

2016 - JCR Evaluation Form

SPECIES: Bighorn Sheep

PERIOD: 6/1/2016 - 5/31/2017

HERD: BS121 - DARBY MOUNTAIN

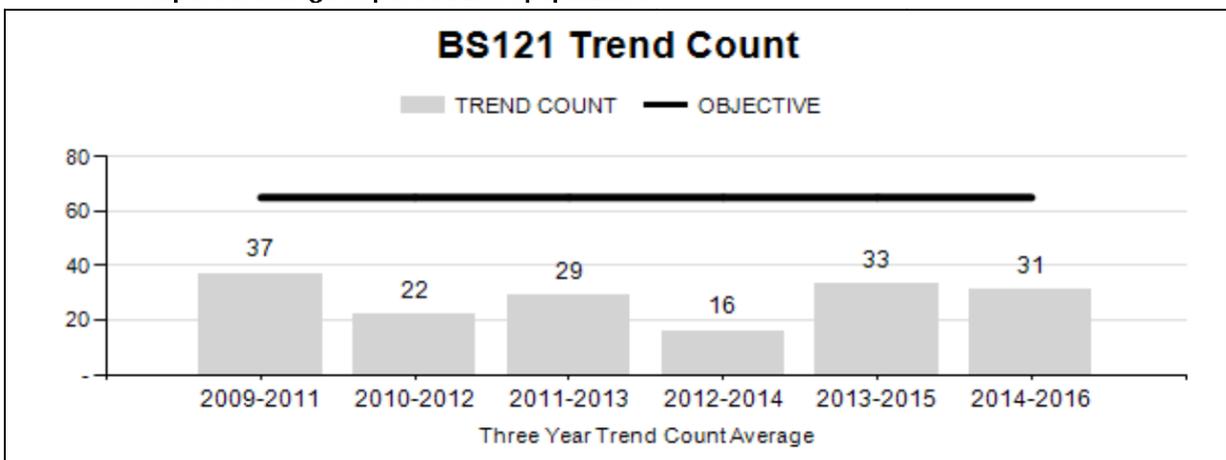
HUNT AREAS: 24

PREPARED BY: GARY FRALICK

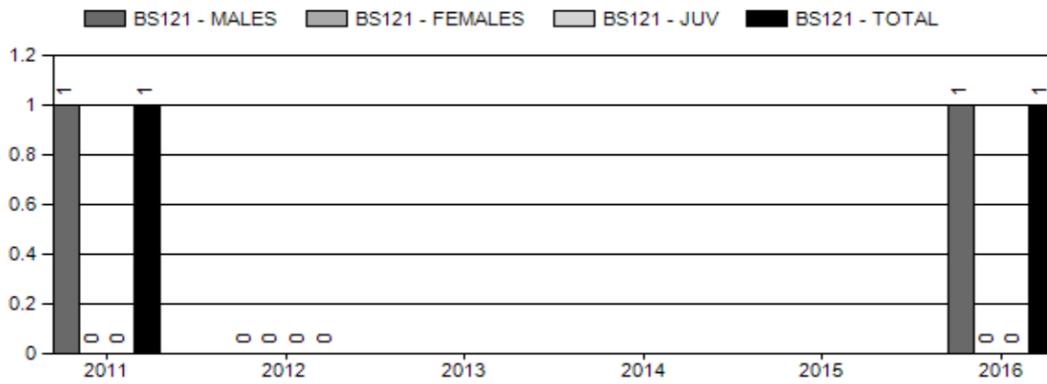
	<u>2011 - 2015 Average</u>	<u>2016</u>	<u>2017 Proposed</u>
Trend Count:	28	39	55
Harvest:	0	1	1
Hunters:	0	1	1
Hunter Success:	0%	100%	100 %
Active Licenses:	0	1	1
Active License Success	0%	100%	100 %
Recreation Days:	0	2	5
Days Per Animal:	0	2	5
Males per 100 Females:	56	210	
Juveniles per 100 Females	50	70	
Trend Based Objective ($\pm 20\%$)			65 (52 - 78)
Management Strategy:			Special
Percent population is above (+) or (-) objective:			-40%
Number of years population has been + or - objective in recent trend:			3

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

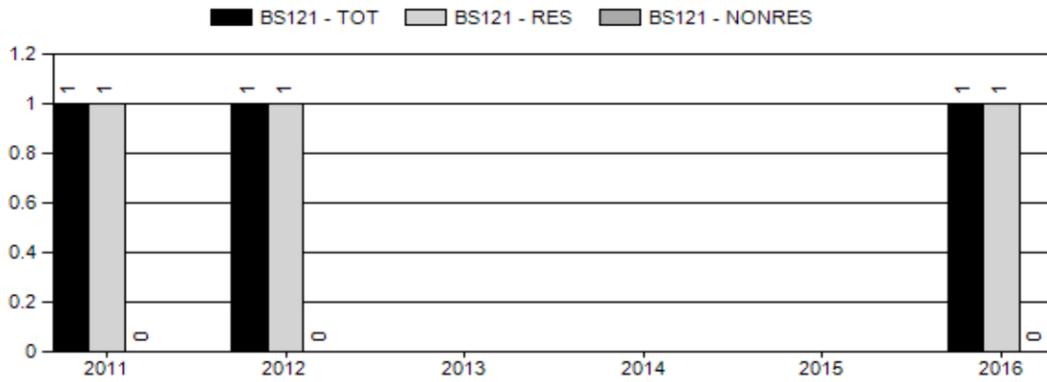
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%



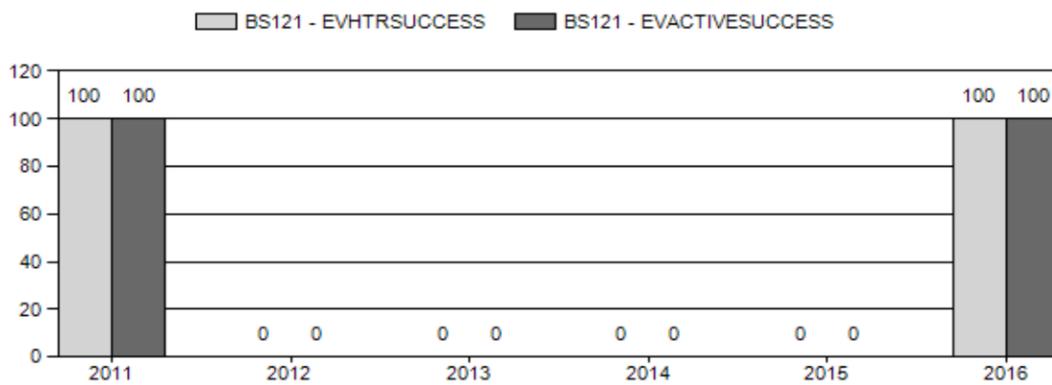
Harvest



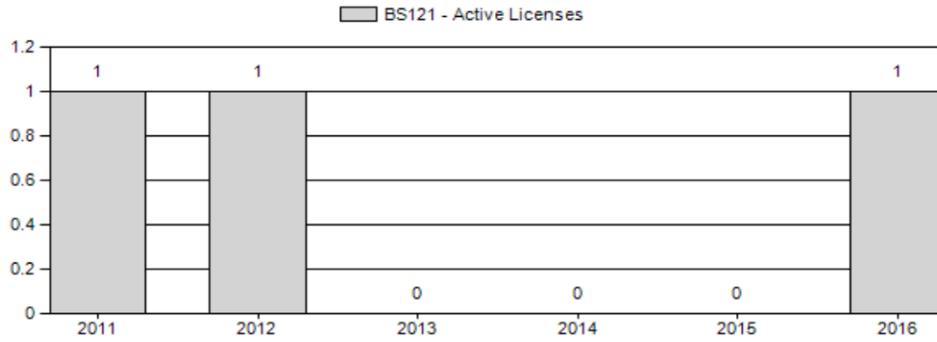
Number of Active Licenses



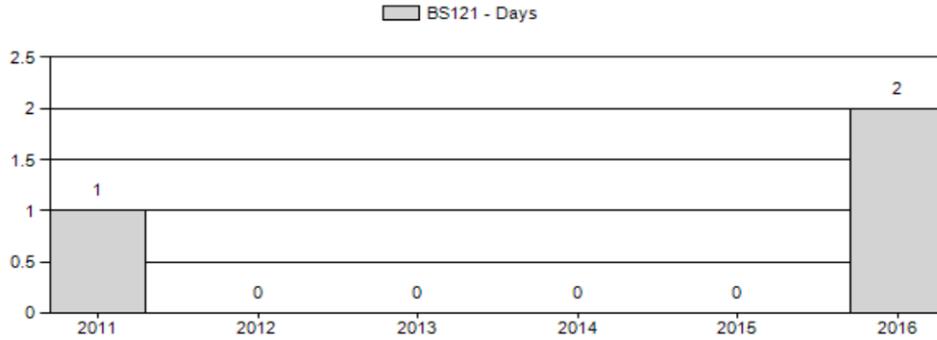
Harvest Success



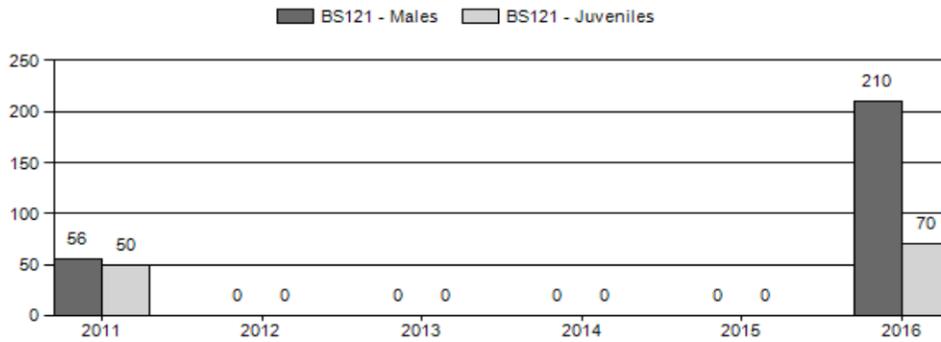
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Bighorn Sheep Herd BS121 - DARBY MOUNTAIN

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	60	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	±0	0	±0	0
2012	60	0	5	5	100%	0	0%	0	0%	5	0	0	0	0	±0	0	±0	0
2013	60	0	0	0	0%	0	0%	0	0%	0	0	0	0	±0	0	±0	0	
2014	60	0	0	0	0%	0	0%	0	0%	0	0	0	0	±0	0	±0	0	
2015	75	3	7	10	18%	28	51%	17	31%	55	0	1	25	36	±0	61	±0	45
2016	0	2	20	22	56%	10	26%	7	18%	39	0	10	200	210	±0	70	±0	23

**2017 HUNTING SEASON
DARBY MOUNTAIN HERD UNIT - BHS121**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
24	1	Sep. 1	Oct. 31	1	Limited quota	Any ram (1 resident)
Archery		Aug. 15	Aug.31			Refer to Section 3 of this Chapter

Summary of Changes in License Number

Area	License Type	Quota change from 2016
24	1	No Change
Herd Unit Total	1	No Change

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 65

Management Strategy: Recreational

2016 Mid-Winter Trend Count: 39

Most Recent 3-Year Running Average Trend Count: 31

The Darby Mountain bighorn sheep herd mid-winter trend objective is 65 sheep. The objective was established in 2016. The 2017 hunting season will be the second year of hunting since the season was closed in 2012. During the period from 2012 to 2015 the

season was closed due to concerns over the general absence of trophy class rams in the population.

On-ground and aerial surveys were conducted in April through July 2015. The 2015 surveys resulted in a minimum of 55 different sheep being observed.

Herd Unit Issues

In 1981 the Wyoming Game and Fish Department and U.S. Forest Service reintroduced bighorn sheep (*Ovis canadensis*) into the Wyoming Mountain Range, west of Big Piney, Wyoming. The last wild sheep occupied this range in the early 1960s. Competition with domestic sheep and illegal harvest were believed responsible for their extirpation. Prior to the transplant, domestic sheep were removed from allotments on Fish Creek and Darby Mountain, which provided the best historic bighorn sheep habitat. In January 1981, 35 Rocky Mountain sheep were transplanted from the Whiskey Basin Habitat Unit near Dubois, Wyoming to Fish Creek Mountain. In January 1987, another 25 bighorn sheep were transplanted from Whiskey Basin to the Fish Creek Mountain site. Funding assistance for this relocation effort was provided by the Foundation for North American Wild Sheep (FNAWS).

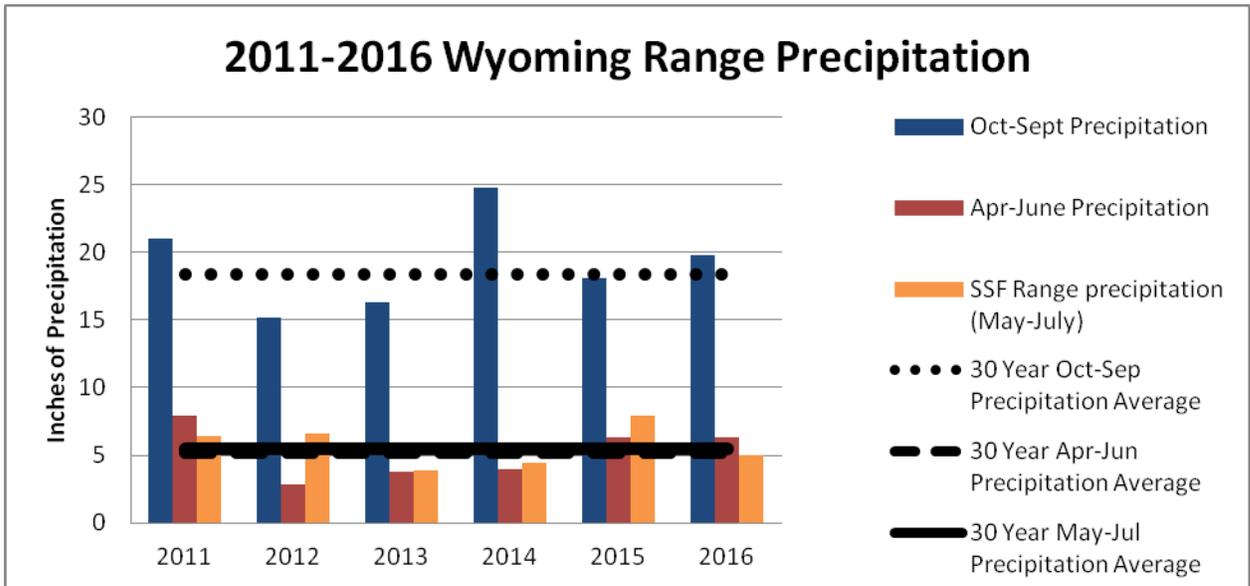
The estimated herd size in mid-winter 1988 was 110 sheep. However, the actual count on 20 February 1988 was 70 sheep and poor weather prevented completion of the survey. A comprehensive on-ground and aerial survey was conducted from 20 June - 14 July 1988 in approximately a 90 square mile area around Fish Creek Mountain. These surveys resulted in a post-lambing count of a minimum of 124 sheep consisting of 56 ewes, 28 lambs and 40 rams in the herd. In 1988 the first hunt was conducted in Hunt Area 24, based primarily on the results of the previous survey. Four permits were issued with 3/4 curl restrictions and four rams were harvested. The population is estimated to have increased to a maximum of approximately 150 sheep in 1994. The department continued to issue four permits for 3/4 curl rams from 1988 through 1997.

Forage production and availability studies on Fish Creek and Darby Mountain winter ranges, (prior to the 1981 re-introduction) suggested a combined capacity for 150 to 175 sheep in most winters. Other potential wintering sites were identified north and east of Fish Creek Mountain. Since 1981 individuals and small groups of sheep that typically number less than 15 individuals have been observed wintering near Star Hill, above the Middle Piney Creek summer homes, the hydrographic divide between the Greys River and Green River drainages in Box Canyon Creek in Greys River drainage, and the windblown ridge tops in the Straight Creek drainage west of Mount Schidler. Fish Creek Mountain and Darby Mountain continue to support the largest concentrations of wintering sheep.

Most summer observations have occurred within the 90 square mile core area around Fish Creek Mountain. However, since 1994 a few sub legal rams and small ewe-lamb groups have been observed on summer range outside the core area. Summer dispersal of bighorn

sheep have been documented along the crest of the Wyoming Mountain Range in the vicinity of the headwaters of South Cottonwood Creek, McDougal Peak, Gunsight Pass, Middle Piney Creek, Straight Creek, North Piney Creek and Roaring Fork drainages as well. This dispersal has resulted in bighorn sheep and domestic sheep mingling on summer ranges in several active sheep allotments.

Weather



Weather conditions during the 2016 were ideal for forage production beginning in early spring and continuing through fall. By late summer the moisture regime had changed frequent precipitation scenario that persisted into the fall hunting season. Drought conditions in the early portion of the summer abated by late fall as persistent snow storms began to deposit snowpack in the Wyoming and Salt Mountain Ranges. By mid winter snow conditions on winter ranges had changed significantly. Significant snowfall and subsequent accumulations occurred on core winter ranges through early February. These conditions persisted throughout the remainder of the winter. By late winter 2017 snowpack in western Wyoming watersheds were estimated to be significantly above normal. For additional weather and precipitation data please visit the following websites: <http://www.ncdc.noaa.gov/temp-and-precip/time-series> and <http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html>.

Habitat

Sagebrush and other shrubs produced good leader growth in 2016 which provided a good quantity of forage on winter ranges. However, many shrubs are under snow and largely unavailable on extreme winters. Current snow conditions do not indicate deer will leave winter ranges early, but weather in the next two months can significantly impact those conditions.

Winter range browse plants have been measured each spring and fall to assess production and utilization since the late 1990s. Growing conditions improved in 2016 on winter ranges because of moisture regimes in early spring and throughout the growing seasons. Improved growing conditions were due to spring and summer rains which have a different effect on shrubs than winter snowpack due to rates of infiltration. For additional site specific information, please refer to the 2016 Annual Report Strategic Habitat Plan Accomplishments, for Pinedale Region habitat improvement project summaries (<http://wgfd.wyo.gov/web2011/wildlife-1000708.aspx>).

Field Data

2016 Post-hunt Survey

An aerial survey was conducted in February 2017 from a Bell 47 Turbine helicopter. The area surveyed encompassed the crest of the Wyoming Range from Marten Creek southward to Box Canyon. Fish Creek and Darby Mountains were not surveyed because of time and fuel constraints. These areas typically support substantial numbers of bighorn sheep. A total of 39 sheep were observed. The age/sex classification of the sheep observed during this survey is as follows: 22 adult rams, 2 yearling rams, 10 ewes, and 7 lambs.

No mountain goats (*Oreamnos americanus*) were observed along the crest of the Wyoming Range during this survey. Approximately one (1) hour of survey time was completed.

2015 Post-hunt Survey

An aerial survey was conducted on April 2, 2015 from a Bell 47 Turbine helicopter. The primary survey area encompassed the crest of the Wyoming Mountain Range and Bighorn Sheep Hunt Area 24. The objective of the survey was to document the location and age/sex characteristics of bighorn sheep.

The survey was initiated on the north at Mount McDougal and terminated on the south along the crest of the Wyoming Range at Cheese Pass and Fish Creek and Darby Mountains. All suitable bighorn sheep habitat was surveyed within the required budgetary constraints and as weather conditions permitted safe fly conditions. Incidental observations of other species were recorded as noted. No mountain goats (*Oreamnos americanus*) were observed along the Wyoming Range crest during this survey. Approximately 6 hours of survey time were completed.

A total of 55 sheep were observed. The age/sex classes were: 7 adult rams; 3 yearling rams; 28 ewes, and 17 lambs were observed. The observed age/sex ratios were noted as follows: 36 rams:100 ewes:61 lambs.

Bighorn sheep were observed in three primary locations. Those locations were: the crest of the Wyoming Range from Marten Creek south to Box Canyon Creek; Fish Creek Mountain to include Middle Piney Creek; and, Darby Mountain. A total of three (n=3) sheep were observed in Marten Creek and 16 sheep observed in Box Canyon Creek. Two rams (n=2) were observed in Straight Creek and one ewe and one lamb were observed in Middle Piney Creek. A total of 27 sheep were observed on Fish Creek Mountain, while five adult rams were noted on Darby Mountain.

Harvest

One license valid for any ram was issued annually during the period from 2008 to 2012. A total of four rams were harvested from 2008 – 2011. In 2012, the one licensed hunter observed very few sheep and could not find a mature ram older than 5 years of age after 15 total days of hunting. The lack of mature rams observed by the hunter is consistent with Department field surveys over the past five years.

The first license issued since 2013 was awarded to a resident hunter in 2016. This hunter harvested a mature ram that was estimated at 8 years old.

Population

The population has stabilized at approximately 60 - 75 sheep. Systematic surveys, typically conducted from a helicopter in winter, have resulted in fewer than 60 sheep observed. Summer on-ground surveys conducted in August have identified the Box Canyon and Fish Creek Mountain areas as locations that typically support the highest aggregations of sheep.

The population objective was evaluated for the first time since 1991. Since that time the Darby Mountain herd objective was 150 sheep. The population objective was revised in 2016 based on public and federal agency input and approval by the Wyoming Game and Fish Commission. The current population objective for the Darby Mountain herd is 65 sheep (Appendix A).

Disease Surveillance

For the first time in the management history of the herd a research effort was initiated in February 2017 to evaluate the health of the Darby Mountain herd. A total of 8 sheep were captured and radio-collared (Table 1). Biological samples were collected that will result in diagnostic results for presence of respiratory pathogens. The primary respiratory pathogens of concern are: *Mannheimia haemolytica*, *Mycoplasma ovipneumoniae*, *Bibersteinia trehalosi*, and *Pasteurella multocida* (Appendix A).

Capture operations ensued on January 25, 2017. Sheep were captured using a Hughes 500 helicopter and net deployed from a Coda net-gun. Sheep were transported via long-line from the capture site to the Middle Piney Creek parking area. Biological samples were collected that included nasal, tonsil, and ear swabs, serology, and fecal samples.

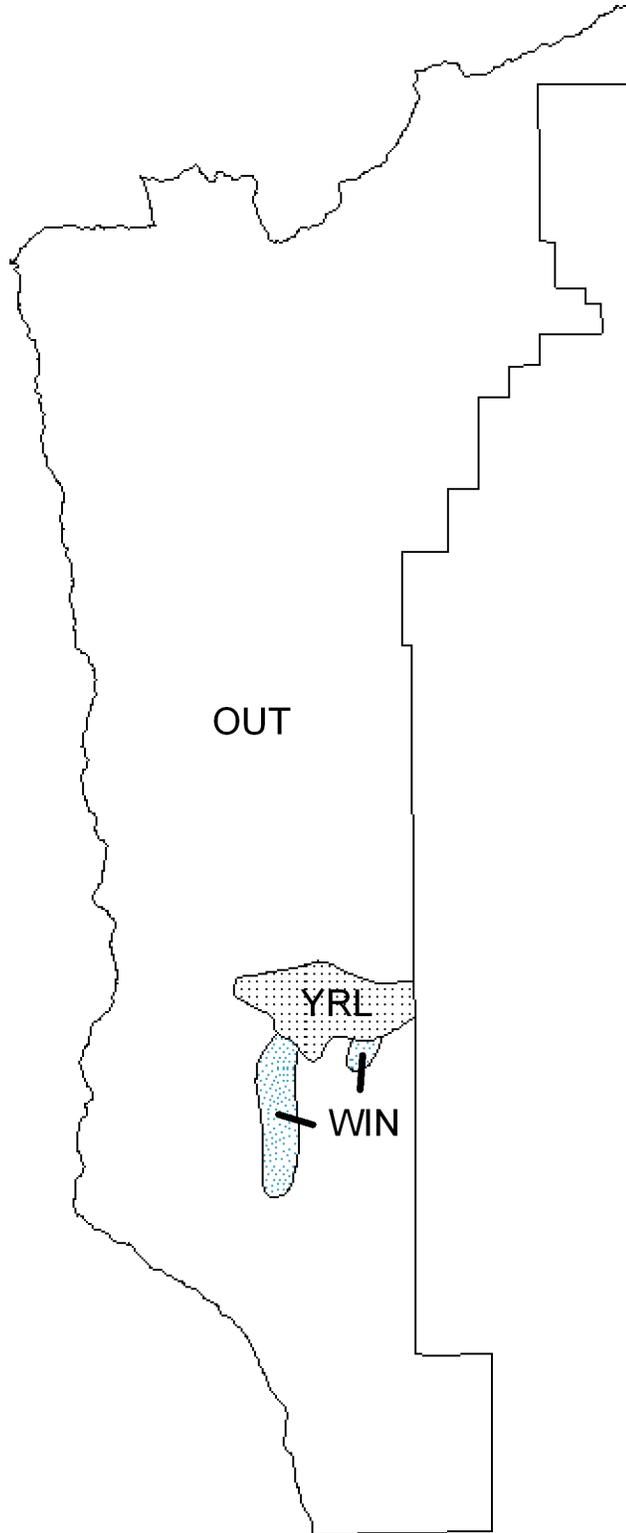
A total of six ewes and two rams were captured to assess general health, vigor, and exposure to respiratory pathogens (Table 1). All sheep were outfitted with Telonics RECON 4560-4 radio-collars and ear-tagged. After tissue and biological samples were collected all sheep were transported back to the respective capture sites.

Table 1. A summary of bighorn sheep captured in February and tested for respiratory pathogens, Darby Mountain bighorn sheep herd, 2017.

Freq	Ear Tag	Capture Date	Capture Location		Sex	Age	Pregnancy Status
			Easting (UTM)	Northing (UTM)			
151.770	Yellow 10	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	6	NA
151.870	Yellow 11	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	5	NA
151.900	Yellow 15	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	2	NA
151.930	NA	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	4	NA
151.940	NA	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	3	NA
151.950	Yellow 14	25-Jan	536,578 Fish Cr Mtn	4,715,497	Female	4	NA
151.970	Yellow 16	25-Jan	532,903 Straight Cr	4,716,857	Male	2	NA
151.980	Yellow 21	25-Jan	532,903 Straight Cr	4,716,857	Male	3	NA

Management Summary

The 2017 bighorn sheep hunting season for Hunt Area 24 will be remain opened to hunting for the second consecutive year. A total of one (1) limited quota license will be issued for any ram. This hunting season will result in the harvest of one adult ram 2+-years old. The projected number of sheep that should be counted in the posthunt 2017 population trend count is approximately 55 sheep.



BHS 121- Darby Mtn.
HA 24
Revised 7/02