

**PURGATOIRE**

**BIGHORN SHEEP MANAGEMENT PLAN**

**S-61**

**Prepared For:**

**THE COLORADO DIVISION OF WILDLIFE**

**By: JEFFREY A. YOST**

**January 2002**

# **ROCKY MOUNTAIN BIGHORN SHEEP MANAGEMENT PLAN**

## **Executive Summary**

**Sheep Management Unit:** S-61, PURGATOIRE

**Current Population Estimate:** 240

**Population Objective:** 300

**Current Sex Ratio:** 55

**Sex Ratio Objective:** 60

### **Significant issues raised from the public and how the plan addresses those issues:**

Most comments received from the public involvement process dealt with increasing the number of sheep licenses available and reducing predators. There is a desire from the public to have a non-resident ram license available in the DAU. In order to have a non-resident ram license available there must be at least 5 ram sheep licenses offered. Currently there have been only 3 ram licenses annually. Biologically the herd can withstand 5 ram licenses. However, most hunters in S-61 hunt on the limited amount of public land there. It has been felt that increasing license numbers would lead to overcrowding on the public areas. A solution to this dilemma might be to offer 5 ram licenses with split season dates. Thus hunters could be separated by season structure with 2 licenses during the first time period and 3 during the second, or, vice versa. DAU objectives for population and sex ratio will remain at current levels.

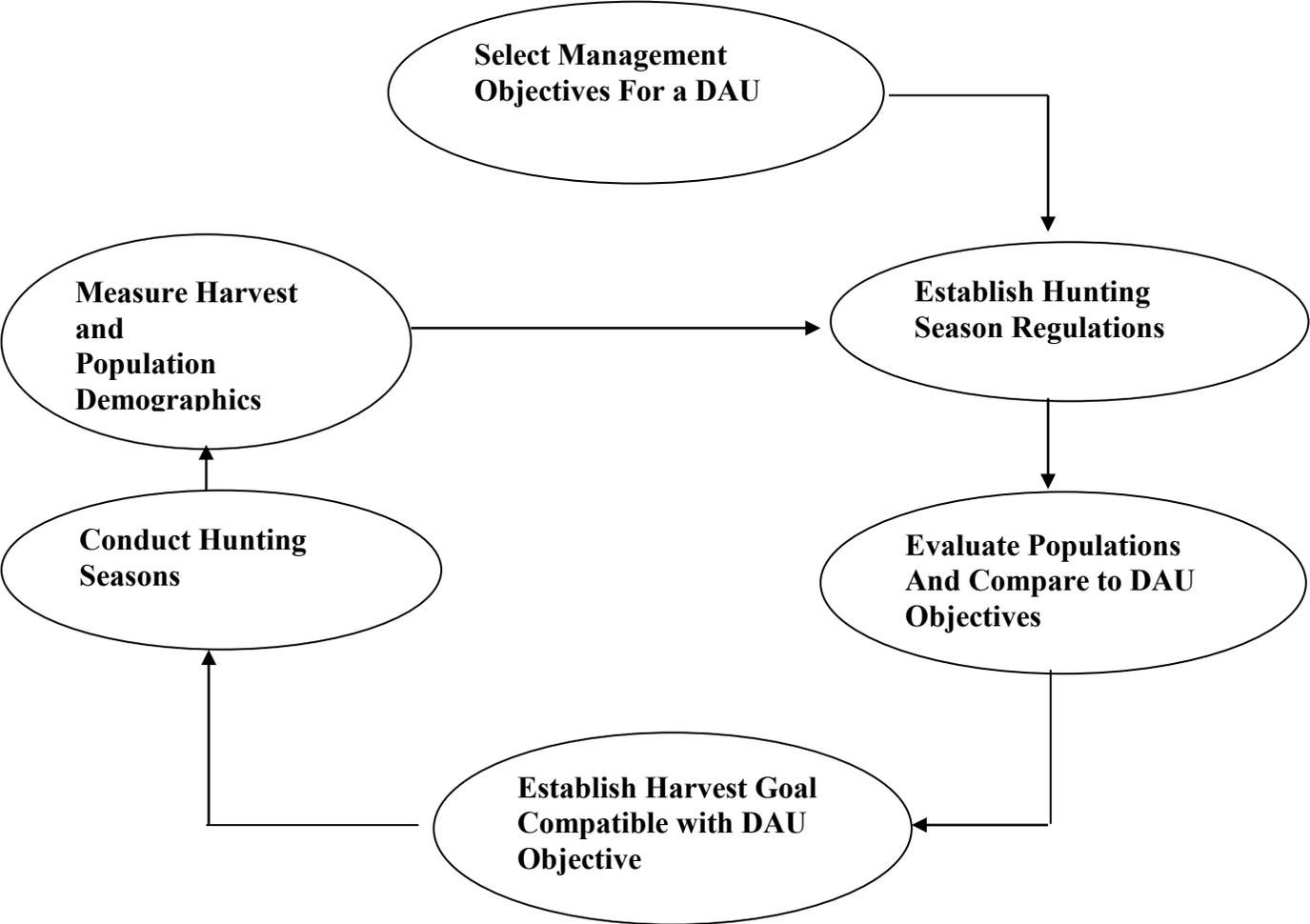
## **BIGHORN SHEEP MANAGEMENT PLANS AND OBJECTIVES**

Historically, big game seasons were set by tradition and/or political whims rather than by current wildlife population levels or habitat conditions. This is still the case to some extent. However, with today's advances in technology and information exchange, the public is demanding more accountability for wildlife management. To meet this demand for accountability, the Division of Wildlife (DOW) has established objectives for individual herds of big game animals. These herds are managed at the Data Analysis Unit (DAU) level, or in the case of bighorn sheep and mountain goat, at the individual population level (sheep unit). Individual herds are managed for long-term population objectives as well as desired male:female ratios.

Each bighorn sheep unit is managed for a specific herd of animals. The boundaries of the unit are generally defined by geographic features, which minimize animal movement into, or out of, the unit. The approach used to manage a sheep unit relies on the short and long-term demographics and size of the herd. Annual information on each herd is collected, then analyzed, and decisions are made for the upcoming hunting seasons. This cycle repeats on an annual basis with the number of available hunting licenses adjusted to meet yearly herd objectives for sex ratio and population size. These plans are designed to meet both the public's desires for wildlife based recreation and the Division of Wildlife's - Long Range Plan goals, while at the same time minimizing human/wildlife conflicts.

Members of the general public, clubs, organizations, and governmental entities are provided many avenues for input into the herd management planning process. Opportunities to comment are provided at public meetings, through written requests, through personal contacts between DOW personnel and these groups, and by attending Wildlife Commission meetings. All comments and suggestions received will be considered and applied to these management plans where feasible and pending approval of the plan by the Wildlife Commission.

# **COLORADO'S BIG GAME MANAGEMENT BY OBJECTIVE PROCESS**



## **PURGATOIRE CANYON POPULATION**

### Physical Description

The Purgatoire Canyon is located in southeastern Colorado (Figure 1). Boundaries for this unit include; (Bent, Las Animas, Otero Counties) bounded on the north by US 50; on the east by Hwy. 109; on the south by US 160; and on the W by US 350. The unit covers approximately 1,000 square miles. The varied geography of the Purgatoire Canyon includes; cedar breaks, canyon lands, short grass prairie, sandsage rangeland, short grass pasture, with limited grain and hay farming on the flats. Although several drainages cross S-61 the main watercourse is the Purgatoire River. Tributaries of the Purgatoire include Chacuaco Creek, Plum Creek, and Vachita Creek. Other major geographic features are Lockwood Arroyo, Taylor Arroyo, Van Bremer Arroyo, Bent Canyon, Chacuaco Canyon, Jack Canyon, Smith Canyon, and Vogel Canyon.

With altitudes ranging from 3,500' to 5,500', the climate is characterized by long, hot, dry summers, and mild winters. Precipitation ranges from 10"- 15" annually with much of this coming as summer monsoons. Severe thunderstorms and occasionally, severe blizzards pass through the area.

Unit S-61 is a mixture of public and private land. The major portion of public land accessible by the public is found on the Comanche National Grasslands and is administered by the USFS. Additionally the United States Army's Pinion Canyon Maneuver Site (known as Pinion Canyon) is found entirely within S-61. Access is restricted by the US Army on Pinion Canyon, but can be obtained for hunting during established time periods with a valid hunting license and access permit for Pinion Canyon. Passes for Pinion Canyon are available from Fort Carson. Limited amounts of land controlled by the Bureau of Land Management (BLM) and the State Land Board (SLB) are also found here. However these areas are so small they do not constitute a viable access option for the public. Likewise, properties managed by the Colorado Division of Wildlife (CDOW) are very limited. Land controlled by government agencies accounts for approximately 30% of the area. Permission to hunt sheep on some private land can be obtained here for a trespass fee ranging up to several thousand dollars or more. The majority of sheep hunters are unwilling to pay the trespass fee and hunt on the Comanche National Grasslands or Pinion Canyon.

Land use (both public and private) is almost exclusively agricultural. Livestock grazing occurs on private land, the Comanche National Grasslands, BLM, and SLB properties. Farming methods consist of both dryland and irrigated crops with limited amounts of alfalfa, and small grains (wheat, rye, corn and milo) produced.

Land use in the area has not changed significantly in recent times. Development is not currently a significant threat to sheep habitat. A conversion of many small dryland crop fields to CRP has occurred over the past 15. However, this has never been a major farming area. Most agricultural

use of the land has centered on grazing domestic livestock. CRP has provided a refuge for many species of wildlife. Deer in particular have adapted quite well to the cover offered in CRP fields. Sheep are not found in association with CRP fields.

## POPULATION DYNAMICS

### Sheep Distribution

Sheep are found mainly in the steeper canyon areas of the unit with concentrations occurring on or near creek drainage's. However, due to the number of side canyons and available habitat, they can be scattered through out much of the unit wherever the terrain is broken and steep.

### Sheep Population Size

Bighorn sheep were absent from this area until April of 1982 when 17 sheep from the Never Summer Range in Rocky Mountain National Park were released on the Purgatoire. This original transplant consisted of 2 rams, 10 ewes, and 5 lambs. A second transplant from Cottonwood Creek in the Collegiate Range occurred in March of 1986. To date these have been the only transplants into S-61. The S-61 sheep population has increased steadily and is currently estimated at 240 animals. License numbers have typically averaged 3 ram permits annually. To date, ewe licenses have not been issued in this unit. In 1995 6 ram licenses were issued, but the number returned to 3 in 1996 and has remained at 3 ever since.

### Sheep Harvest

Sheep harvest has been very consistent since the first season was opened here in 1991. The cumulative success rate for sheep hunters is 88% with 30 of 34 hunters taking rams. No ewe licenses have been issued in S-61 and no ewe harvest has occurred there. (See Figure 2 for harvest data).

### Hunting Pressure

As mentioned above, hunting pressure in Purgatoire has remained consistent since the initial season in 1991. Biologically the herd could withstand an increase in the number of ram licenses allocated and could likely tolerate some ewe harvest. However, no increase in license numbers is planned until more public land becomes available to sheep hunters or a different season structure is developed which will allow separation of hunters by hunt time frame rather than geographic separation. The reasoning for this is because most hunters who draw a license currently hunt on the limited public land available. Adding more licenses will crowd hunters onto the public land, thus decreasing the quality of the hunt and decreasing the success rate. Most successful sheep hunters in S-61 have taken their rams on public land administered by the U.S. Forest Service or the U.S. Army - Pinion Canyon property.

In recent years there has been some pressure from area landowners to include a non-resident license in the S-61 allocation. This has not occurred because by regulation there must be a minimum of 5 ram licenses allocated in a unit before a non-resident tag may be offered. The pressure for a non-resident tag is because non-resident hunters are typically more willing than residents to pay a high trespass fee for private land sheep hunts. The best way to approach this is to offer one non-resident ram license every other year.

## HERD MANAGEMENT

### Inventory

Aerial inventory is the preferred method of counting bighorns. The only realistic way to count this herd is by helicopter. Fixed wing aircraft fly too fast and can't maneuver through the terrain inhabited by these sheep. Budget constraints limit the amount of sheep inventory performed on the Purgatoire sheep herd. Aerial inventory for these sheep has been winter helicopter counts done in January 1992, 1994, 1996, and 2001. The area DWM maintains annual ground counts of adult sheep and lambs, these are not as extensive or thorough as aerial counts.

Table showing Aerial Inventory Results

Year	# Rams	# Ewes and Lambs	Sex Ratio
1992	19	50	38:100
1994	35	93	51:100
1996	43	126	46:100
2001	21	38	55:100

In December of 2000 hunters reported seeing bighorn sheep in the Purgatoire herd showing symptoms of lungworm. Investigation by CDOW field personnel and Pinion Canyon Maneuver Site Personnel found no evidence to support these observations. Sheep fecal pellet groups were collected and analyzed for parasites and groups of sheep were observed for symptoms of disease, none were detected. However, a low number of sheep were observed during the inventory flight in 2001. This low count does not appear to be due to a sheep die off, but rather sheep being missed during the count. Hunters and field personnel continue to report seeing large numbers of sheep in the area.

### Current Conditions

The post-hunt population estimate for 2000 is 240 total sheep. The long-term population objective is 300 sheep with a ram:ewe ratio of 60:100. Current ram:ewe ratio is estimated at 55:100. Management is geared toward achieving the ram:ewe ratio, attaining the population objective, and providing recreational opportunity in the form of hunting and viewing of bighorns. Eighteen years after the original release his herd has expanded greatly and is nearing it's long-term population objective.

## Issues and Strategies

Locally, concern has been expressed about a perceived population decline of sheep and mule deer due to predation by mountain lions. Local speculation is that mountain lions have held sheep numbers down. In order to address this issue, as well as livestock losses, the quota of lion permits for this area has been increased from 5 to 10 lions. However, since the increase in lion quota several years ago, lion harvest has averaged 4-5 lions annually from this vast area encompassing 20 Game Management Units.

Major issues gathered from public input:

1. Want a non-resident ram license
2. Want an increase in sheep licenses
3. Predators are killing sheep, deer, and livestock

## Alternative Development

Announcements (Appendix A) for sheep herd management plan public input meetings were made in several ways. A press release was made to local media outlets and letters were mailed to some landowners requesting input.

All public input has been received and considered. Based on external comments received from the public meetings and internal comments from CDOW personnel, the current long-term population goals and sex ratio objectives will not be modified. The current plan goals and objectives will remain in place. No written comments were received concerning this DAU plan.

Preferred Alternative

The preferred alternative calls for a long-term population level of 300 sheep with a ram:ewe ratio of 60 rams per 100 ewes.

---

Table 1. Population Alternatives Provided

S-61, PURGATOIRE

<u>Alternative number</u>		<u>Population Level</u>	<u>Rams/100 Ewes</u>	<u># of Licenses</u>
1		250	60	3 (rifle)
		250	60	5 (3 rifle, 2 archery)
		250	60	6 (5 res., 1 non-res.)
<b>2</b>	***	<b>300</b>	<b>60</b>	<b>5 (rifle-1 would be non-res)</b>
		300	60	5 (3 rifle, 2 archery)
		300	60	6 (5 res., 1 non-res.)
3		350	60	8 (8 rifle)
		350	60	8 (6 rifle, 2 archery)
		350	60	8 (4 rifle, 4 archery)

---

License number alternatives above are for ram licenses. Ewe license numbers would need to be set accordingly to maintain the desired population objective.

**\*\*\* Preferred Alternative**

---

# **APPENDIX A**

ANNOUNCEMENT OF PUBLIC MEETING

MEETING & WRITTEN REQUEST COMMENTS

PUBLIC MEETING PARTICIPANT LIST



*For Wildlife-  
For People*

## **BIGHORN SHEEP AND ELK MANAGEMENT PLANS**

### **ANNOUNCEMENT OF PUBLIC MEETINGS**

The Colorado Division of Wildlife is currently in the process of writing BIGHORN SHEEP and ELK management plans for southeastern Colorado. We would like to provide an opportunity for you to identify issues and concerns you may have about these local herds. Specific game management units (GMU's) currently being addressed for sheep include S-48 Carrizo and S-61 Purgatoire, for elk E-45 Cimarron (GMU's 132, 139, 145) and E-54 Chacuaco (GMU's 136, 137, 138, 143, 144, 145). See Big Game Hunting Brochures for specific location of GMU's.

As part of this process several public information\comment meetings are planned. The first meeting will be held at 7:00 pm. June 13, 2001 at the Kim Activity Center. The second will be held on June 18, 2001 in Elkhart, Kansas at the City Library – 7:00 pm. You are invited to attend this meeting to express your concerns. If you are unable to attend either meeting you may send written comments to: Jeff Yost, Colorado Division of wildlife, 1204 E. Oliver, Lamar, CO 81052 or telephone 719-336-6605. All comments received will be considered for inclusion in the plans.

### **DATE AND LOCATION OF MEETINGS:**

June 13, 7:00 p.m., Kim, CO - Activity Center  
June 18, 7:00 p.m., Elkhart, KS – City Library

STATE OF  
COLORADO

Bill Owens, Governor

DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF WILDLIFE

AN EQUAL OPPORTUNITY EMPLOYER

Russell George, Director  
6060 Broadway  
Denver, Colorado 80216  
Telephone: (303) 297-1192



*For Wildlife-  
For People*

June 12, 2001

Dear Landowner or Concerned Party

The Colorado Division of Wildlife is currently in the process of writing BIGHORN SHEEP and ELK management plans for southeastern Colorado. We would like to provide you an opportunity to identify issues and concerns you may have about these local herds. Specific game management units (GMU's) currently being addressed for bighorn sheep include S-48 Carrizo and S-61 Purgatoire, for elk E-45 Cimarron River (GMU's 132, 139, 145) and E-54 Chacuaco (GMU's 136, 137, 138, 143, 144, 145). See Big Game Hunting Brochures for specific location of these units.

Enclosed you will find information pertaining to these sheep and elk herds. Any comments or suggestions you have about how these herds are managed will be very useful in writing the plans. Examples of things we need to know are: how you feel about the size of the herds, do you want to see more elk/less elk, more sheep/less sheep, more licenses available, higher male:female ratios, different season structures, any suggestions you may have on how better to manage the resource, etc. I look forward to receiving your input. All comments received will be considered for inclusion in the plans. Comments must be received no later than June 25, 2001. Thank you for your interest!

Comments can be sent to:

Jeff Yost  
Colorado Division of wildlife  
1204 E. Oliver, Lamar, CO 81052  
Telephone 719-336-6605.

Sincerely,

Jeffrey A. Yost  
Area 12 Terrestrial Biologist

DEPARTMENT OF NATURAL RESOURCES, Greg E. Walcher, Executive Director  
WILDLIFE COMMISSION, Rick Enstrom, Chair • Robert Shoemaker, Vice-Chair • Marianna Raftopoulos, Secretary

Members, Bernard Black • Tom Burke • Philip James • Brad Phelps • Olive Valdez  
Ex-Officio Members, Greg E. Walcher and Don Ament

Participant List

Bighorn Sheep and Elk Management Plan Meeting

Kim, CO - June 13, 2001

<u>Name</u>	<u>Address</u>	<u>Affiliation</u>
Jeff Yost	1204 E. Olive Lamar, CO 81052	(CDOW)
Kelly Crane	1204 E. Olive Lamar, CO 81052	(CDOW)

Responded with Comments

Everett Jackson Jr.	27500 Cnty. Rd. 183 Kim, CO 810498	Landowner
Dean Silva	0014 E. Cnty. Rd. Monte Vista, CO 81144	Landowner
Adin Mizer	2163 County Rd J Kim CO 81049	Landowner

## Comment List

### Bighorn Sheep and Elk Management Plan Meeting

Kim, CO - June 13, 2001

- Make cow licenses additional
- Not enough public land to justify license increase
- Split the sheep season into 2 parts with different season dates, then increase license numbers with half valid for each season
- Have enough licenses in the sheep unit so there is a non resident license available

### Written Comments Received

- Would like to see more sheep and elk in this unit
- Lions and bears are very hard on the young, last spring we saw many twins, within a few weeks the lambs had diminished to two
- Do not want to see all the lions and bears done away with but there has to be more control over them
- Last week over a 5-day period we saw three different bears in a six-mile radius. That is too many bears
- Not only are sheep and elk populations in jeopardy from the predators so are the cattle herds of the local ranchers
- The lion season should run until the end of April

### Phone Comments Received

- Suggest a 10-14 day bull elk hunt in September for the Chacuaco herd with any method of take allowed
- Increase number of cow licenses available
- The Chacuaco and Purgatoire drainage elk are really starting to expand

## Comment List

### Bighorn Sheep and Elk Management Plan Meeting

Elkhart, KS - June 18, 2001

- \* Main group of elk numbers 40-50 animals
- \* Move back and forth between Colorado and Kansas
- \* Quail hunters in Kansas push the elk back into Colorado
- \* Need Cooperative management plan between CO, KS, OK, USFS, RMEF, and Landowners
- \* Plan must include both private and public land
- \* Good quality bulls are possible
- \* Colorado needs to change regs so bulls can grow large
- \* Kansas Wildlife and Parks would like to hold herd at approximately 50 animals
- \* Cimarron National Grasslands would like to hold herd at approximately 50 animals
- \* Kansas would be interested in limited hunting (work with Colorado on setting seasons)
- \* Need to get the Rocky Mountain Elk Foundation involved
- \* Interstate license is needed so elk can be harvested when they cross state lines

Participant List

Bighorn Sheep and Elk Management Plan Meeting

Kim, CO - June 13, 2001

<u>Name</u>	<u>Address</u>	<u>Affiliation</u>
Jeff Yost	1204 E. Olive Lamar, CO 81052	(CDOW)
Kelly Crane	1204 E. Olive Lamar, CO 81052	(CDOW)

Responded with Comments

Everett Jackson Jr.	27500 Cnty. Rd. 183 Kim, CO 810498	Landowner
Dean Silva	0014 E. Cnty. Rd. Monte Vista, CO 81144	Landowner
Adin Mizer	2163 County Rd J Kim CO 81049	Landowner

Participant List

Bighorn Sheep and Elk Management Plan Meeting

Elkhart, KS - June 18, 2001

<u>Name</u>	<u>Address</u>	<u>Affiliation</u>
Jeff Yost	1204 E. Olive Lamar, CO 81052	(CDOW)
Wendy Figueroa	1204 E. Olive Lamar, CO 81052	(CDOW)
Scotty Baugh	1001 McArtor Rd. Dodge City, KS 67801	(KDWP)
Mike Mitchener	512 SE 25 <sup>th</sup> AVE. Pratt, KS 67124	(KDWP)
Joe Hartman`	P.O. Box 300 Elkhart, KS 67950	(USFS)
Lloyd Fox	P.O. Box 1525 Emporia, KS 66801	(KDWP)
Daryl Fisher	785 S. HWY 83 Garden City, KS 67846	(KDWP)
Mike Elson	P.O. Box 300 Elkhart, KS 67950	(USFS)