

2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS516 - DOUGLAS CREEK

HUNT AREAS: 18

PREPARED BY: LEE KNOX

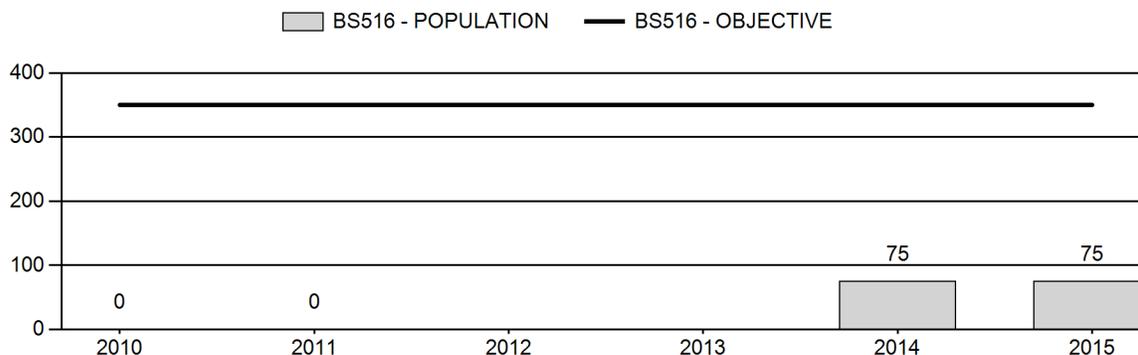
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	15	75	75
Harvest:	1	0	2
Hunters:	1	0	2
Hunter Success:	100%	0%	100 %
Active Licenses:	1	0	2
Active License Success:	100%	0%	100 %
Recreation Days:	3	0	10
Days Per Animal:	3	0	5
Males per 100 Females	33	30	
Juveniles per 100 Females	48	80	

Population Objective (\pm 20%) :	350 (280 - 420)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-78.6%
Number of years population has been + or - objective in recent trend:	200
Model Date:	2/22/2016

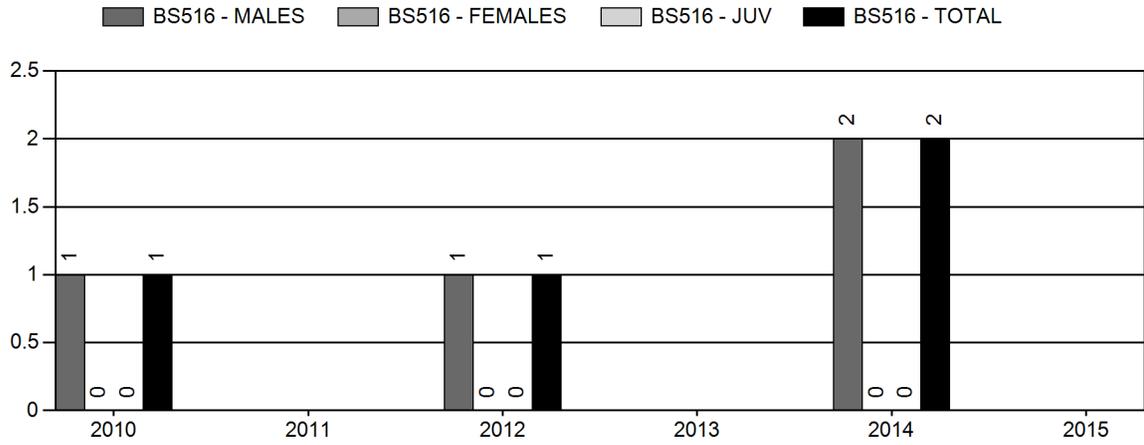
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0%	00%
Males \geq 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	00%
Total:	0%	0%
Proposed change in post-season population:	0%	0%

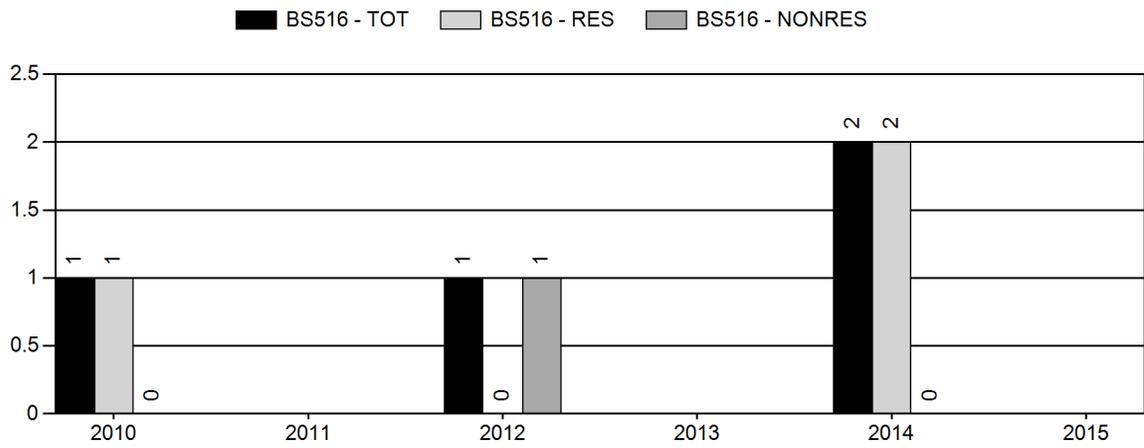
Population Size - Postseason



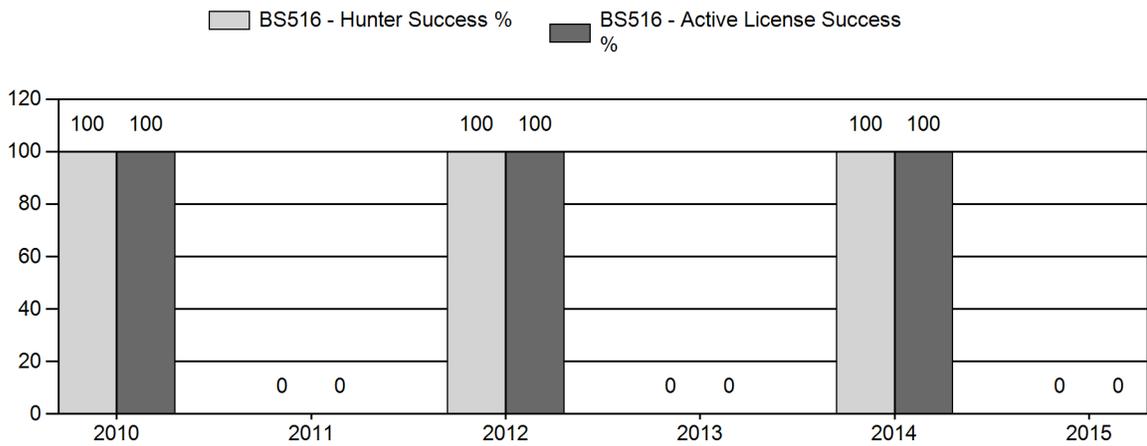
Harvest



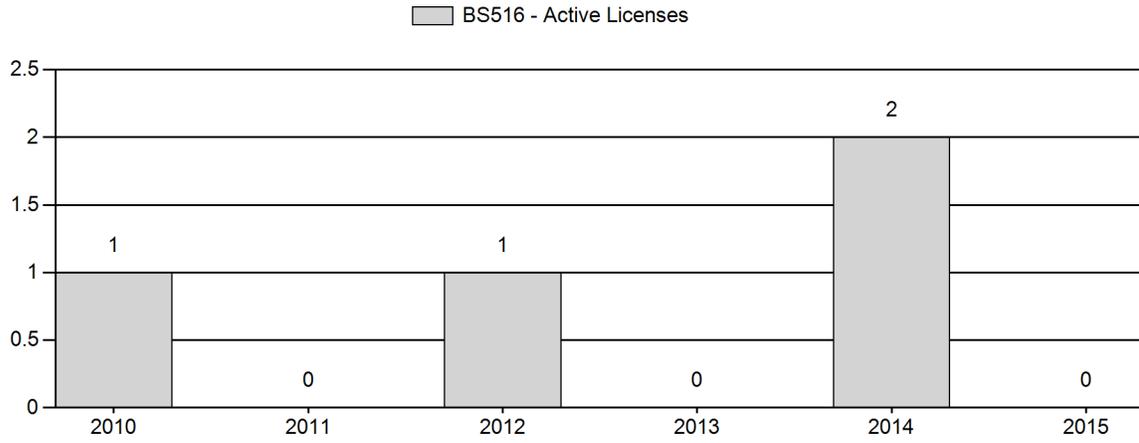
Number of Hunters



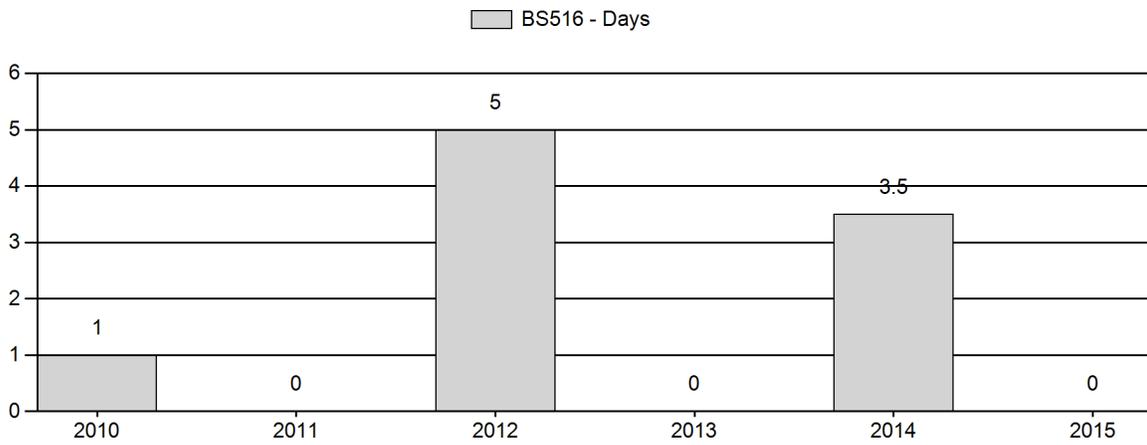
Harvest Success



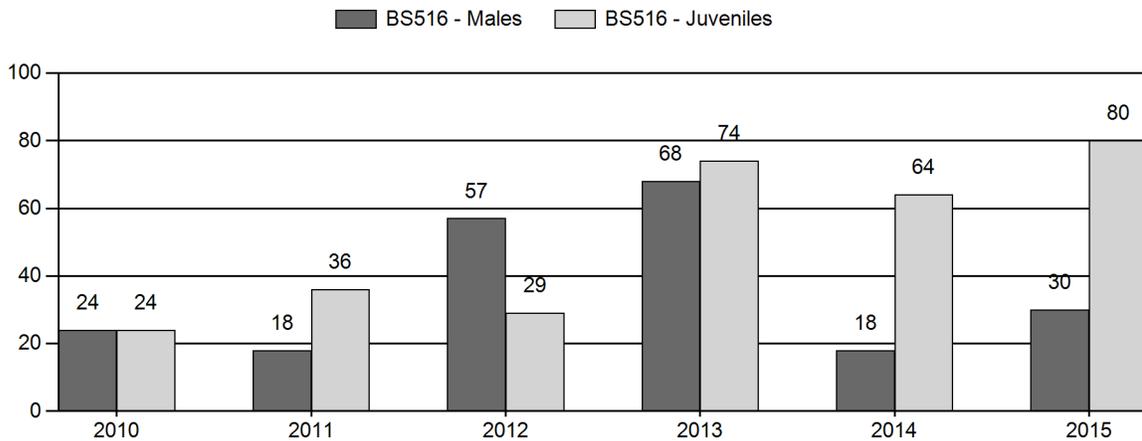
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS516 - DOUGLAS CREEK

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	0	1	3	4	16%	17	68%	4	16%	25	74	6	18	24	± 0	24	± 0	19
2011	0	0	4	4	12%	22	65%	8	24%	34	0	0	18	18	± 0	36	± 0	31
2012	0	1	3	4	31%	7	54%	2	15%	13	0	14	43	57	± 0	29	± 0	18
2013	0	6	7	13	28%	19	41%	14	30%	46	0	32	37	68	± 0	74	± 0	44
2014	75	3	1	4	10%	22	55%	14	35%	40	0	14	5	18	± 9	64	± 19	54
2015	75	0	3	3	14%	10	48%	8	38%	21	0	0	30	30	± 21	80	± 41	62

2016 HUNTING SEASONS

DOUGLAS CREEK BIGHORN SHEEP (BS516)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
18,21	1	Sept. 1	Oct. 31	2	Limited quota	Any ram; (1 resident, 1 nonresident)

Special Archery Season Hunt Areas	Season Dates	
	Opens	Closes
18,21	Aug.15	Aug. 31

Area	Type	Change from 2015
18,21	1	+2
Herd Totals	1	+2

Management Evaluation

Current Postseason Population Management Objective: 350

2015 Postseason Population Estimate: ~ 75

2016 Proposed Postseason Population Estimate: ~ 75

Management Strategy: Special

The management objective for the Douglas creek Bighorn Sheep Herd Unit is a post-season population objective of 350 bighorn sheep. The management strategy is special management. The herd objective and management strategy were last revised in 1986 and will be reviewed in 2016.

Herd unit Issues

The Douglas Creek Herd Unit is located primarily in the Savage Run and Platte River wilderness areas in the Snowy Range Mountains on the Medicine Bow National Forest. The herd is under special management guidelines which require a mean age of harvested rams to be between 6-and 8 years old. This direction was taken to provide trophy opportunity to the public and allow this herd to grow. Pine beetles have dramatically changed the landscape in the Medicine Bow National Forest where a large percentage of mature pines have died and starting to fall over. The impacts from the beetle kill are unclear but could improve sheep habitat as the forest becomes more open. Area 18 was closed from 2004 through 2007 and then again in 2009, 2011, 2013, 2015 because this population has remained below desired levels. Hunt Area 18 will be open for 1 resident and 1 nonresident in 2016.

Weather

Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were above average at all elevations throughout southeast Wyoming. No significant prolonged periods of extreme heat or cold temperatures were observed, or extreme or prolonged periods of snow loading in lower elevation winter ranges. Timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Weather patterns most likely had a positive influence on all big game species. For specific meteorological information for the Douglas Creek herd unit the reviewer is referred to the following link: <http://www.ncdc.noaa.gov/cag/>.

Habitat

Forage availability continued to improve in 2015 with an increase in amounts of precipitation received and the timeliness of when it was received. Precipitation received in April, May, and early June resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs in low elevations. At upper elevations, May, June, and July precipitation was also above average, and created favorable forage conditions. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Conifer encroachment and windthrow of beetle-killed pine trees is suspected to, or likely will have negative impacts on bighorn sheep movements and migrations. Cheatgrass prevalence at lower elevations is also concerning to habitat managers, particularly on south facing aspects in the Platte Valley.

The limited number of habitat transects that have been established throughout the Laramie Region have not provided sufficient data to make reliable assumptions of habitat quantity or quality and consequently heavily influence population management for any particular big game species.

In summer 2015, population biologists and habitat managers began working together to modify habitat monitoring techniques utilized statewide and to improve overall consistency among the regions. While this effort is targeted at mule deer initially, it is hoped efforts will expand to other big game species as methodologies are perfected and adopted. Identification of key herd units per big game species, assessing habitats through landscape scale inventory methods versus monitoring a handful of permanent monitoring sites, assessing habitats in all seasonal ranges (summer, transition, winter), and development of correlations to amounts of and timing of precipitation will help improve the overall value of data collected and result in our abilities to more strongly correlate management decisions for populations based off habitat conditions.

Field Data

We have very little data on this population. The general public provides a few reports during the summer and hunting seasons. Our field personnel make some effort to document the status of segments of the herd during other big game surveys and an annual winter ground survey. Past observation data consistently documents low post-weaning lamb survival. Poor habitat conditions, lack of habitat, and the lack of well-defined seasonal migrations, and perhaps lingering effects of Pasteurellosis or some other disease may be stagnating this population. We classified 21 sheep in February, with a lamb to ewe ratio of 80:100, which is up from previous years. Fifteen sheep were also observed by highway 230 at the state line.

Harvest Data

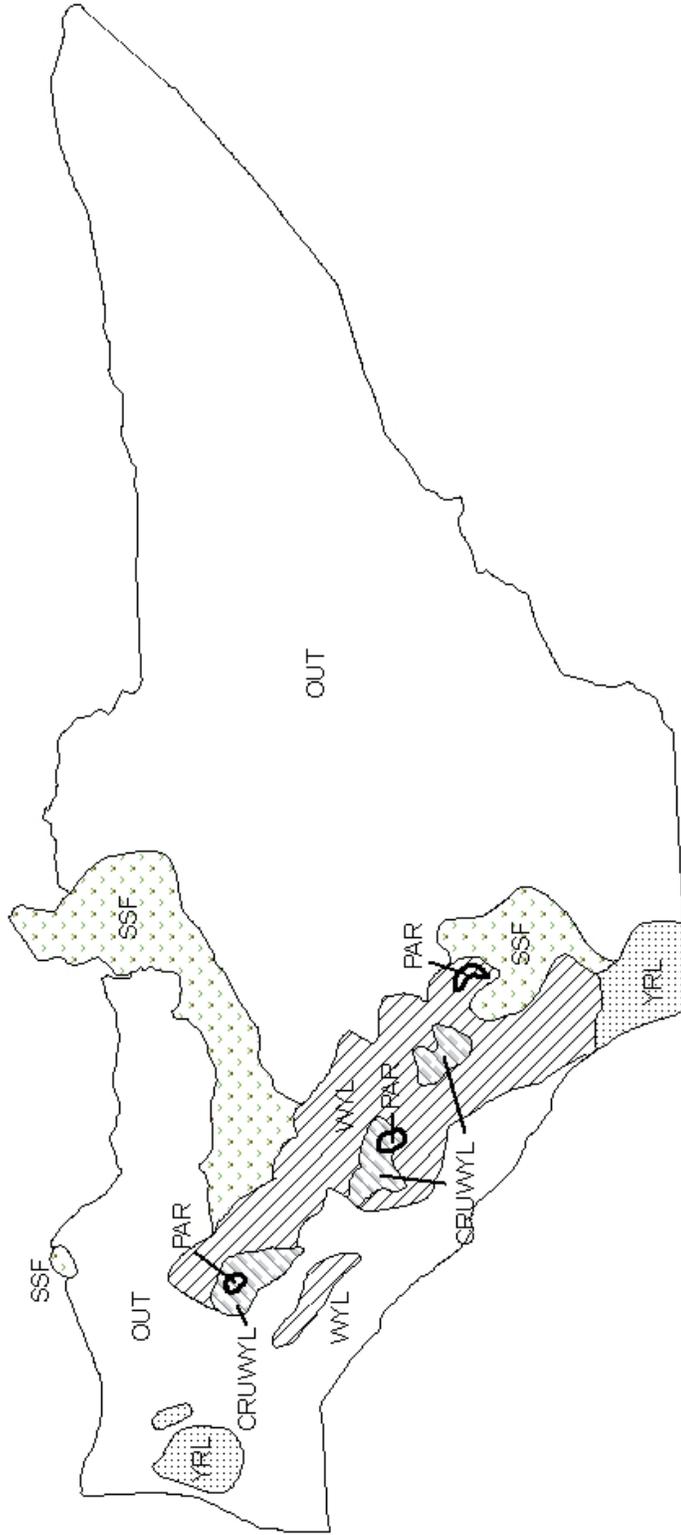
Hunting season was closed in 2015

Population

Data is not adequate for developing a reasonable population model. We are unable to collect the data needed to reliably estimate the population size of this sheep herd.

Management Strategy

We open the season for 2 rams every other year to maintain the opportunity to harvest a 6 year or older age class ram, which is specified by the special management guidelines. The season will be open in 2016 for one nonresident and one resident.



BHS516 - Douglas Creek
 HA 18
 Revised 7/02

2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS517 - LARAMIE PEAK

HUNT AREAS: 19

PREPARED BY: MARTIN HICKS

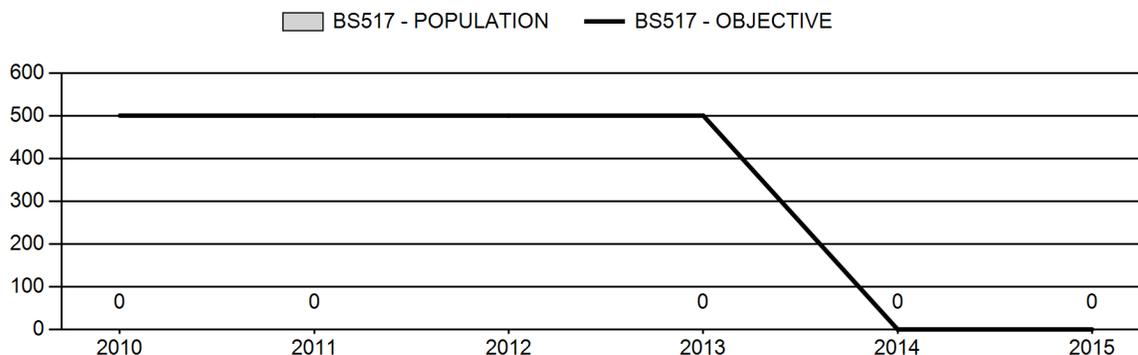
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	0	N/A	N/A
Harvest:	7	8	8
Hunters:	7	9	8
Hunter Success:	100%	89%	100 %
Active Licenses:	7	9	8
Active License Success:	100%	89%	100 %
Recreation Days:	78	102	100
Days Per Animal:	11.1	12.8	12.5
Males per 100 Females	56	55	
Juveniles per 100 Females	43	40	

Population Objective (\pm 20%) :	0 (0 - 0)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

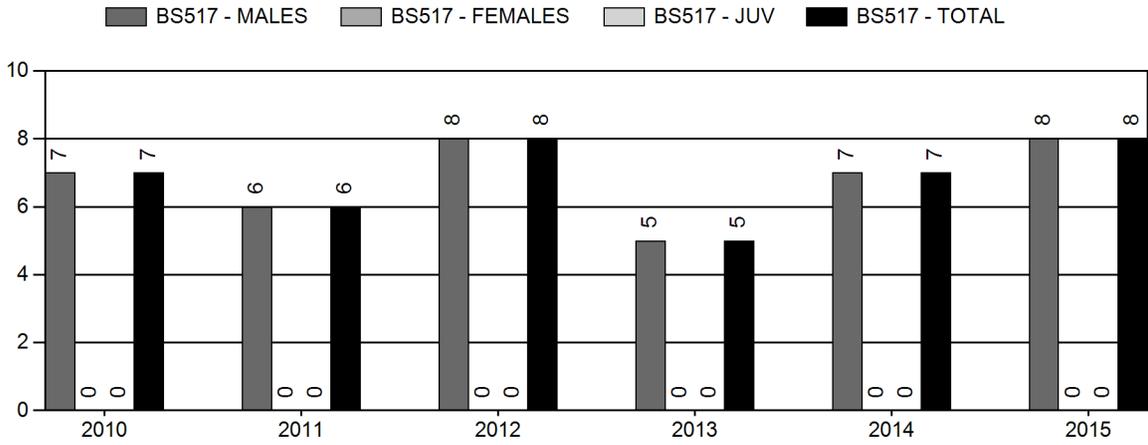
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

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

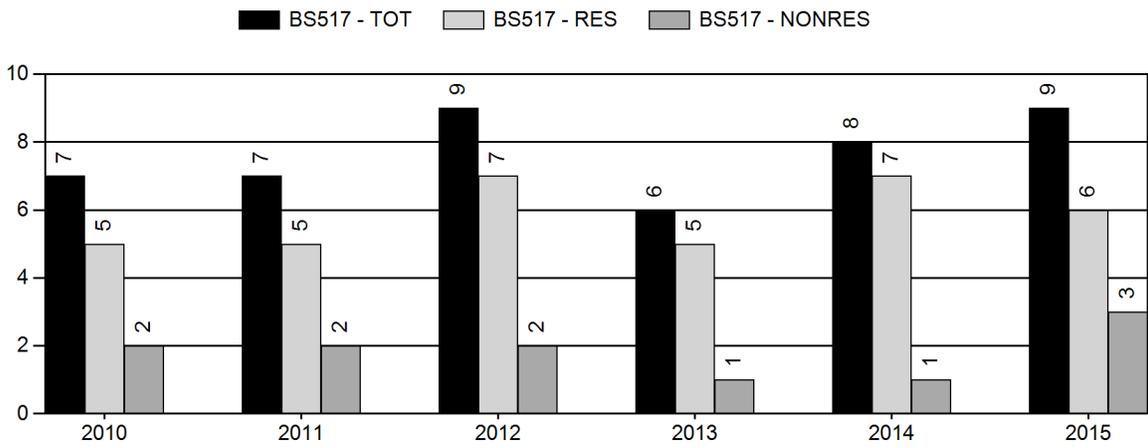
Population Size - Postseason



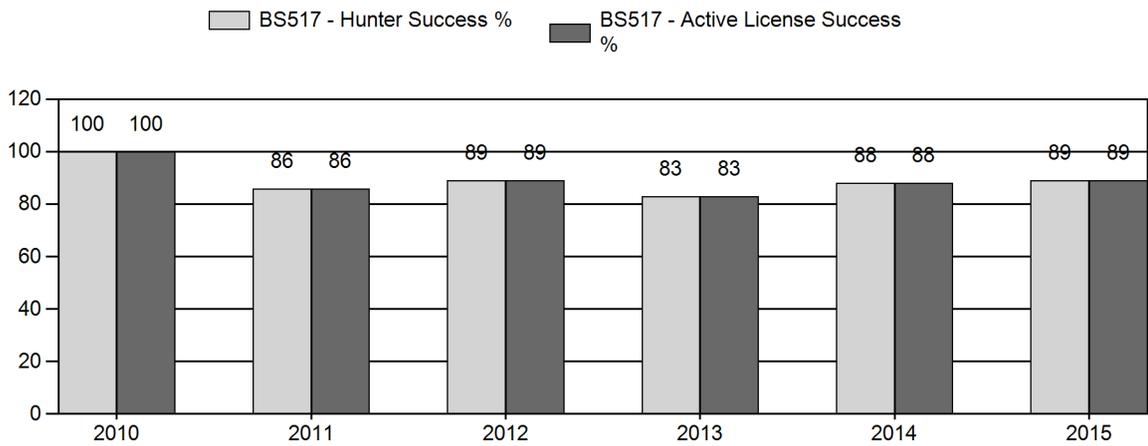
Harvest



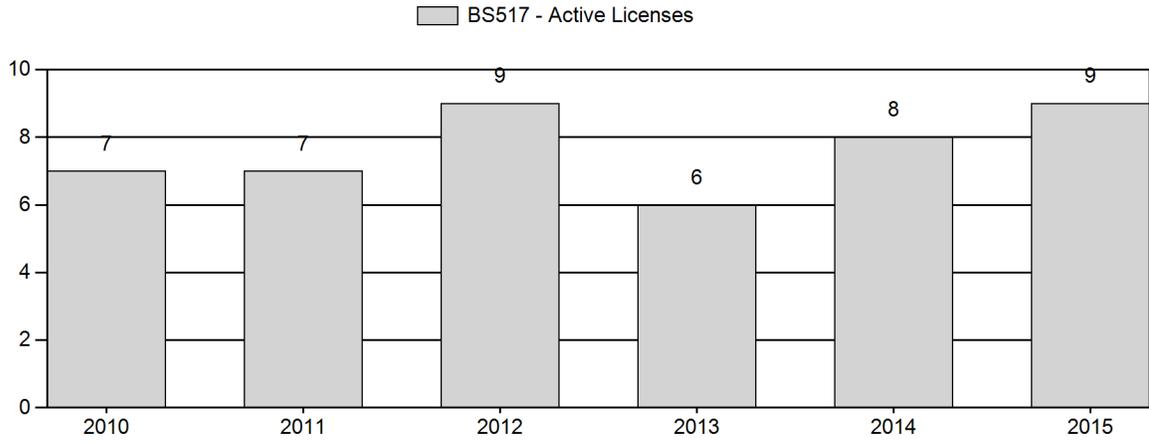
Number of Hunters



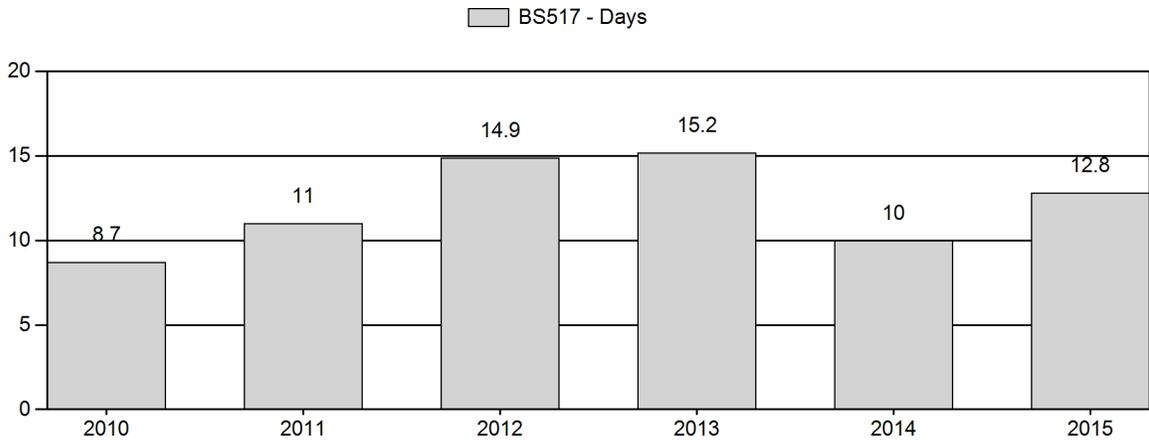
Harvest Success



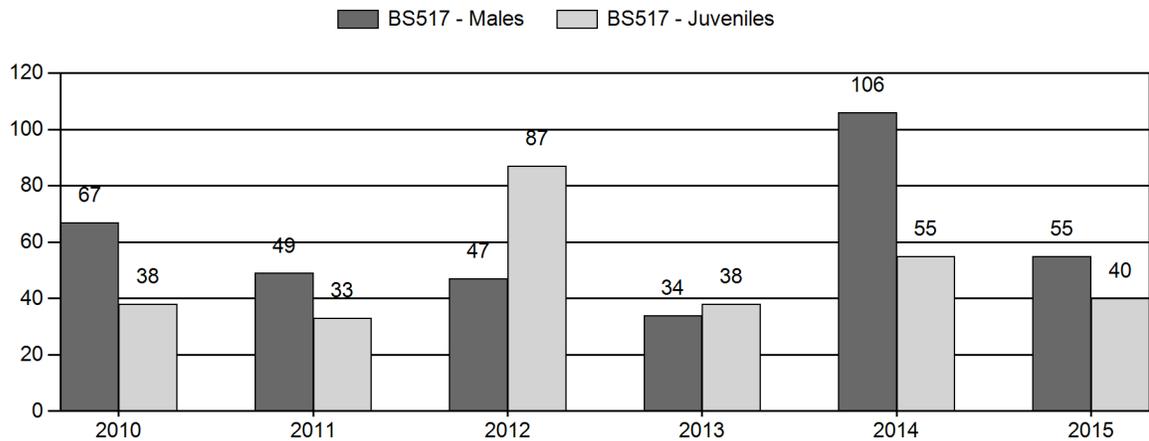
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS517 - LARAMIE PEAK

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	0	3	23	26	32%	39	49%	15	19%	80	0	8	59	67	± 0	38	± 0	23
2011	0	4	20	24	27%	49	55%	16	18%	89	0	8	41	49	± 0	33	± 0	22
2012	0	0	7	7	20%	15	43%	13	37%	35	0	0	47	47	± 0	87	± 0	59
2013	0	7	16	23	20%	68	58%	26	22%	117	0	10	24	34	± 0	38	± 0	29
2014	0	8	25	33	41%	31	38%	17	21%	81	0	26	81	106	± 0	55	± 0	27
2015	0	2	21	23	28%	42	51%	17	21%	82	0	5	50	55	± 0	40	± 0	26

**2016 HUNTING SEASONS
LARAMIE PEAK BIGHORN SHEEP HERD (BHS517)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
19	1	Sept. 1	Oct. 31	8	Limited quota	Any ram

Special Archery Season Hunt Areas	Opening Date	Closing Date	Limitations
19	Aug. 15	Aug. 31	Refer to Section 2 of this Chapter

Hunt Area	Type	Quota change from 2015
19	1	0

Management Evaluation

Current Management Objective:

- 1) **5-year running average of $\geq 75\%$ hunter success:** 94%
- 2) **5-year running average age of harvested rams between 6 and 8 years of age:** 2011-2015 Average Age: 6 years old
- 3) **Documented occurrence of adult rams in the population:** ~45 observed rams

Management Strategy: Recreational

Herd Unit Issues

The management objective for the Laramie Peak Bighorn Sheep herd was a post-season population objective of 500 wild sheep. The management strategy is recreational management. The objective and strategy were last revised in 1978. The population objective was reviewed during the winter/spring of 2014. Based on department staff, landowner, and public comments the following population management alternative objectives were approved by the WGFD Commission:

- 1) 5-year running average of $\geq 75\%$ hunter success
- 2) 5-year running average age of harvested rams between 6 and 8 years of age
- 3) Documented occurrence of adult rams in the population

The Laramie Peak Herd Unit is comprised of 70% private land. The southern portion (south of WY Hwy 34) is over 90% private land. Hunters can expect to pay a trespass/trophy or outfitter fee to hunt on private land. There are two state sections that hunters can access that hold sheep throughout the season and have produced adult rams in past hunting seasons. A portion of occupied sheep habitat was within the 2012 Arapahoe fire that burned over 98,000 acres. This affected sheep distribution post-fire, but above average summer/fall precipitation in 2013 and spring precipitation in 2014 resulted in increased vegetation production for pre-winter diets and early spring green up that will benefit parturition areas for pregnant ewes. The fire will have

long-term benefits for wild sheep, but initially there has been a flush of noxious weeds (e.g. cheatgrass, Canada thistle) that land managers will need to address. A majority of wild sheep are harvested within the northern portion of the herd unit. The Laramie Peak Wildlife Habitat Management Unit is essential for sheep habitat and harvest where 200 plus sheep inhabit. In 2007 forty-two sheep were released in this area from the Perma-Paradise Herd in Montana. These sheep have thrived and improved the overall genetics and health of the existing herd.

During the winter of 2015/16 the WGFD tried to gather biological samples for disease surveillance, with a target goal of 15 bighorn sheep across Wyoming through the use of drop nets, free-darting, and aerial captures. The goal of this effort is to obtain information on each herd and its overall health. Some animals will be fitted with GPS radio-collars to increase our understanding of movements and habitat use. The goal for the Laramie Peak Herd Unit was to collect samples from 15 wild sheep between Sybille Canyon and Iron Mountain. The drop net was not set up on Iron Mountain due to high winds and lack of sheep in the area. Grants through the Governor's Big Game License Coalition and the Wyoming Wild Sheep Foundation will be submitted for aerial capture efforts during the 2016/17 winter to obtain the necessary sample size of 15.

Weather

Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were above average at all elevations throughout southeast Wyoming. No significant prolonged periods of extreme heat or cold temperatures were observed, or extreme or prolonged periods of snow loading in lower elevation winter ranges. Timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Weather patterns most likely had a positive influence on all big game species. For specific meteorological information for the Laramie Peak herd unit the reviewer is referred to the following link: <http://www.ncdc.noaa.gov/cag/>.

Habitat

Forage availability continued to improve in 2015 with an increase in amounts of precipitation received and the timeliness of when it was received. Precipitation received in April, May, and early June resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs. While early season growing conditions were optimal, late summer and fall precipitation were lacking.

Cheatgrass prevalence at lower elevations such as Sybille Canyon and areas burned by the Arapaho Fire of 2012 is concerning to habitat managers. While wildfires have reduced conifer canopies in the Laramie Range, deemed to be largely conducive to bighorn sheep movements and migrations, the prevalence of cheatgrass is cause for concern. In Summer 2015, Colorado State University natural resource program scientists worked cooperatively with WGFD and USFS personnel to map cheatgrass infestations via satellite imagery and on-the-ground vegetation sampling efforts. This data showing cheatgrass prevalence will be available for habitat managers to utilize in 2016. Future herbicide applications to control cheatgrass will likely be largely based off of this data. With recent completion of an Environmental Assessment

by the USFS, options have expanded greatly to control cheatgrass, including aerial application of herbicides.

A significant die-off of big sagebrush and antelope bitterbrush did occur in portions of the Laramie Range due to a rapid freeze event that occurred in November 2014. The die-off was widespread, from the Front Range of Colorado to the Eastern Plains of Montana. The severity of the die-off is unknown at this time, and whether or not the shrubs will recover. Affected shrubs did not show any significant signs of re-sprouting in Summer 2015.

The limited number of habitat transects that have been established throughout the Laramie Region have not provided sufficient data to make reliable assumptions of habitat quantity or quality and consequently heavily influence population management for any particular big game species. In Summer 2015, population biologists and habitat managers began working together to modify habitat monitoring techniques utilized statewide and to improve overall consistency among the regions. While this effort is targeted at mule deer initially, it is hoped efforts will expand to other big game species as methodologies are perfected and adopted. Identification of key herd units per big game species, assessing habitats through landscape scale inventory methods versus monitoring a handful of permanent monitoring sites, assessing habitats in all seasonal ranges (summer, transition, winter), and development of correlations to amounts of and timing of precipitation will help improve the overall value of data collected and result in our abilities to more strongly correlate management decisions for populations based off habitat conditions.

Field Data

In 2015 there were eight out of the nine bighorn sheep harvested in with an average of 6 years old for a 88% success rate. The five-year age average is also 6 years old and the five-year running success average is 94%, which met the two alternative objective criteria.

Since 1964 there have been a total of 228 wild sheep released from two herd sources: Whiskey Mountain in Wyoming and Perma-Paradise in Montana (Table 1). These transplants have helped to supplement the herd and improve overall herd health.

Table 1. Transplant release data for the Laramie Peak Bighorn Sheep Herd.

<u>Year</u>	<u>Number</u>	<u>Release Location</u>	<u>Source Herd</u>
1964	40	North Laramie River Canyon	Whiskey Mountain Herd
1965	36	Labonte Canyon	Whiskey Mountain Herd
1966	21	Labonte Canyon	Whiskey Mountain Herd
1973	42	Duck Creek Canyon	Whiskey Mountain Herd
1982	27	Marshall	Whiskey Mountain Herd
1989	20	Marshall	Whiskey Mountain Herd
2007	42	Hay Canyon	Perma-Paradise- MT
Total	228		

Lamb recruitment continues to improve compared to ratios prior to the 2007 release. There were a total of 82 wild sheep classified in 2015 with lamb ratios (40 lambs:100 ewes) slightly below the 5-year average of 50 lambs:100 ewes. Adult ram ratios were 50 rams:100, which was

slightly above the 4-year average of 49 rams:100 ewes (2014 was thrown out due to poor classification data). Yearling ram ratios were similar to the 5-year average. Based on surveys there is a well represented number for each age class. Several 8+ old rams were observed in the Duck Creek sub-herd. Hunters reported seeing 75-100 bighorn sheep within the Duck Creek sub-herd and 30-45 of those were rams.

Harvest Data

Success has reached 100% three out of the past five years. This last year active license hunters harvested 8 out of 9 rams, with a success rate of 88%. There was one carry over license from 2014. Hunters who pre-scout and/or hire an outfitter typically harvest their ram within 3-5 days. This year the average hunter effort was 12.8 days, which is slightly higher than the five-year average of 11.9 days per harvest. Hunters that chose not to use an outfitter spend more time scouting and hunting. There is limited public land within occupied wild sheep habitat. Overcrowding is an issue that results in pushing bighorn sheep onto private land, where there is no access. To maintain high harvest success no more than 8 licenses are issued. In the past when the quota was increased to 12, success decreased drastically. There were issues this year with nine hunters going to the field. The majority chose to hunt the Duck Creek sub-herd, and based on conversations with those hunters there were some crowding issues. However, the majority of hunters communicated with each other to try and avoid any conflicts. The one hunter that did not harvest a ram was a nonresident that was looking for a 180" plus ram. He had several opportunities to harvest a mature ram but opted to try and pursue a ram that would meet those criteria.

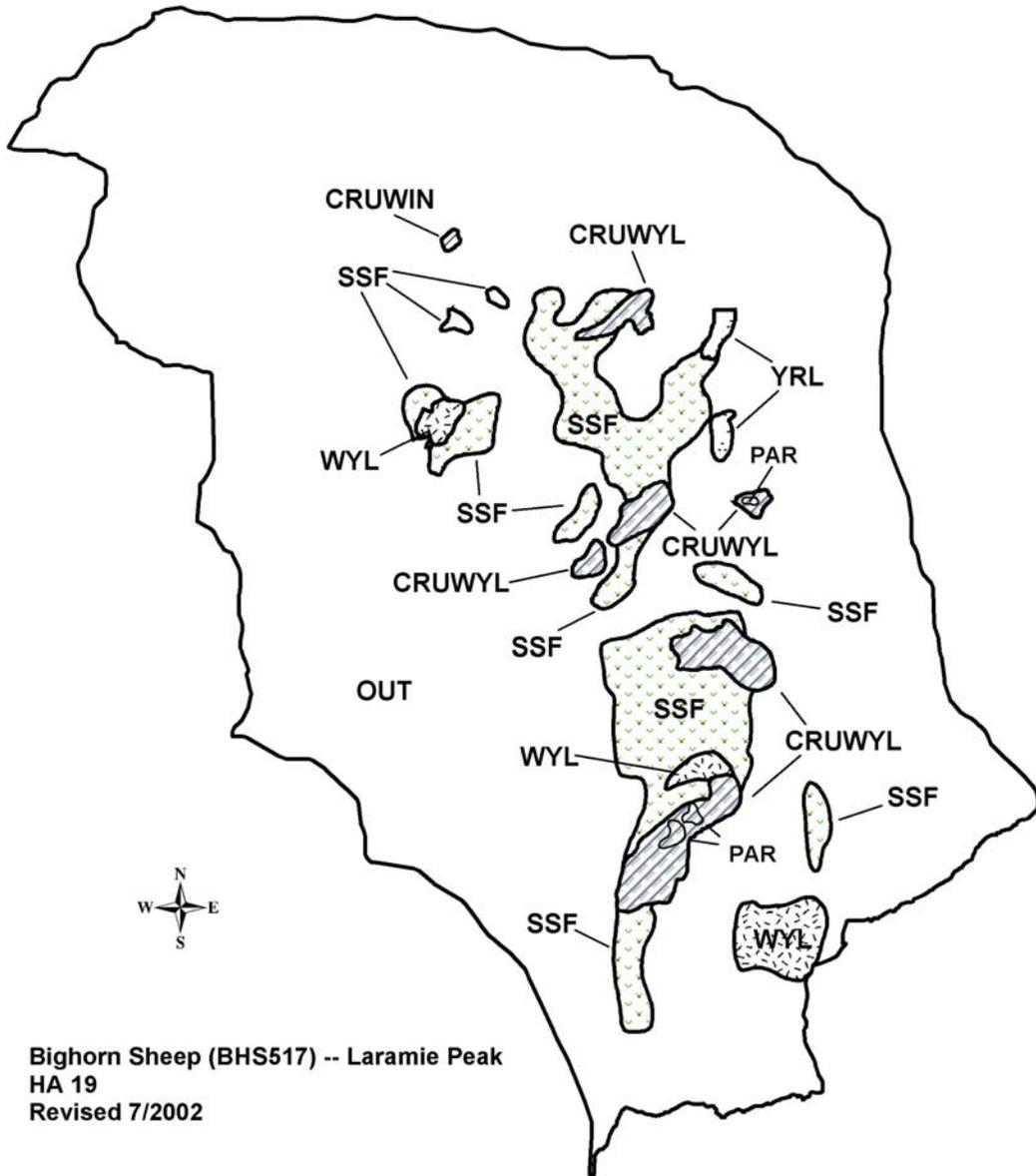
Two rams stood out in the 2015 harvest data. The first was a ram from the 2007 transplant from Montana that was released as a yearling (now 9 years old) and the second was a 10 year old ram that scored 186 points using the Boone and Crocket (B&C) scoring system. Typically the older rams harvested in this herd unit score around 175 B&C points. News about this ram went viral on social media and most likely license demand for 2016 will go up.

The Laramie Peak bighorn sheep season has been September 1-October 31 for the past 25 years. Prior to that, the season ran from September 1- October 14. The increased season length appears to provide adequate opportunity to harvest a ram, given this is typically a once in a lifetime license.

In 2012 there were several fires that burned within bighorn sheep occupied habitat. The Arapahoe, Cow Camp, and Russell's Camp fires burned over 112,000 acres, with the Arapahoe fire being the largest (98,000 acres). Throughout the area there is observed recovery in vegetation. Photo points have been established throughout the fire to document plant succession. Perennial forbs and grasses along with aspen have re-established post-fire.

There is not a reliable working model for this herd unit due to limited population data collected on an annual basis.

For the 2016 season, 8 licenses will be offered for any ram. Given previous harvest statistics hunters should have a high probability of harvesting a mature ram. To improve harvest success hunters will need to put more time into scouting and hunting if they are accessing public lands.



2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS519 - ENCAMPMENT RIVER

HUNT AREAS: 21

PREPARED BY: WILL SCHULTZ

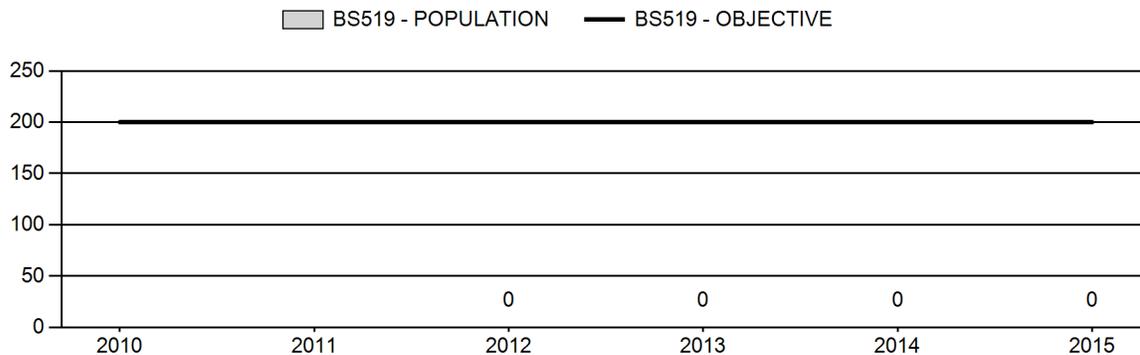
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	0	N/A	N/A
Harvest:	0	0	1
Hunters:	0	0	1
Hunter Success:	0%	0%	100%
Active Licenses:	0	0	1
Active License Success:	0%	0%	100%
Recreation Days:	1	0	2
Days Per Animal:	0	0	2
Males per 100 Females	45	91	
Juveniles per 100 Females	27	45	

Population Objective (\pm 20%) :	200 (160 - 240)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	20
Model Date:	None

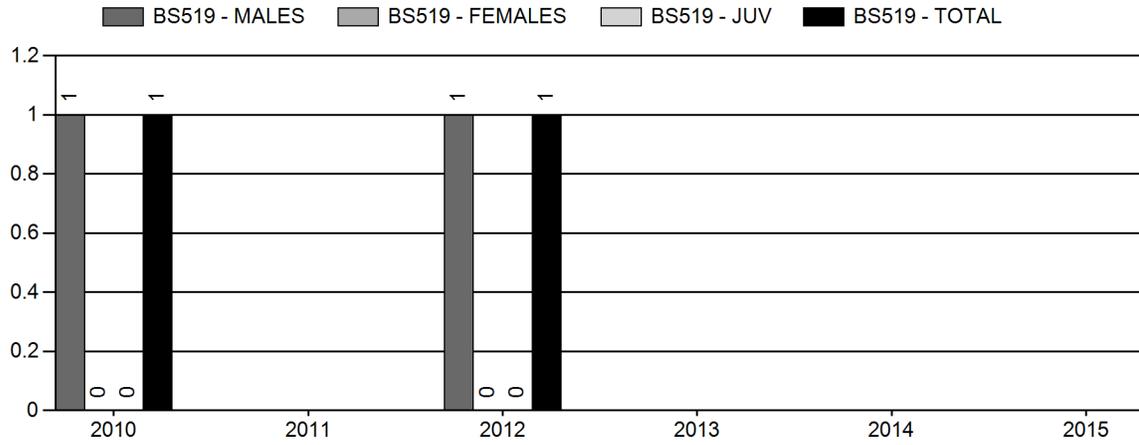
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

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

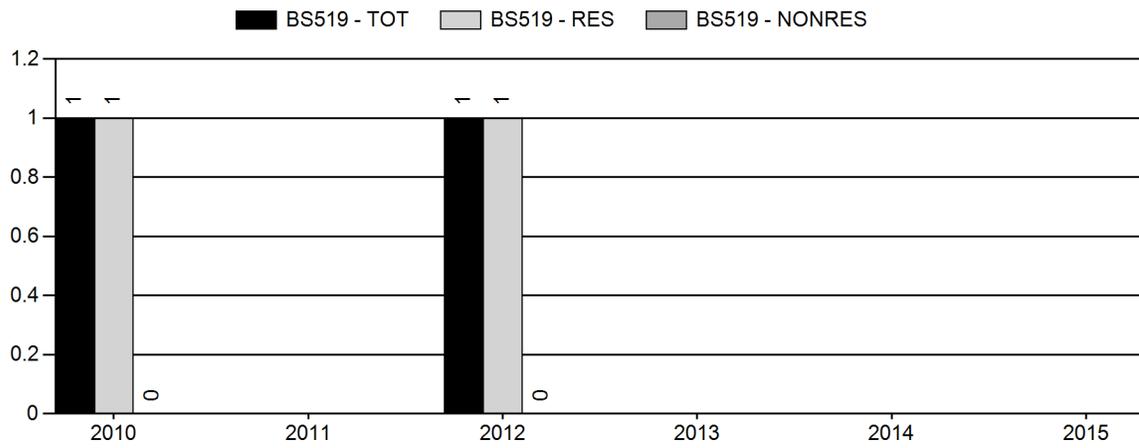
Population Size - Postseason



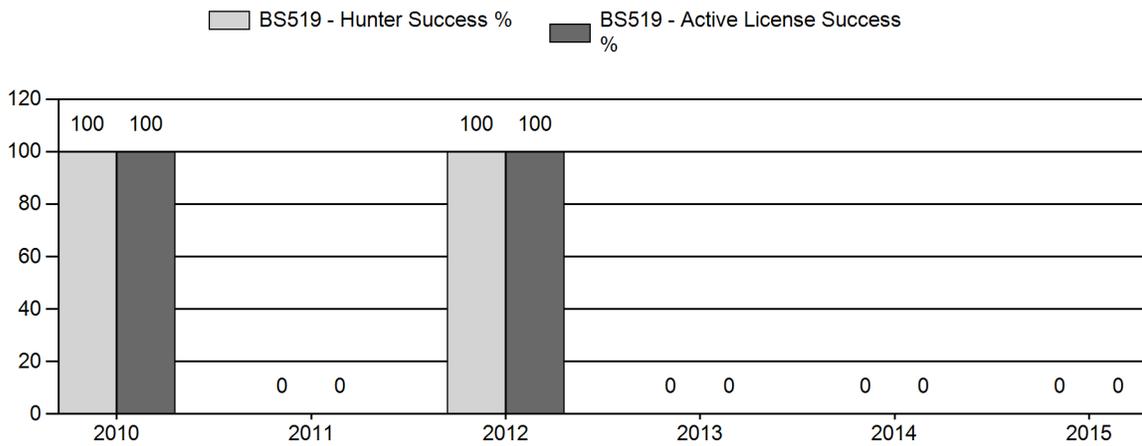
Harvest



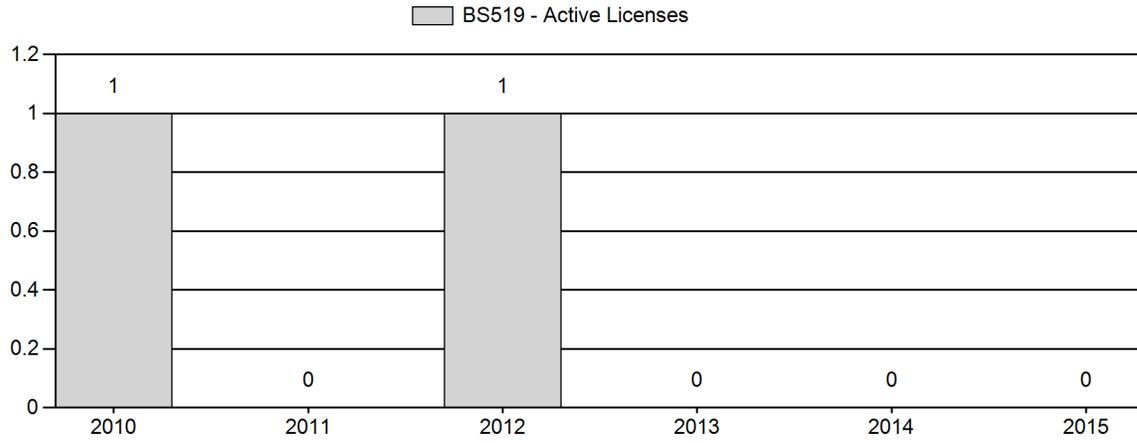
Number of Hunters



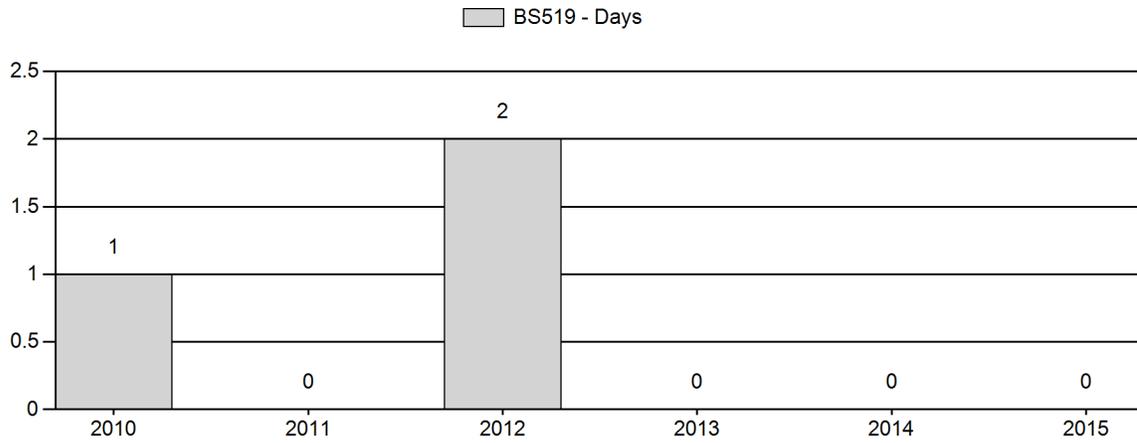
Harvest Success



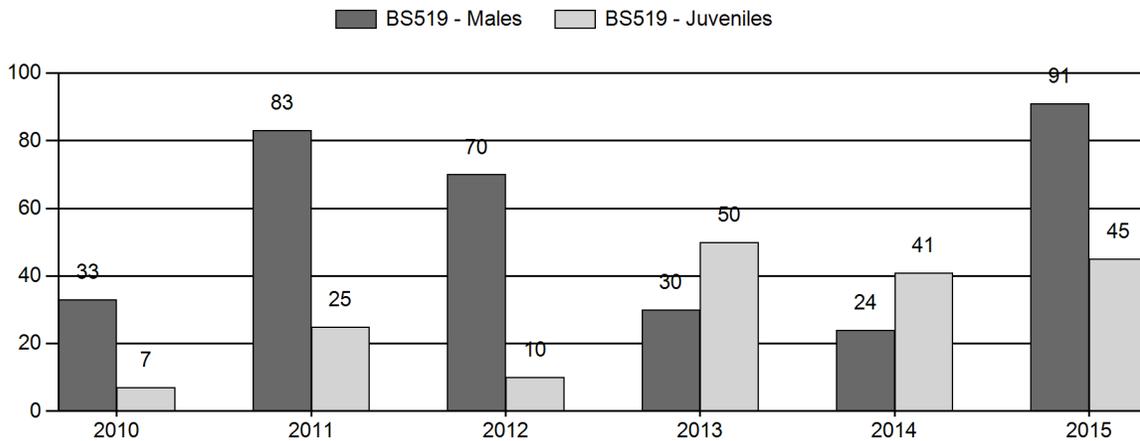
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS519 - ENCAMPMENT RIVER

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	CIs Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylg	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	0	0	5	5	24%	15	71%	1	5%	21	0	0	33	33	± 0	7	± 0	5
2011	0	0	10	10	40%	12	48%	3	12%	25	0	0	83	83	± 0	25	± 0	14
2012	0	0	7	7	39%	10	56%	1	6%	18	0	0	70	70	± 0	10	± 0	6
2013	0	0	3	3	17%	10	56%	5	28%	18	0	0	30	30	± 0	50	± 0	38
2014	0	1	3	4	14%	17	61%	7	25%	28	0	6	18	24	± 0	41	± 0	33
2015	0	2	8	10	38%	11	42%	5	19%	26	47	18	73	91	± 0	45	± 0	24

**2016 HUNTING SEASONS
Encampment River Bighorn Sheep (BS519)**

Season Dates						
Hunt Area	Type	Opens	Closes	Quota	License	Limitations
18,21	1	Sep. 1	Oct. 31	2	Limited quota	Any ram (1 resident, 1 nonresident)
	Archery	Aug. 15	Aug. 31			Refer to license type and limitations in Section 4 of Chapter 9

Hunt Area	License Type	Quota change from 2015
18, 21	1	+2
Herd Unit Total	1	+2

Management Evaluation

Current Postseason Population Management Objective: 200 (160-240)

Management Strategy: Special

2015 Postseason Population Estimate: NA

2016 Proposed Postseason Population Estimate: NA

Bighorn sheep in the Encampment River herd unit are managed toward a postseason population objective of 200. A population model has not been constructed for the herd unit. The herd is managed under the bighorn sheep special management strategy. The objective was last reviewed in 1987. We plan to review the management objective in 2016.

Herd Unit Issues

Bighorn sheep numbers in this herd unit appeared to peak in the late 1970s, not long after reintroduction efforts. Bighorn sheep numbers have been in decline since the early 1980s. The lack of a rebound in numbers has been attributed to decadent habitat. Domestic sheep in grazing on the west slope of the Sierra Madres also poses a disease concern for managers. The population is now at such a low number it is assumed natural recovery is not possible. Limited harvest opportunities have been offered in past years, in combination with the Douglas Creek bighorn sheep herd unit.

In 2013, the State of Wyoming, and thus the Wyoming Game and Fish Department, intervened on behalf of the U.S. Forest Service, in the U.S. District Court case, BIODIVERSITY CONSERVATION ALLIANCE vs. BUTCH BLAZER, et al. This case continues to await a ruling, and may affect future management of bighorn sheep in this herd unit.

Weather

Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were average, to slightly above average at all elevations throughout the herd unit. No significant prolonged periods of extreme heat or cold temperatures were observed or. The timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. Weather patterns most likely had a positive influence on bighorn sheep. Mild fall temperatures and lack of persistent snow allowed bighorn sheep to stay longer in spring, summer, and fall ranges providing additional relief for winter ranges that have historically been over utilized. Snow accumulation began mid December and persisted in lower elevation winter ranges through February. For specific meteorological information for the Encampment River herd unit the reviewer is referred to: <http://www.ncdc.noaa.gov/cag/>

Habitat

Positive trends in habitat conditions were observed in bio-year 2015 due to timely and adequate amounts of precipitation received in this herd unit. The limited number of habitat transects that have been established within this herd unit do not provide sufficient data to make reliable inferences about habitat quantity or quality. The vast majority of shrub habitats in this herd unit are in need of treatments which would result in improved nutritive content and increased production for shrubs.

Field Data

Adequate classification data for this herd has been difficult to collect. 2015 postseason classification observations were obtained while conducting a mule deer sightability survey from a helicopter in February of 2016. The classification results were 8 adult rams, 2 yearling ram, 11 ewes, and 5 lambs. Past postseason classification efforts generally have located a greater number of ewes and lambs than what was observed in 2015. We received several reports of a group of 25+ ewes and lambs in the Miner Creek area during the summer of 2015 but we were unable to locate this number of ewes and lambs for classification in December.

Population

A population model has not been constructed for this herd unit due to limited classification and no annual survival information. Based on the trend of classification data and casual observations, a reasonable estimate of 30-50 bighorn sheep should be considered for this herd unit. A review of the management objective, currently at 200 bighorn sheep postseason, will be evaluated in 2016.

Harvest Data

In 2015 the hunting season was closed in this herd unit.

Management Summary

The hunting season will be reopened in 2016. We will offer two Type 1 licenses, 1 resident and 1 nonresident, valid for any ram. This hunting opportunity will be valid in both Hunt Area 18 (Douglas Creek herd unit) and Hunt Area 21.

Bibliography of Herd Specific Studies

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HA 21
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