Type	Quota change from 2017
Total		

Management Evaluation
Current Hunter Satisfaction Management Objective: Hunter Satisfaction 60%
Management Strategy: Recreational
2017 Hunter Satisfaction Estimate: 83%
Most Recent 3-year Running Average Hunter Satisfaction Estimate: 85%

Management Issues
The Wind River pronghorn management objective was reviewed and updated in 2014. The previous objective of 400 antelope had been in place since 1994. Due to a number of factors it was never possible to accurately estimate the antelope population in this herd. In response, the Department adopted an objective of maintaining 60% hunter satisfaction. Unlike other herd units with a satisfaction objective, the objective for this herd does not include a landowner satisfaction component for reasons outlined in the objective review. In conjunction with hunter satisfaction, this herd is managed for recreational opportunity.

Habitat/Weather
This pronghorn population occupies the upper Wind River basin west of the WRR. Much of the habitat throughout the herd unit is marginal or unsuitable. Pronghorn densities are highest on the east end of the herd unit where they occupy deer and elk winter range throughout the summer months. Some pronghorn winter on bare slopes in the mountain foothills, but many migrate east down the Wind River onto the WRR. Available habitat and climatic conditions seem to be the biggest factors limiting this population.

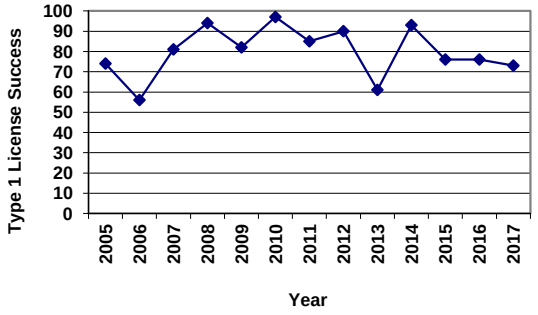
The past year was characterized by mild conditions and good vegetation growth throughout the herd unit. Vegetation transects monitored to determine the amount of forage available on elk winter range revealed herbaceous vegetation production was lower than the previous two years but still slightly above the 20-year average for the area. No shrub data is collected in the herd unit, but the growing conditions likely resulted in average browse production. Given the average feed resource in 2017, antelope in the herd unit likely entered winter in good shape. Fall weather was mild followed by average winter conditions in December and January. Snow cover and depth were normal on the low elevation winter range occupied by antelope. With average conditions, annual survival was likely average as well.

Field/Harvest Data/Population

Classification samples have been collected from the ground and have been low over the past 5 years. Prior to that, classification data was collected aerially and sample sizes were much higher. In 2017 the classification sample was 181 antelope. Low classification samples are likely to remain the rule as long as ground classifications are conducted. Terrain, topography, and access to antelope summer range in the herd unit create difficulties. That said, the classification sample in 2017 yielded a fawn/doe ratio of 55/100. This level of recruitment is low compared to many antelope herds, but not atypical for this population. The buck/doe ratio was low for the herd unit at 19/100. The observed buck/doe ratio tends to be lower than many antelope herds throughout the state and it fluctuates dramatically year-to-year. Much of the fluctuation can be attributed to a combination of low sample size and the fact large bachelor groups inhabit partially timbered areas in early fall and may or may not be observed any given year. Generally, classification ratios for this herd should be viewed skeptically given the low sample sizes.

Type 1 license success was 73% in 2017. This success rate was virtually the same as the last 2 years, but lower than average over the past 10 years (Fig. 1). The days/animal was 5.1 in 2017; the same as in 2016. These statistics indicate the hunt experience has been very similar the past 3 years. Despite harvest statistics indicating below average success over the past 3 years, hunter satisfaction was 83% in 2017. This was the same as the 5-year average.

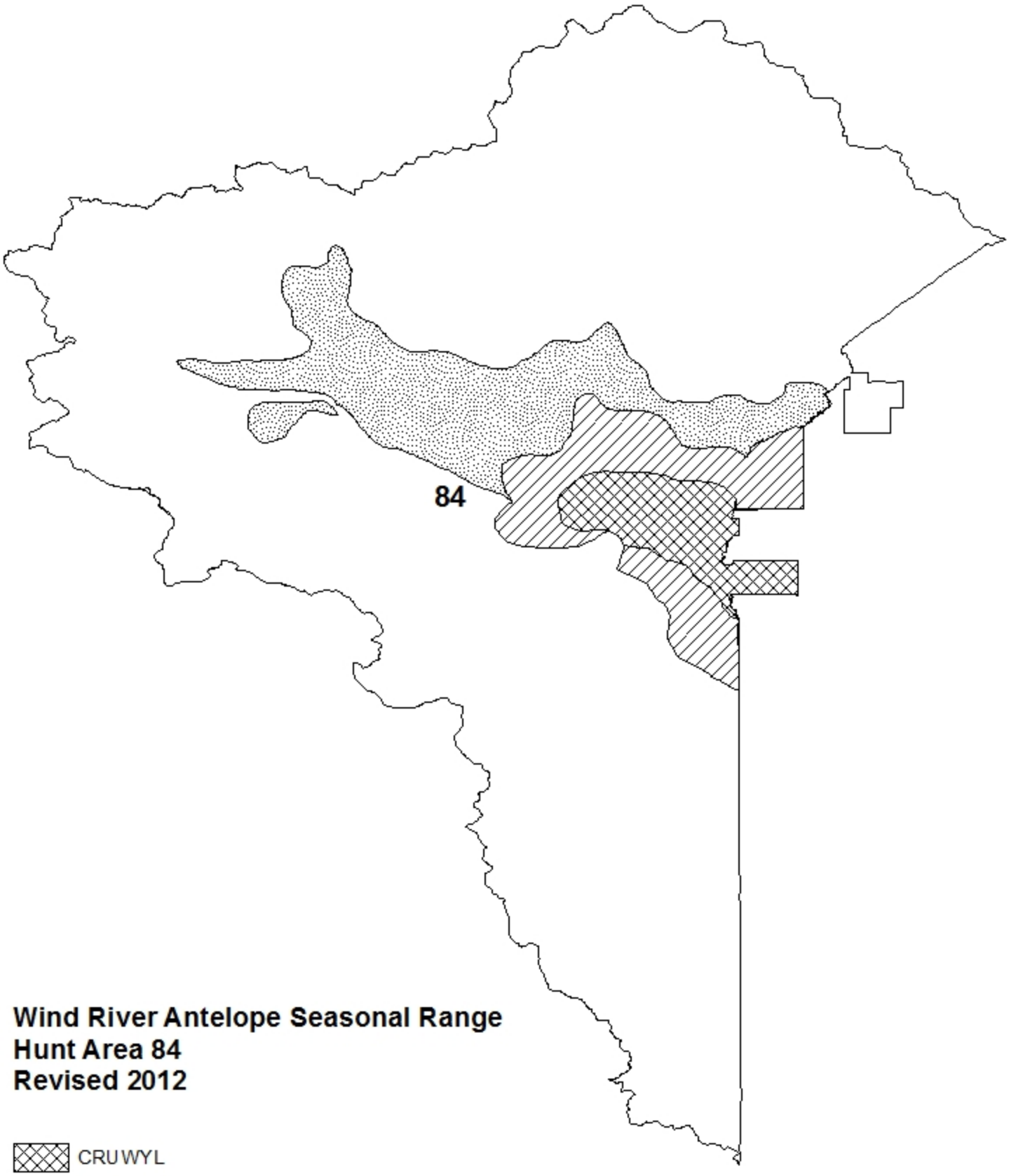
Figure 1. Type 1 license success in the Wind River Antelope Herd



Management Summary

Given scarce demographic data it is difficult to determine trends in this herd unit. Anecdotally, based on public and personnel observations, it appears this population grew substantially from the middle to end of the past decade. Following a harsh winter in 2010 and extreme drought in 2012 and 2013 it seems the population declined somewhat, then increased again in 2014.

Harvest statistics indicate the population has been stable over the past 3 years. As such, no changes are proposed for the 2018 hunting season.



Wind River Antelope Seasonal Range
Hunt Area 84
Revised 2012

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2017 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2017 - 5/31/2018

HERD: PR632 - BEAVER RIM

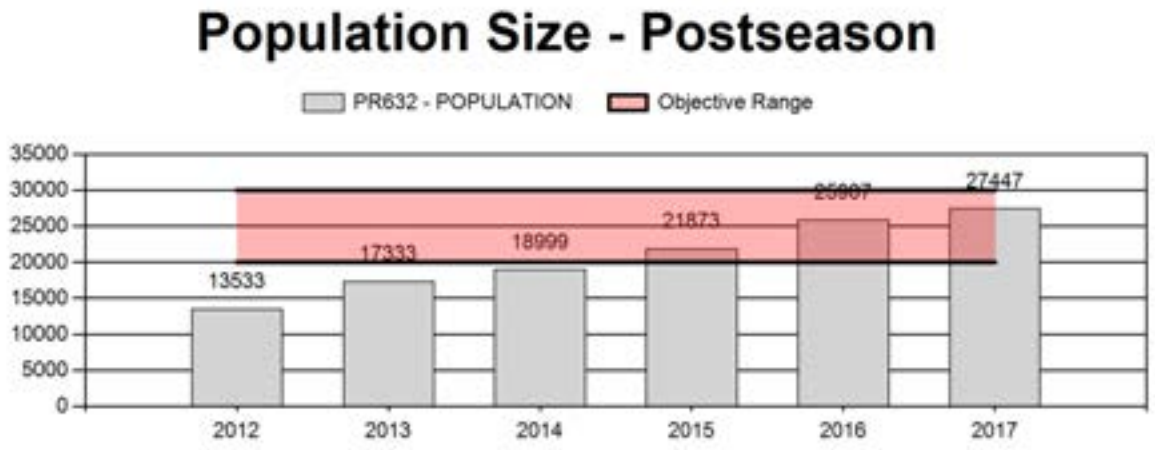
HUNT AREAS: 65-69, 74, 106 | PREPARED BY: STAN HARTER

	2012 - 2016 Average	2017	2018 Proposed
Population:	19,529	27,447	27,101
Harvest:	1,429	1,516	2,190
Hunters:	1,508	1,535	2,250
Hunter Success:	95%	99%	97%
Active Licenses:	1,669	1,711	2,375
Active License Success:	86%	89%	92%
Recreation Days:	4,888	4,247	6,000
Days Per Animal:	3.4	2.8	2.7
Males per 100 Females	55	63	
Juveniles per 100 Females	62	63	

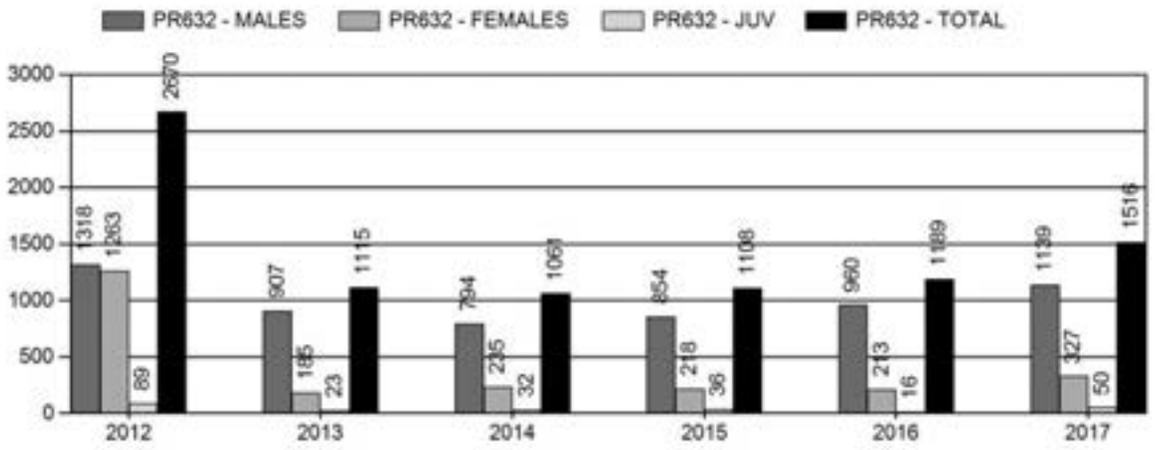
Population Objective (± 20%) :	25000 (20000 - 30000)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	10%
Number of years population has been + or - objective in recent trend:	0
Model Date:	3/2/2018

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

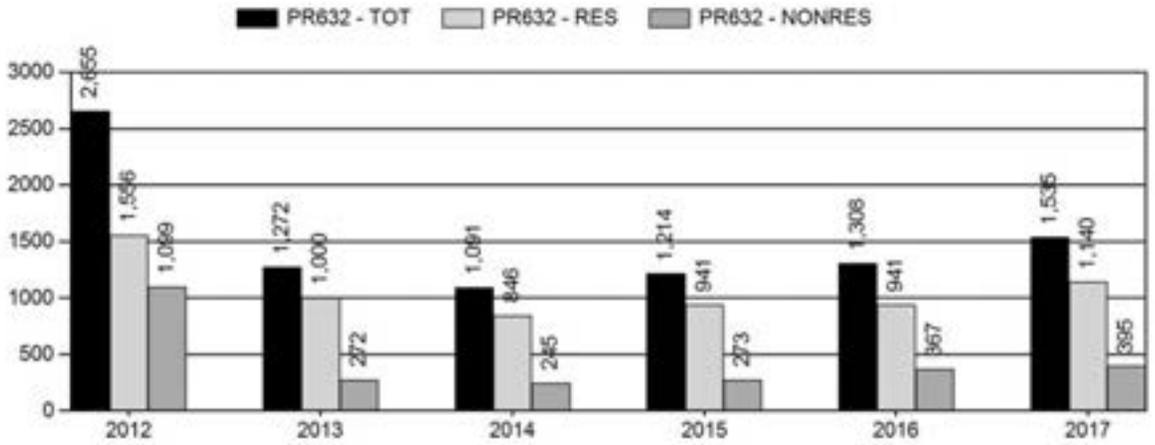
	JCR Year	Proposed
Females ≥ 1 year old:	2.4%	5.2%
Males ≥ 1 year old:	15.4%	20.2%
Total:	5.2%	7.4%
Proposed change in post-season population:	+0.8%	-1.3%



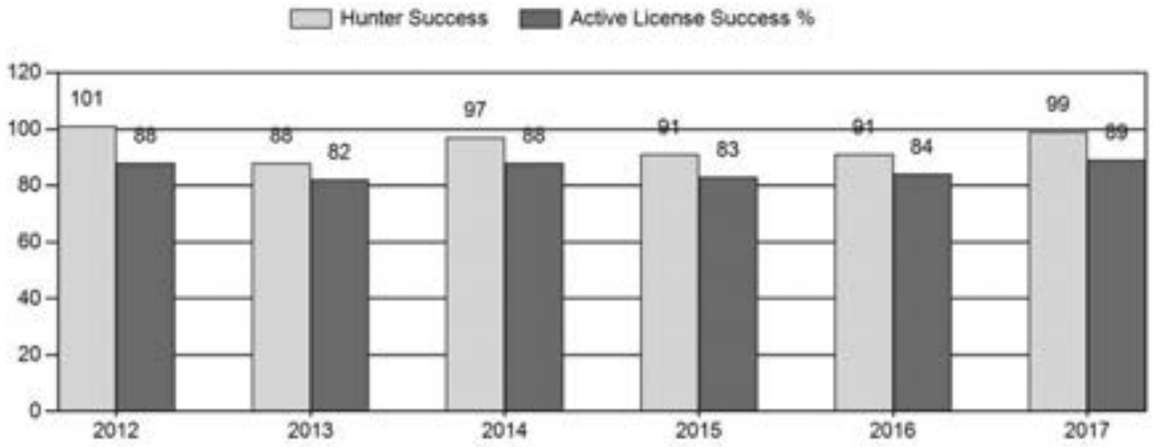
Harvest



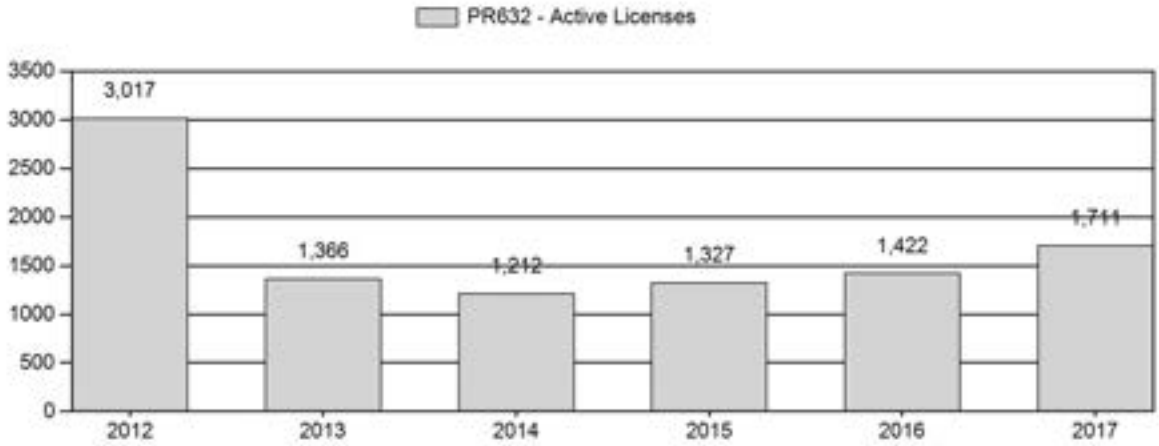
Number of Active Licenses



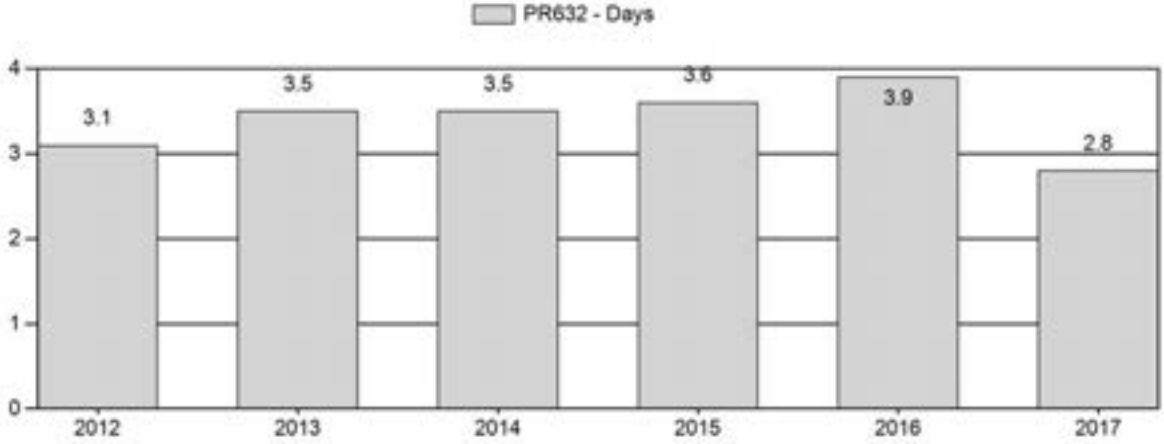
Harvest Success



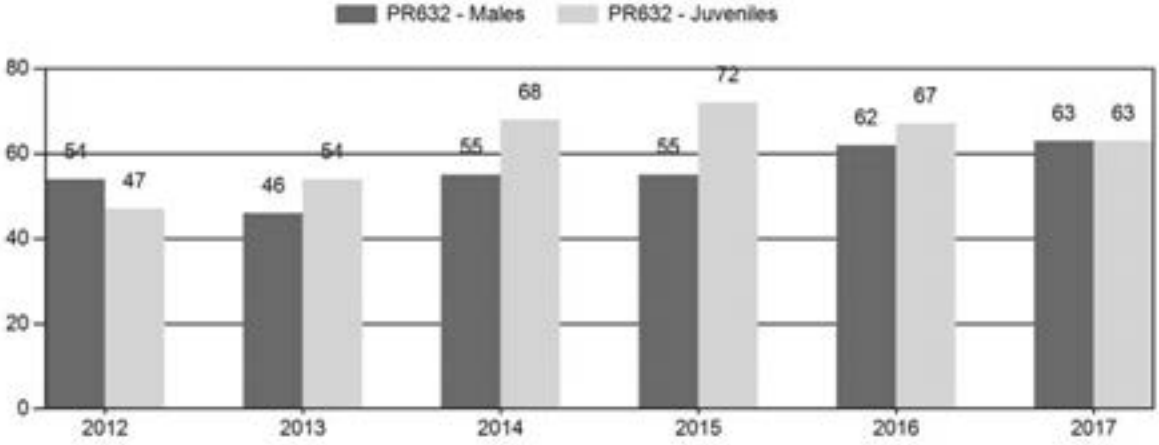
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR632 - BEAVER RIM

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	16,470	317	1,234	1,551	27%	2,867	50%	1,350	23%	5,768	1,766	11	43	54	± 2	47	± 2	31
2013	18,560	149	1,314	1,463	23%	3,199	50%	1,725	27%	6,387	1,608	5	41	46	± 2	54	± 2	37
2014	20,166	419	1,240	1,659	25%	3,003	45%	2,035	30%	6,697	2,408	14	41	55	± 2	68	± 3	44
2015	23,092	572	1,140	1,712	24%	3,087	44%	2,222	32%	7,021	2,279	19	37	55	± 2	72	± 3	46
2016	27,215	937	1,551	2,488	27%	4,001	44%	2,667	29%	9,156	2,516	23	39	62	± 2	67	± 2	41
2017	29,115	912	1,852	2,764	28%	4,389	44%	2,751	28%	9,904	2,311	21	42	63	± 2	63	± 2	38

2018 HUNTING SEASONS
Beaver Rim Pronghorn Herd Unit (PR 632)

Hunt Area	Type	Season Dates Opens	Closes	Quota	License	Limitations
65	1	Sept. 15	Oct. 22	150	Limited Quota	Any antelope
65	6	Sept. 15	Oct. 22	100	Limited Quota	Doe or fawn
65	7	Sept. 1	Nov. 7	100	Limited Quota	Doe or fawn valid north of the Little Popo Agie River
66	1	Sept. 15	Oct. 22	150	Limited Quota	Any antelope
66	6	Sept. 15	Oct. 22	100	Limited Quota	Doe or fawn
67	1	Sept. 15	Oct. 22	300	Limited Quota	Any antelope
67	6	Sept. 15	Oct. 22	100	Limited Quota	Doe or fawn
68	1	Sept. 15	Oct. 22	350	Limited Quota	Any antelope
68	6	Sept. 15	Oct. 22	100	Limited Quota	Doe or fawn
69	1	Sept. 15	Oct. 31	175	Limited Quota	Any antelope
69	6	Sept. 15	Oct. 31	125	Limited Quota	Doe or fawn
74	1	Sept. 15	Oct. 22	275	Limited Quota	Any antelope
74	6	Sept. 15	Oct. 22	100	Limited Quota	Doe or fawn
106	1	Sept. 15	Oct. 22	150	Limited Quota	Any antelope
106	6	Sept. 15	Oct. 22	100	Limited Quota	Doe or fawn
Archery						
65-69, 74, 106		Aug. 15				Refer to license type and limitations in Section 2

Hunt Area	License Type	Quota Change from 2017
65	6	+25
67	1	+25
67	6	+75
68	1	+50
68	6	+75
69	1	+25
69	6	+25
74	1	+25
74	6	+75
106	1	+50
106	6	+75
Herd Unit Total	**1**	**+175**
	6	**+350**

MANAGEMENT EVALUATION

Current Post-season Population Management Objective: 25,000
Management Strategy: Special (60-70 bucks/100 does)
2017 Post-season Population Estimate: ~27,450
2018 Post-season Population Estimate: ~27,100

Herd Unit Issues

Habitats are relatively intact with localized energy development and agricultural developments scattered throughout the herd unit, and urban/rural residential development occurring primarily near Lander. This population fluctuated below objective in the 1990s, reached objective in the mid-2000s before declining to a recent low in 2012 due to drought. The population has since increased with improved precipitation and resultant increased fawn survival. The management objective was reviewed in 2015, and the long-term post-season objective of 25,000 pronghorn was retained. The population reached about 27,450 pronghorn post-season 2017, 10% above objective.

Weather

Precipitation from October 2016 through September 2017 was markedly higher than the 30-year average. Heavy winter snows contributed the majority of the annual precipitation. Precipitation during the growing season (April-June 2017) was also higher than the 30-year average. Most of the growing season (April-June) precipitation fell during April and May, which was followed by a dry, hot summer and a mild fall.

Winter 2017-18 has seen warmer than average temperatures, following a mild fall. Below average snowfall and above average temperatures are likely helping wildlife access forage and maintain body condition compared to the previous winter of more continuous snow cover. However, less snow may negatively affect vegetation production during the coming growing season, if spring precipitation is also lacking.

Habitat

Growing season precipitation was nearly average during the spring/early summer of 2017 which provided good forage across the herd unit for pronghorn. Above normal temperatures and low precipitation amounts from June-August likely caused lower vegetation production than the previous two years. Habitat conditions were still fair to good overall, likely contributing to the fawn/doe ratio observed in the Beaver Rim pronghorn herd unit (63 fawns/100 does).

Several rapid habitat assessments (RHA) were conducted in 2017, in shrub, riparian, and aspen habitats in the South Wind River and Sweetwater mule deer herd units. These assessments are relevant to pronghorn habitat conditions, as well. More RHAs will be conducted in the next 2 years, for a total of 20 each in shrub, aspen, and riparian habitats. Results of the 2017 assessments indicate shrub and aspen habitats are generally in late-seral states, with moderate to severe herbivory. A riparian assessment on West Cottonwood Creek on Green Mountain showed the site was in late seral state with medium site function and has experienced severe herbivory from wildlife, livestock, and feral horses. Yet, plant species diversity across these assessment sites was medium to high for grasses, forbs, and shrubs, which is encouraging. However, the state and condition of shrubs and aspen are concerning, and will likely limit population growth and stability, especially in periods of drought.

Field Data

Pre-season classification surveys are conducted annually using established ground routes, and resulted in a sample of 9,904 pronghorn being observed in August and September 2017, the highest sample collected since 1994 and more than double some samples observed in the 1990s. Pre-season fawn/doe ratios have been favorable for population growth the past few years, with the 2017 ratio of 63J/100F being just above the previous 5-year average. The overall buck/doe ratio increased to 63M/100F in 2013, only the third time since 1994 the overall buck/doe ratio has reached the special management strategy range. This was largely due to continued good recruitment of yearling bucks to a pre-season ratio of 21YM/100F, tied for the second highest level since 1994. The pre-season adult buck ratio was 42AM/100F was also the second highest since 1994. Fawn/doe ratios varied by hunt area from 50J/100 to 76J/100F, while buck/doe ratios had higher variability between hunt areas, ranging from 34M/100F to 73M/100F. Conservative increases in buck harvest are again recommended for 2018 to continue to provide good opportunity where ample buck/doe ratios exist, and to maintain this herd within the special management strategy range of 60-70 bucks/100 does. With the population being 10% over the post-season objective of 25,000 (but within the ±20% range), doe/fawn harvest will be increased to address some limited damage concerns and to move the population back toward objective.

Harvest Data

License quotas were increased in 2017, and led to a 28% increase in total harvest. All harvest data indicate 2017 was a good year for hunting pronghorn in the Beaver Rim herd unit. Hunter success improved in 2017, with 99% hunter success, along with 89% active license success. Type 1 (any antelope) hunter success ranged from 83% in Hunt Area 68 to 97% in Hunt Area 74. Doe/fawn hunters had success rates ranging from of 69% in Hunt Area 67 to 96% in Hunt Area 69. As a whole, it took 2.8 days of hunting for each animal harvested; the lowest since 2004. Adjustments to the upcoming 2018 seasons were made considering these variables, combined with variations in classification data to best fit harvest to individual hunt areas, maintaining the herd unit within the population objective and special management strategy range of 60-70 bucks per 100 does.

Population

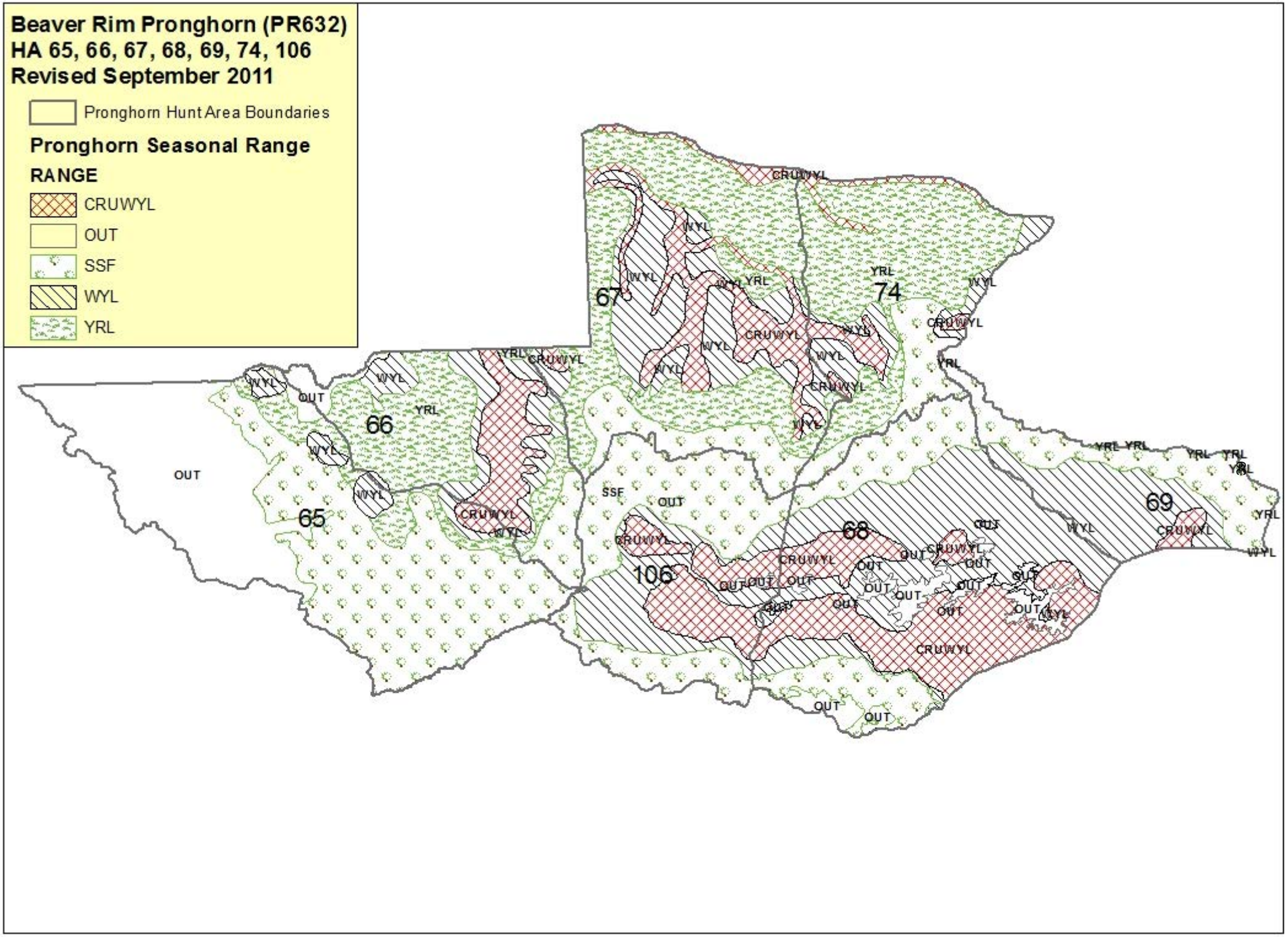
A spreadsheet model was developed for this population in 2012. It has been updated utilizing 2017 pre-season classification and harvest data. Although the TSJ/CA model has lower AICc and fitness values, the (CJ/CA) model was selected for Beaver Rim pronghorn since it more closely tracks with all 8 line-transect (LT) estimates over the past 24 years, the latest of which was conducted at the end of bio-year 2016. As such, we consider the model to be “Good”. The end-of-year estimates produced by the model run almost exactly through or very close to 5 of the 8 LT estimates, and through the confidence interval for the other 3 LT estimates. The model also produces post-season population estimates which closely follow trends observed by field personnel and the public. The population was at or slightly below objective for 7 years (2004 – 10), but declined sharply in 2011 and 2012, due to poor fawn recruitment as a result of intense drought. However, with improved fawn/doe ratios since 2014, the model indicates the population has surpassed the current objective, with 27,447 pronghorn post-season 2017.

Management Summary

For 2018, doe/fawn license numbers are being increased in most hunt areas, to control localized private land damage situations and begin movement toward the objective of 25,000 pronghorn. Increases in Type 1 licenses are implemented in 5 hunt areas, to provide additional hunting opportunity where buck/doe

ratios are within the special management range, and with very good yearling buck recruitment, the overall buck/doe ratio should remain within the Department's Special Management criteria.

The 2018 seasons outlined should reduce the population slightly to around 27,000 pronghorn, if the growing season weather patterns and fawn production/survival observed since fall 2013 continue and winter losses are minimal. A total of 1,550 any antelope and 825 doe/fawn licenses will be available for hunters in 2018, and should result in a harvest of about 2,190 pronghorn.


Beaver Rim Pronghorn (PR632)
HA 65, 66, 67, 68, 69, 74, 106
Revised September 2011
Pronghorn Hunt Area Boundaries
Pronghorn Seasonal Range
RANGE
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YRL
65
66
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68
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74
106

2017 - JCR Evaluation Form

SPECIES: Pronghorn

PERIOD: 6/1/2017 - 5/31/2018

HERD: PR634 - BADWATER

HUNT AREAS: 75

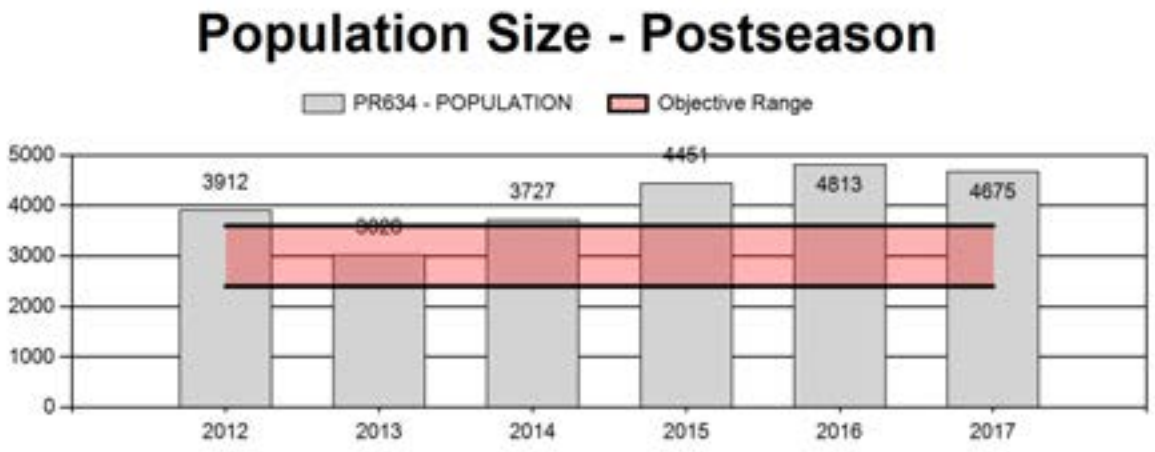
PREPARED BY: GREG ANDERSON

	2012 - 2016 Average	2017	2018 Proposed
Population:	3,986	4,675	4,154
Harvest:	485	690	745
Hunters:	496	698	730
Hunter Success:	98%	99%	102%
Active Licenses:	552	742	800
Active License Success:	88%	93%	93%
Recreation Days:	1,613	1,599	1,700
Days Per Animal:	3.3	2.3	2.3
Males per 100 Females	62	76	
Juveniles per 100 Females	62	82	

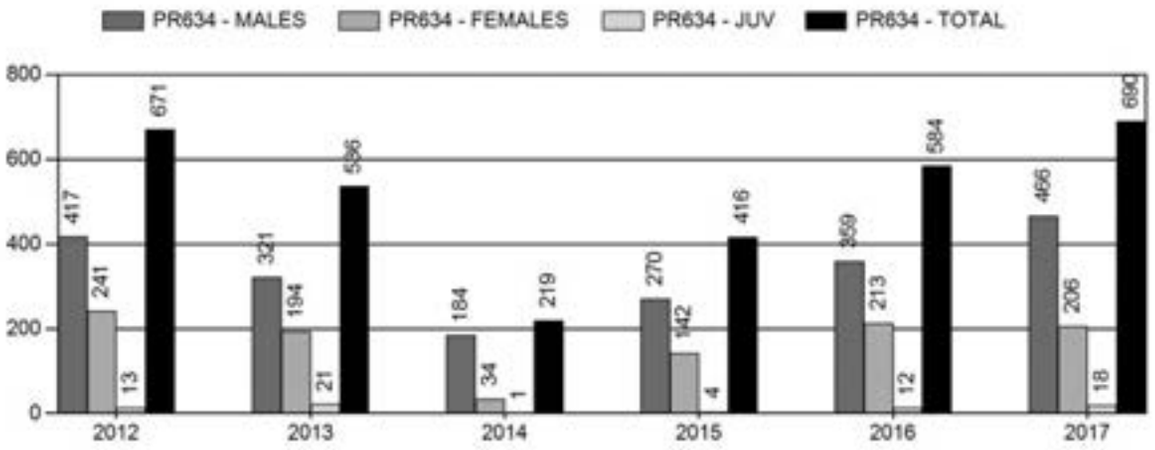
Population Objective (± 20%) :	3000 (2400 - 3600)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	56%
Number of years population has been + or - objective in recent trend:	10
Model Date:	2/16/2018

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

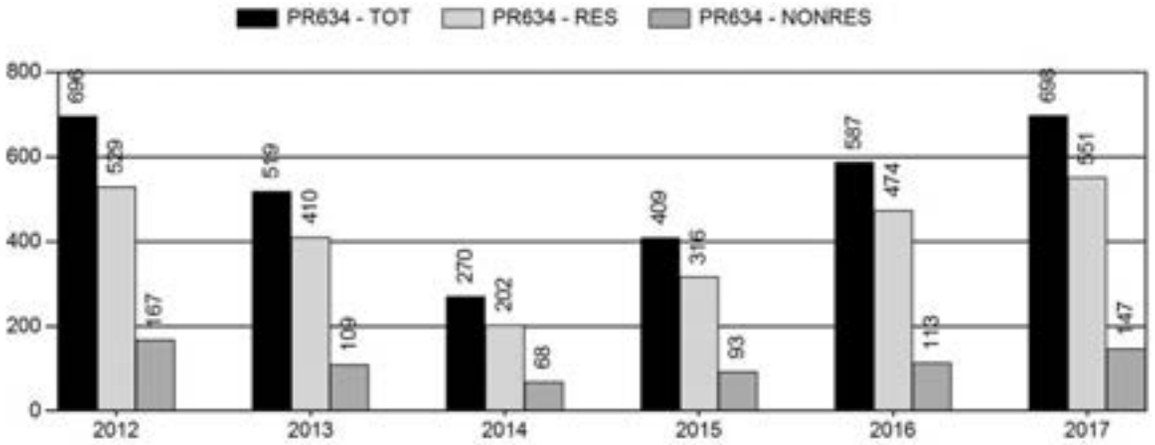
	JCR Year	Proposed
Females ≥ 1 year old:	10%	11%
Males ≥ 1 year old:	41%	48%
Total:	13%	15%
Proposed change in post-season population:	-3%	-12%



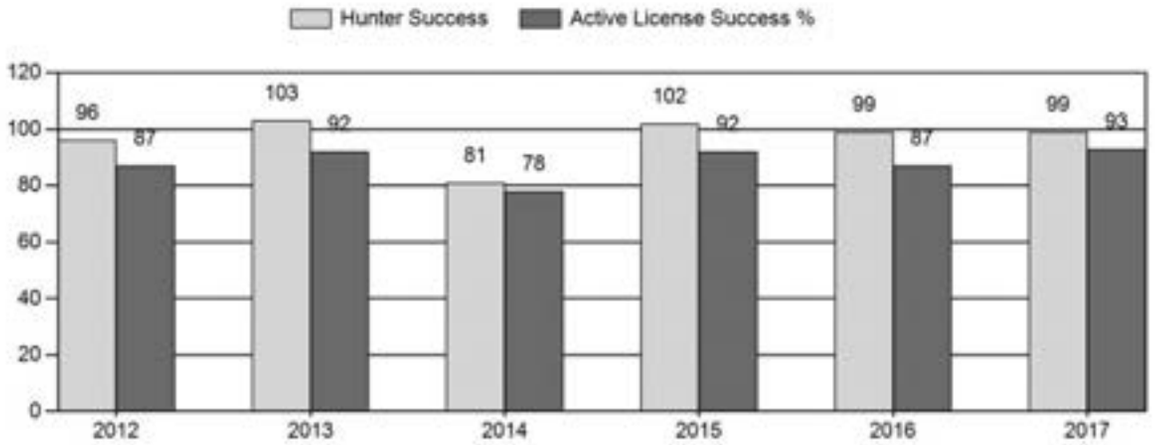
Harvest



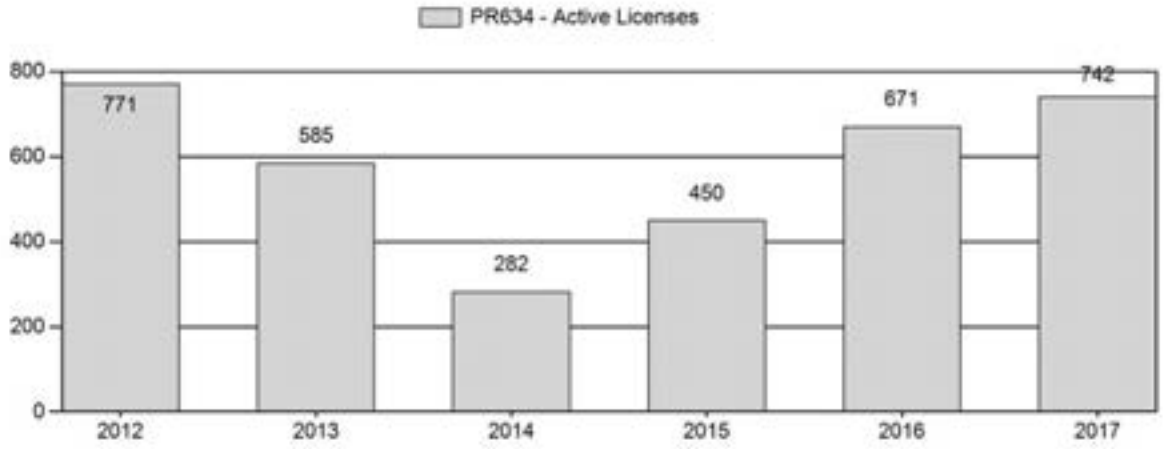
Number of Active Licenses



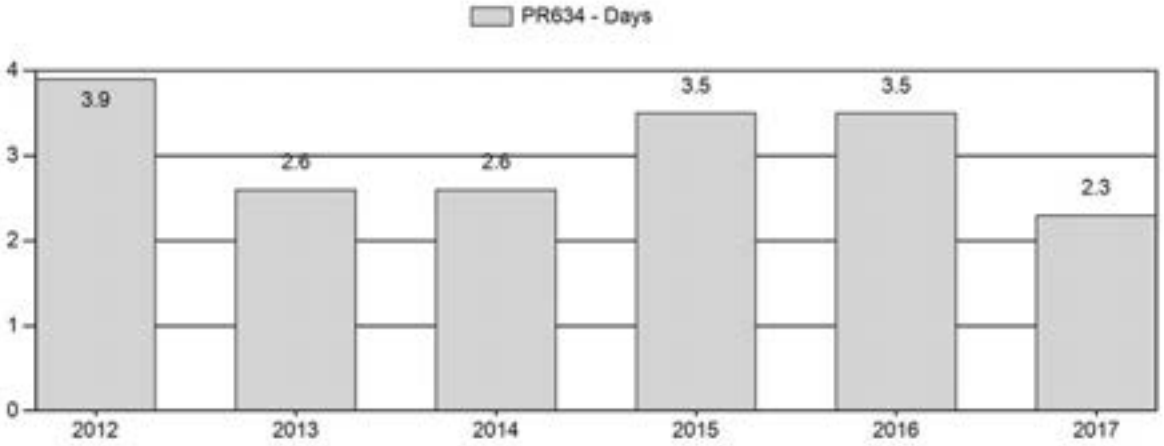
Harvest Success



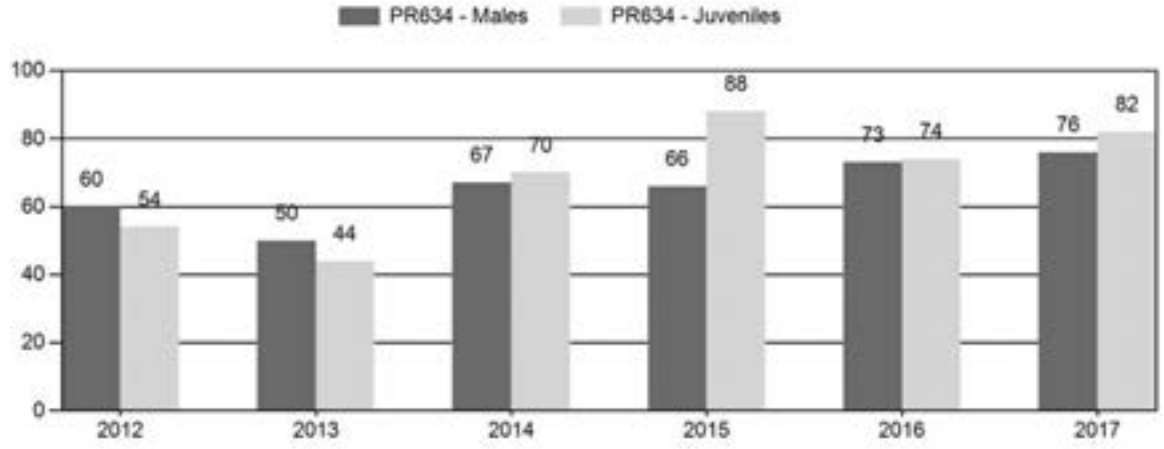
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR634 - BADWATER

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	4,650	83	296	379	28%	631	47%	339	25%	1,349	1,522	13	47	60	± 5	54	± 5	34
2013	3,617	58	268	326	26%	646	51%	285	23%	1,257	1,098	9	41	50	± 5	44	± 4	29
2014	3,968	87	142	229	28%	340	42%	237	29%	806	1,678	26	42	67	± 8	70	± 9	42
2015	4,909	149	115	264	26%	403	39%	354	35%	1,021	2,362	37	29	66	± 8	88	± 9	53
2016	5,455	148	139	287	29%	394	40%	292	30%	973	2,109	38	35	73	± 8	74	± 9	43
2017	5,434	129	196	325	30%	425	39%	347	32%	1,097	2,358	30	46	76	± 8	82	± 9	46

2018 HUNTING SEASONS
BADWATER PRONGHORN (PR 634)

Hunt Area	Type	Season Dates Opens	Closes	Quota	License	Limitations
75	1	Sep. 15	Oct. 22	600	Limited quota	Any antelope
75	6	Sep. 15	Oct. 22	300	Limited quota	Doe or fawn
Archery						
75		Aug. 15	Sep. 14			Refer to section 2 of this chapter

Hunt Area	Type	Quota change from 2017
75	1	+50
	6	+25
Total	**1**	**+50**
	6	**+25**

<u>Management Evaluation</u>
Current Postseason Population Management Objective: 3,000
Management Strategy: Recreational
2017 Postseason Population Estimate: ~4,700
2018 Proposed Postseason Population Estimate: ~4,100

Management Issues
The Badwater pronghorn herd is managed toward a post-season population size objective of 3,000. The population is estimated using a spreadsheet model developed in 2012 and updated in 2017. The herd is managed for recreational opportunity. The objective was last reviewed in 2014. During the 2014 review, it was noted the new spreadsheet model appeared to track the same population trend as the previous POP-II model. However, annual population estimates tended to be about 1,000 animals higher in the new spreadsheet model. Initial attempts to increase the objective to 4,000 to compensate for the apparent higher estimates produced by the spreadsheet model were met with resistance from landowners and the BLM. When noted that leaving the objective at 3,000 would in effect mean managing for fewer antelope than in the past, a number of landowners and representatives from the BLM felt that was appropriate given long-term drought and poor habitat conditions in the area.

This pronghorn population inhabits a heavily industrialized area in central Wyoming. Much of the herd unit has been designated as a special management area emphasizing oil and gas production in both the Casper and Lander BLM RMPs. The Lander BLM is currently analyzing a proposal to develop approximately 4,500 oil/gas wells in the central part of the herd unit.

Given the commodities production emphasis in the area, it is likely a significant amount of pronghorn habitat will be lost or degraded over the next 20 years.

While the herd has generally been above objective over the past 10 years, recent, significant increases in harvest appear to have begun reducing the population. This is evidenced by the modeled population decline from 2016 to 2017 despite high recruitment.

Habitat/Weather

This area has been impacted by extreme drought for much of the last decade. Virtually no vegetation grew throughout the herd unit in 2012 and 2013. In 2017 weather conditions resulted in fair herbaceous production throughout central Wyoming. Although no vegetation transects are monitored annually in this herd unit, observations suggested vegetation growth was good in 2017. Both deer and antelope in the area appeared to enter winter in excellent body condition. Weather conditions were average throughout the fall and winter. Given average winter conditions there were no indications of high winter mortality.

Field Data

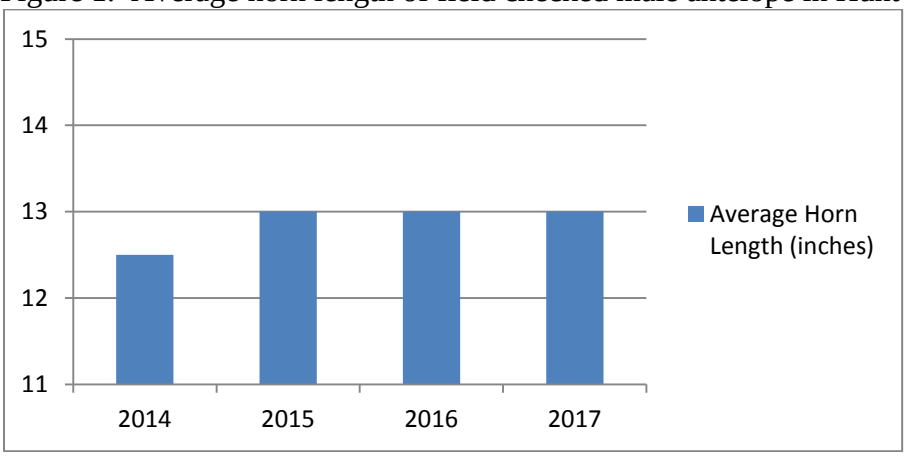
The number of antelope observed along specified ground classification routes has been fairly stable over the past 3 years. In 2017 the classification sample was 1,097 antelope. The sample yielded a fawn/doe ratio of 82/100 and a buck/doe ratio of 76/100. The fawn/doe ratio was significantly higher than the 5-year average of 62/100. This high recruitment coupled with an average winter will likely result in fairly high numbers of yearling antelope in 2018. Similar to the fawn/doe ratio, the 2017 buck/doe ratio of 76/100 was well above the 5-year average of 62/100. It should be noted the buck/doe ratio was 74/100 in 2016 and 88/100 in 2015. The recent, consistent, high buck/doe ratios are indicative of population growth and suggest this population could sustain more recreational harvest.

Harvest Data

As expected, with a high buck/doe ratio and an increasing population, Type 1 license success was good at 93%. This was higher than the 2016 success rate of 87% and the 5-year average of 88%. With the exception of 2014, Type 1 license success in this herd unit has been close to or above 90% each of the last 6 years. This should not be a surprise given the high buck/doe ratios observed over the past 4 years. The high Type 1 success rates over the past several years indicate this herd could sustain increased recreational harvest. Type 6 license success was also good at 94%. The days/animal statistic for Type 1 license holders was unremarkable in 2017 at 2.5 but was lower than the 5-year average of 3.4. Overall, harvest statistics indicate recreational hunting in 2017 was good. Combined with classification data, indications are this population could sustain increased harvest to move closer to recreational management criteria.

In 2017 personnel collected horn length measurements on 40 male antelope in the herd unit. The average and median lengths were both 13 inches. The longest horn measurement of the year was 16 inches (Fig. 1). The average horn length was the same as in 2015 and 2016. Indications are recreational hunting continues to be quite good in the herd unit. Despite increased license numbers each of the past 3 years, hunters continue to harvest bucks with average horn length of 13 inches which is appropriate for an area with a recreational management emphasis.

Figure 1. Average horn length of field checked male antelope in Hunt Area 75.



Population

In 2012, a spreadsheet model was developed for this population. The model behaved predictably with the addition of 2013 and 2014 data but the addition of 2015 data changed model estimates dramatically. The model appears to track population trends reliably but the actual population estimate appears questionable. The model tracks significantly higher than 6 of 7 line-transect (LT) estimates. Recalibrating juvenile and adult survival rates in various versions of the model does nothing to bring the end-of-year estimate closer to these estimates. LT estimates for this population tend to have very high coefficients of variation attributable to low small samples sizes and variable densities across the herd unit. Due to the high standard errors associated with the line-transect estimates the population model deviance errors are very small. These numbers are calculated by dividing the difference of the model estimate and the LT estimate by the standard error of the LT estimate. A large standard error in the denominator of this calculation results in a small population deviance value even if the difference between the model estimate and LT estimate is quite large. Since the Solver function of these models is designed to minimize the population deviance, there is little need to account for already small deviances. The bottom line is Solver has little incentive to consider even large differences between model population estimates and LT estimates and therefore, the model essentially ignores the LT estimates. Concurrently, differences in annual observed versus modeled buck/doe ratios are given undo consideration by Solver. This is not desirable in this case since recent classification sample sizes have been well below adequate. To deal with this problem, population deviances (the difference between model and LT estimates) are multiplied by a factor of 10 in the current model. This forces the model closer to the most recent LT estimate. A correction factor of 10 was chosen because it forces the end-of-year population to model close to the most recent LT estimate. Without the correction factor, the model population is well above the confidence interval for all but one unusually high LT estimate. It should be noted, the overall population trend remains the same with or without the use of a correction factor.

The addition of data from 2017 changed the model very little and trends remained the same as seen in the 2016 model. Similar to 2016, the TSJ/CA model was selected in 2017 to simulate the

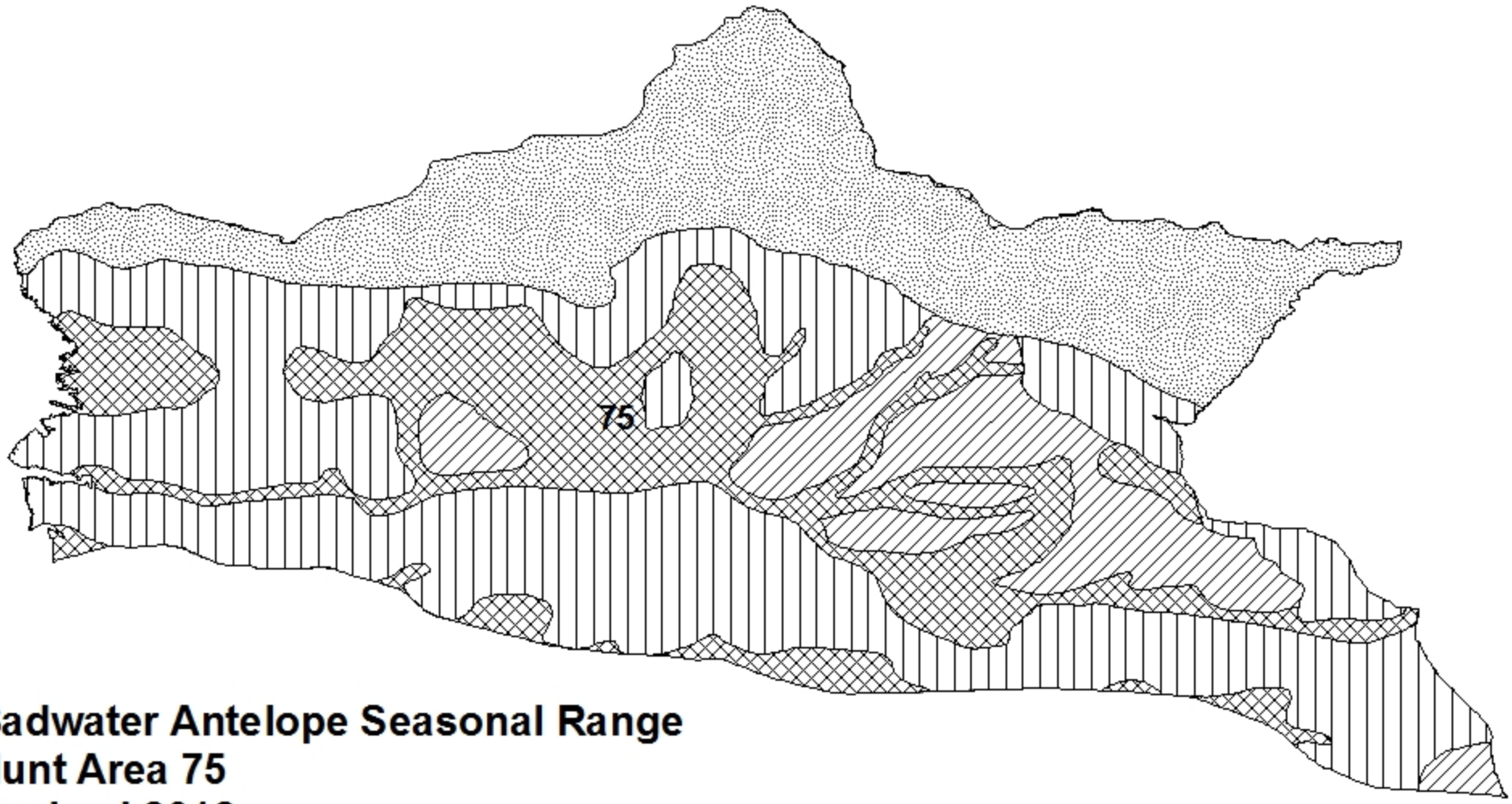
population. In 2017, the TSJ/CA model provided a substantially better fit to observed data than the SCJ/SCA model and had a lower AIC value. Although the AIC value for the TSJ/CA model was slightly higher than the CJ/CA version, the fit was substantially better.

This model version produces a population trend mirroring field personnel impressions. The model indicates the population declined significantly from 2007 through 2013. This is supported by the decreased classification samples collected along standard routes since 2010 as well as declining buck/doe ratios from 2010 through 2013. The population was predicted to be at objective in 2013 and then increased significantly in 2014. The population continued to increase through 2016 followed by a 3% decline in 2017. A significant increase in harvest pressure led to the population decline in 2017 despite high recruitment. As mentioned previously, harvest statistics and classification data also indicate this population increased over the past several years but the increased harvest appears to have arrested growth. Due to the lack of survival estimates, the model is considered a fair simulation.

The last line transect survey for this herd unit was flown on May 26 and 27, 2016. The results from the 2016 survey are included in the model along with 6 previous LT estimates. With the correction factor mentioned above the model tracks closely to 4 of the LT survey estimates. This is a relatively small herd unit without substantial movement barriers and it is hypothesized some of the dramatic fluctuation in LT estimates may be due to lack of population closure.

Management Summary

It appears increases in harvest pressure over the past 3 years is beginning to affect this herd as evidenced by the population decline despite high recruitment in 2017. That said, the buck/doe ratio in the herd is still well above the recreational threshold indicating there is more recreational opportunity in the herd. Over the past two years, the Type 1 license quota was increased 29% and 22% respectively. Given indications harvest pressure in 2017 was beginning to impact the population, Type 1 licenses will not be increased to the extent of the past two years. However, more recreational opportunity exists in the herd so Type 1 licenses will be increased by 50 to 600 (9%). Also, the population remains well above objective indicating increased harvest in 2018 is appropriate. Type 6 licenses will also increase by 25 to maintain harvest pressure and continue moving the population toward objective. Given average recruitment, the population is predicted to decline by approximately 12% to 4,100 and be within 36% of objective.



Badwater Antelope Seasonal Range
Hunt Area 75
Revised 2012

- CRUWYL
- OUT
- SSF
- WYL
- YRL

2017 - JCR Evaluation Form

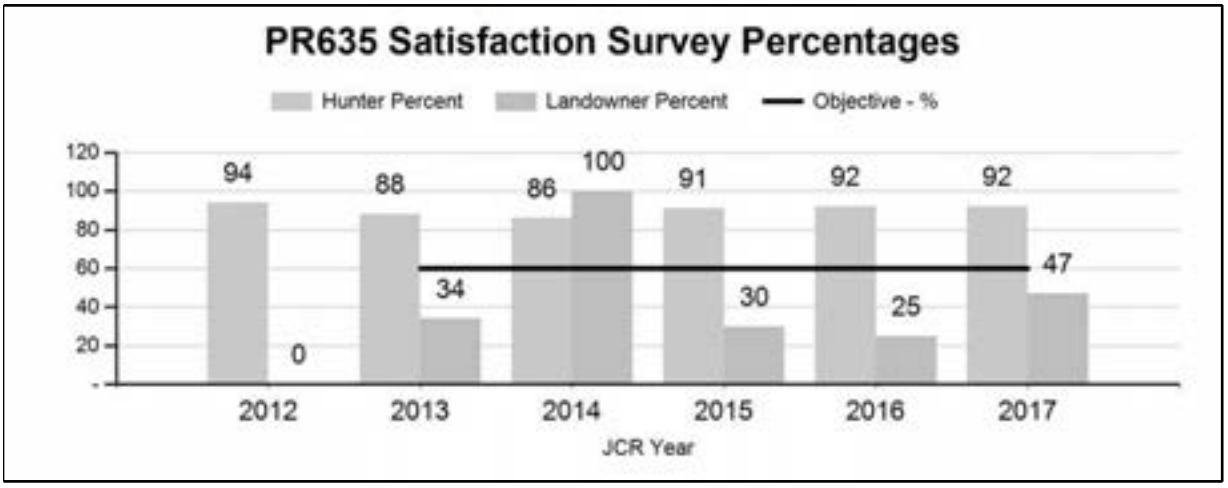
SPECIES: Pronghorn
HERD: PR635 - PROJECT
HUNT AREAS: 97, 117

PERIOD: 6/1/2017 - 5/31/2018

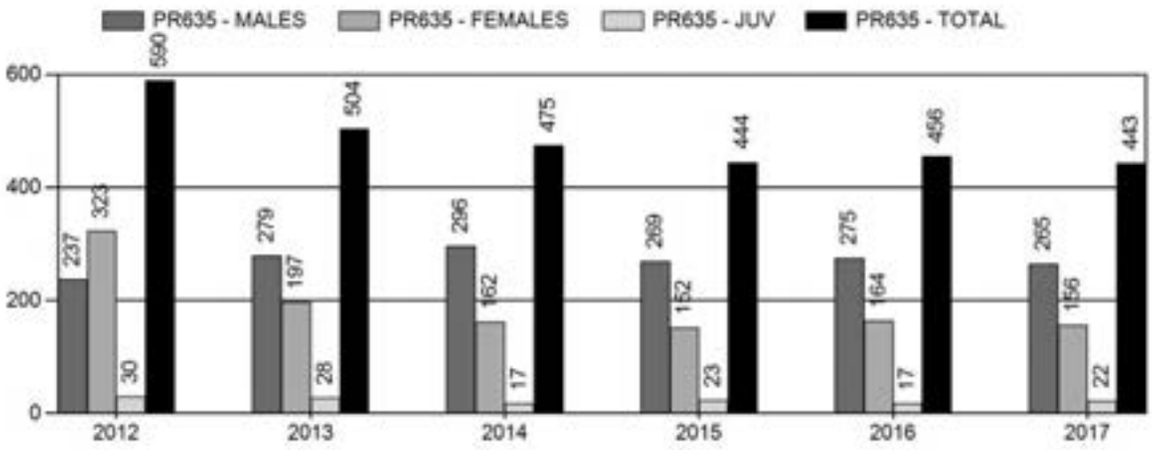
PREPARED BY: GREG ANDERSON

	2012 - 2016 Average	2017	2018 Proposed
Hunter Satisfaction Percent	90%	92%	90%
Landowner Satisfaction Percent	36%	47%	50%
Harvest:	494	443	490
Hunters:	433	437	450
Hunter Success:	114%	101%	109%
Active Licenses:	539	492	500
Active License Success:	92%	90%	98%
Recreation Days:	1,660	1,281	1,300
Days Per Animal:	3.4	2.9	2.7
Males per 100 Females:	60	64	
Juveniles per 100 Females	56	53	

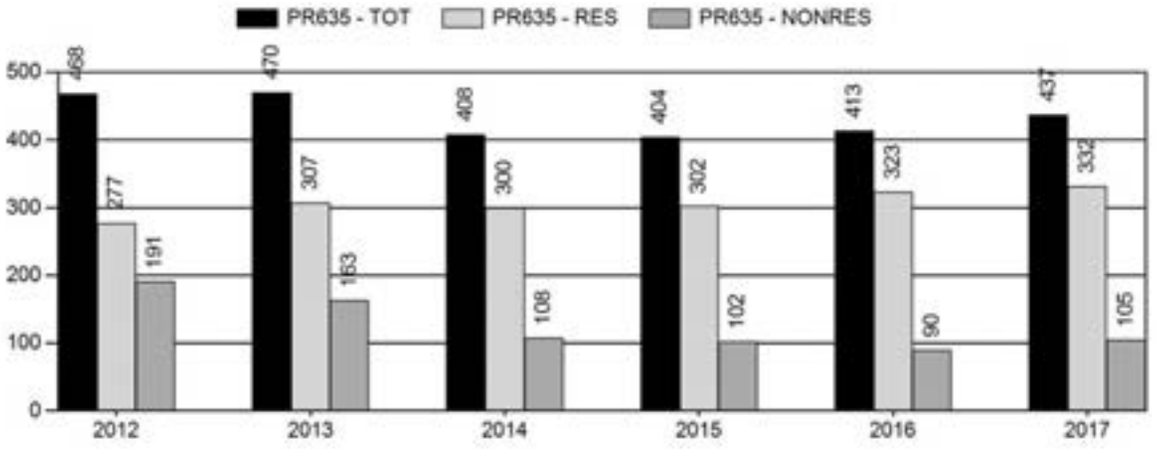
Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	10%
Number of years population has been + or - objective in recent trend:	2



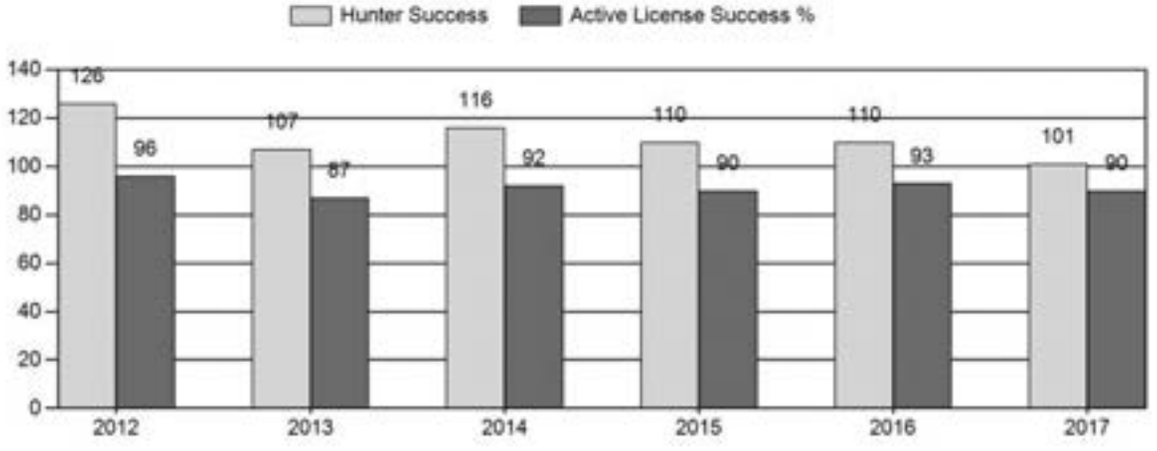
Harvest



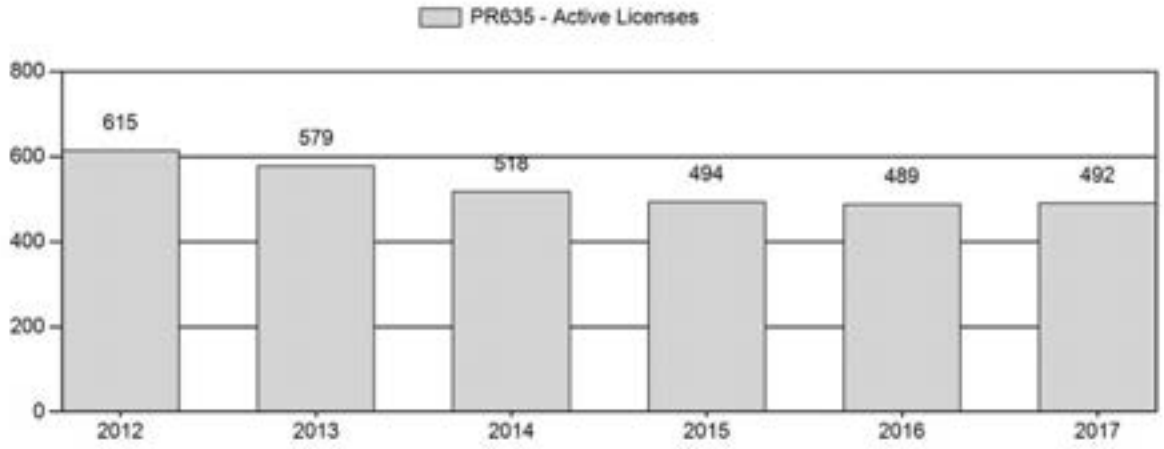
Number of Active Licenses



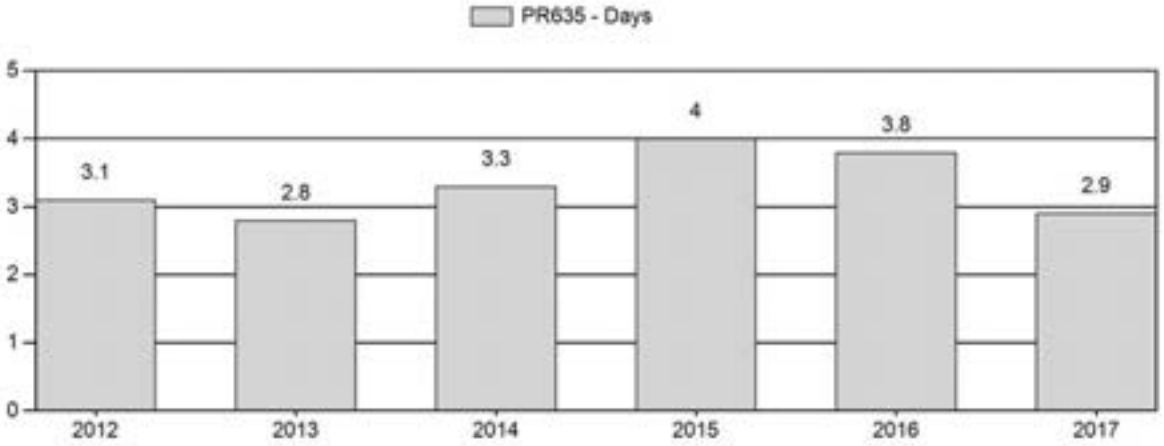
Harvest Success



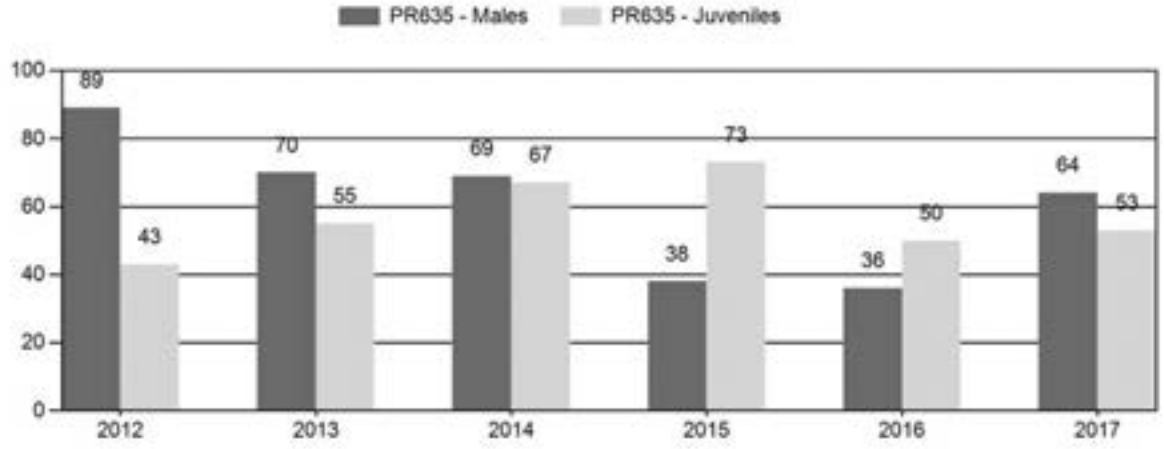
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR635 - PROJECT

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	0	67	112	179	38%	202	43%	86	18%	467	0	33	55	89	± 0	43	± 0	23
2013	0	28	125	153	31%	219	45%	120	24%	492	0	13	57	70	± 0	55	± 0	32
2014	0	21	62	83	29%	120	42%	80	28%	283	0	18	52	69	± 0	67	± 0	39
2015	0	26	45	71	18%	188	47%	137	35%	396	0	14	24	38	± 0	73	± 0	53
2016	0	42	33	75	19%	209	54%	104	27%	388	0	20	16	36	± 0	50	± 0	37
2017	0	37	59	96	29%	151	46%	80	24%	327	0	25	39	64	± 0	53	± 0	32

2018 SEASONS
PROJECT PRONGHORN (PR 635)

Hunt Area	Type	Season Dates Opens	Closes	Quota	License	Limitations
97, 117	1	Sep. 15	Oct. 22	325	Limited quota	Any antelope
97, 117	2	Aug. 15	Oct. 22	25	Limited quota	Any antelope valid in Area 97 south of U.S. Highway 26 or Wyoming Highway 134 and east of Eight Mile Road, and in all of Area 117
97, 117	6	Sep. 15	Oct. 22	225	Limited quota	Doe or fawn
97, 117	7	Aug. 15	Oct. 22	25	Limited quota	Any antelope valid in Area 97 south of U.S. Highway 26 or Wyoming Highway 134 and east of Eight Mile Road, and in all of Area 117
Archery 97, 117		Aug. 15	Sep. 14			Refer to section 2 of this chapter

Hunt Area	Type	Quota change from 2017
97, 117	1	+25
	6	+25
Total		**+50**

Management Evaluation

Current Hunter/Landowner Satisfaction Management Objective: Hunter/Landowner Satisfaction 60%
Management Strategy: Private Lands
2017 Hunter Satisfaction Estimate: 92%
2017 Landowner Satisfaction Estimate: 47% (17 contacts)
Most Recent 3-year Running Average Hunter Satisfaction Estimate: 92%
Most Recent 3-year Running Average Landowner Satisfaction Estimate: 34%

Management Issues

In 2013 the Department conducted an objective review for the Project pronghorn herd unit. Previously the herd had a population objective of 400 pronghorn. The population objective was impractical because personnel were unable to collect adequate demographic data due to extensive interchange with the neighboring Wind River Reservation (WRR). Following an internal review, a public meeting and contact with numerous landowners the objective was changed in 2013 to manage for 60% hunter and 60% landowner satisfaction with a recreational management strategy. The objective was reviewed in 2018 and left unchanged as hunter/landowner satisfaction but with a private lands management strategy.

The landscape throughout this herd unit varies dramatically from irrigated grain and alfalfa fields to arid, native upland areas. The majority of the antelope population resides in close proximity to WRR boundaries near irrigated agricultural areas. This creates management challenges since more sparsely populated areas of arid public lands are easily accessible by hunters. The majority of landowners in the area allow hunting access but hunter densities are still higher in the public land portion of the herd unit where there are fewer antelope. That said, landowner comments from the last several years indicate most would like to see higher antelope harvest.

Habitat/Weather

This herd occupies a predominantly agricultural area in central Wyoming as well as lands interspersed with the WRR. Land ownership patterns and extensive border with the WRR make it cost prohibitive to collect adequate demographic data in the herd unit. The highest densities of pronghorn are found along the northern portion of hunt area 97 and commonly move between the herd unit and the WRR. During periods of drought, this herd has typically been impacted less than surrounding populations due to the abundance of feed associated with agricultural operations. In 2017, weather conditions were conducive to average vegetative production throughout the herd unit including upland, native range. As such, antelope were well dispersed throughout the area. Fall observations and field checks indicate antelope in the herd unit entered winter in excellent body condition.

Field/Harvest Data/Population

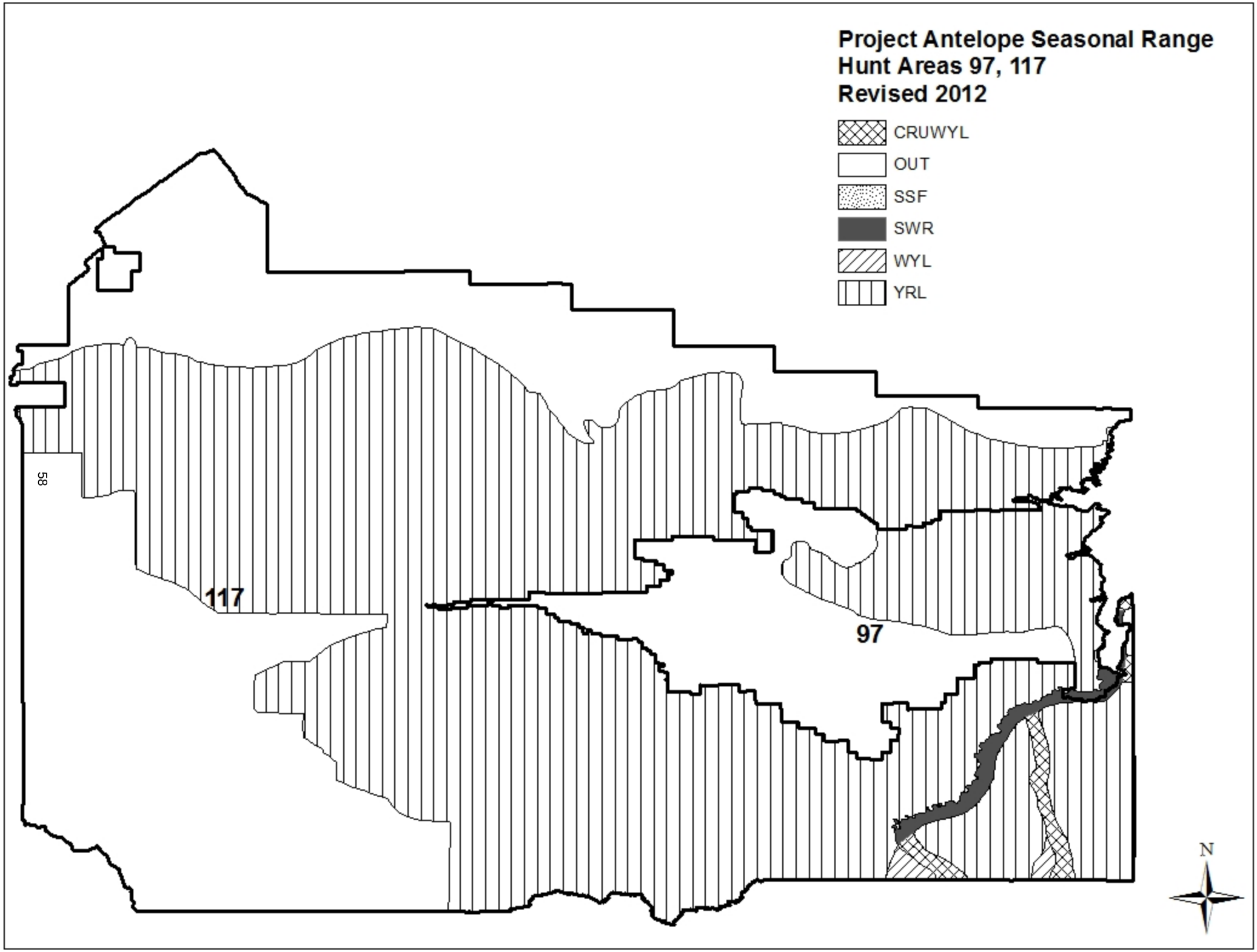
The fawn/doe ratio in hunt area 97 was 53/100 in 2017. This was slightly higher than the 2016 ratio of 50/100 and close to the 5-year average of 56/100. The buck/doe ratio increased from 36/100 in 2016 to 64/100 in 2017. The buck/doe ratio in this herd can fluctuate significantly year-to-year. A change of the magnitude seen between 2016 and 2017 is likely due to interchange with the WRR as opposed to actual demographic change. Type 1 license success is

consistently high in this herd unit and was 91% in 2017. In conjunction, hunter satisfaction was 92% in 2017 and averaged 92% over the past 3 years. These figures indicate recreational hunt quality continues to be good in the herd unit.

The population is considered to be above objective in 2017. Hunter satisfaction (satisfied or very satisfied) has been quite high over the past several years but landowner satisfaction has been below 60% with the majority of landowner commenting there are too many antelope. Landowner satisfaction in 2014 was based on only 4 responses to an e-mail survey and is not considered accurate. However, in 2017, a lower percentage of landowners commented there were too many antelope. This indicates license increases over the last several years have had the desired effect.

Management Summary

Although hunter satisfaction has been quite high over the past several years, landowner satisfaction has remained below 60% with the majority of landowners commenting there are too many antelope in the area. A higher percentage of landowners were satisfied with antelope numbers in 2017 than each of the previous 2 years. To address continued landowner concerns both Type 1 and Type 6 licenses will be increased by 25 in 2018. This small increase reflects the fact that landowner satisfaction while still below 60% did increase in 2017. Type 2 and Type 7 licenses will remain unchanged to address specific, localized damage concerns. With average survival for the year but increased harvest, the population is expected to decline in 2017.


Project Antelope Seasonal Range
Hunt Areas 97, 117
Revised 2012
CRUWYL
OUT
SSF
SWR
WYL
YRL
117
97
N

2017 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2017 - 5/31/2018

HERD: PR636 - NORTH FERRIS

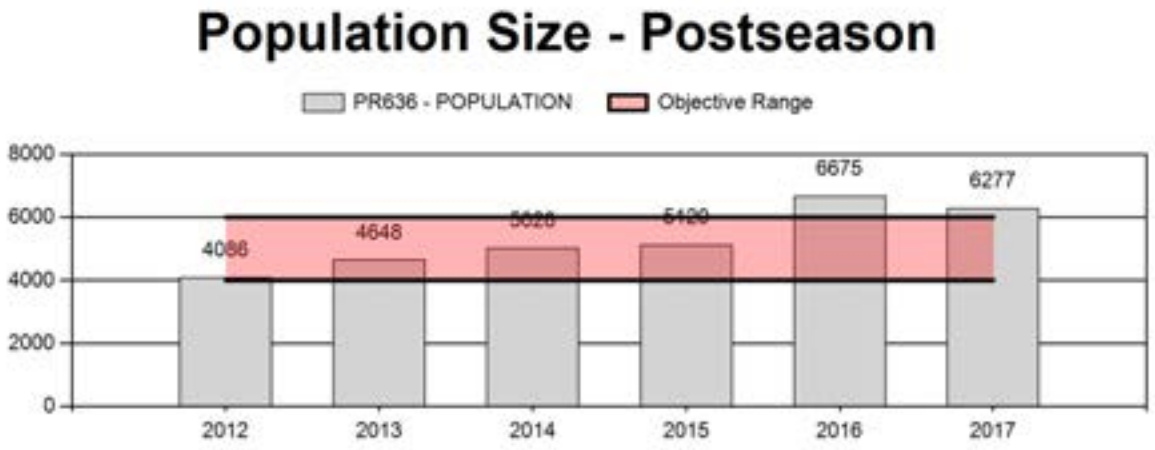
HUNT AREAS: 63 | PREPARED BY: GREG HIATT

	2012 - 2016 Average	2017	2018 Proposed
Population:	5,111	6,277	5,637
Harvest:	355	643	650
Hunters:	397	683	725
Hunter Success:	89%	94%	90 %
Active Licenses:	430	779	783
Active License Success:	83%	83%	83 %
Recreation Days:	1,197	1,936	2,080
Days Per Animal:	3.4	3.0	3.2
Males per 100 Females	59	72	
Juveniles per 100 Females	63	79	

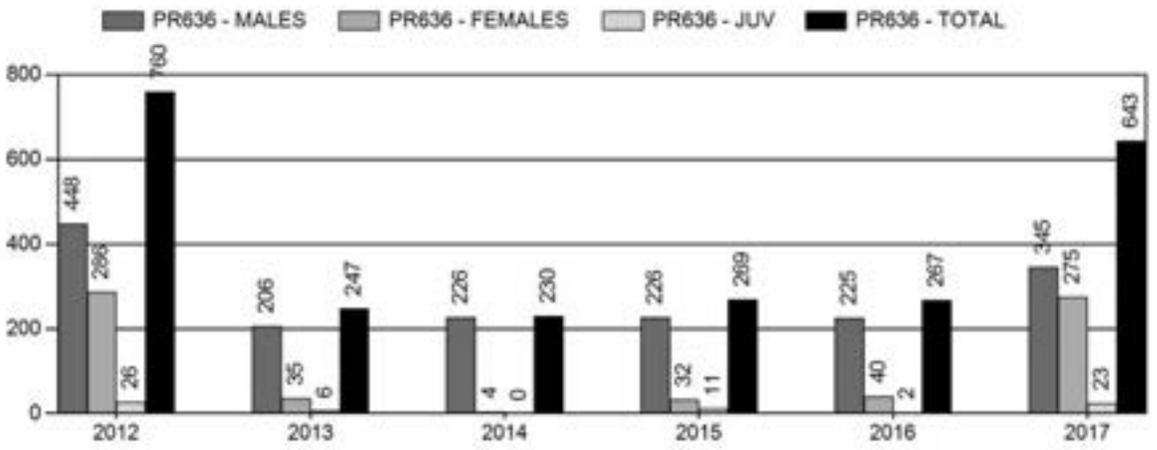
Population Objective (± 20%) :	5000 (4000 - 6000)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	26%
Number of years population has been + or - objective in recent trend:	4
Model Date:	02/26/2018

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

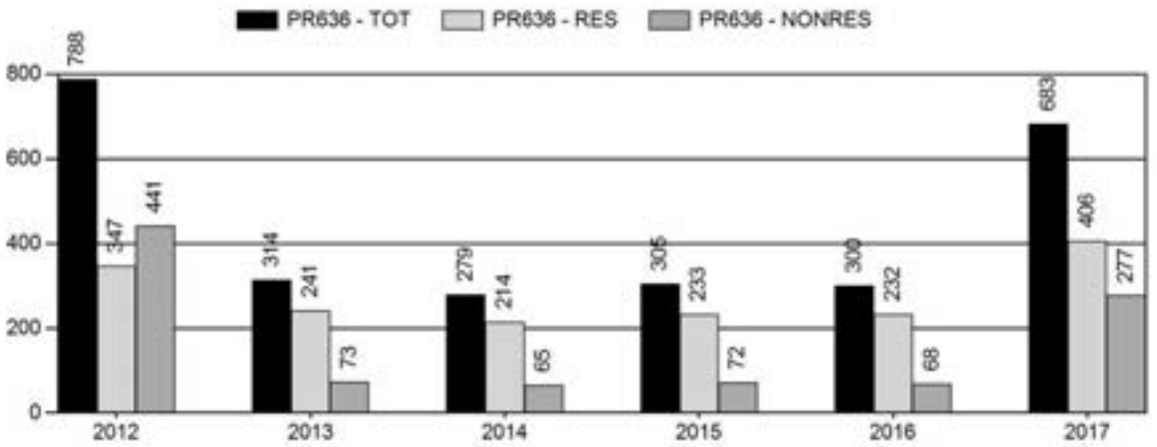
	JCR Year	Proposed
Females ≥ 1 year old:	9.3%	9.9%
Males ≥ 1 year old:	20.4%	20.2%
Total:	10.4%	10.2%
Proposed change in post-season population:	-18.6%	-10.0%



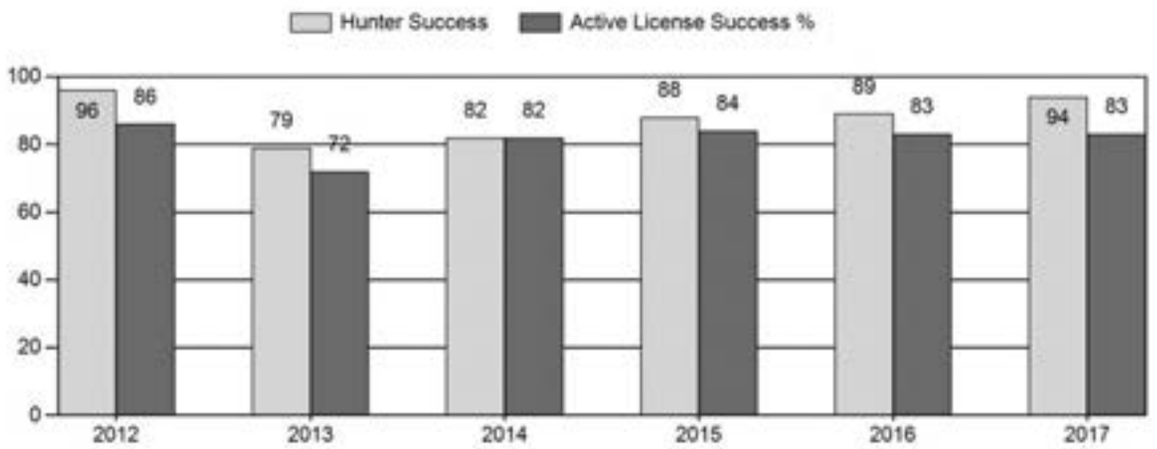
Harvest



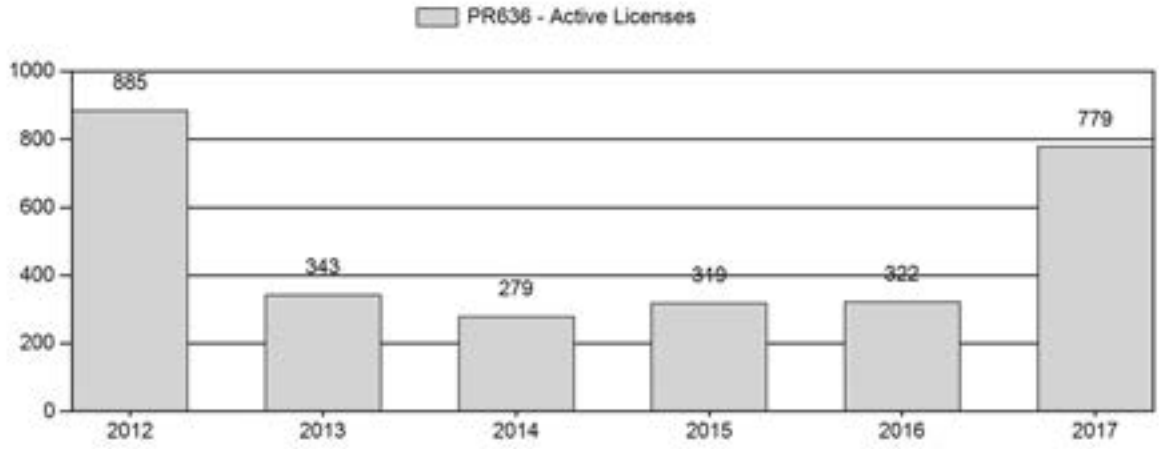
Number of Active Licenses



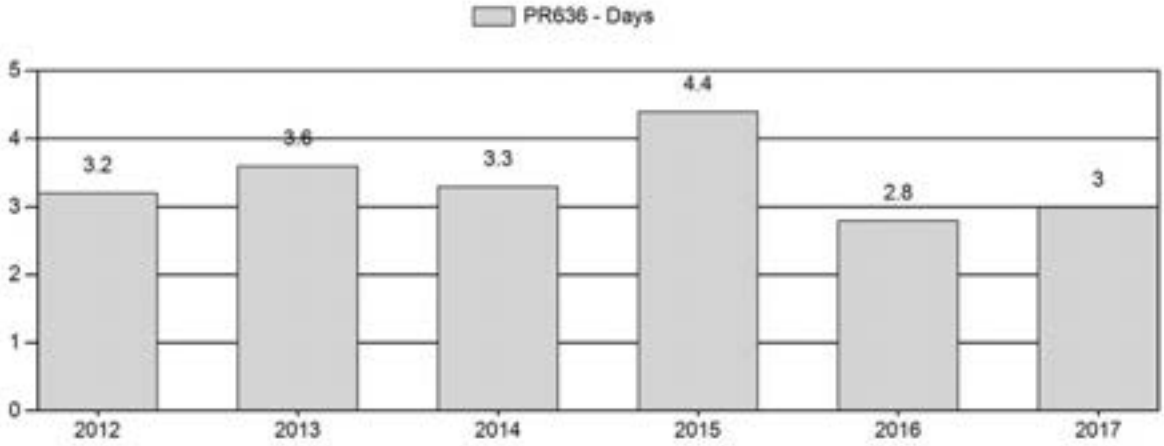
Harvest Success



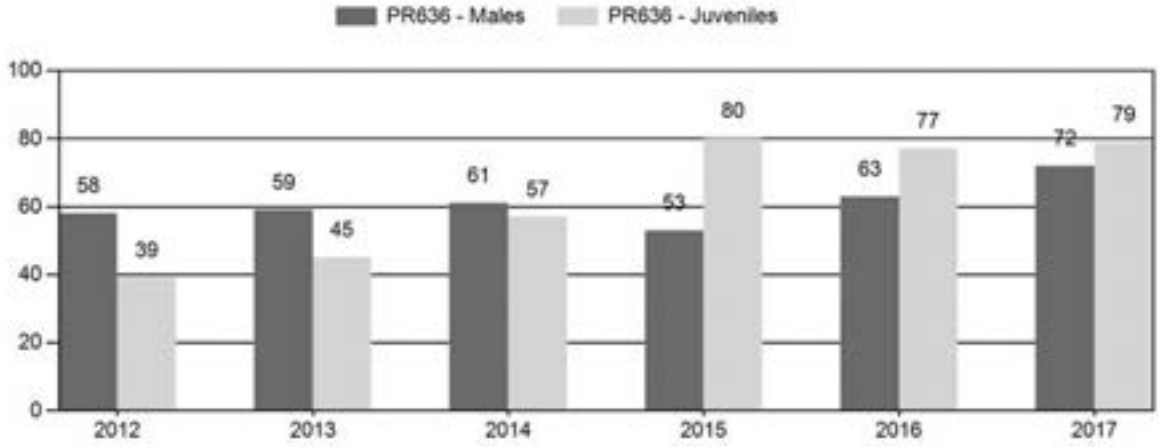
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR636 - NORTH FERRIS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	4,914	55	253	308	29%	534	51%	208	20%	1,050	1,330	10	47	58	± 6	39	± 5	25
2013	4,920	57	216	273	29%	459	49%	205	22%	937	1,460	12	47	59	± 7	45	± 6	28
2014	5,281	72	143	215	28%	350	46%	201	26%	766	1,611	21	41	61	± 8	57	± 8	36
2015	5,420	118	273	391	23%	736	43%	587	34%	1,714	2,173	16	37	53	± 5	80	± 6	52
2016	6,970	158	338	496	26%	782	42%	606	32%	1,884	2,347	20	43	63	± 5	77	± 6	47
2017	6,985	209	384	593	29%	818	40%	643	31%	2,054	2,478	26	47	72	± 5	79	± 6	46

2018 HUNTING SEASONS
NORTH FERRIS PRONGHORN HERD (PR636)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	License	Limitations
63	1	Sep. 15	Oct. 31	200	Limited quota	Any antelope
	2	Sep. 15	Oct. 31	250	Limited quota	Any antelope valid east of the Buzzard Road (Natrona County Road 410 – Carbon County Road 497)
	6	Sep. 15	Oct. 31	150	Limited quota	Doe or fawn
	7	Sep. 15	Oct. 31	250	Limited quota	Doe or fawn valid east of the Buzzard Road (Natrona County Road 410 – Carbon County Road 497)
Archery						
63		Aug. 15	Sep. 14			Refer to Section 2 of this Chapter

Hunt Area	License Type	Quota change from 2017
63	1	0
	2	0
	6	0
	7	0
Herd Unit Total	**1**	**0**
	2	**0**
	6	**0**
	7	**0**

<u>Management Evaluation</u>
Current Postseason Population Management Objective: 5,000
Management Strategy: Recreation
2017 Postseason Population Estimate: 6,300
2018 Proposed Postseason Population Estimate: 5,650

Herd Unit Issues

The North Ferris pronghorn herd is managed toward a post-hunt population of 5,000, an objective last reviewed in 2014. Population size is estimated using a spreadsheet model

developed in 2012 and updated in 2018. The herd is in recreational management, with harvest quotas designed to maintain pre-hunt buck:doe ratios below 60:100.

Historically, access has not been an issue in this herd unit which is mostly public lands, but access to some large blocks of private land has become more difficult in recent years and may affect management ability to attain adequate harvests in the future. Potential for economic wind power exists within the herd unit, but appears unlikely when other resource issues such as T&E species and sage-grouse Core Area are considered. Many miles of sheep-tight fences still stand in the herd unit, impeding pronghorn movements.

Losses to EHD were documented in pronghorn herds south and west of North Ferris in 2013, and reports of carcasses in Area 63 suggests the disease was present here as well. This disease may recur when suitable conditions arise.

Weather

Record precipitation in 2015 produced exceptional vegetative growth, improving fawn survival, and was followed by another wet spring in 2016 and good moisture in early 2017. High fawn production was seen again in all three years as a result. Condition of pronghorn going into the 2017-18 winter is expected to have been above average because of improved forage production. The 2017-18 winter had numerous periods of bitter cold, some with significant snowfall, continuing through February. Winter losses may have been above average.

Habitat

While no herbaceous habitat transects are established within occupied habitats of this herd unit, herbaceous forage production appeared to be exceptional in 2015, due to record precipitation, and above average in 2016 and 2017. Two shrub transects have been established within this herd unit, primarily to monitor mule deer winter forage. One of these, on the Morgan Creek WHMA, was burned in the 2012 fires and the second was not read in 2017. New owners of the Pathfinder Ranch, which encompasses the north-central portion of this herd, have expressed interest in improving habitat conditions for wildlife, possibly as mitigation for wind power projects in other parts of the state. Shrub treatment on winter ranges, adjustments of grazing use, and modification of sheep-tight fences would benefit pronghorn in this herd unit.

Field Data

Classification sample size increased again in 2017, more than double the 2013 and 2014 samples, and was the largest sample since 2009. Sample size was still less than statistically desired. These data are collected from the ground along routes that have had only minor changes over the past two decades. Higher densities of pronghorn were again found in the eastern half of the area near Pathfinder Reservoir and along irrigated hayfields on the Buzzard and Sand Creek Ranches. Fawn production increased slightly to 79:100, the second highest in 34 years, and was well above the long-term average for this herd.

Following exceptionally high recruitment of yearlings in 2005, buck:doe ratios exceeded the 60:100 maximum criterion for recreational management in this herd. Buck harvests were

increased, often double or triple historic levels, and surplus bucks were successfully harvested with the buck:doe ratio returning to acceptable levels by 2012. Much of the decline was in the supply of adult bucks, with that ratio dropping to its lowest level in ten years in 2015. As expected, hunter complaints about poor quality of bucks increased and hunter satisfaction declined as the adult buck:doe ratio declined. Following near-record fawn production in 2015 and 2016, yearling recruitment was high again in 2016 and 2017, again increasing the buck:doe ratio above the recreational maximum, to 72:100. As a consequence, buck harvest was increased again beginning in 2017.

Harvest Data

Overall hunter success in 2017 was unchanged from 2016 at 83 percent, with the average effort required to harvest a pronghorn increasing slightly from 2.8 days to 3.0 days. Unlike in 2016, hunters with the Type 2 and Type 7 licenses, restricted to the eastern portion of the herd unit, had higher success than those with Type 1 or Type 6 licenses, who had the entire hunt area available and were free to hunt the eastern portion if they chose to do so. Success for the Type 1 and Type 6 hunters dropped to 66 and 63 percent, near record lows for this area. This suggests either pronghorn were concentrated near riparian habitats in the eastern half, as was seen in previous years, or the western half suffered noticeably worse losses during the 2016-17 winter.

Population

Population estimates suggest this herd was well above objective size in 2006 due to record high fawn survival, and harvests were increased accordingly. The current spreadsheet model predicts the increased harvests successfully reduced the herd to objective size by 2012. Harvests were reduced and the herd remained at objective for three years. Following near-record high fawn production in 2015, 2016 and 2017, the herd is above objective level again. This model aligns well with three line-transect survey estimates, but greatly underestimates the most recent line-transect estimate. This survey was flown with a single, inexperienced observer, which may have affected survey estimates. Hunter comments, satisfaction and harvest statistics do not support the exceptionally high numbers predicted by the 2016 line-transect estimate.

The SCJ,SCA spreadsheet model provides adequate fit with observed buck:doe ratios and has the lowest AICc value for this herd. This base model was modified to allow fawn survival to fluctuate upwards in four years preceding the exceptionally high observed yearling buck:doe ratios. Annual adult survival was predicted at 85 percent, a level slightly lower than models for some nearby pronghorn herds. Juvenile survival rate averaged 50 percent, except in the years when higher fawn survival was allowed. These annual fawn survival rates exceeded adult survival rates and as a result the model is only considered to be a “Fair” representation of the herd. The CJ,CA model had a higher AICc value and poorer fit with observed data. The TSJ,CA model also had a higher AICc value, but better fit with buck:doe ratios. Population estimates from this simpler model were much lower in 2015 and 2016, further under-estimating the most recent line-transect estimate.

Fawn production in 2018 was projected near the 5-year average. Due to record high fawn production seen in three of those five years, this average may be overly optimistic. The model

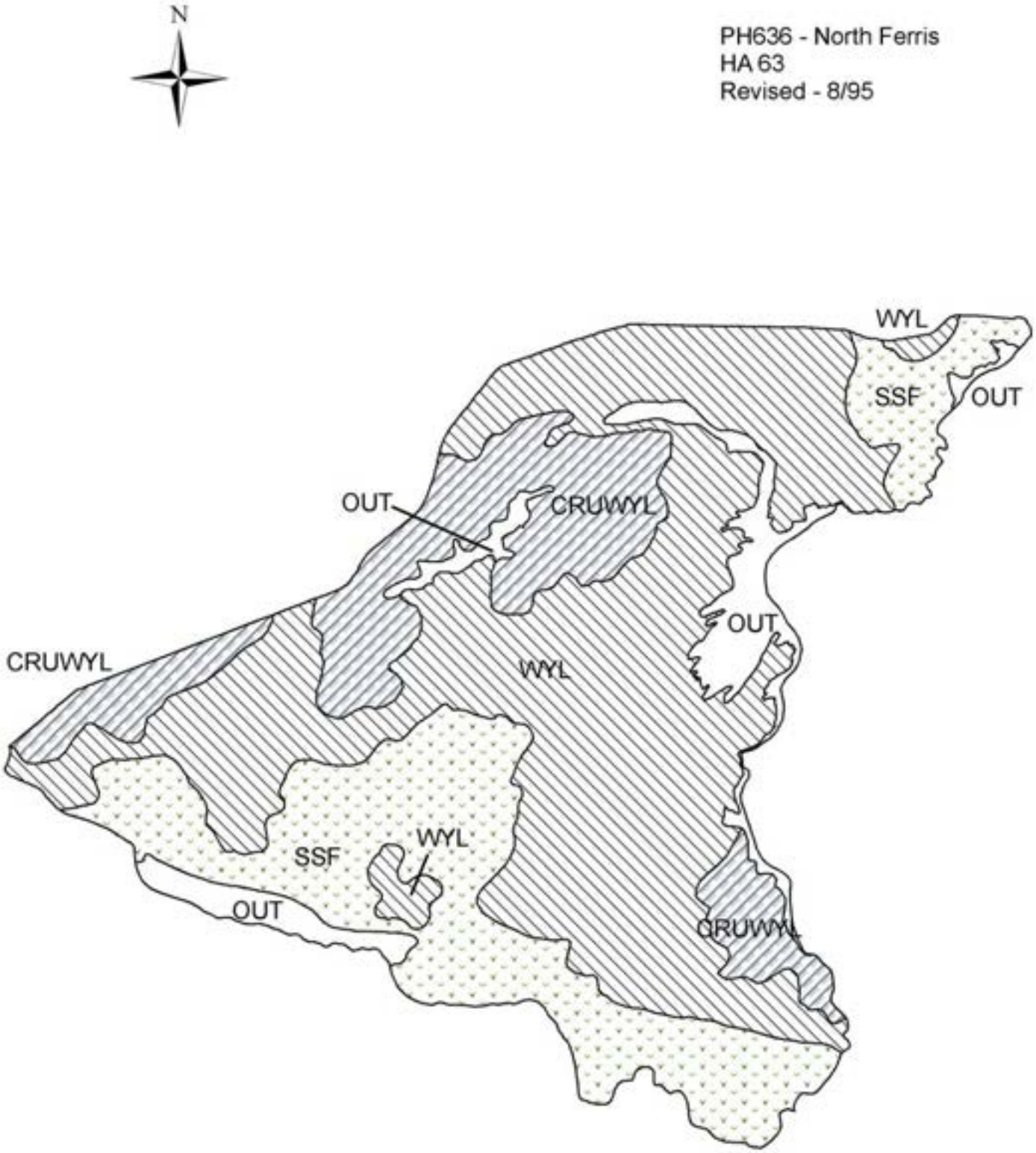
was run using a median juvenile survival for the 2017-18 winter, and predicts the herd will be within 15 percent of objective in 2018 with the proposed harvest.

Management Summary

With continued improvement in fawn production and the herd estimated to still be above objective size, increased doe harvest begun in 2017 needs to be maintained in 2018. As in previous years, Type 2 and Type 7 licenses are issued to direct hunting pressure to the eastern portion of the herd unit where pronghorn densities are higher and most private lands are found. With average fawn production in 2018, the model predicts this increased harvest will reduce the herd within acceptable range of the 5,000 pronghorn herd objective.

The expected harvest of roughly 350 bucks and 300 does and fawns from the 2018 license quotas should provide a significant decrease (15-20 percent) in herd size, projected to be ~5,640 at post-hunt 2018. With the herd so close to objective, either low winter survival or poor fawn production in 2018 could require harvest reductions in future years.

Opening date is shifted one day to remain on the third Saturday of September, synchronizing with Area 68 to the north and other areas in the Lander Region. Closing date is the same as in the previous six years and extends to the closing of the local deer season. Archery season uses a standardized opening date and closes the day before the opening of the regular season.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2017 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2017 - 5/31/2018

HERD: PR637 - SOUTH FERRIS

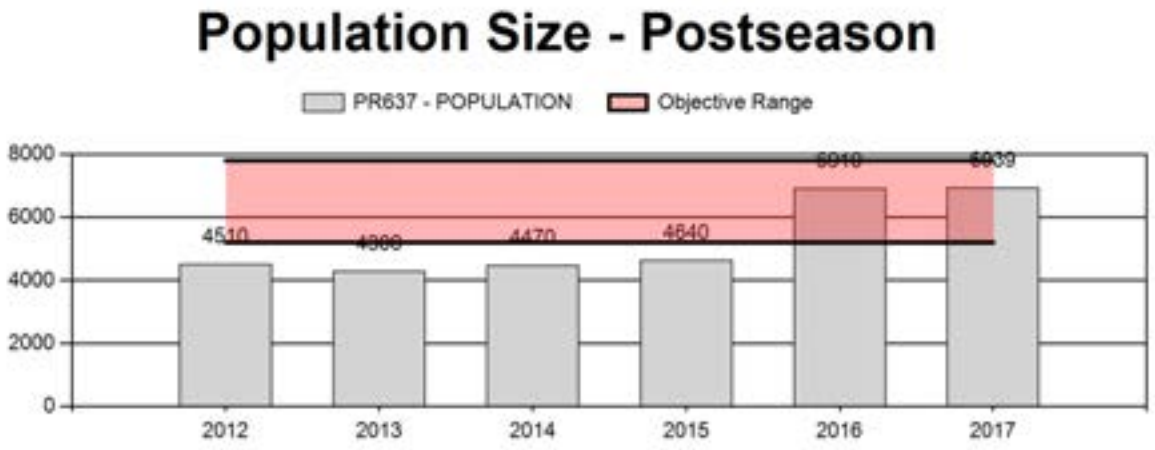
HUNT AREAS: 62 | PREPARED BY: GREG HIATT

	2012 - 2016 Average	2017	2018 Proposed
Population:	4,966	6,939	7,413
Harvest:	155	201	250
Hunters:	172	190	250
Hunter Success:	90%	106%	100 %
Active Licenses:	186	225	280
Active License Success:	83%	89%	89 %
Recreation Days:	585	546	750
Days Per Animal:	3.8	2.7	3
Males per 100 Females	58	59	
Juveniles per 100 Females	48	42	

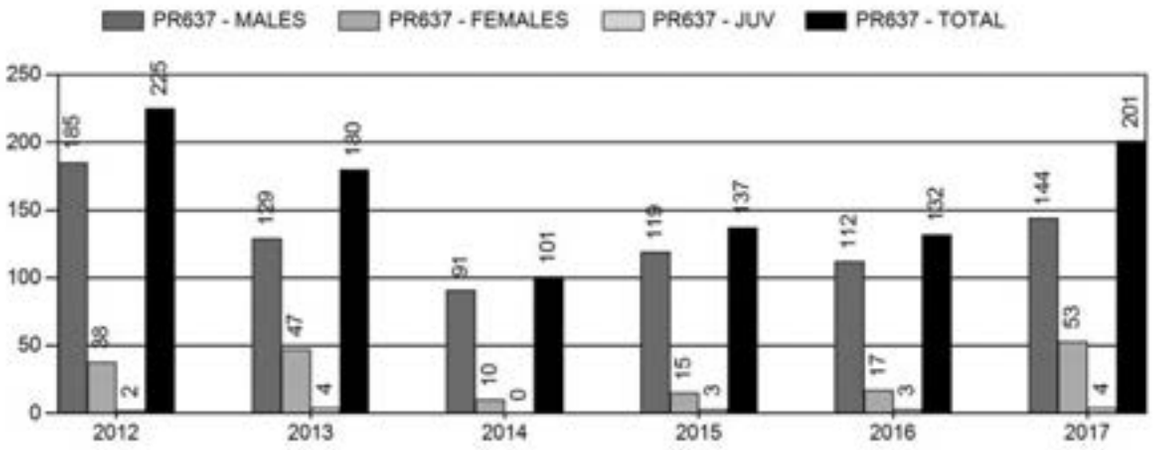
Population Objective (± 20%) :	6500 (5200 - 7800)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	7%
Number of years population has been + or - objective in recent trend:	3
Model Date:	02/26/2018

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

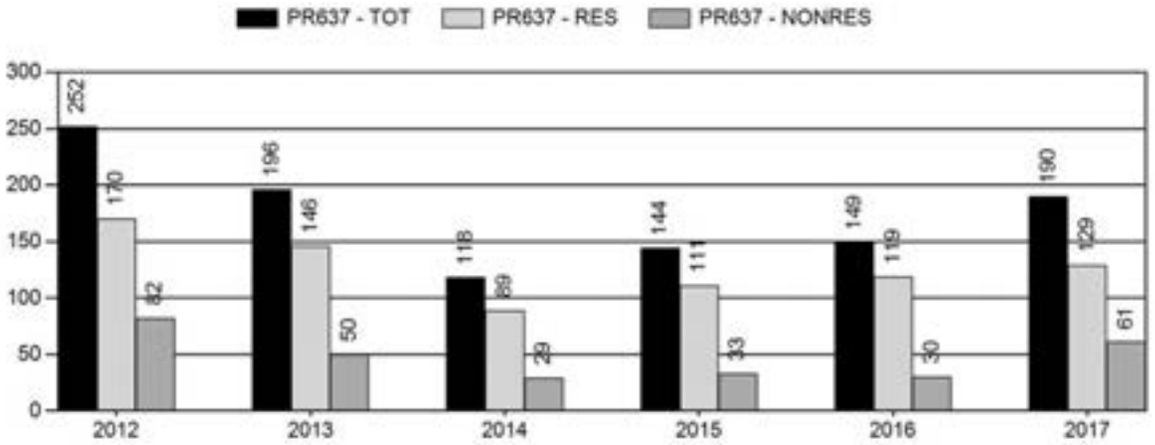
	JCR Year	Proposed
Females ≥ 1 year old:	2.3%	2.8%
Males ≥ 1 year old:	6.2%	6.1%
Total:	3.1%	3.3%
Proposed change in post-season population:	3.1%	6.8%



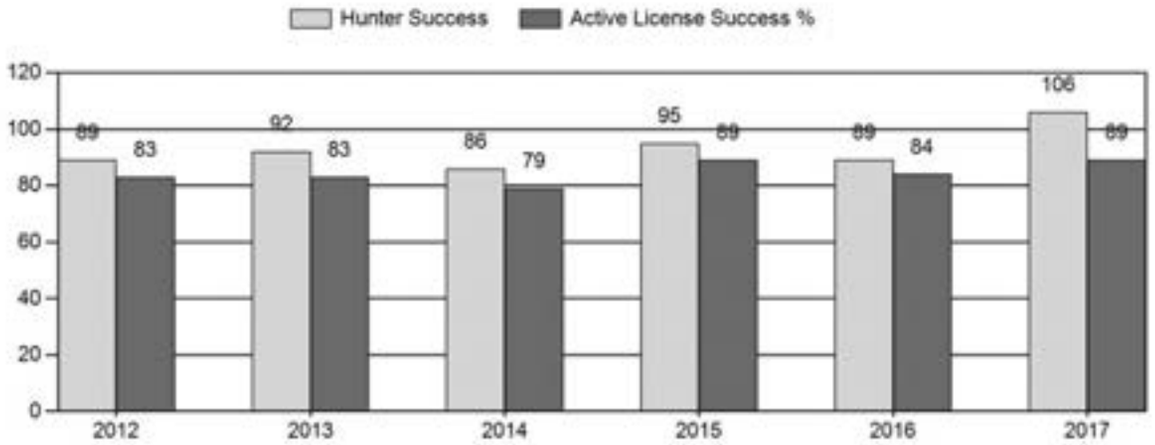
Harvest



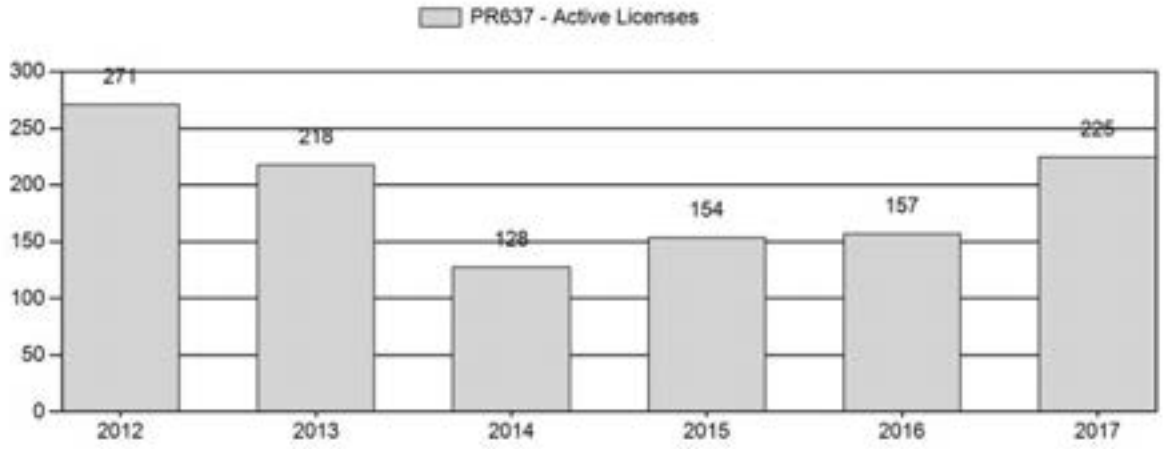
Number of Active Licenses



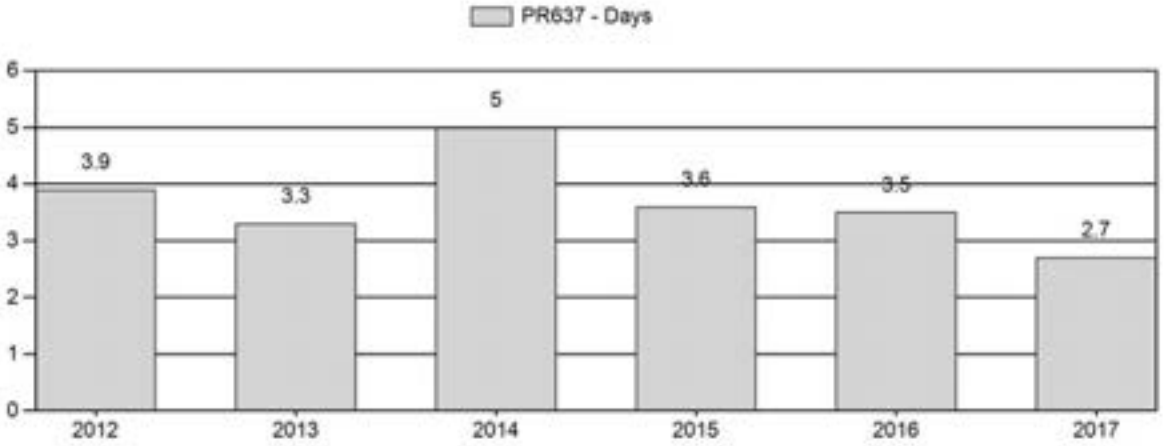
Harvest Success



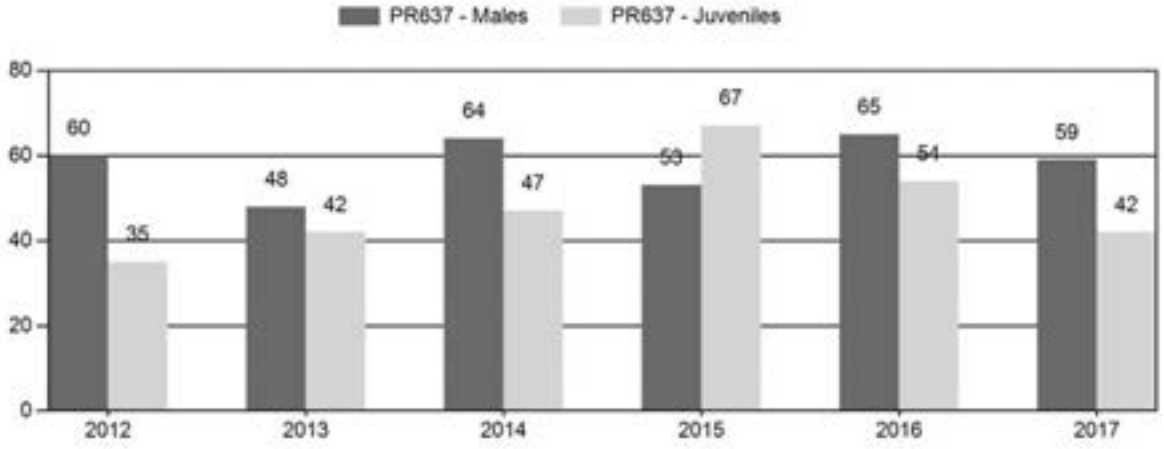
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2012 - 2017 Preseason Classification Summary

for Pronghorn Herd PR637 - SOUTH FERRIS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2012	4,760	47	452	499	31%	827	51%	293	18%	1,619	1,502	6	55	60	± 5	35	± 3	22
2013	4,500	53	312	365	25%	766	53%	319	22%	1,450	1,145	7	41	48	± 4	42	± 4	28
2014	4,580	82	354	436	30%	686	47%	324	22%	1,446	1,638	12	52	64	± 5	47	± 4	29
2015	4,790	89	261	350	24%	661	45%	443	30%	1,454	1,711	13	39	53	± 5	67	± 6	44
2016	7,050	141	263	404	30%	620	46%	334	25%	1,358	1,868	23	42	65	± 6	54	± 5	33
2017	7,158	139	309	448	30%	753	50%	317	21%	1,518	1,588	18	41	59	± 5	42	± 4	26

2018 HUNTING SEASONS
SOUTH FERRIS PRONGHORN HERD (PR637)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	License	Limitations
62	1	Sep. 8	Oct. 31	75	Limited quota	Any antelope
	2	Sep. 8	Oct. 31	100	Limited quota	Any antelope valid east of the Continental Divide and north of Wise Dugout Draw
	6	Sep. 8	Oct. 31	100	Limited quota	Doe or fawn valid east of the Continental Divide and north of Wise Dugout Draw
	7	Sep. 8	Oct. 31	50	Limited quota	Doe or fawn
Archery 62		Aug. 15	Sep. 7			Refer to Section 2 of this Chapter

Hunt Area	License Type	Quota change from 2017
62	1	0
	2	0
	6	+50
	7	+50
Herd Unit Total	**1**	**0**
	2	**0**
	6	**+50**
	7	**+50**

<u>Management Evaluation</u>
Current Postseason Population Management Objective: 6,500
Management Strategy: Recreation
2017 Postseason Population Estimate: 6,900
2018 Proposed Postseason Population Estimate: 7,400

Herd Unit Issues

The South Ferris pronghorn herd is managed toward a post-hunt population size of 6,500 pronghorn, an objective last publicly reviewed in 2014. Population size is estimated using a spreadsheet model developed in 2015 and last updated in 2018. The herd is in recreational management, with harvest quotas designed to maintain pre-hunt buck:doe ratios below 60:100.

Hunter access to much of the eastern half of the herd has been severely limited by private landowners since the mid-1990s and has resulted in buck:doe ratios and pronghorn densities greatly skewed between the western and eastern portions.

Fawn crops have only ranged from 28 to 67:100 over the past 15 years, averaging ~43:100. In addition to limited access to much of the herd, poor production and recruitment has reduced harvest levels the herd can support.

The large Peterson Ranch in the south-central portion of the herd has changed hands several times in recent years, and it is not known how the newest owners will handle hunter access. They did not renew the large Walk-In area along US287 in 2017.

Losses to EHD were documented in this herd in 2013. By the number of reported and observed carcasses, losses appeared to be greatest along the west shore of Seminoe Reservoir, but spanned down to Rawlins and up towards Lamont. No similar mortalities were found in following years, but the presence of the disease should remain a concern whenever drought conditions arise.

Weather

Record precipitation in 2015 produced exceptional vegetative growth, improving fawn survival, and was followed by another wet spring in 2016 and good moisture in early 2017. Improved fawn production was seen in 2015 and 2016 as a result of improved moisture, but returned to typical lows in 2017. Condition of pronghorn going into the 2017-18 winter is expected to have been above average because of improved forage production. The 2017-18 winter had numerous periods of bitter cold, continuing through February, but most winter ranges were open and available. Winter losses were expected to be near average.

Habitat

While no herbaceous habitat transects are established within occupied habitats of this herd unit, herbaceous forage production appeared to be exceptional in 2015, due to record precipitation, and appeared above normal again in 2016. Spring moisture in 2017 was also above previous drought levels. Only one shrub transect has been established near this herd unit, on the Morgan Creek WHMA. This transect, used to monitor bitterbrush growth and utilization in the Seminoe Mountains, was burned in the 2012 fires.

Owners of the Pathfinder Ranch, which encompasses the north-central portion of this herd, have expressed interest in looking for opportunities for improving habitat conditions for wildlife, possibly as mitigation for wind power projects in other parts of the state. Treatment of browse on winter ranges, adjustments of grazing use, and modification of sheep-tight fences would benefit pronghorn in this herd unit.

Field Data

Classification sample size increased in 2017, the largest sample in five years, but was still a third less than samples seen in 2007-2011. These data have been collected on standard routes for more than 20 years for most of the herd unit, and it is difficult to reconcile low sample sizes with

estimates suggesting the herd is near objective size. Fawn production dropped again, to 42:100 from 67:100 in 2015 and 54:100 in 2016, and was near low levels recorded in eight of the previous 10 years. Fawn production remained at 49:100 in the western portion of the herd, compared to 35:100 in the east.

The buck:doe ratio dropped from 65:100 in 2016 to 59:100 in 2017, with almost all the decline in the yearling buck:doe ratio. This fell to 18:100, a result of both lower fawn production in 2016 and losses during the 2016-17 winter, but was still the second highest yearling recruitment since 1992. As is typical, the buck:doe ratio was significantly higher in the eastern portion of the herd unit, where access is strictly limited. The eastern ratio declined from 68:100 in 2015 and 75:100 in 2016 to 64:100 in 2017. Type 2 licenses introduced in 2012 to address the disparity in buck densities between the two portions of the area have been only moderately successful, due to continued access restriction to much of the eastern third.

Buck:doe ratios in the western portion of the herd improved again to 55:100, compared to 51:100 in 2016. Most of the increase resulted from increased numbers of adult bucks, rising to 37:100 from 31:100 in 2015 and 2016. The yearling buck:doe ratio remained high at 17:100, compared to 5:100 in 2015 to 20:100 in 2016. Buck:doe ratios for this herd have exceeded the 60:100 maximum criterion for recreational management in two of the past five years, but always due to high ratios in the east half of the herd which is largely unavailable to most hunters. Buck:doe ratios in the western, publicly accessible portion only averaged 48:100 over the past five years, generating complaints of poor buck numbers and quality by hunters. Buck:doe ratios in the eastern portion, however, averaged 72:100 over those five years.

Harvest Data

The difference in supply of bucks between the two portions of the herd unit has also been apparent in harvest statistics, but these evened out in 2017. Success for hunters with Type 1 licenses rose to 88 percent, while those hunting the eastern portion with Type 2 licenses remained essentially stable at 89 percent success. The Type 1 hunters expended an average of 3.0 days for each pronghorn harvested while effort for hunters limited to the eastern portion of the herd unit was similar at 3.1 days to harvest an animal. Changes in harvest statistics suggest either pronghorn numbers have increased in the western portion, or more of the Type 1 hunters are making the effort to hunt in the eastern third.

Type 7 doe/fawn licenses valid only in the Muddy Creek drainage were introduced in this area in 2013 to address complaints about high concentrations of pronghorn on irrigated fields along that creek. Nineteen does were harvested the first year, 10 were removed in 2014, 18 in 2015, 19 in 2016 and 14 were reported for 2017. Pronghorn use of the irrigated fields has lessened, and the landowner has requested these licenses not be issued in 2018. Pronghorn use of these fields may increase if drought conditions return, but this strategy was effective in addressing that issue.

Population

Efforts to develop a reasonable spreadsheet model for this herd in 2012 and 2013 failed, a failure attributed to the highly skewed buck:doe ratios between the eastern and western portions of the herd unit. Population estimates in 2013 were obtained using two separate spreadsheet models, one each for the east and west portions of the herd unit. While effective, these separate models

could not be anchored to defensible line-transect estimates of herd size. The addition of the 2014 and 2015 classification and harvest data allowed for a reasonable unified model which incorporates line-transect estimates, despite the highly skewed buck:doe ratios within portions of the herd. This unified model still worked well when 2016 and 2017 data were added.

A line-transect survey in spring of 2016 estimated 5,482 pronghorn in this herd, and again found a noticeable disparity in pronghorn densities between the east and west portions. The population estimate was 19 percent higher than from a similar survey three years earlier, despite declines in classification samples and hunter success. This survey was flown with a single, inexperienced observer, which may have affected survey estimates. The current model incorporates four years of variable survival in the SCJ,SCA model, accounting for three severe winters and losses due to the 2012 drought.

The resultant SCJ,SCA model has a reasonable AICc value, aligns closely with all three line-transect estimates, has a reasonable track compared to historic trend counts, and aligns well with most observed buck:doe ratios. Adult survival for the majority of years in the model is estimated at a high 95 percent, while dropping to reasonable levels for the severe winters and drought. Juvenile survival is a reasonable 49 percent in most years, however, juvenile survival rate exceeded adult survival rate in one year of the model. This is difficult to accept biologically, and as a result the model is only considered to be a “Fair” representation of the herd.

The CJ,CA model had a higher AICc value, did not track observed buck:doe ratios and only aligned with one line-transect estimate. The TSJ,CA model had the highest AICc value, and only aligned with two of three line transect estimates.

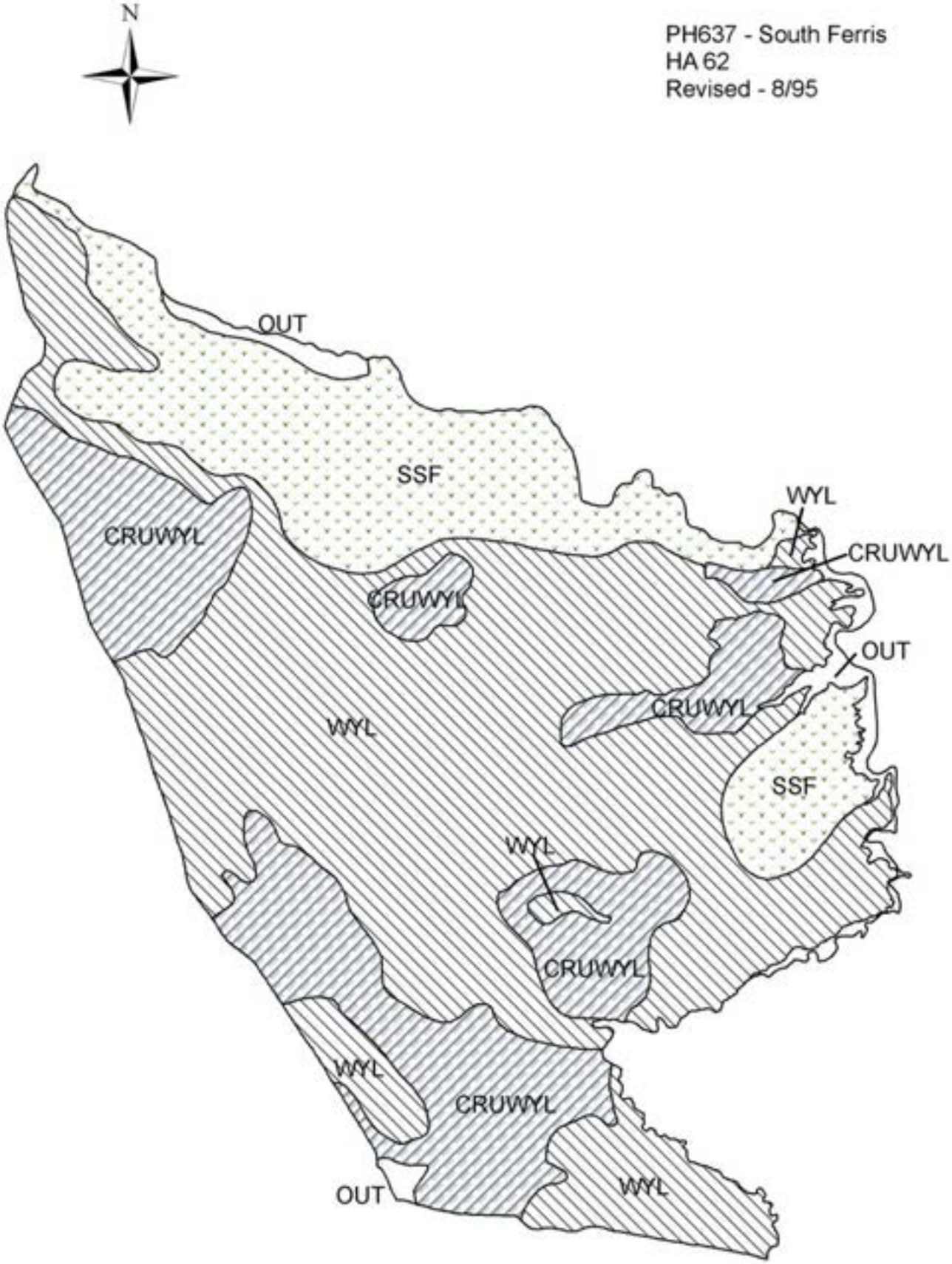
The updated SCJ,SCA model predicts the herd was about 7 percent above objective in 2017. Assuming average fawn production in 2018 and mid-range fawn survival of 60 percent, the model predicts the herd will still be within 15 percent of objective in 2018.

Management Summary

With the population apparently at objective, harvests should be increased to maintain herd size. Herd growth has been slow due to poor fawn production, so large increases in harvest are not necessary. The elevated buck:doe ratio in the eastern portion of the herd indicates there is a surplus of bucks that can be harvested in that portion, but access is still limited to most of that area. Classification and line-transect observations suggest most doe harvest should still come from the eastern portion of the area, and the Type 6 doe/fawn licenses are designed to do that. Landowners along Muddy Creek have expressed a desire to end the doe/fawn harvest directed towards their irrigated croplands, so the Type 7 licenses are available for the entire hunt area. Opening date for these licenses is set back to match the rest of the herd unit. These Type 7 licenses were removed from application materials, so there is no hunter expectation of an early doe/fawn hunt.

The expected harvest of roughly 140 bucks and 110 does and fawns from the 2018 license quotas should maintain herd size within 15 percent of objective. With the herd so close to objective, either poor winter survival or low fawn production in 2018 could require harvest reductions in future years.

Opening date falls on the traditional day of the week and will synchronize with neighboring Area 61. Closing date is the same as in the previous six years and extends to the closing of the local deer season. A standardized opening date is used for the archery season, which closes the day before the opening of the regular season.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