

## 2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS201 - CLARKS FORK

HUNT AREAS: 1

PREPARED BY: DOUG  
MCWHIRTER

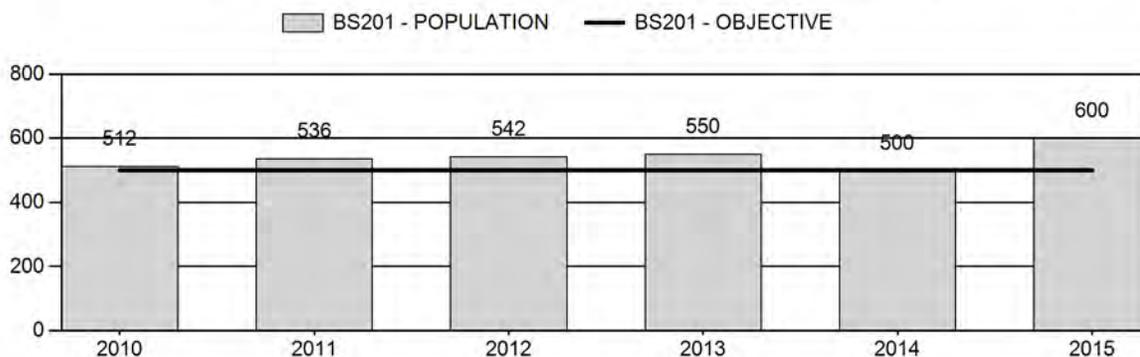
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	528	600	600
Harvest:	15	18	18
Hunters:	21	19	20
Hunter Success:	71%	95%	90%
Active Licenses:	21	19	20
Active License Success:	71%	95%	90%
Recreation Days:	190	229	225
Days Per Animal:	12.7	12.7	12.5
Males per 100 Females	27	43	
Juveniles per 100 Females	33	21	

Population Objective (± 20%) :	500 (400 - 600)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	20%
Number of years population has been + or - objective in recent trend:	11
Model Date:	2/11/2016

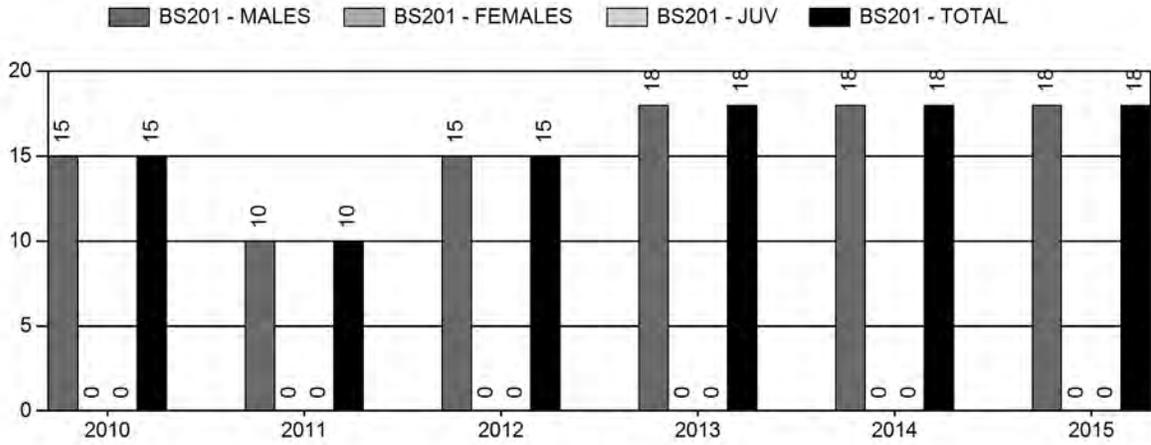
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	14.3%	12.3%
Juveniles (< 1 year old):	0%	0%
Total:	2.9%	2.8%
Proposed change in post-season population:	+4.0%	+3.5%

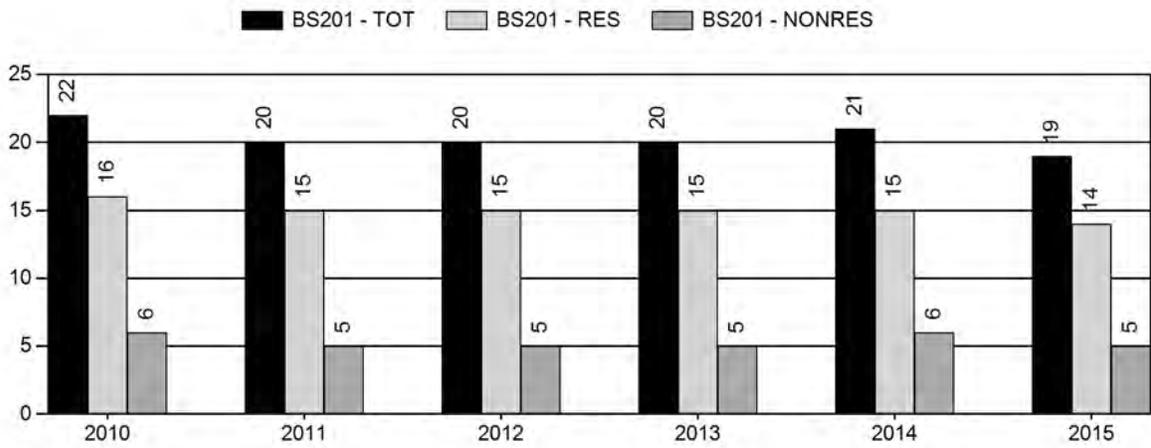
## Population Size - Postseason



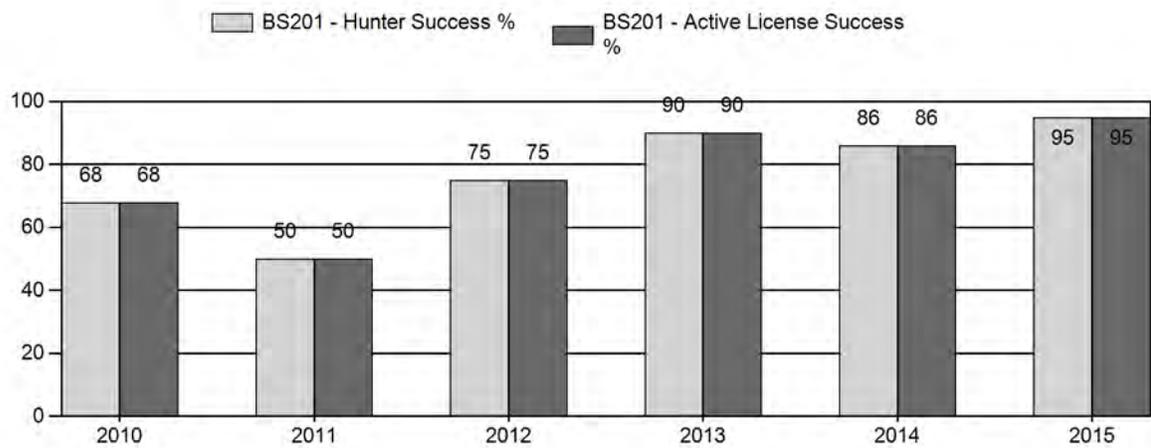
# Harvest



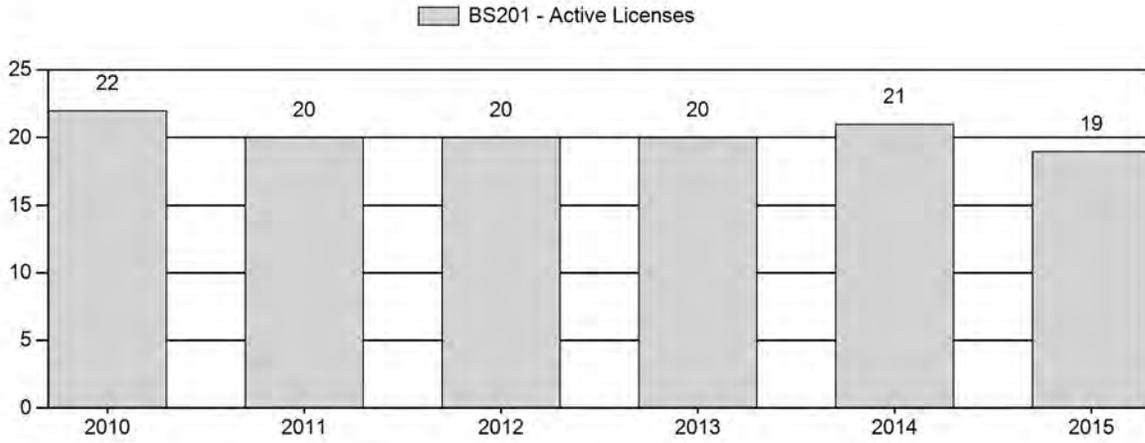
# Number of Hunters



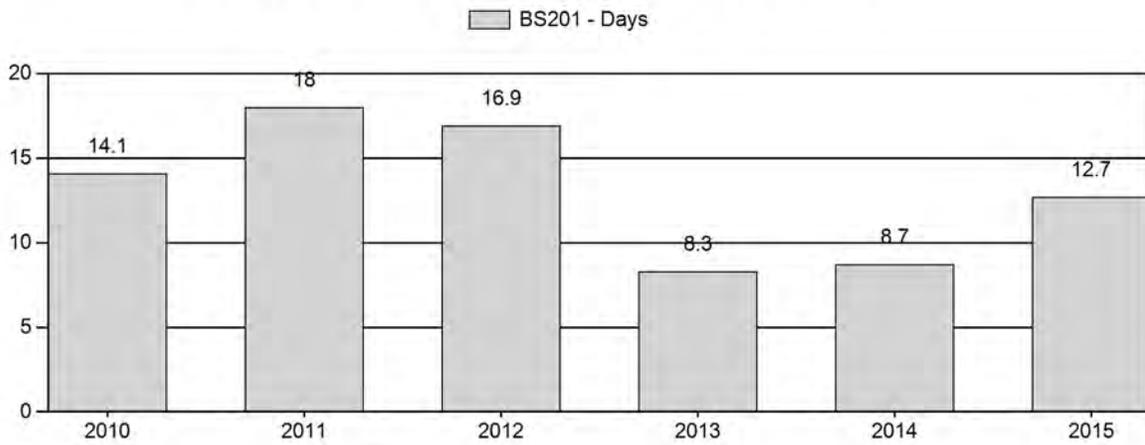
# Harvest Success



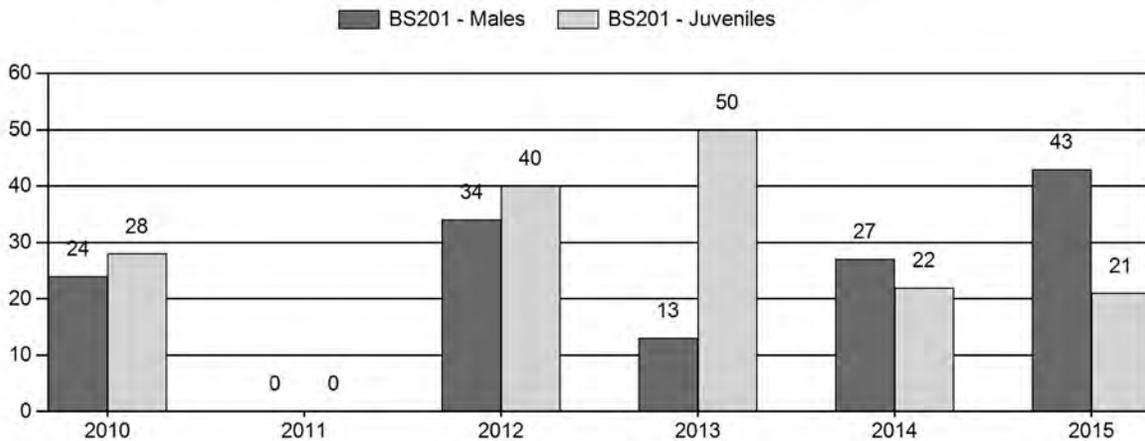
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



### 2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS201 - CLARKS FORK

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	512	0	7	7	16%	29	66%	8	18%	44	274	0	24	24	± 12	28	± 14	22
2011	536	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2012	542	0	26	26	19%	77	57%	31	23%	134	274	0	34	34	± 9	40	± 10	30
2013	550	0	4	4	8%	30	61%	15	31%	49	289	0	13	13	± 9	50	± 19	44
2014	500	0	25	25	18%	91	67%	20	15%	136	274	0	27	27	± 7	22	± 6	17
2015	600	4	16	20	26%	47	61%	10	13%	77	302	9	34	43	± 14	21	± 9	15

**2016 HUNTING SEASONS  
CLARKS FORK BIGHORN SHEEP HERD (BS201)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
1	1	Sep. 1	Oct. 31	20	Limited quota	Any ram

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
1	1	Aug. 15	Aug. 31	Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2015
		No Changes
<b>Total</b>		<b>No Changes</b>

**Management Evaluation**

**Current Postseason Population Management Objective: 500**

**2015 Postseason Population Estimate: 600**

**2016 Proposed Postseason Population Estimate: 600**

**Herd Unit Issues**

Most sheep in this herd unit are found in the Absaroka Mountains, although a small number (currently less than 50) occupy the Beartooth Mountains year-round. Some Absaroka Mountains sheep from the northern portion of the sub-herd migrate into Montana, where they are subjected to hunting seasons there (currently an unlimited season with a harvest quota of 2). These sheep often end up wintering in the Wyoming portion of the Beartooth Mountains. In addition, perhaps 10%-15% of the sheep in this sub-herd reside (some seasonally, some year-round) in Yellowstone National Park (YNP). Both of these factors (Montana harvest and sheep unavailable for harvest in YNP) must be taken into account when managing this herd.

Periodic fixed-wing trend counts (and more recently helicopter classification/trend surveys) during summer have been used to assess population performance. Summer surveys are done because many sheep migrate into Montana to winter, and surveys were designed to more closely monitor sheep while on Wyoming summer ranges. Classifications collected mid-summer are useful in tracking ram:ewe ratios, but allow little understanding of lamb survival as they are conducted so early in the year.

**Weather**

Snow depths and snow water equivalents at high elevation monitoring sites during the 2015-2016 winter were not excessive, with most sites 75%-90% of normal. Temperatures were also near normal, with cooler temperatures in early winter, followed by a very warm periods in February and March. Both annual precipitation and growing season precipitation at higher elevations were slightly below normal.

**Habitat**

No habitat monitoring data is collected in this sub-herd.

**Field Data**

Preseason classification samples from recent surveys, however, reflect good lamb:ewe (51:100 – 65:100) and ram:ewe (42:100 – 56:100) ratios in most years surveyed (6 surveys over the last 10 years). Poor lamb:ewe ratios as seen in 2009 (32:100) do occasionally occur and can affect ram recruitment. Recent trend counts (401 sheep in 2006, 409 in 2009, 390 in 2011) also provide support that this herd is probably near the objective of 500 sheep.

**Harvest Data**

In 2015, 19 hunters took 18 rams for a success rate of 95.0%, which is among the better years seen since permits were increased to 20 in 2007. The average age of rams killed in 2015 was 8.0 years old, with 61.1% of the rams killed being 8 years old and older. One ram less than  $\frac{3}{4}$  curl was killed in 2015.

**Population**

The “Time Specific Juvenile – Constant Adult Mortality Rate” (TSJCA) spreadsheet model was chosen to use for the post season population estimate of this herd. Although this model did not have the lowest relative AIC, the population estimate appears to be the most reasonable. The earlier trend projected by the model (early 1990s – early 2000s) is not felt to be entirely accurate, but estimates in the recent past appear reasonable. The postseason 2015 population is estimated to be approximately 600 sheep. Efforts will continue to improve this model and improve reliability.

All indicators show good population performance, and an acceptable presence of mature rams. Therefore license numbers will remain at 20 for the 2015 season. This should result in a postseason 2015 population of approximately 600 sheep.

Harvest parameters for the Clarks Fork Bighorn Sheep Herd Unit, 1968-2015 (Wyoming portion only).

	1968-72	1973-91	1992-97	1998-2002	2003-2006*	2007-2014*	2015*
Permits	20	24	20	16	16	20	20
Harvest	7.4	11.9	10.7	10.6	14.3	14.0	19
% Success	49.0%	53.5%	52.9%	67.7%	90.3%	70.0%	95.0%
Effort (days/ram)	6.8	16.7	17.7	16.7	10.3	17.0	12.7
Avg. Age	-	6.6	6.9	7.0	6.4	7.1	8.0
% Rams > 8 Yrs	-	31.7%	26.7%	32.0%	21.1%	37.8%	61.1%
% Rams < ¾ Curl	-	-	-	-	15.9%	6.3%	5.6%

\* “any ram” regulation in place



## 2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep  
 HERD: BS202 - TROUT PEAK  
 HUNT AREAS: 2

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

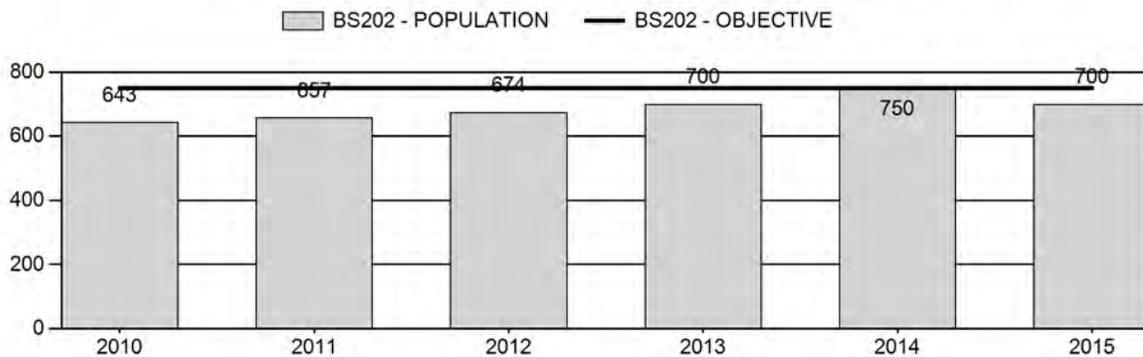
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	685	700	700
Harvest:	20	17	20
Hunters:	25	23	24
Hunter Success:	80%	74%	83%
Active Licenses:	25	23	24
Active License Success:	80%	74%	83%
Recreation Days:	211	178	200
Days Per Animal:	10.6	10.5	10
Males per 100 Females	38	24	
Juveniles per 100 Females	27	25	

Population Objective (± 20%) : 750 (600 - 900)  
 Management Strategy: Special  
 Percent population is above (+) or below (-) objective: -6.7%  
 Number of years population has been + or - objective in recent trend: 7  
 Model Date: 2/16/2016

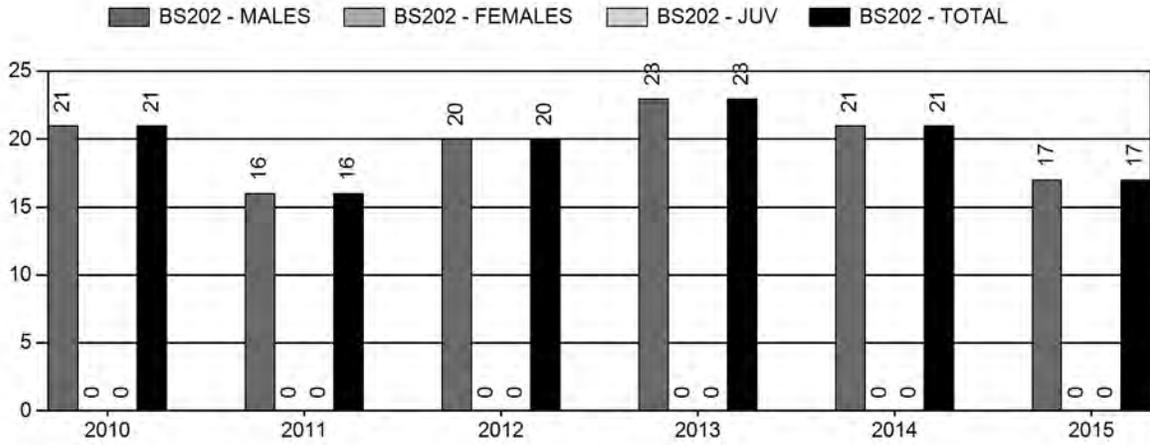
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	10.6%	11.8%
Juveniles (< 1 year old):	0%	0%
Total:	2.4%	2.7%
Proposed change in post-season population:	+2.7%	+2.8%

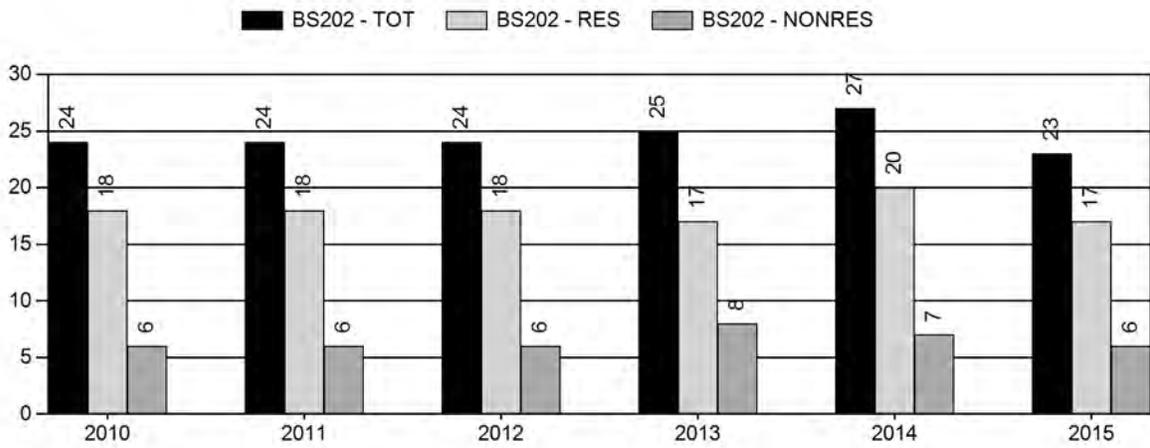
### Population Size - Postseason



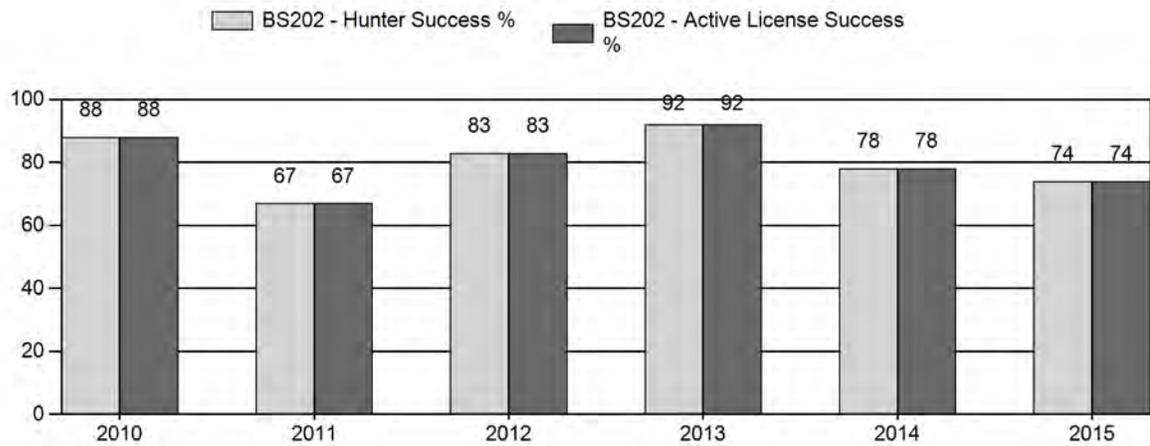
# Harvest



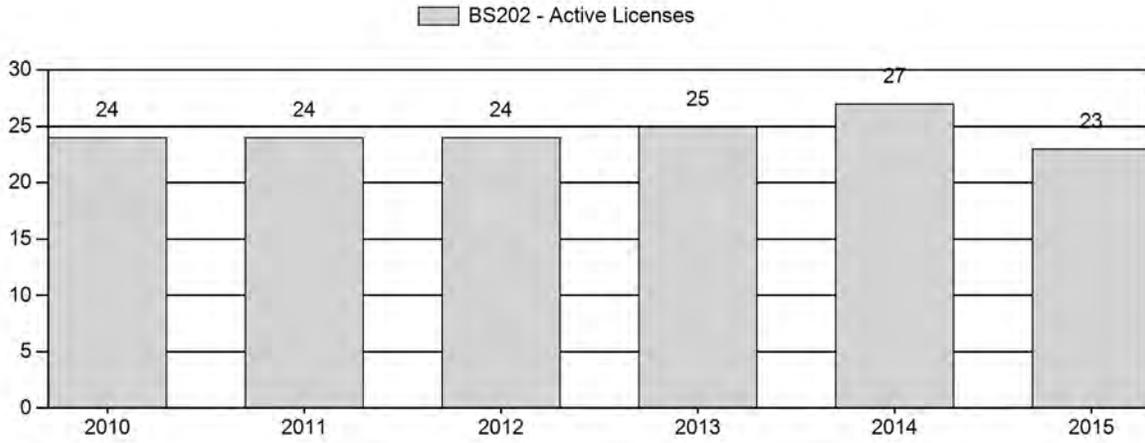
# Number of Hunters



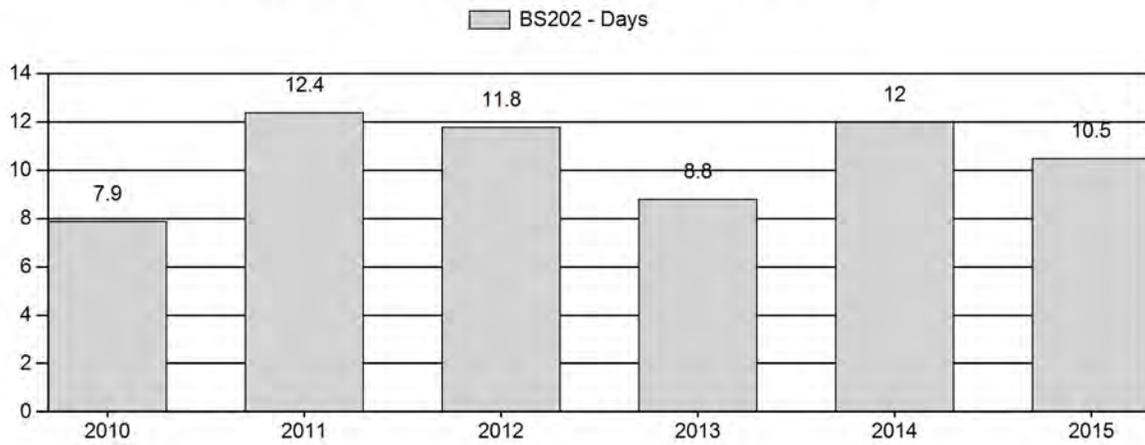
# Harvest Success



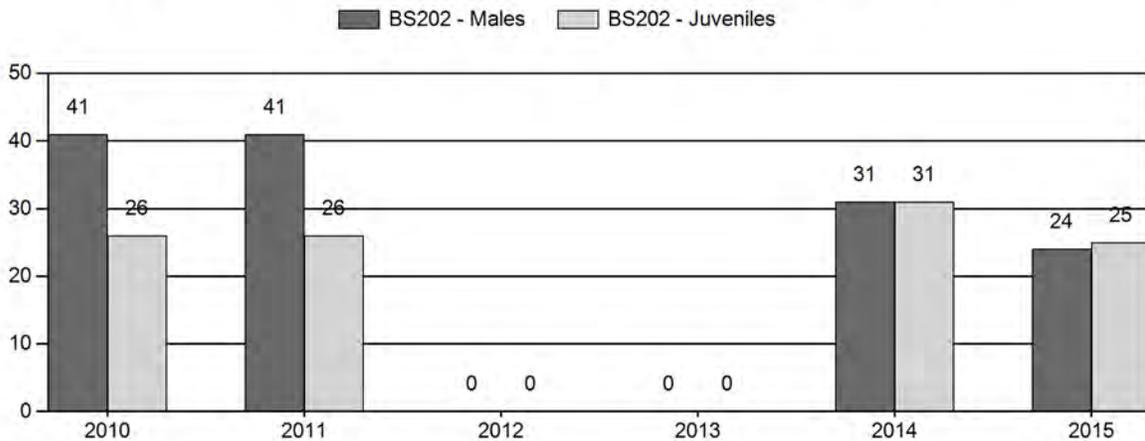
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS202 - TROUT 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	643	0	111	111	24%	273	60%	71	16%	455	0	0	41	41	± 3	26	± 2	18
2011	657	1	110	111	24%	273	60%	71	16%	455	338	0	40	41	± 3	26	± 2	18
2012	674	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2013	700	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2014	750	3	63	66	19%	216	62%	66	19%	348	325	1	29	31	± 4	31	± 4	23
2015	700	0	23	23	16%	96	67%	24	17%	143	325	0	24	24	± 6	25	± 7	20

**2016 HUNTING SEASONS  
TROUT PEAK BIGHORN SHEEP HERD (BS202)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
2	1	Sep. 1	Oct. 31	24	Limited quota	Any ram (18 residents, 6 nonresidents)

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
2	1	Aug.15	Aug. 31	Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2015
2		No Changes
<b>Total</b>		<b>No Changes</b>

**Management Evaluation**

**Current Postseason Population Management Objective: 750**

**2015 Postseason Population Estimate: 675**

**2016 Proposed Postseason Population Estimate: 700**

**Herd Unit Issues**

The Trout Peak Herd Unit possesses some of the most difficult terrain in Wyoming, which is partially responsible for the wide variation in hunter statistics for which this herd is famous. A small percentage of sheep (presumably less than 10%) reside within Yellowstone National Park. Sheep can be found on low elevation winter ranges along the North Fork of the Shoshone River, but also occupy high elevation ranges throughout the hunt area.

**Weather**

Snow depths and snow water equivalents at high elevation monitoring sites during the 2015-2016 winter were not excessive, with most sites 75%-90% of normal. Temperatures were also near normal, with cooler temperatures in early winter, followed by very warm periods in February and March. Both annual precipitation and growing season precipitation at higher elevations were slightly below normal.

**Habitat**

No habitat monitoring data is collected in this herd unit.

### Field Data

Seven surveys have been conducted over the last 10 years, resulting in samples ranging from 117 to 480 classified sheep. Lamb:ewe ratios have ranged from 15:100 to 31:100 over this time, while ram:ewe ratios have varied from 30:100 to 67:100. The most recent survey in 2011 resulted in 465 sheep observed, representing one of the higher sample sizes obtained, even though the western portion of the hunt area was not surveyed. The lamb:ewe ratio for this sample was 26:100, which is slightly below the recent average. The ram:ewe ratio was 41:100 which is about average.

### Harvest Data

In 2015, 23 hunters took 17 rams for a success rate of 74%, which is essentially average for this herd unit since it has been managed with approximately 24 licenses. The average age of rams killed in 2015 was 7.3 years old, with 29.4% of the rams killed being 8 years old and older. One ram less than  $\frac{3}{4}$  curl was killed in 2015. All of these indicators, plus good lamb:ewe and ram:ewe ratios from recent surveys, indicate good population performance, and an acceptable presence of mature rams.

### Population

The “Time Specific Juvenile – Constant Adult Mortality Rate” (TSJCA) spreadsheet model was chosen to use for the post season population estimate of this herd. Although this model did not have the lowest relative AIC, the population estimate and trend appears to be very reasonable. The postseason 2015 population is estimated to be 700 sheep. Efforts will continue to improve this model and improve reliability.

Since adopting the any ram regulation in 2004, this herd unit has exhibited some of the variation in harvest parameters for which it has always been famous. When averaged over the last 8 years, however, harvest parameters are within desirable ranges. Therefore permit levels will remain at 24 licenses for the 2016 season. The predicted postseason 2016 population is estimated to be approximately 700 sheep.

Harvest parameters for the Trout Peak Bighorn Sheep Herd, 1978-2015.

	1978-96	1997-2002	2003	2004-2014*	2015*
Permits	32	24	28	24 <sup>+</sup>	24
Harvest	18.8	15.2	16	19.1	17
% Success	61.0%	63.8%	61.5%	78.7%	74%
Effort (days/ram)	18.2	16.0	25.1	12.6	10.5
Avg. Age	5.9	6.7	6.6	7.1	7.3
% Rams > 8 Yrs	19.5%	25.6%	18.8%	33.1%	29.4%
% Rams < $\frac{3}{4}$ Curl	-	-	-	4.0%	5.9%

\*any ram regulation in place

+ 25 permits were issued in 2006, 2007, and 15 and 28 permits were issued in 2008 and 2009, respectively due to the Gunbarrel Fire

## 2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS203 - WAPITI RIDGE

HUNT AREAS: 3

PREPARED BY: DOUG  
MCWHIRTER

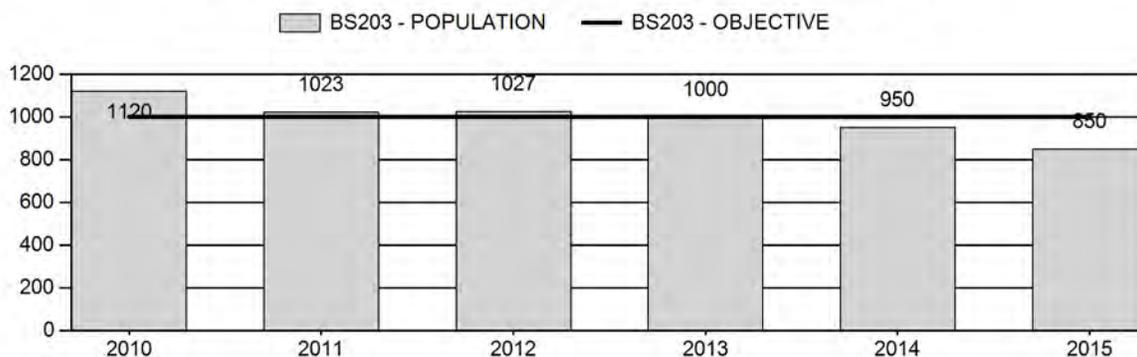
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	1,024	850	850
Harvest:	36	30	32
Hunters:	43	40	40
Hunter Success:	84%	75%	80%
Active Licenses:	43	40	40
Active License Success:	84%	75%	80%
Recreation Days:	348	402	400
Days Per Animal:	9.7	13.4	12.5
Males per 100 Females	29	27	
Juveniles per 100 Females	21	31	

Population Objective (± 20%) :	1000 (800 - 1200)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-15%
Number of years population has been + or - objective in recent trend:	8
Model Date:	2/16/2016

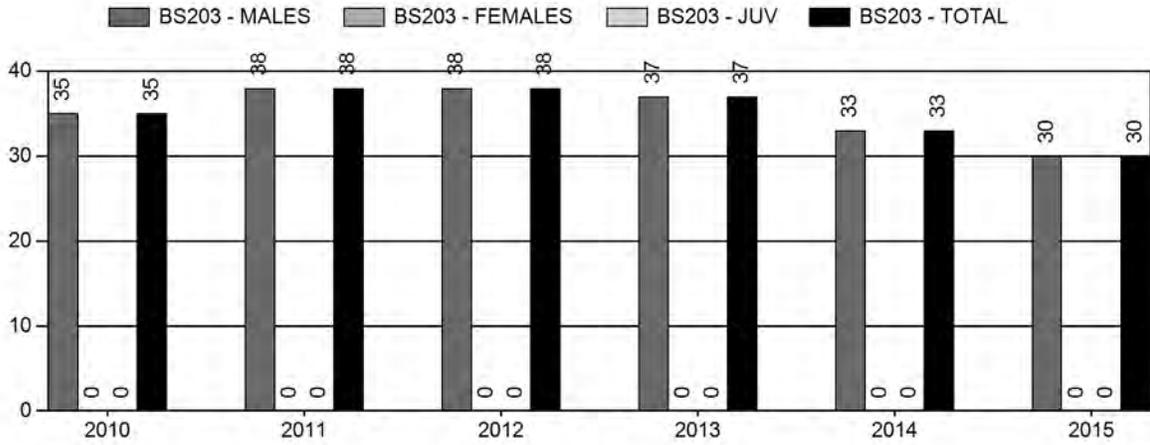
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	17.7%	18.6%
Juveniles (< 1 year old):	0%	0%
Total:	3.3%	3.6%
Proposed change in post-season population:	-0.3%	-0.8%

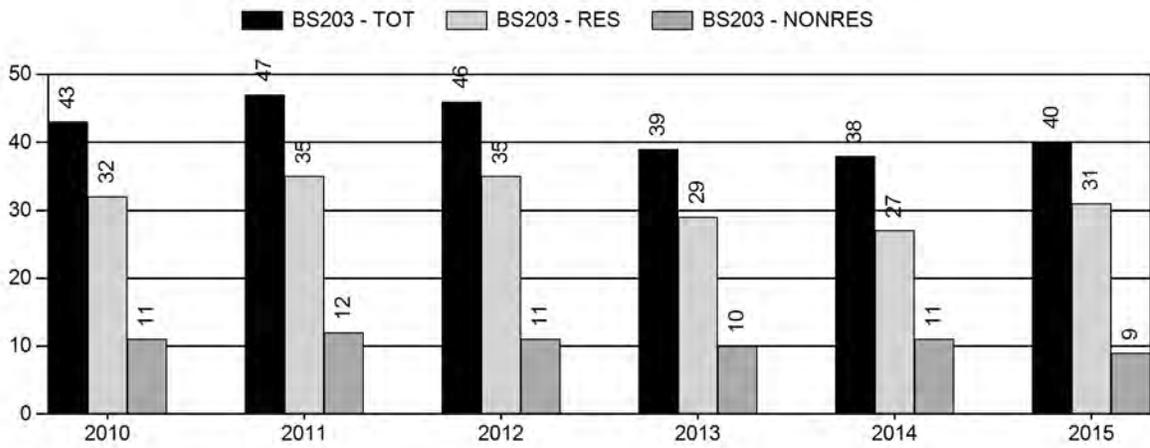
## Population Size - Postseason



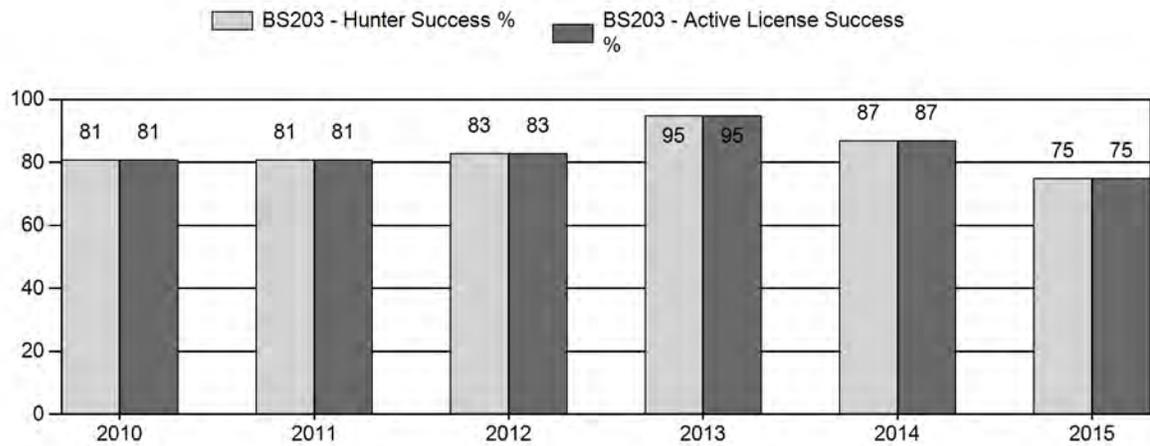
# Harvest



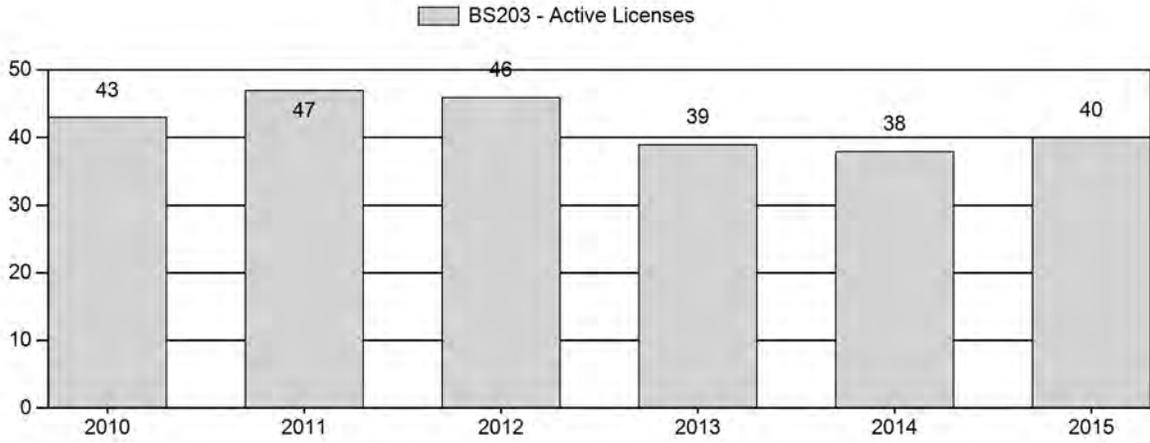
# Number of Hunters



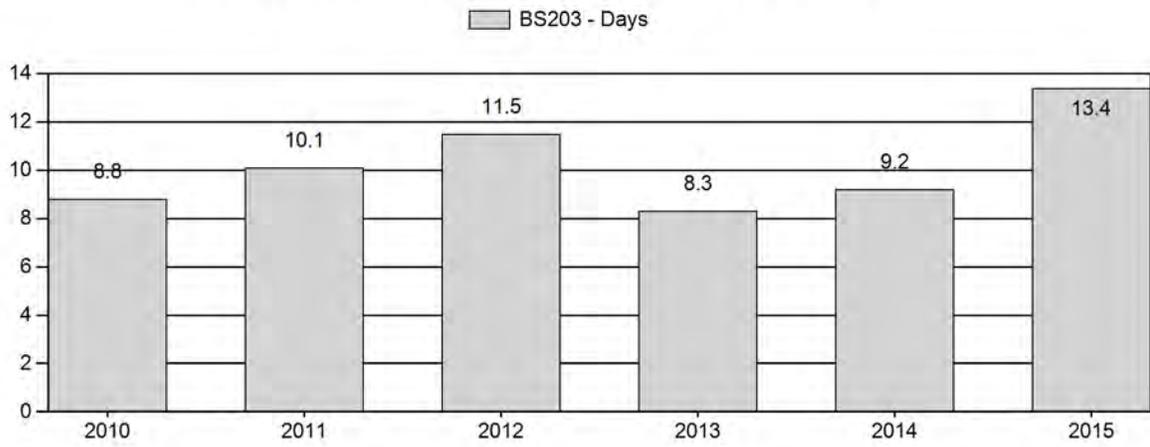
# Harvest Success



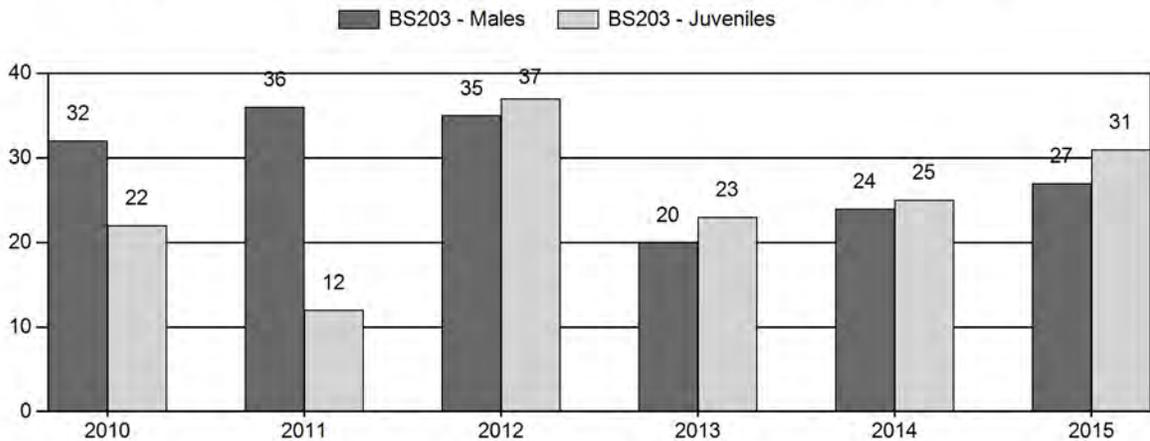
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS203 - WAPITI RIDGE

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	1,120	8	33	41	21%	130	65%	28	14%	199	392	6	25	32	± 7	22	± 5	16
2011	1,023	12	148	160	24%	446	67%	55	8%	661	415	3	33	36	± 3	12	± 1	9
2012	1,027	7	32	39	20%	111	58%	41	21%	191	392	6	29	35	± 8	37	± 8	27
2013	1,000	9	41	50	14%	246	70%	56	16%	352	378	4	17	20	± 3	23	± 3	19
2014	950	6	109	115	16%	487	67%	124	17%	726	363	1	22	24	± 2	25	± 2	21
2015	850	17	74	91	17%	339	63%	106	20%	536	363	5	22	27	± 2	31	± 3	25

**2016 HUNTING SEASONS  
WAPITI RIDGE BIGHORN SHEEP HERD (BS203)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
3	1	Sep.1	Oct 31	40	Limited quota	Any ram

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
3	1	Aug. 15	Aug. 31	Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2015
3	1	No Changes
<b>Total</b>	<b>1</b>	<b>No Changes</b>

**Management Evaluation**

**Current Postseason Population Management Objective:** 1,000

**2015 Postseason Population Estimate:** 850

**2016 Proposed Postseason Population Estimate:** 850

**Herd Unit Issues**

The Wapiti Ridge Herd Unit consists of sheep that occupy low elevation winter ranges along the North and South Forks of the Shoshone River, but also occupy high elevation ranges throughout the hunt area. A small percentage of sheep (presumably less than 10%) reside within Yellowstone National Park.

**Weather**

Snow depths and snow water equivalents at high elevation monitoring sites during the 2015-2016 winter were not excessive, with most sites 75%-90% of normal. Temperatures were also near normal, with cooler temperatures in early winter, followed by a very warm periods in February and March. Both annual precipitation and growing season precipitation at higher elevations were slightly below normal.

**Habitat**

No habitat monitoring data is collected in this herd unit.

**Field Data**

Eight surveys have been conducted over the last 10 years, resulting in samples ranging from 315 to 914 classified sheep. Lamb:ewe ratios have ranged from 12:100 to 37:100 over this time, while ram:ewe ratios have varied from 32:100 to 46:100. The most recent survey in 2011

resulted in 661 sheep observed, a lamb:ewe ratio of 12:100 (which is well below the recent average), and a ram:ewe ratio of 36:100, which is about average for this herd unit.

**Harvest Data**

In 2015, 40 hunters took 30 rams for a success rate of 75%, which is slightly below average for this sub-herd. The average age of rams killed in 2013 was 7.3 years old, with 43.3% of the rams killed being 8 years old and older. Four rams less than ¾ curl were killed in 2015. Hunter effort was 13.4 days per ram harvested in 2015, which is above average for this sub-herd.

**Population**

The “Time Specific Juvenile – Constant Adult Mortality Rate” (TSJCA) spreadsheet model was chosen to use for the post season population estimate of this herd. Although this model did not have the lowest relative AIC, the population estimate appears to be reasonable. The rather steep decline produced by the model however, is not believed to entirely realistic. The postseason 2015 population is estimated to be 850 sheep. Efforts will continue to improve this model and improve reliability.

With the extremely poor lamb production experienced recently, it is likely that the availability of rams will decline in this herd unit in coming years as lambs from these cohorts enter mature ram age classes. Impacts from the 2010-2011 winter had localized impacts on this population as well. Further permit reductions may be necessary in the near future to preserve or improve ram hunting opportunities. Harvest statistics should be monitored closely to determine if such a situation is developing. License numbers were reduced to 40 for the 2013 season, and remained so for the 2014 and 2015 seasons. The postseason 2016 population is estimated to be approximately 850 sheep.

Harvest parameters for the Wapiti Ridge Bighorn Sheep Herd Unit, 1978-2015.

	1978-83	1984-85	1986-92	1993-99	2000-04*	2005-12*	2013-2014*	2015*
Permits	32	36	40	44	48	44+	40	40
Harvest	22.5	29.5	36.1	36.9	38.0	36.5	35.0	30
% Success	69.3%	81.2%	83.0%	79.0%	77.6%	81.4%	90.9%	75.0%
Effort (days/ram)	11.3	9.3	8.6	9.0	9.8	10.3	8.75	13.4
Avg. Age	5.9	7.1	6.9	7.1	6.8	6.7	7.5	7.3
% Rams > 8 Yrs	12.8%	49.2%	41.5%	35.1%	31.0%	29.3%	50.3%	43.3%
% Rams < ¾ Curl	-	-	-	-	8.4%	8.6%	7.1%	13.3%

\* “any ram” regulation in place

+ 46 licenses were issued in 2012 to achieve a 75:25 statewide split between residents and nonresidents

## 2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS204 - YOUNTS PEAK

HUNT AREAS: 4

PREPARED BY: DOUG  
MCWHIRTER

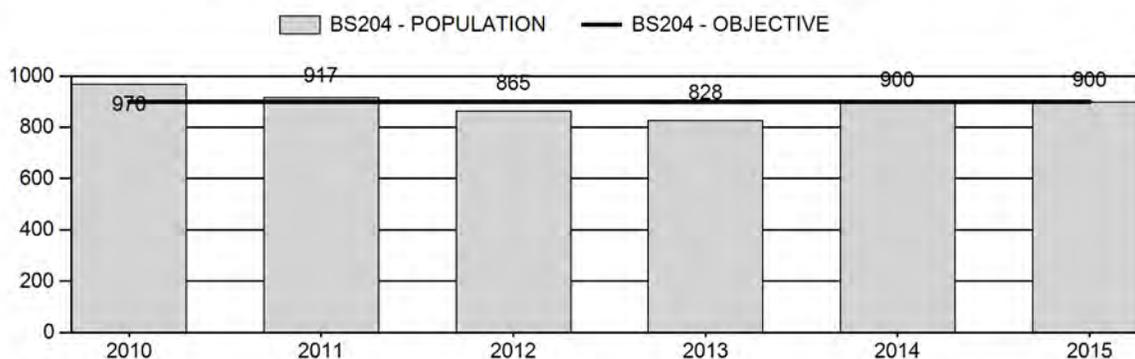
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	896	900	900
Harvest:	21	16	15
Hunters:	30	21	20
Hunter Success:	70%	76%	75%
Active Licenses:	30	21	20
Active License Success:	70%	76%	75%
Recreation Days:	229	143	150
Days Per Animal:	10.9	8.9	10
Males per 100 Females	41	39	
Juveniles per 100 Females	24	27	

Population Objective ( $\pm 20\%$ ) :	900 (720 - 1080)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	0%
Number of years population has been + or - objective in recent trend:	6
Model Date:	2/16/2016

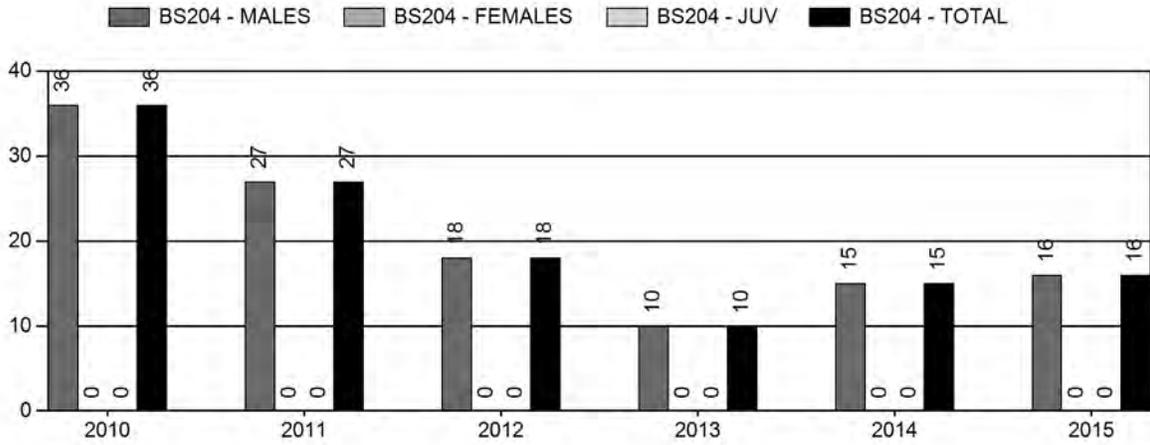
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	0%	0%
Males $\geq 1$ year old:	7.0%	6.5%
Juveniles (< 1 year old):	0%	0%
Total:	1.8%	1.7%
Proposed change in post-season population:	-3.0%	-0.1%

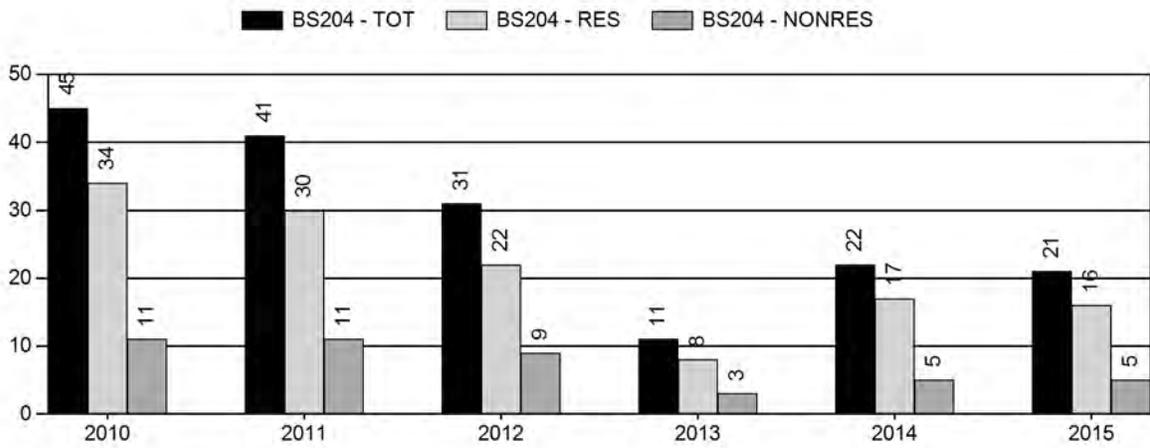
## Population Size - Postseason



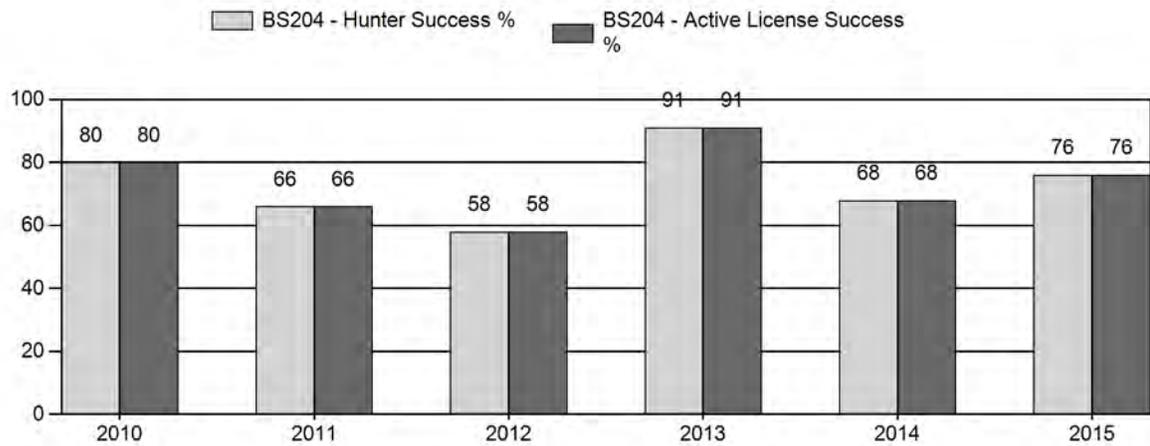
# Harvest



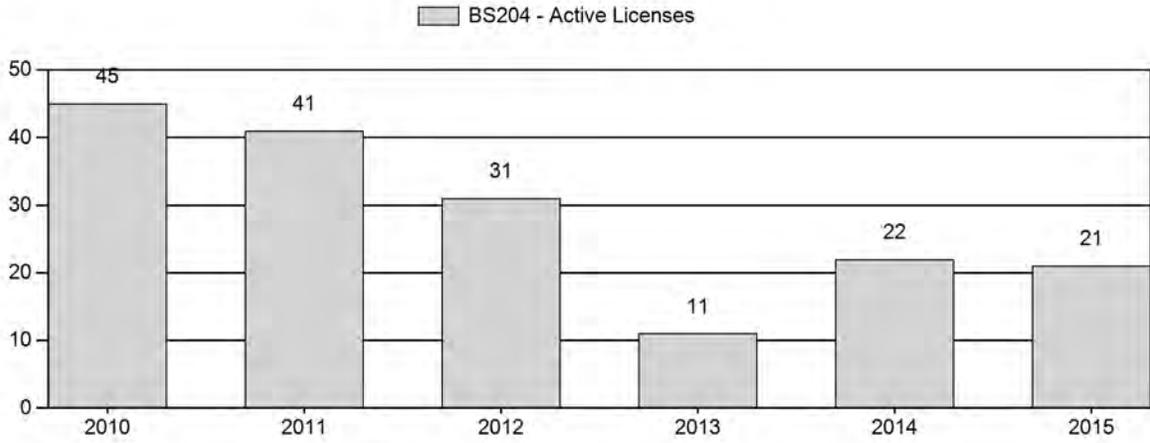
# Number of Hunters



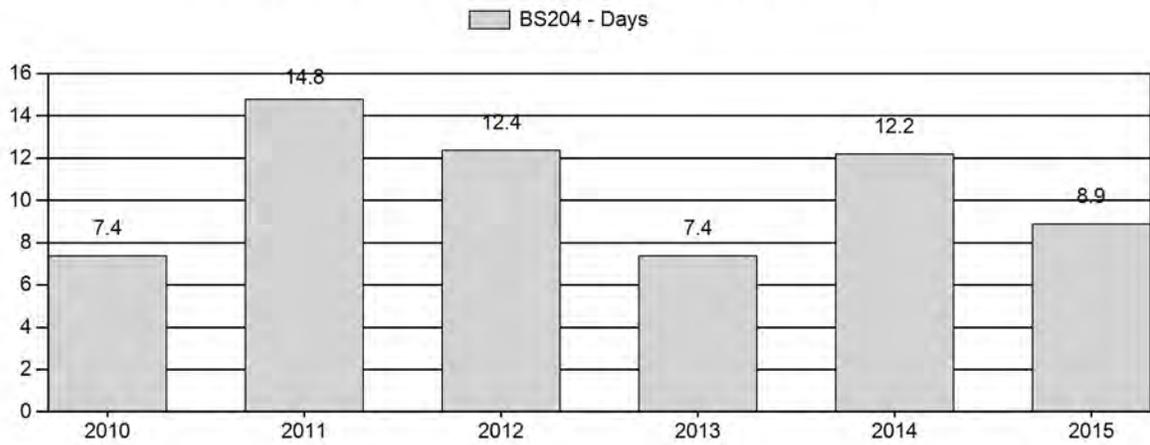
# Harvest Success



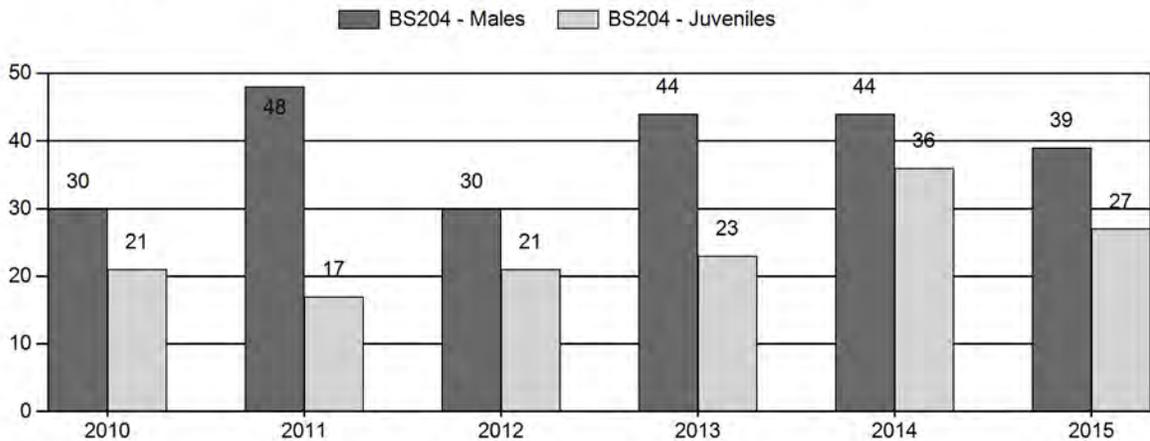
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS204 - YOUNTS PEAK

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	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	970	0	46	46	20%	155	67%	32	14%	233	409	0	30	30	± 6	21	± 4	16
2011	917	21	126	147	29%	305	60%	53	10%	505	386	7	41	48	± 4	17	± 2	12
2012	865	0	46	46	20%	155	67%	32	14%	233	345	0	30	30	± 5	21	± 4	16
2013	828	4	115	119	26%	269	60%	63	14%	451	345	1	43	44	± 4	23	± 3	16
2014	900	10	100	110	24%	252	56%	91	20%	453	355	4	40	44	± 5	36	± 4	25
2015	900	9	64	73	24%	186	60%	50	16%	309	363	5	34	39	± 6	27	± 4	19

**2016 HUNTING SEASONS  
YOUNTS PEAK BIGHORN SHEEP HERD (BS204)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
4	1	Sep. 1	Oct. 31	20	Limited quota	Any ram

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
4	1	Aug. 15	Aug. 31	Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2015
4	1	No Changes
<b>Total</b>	<b>1</b>	<b>No Changes</b>

**Management Evaluation**

**Current Postseason Population Management Objective: 900**

**2015 Postseason Population Estimate: 900**

**2016 Proposed Postseason Population Estimate: 900**

**Herd Unit Issues**

The Younts Peak Herd Unit is characterized by sheep that live at extremely high elevation year-round. This subjects many of them to occasionally heavy winter losses, which occurred in 1995, 1996, and 2010-13.

**Weather**

Snow depths and snow water equivalents at high elevation monitoring sites during the 2015-2016 winter were not excessive, with most sites 75%-90% of normal. Temperatures were also near normal, with cooler temperatures in early winter, followed by a very warm periods in February and March. Both annual precipitation and growing season precipitation at higher elevations were slightly below normal.

**Habitat**

No habitat monitoring data is collected in this herd unit.

**Field Data**

Seven surveys have been conducted over the last 10 years, resulting in samples ranging from 233 to 536 classified sheep. Lamb:ewe ratios have ranged from 17:100 to 36:100 over this time, although 5 of these surveys produced lamb:ewe ratios of 17:100, 21:100, 22:100, and 23:100. Ram:ewe ratios have varied from 30:100 to 54:100. The most recent complete survey in 2014

resulted in 453 sheep observed, a lamb:ewe ratio of 36:100 (which is slightly above average), and a ram:ewe ratio of 44:100, which is also slightly above average for this herd unit. Survey data from the Dubois portion of the herd unit in 2015 yielded a lamb:ewe ratio of 21:100 and a ram:ewe ratio of 51:100.

### Harvest Data

A total of 21 hunters took 16 rams in 2015 for a success rate of 76%. The average age of rams killed in 2013 was 8.3 years old, with 68.8% of the rams killed being 8 years old and older. One ram less than  $\frac{3}{4}$  curl was killed in 2015. Hunter effort was 8.9 days per ram harvested in 2015. These figures represent a return to levels previously seen in this sub-herd, but came at the expense of significantly reducing hunter opportunity.

### Population

The “Semi-Constant Juvenile – Semi-Constant Adult Mortality Rate” (SCJSCA) spreadsheet model was chosen to use for the post season population estimate of this herd. Although this model did not have the lowest relative AIC, the population trend is much more reasonable than other models. The postseason 2015 population is estimated to be 900 sheep. Efforts will continue to improve this model.

With the extremely poor lamb production experienced recently, it is likely that the availability of rams will not recover rapidly in this herd unit in coming years as lambs from these cohorts enter mature ram age classes. Maintenance of reduced ram hunting opportunities may be necessary in the near future to preserve or improve ram hunting opportunities. Ram:ewe ratios, average age of harvested rams, and the percentage of rams at least 8 years of age and older should be monitored closely to determine if such a situation is developing. License numbers were reduced to 20 for the 2013-15 seasons and will remain there for the 2016 season. The postseason 2016 population is estimated to remain at be approximately 900 sheep.

Harvest parameters for the Younts Peak Bighorn Sheep Herd Unit, 1984-2015.

	1984-91	1992-95	1996-00*	2001-04*	2005-08*	2009-11*	2012*	2013-2014*	2015*
Permits	60	48	32	36	40	44 <sup>+</sup>	28	20	20
Harvest	33.1	28.3	22.6	32.3	34.0	32.7	18	16.5	16
% Success	59%	62%	74%	87%	83.3%	75.4%	58.1%	79.5%	76%
Effort (days/ram)	18.6	15.0	8.4	7.9	8.2	10.5	12.4	9.8	8.9
Avg. Age	6.6	6.5	6.7	7.3	7.3	7.5	7.2	7.9	8.3
% Rams > 8 Yrs	24.1%	17.5%	33.3%	44.1%	32.7%	47.6%	22.2%	61.7%	68.8%
% Rams < $\frac{3}{4}$ Curl	-	-	11.9%	15.0%	7.2%	5.9%	5.6%	11.7%	9.1%

\* “any ram” regulation in place

+ 46 permits were issued in 2010 and 2011.

## 2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep

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

HERD: BS205 - FRANCS PEAK

HUNT AREAS: 5, 22, 999

PREPARED BY: BART KROGER

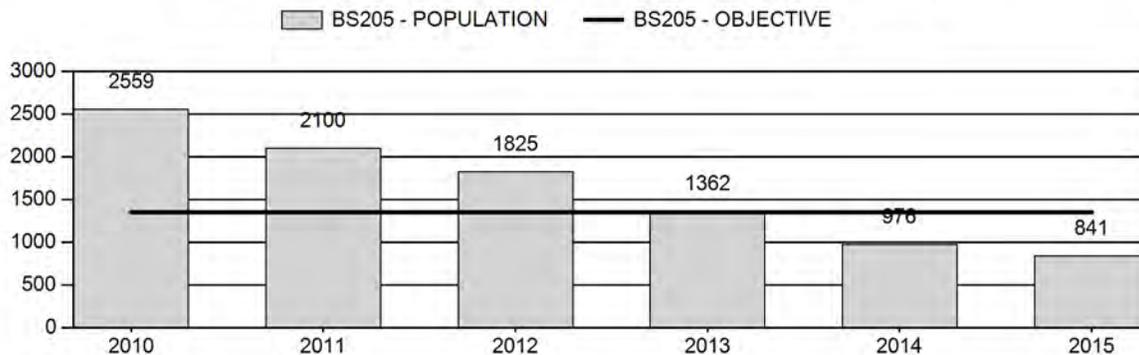
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	1,764	841	710
Harvest:	71	40	40
Hunters:	87	51	50
Hunter Success:	82%	78%	80 %
Active Licenses:	87	51	50
Active License Success:	82%	78%	80 %
Recreation Days:	587	383	380
Days Per Animal:	8.3	9.6	9.5
Males per 100 Females	58	55	
Juveniles per 100 Females	25	26	

Population Objective ( $\pm 20\%$ ) :	1350 (1080 - 1620)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-37.7%
Number of years population has been + or - objective in recent trend:	2
Model Date:	2/18/2016

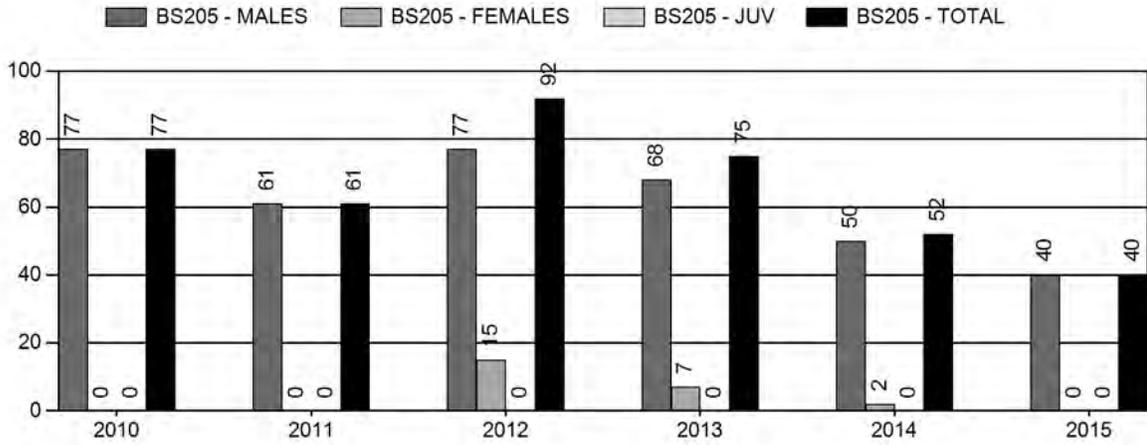
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	0%	0%
Males $\geq 1$ year old:	29%	30%
Juveniles (< 1 year old):	0%	0%
Total:	7%	7%
Proposed change in post-season population:	-14%	-16%

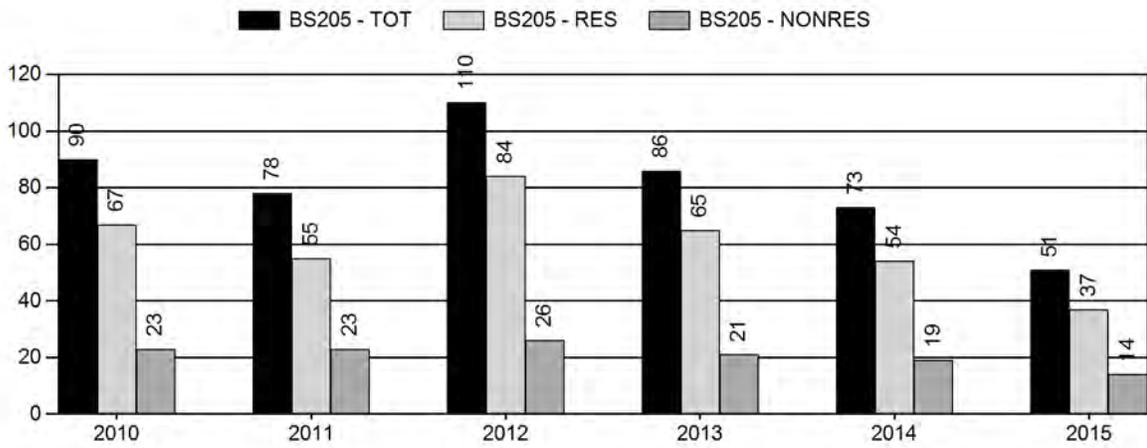
## Population Size - Postseason



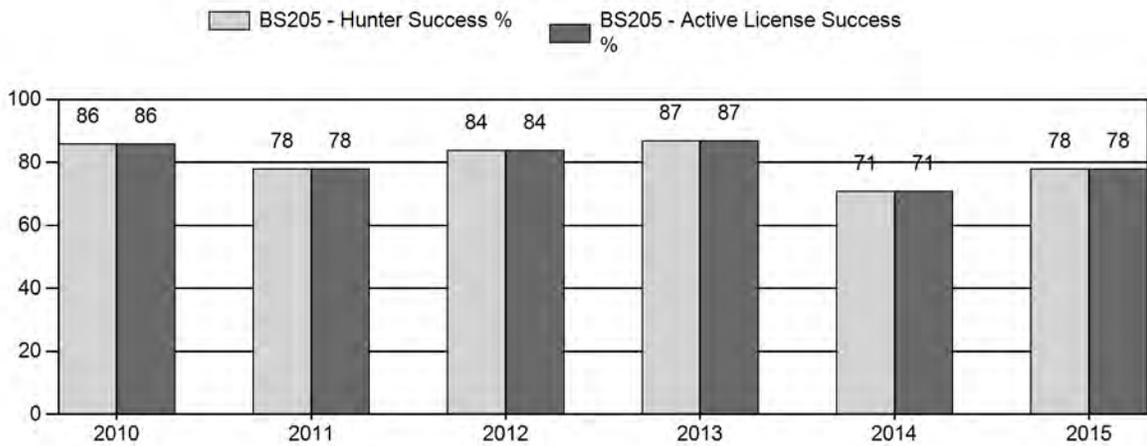
# Harvest



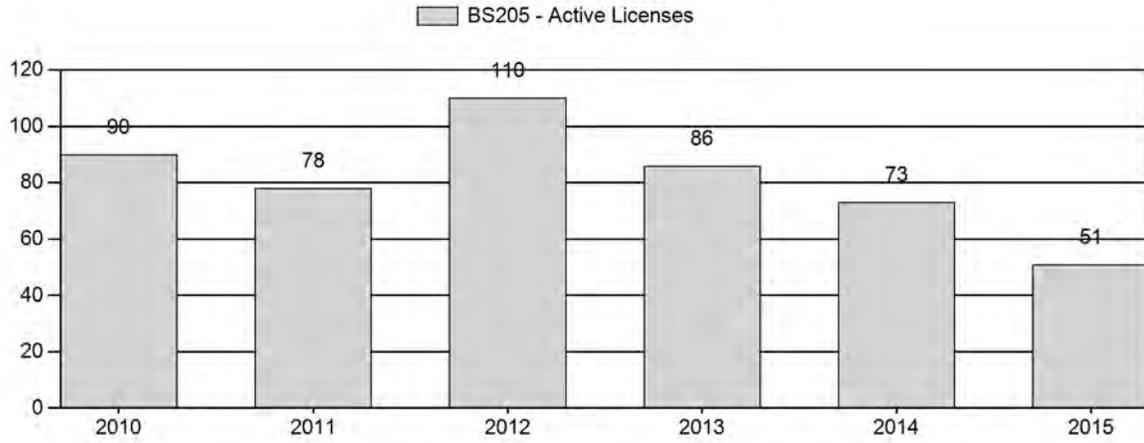
# Number of Hunters



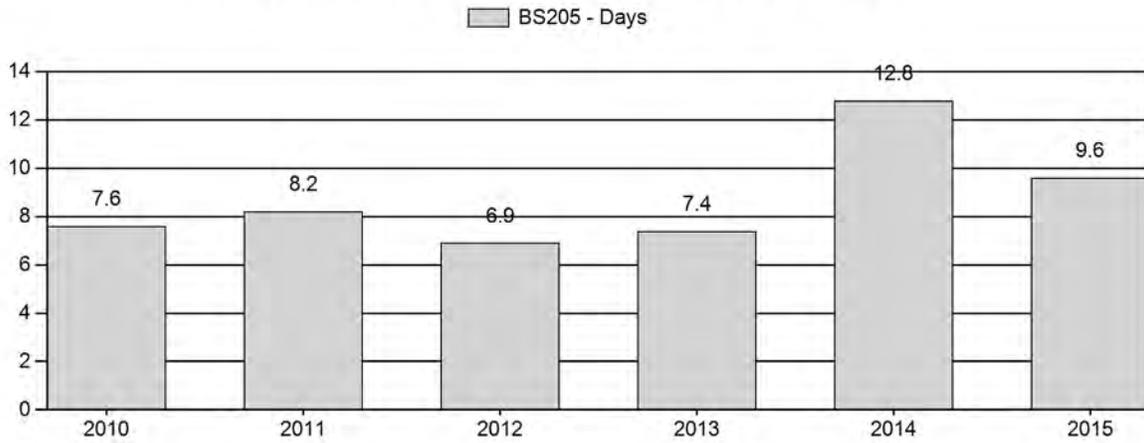
# Harvest Success



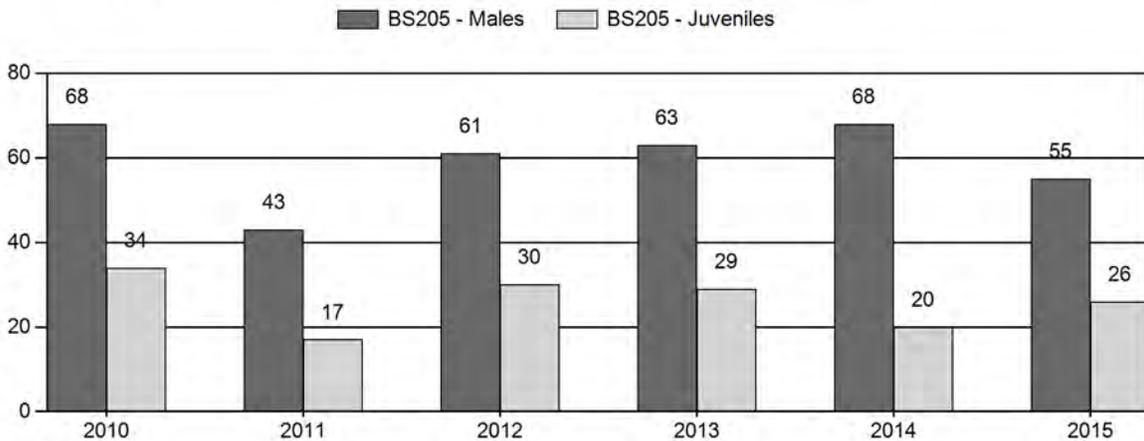
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2010 - 2015 Postseason Classification Summary

for Bighorn Sheep Herd BS205 - FRANCS PEAK

Year	Post 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	2,559	0	153	153	34%	225	50%	76	17%	454	727	0	68	68	± 8	34	± 5	20
2011	2,100	0	0	172	27%	400	62%	68	11%	640	445	0	0	43	± 4	17	± 2	12
2012	1,825	0	140	140	32%	228	52%	68	16%	436	802	0	61	61	± 7	30	± 5	18
2013	1,362	0	144	144	33%	230	52%	66	15%	440	584	0	63	63	± 7	29	± 4	18
2014	976	0	135	135	36%	200	53%	41	11%	376	490	0	68	68	± 8	20	± 4	12
2015	841	0	0	103	30%	188	55%	48	14%	339	352	0	0	55	± 7	26	± 4	16

**2016 HUNTING SEASONS  
FRANCS PEAK BIGHORN SHEEP HERD (BS205)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
5	1	Sep. 1	Oct. 31	32	Limited quota	Any ram
22	1	Sep. 1	Oct. 31	4	Limited quota	Any ram
22	1	Oct. 1	Oct. 31			Unused Area 22 Type 1 licenses also valid in Area 5

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
5, 22	1	Aug. 15	Aug. 31	Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2015
<b>HU Total</b>	<b>1</b>	<b>No changes</b>

**Management Evaluation**

**Current Postseason Population Management Objective: 1,350**

**Management Strategy: Avg. age of harvested rams from 6-8 years**

**2015 Postseason Population Estimate: 850**

**2016 Proposed Postseason Population Estimate: 700**

**Herd Unit Issues**

The herd objective and management strategy was revised and approved in 2013 for this sheep herd. The management strategy is to maintain an average age of harvested rams between 6-8 years old, along with a hunter success of >80%. Lamb ratios are also monitored closely to anticipate potential changes in age classes of rams. After the 2010/11 winter, this population started showing declines, and between 2011 and 2013, 163 ram pickup heads were registered from area 5, about a 200% increase compared to normal. Hunter success dropped to 72% in 2014 and 81% in 2015, the two lowest since the year 2000.

**Weather**

The winter of 2010/11 appeared to have been severe enough to cause some die-off as well as reduced lamb production. The extreme dry conditions of 2012 resulted in some changes to the distribution of sheep on their summer range, likely because of reduced forage production and condition. The winter of 2013/14 was more severe than normal, with mainly deep snow at higher elevations. The summer of 2014 and 2015 were exceptional for moisture, and the winters appeared to be mostly normal.

**Habitat**

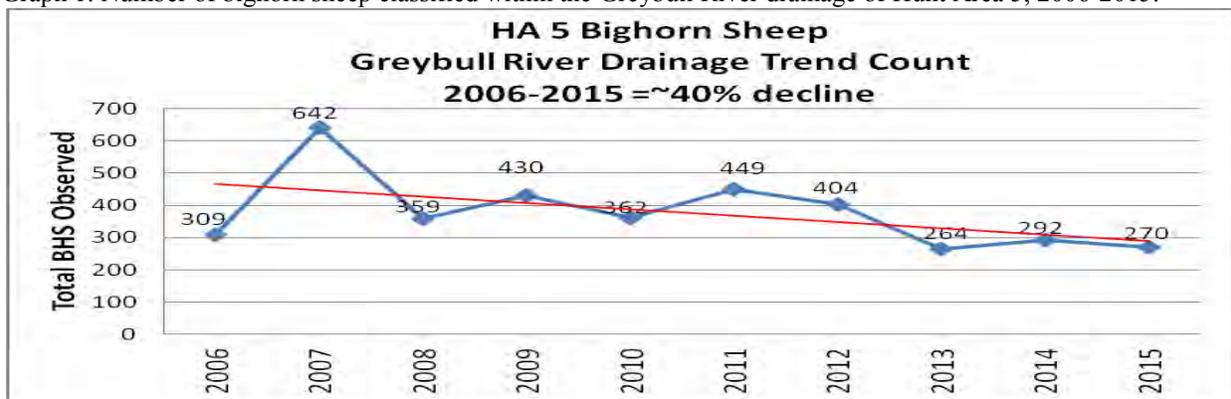
Habitat conditions for the most part are considered good to excellent in this herd unit. The Little Venus fire in 2006 and the Norton Point fire in 2011 improved overall forage availability and production in Hunt Area 5. The drought conditions in 2012 did cause lower than normal forage

production. Higher than normal precipitation in 2014 and 2015 were favorable for spring green up and winter forage.

### Field Data

Aerial classifications surveys are used in obtaining post-season lamb and ram ratio for this sheep herd. On average about 500-600 sheep are classified annually, except for the past three years where the average has been about 400 sheep. Lamb:ewe ratios for the herd have remained mostly favorable, with an average ratio of 25:100. Ram:ewe ratios typically exceed 50:100. Since 2005, a commonly flown flight path has been used during classification surveys within the Greybull River drainage. The number of sheep observed on these annual flights has been used to track population trends. Over the past 10 years the number of sheep observed on average has declined by 40% (Graph 1).

Graph 1. Number of bighorn sheep classified within the Greybull River drainage of Hunt Area 5, 2006-2015.



### Harvest Data

Since 2012 license quotas in area 5 have been reduced by 60% because of declines in sheep numbers. Typically in area 5 hunter success is usually around 90%, with an average hunter effort of about 6-7 days/ram. Starting in 2014 hunter success dropped to 72% and hunter days increased to 13.7. In 2015 hunter success increased slightly to 80%, while hunter effort improved to 10.1 days. Two rams were harvested from the area 22, while 8 were harvested from the Wind River Reservation. The average age of harvested rams has been maintained between 7-8 years.

### Population

The semi-constant juvenile & semi-constant adult survival (SCJ, SCA) spreadsheet model was chosen to represent this herd because it reflects a good recent year trend (2010-2015) in the population. The model supports an AIC value at 199. Because of this, the overall model is considered mostly reliable, at least for the last 4 year trend. The model also reflects trends in past year observations of sheep numbers during classification surveys. On average for the herd unit, the number of sheep classified has declined by about 40% in recent years.

### Management Summary

The low lamb ratios in 2011 (17:100) and 2014 (20:100), a drop in hunter success, an increase in days/animal, and the overall decline in observed sheep warrants some concern for this sheep herd. Because of these concerns the Type 1 quotas in both areas 5 and 22 will remain at 32 and 4 licenses, respectively. The license quota for the Owl Creeks hunt area of the Wind River

Reservation will again remain at 12. The projected 2016 harvest for the herd unit is roughly 35-40 rams. The 2016 post-season population estimate will be around 700 sheep.



## 2015 - JCR Evaluation Form

SPECIES: Bighorn Sheep  
 HERD: BS212 - DEVIL'S CANYON  
 HUNT AREAS: 12

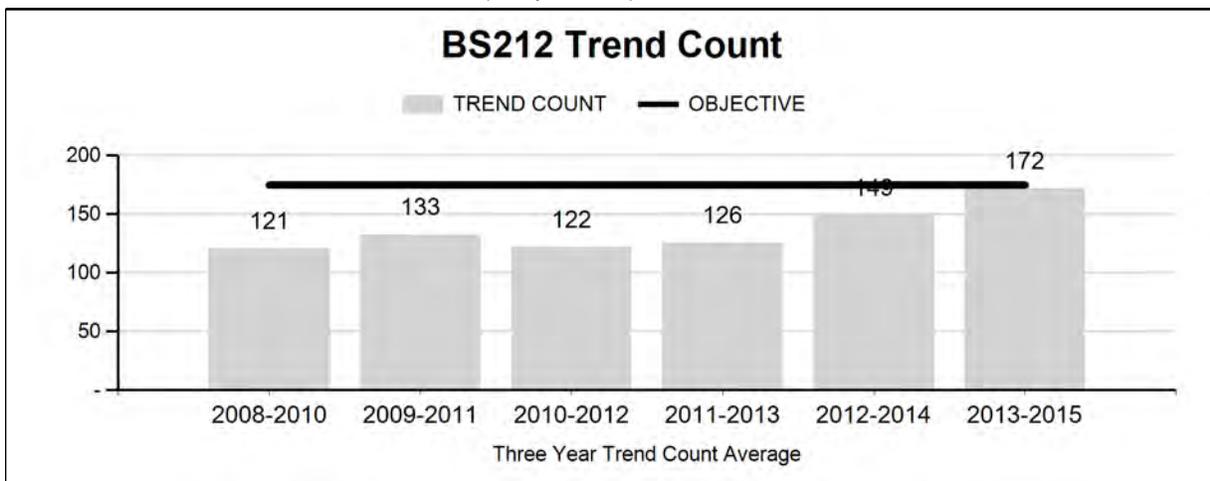
PERIOD: 6/1/2015 - 5/31/2016  
 PREPARED BY: LESLIE SCHREIBER

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Trend Count:	144	164	175
Harvest:	2	4	6
Hunters:	2	4	6
Hunter Success:	100%	100%	100%
Active Licenses:	2	4	6
Active License Success	100%	100%	100%
Recreation Days:	11	13	12
Days Per Animal:	5.5	3.2	2
Males per 100 Females:	44	48	
Juveniles per 100 Females	63	58	

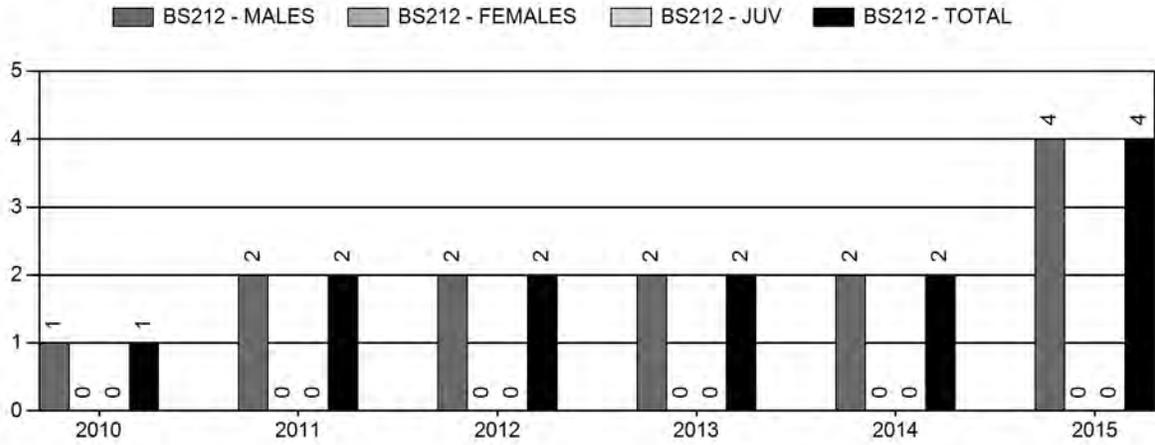
Trend Based Objective ( $\pm 20\%$ ) 175 (140 - 210)  
 Management Strategy: Special  
 Percent population is above (+) or (-) objective: -6.3%  
 Number of years population has been + or - objective in recent trend: 0

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

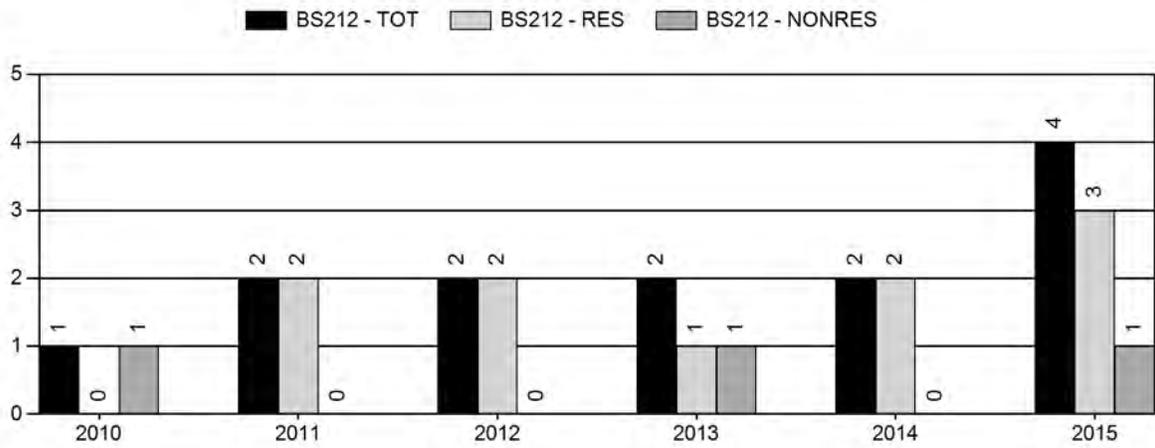
	<u>JCR Year</u>	<u>Proposed</u>
Females $\geq 1$ year old:	0%	0%
Males $\geq 1$ year old:	8%	12%
Juveniles ( $< 1$ year old):	0%	0%



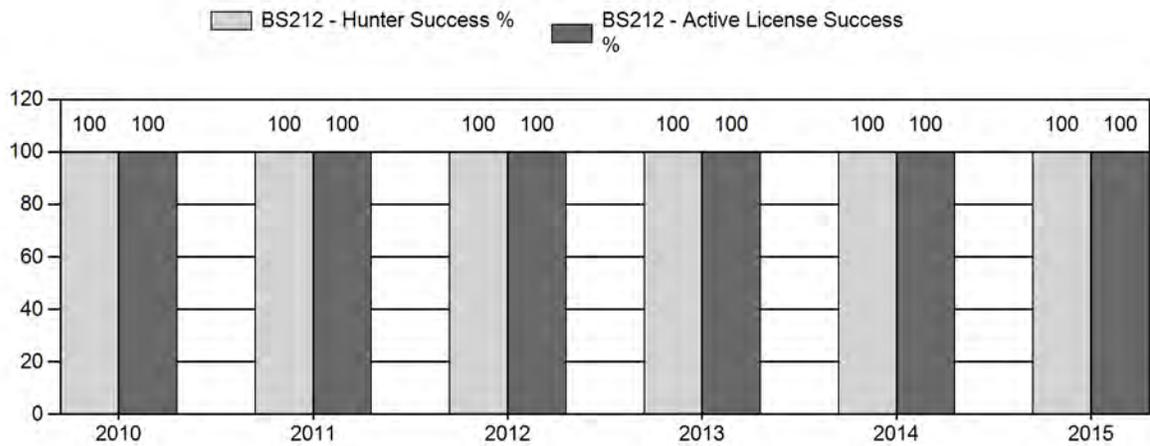
# Harvest



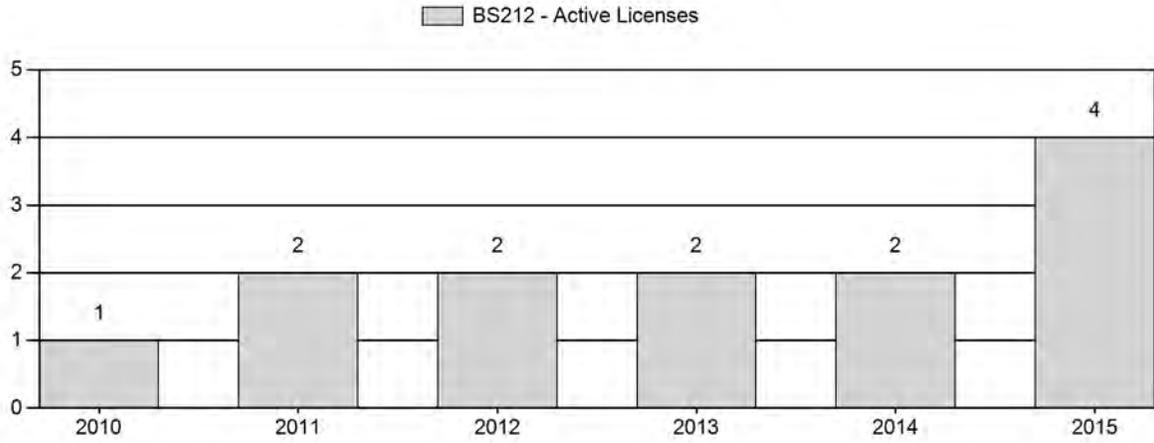
# Number of Hunters



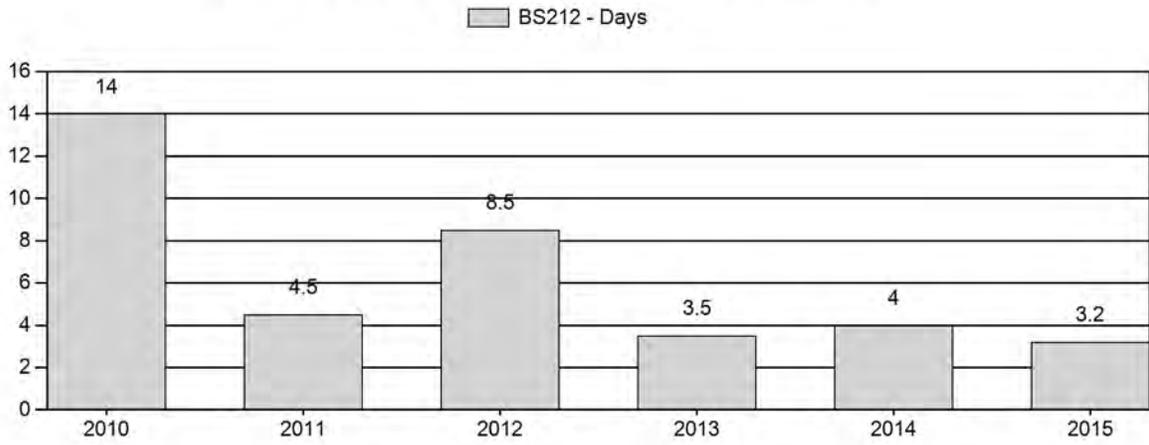
# Harvest Success



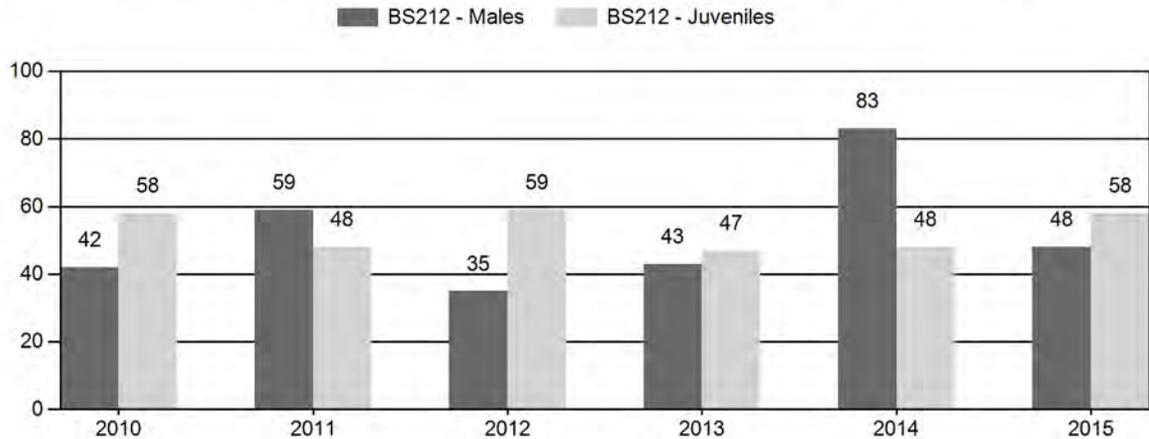
# Active Licenses



# Days Per Animal Harvested



# Preseason Animals per 100 Females



**2010 - 2015 Preseason Classification Summary**

for Bighorn Sheep Herd BS212 - DEVIL'S CANYON

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Int	100 Fem	Conf Int	100 Adult
2010	0	6	18	27	21%	64	50%	37	29%	128	142	9	28	42	± 0	58	± 0	41
2011	0	0	41	41	29%	69	48%	33	23%	143	141	0	59	59	± 0	48	± 0	30
2012	0	0	12	17	18%	49	52%	29	31%	95	142	0	24	35	± 0	59	± 0	44
2013	0	0	32	32	23%	74	52%	35	25%	141	143	0	43	43	± 0	47	± 0	33
2014	0	0	76	76	36%	92	43%	44	21%	212	136	0	83	83	± 0	48	± 0	26
2015	0	0	0	38	23%	80	49%	46	28%	164	167	0	0	48	± 0	58	± 0	39

**2016 HUNTING SEASONS  
DEVIL’S CANYON BIGHORN SHEEP HERD (BS212)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
12	1	Aug. 15	Oct. 15	6	Limited quota	Any ram

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
12	1	Aug. 1	Aug. 14	Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2015
		+2
<b>Total</b>		<b>+2</b>

**Management Evaluation**

**Current Trend Count Management Objective:** 175

**Management Strategy:** Special

**2016 Trend Count:** 164

**Most Recent 3-year Running Average Trend Count:** 172

**Herd Unit Issues**

Prior to the first transplant into the Devil’s Canyon area in 1973, an informal goal of 200 bighorn sheep was established. That population objective was carried over following the more recent transplants in 2004 from Oregon and 2006 from Montana. In 2015, a formal objective of 175 bighorn sheep based on a summer aerial trend count calculated on a 3-year running average was established during the public herd unit review process. The management goals for this herd are three-fold: provide a disease-free source stock for in-state transplant while providing ram hunting opportunity and limiting comingling with other wild and domestic sheep.

The Devil’s Canyon herd occurs mostly on BLM lands, which are designated a “cooperative review area” by the Wyoming State-wide Bighorn/Domestic Sheep Interaction Working Group. Bighorn National Forest lands are designated a “non-emphasis” area by the same group. To keep separation between wild and domestic sheep, an agreement was reached where any wild sheep in and south of Cottonwood Canyon would be removed by WGFD personnel. Two rams were removed in November 2015 along US Highway 14A. One ram was removed in May 2016 in Cottonwood Canyon. The WGFD conducts clearance flights when flight money is available each spring before domestic sheep trail up US Highway 14A stock trail. In addition, USFS and WGFD personnel do ground surveys before sheep trailing in the spring and fall to ensure no comingling occurs.

**Weather**

Climatic conditions probably have the most influence on productivity and survival of this population. Cheatgrass has become established on some sites. No anthropogenic development currently affects this population or habitat. There is limited farming consisting of irrigated pastures on a small portion of private land. Bighorn sheep are attracted to those pastures especially during drought years. The landowners have commented on the concentration of sheep

on those pastures, but have not requested management to remove or reduce their numbers so far. In 2015, growing season moisture was well timed resulting in good herbaceous growth.

### **Habitat**

Although drought conditions were documented during summer 2012 and 2013 across most of Wyoming, effects on this bighorn sheep herd appear to have been minimal. Distribution to irrigated pastures probably negated any adverse effects.

### **Field Data**

Total number of sheep observed during pre-season classification surveys give the most consistent population trend estimate. However, some surveys prior to 2012 were not conducted across all areas used by bighorns and effort (flight time, aerial vs. ground) has not been consistent across years. For the July 2015 classification survey, personnel counted a total of 164 bighorn sheep, of which 80 were ewes (Appendix). We observed 38 rams (9 class I rams, 7 class II rams, 15 class III rams, and 7 class IV rams) for a ratio of 48 rams:100 ewes. We observed 46 lambs for a ratio of 58 lambs:100 ewes. Flight time and area surveyed in 2015 did not differ greatly from the previous 3 years. The day after the classification flight, a BLM employee observed 13 additional rams from the ground that were not observed during the flight.

### **Harvest Data**

Harvest statistics provide little information about this population's trend. Only 1-2 licenses were issued each year from 2008-14 with 100% hunter success. Four licenses were issued in 2015 with 100% hunter success. Recreation days and days per harvested animal vary depending on the amount of time each hunter allocated to his/her hunt. Similarly, average age of harvested rams does not indicate a trend, because only 1-4 rams were harvested each year. Furthermore, ram genetics from recent transplants allowed for more horn growth of young rams. For example, a Devil's Canyon ram with Montana's Missouri River breaks genes was harvested as a 6-year old and scored >180 Boone and Crockett points. Thus, average age of harvested rams could decrease even though larger rams are being harvested.

### **Population**

One landowner controls key access to the area where most bighorns occur in Devil's Canyon and has traditionally requested a low number of ram licenses each year, because of hunter crowding concerns. We have worked closely with the landowner this past year to develop acceptable management and consequently we are increasing the number of ram licenses to 6 in 2016. Devil's Canyon sheep occupy a relatively small area where rams are highly visible and are habituated to human activity creating a potential for conflict among hunters. If conflicts are minimal and the landowner is satisfied, we hope to keep 6 ram licenses in the future.

In February 2015, 25 bighorn sheep (4 rams, 1 ram lamb, 20 ewes) were captured, sampled, fitted with radio-collars and released in the Seminole Mountains north of Sinclair. In February 2016, another 25 sheep (3 rams, 1 ram lamb, 21 ewes) were captured, sampled, and fitted with radio-collars. One 3-year-old ewe died from capture myopathy and was not released. The remaining 24 sheep were released on the east end of the Ferris Mountains. With high lamb productivity in the Devil's Canyon herd, these transplants were necessary in keeping the Devil's Canyon herd at objective.

## **Management Summary**

Our current management strategy in Hunt Area 12 is to use translocations of ewes and lambs to keep the population at objective, which decreases the likelihood of wandering Devil's Canyon sheep comingling with other wild and domestic sheep. Translocations in 2015 and 2016 of 25 sheep each year assisted in this goal. Further, maintaining a good working relationship with the landowner is a high priority and critical for successful management of this herd, especially when allocating hunting licenses. The longer rifle season and earlier archery season for 2016 were designed to prevent hunter crowding, a major concern of the landowner. From 2008-2014, only 1-2 licenses were issued each year. Abundance and distribution of rams has grown in recent years, spurring the license quota to 4 in 2015 and 6 in 2016.

TO: Osterland, Woolley, Werbelow, Hobbs, McWhirter  
 FROM: Leslie Schreiber  
 COPIES: file  
 SUBJECT: July 17, 2015 – HA 12 bighorn sheep classification flight

Observer: Schreiber, Hobbs, Rael (WGF Commissioner)  
 Species: Bighorn Sheep  
 Survey Type: Classification/trend  
 Air Service: SKY Aviation  
 Aircraft: Jet Ranger Helicopter (L1)  
 Conditions: Overcast, wind 0-10 mph, 55-75°  
 Flight time: 1.2 hours ferry, 4.0 hours survey

Below are the classification/trend survey results flown for bighorn sheep in hunt area 12 on July 17, 2015. Total number of sheep observed was between 164 and 177. Locations of these sheep and our flight tracks (blue line) are mapped below on the Google Earth image. The highest concentrations of ewe/lamb groups were found along the upper ledges below the canyon rim near the confluence of Deer and Porcupine Creeks. Rams were found on both sides of Devil’s Canyon. Rams were classified based on horn curl/mass. Unclassified rams marked with an asterisk, were observed by BLM personnel on the ground the day after the flight.

Ewes	Lambs	Unclass. ram	C1 ram Yrl - ½ curl	C2 ram ½ - ¾ curl	C3 ram ¾ - full curl	C4 ram ≥ full	Total Rams	Total Sheep	Lamb Ratio	Ram Ratio
80	46	13*	9	7	15	7	51	164(177*)	58:100	64:100

