

**MONTANA FISH, WILDLIFE & PARKS
HUNTING SEASON / QUOTA CHANGE SUPPORTING INFORMATION**

Species: Bighorn Sheep
Region: 4
Bighorn Sheep Hunting District: 441
Year: 2019

- 1. Describe the proposed season / quotas changes and provide a summary of prior history (i.e., prior history of permits, season types, etc.).**

Proposal: Change bighorn sheep license quota from 2 – 7 to 1 – 7 and reduce quota from 3 to 1.

Existing Season:

HD	Bighorn Sheep License	Opportunity	Apply by Date	Number of Licenses Available	Archery Only Dates	General Season Dates	Opportunity Specific Information and/or Restrictions
441	441-20	Either-sex	May 1	3	Sep 07-Sep 14	Sep 15–Dec 01	

Proposed Season:

HD	Bighorn Sheep License	Opportunity	Apply by Date	Number of Licenses Available	Archery Only Dates	General Season Dates	Opportunity Specific Information and/or Restrictions
441	441-20	Either-sex	May 1	1	Sep xx-Sep 14	Sep 15–Nov 29	

A bighorn sheep either-sex season was first established in 1982 in Hunting District (HD) 441 when 4 licenses were offered. In 1987, the number of licenses was raised to 6, lowered to 5 the following year where it remained until 1994 when 3 licenses were offered in response to disease concerns. In 1995, the number of licenses was raised to 5 where it has remained until 2016 when it was lowered to 3 in response to potential disease concerns and hunter comments.

The number of licenses has remained relatively constant though variations in overall observed bighorn sheep numbers, lamb production, ram age structure and overall herd health has occurred (Table 1, Table 2). Historically, harvest of either-sex bighorn sheep licenses in this district tends fluctuates from a success rate of 20% to 100%. The 10-year average harvest success is 80 percent (40% – 100%). Hunting season length has traditionally run from September 15 until the end of the general rifle season. Beginning in 2008, a special statewide Bighorn Sheep Archery Only season was initiated and remains in place.

Table 1. Either-sex bighorn sheep license in HD 441, 2001-present. Average age of harvested bighorn sheep rams and number aged. The number of observed bighorn sheep are recorded during the fall surveys (normally conducted in late August or early September).

Year	# Either- Sex Licenses	Total # Observed Sheep (fall surveys)	Average age of Harvested Ram (# in parenthesis)	Oldest Ram Harvested
2001	5	87	6.5(2)	7.5
2002	5	62	7.2 (5)	10.5
2003	5	37	6.1 (5)	8.5
2004	5	115	8.0 (2)	8.5
2005	5	101	8.3(5)	10.5
2006	5	138	9 (2)	10.5
2007	5	No Survey	6.4 (5)	9.5
2008	5	108	7.5 (4)	9.5
2009	5	No Survey	7.5(4)	11.5
2010	5	92	9.5 (2)	11.5
2011	5	43	8.0 (3)	9.5
2012	5	70	7.5 (5)	8.5
2013	5	61	7.8 (4)	9.5
2014	5	19*	8.9 (4)	10.5
2015	5	35	6.5 (4)	6.5
2016	5	No Survey	8.7 (5)	11.5
2017	3	No Survey	5.5(1)	5.5
2018	3	44	9.5(1)	9.5

* Partial Survey

Table 2. Annual fall bighorn sheep observations/classifications for HD 441, 2003 - present. Note the significant reduction in overall numbers and lamb recruitment following the 2010/2011 die-off. **Note:** 2019* survey is a spring, winter range survey.

Year	Ewe	Lamb	1/4	1/2	3/4	3/4 +	Uncl.	Total
2003	4	2		9	15	7	0	37
2004	52	20	6	7	23	7	0	115
2005	50	21	5	7	10	8	0	101
2006	72	21	7	7	15	14	0	138
2007								
2008	56	4	4	12	18	9	3	108
2009								
2010	42	24	3	5	12	6	0	92
2011	34	1	1	2	2	2	0	43
2012	50	19	0	0	1	0	0	70
2013	29	13	4	5	5	5	0	61
2014	12	3	2			1	0	19*
2015	22	7	2	0	1	3	0	35
2016								
2017								
2018	20	10	3	4	3	2	0	44
2019*	31	14	6	3	2	1	2	60

2. What is the objective of this proposed change? This could be a specific harvest amount or resulting population level or number of game damage complaints, etc.

Although bighorn sheep population observations in this HD vary considerably, until 2010 population numbers were at relatively good levels (Table 2). Beginning in the summer of 2010, disease in conjunction with normal loss due to predation, weather and accidents and subsequent bighorn sheep loss began to occur in native populations in adjacent hunting districts to the south. Information suggests disease related mortality has occurred in the southern half of HD 441 for the following reasons:

- Disease has been identified as a factor in bighorn sheep population declines adjacent HDs to the south.
- Bighorn sheep movement between adjacent HD 421 to the south and HD 441 has been documented (Andryk 1983) and observed in recent years (Rod Duty pers. comm.).
- Very few if any bighorn sheep have been observed during surveys or incidentally in the southern half of the district in the past 2 years where observations were common previously.

Disease is not suspected in the northern portion of the hunting district as recruitment remains good. However overall numbers are low. Bighorn sheep observed on most recent complete fall survey observations (fall 2018) place overall numbers at 51% of long-term average observed. In most recent fall survey observations, 2013 and 2015, were 58% of long-term average. This spring, a wintering range survey was conducted for the first time, partly in response to low observed numbers in the traditional fall survey. A total of 60 bighorn sheep were observed (Table 2). It must be mentioned however bighorn sheep are difficult to survey in this hunting district. Based on observations and hunter reports however, overall numbers of rams to include all ages of rams appear to be struggling in this area. The previous 2 seasons, only 1 ram was harvested each season.

Hunter reports and observations also appear to indicate lower number of rams observed.

In order to reduce hunting pressure on what appears to be currently a low number of rams, this license reduction is being proposed.

3. How will the success of this proposal be measured? This could be annual game or harvest surveys, game damage complaints, etc.

Success of this proposal will be monitored and gauged through hunter harvest success to include maintaining an average harvest age of rams at, at least 7.5 years old, hunter satisfaction, and bighorn sheep surveys observations with respect to population objectives and harvest strategies.

4. What is the current population's status in relation to management objectives? (i.e., state management objectives from management plan if applicable; provide current and prior years of population survey, harvest, or other pertinent information).

Survey results vary widely in this hunting district as it is difficult to survey given the widely dispersed nature of suitable habitat and low density of bighorn sheep. The most recent observations (May 2019) in this HD place numbers at not less than 60 animals. This survey was the first completed during spring when bighorn sheep are on winter range. Traditionally, this

HD has been surveyed in late August or early September. The trend of these traditional surveys is significantly lower (51%) than the long term average. A partial survey was conducted in 2014 while conditions and helicopter availability prevented a survey in 2016 and the Family Peak Complex Fire prevented a survey in 2017. Therefore, recent aerial surveys are likely not entirely representative of the population but do indicate decreased numbers.

In accordance with the 2010 FWP Bighorn Sheep Conservation Strategy, overall population objectives for bighorn sheep in this HD are for observations to be within +/-10% of 200 animals. However, the bighorn sheep observed have yet to meet this goal. In addition, lamb:ewe ratio objectives are to observe ≥ 30 lambs:100 ewes. Fall 2018 observations are 50 lambs:100 ewes, although the sample size is small. There are also specific ram objectives to include a minimum observation of 40-60 rams:100 ewes and at least 30% of the observed rams must be $\geq \frac{3}{4}$ horn curl.

Ram observations have varied widely for this hunting district and are not consistent enough to evaluate against objectives. However, hunter comments also portray observations of limited bighorn sheep and especially older age rams observed during the hunting season. It is for these reasons, potential impacts of disease, low observation numbers, and unfavorable hunter reports, reducing the quota from 3 to 1 in this hunting district is being proposed.

5. Provide information related to any weather/habitat factors that have relevance to this change (i.e., habitat security, hunter access, vegetation surveys, weather index, snow conditions, and temperature / precipitation information).

Weather patterns in this area have been such to provide adequate production and recruitment into this population to sustain good bighorn sheep numbers. Habitat conditions are sufficient to sustain bighorn sheep numbers within population objective. The winter of 2016-2017 was more severe usual with increased snow fall. The winter of 2017-2018 was also severe likely resulting in additional winter mortality. The most recent winter (2018-2019) was relatively mild until February and likely produced little overwinter mortality.

Much of HD 441 has burned in recent years. A portion of the northern portion of the district burned in 2015 and another portion burned in 2017. Earlier, a major portion of the southern district burned in 2007. Over time, this will improve bighorn sheep habitat but has yet to appear to benefit bighorn sheep population.

This area consists of nearly 100% public land hunting opportunity so access to these bighorn sheep is not generally a concern.

6. Briefly describe the contacts you have made with individual sportsmen or landowners, public groups or organizations regarding this proposal and indicate their comments (both pro and con).

Some contact has been made regarding this proposal. The proposal was discussed with area game wardens who both support this proposal. A limited number of sportsmen have been contacted who have either supported the proposal or remained neutral.

Submitted by: Ryan Rauscher, Wildlife Biologist – Conrad Area Office

Date: May 10, 2018

Approved: _____
Regional Supervisor / Date

Disapproved / Modified by: _____
Name / Date

Reason for Modification:

Literature Cited:

Andryk, Timothy A., 1983. Ecology of bighorn sheep in relation to oil and gas development along the East Slope of the Rocky Mountains, northcentral Montana.