

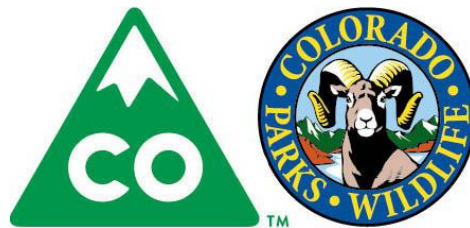
RED FEATHER-POUDRE CANYON DEER HERD MANAGEMENT PLAN

DATA ANALYSIS UNIT D-4 Game Management Units 7, 8, 9, 19, 191



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HERD MANAGEMENT PLAN FOR D-4 EXECUTIVE SUMMARY

GMUs: 7, 8, 9, 19 and 191 (Northern Larimer County)

Land Ownership: 40% Private, 46% USFS, 6% City/County, 5% State, 2% BLM

Post-hunt Population:

Previous Objective: 10,000-12,000

2016 Estimate: 14,600

Current Objective: 13,000 - 15,000

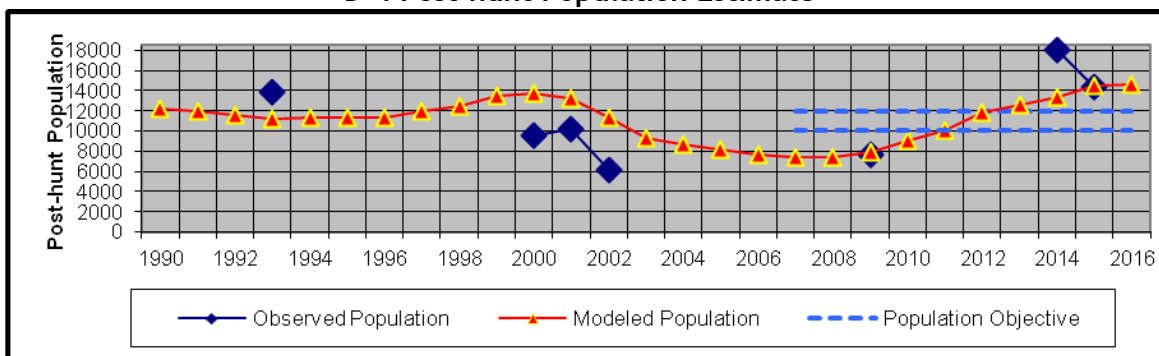
Post-hunt Sex Ratio (bucks: 100 does):

Previous Objective: 25-30

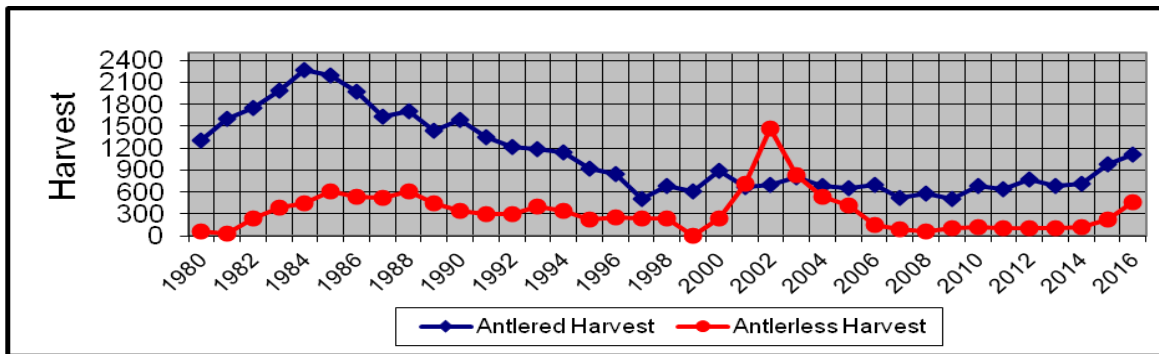
2016 Observed Estimated: 33

Current Objective: 25-30

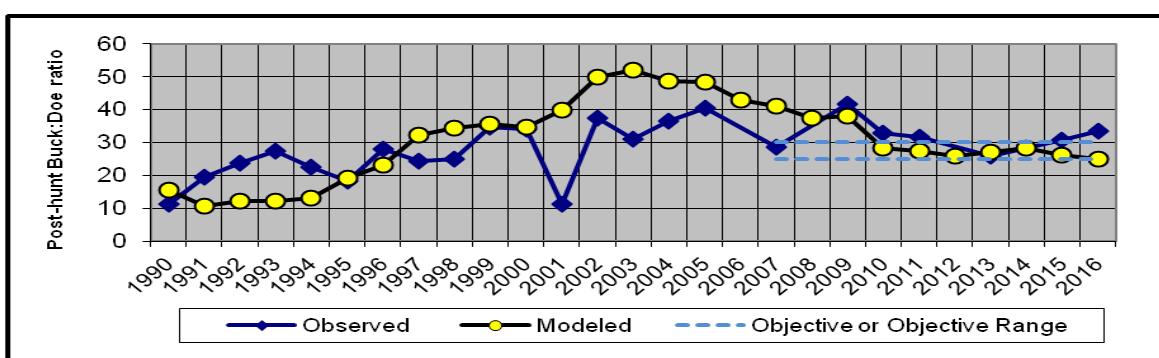
D-4 Post-hunt Population Estimate



D-4 Harvest



D-4 Post-hunt Sex Ratios



Background and Management Issues

The Red Feather-Poudre Canyon deer herd (D-4) is located in northern Larimer County, north and west of Fort Collins, and consists of Game Management Units (GMUs) 7, 8, 9, 19 and 191. The previous management plan was implemented in 2007 where the management objectives were set to increase the herd to between 10,000 to 12,000 animals and maintain a herd composition sex ratio of 25 to 30 bucks per 100 does. The 2016 population estimate for this herd is 14,600 with an observed herd composition sex ratio of 33 bucks per 100 does. The observed and modeled sex ratio estimates will both be considered in managing for the sex ratio management objective.

Chronic wasting disease (CWD) remains a significant issue although prevalence has decreased from where it was during the 2000-2010 period. This may be due to management strategies that focused on reducing deer density, harvest timing, and maintaining a moderate proportion of mature bucks in the population. Habitat destruction, degradation, and fragmentation due to development are of concern. Fires that have occurred over the past decade along with an increase in moisture in 2013 - 2016 have enhanced and increased deer habitat through much of D-4 allowing for an increase in deer populations. A significant issue identified by hunters and landowners is the continued desire to maintain a large, robust deer herd. Negative stakeholder comments about the decreased numbers of deer and lower management objectives during the 2000-2010 period still are frequent. Landowner damage is non-existent and informal input from landowners is similar to most hunter comments, which is to strongly support the current deer population size in D-4.

Post-hunt Population Objective Alternatives

Alternative 1: 10,000 - 12,000

Alternative 2: 13,000 - 15,000 - Preferred

Maintains current population level. This alternative is selected because it is within the biological carrying capacity and was supported by public input. This is about a 30% increase in herd population from the previous management objective (10,000-12,000). This alternative allows for maintaining the current estimated herd population.

Alternative 3: 15,000 - 17,000

Post-hunt Herd Composition-Sex Ratio Objective Alternatives

Alternative 1: 20 - 25 bucks: 100 does

Alternative 2: 25 - 30 bucks: 100 does - Preferred

Maintains hunting opportunity similar to last 5 years. This alternative is preferred because this ratio provides a balance between desires expressed by hunters to see mature bucks, and will likely allow hunters to hunt frequently, while also stabilizing the proportion of older age-class males in the population. CWD rates in harvested adult bucks will be periodically evaluated. Once CWD prevalence exceeds triggers specified in the Colorado Chronic Wasting Disease Response Plan, appropriate adaptive management actions listed in the Colorado Chronic Wasting Disease Response Plan will be implemented. In addition, if CWD prevalence is $\geq 10\%$ in adult bucks, the sex ratio will be managed to 25 bucks: 100 does.

Alternative 3: 35 - 40 bucks: 100 does

Strategies to Achieve Objectives:

Population- To maintain the population within objective, doe harvest will be adjusted as needed; this will be accomplished through allocations of doe licenses primarily in the 2nd, 3rd and 4th rifle seasons. Late deer seasons will be considered as needed.

Herd Composition- To maintain the herd within objective, buck harvest will be increased; this will be accomplished primarily through allocations of buck licenses in the rifle seasons, in private land only longer seasons, and to GMUs with higher buck: doe ratios. Municipalities with large open space tracts will continue to be encouraged to include active management of deer populations in their management plans.

This herd management plan was approved by the Colorado Parks and Wildlife Commission on 16 November 2019.

**RED FEATHER-POUDRE CANYON
DEER HERD MANAGEMENT PLAN
DAU D-4 (GMUs 7, 8, 9, 19 & 191)**

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HERD MANAGEMENT PLAN FOR D-4

Introduction

The purpose of a Herd Management Plan (HMP) is to give Colorado Parks and Wildlife (CPW) direction in managing a big game species in a given geographical area. The plan identifies suitable habitat, gives the herd history and current status, and identifies issues and problems. Key features of a HMP are the herd size and herd composition objectives, which are developed after considering input from all interested entities. Colorado Parks and Wildlife intends to update these plans as new information and data become available, at least once every ten years.

HMP and Wildlife Management by Objectives

Colorado Parks and Wildlife manages wildlife for the use, benefit and enjoyment of the people of the state in accordance with CPW's Strategic Plan and mandates from the Colorado Parks and 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, CPW uses a "management by objective" approach (Figure 1). Big game populations are managed to achieve population and sex ratio objectives established for HMPs.

HMPs provide the framework to manage individual herds of big game animals. HMPs are generally discrete geographically, and attempt to identify an individual big game population. However, individual animal movements may at times straddle or encompass more than one HMP. While HMP boundaries are administrative, they represent the best way to encompass the majority of a herd within a biological area, and allow the most practical application of management tools such as hunting, to reach objectives. HMPs are typically composed of smaller areas designated as game management units (GMUs), which provide a more practical framework where the management goals can be refined and applied on a finer scale, typically through hunting regulations.

The HMP planning process is designed to balance public demands, habitat capabilities and herd capabilities into a management scheme for the individual herd. The public, hunters, federal land use agencies, landowners and agricultural interests are involved in the determination of the plan objectives through input given during public meetings, the opportunity to comment on draft plans and when final review is undertaken by the Colorado Parks and Wildlife Commission.

The objectives defined in the plan guide a long-term cycle of information collection, information analysis and decision-making. The product of this

process is an annual recommendation for numbers of hunting licenses for the herd (Figure 1). A traditional HMP plan addresses two primary goals: the number of animals the HMP should contain and the sex ratio of those animals expressed as males: 100 females. The plan also specifically outlines the management techniques that will be used to reach desired objectives. The fact that HMPs are reviewed and revised on a ~ 10-year basis provides assurances against the often-dynamic fluctuations experienced by Colorado’s big game herds. Changes in land development, public attitudes, hunter success, hunter access, research results, disease prevalence and game damage may all contribute new information needed when reviewing or revising a HMP. Colorado Parks and Wildlife strives to maintain a tight link between the inclusion of publics in the development of population objectives and the yearly iteration of data collection, analysis and renewed decision-making to reach those objectives.

Individual HMPs are managed with the goal of meeting herd objectives. Herd data, which is typically collected annually, is entered into a computer population model to get a population projection. The parameters that go into the model include harvest data from hunter surveys, sex and age composition of the herd gathered by field surveys, and mortality factors such as wounding loss and winter severity, generally acquired from field observations. The resultant computer population projection is then compared to the herd objective, and a harvest calculated to align the population with the herd objective.

COLORADO’S BIG GAME MANAGEMENT BY OBJECTIVE PROCESS

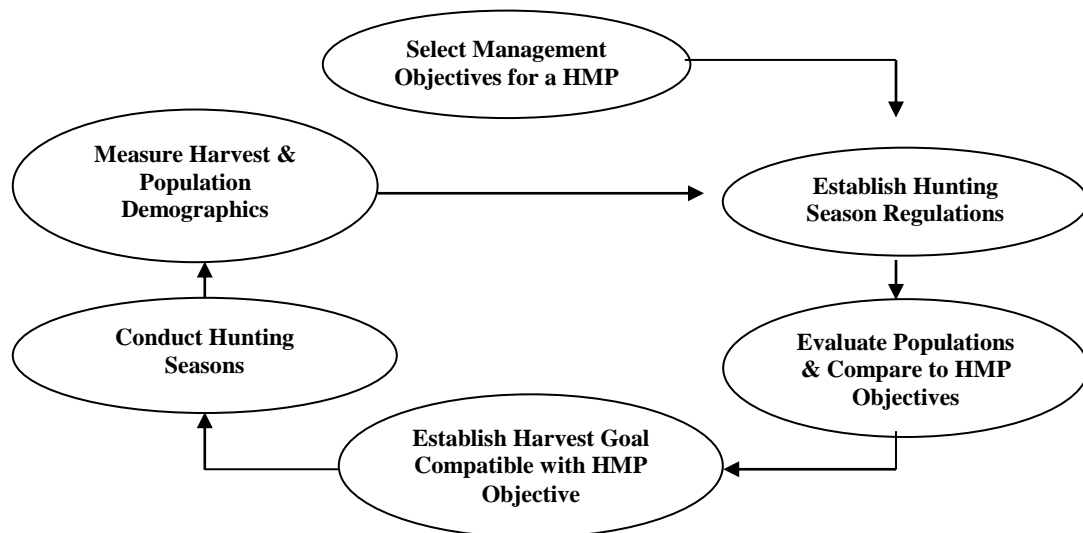


Figure 1. Management by objectives process used by CPW to manage big game populations on a HMP basis.

DESCRIPTION OF DAU AND HABITAT

Geography

Data Analysis Unit (DAU) D-4 is located in Larimer County in northcentral Colorado. D-4 is bounded on the north by the Wyoming state line, on the west by Jackson County, and on the east by I-25. The southern boundary is defined by Harmony Road, Larimer County roads 19, 38E, 27 and 44H, the Elk Creek and Pennock Creek divide and Rocky Mountain National Park's northern border. D-4 is drained by the Laramie River, and by the North Fork and main stem of the Cache la Poudre River (Figure 2). The DAU is comprised of game management units 7, 8, 9, 19 and 191.

Elevations range from 12,795 feet at the highest point in the southwestern part of the DAU to 4,921 feet along the eastern edge near Fort Collins. The DAU covers much of the northern part of the Arapaho/Roosevelt National Forest (United States Forest Service (USFS)).

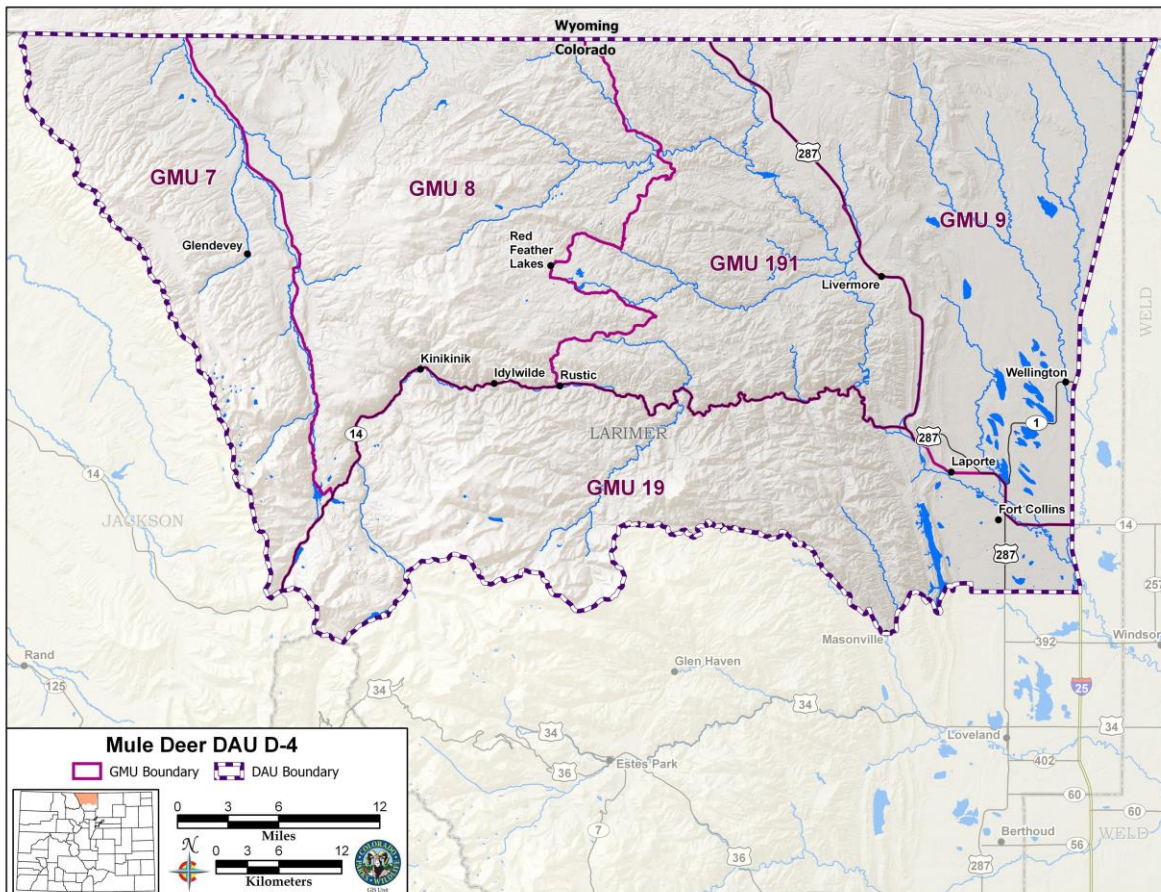


Figure 2. Location of DAU D-4

Climate

The overall climate in D-4 is relatively dry with low humidity. Climate varies across the DAU as a function of elevation. Conditions on the eastern edge are standard for the foothills/short grass prairie interface, with relatively mild winters, smaller snow accumulations and hotter summers. The higher elevation portions in the west experience a harsher climate, with long, cold winters, abundant snowfall, and short, cool summers. Deer summer range generally includes all of D-4, from elevations of 5,000 to 11,500 feet. The higher ranges usually become available to deer as snowlines recede in mid to late May. The majority of deer winter at elevations below 8,000 feet (Figure 3). Many west and south-facing slopes are typically clear of snow all year, with occasional spring and late winter storms depositing accumulations that quickly melt off. Weather-related winter deer mortality is usually not a factor in D-4.

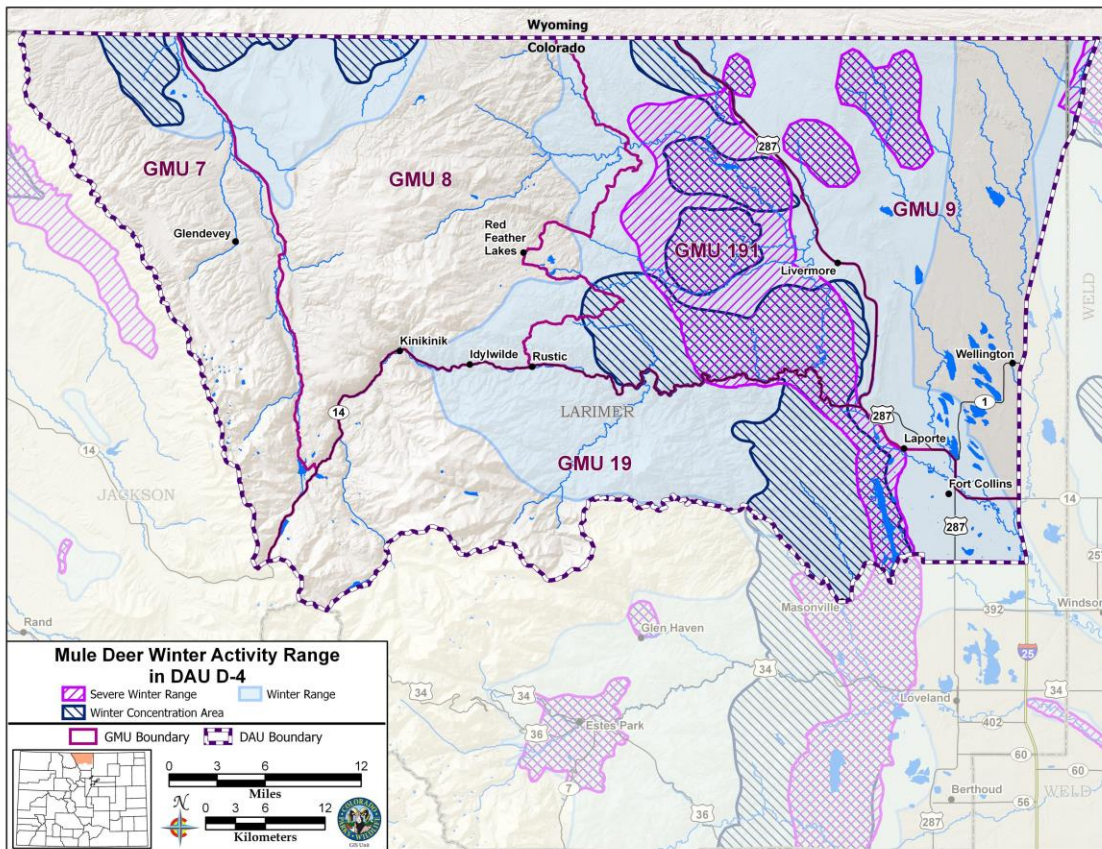


Figure 3. D-4 mule deer winter activity

Deer Species

Most HMPs in Colorado manage mule deer and white-tailed deer together. Population estimates, harvest and licensing are for the entire deer herd. In D-4, mule deer are by far the predominant species; however, occasional white-tailed deer have historically been observed in the DAU for at least the last 50-

60 years. In recent years, localized white-tailed deer herds have become established in D-4, most notably in the Laramie River drainage, the area surrounding Fort Collins and in some drainages of the North Fork of the Cache la Poudre River. These small-localized herds are currently not a concern for hybridization or competition with mule deer, but any expansion will be evaluated. Since white-tailed deer are harvested along with mule deer on general deer licenses, harvest pressure and habitat may act together to limit their range.

Land Ownership and Use

Wildlife habitat in D-4 spreads across a wide range of land ownership categories (Figure 4). Private land encompasses 685 sq. miles, or 38.3% of the DAU. The USFS manages the majority of land in D-4 with stewardship over 830 sq. miles (46% of DAU). The vast majority of USFS land is National Forest or Designated Wilderness. There are 4 USFS wilderness areas in the DAU; Cache La Poudre Wilderness (14 sq. mi.), Comanche Peak Wilderness (96 sq. mi.), Neota Wilderness (15 sq. mi.) and Rawah Wilderness (113 sq. mi.). There are some small areas in D-4 managed by the Bureau of Land Management (BLM) (43 sq. miles or 2% of DAU). State lands in this area include; State Wildlife Areas, Lory State Park and State Land Board holdings accounting for 97 sq. miles. These three state property types provide an abundance of deer hunting opportunity. Outside of private land, USFS and state lands receive the majority of deer hunting pressure.

Both the City of Fort Collins and Larimer County manage sizable parcels of land in D-4, all of which include quality deer habitat. Overall, city and county ownership of land totals 105 sq. miles or 6% of the DAU including Larimer County Department of Natural Resources (LCDNR) Red Mountain Open Space property, Eagle's Nest property and the City of Fort Collins' Soapstone Prairie property.

Human occupation is limited in central and western parts of the DAU, particularly in the western (Laramie River valley) and southwestern portions (upper Poudre, Joe Wright Creek). To the east, primarily in portions of eastern GMU 8 and most of GMU 191, rural developments are more common. Irrigated hay and ranching form the main landscape use in the western part of the DAU. Increased fragmentation due to home construction, small acreage pasturing and hobby livestock ranching is occurring on the eastern side. GMU 9 is almost entirely private land, however, over the past 10 years CPW has worked with Larimer County Department of Natural Resources and the City of Fort Collins to build a successful public limited hunting access program on Red Mountain Open Space and Soapstone Prairie Natural Area. These two areas represent the only public land in this GMU.

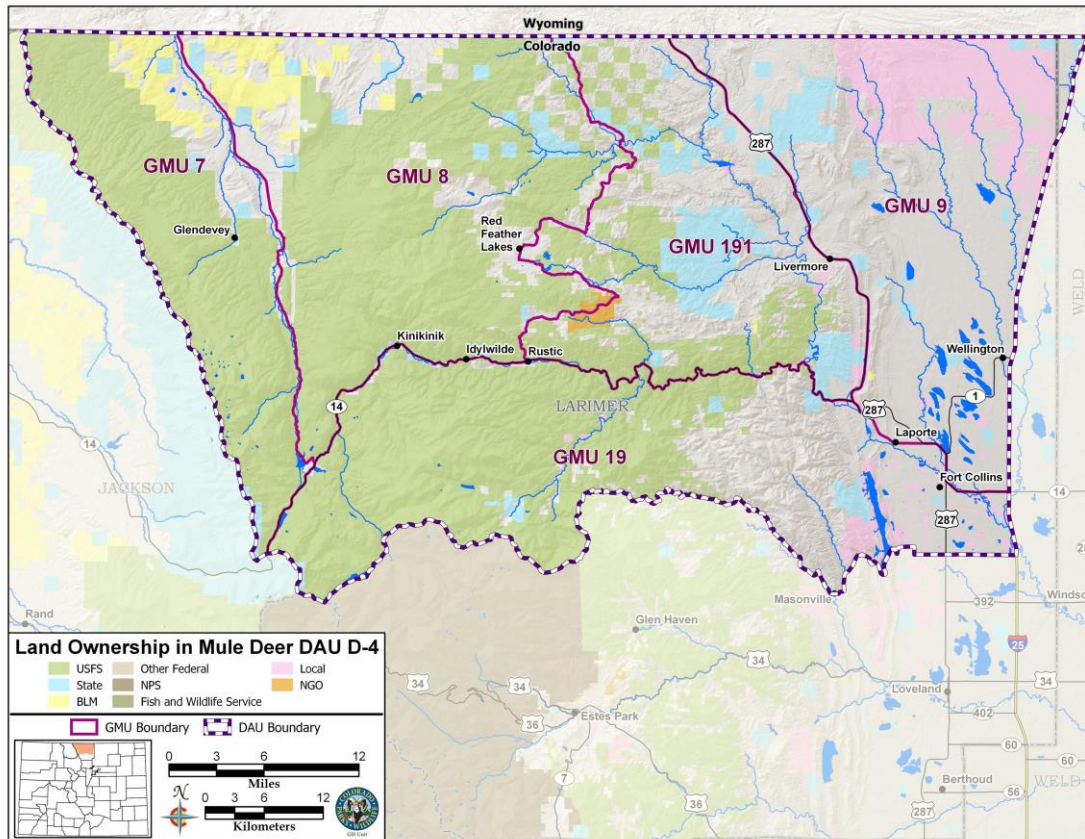


Figure 4. Land ownership in D-4

Vegetation

Vegetation on the eastern side of the D-4 bordering I-25 is composed of shortgrass prairie shrubs and plants. Native grasses, non-native grasses and croplands dominate much of the landscape, with areas of rabbit brush and cacti. Most riparian areas are comprised of cottonwoods, along with alders and willows. Deer densities are relatively high in these open, broken eastern landscapes.

Various shrub types and ponderosa pine characterize foothills vegetation from approximately 5,500 to 7,000 feet. Shrubs such as mountain mahogany, antelope bitterbrush, juniper, wild plum, and chokecherry all are present, although the localized diversity varies greatly. This foothills shrub community type may represent some of the highest winter range densities of deer in D-4 (see Figure 3).

Moving higher in elevation from the foothills brings a change in vegetation and a new ecological region, the montane zone. Ponderosa pine forests may continue to elevations above 8,000 feet, but often Douglas-fir stands begin at middle elevations and continue up to 9,000 feet. Both aspen and lodge pole pine appear as early colonizers, inhabiting areas of disturbance.

Areas on the far western and southwestern portion of the DAU have vegetation types from the subalpine zone. Aspen is present at the lower end of the zone, giving way to lodge pole stands as elevation increases. Spruce/fir communities are the standard forest type through the subalpine until 11,500 feet, at which point timberline is reached and tree growth is nearly impossible given the cold, snow and wind. Above timberline, the landscape is dominated by tundra vegetation such as cushion plants and small groups of krumholtz trees. Summer deer densities tend to be low on the alpine, although size and maturity of bucks at these elevations can sometimes be exceptional. D-4 has one early season high-country buck hunt that exclusively provides opportunity for the high elevation deer.

In the past decade there have been several large fires that burned in GMU's 19 and 191 which have improved deer forage in the ponderosa, lodge pole and shrub habitat types.

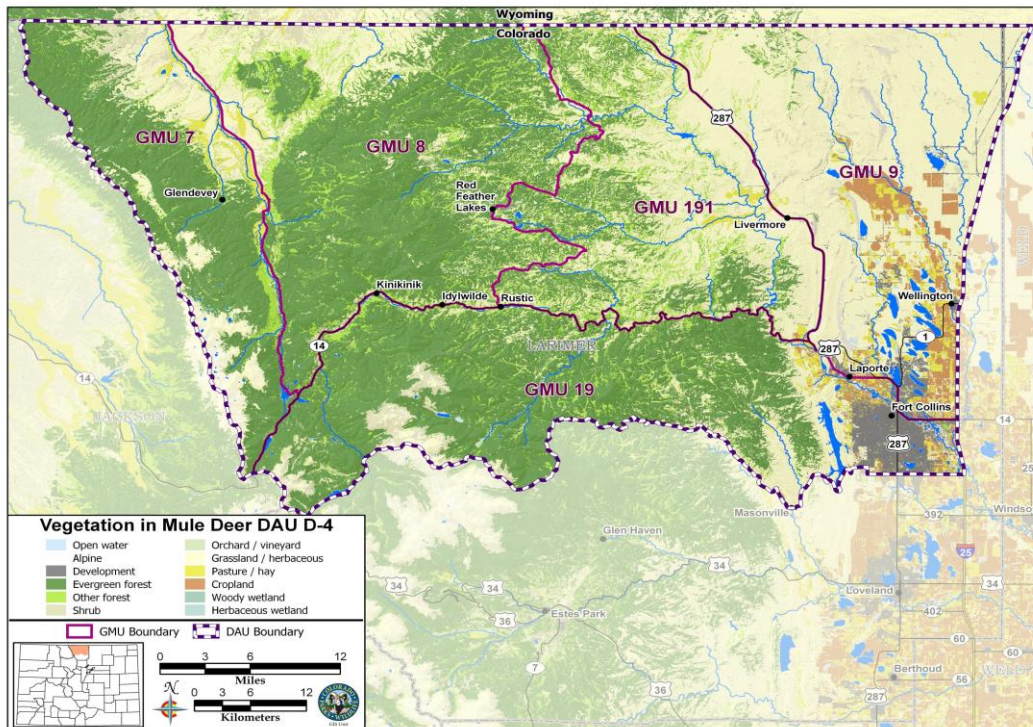


Figure 5. Vegetation Map

HERD MANAGEMENT HISTORY AND BACKGROUND

The current Herd Management Plan for D-4 was approved in 2007. Management objectives were to increase the herd to 10,000-12,000 deer with a buck: doe ratio of between 25-30 bucks: 100 does.

Past Management

Prior to the 1990s, D-4 had been principally managed with statewide buck licenses and very limited doe hunting. During the 1990s, D-4 was managed under season structures and licensing philosophies that focused on providing maximum opportunity for antlered hunting with a small amount of antlerless hunting. Before 1997, buck-hunting opportunities included both unlimited and limited statewide tags. In 1997, all licenses in the DAU became specified and limited, meaning that licenses were only valid in D-4 and they were limited in number. The total number of buck licenses were high enough to provide maximum opportunity. This overabundance of tags was evident in 1999, when D-4 antlered licenses were cut almost 60% (in keeping with the statewide direction of limiting all deer hunting and reducing harvest) and there were still leftover licenses available.

Beginning in 2001, management emphasis shifted from recreational opportunity to disease management. At the time, chronic wasting disease (CWD) prevalence rates in D-4 were the highest in the state, and based on lack of detection of the disease in other DAUs adjacent to D-4 (primarily to the west and southwest), an attempt was made to decrease deer density to control the spread and prevalence of the disease. In 2001, there was no management precedent for CWD and very little was known about transmission, eradication or containment. Based on the Colorado Parks and Wildlife Commission (CPWC) CWD policy at the time, CPW attempted to manage D-4 towards a reduced CWD prevalence rate objective, and the 2001 HMP made changes to decrease population size and lower the buck: doe ratio. The specific post-season population objective was “less than 7,000 deer or sufficient to result in a less than 1% prevalence across the DAU”. At the time, sample sizes sufficient to show higher prevalence rates in male deer had not been reached, so no guidance was available on an optimal sex ratio to help reduce disease prevalence. For that reason, the plan was explicit in managing for a “ratio consistent with reducing CWD prevalence to less than 1% across the DAU” and the correspondingly broad sex ratio range of 10-35 bucks: 100 does was established.

Imbedded in this new population objective reduction was a smaller, GMU-specific management experiment that was initiated in the fall of 2000 in GMU 9. The objective was to lower the population by half to see what effect this density reduction would have on CWD prevalence in that area. To accomplish this reduction, unlimited licenses were sold to hunters who had acquired private lands access vouchers. In the first year, tags were issued as either-sex licenses and the vast majority of hunters harvested male deer. Since population reduction was the target, these tags were changed to antlerless licenses the following year to more efficiently accomplish that goal. In subsequent years, late-seasons and two carcass tags per licenses were also made available to assist in that reduction. Agency culling was employed

consistently on one ranch in GMU 9 that allowed access. Despite these efforts to reduce the population, this 50% reduction was never achieved in GMU 9 due primarily to inability to access private land. Landowner support for agency culling and intense hunter access for removal was less than expected. This management experiment was discontinued in 2005.

After significant internal and external input, a new HMP plan was approved in 2007 that called for increasing the population at least 50% to 10,000-12,000 deer. This population alternative received overwhelming public support and was favored by CPW staff.

Population and Herd Composition

Estimating population numbers of wild animals over large geographic areas is a difficult and approximate science. Numerous attempts have been made to accurately count known numbers of wild animals in large fenced areas. All of these efforts have failed to count 100% of the animals. CPW recognizes the difficulties of estimating the size of deer populations as a challenge in managing populations and attempts to maximize the accuracy of these estimates by using the latest technology and inventory methodology available. As better information and techniques become available (e.g., new estimates of survival/mortality, wounding loss, sex ratios, density, or new modeling techniques and software) they are evaluated and used where appropriate. The population estimate presented in this document should, therefore, not be considered a completely accurate enumeration of the animals in the DAU.

Historical populations of deer were much more robust than they are today in northern Larimer County. Observations from residents along Poudre Canyon from the mid-1900s indicate high deer densities were commonplace. While population estimates are not available for those years, harvest numbers indicate a much greater abundance in the past. More recently, population levels appear to have peaked in the mid-1980s, and then declined into the 1990s with a low point in the early 2000s. From the mid-2000s to present, numbers have increased to near or above levels seen in the early 1990s. Through most of the 1990s, modeled population projections were relatively stable, fluctuating around 12,000 deer (Figure 5). From 1998 to 2001, the population is estimated to have declined due to factors outside of hunting removals, as harvest decreased in those years. However, harvest driven declines which were enacted as a management strategy for CWD were largely responsible for the population decrease from 2001-2007. A reduction in doe harvest, improved habitat conditions, and possibly a reduced rate of CWD prevalence contributed to the deer herd increase from 2007 to 2017.

The D-4 DAU is a relatively well-studied and monitored deer herd. In the 1980s, a quadrat system was set up across the landscape using a random sampling approach to estimate population size. During the 1980s and 1990s,

this consisted of aerial sampling a group of approximately 100 quarter-section quadrats each winter and counting the total deer seen per quadrat. Extrapolation across each habitat/density strata and summing all strata generated a total population estimate. Quadrat corners were physically marked with orange signs and the same quadrat was sampled each year. Beginning in 2001, the number of quadrats was increased to approximately 140 and global positioning system units were used in the helicopter to locate the corners. Sample size was increased in an attempt to more closely track the proposed population reduction in D-4.

The Red Feather-Poudre Canyon deer herd was specifically targeted for a statewide program to gather information that is more precise on survival beginning in 1997. From 1997 to 2004, D-4 was considered a core mule deer survival-monitoring unit. As part of the core mule deer monitoring protocol a sample of mule deer does and fawns were captured and radio collared in D-4 each year from 1997-2002. These deer were monitored aerially on a regular basis and all mortalities were immediately investigated. Annual doe survival and over-winter fawn survival were estimated for each of these years.

During the past 17 years, population surveys were conducted in 2000, 2001, 2002, 2009, 2014 and 2015. D-4 population quadrat flights require 3 days of helicopter time. Financial and weather related constraints dictate the years that population flights are conducted. The 2014 and 2015 post-hunt population estimates of between 14,000-18,000 deer indicate that the population has grown past the 2007 objective of 10,000-12,000 animals (Figure 6).

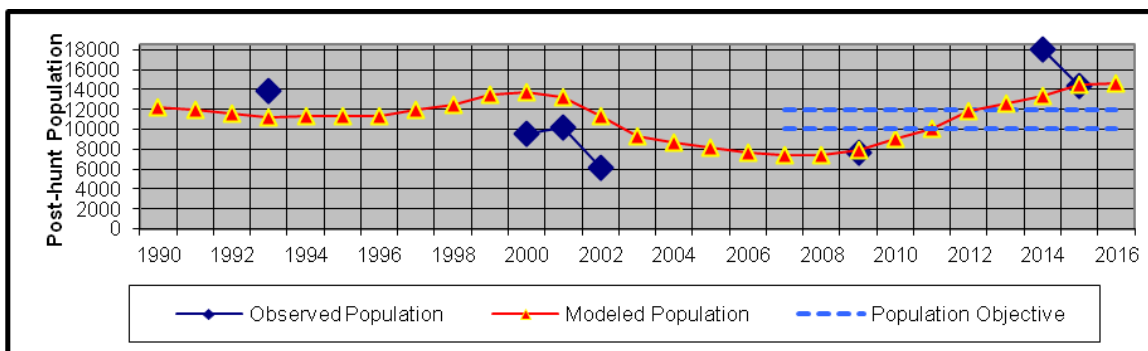


Figure 6. D-4 post-hunt population 1990-2016

The observed buck: doe ratio in D-4 peaked in 2009 at just over 40 bucks: 100 does (Figure 7). That year was also the lowest buck harvest in almost 20 years, a portion of that peak might have been reflected in extra males that were not removed during the hunting seasons being on the landscape post-hunt. Sex ratios have decreased since 2009, but have consistently averaged around 30 bucks: 100 for the last 5 years. This observed ratio has been closely tracked by the modeled sex ratio, with both ratios aligning very well with each other since 2009.

The buck: doe objective in D-4 was changed in 2001 to reflect a goal of reducing the prevalence of CWD. The objective was set at a range of 10-35 bucks:100 does, as little was known about at which end of the spectrum CWD could most effectively be managed. In the 2007 plan, an intermediate choice balancing buck maturity with opportunity and likely a lower CWD prevalence in males was selected (25-30 bucks: 100). Given the limited data on causation, that is available relating herd composition and prevalence, correlative inspection suggests herds with an older buck age structure will probabilistically have a higher rate of CWD (Miller and Conner 2005). That tradeoff between buck age structure, stakeholder satisfaction and CWD prevalence is still part of management considerations today.

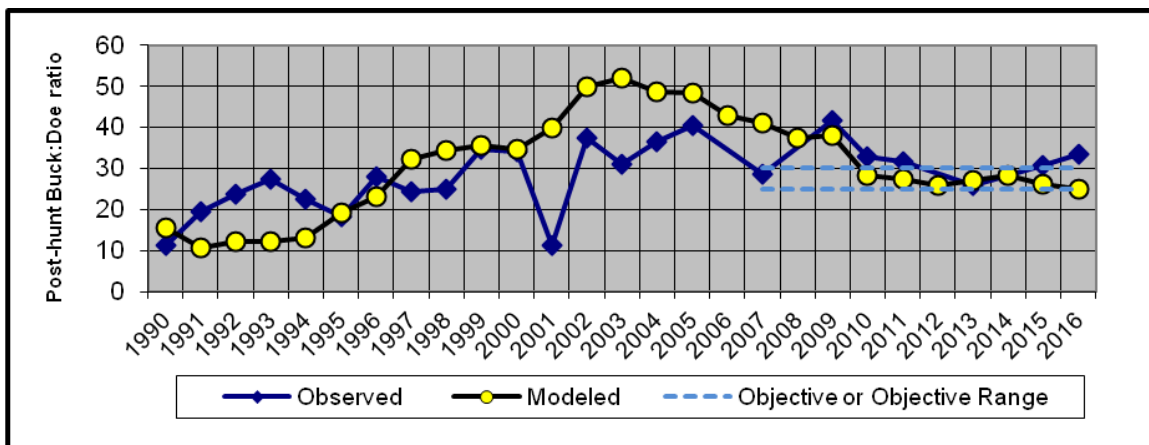


Figure 7. D-4 post-hunt buck: doe ratio 1990-2016

Licenses

Licenses in D-4 have been limited and specified since 1997. Before 1997, buck-hunting licenses were valid statewide and were over-the-counter in the 1st and 2nd seasons, and limited in the 3rd. Figure 8, illustrates changes in hunter numbers over the last 26 years and provides the best comparison between limited and unlimited license years. In 1997, regulations were passed making D-4 limited and specified to better identify and document the occurrence of CWD in the DAU. In 1999, regulations were approved making all deer licenses limited in Colorado. In keeping with the public's statewide desire to improve both the deer numbers and buck: doe ratios by decreasing hunting pressure on deer herds, antlered license numbers in D-4 were cut over 50% (Figure 8). While this appears to be a dramatic reduction in hunting opportunity, that was not the case, as thousands of licenses under the original levels went unsold each year. This is further evidenced by the fact that the number of bucks harvested in 1999 (607) only decreased slightly relative to previous years with a 50% reduction in tags (see Figure 9). While buck licenses may have been available as leftovers into the mid-2000s, after license reductions in 2009 this is no longer the case.

From 1995 to 2000, doe licenses were set at relatively conservative levels. In 1999, no antlerless licenses were offered. However, beginning in 2001 and continuing through 2003, there was an exponential increase in numbers of antlerless licenses issued. In 2001, the only antlerless licenses available in D-4 were in GMU 9, and along with the either-sex licenses, were created for the density reduction experiment. The either-sex tags ultimately contributed minimally to the density reduction because many hunters chose to kill bucks instead of does. In 2002, these GMU 9 specific either-sex licenses were converted to antlerless only, although numbers remained unlimited.

To reduce the herd to < 7,000, large license number increases were made by adding antlerless licenses to every regular rifle season in all units, adding private-land only (PLO) doe seasons and adding late seasons. Probably the most significant change in licensing was that all antlerless licenses provided 2 carcass tags and were considered additional or 'list B' in 2002 and 2003. These changes, with the 2-for-1 doe licenses being the most notable, doubled antlerless harvest in one year from 716 in 2001 to 1,461 in 2002 (Figure 9). Antlerless license numbers increased from 600 in 2001 to 2,925 in 2002 (Figure 10).

Beginning in 2004, as the modeled population neared the < 7,000 objective, incremental reductions were made in antlerless license numbers. The 2-for-1 carcass tag regulation was removed and both regular and late-season antlerless licenses were cut back. The last year with any late or PLO seasons was 2006 (outside of GMU 9). During 2006, all doe licenses in D-4 sold in the draw. Moderate reductions to both buck and doe licenses continued until 2009.

Doe license levels stayed very low through 2014 (80 rifle tags for the DAU from 2010-2014) until population estimates indicated that the herd had reached and begun to surpass objective. Increases in doe licenses began in 2015 and continued through present to begin to provide opportunity and slow the rate of growth above the 2007 population objective.

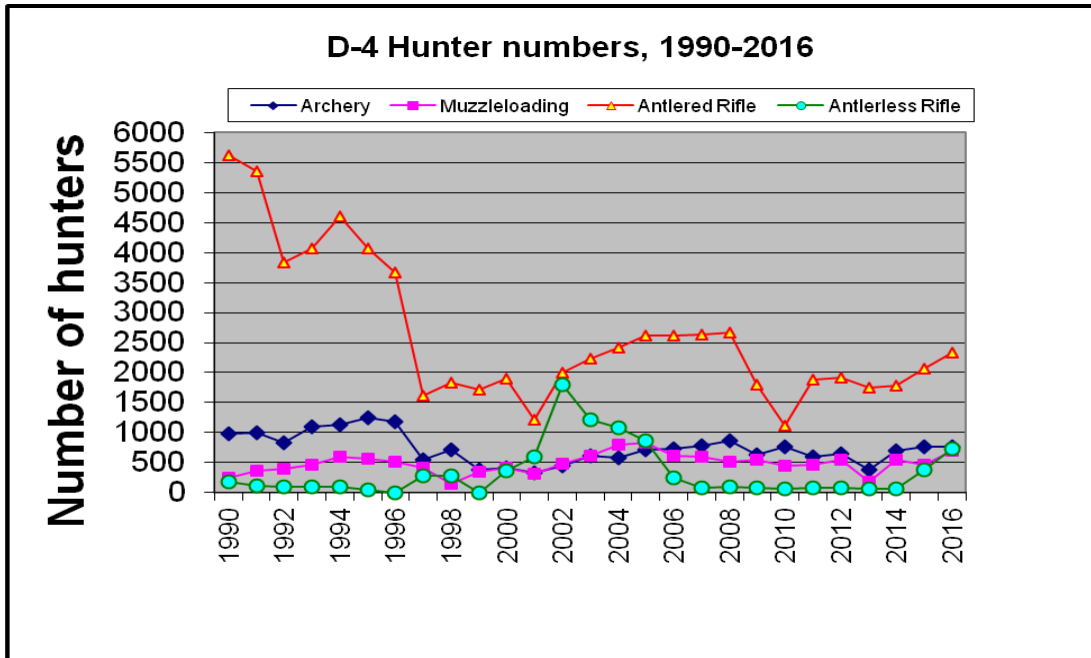


Figure 8. D-4 hunter numbers by method of take 1990-2016

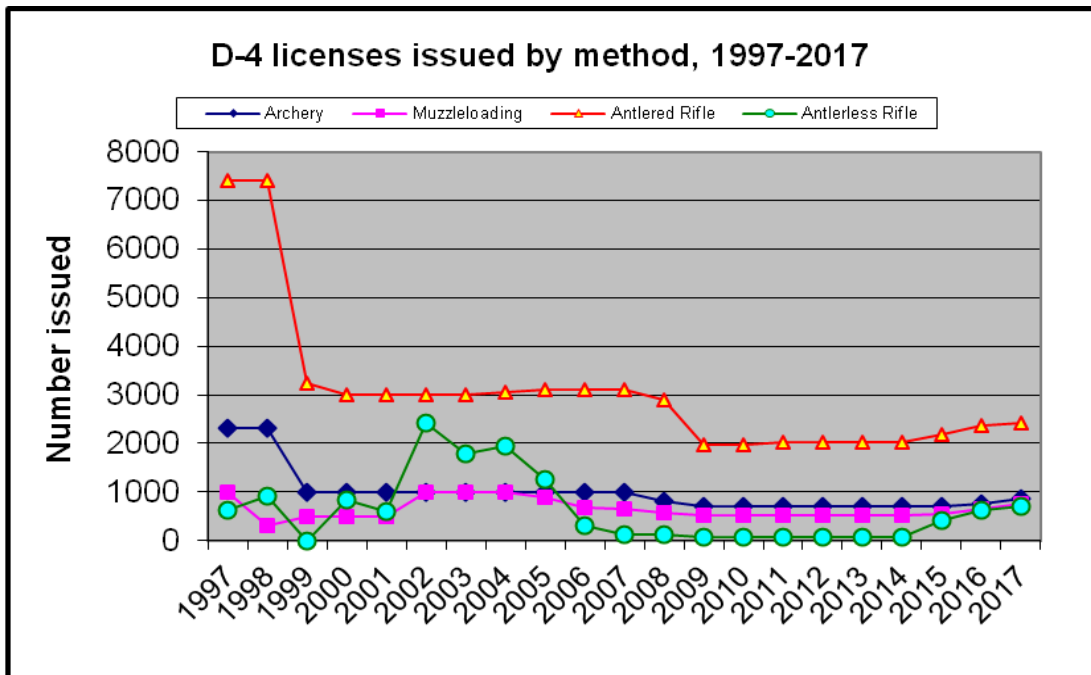


Figure 9. D-4 license numbers by method of take 1997-2017 (statewide buck licenses before 1997)

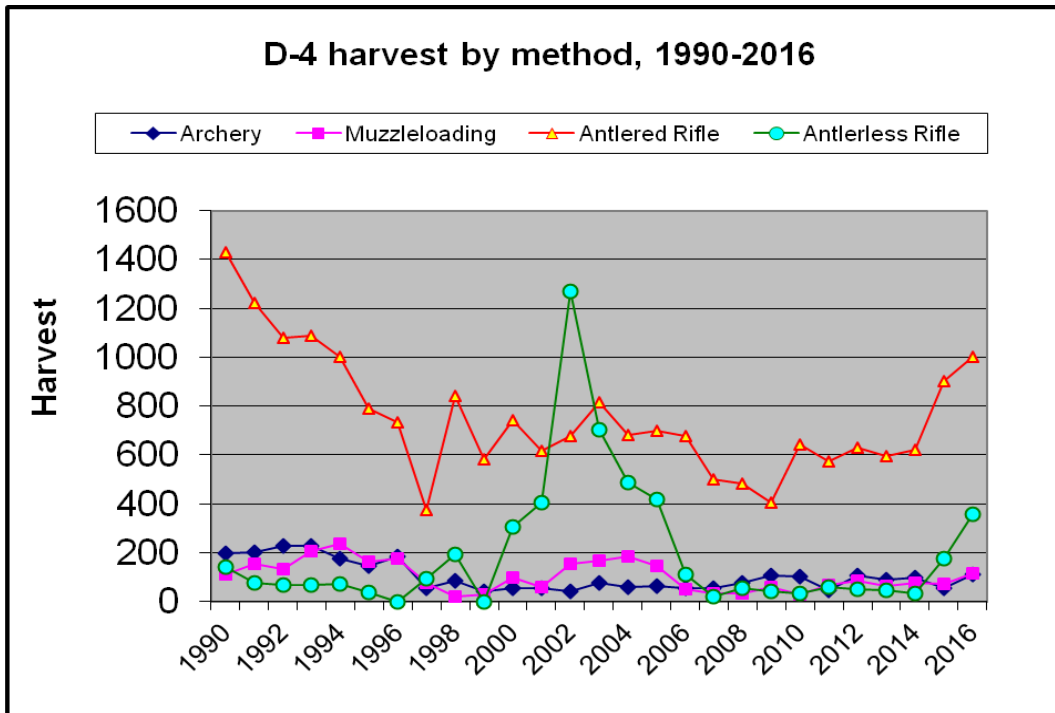


Figure 10. D-4 harvest by method 1990-2016

Harvest

Over the last 26 years, D-4 buck harvest peaked in the early 1990s. Deer populations were at their highest then. Present levels of both buck harvest and population size are beginning to approach the historic highs. In 1990 buck hunters killed over 1,400 bucks and harvest decreased every year through 1997. For the next 10 years, antlered harvest was consistent in the 600-800 range. From 2007-2009 buck harvest was under 600 deer. From 2010-2014 buck harvest has been over 600 deer. Buck harvest was relatively consistent for 8 of the last 10 years. Only in the last two years has buck harvest increased with upwards of 900 males harvested in 2015 and 1,117 bucks harvested in 2016. Since license levels have only slightly increased in the last 2 years these recent higher harvest levels are likely due to a larger deer herd, buck: doe ratios at the upper end of the objective range, and higher success rates.

From 1995-2001, the only year where antlerless licenses were issued during the regular rifle seasons was 1997. Nearly all antlerless harvest during those years was coming outside of the regular rifle seasons from GMU 9, 19 and 191 late-seasons. Doe harvest in the regular seasons began to occur on a significant scale in 2002 after the approval of the 2001 HMP. From 2001-2005 doe harvest was liberalized to drive the population down. CPW relied heavily on very generous late-season doe quotas as well as regular rifle season doe licenses to achieve these reductions. Reductions in antlerless harvest levels began to decline around 2005 after a peak harvest of 1,461 antlerless deer in 2002. The change in management philosophy articulated in the 2007 plan led to large-

scale reductions in doe harvest across all hunt codes and the elimination of all late-seasons, except one in GMU 9. By 2010 doe harvest in the only available rifle season (2nd) was just 17 animals across the DAU.

Over most of the last 10 years' female harvest has averaged around 100 animals as the herd was still under objective until 2015. Doe harvest during that time was largely via archery (an either-sex license) or a GMU 9 PLO doe tag that has been maintained since the original population reduction efforts related to CWD. Given the relatively high CWD prevalence rate in GMU 9 compared to the rest of the DAU and the fact that the GMU is nearly all private property, the GMU 9 PLO tag has been used to slow the rate of population increase specifically in that unit. Until 2016, doe harvest goals were so small that the only antlerless rifle licenses available were during the second rifle season, as the third rifle season hunt codes were not used. During this time, doe licenses were scarce enough that they required two preference points to draw.

With the modeled post-hunt population exceeding the upper end of the objective in 2014 and two consecutive years of population estimates to support the model (2014 and 2015) CPW began to increase doe harvest during the fall of 2015. Harvest went up to 225 antlerless animals taken in 2015. This represented a nearly 100% increase over previous annual harvest levels. Harvest doubled again in 2016 to 465 antlerless deer.

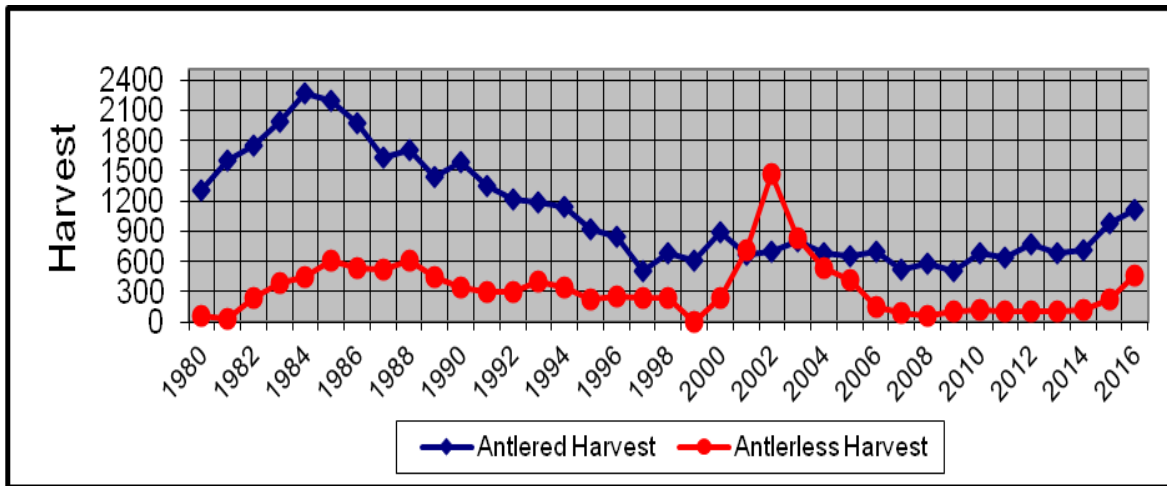


Figure 11. D-4 antlered and antlerless harvest 1980-2016

Success Rates

Success rates were defined and analyzed in this document as being the number of animals harvested divided by the numbers of licenses for that particular method or season. In units like D-4 where all licenses are sold, this harvest per license sold metric creates a similar success rate to calculations using harvest per hunters afield.

Buck rifle hunter success was relatively low during the period of statewide licenses until 1997 and even through 1999 when licenses were decreased by over 50%. This reduction in licenses did help increase success for hunters that went afield and for the period from 2000-2008 antlered hunter success averaged 22%. With buck license cuts of 30% in 2009, hunter success again increased and has average 32% since that year. The highest two success rates over the last 20 years occurred during the last two years in 2015 (41%) and 2016 (42%) (Figure 12). This has corresponded to a modest increase in antlered licenses but a significant increase in overall deer numbers.

Hunter success on antlerless deer was low during the end of the 1990s. During the period from 2000-2003 harvest success increased as higher harvest tools like late-seasons were employed. Antlerless rifle success dropped slightly during the multiple carcass tag years of 2002 and 2003. Given that any antlerless hunter in D-4 could kill two does on a single license during those years, success could have theoretically gone above 100%. There is not a way to statistically isolate hunters who harvested two deer from those that harvested one deer on the multiple license harvest survey. Likely, most hunters did not take advantage of the opportunity to harvest a second animal and deer densities were simultaneously declining on the landscape. Since 2003, antlerless rifle success has generally increased with lower rates in the mid-2000s around 20-30%, peaking at 75% in 2011. The relatively high antlerless success rates seen during 2011-2013 are partially due to the very limited number of doe licenses and the effort expended by hunters that spent preference points to draw these tags.

Archers saw a decrease in license numbers in 1999 of over 50% from over 2,300 to 1,000. Success did not change with that impact due to the undersubscription of licenses. Licenses stayed at 1,000 for the next decade, followed in the most recent 10 years with a level of around 700 licenses, with low success rates, which have only increased slightly during the last 5 years. Overall archery success in D-4 has been consistent over the last 20 years, ranging between 2-15%, with an average of 8%, and a 5-year average of 13% (Figure 12).

Muzzleloader success rates have been relatively static over the last 20 years, particularly for bucks. Overall muzzleloader success rates have ranged from an annual low of 5% up to 20% but have mostly averaged between 12-14%. Since buck licenses represent the biggest portion of muzzleloader numbers the higher success rates on the fewer doe licenses is swamped when pooled with males, but doe success for the last 10 years has been around 30%. During the herd reduction period in the early 2000s, doe success was lower probably due to the high numbers of licenses and lower deer densities.

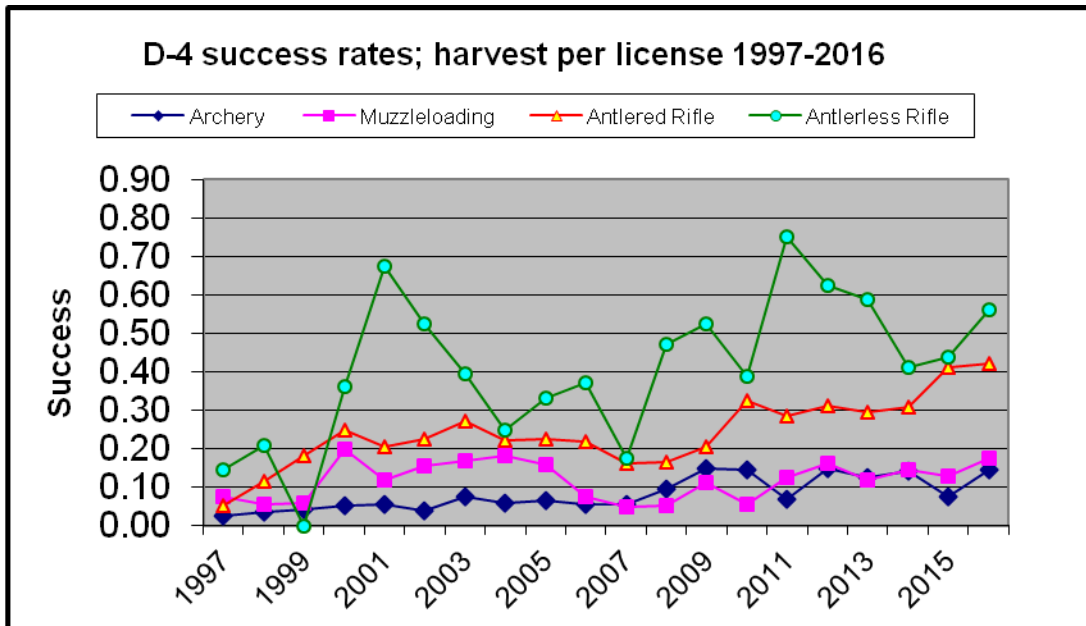


Figure 12. D-4 harvest success rates for archery, muzzleloader and antlered and antlerless rifle 1997-2016 (no antlerless rifle licenses issued in 1996 and 1999)

Disease

Chronic wasting disease, a transmissible spongiform encephalopathy (TSE), is a disease of native mule deer, white-tailed deer, elk and moose in D-4 and elsewhere, characterized by behavioral changes and progressive loss of body condition leading to death (Williams and Young 1992). There are no known treatments for CWD in deer. A rectal and tonsillar biopsy live-test have been developed.

Hunter concerns over CWD vary, but reductions in hunter participation due to disease in D-4 has not been observed. This is consistent with data reported from other CWD-positive states (Miller 2003, Gigliotti 2004, Holsman and Petchenik 2006).

An analysis comparing winter range sub-herds that had population reductions versus sub-herds that did not have population reductions between the years 2000-2005 did not detect a significant change in CWD prevalence rate between the different managed sub-herds. The management experiment initiated in GMU 9 called for a 50% reduction in overall deer numbers. The objective of 50% population reduction was not achieved. However, retrospective evaluation of 17 years of D-4 prevalence rates shows a decline in the disease (from hunter samples) from 2010-2011 with a consistently reduced prevalence rate from that point to present. During this same time, other Colorado herds with different management histories have seen increasing trends in CWD prevalence. There are no sampling-based explanations for this prevalence change as sample submission stayed proportionate to harvest by GMU for all 17 years in D-4. No

other impacts on the landscape (i.e. - shifting harvest to lower prevalence GMUs) or other changes in sample spatial distribution occurred. One explanation for the current prevalence level, which is 50% lower than the rate during the 2000s, would be some aspect of the management schemes employed in D-4.

In an attempt to improve D-4 prevalence estimation by increasing sample size, CPW initiated a voluntary D-4 hunter head submission program during the fall of 2016. In the fall of 2017, mandatory submission regulations for a sub-set of D-4 hunters will be used to further improve and refine prevalence estimates. The most recent three years (2015-2017) of submitted samples from harvested buck deer (n=598) produces an average DAU-wide CWD adult male prevalence rate of 4.4 %.

There is a higher prevalence of CWD in mature, male mule deer relative to female and younger male age classes (Miller and Conner 2005). The higher CWD prevalence in older mature male mule deer continues to be documented in D-4 and other Colorado herds. Having a sex ratio objective with a range (25-30 bucks: 100) may offer an opportunity to allow management goals to vary, within the ratio sideboards and subject to detected CWD prevalence rates. For instance, a deer population at the lower end of the range (25 bucks: 100) would have a lower overall rate of CWD because this ratio would be comprised of younger aged bucks. Inversely a deer population at the upper end of the range would have a higher overall rate of CWD because the ratio would be comprised of older aged bucks.

All sex ratio alternatives in this plan recommend a CWD prevalence threshold whereby periodic testing would inform disease estimates and would be used to provide direction on which end of the ratio spectrum the population would be driven towards using buck harvest to reach goals (Potapov et al 2016). Over the past 6 years, CWD prevalence in D-4 in adult male mule deer has been consistent at ~4-5%. If an increase in prevalence rate is detected during hunter harvest surveillance periods and/or reaches a threshold of 10% prevalence in adult male deer, it would precipitate adaptive management actions to reduce the sex ratio to the lower end of the approved long-term objective range. Management strategies including increasing over all buck harvest, shifting buck harvest later into December, and special hunting licenses in identified CWD hotspots may be implemented. All sex ratio alternatives in this plan recommend the CWD prevalence threshold or trigger to adaptively adjust the target objective within the sex ratio objective range. Furthermore, once CWD prevalence exceeds triggers specified in the Colorado Chronic Wasting Disease Response Plan, appropriate adaptive management actions listed in the Colorado Chronic Wasting Disease Response Plan will be implemented.

While funding for obtaining 300 hunter head samples each year is unlikely, the recommendation is for harvest sampling to occur in D-4 every 3-5 years. This allows a balance between available resources and obtaining enough precise data to generate management strategies in a meaningful timeframe.

Table 1. CWD prevalence in hunter samples from deer >2 years old

Year	Gender	Sample # Detected	Total Sample #
2015	F	0	9
2015	M	2	51
2016	F	0	39
2016	M	4	98
2017	F	1	26
2017	M	23	449
3-yr average (2015-2017) prevalence rate for >2yr bucks =			4.4%

Table 2. CWD prevalence over time

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# positive	26	39	22	16	24	13	13	8	7	6	5	1	2	2	4	23
# sampled	153	409	185	167	212	156	124	78	65	140	87	60	59	51	98	449
prevalence	0.17	0.10	0.12	0.10	0.11	0.08	0.10	0.10	0.11	0.04	0.06	0.02	0.03	0.04	0.04	0.05
Rolling 3-yr average			0.13	0.10	0.11	0.10	0.10	0.10	0.11	0.08	0.07	0.04	0.04	0.03	0.04	0.04

Game Damage

Should damage occur, adequate provisions are incorporated into existing game damage laws to effectively deal with claims. For landowners in the DAU, the Northern Larimer County Habitat Partnership Program Committee can be used for helping provide financial compensation for documented losses.

There has not been a single deer damage claim submitted or paid in D-4 in 17 years. The twenty-year average of deer game damage payments is minimal at \$436 per year.

CURRENT HERD MANAGEMENT

Current Post-hunt Population

Based on the D-4 population model, as well as observed data from aerial quadrat flights, the 2016 post-hunt population is estimated at 14,600 deer (see Figure 6). License levels in the past 2 years have been used to slow the population growth that has occurred over the last 5 years largely by increasing doe tags. The population increase has pushed the population over the current long-term objective.

Current Herd Composition

Annual computer modeling, after incorporating aerial classification flight data projects a 2016 post-hunt sex ratio of 25 bucks: 100 does (see Figure 6). The 2016 post-hunt observed sex ratio was 33 bucks: 100. However, when aerial observations are further analyzed, trends in sex ratios are apparent between public and private (GMU 9) or refuge lands. The sex ratios observed on public lands are lower than those seen on private lands or un hunted refuges (including privately owned and municipality-owned properties). During classification flights larger samples of deer are often found on these refuge areas; therefore the DAU buck: doe ratio is driven in some degree by samples from these lightly or non-hunted areas.

Current Management Strategies

The current management strategy since 2007 has focused on increasing the population in what previously had been an intentionally suppressed DAU due to CWD management goals. The present licensing scheme was conservative during the early portion of the HMP as the herd increased, but in the last two years' significant antlerless harvest has been initiated while also increasing buck harvest as deer numbers have exceeded the long-term objective. Current antlered hunting philosophy could be considered a "moderate" opportunity strategy with a 25-30 buck: 100 ratio and 2nd and 3rd season rifle buck licenses available with a limited draw first choice and no preference points.

Current Management Problems

There are currently no prominent management problems in D-4. However, like much of Colorado, D-4 is experiencing changes in deer habitat through rural subdivision growth, small acreage development and subsequent loss of deer overall and winter range. Due to the significant proportion of public land in D-4, these changes have had limited impact on a DAU/population-scale, however localized issues of habitat loss have occurred and will continue to develop. There are also several water development projects in D-4 at various levels of planning (Northern Integrated Supply Project, Halligan expansion, Seaman expansion). If these water storage projects are all completed, the cumulative impacts on deer overall and winter range in GMU 191 would be pronounced.

As local municipalities (City of Fort Collins, Larimer County) purchase and manage large working ranches, the continuance of active wildlife management on those parcels is crucial. In most cases, herds can be managed via harvest to keep their size and distribution compatible with habitat on the property and to minimize impacts on surrounding landowners. Larimer County is in its 10th

year of a successful limited access big game hunting program on its Red Mountain Open Space property and The City of Fort Collins is in its 3rd year on its Soap Stone property. These access programs provide quality-hunting access for buck deer, bull and cow elk, and doe pronghorn to hunters each year with no conflicts with other open space users.

Hunters are willing and interested to hunt in D-4 despite the long history and presence of CWD. When conversing with hunters and landowners CPW managers still occasionally hear concerns and criticisms over the population reductions that occurred over 10 years ago in an attempt to manage CWD.

ISSUES AND STRATEGIES

Issue Solicitation Process

Public input was solicited through one public meeting and a public survey. The public meeting was announced through various media outlets, press releases, and the CPW website. The public meeting was held in Fort Collins on June 29th 2017. The format of the public meeting was to disseminate information on the herd, answer questions from the public and give attendees the opportunity to complete the public survey regarding the future management of the herd. Five members of the public attended and provided input. Attendees filled out a questionnaire highlighting what they felt the major management issues were, as well as providing general comments on population management.

The public survey was available on the CPW website from June 15th to July 17th 2017. The survey's availability and background information on the herd was advertised with a press release and announced on CPW's website. Additionally, a postcard with an online survey link was sent to 2,300 randomly selected past D-4 hunters and LPP registered landowners in the DAU. A public survey hard copy was also made available to be mailed. In total, 267 respondents completed the survey.

Public input from the survey was then incorporated into the draft management plan that was posted on the CPW website and sent to local governments and land management agencies for comment. Individuals, land management agencies, and local governments were then invited to submit comments on the draft management plan during a 30-day comment period, which was held from March 1, 2018 to March 30, 2018. Zero citizens provided comments on the draft plan and one government or nongovernment organizations provided comments on the draft plan (Appendix C),

SUMMARY OF PUBLIC INPUT

Survey Results

The herd management public survey and results are located in Appendices A and B. The majority of survey respondents live in Colorado (94%). Forty-five percent (45%) of respondents defined their interest in the herd as a hunter and 23% of respondents defined their interest in the herd as a wildlife viewer/watcher. Ninety-six percent (96%) of respondents have hunted in GMU's 7, 8, 9, 19 or 191. On a scale of very important to very unimportant a majority of respondents find spending time in nature (75%), spending time with family/friends (54%), obtaining wild game meat (44%), and contributing to wildlife management (44%) as very important. The majority of respondents (35%) defined their experience when hunting as moderately crowded and most (62 %) were somewhat or very satisfied with their hunting experience.

A majority of respondents (58%) would like to see an increase in the herd size. Only 4% support a decrease and 33% would like to see the herd remain the same size as it is now. Forty-six percent (46%) of respondents support no change to current buck hunting opportunity and quality. Thirty-one percent (31%) would like to increase the quality of hunting opportunity (higher buck to doe ratio).

Issue identification

There were several common themes from the general comments in the survey:

- Increase the deer herd
- Manage for quality buck deer hunting
- CPW should not cull again to manage CWD
- CPW should manage to mitigate CWD
- Increase opportunity for antlerless harvest
- CPW should work to improve hunter access on private land

MANAGEMENT ALTERNATIVES

Population Alternative Objectives

Population objectives are presented in ranges. This is due to the complexity of precisely estimating and managing populations at a point objective. Population range objectives allow managers to take into consideration fluctuations in populations inherent in carrying capacity due to changes in climate, disease, land management, etc... The intention is to manage for a target within the selected objective range.

Alternative 1: 10,000- 12,000 deer post-hunt

This option is the current objective and would represent a population level slightly smaller than current herd size. Antlerless licenses would need to be increased immediately to reduce numbers but would yield reduced opportunity over the longer-term life of the plan. Achieving this objective would offer a short-term increase in opportunity, but long-term buck license numbers would probably be reduced as the surplus growth from this lower population level would be smaller than any of the other options. Given past deer numbers and habitat condition, a herd of this size could be expected to have no significant game damage or habitat impacts on any large scale.

Alternative 2: 13,000-15,000 deer post-hunt

This alternative includes the current post hunt estimate and would maintain current deer numbers. As this herd continues to grow, some increase in licenses would be possible as stabilization at the upper end of the range would require a small increase in harvest from present levels. Current game damage claim numbers and habitat impacts from this population level are non-existent and that would be expected to continue.

Alternative 3: 15,000-17,000 deer post-hunt

The midpoint of this alternative represents an approximate 10% increase over current deer numbers. Reaching this level, if achievable, would require a temporary reduction in antlerless harvest to allow the population to grow followed by a larger increase in licenses, compared to the other alternatives, to stabilize this larger population. Deer numbers, habitat impacts, game damage and deer/vehicle collisions would be at their highest level under this alternative compared to the other two.

Herd Composition Alternative Objectives (sex ratios)

Similar to the population objective, sex ratio objectives are in ranges in recognition of the difficulties of precisely estimating and managing populations. The intention is manage for a target within the selected objective range, while allowing some flexibility to respond to the variation inherent in carrying capacity due to changes in climate, disease, land management, etc... All three proposed alternatives allow sufficient males for breeding purposes.

Alternative 1: 20-25 bucks: 100

This alternative represents the lowest number of bucks in the population with likely younger, smaller antlered bucks than the other 2 options. This ratio

would allow for the most opportunity for antlered hunting, as license numbers would not need to be decreased at all from current levels. Hunters would experience more people afield and probably see a smaller number of bucks compared to alternatives 2 and 3. Based on current data, a smaller proportion of bucks harvested would be expected to test positive for CWD, as the male age structure in the herd would be younger. This could lead to current or lower levels of CWD in the population.

Alternative 2: 25-30 bucks: 100 does

This option is the current objective and would maintain the current sex ratio. Given that under current antlered license numbers both the modeled and observed data in D-4 indicate that the current sex ratio is slightly above this objective, it could be assumed that buck hunting opportunities wouldn't change dramatically from the status quo. This alternative would provide an intermediate level of buck numbers in the field, with a moderate number of older, large-antlered animals. Hunter numbers would be similar to current levels. Chronic wasting disease rates might be similar to prevalence seen currently under this same ratio objective.

Alternative 3: 35-40 bucks: 100 does

This alternative represents the highest buck: doe ratio of the three alternatives, with older, large-antlered bucks than either of the other 2 options. While post-hunt 2006 modeled and previously observed ratios indicate the DAU sex ratio is at the lower end of this objective, it is probable that antlered license numbers would need to be reduced to maintain this proportion of bucks in the population. This alternative represents the option that would provide the largest-antlered, most mature bucks. Based on current knowledge, this alternative could result in a higher proportion of bucks testing positive for CWD. With reductions in buck licenses, hunters could expect to see more bucks and fewer hunters while afield.

PREFERRED ALTERNATIVE OBJECTIVES

Population Alternative: 13,000-15,000 deer post-hunt

This alternative was selected because it is within the biological carrying capacity and was supported by public input. This is about a 30% increase in herd population from the previous management objective (10,000-12,000). This alternative allows for maintaining the current estimated herd population.

Herd Composition Alternative: 25-30 bucks: 100 does

This alternative is the current management objective and will provide the same level of hunting opportunity and buck maturity as seen within the past 5 years.

This ratio provides a balance between desires expressed by hunters to see mature bucks, and will likely allow hunters to hunt frequently, while also stabilizing the proportion of older age-class males in the population. CWD rates in harvested adult bucks will be periodically evaluated. Once CWD prevalence exceeds triggers specified in the Colorado Chronic Wasting Disease Response Plan, appropriate adaptive management actions listed in the Colorado Chronic Wasting Disease Response Plan will be implemented. If CWD prevalence is $\geq 10\%$ in adult bucks, the sex ratio will be managed to 25 bucks: 100 does.

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APPENDIX A
Public Survey

**DEER HERD SURVEY
Data Analysis Unit (DAU) D-4**

Public Comment Form

**Game Management Units 7, 8, 9, 19 and 19
Red Feather/Poudre Canyon deer herd**

Dear Interested Citizen:

Colorado Parks and Wildlife (CPW) is seeking **your input** about deer management in the Red Feather/Poudre Canyon area (Game Management Units: 7, 8, 9, 19, and 191). The information **you provide** will help CPW develop objectives and management strategies for deer in northern Larimer County.

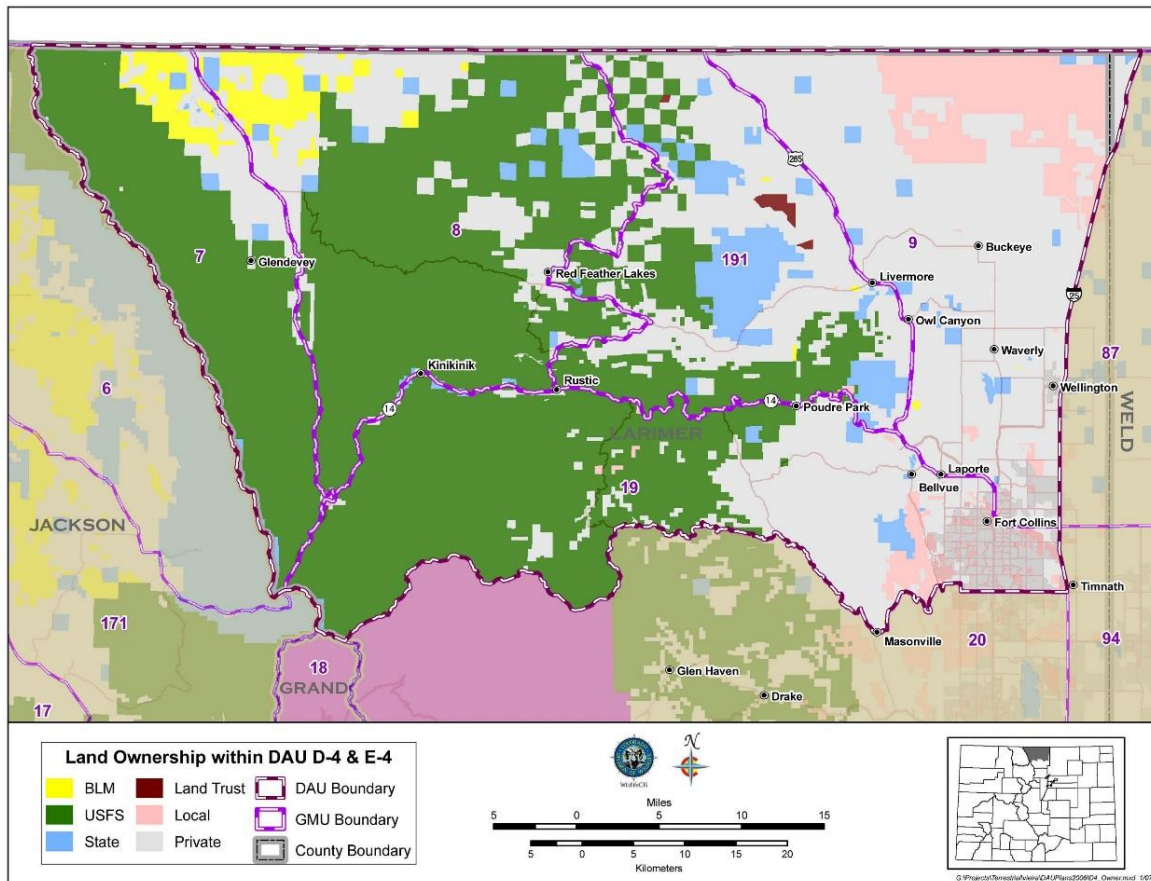
The draft plan which will incorporate results from this questionnaire will offer three population objective alternatives and three sex ratio (buck-to-doe) objective alternatives for you to consider.

The DAU planning process is the CPW method for incorporating public concerns, desires, and perspectives with the biological capabilities of a specific deer herd. **Public input is a very important** part of the DAU planning process. Your responses to the following survey questions will allow CPW to develop preferred management objectives for the final DAU plan.

Thank you for taking the time to share your perspectives with us!

**Return To:
CPW- D4 Survey
317 W Prospect
Fort Collins, CO 80526**

Figure 1: Deer DAU D-4.



1. Would you like the number of deer in GMUs 7, 8, 9, 19 and 191 (Figure 1) to: *(Please check only one.)*
- Decrease from current levels
 - Stay the same as now
 - Increase from current levels
 - Not sure

Please read the following brief description about managing male-to-female ratios before answering question 2 (below).

If deer herds are managed to maximize **hunting opportunity**, more buck hunting licenses are made available and buck hunters are able to hunt more frequently. This results in fewer total bucks in the herd (*lower buck-to-doe ratio*) and fewer large or mature bucks.

If a herd is managed to **maximize mature, larger-antlered bucks**, fewer buck licenses are issued in order to increase the number the number of bucks in the population (*higher buck-to-doe ratio*). This results in larger bucks being harvested but less frequent hunting opportunities. It is important to note that older, mature bucks have a significantly higher prevalence of chronic wasting disease (CWD) (a fatal neurological disease) than younger bucks or females.

2. How should the deer herd in the Red Feather/Poudre Canyon area be managed in terms of buck hunting *opportunity* and *quality*?

(Please check one.)

- Increase the **quality** of hunting opportunity (*higher buck-to-doe ratios*)
- Maximize the **quantity** of hunting opportunity (*lower buck-to-doe ratios*)
- No change (*maintain current level which focuses on maximizing opportunity and moderate buck-to-doe ratios for CWD management*)

3. Which of the following best describes how you interact with deer in GMUs 7, 8, 9, 19 and 191? (Please check all that apply.)

- As a viewer/wildlife watcher
- As a landowner
- As a hunter
- As a livestock producer
- As an Outdoor recreationist (e.g., hiker, skier, mountain biker, etc.)
- As a Guide/Outfitter
- Other (Please specify): _____

4. Have you hunted deer in GMUs 7, 8, 9, 19, or 191? (Please check one.)

- Yes
- No (If "No" → Please SKIP to question 8)

5. How important to you is each of the following reasons to hunt? (Please check only one response for each statement.)

<i>Reasons to hunt</i>	Not important	Slightly important	Moderately important	Very important
To spend time in nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To spend time with family/friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To obtain wild game meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To contribute to wildlife management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce property damage caused by wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To contribute to the local community (e.g., financial benefits from hunters)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To obtain a trophy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How would you rate the level of crowding you experience while hunting in GMUs 7, 8, 9, 19 or 191? (Please check only one.)

- Very crowded
- Moderately crowded
- Slightly crowded
- Not at all crowded

7. Overall, how satisfied were you with your hunting experience(s) in GMUs 7, 8, 9, 19, or 191? (Please check only one response.)

- Very unsatisfied
- Somewhat unsatisfied
- Neither unsatisfied nor satisfied
- Somewhat satisfied
- Very satisfied

8. Where do you live? (Please circle one of the options below.)

- Fort Collins
- Laporte/Bellvue
- Livermore/Red Feather Lakes/Cherokee
- Other locations **within** GMUs 7, 8, 9, 19, or 191
- Outside Colorado
- Other (please specify): _____

9. In what year were you born? (Please enter four-digit year.) _____

Please use the space provided below to write-in additional comments about the future management of deer in D-4.

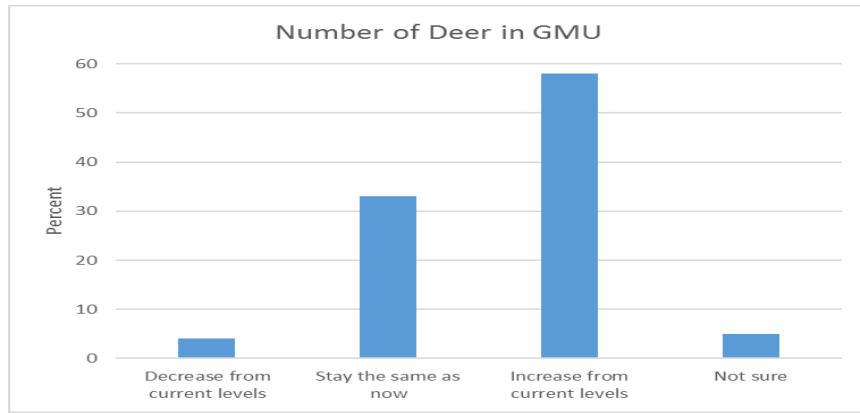
Thank you for your help!

APPENDIX B
Public Survey Results

Two hundred sixty-seven (267) people participated in this survey. Survey data is based upon a response to an individual question, not all participants responded to each question. One hundred forty-eight (148) comments were received.

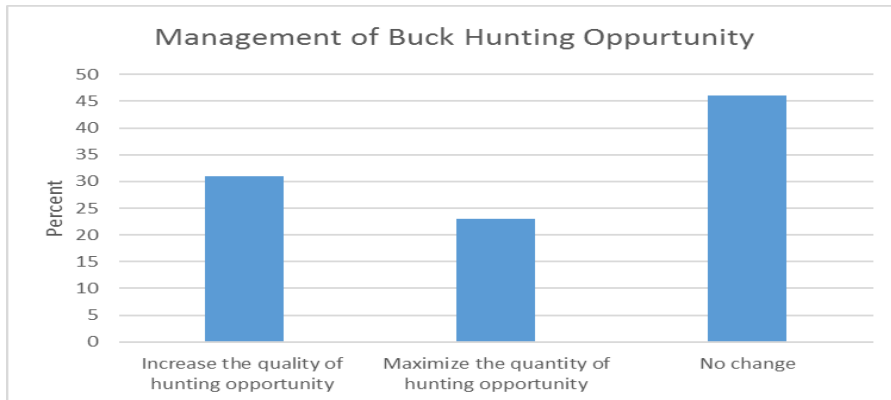
1. Would you like the number of deer in GMUs 7, 8, 9, 19, and 191 to:

n=11	Decrease from current levels	(4%)
n= 89	Stay the same as now	(33%)
n=156	Increase from current levels	(58%)
n=14	Not sure	(5%)



2. How should the deer herd in the Red Feather/Poudre Canyon area be managed in terms of buck hunting opportunity and quality?

n=82	Increase the quality of hunting opportunity (higher buck-to-doe ratios)	(31%)
n=62	Maximize the quantity of hunting opportunity (lower buck-to-doe ratios)	(23%)
n=123	No change (maintain current level which focuses on maximizing opportunity and moderate buck-to-doe ratios for CWD management)	(46%)



3. Which of the following best describes how you interact with deer in GMUs 7,8,9,19 and 191?

n=133 As a viewer/wildlife watcher
 n=56 As a landowner
 n=260 As a hunter
 n=7 As a livestock producer
 n=113 As an Outdoor recreationist
 n=3 As a Guide/Outfitter
 n=7 Other

4. Have you hunted deer in GMUs 7, 8, 9, 19, or 191?

n=256 Yes (96%)
 n=11 No (4%)

5. How important to you is each of the following reasons to hunt?

	Very Unimportant	Somewhat Unimportant	Neither Important or Unimportant	Somewhat Important	Very Important
To spend time in nature	n=19 (7%)	n=5 (2%)	n=4 (2%)	n=37 (14%)	n=191 (75%)
To spend time with family/friends	n=23 (9%)	n=13 (5%)	n=23 (9%)	n=58 (23%)	n=139 (54%)
To obtain wild game meat	n=13 (5%)	n=19 (7%)	n=21 (8%)	n=91 (36%)	n=112 (44%)
To contribute to wildlife management	n=13 (5%)	n=13 (5%)	n=24 (9%)	n=94 (37%)	n=112 (44%)
To reduce property damage caused by wildlife	n=51 (20%)	n=46 (18%)	n=88 (34%)	n=59 (23%)	n=12 (5%)
To contribute to the local community	n=25 (10%)	n=34 (13%)	n=82 (32%)	n=80 (31%)	n=35 (14%)
To obtain a trophy	n=65 (25%)	n=39 (15%)	n=71 (28%)	n=68 (27%)	n=13 (5%)

6. How would you rate the level of crowding you experience while hunting in GMUs 7, 8, 9, 19 or 191?

n=40 Very crowded (16%)
 n=89 Moderately crowded (35%)
 n=78 Slightly crowded (30%)
 n=49 Not at all crowded (19%)

7. Overall, how satisfied were you with your hunting experience(s) in GMUs 7, 8, 9, 19, or 191?

n=24	Very unsatisfied	(9%)
n=41	Somewhat unsatisfied	(16%)
n=32	Neither unsatisfied nor satisfied	(13%)
n=102	Somewhat satisfied	(40%)
n=57	Very satisfied	(22%)



8. Where do you live?

n=77	Fort Collins	(29%)
n=10	Laporte/Bellvue	(4%)
n=21	Livermore/Red Feather Lakes/Cherokee	(8%)
n=17	Other locations within GMUs 7, 8, 9, 19, or 191	(6%)
n=16	Outside Colorado	(6%)
n=126	Other	(47%)

9. What year were you born?

n=7	1930's	(3%)	n=55	1970's	(21%)
n=38	1940's	(14%)	n=53	1980's	(20%)
n=45	1950's	(17%)	n=6	1990's	(6%)
n=57	1960's	(21%)	n=6	2000's	(6%)

Appendix C Outside Agency and Public Comments



February 12, 2018

Angelique Curtis
Colorado Parks and Wildlife
317 W Prospect Rd. Fort Collins, CO 80526

RE: Northern Larimer County Habitat Partnership Program Comments - Deer DAU D4

Dear Angelique:

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

The Northern Larimer County HPP committee has discussed your presentation and reviewed the draft alternatives for this DAU plan update. The Northern Larimer County 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 NLCHPP committee supports the draft alternative to increase the population objective within this DAU and within our committee area. Due to the fact that the population is currently over objective, raising the objective will allow CPW to manage the population in the area as is. The NLCHPP committee does not believe this increase would create more conflicts and we also believe we have the resources necessary to address conflicts should they occur. This alternative will maintain the license availability, opportunities, and success that sportsmen in the area currently enjoy.

The NLCHPP 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 buck.

We acknowledge that the prevalence of Chronic Wasting Disease in the area has decreased through proper game management, and we feel that these alternatives will help to keep prevalence low.

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

Sincerely,


Lars Larson, Chair
Northern Larimer County HPP Committee