

CRIPPLE CREEK DEER MANAGEMENT PLAN

DATA ANALYSIS UNIT D-16

GAME MANAGEMENT UNITS
49, 57, 58, 581

November, 2007



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DAU D-16 (Cripple Creek)

EXECUTIVE SUMMARY

11/15/07

GMUs: 49, 57, 58, and 581

Land Ownership: 43% Private, 27% USFS, 21% BLM, 8% State

Posthunt Population: Objective 30,300¹; 2006 Estimate 11,500²; Current Objective 16,000-20,000²

Posthunt Sex Ratio (Bucks/100 Does): Objective 33¹; 2006 Observed 22²; Current Objective 30-35²

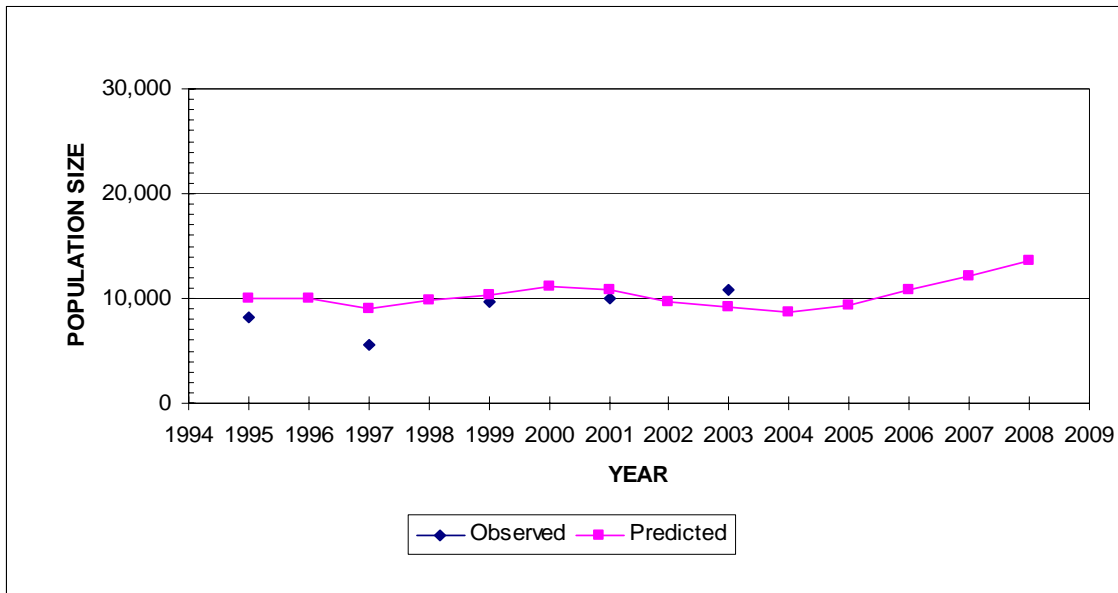


Figure 1. D-16 post season observed and predicted population size from 1995-2008.

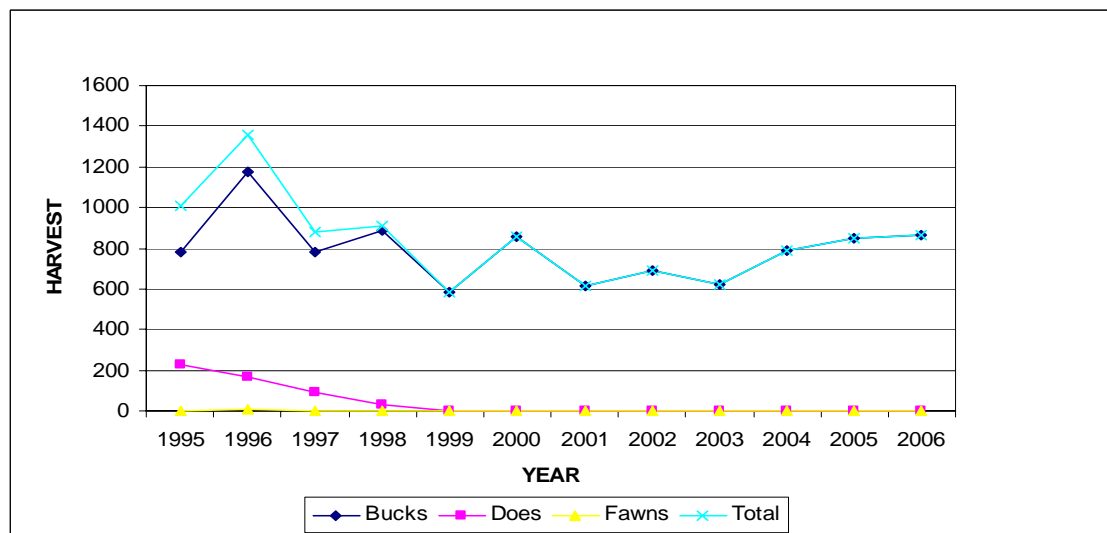


Figure 2. D-16 harvest from 1995 through 2006.

¹ Represents GMUs 49, 57, 58, 581, 59, 591

² Represents GMUs 49, 57, 58, 581

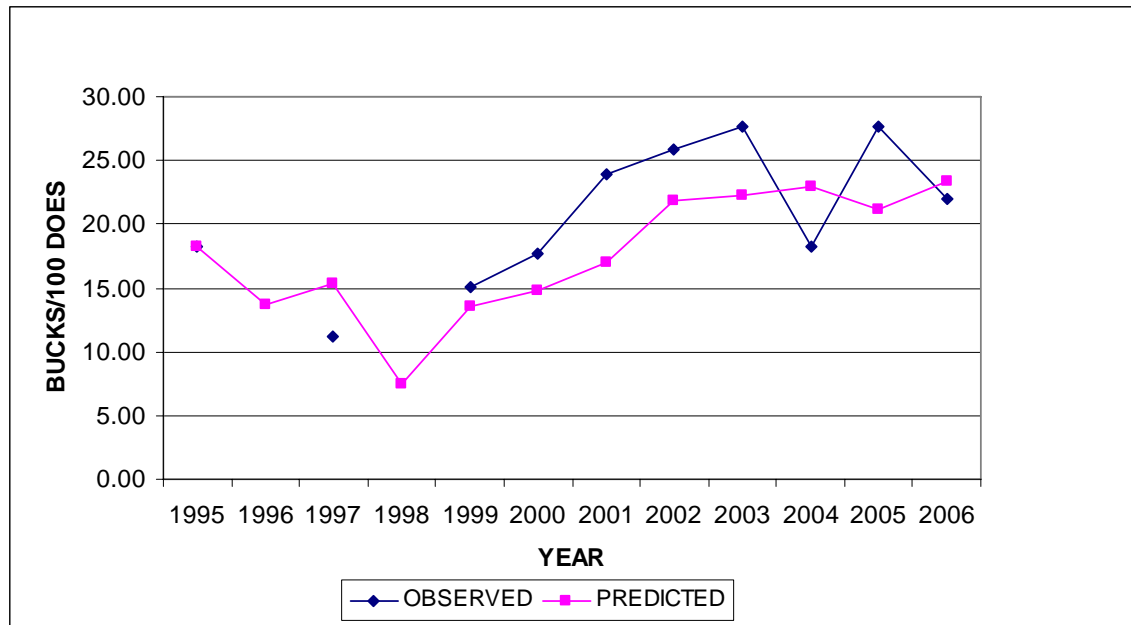


Figure 3. D-16 observed and predicted sex ratio estimates from 1995 through 2006.

D-16 Background

Like the remainder of the state this deer herd reached peak population levels in the early 1960s and declined through the 1970s. This population's most recent peak was estimated to be approximately 27,000 in the late 1980s and early 1990s. Since the 1990s, the population declined by approximately 50% with an associated reduction in sex ratio. In addition, buck harvest declined significantly by 1995 and has remained low since. In an effort to improve the population size and sex ratio, hunting was restricted to bucks in 1999 with a 50% reduction in buck hunters. Annual permit numbers have remained at 1,910 for rifle, 395 for archery, and 165 for muzzleloading since 1999.

Populations have gradually increased to the current population estimate of 11,500 deer in the new, smaller, DAU boundary, which is slightly below 50% of peak numbers. It is believed that the population is below the estimated carrying capacity of the DAU. Since 1999, with the reduction in buck licenses, sex ratios have increased from 11 bucks per 100 does to 22-28 bucks per 100 does.

The boundaries for this DAU are being changed with this plan and game management units (GMU) 59 and 591 are being shifted to D-50 (Rampart Deer DAU, GMUs 511 and 512). Eight years of radio collar data indicated almost no interchange between GMUs 581 and 59. Movements across U. S. Highway 24, however, show much more movement between GMU 59 and 511.

The current posthunt population objective since the draft DAU plan was written in 1988 has been 30,300 deer for the original, larger, D-16 DAU. The new DAU area is 27% smaller and significant residential development in traditional winter ranges is expected to reduce the carrying capacity for deer in this DAU.

Public comment (mail survey, internet survey and public meetings) showed a strong (75%) support for increasing the population with "slightly increase from current levels" preferred by 22% of respondents, "moderate increase" preferred by 31%, and "greatly increase" preferred by 22%. Surveys from landowners engaged in ranching and farming (23 representing 33,509 acres) even more strongly supported increasing the deer population (6.7% increase slightly, 34.8% increase moderately, 43.5% increase greatly). Game damage complaints in the DAU are very limited at current population levels with a total of \$6,038.21 paid since 1995. Of that amount, \$4,820 was one claim for damage to nursery trees by whitetail deer in the Canon City area.

D-16 Management Alternatives

The CDOWs recommended alternatives are to manage for a post-season population objective of 16,000 to 20,000 deer with an observed post-season composition of 30 to 35 bucks/100 does. Public input supports these objectives and adequate habitat exists to support a population of this size.

Three posthunt population objectives were proposed for D-16 1) 8,000 to 12,000, a 10% reduction from the current estimate; 2) 10,000 to 14,000 which is the current population estimate; and 3) 16,000 to 20,000 with the target (18,000) being approximately a 50% increase from the current estimate. The DOW does not recommend managing for over 20,000 deer at this time because of habitat limitations and potential conflict concerns that would be anticipated due to the loss of historic winter range. Sex ratio alternatives included 1) 20 to 25 bucks per 100 does; 2) 30 to 35 bucks per 100 does (current objective); and 3) 40 to 45 bucks per 100 does.

The D-16 DAU Plan was approved by the Colorado Wildlife Commission on January 10, 2008.

Cripple Creek Deer Management Plan

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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 objective" 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.

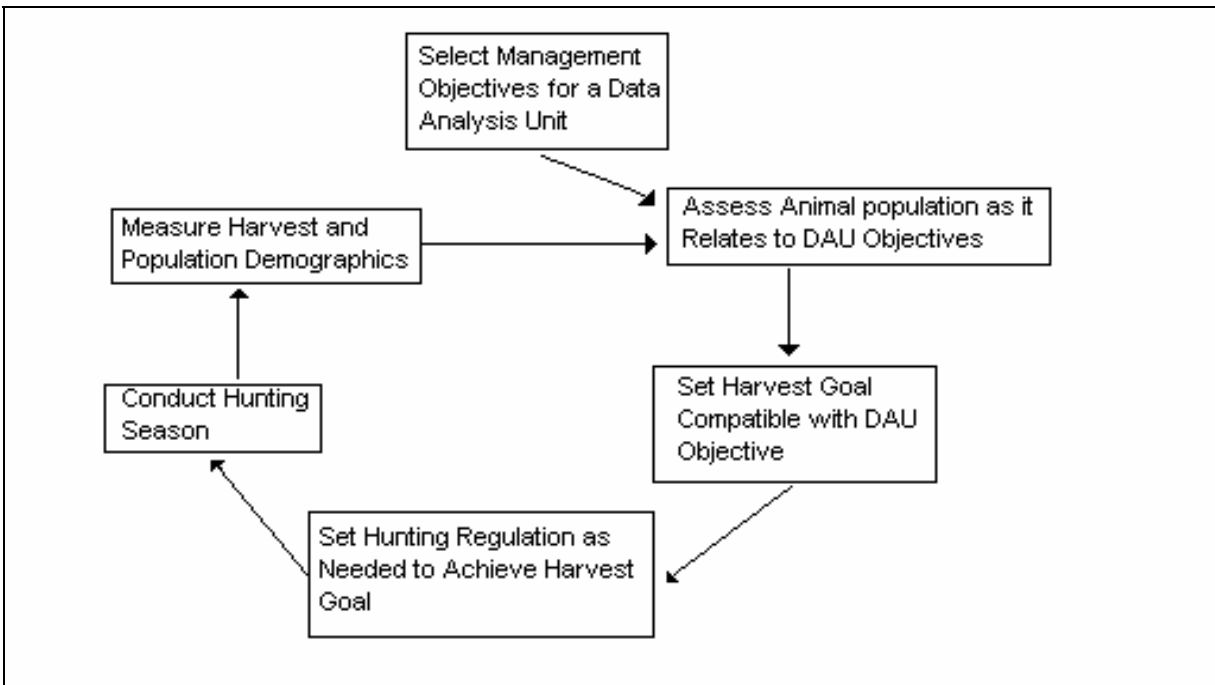


Figure 4. Management by objective process used by the CDOW to manage big game populations on a DAU basis.

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 counts
- 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 objective.

Description of Data Analysis Unit D-16

Location

The Cripple Creek deer data analysis unit (DAU) encompasses an area of 2,370 square miles in central Colorado, from 15 miles west of Colorado Springs to Canon City, Salida, Leadville and Fairplay (Figure 5). It includes game management units (GMU) 49, 57, 58, and 581. The DAU is bounded on the north by the Continental Divide, Colorado Highway 9, and U. S. Highways 285 and 24; on the east by Colorado Highway 67 and the Phantom Canyon Road (Fremont County Road 67); on the south by U.S. Highway 50 and the Arkansas River; and on the west by the Arkansas River. The DAU includes the western and southern half of Park County, the southwestern third of Teller County, the northwestern half of Fremont County, the eastern third of Chaffee County and the eastern half of Lake County (Figure 5).

Formerly the DAU included GMUs 59 and 591 and extended further eastward to Interstate 25 from Colorado Springs to Pueblo. Those two units are now to be combined with GMUs 511 and 512 as part of DAU D-50.

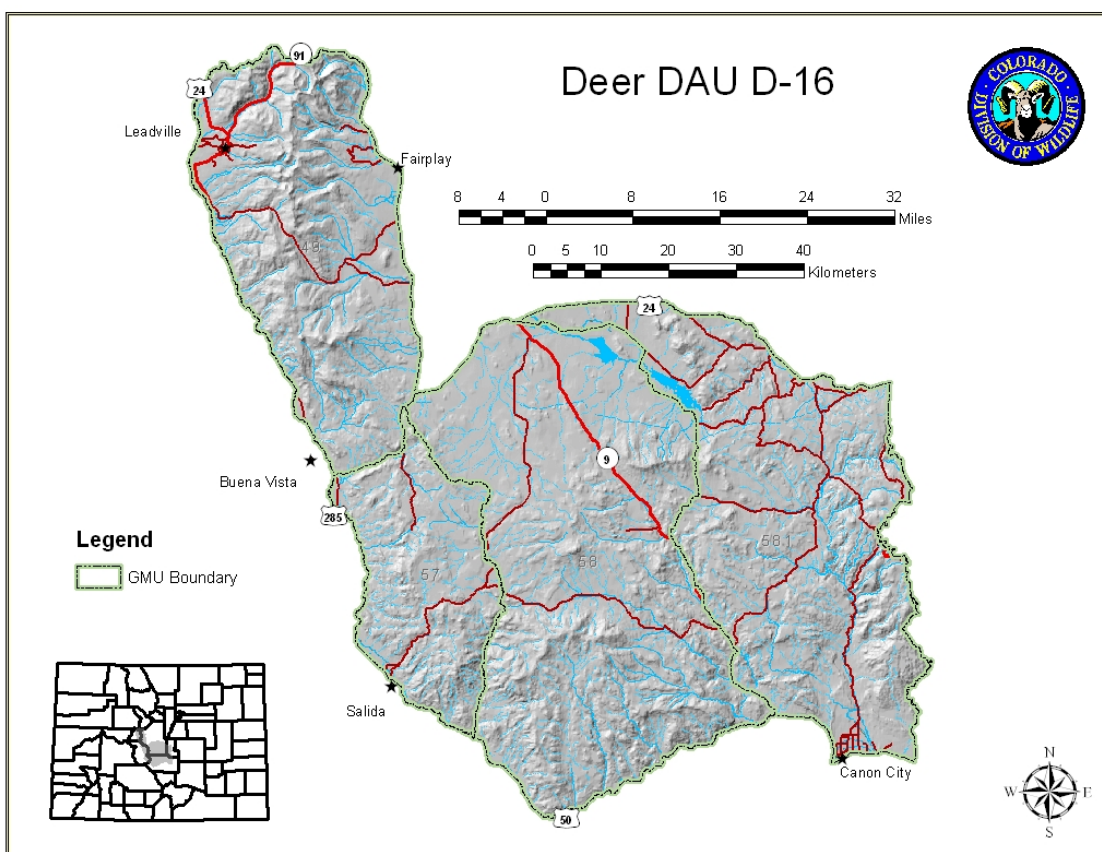


Figure 5. D-16 Map.

Physiography

The area comprises the eastern and northern side of the Arkansas River valley up to and including the western and southern edges of South Park. The four game management units descend steeply, from the top of the Mosquito Mountain Range and Aspen Ridge to the river valley on the west and south and to the broad flat of South Park on the east and north. It includes the mountains that make up the west and south perimeter of South Park and the east and north edge of the Arkansas River valley to the west slope of Pikes Peak. Elevations range from 14,286 feet, at Mount Lincoln in the north end of the DAU, to 5,300 feet above sea level at Canon City at the southeast corner. Side drainages generally run east to west and north to south to terminate at the Arkansas River at the western and southern boundaries of the unit.

Vegetation

The northwestern portion of the DAU is alpine tundra (above 11,500') and is characterized by sedges, forbs and alpine willows. As the elevation drops, the next ecosystem is subalpine forest (9,000'-11,500') dominated by subalpine fir, Engelmann spruce, aspen and bristlecone pine. The montane forest (5,600'-9,000'), contains primarily ponderosa pine, Douglas-fir, lodgepole pine, and aspen. The semidesert shrubland areas (7,000'-8,000'), support sagebrush, rabbitbrush, mountain mahogany, grasses and numerous forbs. The pinon-juniper woodlands (6,800'-8,000'), contain primarily pinon pine, juniper, mountain mahogany, rabbitbrush, forbs and cactus. The riparian ecosystems extend along all of the drainages and include narrowleaf cottonwood, willow, cinquefoil, current and forbs and grasses. Agricultural cropland in the DAU consists mainly of native grass hay with some alfalfa hay fields in the Arkansas River valley bottom and along tributaries.

Climate

As with all of mountainous Colorado, the climate varies significantly with season, elevation and aspect. Elevations below 7,500 feet are usually hot and dry in the summer and generally remain snowfree during most of the winter. Elevations between 7,500 feet and 8,500 feet have slightly cooler and wetter summers with persistent snow cover during the winter. South facing slopes normally remain open or have minimal snow cover throughout the winter. Above 8,500 feet is much cooler and wetter during the summers and snowcovered all winter except for windswept ridges above timberline. Annual precipitation varies from nine inches per year at the Arkansas River valley floor and the bottom of South Park to over 25 inches at the highest elevations. Snowfall accounts for the majority of the precipitation in the higher parts of the DAU with thunderstorms adding significant localized volumes in the summer.

Average daily high temperatures range from 50 degrees in winter to 89 degrees in summer, in Canon City. Average lows range from 22 degrees in winter to 61 degrees in summer. In Leadville, daily high temperatures range from 30 degrees in winter to 67 degrees in summer while daily low temperatures average 0 degrees in the winter and 36 degrees in the summer.

Land Status

The Cripple Creek deer DAU encompasses 2,370 square miles (Figure 6). Public lands total 1,335 square miles (56%) and private lands total 1,029 square miles (43%) of the DAU. The higher elevation portions of the DAU are in Pike/San Isabel National Forest and divided between the Leadville, Salida, and San Carlos Ranger Districts. Forest Service lands total 633 square miles (27%) of the DAU. Lower elevation public lands, managed by the Royal Gorge field office of the Bureau of Land Management, generally lie between the lower edge of the USFS lands and private lands. BLM lands total 506 square miles (21%) of the DAU. The state of Colorado owns a total of 187 square miles (8%) of the DAU, managed by the State Land Board (135 square miles), the Division of Parks and Outdoor Recreation (35 square miles) and the Division of Wildlife (17 square miles).

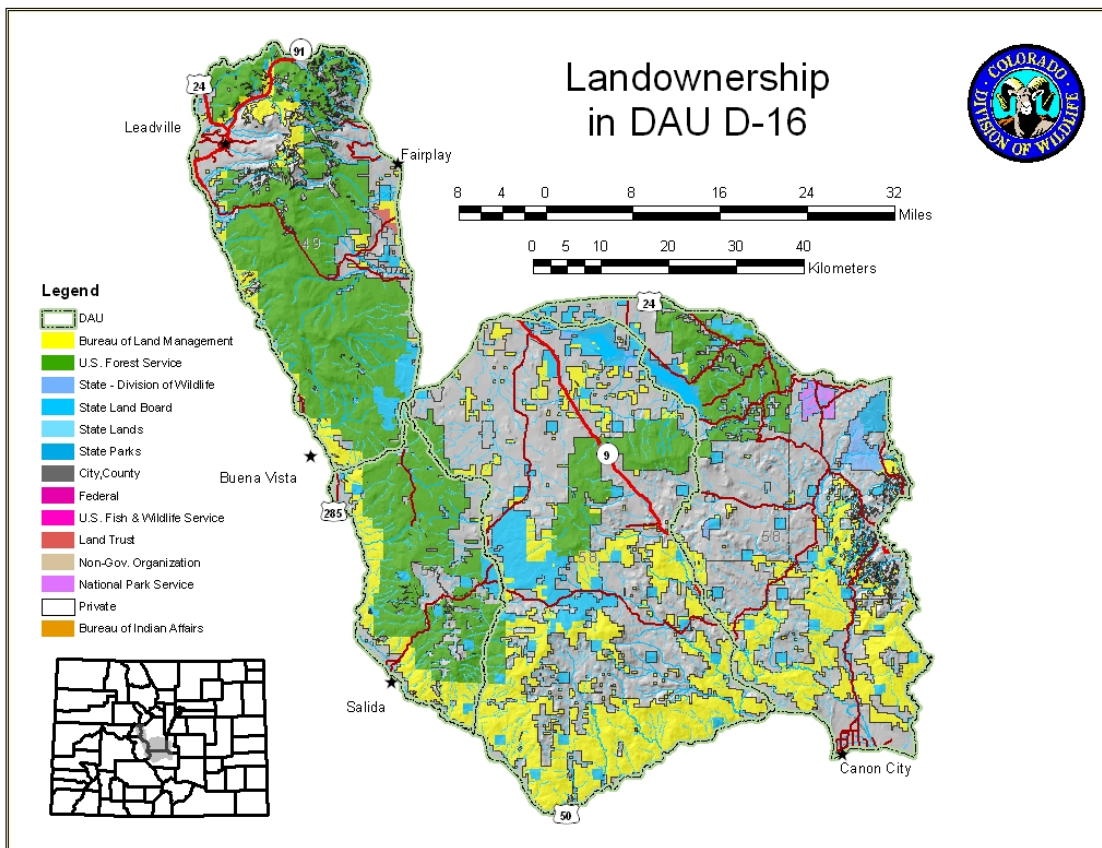


Figure 6. Landownership status in D-16.

Table 1. Land ownership within D-16 (square miles and percent of GMU).

GMU	Private	% Private	USFS	% USFS	BLM	% BLM	Colorado	% Colo.
49	139	26%	329	62%	46	9%	18	3%
57	62	22%	158	58%	54	20%	17	6%
58	438	50%	84	10%	249	29%	104	12%
581	390	57%	62	9%	157	23%	48	7%
Total DAU	1,029	43%	633	27%	506	21%	187	8%

Land Use

Land use in this DAU has changed significantly in the last 20 years. Multiple use of the public lands in the DAU includes heavy recreational use of both USFS and BLM lands throughout the year. Much of the public lands also have seasonal grazing allotments. On public lands there is a small amount of logging for purposes of disease control, salvage timber sale of beetle killed trees and habitat improvement for deer and elk. Some private lands have also been logged or are in the process of being logged. Historically, mining was a significant use of public and private lands but has decreased to a very low level of activity at the current time. Private lands are generally in agricultural production, either for grazing or hay production, however, there has been a steady and accelerating rate of conversion from agricultural use to subdivision for residential development. Much of the important winter range for this deer herd has been converted or is vulnerable to development.

Deer Distribution

Deer occupy all of the DAU at some time of the year (Figure 7). Densities are low in the lower elevation and drier habitats during the summer when most deer move up to traditional fawning and summering areas in higher elevation habitats. During the winter, deer move to winter ranges as snow accumulates on the higher elevations and north slopes. Approximately two thirds of the DAU is winter range in normal winters with some concentration occurring in preferred habitats which are often near alfalfa fields (Figure 8 and Table 2). During severe winter periods, habitat utilization is reduced to 21% of the size of the summer range (Figure 8 and Table 2).

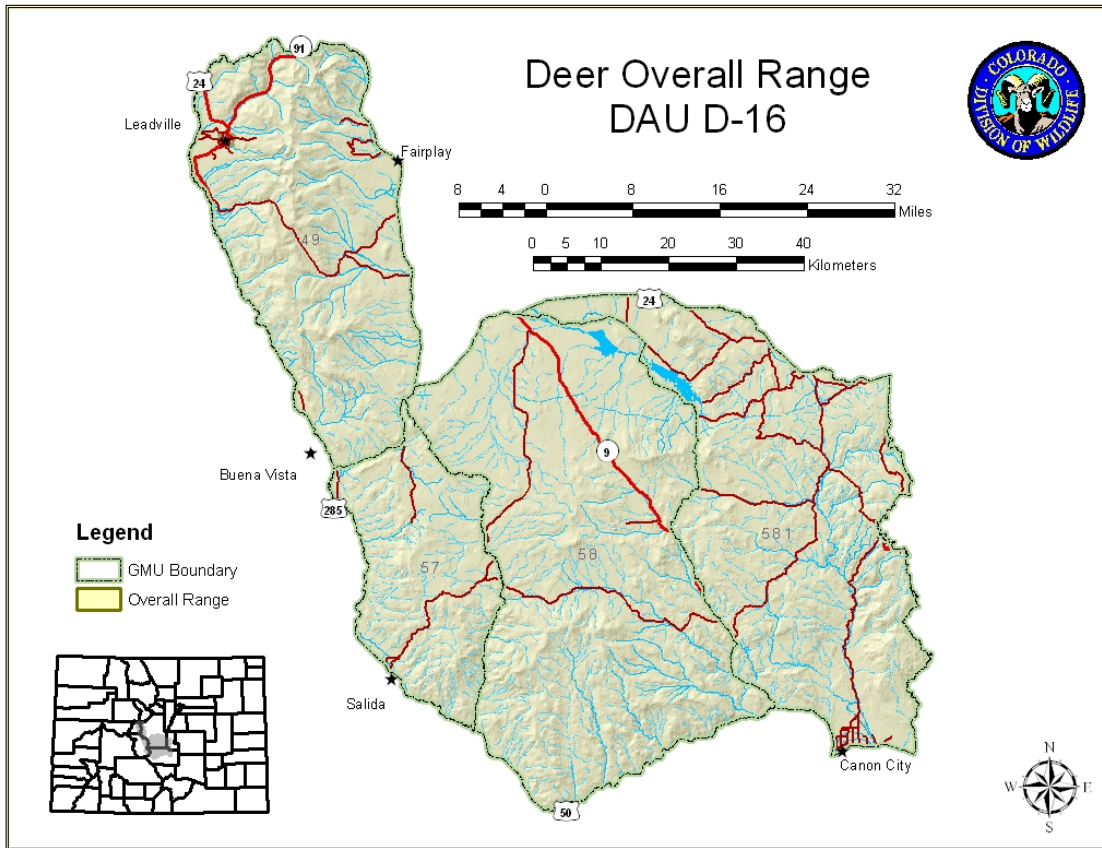


Figure 7. Overall deer range in D-16.

In recent years an increasing number of deer remain in the urban areas in and around Salida and some rural subdivisions because of high quality forage associated with fertilized and irrigated yards and gardens. Additionally, restrictions on the discharge of firearms within city limits and closure by covenants in most subdivisions have created de facto refuges where resident deer populations are not removed or disturbed. This situation has led to increased deer/auto accidents and complaints about foraging impacts on landscaping and garden plants.

Table 2. D-16 habitat categories (square miles).

GMU	Overall Range	Winter Range	Severe Winter Range	Winter Concentration Area
49	538	219	148	99
57	270	249	66	27
58	874	507	380	185
581	688	583	460	177
DAU Total	2,370	1,558	1,054	488

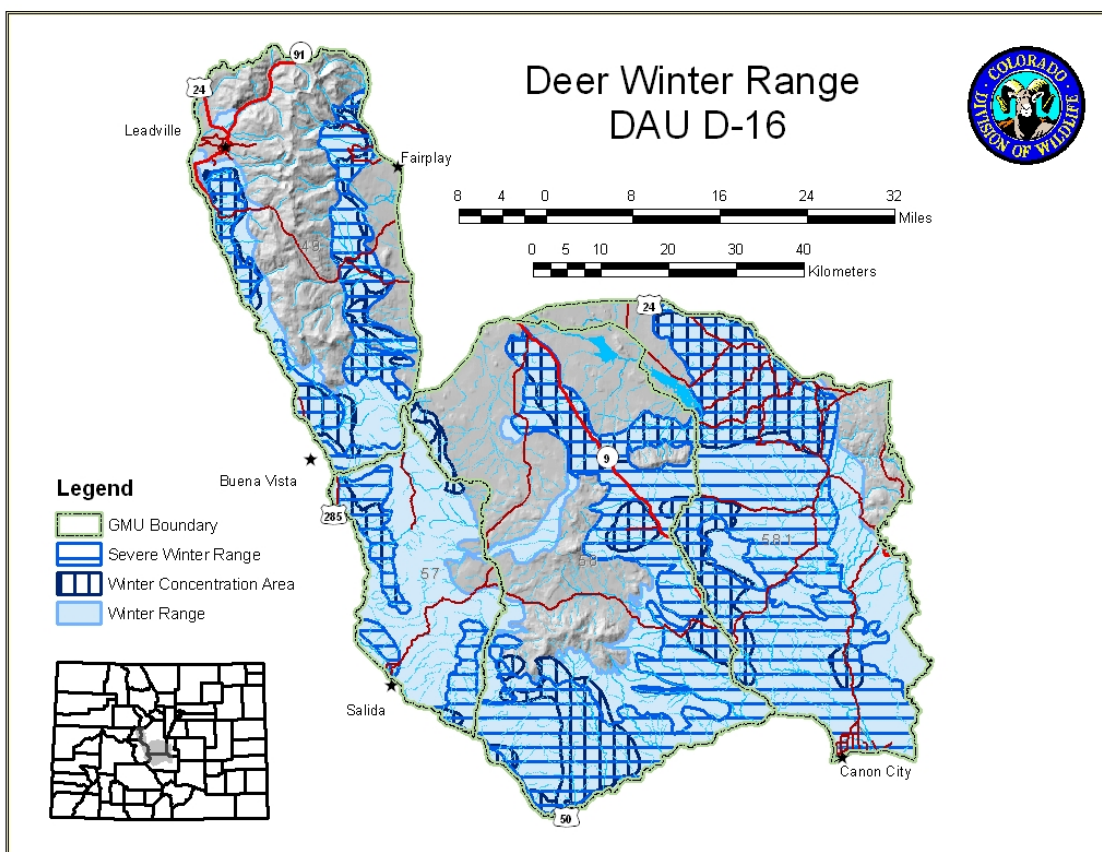


Figure 8. Deer winter range in D-16.

Annual movements of 100 to 120 radio collared does and fawns have been monitored from 1999 through the present as part of a survival study for population modeling. This has improved the accuracy of habitat mapping, provided a better understanding of movements and winter range/summer range associations in this deer herd.

Herd Management

Management of the deer herd in D-16 is conducted like most herds in Colorado. Hunting season regulations and license numbers are set based on the current estimated post-hunt population and the long term population and sex ratio objectives (10 year periods) established by the Wildlife Commission in this DAU Plan. Those population objectives are considered to be the most reasonable goal for this herd based on the quantity and quality of available habitat for deer, the recreational, economic and political desires of the people of the state, the level of conflicts between the deer herd and agricultural producers in the area, and the comments of land management agencies.

The post-season population size is estimated each winter from a computer model utilizing annual harvest data gathered by the Division of Wildlife, age and sex ratio

sample counts done by DOW personnel, measured survival rates for does and fawns, and population estimates from quadrat counts. Estimating population size over a large geographic area is difficult. Thus, the population objectives considered in this plan are given as ranges to reflect the fact that each year's population estimate may vary according to changes in hunting, counting conditions, survival rates, and winter snow conditions.

Prior to 1999, this DAU was hunted with unlimited, over-the-counter buck licenses and a limited number of antlerless and private-land-only antlerless licenses. Like mule deer herds throughout the western United States, the original D-16 population (including GMUs 59 and 591) increased to a high point in the early 1960s and then declined in the early 1970s. It recovered to an estimated high of 27,000 in the late 1980s and then dropped to half of that estimate (13,700) in the 1990s. Since that time it has been slowly recovering to its current estimate of 16,300. The current herd estimate, for the new DAU boundary, not including GMUs 59 and 591, is 11,000 to 12,000 deer (Figure 9).

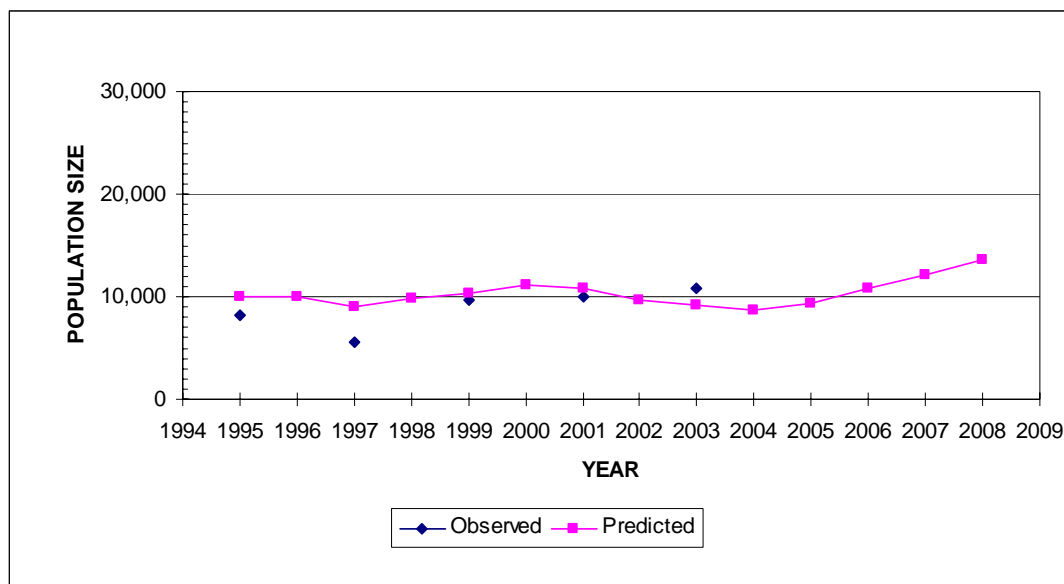


Figure 9. D-16 post season observed and predicted population size from 1995-2008.

The reason for the continuing series of peaks and declines of the mule deer population throughout the western states is not known. However, each time the statewide and nationwide populations reach a peak, that high point is not as high as the preceding peak twenty years earlier. The long term downward trend is thought to be a result of a decline in habitat quality for deer.

Being a successional species, deer rely on pre-climax habitat conditions. As the trend since the early 1900s has been towards more stability and approaching climax vegetative conditions, the ability of the habitat to support deer has declined. The primary causes of this trend in habitat conditions are thought to result from the

elimination of wildfire from the forests of the state, the encroachment of forest cover in formerly open grassland and shrubland habitats, and the improved soil and range management that has resulted in more stable grasslands. All these factors are to the detriment of the forb and shrub components of the habitat, which are important parts of the deer diet.

Post Season Herd Composition

Herd composition data has been acquired with annual age and sex composition quadrat counts during November and December. Since 1999, when count data was standardized, sample sizes have ranged from 317 deer classified in 1999 to 537 classified in 2004, with an eight year average sample size of 431 deer classified from 1999 through 2006. Figure 10 shows the trend in age ratio.

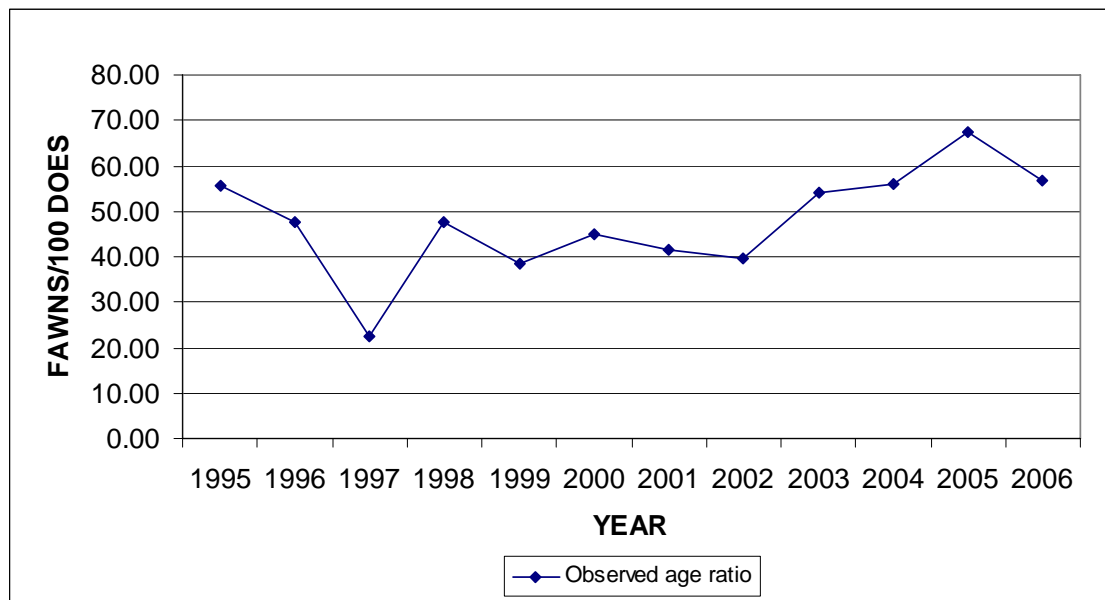


Figure 10. D-16 observed age ratio from 1995 through 2006.

Sex ratios have increased over the past 10 years to the current high of 22-28 bucks per 100 does (Figure 11). Prior to 1999, buck hunting was unlimited and the DAU had a much higher buck harvest that kept the sex ratio in the teens. Observed ratios were as low as 10 to 12 bucks per 100 does prior to the initiation of limited buck hunting.

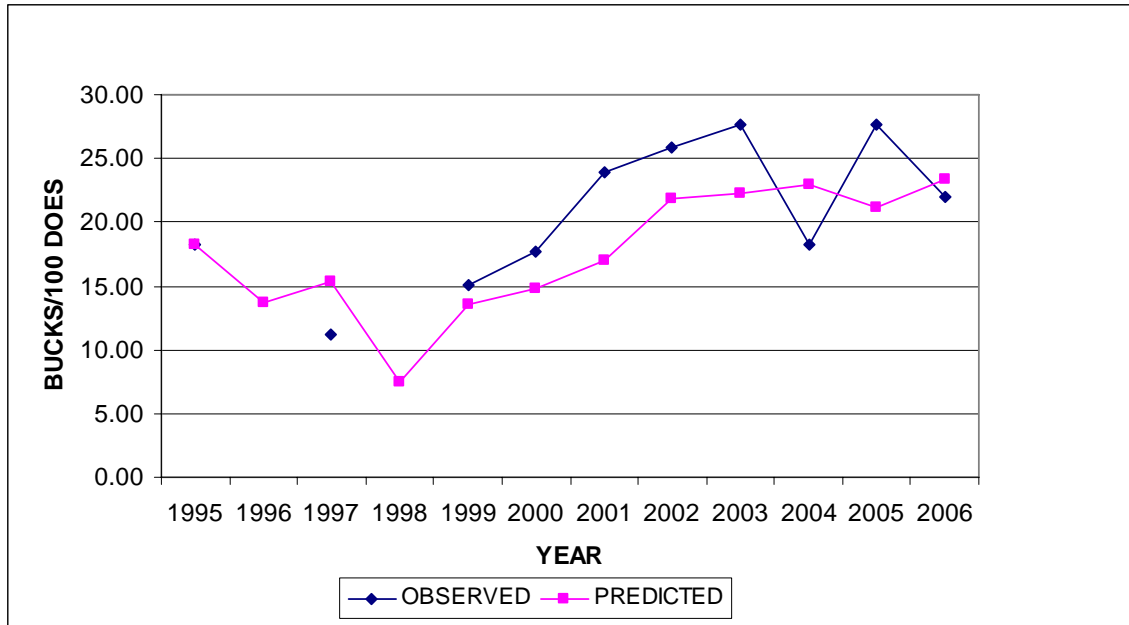


Figure 11. D-16 observed and predicted sex ratio estimates.

Harvest

Harvest in D-16 has varied with the population size over the past 21 years as shown in Figure 12. Hunter numbers declined as the population declined and antlerless licenses were reduced. In 1999, the DAU went to limited buck-only hunting and the number of buck hunters was reduced to one half of the average number of buck hunters in the previous three years. Since that time, sex ratios rose from 11 bucks per 100 does to 22-28 bucks per 100 does.

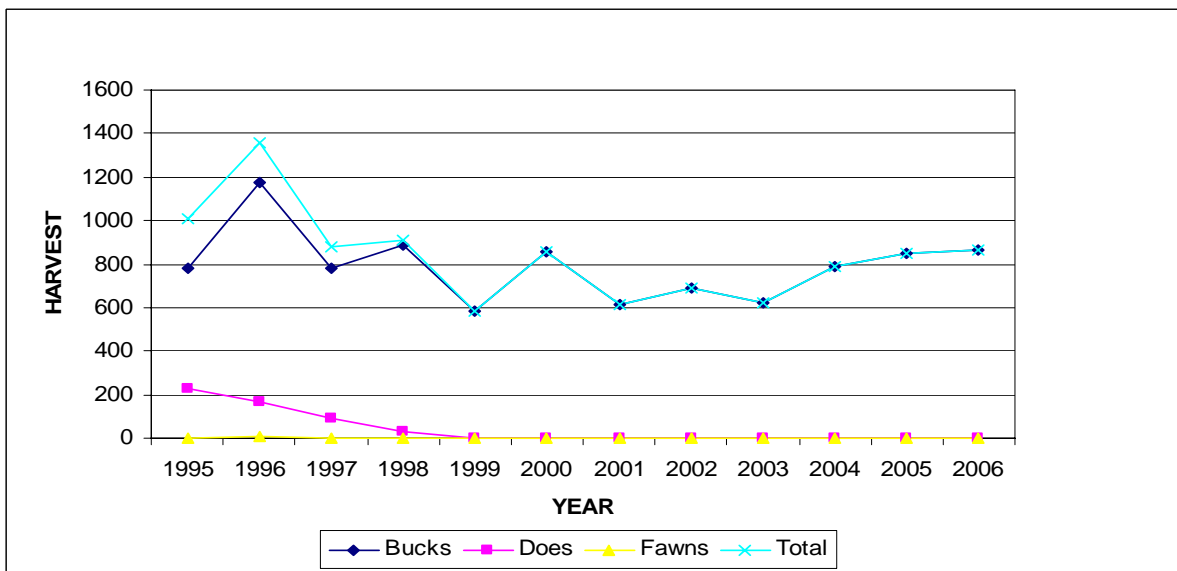


Figure 12. D-16 harvest from 1995 through 2006.

As sex ratios have increased and hunter numbers have decreased, hunter success has increased to an average of 39% for all methods and seasons over the last 5 years (Figure 13). For comparison, hunter success averaged 24% for the five years prior to changing to limited buck-only hunting.

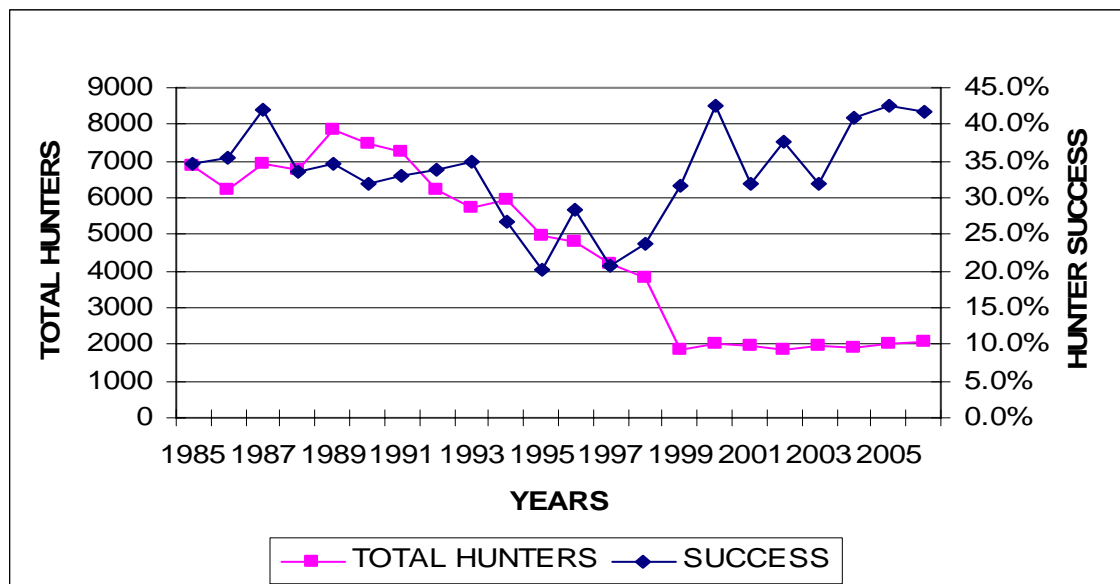


Figure 13. Total number of hunters and hunter success in D-16 from 1985 to 2006.

Current Herd Management

The current post-hunt objectives for D-16 are 30,300 deer and 33 bucks per 100 does. These provisional objectives have been in effect since 1988 when a draft DAU plan was first written and included GMUs 59 and 591.

The 2006 post-hunt population estimate for the new, smaller, D-16 area is approximately 11,500 based on counts and population modeling. The population is estimated to be increasing approximately 5% per year at the current time.

The observed sex ratio has also been increasing from 11 buck per 100 does in 1997 to 28 buck per 100 does in 2005 and 22 buck per 100 does in 2006. Depending on harvest levels and fawn survival, the ratio could reach the current objective within two to three years. The model estimates the current sex ratio at 23 bucks per 100 does.

Current Management Problems

There has been a significant loss of deer habitat due to changes in land use in this DAU. Much of the conversion from agricultural to residential use has occurred in winter and transitional ranges which are important in determining the carrying capacity of this

area. The loss of hunting access that accompanies most subdivision activity has also impacted the ability to manage deer numbers in some areas.

Population recovery has been uneven over the breadth of the DAU due to a diversity of habitat conditions. Long term observations and management experience has shown some areas have had a steady increase in population since the last population low while other areas have seen much less increase.

There have been minimal game damage claims resulting from deer in D-16. In one area on the western edge of the DAU, high deer densities during the winter are causing some conflicts in one set of alfalfa fields. There have been three claims for hay and forage loss in this DAU since 1995 totaling \$1,218.21. One other claim for nursery tree damage by whitetail deer in 2004 totaled \$4,820.

The accurate determination of population size in this DAU is also a management challenge in this herd. Classification counts and general field observations indicate an increasing trend in the population but this does not seem to be substantiated by modeled population estimates. At current levels, we believe there is opportunity for a significant increase in the total population size. The population has been relatively slow in recovering from recent low levels.

Development of Alternatives

Three population alternatives and three sex ratio alternatives are being considered for long term objectives in D-16. The population alternatives include: 1) A population of 8,000 to 12,000 deer with a population target of 10,000, which is a 10% reduction from the current estimate. 2) Maintain the current population estimate at 10,000 to 14,000 with a target of 12,000. 3) A population of 16,000 to 20,000 with a target of 18,000, which is a 50% increase from the current population estimate.

Sex ratio alternatives included: 1) 20 to 25 bucks/100 does which is the current estimate; 2) 30 to 35 bucks/100 does which is a 43% increase from current levels and is the current long term objective; and 3) 40 to 45 bucks/100 does which is a 86% increase from current levels.

To gather public input on population alternatives, a variety of methods were used. Two public meetings were held to discuss this plan and the alternatives in 2001, two meetings were held in September of 2005, and six meetings were held in August and September of 2007. Additionally, a mail survey was sent to sportsmen, landowners and businesses in 2001. A survey was also provided on the internet in November of 2006 and at the public meetings in 2007. A copy of the draft plan was available on the internet for comments in October and November, 2007, as well.

Population Alternative Discussion

- 1) Decrease the population objective by 10% from the current estimate, to a range of 8,000 to 12,000 deer with a management target of 10,000 deer.

This objective range would result in a density of 4.2 deer per square mile of overall range and 6.4 deer per mile of winter range. The current level of game damage would continue, mostly as a result of deer use of attractive alfalfa hay fields. No change in the current density of deer in urban/subdivided areas would likely occur. Antlerless licenses would be initiated within one year to stop the population increase and reduce the population to the target objective. Total recreational opportunity and license numbers would be reduced in the future once the population reduction is achieved.

- 2) Maintain the population at a range of 10,000 to 14,000 deer with a management target of 12,000 deer, which is the current population estimate.

This objective range would result in a density of 5.1 deer per square mile of overall range and 7.7 deer per square mile of winter range. Game damage claims would continue at current low levels as deer densities around hay fields would continue. There would be no change in deer numbers in the urban/subdivided areas. Antlerless licenses would be initiated within a year to halt the current slow population growth and antlered licenses would increase within 3 to 5 years once the sex ratio objective is reached. Eventually, there would be more antlerless licenses required than for alternative 1 to hold the population within the objective range.

- 3) Increase the long term population objective to a range of 16,000 to 20,000 deer with a target objective of 18,000 deer, which is a 50% increase from the current population estimate.

This objective range would result in a density of 7.6 deer per square mile of overall range and 11.5 deer per square mile of winter range. Conflicts could increase leading to the use of private-land-only and distribution hunts to reduce deer densities near alfalfa fields. Higher payments for game damage would be possible with the selection of this objective. Antlerless licenses would not be required for several years so that this objective could be reached. However, private land only antlerless licenses could be utilized to address concentration areas if conflicts occurred. In the long term, this population level would support more antlered and antlerless licenses and provide more hunting opportunity than the lower two objectives. Habitat condition would need to be monitored at the time the population objective is reached to ensure this level does not exceed the capacity of habitats existing in the DAU.

Sex Ratio Alternative Discussion

- 1) Reduce the post-hunt objective to 20 to 25 bucks per 100 does.

This objective range would allow higher numbers of buck licenses and a higher buck harvest starting immediately. There would be an expected decrease in hunter success and age of bucks harvested would be lower because of the harvest of more bucks in the population.

- 2) Maintain the current objective at 30 to 35 bucks per 100 does.

The current objective should be reached within a few years, depending on the number of bucks harvested. When the objective is reached, antlered license numbers would be increased to hold the observed ratio within the objective range. The DAU would provide higher hunter success levels because of reduced pressure, and the percentage of mature bucks in the population would increase. This objective would allow for less hunter opportunity than alternative 1.

- 3) Increase the post-hunt objective to 40 to 45 bucks per 100 does.

This objective range would not be reached for several years, depending on the number of bucks harvested. This range would provide higher success levels because of reduced pressure and more mature bucks in the population because of a reduced buck harvest. This alternative represents a further reduction in buck hunting opportunity over current limited buck license numbers.

Preferred Objectives

The CDOW's preferred alternative for the population objective is 16,000-20,000 with a management target of 18,000 (Alternative 3). This represents a reduction in objective of 41% from the previous objective of 30,300 due to a reduction in the overall size of the DAU of 27% (GMUs 59 and 591) and the loss of historic winter range capacity to land use changes. This management objective represents a 50% increase from the current population estimate. Currently, there is adequate habitat to support a significant increase in deer population without exceeding population estimates from the early 1990s. Over 75% of the survey responses supported increasing the population from current levels. There is stronger support for a larger increase in population levels from landowners engaged in ranching and farming than sportsmen, based on survey responses.

The recommended sex ratio objective is to maintain the current objective of 30 to 35 bucks/100 does (Alternative 2). This is an increase from the currently observed sex ratio of 22 to 28 bucks/100 does. 77% of survey responses supported increasing the sex ratio from current levels with 52% recommending 30 to 35/100 does.

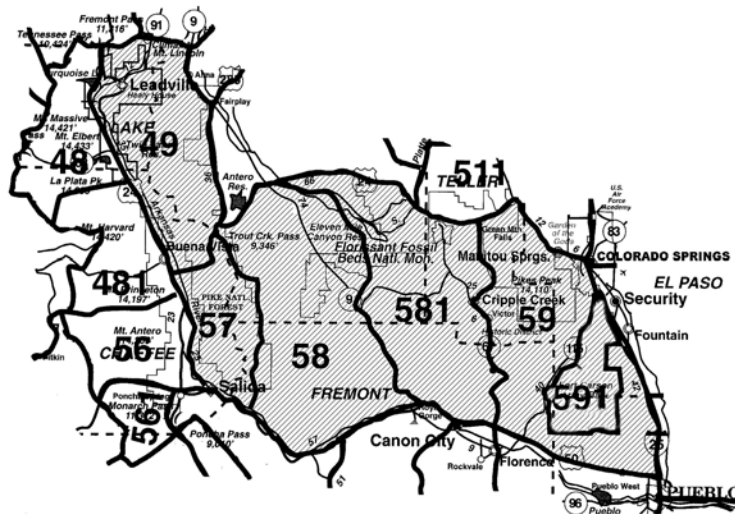
Appendix 1. Mail and internet survey form with responses.
Actual responses in brackets []. 203 returned.

MULE DEER D-16

ABOUT THIS QUESTIONNAIRE

- The primary purpose of this questionnaire is to gather public input that will be used by the Colorado Division of Wildlife in the development of mule deer management plans for Game Management Units (GMUs) 49, 57, 58, 581, 59 & 591. Your input will be used by wildlife managers to help establish long-term objectives for the age and sex structure and the size of the deer population.
- Your input is important to us. Please take a few minutes to complete and return this questionnaire at your earliest convenience. We would appreciate receiving all public comments by **November 15, 2006**.
- Your responses will remain confidential.
- **In this questionnaire, Game Management Units (GMUs) 49, 57, 58, 581, 59 & 591 will be referred to as “the designated area”.**
- When completed, please insert the survey(s) in the attached postage-paid envelope and drop in the mail. Return postage has been provided.

Thanks again for your input!



Description of GMU 49: Those **shaded** portions of Lake, Park and Chaffee counties bounded on the north by the Continental Divide; on the east by Colo 9 and US 285; on the south by US 24; and on the west by the Arkansas River and Tennessee Creek.

Description of GMU 57: That shaded portion of Chaffee, Park and Fremont counties bounded on the north by US 24; on the east by Kaufman Ridge and Badger Creek; on the south by US 50 and Colo 291; and on the west by the Arkansas River.

Description of GMU 58: That shaded portion of Fremont and Park counties bounded on the north by US 24; on the east by Park Co Rd 59 and Colo 9; on the south by US 50; and on the west by Kaufman Ridge and Badger Creek.

Description of GMU 581: Those **shaded** portions of Park, Teller and Fremont counties bounded on the north by US 24; on the east by Colo 67; on the south by US 50; and on the west by Colo 9 and Park Co Rd 59.

Description of GMU 59: Those **shaded** portions of Pueblo, Fremont, El Paso and Teller counties bounded on the north by US 24; on the east by I-25; on the south by US 50; on the west by Colo 67.

Description of GMU 591: Those portions of Pueblo, Fremont and El Paso counties within the boundaries of the Fort Carson Military Reservation.

BACKGROUND INFORMATION

1. Are you... [175] a resident of Colorado
 [26] a non-resident of Colorado

2. Do you live in the designated area (GMUs 49, 57, 58, 581, 59 & 591)?
 [143] No
 [58] Yes If yes, how many years? years

3. Do you own or lease property in the designated area (GMUs 49, 57, 58, 581, 59 & 591)?
 [120] No
 [81] Yes If yes, how many acres? [37,672] acres
Do you ranch or farm on the property you own or lease in the designated area?
 [53] No [23] Yes
 [4,163 acres] [33,509 acres]

4. Do you own a business in the designated area (GMUs 49, 57, 58, 581, 59 & 591)?
 [185] No
 [16] Yes

5. Do you guide or outfit for big game hunters in the designated area (GMUs 49, 57, 58, 581, 59 & 591)?
 [199] No
 [1] Yes

6. Are you [185] Male [16] Female

7. What is your age?
 [12] 20 and under [30] 21-40 [120] 41-60
 [41] 61-80 [0] over 80

8. Do you hunt? [2] No [197] Yes

9. Do you fish? [17] No [181] Yes

PEOPLE AND DEER

1. Please indicate how interested you are in doing each of the following in the designated area (GMUs 49, 57, 58, 581, 59 & 591).
(Circle one number for each item)

How interested are you in	Not at all Interested				Very Interested	Don't Know
seeing deer?	1	2	3	4	5	6
	[1]	[1]	[1]	[14]	[181]	[1]
hunting deer?	1	2	3	4	5	6
	[0]	[3]	[3]	[8]	[185]	[1]
learning more about deer management?	1	2	3	4	5	6
	[7]	[9]	[19]	[48]	[111]	[5]
providing input for decisions about deer management ?	1	2	3	4	5	6
	[1]	[4]	[22]	[47]	[121]	[4]

2. Please indicate how concerned you are about each of the following possible problems in the designated area (GMUs 49, 57, 58, 581, 59 & 591).
(Circle one number for each item)

How concerned are you about	Not at all Concerned				Very Concerned	Don't Know
a) deer-auto accidents	1	2	3	4	5	6
	[28]	[34]	[42]	[39]	[51]	[5]
b) economic losses to ranchers/farmers from deer damage to rangelands/hay/crops/fences	1	2	3	4	5	6
	[34]	[29]	[61]	[43]	[29]	[4]
c) damage from deer to homeowners' trees, shrubs and gardens	1	2	3	4	5	6
	[58]	[43]	[44]	[28]	[23]	[4]
d) predation on the deer population from coyotes, bears and mountain lions	1	2	3	4	5	6
	[17]	[21]	[41]	[55]	[63]	[3]
e) the reduction of deer habitat due to increased human population and development	1	2	3	4	5	6
	[4]	[3]	[20]	[47]	[125]	[1]
f) the potential of starvation of deer during the winter	1	2	3	4	5	6
	[4]	[10]	[25]	[57]	[103]	[1]
g) deer spreading diseases to livestock, pets or humans	1	2	3	4	5	6
	[27]	[29]	[26]	[47]	[67]	[4]
h) deer competing with livestock for forage	1	2	3	4	5	6
	[43]	[34]	[52]	[37]	[31]	[3]
i) the revenue that deer hunting and deer viewing provides for local businesses	1	2	3	4	5	6
	[14]	[24]	[46]	[66]	[46]	[4]

3. How do you personally feel about deer in the designated area (GMUs 49, 57, 58, 581, 59 & 591)? (Check one)
- 0 I do not enjoy the presence of deer in the designated area and regard them as nuisances.
- 40 I enjoy the presence of deer in the designated area, BUT I worry about problems deer may cause.
- 153 I enjoy the presence of deer in the designated area, BUT I do not worry about problems deer may cause.
- 6 I have no particular feelings about deer in the designated area.

DEER MANAGEMENT

1. How would you like the mule deer population in the designated area (GMUs 49, 57, 58, 581, 59 & 591) to change, if at all? *(Check one)*
 - 1 decrease greatly (over 50%)
 - 4 decrease moderately (26-50%)
 - 11 decrease slightly (1-25%)
 - 28 no change
 - 45 increase slightly (1-25%)
 - 63 increase moderately (26-50%)
 - 45 increase greatly (over 50%)
 - 4 don't know

2. How would you like the number of buck (male) mule deer in the designated area (GMUs 49, 57, 58, 581, 59 & 591) to change, if at all? *(Check one)*
 - 0 decrease greatly (5 bucks/100 does)
 - 2 decrease moderately (10 bucks/100 does)
 - 5 decrease slightly (15 bucks/100 does)
 - 35 no change (20 bucks/100 does)
 - 49 increase slightly (25 bucks/100 does)
 - 50 increase moderately (30 bucks/100 does)
 - 54 increase greatly (35 or over bucks/100 does)
 - 5 don't know

3. How would you rate the overall success of the Colorado Division of Wildlife's mule deer management in the designated area (GMUs 49, 57, 58, 581, 59 & 591)? *(Circle one)*

Poor	Fair	Good	Very good	Excellent	No opinion
[16]	[39]	[68]	[50]	[14]	[11]

4. Overall, how would you rate the quality of mule deer hunting opportunities available in the designated area (GMUs 49, 57, 58, 581, 59 & 591)? *(Circle one)*

Poor	Fair	Good	Very good	Excellent	No opinion
[22]	[49]	[69]	[35]	[18]	[5]

DEER HUNTING

1. Have you ever hunted mule deer in Colorado?
[9] No (Please go to next page)
[194] Yes - how many years?
 _____ years

2. Have you ever hunted mule deer in the designated area (GMUs 49, 57, 58, 581, 59 & 591)?
[18] No (Please go to next page)
[180] Yes- how many years?
 _____ years

3. Overall, how satisfied or dissatisfied have you been with your past mule deer hunting experiences in the designated area (GMUs 49, 57, 58, 581, 59 & 591)? (Circle one)

very dissatisfied	somewhat dissatisfied	slightly dissatisfied	Neutral	slightly satisfied	somewhat satisfied	very satisfied
[12]	[12]	[30]	[8]	[25]	[55]	[40]

4. Overall, to what extent have you felt crowded by other hunters while mule deer hunting in the designated area (GMUs 49, 57, 58, 581, 59 & 591)? (Circle one)

extremely crowded	moderately crowded	slightly crowded	not at all crowded
[9]	[34]	[79]	[60]

5. Which ONE factor is the MOST important to you when mule deer hunting in the designated area (GMUs 49, 57, 58, 581, 59 & 591): (Check one)
[41] few contacts with other hunters
[90] obtaining meat
[54] to get a trophy mule deer

6. In the past 5 years (2001-2005), indicate the number of years you have hunted mule deer in the following units: (please refer to map on page 2)

Unit 49 _____ # of years	Unit 57 _____ # of years	Unit 58 _____ # of years
Unit 581 _____ # of years	Unit 59 _____ # of years	Unit 591 _____ # of years

[127 surveys had comments, 76 did not]

**If you have any questions regarding this questionnaire,
please contact Jack Vayhinger at 719-530-5537.**

TO RETURN THIS QUESTIONNAIRE:
Please insert in attached envelope and drop it in the mail.

Return postage has been provided.

Summary table of survey respondents that indicated landownership in D-16 to the desired population change for deer in D-16.

			landowner_type_2			Total
			non-landowner	landowning farmer	landowning non farmer	
deer population change desired	decrease greatly	Count	1	0	0	1
		% within landowner_type_2	.8%	.0%	.0%	.5%
	decrease moderately	Count	2	2	0	4
		% within landowner_type_2	1.7%	8.7%	.0%	2.1%
	decrease slightly	Count	8	0	2	10
		% within landowner_type_2	6.6%	.0%	3.8%	5.2%
	no change	Count	16	1	11	28
		% within landowner_type_2	13.6%	4.3%	20.8%	14.4%
	increase slightly	Count	28	2	13	43
		% within landowner_type_2	23.7%	8.7%	24.5%	22.2%
	increase moderately	Count	36	8	16	60
		% within landowner_type_2	30.5%	34.8%	30.2%	30.9%
	increase greatly	Count	23	10	11	44
		% within landowner_type_2	19.5%	43.5%	20.8%	22.7%
	don't know	Count	4	0	0	4
		% within landowner_type_2	3.4%	.0%	.0%	2.1%
	Total	Count	118	23	53	194
		% within landowner_type_2	100.0%	100.0%	100.0%	100.0%

Summary table of survey respondents that indicated landownership in D-16 to the desired change in the number of bucks in D-16.

			landowner_type_2			Total
			non-landowner	landowning farmer	landowning non farmer	
change in number of bucks in area	decrease moderately	Count	2	0	0	2
		% within landowner_type_2	1.7%	.0%	.0%	1.0%
	decrease slightly	Count	3	0	1	4
		% within landowner_type_2	2.5%	.0%	1.9%	2.1%
	no change	Count	23	2	9	34
		% within landowner_type_2	19.5%	8.7%	17.3%	17.6%
	increase slightly	Count	24	2	21	47
		% within landowner_type_2	20.3%	8.7%	40.4%	24.4%
	increase moderately	Count	29	10	9	48
		% within landowner_type_2	24.6%	43.5%	17.3%	24.9%
	increase greatly	Count	32	9	12	53
		% within landowner_type_2	27.1%	39.1%	23.1%	27.5%
	don't know	Count	5	0	0	5
		% within landowner_type_2	4.2%	.0%	.0%	2.6%
	Total	Count	118	23	52	193
		% within landowner_type_2	100.0%	100.0%	100.0%	100.0%