WET MOUNTAIN DATA ANALYSIS UNIT
D-34

GAME MANAGEMENT UNITS
69, 84, 86, 691, 861

DEER MANAGEMENT PLAN

PREPARED FOR
THE COLORADO DIVISION OF WILDLIFE

BY
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AND
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OCTOBER 2005

D-34 DATA ANALYSIS UNIT PLAN
Executive Summary
11/11/2005

GMUs: 69, 84, 86, 691 and 861
Land Ownership: 59% Private, 27% USFS, 10% BLM, 4% State
Current Posthunt Population Objective: 16,500-17,500
Previous Posthunt Population Objective: 22,000 **2004 Estimate:** 16,700
Current Posthunt Sex Ratio (Bucks/100 Does) Objective: 25-30 bucks: 100 does
Previous Posthunt Sex Ratio (Bucks/100 Does): Objective: 20 **2004 Observed**: N/A
Modeled: 38.01

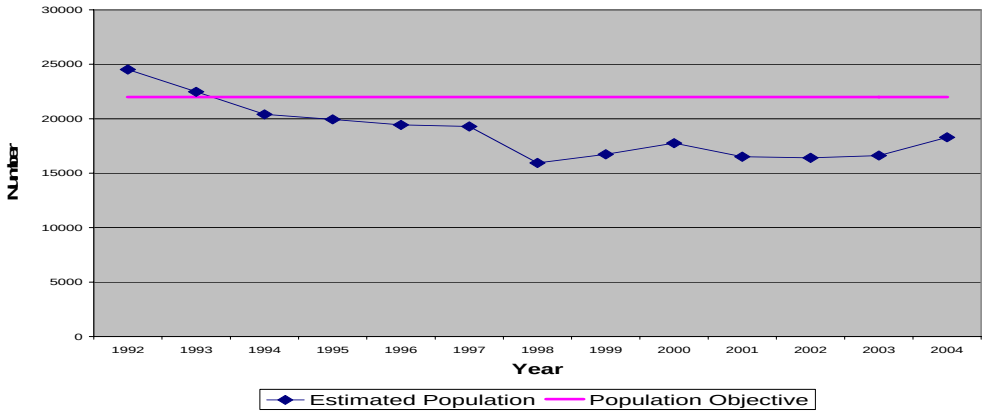

Figure 1. D-34 Posthunt population Estimate

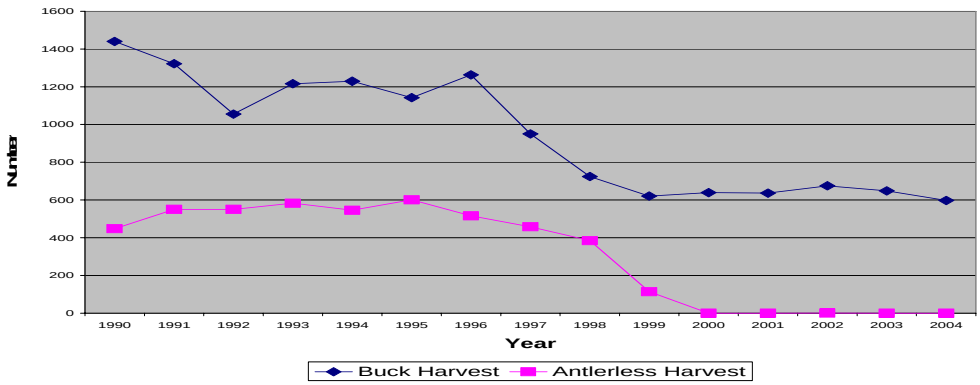

Figure 2. D-34 Harvest

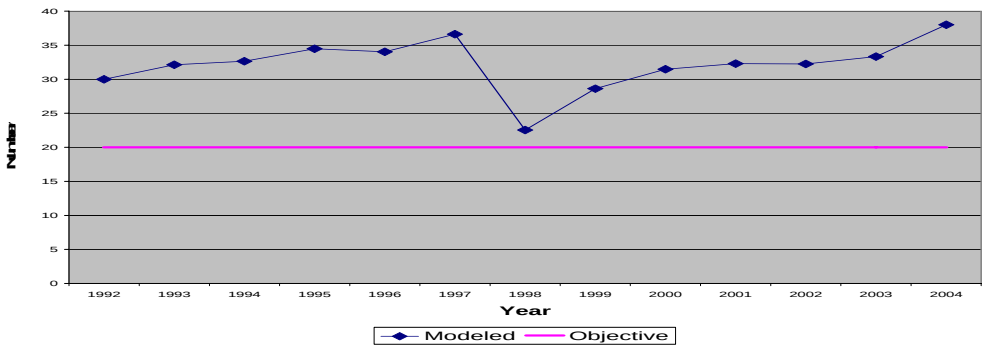

Figure 3. Posthunt Bucks/100 Does

D-34 Background

The Division of Wildlife adopted a population objective of 22,000 deer in 1987 for DAU D-34, at that time the estimated post-season population was close to 15,000 deer. The deer population has fluctuated very little since that time. Prior to 1991, antlerless harvest was confined to private land only hunts in GMU's 69 and 691 where winter concentrations of deer were damaging habitat and causing game damage to private property. The current sex ratio was also adopted in 1987, however limited aerial surveys and the lack of an accurate census technique has made population estimation very difficult. GMU's 69 and 691were set up with quadrate surveys in 1992 and the surveys continued on an alternating year basis until 2001 when funding and habitat conversion issues shifted the money to a fawn survival study. It was felt that the quadrate data obtained from these counts was fairly representative of the remainder of the DAU.

This population has stayed essentially static at 15,000-16,500 deer since 1985, with no antlerless licenses available. Low post-season fawn/doe ratios have indicated that recruitment into the yearling class is low, slowing the population increase expected from the elimination of antlerless harvest. Land use changes, habitat maturation, weed competition, and housing development have had an effect on habitat quality and quantity effectively lowering the carrying capacity of the DAU. A reduction in competition for forage along with an increase in habitat quality is necessary in order to increase recruitment and fawn survival. Habitat improvement projects alone may not be adequate to offset the loss of habitat to private property development. Decreasing the population objective increases the probability of obtaining a compensatory response in recruitment and survival.

D-34 Significant Issues

The issues and concerns identified during the public input process reveal a concern for the decline in the deer population and the reduction of deer habitat in the face of continued housing development. The CDOW has its own concerns with population estimation and census in the face of the continued subdivision.

Declining deer population – The apparent decline in the deer population in this DAU is a significant concern. The reason for the decline is unknown at this time, but is likely the result of several factors; increasing elk herds competing for the available forage, habitat maturation, increased natural mortality due to predation, nutritional deficiencies and starvation, and many other possible causes.

Housing Development – In the last decade, this DAU has seen a rapid development of housing in areas that were once part of deer ranges. Ranches have sub-divided and natural habitats have been permanently altered or eliminated. This includes direct loss of habitat and effective loss of habitat due to harassment from people and pets.

Population estimation – Because of funding shortages and housing development, quadrate counts were dropped after the 2000 post-hunt inventories. This has created a shortage of accurate information on age and sex ratios used in the modeling process.

Quadrate counts could be established in this DAU to accurately model the population. If quadrate counts are not financially feasible then trend counts need to be established.

D-34 Management Alternatives

Three post-hunt population objectives are being proposed for D-34 (1) 15,500-16,500 (2) 21,000-22,000 (3) 24,500-25,500. These alternatives were developed during the 1999 DAU planning process and represent a 25% decrease in the population objective and a 15% increase in the current objective. They were utilized to ensure compatibility with the 2000 public input process. Since that time doe harvest has been eliminated and there has not been a representative increase in the deer population. The CDOW does not recommend managing for more than 18,000 animals in D-34 because of habitat and low recruitment concerns.

Two sex ratio objectives are being proposed for D-34 (1) 20-25 bucks/100 does and (2) 25-30 bucks/100 does. Since deer licenses have become limited within the area hunters have been able to draw licenses on a second choice basis in this area.

Sportsmen favor an increase in the deer population as well as an increase in the number of bucks in the population. All segments of the public have expressed a desire to do whatever is necessary to accomplish this goal, including further reductions on license numbers. There is also significant public concern related to habitat quality and quantity.

CDOW Recommendation to the Wildlife Commission

Population Objective

The CDOW recommendation is to manage this deer population within the range of 16,500-17,500 animals representing a 25% decrease from the previous population objective. The current estimated population falls within this population range.

The current long term population objective for D-34 is 22,000 deer. And this population objective has been supported substantially at public meetings and in hunter survey results, however, public support of this alternative is based on the knowledge that the population is currently 30% below objective and 22,000 deer would satisfy public desire to substantially increase the deer population.

Despite very conservative management strategies, this herd has stayed essentially static at between 15,000 and 17,000 animals since 1985. The population is currently about 23% below objective. Post-season fawn/doe ratios are low, averaging 51 fawns/100 does, indicating recruitment to the yearling age class is low. This level of recruitment is probably only replacing animals lost to harvest and natural mortality. Until management strategies are successful at decreasing forage competition, fawn recruitment and survival will not change.

Habitat loss and maturation are two of the substantial problems that managers must overcome before this population can reach an objective of 22,000 animals, and it is unlikely that habitat improvement projects will successfully offset the loss of habitat from

these problems. While reducing the population objective will not directly influence habitat conditions it is possible that we will observe a habitat response to a lower population.

The recommended long-term population objective is 16,500-17,500, trying to strike a balance between the publics' desires to increase the deer population and in an effort to improve recruitment and survival.

Sex Ratio Objective

The CDOW recommendation is to manage the sex ratio objective within a range of 20-25 bucks per 100 does. During the past several years modeled sex ratios have continued to be above this level and maintenance of these levels would only require a slight reduction in license numbers.

Management Strategy

The DAU management strategy recommendation by the CDOW is status quo. Current management practices limiting the availability of buck licenses should continue and antlerless harvest should remain restricted. Although limited antlerless harvest would allow some flexibility in population management and allow some flexibility in damage situations. Periodic adjustments in antlerless harvest will be necessary to maintain population stability and coexistence with agricultural interests in the available habitat.

The increase of the long-term sex ratio objective would require a minimal reduction in the number of antlered licenses available in this DAU, and can be handled within the current season framework.

The D-34 DAU Plan was approved by the Colorado Wildlife Commission on November 3, 2005.

TABLE OF CONTENTS

DATA ANALYSIS UNIT PLANS

Historically, big game seasons were set by tradition and/or political whims. Seasons that resulted did not reflect what was occurring with wildlife populations or habitat. To a degree big game seasons are still traditional and/or political, but in a response to a growing demand for finite wildlife resources, the Division of Wildlife must be more accountable. Managing our wildlife resources by management objectives creates accountability. The Division's Long Range Plan provides direction and broad objectives for the Division to meet a system of policies, objectives and management plans such as the Data Analysis Unit Plan, and directs the actions the Division takes to meet the legislative and Commission mandates.

DAU's are used to manage populations of big game animals. Each DAU is established to contain a discrete population of animals utilizing geographic boundaries that minimize movements between DAU's. Each DAU may contain from one to 10 or more Game Management Units (GMU) to which specific management practices are applied to reach the DAU population and sex ratio goals.

DAU management plans are designed to support and accomplish the objectives of the Division of Wildlife's Long Range Plan and meet the publics' needs and desires for their wildlife recreation while minimizing human/wildlife conflicts.

The DAU planning process is designed to incorporate public demands, habitat capabilities, and herd capabilities into a management scheme for the big game population (Figure 4). The public, sportsmen, federal land use agencies, landowners and agricultural interests are involved in the determination of the plans objectives through goals, public meetings, comments on draft plans and the Colorado Wildlife Commission.

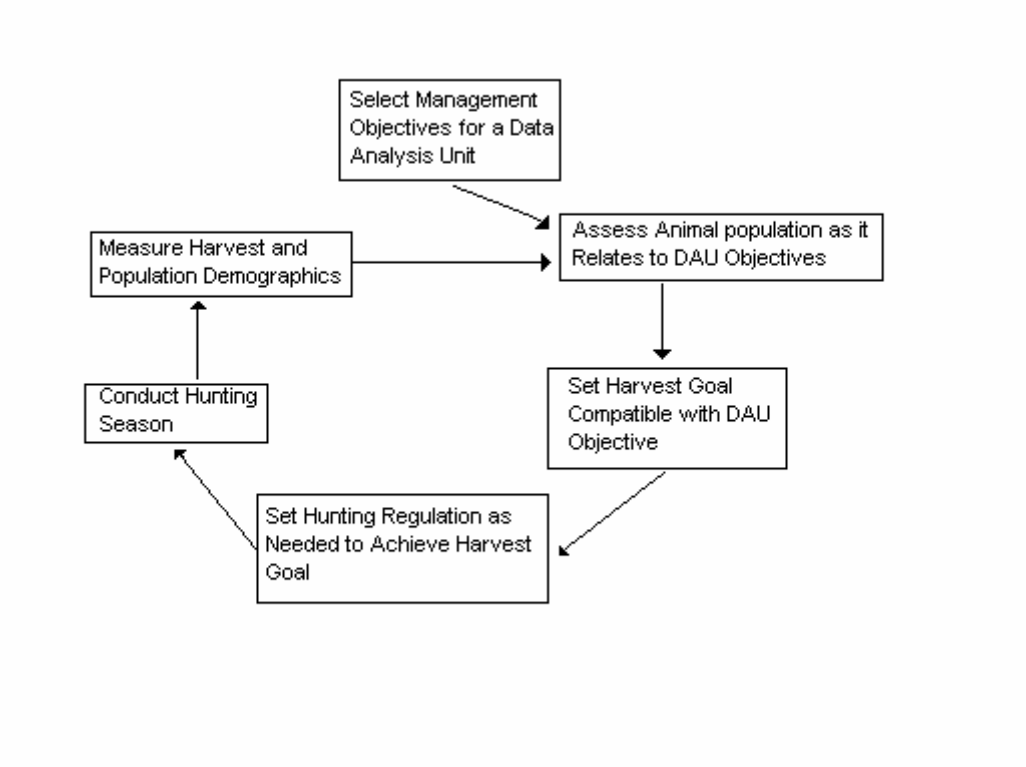

Figure 4. Colorado's Object Cycle of Big Game Management and Harvest.

Individual DAU's are managed with the goal of meeting herd objectives. This is accomplished by gathering herd data and putting it into a spreadsheet model (DEAMAN) to get a population projection. The input parameters for the model include harvest data which is tabulated from hunter surveys, sex and age composition of the herd which is acquired from aerial counts and mortality factors such as wounding loss and winter severity which are generally acquired from field observations. Once these variables are entered into the population modeling program a population estimate is obtained. The resultant computer population projection is then compared to the herd objective and a harvest is calculated to align the population with the herd objective.

WET MOUNTAIN DATA ANALYSIS UNIT

PHYSIOGRAPHY

The Wet Mountain DAU is located in south central Colorado and lies within portions of Fremont, Custer, Huerfano and Pueblo Counties (Figure 5). It consists of Game Management Units (GMU's) 69, 84, 86, 691 and 861. In 1998 GMU 69 was split down Grape Creek to create GMU 691, this increased the number of GMU's in the DAU while the total area of the DAU remained the same. The DAU is bounded on the north by US highway 50; on the east by Interstate 25; on the south by Colorado 69, Huerfano County Road #555 (Muddy Creek Road and Huerfano county roads #570 and #572 (Pass Creek Road); and on the west by the Sangre de Cristo Divide.

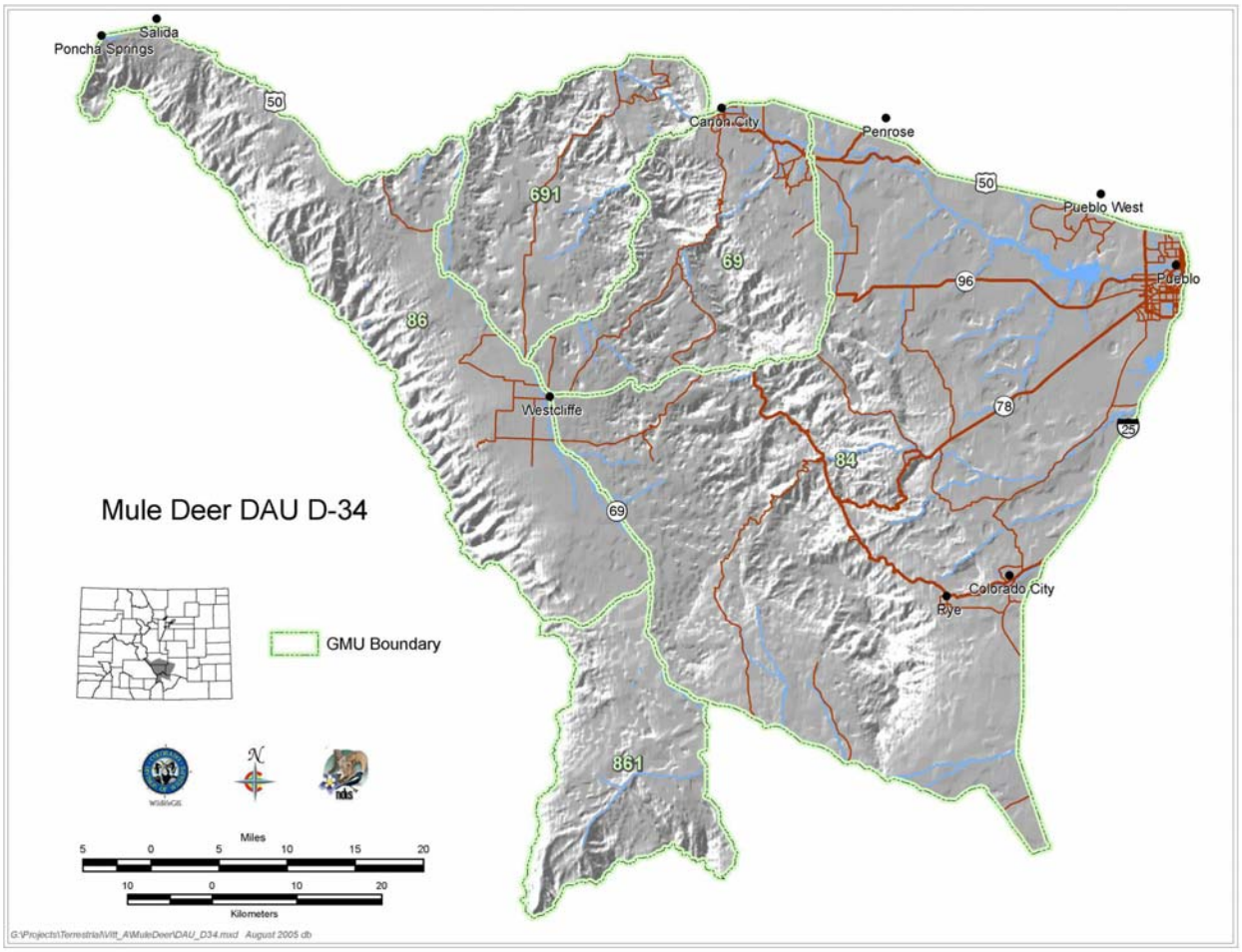

Figure 5. Mule Deer DAU D-34

This DAU covers 2,517 square miles ranging in elevation from 14,345 feet at the summit of Mount Blanca to about 4,640 feet where the Arkansas River flows under Interstate 25. Topography ranges from flat short-grass prairie to rolling hills, steep foothills with cliffs, to mountain meadows, and steep ridges to alpine meadows. Two mountain ranges, the Sangre de Cristo and Wet Mountains dominate the area. Higher elevations may receive in excess of 20 inches of moisture while lower elevations may receive less than 6 inches,

with precipitation falling mainly as winter snow and spring and summer rains. Major rivers in D-34 are: Arkansas River, Howard Creek, Cherry Creek, Hayden Creek, Lake Creek, Texas Creek, Grape Creek, Hardscrabble Creek, Oak Creek and Newlin Creek in Fremont County; Brush Creek, Taylor Creek, Alvarado Creek, Venable Creek, Horn Creek, Grape Creek, Hardscrabble Creek, Antelope Creek, Froze Creek, St. Charles River, Beaver Creek and Ophir Creek in Custer County; Muddy Creek, Manzanares Creek, May Creek, Williams Creek, Turkey Creek, Apache Creek and the Huerfano River in Huerfano County; and Little Graneros Creek, Greenhorn Creek, Cold Springs Creek, Muddy Creek, St. Charles River and Red Creek in Pueblo County.

Of the 2,517 square miles in D-34 the Division of Wildlife controls about 17 square miles (Pueblo, Taylor Creek, Lake DeWeese, Lake Beckwith and Huerfano State Wildlife Areas) which is less than 1% of the DAU, the U. S. Forest Service controls 686 square miles (27%), the Bureau of Land Management 242 square miles (10%), the State Land Board 87 square miles (3%), and 1,485 square miles is in private ownership (59%). (Figure 6)

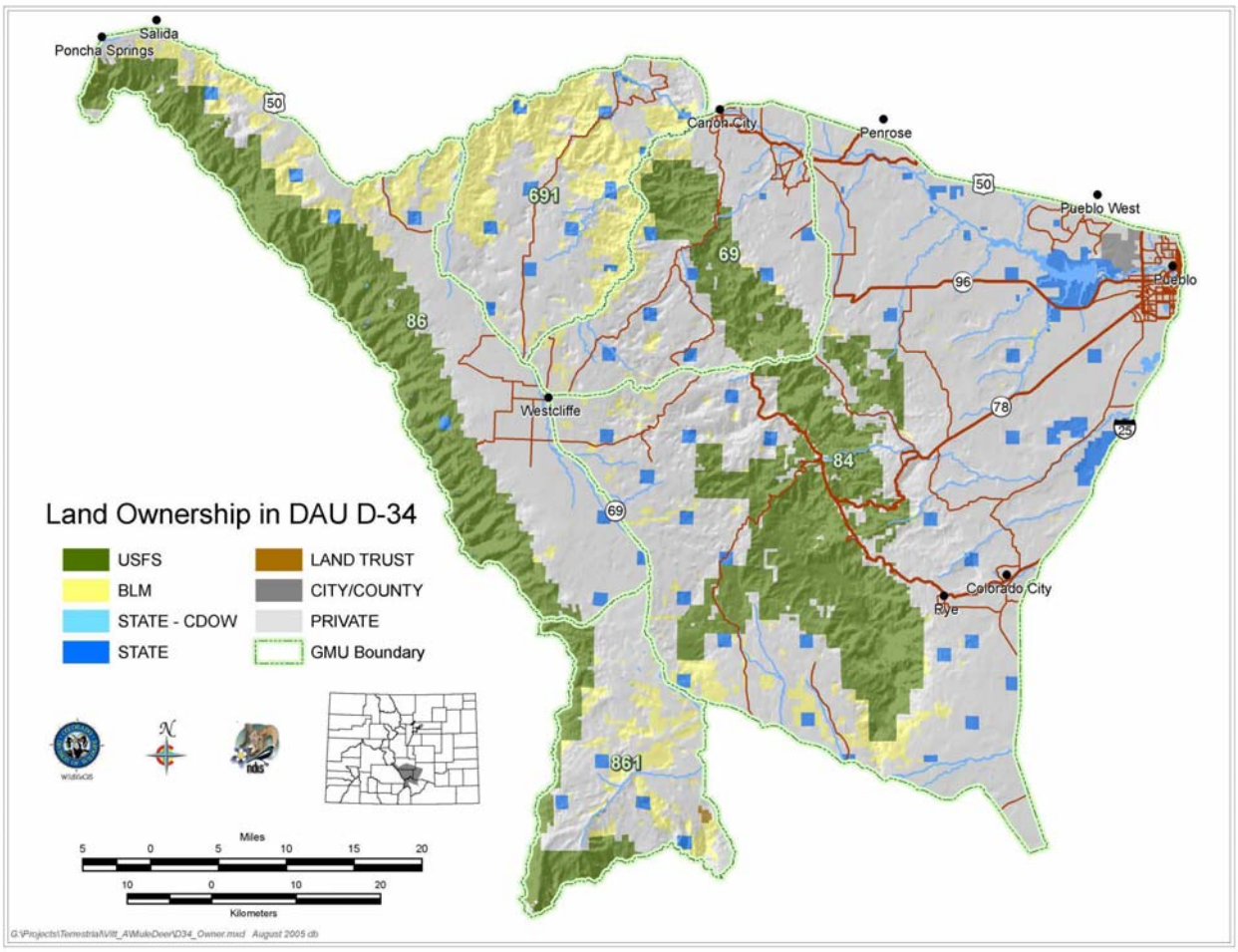

Figure 6. Land Ownership in DAU D-34

Approximately 80% of D-34 (2,014 square miles) is deer habitat of which approximately 930 square miles is open to the public for managed hunting (Figure 7). The Division of Wildlife currently possesses the recreational lease on 10,860 acres of State Land Board

property in this DAU (17 square miles). These leased properties include Bear Gulch (640 acres), Lapin Creek (640 acres), Beddows Mountain (560 acres), and Froze Creek (640 acres) in Custer County; Black Mountain (640 acres), Wolf Springs (640 acres) and Blue Springs (640 acres) in Huerfano County; Florence (640 acres), Short Creek Baldy (640 acres), Cody Park (1,560 acres), Grape Creek (1,280 acres), McCoy Gulch (640 acres), Newlin Creek (640 acres), Pinnacle Rock (420 acres) and West Bear Gulch (640 acres) in Fremont County. Predominate biotic communities are: alpine tundra, sub-alpine conifer, montane conifer, montane shrub, mountain meadow and plains grassland.

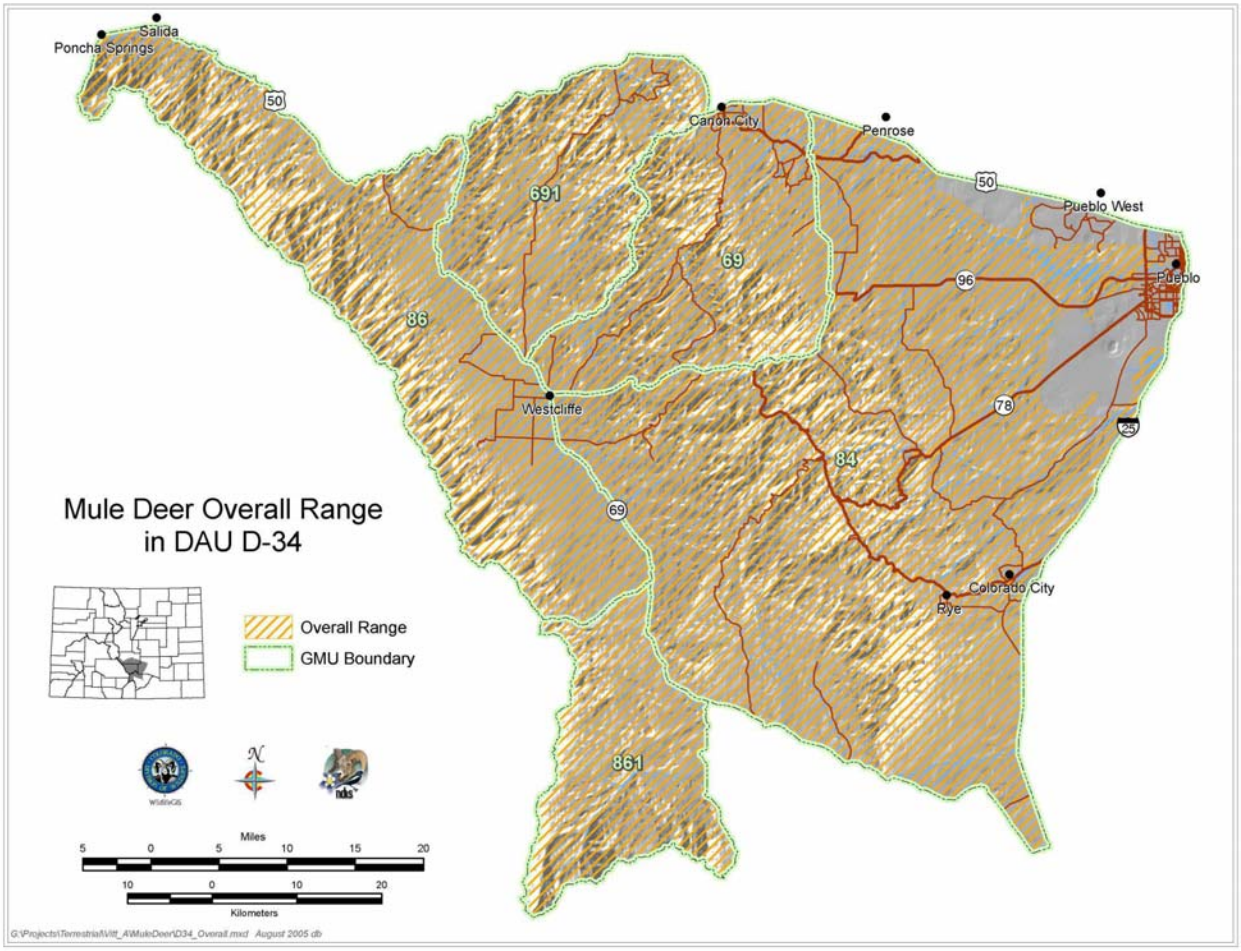

Figure 7. Mule Deer Overall Range in DAU D-34

Agriculture is the predominate land use in the Wet Mountain Deer DAU with livestock grazing, primarily cattle and horses, occurring throughout the DAU on native rangeland. Irrigated hay and alfalfa occurs along many rivers with the majority of row crops confined to small farms. With Custer County in the top ten fastest growing counties in the nation, loss of wildlife habitat to rural development is a major concern in this DAU. Pueblo West, Colorado City, Canon City, Buela, Rye, Wetmore and Florence continue to expand and large ranches are being developed into 40 acre or smaller "ranchettes". Habitat loss to development and a decline in habitat quality will be the major concerns in the future for this DAU.

POPULATION DYNAMICS

Deer Distribution

Deer generally occupy the entire DAU from the grassland\shrub and pinion\juniper areas of the foothills through all vegetative zones up to the alpine tundra during the summer and early fall. Another distinct population of deer spends the majority of the year in the riparian and agricultural areas at lower elevations throughout most of the drainages described above. The areas with the highest deer densities are found in the northwest portions of the DAU. Deer movement to winter range is dictated by weather with snow and limited forage availability driving the deer to winter range (Figure 8). For those animals that summer in the mountainous part of the DAU the migration moves east to the lower elevation winter ranges. Many areas of this DAU have little distinction between overall range and winter range, with the deer in the agricultural and riparian areas wintering in the same areas they occupied during the rest of the year. Wind and mild winter weather will often open up south facing slopes and influence deer movements into many areas within the DAU not necessarily classified as winter range.

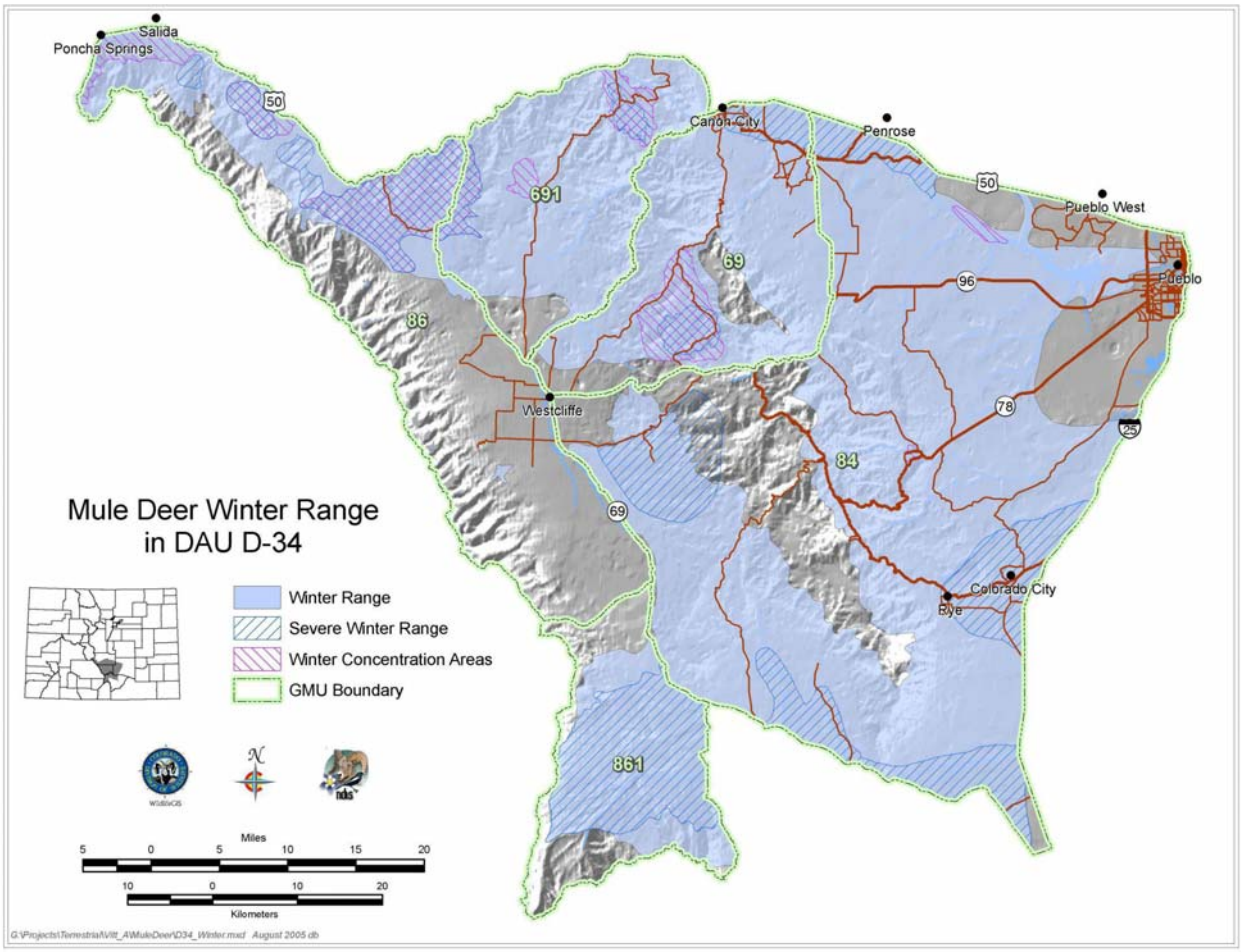

Figure 8. Mule Deer Winter Range in DAU D-34

HERD MANAGEMENT HISTORY

Prologue

The total number of animals in a big game population fluctuates throughout the year. Normally, the population peaks in the spring just after the birth of the young. Populations then decline throughout the year as natural mortality and hunting seasons take animals from the population. Traditionally, the CDOW uses post-hunt populations (immediately after the conclusion of the last regular hunting season, usually in late November) as a frame of reference when we refer to the size of a population of deer. In this manner we have established a reference point and can eliminate confusion when referring to populations.

Realistically, deer population objectives are determined by a combination of variables that are woven together in a manner best suited to satisfy all the demands in order to arrive at a final objective number. The variables involved include biological data, economic, political and recreational considerations, along with domestic livestock concerns and vegetative considerations to name some of the most prominent factors. Population objectives are often set at a level consistent with the herds' maximum sustained yield (MSY). However, it is very difficult to determine the ranges' MSY and carrying capacity.

Post-hunt populations referred to in this plan have been generated by computer simulation. A brief discussion concerning population assessment is contained in a *Population Assessment Procedure Overview* at the end of this section.

The Wet Mountain DAU is considered to be one of the better deer DAU's in the south-central part of the state. Generally mild winters and available year-round food supplies have allowed the deer population to remain in optimum habitat during the winter months. Management of the deer herd in the DAU has included limited doe licenses, mainly concentrated in the northern GMU's, with Private Land Only doe licenses being used in most GMU's for the last decade to reduce deer conflicts in the agricultural areas. Modifications in statewide season structure and the limited doe and private land only doe hunts have been the only management changes instituted within the DAU.

Post-hunt population size is defined by spreadsheet population modeling using the DEAMAN program provided by Dr. Gary White at Colorado State University. DEAMAN uses population and herd composition data acquired during post-hunt aerial surveys and may change as new information becomes available. Since 1988 the population goal has been 22,000 animals, resulting in a density of 11 deer per square mile. Post-hunt population estimates indicate the DAU has been below objective for the past 12 years, although not severely below objective. Since 1980, the post-hunt population has ranged from about 16,000 in 1980 to the 2004 post-season estimate of 16,700. Population numbers and sex ratios are derived from field observations and harvest data.

Post-hunt Herd Composition

Post-hunt herd composition data was acquired by aerial surveys in GMU's 69 and 691, performed in December or January following the regular big game hunting seasons. These aerial surveys were conducted from 1992-2001 in alternate years. The remaining GMU's relied on field observations and the DEAMAN model for herd composition information. After 2001 the funding for the quadrate counts was shifted to the deer survival study in the DAU north of the Arkansas River. This coincided with many of the quadrates becoming housing developments and deer numbers declining in those areas. Some of the quadrates became difficult to fly as fences and development in the area began to generate complaints from the landowners.

At the present time plans are to survey many of these areas in a manner consistent with other DAU's and establish trend counts to gather the required data. It is generally accepted that buck/doe ratios are higher than the observed ratios while the fawn/doe ratios are fairly accurate. Aerial surveys are subject to variability due to weather, snow cover, sample size and observers. Aerial surveys in GMU's 69 and 691 during 1992, '94, '96 and '98 showed age ratios of 46 fawns/100 does, 58 fawns/100 does, 49 fawns/100 does and 52 fawns/100 does respectively. Observed buck/does ratios were 21 bucks/100 does in 1992, 20 bucks/100 does in 1994, 11 bucks/100 does in 1996 and 25 bucks/100 does in 1998.

Statewide deer seasons have varied in season length and the implementation of antler point restrictions. These changes have put different harvest pressures on the male segment of the population. From 1980 until 1985 deer seasons were generally short with any buck being legal. Between 1985 and 1999 there have been longer seasons and a variety of antler restrictions imposed on deer. In 1999 the wildlife commission decided that all deer hunting license allocation was to be through the drawing process to allow the Division of Wildlife better control of our hunting harvest and attempt to slow the statewide decline in deer populations. At this same time doe harvest was curtailed in any DAU that was under its population objective except for very limited circumstances. The average buck/doe ratio between 1985 and 1999 was projected to be 21 bucks/100 does. The observed post-hunt ratio was 25 bucks/100 does. Observed buck numbers are generally lower than in the real population and increased doe harvest between 1995 and 1999 caused an increase in the buck/doe ratio. It may be interesting to note that 31% of the total deer harvest from 1990 to 1999 has been does and fawns. The current long-range buck/doe ratio objective is 20 bucks per 100 does.

Hunter harvest is affected by various variables including: hunter pressure, the availability of antlerless permits, season structure, weather, hunting access and the deer population size. Harvest from 1980 to 2003 ranged from a low of 636 in 2001 to a high of 2,537 in 1985 and has averaged about 1,261 since 1990(Figure 9). Since the wildlife commission elected to totally limit deer licenses in 1999 harvest has averaged 655 animals.

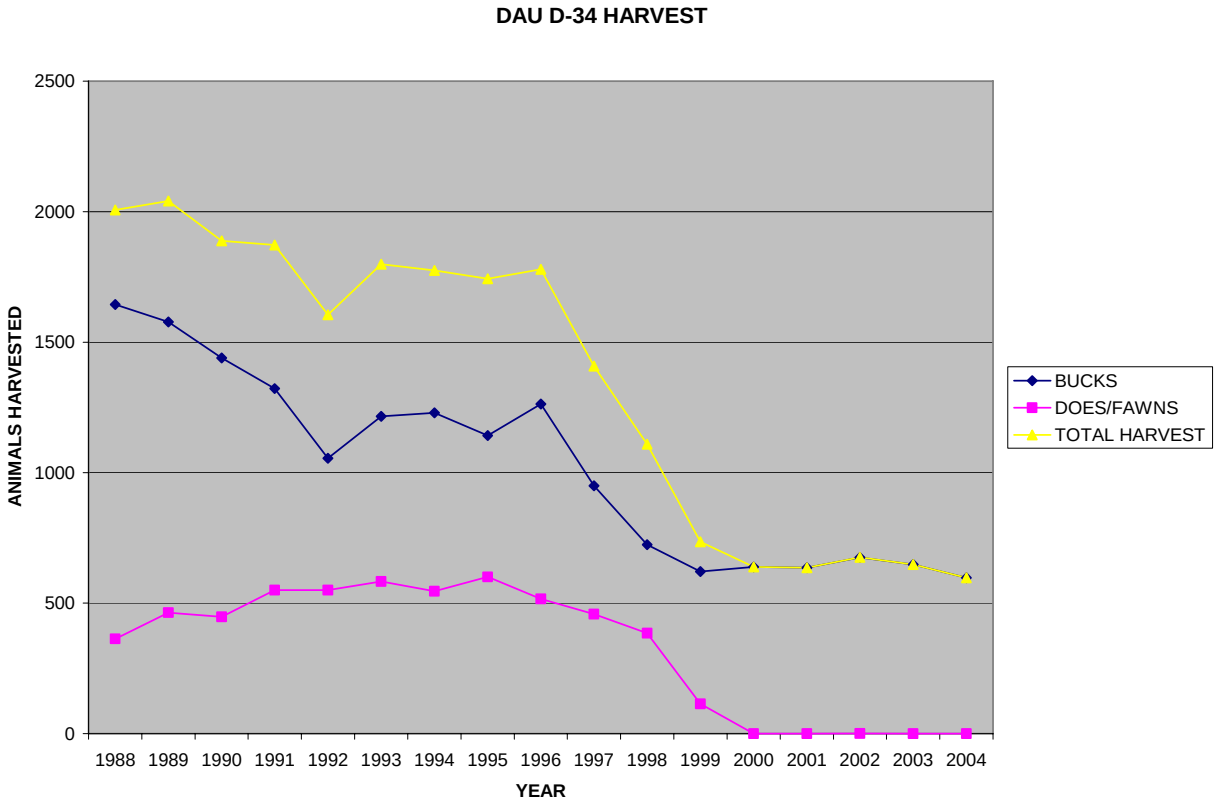

Figure 9. DAU D-34 HARVEST, 1988-2004

The yearly success rate for all manners of take within the DAU averaged 31% from 1988 to 2004, with a low of 23% in 1998 (Figure 10).

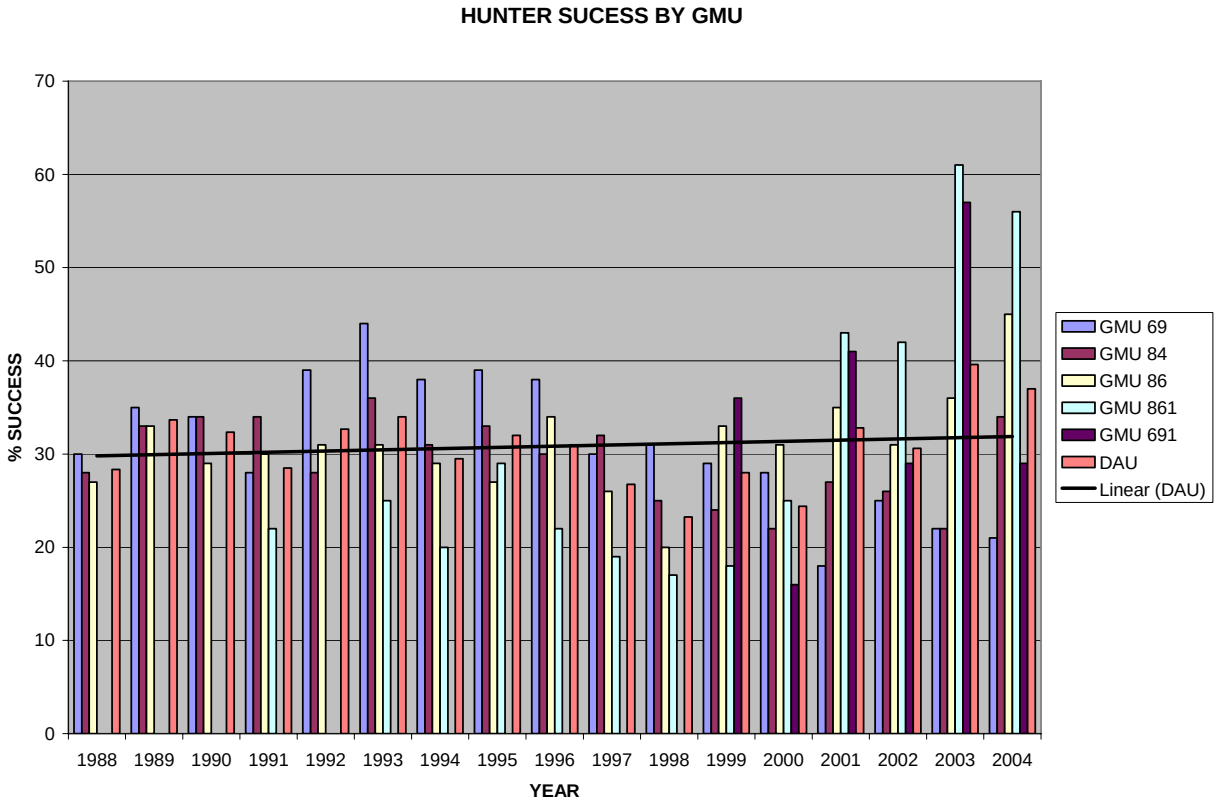

Figure 10. HUNTER SUCCESS BY GMU, 1988-2004

The number of hunters from 1980 to 1999 ranged from a low of 2,968 in 1980 to a high of 7,095 in 1985 with recent years averaging about 5,100 (Figure 5). It may be noted that a general over-all decline in the number of hunters has occurred since 1988, with a noticeable decrease in 1999, the year deer licenses ceased being available over-the-counter and became totally limited.

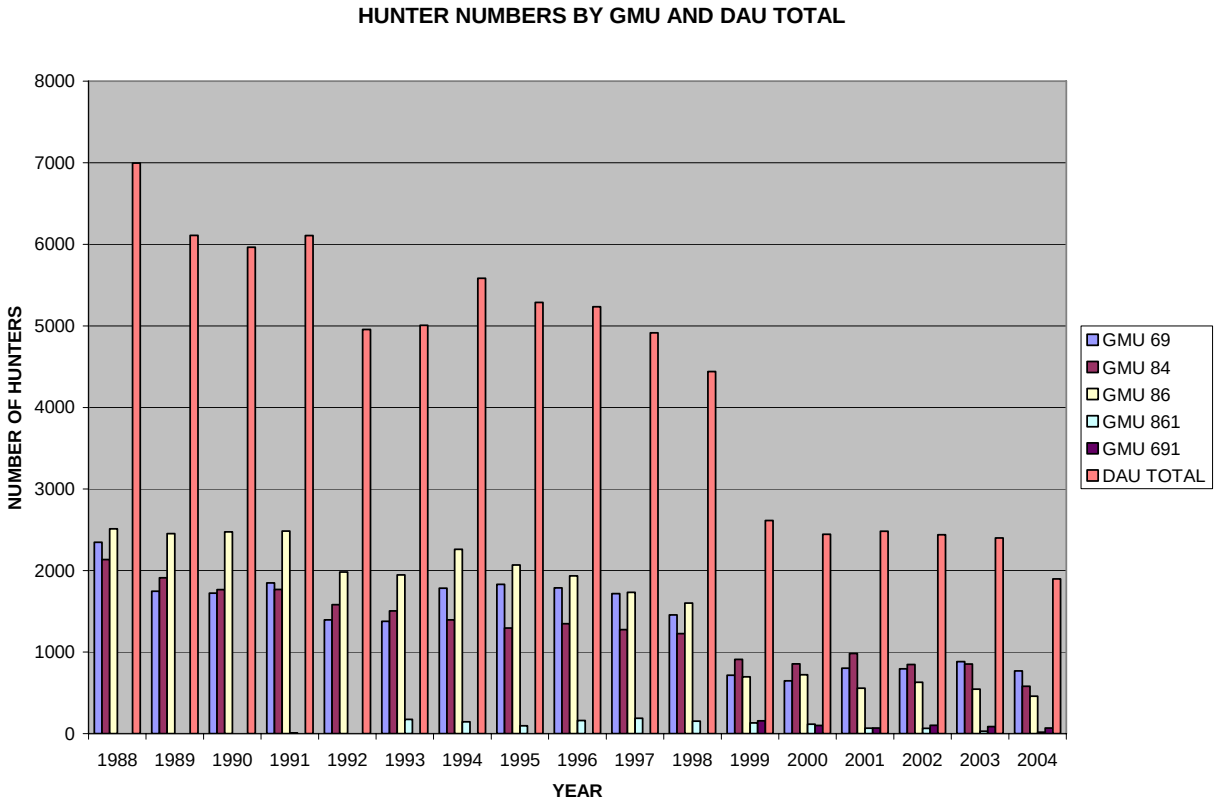

Figure 11. HUNTER NUMBERS BY GMU WITH DAU TOTAL, 1988-2004

CURRENT HERD MANAGEMENT STATUS

The 2004 post-hunt population estimate for the Wet Mountain DAU is approximately 16,700 deer. This is below the long-tern objective of 22,000 animals.

The long-term sex ratio is 20 bucks/100 does. The number of bucks per 100 does has increased from 15 bucks/100 does in 1989 to the current observed ratio of 25 bucks/100 does. The increase in doe harvest from 1989 to 1999 is more of a factor in the increase in sex ratio than any perceived increase in the numbers of bucks in the population. Buck harvest has in fact declined from 1,557 in 1985 to 597 in 2004.

Current Management Problems

The accurate determination of actual herd size is difficult in this DAU because of lack of population information. Harvest information along with partial aerial surveys and field observations have been the only inputs into the models with a reasonable degree of accuracy. Natural mortality can play a large role in the herd size, but there is little information on its influence for this DAU. The lack of information on natural mortality in this area has made modeling the population difficult. For modeling purposes fawn survival data from the survival study north of the DAU has been used. Habitat conditions and quality are similar to this DAU and survival estimates are considered to be similar.

Issues and Strategies

The most important aspect of the DAU planning process is obtaining input from all segments of the public. In order to accomplish this, the CDOW held open public meetings to gather recommendations on the goals and objectives of the DAU plan.

The CDOW held two meetings in 1999 in order to obtain the publics' issues and concerns for this deer population. Public meetings were held in Westcliffe and Colorado City, with 44 attendees in Westcliffe and 7 in Colorado City. The CDOW presented information that included past management in D-34, the objectives of the DAU plan and several population and sex ratio alternatives for consideration. Additional meetings were held in Westcliffe and Rye in 2005. A forest fire in the region and the corresponding evacuation alert canceled the planned Rye meeting which was rescheduled for August 16, 2005. 13 people attended the meeting in Westcliffe resulting in comments from 9 people. 8 people attended the second planned meeting in Rye with comments received from 7 people. Comments from both meetings in 2005 are summarized in appendix B. Information presented included past management in E-27, the objectives of the DAU plan and several population and sex ratio alternatives for consideration.

In 1999 about 900 questionnaires were distributed to the public in an effort to sample preferences regarding the DAU objectives. We received a total of 155 responses to the questionnaire from sportsmen, landowners, environmental concerns, outfitters and interested individuals. A summary of the results of the questionnaire are presented in this report as appendix A.

Issues and Concerns

1. Declining deer population – The apparent decline in the deer population in this DAU is a significant concern. The reason for the decline is unknown at this time, but is likely the result of several factors; increasing elk herds competing for the available forage, habitat maturation, increased natural mortality due to predation, nutritional deficiencies and starvation, and many other possible causes.
2. Housing Development – In the last decade, this DAU has seen a rapid development of housing in areas that were once part of deer ranges. Ranches have sub-divided and natural habitats have been permanently altered or eliminated. This includes direct loss of habitat and effective loss of habitat due to harassment from people and pets.
3. Population estimation – Because of funding shortages and housing development, quadrate counts were dropped after the 2000 post-hunt inventories. This has created a shortage of accurate information on age and sex ratios used in the modeling process. Quadrate counts could be established in this DAU to accurately model the population. If quadrate counts are not financially feasible then trend counts need to be established.

DEVELOPMENT OF ALTERNATIVES

The primary purpose of this DAU plan is to determine long-term post-hunt population and herd composition objectives. Herd composition is determined by fawn/doe and buck/doe ratios. Fawn/doe ratios are determined by many environmental factors, of which wildlife managers have no control. On the other hand, buck/doe ratios can be directly controlled by management options. Listed below are a few of the many possible alternatives that could be considered to accomplish these objectives.

Each alternative includes a brief discussion of management variables that would probably occur for that population level. Generally, the lower the population objective the lower the investment needs to be in habitat improvements. With the lower population objectives habitat restoration efforts would only be needed to offset habitat loss from housing development. As the objective increases, larger investment in habitat restoration needs to be initiated, both to offset housing development and to increase habitat quality to improve fawn survival and herd health. Habitat Management practices' vary in labor intensity, costs and life expectancy of each practice. Individual practices that should be considered include prescribed fires, fertilization, seeding, water development, livestock exclusionary fencing, timber and brush management, travel management, and others.

Game damage problems, although closely tied to the severity of the winter, would probably decrease under the lower population alternatives, and may increase with increasing population levels. Higher population levels, on the other hand, will also support a higher hunter harvest, increase hunter opportunity and increase the fiscal benefits to local economies. A population objective that involves reducing the number of hunting licenses by 10% will also reduce the economic benefits to the state and local counties involved by approximately 10%. The population objectives below are examples of management objectives.

Population Objective

1. **Maintain the current population objective of 21,000-22,000 deer.**

   General discussion – This is the current long-term objective. The 2003 post-season population estimate is ≈16,700 deer which is approximately 23% below the long-tern population objective. This objective would result in a density of about 11 deer per square mile of deer habitat.
   Game Damage – Game damage problems have the potential of increasing above current levels with a population increase above the current estimated population.
   Habitat Improvement – Large scale habitat improvement projects would be needed to improve large areas of deer habitat and to resolve distribution problems and overall range health.
   Season Framework – The regular season could be maintained as it is structured for the 2005 hunting season. Even with the continued suspension of antlerless licenses until the population objective has been met, the overall effect would be

an increase in hunter opportunity and an increase in sustained harvest from current levels.
Fiscal Impacts – Increased fiscal benefits to local and state economies would be realized.

2. **Decrease current population objective by 25% to 15,500-16,500 deer.**

General Discussion – A 25% reduction of the current population objective (22,000 deer) would result in a population objective of 16,500 deer. This is slightly below the 2004 post-hunt population estimate and results in a density of about 8 deer per square mile of deer habitat.
Habitat Improvement and Game Damage – Habitat improvement would be needed in conflict areas and to offset any further habitat loss from housing development. Game damage would remain near current levels.
Season Framework- The season framework could be maintained as it structured for the 2004 hunting season. Harvest and hunter opportunities would remain at the current levels.
Fiscal Impacts – There would be little or no change in this parameter.

3. **Increase the population objective by 15% to 24,500-25,500 deer.**

General Discussion – Without large scale habitat improvement this alternative would be difficult to obtain. After 5 years of restricted antlerless harvest the population has remained static and has not reached the current population objective, indicating a broader problem than just harvest holding population levels down. This alternative would increase the current population objective from 22,000 deer to 25,300, resulting in a density of about 12.5 deer per square mile of deer habitat.
Habitat Improvement and Game Damage – Large scale habitat improvement projects would have to be completed to reduce game damage and prevent further damage to the habitat. Local ranchers and farmers may express concern for loss of forage on ranges and growing hay leading to a possible increase in game damage complaints.
Season framework – Once the population increases to the desired level season structure would remain intact, with hunter harvest and opportunity increasing. Until that time there would have to be severe reductions in harvest to all segments of the population.
Fiscal Impacts – There would be positive fiscal impacts to state and local economies.

Herd Composition

General Discussion- - The current buck/doe ratio is 20 bucks/100 does which is slightly lower than the current projected ratio of 25 bucks/100 does. To raise the buck/does ratio a reduction in numbers of antlered hunting licenses would be required, while an increase

in licenses would decrease the ratio. Habitat, Game Damage and Season Structure impacts will not change because of the changes of buck/doe ratios, only fiscal impacts and antler "Quality" so those impacts will not be addressed here.

1. **Maintain the current post-hunt sex ratio objective of 20-25 bucks/100 does**

   General Discussion – This is the range of the current buck / doe ratio license numbers would remain at present levels. Most bucks harvested at this level are 1.5 YO with a few in the older age classes. Most hunters will be drawing licenses on a first choice basis with 0 to 1 preference points.
   Fiscal Impacts – There would be little change in this parameter.

2. **Increase current post-hunt sex ratio objective to 25-30 bucks/100 does**

   General Discussion – This alternative represents a 50% increase in the current long-term sex ratio objective, and a 25-50% increase in the current observed post-hunt sex ratio. To achieve this ratio a reduction in the number of antlered licenses would be required. This alternative would allow a larger number of bucks to survive successive hunting seasons allowing a larger portion of the mature bucks to be carried over to the next hunting season. This would allow a larger number of older age-class bucks to be available for harvest. Drawing odds would be reduced at this level with all licenses going on a first choice basis with 2 or 3 preference points required to draw a license.
   Fiscal impacts – The number of hunters would be reduced resulting in declines in license and associated hunting related revenue.

Appendix A: 2000 Hunter Questionnaire results

Survey Purpose and Intent

The purpose of this questionnaire was to assess public attitudes toward mule deer and elk management in the Wet Mountain area, specifically in Game Management Units 69, 84, 86, 691 and 861. The Colorado Division of Wildlife (CDOW) is responsible for developing mule deer and elk population management plans for the Wet Mountains area.

In Colorado, big game populations are managed for specific geographic areas, called Data Analysis Units (DAU). The DAU plan analyzes information for two primary decisions: 1) how many animals should the DAU support, and 2) what is the herd's most appropriate male to female ratio, better known as the sex ratio. The DAU planning process examines the biological capabilities of the deer and elk herds, and public preferences. An appropriate balance of each is sought and reflected in the herd objectives, which are set for a five year period of time. Annual hunting seasons are then designed with the intent of keeping the population at or near the selected herd objectives.

Public input is an important part of the DAU planning process. It is vital that public desires are integrated into these plans so that established goals are widely accepted and biologically sound. In an attempt to maximize public input, a questionnaire was developed and distributed to interested publics.

In the development of DAU plans, results of surveys such as this one are considered along with other forms of input the CDOW receives from land management agencies and the public, via public meetings, letters, phone calls, and testimony before the Colorado Wildlife Commission. All public input is integrated with other significant elements in making the final selection of a preferred alternative for population and composition (male/female ratios) objectives for the deer and elk herds in GMUs 69, 84, 86, 691 and 861. The Colorado Wildlife Commission makes final determination on the herd objectives which will then be in effect for five years.

Methods

The target population for the study consisted of residents of the Wet Mountain area, individuals owning land in the Wet Mountain area, and individuals who hunted deer and/or elk in the Wet Mountain area.

Surveys were distributed by Area-11 officers in the field during all the fall deer and elk hunting seasons in the appropriate GMUs. Surveys were also distributed to landowners by District Managers. Several license agents in Colorado City, Beulah, and Westcliffe, Colorado made the surveys available to their customers. Custer County courthouse was also a distribution site. Three volunteers from the DOW volunteer program distributed surveys to hunters during all the opening days of the fall rifle seasons. The Pueblo Service Center also made surveys available to customers.

All surveys had a postage paid envelope attached with instructions for return mailing. Nine hundred twenty-eight questionnaires were distributed within the appropriate GMUs. One hundred fifty-five questionnaires were completed and returned for a response rate of 16.7%.

Note: This survey effort is not a "scientific study" in the strictest sense of the term. While efforts were made to obtain a significant mix of residents, landowners, and hunters, the sample is not a representative cross-section of the target population. "Representativeness" refers to the extent to which relevant populations were included in a study and whether or not a probabilistic sampling scheme was used.

Results

Results are presented in two sections. "Survey Highlights" summarizes the important results of this survey, particularly as they apply to the DAU plan objectives. The "Summary of Open-ended Comments" categorizes the additional comments received and provides insight into the main issues that people thought were important for the CDOW to consider.

The actual results of the survey may be reviewed at the Pueblo Service Center by contacting Allen Vitt, Terrestrial Biologist at 719-561-5306.

SURVEY HIGHLIGHTS

ABOUT THE RESPONDENTS

X Of the 155 respondents, 96% are Colorado residents and 4% are non-residents.

X Of the 155 respondents, 71% live in the DAU's listed, for an average of 22 years. 61% own or lease property in the DAU's, with an average of 1447 acres.

X Fifteen percent own a business in the DAU's and 33% ranch or farm the property they own. Three percent of respondents either guide or outfit.

X Ninety-seven percent were male, and 56% of respondents were 41-60 years of age (33% were younger than 41 and 11% were older than 60).

X Ninety-five percent of respondents identified themselves as hunters, and 89% identified themselves as fishermen.

MULE DEER

X People are very interested and concerned about the mule deer population in the Wet Mountains. The majority of respondents (92%) are "very interested" in seeing mule deer in the Wet Mountains, and 77% are "very interested" in hunting deer. Sixty-five percent of respondents indicated they were "very interested" in learning more about deer management, and 73% are "very interested" in providing input for (or participating in) decisions about deer management in the Wet Mountains.

X Concerns about mule deer welfare are issues that interest people. Seventy-one percent of respondents were "very concerned" about the reduction in deer habitat due to increased human population development; 47% were "very concerned" about predation on deer by coyotes, bears, and mountain lions; and 57% were "very concerned" about the potential of starvation of deer during winter.

X When asked, "how do you personally feel about deer in the Wet Mountains?", 76% responded "I enjoy the presence of deer in the Wet Mountains, and I do not worry about problems deer may cause."

X The majority of respondents (79%) indicated they would like to see either a "moderate" (26-50%), or "great" (over 50%) increase in the deer population. Equal numbers of people suggested a moderate increase and a great increase. A moderate increase would be considered an increase from 26-50%, while a great increase would be considered over 50%.

X Seventy percent of respondents wanted to see a "moderate" (44 bucks/ 100 does) to "great" (50 bucks/ 100 does) increase in the number of buck deer in the population. Fifteen percent of respondents wanted to see a "slight" (38 bucks / 100 does) increase in buck deer numbers.

X Regarding mule deer management by CDOW, 22% of respondents thought CDOW was doing a "poor" job and 58% of respondents thought the CDOW was doing a "fair" to "good" job of managing mule deer in the Wet Mountains.

X Ninety percent of respondents hunted mule deer in Colorado with an average of 18 years. Of those, 89% have hunted mule deer in the Wet Mountains for an average of 12 years.

X Fifty-five percent of hunters were dissatisfied with their past mule deer hunting experiences in the Wet Mountains, 10% were neutral and 45% were satisfied with past mule deer hunting experiences.

X People were divided over the issue of hunter crowding. Eleven percent felt "extremely crowded", 33% felt "moderately crowded", 35% felt "slightly" crowded and 21% felt "not crowded at all" while hunting mule deer in the Wet Mountains.

X Overall, people rated the quality of mule deer hunting in the Wet Mountains as "fair" (41%).

X In the Wet Mountain DAU, 53% of respondents indicated "obtaining meat" was the most important factor when mule deer hunting; for 24% it was to "get a trophy" mule deer, and for 23% it was "few contacts with other hunters".

X When asked to indicate the number of years out of the last five respondents hunted in individual GMU's 37% of respondents hunted an average of 3.4 years in Unit 84, 24% averaged 2.8 years in Unit 86, 22% averaged 3.1 years in Unit 69, 9% averaged 2.2 years in Unit 691 and 8% averaged 2.7 years hunted in Unit 861.

SUMMARY OF OPEN-ENDED COMMENTS

At the end of the questionnaire, people were asked to provide additional comments they would like to make about elk and mule deer in south-central area. Numerous comments were received. These comments provide insight into the main issues that are important to people in deer and elk management. The comments were analyzed by categorizing them into like groups and reporting the number of comments in each group. Comments were grouped into 13 categories, reported below; the number of comments received for each category is enclosed by parentheses. The categories are listed in descending order based on the number of comments received. A few of the typical responses are highlighted by arrows.

1. Issues that affect hunting opportunity such as changes in hunting regulations, licensing, quality aspects. (47 comments)

   % Don't restrict in-lines unless bows are restricted to long bow only.

   % I think we need antler point restrictions in all seasons not just in one or two.

   % I would like to reduce the number of deer licenses even more.

   % I support DOW decisions in order to bring deer back to 1984 levels.

2. Hunting access issues, including the use/misuse of all-terrain vehicles. (28 comments)

   % ATV use is a problem, the government is not enforcing ATV laws.

   % Open more roads, fix roads don't close them, we can't use roads to get game out.

   % Landowners don't let you hunt but still complain about damage.

   % Too many elk on private land, won't move out to public land.

5. Deer population issues (15 comments)

   Most of the deer comments were related to the decline in the population and a desire to see the population increase to levels seen in past years. There was little concern about problems deer may cause.

   % DOW should study why elk are doing well on private property but deer are not.

   % Unit 69 deer have decreased greatly the last 5 years. Its hard to even find a buck.

   % Eliminate the third buck season when they are most vulnerable.

6. Issues related to the quality and quantity of deer and elk habitat (13 comments)

   % Development of 40 acre tracts give elk a place to hide with no hunting allowed.

   % Use GOCO money for land purchases, development is taking up all the land.

   % Burning timber is needed to provide habitat.

   % Spend more money on habitat.

7. Miscellaneous Comments (13 comments)

% I hope biological data takes precedence over public opinion.

% Colorado needs to not worry about how much money non-residents bring in.

% There is too much emphasis on the money aspect of management.

8. Mule deer limited license issues (11 comments)

% Restrictions on deer hunting has helped the buck/doe ratio.

% Deer hunting should be unlimited with 4 point restriction statewide.

% Close the season for 3 years and decrease licenses another 25-30%.

% Eliminate the 3rd deer season and shorten archery season. Hunters and predators have decreased the deer population.

9. Issues relating to predator control and how it may impact deer and elk populations (9 comments)

There is concern that predators including coyotes, mountain lion and black bear, are killing a significant portion of the deer population. The general feeling is that the CDOW should take action to reduce the number of predators.

% Coyote population needs to be reduced, perhaps add bounties.

% Manage the cats, open bear hunting to hounds and baits.

10. Some residents feel that non-resident licenses should be limited in some manner (9 comments)

% Too many non-resident tags for the number of resident tags. Take care of residents first.

11. Some landowners and local residents prefer a preference system in obtaining a deer or elk license (7 comments)

% The drawings are fixed for non-residents just for the money. Residents pay taxes and should reap the benefits first. We need a resident only first season.

% There are too many non-residents in unlimited areas. Have a drawing for non-residents.

12. Wildlife Ranching issues and concerns (4 comments)

% RFW allows rifle during the rut. That is wrong. The landowner and outfitter get rich off the system.

% RFW has depleted the number of bulls.

% Don't like RFW in limited units. It allows an individual to harvest what everyone else has helped to achieve.

13. Issues related to public land management and impacts to hunting (2 comments)

% Why do cattle have to be everywhere in Unit 84? They are out for rifle season, they should be out for archery season as well.

% Need fewer restrictions on SLB property. These lands should be open as they are on USFS lands.

Appendix B: 2005 Hunter Questionnaire Results

2005 SURVEY HIGHLIGHTS

ABOUT THE RESPONDENTS

X Of the 16 respondents, 94% are Colorado residents and 6% are non-residents.

X Of the 16 respondents, 81% live in the DAU's listed, for an average of 29.5 years. 88% own or lease property in the DAU's, with an average of 2319 acres.

X Thirty-one percent own a business in the DAU's and 43% ranch or farm the property they own. Nineteen percent of respondents either guide or outfit.

X Eighty-one percent were male, and 50% of respondents were 41-60 years of age (26% were younger than 41 and 20% were older than 60).

X Eighty-eight percent of respondents identified themselves as hunters, and 88% identified themselves as fishermen.

MULE DEER

X People are very interested and concerned about the mule deer population in the Wet Mountains. All of the respondents (100%) are "very interested" in seeing mule deer in the Wet Mountains, and 76% are "very interested" in hunting deer. Seventy-one percent of respondents indicated they were "very interested" in learning more about deer management, and 73% are "very interested" in providing input for (or participating in) decisions about deer management in the Wet Mountains.

X Concerns about mule deer welfare are issues that interest people. Sixty-three percent of respondents were "very concerned" about the reduction in deer habitat due to increased human population development; 31% were "concerned" about predation on deer by coyotes, bears, and mountain lions; and 38% were "very concerned" about the potential of starvation of deer during winter.

X When asked, "how do you personally feel about deer in the Wet Mountains?", 87% responded "I enjoy the presence of deer in the Wet Mountains, and I do not worry about problems deer may cause."

X The majority of respondents (63%) indicated they would like to see either a "moderate" (26-50%), or "slight"(over 1-25%) increase in the deer population. Twenty-five percent of the people suggested "no change" in the deer population. A moderate increase would be considered an increase from 26-50%, while a slight increase would be considered an increase from 1-25%.

X Seventy percent of respondents wanted to see a "slight" (38 bucks/ 100 does) to "moderate" (44 bucks/ 100 does) increase in the number of buck deer in the population. Nineteen percent of respondents wanted to see "no change" (34 bucks / 100 does) in buck deer numbers.

X Regarding mule deer management by CDOW, 47% of respondents thought CDOW was doing a "Good" job and 13% of respondents thought the CDOW is doing a "very good" job of managing mule deer in the Wet Mountains. Thirty-three percent of respondents had "no opinion".

X Sixty-nine percent of respondents hunted mule deer in Colorado. Of those, 85% have hunted mule deer in the Wet Mountains for an average of 14.3 years.

X Sixty-four percent of hunters were "somewhat satisfied" with their past mule deer hunting experiences in the Wet Mountains, 9% were "slightly dissatisfied" and 18% were "very satisfied" with past mule deer hunting experiences.

X Most people felt "slightly crowded" (80%) while hunting mule deer in the Wet Mountains, with 20% feeling "not crowded at all".

X Overall, people rated the quality of mule deer hunting in the Wet Mountains as "fair" to "good" (80%).

X In the Wet Mountain DAU, 50% of respondents indicated "get a trophy" mule deer was the most important factor when mule deer hunting; for 30% it was to "obtaining meat", and for 20% it was "few contacts with other hunters".

SUMMARY OF OPEN-ENDED COMMENTS

At the end of the questionnaire, people were asked to provide additional comments they would like to make about elk and mule deer in south-central area. Numerous comments were received. These comments provide insight into the main issues that are important to people in deer and elk management. The comments were analyzed by categorizing them into like groups and reporting the number of comments in each group. Comments were grouped into 13 categories, reported below; the number of comments received for each category is enclosed by parentheses. The categories are listed in descending order based on the number of comments received. A few of the typical responses are highlighted by arrows.

1. <u>Issues that affect hunting opportunity such as changes in hunting regulations, licensing, quality aspects.</u>

   a. I would like to see fewer seasons, one long season.
   b. I do not what the number of permits to outfitters increased. I don't think outfitters have a vested interest in the land or the game.
   c. There should be PLO licenses available to people that hunt only on private land.

2. <u>Hunting access issues</u>, including the use/misuse of all-terrain vehicles.

   a. Hunters should be able to access USFS lands through Pueblo Mountain Park, right now guns are not allowed in the area.

APPENDIX C: 2005 Press releases announcing public meeting on DAU plans

Contact Name: Michael.Seraphin
Contact Phone: 719.227.5211

WET MOUNTAIN GAME MANAGEMENT MEETINGS

EDITORS: THIS COPY REPLACES THE EARLIER VERSION… PLEASE NOTE DATE CHANGE FOR MEETING IN RYE.

The Colorado Division of Wildlife (DOW) is holding public meetings to discuss deer and elk management for the Wet Mountains and the east side of the Sangre deCristos..

Meetings will be held in Rye on July 11 at the Rye Fire Station at Boulder and Main and in Westcliffe on July 13 at the Custer County High School. Both meetings are 7-9 p.m.

The DOW manages big game hunting by dividing specific areas into what are known as Data Analysis Units or DAU's. Those large areas are further divided into smaller geographical areas called Game Management Units or GMU's.

The purpose of these meetings is to discuss the management of deer and elk in GMU's 69, 84, 86, 691 and 861.

This is a continuation of the DAU planning process and is a chance for public opinion to be incorporated into the DOW herd planning process. Items that will be discussed are the herd population and herd composition objectives that will govern license setting and policy issues for the next ten years.

People who cannot attend the meetings can send written comments to Allen Vitt at the DOW at 600 Reservoir Rd., Pueblo, CO 81005.

For more news about Division of Wildlife go to:
http://wildlife.state.co.us/news/index.asp?DivisionID=3

For more information about Division of Wildlife go to: http://wildlife.state.co.us.

Contact Name: Michael Seraphin – Colorado Division of Wildlife
Contact Phone: (719)227-5211

PUBLIC MEETING RE-SCHEDULED IN RYE

The Colorado Division of Wildlife (DOW) has re-scheduled a public meeting to discuss deer and elk management for the Wet Mountains on August 16. The original meeting was postponed due to the Mason-Gulch forest fire.

The location of the meeting is the Rye Fire Station at Boulder and Main. Start time is 7 p.m.

The DOW manages big game hunting by dividing specific areas into what are known as Data Analysis Units or DAU's. Those large areas are further divided into smaller geographical areas called Game Management Units or GMU's.

The purpose of these meetings is to discuss the management of deer and elk in GMU's 69, 84, 86, 691 and 861.

This is a continuation of the DAU planning process and is a chance for public opinion to be incorporated into the DOW herd planning process. Items that will be discussed are the herd population and herd composition objectives that will govern license setting and policy issues for the next ten years.

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For more news about Division of Wildlife go to:
http://wildlife.state.co.us/news/index.asp?DivisionID=3

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Sangre de Cristo Committee
Habitat Partnership Program
600 Reservoir Road
Pueblo, CO 81005

November 9, 2005

To: Colorado Wildlife Commission

From: The Sangre de Cristo HPP committee

RE: Support of DAU Plans E-27, E-28 and D-34

Dear Wildlife Commissioners,

At our regular meeting the Sangre de Cristo HPP committee, we reviewed the DAU plans and analysis of herd objectives and offer our support for the changes in DAU population and sex ratios as presented below:

D-34 Current estimated population: 16,700
Current population objective 22,000 : Proposed objective 16,500-17,500
Current sex ratio 20 bucks per 100 does : Proposed objective 20-25 bucks per 100 does

E-27 Current estimated population: 1,800
Current population objective 1,400 : Proposed objective 1,450-1650
Current sex ratio 15 bulls per 100 cows : Proposed objective 15-20 bulls per 100 cows

E-28 Current estimated population: 1,585
Current population objective 1,600 : Proposed objective 1,400-1600
Current sex ratio 40 bulls per 100 cows : Proposed objective 35-40 bulls per 100 cows

Based on the diversity of our committee members experience levels, we feel qualified in recommending that the elk social carrying capacities have now been achieved. Therefore, we would not support future recommendations for proposed increases in the elk population over the next 5-year review period.

Sincerely,

JOHN STROH II
Committee Chair

cc: AWM A. Trujillo, Area 11
Terrestrial Biologist A.Vitt
Sangre de Cristo HPP Committee