

**Data Analysis Unit D-21  
Deer Management Plan  
Game Management Unit 54**



**Colorado Division of Wildlife  
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**October, 2006**



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**DAU D-21 (West Elk)  
EXECUTIVE SUMMARY  
October 2006**

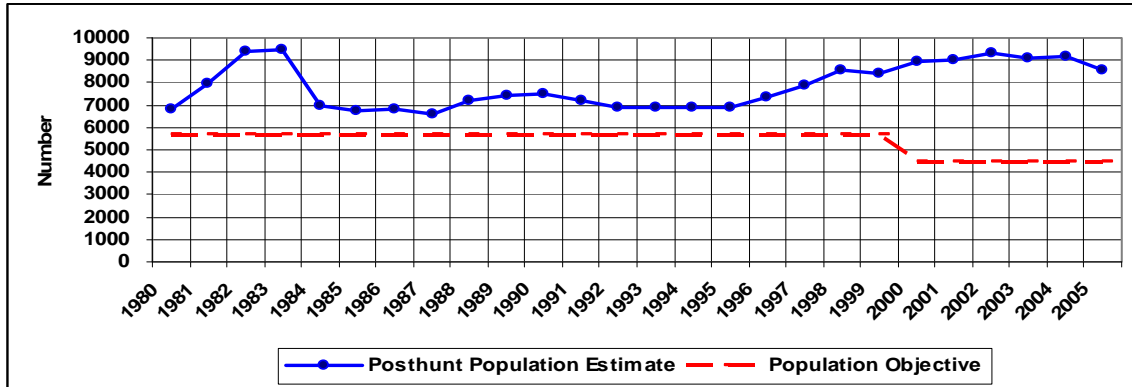
**GMUs: 54**

**Land Ownership: 23% Private, 59% USFS, 11% BLM, 3% NPS, 3% State**

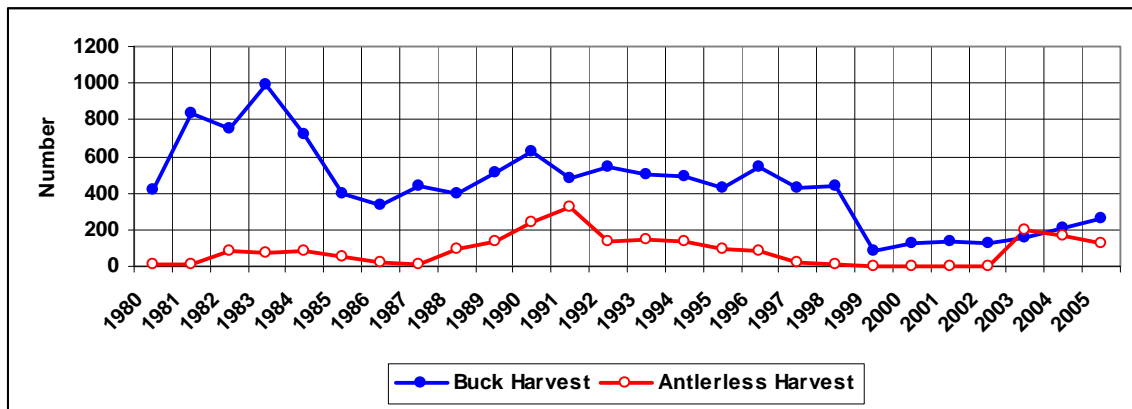
**Posthunt Population: Objective 6,500-7,500 2005 Estimate 8,500**

**Posthunt Sex Ratio: Objective 40-45:100 2005 Observed 57:100**

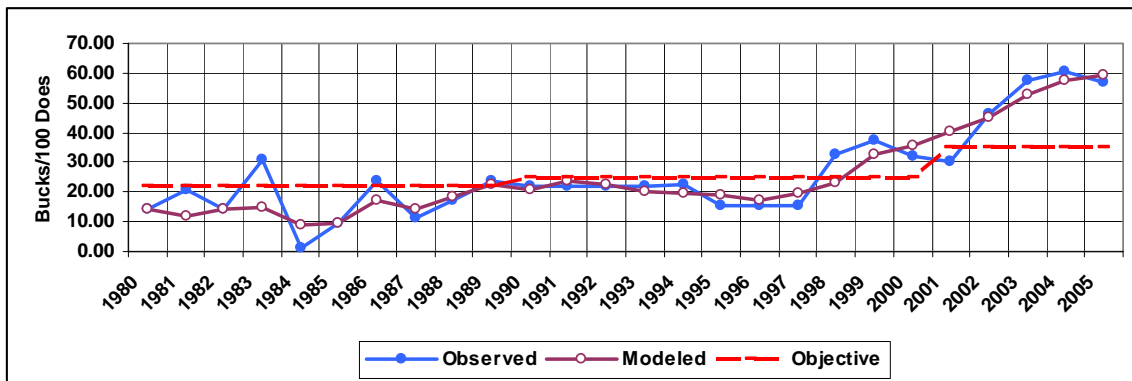
*Figure 1. D-21 Posthunt Population Estimates*



*Figure 2. D-21 Harvest*



*Figure 3. D-21 Posthunt Sex Ratios*



## **D-21 Background**

The game management units surrounding Gunnison have traditionally been popular mule deer hunting destinations for resident and non-resident hunters. In 1999 deer licenses became limited in all Colorado game management units, due largely to declines in overall deer numbers and diminishing buck:doe ratios. License allocation in D-21 has been extremely conservative since limitations went into effect and GMU 54 is now renowned nationally for trophy mule deer hunting.

The 2005 posthunt population estimate was approximately 8,500 animals, which was over the previous objective of 4,500. During the last twenty-five years, modeled estimates indicate that the deer population in D-21 reached its peak during the early 1980's. The winter of 1983-84 was severe in the Gunnison Basin, which resulted in substantial winter mortality and marked reductions in local deer populations. During the late 1980's and early 1990's deer numbers remained relatively static in the DAU, but began increasing significantly following license limitations and a series of mild winters in the Gunnison Basin. Sex ratios in D-21 have fluctuated over the last twenty-five years, but have increased noticeably since antlered licenses were reduced in 1999. Buck:doe ratios have exceeded 50:100 over the last three years, and were estimated at 57:100 following the 2005 hunting season. From 1992 through 1998, an average of 2,600 deer hunters participated in the annual hunting seasons in GMU 54. From 1999 to 2005, following license limitations, hunter numbers have averaged around 350. In 2006 1,030 either-sex, antlered, and antlerless licenses were available in D-21 across all seasons. Over the last seven years success rates have been nearly 64% with approximately 230 deer being harvested annually.

The previous DAU plan for D-21 was approved by the Colorado Wildlife Commission in 2001, but for a variety of reasons local managers determined that a plan amendment was necessary. The chief motivation for the amendment was a significant update to the population models that occurred in 2003. At that time, mule deer models for all of the Gunnison Basin DAU's were converted to a spreadsheet format, which resulted in significant changes in population estimates from the previous POP II models. The previous DAU population objectives were largely based on POP II estimates, and were outdated. The second factor motivating the amendment was the recent concern regarding the sex ratio objectives established in the 2001 DAU plans. The Gunnison Basin DAU's were over sex ratio objectives for a number of years, and some constituents expressed great interest in increasing those objectives in order to maintain greater numbers of bucks, and more specifically, greater proportions of bucks in older age classes.

Mule deer management has generated great interest from many different constituents in the Gunnison Basin, with issues revolving primarily around trophy hunting versus hunting opportunity. The Gunnison area has received a tremendous amount of publicity for its mule deer hunting over the last five years, which has generally resulted in increased numbers of applicants and burgeoning preference point requirements. The CDOW held a public meeting on August 21, 2006 to discuss mule deer management in the Gunnison Basin, and to solicit public comment on desired future objectives. Managers received fewer comments than expected following that public meeting, although some trends were noted. Approximately half of those individuals participating in a written survey indicated that they would like to hunt every one to two years, while the other half indicated that they would be content to hunt every three to five or more years. The majority of respondents, however, indicated that higher buck:doe ratios were desirable when DAU plans were amended. Letters soliciting comment were also sent to local county commissioners, livestock interests, sportspersons & outfitters, and federal agencies. Response letters were received from the Gunnison Stockgrowers Association and the Bureau of Land Management. Those comments indicated that increasing mule deer population objectives in the Gunnison Basin was not appropriate, based primarily on winter range condition, elk population concerns, and potential impacts to other land uses such as public land livestock grazing.

The Division of Wildlife recognizes that there is significant interest in preserving high quality mule deer hunting in the Gunnison Basin. However, it is also recognized that many hunters are becoming increasingly concerned with diminishing levels of hunting opportunity, and many of the other local issues

surrounding trophy mule deer management. After considering the many biological and social variables in the DAU, the final management objectives in D-21 are:

- **Post-hunt Population Objective = 6,500-7,500**
- **Sex Ratio Objective = 40-45 bucks : 100 does**

*Potential advantages:*

- This management scenario continues to provide high quality buck hunting and maintains older age classes of males.
- This management scenario allows managers to continue harvesting antlerless deer in the DAU, which will provide additional deer hunting opportunity.
- Population reduction is expected to reduce the overall utilization of key forage species throughout area winter ranges.
- This management scenario is expected to provide a desirable balance between hunt quality and opportunity.
- If severe winter mortality is experienced, shorter time periods would be required in order to restore the male segment of the population (ie. sex ratio objective).
- Post-rut bucks may enter winter in better condition, thus increasing survival.
- Success rates will likely remain high across all seasons.

*Potential disadvantages:*

- There will be some increases in the number of hunters participating in annual hunting seasons, especially when compared to the previous five years.
- National publicity is expected to keep application rates high for local game management units, and it is likely that preference points will continue to be required for all antlered licenses.
- The number of older males (5+ years) in the population is likely to be reduced slightly due to the combination of increased license allocation and sustained interest by trophy mule deer hunters.
- When objectives are reached, hunting opportunity may decline when management shifts to more of a “maintenance” mode.

## INTRODUCTION AND PURPOSE

The Colorado Division of Wildlife (CDOW) manages wildlife for the use, benefit and enjoyment of the people of the state in accordance with the CDOW's Strategic Plan and mandates from the Wildlife Commission and the Colorado Legislature. Colorado's wildlife resources require careful and increasingly intensive management to accommodate the many and varied public demands and growing impacts from people. To manage the state's big game populations, the CDOW uses a "management by objectives" approach (Figure 4). Big game populations are managed to achieve population and sex ratio objectives established for Data Analysis Units (DAUs). Each DAU generally represents a geographically discrete big game population. The DAU planning process establishes herd objectives that support and accomplish the broader objectives of the CDOW's Strategic Plan.

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

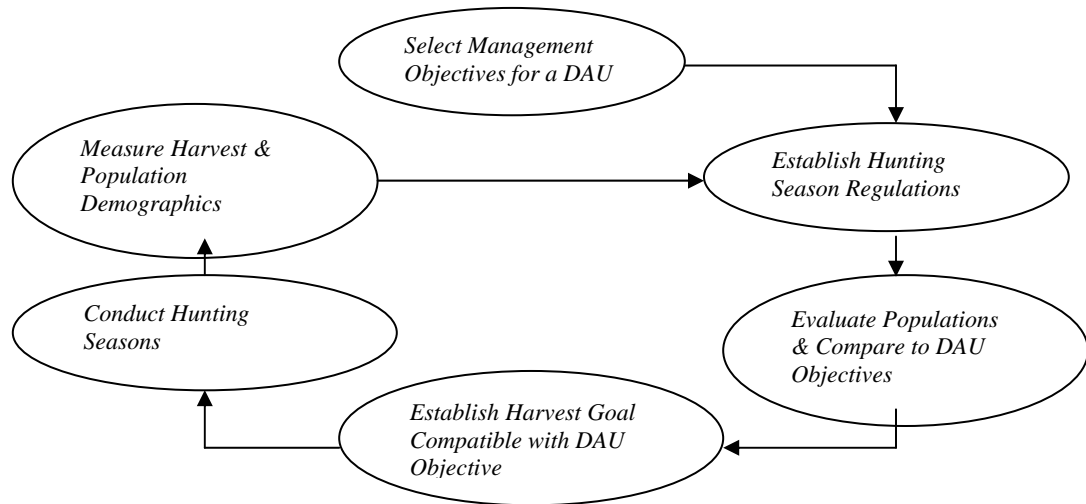


Figure 4. Management by objectives process used by the CDOW to manage big game populations on a DAU basis.

The DAU planning process incorporates public input, habitat capabilities, and herd considerations into management objectives for each of Colorado's big game herds. The general public, sportsmen, federal land management agencies, landowners, and agricultural interests are involved in determining DAU plan objectives through questionnaires, public meetings, comments on draft plans, and input to the Colorado Wildlife Commission. Limited license numbers and season recommendations result from this process.

Each DAU is managed to meet herd objectives that are established through the DAU planning process. The DAU plan establishes post-hunt herd objectives for the size and structure of the population. Once the Wildlife Commission has approved DAU objectives, they are compared with modeled population estimates. Model inputs include:

- Harvest estimates determined by hunter surveys
  - Post-hunt sex and age ratios determined by aerial classifications
    - Estimated wounding loss, illegal kill, and survival rates based on field observations and telemetry studies.

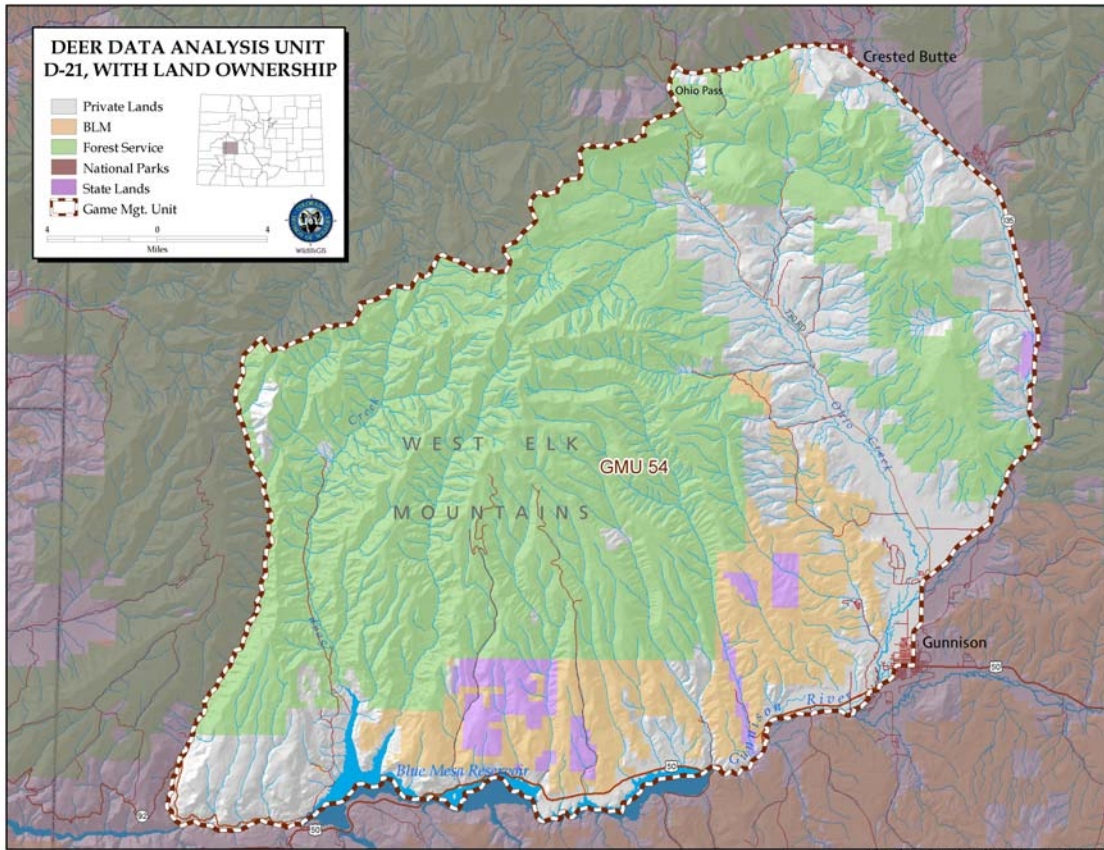
A computer model calculates the population's size and structure based on the most accurate information available at the time. The final step in the process is to calculate harvest recommendations that will align population estimates with the herd objectives.

## DESCRIPTION OF DAU D-21

### Location

Data Analysis Unit (DAU) D-21 is located in southwestern Colorado and includes Game Management Unit (GMU) 54 (Figure 5). The unit is commonly referred to as the “West Elk” deer DAU, and lies entirely within Gunnison County. The unit encompasses approximately 574 square miles and is bound on the north by the North Fork of the Gunnison River/Gunnison River divide, on the east by Highway 135, on the South by the Gunnison River, and on the west by Curecanti Creek. Communities adjacent to or within the DAU include Crested Butte, Almont, and Gunnison.

Figure 5. DAU D-21



### Topography/Climate

Elevations within the DAU range from approximately 7,500 feet near Blue Mesa Reservoir, to over 13,000 at the summit of West Elk Peak in the West Elk Wilderness. Some of the most prominent geographic features in D-21 are found in the West Elk Wilderness, which comprises a significant portion of the unit. Some of the most recognized rivers and creeks in the DAU include the Gunnison and East Rivers, and Ohio, Mill, Beaver, Red, Soap, and Curecanti creeks. Linear drainages running from north to south occur in the southern half of GMU 54 creating large, broken canyons separated by vast ridges. Many of the drainages in the unit flow into Blue Mesa Reservoir, which is one of the largest man-made bodies of water in Colorado. On the eastern side of the unit, prominent geographic features include Red Mountain and Flat Top Mountain, which provide important mule deer habitat year-round.

Elevation and season have a profound effect on climate within D-21. Low elevation valleys generally receive less annual precipitation, while higher elevation mountainous environments are prone to heavy

snow accumulations and much shorter growing seasons. The elevations from 9,000 to 13,000 feet generally receive around 40 inches of annual precipitation, while lower elevations at the southern end of the unit typically average 12-16 inches. By October each year, snow generally begins accumulating, which may persist until May or June of the following year. The Gunnison Basin has the distinction of being one of the coldest places in the continental United States. The area is prone to severe winters in terms of both snow accumulations and temperatures, which often stay below zero for weeks or months at a time.

### Vegetation

Plant communities are diverse in D-21 and vary depending on many factors including elevation, aspect, moisture regime, and soils (Table 1). Topographic features which include riparian corridors, deep broken canyons, vast sloping expanses of forest, and high elevation subalpine and alpine valleys provide a mosaic of excellent habitat for mule deer. The Gunnison Basin is a high mountain valley dominated by big sagebrush ecosystems at lower elevations that are interspersed with wetland/riparian areas, irrigated hay meadows, and artificially seeded rangelands. Bitterbrush and Rocky Mountain juniper are commonly found in sage dominated communities in the DAU, and are of importance to local mule deer herds. Mixed-mountain shrub communities comprised of serviceberry, chokecherry, mountain mahogany, and oak are found at slightly higher elevations with occasional pockets of aspen, Douglas fir and Ponderosa pine. Higher elevations are dominated by aspen, Lodgepole pine and Engelmann spruce/Subalpine fir forests. Alpine tundra is present within the DAU at the highest elevations, primarily in the West Elk Wilderness Area.

Table 1. ECOLOGICAL TYPES OF THE GUNNISON BASIN (Johnston 2001)

<b>Zone</b>	<b>Dominants</b>	<b>Elevation on north and east slopes, ft</b>	<b>Elevation on south and west slopes, ft</b>	<b>Soil Temperature Regime(s)</b>	<b>Soil Moisture Regime(s)</b>
Alpine	Gravity and freeze-thaw processes, mostly very low herbaceous plants such as curly sedge, alpine avens, tufted hairgrass	>11,800	>12,200 ft	Pergelic, Cryic	
Subalpine	Subalpine fir, Engelmann spruce, aspen, lodgepole pine, Douglas-fir, bristlecone pine, mountain big sagebrush, Thurber fescue, planeleaf and Wolf willows, Idaho fescue	9,700-11,800	10,100-12,300	Cryic	
Montane	Douglas-fir, ponderosa pine, lodgepole pine, aspen, Arizona fescue, big sagebrush, Saskatoon serviceberry, blue and serviceberry willows	9,100-10,700	9,400-11,100	Frigid	
Mountain Shrub	Douglas-fir, big sagebrush, muttongrass, Utah serviceberry, Gambel oak, yellow-Geyer-Bebb willows, narrowleaf cottonwood	7,600-10,100		Frigid	
Piñon-Juniper*	Missing	Missing		Mesic	Aridic (Torric)
Foothills-Semidesert Shrub	Wyoming big sagebrush, Indian ricegrass, Needle-and-thread, Rocky Mountain juniper, narrowleaf cottonwood	<8,400		Mesic	Aridic (Torric)

\* Piñon-Juniper is sparsely represented in the Upper Gunnison Basin.

### Land Use

#### ► **Ownership**

D-21 contains a mixture of public and private lands, but is primarily public. Approximately 76% of the DAU is public lands with 11% managed by the BLM, 59% by the USFS, 3% by the National Park Service (NPS) and 3% under the jurisdiction of the Colorado Division of Wildlife and the State Land Board. The remaining 23% of the land in D-21 is under private ownership that is primarily managed for livestock and hay production (where undeveloped). The majority of private land in the DAU is found at lower elevations within mule deer transition and winter ranges, with the largest block located in the southeastern portion of GMU 54 in and adjacent to the Ohio Creek drainage.

► ***Agriculture***

Agriculture remains of considerable importance to the local communities in D-21, and is perhaps one of the oldest and most prolific land uses in the DAU both on private and public lands. In the Gunnison area, livestock producers almost exclusively raise beef cattle, and rely heavily on private and public lands for livestock forage throughout the year. Most cattlemen produce grass hay on private lands during the growing season to provide winter forage for herds returning from public land allotments. Similar to many mountainous areas in Colorado, the largest blocks of private land in D-21 are situated in valley bottoms and riparian corridors where productivity is highest.

► ***Recreation***

The public lands surrounding Gunnison receive a significant amount of recreation throughout the year, and have always been popular tourist destinations. Many different forms of recreation occur in D-21 including hunting, hiking, camping, fishing, wildlife watching, cross-country skiing, horseback riding, shed antler hunting, mountain biking, OHV use, and snowmobiling. Recreational demand and intensity on public lands in this DAU appears to have increased over the last five to ten years. Some local resource managers and members of the public are concerned about the potential impacts to mule deer from recreational activity. Fragmentation of habitats and displacement of deer into suboptimal habitats are the chief concerns, particularly on limited winter range areas. Burgeoning interest in collecting shed antlers during mid to late winter is of great concern to the Division of Wildlife, and is an issue that has recently been examined by the Colorado Wildlife Commission.

► ***Human Development***

Over the last ten years development in D-21 has increased. In addition to primary residential development and enhanced infrastructure, the Gunnison area, like many places in the Rocky Mountain west has become a fashionable location for second home owners. The majority of D-21 is public land, but considerable development has occurred in and adjacent to the Ohio Creek drainage, and the East and Slate River Valleys. Much of the development has taken place on transition and winter ranges, which is of concern to wildlife managers. Loss of habitat or fragmentation of habitat (ie, blocked migratory corridors) due to human development may become a detriment to mule deer populations in this DAU. Participation in land use planning processes, working cooperatively with local landowners, and opportunistically acquiring conservation easements should remain priorities for local resource agencies. Preservation and enhancement of critical winter range is essential.

## **HERD MANAGEMENT HISTORY**

The Gunnison area contains large expanses of excellent mule deer habitat. It is likely that deer populations in the area were regulated historically by habitat conditions and winter severity. Predation by large carnivores, such as the gray wolf may have also limited population growth under certain circumstances. More recently, there are a host of factors believed to be exerting influence over mule deer population dynamics throughout the west. These factors have included competition with burgeoning elk populations, fire suppression & plant succession, drought, over hunting, noxious weed proliferation, human development/habitat fragmentation, and predation. Mild winters and limited hunting pressure have recently contributed to mule deer population increases in many areas of western Colorado, including D-21.

### **D-21 Management Summary**

Estimating population numbers of wild animals over large geographic areas is an inexact science. Whenever attempts have been made to account for a known number of animals in large fenced enclosures, investigators have consistently failed to see every animal. In some cases, less than 50% of the animals have been observed. High-tech methods using remote sensing have also met with very limited success. Most population estimates derived using computer model simulations involve estimations of sex ratio at birth, survival rates, wounding loss and annual production. These simulations are then adjusted to align on measured post-hunt age and sex ratio data, or in some instances density estimates derived from line-transect or quadrat surveys. The Division of Wildlife recognizes population estimation as a serious limitation in our management efforts and attempts to minimize this problem by using the latest technology and inventory methodology available. As better information is obtained on survival rates, wounding loss, fetal sex ratios

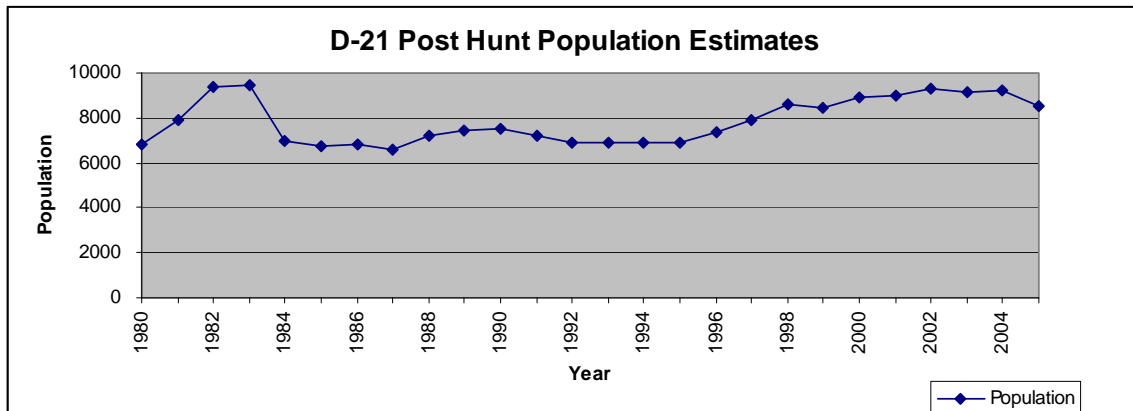
and density estimates, and whenever new modeling techniques and programs have emerged, these have been assimilated into the process for estimating populations. These changes may result in significant differences in the population size estimate and make new management strategies more appropriate. It is recommended that the population estimates presented in this document not be viewed as an exact representation of the number of animals in the DAU; instead, their utility is in helping to evaluate population trends over time.

The CDOW has traditionally used *post-hunt* population information to assess annual trends in overall numbers and sex and age composition. All data presented in this DAU plan, other than harvest, is derived from post-season classification flights and modeling sessions. Post season flights are conducted in order to classify a representative sample of the overall population and should not be misinterpreted as an all-inclusive population “count”.

**Post-hunt Population Size**

Population objectives are generally established based on a variety of different biological and social variables. These often include the productivity and condition of animal and plant communities, agricultural and private land concerns, local economics, and hunting opportunity. The deer population in D-21 has fluctuated over the last twenty years (Figure 6). The population model for this unit was recently updated, but the trend remained similar to the previous model with a population peak occurring during the early 1980’s. The population declined following the severe winter of 1983-84, but remained relatively static until the late 1990’s when numbers again began to increase. Recent population increases in the Gunnison Basin are likely the result of two primary factors. One is the limited license program the CDOW initiated in 1999 which resulted in an increase in the number of buck deer present in the population following annual hunting seasons. And perhaps of greater significance was a series of relatively mild winters that occurred in the Gunnison Basin prior to 2004. Increases in the number of antlered and antlerless hunting licenses over the last three years, and the winters of 2004-2005 and 2005-2006 have recently curtailed additional population growth. The 2006 population estimate for D-21 is approximately 8,500 animals. The previous DAU plan for this unit maintained a population objective of 4,500 animals, and is outdated. The previous population model indicated that this deer population was over objective, and it is generally accepted that the deer population in D-21 remains over objective. Revisiting the population objective was one of the central motivations for amending this DAU plan.

Figure 6. D-21 Post hunt population estimates 1980-2005



**Post-hunt Herd Composition**

**Sex Ratio (buck:doe)**

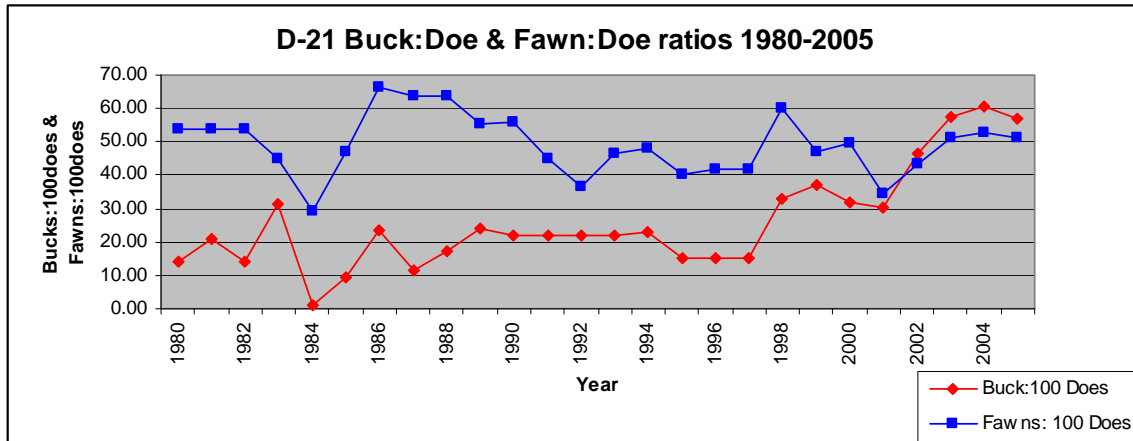
When mule deer license became limited statewide, a variety of management strategies were implemented across the state. In the Gunnison Basin, largely due to lower than desired post-season buck:doe ratios, license numbers were reduced by 90% from the previous three-year average. Following those reductions, post-season observed buck:doe ratios have steadily increased (Figure 7). Extremely conservative license allocation has produced some of the highest buck to doe ratios in the state, and hunting licenses are highly

sought after. Buck:doe ratios increased to an observed high of 60:100 post-season 2004. The post-season 2005 observed buck:doe ratio was down slightly and was approximately 57:100. These ratios contrast markedly to the low buck:doe ratios recorded in the early 1980's and mid 1990's. The lowest buck:doe ratio observed in the DAU occurred post-hunt 1984 with .9 bucks per 100 does. The previous sex ratio objective, according to the 2001 DAU plan was 35 bucks to 100 does. There has been considerable discussion and debate over the last five years as to whether that sex ratio objective remained desirable. Achieving the previous DAU plan objective would have required significant increases in the number of hunting licenses issued in future years, and there was concern that trophy bucks would no longer be present in the population at lower buck:doe ratios. Addressing the sex ratio objective was central to this DAU plan amendment.

Age Ratio (fawn:doe)

Fawn to doe ratios have varied considerably in D-21 over the last 25 years. The 2005 observed fawn:doe ratio was approximately 51:100. Age ratio trends are of interest to wildlife managers as they can be indicative of population performance and productivity. However, managing for a desired age ratio on an annual basis is unrealistic due to the tremendous variability in annual natality and mortality rates. Recruitment of fawns into the breeding population is critical for population maintenance, but changes in population size may be influenced by many factors including age-specific survival rates, reproductive rates, and climatic and habitat conditions. Figure 7 shows changes in fawn:doe ratios since 1980.

Figure 7. D-21 sex and age ratios 1980-2005



Hunter/Harvest History

Game Management Unit 54 has traditionally been a popular mule deer hunting destination for resident and non-resident hunters. Management strategies have varied over the years, and have included antler point restrictions, separate and combined deer and elk seasons, and conservative three and five day buck deer seasons (1992-1994 & 1995-1999 respectively). Antlered mule deer licenses in GMU 54 were traditionally available “over the counter” and sold on an unlimited basis. Antlerless licenses were also issued annually on a limited basis prior to 1999. In 1999, mule deer licenses became limited statewide and significant license reductions occurred in D-21. It was determined at the time that deer populations in the Gunnison Basin had fallen below population and buck:doe ratio objectives. Thus, antlerless licenses were abolished in the unit and antlered licenses were reduced by 90% of the previous three-year average.

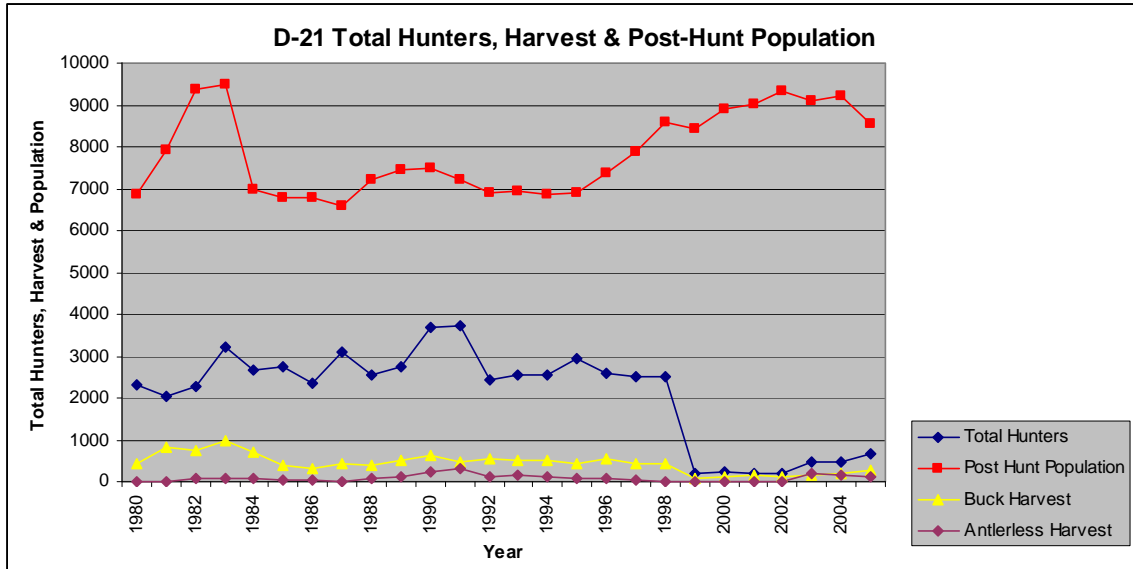
Hunter Trends-

Between 1992 and 1998, the average number of deer hunters pursuing deer in GMU 54 was approximately 2,600. The average number of hunters in D-21 between 1999 and 2005 was estimated to be around 350. The highest estimated number of hunters in the DAU was documented in 1991 at more than 3,700. The lowest number of hunters recorded in the DAU was 203 during the 2001 hunting season. In 2005, an estimated 654 hunters participated in the mule deer hunting seasons in D-21. Figure 8 shows changes in hunter numbers between 1980 and 2005.

Harvest Trends-

The average buck harvest from 1992 through 1998 was 481, with the total harvest averaging 569 animals. Between 1999 and 2005, the average buck harvest was 159, with a total harvest of 230. Figure 8 illustrates the highest documented harvest in the DAU occurred in 1983 with 1,068 deer harvested, including 990 bucks. The lowest annual harvest took place in 1999, with a total of 88 antlered deer taken. Success rates have varied since 1980, but have averaged around 64% since 1999 across all seasons. In 2005, an estimated 389 deer were taken by 654 hunters, which included 130 antlerless and 259 antlered animals.

Figure 8. Total hunters, harvest, and post-hunt population estimates 1980-2005.



**CURRENT MANAGEMENT STATUS**

Under current five-year season structure constraints, mule deer hunts in D-21 begin in late August and extend through November. All seasons run concurrently with the regular elk hunting seasons. In addition to the archery and muzzleloader seasons, there are three rifle hunts in the unit which begin in late October and end by mid-November. There are no regulatory antler point restrictions, and a legal buck is at a minimum required to have spike antlers equal to or greater than five inches long. Any doe or fawn may be harvested by hunters with valid antlerless licenses.

**Doe Harvest-**

Antlerless licenses were not issued in the DAU between 1999 and 2002 in an attempt to expedite population increase following statewide license limitations. Minimal hunter harvest and a series of mild winters occurred during this time period and deer populations increased noticeably. When the existing population objective of 4500 was exceeded post-hunt 2002, a limited number of antlerless licenses were once again issued. Doe licenses have been issued annually since 2003 and will continue to be issued until population objectives are reestablished and subsequently achieved. 300 antlerless licenses were issued in 2006 (Figure 9).

**Buck Harvest-**

The number of buck licenses in the DAU has gradually increased over the last five years. In 1999, a total of 265 antlered licenses were issued, compared to the 730 either sex and antlered licenses issued in 2006. License increases have been based on post-season classification data (Figure 10), which indicated that the number of buck licenses being issued was not sufficient for achieving the previous buck:doe ratio objective of 35:100. Buck:doe ratios have quickly exceeded expectations, and achieving a 35:100 buck to doe ratio would likely have required substantial license increases.

**Model Updates-**

In 2003, modifications were made to the D-21 population model which resulted in substantial changes to population estimates. Prior to 2003 all of the deer populations in the Gunnison Basin were being estimated using POP II models, which predated more advanced spreadsheet models. The Colorado Division of Wildlife began converting to spreadsheet population models during the mid to late 1990's in an effort to improve the precision of modeled estimates. Spreadsheet models currently provide the best scientific method of estimating ungulate populations based on a variety of data inputs. In most cases, spreadsheet models calculated higher estimates than POP II, which clearly had significant management implications. Without exception, revised spreadsheet models projected larger deer population estimates within the Gunnison Basin, which necessitated consideration for DAU plan amendments.

Previous DAU plan objectives (2001):

- Population = 4,500
- Sex Ratio = 35 bucks : 100 Does

Post-season 2005 Estimates:

- Population = 8,500
- Sex Ratio = 57 bucks : 100 Does

Figure 9. Antlered and Antlerless licenses issued 1999-2006

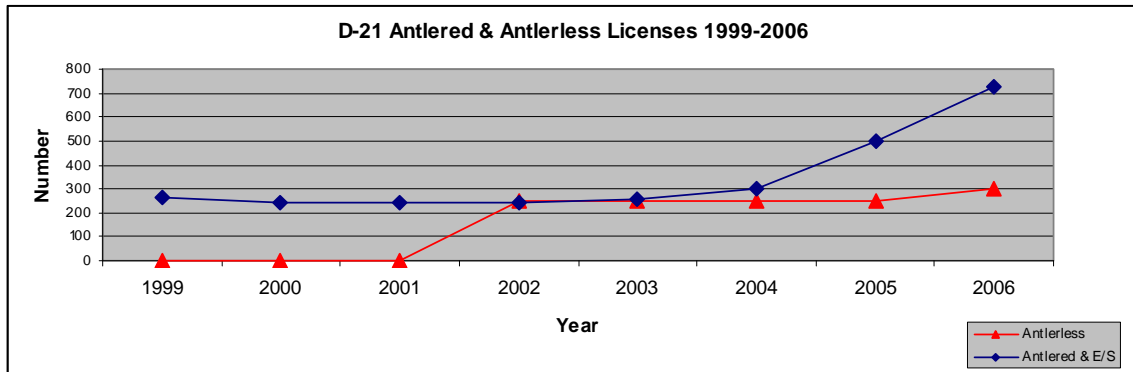
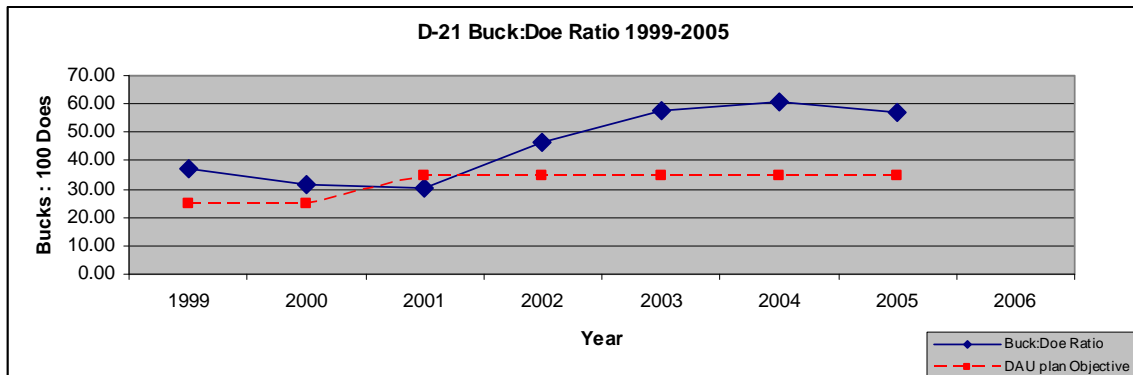


Figure 10. Observed Buck:Doe ratios vs. Objectives 1999-2005



**Citizen's Task Force**

Data Analysis Unit (DAU) plans are the cornerstone of big game management for each mule deer population in the state. Current DAU plans are written in order to provide management direction that spans over a ten-year period, making plan objectives critical. In the late 1990's, it became evident that local publics were strongly interested in becoming more involved in wildlife decision making processes. In order to increase the level of local public participation in the Gunnison Basin, the CDOW recommended that a new process be tested for developing DAU plan objectives. A coalition known as the Citizen's Task

Force (CTF) was created, which was based on a process developed in New York State. It is important to mention the CTF process, as it was largely responsible for the previous management objectives presented in local mule deer DAU plans.

Public meetings were held in Lake City and Gunnison on December 16<sup>th</sup> and 17<sup>th</sup>, 1997 where the CTF process was described and issues were identified, ranked and recorded using a nominal group technique. Interested parties identified their “stake” or interest in the process, and several individuals volunteered to serve as CTF members. In January 1998, representatives of the CDOW, Gunnison Basin Habitat Partnership Committee (HPP), Forest Service, and BLM met to nominate individuals to serve on the CTF. Twenty-five people were contacted to determine if they would serve on the task force, with 17 accepting. There were three members representing business interests, two representing sportspersons, two representing the environmental community, two to represent ranchers, two to represent outfitters, three representing the general public, and three representing local, state and federal agencies. A third sportsman was added at the request of a sportsman’s group, bringing the CTF to 18 members.

The first CTF meeting was held January 13, 1998 in Gunnison. The CTF was delegated the task of developing recommendations for post-season herd size and sex ratio composition for each of the seven DAUs in the Gunnison Basin (three elk, three deer, and one pronghorn). The premise of the CTF was that each member would solicit input from their constituents, which would be brought back to the group and incorporated into selected management recommendations. All meetings were open to the public and consensus was sought for each recommendation. Members of the public in attendance (which varied from 4 to 100) were allowed to ask questions or make statements of fact or opinion. However, only members of the CTF were allowed to vote on decision items.

The initial strategy was to have three CTF meetings in order to develop recommendations. However, due to a variety of factors, the CTF met a total of eleven times with the final meeting taking place in April of 2000. All recommendations except the population size for the three deer DAUs were reached by consensus. Decisions on deer numbers ultimately were reached by a 9-4 majority vote. The final CTF recommendations were presented to the Colorado Wildlife Commission and were integrated into the previous DAU plans approved in 2001.

### **KEY ISSUES**

Many issues surround mule deer management in the Gunnison Basin which generally fall into either a biological or social/political category. Certain issues have been raised during this planning process that appear central to discussions pertaining to management in D-21.

#### ***Quality Management-***

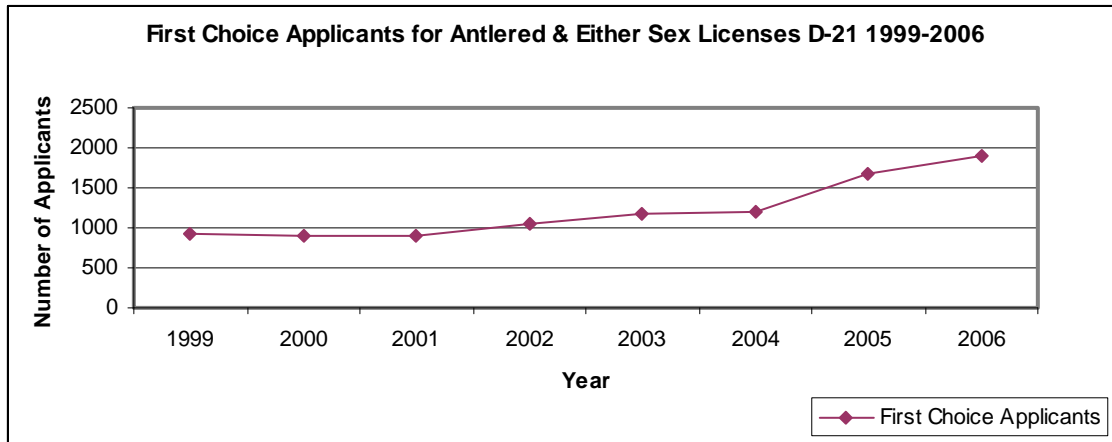
The concept of managing big game populations for “quality” hunting has generated considerable discussion during recent years, and hunters clearly disagree on the definition of quality. To some hunters, quality is synonymous with trophy antler size and the opportunity to see numerous trophy class animals over the course of a hunt. Others perceive quality as being in the field with reduced hunter crowding, and having the opportunity to see undisturbed animals on a regular basis. There are also hunters that consider a week in the woods with friends and family a quality hunt, regardless of whether they see animals while hunting. In the Gunnison Basin, discussions related to quality have recently focused on trophy buck management. Record book mule deer are evidently a highly sought after commodity amongst big game hunters and the Gunnison area has received national notoriety as one of the premier places in the west to find a trophy mule deer buck. In recent years, auction mule deer licenses (“Governor’s tags”) have generated more than \$100,000 in Colorado, and many of the deer harvested have come from GMU’s in the Gunnison Basin. Some landowner vouchers in the Gunnison area are being sold for over \$10,000, further demonstrating what some wealthy hunters are willing to pay in order to find a trophy mule deer buck. Conservative license allocation and favorable climatic conditions have resulted in substantial increases in the total number of bucks present in local deer populations which managers do not believe are sustainable. However, some hunters continue to question how license allocation will ultimately impact the total number of bucks in Gunnison deer populations, and more specifically, how changes in license numbers will affect the number of mature bucks present. There is a perception that extremely high buck:doe ratios must be

maintained in order to produce trophy mule deer bucks (ie.  $\geq 50$ ), and also concern that the recent influx of trophy hunters will result in diminished numbers of mature bucks in the population, especially if license numbers continue to increase.

***Hunter Opportunity-***

A key element of big game management is the public’s desired level of hunting opportunity. Some hunters prefer to hunt every year, whereas others would wait five or more years in order to hunt in a highly sought after unit. Some hunters forego multiple years of hunting in order to build preference points, while others are willing to buy expensive landowner vouchers in order to hunt every year. Trophy mule deer bucks are probably one of the most sought after big game animals in the western United States, and hunters are continuously seeking opportunities to hunt trophy deer. Technological and societal changes over the last ten years (ie. internet, hunting media, hunting consultants) have led to an environment where hunting “hot-spots” may be quickly disseminated to the hunting community. Many hunters now apply for licenses in multiple states each year and the demand for highly sought after permits has increased markedly. In D-21, the number of first choice applicants across all antlered and either sex huntcodes has gone from 921 in 1999 to 1,912 in 2006, which amounts to a 107% increase (Figure 11). License increases over the last three years and the addition of a 4<sup>th</sup> season in 2006 have helped offset preference point requirements for some huntcodes in D-21. However, it is unlikely that license increases will continue to mitigate burgeoning application rates in GMU 54, which has led to concerns regarding the trade-offs between quality management and hunting opportunity. The level of hunting opportunity is ultimately dictated by the objectives set in this DAU plan.

Figure 11. Number of First Choice Applicants for Antlered & Either Sex Licenses D-21



***Mule Deer Ecology***

There are a number of important factors influencing mule deer population dynamics in the Gunnison Basin other than hunter harvest. Some of these factors include, but are not limited to, winter severity, habitat condition, competition with elk, and human development. Wildlife managers are continuously monitoring and evaluating these factors in order to incorporate them into management objectives and annual license setting processes as necessary.

***Winter Mortality/Supplemental Feeding***

Although superbly adapted to Rocky Mountain climates, mule deer in the Gunnison area are periodically subjected to severe winters which may result in significant mortality. The winters of 1978-79, 1983-84, and 1996-97 are recent examples of how unforgiving winters may be in the area. In naturally functioning systems large-scale winter mortality events likely regulated mule deer populations, which allowed plant communities recovery time following periods of increased herbivory during population peaks. In general, dramatic population fluctuations are no longer socially acceptable to many big game hunters, based primarily on the potential impacts to hunt quality and opportunity. The same may be said for other local economic interests that rely on predictable levels of hunting related tourism. Therefore, the CDOW currently maintains a policy pertaining to feeding big game animals during severe winters. Supplemental

feeding programs have been initiated during the three winters previously mentioned with variable success. At present population levels, winter feeding programs would likely be extremely costly and logistically challenging when applied at the landscape level. Localized habitat degradation, animal habituation, and increased potential for disease transmission are often discussed with regard to supplemental feeding of big game.

***Mule deer buck management issues:***

For many years, big game managers have discussed the ramifications of “stockpiling” mule deer bucks in areas prone to severe winters. This issue revolves around the disproportionate levels of mortality observed in bucks, especially older age classes of bucks, during harsh winters. The breeding period for mule deer in the Gunnison Basin typically peaks during mid to late November and extends into early December. Bucks exert a tremendous amount of energy tending does and competing with rival males during the rut, and many enter winter in a weakened condition. Mule deer bucks use up precious fat reserves and often sustain one or more injuries during the breeding season which has obvious survival implications. Dominant bucks in their prime (ie. those with the largest antlers and body size) often enter the winter in the poorest condition and are much more likely to succumb to the rigors of the season. This phenomenon was observed during the winter of 2004-2005, most notably in the northeastern portion of the Gunnison Basin. Buck:doe ratios had reached an all time high that year, and the winter was exceptional. Antler shedding appeared to commence early and an unusual number of mule deer buck carcasses were discovered the following spring. Most skeletons revealed that the bucks had died late in the winter following antler shed. The rigors of the rut paired with the winter conditions had exceeded physiological thresholds, and many mature bucks perished. The number of bucks maintained in a population will dictate the number of hunting licenses available. Thus, significant winter events may have profound impacts on the level of hunting opportunity from year to year. In the Gunnison Basin mule deer will periodically be subjected to one or more severe winters, which are likely to result in reduced hunting opportunity. Higher buck:doe ratio objectives require greater lengths of time to restore following significant winter mortality events, resulting in temporary reductions in hunter opportunity.

***Population objective & buck:doe ratio***

There is an important relationship between the DAU population objective and buck:doe ratio. These two population parameters ultimately dictate how many does may be maintained in the population, and therefore what the reproductive potential of the herd is. This is an important consideration following significant winter mortality events. Furthermore, it is theoretically possible to begin replacing females with males if buck:doe ratios continuously increase while females are concurrently removed from the population through annual hunter harvest.

***Habitat Condition / Winter Range***

Like many places in the Rocky Mountain west, spring and summer ranges in D-21 are much more expansive than the limited winter range. Most winter range areas occur many miles from summer range and can only be reached following lengthy migrations. Winters may be severe in the Gunnison Basin and the quantity and quality of winter habitat clearly presents a potential bottleneck for herd productivity and sustainability. In D-21 mule deer typically begin arriving on winter ranges during late October or early November where they will remain until the following May. Winter habitats in the Gunnison Basin consist of sagebrush dominated systems interspersed with other key forage species such as aspen, serviceberry, mountain mahogany, bitterbrush, chokecherry, snowberry, rabbitbrush, and occasionally scrub oak. Winter ranges generally receive lower annual precipitation than higher elevation sites and contain less productive soil types. These conditions result in systems that are slow to recover from excessive herbivory and/or climatic stress. A reduction in the quantity and quality of winter range forage across the landscape will ultimately result in declining productivity for local mule deer herds. Degradation of sagebrush systems is also of concern to wildlife managers with regard to Gunnison sage grouse, and other sage obligate species.

For many years, local resource managers have expressed concern about the current condition of big game winter ranges in the Gunnison Basin. Data have been collected throughout the area by federal land managers, but comprehensive reports have been lacking. However, two habitat assessment projects have been conducted in the Gunnison area over the last ten years which are worthy of mention.

### **Habitat Assessment Project:**

In the late 1990's, Roy Roath et al. attempted to quantify winter range condition in important winter range areas within the Gunnison Basin. This project, referred to as the "Gunnison Basin Habitat Assessment Project", was intended to aid the Division of Wildlife in DAU planning efforts that were underway at the time. There were a variety of facets to the project, but the main objective of the study was to determine "whether the standing herd of grazing animals is in balance with the current forage resource and whether current use is compatible with long term sustainability of that forage resource." Due to various constraints, the team was not able to assess all of the DAU's in the Gunnison Basin and chose to focus on GMU's 54 & 55 north of Highway 50. The results of the assessment indicated that winter range forage resources were not in good condition, and suggested that big game populations in the Basin had exceeded winter range carrying capacity. Dry Mountain Loam range types, which made up the majority of the study area, were in the poorest condition of any of the range types measured by the assessment team. The results section of their report states, "The relative health and productivity of both species of sagebrush are low. Many if not most of the sagebrush plants show little annual growth of leaves and new leaders. Some sagebrush plants and nearly all of the palatable shrubs, like bitterbrush and mountain mahogany, show excessive cumulative use (Roath et al. 1999)." The results of this project led to local contention; however they were quite useful in fostering discussion regarding the inextricable link between big game populations, habitat condition and the concept of carrying capacity.

### **BLM Shrub Monitoring Project:**

Another noteworthy winter range assessment project was initiated in 2001 by the Gunnison Field Office of the Bureau of Land Management. At that time, biologists established 37 transects located throughout BLM lands in the Gunnison Basin. Transects were placed within key winter range areas containing shrub communities. The target or key shrubs for the study were bitterbrush, serviceberry, and mountain mahogany. Each transect consisted of 50 plots. At each plot, the closest key shrub was measured so on each transect 50 individual shrubs were surveyed (Figure 12). Overall, a total of 1,850 plants were surveyed. The variables measured for each plant were degree of hedging, plant volume, and percent dead. The transects were surveyed again in 2006, which provides a current comparison with the 2001 data. The preliminary data indicates that on average the degree of hedging has increased, plant volume has decreased, and the percent dead has increased for the three key shrub species measured. This study concluded that the condition of key shrub species on winter ranges is declining at a rapid rate in the Gunnison Basin. The BLM also pointed out that utilization of sagebrush plants has increased since the 2001 survey (United States Department of the Interior, 2006).

*Figure 12. Serviceberry on winter range in the Gunnison Basin, summer 2006*



*Photo courtesy of BLM*

It is important to recognize that many variables have contributed to the current condition of plant communities in the Gunnison Basin. Historic and present grazing regimes by domestic livestock, herbivory by mule deer and other wild ungulates, climate, fire suppression, and land use changes (roads,

development) are just a few of the many factors influencing present plant condition. Southwest Colorado experienced the worst drought of the century during the early 2000's, which has had profound effects on some local plant and animal communities. Although not socially desirable, drought is a naturally occurring climatic phenomenon that may periodically result in successional changes in the flora and fauna within a given area. The data collected by the BLM on key shrub species in the Gunnison Basin clearly were influenced by recent drought conditions. The data suggests, however, that the level of shrub utilization across the landscape continues to be an issue of concern on big game winter ranges.

Caution is recommended before concluding that reduced herbivory equates to an immediate increase in vigor and production of plants on winter ranges. Although some areas may receive temporary respite, smaller populations of wild ungulates may still cause localized degradation within winter concentration areas. In the absence of disturbance (ie, fire, etc.) many decadent shrub and aspen communities may continue to be unproductive, and remain of lesser value to wintering big game animals and other mountain-shrub/sagebrush dependent species. Local BLM range specialists, however, have documented that shrubs protected from browsing have shown significant recovery in 3-5 years, and that the production of available forage can increase 5-10 times. A mosaic of disturbed and undisturbed sites across the landscape would be expected to enhance plant condition while improving wildlife distribution and grazing/browsing intensity.

### ***Elk***

Elk management in the Gunnison Basin has generated considerable controversy over the last ten years, specifically with regard to limited vs. unlimited hunting opportunity, and the difficulties in achieving herd objectives in some DAU's. There are currently three elk DAUs in the Basin, and elk populations are thriving. Elk management has been a topic of interest with regard to mule deer based primarily on the potential for competition between species, specifically during heavy winters. During severe winters, elk and deer become concentrated on limited winter ranges and direct and indirect competition for space and forage becomes pronounced. Members of the public and agency personnel have expressed concern that static or increasing numbers of elk may be having deleterious effects on local mule deer populations. Elk harvest in the northern Gunnison Basin is of chief concern, as it is driven primarily by weather and success rates are generally low. The Division of Wildlife will continue to work towards population objectives for area elk herds, and recognizes that the number of elk maintained in the Basin has some influence over mule deer populations.

### ***Chronic Wasting Disease (CWD)***

Chronic wasting disease is a neurological disease occurring in members of the cervid family, which includes mule deer. CWD has been of concern to wildlife managers both from a herd health and human health standpoint. With regard to mule deer, issues such as population density, supplemental feeding, and sex and age specific prevalence rates are important when discussing Chronic Wasting Disease. In 2005, CWD testing was mandatory for mule deer in the three Gunnison Basin DAUs. This regulation was implemented based primarily on the fact that sample sizes were not being achieved through voluntary submissions, and because winter feeding has occurred several times over the last 30 years. The CDOW has determined that a sample size of 300 animals over a three-year period is adequate for determining presence or absence of CWD within a given DAU. In 2005, head submission rates were around 80% in the Gunnison Basin, and no CWD positive animals were detected (Table 2).

CWD testing will not be mandatory in the Gunnison Basin for the 2006 hunting season. The CDOW anticipates that submission rates will decline, but will continue to monitor for the presence of the disease. If Chronic Wasting Disease is detected in one of the local DAUs, managers may need to reevaluate management objectives if they are deemed incompatible with CWD risks.

Table 2. Gunnison Basin CWD Submissions by DAU 2002-2005

	<b>Estimated harvest</b>	<b>CWD submissions</b>	<b>Estimated submission rate</b>
D-21 2002	129	32	24.8%
D-21 2003	350	30	8.6%
D-21 2004	383	21	5.5%
<b>D-21 2005</b>	<b>389</b>	<b>343</b>	<b>88.2%</b>
D-22 2002	234	53	22.6%
D-22 2003	491	41	8.4%
D-22 2004	576	30	5.2%
<b>D-22 2005</b>	<b>661</b>	<b>538</b>	<b>81.4%</b>
D-25 2002	202	51	25.2%
D-25 2003	430	45	10.5%
D-25 2004	385	31	8.1%
<b>D-25 2005</b>	<b>486</b>	<b>380</b>	<b>78.2%</b>

### **PUBLIC INVOLVEMENT / ALTERNATIVE SELECTION**

Big game issues are always of interest to local constituents in the Gunnison Basin both from a socio-economic and biological standpoint. Therefore, the Division of Wildlife provided the public and agency personnel with various opportunities to be involved in this DAU planning process.

#### **Chronology:**

July 21, 2006: Letters were sent to various constituents outlining the DAU process and requesting attendance at a public meeting to be held in late August. The mailing also solicited formal comments pertaining to mule deer management in local DAUs. Those letters were sent to the Saguache, Gunnison, and Hinsdale County Commissioners, Gunnison Wildlife Association, Gunnison Guides & Outfitters, Gunnison County Stockgrowers, Gunnison Basin HPP Committee, and the local Forest Service and BLM offices.

Weeks of August 7<sup>th</sup> and August 14<sup>th</sup>: Advertisements were run in the Crested Butte, Lake City, and Gunnison newspapers for the August public meeting; that meeting was also publicized on the Division of Wildlife's website.

August 21, 2006: Public meeting was held in Gunnison to discuss the DAU planning process, mule deer management issues, and solicit public comment. Approximately 40 people attended that meeting. In order to facilitate public comment, a concise survey (Appendix 1) pertinent to local mule deer management was developed and made available. Respondents were asked to return surveys by September 12, 2006 so that the results could be incorporated into draft management plans.

September 7, 2006: Wildlife Commission meeting in Gunnison. A brief presentation regarding local mule deer DAU plans was given, and interested parties were granted the opportunity to provide comments to the Commission.

November 2006: Draft DAU plan submitted to the Colorado Wildlife Commission.

January 2007: Final DAU plans approved by Wildlife Commission

#### **Constituent Response**

Only the Gunnison County Stockgrowers Association and Bureau of Land Management provided comments to the Division of Wildlife in response to the letter of solicitation in July. Both letters suggested that increasing mule deer populations in the three DAU's was not advisable, and that elk management in the Gunnison Basin was a key issue. Their concerns focused on the condition of winter range throughout the Basin and potential impacts to other land uses such as public land livestock grazing.

#### **Public Survey**

An unexpectedly small number of surveys were returned during the public comment period (n =75) despite

the local interest in mule deer management. The goal of this survey was to attain a broad, representative sample from the target population (ie. mule deer hunters) that would provide managers with insight into public opinion regarding local deer management. The survey was anonymous, which was intended to provide a private venue that encouraged participation. Based on the low response rate during this planning process, future efforts may employ mail surveys where samples are derived from first choice applicants or successful applicant lists from previous years.

Despite the relatively small sample size, some trends were apparent from the public survey. As expected, most respondents were resident hunters that lived in the Gunnison Basin who had hunted deer in local GMU's. From a management standpoint, perhaps the most important questions in the survey pertained to desired levels of hunting opportunity and trophy quality. The primary question related to hunting opportunity focused on how often the respondent was willing to wait to hunt mule deer. The survey indicated that approximately 50% of respondents wanted to hunt every year or every two years, while the other 50% of respondents were content hunting every three to five, or more years. With regard to harvesting a trophy animal, 32% of respondents indicated that harvesting a trophy was "very important", 24% of respondents indicated that harvesting a trophy was "not important", while the majority of respondents, 44%, indicated that harvesting a trophy was "somewhat important." The majority of respondents also indicated that they would like to maintain higher buck to doe ratios in the Gunnison Basin than were previously called for in local DAU plans. A complete summary of the public survey, including all comments is included in Appendix 1.

**Objective Alternatives**

This section includes some of the potential alternatives for managing the D-21 mule deer herd. For DAU planning, there are logically three general alternatives available with some variation. The alternatives selected will determine the total population and sex/age objectives, and subsequently the number of licenses issued in a GMU. These basic alternatives include status quo (no change or minor change), increased population and/or sex ratio objectives, or decreased population and/or sex ratio objectives. Some alternatives are presented in Table 3. Managers suggested that population & buck:doe ratio objectives for this DAU plan be set as a range rather than a fixed number. Setting an objective range recognizes that population modeling is a continuously evolving, inexact science, but more importantly, a range allows greater flexibility on an annual basis for management actions in a DAU. There are important relationships between the buck:doe ratio selected and the total population objective, but they could be viewed as independent variables. In Table 3, "Alternative 1" for population did not directly correspond to "Alternative 1" for the Buck:Doe ratio. Any combination of these population and sex ratio alternatives could be selected.

Table 3. D-21 Population & Buck:DoeRatio Alternatives

<b>Possible Alternatives for D-21 Population &amp; Buck:Doe Ratio Objectives</b>		
Population Alternatives	<u>Post-hunt Population</u>	<b>2005 Post-hunt Estimate = 8500</b>
<i>Alternative 1</i>	6500-7500	
<i>Alternative 2</i>	7000-8000	
<i>Alternative 3</i>	7500-8500	
<i>Alternative 4</i>	8000-9000	
Sex Ratio Alternatives	<u>Bucks:100 Does</u>	<b>2005 Post-hunt Estimate = 57:100</b>
<i>Alternative 1</i>	35-40:100	
<i>Alternative 2</i>	40-45:100	
<i>Alternative 3</i>	45-50:100	
<i>Alternative 4</i>	50-55:100	

## **Preferred Management Recommendation**

The Division of Wildlife recognizes that there is significant interest in preserving high quality mule deer hunting in the Gunnison Basin. However, it is also recognized that many hunters are becoming increasingly concerned with diminishing levels of hunting opportunity, and many of the other local issues surrounding trophy mule deer management. After considering the many biological and social variables in the DAU, the final management objectives in D-21 are:

- **Post-hunt Population Objective = 6,500-7,500**
- **Sex Ratio Objective = 40-45 bucks : 100 does**

### *Potential advantages:*

- This management scenario continues to provide high quality buck hunting and maintains older age classes of males.
- This management scenario allows managers to continue harvesting antlerless deer in the DAU, which will provide additional deer hunting opportunity.
- Population reduction is expected to reduce the overall utilization of key forage species throughout area winter ranges.
- This management scenario is expected to provide a desirable balance between hunt quality and opportunity.
- If severe winter mortality is experienced, shorter time periods would be required in order to restore the male segment of the population (ie. sex ratio objective).
- Post-rut bucks may enter winter in better condition, thus increasing survival.
- Success rates will likely remain high across all seasons.

### *Potential disadvantages:*

- There will be some increases in the number of hunters participating in annual hunting seasons, especially when compared to the previous five years.
- National publicity is expected to keep application rates high for local game management units, and it is likely that preference points will continue to be required for all antlered licenses.
- The number of older males (5+ years) in the population is likely to be reduced slightly due to the combination of increased license allocation and sustained interest by trophy mule deer hunters.
- When objectives are reached, hunting opportunity may decline when management shifts to more of a “maintenance” mode.

### *Implementation:*

Wildlife managers plan on phasing in updated management objectives over the next few years, based on careful examination of the most current biological information.

### Literature Cited

- Johnston, B.C.. 2001. Ecological types of the Gunnison Basin. USDA Forest Service Tech. Rep. R2-RR-2001-01. 858pp.
- Roath, Roy, et al. Gunnison Basin Habitat Assessment Project. Report to Habitat Partnership Committee. January 1999.
- United States Department of Interior. Bureau of Land Management. "Impacts of Wintering Game on Shrubland Communities in the Gunnison Basin, Summary of Key Points and Results." Unpublished Report. Gunnison. 2006.

Appendix 1. Survey Results for DAU's D-21, D-22, & D-25

BACKGROUND INFORMATION

- 1) Are you a resident of Colorado? 75 Total Respondents  
89% Yes  
11% No
- 2) Do you live in GMU's 54, 55, 551, 66, or 67? 71 Total Respondents  
93% Yes If yes, how many years and in what GMU? \*see below\*  
7% No

Respondents had lived in the units for varying lengths of time:

- GMU 54: <1 yr to 42 yrs  
GMU 55: <1 yr to 75 yrs  
GMU 551: 1 yr to 42 yrs  
GMU 66: 4 yrs to 48 yrs  
GMU 67: 2 yrs to 30 yrs

- 3) Which group(s) best represents your interests in mule deer management in GMU's 54, 55, 551, 66, or 67? 93 Total Respondents

- 6% A) Rancher/Farmer  
6% B) Business owner  
5% C) Landowner  
5% D) Guide/Outfitter  
67% E) Hunter/Sportsperson  
11% H) Environmental/Conservation  
0% I) Other, please explain \_\_\_\_\_

- 4) Have you ever hunted mule deer in GMU's 54, 55, 551, 66, or 67?

71 Total Respondents

- 85% Yes  
15% No

What is your preferred unit? (circle one) 54 55 551 66 67

Respondents indicated:

- GMU 54: 24%  
GMU 55: 36%  
GMU 551: 11%  
GMU 66: 11%  
GMU 67: 18%

- 5) Which season do you prefer to hunt? 74 Total Respondents

- 11% Archery  
11% Muzzleloader  
27% 2nd Combined  
42% 3rd Combined  
10% 4th Combined

- 1) The number of mule deer bucks maintained in a population is directly related to annual levels of hunting opportunity. Maximum hunting opportunity will generally result in lower buck:doe ratios. Conversely, extremely limited hunting opportunity will generally result in the highest buck:doe ratios. With that in mind, how often would you prefer to hunt mule deer?

71 Total Respondents

- 24% Every year  
23% Once every 2 years  
27% Once every 3-5 years  
27% Once every 5+ years  
\_\_\_\_\_ Don't know

Comments:

- “I would rather hunt less often but see more large bucks when I do hunt and hope to fill my tag on a large buck not a forked horn.”
- “I want to see deer (and elk) in balance with their environment (both winter and summer). No winter feeding.”
- “Every 3-5 years for buck, more often for does”
- “Trophy opportunities abound here. Every year/other year units can be hunted, but the Gunnison Basin should not be any of those units.”
- “Every year would be great but I'm willing to have alternating years and increase quality of hunt by reducing hunter numbers.”
- “What is good for the animals and what is good for the future of hunters. I would prefer to hunt every year and then let non residents have to wait. I think its too bad when residents have to wait and (unreadable) buying landowner tags get first choice on everything”
- “35/100 is a good ratio that takes us out of the top 10 in the nation and a playground for the rich with their money and helicopters”
- “My hunting is done on the Cochetopa and I would like to see more bucks up there”
- “Folks who want to can hunt 2<sup>nd</sup> season every other year”
- “I want to know that I have a chance at a trophy buck and am willing to wait for that chance.”
- “A trophy opportunity once every 3-5 years is fine.”
- “2-3 yrs instead of 3-5”
- “I would rather hunt a doe every year than only have the opportunity to hunt a buck once every 3-5 years.”
- “I would like to hunt every yr. but wouldn't be opposed to every 2 yrs.”
- “I don't mind hunting does or smaller bucks.”
- “Buck one year doe the next year”
- “I would prefer to hunt deer every year as a resident. But I don't think that's gonna happen. I also believe in feeding my family by means of hunting elk and deer!!”
- “I do not have great faith in your modeling numbers.”
- “I have waited 7 years for a buck tag & now you double the permits. Are you into game management or money making?”
- “It seems to me that there are a huge amount of deer in the area. With the number of winter kill and road kill each year I would think there would be more tags available”
- “I would give up shooting a buck to every 10 years if I could shoot a doe every couple of years”
- “I would like to be able to hunt deer where I live every year if possible. I would not want to do it if the animal population could not sustain it.”
- “I would like to see higher buck:doe ratios than the objective”
- “I think once every two yrs would be sufficient in the DAU objectives”

“Landowner voucher system allows some of us to hunt every year & that has been the case in my situation. However if there were no vouchers I would wait to draw a tag every 3 to 5 years.”

2) How important is it to you to harvest a trophy animal?

72 Total Respondents

- 32% Very important
- 44% Somewhat important
- 24% Not important
- \_\_\_\_\_ Don't know

Comments:

“If I fail to kill a deer each time I am able to hunt I would like to see large bucks during my hunt this makes my hunt much more enjoyable.”

“I want hunting opportunity more than a potential “trophy” animal every 6, 8, or 10 years!”

“Getting a trophy would be great but not a priority”

“When did a trophy change from something you work for and EARN to something that we just take our turn”

“Venison is not my preferred meat! I kill an elk every year I deer hunt for “fun”!”

“It is important, but not as important as knowing that there really is that opportunity where I am hunting”

“I would rather have the meat from a nice doe.”

“If I have to wait 4 yrs to draw a tag, it would be nice if there were big bucks around.”

“I have taken several outstanding bucks over the years, and would enjoy having the opportunity to continue doing so. Unfortunately the condition of the winter range and the impacts of the elk herds means that deer numbers will remain low whether we manage for that or they just flat starve to death. Low numbers = L chance for disease out breaks.”

“I don't need deer meat so I pass on non-trophy bucks and do not fill my tag”

“Reward hunters who shoot a doe with an additional preference point”

“I believe if I kill 1 trophy deer in my life time, and the rest is good meat I will be totally satisfied!!”

“Trophy being a 160 B&C buck or better.”

“It is more important that 4-5-6 yr old bucks are present than for me to harvest one.”

“Do you really think hunters go out to shoot a bambi?”

“I'd rather be able to shoot something if that happens to be big that's great but a little buck or doe is better than nothing”

“The fact that DOW hasn't come in the realm of close to reaching objectives shows that they have been catering to the trophy hunters the last 5 years. Let's try to meet the middle point, there will be trophies still, but hunters might have to get off their 4-wheelers to get them. Should it be fairly easy to shoot a trophy? Seems to me they call it “hunting”, not “getting.”

“I like does and cow elk.”

“I would love to harvest a trophy animal. If the opportunity arose- but just getting out and possibly getting some meat are my main reasons for hunting.”

“It's important to have the animals be able to grow to trophy size & have a chance to hunt one but @ the same time a person has to sometimes hunt a lesser animal to ensure healthy populations”

“I like viewing trophy animals more than hunting them.”

- 3) Referring to the 2005 post-hunt population estimates (Table 1) how would you like the deer populations in D-21, D-22, and/or D-25 to change, if at all? Some possible ranges are listed below, please indicate a range you would prefer, or propose an additional alternative.

67 Total Respondents

D-21	Check box
6500-7500	27%
7000-8000	30%
7500-8500	31%
8000-9000	6%
Other (list range)	6%

70 Total Respondents

D-22	Check box
6500-7500	30%
7000-8000	29%
7500-8500	27%
8000-9000	8%
Other (list range)	6%

68 Total Respondents

D-25	Check box
4000-5000	22%
4500-5500	9%
5000-6000	29%
5500-6500	37%
Other (list range)	3%

Comments:

- “Would be interesting to see what it looks like if the population is close to our original objectives. At the very least, go back to minimum herd sizes w/in last 20 years.”
- “Slight decrease in present numbers to slightly increase hunter opportunity (# of licenses) \* would still give “buffer” for say an unexpected severe winterkill”
- “If we could ever kill some elk we could have more deer”
- “Shrub health and recovery is a very long term proposition. Every effort should be made to reduce impacts to the shrub community.”
- “Estimates in D-25 seem low”
- “I think the population objectives in table 1 are reasonable. A good place to start. We need more “resident” tags to reach the goal. Living here should have some obvious advantages regardless.”
- “Explain to the public how you come up with your numbers!”
- “It seems that there are plenty of deer and big bucks in all units. A decrease wouldn’t hurt but CWD is coming like it or not and that is going change the entire scheme of things”
- “I don’t live here I don’t know”
- “Honestly, by the health of the shrub community, it should be even lower than your ranges above. All it takes is starvation or CWD and then you guys will be blamed for not controlling the population”
- “Reduce the herds by approx ½ let the forage shrubs on the winter range recover then increase the herds to a size that maintains the forage shrub productivity”
- “I do not know enough about game management to make this kind of determination as I stated above I would like to be able to hunt deer every year if possible.”

- 4) Referring to the 2005 post-hunt Buck:Doe ratio estimates (Table 1) how would you like the number of buck deer (ie, buck:doe ratio) in D-21, D-22, and/or D-25 to change, if at all? Some possible ranges are listed below, please indicate a range you would prefer, or propose an additional alternative.

67 Total Respondents

D-21	Check box
35-40	24%
40-45	9%
45-50	46%
50-55	16%
Other (list range)	4%

68 Total Respondents

D-22	Check box
35-40	26%
40-45	6%
45-50	47%
50-55	16%
Other (list range)	4%

66 Total Respondents

D-25	Check box
35-40	24%
40-45	6%
45-50	48%
50-55	17%
Other (list range)	5%

Comments:

“Need to keep the Buck to Doe levels at 45 to 50 to have any chance at seeing or maybe harvesting a large buck.”

“I don’t care about the ratio, so long as the health of the herds & the habitat are maintained.”

“Slight decrease in bucks:does gives slight increase in hunter opportunity (eg. # hunters in successful draw)”

“Make one a trophy unit for the “professional hunters” let the rest of us enjoy our falls in the woods”

“I can live with 40 to 45”

“I’d like it even higher but I think we can maximize opportunity and maintain trophy bucks at 45-50”

“I think a closer ratio would be better. One to three seems a bit low.”

“75-80 bucks/100 does reflects the more natural ratios found in “unmanaged” situations. The current objectives reflect an actual herd composition of 26% bucks 74% does. Limited winter range resources support 75% of the herd, but in return there is < hunting opportunity since most people want to hunt bucks.”

“I’m not too proud to harvest a doe. It makes no sense to me, driving past all the road kills, knowing any one of them could be in my freezer, feeding my family through the long, cold, winters.”

“the most important facet is to have the buck herd comprised of at least 5-6 age classes of bucks.”

“Manage Game-don’t Revenue!”

“I like to see lots of bucks and from shed hunting I can see that is true, and there are plenty of big ones”

“like what we have”

“Do I want to see more bucks out there? Maybe if I could draw a tag more often but you can’t eat horns or preference points. Why must CDOW help people think that trophies are what you are after.”

“I think the deer ratios should be managed to provide the best possible numbers an area can sustain.”

- 5) What other issues do you consider important related to mule deer management in D-21, D-22, and/or D-25?

Comments:

“No Land Owners Vouchers”

“Outlaw Land Owner Vouchers”

“I feel drought conditions have caused shrubs to decline more than that there are too many deer.”

“The condition of the vegetation, particularly aspen, mahogany, and serviceberry/bitterbrush on deer and elk winter range, is my primary interest and concern.”

“Keeping population in sync with carrying capacity of unit”

“Winter kill – highway related”

“Habitat conditions, Disease Mgmt, Recreation (too many roads/trails), Harassment of wildlife”

“1. Massive older age class loss wasted on harsh winters (too many bucks) 2. Keep out the rich and famous and the helicopters. They have AZ-UT-NV already lets not give them Gunnison as well.”

“CWD!”

“Limit elk hunting so we can kill some cow elk!”

“Condition of the winter range, too high elk pop in 54, 55, & 551”

“We have a few elk units in the NW that provide excellent trophy elk hunting. We have excellent trophy deer hunting in the Gunnison basin WHY THROW THAT AWAY”

“Land owner vouchers & late season hunts w/ governor & raffle tags. The uses on landowner tags have gone way past the original intentions of them (incredible prices). The hunting of deer in January has to come to a halt.”

“Lion management, non-resident (not local) poaching, hunting in the wrong unit”

“The two major impediments to good deer management are the out of control elk numbers and the increased demand created by the combined seasons. I continue to very strongly support an entirely separate deer season held before the downward migrations begin –that is quality deer hunting. There is absolutely no quality to hunting a 4<sup>th</sup> season buck!”

“I think the land owner vouchers (for big \$\$) have gotten out of hand”

“Harvest more elk”

“avoiding massive road kill, avoiding pressuring deer by antler hunters in the spring”

“Winter range habitat”

“I think the objectives in table 1 are a good goal. I also think ”trophy” hunting is receiving too much credibility. What happened to hunting to fill the freezer. We’re not all rich. The more I save at the grocery store the more I can spend on my children now and down the road. Ever see the prices of college? What about 10 years from now?”

“To have you realize that Gunnison is deer country and manage them as the high quality animal they are-not as the kill as many as you can-that you have done for the past 3 years – shoot more does! Not all the bucks!”

“Private land vouchers should be outlawed! Rape should be illegal!”

“If motor bikes are allowed on trails then 4-wheelers should also be allowed.”

“Road kill, shed hunting – I feel that the pressure the DOW has put on the public about shed hunting lately is bull\*\*\*\* along with the talk of harassment tickets. What about all the DOW

trucks I see running around w/ snowmobiles and ATV's. I don't think people hiking around looking for antlers is bothering the deer."

"Doe tags to kids"

"Food & Fire"

"Range Work"

"I know this doesn't matter in this amendment but there is something very related to mule deer and both are at too high of populations and destroying shrub communities & hanging out in ranches hay meadows. They are called elk."

"Deer on private land during the seasons makes a large percentage unavailable to hunters, unless they pay an expensive trespass fee to landowners, if they allow hunters at all."

"Excessive utilization of the winter range for most of the last 50 years has reduced winter food production & has degraded the habitat for other wildlife species-such as sagebrush obligates"

"High deer populations are affecting the habitat of other non-game species of wildlife in the basin."

"Deer are exceeding their carrying capacity & impacting habitat for other animals"

"Having lived in game management areas 55 & 551 for about 27 years – and not receiving any tags at all this year – I would like to see locals given more preference for hunting opportunities."

"Habitat manipulation. Road & trail closures. Restrictions of motorized vehicles – public education on effects of recreation on wildlife"

#### ADDITIONAL COMMENTS:

Please use the space below (or back of page) for any additional comments you would like to make about mule deer management in DAU's D-21, D-22, & D-25.

#### Comments:

"I think for hunting and great photo opportunities we need the buck to doe levels at the 45 to 50 range."

"A lot of the low elevation stands (esp. Aspen) look awful – drought no doubt a factor – suckers are there, but are already being browsed. We need to slow down the "barking" on mature aspen, or we're going to lose some stands."

"Those who want extreme limits already have a tag in their pocket be it landowner voucher or bought or will benefit by selling L/O tags or outfitter sales. Our country creates its own trophies the people selling tags will push for more limits. The squeakier the wheel the more likely that profit is their motive. If they need to shoot a trophy out their window, they can go to one of the limited units. Let's not fall victim to the wealthy who want us to limit ourselves so they can come in every year while we wait our turn. Again – when did the definition of "trophy" change from something you work for and earn to something where you just wait your turn (unless you are rich)"

"Since we can't kill elk we need more doe tags. Your bucks per 100 does provides quality and you can hunt 2<sup>nd</sup> season every other year"

"Too high buck/doe ratio makes too vigorous rut, which sends bucks into winter in too poor condition"

"I don't think the range condition is as bad as the FS & BLM state and I don't think that the deer are responsible for any serious part of whatever degradation is there"

"Keep up the good work. There are big bucks all over the Gunnison Basin, lets keep it that way."

"Residents should be able to trade in antlerless tags if unsuccessful for another season or method of hunting."

The D.O.W. complains about local citizens harassing wildlife during the critical wintering months, but allows governor tag holders & raffle ticket winners hunt during this time.”

“A buck license in Gunnison should be valid in all units listed for this basin. No 4<sup>th</sup> season tags! Landowner vouchers say a wealthy man can hunt, and a working man stays home! At the very least, a landowner voucher should only be legal on the landowners property.”

“Given the current winter range conditions and the fact that any significant improvement/recovery is probably decades away I feel that we should keep herd numbers low, have increased opportunity to hunt does, and manage for the 1 in 20 year winters. In fact, the current conditions result in even moderately severe winters impacting the deer as greatly as a truly severe winter would on fair condition range. I strongly oppose winter feeding and the increased chance of major disease epidemics. Unfortunately public outcries will always result in feeding being implemented. The smaller the herd to begin with, the less often we will have to feed. Over the counter cow licenses, with a 2 cow (or more) bag limit! White tailed deer should be treated as vermin. A year round season & no bag limit.”

“It’s too bad when a local resident can’t hunt but a (rich) non resident can”

“Start seasons during middle of the week to take some pressure off of the animals”

“I am in colo to hunt elk, I hope to hunt deer here someday, the guy I’m staying with made me fill it out”

“I/we are raising 2 more hunters. And we always respect the environment. The last few years hunting elk in 55 I have seen a total disregard for the area. I guess most people hunting think the fire pit is a trash can. Complete mess when the hunt is over. Have the rangers take note of license #'s at certain camps and when they are trashed, send the slobs a big fat ticket!!”

“We, the Gunnison area residents lost our deer in three bad winters two in the 70’s and one in the early 80’s. The DOW was unable in over 20 years to find a management tool to bring them back. The citizens brought the 90% tags reduction plan to the forefront and it worked. After the DOW and the HPP spent \$54,000 on a study that said Gunnison was not Mule Deer habitat and that the residents should not worry about the numbers of deer here. This area is capable of supporting both great deer and elk herds in spite of the weather and the management limitations. If your bosses compel you to issue more licenses then issue doe tags and do something different and take us back to a buck herd that is diverse in age classes. We spent twenty years with a buck herd that had only two and three year old bucks for 95% of our herd. Your, the last three years, have us headed back down that road again! Don’t go there! Most of us will not live long enough to enjoy another recovery!”

“Manage – Don’t Revenue!”

“Having a great bow hunt”

“Many ranchers also feel that populations are too high but won’t speak out because you guys give them tags to sell for \$5,000. If you stop doing this, you will find out what people in the Gunnison basin really think of deer & elk. Thank you for allowing the public to comment on this issue. I think you guys are doing a good job, but possibly have allowed populations out of control, and the pressure will be on you when starvation or disease kicks in. Reduce populations before this happens.”

“There needs to be a resident only season or two for those of us that like to eat the meat. You can’t eat antlers.”

“I’ve seen severely hedged shrubs increase annual production by over 10 times after just 3 years of protection from deer and elk. A significant herd reduction is badly needed, reduce the herd – monitor winter range forage shrub recovery, don’t leave elk #'s out of the equation”