

2015 - JCR Evaluation Form

SPECIES: Pronghorn

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

HERD: PR401 - SUBLETTE

HUNT AREAS: 85-93, 96, 107

PREPARED BY: PATRICK
BURKE

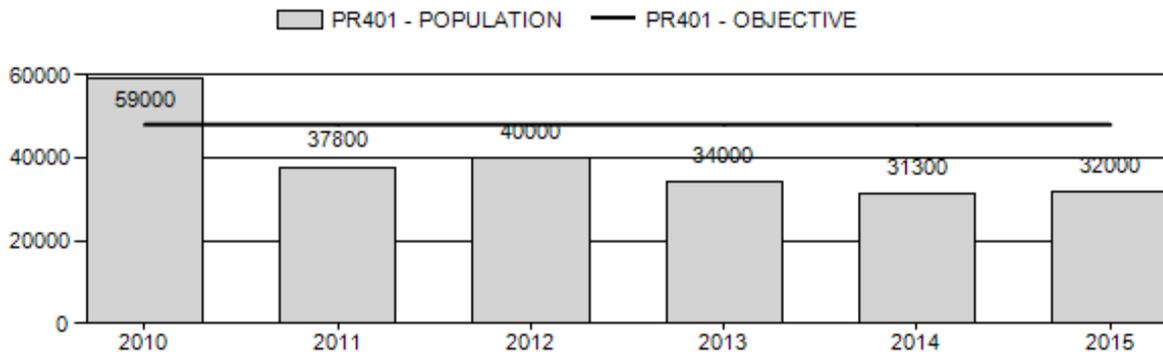
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	40,420	32,000	32,000
Harvest:	4,423	3,304	3,325
Hunters:	4,599	3,395	3,500
Hunter Success:	96%	97%	95 %
Active Licenses:	5,188	3,855	4,000
Active License Success:	85%	86%	83 %
Recreation Days:	16,267	12,858	13,000
Days Per Animal:	3.7	3.9	3.9
Males per 100 Females	54	53	
Juveniles per 100 Females	65	72	

Population Objective ($\pm 20\%$) :	48000 (38400 - 57600)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-33.3%
Number of years population has been + or - objective in recent trend:	5
Model Date:	2/23/2016

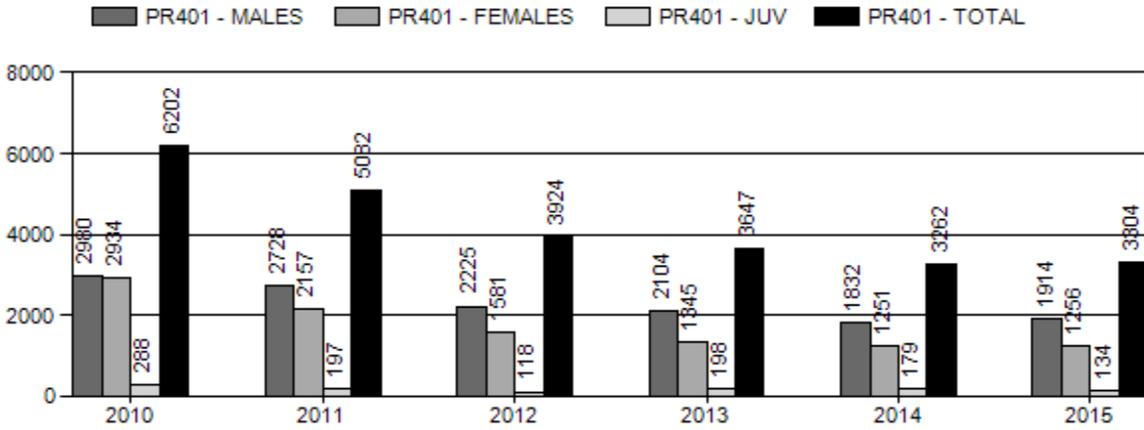
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	8%	9%
Males ≥ 1 year old:	26%	25%
Juveniles (< 1 year old):	1%	1%
Total:	8%	10%
Proposed change in post-season population:	0%	0%

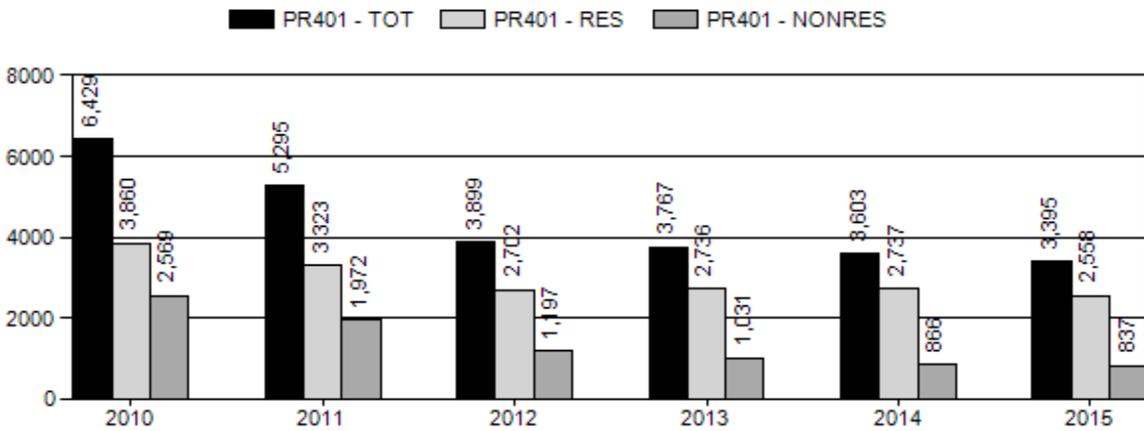
Population Size - Postseason



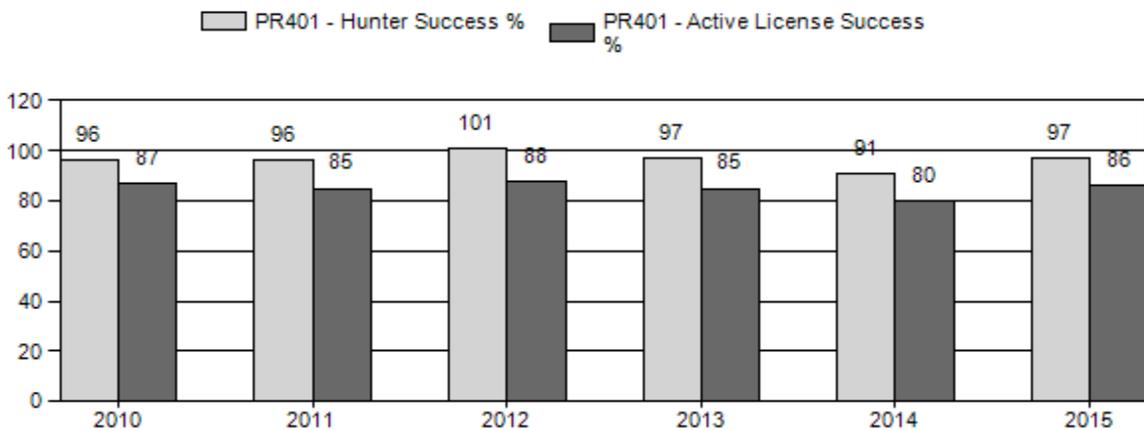
Harvest



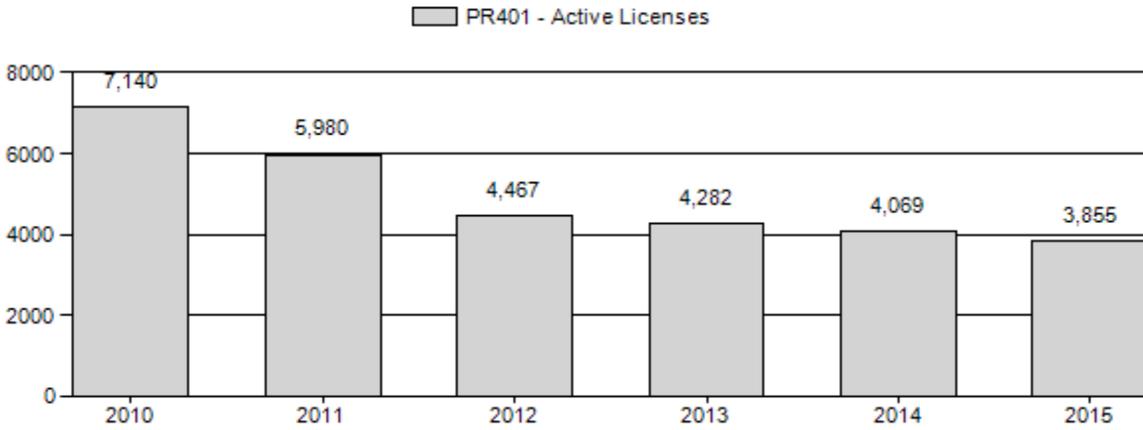
Number of Hunters



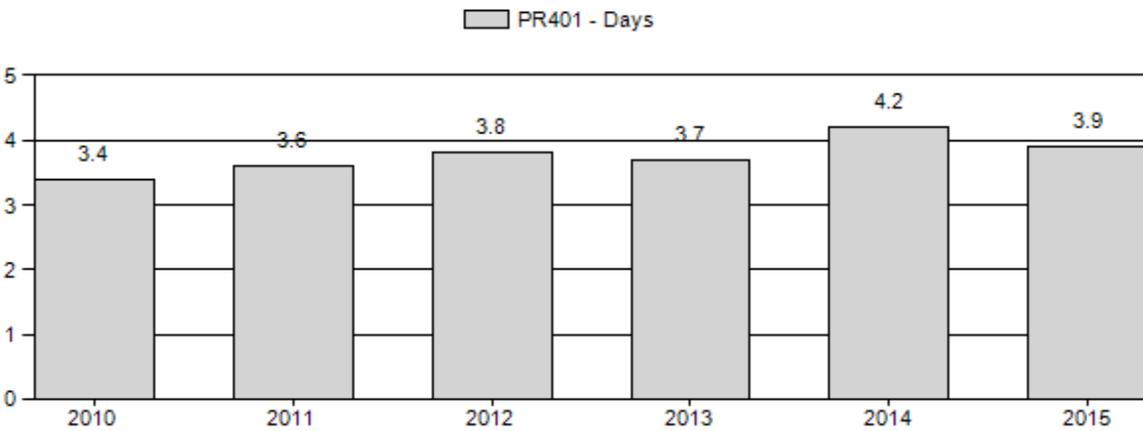
Harvest Success



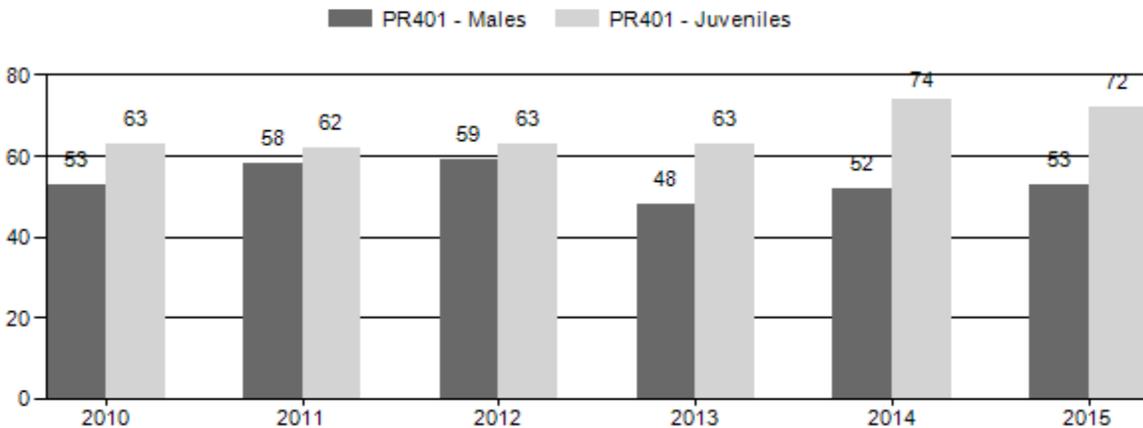
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR401 - SUBLETTE

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylg	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	66,000	783	2,407	3,190	24%	6,035	46%	3,804	29%	13,029	2,138	13	40	53	± 2	63	± 2	41
2011	43,400	684	2,043	2,727	26%	4,713	45%	2,936	28%	10,376	2,163	15	43	58	± 2	62	± 2	39
2012	45,000	646	1,967	2,613	27%	4,439	45%	2,800	28%	9,852	1,986	15	44	59	± 2	63	± 2	40
2013	38,000	517	1,848	2,365	23%	4,975	48%	3,123	30%	10,463	2,065	10	37	48	± 2	63	± 2	43
2014	35,000	786	1,687	2,473	23%	4,791	44%	3,529	33%	10,793	2,614	16	35	52	± 2	74	± 2	49
2015	35,500	864	1,651	2,515	24%	4,764	45%	3,408	32%	10,687	2,603	18	35	53	± 2	72	± 2	47

**2016 HUNTING SEASONS
SUBLETTE PRONGHORN HERD (PR401)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
85	1	Sep. 10	Oct. 31	20	Limited quota	Any antelope
86	1	Sep. 10	Oct. 31	50	Limited quota	Any antelope
	6	Sep. 10	Oct. 31	25	Limited quota	Doe or fawn
87	1	Sep. 10	Oct. 31	200	Limited quota	Any antelope, except that portion of Area 87 within one (1) mile north and one (1) mile west of the junction of U.S. Highway 191 and Wyoming Highway 352 shall be closed
	2	Sep. 25	Oct. 31	150	Limited quota	Any antelope, except that portion of Area 87 within one (1) mile north and one (1) mile west of the junction of U.S. Highway 191 and Wyoming Highway 352 shall be closed
	6	Sep. 10	Oct. 31	150	Limited quota	Doe or fawn, except that portion of Area 87 within one (1) mile north and one (1) mile west of the junction of U.S. Highway 191 and Wyoming Highway 352 shall be closed
	7	Sep. 25	Oct. 31	150	Limited quota	Doe or fawn, except that portion of Area 87 within one (1) mile north and one (1) mile west of the junction of U.S. Highway 191 and Wyoming Highway 352 shall be closed
88	1	Sep. 10	Oct. 31	300	Limited quota	Any antelope, except that portion of Area 88 on B.L.M. land immediately west of and adjacent to the East Green River Road (Sublette County Road 23-110) and west of Sublette County Road 23-179 shall be closed
	6	Oct. 1	Oct. 31	325	Limited quota	Doe or fawn, except that portion of Area 88 on B.L.M. land immediately west of and adjacent to the East Green River Road (Sublette County Road 23-110) and west of Sublette County Road 23-179 shall be closed

89	1	Sep. 10	Oct. 31	200	Limited quota	Any antelope
	2	Oct. 10	Oct. 31	125	Limited quota	Any antelope
	6	Oct. 1	Oct. 31	375	Limited quota	Doe or fawn
	6	Nov. 1	Nov. 15			Unused Area 89 Type 6 licenses valid south of Middle Piney Creek and south of Wyoming Highway 351
90	1	Sep. 10	Oct. 31	225	Limited quota	Any antelope valid east of U.S. Highway 191
	2	Sep. 10	Oct. 31	150	Limited quota	Any antelope valid west of U.S. Highway 191
	6	Sep. 10	Oct. 31	150	Limited quota	Doe or fawn valid east of U.S. Highway 191
	8	Aug. 15	Sep. 9	50	Limited quota	Doe or fawn valid on private land east of U.S. Highway 191
	1	Sep. 10	Oct. 31	350	Limited quota	Any antelope
91	6	Sep. 10	Oct. 31	200	Limited quota	Doe or fawn
	7	Aug. 15	Oct. 31	75	Limited quota	Doe or fawn valid on private land and Bureau of Reclamation land within Sweetwater County
	1	Sept. 10	Oct. 31	125	Limited quota	Any antelope
92, 96	7	Sept. 10	Oct. 31	50	Limited quota	Doe or fawn valid within the Farson-Eden Irrigation Project
	1	Sept. 10	Oct. 31	500	Limited quota	Any antelope
93	6	Sept. 10	Oct. 31	25	Limited quota	Doe or fawn
	7	Sept. 10	Oct. 31	200	Limited quota	Doe or fawn valid in that portion of Area 93 north and west of Wyoming Highway 189
	8	Oct. 1	Nov. 30	100	Limited quota	Doe or fawn valid on private land north and west of Wyoming Highway 189

107	1	Sept. 10	Oct. 22	50	Limited quota	Any antelope
	6	Sept. 10	Oct. 22	50	Limited quota	Doe or fawn
	0	Aug. 20	Sept. 9	50	Limited quota	Any antelope, muzzleloading firearms and handguns only

Special Archery Season Hunt Areas	Opening Date	Limitations
85-93, 107	Aug. 15	Refer to Section 2 of this Chapter

Hunt Area	Type	Quota change from 2015
90	6	-25
	8	+25
91	1	-25
	7	-50
92	7	+25
93	1	+100
	7	+50
	8	+100
96	1	-25
	7	-25
Herd Unit Total	1	+50
	6	-25
	7	-25
	8	+125

Management Evaluation

Current Management Objective: 48,000

Management Strategy: Recreational

2014 Postseason Population Estimate: ~32,000

2015 Proposed Population Estimate: ~32,000

The post-season population objective for the Sublette pronghorn herd is 48,000 pronghorn and is designated as a recreational management herd. This objective for this population was set in 1994.

Herd Unit Issues

The 2015 post-season modeled population estimate for the Sublette herd is approximately 32,000 pronghorn with a stable trend. The last two line-transect surveys conducted in this herd unit have yielded lower estimates for where this herd is in relation to its population objective than previous line-transect estimates. One survey flown at the end of the 2006 bio-year year resulted in an estimated end of bio-year population size of just over 48,000 pronghorn, which placed this population significantly over objective. Because of this survey, harvest was significantly increased across the herd unit in order to move the herd down towards its population objective. Following that survey, severe winter conditions during the 2010-2011 winter resulted in significantly higher than normal mortality for the herd. Another line-transect survey flown at the end of the 2010 bio-year resulted in a much lower population estimate of just under 27,000 animals. The discrepancy between these two estimates, even with a severe winter between them when this herd experience higher than normal mortality, raised some questions about the true size of this population. In early June 2013, another line-transect survey was flown, using a slightly modified stratified survey design from the 2010 survey. The resulting end of bio-year population estimate from this latest survey was around 31,500 pronghorn which correlated well with both the 2010 estimate and with model predictions.

Weather

Tougher than normal winter conditions during the 2010-2011 winter resulted in higher than normal over winter mortality in this herd. Winters since then have been, by comparison significantly milder than the 2012-2011 winter. The summers of 2012, 2013, and to a lesser extent the summer of 2014 were very dry with little summer precipitation, especially in the southern, lower elevation portions of this herd unit. These dry years appear to have had little effect on this herd as fawn ratios have been remarkably stable during this time period. This can probably be explained by the northern, more

productive portions of the herd unit being less affected by the drought conditions than the southern, traditionally less productive, portions of the herd. The summer of 2015 saw substantially better moisture in most portions of the herd unit. This improvement in climatic conditions did result in increased observed fawn to doe ratios in the herd unit in 2014 and 2015. The below average precipitation levels do seem to still be having an impact in the southern portions of the herd.

Habitat

No habitat transects targeting pronghorn range were conducted in the Sublette herd unit during the period covered by this report. However, the dry summers over the last few years have had an impact on the overall habitat conditions in the southern portion of the herd. Some large sage-brush die-offs have been documented in the herd unit that could have an impact on pronghorn living in these areas. While the exact cause of die-offs has not been determined, it has been speculated that the dry conditions during the summer of 2013 and then the very wet conditions in the fall of 2013 may have drowned sage-brush living in low-laying areas. Improved precipitation levels during the summer of 2015 did result in better plant growth than had been seen in the previous three years.

Field Data

Pre-season ground classifications conducted in August of 2015 resulted in observed ratios of 72 fawns per 100 does as well as 53 total and 18 yearling bucks per 100 does for the herd unit. A total of 10,687 pronghorn were classified across the whole herd unit, which is very similar to the 10,793 classified in 2014, but down from a high of 13,029 pronghorn classified in 2010 when the population was at a higher level, but up slightly from the 9,852 classified in 2012 and 10,463 classified in 2013.

Harvest Data

The 2015 hunting season saw a slight increase in the harvest that was reported from the 2014 season. The total number of pronghorn harvested herd unit wide in 2014 was 3,304 pronghorn. This compares to 3,262 pronghorn harvested in 2014. Days per animal harvested declined slightly in 2015 to 3.9 days per animal harvested compared to 2014's 4.2 days per animal. The overall success rate in 2015 was 83% for the Type 1 licenses and 83% success for the doe/fawn licenses in the herd unit.

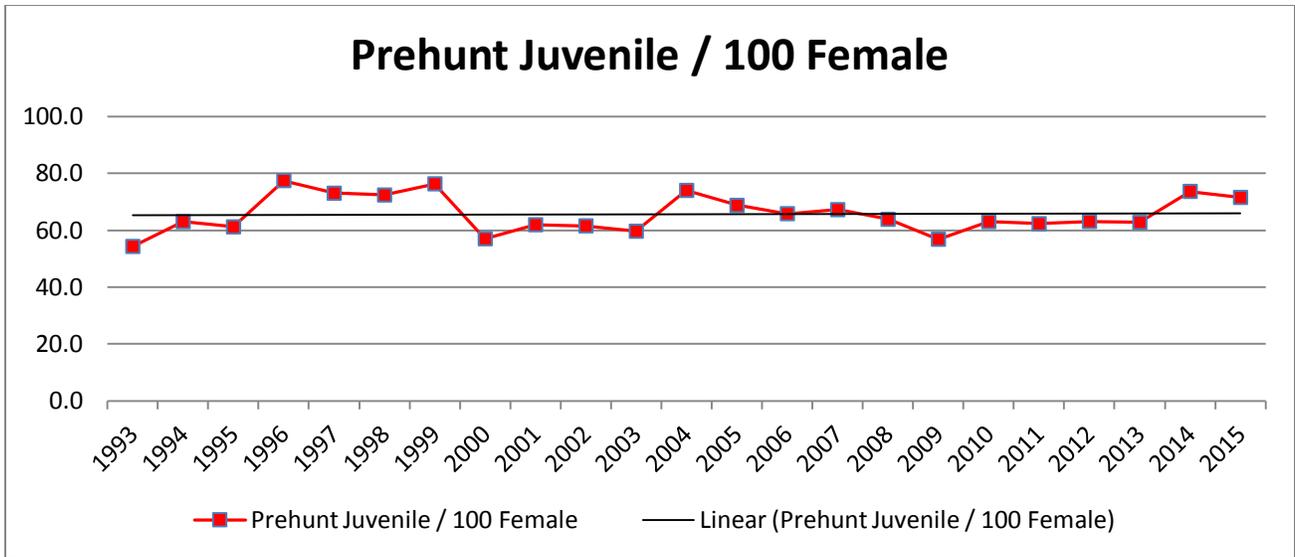
Population

The model for the Sublette herd does an OK job of tracking observed ratios and line-transect estimates for this large and geographically spread out pronghorn herd. Use of the semi-constant survival model was necessary to allow the modeled population estimates to match the line-transect estimates and to allow for the population to decline sharply after the 2010-2011 winter when this herd experienced above average winter mortality. The model prediction of a significant population reduction between the 2006 bio-year and 2010 bio-year line-transect estimates match observations made by both field personnel and the general public.

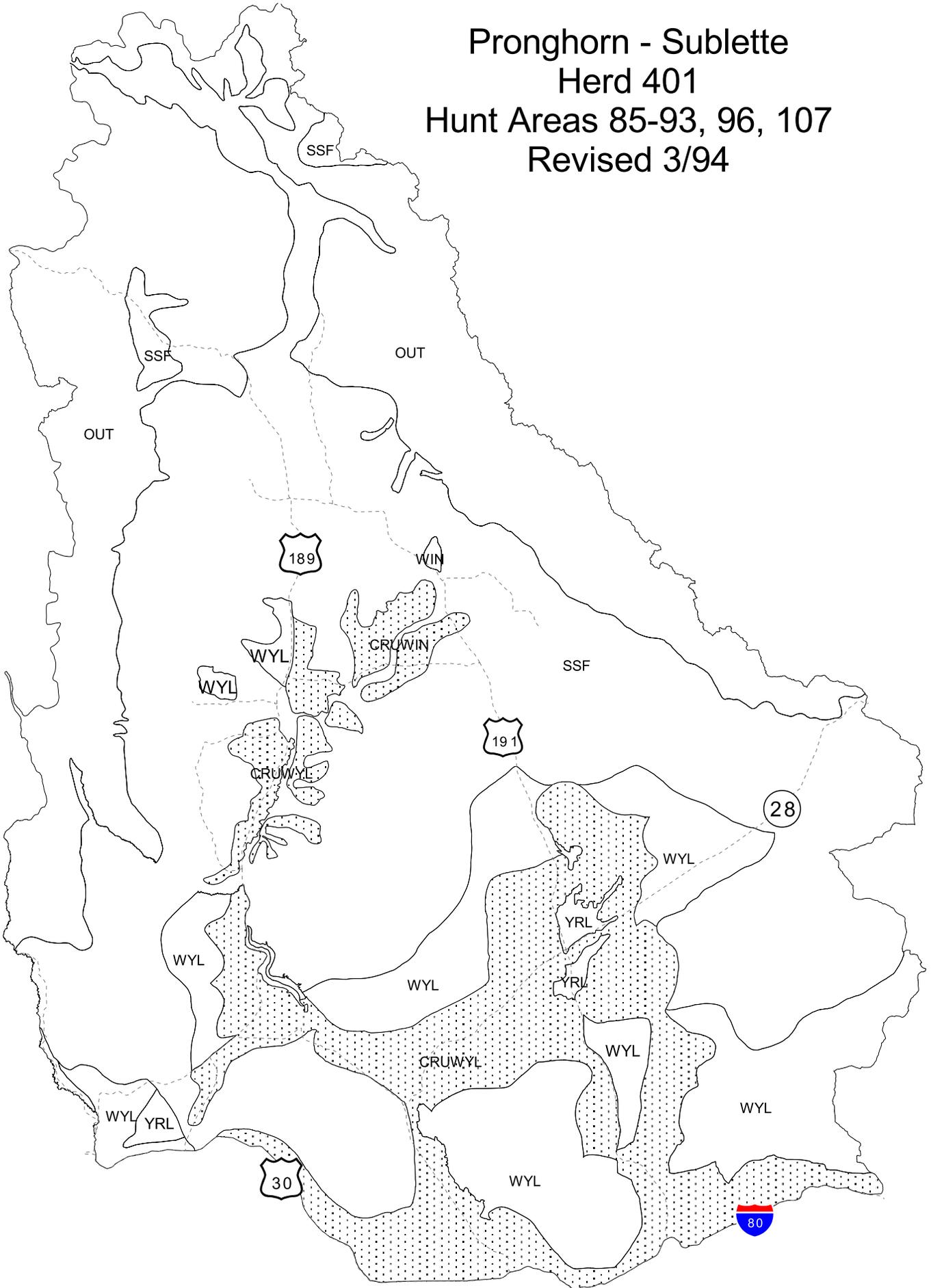
A line-transect survey was flown in the Sublette herd in June of 2013 to obtain an end of bio-year estimate for the 2012 bio-year. That survey was designed and analyzed using a stratified design to account for low, medium, and high density areas of the herd unit. The resulting end of bio-year population estimate for the herd was 31,550 (SE 7438) pronghorn. This population estimate agrees well with the previous line-transect survey flown in 2011 and with model predictions.

Management Summary

The 2015 season package is similar to previous hunting seasons for the herd unit, but does include changes in 5 of the hunt areas in the herd unit. Reductions in one or more license types will occur in HAs 90, 91, and 96; and increases will happen in HAs 90, 92, and 93, along with the creation of a new license type in HA93. These were proposed due to concerns over lower pronghorn numbers in the middle and southern portions of the herd and concerns about pronghorn numbers on private land in the western portion of HA93. The 2016 seasons also includes combining HAs 92 and 96 due to extremely low pronghorn densities in HA96 and removing the stand alone HA96 licenses from the season offering. This change was instituted due to extremely low pronghorn numbers in HA96. It is hoped that if hunters are able to choose between harvesting a pronghorn in either HA92 or 96 that most will choose HA92, where pronghorn are more numerous, than HA96, which has much lower pronghorn numbers. The 2016 seasons should result in approximately 3,325 pronghorn being harvested with 1,925 bucks, 1,350 does and 50 fawn projected to be harvested assuming similar success rates to previous seasons. This level of harvest should result in the population remaining fairly stable between the 2015 and 2016 seasons at approximately 32,000 pronghorn. If this population is to grow to near its population objective of 48,000 animals, doe and fawn harvest rates will have to be reduced in future hunting seasons.



Pronghorn - Sublette
Herd 401
Hunt Areas 85-93, 96, 107
Revised 3/94



2015 - JCR Evaluation Form

SPECIES: Pronghorn

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

HERD: PR411 - UINTA-CEDAR MOUNTAIN

HUNT AREAS: 95, 99

PREPARED BY: JEFF SHORT

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	10,365	6,355	6,363
Harvest:	878	880	840
Hunters:	934	941	900
Hunter Success:	94%	94%	93%
Active Licenses:	1,019	1,051	1,000
Active License Success:	86%	84%	84%
Recreation Days:	3,654	4,481	4,400
Days Per Animal:	4.2	5.1	5.2
Males per 100 Females	58	73	
Juveniles per 100 Females	58	69	

Population Objective (\pm 20%) : 10000 (8000 - 12000)

Management Strategy: Recreational

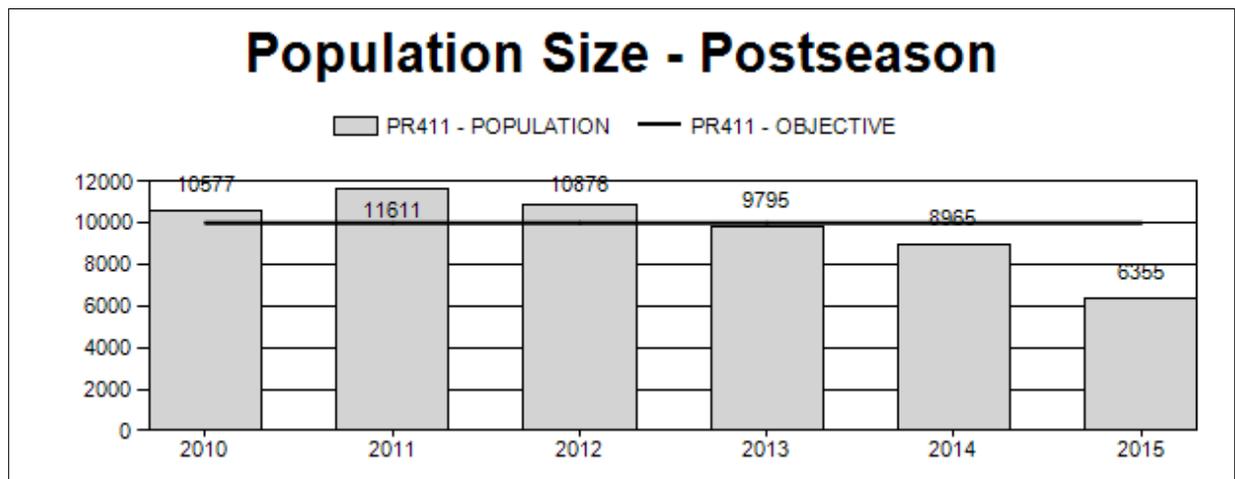
Percent population is above (+) or below (-) objective: -36.4%

Number of years population has been + or - objective in recent trend: 10

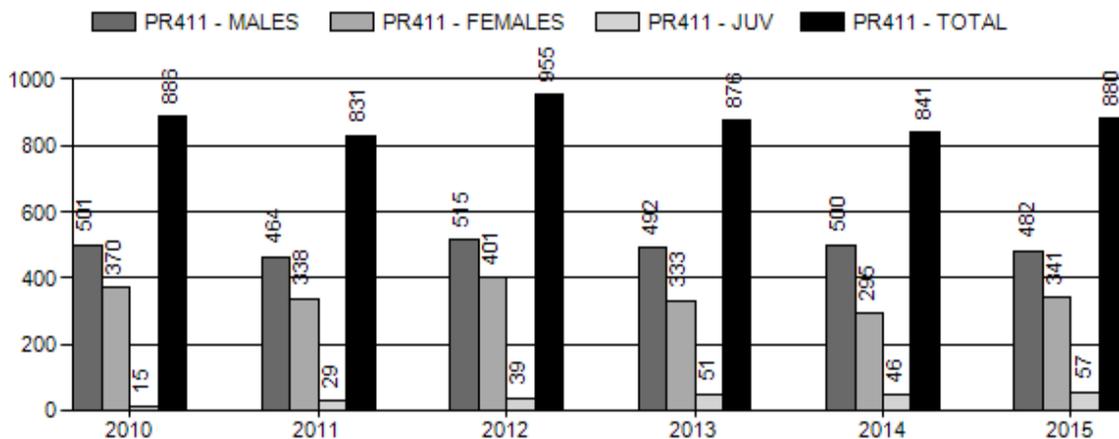
Model Date: 02/16/2016

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

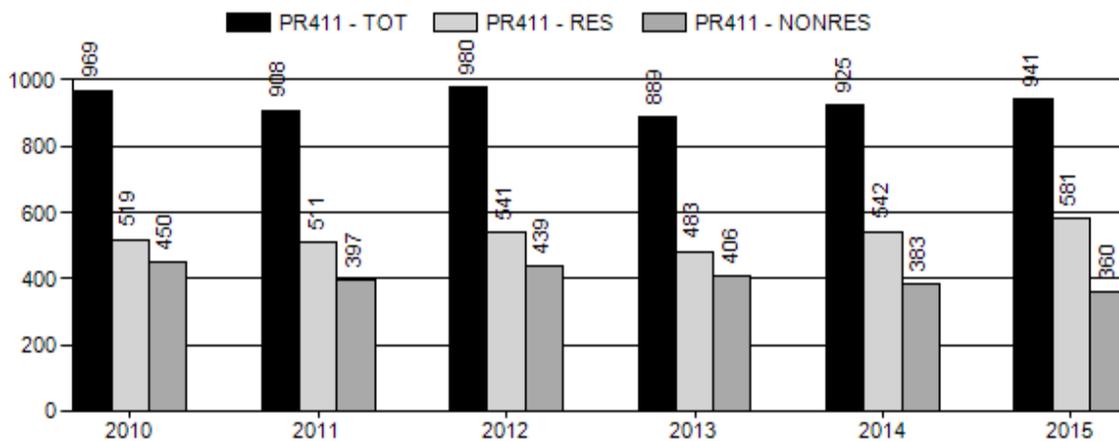
	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	10.2%	8.7%
Males \geq 1 year old:	28.6%	27.8%
Juveniles (< 1 year old):	2.5%	2.0%
Total:	12.0%	11.5%
Proposed change in post-season population:	8.0%	0.12%



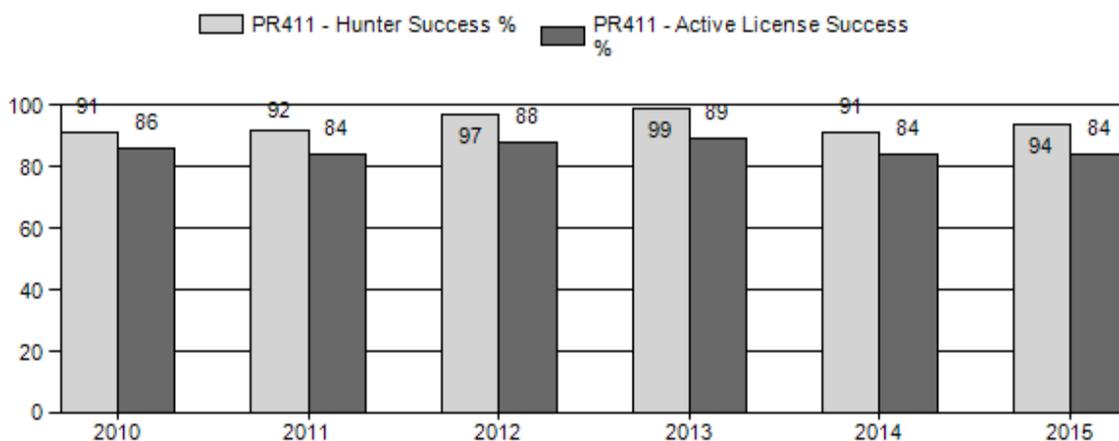
Harvest



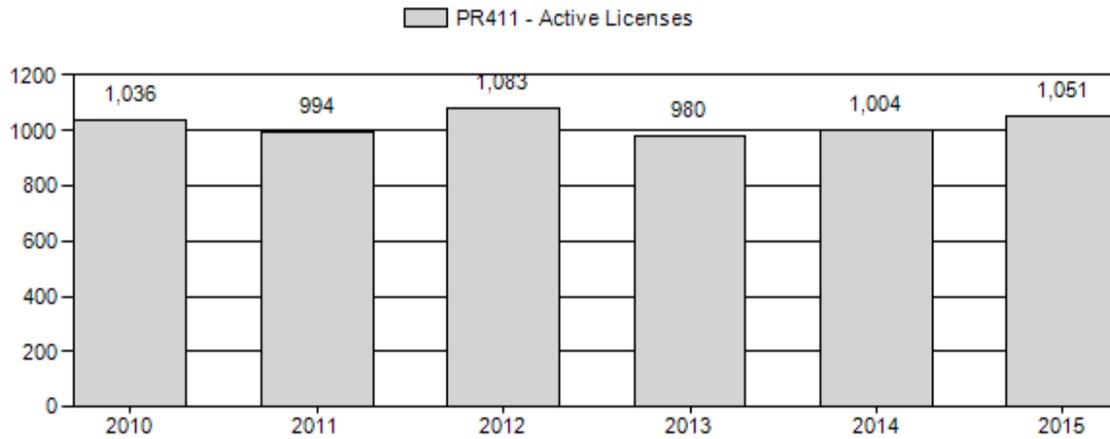
Number of Hunters



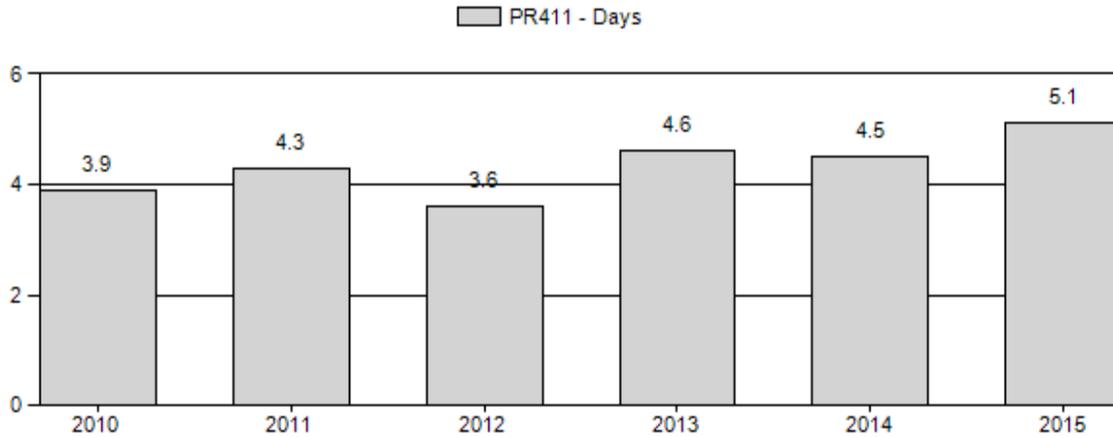
Harvest Success



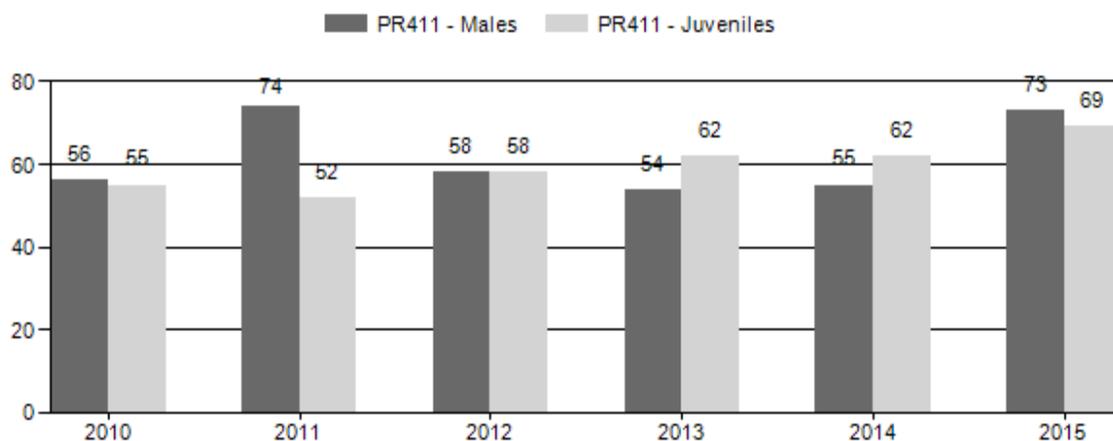
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR411 - UINTA-CEDAR MOUNTAIN

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot CIs	CIs Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	11,551	151	525	676	26%	1,213	47%	668	26%	2,557	0	12	43	56	± 4	55	± 4	35
2011	12,525	120	317	437	33%	589	44%	309	23%	1,335	0	20	54	74	± 7	52	± 6	30
2012	11,916	88	378	466	27%	799	46%	460	27%	1,725	0	11	47	58	± 5	58	± 5	36
2013	10,759	80	210	290	25%	536	46%	332	29%	1,158	0	15	39	54	± 6	62	± 7	40
2014	9,891	152	374	526	25%	960	46%	598	29%	2,084	0	16	39	55	± 4	62	± 5	40
2015	7,323	201	392	593	30%	812	41%	563	29%	1,968	0	25	48	73	± 6	69	± 5	40

2016 HUNTING SEASONS

SPECIES: Pronghorn

HERD UNIT: Uinta-Cedar Mountain (411)

HUNT AREAS: 95, 99

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
95	1	Sep. 10	Oct. 31	325	Limited	Any antelope
	7	Aug. 15	Oct. 31	200	Limited	quota Doe or fawn valid on irrigated land
99	1	Sep. 10	Oct. 31	225	Limited	Any antelope
	6	Sep. 10	Oct. 31	100	Limited	quota Doe or fawn
	7	Sep. 10	Nov. 30	200	Limited	quota Doe or fawn valid north and west of Wyoming Highway 410 and west of Uinta County Road 271
	0	Sep. 1	Oct. 31	50	Limited	quota Any antelope, muzzle-loading firearms only
95, 99	Archery	Aug. 15	Sept. 9		Limited	Refer to Section 2 of this chapter
					quota	

Hunt Area	License Type	Quota change from 2015
95	7	+50
99	6	-200
Herd Unit Total	6	-200
	7	+50

Management Evaluation

Current Postseason Population Management Objective: 10,000

Management Strategy: Recreational

2015 Postseason Population Estimate: ~6,355

2016 Proposed Postseason Population Estimate: ~6,363

Herd Unit Issues

The two hunt areas in this herd are very different in several characteristics. Hunt Area 95 is mostly public land, more xeric, and has much lower fawn ratios. Hunt Area 99 has much better conditions for fawn production and survival. Hunt Area 99 has much more private land where the majority of HA 95 is BLM land.

Throughout the herd unit there is a low tolerance for the presence of pronghorn on some of the irrigated land holdings. Conflict with agriculture producers can be an issue for this herd. Damage complaints mostly occur on irrigated lands during the summer and early fall. However, irrigated lands are uncommon relative to native ranges. Significant efforts have been made to direct harvest toward those problems. Perceived reduction in livestock forage due to pronghorn foraging is an issue that can be brought up. However, dietary overlap and pronghorn impacts are negligible in native rangelands.

Energy development on crucial habitat is a looming issue for this herd. Development is present but has yet to impact habitats on a large scale. Wyoming Highway 414 has created a significant movement barrier between the two hunt areas in this herd unit.

Weather

Weather during 2015 and into 2016 has been highly variable. In the early part of 2015 the winter was very mild and dry. A moist spring and summer followed. In late August conditions dried considerably and a relatively dry fall continued into late December. Winter did not set in until mid December but it came in abruptly. The winter of 2015-2016 has been very cold with high snow loads to this point and pronghorn have migrated to crucial winter ranges. A much needed warming trend has occurred in February and it remains to be seen how the winter will ultimately shape out. The winters from 2011 to 2015 were very mild with low snowpack and relatively warm temperatures resulting in very mild winter conditions. However, the dry springs and summers of 2012 and 2013 negatively impacted summer and winter range forage production.

Habitat

Habitat data has been inconsistently collected in this herd unit and has been absent in the recent past.

Field Data

The 2015 post-season population estimate is 6,355 animals with a downward trend since 2011. A line transect survey was flown in 2015. Survey variance has been high for this herd unit in the past and a new survey design was used in 2015. This was an end of bio year 2014 estimate of 4,923 with a relatively low variance. The previous line transect survey conducted in this herd unit was in June 2009. Originally, that survey was reported as an estimate of 10,997 pronghorn for the end of bio year 2008 with a huge variance on the estimate. A new method was used to reanalyze that survey data which resulted in a much lower estimate of 6,009 with a much lower variance. The addition of this information has significantly changed population estimates for this herd from previous estimates.

Harvest Data

In 2012 Area 99 a type 7 hunt was added to target specific depredation problems west of Mountain View. We have increased those permits over time to address continual complaints. Hopefully this will help to alleviate private land problems. Conservative seasons continue to be warranted overall in HA 95 due to low productivity in this dry environment. We have increased hunt area 95 type 7 (irrigated land only) licenses to alleviate damage issues on key parcels.

Doe/fawn harvest opportunity was increased every year for several years in area 99. This was to alleviate pressure on limited winter ranges and to address landowner concerns. The 2009, 2010 and 2011 season structures offered substantial doe/fawn harvest opportunity to try to control growth of that part of the herd. Those seasons allowed significant doe/fawn harvest with large increases in permits. These hunts had good success rates. This management framework has reduced this population segment. Public land areas of hunt area 99 have much lower antelope populations due to those type 6 licenses. We are now reducing this harvest pressure since the herd is well below objective. For 2015 we will reduce area 99 type 6 licenses. We will maintain type 7 licenses to target antelope on private lands.

Population

The TSJ,CA model was selected due to the low Relative AICc score, its good fit with the data. The CJ,CA model scored slightly better but it did not fit the data as well as the TSJ,CA model. The TSJ,CA model fits very well with the variable fawn survival common in the high elevation winter ranges in the herd unit.

In the future it will be imperative that we get a reliable population estimate periodically through line transect surveys to check the status of the herd and anchor the model. With this, it is likely we can provide a good population model and track the trend of this population. Without this anchor point, it will be unclear if our current harvest levels can be sustained or if we are on the right management track.

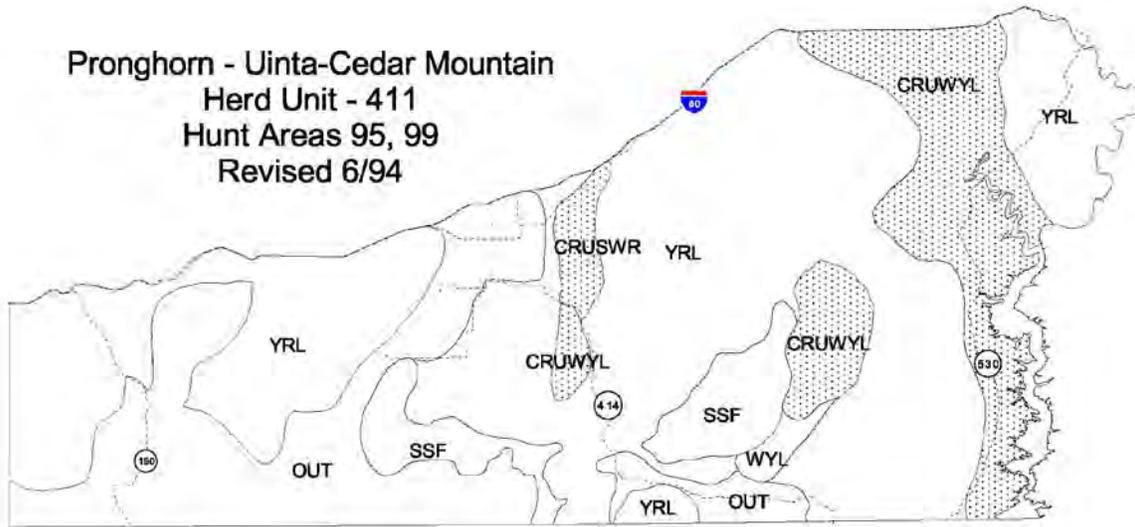
Due to significant documented differences in density and productivity between hunt areas within this herd unit models generated for this herd should be used with some caution. However, with consistent good line transect data it should be able to perform in the future. In 2012 the Department switched from POPII models to an Excel spreadsheet model. Since these are new models they are going to be under development and subject to extensive refining. They will likely change over time with new data.

The model underwent a lot of change this year with the addition of new and refined line transect data. The addition of this information has significantly changed population estimates for this herd from previously reported estimates. Currently the model is estimating we have around 6,355 pronghorn in the herd. The model estimates a downward trend since 2011. This is substantiated by a reduction in classification sample sizes and field observations in hunt area 99.

Management Summary

For 2016 season setting we will maintain similar levels of harvest in hunt area 95 while putting more pressure on antelope using private irrigated lands. This should continue to alleviate depredation issues and keep that part of the population fairly stable. We will back off on antlerless harvest in parts of area 99 to hopefully help that population segment rebound. The model predicts a 2016 post-season population of about 6,363. The objective and management strategy were last revised in 2014.

Pronghorn - Uinta-Cedar Mountain
Herd Unit - 411
Hunt Areas 95, 99
Revised 6/94



2015 - JCR Evaluation Form

SPECIES: Pronghorn

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

HERD: PR412 - SOUTH ROCK SPRINGS

HUNT AREAS: 59, 112

PREPARED BY: PATRICK BURKE

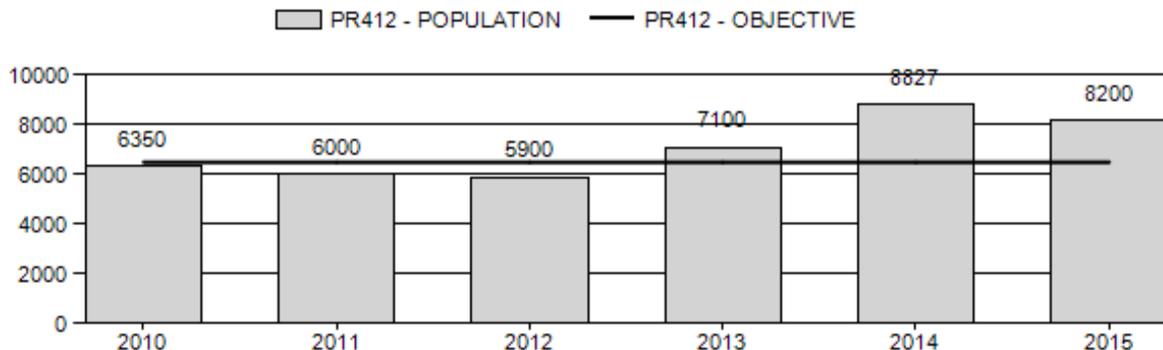
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	6,835	8,200	8,200
Harvest:	339	295	340
Hunters:	377	320	360
Hunter Success:	90%	92%	94 %
Active Licenses:	389	320	360
Active License Success:	87%	92%	94 %
Recreation Days:	1,235	1,028	1,200
Days Per Animal:	3.6	3.5	3.5
Males per 100 Females	42	49	
Juveniles per 100 Females	50	64	

Population Objective (\pm 20%) : 6500 (5200 - 7800)
 Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: 26%
 Number of years population has been + or - objective in recent trend: 0
 Model Date: 02/17/2016

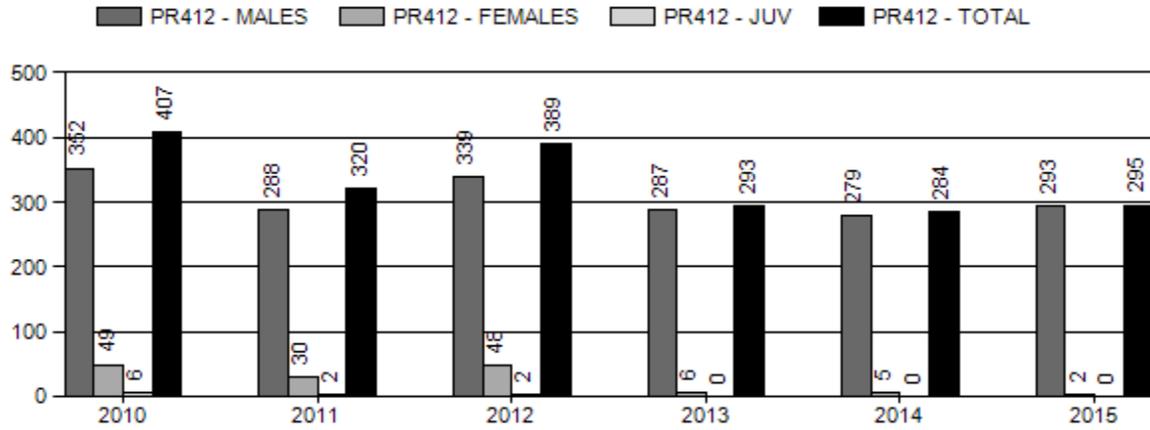
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	.1%	1.1%
Males \geq 1 year old:	20%	18%
Juveniles (< 1 year old):	0%	0%
Total:	4%	4%
Proposed change in post-season population:	0%	-1%

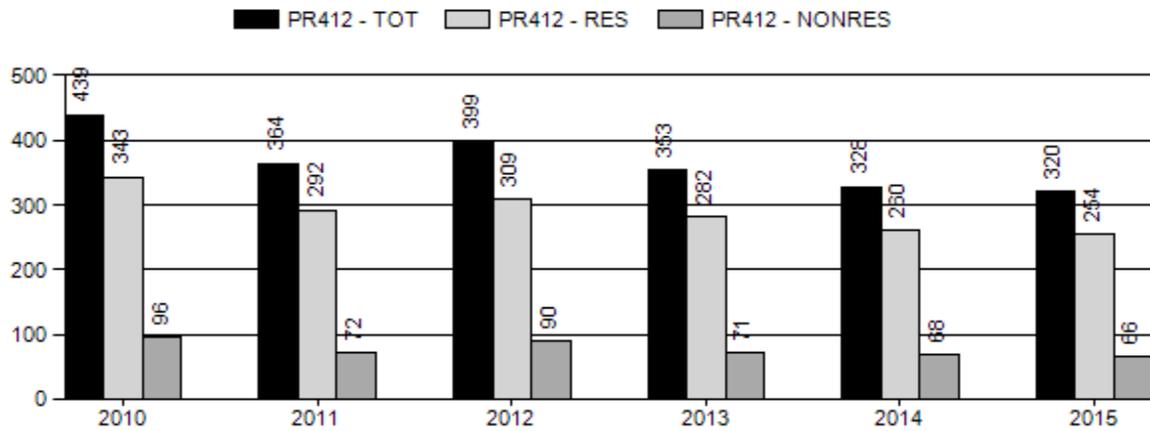
Population Size - Postseason



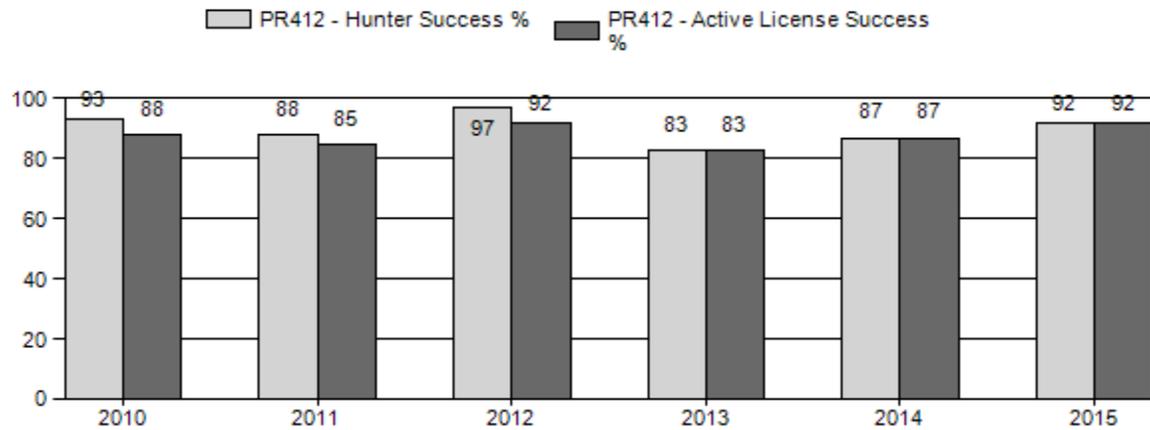
Harvest



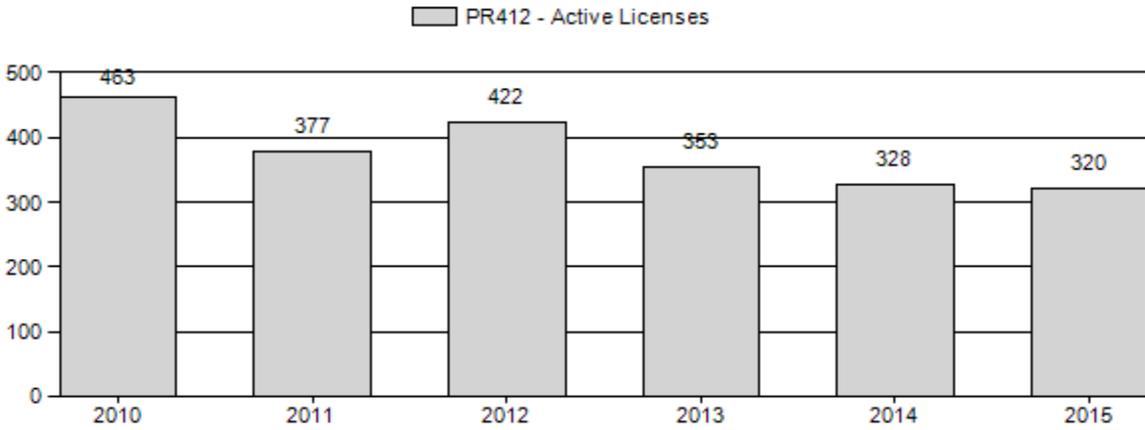
Number of Hunters



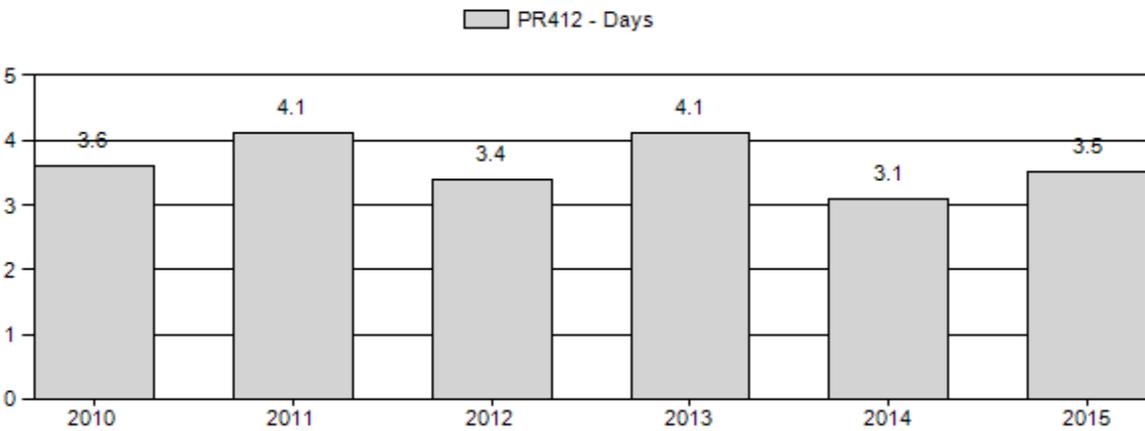
Harvest Success



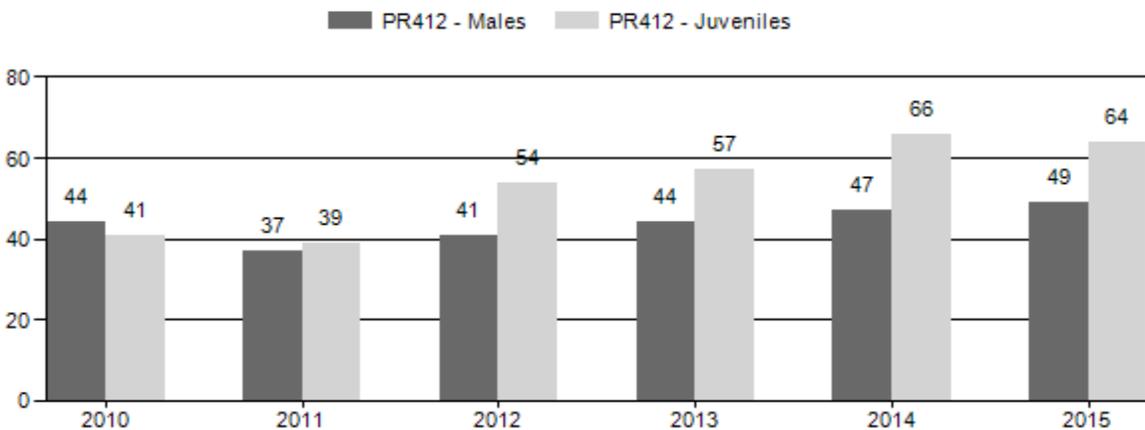
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR412 - SOUTH ROCK SPRINGS

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	6,800	113	302	415	24%	951	54%	386	22%	1,752	1,270	12	32	44	± 4	41	± 3	28
2011	6,350	114	274	388	21%	1,045	57%	404	22%	1,837	1,084	11	26	37	± 3	39	± 3	28
2012	6,300	120	268	388	21%	936	51%	505	28%	1,829	931	13	29	41	± 3	54	± 4	38
2013	7,450	119	256	375	22%	848	50%	482	28%	1,705	944	14	30	44	± 4	57	± 5	39
2014	9,139	144	195	339	22%	724	47%	480	31%	1,543	1,773	20	27	47	± 5	66	± 6	45
2015	8,500	179	250	429	23%	873	47%	558	30%	1,860	1,940	21	29	49	± 4	64	± 5	43

**2016 HUNTING SEASONS
SOUTH ROCK SPRINGS PRONGHORN HERD (PR412)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
59	1	Sept. 20	Oct. 31	250	Limited quota	Any antelope
	6	Sept. 20	Oct. 31	25	Limited quota	Doe or fawn
112	1	Sept. 20	Oct. 31	100	Limited quota	Any antelope
	6	Sept. 20	Oct. 31	25	Limited quota	Doe or fawn

Special Archery Season Hunt Areas	Opening Date	Limitations
59, 112	Aug. 15	Refer to Section 2 of this Chapter

Hunt Area	Type	Quota change from 2015
59	6	+25
112	6	+25
Herd Unit Total	6	+50

Management Evaluation

Current Management Objective: 6,500

Management Strategy: Recreational

2015 Postseason Population Estimate: ~9,000

2016 Proposed Postseason Population Estimate: ~9,000

The post-season population objective for the South Rock Springs pronghorn herd is 6,500 animals under recreational management. The objective for this herd was changed to its current level in 2002. The objective was reviewed in the summer of 2013, when no changes were made.

Herd Unit Issues

The population model for this herd estimates the 2015 post-season population to be a little over 8,000 pronghorn. This estimate is a significant increase from recent population estimates that estimated the herd to be slightly under objective. This drastic increase in the model estimate does not coincide with field observations and most likely does not represent biological reality. Observations by field personnel and the hunting public suggest that the herd more likely remained stable or has decreased slightly in size over the last few years rather than increased by almost 2,000 animals in just two years. The most likely explanation for the larger population estimate is a combination of somewhat higher observed buck to doe ratios in the last couple of years and slightly increased observed fawn to doe ratios. The observed fawn ratios for the last three years have only been in the mid 50's to the mid 60's. Fawn ratios in this range should not cause the population to increase, especially at the rate suggested by the model. Typically, fawn ratios in this range would result in population maintenance and not an overall population increase.

Weather

The most prominent weather condition present in the South Rock Springs pronghorn herd for the last several years has been dry summer conditions with relatively mild winters. The summer of 2012 was the driest on record at the Rock Springs monitoring station with only 3.13 inches of precipitation recorded, 2013 was the 5th driest with 4.68 inches of precipitation measured and 2014 was the second driest on record with only 4.24 inches of precipitation for the year. This lack of moisture was especially evident in areas of the herd unit below 8,000 ft. Near normal precipitation levels were documented in 2015, with 8.62 inches of precipitation recorded at the Rock Springs monitoring site. Most of the moisture came in July, however which did not benefit plant growth as much as if it had arrived earlier in the growing season. Unlike the South Rock Springs deer herd, all indications are that this pronghorn herd has dealt fairly well with these conditions though. Multiple years of drought conditions have undoubtedly reduced forage

quality and quantity and the severe drought conditions of 2012 and 2013 along with mild drought conditions in 2014, did result in many of the water sources in the herd unit drying up, even with the better precipitation experience in the summer of 2015. Some portions of the herd unit did receive good snowfall amount during the 2015-2016 winter, hopefully the moisture from this winter precipitation will help recharge some of these groundwater sources.

Habitat

No habitat transects targeting pronghorn ranges have been conducted in the South Rock Springs pronghorn herd unit. However, the dry summers of recent years have had a negative impact on plant growth in areas of the herd unit below 8,000 ft. where the majority of this herd winters. This lack of plant growth in the lower elevation areas of the herd unit might partially explain why significant portions of this herd have chosen to winter in areas outside of their normal winter ranges the past several winters. The dry summers may have resulted in fewer fawns dying to cold, wet conditions during the early summer and could be the cause for the slightly better fawn ratios seen in lately. The summer of 2015 saw better moisture than the previous three summers, but was only average in the amount of precipitation received with much of that moisture coming latter in the summer.

Field Data

Pre-season classifications conducted in August 2015 resulted in observed fawn to doe ratios of 63 fawns per 100 does. This observed fawn to doe ratio is the above the long term average for the herd, but slightly down from the 66 fawns per 100 does seen in 2014. Pre-season classifications also resulted in observed buck ratios of 49 total bucks per 100 does for the herd unit as a whole, which is well within the approved range for a recreational management herd.

Harvest Data

Harvest statistics for the 2015 hunting season were typical for this herd. Harvest success for the herd unit was 92% Days per harvest was 3.5 days per harvest during the 2015. A total of 295 pronghorn were harvested in 2015, with 293 bucks and 2 does being harvested. Broken out by hunt area, HA59 had a 96% success rate and 3.3 days per harvest with a total of 223 bucks harvested and HA112 had a 82% success rate and 4 days per harvest with a total of 70 bucks and 2 does harvested.

Population

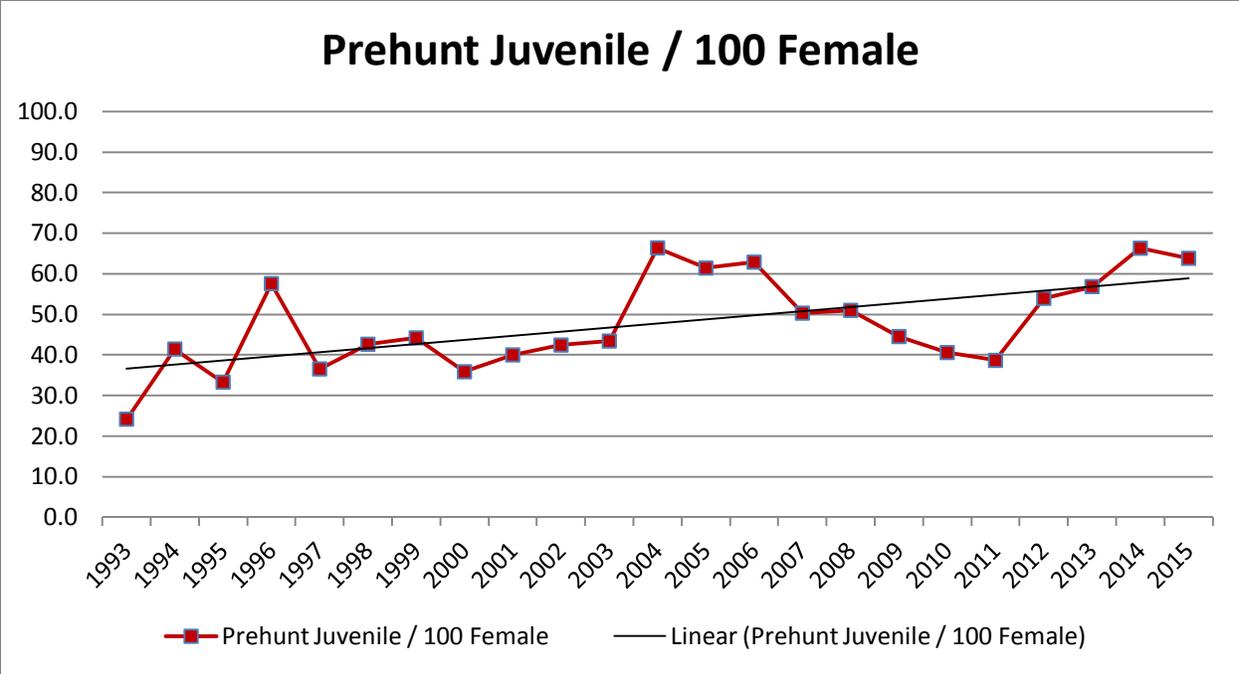
The model for this population has tracked fairly well with field observations of this herd until 2013, when the post-season population estimate moved in a direction counter to the field observations of both the managers and the public. The model performance in 2015 continues to be poor, with the model “running away” and forecasting a simply unrealistic growth rate. The growth predicted by the model of almost 2,000 animals in just a few years is simply not possible given the fawn ratios and habitat conditions present in this herd unit. The unrealistic estimates given by the model in the last two years suggest that this model is no longer reliable, and should not be considered an accurate estimate of this population.

A line-transect survey was flown in this herd unit in June of 2015 for an end of bio-year 2014 estimate. The result of the LT survey was a point estimate of 6,650 pronghorn with a standard error of 1,033 animals. This estimate along with the model goes contrary to what is seen on the ground in August and September. It should be noted that August classification sample sizes have remained fairly consistent, with the 2015 sample size being right in line with average sample sizes for this herd. While classification sample sizes are in no way a population estimate, one would expect the number of animals classified to increase if the herd was indeed increasing at a rapid rate as is being suggested by the computer model.

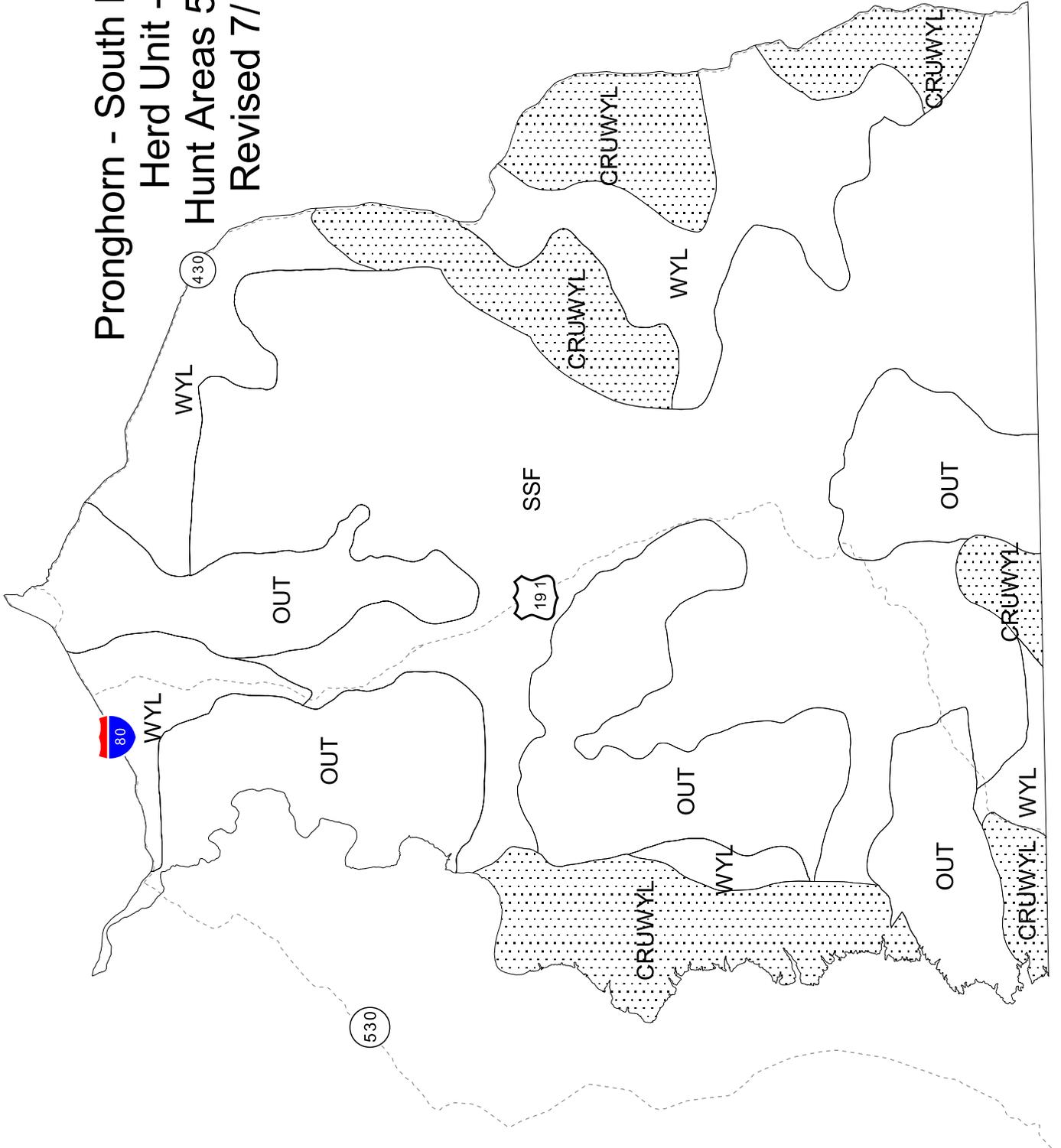
The time-specific juvenile survival model was selected for this herd because of its relative AIC value and because that model best fit the field observations of the population and the biology of the species.

Management Summary

The hunting season for 2016 is identical to the 2015 season in regards to the number of Type 1 licenses being offered in both hunt areas in the herd unit. The observed buck to doe ratio of 49 bucks per 100 does is right in the middle of the management prescription for a recreational management herd, indicating that the number of buck licenses issued in the herd has been appropriate. The 2016 season offering does include adding 25 Type 6 licenses in both hunt areas. This license type is being offered due to the feeling by the local managers that some level of doe hunting opportunity is possible in this herd unit without negatively affecting the population.



Pronghorn - South Rock Springs
Herd Unit - 412
Hunt Areas 59, 112
Revised 7/1999



2015 - JCR Evaluation Form

SPECIES: Pronghorn

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

HERD: PR414 - BITTER CREEK

HUNT AREAS: 57-58

PREPARED BY: TONY MONG

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	9,453	15,900	16,100
Harvest:	238	258	450
Hunters:	248	281	500
Hunter Success:	96%	92%	90%
Active Licenses:	255	285	515
Active License Success:	93%	91%	87 %
Recreation Days:	842	1,133	1,800
Days Per Animal:	3.5	4.4	4
Males per 100 Females	54	56	
Juveniles per 100 Females	42	58	

Population Objective (\pm 20%) : 15000 (12000 - 18000)

Management Strategy: Special

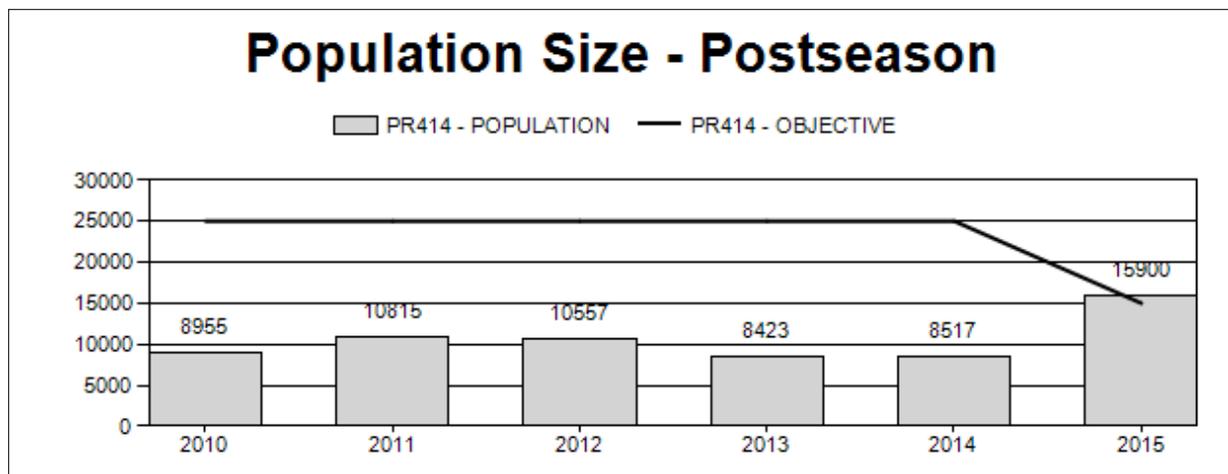
Percent population is above (+) or below (-) objective: 6%

Number of years population has been + or - objective in recent trend: 0

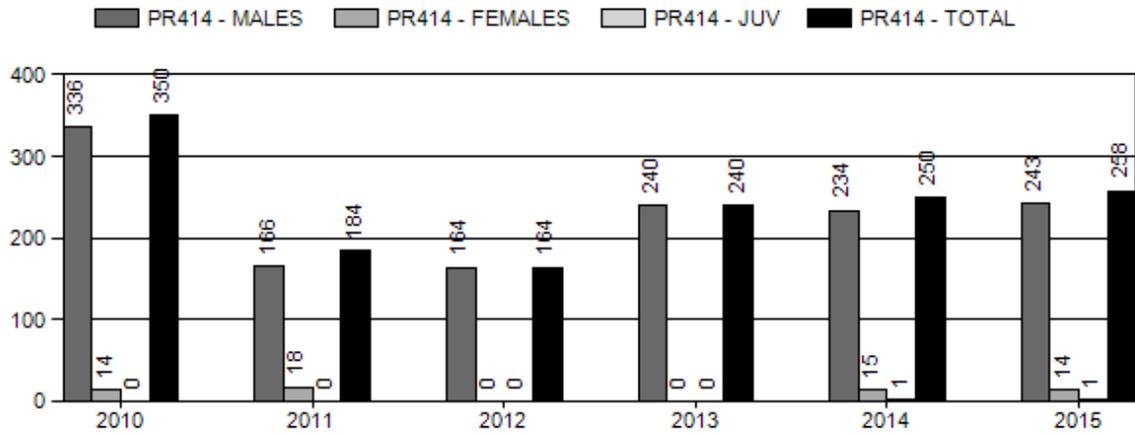
Model Date: 06/20/2016

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

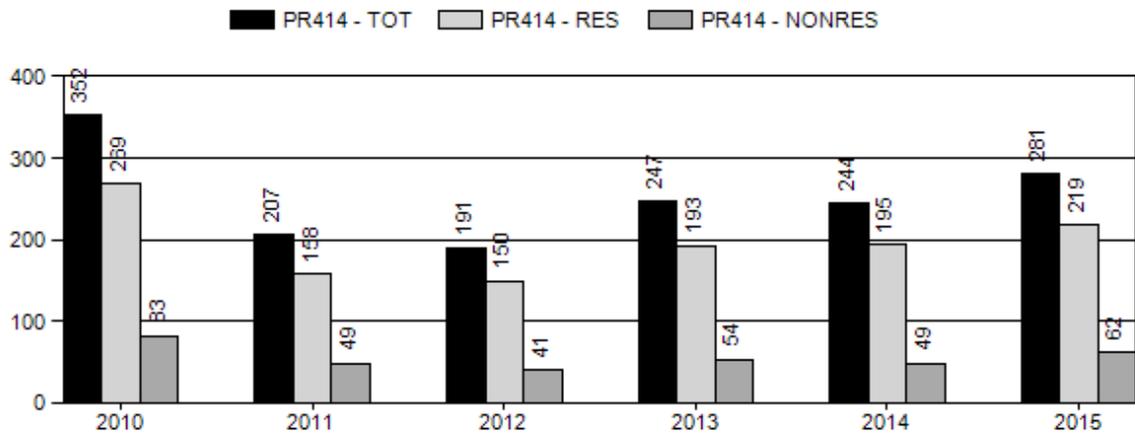
	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0.4%	2.1%
Males \geq 1 year old:	11.7%	8.0%
Juveniles (< 1 year old):	0%	0.5%
Total:	3%	4%
Proposed change in post-season population:	10%	1%



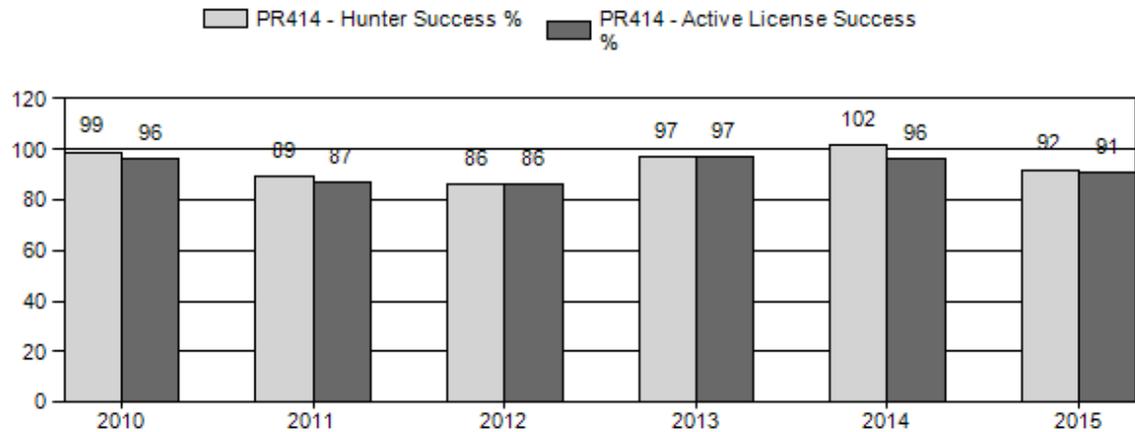
Harvest



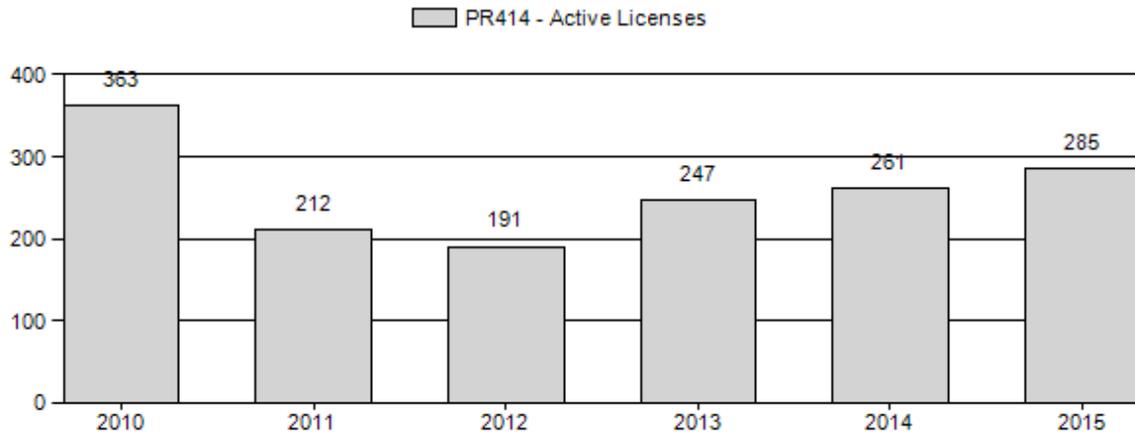
Number of Hunters



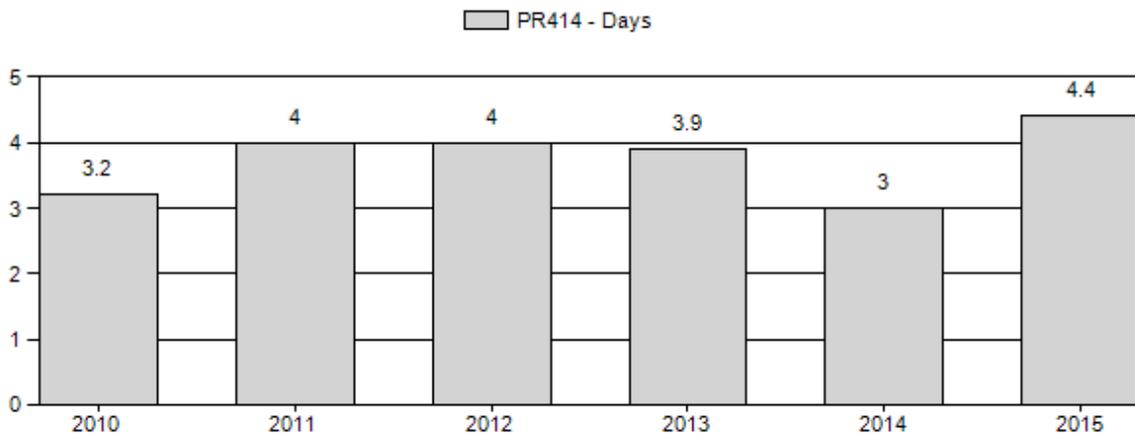
Harvest Success



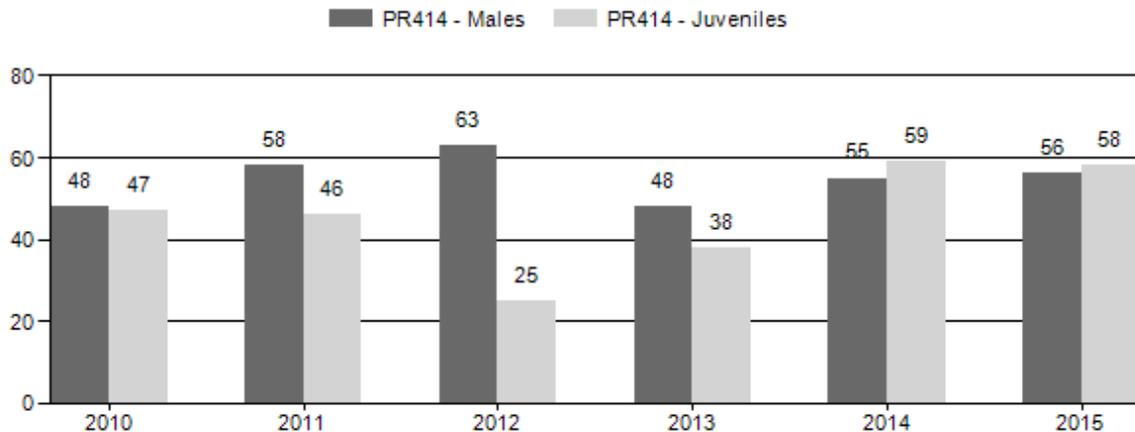
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary																				
for Pronghorn Herd PR414 - BITTER CREEK																				
Year	Pre Pop	MALES				FEMALE		JUVENIL		Tot		Cls		Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%	Cls	Obj	Yng	Adult	Total	Int	100 Fem	Conf Int	100 Adult		
2010	9,340	39	116	530	24%	1,113	51%	523	24%	2,166	0	4	10	48	± 4	47	± 4	32		
2011	11,018	146	395	541	28%	937	49%	427	22%	1,905	0	16	42	58	± 5	46	± 4	29		
2012	10,737	116	372	549	34%	866	53%	219	13%	1,634	0	13	43	63	± 5	25	± 3	15		
2013	10,390	51	306	357	26%	751	54%	283	20%	1,391	0	7	41	48	± 5	38	± 4	26		
2014	8,792	91	217	308	26%	563	47%	333	28%	1,204	0	16	39	55	± 6	59	± 6	38		
2015	16,200	218	473	691	26%	1,231	47%	709	27%	2,631	0	18	38	56	± 4	58	± 4	37		

2016 HUNTING SEASON

SPECIES : Pronghorn

HERD UNIT : Bitter Creek (414)

HUNT AREAS: 57, 58

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
57	1	Sep. 20	Oct. 31	300	Limited Quota	Any antelope
	2	Sep. 20	Oct. 31	15	Limited Quota	Any antelope valid west of Sweetwater County Road 23S and B.L.M. Road 3310, and north and east of B.L.M. Roads 4411 and 4409
	6	Sep. 20	Oct. 31	100	Limited Quota	Doe or fawn only
	7	Sep. 1	Oct. 31	50	Limited Quota	Doe or fawn valid on or within one (1) mile of private land south of County Road 700 and east of County Road 730
58	1	Sep. 20	Oct. 31	50	Limited Quota	Any antelope

Special Archery Season Hunt Areas	Opening Date	Limitations
57, 58	Aug. 15	Refer to Section 2 of this Chapter

<i>Hunt Area</i>	<i>Type</i>	<i>Quota change from 2015</i>
57	1	+50
	2	+15
	6	+50
	7	0
58	1	+20
<i>Herd Unit Total</i>	<i>1</i>	<i>+70</i>
	<i>2</i>	<i>+15</i>
	<i>6</i>	<i>+100</i>

Management Evaluation

Current Management Objective: 15,000 (2015)

Management Strategy: Special

2015 End-of-bio-year Estimate: 12,431

2016 Proposed postseason Estimate: 15,918

The Bitter Creek herd is at the new objective of 15,000 (set in 2015) therefore our current management strategy is to maintain herd size. We are increasing type 1 licenses in hunt area 57 to allow for more opportunity, creating a hunt area 57 type 6 license to help maintain current population numbers and slightly increasing current license levels in hunt area 58 to allow for more opportunity. The private land type 7 license was successful in curbing damage issues on irrigated meadows in the SE portion of hunt area 57 and we are increasing these for 2016. High pronghorn numbers and a lack of hunter use in the northern portion of hunt area 57 are the basis for the hunt area 57 type 2 license in 2016.

Herd Unit Issues

The main issues impacting the Bitter Creek herd include continued energy development and competition with wild horses. The Bitter Creek herd is facing many challenges through the expansion of the Continental Divide-Creston Junction (CDC) and Desolation Flats gas fields. Currently there are nearly 5,000 wells in the CDC and an EIS for an additional 8,950 infill wells. A majority of these wells occur in summer and winter range as well as migration routes for the Bitter Creek herd. New developments are continuing to occur in relation to the Desolation Flats development, most notably along the Bitter Creek Rd and the Willow Creek Rim area. A new large pipeline has been built to connect 2 new compressor stations that will be placed on and near Willow Creek Rim. In addition a new road has been built to facilitate traffic from Wamsutter to Willow Creek Rim, this road bisects current winter range and migration routes. This new road has significantly increased the amount of traffic in areas that had seen minimal travel prior to construction of the new road. The number of proposals to work year-round on both of these sites has increased recently. These landscape level impacts may prove to be a challenge for the pronghorn in the Bitter Creek herd.

Wild horses have been shown to “defend” open water sources and recent fecal analysis is showing a diet overlap with pronghorn. It will be important to work with BLM to delineate distribution as well as estimates based on aerial distance sampling done in conjunction with pronghorn line transects.

Weather

There has been an increase in moisture over the last two years in the Bitter Creek herd unit, especially in 2015, which has caused the filling of reservoirs and a positive response from vegetation (Figure 1). 2015 saw a 150% increase in normal precipitation across the entire herd unit.

The 2014 winter was extremely mild with no noticeable winter kill events. 2015 has seen an unusually high amount of snow in the herd unit, especially in areas that have traditionally seen very little snow along the Colorado/Wyoming border potentially impacting wintering pronghorn. This could lead to higher winter mortality for the pronghorn in the southern portion of the herd unit.

Figure 1. Percent of normal precipitation for the Bitter Creek herd unit from February 2015 to February 2016.



Field Data

We have seen two good years of fawn ratios in the Bitter Creek herd. The average fawn ratio for 2014-2015 (59:100) is significantly higher than the previous five years (38:100). This is encouraging however, high variability in fawn production and buck ratios between hunt areas 57 and 58 are also problematic for this herd. Hunt area 58 has shown extremely low buck ratios in both 2014 and 2015 (42 and 49) compared to hunt area 57 (67 and 64) indicating a significant difference between the two areas in relation to population dynamics. This is also evident with overall fawn production in the hunt areas, with hunt area 58 having a much lower 10-year average fawn ratio (35) compared to hunt area 57 (46). These variations between the two hunt areas has been seen since the 2007-08 winter possibly pointing towards a much more severe loss in hunt area 58 than 57.

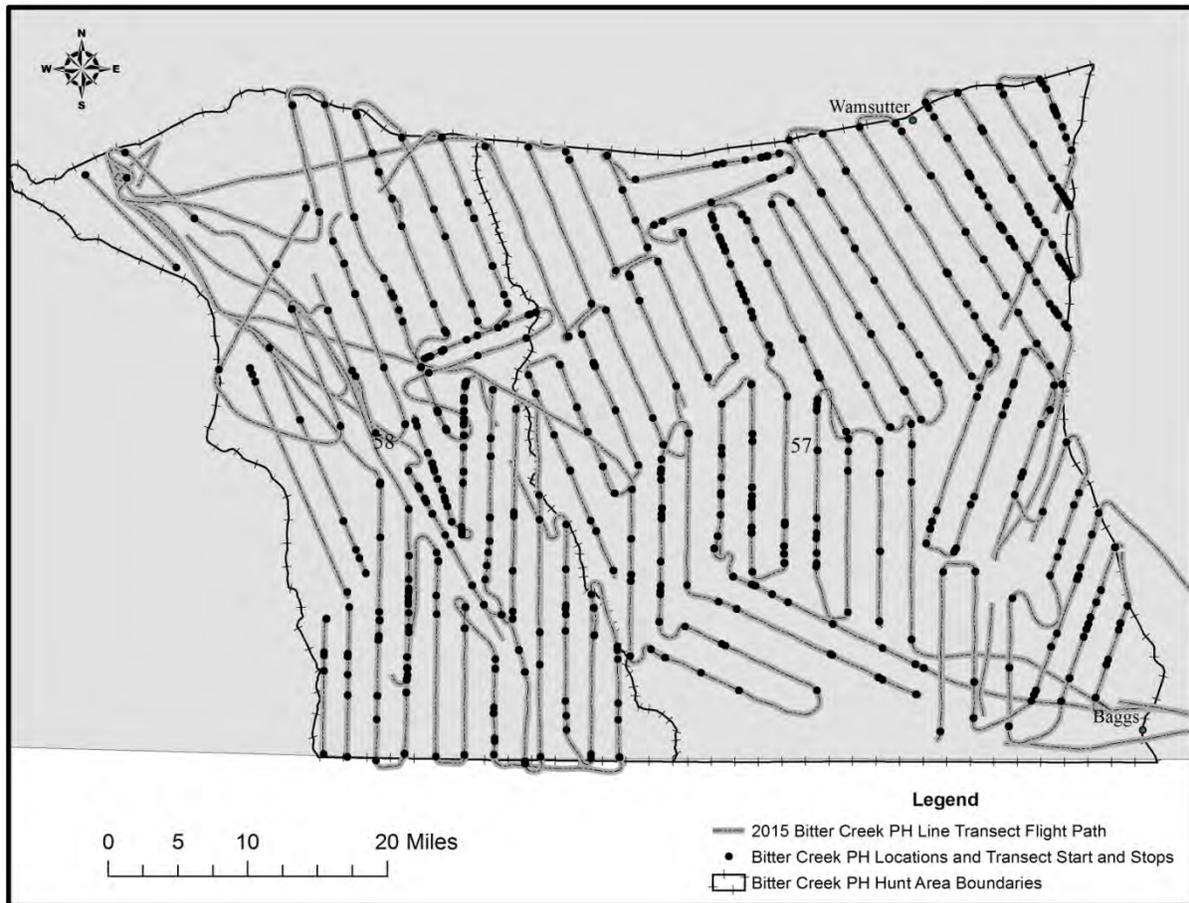
2015 Bitter Creek Line Transect

In late May/ early June we flew 1001 miles of transect lines throughout the Bitter Creek herd unit. We utilized GPS technology to design a line transect pattern that took into consideration typical pronghorn distribution, topography and line length (Figure 2). We abandoned the previous line transect line patterns which involved flying up to 50 miles on one line and over major changes in topography. This new design yielded 85 sample lines and 334 cluster observations. Despite the large amount of samples and clusters there were analysis issues stemming from the detection probabilities for each of the distance bands. The probability of detection with the distance bands B, C and E were much higher than they should have been indicating we were detecting pronghorn in those bands more readily than would have been projected. After running the typical modeling structures for the data (see LT manual), it was apparent the estimate was much larger ($19,949 \pm 2,513SE$) than the last line transect flown for this herd (flown in 2010, $7,048 \pm 960SE$) and much higher than the estimate from spreadsheet modeling.

After investigating the 2010 analysis and binning the A, B, C distance bands together and then doing the same for the D and E distance bands a more realistic estimate was obtained for both the

2010 and 2015 line transect analyses. Upon inspecting the 2010 LT analysis it was found that the wrong “occupied habitat” size was used which caused the 2010 estimate to be smaller than it should have been (new 2010 estimate, $10,944 \pm 1491SE$). In addition, binning the 5 distance bands into 2 bands decreased the estimate without increasing the Coefficient of Variation (new 2015 estimate, $14,195 \pm 1625SE$). These estimates and associated standard errors “reset” the spreadsheet model to estimate closer to these new data. We feel fairly comfortable with the new spreadsheet model and associated LT estimate from 2015 however, it should be taken with a note of caution as is the case when any estimate causes a completely new interpretation of the status of a herd. Discussions need to continue between all managers involved to ensure everyone is comfortable with the new estimates for both hunt areas.

Figure 2. Bitter Creek pronghorn line transect flight path, cluster locations and transect start and end points.



2015 PR414 - BITTER CREEK Pronghorn Line-Transect Summary

Survey Dates: 5/28/2016 - 6/1/2016
Survey Cost: \$ 12,000.00
Flight Service: OWYHEE AIR, LLC.
Aircraft: MAUL
Observers: Tony Mong Patrick Burke

Weather Conditions:

Temperature (Degrees Fahrenheit): 45
Cloud Cover (%): 10
Wind Speed (MPH): 5 - 15

Transect Limits: 41.3232 to 107.2510

Transect Direction: North/South

Transect Interval (Minutes of Longitude): 1.0

Transect Length: (Mi.): 20

Transect Altitude (AGL): 312 ft.

Occupied Habitat (mi²): 2,641

Density Estimate (Animals/mi² with Confidence Intervals): 5.4 (4.3 - 6.7)

Population Estimate (with Confidence Intervals): 14,195 (11,339 - 17,771)

Harvest Data

Hunters within the Bitter Creek herd unit are finding great success and are extremely satisfied with their experience in both hunt areas. Hunter success has decreased from 2014 (102%) but remains high at 92%, many of the hunter comments we receive at check stations and field checks in hunt area 57 revolve around the number of bucks available and the number of pronghorn seen. The 2015 season brought a large difference in hunter success between the two hunt areas within the Bitter Creek herd unit. Prior to the 2015 season the two hunt area hunter success rates were not much different with the previous 5-year average at 96% for 57 and 90% for 58. 2015 rates were much different with only 74% of hunt area 58 hunters finding success and 93% of 57 hunters finding success. We are not certain of the reason for this lower hunter success but one possibility is that the hunters that drew this area were only interested in taking a large trophy sized animal and if that animal was not found, they did not care to harvest. The satisfaction survey did not reveal that hunters were dissatisfied with their hunt in area 58 as 100% of those surveyed (n=17) were either “satisfied” or “very satisfied” with the overall hunt quality. And an overall rating of 94% “satisfied” or “very satisfied” for the herd unit indicates the quality hunters are finding a quality hunt across the herd unit.

Population

The spreadsheet model was “reset” through the adjustment of a 2010 LT estimate and the addition of a 2015 LT estimate (see above “Field Data” for details). The current population model estimates the 2015 end-of-bio-year population to be 12,318 animals. Despite the CJ, CA model having the lowest AICc value we chose the SCJ, SCA model based on what we believe to be a better representation of the actual population trend and size based on the line transect

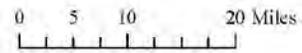
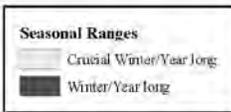
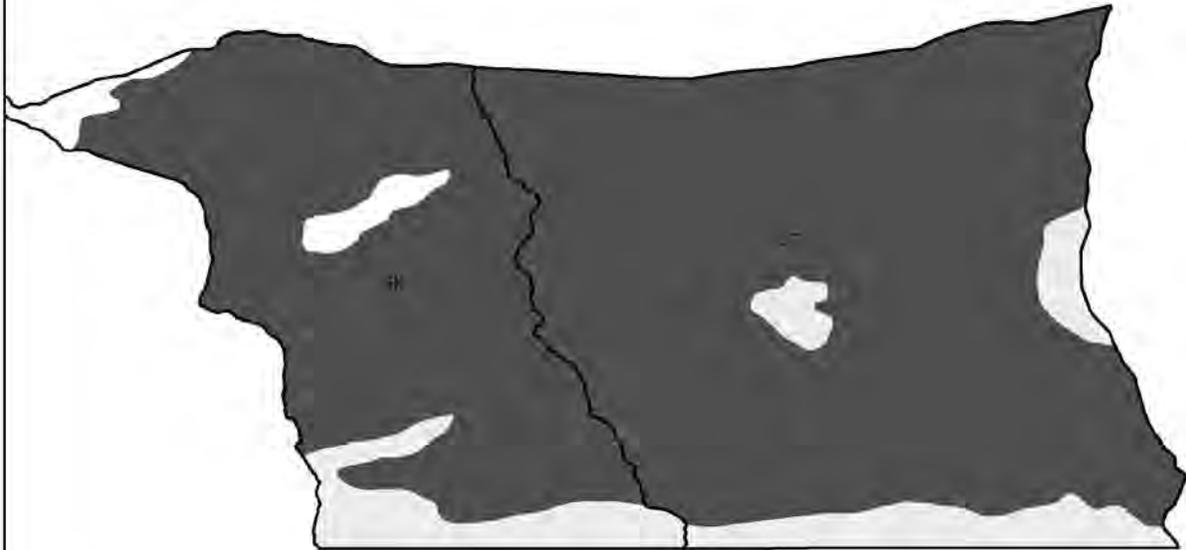
estimates obtained in 2009 and 2015 and also on model fit (CJ, CA = 57; SCJ, SCA = 53). Within the SCJ, SCA model we restrained juvenile survival rates for 2007 (0.1 to 0.4) and 2010 (0.1 to 0.4) based on known winter die off occurring at a higher rates than normal (model estimate for all other years, 0.454). We also restrained adult survival for the same reason for 2007 (0.4 to 0.75) and 2010 (0.6 to 0.85).

Management Summary

The hunting seasons in 2016 will allow us to begin to change our management strategy for this herd unit based on a mix of decreasing the population objective and new LT analyses. We are again increasing type 1 licenses in hunt area 57 in order to continue to allow more opportunity because of high buck ratios. We are cautiously increasing type 1 licenses in hunt area 58 based on field knowledge and a mistrust of the estimates created from the spreadsheet and 2015 LT flight. With the potential of having a population approaching the population objective range, we are allowing new doe pronghorn opportunities in hunt area 57 through a type 6 to maintain population sizes near objective. In addition, the increase in hunt area 57 type 7 licenses is a direct result of a request from the landowners in the SE portion of the hunt area to decrease the number of pronghorn on their hay meadows and private property.

High pronghorn numbers and a lack of hunter use in the northern portion of hunt area 57 are the basis for the hunt area 57 type 2 license in 2016. Based on data collected by the Green River Access Coordinator and his staff very little hunting effort is occurring in the northern portion of hunt area 57 and the specific type 2 licenses in that area will increase opportunity for hunters and will result in more use in that portion of hunt area 57.

Bitter Creek PR414 Herd Seasonal Ranges



2015 - JCR Evaluation Form

SPECIES: Pronghorn

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

HERD: PR419 - CARTER LEASE

HUNT AREAS: 94, 98, 100

PREPARED BY: JEFF SHORT

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	6,413	6,180	6,145
Harvest:	1,545	1,404	1,350
Hunters:	1,617	1,489	1,450
Hunter Success:	96%	94%	93 %
Active Licenses:	1,800	1,679	1,630
Active License Success:	86%	84%	83 %
Recreation Days:	5,801	6,160	6,000
Days Per Animal:	3.8	4.4	4.4
Males per 100 Females	63	56	
Juveniles per 100 Females	64	68	

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

Management Strategy: Recreational

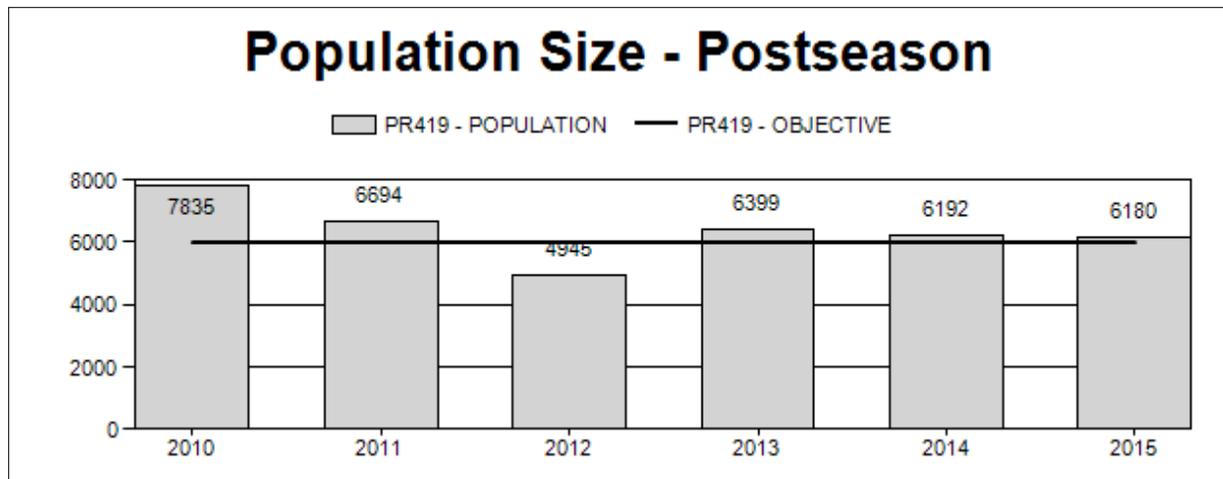
Percent population is above (+) or below (-) objective: 3%

Number of years population has been + or - objective in recent trend: 2

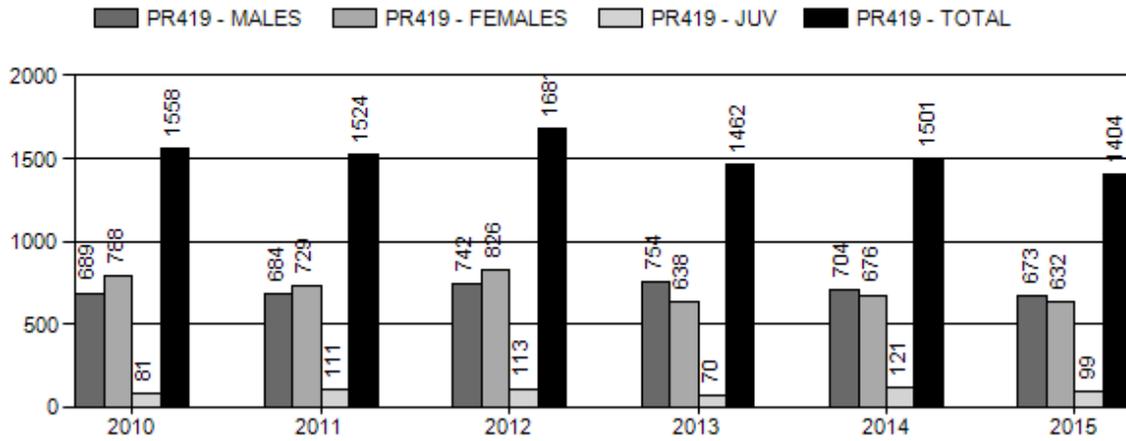
Model Date: 02/16/2016

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

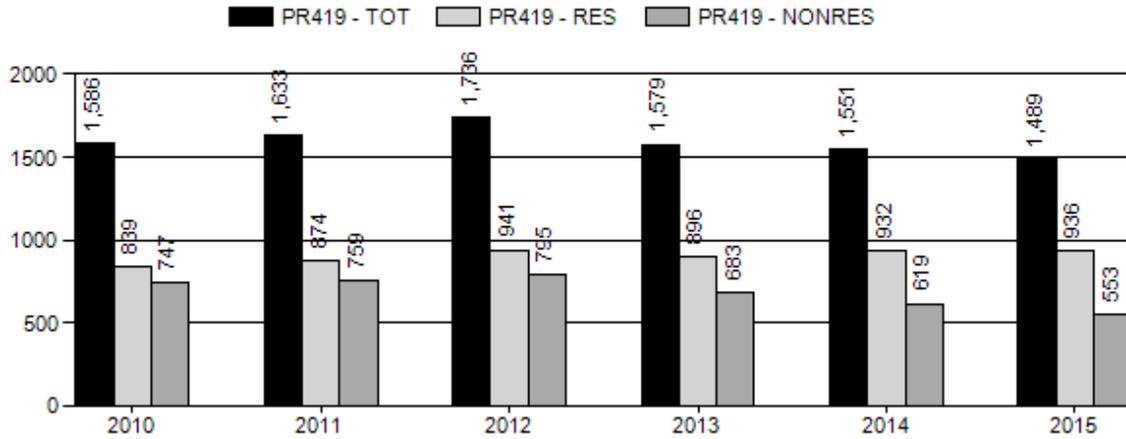
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	13.7%	13.2%
Males ≥ 1 year old:	28.6%	28.4%
Juveniles (< 1 year old):	2.4%	2.3%
Total:	13.0%	12.3%
Proposed change in post-season population:	-1.5%	-0.6%



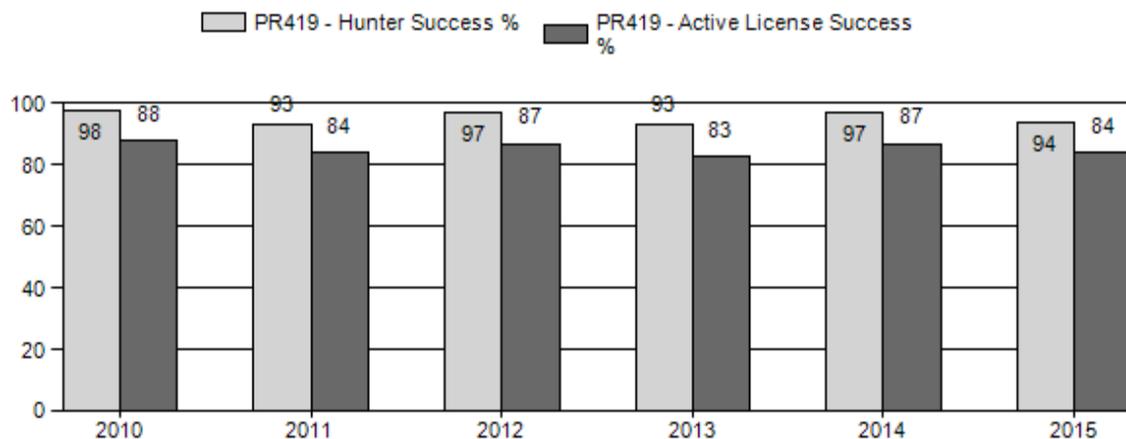
Harvest



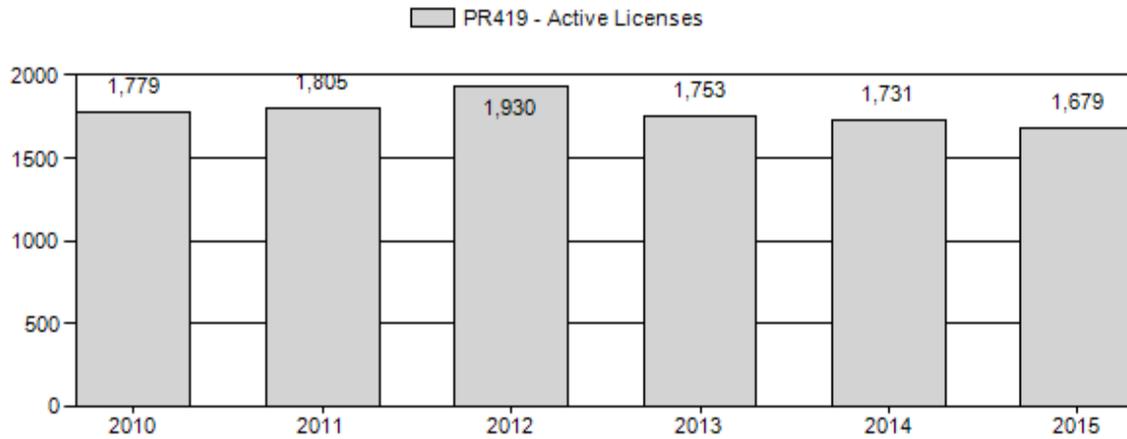
Number of Hunters



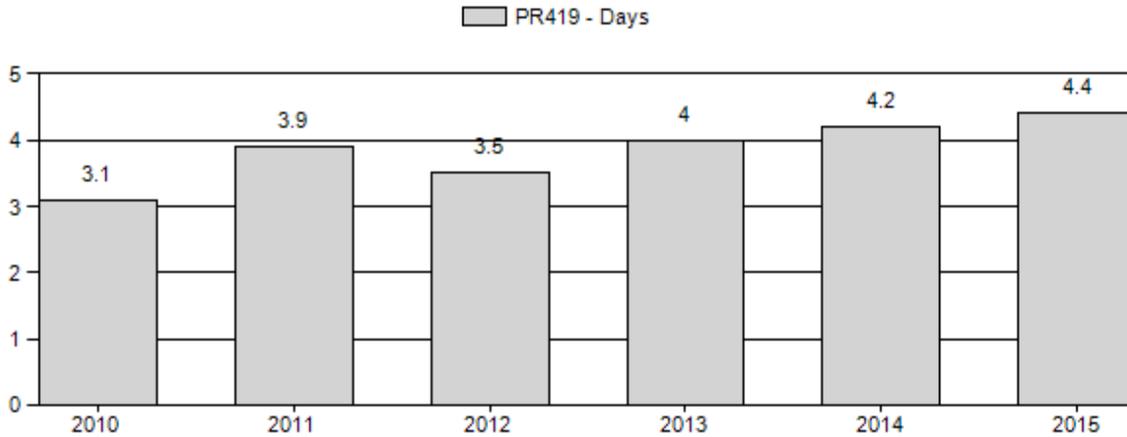
Harvest Success



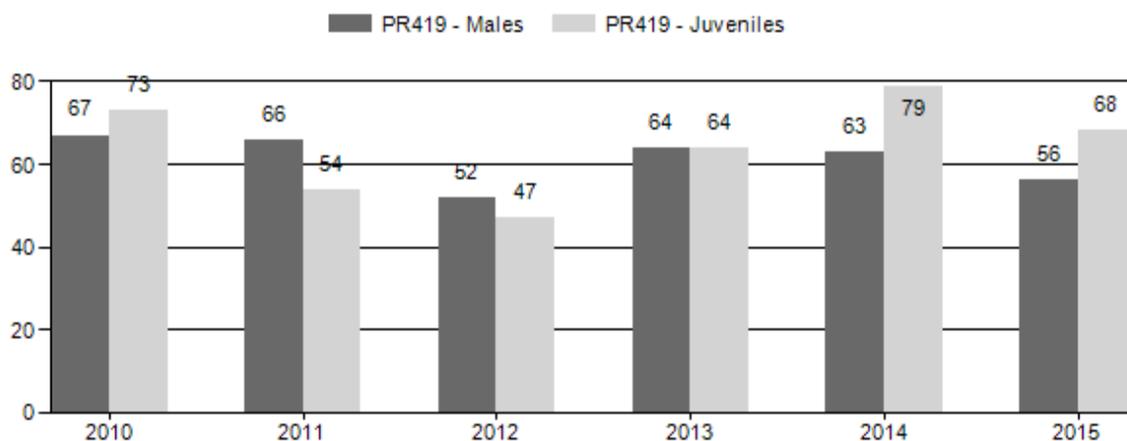
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Pronghorn Herd PR419 - CARTER LEASE

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot CIs	CIs Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	8,697	237	593	830	28%	1,234	42%	905	30%	2,969	0	19	48	67	± 4	73	± 4	44
2011	7,614	174	537	711	30%	1,071	45%	582	25%	2,364	0	16	50	66	± 4	54	± 4	33
2012	6,060	114	430	544	26%	1,051	50%	498	24%	2,093	0	11	41	52	± 4	47	± 3	31
2013	7,273	106	475	581	28%	904	44%	576	28%	2,061	0	12	53	64	± 5	64	± 5	39
2014	7,073	152	511	663	26%	1,058	41%	838	33%	2,559	0	14	48	63	± 4	79	± 5	49
2015	6,984	281	419	700	25%	1,252	45%	849	30%	2,801	0	22	33	56	± 3	68	± 4	43

2016 HUNTING SEASONS

SPECIES: Pronghorn

HERD UNIT: Carter Lease (419)

HUNT AREAS: 94, 98, 100

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
94	1	Sep. 10	Oct. 31	500	Limited quota	Any antelope
	6	Sep. 10	Oct. 31	250	Limited quota	Doe or fawn
	7	Sep. 10	Oct. 31	200	Limited quota	Doe or fawn valid on or within one (1) mile of irrigated land
98	1	Sep. 10	Oct. 31	200	Limited quota	Any antelope
	6	Sep. 10	Oct. 31	200	Limited quota	Doe or fawn
100	1	Sep. 10	Oct. 31	200	Limited quota	Any antelope
	6	Sep. 10	Oct. 31	225	Limited quota	Doe or fawn
	7	Sep. 10	Oct. 31	25	Limited quota	Doe or fawn valid west of the Bear River Divide
94, 98, 100	Archery	Aug. 15	Sept. 9		Limited quota	Refer to Section 2 of this chapter

Hunt Area	License Type	Quota change from 2015
94	1	+50
98	6	-100
100	6	+75
100	7	-75
Herd Unit Total	1	+50
	6	-25
	7	-75

Management Evaluation

Current Postseason Population Management Objective: 6,000

Management Strategy: Recreation

2015 Postseason Population Estimate: ~6,180

2016 Proposed Postseason Population Estimate: ~6,358

Herd Unit Issues

Energy development on crucial habitat is a looming issue for this herd. Development is present and has had impacts to habitats in the eastern portion of the herd unit. The hunt areas in this herd are very different in several characteristics. Hunt Area 94 is more xeric and has classic pronghorn habitat. Hunt Areas 98 and 100 have more hilly terrain, are slightly wetter and are very important winter range for the Wyoming Range mule deer herd. A large number of mule deer migrate into that area to winter on shrub browse. Therefore, we manage for low pronghorn numbers in 98 and 100 to reduce browse competition for mule deer. The herd unit has a split objective of 5,000 antelope in Hunt Area 94 and 1,000 antelope in Hunt Areas 98 and 100 combined.

In some years, high recruitment rates can make it difficult to maintain this population at such a low level. This is especially true in Hunt Areas 98 and 100 where the desired population is approximately 1,000 antelope, which is less than 1 antelope per square mile. Due to low antelope densities hunter success is usually lower than adjacent areas.

Throughout the herd unit there is a low tolerance for the presence of pronghorn on some of the private land holdings. Conflict with agriculture producers can be a primary issue for this herd. Damage complaints primarily occur on irrigated lands during the summer and early fall. However, irrigated lands are uncommon relative to native ranges. Significant efforts have been made by field personnel to target harvest toward those problems. Perceived reduction in livestock forage due to pronghorn foraging is an issue commonly brought up.

Weather

Weather during 2015 and into 2016 has been highly variable. In the early part of 2015 the winter was very mild and dry. A moist spring and summer followed. In late August conditions dried considerably and a relatively dry fall continued into late December. Winter did not set in until mid December but it came in abruptly. The winter of 2015-2016 has been very cold with high snow loads to this point and pronghorn have migrated to crucial winter ranges. A much needed warming trend has occurred in February and it remains to be seen how the winter will ultimately shape out. The winters from 2011 to 2015 were very mild with low snowpack and relatively warm temperatures resulting in very mild winter conditions. However, the dry springs and summers of 2012 and 2013 negatively impacted summer and winter range forage production.

Habitat

Habitat data collection has been inconsistently collected in this herd unit and has been absent in the recent past. A new effort is underway to resume data collection.

Field Data

Fawn ratios in this Herd Unit have been very good in the past, averaging over 75:100 from 2007-2010. During that time observed ratios ranged from 73:100 in 2010 to 83:100 in 2007. This population had been suppressed by harvest due to a low overall objective for the herd unit when compared to carrying capacity. This explained the productive nature of the herd. However, the 2011 herd unit fawn:doe ratio data was significantly lower at 54:100 and even lower in 2012 at 47:100. These are the lowest fawn:doe ratios in over 12 years. The harsh winter conditions in the winter of 2010/11 decreased doe condition enough to cause poor fawn production in 2011 and the extremely dry conditions in 2012 caused significant observed pre-season fawn mortality. In 2013, 2014 and 2015 Herd Unit fawn ratios rebounded greatly to 64:100 in 2013 and 79:100 in 2014 and 66:100 in 2015.

Line transect survey data was most recently conducted in 2014 in Hunt Area 94. Hunt areas 98 and 100 are not conducive to this type of survey due to low antelope densities and broken terrain. Hunt Area 94 is difficult to attain minimum sample sizes with this type of survey. An increased effort was made in 2011 and 2014 to survey HA 94 with high enough intensity to develop a better estimate. The Hunt area 94 population had been declining for several years due to aggressive harvest strategies. That harvest has been reduced slightly and we have now leveled off at or near objective.

Harvest Data

Doe/fawn harvest opportunity was increased every year for several years in area 94. Starting in 2006 season structures offered substantially increased doe/fawn harvest opportunity to try to reduce that part of the herd and reduce damage problems on irrigated lands. Those seasons allowed significant doe/fawn harvest. These hunts have had very good success rates. This management framework along with two years of poor fawn production has brought this population near to objective.

In 2010 we altered the area 100 type 7 licenses. They are valid for doe/fawn antelope in the portion of area 100 west of the Bear River Divide. This was to address concentrations of antelope on private land near Evanston and to focus more harvest on animals in potential competition with mule deer. Since increasing doe/fawn harvest substantially over the years in area 100 the antelope population in area 100 has significantly declined, as was intended. Due to low field observations in the area we are reducing the hunt area 100 type 7 permits and moving those licenses into the type 6 hunt. Success rates in HA 100 are lower than adjacent hunt areas including area 98, which is also managed for low antelope densities.

Population

A total Herd Unit 419 (Carter Lease) model is very unreliable due to much different population parameters in Hunt Areas 98 and 100 compared to Hunt Area 94. Additionally the line transect survey method does not fit with hunt areas 98 and 100. It makes sense to model Hunt Area 94 only. The HA 94 population model is presented. Efforts have been made to tighten line transect estimates and we now have two estimates with tight confidence intervals. The current model tracks very well and we have fairly good confidence in the estimates. Model results are presented for hunt area 94 only. Herd unit population estimates are reported as the HA94 model plus 1,000 animals to account for the populations we are unable to model in HA 98 and 100. The TSJ,CA model was selected due to its excellent fit with the data, a reasonably low relative AICc score, proper population dynamics fit with the nature of this herd and the population estimate appears to be reasonable. Another reason we have good confidence in the strength of this model is that all three model variations produce a very similar population estimate.

In the future it will be imperative that we obtain a reliable population estimate periodically through line transect surveys to check the status of the herd and anchor the model. With this it is likely that we can continue to provide a good population model and track the trend of this population. Without this it will be unclear if our current harvest levels can be sustained or if we are on the right management track relative to objective. In 2012 the Department switched from POPII models to an Excel spreadsheet model. Since these are new models they are going to be under development and subject to extensive refining. They will likely change over time with new data.

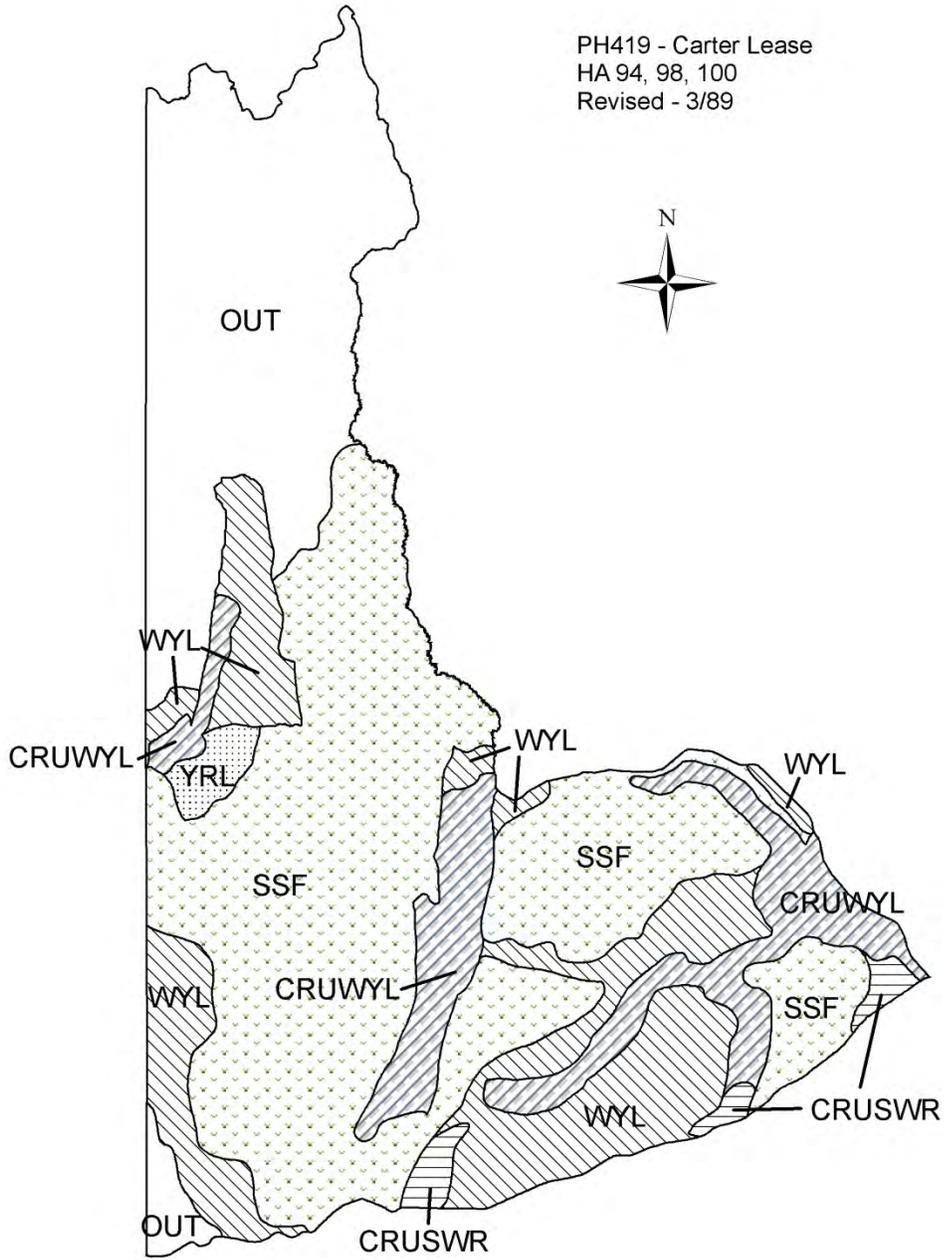
Currently the model is estimating we have around 5,180 pronghorn following the 2015 season in hunt area 94. This is very near the population objective of 5,000 animals for that area. The model estimates that we were on a steep downward trend from 2009 to 2012. This was due to a

severe winter in 2010/11, very poor fawn production in 2011/2012 and harvest designed to reduce the population. The population reduction was substantiated by reductions in classification sample sizes and field observations. Since 2012 we have relaxed harvest slightly and had very mild winters. This has rebounded the population to objective levels. This herd has the potential for rapid growth as consecutive years with high fawns ratios have occurred in the past. Therefore, adequate female harvest has been needed to curtail growth.

Management Summary

For 2016 we will have reductions in antlerless licenses issued in the Herd Unit. We will also slightly increase hunt area 94 type 1 licenses. All areas in the Herd Unit have ample hunting opportunity. We are now right at the objective in Hunt Area 94 according to the model and striving to maintain very low antelope densities in Areas 98 and 100. We will maintain levels of type 7 harvest in hunt area 94 to alleviate damage concerns on irrigated lands. The Objective and management strategy were last revised in 2015 and no changes were made.

PH419 - Carter Lease
HA 94, 98, 100
Revised - 3/89



2015 - JCR Evaluation Form

SPECIES: Pronghorn

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

HERD: PR438 - BAGGS

HUNT AREAS: 53, 55

PREPARED BY: TONY MONG

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	7,848	8,700	9,100
Harvest:	187	299	350
Hunters:	203	295	350
Hunter Success:	92%	101%	100 %
Active Licenses:	214	344	395
Active License Success:	87%	87%	89 %
Recreation Days:	628	817	1,000
Days Per Animal:	3.4	2.7	2.9
Males per 100 Females	56	49	
Juveniles per 100 Females	60	58	

Population Objective (\pm 20%) : 9000 (7200 - 10800)

Management Strategy: Recreational

Percent population is above (+) or below (-) objective: -3.3%

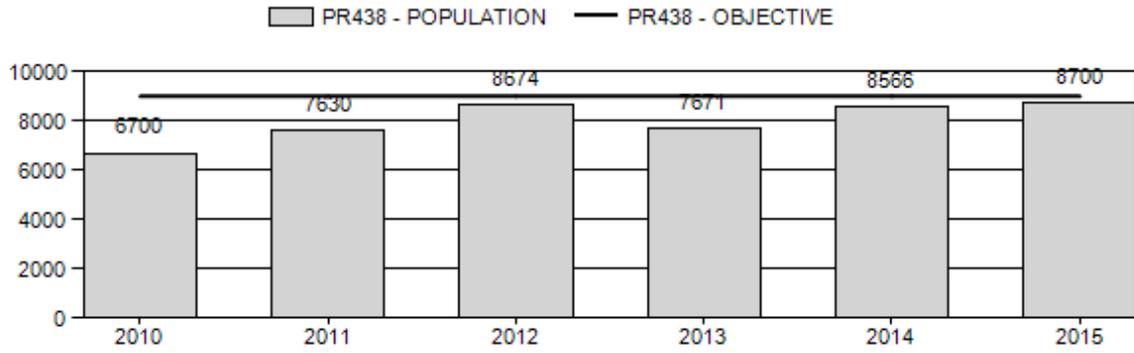
Number of years population has been + or - objective in recent trend: 0

Model Date: 02/20/2016

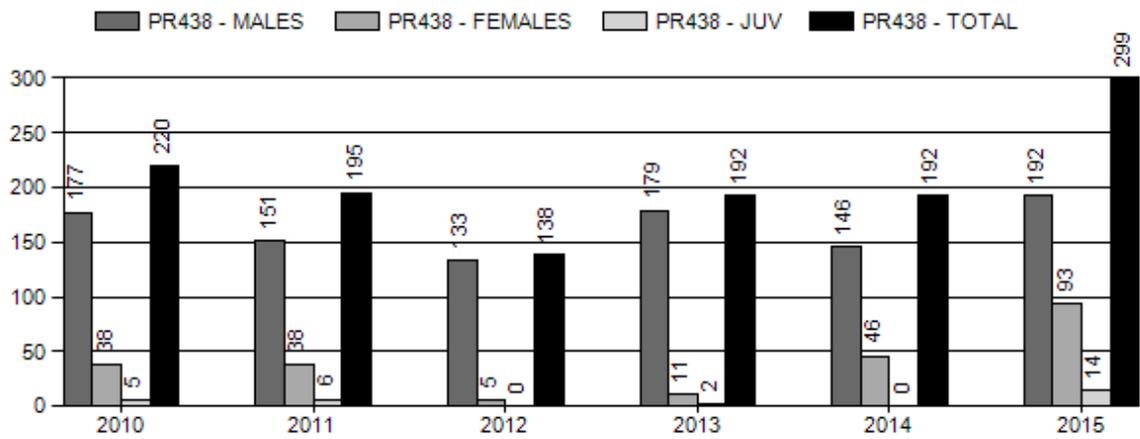
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	2.0%	2.7%
Males \geq 1 year old:	7.5%	7.3%
Juveniles (< 1 year old):	0.5%	0.5%
Total:	2.7%	2.5%
Proposed change in post-season population:	2.0%	3.0%

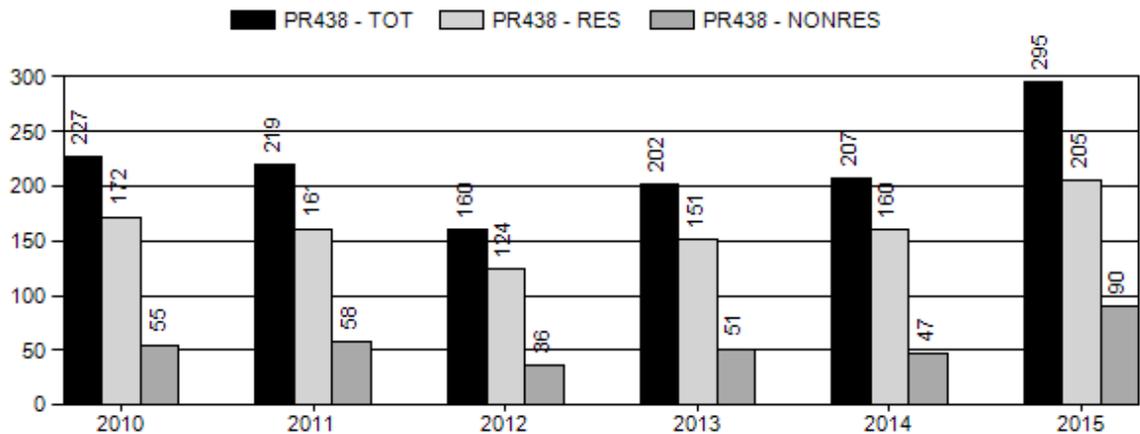
Population Size - Postseason



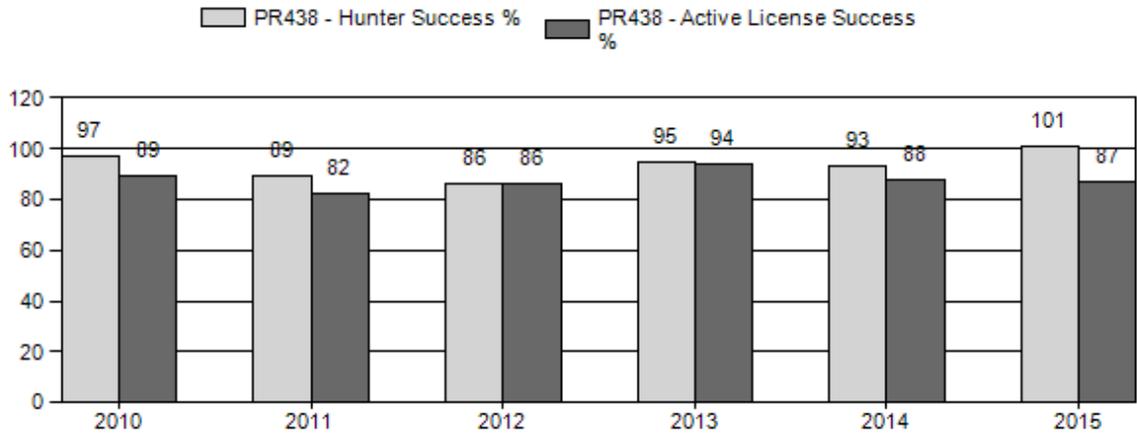
Harvest



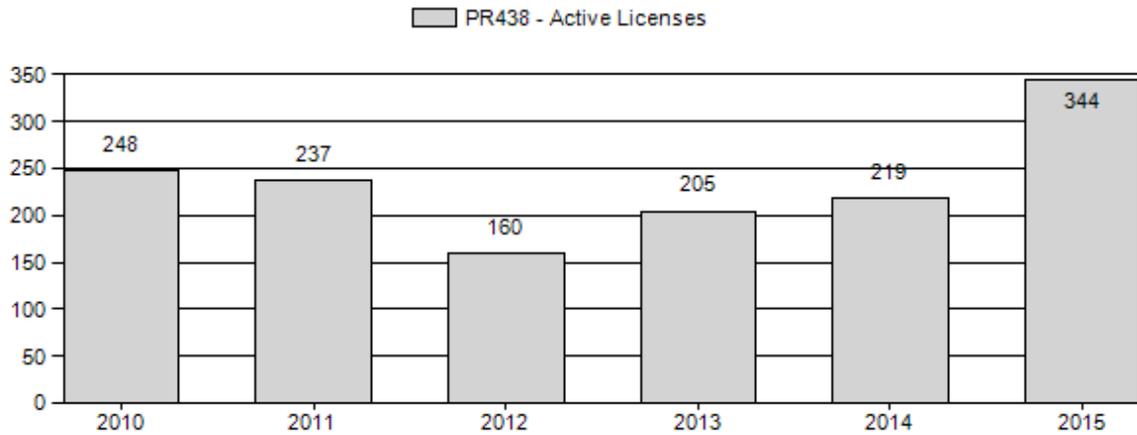
Number of Hunters



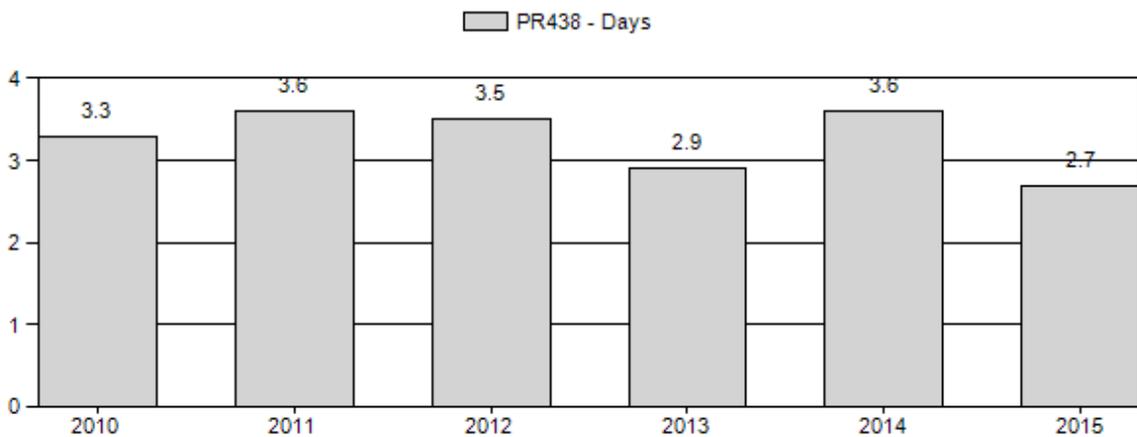
Harvest Success



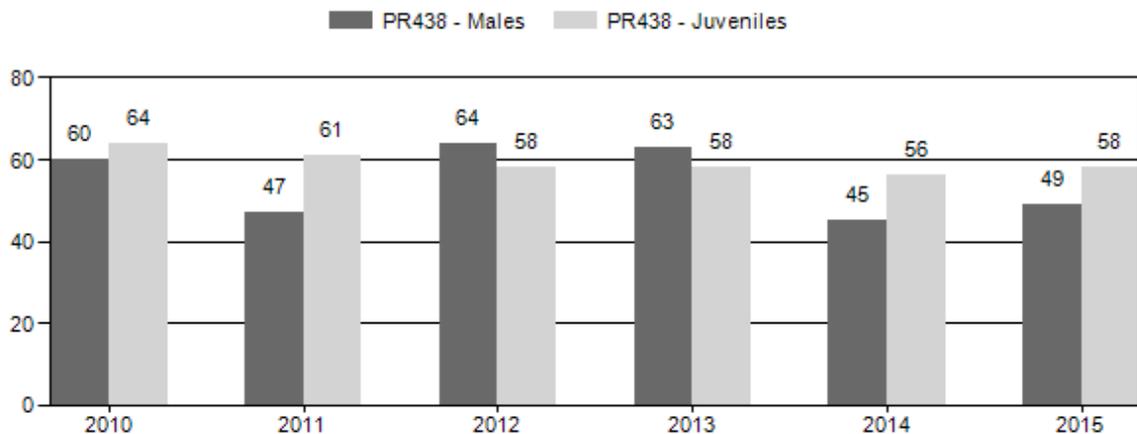
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary																			
for Pronghorn Herd PR438 - BAGGS																			
Year	Pre Pop	MALES				FEMALE		JUVENIL		Males to 100 Females						Young to			
		Ylg	Adult	Total	%	Total	%	Total	%	Tot		Yng	Adult	Total	Conf		100 Fem	Conf Int	100 Adult
										Cls	Obj				Int	±			
2010	7000	221	248	469	0	782	0	499	0	1750	0	28	32	60	± 0	64	± 0	40	
2011	7884	75	222	297	0	628	0	381	0	1306	0	12	35	47	± 5	61	± 6	41	
2012	8825	107	358	465	0	728	0	425	0	1618	0	15	49	64	± 6	58	± 5	36	
2013	9571	89	314	403	0	638	0	373	0	1414	0	14	49	63	± 6	58	± 6	36	
2014	8783	92	258	350	0	776	1	437	0	1563	0	12	33	45	± 4	56	± 5	39	
2015	9000	89	265	354	0	728	0	422	0	1504	0	12	36	49	± 5	58	± 5	39	

2016 HUNTING SEASONS

SPECIES : Pronghorn

HERD UNIT : **Baggs (438)**

HUNT AREAS: **53, 55**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
53	1	Sep. 20	Oct. 31	100	Limited quota	Any antelope
	6	Sep. 20	Oct. 31	100	Limited quota	Doe or fawn
	7	Sep. 1	Oct. 31	50	Limited quota	Doe or fawn valid on private land within one (1) mile of Wyoming Highway 70 or Carbon County Road 561
55	1	Sep. 20	Sep. 31	150	Limited quota	Any antelope
	6	Sep. 20	Oct. 31	100	Limited quota	Doe or fawn

Special Archery Season Hunt Areas	Opening Date	Limitations
53, 55	Aug. 15	Refer to Section 2 of this Chapter

<i>Hunt Area</i>	<i>Type</i>	<i>Quota change from 2015</i>
53	1	0
	6	+25
	7	+25
55	1	+50
	6	+50
Herd Unit Total	1	+50
	6	+75
	7	+25

Management Evaluation

Current Management Objective: 9,000 (2015)

Management Strategy: Recreation

2015 End-of-bio-year Estimate: 7,100

2016 Proposed Postseason Population Estimate: 9,100

The Baggs Pronghorn Herd is at the objective of 9,000 (reset in 2015) therefore our current management strategy is to maintain current population levels through doe harvest. However, buck ratios in the herd unit have been stagnate over the last few years so we are going to maintain buck harvest at current levels. In addition, we are adding 50 doe/fawn licenses across the herd unit.

Herd Unit Issues

There are four main issues impacting the Baggs herd including energy production, public land access in hunt area 55, dichotomy of buck ratios between hunt areas 55 and 53 and increasing numbers of summering pronghorn along the irrigated meadows along the two main rivers in the herd unit. Throughout the Baggs herd we continue to see development of oil and gas fields associated with the Atlantic Rim Project and within 2 years we could begin to see the development of the largest wind turbine project in North America, the Chokecherry-Sierra Madre Wind Project. We are uncertain of the potential impacts to the herd however it is an issue we must continue to monitor with the increasing pressures on this herd.

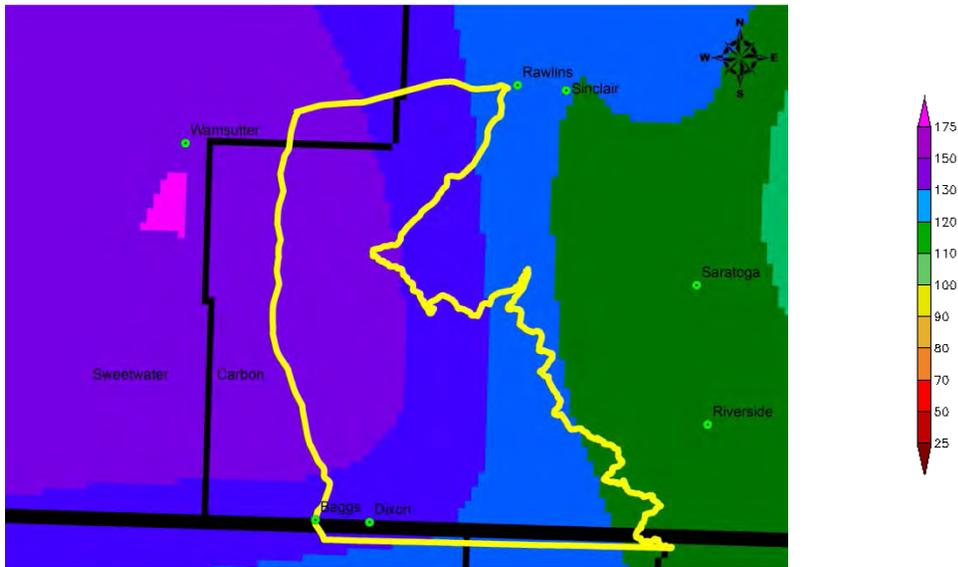
Hunt area 53 remains relatively open to public hunting with a majority of the land under public ownership; however in hunt area 55 we continue to see public access problems with a checkerboard landscape and much of the private land under lease from outfitters or shut down from any use. These landownership issues will become more of an issue if the herd continues to grow and a larger doe harvest is needed throughout the area. In addition to difficulties gaining access to harvest animals in hunt area 55, this restricted access may also be inflating buck ratios and causing a large difference between hunt area 53 and 55 buck ratios. Over the last 2 years we have seen an average buck ratio in hunt area 53 of 35:100 compared to 58:100 in hunt area 55. Determination of all factors contributing to these differences will be important as management continues into the future.

Over the last 3 years we have seen a large increase of pronghorn using irrigated meadows along the Little Snake River and the lower end of Savery Creek. This issue was originally contained within the Little Snake River drainage however, over the course of the last year we have seen pronghorn numbers increase in the Savery Creek drainage. Landowner complaints on pronghorn numbers in these areas and interest in private land only licenses have been increasing throughout this time period along with the numbers. Because of the willingness of the landowners to address this issue through harvest we have designated licenses for those areas and propose to do so into 2016 with an expansion of the area where these private land licenses are valid.

Weather

The Baggs herd unit has benefited from higher moisture levels in the lower elevation regions allowing for maximum vegetative response and the filling of many previously dry reservoirs (Figure 1). The 2015 winter started similar to the previous 4 winters with mild temperatures early however, beginning in mid-December we saw a shift to higher snow fall and colder temperatures that may result in some higher winter mortality than seen in previous years.

Figure 1. Percent of normal precipitation for the herd unit from February 2015 to February 2016.



Field Data

Recent higher fawn ratios (5-year average 59:100) and favorable winters have allowed survival to increase for both fawns and adults which has led to increases in the herd population size. As mentioned above we continue to see a difference in adult buck ratios between hunt areas 53 (38) and 55 (59).

Harvest Data

Hunters within the Baggs pronghorn herd have been extremely successful and satisfied during their hunts in 2015. Hunter success rates were the highest seen in the herd unit with an overall rate of 101%, however, a better indication of success may be the active license success rate of 87% which is similar to the previous 5-year average of 88%. This success equated to 93% of hunters surveyed indicated they were either satisfied or very satisfied with the overall quality of the hunt in the Baggs herd unit.

The previous year's pattern of separation between the hunt area hunter success rates disappeared this year with hunt area 53 showing a 100% hunter success on the Type 1 license compared to a 85% hunter success rate in hunt area 55. This reverse from the previous year possibly indicates that the buck numbers and quality have increased in hunt area 53.

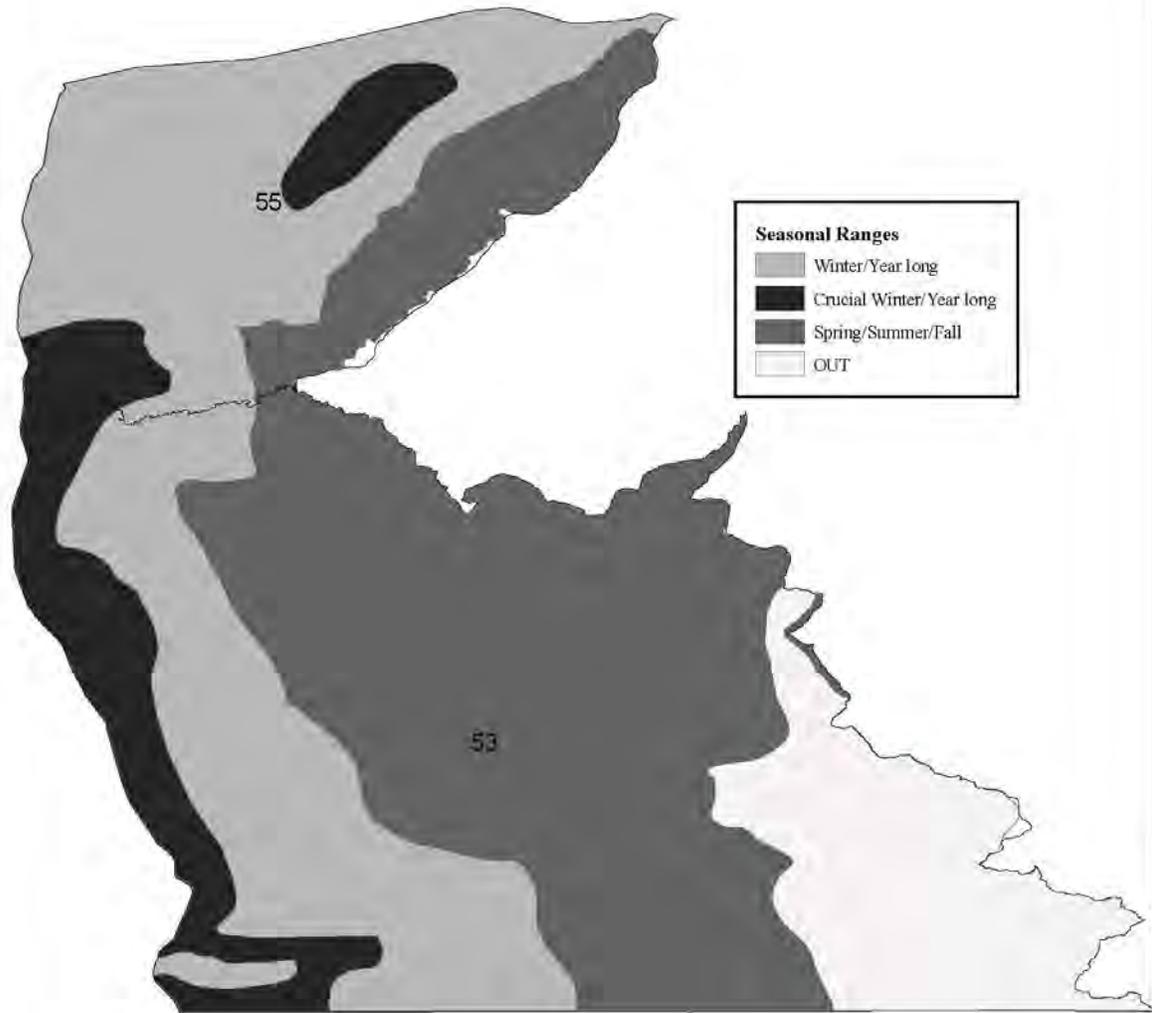
Population

The current population model estimates the 2015 posthunt population to be 8,700 pronghorn. The CJ, CA model was selected based on the lowest AICc value and what we believe to be the best representation of the actual population trend and size based on the line transect estimates obtained in 2008 and 2012. The spreadsheet model is tracking below the 2012 line transect population estimate and despite efforts to parameterize the model to try and better fit the line transect estimate, efforts were not successful. Buck ratios in this model have not been able to track actual ratios. This may be related to the highly variable nature of buck ratios in this herd.

Management Summary

The main challenge with managing this herd is the overall increase in population size coupled with the differences in access and buck ratios between hunt areas 53 and 55. Hunter access within hunt area 55 will need to be addressed to allow for adequate harvest of doe pronghorn to ensure the population is maintained near the population objective. Because of the overall population levels, we are going to maintain population levels near the objective through another increase in doe/fawn licenses however, maintaining current levels of type 1 licenses in hunt area 53 to allow for buck ratios to increase to a more acceptable level and increasing type 1 licenses in hunt area 55 to allow for more hunter opportunity. It will be important to monitor population response closely as there may be an impact from the oil and gas production in hunt area 53 we do not yet understand.

Baggs PR438 Herd Seasonal Ranges



Seasonal Ranges	
	Winter/Year long
	Crucial Winter/Year long
	Spring/Summer/Fall
	OUT

