

CRIPPLE CREEK DEER HERD MANAGEMENT PLAN EXTENSION

DATA ANALYSIS UNIT D-16

GAME MANAGEMENT UNITS
49, 57, 58, 581

November 2020



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EXECUTIVE SUMMARY

Cripple Creek Deer Herd (DAU D-16)	GMUs: 49, 57, 58, & 581
Posthunt Population: Previous Objective: 16,000-20,000 deer; Estimate for 2019: 11,700. Preferred Alternative: <u>Maintain population objective of 16,000-20,000</u>	
Posthunt Sex Ratio (Bucks:100 Does): Previous Objective: 30-35. Posthunt 2019 observed: 23; modeled: 22. Preferred Alternative: <u>Status Quo 30-35</u>	

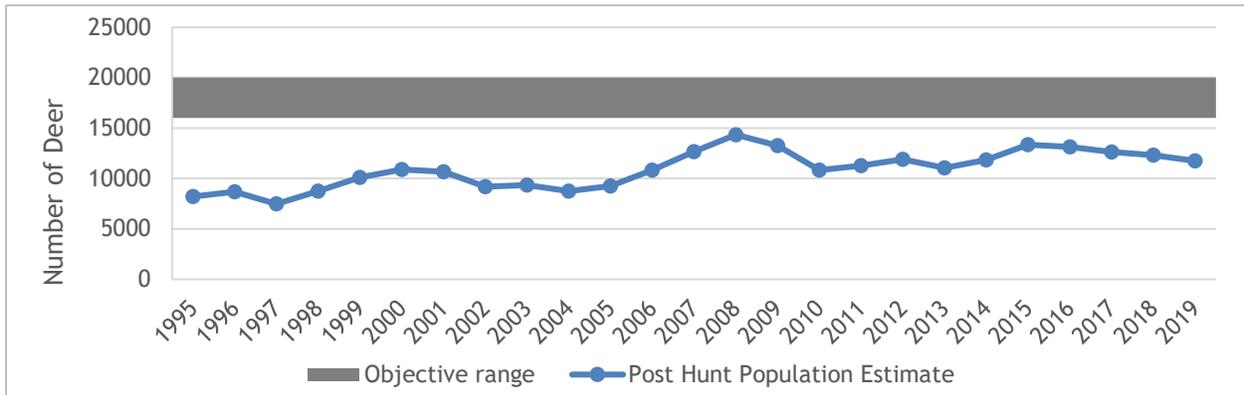


Figure 1. D-16 Post-hunt population estimate since 1995.

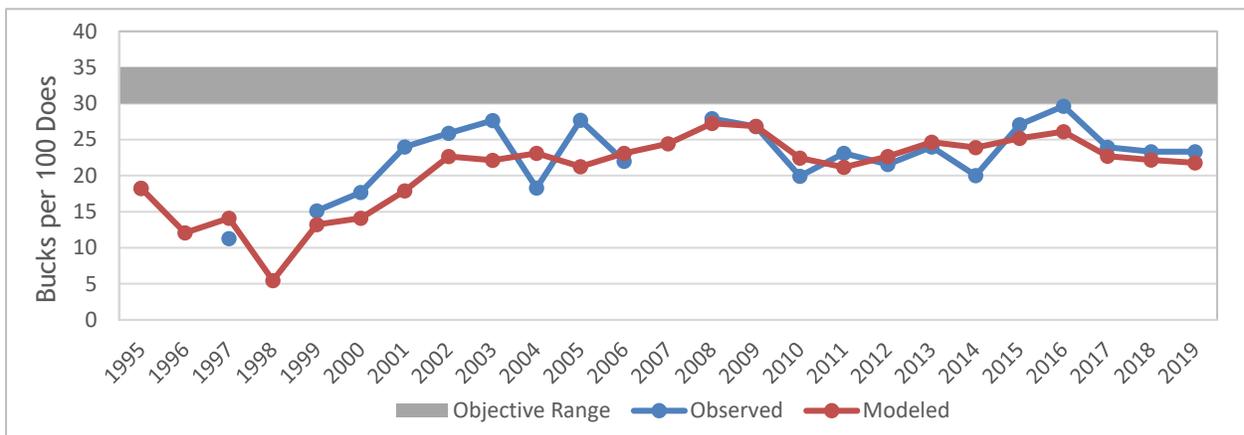


Figure 2. D-16 observed and predicted post-hunt bucks:100 does since 1995.

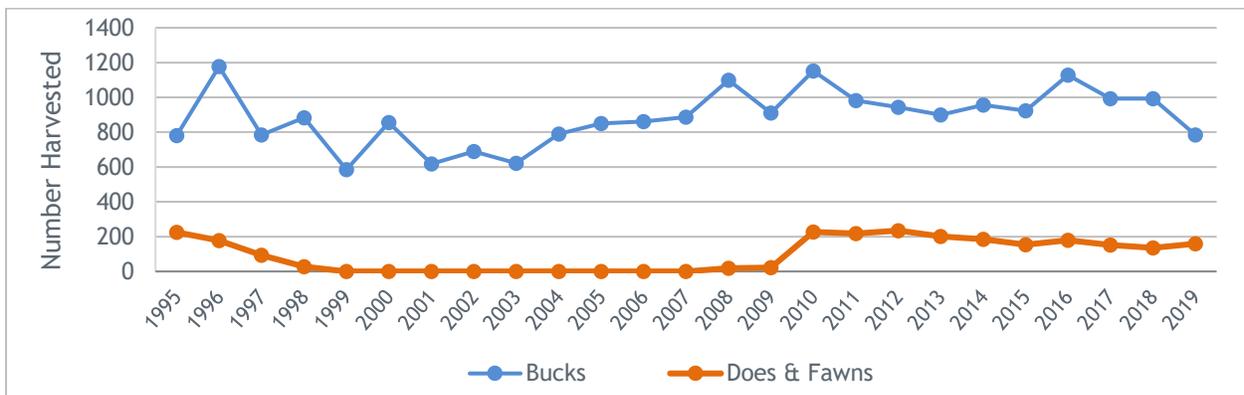


Figure 3. D-16 harvest since 1995.

D-16 Background

Like much of Colorado, the Cripple Creek (D-16) deer herd reached peak population levels in the 1960s and 1970s before declining through the 1980s and 1990s. It is estimated this population peaked in the 1960s at approximately 27,000; however, that estimate included GMUs 59 and 591, which are no longer considered part of this population. In the decades since, the population and associated harvest have declined by approximately 50%. Since bottoming out in the early 1990s at approximately 8,000 deer, the D-16 population has gradually increased to its current population estimate of approximately 11,700 deer. The current management objective is 16,000-20,000 deer. The population is below the current objective due to low annual adult doe survival, over winter fawn survival, and productivity. Since 1999, when buck licenses went limited statewide, sex ratios have increased from 11 bucks per 100 does to 25-30 bucks per 100 does.

Since 1999, D-16 has been one of five deer herds in the state in which annual doe and over-winter fawn survival are monitored annually using radio collars. Since 1999, the leading cause of known deer mortality in D-16 has been cougar predation, which led to the initiation of a nine-year, three-staged research project in D-16 and neighboring herd D-34 to examine mule deer population response to changes in cougar density and how cougar/deer populations respond to various harvest levels. This project will provide better understanding of how cougar harvest could be used as a deer management tool. In addition, it will provide valuable information on deer body condition, neonate fawn survival and mortality, migration patterns, and habitat use. In 2017, the first sample of cougars, does, and fawns were captured and fitted with GPS radio collars for this study.

D-16 Significant Issues:

- Ongoing deer/cougar research study
- Conversion of agricultural pastures and other habitats for human development
- Increasing human recreational use of public lands
- Urban deer issues

In developing this Herd Management Plan (HMP) Extension, Colorado Parks and Wildlife (CPW) sought input from the Arkansas River Habitat Partnership Program (HPP) Committee, and posted the draft HMP Extension on the CPW website for a 30-day comment period.

CPW Recommendation to the Wildlife Commission

Population and Sex Ratio Objectives: The CPW recommendation is to extend the current D-16 post-hunt population objectives of 16-20,000 deer with a sex ratio of 30-35 bucks per 100 does for the life of this plan. This will allow CPW to evaluate the results of the ongoing deer/cougar research study.

Strategies for Addressing Management Issues and Achieving Objectives

CPW has limited ability to affect several of the management issues identified in D-16, including conversion of agricultural pastures and other habitats for human development. However, we are consulting with land management agencies, non-governmental organizations, and local governments to find opportunities to balance the needs of wildlife with recreation on public lands. For urban deer issues, local wildlife managers are working with each community to establish methodologies that will attempt to alleviate residential concerns.

Annually, we will evaluate where the D-16 deer herd is relative to the population and sex ratio objectives set forth in this plan. We will set hunting licenses numbers with the goal of moving the population towards the objectives.

Cripple Creek Deer Herd Management Plan

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INTRODUCTION AND PURPOSE

Colorado Parks and Wildlife (CPW) manages big game for the use, benefit, and enjoyment of the people of the state in accordance with the CPW's Strategic Plan (2010-2020). Deer management is also determined by mandates from the Colorado Parks and Wildlife Commission (PWC) and the Colorado Legislature. Colorado's wildlife species require careful and increasingly intensive management to accommodate the many and varied public demands and growing human impacts. The CPW uses a "Management by Objective" approach to manage the state's big game populations (Figure 4).

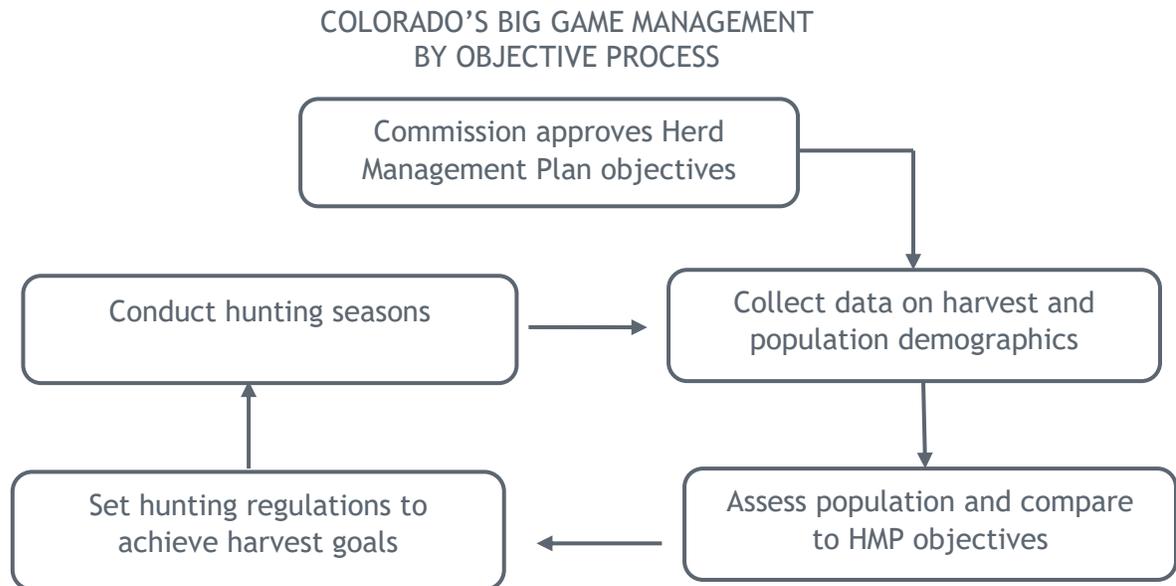


Figure 4. Management by Objective process used by Colorado Parks and Wildlife to manage big game populations by Data Analysis Unit (DAU).

With the Management by Objective approach, big game populations are managed to achieve population objectives established for a Data Analysis Unit (DAU). A DAU is the geographic area that includes the year-round range of a big game herd. A DAU includes the area where most animals in a herd are born, live and die. DAU boundaries are delineated to minimize interchange of animals between adjacent herds. A DAU may be divided into several Game Management Units (GMUs) to distribute hunters and harvest.

Management decisions within a DAU are based on a Herd Management Plan (HMP). The primary purpose of a Herd Management Plan is to establish population and sex ratio (i.e., the number of males per 100 females) objectives for the herd. The HMP also describes the strategies and techniques that will be used to reach these objectives. During the herd management planning process, public input is solicited and collected through questionnaires, public meetings, and comments to the CPW staff and the PWC. The intentions of the CPW are integrated with the concerns and ideas of various stakeholders including the State Land Board (SLB), the Bureau of Land Management (BLM), city and county governments, hunters, guides and outfitters, private landowners, local chambers of commerce, and the public. In preparing a Herd Management Plan, agency personnel attempt to balance the biological capabilities of the herd and its habitat with the public's demand for wildlife recreational opportunities. Herd Management Plans are approved by the PWC and are reviewed and updated approximately every 10 years.

The HMP serves as the basis for the annual herd management cycle. In this cycle, the size and composition of the herd is assessed and compared to the objectives defined in the HMP and removal goals are set. Based on these goals, specific removal strategies are made for the coming year to either maintain the population or move it towards the established objectives (e.g., license numbers and allocation are set, translocation plans are made). Hunting seasons and/or translocations are then conducted and evaluated. The annual management cycle then begins again (Figure 4).

The purpose of this HMP is to set population and sex ratio objectives for the Cripple Creek deer herd. This HMP will be in place from 2020-2030 with the expectation that it will be reviewed and updated in 2030.

Description of Cripple Creek Deer Herd D-16

Location

The Cripple Creek deer DAU encompasses an area of 2,370 mi² 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 Hwy 9, and U.S. Hwys 285 and 24; on the east by Colorado Hwy 67 and the Phantom Canyon Road (Fremont County Road 67); on the south by U.S. Hwy 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).

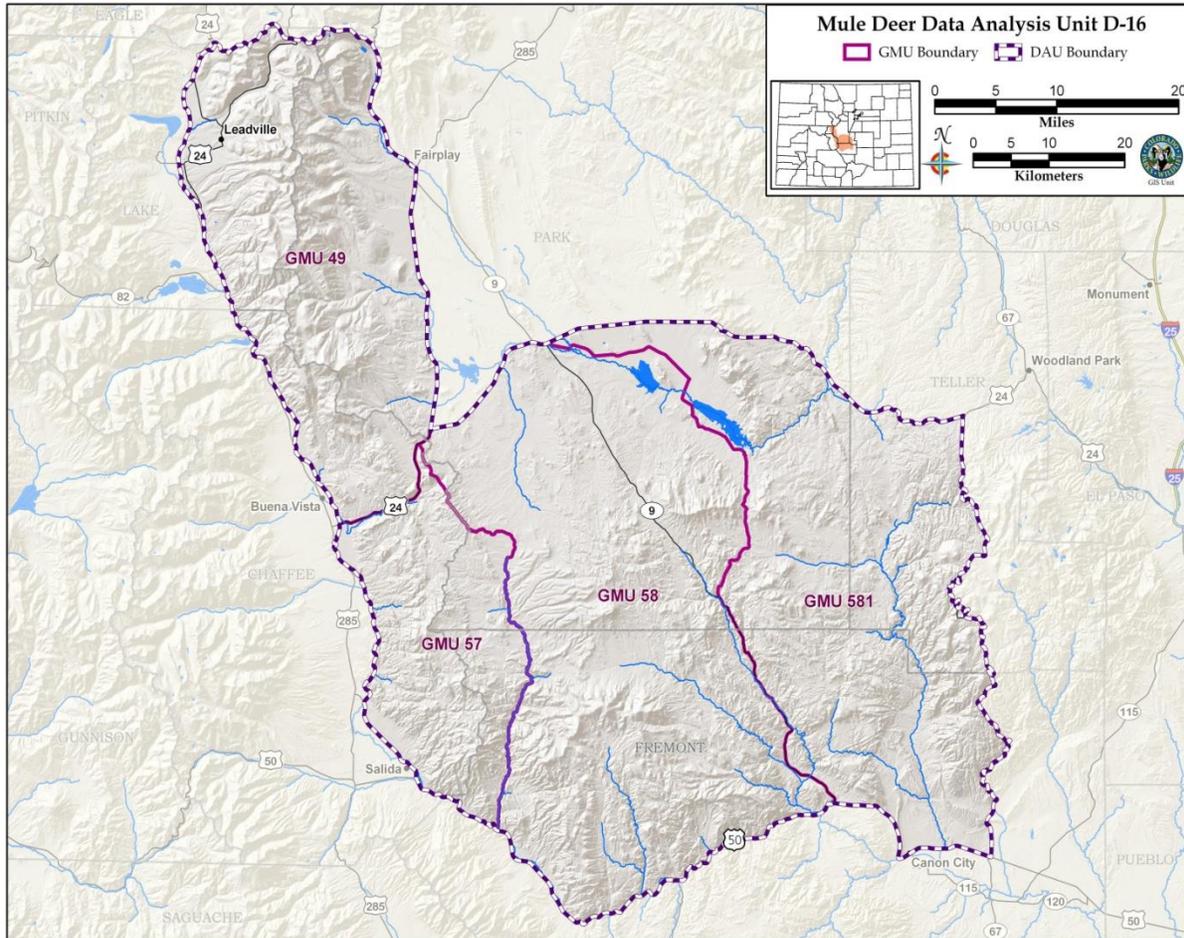


Figure 5. Cripple Creek Deer DAU D-16.

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 ft, at Mount Lincoln in the north end of the DAU, to 5,300 ft 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 area.

Vegetation

The northwestern portion of the DAU is alpine tundra (above 11,500 ft) and is characterized by sedges, forbs and alpine willows. As the elevation drops, the next ecosystem is subalpine forest (9,000 ft-11,500 ft) dominated by subalpine fir, Engelmann spruce, aspen and

bristlecone pine. The montane forest (5,600 ft-9,000 ft), contains primarily ponderosa pine, Douglas-fir, lodgepole pine, and aspen. The semidesert shrubland areas (7,000 ft-8,000 ft), support sagebrush, rabbitbrush, mountain mahogany, grasses and numerous forbs. The pinon-juniper woodlands (6,800 ft-8,000 ft), 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 area consists mainly of native grass hay with some alfalfa hay fields in the Arkansas River valley bottom and along tributaries (Figure 6).

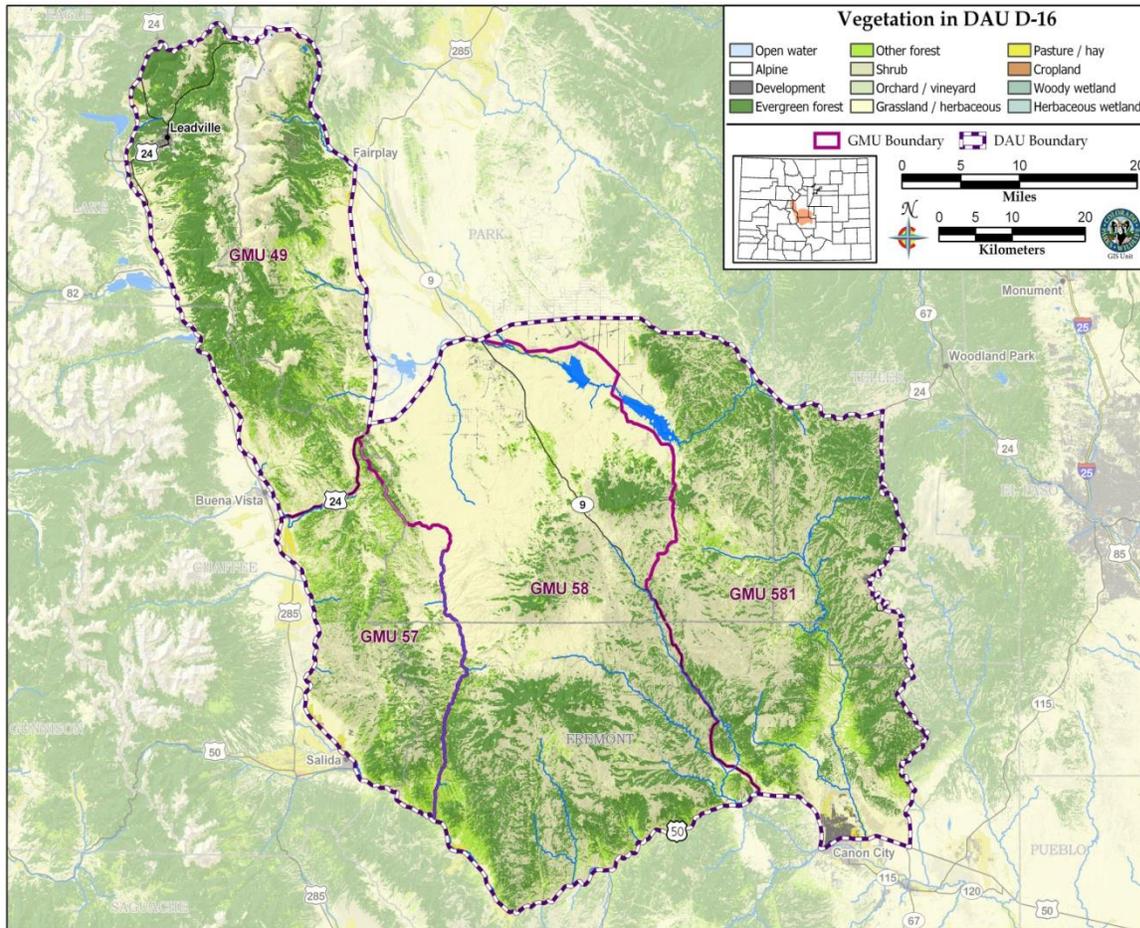


Figure 6. Land cover in D-16.

Climate

As with all of mountainous Colorado, the climate varies significantly with season, elevation and aspect. Elevations below 7,500 ft are usually hot and dry in the summer and generally remain snowfree during most of the winter. Elevations between 7,500 ft and 8,500 ft 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 ft is much cooler and wetter during the summers and snow covered 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 D-16 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

Of the 2,370 mi² in the D-16 DAU, 1,335 mi² (57%) are public lands and 1,092 mi² are private (Figures 7 and Table 1). The higher elevation portions of D-16 are in the Pike/San Isabel National Forest and divided between the Leadville, Salida, and San Carlos Ranger Districts. Forest Service lands total 633 mi² (27%) of D-16. 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 mi² (21%) of D-16. The state of Colorado owns a total of 187 mi² (8%) of the DAU, including lands managed by the State Land Board (135 mi²), the Division of Parks and Outdoor Recreation (35 mi²) and Colorado Parks and Wildlife (17 mi²).

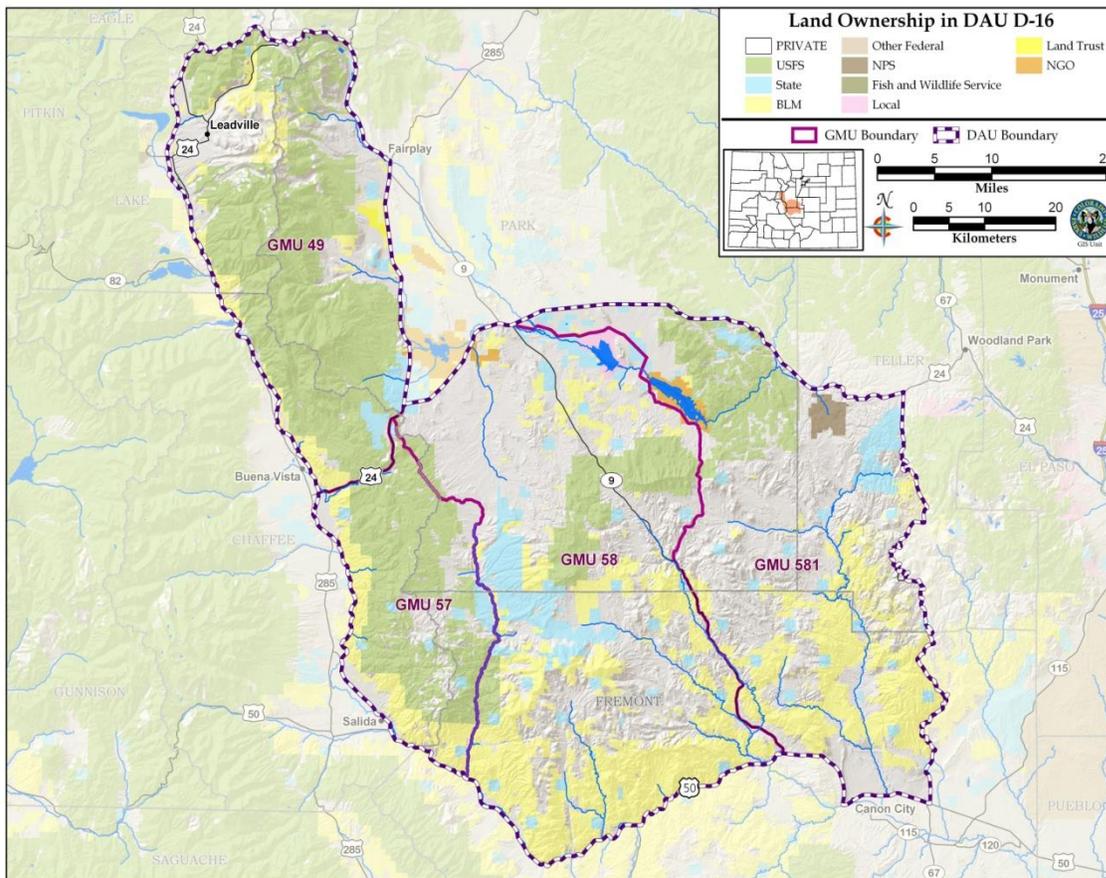


Figure 7. Landownership in D-16.

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 D-16 has changed significantly in the last 20 years. Multiple use of the public lands includes heavy and increasing 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 human development and increasing recreational pressure.

Deer Distribution

Deer occupy nearly all of D-16 at some time of the year. 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 D-16 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).

In recent years an increasing number of deer remain in the urban areas in and around Buena Vista, Canon City, and Salida 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

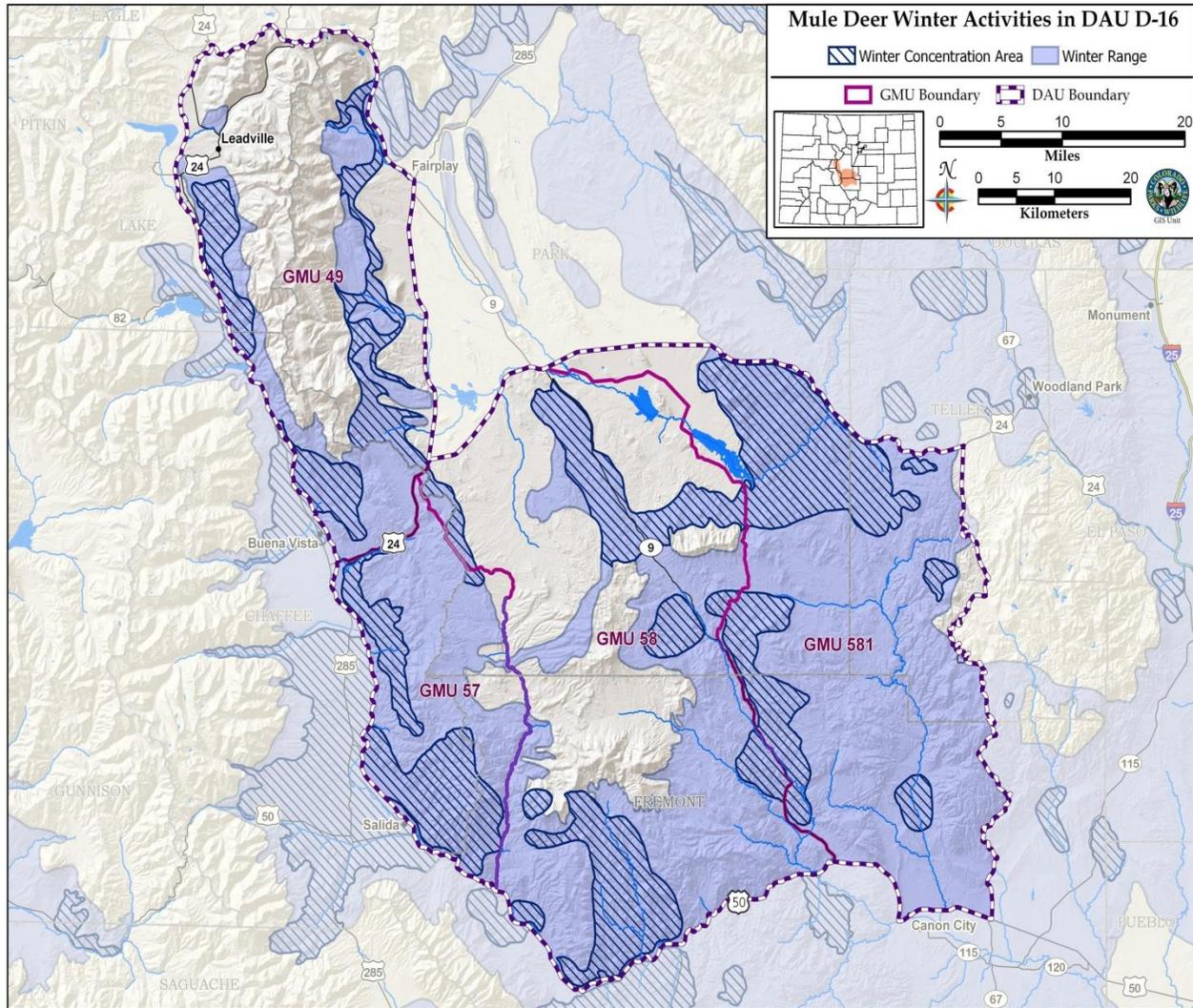


Figure 8. Deer winter range in D-16.

Annual movements of 80 radio collared does and 60 fawns have been monitored from 1999 through the present as part of an ongoing survival study for population modeling. This has improved the accuracy of habitat mapping and provided better understanding of migration patterns and winter range/summer range associations for this deer herd.

HERD MANAGEMENT

Hunting season regulations and license numbers for deer herds in Colorado 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 Parks and Wildlife Commission in HMPs.. Those population objectives are considered to be the most reasonable goal for each 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, age and sex ratio surveys conducted by CPW personnel, and measured survival rates for does and fawns. 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, D-16 was hunted with unlimited, over-the-counter buck licenses and a limited number of antlerless and private-land-only antlerless licenses. Like most mule deer herds throughout the western United States, the original D-16 population (including GMUs 59 and 591) increased to a high point of approximately 27,000 in the 1960s and then declined in the 1980s and 1990s. Since that time, it slowly recovered to a high number of 13,400 deer in 2008, but has since remained closer to its current estimate of 11,700 deer (Figure 9).

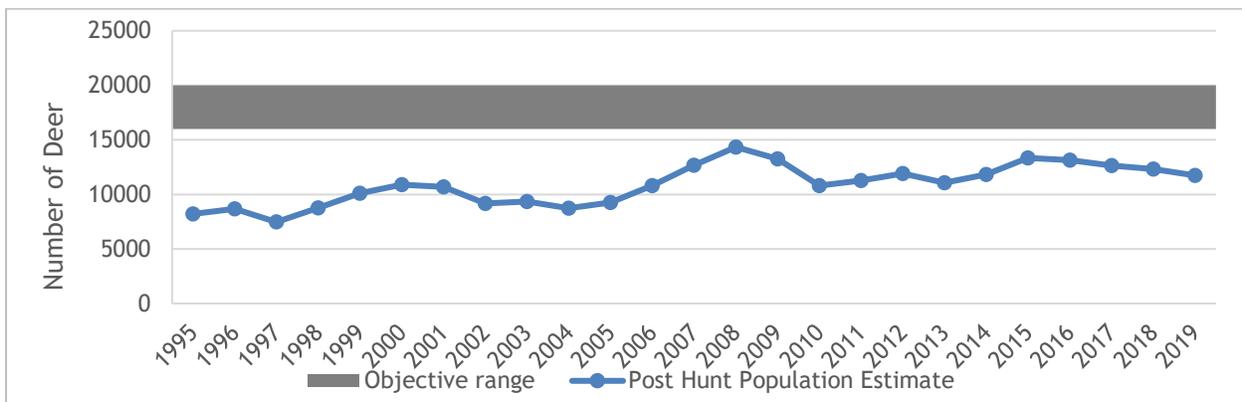


Figure 9. D-16 post-hunt population size since 1995.

Post-hunt Herd Composition

Herd composition data has been acquired via annual winter helicopter surveys. Since 1999, an average of approximately 1,400 deer have been classified annually in D-16 to obtain accurate post-hunt fawn:doe and buck:doe ratios within the herd. Fawn:doe ratios have steadily declined from nearly 70:100 to approximately 50:100 since 2005 (Figure 10). The cause of the decline is not entirely known, but may be the result of an increase in predation on fawns or a herd that is at the habitat carrying capacity, either of which can lead to a decrease in fawn survival. Fawn ratios did increase somewhat in 2019 following a good moisture year and high forage production.

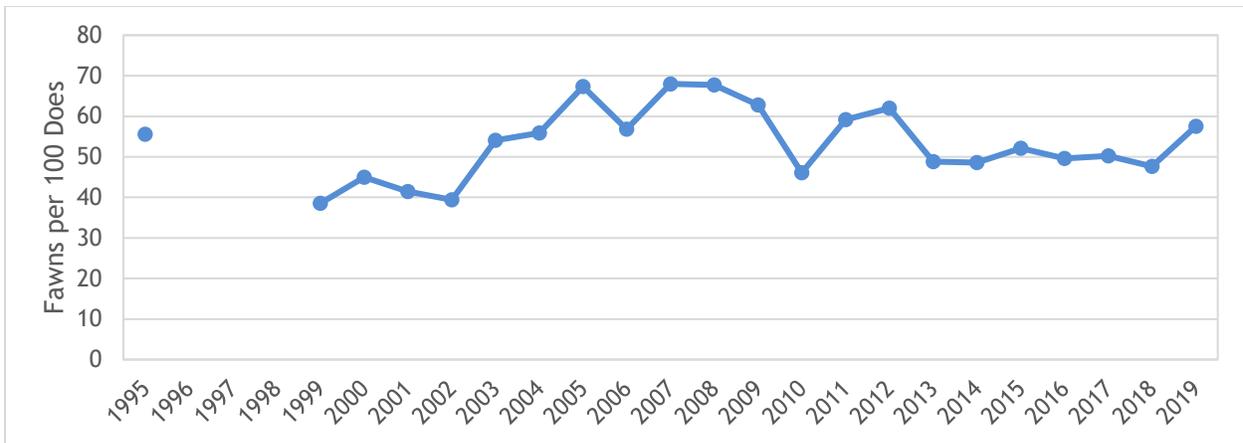


Figure 10. D-16 observed post-hunt fawn:100 does ratio since 1995.

Buck ratios have remained relatively stable since 2001 at around 25 bucks per 100 does, slightly below the objective of 30-35 bucks per 100 does (Figure 11). Prior to 1999, buck hunting was unlimited and D-16 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.

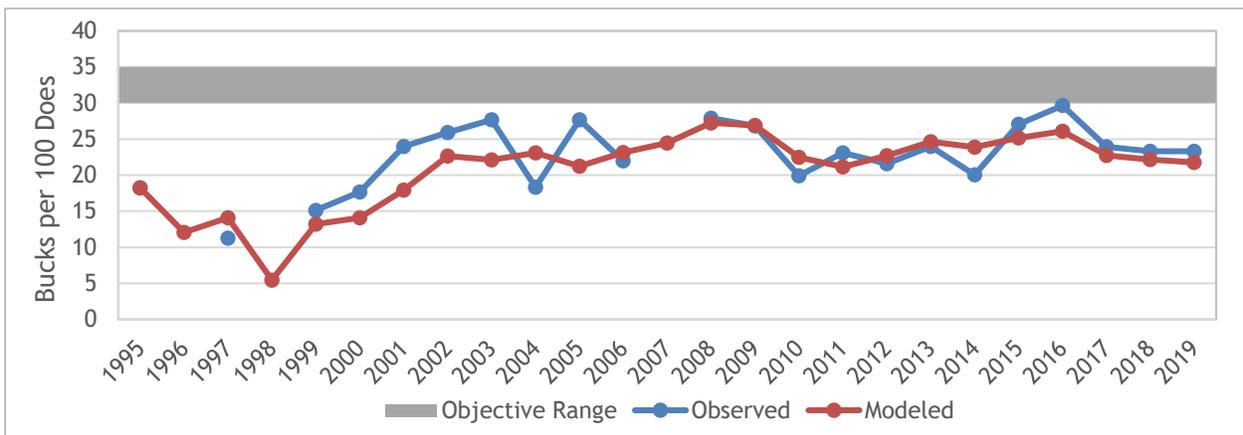


Figure 11. D-16 observed and predicted post-hunt buck:100 doe estimates.

Harvest

Buck harvest has remained relatively stable in this herd since the mid-1990s, fluctuating somewhat annually based on weather conditions during the hunting seasons and slight annual changes in overall population size (Figure 12). Doe harvest in D-16 is minimal and occurs primarily on private lands as a means of mitigating damage issues.

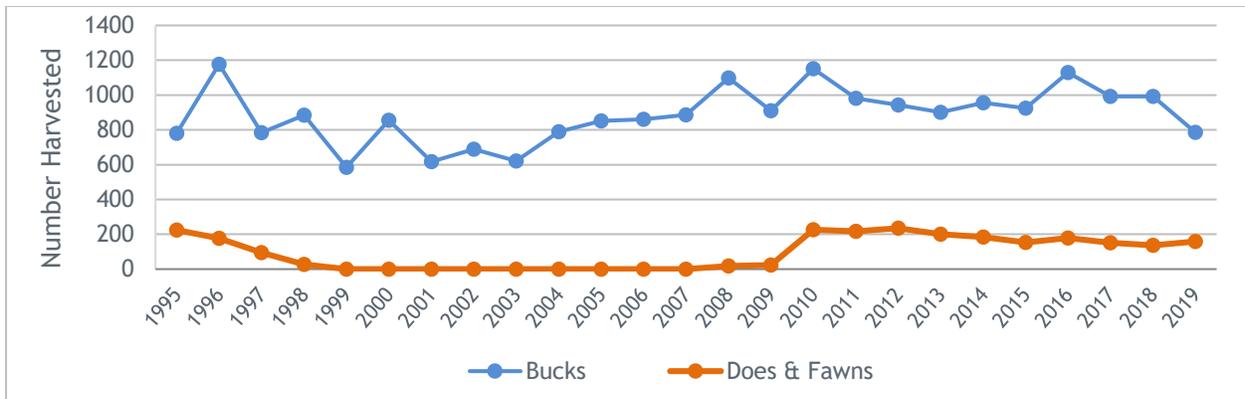


Figure 12. D-16 harvest since 1995.

Current Herd Management

The 2019 post-hunt population estimate for D-16 is approximately 11,700 deer, which is below the current objective of 16,000-20,000 deer. The population reached a recent high of approximately 14,300 deer in 2008, but has shown no capability of growing beyond that in recent years. It is possible that this population is habitat-limited at around 14,000 deer given current conditions.

The current post-hunt buck:doe ratio objective is 30-35 bucks:100 does. Buck ratios have remained relatively stable since 2001 at around 25 bucks per 100 does. The post-hunt 2019 observed ratio in D-16 was 23 bucks:100 does.

Current Management Issues

Cougar/deer study- The recently adopted Colorado mule deer strategy identifies predation as one of the potential factors limiting Colorado mule deer populations. Since the adoption of the mule deer strategy by the Parks and Wildlife Commission, members of the Leadership Team developed a plan for the implementation of the strategy. As part of the implementation strategy, staff examined existing predator and deer research and monitoring data to identify areas where predation may be most limiting to mule deer, which in turn could be used to inform predator harvest/management decisions. In June 2015, CPW personnel from the SE Region, Terrestrial, and Research branches met to explore the concept for a project that examines how deer demographic parameters may change following cougar population alteration in D-16.

Beginning in 1999, D-16 was added as one of 5 intensive deer monitoring DAUs in the state. Under the intensive monitoring protocol, we typically monitor 80-90 adult does to determine annual survival rates and 60 fawns annually to determine over winter fawn survival rates. Since 1999, we have radio collared 1,086 adult does and 898 fawns in D-16 to examine annual adult survival and winter fawn mortality. From 1999-present, averaging across all years, the leading known cause of both doe (6.4%) and fawn (7.5%) mortality has been cougar predation. Cougar predation has ranged from 0 to 60% (avg. 28%) of the total mortality for does and 0 to 64% (avg. 32%) of the total mortality for fawns. However, it is not known if cougar predation is limiting population growth in D-16, or if this population is experiencing density-dependence due to habitat limitations.

In the winter of 2016/2017, a nine year research project on mule deer and cougars was initiated in D-16 and neighboring D-34 (Alldredge et al, 2016). The project objectives include examining mule deer population response to changes in cougar density and how cougar populations respond to various harvest levels. This research will provide better understanding of how cougar harvest could be used as a deer management tool. In the winter of 2016/2017, CPW initiated the project by fitting 80 adult does with GPS radio collars to examine annual survival, habitat use, and migration patterns in both D-16 and D-34. Each summer since 2017, CPW personnel have captured and equipped 60 newborn fawns with GPS collars to examine annual fawn survival within both herds. Over the course of the nine year study, CPW expects to collect: 1.) annual adult doe survival rates, 2.) annual fawn survival rates, 3.) adult doe and fawn habitat use and migration patterns, 4.) pregnancy rates on adult does, 5.) body condition measurements of adult does, and 6.) cause-specific mortality information on both adult does and fawns. This information will be used in collaboration with annual winter classification flights examining sex and age ratios to provide comprehensive analysis of deer population dynamics in D-16 and D-34. Given this ongoing research, CPW is proposing to maintain the existing population objectives for the duration of the study.

Human development and recreation- In recent decades much of Colorado, including D-16, has experienced a significant loss of agricultural fields and a significant increase in human development in areas that historically were important in maintaining robust deer populations. Ranches have sub-divided and natural habitats have been permanently altered or eliminated. Investigations into the effects of housing and energy development have demonstrated that human development is correlated with declines in fawn survival and winter fawn:doe ratios (Johnson et al., 2016;Figure 13). These declines can be attributed to direct loss of habitat as well as effective loss of habitat due to harassment from people and pets.

Of further concern are projections that Colorado is expected to roughly double its human population by 2050 (Denver Post, 2017). Increasing human populations will result in further development of vital deer habitats as well as continued increases in recreational use of public lands that deer rely upon. Increasing human development and use of wild landscapes puts wildlife populations at risk, and presents biologists with mounting challenges when trying to manage for healthy and robust populations.

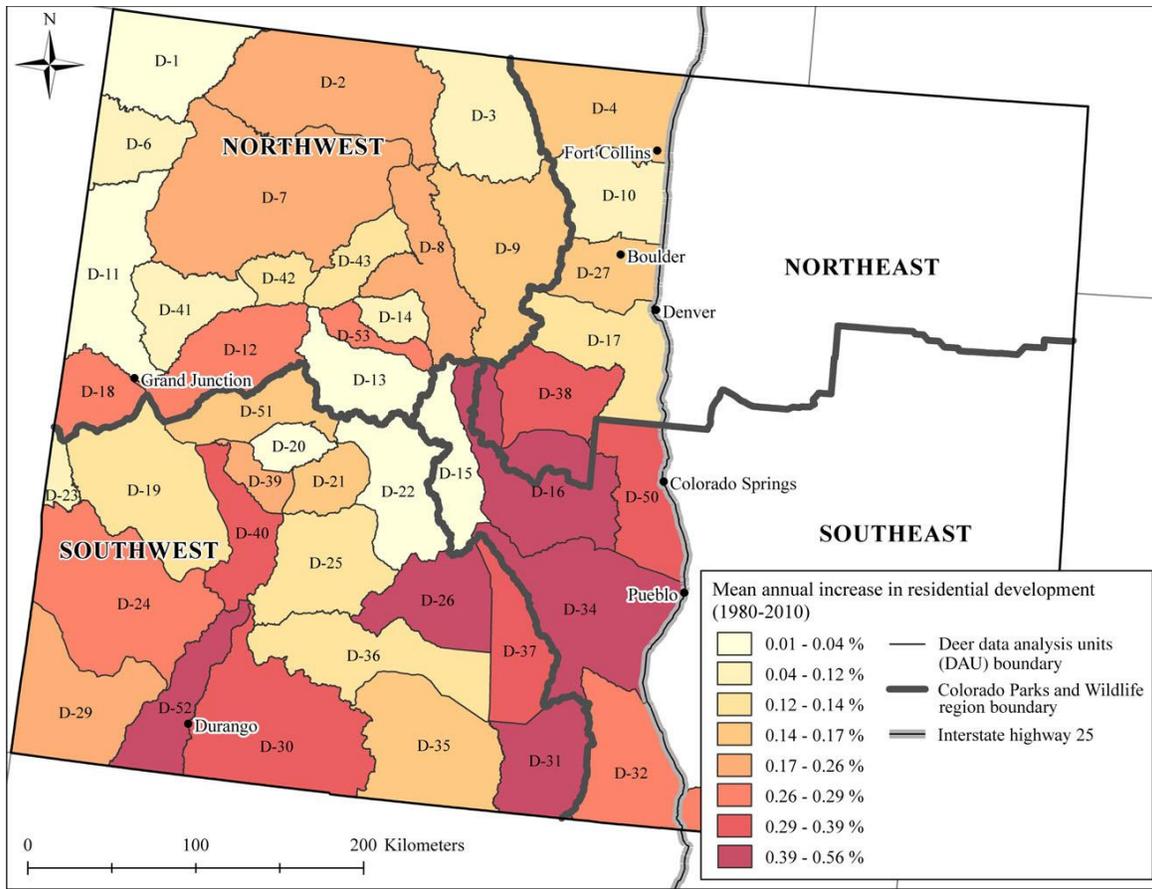


Figure 13. Increase in residential development across deer herd management areas in Colorado from 1980-2010.

Urban deer issues - Several communities within D-16 have expressed concern over the increasing population of urban deer. The communities of Buena Vista, Canon City, and Salida have various issues as a result of non-migratory, residential deer within town limits. Complaints within each community vary, but most are composed of damage to ornamental landscaping, damage to trees and shrubs, loss or damage to family gardens, human/pet safety during the fawning and rut portions of the year, and damage to vehicles from collisions. Wildlife managers are working with each community to establish methodologies that will attempt to alleviate residential concerns.

Chronic Wasting Disease - Chronic wasting disease (CWD) was first detected in D-16 in 2019, when an emaciated adult doe died in a yard in Canon City (GMU 581) and subsequently tested positive for the disease. CWD testing will be mandatory for D-16 rifle deer hunters for the 2020 season, which will provide an estimate of CWD prevalence in adult bucks. The Colorado Chronic Wasting Disease Response Plan (2018) sets a 5% prevalence threshold in adult bucks for compulsory management actions. If the CWD prevalence rate exceeds 5%, we will implement one or more of the management actions outlined in the Response Plan.

PUBLIC INPUT AND MANAGEMENT OBJECTIVES

Historically, it is customary to identify a range of population objective alternatives when updating a HPM. The current HMP for D-16 was adopted by the Colorado Wildlife Commission in 2007 and therefore has exceeded the 10-year planning window that we try to maintain with herd management plans. With a goal of getting all herd management plans current, as set forth by CPW's Strategic Plan (2015), we would like to update this management plan. However, given the recently initiated deer/cougar research project in D-16 and neighboring D-34, managers believe we should extend the existing objectives of 16-20,000 deer and a buck:100 does ratio of 30-35 for the next 10 years and utilize the wealth of information obtained from this project to inform the next scheduled update of the D-16 HMP in 2030. The draft Extension was presented to the Arkansas River HPP Committee in May, 2020, and they supported the Extension (Appendix A). The draft Extension was also posted on the CPW website on April 29, 2020 for a 30-day comment period.

STRATEGIES FOR ACHIEVING OBJECTIVES

The current deer population size (11,700 deer) and sex ratio (23 bucks per 100 does) are both below the respective objectives. Despite limited doe harvest in the DAU, the population has failed to grow toward the objective. Depending on the results of the deer/cougar research project, we may be able to identify the management actions necessary to move population towards objective. We will evaluate the sex ratio objective annually, and adjust antlered licenses as needed to move the buck/doe ratio toward the objective.

Literature Cited

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- Johnson, H. E., J. Sushinsky, A. Holland, E. J. Bergman, T. Blazer, J. Garner, and S. E. Reed. 2016. Increases in residential and energy development are associated with reductions in recruitment for a large ungulate. *Global Change Biology*. 23:578-591.

APPENDIX A: Arkansas River Habitat Partnership Program Letter of Support



May 15, 2020

Jamin Grigg
Colorado Parks and Wildlife
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RE: Arkansas River Habitat Partnership Program Comments - DAU D-16

Dear Jamin,

One of the initial reasons for creating the Habitat Partnership Program was to provide local landowners and other interests an opportunity for input into big game management in their areas. The diverse makeup of local HPP committees (3 livestock growers, Forest Service, BLM, CPW and sports persons representatives) provide a good cross section of local interests to review DAU proposals and respond accordingly for CPW consideration.

HPP has two purposes; to resolve big game wildlife (deer, elk, pronghorn, moose) conflicts with agricultural landowners and to assist CPW to meet game management objectives for those same species. From those perspectives, the Arkansas River HPP committee has discussed your presentation, reviewed the draft alternatives, and offers these comments for consideration.

The Arkansas River HPP committee is in agreement with the following comments pertaining to proposals for the population range and sex ratio objectives for the above DAU plan.

The Arkansas River committee supports the draft alternative to keep the current population objective. We believe this alternative responsibly balances local range and habitat conditions with sportsmen desires, landowner concerns, and the ongoing mountain lion study. We have not heard of any concerns about the current population or any desires to increase the local herd size and so we believe the current levels are where they should be. Any issues we have are more likely related to distribution of the herds in the area and not the overall population size.

The Arkansas River committee also discussed the proposed sex ratio alternative. We believe the current sex ratio is a good balance and provides ample hunting opportunity while also providing for a reasonable number of mature animals for those hunters who want to take a larger bull or buck.

As stated above, HPP is also directed by statute to assist the Division to meet game management objectives. The Arkansas River committee has worked with both public land managers and private landowners to improve the quality and quantity of the habitat in DAU D-16. Adequate habitat is critical to meeting game management objectives and we remain committed to maintaining and improving habitat in this area.

Our committee is confident about CPW being able to achieve the proposed objectives because we have worked with numerous landowners who want to implement positive improvements for big game on their property. In addition, federal land managing agencies place a high priority on habitat

improvement and have worked successfully with our committee on valuable projects in the past and have expressed a desire to continue this.

The Arkansas River HPP committee feels there is adequate habitat with adequate protections in place, such as seasonal closures and use restrictions, to achieve the desired objectives. While the committee has confidence in the plan's objectives over the next ten years, beyond that they are concerned residential growth and increased recreation demands could hinder future population objectives.

We also recognize that changing population objectives could impact the ongoing mountain lion study, and so we agree that the objectives should stay the same until results from the study have been evaluated. Results from the study will help to inform future decisions, so we feel that this is the best option until results are available.

Thank you for the presentation and the opportunity to provide these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Williams", written in a cursive style.

Jeff Williams, Chair
Arkansas River HPP Committee