

BOOKCLIFFS DEER HERD MANAGEMENT PLAN

DATA ANALYSIS UNIT D-11

GAME MANAGEMENT UNITS 21 & 30

PREPARED FOR
COLORADO PARKS AND WILDLIFE



BY

STEPHANIE DURNO KARNs

DAN NEUBAUM

DARBY FINLEY

KIRK OLDHAM

BILL DE VERGIE

THIS PLAN WAS APPROVED BY THE COLORADO PARKS AND WILDLIFE COMMISSION ON

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EXECUTIVE SUMMARY

Bookcliffs Deer Herd (DAU D-11)	GMUs: 21 & 30
Post-hunt Population: Previous Objective: 10,000-12,000 deer; Estimate for 2020: 7,175. Preferred Alternative: <u>5,000-8,000</u>	
Post-hunt Sex Ratio (Bucks: 100 Does): Previous Objective: 30-35; Post-hunt 2020 observed: 32; modeled: 30. Preferred Alternative: <u>27-32 bucks:100 does</u>	

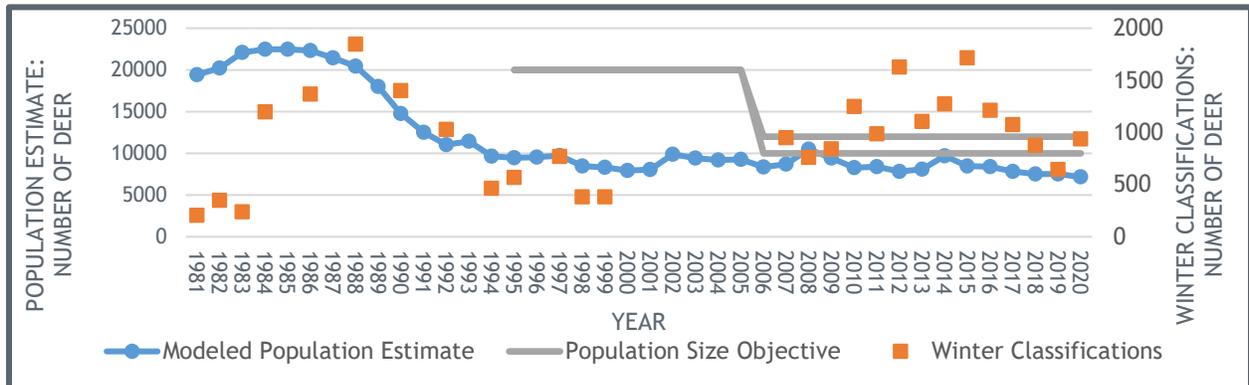


Figure 1. D-11 modeled post hunt population and objective range, 1981-2020.

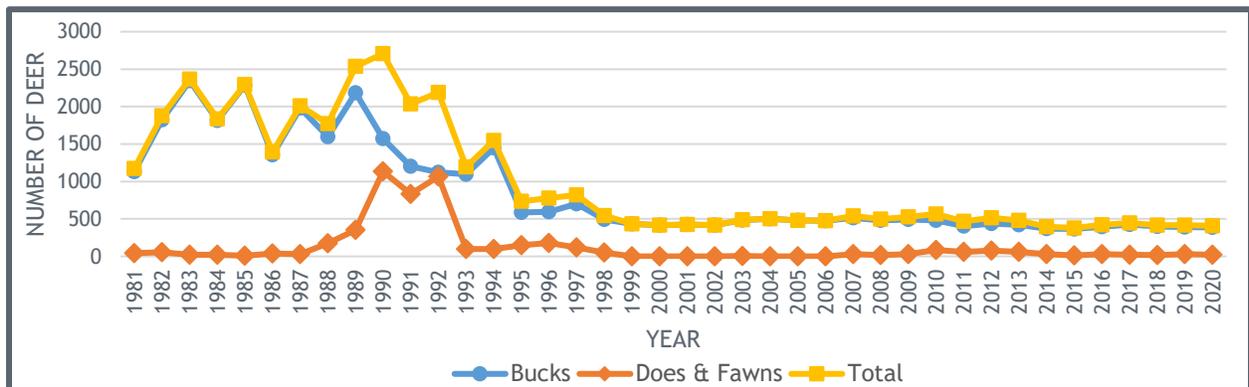


Figure 2. D-11 harvest estimates, 1981-2020.

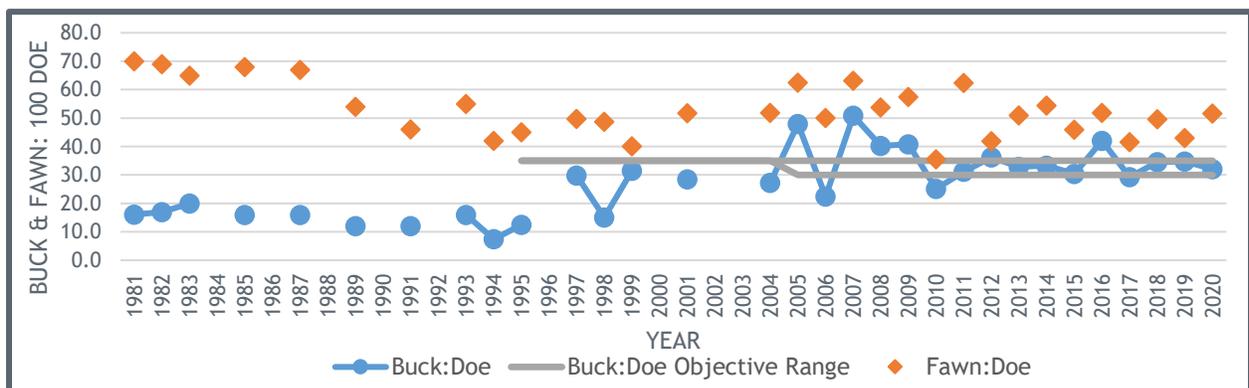


Figure 3. D-11 observed sex and age ratios, 1981 - 2020.

Background Information

The Bookcliffs deer herd (DAU D-11) is located in west central Colorado and includes portions of Mesa, Garfield, and Rio Blanco Counties. The D-11 DAU (Data Analysis Unit) consists of Game Management Units (GMUs) 21 and 30. The Bureau of Land Management (BLM) manages approximately 80% of D-11 and privately owned lands consisting of the remaining 19%. Livestock grazing is an important land use on public and private lands, while hay and row crops are grown on private lands at lower elevations.

Mule deer generally occupy the entire DAU, migrating from low-elevation winter ranges to high-elevation summer ranges in response to available forage and snow conditions. Small resident herds live year-round in the Grand Valley, relying on agricultural and low-density residential developments for forage.

Significant Issues

Significant issues facing this deer herd include declining fawn:doe ratios, population stagnation, recreation, energy development, disease, and degraded habitats due to feral horses, long-term drought, over-utilization, and wildfire. The deer population in D-11 has been stagnant at historically low levels for nearly two decades. Fawn:doe ratios are declining and buck:doe ratios are high. The habitat encompassed by the DAU is fragmented and degraded throughout much of the herd's important ranges. Predation may also be affecting fawn survival. Hemorrhagic and chronic wasting diseases have been documented in D-11 and may negatively influence the population size and survival.

Management Alternatives

Three alternatives were proposed for the population size and the buck:doe ratio objectives to guide the management of mule deer in D-11 for the next ten years. For each parameter, the three options were a comparison of the 2020 population size estimate of 7,175 deer and the current sex ratio objectives 30-35 bucks:100 does. The three options were a) to remain at status quo, b) a slight decrease from the current population size estimate and sex ratio objective and c) a moderate decrease from the current population size estimate and sex ratio objective.

Preferred Alternatives

Using the information outlined in this herd management plan, public feedback, and response letters from the BLM and county commissioners, and considering the potential and present conditions influencing the D-11 herd, CPW selected the final preferred population and sex ratio objectives. CPW staff recommend a moderate decrease in the population size objective from 10,000-12,000 to 5,000-8,000. A moderate decrease in the population size objective will allow CPW to manage the D-11 herd in sync with the habitat condition and capability while increasing the resiliency and sustainability of the herd. If habitat conditions improve, this broader population objective range will allow CPW the flexibility to manage for increased population levels at that time. CPW staff recommend a slight decrease from the current buck:doe ratio objective of 30-35 bucks:100 does to 27-32 bucks:100 does. A slight decrease to the buck:doe ratio objective will decrease the potential for increasing CWD prevalence as documented in adjacent units, potentially increase fawn:doe ratios, and maintain or increase hunting opportunity.

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INTRODUCTION AND PURPOSE

Colorado Parks and Wildlife (CPW) manages wildlife for the use, benefit, and enjoyment of the people of the state in accordance with the CPW's Strategic Plan and mandates from the 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 human impacts.

CPW establishes general season structure guidelines statewide, known as the Big Game Season Structure (BGSS). CPW uses the BGSS as a standardized framework for annual big game hunting regulations to ensure predictability and consistency geographically and annually for big game seasons. This framework is updated every five years through a public process and establishes what types of hunting opportunities will be available, when and where they will be available, and how the opportunities will be divided amongst methods of take.

Within these overarching frameworks, CPW manages big game populations as individual herds called Data Analysis Units or DAUs. A DAU is the geographic area that represents the year-around range of a big game herd and delineates the seasonal ranges of a specific herd that naturally experiences little interchange with adjacent herds. A DAU includes the area where the majority of the animals in a herd are born, live, and die. Each DAU usually is composed of several game management units (GMUs) designed to distribute hunters within the DAU. In some cases, only one GMU makes up a DAU.

CPW uses a "management by objective" approach (Figure 1). With this approach, CPW manages big game populations to achieve population and sex ratio objective ranges established through an intensive public process that culminates in Herd Management Plans (HMPs). The purpose of a HMP is to provide a process to integrate the plans and intentions of CPW with the concerns and ideas of land management agencies and interested publics in determining the management practices of each big game herd.

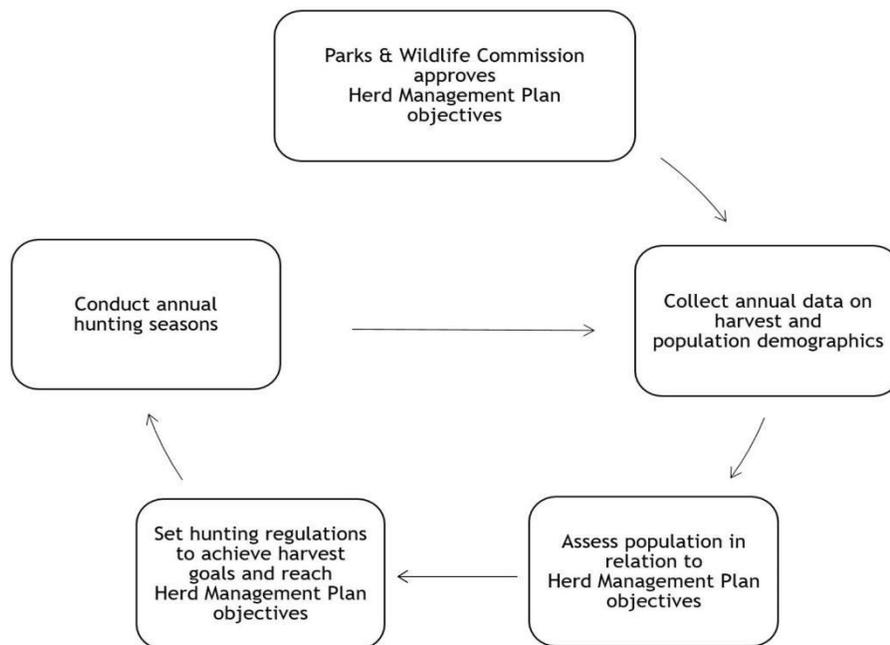


Figure 1. CPW's Management by Objective Process.

In preparing an HMP, CPW personnel strive to balance the biological capabilities of the herd and its habitat with the public's demand for wildlife recreational opportunities. Primarily, the HMP process produces objective ranges for the number of animals in the DAU and the desired sex ratio (e.g., the number of males per 100 females). These numbers are referred to as the DAU population and herd composition objectives, respectively. Secondly, the HMP process identifies strategies and techniques to reach the population size and herd composition objectives. Population and sex ratio objectives drive important decisions in the big game season setting process, namely, how many animals need to be harvested to maintain or move toward the objectives, and what types of hunting seasons are required to achieve the harvest objective. Various constituents, including the Bureau of Land Management, sports persons, guides and outfitters, private landowners, local chambers of commerce and the public are involved in the determination of DAU population and composition objectives and related issues. During the HMP process, public input is solicited, collected, and incorporated through surveys, public meetings, and written comments to the Parks and Wildlife Commission. The purpose of this herd management plan is to set population and harvest objectives for the Bookcliffs deer herd (D-11; GMUs 21 & 30). The herd management plan will be in place from 2021-2031 with the expectation that it will be reviewed and updated in 2031.

BOOKCLIFFS DEER DATA ANALYSIS UNIT DESCRIPTION

Location

The Bookcliffs deer herd, DAU D-11, is located in west-central Colorado and includes portions of Mesa, Garfield, and Rio Blanco Counties (Figure 2). It is bound on the north by the White River; on the east by Monument Gulch, Colorado Highway 64, Monument Gulch Road, Rio Blanco County Roads 26 and 103, East Salt Creek/Roan Creek Divide, Big Salt Wash/Roan Creek Divide, the Little Salt Wash/Roan Creek Divide, and the Bookcliffs; on the south by the Colorado River; and on the west by the Colorado-Utah state line. The Game Management Units in D-11 are 21 and 30. The entire DAU encompasses approximately 4,555 km². Human population centers occur on the periphery of the DAU in the cities and towns of Grand Junction, Fruita, and Rangely.

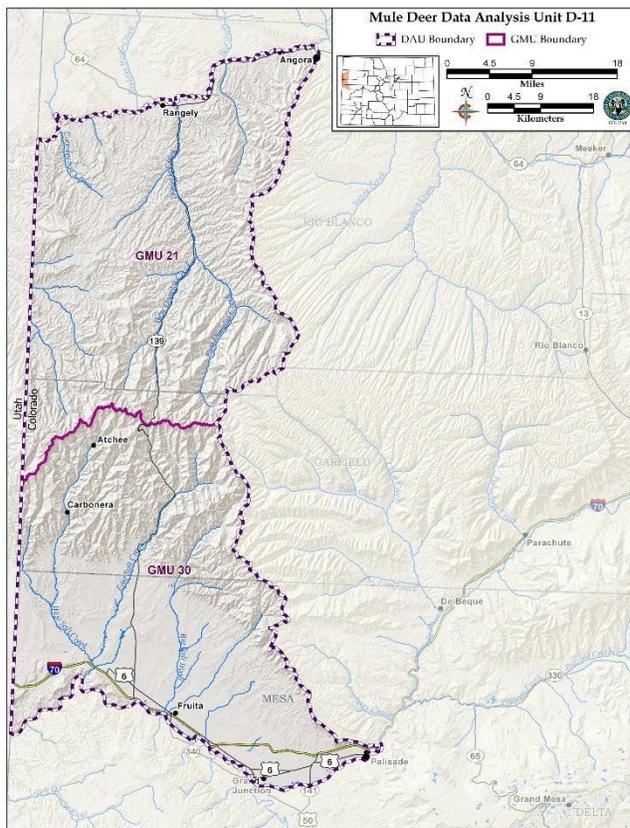


Figure 2. Location of Data Analysis Unit D-11 in west-central Colorado.

Physiography

Topography

The topography in DAU D-11 is highly varied. Elevations range from approximately 4,600 ft. where the Colorado River meets the Utah state line to over 8,800 ft. along the boundary between the two GMUs. Topography includes flat, low elevation desert and agricultural areas, steep foothills, and narrow ridges often bisected by nearly vertical canyon walls. This diversity of topography results in a wide variation in available wildlife habitats. Major drainages in the DAU include the Colorado and White Rivers, and West Salt, East Salt, and Douglas Creeks.

Climate

The climate varies with the elevation gradient of the DAU. Lower elevations are characterized by moderate winters and hot summers with low precipitation. Most low elevation areas receive approximately 10 inches of precipitation annually. Much of the precipitation at these low elevations is associated with summer monsoons and relatively little occurs in the form of snow. Although the lower elevations are generally warmer throughout the year, temperature inversions can result in dramatically lower winter temperatures in valleys compared to higher elevations. Aside from anomalous inversions, valley temperatures generally average between 10°F and 100°F.

The higher elevations are characterized by long, cold winters and short mild summers with approximately 20 - 25 inches of precipitation per year. Temperatures generally average between 0°F and 85°F. Heavy snowfall accumulates at the highest elevations of the DAU, including Douglas and Baxter Passes. This deep snow generally drives deer to lower elevations and south-facing, wind-blown slopes for the winter. Seasonal migrations such as this are typical of deer herds in western Colorado.

Land Status

Land Ownership

The Bureau of Land Management manages approximately 80% of the 4,555 km² in D-11 with the majority of the remaining 19% as privately owned. The state of Colorado and smaller federal agencies manage the remaining 1% of the total land in the DAU (Figure 3).

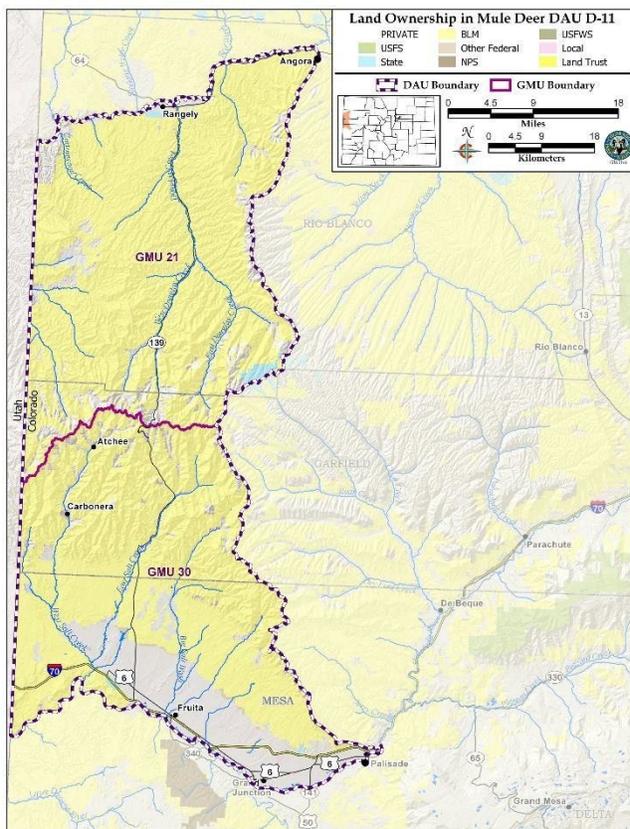


Figure 3. Land ownership in Data Analysis Unit D-11 in west-central Colorado.

Land Use

Land use in D-11 varies across the elevation gradient. Population centers are located on the periphery of the DAU at the lowest elevations. The areas immediately surrounding the major cities and towns are generally privately owned and used for agricultural production. The land at higher elevations is generally publicly owned and managed by the Bureau of Land Management. These lands provide summer livestock grazing, wildlife habitat, recreation such as hunting, and, in some areas, energy extraction. Ranching is an important land use across the DAU.

▪ Energy Development

D-11 lies atop significant deposits of natural gas and oil shale that is open to mineral extraction. Energy development is particularly concentrated in GMU 21 in the Texas Mountain area and along the state line in GMU 30 (Figure 4). In addition to the direct loss of habitat from infrastructure, energy development can cause behavioral and distributional shifts in mule deer and affect the quantity and quality of available habitat (Sawyer et al. 2010, Hebblewhite 2011, Northrup et al. 2015). A further discussion of the impacts of energy development on mule deer in general and for D-11 specifically is found in [Energy Development](#) section in [Current Issues](#).

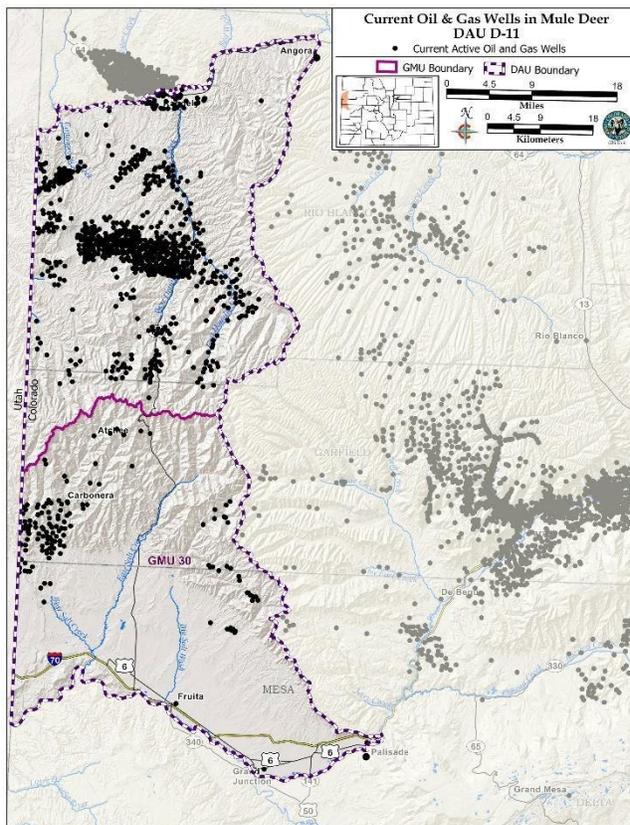


Figure 4. Current oil and gas wells in Data Analysis Unit D-11 in west-central Colorado.

▪ Outdoor Recreation

Outdoor recreation is a popular and increasing activity in D-11 on both deer winter and summer ranges, including the North Fruita Desert, the Bookcliffs and the top of Douglas and Baxter Passes. Common activities include mountain biking, feral horse viewing, motorized touring (snowmobile, ATVs, and 4WD vehicles), dispersed camping, shooting, hiking, and

horseback riding. Outdoor recreation is associated with flight behavior and decreased foraging in ungulates (Larson et al. 2016), so it is likely that the increased outdoor recreation in D-11 is influencing the performance of this herd. Conflicts between user groups and with wildlife have increased in recent years. CPW seeks to minimize and mitigate these conflicts during land use and herd management planning.

Hunting is a popular activity in D-11. Hunters pursue big game, small game, and waterfowl across much of the DAU. Waterfowl hunting is popular in small lakes and sloughs during early seasons and on the Colorado and White Rivers during the later seasons when still water is frozen. The Bookcliffs herd overlaps portions of the Yellow Creek elk herd, which provides substantial hunting opportunity. Bull licenses in second and third rifle seasons and either-sex archery licenses are unlimited in number, and available over-the-counter. On average, 8,600 hunters spend nearly 43,000 recreation days annually in E-10 pursuing elk. Of these, approximately 3,100 hunters focus on GMUs 21 or 30. Other big game and small game harvest opportunities, including live trapping, abound and provide a great deal of opportunity throughout the DAU.

- **Agricultural Production**

Farming and ranching are traditional activities in D-11 that still contribute significantly to the economies of the area. Row crops, particularly corn, are produced in the Grand Valley around Grand Junction and Fruita. These crops attract deer and support a non-migratory population that remains in the Grand Valley year-round. Hay and alfalfa are produced at middle elevations on private lands as cut forage for livestock. Cattle and sheep graze much of the deer habitat on public and private land in the DAU throughout the year. Livestock generally graze high elevations on BLM and private lands during the summer and then move to lower elevation BLM lands and home ranches for the winter. Livestock grazing can have negative, positive, and neutral impacts to wildlife (Schiltz 2017). A suite of factors, including the timing, seasonality, intensity, duration, and location of the grazing, determine the degree to which they affect deer. Generally, lighter intensity grazing, rotational systems, seasonal rest, and deference during drought are less associated with negative impacts.

Sympatric Big Game Populations

The geographic area encompassed by D-11 overlaps portions of the DAU boundaries of one elk herd, two pronghorn herds, one black bear and one mountain lion population (Table 1). Just as with deer DAUs, the geographic boundaries of these other big game DAUs represent the year-around range of the population and delineates the seasonal ranges of that specific population that naturally experience little interchange with adjacent populations. A DAU includes the area where the majority of the animals in a population are born, live, and die.

Due to similarities in management, disease, and popularity as a hunting resource, elk and mule deer populations and their management often influence one another. The E-10 elk herd includes five GMUs, of which two comprise D-11. The herd management plan for the E-10 elk herd was revised concurrently with that of D-11.

Herd	Species	GMUs	2020 Post-hunt Population Estimate
A-21	Pronghorn	10, 21	288
A-22	Pronghorn	30	not modeled
B-01	Black bear	21, 22, 30, 31, 32	not modeled
E-10	Elk	21, 22, 30, 31, 32	12,067

Table 1. Sympatric big game populations in Data Analysis Unit D-11 in west-central Colorado.

The Douglas Pass Data Analysis Unit (DAU B-1) bear population overlaps with E-10 and includes GMUs 21, 22, 30, 31, and 32. This bear population is above the socio-political carrying capacity and management efforts are concentrated on suppressing the population (Colorado Parks & Wildlife unpublished draft). Since 2012, license numbers and harvest have increased significantly and, beginning in 2020, all licenses in B-1 will be List B, meaning that hunters can harvest two bears annually. Despite increased license availability, harvest in B-1 is likely to be limited by both hunter demand and private land access.

The mountain lion population within DAU D-11 was historically managed as a single population known as L-07. Since the approval of the West Slope Lion Management Plan in September 2020 (Colorado Parks & Wildlife 2020a), is managed at the regional level, and grouped with much of the Northwest Region for harvest limit goals. This much larger geographic scale is more relevant to mountain lion biology and spatial use. The broad goal laid out by the Plan is for relatively stable mountain lion population, while allowing for management flexibility where appropriate. The Plan sets forth broad composition mortality thresholds to guide regional harvest objectives. All management actions are intended to be implemented and evaluated at 3-year intervals to account for single-year stochastic events. At a smaller scale within the over-arching regional framework, harvest limits for the mountain lions within E-10 are grouped with much of the western portion of the Northwest Region (Figure 5).

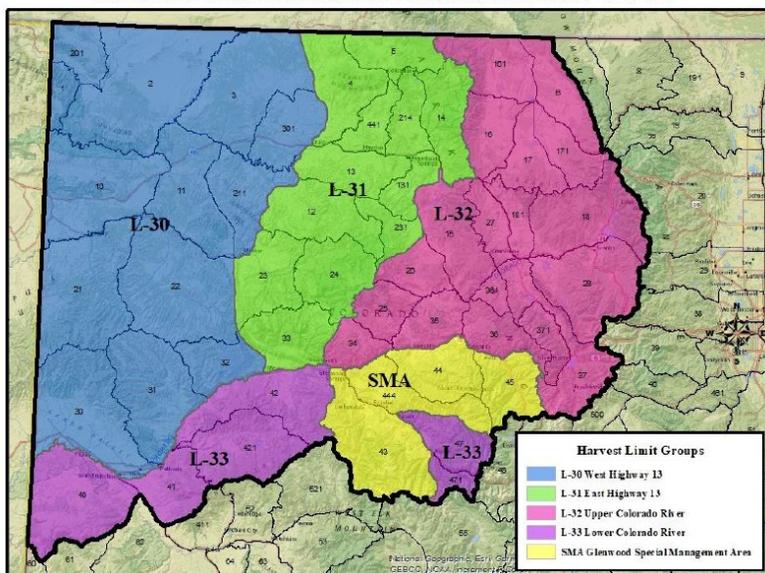


Figure 5. CPW NW Region Mountain Lion Harvest Limit Groups (Colorado Parks & Wildlife 2020).

HABITAT RESOURCE

The habitat resource in D-11 varies widely across the 4,555 km² geographic area that this deer herd inhabits. Generally, there is a gradient from low to high elevations of salt desert shrub, pinyon-juniper woodlands, Gambel oak, aspen, and finally spruce-fir woodlands. The rugged topography in D-11 generates highly variable aspects that create unique microclimates supporting many variations in vegetation and habitat. The broad diversity of habitats in close proximity provides a highly desirable mosaic and beneficial edge effect that is valuable for many wildlife species, including deer (Figure 6).

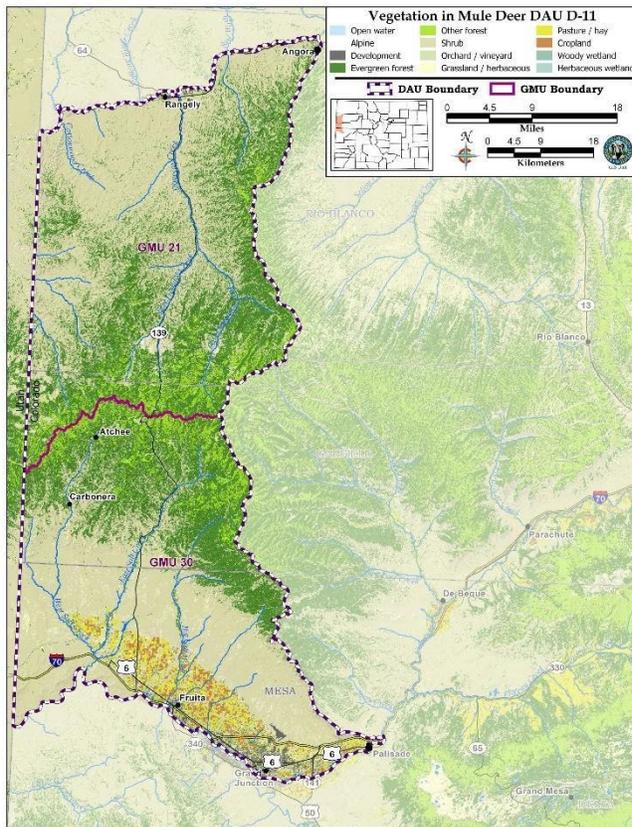


Figure 6. Vegetation distribution in Data Analysis Unit D-11 in west-central Colorado.

Diverse shrublands and evergreen woodlands cover much of D-11 (Figure 7). Evergreen woodlands make up approximately 37% of the vegetation in D-11 and provide winter habitat in pinyon-juniper woodlands as well as summer habitat in spruce-fir forests. Shrub habitats include both high elevation summer sagebrush and lower elevation sage and shrub winter habitats and make up approximately 45% of the vegetation. Aspen woodlands comprise approximately 6% of the vegetation in D-11 and provide critical forage in summer and fawning habitats. Grasslands, residential developments, and croplands each comprise less than 5% of the DAU.

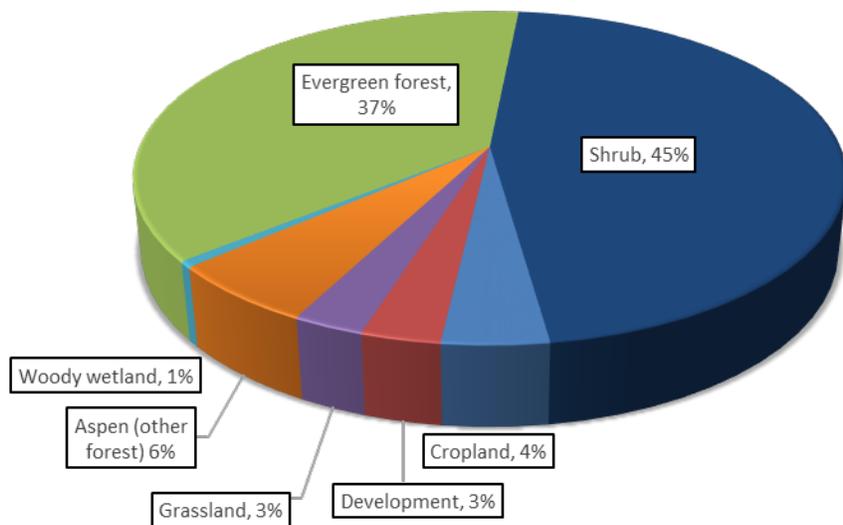


Figure 7. Vegetation composition of Data Analysis Unit D-11 in west-central Colorado.

Habitat Distribution

Mule Deer Overall Range

Deer live throughout D-11 including in the largest human population areas and the desert lowlands in the Grand Valley. Deer herds move across the available habitat throughout the DAU during the year, utilizing different ranges during different seasons.

Mule Deer Summer Range

CPW defines summer range as “that part of the range of a species where 90% of the individuals are located between spring green-up and the first heavy snowfall.” Summer range in D-11 generally falls at the highest elevations, along the drainage divides that make up the boundaries of the two GMUs (Figure 8). There are approximately 975 km² of summer range. High elevation Douglas fir, aspen, and aspen/conifer stands, interspersed with sagebrush mixed grasslands provide excellent forage and cover during summer and fall. The quality of summer range is important for deer to ensure they recover from winter weight loss, support late fetal development and lactation by does, and send all animals in the population into winter in good body condition.

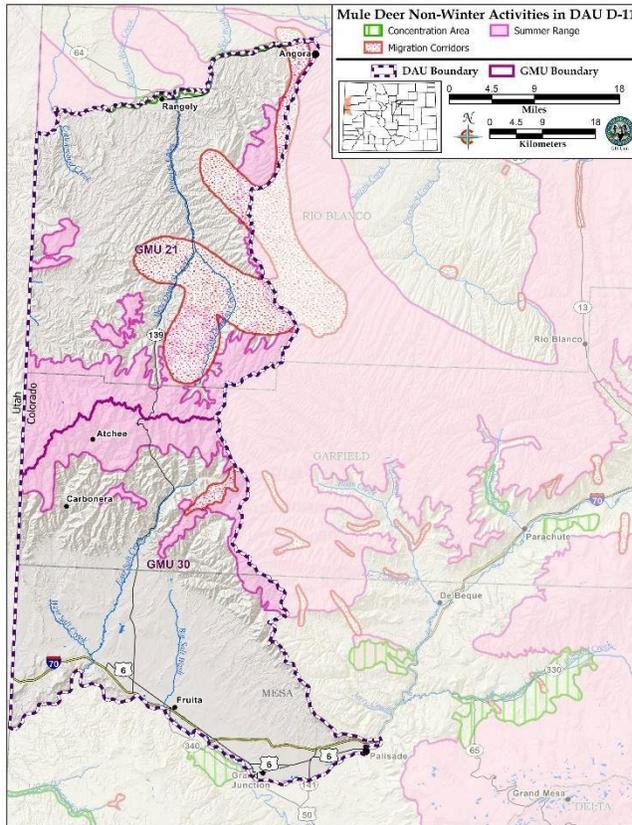


Figure 8. Mule deer summer activities in Data Analysis Unit D-11 in west-central Colorado.

Mule Deer Winter Range

CPW defines winter range as “that part of the overall range of where 90 percent of the individuals are located during the average five winters out of ten from the first heavy snowfall to spring green-up”. CPW further differentiates winter range into winter concentration areas and severe winter range. These areas are defined as:

Winter Concentration Area: the part of the range where densities are at least 200% greater than the surrounding winter range in average winters.

Severe Winter Range: that part of the range where 90% of the elk are located during the two worst winters in 10 years as determined by the maximum annual snowpack and minimum temperatures.

DAU D-11 has approximately 2,870 km² of deer winter range (Figure 9). Favorable snow depths, slope, aspect, and temperatures create accessible forage and make these areas suitable for wintering deer. Important winter ranges include the south-facing slopes of the Bookcliffs, Douglas Creek, and the White River. During light winters, deer often remain on relatively open windswept ridges at higher elevations including South Canyon, Cathedral Rim and Douglas Pass.

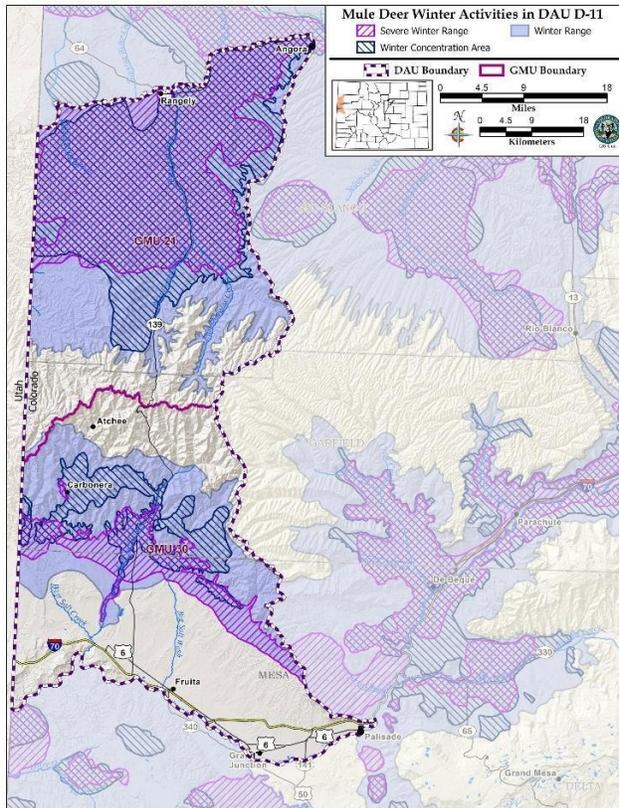


Figure 9. Mule deer winter activities in Data Analysis Unit D-11 in west-central Colorado.

Habitat Condition and Capability

Although the condition of the landscape varies across the DAU, much of the habitat in D-11 is degraded due to drought, overgrazing by livestock, energy development, and conversion from native to invasive plants. Healthy and diverse vegetation for cover and foraging are essential across all seasonal ranges for mule deer to meet nutritional demands and escape predation. Lack of cover and security areas can increase vulnerability to predation.

The majority of D-11 (~80%) is managed by the Bureau of Land Management. The BLM monitors its rangelands using the Assessment, Inventory, and Monitoring (AIM) Strategy and the Land Monitoring Framework. Both methods include the collection of over 100 different measurements of standard, quantitative soil and vegetation data relevant to livestock and wildlife habitat management, and soil and water conservation (Pellant et al. 2018). In D-11, the BLM monitors 206 sites. Most of these sites have some degree of departure from reference conditions, varying from slight to extreme, in the key indicators including biotic integrity, noxious weed cover, and functional/structural condition. Additionally, the majority of sites have one or more species of noxious weed and at least 10% noxious weed cover (USDI Bureau of Land Management 2019a). These departures are all indicative of poor habitat condition. Figure 10 shows the habitat conditions in GMUs 30 and 31 based on BLM Land Health Assessments. Much of the riparian areas and winter ranges are classified as “Not Meeting Land Health Standards” and additional winter ranges are “Meeting Land Health Standards with Problems”. Nearly 29% of the BLM lands in GMU 30 are “Not Meeting or Meeting Land Health Standards with Problems” and the vast majority of these problematic areas are in deer winter range.

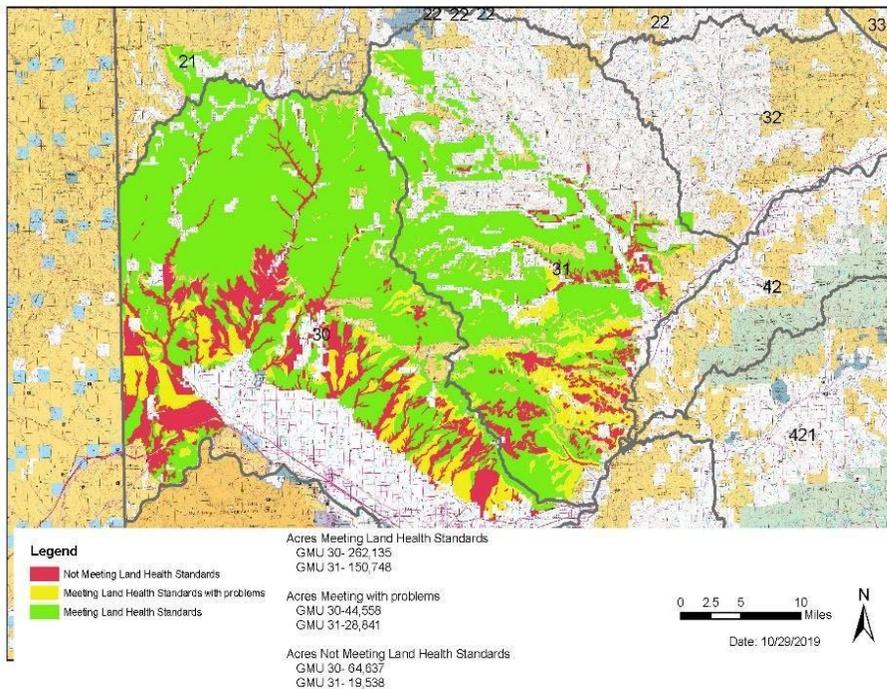


Figure 10. Land Health Assessment GMUs 30 and 31, Data Analysis Units D-11 and D-41 in west-central Colorado. From (USDI Bureau of Land Management 2019b).

The degraded habitat quality may be reflected by the ungulate reproduction in D-11. Fawn:doe ratios have declined from 70.0 fawns:100 does in 1981 to 51.6 fawns:100 does in 2020. In addition, calf:cow ratios in overlapping E-10 have declined from 61.5 calves:100 cows in 1983 to 35.7 calves:100 cows in 2020.

Drought

A critical contributor to the poor habitat quality in D-11 is long-term drought. Long-term drought and the impacts to the forage and wildlife in D-11 are severe, cumulative, and long-lasting. Drought can impact foraging opportunities for ungulates (Aikens et al. 2020), negatively impact fawn survival (Tosa et al. 2017) and alter the timing of annual elk migration (Rickbeil et al. 2019).

The US Drought Monitor (USDM) is a partnership between the National Drought Administration Center, the US Department of Agriculture (USDA), the National Oceanic and Atmospheric Administration (NOAA) that compiles and publishes drought conditions nationwide on a weekly basis since January 6, 2000. These conditions are categorized into five levels of drought that provide information about potential consequences to rangelands and agriculture (National Integrated Drought Information System NIDIS - Drought.gov 2021):

- D0: Abnormally Dry
 - Precursor to drought.
 - Hay production decreases.
 - Rangeland is dry.
 - Irrigation begins sooner.
- D1: Moderate Drought
 - Rangeland growth is stunted.
 - Very little hay is available.
 - Dryland crops suffer.
 - Wildfires increase.
- D2: Severe Drought
 - CRP lands suffer.
 - Farmers reduce planting.
 - Producers sell cattle.
 - Fire season is extended.
- D3: Extreme Drought
 - Pasture conditions worsen.
 - City landscapes die.
 - Large fires develop.
- D4: Exceptional Drought
 - Dust storms and topsoil removal are widespread.
 - Agricultural and recreational economic losses are large.

It is critical to point out that even at D1 levels, rangeland growth is stunted, and wildfires increase. From these data, it is clear that drought has adversely affected the vegetation and wildlife long-term. In D-11, an average of 40% of the landmass in Mesa, Garfield, and Rio Blanco Counties is impacted by some level of drought. The longest duration of drought (D1-D4) in these counties lasted 204 weeks beginning on February 12, 2002 and ending on January 9, 2006. During July of 2002, D4 Exceptional Drought affected an average of 90% of the landmass in these counties. The most intense drought in these counties began on October 6, 2020 and continues to the date of this report (February 23, 2021) a period of more than 20 weeks. More than 50% of the land area in Mesa, Garfield, and Rio Blanco counties is experiencing D4 Exceptional Drought (National Integrated Drought Information System NIDIS - Drought.gov 2021).

Pine Gulch Fire

The Pine Gulch Fire, the third largest wildfire in state history, was sparked by lightning on July 31, 2020. The fire burned more than 567 km² before it was fully contained in late September. Most of the fire burned in D-41 but more than 194 km² in GMU 30 were also burned (Figure 11). Approximately 145 km² of winter range and 90 km² of summer range in D-11 were impacted. It is likely that the impacts from the Pine Gulch Fire will decrease survival of wintering deer in GMU 30 for the next 20 years.

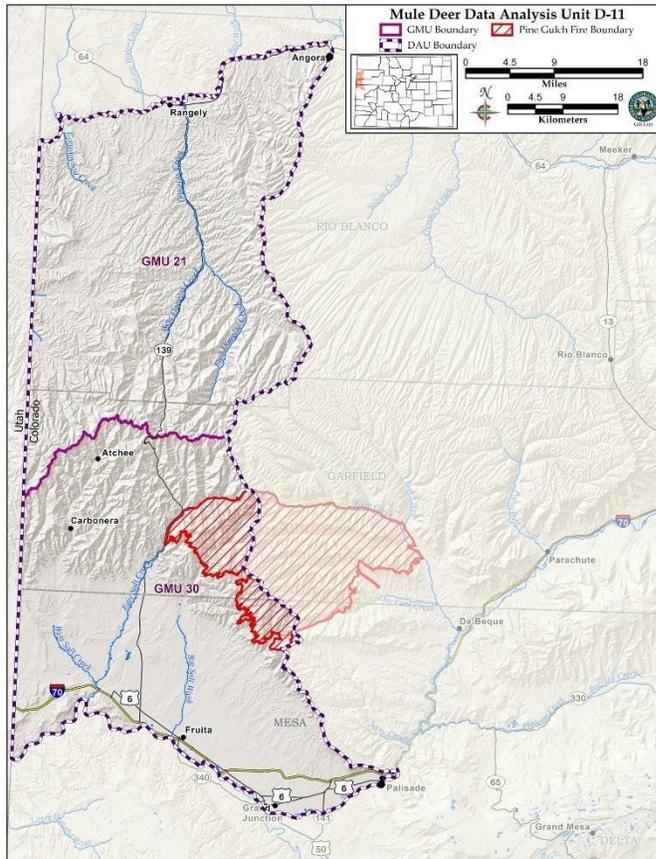


Figure 11. Pine Gulch burn location and extent in Data Analysis Unit D-11 in west-central Colorado.

The intensity of the fire was highly variable across the landscape, with large expanses of both high and low intensity burns interspersed with a matrix of varying severity (Figure 12). Areas of lower intensity and patchy fire distribution will likely encourage a flush of regrowth in the vegetation, particularly in mountain shrub species, on which mule deer rely for winter forage. This regeneration will be beneficial to mule deer in both the short and long term. Areas of higher intensity fire will take longer to regenerate and provide forage for deer. In addition, there is the potential for revegetation to be dominated by invasive plants or those with limited value to mule deer. It will be critical for land management agencies and private landowners to collaborate while reclaiming targeted areas affected by the Pine Gulch fire, with the intention of long-term habitat management that benefits wildlife.

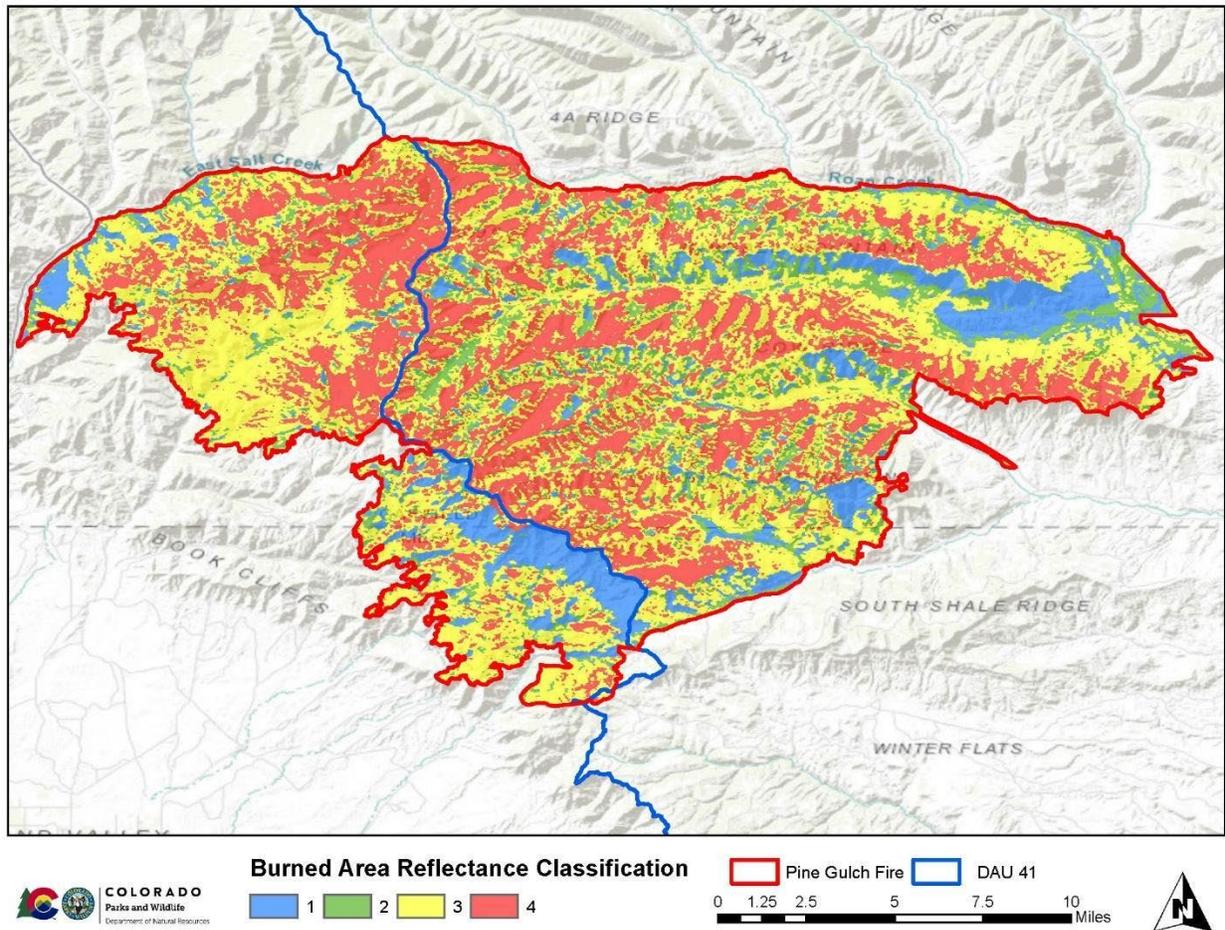


Figure 12. Pine Gulch Fire severity by Burned Area Reflectance Classification in west-central Colorado.

In late 2020, BLM, CPW and private landowners collaborated to identify approximately 20,000 acres of the burned area for re-seeding with native vegetation. Approximately 1,500 acres were identified as high-priority wildlife habitat and received a higher proportion of forb and shrub seeds to have the greatest benefit to deer and elk.

Secretarial Order 3362 and State of Colorado Response

On February 9, 2019, the US Department of Interior issued Secretarial Order 3362 to encourage partnerships between federal and state agencies to improve big game winter range and migration corridors APPENDIX II: US DEPARTMENT OF INTERIOR SECRETARIAL ORDER 3362. The order directs appropriate US agencies including US Fish and Wildlife Service (USFWS), National Park Service (NPS), and Bureau of Land Management (BLM) to work in close partnership with the State of Colorado, among others, to enhance and improve the quality of big-game winter range and migration corridor habitat on federal lands. The directive encourages scientific endeavors and land management actions to benefit wildlife such as elk, mule deer, and pronghorn. The order also specifically directs federal land management agencies to restore sagebrush ecosystems through intentional management projects that remove encroaching trees, rehabilitate wildfires, and treat exotic/invasive vegetation. In addition, Secretarial Order specifically directs land management agencies to revise feral

horse appropriate management levels (AML) or remove feral horses from wildlife migration corridors and winter range if the habitat is degraded due to the presence of the feral horses.

In response to the Secretarial Order, CPW designated five priority landscapes, including D-11, to guide habitat management and conservation efforts for the agency and conservation partners (APPENDIX III: CPW ACTION PLAN FOR SO3362). The designation of the Bookcliffs landscape prioritizes the winter ranges, migration corridors, and sagebrush ecosystems that are critical to the mule deer herd in D-11. Intentional prioritization of these habitats will improve the sustainability, resiliency, and production of the mule deer in D-11 by improving forage conditions, decreasing disturbance during fawning and winter seasons, and restoring and/or protecting migration routes.

Game Damage

Mule deer conflicts with agriculture are most common in the Grand Valley near Fruita due to cultivation of crops, usually corn that occurs there. From 2009 to 2020, there were only four game damage claims submitted to CPW by agricultural producers (Table 2). The total value of damage claimed during that time was \$10,872.00 and the average claim was \$2,718.00. All claims were related to damage to growing corn crops.

Claim Date	Damage	GMU	Amount
1 /26/2009	Growing Corn	30	\$ 2,624.00
3 /11/2010	Growing Corn	30	\$ 6,179.00
12/29/2010	Growing Corn	30	\$ 495.00
11/19/2014	Growing Corn	30	\$ 1,574.00

Table 2. Mule deer game damage claims in Data Analysis Unit D-11 in west-central Colorado, 2009 - 2020.

Since 2008, CPW has issued limited licenses to help prevent and mitigate this type of crop damage. Private land-only archery licenses, restricted to the area south of the Highline Canal and east of West Salt Creek, are valid from the beginning of archery season through the end of October to harvest deer that are causing damage. These licenses have helped keep the number and cost of claims at an acceptable level.

HERD MANAGEMENT HISTORY, ISSUES AND STRATEGIES

Overview of Procedures to Estimate Population Size

Estimating population size of wild animals over large geographic areas is a difficult and inexact exercise. A complete count of each individual animal in a population is prohibitively expensive and inherently inaccurate. Multiple research projects have attempted to count a known number of animals in large, fenced area and have failed to accurately do so. In most cases, fewer than 30% of the animals can be observed and counted.

The most accurate method of estimating population size available at this time is through computer modeling using known biological parameters and the most accurate biological and harvest data for a given population. CPW conducts aerial classification surveys of deer and elk herds nearly every year in December or January to document post-hunt age and sex ratios. These surveys are not a census of the population and are at best a very coarse index of population trend. They are simply a snapshot of the composition of the herd immediately following hunting seasons.

CPW then incorporates the observed post-hunt age and sex ratios, along with hunter harvest, estimated survival rates of adults and juveniles, and wounding loss rates into population models developed by (White and Lubow 2002). These population modeling methods represent CPW's current best estimate of population sizes. It is important to note that these models are subject to revision and improvement as further wildlife management research provides more accurate modeling techniques. As better information becomes available, such as new estimates of age-specific or sex-specific survival rates, wounding loss, sex ratio at birth, density estimates, or new statistical modeling techniques, better population estimates may be derived in the future.

Post-hunt Population Size

The deer population in D-11 has dropped precipitously since the early 1990's. The population was more than double the current size throughout the middle of the 20th century. Like most mule deer herds in the western US, the Bookcliffs deer population has declined since then and stagnated at a much smaller size. Since 2004, the D-11 herd has plateaued at around 7,000-10,000 deer (Figure 13).

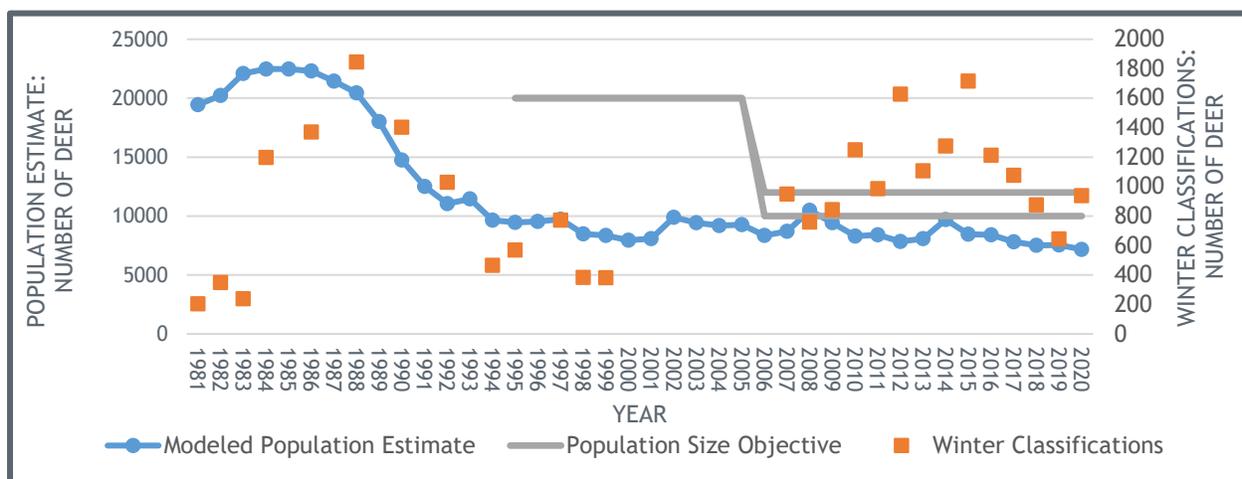


Figure 13. Modeled post-hunt population size, objective range, and winter classifications, in Data Analysis Unit D-11 in west-central Colorado, 1981-2020.

Modeled estimates of the number of deer in D-11 have changed over time with the type and complexity of the models used. Until 1995, CPW estimated the population size at approximately 20,000 deer. This estimate was the basis for the provisional population size objective in place between 1995-2006. In 2005, updated models estimated the population at approximately 8,600 deer. There was general agreement among CPW staff and interested stakeholders that the population was too low and there was strong demand to set an attainable population objective to grow the herd. Following a full Herd Management Planning process and incorporation of public input, an objective range of 10,000-12,000 deer was selected and has guided deer management in D-11 since.

Further advancements in CPW models currently estimate the 2020 post-hunt deer population in D-11 to be approximately 7,175 deer. This number does not reflect an actual population size decrease, simply a further refinement provided by improved modeling techniques. For a more in-depth explanation of population modeling and population size estimates, see Overview of Procedures to Estimate Population Size.

Post-hunt Herd Composition

The composition of the deer population in D-11 is monitored annually with helicopter surveys on winter range. Observed deer are classified as does, fawns, yearling bucks, two-year-old bucks, and mature bucks and provide a snapshot of the current condition of the population.

Fawn:doe ratios

Fawn:doe ratios have been declining steadily since 1981, from 70 fawns:100 does in 1981 to 51.6 fawns:100 does in 2020 (Figure 14). This decline mirrors fawn: doe ratio declines across much of western Colorado and is addressed more fully in the Population Decline and Stagnation section. Although some of the issues facing the D-11 herd are beyond the scope of this HMP, CPW staff and interested stakeholders are committed to managing this herd with strategies that promote a robust, healthy, and resilient population. CPW will continue collaborating with BLM and private landowners to identify and implement opportunities for habitat improvements. CPW staff will participate fully in land management processes that affect D-11, including BLM Resource Management Plans, wildfire mitigation, and energy development mitigation. Ongoing disease surveillance will focus on detecting chronic wasting, hemorrhagic, adenovirus diseases, and employing effective tactics to mitigate the impacts on the herd.

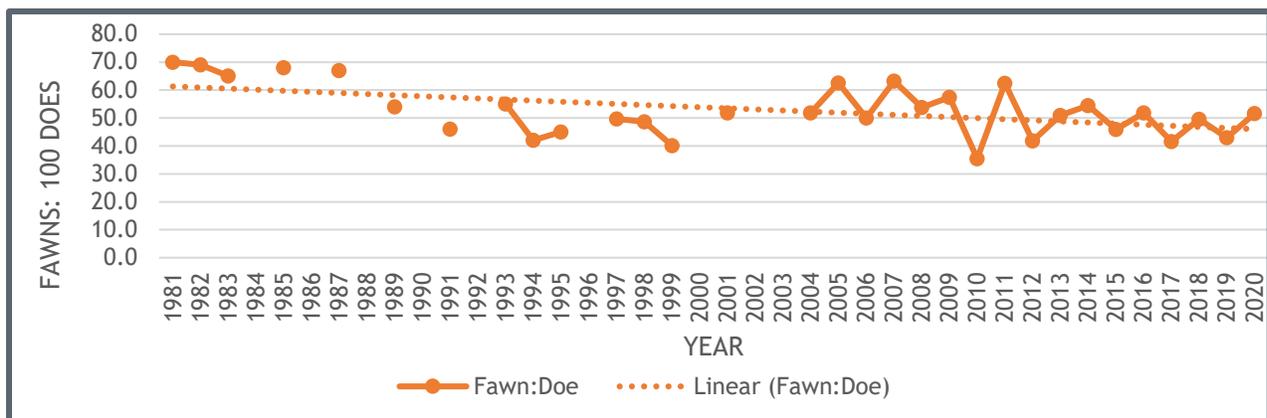


Figure 14. Observed fawn: doe ratios in Data Analysis Unit D-11 in west-central Colorado, 1981-2020.

Buck:doe ratios

Buck:doe ratios in D-11 have been increasing slowly since 1981 and are generally within or near the current sex ratio objective range of 30-35 bucks:100 does (Figure 15). This unit has been managed for older age-class and quality buck harvest since 1995.

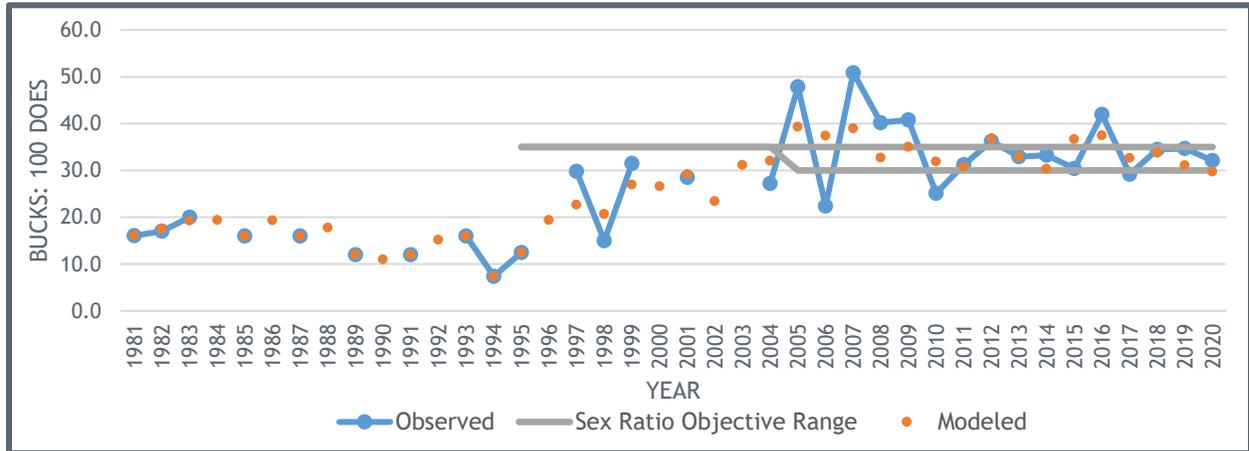


Figure 15. Observed buck: doe ratios in Data Analysis Unit D-11 in west-central Colorado, 1981-2020.

Harvest and Hunters

License Allocation

CPW specifies hunting licenses in D-11 by sex, season, GMU, and method of take to manage the deer herd most effectively. Currently, licenses are limited in number for all seasons, sexes, and method of take. Antlerless licenses are extremely limited in number and primarily issued for seasons that address agricultural damage.

Harvest

Deer harvest in D-11 has been generally stable since the mid 1990's, when antlered licenses were completely limited to increase the age of harvested bucks (Figure 16). Doe harvest is driven by damage prevention efforts and has fluctuated accordingly.

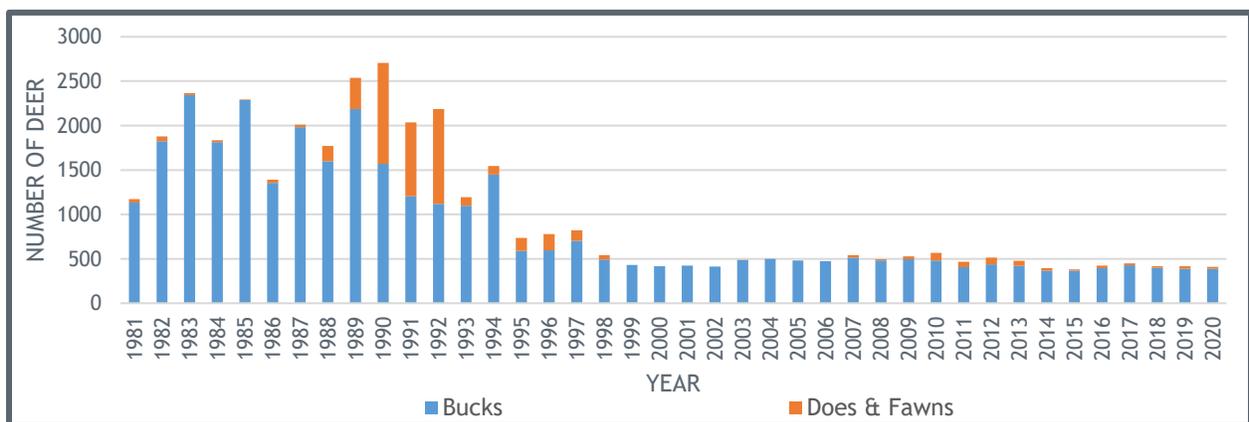


Figure 16. Estimated annual deer harvest in Data Analysis Unit D-11 in west-central Colorado, 1981-2020.

Hunters

On average, 660 hunters spend over 3,400 recreation days annually in D-11 pursuing deer (Figure 17). Although the number of hunters has remained constant for nearly 20 years, success rates have declined recently, and the number of hunting days has increased. These changes are likely a result of increased demand for, and decreased availability of, older age class bucks.

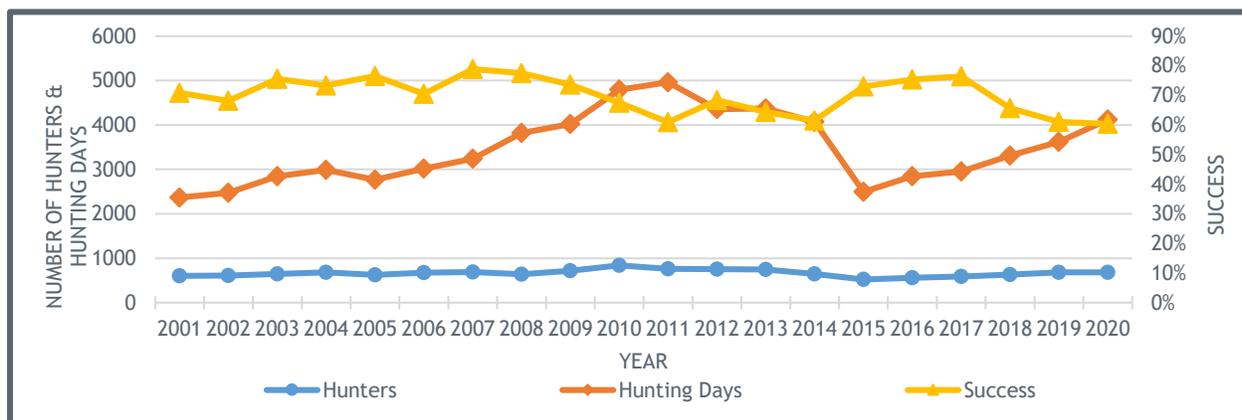


Figure 17. Estimated annual deer harvest, hunters, and success in Data Analysis Unit D-11 in west-central Colorado, 2001-2020.

Economic Benefits of Hunting

Hunting provides a significant economic contribution to Colorado and DAU D-11 specifically. Economic data are available at the county level but are not analyzed in alignment with DAU boundaries. However, the three counties that overlap with D-11 rely on substantial economic benefits from hunting expenditures (Table 3). Expenditures include lodging, equipment sales, meals, and supply purchases. These economic contributions are based on all types of hunting, including small game, big game, and waterfowl (Southwick Associates 2018).

County	GDP Contribution	State & Local Taxes	Jobs
Mesa	\$ 13,483,000.00	\$ 1,712,000.00	392
Rio Blanco	\$ 5,086,000.00	\$ 1,229,000.00	172
Garfield	\$ 8,961,000.00	\$ 1,369,000.00	217

Table 3. Economic benefits of hunting in Data Analysis Unit D-11 in west-central Colorado, 2001-2019 (Southwick Associates 2018).

Past Management Strategies

Like all big game DAUs in Colorado, D-11 is managed under general guidelines set every five years during the statewide Big Game Season Structure (BGSS) process. For a further explanation of BGSS, see INTRODUCTION AND PURPOSE.

Under the BGSS, the complexity of license structure in D-11 has increased over the years in response to the progressively more complex management issues facing this herd and deer across the state of Colorado.

However, management strategies in D-11 have not changed substantively for two decades with quality buck management and little to no doe harvest. Prior to 1995, buck licenses were unlimited in number and buck ratios were low but stable during the 1980's and early 1990's. In 1995, all buck licenses in D-11 were limited to improve the quality of harvested bucks. In

2000, all deer hunting statewide became limited. These management changes steadily increased buck: doe ratios and the size and quality of bucks harvested through the mid-2000's. Since that time, buck: doe ratios and harvest quality have plateaued, likely due to severe winters as well as habitat loss and degradation. Antlerless licenses have been severely limited due to the ongoing decline and then stagnation of the population. Minimal doe harvest results from the Grand Valley damage seasons and archery and muzzleloader seasons.

Current Issues

Although some of the issues facing the D-11 herd are beyond the scope of this HMP, CPW staff and interested stakeholders are committed to managing this herd with strategies that promote a robust, healthy, and resilient population. CPW will continue collaborating with BLM and private landowners to identify and implement opportunities for habitat improvements. CPW staff will participate fully in land management processes that affect D-11, including BLM Resource Management Plans, wildfire mitigation, recreation planning, and energy development mitigation. Ongoing disease surveillance will focus on detecting chronic wasting, hemorrhagic, and adenovirus diseases, while employing effective tactics to mitigate the impacts on the herd.

Competition with Feral Horses

The Bureau of Land Management manages over 95,000 feral horses and burros on 217,774 km² across 10 Western states, including Colorado. The Wild Horse and Burro Program's goal is to manage healthy feral horses and burros on healthy public rangelands. Areas that are managed for feral horses are designated as Horse Management Areas (HMAs). Areas with free-roaming horses and burros but not managed for them are designated as Horse Areas (HAs). The BLM determines the Appropriate Management Level (AML), or the number of feral horses the habitat can support with on a given HMA. Since HAs are not managed for feral horses and burros, and they are not intended to be present on these lands, AMLs are not designated for these areas.

There are no designated HMAs (managed for feral horses) in D-11 (USDI Bureau of Land Management 2020) (Figure 18), but an estimated 365 feral horses roam across the 517 km² West Douglas HA (USDI Bureau of Land Management 2020). During the summer of 2021, the BLM implemented a round up and removal of feral horses in the West Douglas HA. A total of 417 horses were gathered out of an estimated 450 individuals upon completion of the effort.

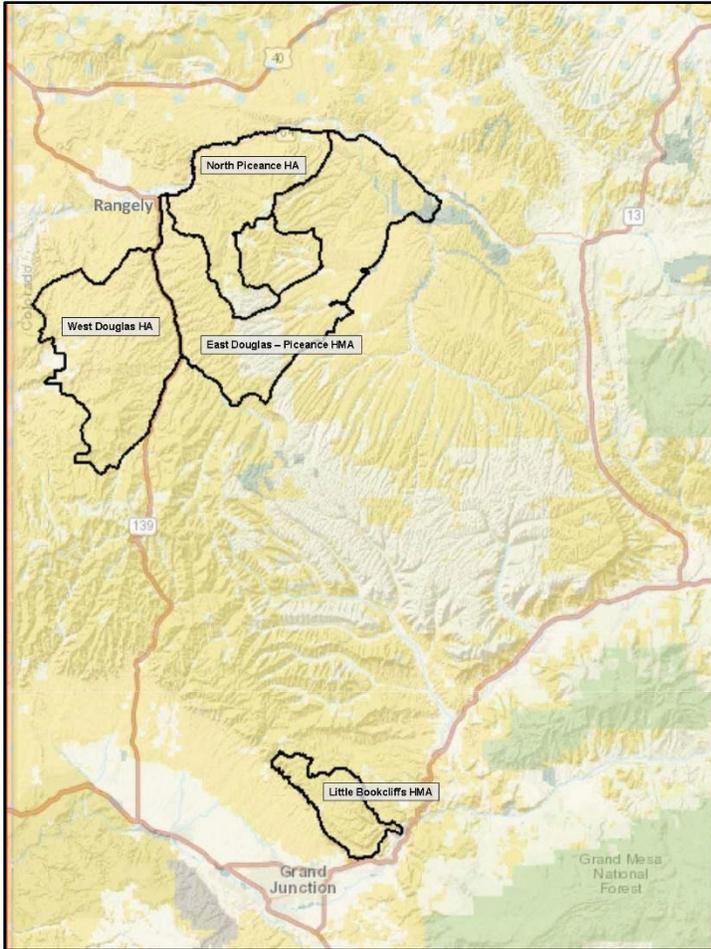


Figure 18. Wild Horse Management Areas (HMAs) and Horse Areas (HAs) in northwest Colorado, including D-11. Sourced from (USDI Bureau of Land Management 2021).

The areas used by horses overlap with mule deer winter range, winter concentration areas, and severe winter range. These areas are critical to the sustainability and resilience of the D-11 herd and the high levels of non-designated horse use contribute directly to habitat degradation. Feral horses degrade sagebrush habitats and riparian areas. Negative impacts from feral horses to wildlife and wildlife habitat include spatial, water source, and forage competition, and habitat degradation (Hall et al. 2016, Boyd et al. 2017, Danvir 2018).

In addition to documented adverse impacts to habitat and wildlife populations in other areas, the habitat damage done by feral horses in D-11 is readily observable. In APPENDIX V: PUBLIC SURVEY RESPONSES, there were 25 written comments submitted through the public survey that specifically identified feral horses as adversely affecting the deer herd and habitat in D-11.

Disease

- Chronic Wasting Disease

Chronic wasting disease (CWD) is a fatal, infectious disease that affects deer, elk, and moose in Colorado. The disease is characterized by progressively declining body condition and mental responsiveness due to deterioration of the brain and nervous system. CWD can have

significant negative impacts to the health and sustainability of free-ranging herds (Miller et al. 2008). It is likely unfeasible to eliminate CWD from free-ranging cervids in Colorado (Miller and Fischer 2016). For this reason, CPW has focused on developing and sustaining practicable management actions of CWD surveillance, monitoring, and control based on the prevalence of the disease in each herd. Because CWD appears to affect deer at higher rates than elk, CPW’s management actions focus on deer and concurrently monitor prevalence trends for all deer, elk, and moose in each area.

In 2018, CPW published a response plan to guide management of CWD in Colorado. The plan generally follows recommendations from the Western Association of Fish and Wildlife Agencies’ plan Recommendations for Adaptive Management of Chronic Wasting Disease in the West (Western Association of Fish and Wildlife Agencies 2017). CPW’s Colorado Chronic Wasting Disease Response Plan outlines actions to assess and control CWD prevalence at the herd level (Colorado Parks & Wildlife 2020a). The management recommendations include a 5% prevalence threshold in adult male animals for compulsory intervention in management. This compulsory intervention mandates the implementation of strategies intended to reduce the prevalence to below 5%.

In relation to D-11, strong consideration has been given to the recommendations in CPW’s CWD Response Plan. Specifically, if prevalence in adult males in D-11 reaches the 5% prevalence threshold, the following management actions to control CWD prevalence will be implemented as feasible and appropriate:

- A. Reduce Population or Density
- B. Reduce Male/Female Ratio
- C. Change Age Structure
- D. Maximize Ability to Remove Diseased Animals at the Smallest Scales Possible (hot spots)
- E. Remove Motivations that Cause Animals to Congregate
- F. Minimize Prion Point Sources
- G. Incorporation of CWD Management Actions and Prevalence Threshold into Herd Management Plans

To accurately estimate the prevalence of CWD in a herd, sufficient samples must be submitted for testing over a 1-3-year period. Between 2003 and 2018, 279 deer were submitted for CWD testing in D-11 and one animal tested positive in 2009. From 2015-2019, submissions have averaged only four deer annually. This voluntary submission rate is too low to determine whether CWD prevalence is above or below the management threshold.

Consequently, the submission of all harvested animals was mandatory in 2020, enabling CPW to obtain a more accurate estimate of the prevalence of CWD in D-11. A total of 232 deer were submitted (3 does and 229 bucks), and 6 bucks tested positive for CWD (Table 4).

GMU	Does	Bucks	Positive	Prevalence	95% CI
21	1	199	6	3.0%	1.1% - 6.4%
30	2	30	0	0.0%	0.0% - 10.9%
D-11	3	229	6	2.6%	1.0% - 5.5%

Table 4. 2020 CWD Surveillance Results Data Analysis Unit D-11 in west-central Colorado. From CPW Unpublished Data.

The current prevalence in D-11 is estimated at 2.6%, which is below the management intervention threshold of 5%. However, two deer DAUs adjacent to D-11, D-07 and D-41, both have prevalence above 10% (Table 5). Elk prevalence in the overlapping E-10 DAU is

estimated at less than 5% based on multiple years of pooled data. Elk prevalence will be monitored in concert with efforts to manage the prevalence in overlapping deer herds but generally have lower prevalence. Proactive management of chronic wasting disease includes long-term decreases in deer densities and buck: doe ratios. Decreasing the number of deer and bucks in a herd will likely slow the spread and rate of infection of CWD in D-11.

GMU	GMU Elk Prevalence	DAU Elk Prevalence	Elk DAU	GMU Deer Prevalence	DAU Deer Prevalence	Deer DAU
21	not available	<5%	E-10	3%	2.6%	D-11
22	not available	<5%	E-10	not available	15.0%	D-07
30	not available	<5%	E-10	0%	2.6%	D-11
31	not available	<5%	E-10	not available	8.2%	D-41
32	not available	<5%	E-10	not available	8.2%	D-41
not available means results are still pending or insufficient samples have been tested						

Table 5. Chronic wasting disease surveillance results in deer and elk in D-11 and adjacent herds. From (Colorado Parks & Wildlife 2020b, c).

- Hemorrhagic Disease

Hemorrhagic diseases are caused by multiple viruses and can cause death by damaging blood vessels in lungs, intestines, and other organs. Epizootic hemorrhagic disease virus (EHDV) and bluetongue virus (BTV) are transmitted by biting midges in the late summer and early fall when hot weather conditions support vector abundance and disease transmission (Stallknecht and Howerth 2004). These diseases also demonstrate annual variation, with periodic outbreaks of severe disease followed by periods with lower mortality. The variability in disease from year-to-year is not completely understood but may involve herd immunity and weather patterns (Stallknecht and Howerth 2004). Generally, mule deer populations do not experience widespread die-offs during an outbreak of either BTV or EHDV. However, EHDV was attributed to a 10-25% decline in the mule deer population in the Mesa Verde deer population in southwest Colorado during the mid-1990s (Colorado Parks & Wildlife 2014). EHDV also appears to damage the testes of mule deer bucks. Affected bucks retain antler velvet and fail to cast antlers (also known as “cactus bucks”) due to testicular damage and subsequent decreases in testosterone production (Fox et al. 2017). Both CPW staff and landowners have observed concentrations of “cactus bucks” in D-11 along the state line, especially in GMU 30.

In winter 2015 - 2016, a new hemorrhagic disease found in both deer and elk, adenovirus hemorrhagic disease (AHD), was detected in Colorado and has since been confirmed in E-10 and overlapping deer DAUs. AHD is different from other hemorrhagic diseases in that it does not require an intermediate insect host. Since AHD is spread animal-to-animal, it can be passed to other individuals in all seasons. This virus has been involved in significant die-offs of both elk calves (Fox et al. 2017) and deer fawns (Woods et al. 1996). AHD has the potential to impact deer in D-11 as well as overlapping elk and adjacent deer DAUs in the future. Ongoing surveillance efforts include the testing of all suspect animals and carcasses in Colorado.

Population Decline and Stagnation

Since the early 1990’s, the population of D-11 has declined dramatically from historic levels and has stabilized at roughly half the size of previous estimates. This decline and stagnation is consistent with many mule deer populations across the West (Western Association of Fish and Wildlife Agencies 2019). Mule deer population decline is likely attributable to a suite of factors, but it is likely that habitat plays a critical role. Bishop et al. (2010) and Johnson et al. (2017) demonstrated that mule deer reduce their selection of habitat near residential and

energy development, effectively decreasing the area available as functional habitat. In addition, deer populations managed for high buck ratios have been correlated with lower fawn ratios (Bergman et al. 2011, Bergman et al. 2015). In D-11 specifically, probable factors for population decline include long-term habitat degradation, habitat loss and fragmentation associated with energy development, and management strategies that favor high buck: doe ratios.

Habitat Quality Decline

As referenced in Habitat Condition and Capability, much of the habitat in D-11 is degraded and in poor condition. CPW works closely with landowners and land management agencies to enhance wildlife habitat. Ongoing partnerships have resulted in habitat improvement projects, conservation easements and other methods of enhancing the wildlife habitat in D-11. Much of the winter range in D-11 has been treated using a variety of methodologies including pinyon-juniper and mountain shrub mastication, energy infrastructure reclamation, weed control, and seeding. Most of these projects were implemented with the specific intent to benefit mule deer habitat.

Outdoor Recreation

Recreational activity, both motorized and non-motorized, negatively impacts deer by increasing activity levels and decreasing resting and feeding times (Larson et al. 2016). Portions of the North Fruita Desert in GMU 30 are managed specifically for high intensity mountain bike recreation. Although winter closures are in place for some areas, there is potential for overlap in deer use and mountain biking during winters with heavy snowpack. CPW works collaboratively with BLM's Grand Junction Field Office to mitigate and minimize the impacts of mountain biking and other forms of recreation on the deer in D-11.

Energy Development

Much of D-11 lies atop significant deposits of natural gas and oil shale open to mineral extraction. Energy development is concentrated on the state line and Texas Mountain areas. Although inherent fluctuations in commodity prices as well as political considerations affect the demand for oil & gas and resulting development intensity, oil and gas wells and the associated infrastructure have increased dramatically across D-11 since 1970 (Figure 19).

Although studies have shown somewhat varied impacts from energy development, it can cause behavioral and distributional shifts in mule deer and affect the quantity and quality of available habitat. Migratory mule deer select areas with increased cover and have increased their rate of travel through developed areas (Anderson Jr. 2019). These behavioral changes increase with development intensity (Sawyer et al. 2012).

Although there is some evidence that mule deer in the Piceance Basin show no avoidance of infrastructure (Anderson Jr. 2019), other studies have shown that mule deer avoid areas within 700 m-2,700 m of well pads with active drilling (Sawyer et al. 2010, Northrup et al. 2015). Over 22% of winter range in D-11 is within 700 m of a well pad, and nearly 80% is within 2,700 m. These calculations do not account for the impact of associated infrastructure such as major roads, they solely account for oil & gas wells. This scale of energy development is not compatible with productive mule deer populations (Johnson et al. 2017).

The sheer number of wells drilled in D-11 (Figure 19) is a strong indicator that the D-11 herd is impacted by energy development. Stagnant population size, decreasing fawn:doe ratios, and the degraded habitat in D-11 are likely affected by development of energy extraction infrastructure.

Much of the development to extract the energy resources in D-11 has been completed and energy extraction has entered the production phase. This production phase is generally associated with less overall disturbance and fewer impacts to wildlife.

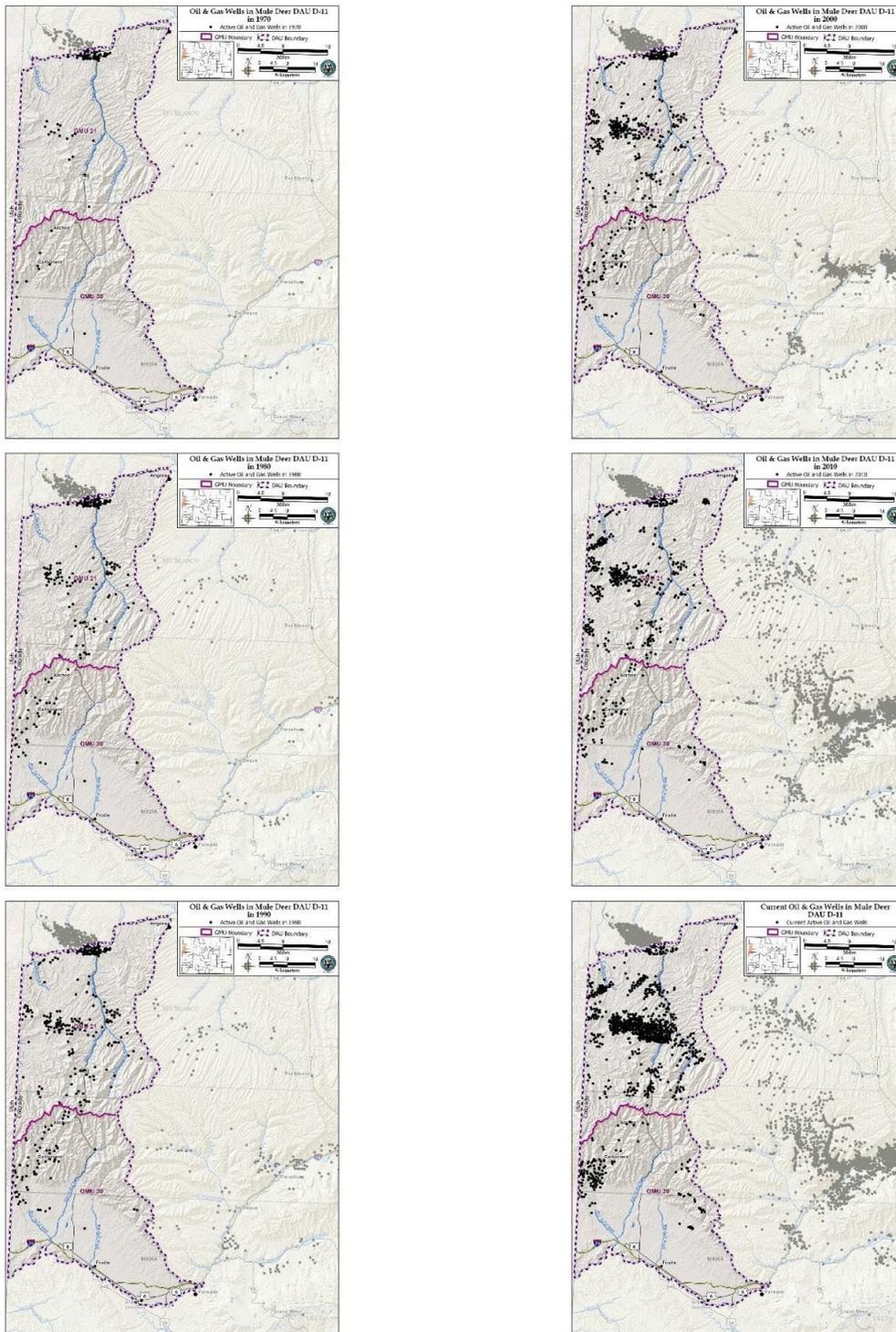


Figure 19. Oil and Gas Wells in Data Analysis Unit D-11 in west-central Colorado, 1970-2018. Locations compiled from (Johnson et al. 2017) and the CPW GIS Unit.

Public Hunting Access

Although roughly 80% of D-11 is managed by the BLM, public hunting access can be challenging in some areas due to large tracts of privately held properties that are not hunted, isolated public lands interspersed with private lands, prohibitively steep or impassable topography, and variations in seasonal deer use. Energy companies own significant portions of the DAU and control public access of these large tracts of mule deer habitat. For example, a 5,000-acre property located on the boundary of GMUs 21 and 22 was historically available to public hunters. The property owner no longer allows public access to this area. These large tracts of un hunted lands act as sanctuaries and restrict public hunting opportunity as well as CPW's ability to manage the associated deer herds.

Residential Development

Residential development is associated with poor population performance in mule deer (Johnson et al. 2017). Only 19% of D-11 is privately owned, which effectively caps the total lands available for residential development (Figure 3). However, the density of development on those private lands since 1970, particularly in the Grand Valley, has increased dramatically (Figure 20), despite the total footprint having changed little. The increased densities and conversion of agricultural lands to housing have created some non-migratory populations that depend on anthropogenic food sources and protection from predation. It is likely that conflict between homeowners and mule deer in the Grand Valley will increase in coming years.

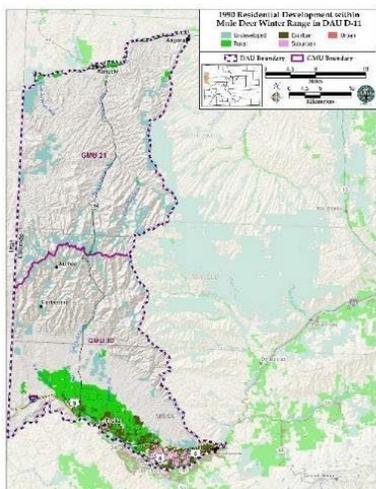
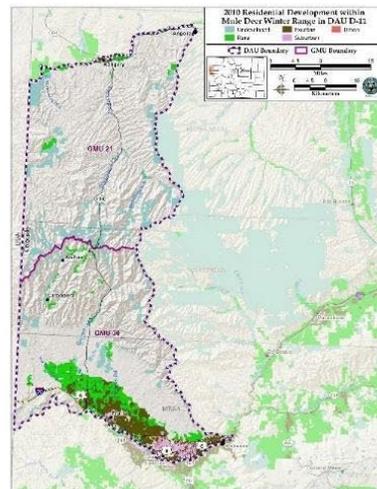
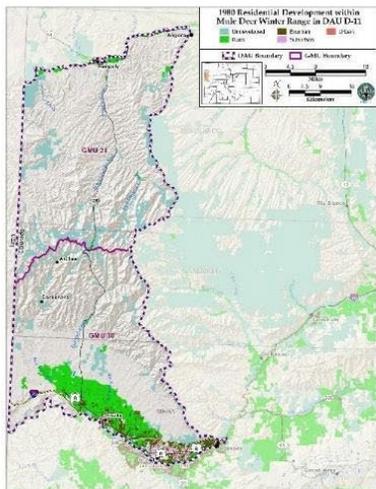
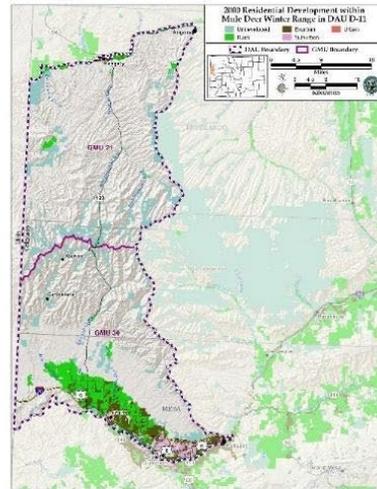
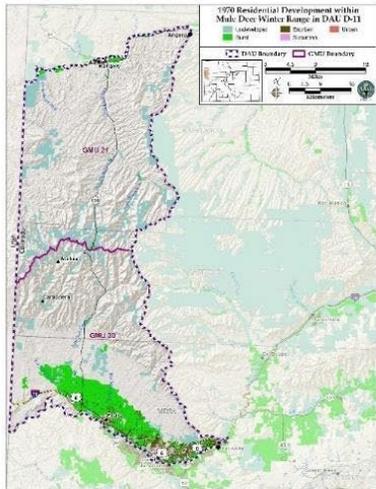


Figure 20. Residential Development in Data Analysis Unit D-11, 1970-2010 (Johnson et al. 2017) and CPW GIS Unit.

PUBLIC INVOLVEMENT

Public involvement is a critical component of herd management planning, ensuring that hunters, landowners, and other interested stakeholders can participate in the development of management objectives for each herd.

Public Survey

The public outreach process for the D-11 HMP revision was extensive and yielded significant public input. During the summer of 2020, all applicants that successfully drew a license from 2016-2020 were contacted to solicit their input. A total of 2,426 deer hunters were invited to participate in a virtual meeting held in August of 2020. These same people then received the link to submit feedback through an online survey that was posted on the CPW website from September 17 to October 17, 2020. Additional key individual stakeholders including private landowners, outfitters, and other members of the public were encouraged to participate in the survey. The full survey can be found in APPENDIX IV: PUBLIC SURVEY and the complete text and analysis of all responses can be found in APPENDIX V: PUBLIC SURVEY RESPONSES. Public input into the draft plan was solicited for a 30-day period in November 2021. Local officials and land management agencies were contacted directly to request their feedback about the plan with revisions incorporated.

There was significant public feedback received during the public scoping process in October 2020 with 481 individuals responding to the online survey. The majority of respondents to the online survey had not attended the virtual meeting held in August (96% new contacts). Of the 391 respondents who answered the question “Which management approach to the buck-to-doe ratio objective and hunting frequency do you prefer?” nearly equal numbers chose each of the three alternatives. However, the majority (61%) supported a decrease to the buck: doe ratio. Only 39% supported maintaining the current sex ratio objective. Of the 397 respondents who answered the question “Which population size objective do you prefer?” the majority (71%) supported a slight or moderate decrease. The greatest support (39%) was for a moderate decrease and only 29% of respondents supported maintaining the objective.

Respondents asked to share their concerns about future deer hunting experiences in D-11 were able to check all the available choices that applied to them. The most frequently identified concerns were the population size and the male antler size. Overcrowding and land access, both private and public, were also selected but at lower levels.

Respondents also had the opportunity to provide free form comments about their concerns. The most frequent topic that respondents identified were feral horses, energy development, low population size, predators, low fawn:doe ratios, hunting access and frequency, and antler quality. Although several respondents identified chronic wasting disease as a concern, most respondents were most concerned about the potential of the disease to affect future generation’s ability to enjoy deer hunting or for the potential of the disease to reduce hunting opportunities. Most respondents were not concerned about eating meat harvested from D-11 or for themselves or their family.

Public Comments on the Draft Plan

CPW posted the draft plan with identified preferred alternatives online and accepted comments for 30 days between January 21 to February 21, 2022. The full comments submitted are available in [Appendix VI](#). CPW also sent a draft to the Bureau of Land Management and presented it to the Mesa, Garfield, and Rio Blanco County Commissioners, and the White River Habitat Partnership Program Committee.

Public comments on the draft plan addressed a number of concerns about the management of the D-11 population, the management of deer in Colorado and other issues facing deer across

the state. There was some support for the preferred alternatives as well as concerns about reducing and attaining the objectives for this herd based on skepticism regarding current population estimates. Concerns included poor habitat conditions, predation impacts, feral horses, chronic wasting disease, and increasing human disturbance.

Management Alternatives

During the initial public scoping period, the virtual public meeting, and the online survey, three alternatives were proposed for the population size (Table 6). For each parameter, the three options were a comparison of the 2019 population size estimate of 7,453 deer. Stakeholders were educated about the three alternatives, how they may address current issues, and the likely consequences of each alternative.

Population Objective Alternatives

Alternative 1: 10,000 - 12,000 (Status quo)

The current population size objective in D-11 is 10,000 - 12,000 deer. The herd has not reached that range since 2008 and declined to 7,175 deer in 2020. Fawn: doe ratios have consistently declined from 63.2 fawns: 100 does in 2007 to 43.0 fawns: 100 does in 2019 before rebounding in 2020 to 51.6 fawns: 100 does. Notable improvements to habitat quality and quantity tied to issues such as drought would need to improve considerably for production levels to attain this objective. Numbers of licenses would likely need to decrease over time. No measures to address CWD would be implemented with the exception of periodic testing to monitor disease prevalence.

Alternative 2: 8,000 - 10,000 (Slight decrease)

This alternative seeks to grow the population back towards the lower end of the current objective range. However, the herd has not been able to attain numbers this high since the early to mid-1990's (Figure 13). The bottom of this objective range is higher than the current population estimate, which is unlikely to increase without increased harvest and lower buck: doe ratios. Given that the current population is below the low end of this alternative range, no change in licenses would occur and a slight increase in population resilience is expected if habitat conditions were to improve. Proactive measures to address CWD prevalence would be deferred until infection rates rise (Table 6).

Alternative 3: 5,000 - 8,000 (Moderate decrease)

The D-11 herd, while remaining mostly stable over the last two decades, hovering between 8,000 - 9,000 animals, has shown a slow decline suggesting it has become stagnant (Figure 13). The slightly wider objective range for this alternative would allow for more flexibility in dealing with issues that could change significantly during the 10 years that this herd management plan will be in effect. During times of drought when habitat conditions are poor, the population could be drawn down to levels lower than it currently is by harvesting more bucks, which simultaneously addresses potential disease issues. In the event that drought wanes, competition with feral horses is reduced, and habitat conditions improve, the herd could be allowed to increase back to current or slightly higher levels. Recovery of the Pine Gulch Fire area has potential to see improvements in habitat production for deer over the next 5 - 10 years if given the opportunity to recover.

POPULATION SIZE ALTERNATIVES				
ALTERNATIVE	MANAGEMENT	ANTLERLESS LICENSES	CWD PREVALENCE	POPULATION RESILIENCE
1	Status quo	Long-term decrease	Increase	Decrease
2	Slight decrease	No change	No change	Slight increase
3	Moderate decrease	Moderate increase	May decrease	Moderate increase

Table 6. Proposed population size objective alternatives for Data Analysis Unit D-11 in west-central Colorado.

Sex Ratio Objective Alternatives

Three alternatives were proposed for the buck:doe ratio objectives (Table 7). For each parameter, the three options were a comparison of the current sex ratio objective of 30-35 bucks:100 does, which reflects data over the last decade. Buck:doe ratio objectives balance hunting opportunity and the chance to harvest an older age-class animal. Higher buck:doe ratios result in more bucks in the population and increase the number of quality animals available for harvest.

Alternative 1: 30-35 bucks:100 does (Status quo)

The current buck: doe ratio objective in D-11 is 30-35 bucks:100 does with the intention of providing a quality hunting experience. Antlered licenses are severely limited across all seasons. The population composition has reflected this management strategy consistently and has averaged 31.9 bucks:100 does since 2010. Under this limited harvest, no proactive steps will be taken to address the potential for higher prevalence of chronic wasting disease, range conditions, or overall population size.

Alternative 2: 27-32 bucks:100 does (Slight decrease)

In Colorado, there is evidence that high buck: doe ratios, limited licenses, and older age-class of harvested bucks are associated with lower fawn: doe ratios and lower herd performance (Bergman et al. 2011). Since 1995, when all deer licenses in D-11 were limited, buck:doe ratios have doubled, while the total population size and winter fawn:doe ratios have decreased approximately 20%. Although high buck: doe ratios are not the singular cause of the diminished and stagnant population size, it may be contributing to the poor herd performance. In addition, low hunting pressure associated with management strategies favoring higher buck:doe ratios are linked with higher prevalence of chronic wasting disease (Miller et al. 2020). Proactive management of chronic wasting disease includes long-term decreases in deer densities and buck:doe ratios. This buck: doe ratio allows CPW to decrease the number of bucks slightly in an effort to reduce the spread of CWD between D-11 and adjacent deer units. Allowing for a small increase in buck harvest may also address pressures from poor range conditions, resulting in improved herd performance.

Alternative 3: 20-26 bucks:100 does (Moderate decrease)

CWD levels in adjacent herds have experienced notable increases over the last decade. As noted in Alternative 2, proactive management of CWD has been shown to slow the spread of the disease. As rates of infection rise into double digits (e.g., D-07; Table 5), greater harvest of bucks may be necessary. This alternative takes an aggressive approach to restricting the spread and prevalence of CWD through moderate increases in buck harvest. The increase in buck licenses will significantly reduce the number of high quality individuals harvested.

BUCK-TO-DOE RATIO ALTERNATIVES				
ALTERNATIVE	MANAGEMENT	HUNTING FREQUENCY	DISEASE PREVALENCE	POPULATION HEALTH
1	Status quo	No change	Increase	Slight decrease
2	Slight decrease	Slight increase	No change	Slight increase
3	Moderate decrease	Moderate increase	May decrease	Moderate increase

Table 7. Proposed buck: doe ratio objective alternatives in Data Analysis Unit D-11 in west-central Colorado.

Preferred Alternatives

Using the information outlined in this herd management plan, public feedback, and response letters from the BLM and county commissioners, and considering the potential and present conditions influencing the D-11 herd, CPW selected the final preferred population and sex ratio objectives. A final draft will be shared with the CPW Commission for approval. The final plan will be posted online and used to make management decisions over the next 10 years for this herd.

Population Objective: Alternative 3

CPW staff recommend a moderate decrease in the population size objective from 10,000-12,000 to 5,000-8,000. A moderate decrease in the population size objective will allow CPW to manage the D-11 herd in sync with the habitat condition and capability while increasing the resiliency and sustainability of the herd. If habitat conditions improve, this broader population objective range will allow CPW the flexibility to manage for increased population levels at that time.

Sex Ratio Objective: Alternative 2

CPW staff recommend a slight decrease from the current buck: doe ratio objective of 30-35 bucks:100 does to 27-32 bucks:100 does. A slight decrease to the buck: doe ratio objective will decrease the potential for increasing CWD prevalence as documented in adjacent units, potentially increase fawn: doe ratios, and maintain or increase hunting opportunity.

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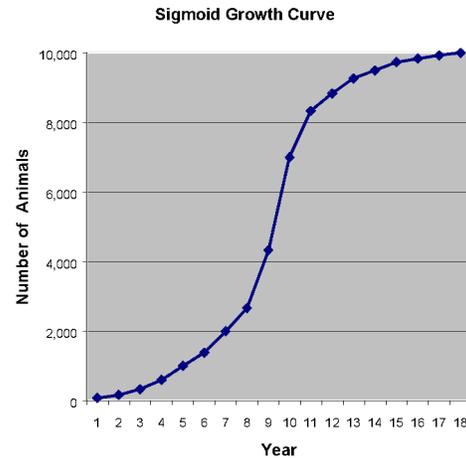
APPENDIX I: POPULATION DYNAMICS, MAXIMUM SUSTAINED YIELD, AND DENSITY DEPENDENCE

Numerous studies of animal populations, including bacteria, mice, rabbits, and white-tailed deer have shown that the populations grow in a mathematical relationship referred to as the "sigmoid growth curve" (Figure 21). There are three distinct phases to this cycle. The first phase occurs while the population level is still very low and is characterized by a slow growth rate and a high mortality rate. This occurs because the populations may have too few animals and the loss of even a few of them to predation or accidents can significantly affect population growth.

The second phase occurs when the population number is at a moderate level. This phase is characterized by high reproductive and survival rates. During this phase, food, cover, water, and space are not a limiting factor. During this phase, for example, animals such as white-tailed deer have been known to successfully breed at six months of age and produce a live fawn on their first birthday and older does have been known to produce 3-4 fawns that are very robust and healthy. Survival rates of all sex and age classes are also at maximum rates during this phase.

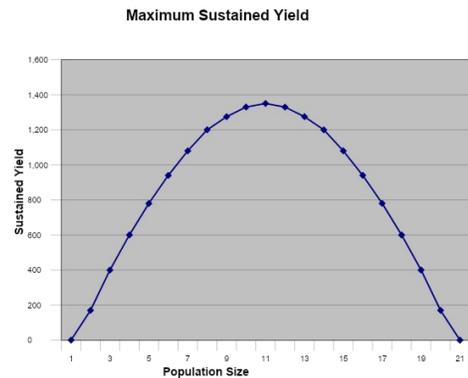
The final or third phase occurs when stocking rate increases causing the habitat to become crowded or habitat conditions become less favorable. During this phase, the quantity and quality of food, water, cover, and space become scarce due to the competition with other members of the population. These types of factors that increasingly limit productivity and survival at higher population densities are known as density-dependent effects. During this phase, for example, white-tailed deer fawns can no longer find enough food to grow to achieve a critical minimum weight that allows them to reproduce; adult does will usually only produce 1-3 fawns; and survival of all deer (bucks, does and fawns) will decrease. During severe winters, large die-offs can occur due to the crowding and lack of food. The first to die during these situations are fawns, then bucks, followed by adult does. Severe winters affect the future buck to doe ratios by favoring more does and fewer bucks in the population. In addition, because the quality of a buck's antlers is somewhat dependent upon the quantity and quality of his diet, antlers development is diminished. If the population continues to grow it will eventually reach a point called "K" or the maximum carrying capacity. At this point, the population reaches an "equilibrium" with the habitat. The number of births each year equal the number of deaths, therefore, to maintain the population at this level would not allow for any "hunnable surplus." The animals in the population would be in relatively poor body condition, habitat condition would be degraded from over-use, and when a severe winter or other catastrophic event occurs, a large die-off is inevitable.

What does all this mean to the management of Colorado's big game herds? It means that if we attempt to manage for big game herds that are at high stocking rates they are being limited by density-dependent effects; we should attempt to hold the populations more towards the middle of the "sigmoid growth curve." Biologists call this point of inflection of the sigmoid growth curve the point of "MSY" or "maximum sustained yield." In the example below, MSY, which is approximately half the maximum population size or "K", would be 5,000 animals. At this level, the population should provide the maximum production, survival, and available surplus animals for hunter harvest. In addition, at this level, range habitat condition should be good to excellent and range trend should be stable to improving. Game damage problems should be lower and economic



return to the local and state economy should be higher. This population level should produce a "win - win" situation to balance sportsmen and private landowner concerns.

A graph of a hypothetical deer population showing sustained yield (harvest) potential vs. population size is shown (Figure 22). Notice that as the population increases from 0 to 5,000 deer, the harvest also increases. However, when the population reaches 5,000 or "MSY", food, water and cover become scarce and the harvest potential decreases. Finally, when the population reaches the maximum carrying capacity or "K" (10,000 deer in this example), the harvest potential will be reduced to zero. Also, notice that it is possible to harvest the same number of deer each year with 3,000 or 7,000 deer in the population. This phenomenon occurs because the population of 3,000 deer has a much higher survival and reproductive rate compared to the population of 7,000 deer. However, at the 3,000 deer level, there will be less game damage and resource degradation but lower watchable wildlife values.



Managing deer and elk populations for MSY on a DAU basis is difficult if not impossible due to the amount of detailed biological information about habitat and population size required. Additionally, carrying capacity is not static, the complex and dynamic nature of the environment cause carrying capacity to vary seasonally, annually, and trend over time. In most cases, we would not desire true MSY management even if possible, because of the potential for overharvest and the number of mature of bulls and bucks is minimized because harvest reduces recruitment to older age classes. However, the concept of MSY is useful for understanding how reducing densities and pushing asymptotic populations towards the inflection point can stimulate productivity and increase harvest yields. Knowing the exact point of MSY is not necessary if the goal is to conservatively reduce population size to increase yield. Long-term harvest data is a gauge of the effectiveness of reduced population size on harvest yield.

Several studies in Colorado have shown that density-dependent winter fawn survival is the mechanism that limits mule deer population size because winter forage is limiting (Bartmann et al. 1992, Bishop et al. 2010). Adult doe survival and reproduction remain high, but winter fawn survival is lower at higher population sizes relative to what the winter habitat can support. The intuition to restrict, or even eliminate, female harvest in populations where productivity is low and when populations are below HMP objectives is counterproductive and creates a management paradox. In that, for populations limited by density dependent processes, this "hands-off" type of management simply exacerbates and perpetuates the problem of the population being resource limited and countermands the goals and objectives of the HMP. As Bartmann et al. (1992) suggest, because of density-dependent processes, it would be counterproductive to reduce female harvest when juvenile survival is low and increase harvest when survival is high. Instead, a moderate level of female harvest helps to maintain the population below habitat carrying capacity and results in improved survival and recruitment of fawns. Increased fawn recruitment allows for more buck hunting opportunity and a more resilient population, as half of fawns recruited to adults are bucks.

Thus, the key for Herd Management Planning and management by objective is to set population objectives in line with what the limiting habitat attributes can support. A suitable population objective range must be below carrying capacity.

APPENDIX II: US DEPARTMENT OF INTERIOR SECRETARIAL ORDER 3362

ORDER NO. 3362

Subject: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors

Sec. 1 Purpose. This Order directs appropriate bureaus within the Department of the Interior (Department) to work in close partnership with the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming to enhance and improve the quality of big-game winter range and migration corridor habitat on Federal lands under the management jurisdiction of this Department in a way that recognizes state authority to conserve and manage big-game species and respects private property rights. Through scientific endeavors and land management actions, wildlife such as Rocky Mountain Elk (elk), Mule Deer (deer), Pronghorn Antelope (pronghorn), and a host of other species will benefit. Additionally, this Order seeks to expand opportunities for big-game hunting by improving priority habitats to assist states in their efforts to increase and maintain sustainable big game populations across western states.

Sec. 2 Authorities. This Order is issued under the authority of section 2 of Reorganization Plan No. 3 of 1950 (64 Stat. 1262), as amended, as well as the Department's land and resource management authorities, including the following:

- a. Federal Land Policy and Management Act of 1976, as amended, 43 U.S.C. 1701, *et seq.*;
- b. U.S. Geological Survey Organic Act, as amended, 43 U.S.C. 31, *et seq.*;
- c. National Wildlife Refuge System Improvement Act of 1997, as amended, 16 U.S.C. 668dd *et seq.*; and
- d. National Park Service Organic Act of 1916, as amended, 54 U.S.C. 100101, *et seq.*

Sec. 3 Background. The West was officially “settled” long ago, but land use changes continue to occur throughout the western landscape today. Human populations grow at increasing rates with population movements from east and west coast states into the interior West. In many areas, development to accommodate the expanding population has occurred in important winter habitat and migration corridors for elk, deer, and pronghorn. Additionally, changes have occurred across large swaths of land not impacted by residential development. The habitat quality and value of these areas crucial to western big-game populations are often degraded or declining.

The Bureau of Land Management (BLM) is the largest land manager in the United States (U.S.) with more than 245 million acres of public land under its purview, much of which is found in Western States. The U.S. Fish and Wildlife Service (FWS) and National Park Service (NPS) also manage a considerable amount of public land on behalf of the American people in the West. Beyond land management responsibilities, the Department has strong scientific capabilities in the U.S. Geological Survey (USGS) that can be deployed to assist State wildlife agencies and Federal land managers. Collectively, the appropriate bureaus within the Department have an opportunity to serve in a leadership role and take the initiative to work closely with Western States on their priorities and objectives as they relate to big-game winter range and migration corridors on lands managed by the Department.

Consistent with the American conservation ethic, ultimately it is crucial that the Department take action to harmonize State fish and game management and Federal land management of big-game winter range and corridors. On lands within these important areas, if landowners are interested and willing, conservation may occur through voluntary agreements.

Robust and sustainable elk, deer, and pronghorn populations contribute greatly to the economy and well-being of communities across the West. In fact, hunters and tourists travel to Western States from across our Nation and beyond to pursue and enjoy this wildlife. In doing so, they spend billions of dollars at large and small businesses that are crucial to State and local economies. We have a responsibility as a Department with large landholdings to be a collaborative neighbor and steward of the resources held in trust.

Accordingly, the Department will work with our State partners and others to conserve and/or improve priority western big-game winter range and migration corridors in sagebrush ecosystems and in other ecotypes as necessary. This Order focuses on the Western States of: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. These States generally have expansive public lands with established sagebrush landscapes along with robust big-game herds that are highly valued by hunters and tourists throughout the Nation.

The Department has broad responsibilities to manage Federal lands, waters, and resources for public benefit, including managing habitat to support fish, wildlife, and other resources. Secretary's Order 3356, "Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories," (SO 3356) was issued on September 15, 2017. SO 3356 primarily focused on physical access to lands for recreational activities, particularly hunting and fishing. This Order is focused on providing access to big game animals by providing direction regarding land management actions to improve habitat quality for big-game populations that could help ensure robust big-game populations continue to exist. Further, SO 3356 includes a number of directives related to working with States and using the best available science to inform development of guidelines, including directing relevant bureaus to:

- a. Collaborate with State, tribal, and territorial fish and wildlife agencies to attain or sustain State, tribal, and territorial wildlife population goals during the Department's land management planning and implementation, including prioritizing active habitat management

projects and funding that contributes to achieving wildlife population objectives, particularly for wildlife that is hunted or fished, and identifying additional ways to include or delegate to States habitat management work on Federal lands;

b. Work cooperatively with State, tribal, and territorial wildlife agencies to enhance State, tribe, and territorial access to the Department's lands for wildlife management actions;

c. Within 180 days, develop a proposed categorical exclusion for proposed projects that utilize common practices solely intended to enhance or restore habitat for species such as sage grouse and/or mule deer; and

d. Review and use the best available science to inform development of specific guidelines for the Department's lands and waters related to planning and developing energy, transmission, or other relevant projects to avoid or minimize potential negative impacts on wildlife.

This Order follows the intent and purpose of SO 3356 and expands and enhances the specific directives therein.

Sec. 4 Implementation. Consistent with governing laws, regulations, and principles of responsible public stewardship, I direct the following actions:

a. With respect to activities at the national level, I hereby direct the BLM, FWS, and NPS to:

(1) Within 30 days, identify an individual to serve as the "Coordinator" for the Department. The Coordinator will work closely with appropriate States, Federal agencies, nongovernmental organizations, and/or associations to identify active programs focused on big-game winter range and/or migration corridors. The programs are to be organized and cataloged by region and other geographic features (such as watersheds and principles of wildlife management) as determined by the Deputy Secretary, including those principles identified in the Department's reorganization plan.

(2) Within 45 days, provide the Coordinator information regarding:

(i) Past and current bureau conservation/restoration efforts on winter range and migration corridors;

(ii) Whether consideration of winter range and corridors is included in appropriate bureau land (or site) management plans;

(iii) Bureau management actions used to accomplish habitat objectives in these areas;

(iv) The location of areas that have been identified as a priority for conservation and habitat treatments; and

(v) Funding sources previously used and/or currently available to the bureau for winter range and migration corridor conservation/restoration efforts.

(3) Within 60 days, if sufficient land use plans are already established that are consistent with this Order, work with the Coordinator and each regional Liaison (see section 4b) to discuss implementation of the plans. If land use plans are not already established, work with the Coordinator and each regional Liaison to develop an Action Plan that summarizes information collected in section 4 (a) (1) and (2), establishes a clear direction forward with each State, and includes:

(i) Habitat management goals and associated actions as they are associated with big game winter range and migration corridors;

(ii) Measurable outcomes; and

(iii) Budgets necessary to complete respective action(s).

b. With respect to activities at the State level, I hereby direct the BLM, FWS, and NPS to:

(1) Within 60 days, identify one person in each appropriate unified region (see section 4a) to serve as the Liaison for the Department for that unified region. The Liaison will coordinate at the State level with each State in their region, as well as with the Liaison for any other regions within the State. The Liaison will schedule a meeting with the respective State fish and wildlife agency to assess where and how the Department can work in close partnership with the State on priority winter range and migration corridor conservation.

(2) Within 60 days, if this focus is not already included in respective land management plans, evaluate how land under each bureau's management responsibility can contribute to State or other efforts to improve the quality and condition of priority big-game winter and migration corridor habitat.

(3) Provide a report on October 1, 2018, and at the end of each fiscal year thereafter, that details how respective bureau field offices, refuges, or parks cooperated and collaborated with the appropriate State wildlife agencies to further winter range and migration corridor habitat conservation.

(4) Assess State wildlife agency data regarding wildlife migrations early in the planning process for land use plans and significant project-level actions that bureaus develop; and

(5) Evaluate and appropriately apply site-specific management activities, as identified in State land use plans, site-specific plans, or the Action Plan (described above), that conserve or restore habitat necessary to sustain local and regional big-game populations through measures that may include one or more of the following:

(i) restoring degraded winter range and migration corridors by removing encroaching trees from sagebrush ecosystems, rehabilitating areas damaged by fire, or treating exotic/invasive vegetation to improve the quality and value of these areas to big game and other wildlife;

(ii) revising wild horse and burro-appropriate management levels (AML) or removing horses and burros exceeding established AML from winter range or migration corridors if habitat is degraded as a result of their presence;

(iii) working cooperatively with private landowners and State highway departments to achieve permissive fencing measures, including potentially modifying (via smooth wire), removing (if no longer necessary), or seasonally adapting (seasonal lay down) fencing if proven to impede movement of big game through migration corridors;

(iv) avoiding development in the most crucial winter range or migration corridors during sensitive seasons;

(v) minimizing development that would fragment winter range and primary migration corridors;

(vi) limiting disturbance of big game on winter range; and

(vii) utilizing other proven actions necessary to conserve and/or restore the vital big-game winter range and migration corridors across the West.

c. With respect to science, I hereby direct the USGS to:

(1) Proceed in close cooperation with the States, in particular the Western Association of Fish and Wildlife Agencies and its program manager for the Crucial Habitat Assessment Tool, prior to developing maps or mapping tools related to elk, deer, or pronghorn movement or land use; and

(2) Prioritize evaluations of the effectiveness of habitat treatments in sagebrush communities, as requested by States or land management bureaus, and identified needs related to developing a greater understanding of locations used as winter range or migration corridors.

d. I further hereby direct the responsible bureaus and offices within the Department to:

(1) Within 180 days, to update all existing regulations, orders, guidance documents, policies, instructions, manuals, directives, notices, implementing actions, and any other similar actions to be consistent with the requirements in this Order;

(2) Within 30 days, provide direction at the state or other appropriate level to revise existing Federal-State memorandums of agreement to incorporate consultation with State agencies on the location and conservation needs of winter range and migration routes; and

(3) Consult with State wildlife agencies and bureaus to ensure land use plans are consistent and complementary to one another along the entire wildlife corridor in common instances where winter range or migration corridors span jurisdictional boundaries.

e. Heads of relevant bureaus will ensure that appropriate members of the Senior Executive Service under their purview include a performance standard in their respective current or future performance plan that specifically implements the applicable actions identified in this Order.

Sec. 5 Management. I hereby direct the Deputy Secretary to take is responsible for taking all reasonably necessary steps to implement this Order.

Sec. 6 Effect of Order. This Order is intended to improve the internal management of the Department. This Order and any resulting reports or recommendations are not intended to, and do not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person. To the extent there is any inconsistency between the provision of this Order and any Federal laws or regulations, the laws or regulations will control.

Sec. 7 Expiration Date. This Order is effective immediately. It will remain in effect until its provisions are implemented and completed, or until it is amended, superseded, or revoked.

Secretary of the Interior

Date:

APPENDIX III: CPW ACTION PLAN FOR SO3362

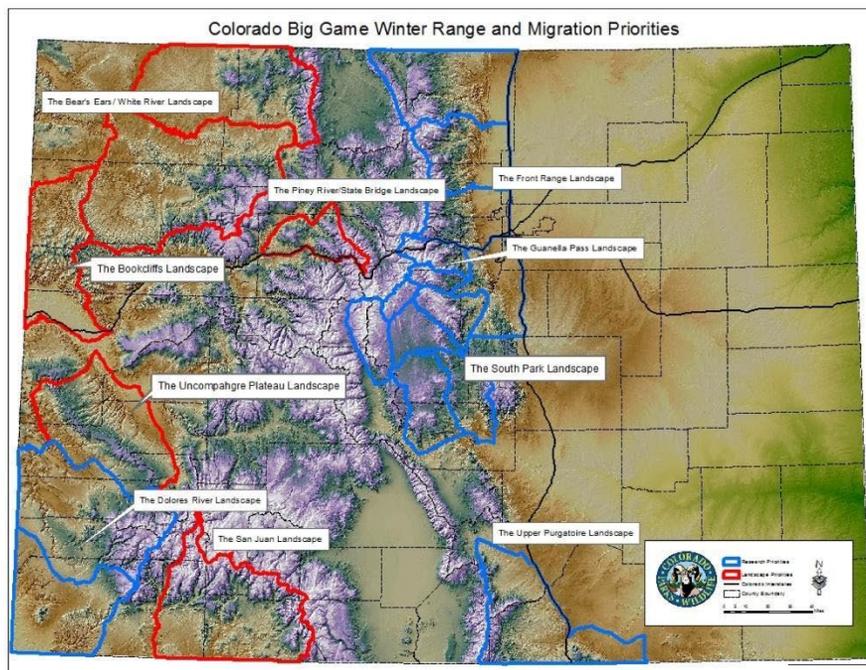
COLORADO PARKS & WILDLIFE

Conserving Colorado's Big Game Winter Ranges and Migration Corridors



Background and Purpose

Pursuant to the Department of Interior's Secretarial Order 3362: Improving Habitat Quality in Western Big-game Winter Ranges and Migration Corridors Colorado Parks and Wildlife (CPW) has identified five priority landscapes that will guide habitat management and conservation efforts for the agency and our conservation partners. In addition, CPW has developed five research landscapes that we will be collecting big game animal movement information to better understand big game migration.



Priority Landscapes

Priority landscapes either have been monitored, or are currently being monitored, to document big game movement and migration patterns. Strategically placed habitat treatments, conservation easements, and highway crossing structures will help to conserve the migration corridors and winter range used by these important herds. The five priority landscapes designated in Colorado's Action Plan for SO3362 are:

The Bear's Ears/White River Landscape- Located in NW Colorado, this areas mule deer and elk herds are among the largest herds in Colorado. These herds contain about 80,000 deer and 70,000 elk. Although the elk herds are robust, the mule deer herds in the region have been in decline in recent years.

The San Juan Landscape- Located in SW Colorado, the area is home to about 27,000 mule deer and 19,000 elk, which use several migration routes as they travel across a patchwork of federal, tribal, state and privately held lands. Some of these animals migrate south across the state boundary into New Mexico. The Colorado Department of Transportation has identified this corridor as a focus area for wildlife crossing structures.

The Uncompahgre Plateau Landscape- Located in SW Colorado, this area supports about 15,000 mule deer and 9,000 elk. Both species have declined in recent years, primarily from recurring drought, poor livestock management, disease, and development (both residential and commercial), along with increasing recreational activity within big game habitat.

The Piney River/State Bridge Landscape- Located in NW Colorado, this areas big game habitat for the 14,000 deer and 3,700 elk within the Piney River/State Bridge area has declined in quantity and quality due to land development, fragmentation by roads and trails, increased human activity on public lands, and suppression of large-scale wildfires.

The Bookcliffs Landscape- Located in NW Colorado, this area supports about 7,500 mule deer and 5,000 elk. Both deer and elk migrate elevationally with the seasons. Portions of each herd migrate relatively long distances west, crossing state lines to spend the winter months in Utah.

Research Landscapes

CPW has identified five new research needs to better understand movement and migration patterns of big game. These areas will be priority for future documentation of seasonal movement patterns to drive future habitat conservation actions.

The Upper Purgatoire Landscape- The migration corridors used by the Upper Purgatoire mule deer and elk herds in southeast Colorado need to be better understood. This area borders New Mexico and Interstate 25 bisects a portion of this area. New Mexico's Department of Transportation is in the process of installing exclusionary fencing along this highway; we expect the incidence of highway crossings to increase in Colorado as a result. Additionally, CPW has collaborated with The Nature Conservancy and Trust for Public Lands to purchase a 19,000-acre ranch that abuts Interstate 25.

The South Park Landscape- The South Park area in central Colorado contains critical winter range for several local elk herds. Better understanding of elk movements, migration corridors, and distribution of winter range use is needed to inform future management of these habitats.

The Front Range Landscape- The Front Range in northeast Colorado is considered an area where additional knowledge of mule deer movements is needed to identify migration corridors and better understand their patterns of use within a rapidly developing landscape. This knowledge will inform future efforts to manage mule deer where hunting is restricted.

The Guanella Pass Landscape- Guanella Pass in northeast Colorado is an area that contains important habitat and migration corridors for elk, mule deer, and moose. This area is undergoing rapid increases in recreational activities. Detailed understanding of big game movements and habitat use patterns will help to inform future land use plans.

The Dolores River Landscape- Mule deer and elk herds in the Dolores area near Disappointment Creek are performing poorly. Data describing specific migration corridors, stopovers, and summer and winter ranges is needed to inform plans and conservation actions to maintain habitat connectivity and protect important habitats.

APPENDIX IV: PUBLIC SURVEY

Bookcliffs Deer Herd (D-11)



About This Questionnaire

Colorado Parks and Wildlife (CPW) is currently re-evaluating the Herd Management Plan that guides the agency's management of the Bookcliffs Deer Herd (D-11).

The Bookcliffs Deer Herd includes Game Management Units (GMUs): 21 and 31

The purpose of this survey is to better understand the perspectives of hunters' like yourself, who hunt in these GMUs. Learning from you will help CPW effectively manage this herd. Thank you for your participation in this process!

Surveys must be complete by October 15, 2020

Did you attend the online public meeting for the D-11 Bookcliff deer herd management plan held on August 25, 2020?

- Yes (4)
- No (5)

Background Information

Q1 1. Are you a resident of Colorado? (Please choose one)

- Yes (6)
- No (7)

Q2 2. Do you currently live in D-11? (Please choose one)

- Yes (1)
- No (2)

Q3 3. Do you own property in D-11? (Please choose one)

- Yes (1)
- No (2)

Skip To: Q4 If 3. Do you own property in D-11? (Please choose one) = Yes

Skip To: Q6 If 3. Do you own property in D-11? (Please choose one) = No

Q4 4. How many acres is your property? (Please choose one)

- a. Less than 40 acres (1)
- b. 40 – 159 acres (2)
- c. 160 – 999 acres (3)
- d. 1000 – 4999 acres (4)
- e. Greater than 5,000 (5)

Q5 5. What is the primary land use of your property? (Please choose one)

- a. Primary residence (1)
 - b. Ranching (2)
 - c. Farming (3)
 - d. Seasonal home (4)
 - e. Energy/mineral extraction (5)
 - f. Recreational (6)
 - g. Other (please explain) (7)
-

Your Interest In Hunting

Q6 6. Which of the following outdoor activities do you participate in D-11? (Please choose all that apply)

- a. Hunting (1)
 - b. Fishing (2)
 - c. Wildlife watching (3)
 - d. Hiking (4)
 - e. Horseback riding (5)
 - f. Mountain biking (6)
 - g. ATV, UTV, or other 4WD motorized travel (7)
 - h. Snowmobiling (8)
 - i. Livestock grazing (9)
 - j. Outfitting/guiding (11)
 - k. Other (Please specify): (10)
-

Q7 7. Did you hunt deer in D-11 during the previous three years? (Please choose one)

- Yes (1)
- No (2)

Skip To: Q8 If 7. Did you hunt deer in D-11 during the previous three years? (Please choose one) = Yes
Skip To: Q10 If 7. Did you hunt deer in D-11 during the previous three years? (Please choose one) = No

Q8 8. During which of the following seasons have you hunted deer in D-11 in the past three years? (Please choose all that apply)

- Archery (2)
 - Muzzleloader (3)
 - 2nd Season (4)
 - 3rd Season (5)
-

Q9 9. Overall, how satisfied were you with your deer hunting experience(s) in D-11 during the previous three years? (Please choose one)

- Dissatisfied (1)
 - Neither satisfied nor dissatisfied (2)
 - Satisfied (3)
-

Potential Concerns About the Bookcliffs Deer Herd

Q10 10. Which of the following are concerns you have about your future deer hunting experiences in D-11? (Please choose all that apply)

- a. Overcrowding (1)
 - b. Population size (2)
 - c. Male antler size (3)
 - d. The amount of public lands available to hunters (4)
 - e. Private lands access creating sanctuaries during hunting seasons (5)
 - f. Motorized access for hunting (6)
 - g. Non-motorized areas to provide for solitude and backcountry hunting opportunities (7)
 - h. Other (please specify): (8)
-

Reasons Why You Hunt

Q11 11. How important to you is each of the following reasons to hunt deer in D-11? (Please choose one response for each statement)

	Not important (1)	Somewhat important (2)	Very important (3)
a. To spend time in nature (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. To harvest a more mature buck (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. To spend time with family/friends (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. To obtain wild game meat (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. To contribute to wildlife management (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. To contribute to the local community (e.g., financial benefits from hunters) (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. To test/improve my skills (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. For physical exercise (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Other (please specify): (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12 12. How concerned are you about the following potential issues between deer and human activities/property in D-11? (Please choose one response for each potential issue)

	Not concerned (1)	Somewhat concerned (2)	Very concerned (3)
a. Vehicle collisions with deer/elk (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Loss of deer habitat due to human population growth and land development (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Loss of deer habitat due to energy development (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Decline in quality of deer habitat due to energy development (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Disturbance to deer from human outdoor recreation activities (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Economic losses to residents due to deer damaging gardens, trees, shrubs (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. The potential for deer to spread disease to humans, pets, or livestock (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Impacts to deer habitat and populations from the recent Pine Gulch fire (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Other (please specify): (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Buck-Doe ***Please read the following brief description about managing the D-11 mule deer herd's population before answering Question #13.*

In Colorado, there is evidence that high buck-to-doe ratios, limited licenses and older age-class of harvested bucks are associated with lower fawn-to-doe ratios and lower herd performance. Since 1995, when all buck deer licenses in D-11 were limited, buck-to-doe ratios have doubled, while the total population size and winter fawn-to-doe ratios have decreased ~20%. The sex ratio objective for the D11 mule deer herd was set in the 2006 Herd Management Plan to a range of 30-35 bucks-to-100 does. The buck-to-doe ratio has generally been at or near this range since its establishment. The three proposed alternatives for a buck-to-doe ratio objective and the expected relative consequences of each alternative, are shown in the table below:

BUCK-TO-DOE RATIO ALTERNATIVES				
ALTERNATIVE	MANAGEMENT	HUNTING FREQUENCY	DISEASE PREVALENCE	POPULATION HEALTH
1	Status quo	No change	Increase	Slight decrease
2	Slight decrease	Slight increase	No change	Slight increase
3	Moderate decrease	Moderate increase	May decrease	Moderate increase

Q13 13. Considering this information, which management approach to the buck-to-doe ratio objective and hunting frequency do you prefer? (*Please choose one*)

- a. Status quo for ratio / no change in hunting frequency (1)
 - b. Slight decrease in ratio / slight increase in hunting frequency (2)
 - c. Moderate decrease in ratio / moderate increase in hunting frequency (3)
-

Potential Concerns About Chronic Wasting Disease (CWD) In D-11, the prevalence of chronic wasting disease (CWD) is currently unknown primarily due to a low number of voluntary submissions. Additional testing and mandatory submissions are planned for the 2020 season.

Q14 14. How concerned are you about each of the following potential issues involving chronic wasting disease (CWD) in the D-11 deer herd? (Please choose one response for each potential issue)

	Not concerned (1)	Somewhat concerned (2)	Very concerned (3)
a. You and your family's health? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Eating meat from a deer harvested in an area of high (>10%) CWD prevalence? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Eating meat from a deer harvested in D-11? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. The disease status of the D-11 deer herd? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. The potential for CWD to reduce deer hunting opportunity in D-11? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Future generations' ability to enjoy hunting deer because of CWD in D-11? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Herd Management

**Please read the following brief description about managing the D-11 mule deer herd's population objective before answering Question #15. The current population objective for the D-11 mule deer herd, which was established in the 2006 Herd Management Plan, is 10,000 - 12,000 deer. However, the herd has not reached that range since 2008. The population is currently estimated at ~7,500 deer. Due to ongoing declines in fawn-to-doe ratios, significant habitat loss across this area, poor forage availability, the potential for higher CWD prevalence, and ongoing drought, CPW is proposing three alternatives for this herd: one status quo, and two population size decreases. The three proposed alternatives for population objective and the expected relative consequences of each alternative, are shown in the table below:

POPULATION SIZE ALTERNATIVES				
ALTERNATIVE	MANAGEMENT	ANTLERLESS LICENSES	CWD PREVALENCE	POPULATION RESILIENCE
1	Status quo	Long-term decrease	Increase	Decrease
2	Slight decrease	No change	No change	Slight increase
3	Moderate decrease	Moderate increase	May decrease	Moderate increase

Q15 15. Considering this information, which population size objective do you prefer? (Please choose one)

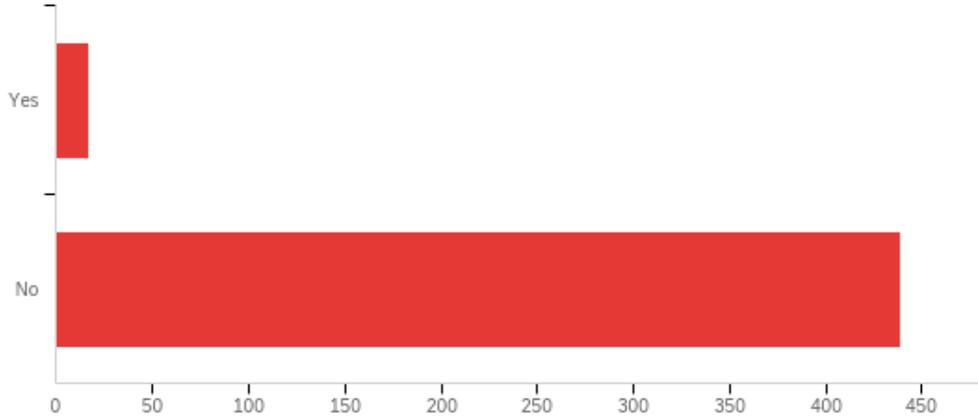
- a. Status quo (1)
 - b. Slight decrease (2)
 - c. Moderate decrease (3)
-

Comments Please provide any additional feedback related to D-11 deer herd issues that you feel are important.

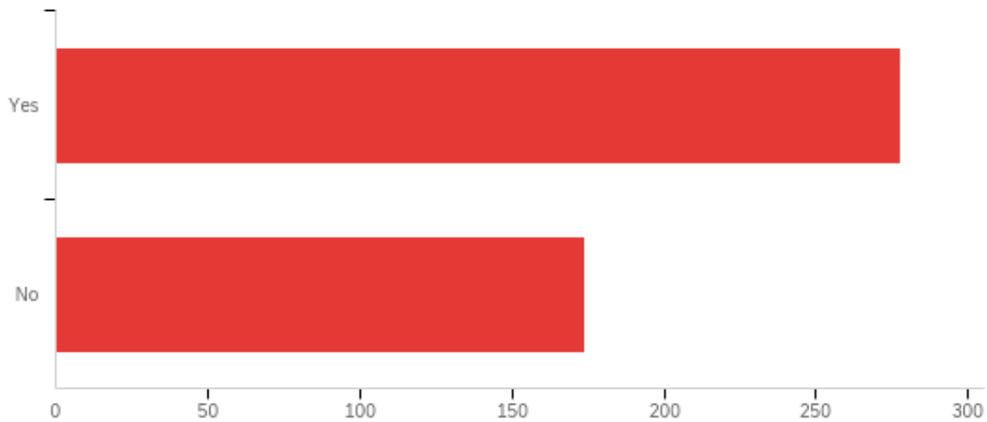
Thank you for participating in this survey!

APPENDIX V: PUBLIC SURVEY RESPONSES

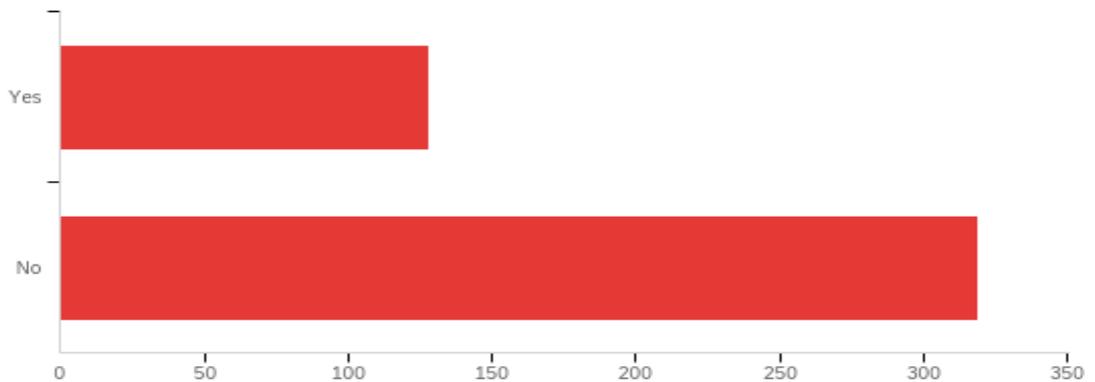
Did you attend the online public meeting for the D-11 Bookcliffs deer herd management plan held on August 25, 2020?



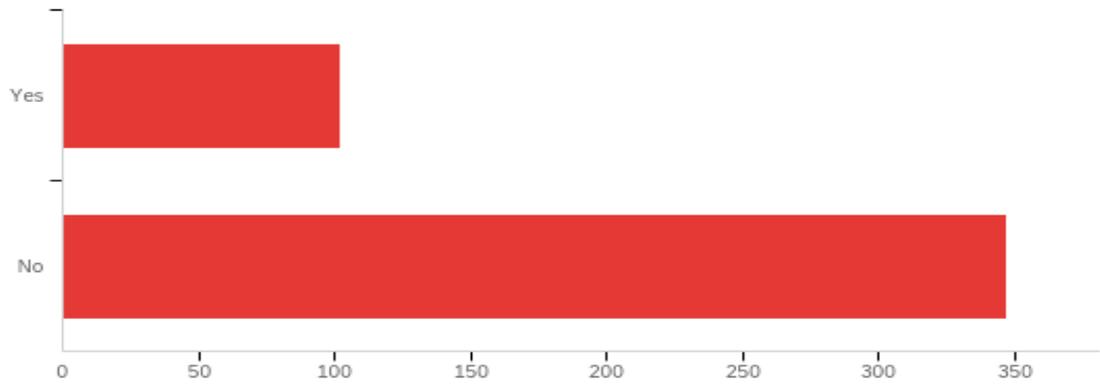
Q1. Are you a resident of Colorado? (Please choose one)



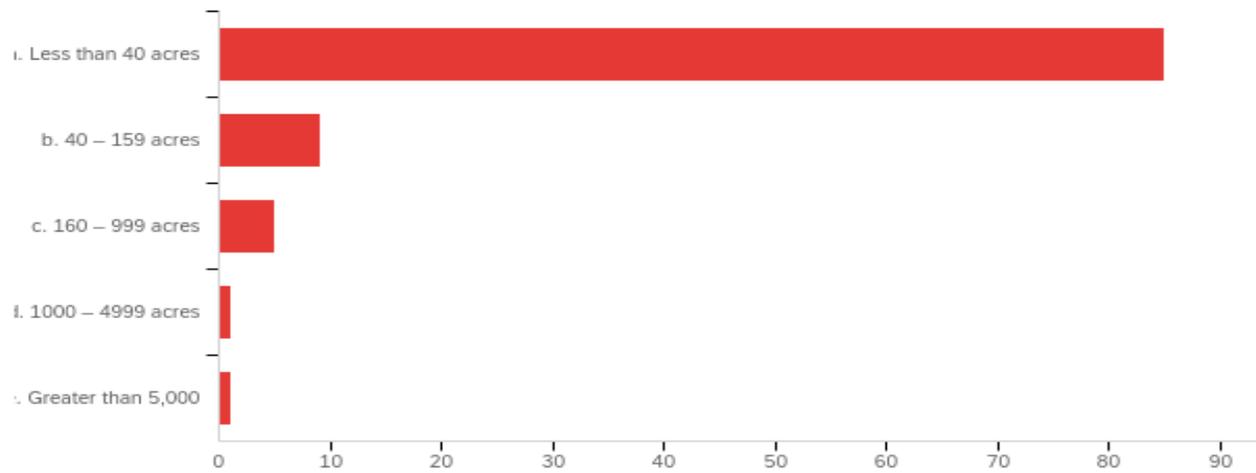
Q2. Do you currently live in D-11? (Please choose one)



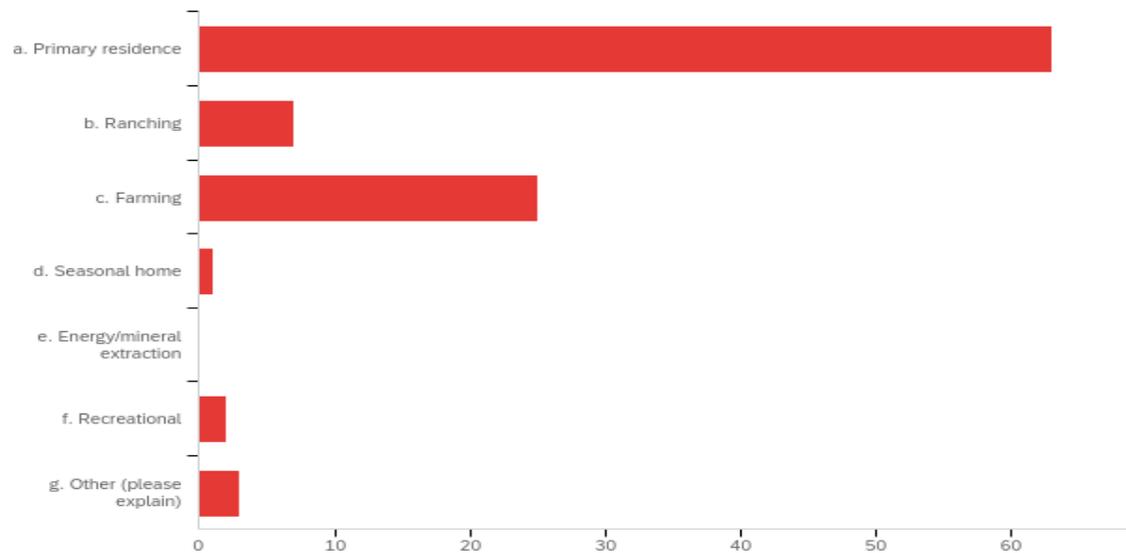
Q3. Do you own property in D-11? (Please choose one)



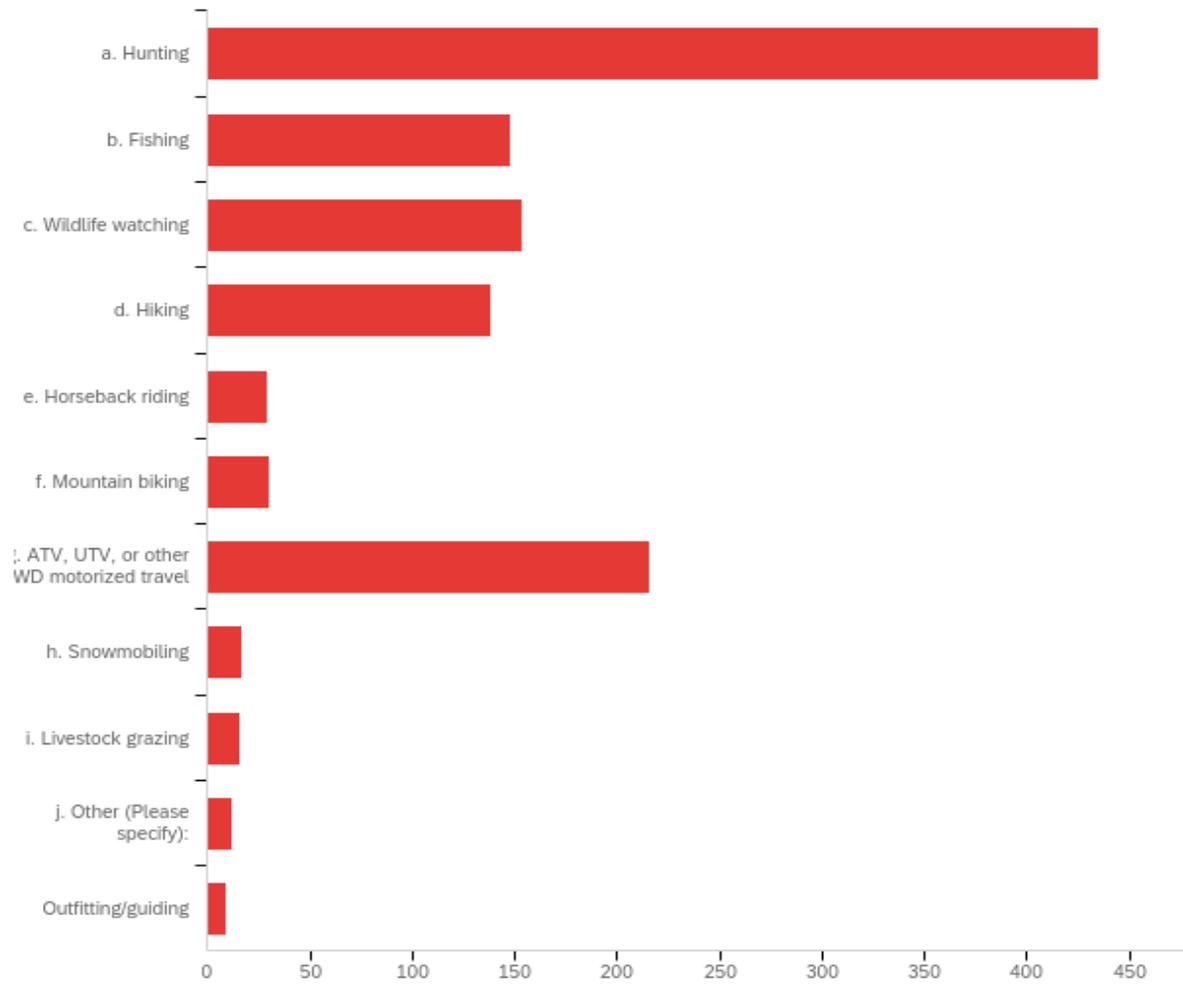
Q4. How many acres is your property? (Please choose one)



Q5. What is the primary land use of your property? (Please choose one)

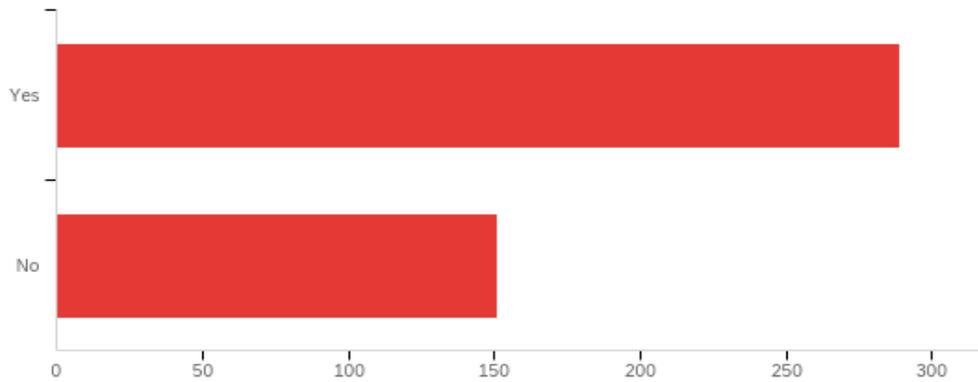


Q6. Which of the following outdoor activities do you participate in D-11? (Please choose all that apply)

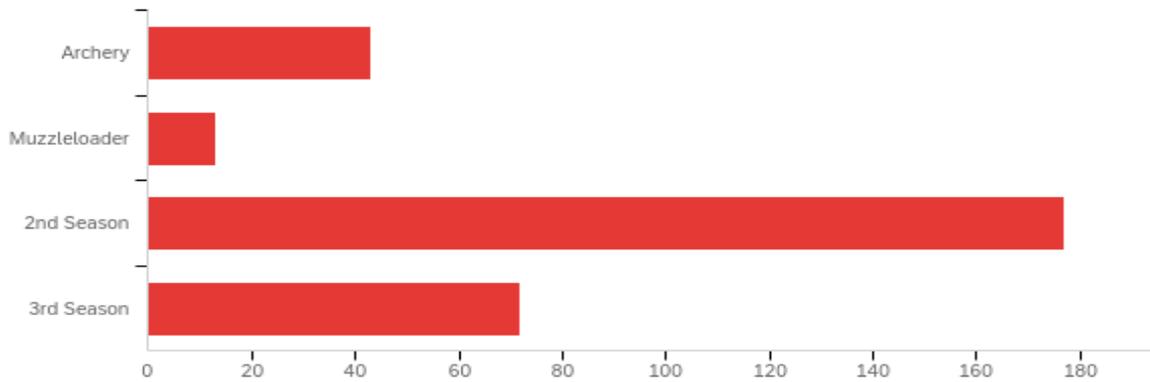


#	Answer	%	Count
1	a. Hunting	36.13%	435
2	b. Fishing	12.29%	148
3	c. Wildlife watching	12.79%	154
4	d. Hiking	11.46%	138
5	e. Horseback riding	2.41%	29
6	f. Mountain biking	2.49%	30
7	g. ATV, UTV, or other 4WD motorized travel	17.94%	216
8	h. Snowmobiling	1.41%	17
9	i. Livestock grazing	1.33%	16
10	j. Other (Please specify):	1.00%	12
11	Outfitting/guiding	0.75%	9
	Total	100%	1204

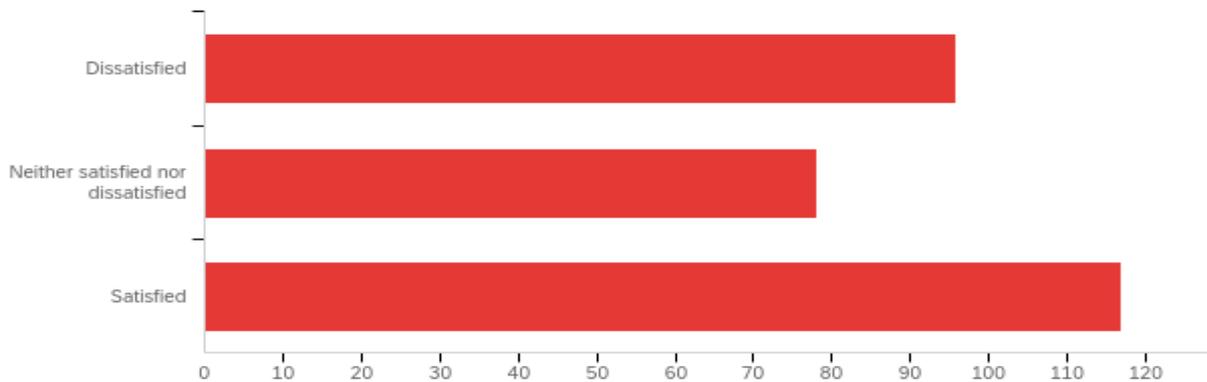
Q7. Did you hunt deer in D-11 during the previous three years? (Please choose one)



Q8. During which of the following seasons have you hunted deer in D-11 in the past three years? (Please choose all that apply)



Q9. Overall, how satisfied were you with your deer hunting experience(s) in D-11 during the previous three years? (Please choose one)



Q10. Which of the following are concerns you have about your future deer hunting experiences in D-11? (Please choose all that apply)

#	Answer	%	Count
1	a. Overcrowding	17.58%	190
2	b. Population size	20.91%	226
3	c. Male antler size	20.35%	220
4	d. The amount of public lands available to hunters	11.10%	120
5	e. Private lands access creating sanctuaries during hunting seasons	12.30%	133
6	f. Motorized access for hunting	6.66%	72
7	g. Non-motorized areas to provide for solitude and backcountry hunting opportunities	6.75%	73
8	h. Other (please specify):	4.35%	47
	Total	100%	1081

Q10_h. Other (please specify):

Drought and chronic wasting

hunters chasing trophies and not hunting for meat are killing off all the breeding bucks. And I have spoken to hunters that when they don't see that big buck after waiting for as long as they do to draw just shoot any legal buck. Our society has gotten way to obsessed with horn size attributing to a person being a good hunter and the you guy are not helping with the once in a lifetime draws. We should be teaching hunters that it is about being respectful to the game and harvest in responsible ways. We should not be hunting when the temperature is so hot outside the meat has a higher chance of spoiling. We should also teach hunters that if they wound a animal and can't find it they are done for the year not just go shoot another one. I think we need to shut down hunting in blocks of units for 3 years to see our herd size increase.

saw more wild horses than deer and elk

wild horse population

predator control

Too hard to draw permit

Quit closing off roads making everyone on public land go to the exact same spot

Too many seasons overlap. Bear, archery deer, archery elk, and muzzleloader. Keep all rifle options out of archery season.

Pushing hunting season back so 2 seasons are in the rut/ Decrease antler size.

Q10_h. Other (please specify) CONTINUED:

lockup of oil land w/o warning

amount of wild horses in area

Rising cost of living is squeezing out many past times and hobbies including hunting.

Doe to buck ratio was insane this year. I have hunted this area since 2013 for OTC elk (except 2019), and each year I have seen fewer and fewer bucks, but the doe population is booming.

access on public/county roads being locked off

None

Very difficult to access the public land available for elderly hunters. Tops are open but access through the lowlands pretty difficult. Also three years ago I shot a deer on public land and the deer died on private land and the young people watching the land would not let me enter to retrieve the animal. I asked permission and was denied. Ruined my hunt right then and there. I quit hunting that day!!!

The number of available licenses

Number of outfitters

Wild horse population & interaction with native species

Too many hunters, not enough deer

Split deer and elk seasons to limit hunters in the field

Bucks moved in to unit after the season was closed last year.

The amount of preference points required versus the quality of antlered maturity

To many tags

Aggressive Private Land Owners

Antler size is smaller and less populated deer heard. Started hunting in 21/30 back in 1990, wow what a difference now!

Too much public roads and not enough deer tags. The deer in the back country are hard to get to, however the amount of non-residents that ruin the area is hurtful. Non-residents don't respect the BLM land. Not saying they're all bad, don't get me wrong but I think the deer management and that territory should be respected and hunted. t

Private lands blocking access to public lands by putting gates up on county roads ! I think is Bullshit !

To many people along 30 and 21 line

restricted access to public land

Effects of pine mulch fire

Too many hunters-overcrowded

Over run with OHV's

CWD impacts on population

Q10_h. Other (please specify) CONTINUED:

Properly managing the area for quality of mature bucks, over an area that is a “fun hunt”. This area is well know for have the genetics to have mature trophy animals, just like Gunnison. I think you guys should manage certain areas, like 21, to allow the deer to mature. Decrease tags, put minimum points per side of antlers in place, pick select areas to improve habitat for the deer to provide more solitude, and maybe look at coming up with management tags (ie 2x2 or 2x3 only) so that you give the animals a change to mature and possible cull the lesser gens and keep the population in check so they don't eat them selfs into starvation.

I have been very upset that the deer licenses are so limited! I've been hunting the area around Rangely for 50 years and now can't get or are selected for a deer license. I've been forced to exclusively hunt for Elk. In 2018 & 2019 while hunting Elk in the area I observed numerous deer and numerous Mature Bucks! Finally, cars and trucks take more deer than we are allowed to by hunting. Appreciate the opportunity to voice my opinions. Rob Knaub

Antler size and all that cool. Too many wild horses. They hampered a spot and stalk strategy for my deer hunt numerous times They were all over the place 2-3 years ago. Any management plan for wild horses? I know it is the Feds but it is part of the equation. Thanks.

Over use of joy riding of atv and ATV vehicles

overgrazing

Too many buck tags issued and too many hunters in the field at same time

ATV, utv usage is out of control

The fact you guys keep making everything about the size of the horns people should not be hunting for Horn size and greed

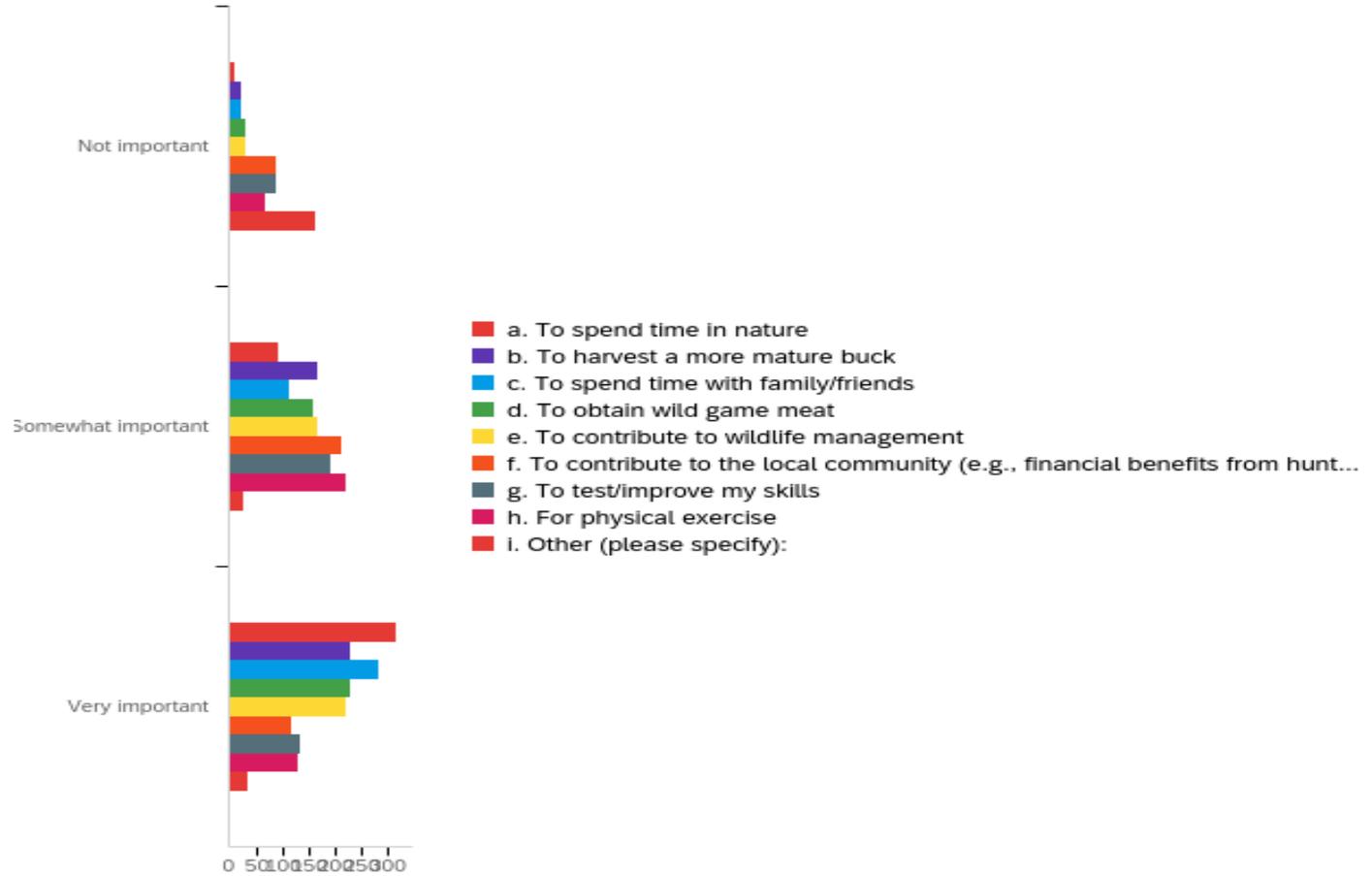
Predators. Lions, coyotes

The number of feral horses competing with native wildlife species

The thousands of wild horses eating and drinking all the resources. They are running the deer out of the unit

Non-native species overcrowding (Feral Horses)

Q11. How important to you is each of the following reasons to hunt deer in D-11? (Please choose one response for each statement)



#	Question	Not important		Somewhat important		Very important		Total
1	a. To spend time in nature	2.38%	10	21.90%	92	75.71%	318	420
2	b. To harvest a more mature buck	5.41%	23	40.00%	170	54.59%	232	425
3	c. To spend time with family/friends	4.98%	21	27.25%	115	67.77%	286	422
4	d. To obtain wild game meat	7.82%	33	37.91%	160	54.27%	229	422
5	e. To contribute to wildlife management	7.84%	33	39.67%	167	52.49%	221	421
6	f. To contribute to the local community (e.g., financial benefits from hunters)	21.09%	89	50.95%	215	27.96%	118	422
7	g. To test/improve my skills	21.24%	89	46.54%	195	32.22%	135	419
8	h. For physical exercise	16.39%	69	52.97%	223	30.64%	129	421
9	i. Other (please specify):	71.74%	165	12.61%	29	15.65%	36	230

Q12. How concerned are you about the following potential issues between deer and human activities/property in D-11? (Please choose one response for each potential issue)

#	Question #12	Not concerned		Somewhat concerned		Very concerned		Total
1	a. Vehicle collisions with deer/elk	38.77%	164	43.74%	185	17.49%	74	423
2	b. Loss of deer habitat due to human population growth and land development	15.06%	64	36.71%	156	48.24%	205	425
3	c. Loss of deer habitat due to energy development	36.41%	154	34.28%	145	29.31%	124	423
4	d. Decline in quality of deer habitat due to energy development	37.97%	161	31.84%	135	30.19%	128	424
5	e. Disturbance to deer from human outdoor recreation activities	26.89%	114	48.82%	207	24.29%	103	424
6	f. Economic losses to residents due to deer damaging gardens, trees, shrubs	76.47%	325	20.47%	87	3.06%	13	425
7	g. The potential for deer to spread disease to humans, pets, or livestock	72.24%	307	19.76%	84	8.00%	34	425
8	h. Impacts to deer habitat and populations from the recent Pine Gulch fire	21.28%	90	46.57%	197	32.15%	136	423
9	i. Other (please specify):	73.96%	142	8.85%	17	17.19%	33	192

Q13. Considering this information, which management approach to the buck-to-doe ratio objective and hunting frequency do you prefer? (Please choose one)

#	Answer	%	Count
1	a. Status quo for ratio / no change in hunting frequency	38.62%	151
2	b. Slight decrease in ratio / slight increase in hunting frequency	33.25%	130
3	c. Moderate decrease in ratio / moderate increase in hunting frequency	28.13%	110
	Total	100%	391

Q14. How concerned are you about each of the following potential issues involving chronic wasting disease (CWD) in the D-11 deer herd? (Please choose one response for each potential issue)

#	Question	Not concerned		Somewhat concerned		Very concerned		Total
1	a. You and your family's health?	44.96%	183	36.12%	147	18.92%	77	407
2	b. Eating meat from a deer harvested in an area of high (>10%) CWD prevalence?	39.46%	161	42.16%	172	18.38%	75	408
3	c. Eating meat from a deer harvested in D-11?	59.61%	242	32.02%	130	8.37%	34	406
4	d. The disease status of the D-11 deer herd?	24.45%	100	50.37%	206	25.18%	103	409
5	e. The potential for CWD to reduce deer hunting opportunity in D-11?	13.27%	54	42.51%	173	44.23%	180	407
6	f. Future generations' ability to enjoy hunting deer because of CWD in D-11?	9.80%	40	37.50%	153	52.70%	215	408

Q15. Considering this information, which population size objective do you prefer? (Please choose one)

#	Answer	%	Count
1	a. Status quo	29.22%	116
2	b. Slight decrease	31.99%	127
3	c. Moderate decrease	38.79%	154
	Total	100%	397

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important.

Too many predators in this area - Mountain Lion and Coyote need severely decreased. Bring back spring bear hunting. Do not allow any wolves to return!

I think the Dow should increase lion tags and allow longer time to hunt bears. To harvest more bears, lions, coyotes need to be trapped. The wild horses need to be managed for the winter range. They are also out of control. This was a good year for fawns seen during the archery season. Lots of bucks where also seen this year and only a few elk. I didn't see a bear this season. The deer hunting has changed because of all the new people hunting pressure has changed the way this family hunts them. Like Paul said it's not trophy unit. Wants to add doe tags. Why kill your breeding stock. 31 and 32 you guys harvest doe's. I believe more fawns are killed by predators then what Dow said on the video chat. When you go look for a lion track and see more coyote kills than lion kills. And I believe there is more poaching and hunters ethics is a bigger problem than you guys realize on Baxterpass and rathole over the years. We find more of that during the archery season while hunting. It's not big enough and just leave it. Most are found less than a 100 yards from the roads. This year called Paul and Terry instead waiting to see one of them again. Now there killing doe deer and leaving it. My best guess is people wanting to bait bears from it. This has been happening for years and could be a bigger problem.

I don't think your survey numbers are accurate because I am old enough to remember every time I would drive to Rangely I would see at least 100 deer and for the past several years I would consider myself lucky to see a deer and I drive that road at least once every two months.

need to decrease the wild horse herd

I live and hunt in unit 30 not 31 sorry

There needs to be more predator control !

I hunted the unit 21 in 2009 and again in 2019. The wild horse population has dramatically increased and they seemed to be everywhere. There were several close calls on the roads driving out in the morning and evening where a herd of horses were standing in they middle of the road. They were extremely hard to see, being dark brown and black. I can't imagine that many large animals around is helping the condition of the winter range for the native species.

Lack of mature bucks is something that is definitely noticeable.

I think getting rid of tons of wild horses in these units would definitely help the deer population come back start letting people shoot and eat them horses or do something else with them useful would help

do not increase antlerless permits

Your horse issue is a major problem. Also, the predators are out of control.

There are a lot of predators in this area it needs to be looked at

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

I've hunted unit 21 & 30 for almost 30 years now. And in my opinion it has been over hunted for both Deer and Elk. But as far as the deer population in unit 30 goes, I feel that there shouldn't be any hunting in the valley or farm fields unless it's for the disabled/handy capped or youth hunting. And land owner tags for farmers/land owners in the valley shouldn't be issued anymore do to the fact that it's not fair chase because the deer are pretty much tame and aren't afraid of humans and most or all of those tags are sold to other people (which you aren't getting any of that money which isn't right) and the deer aren't killed on the property that is was issued for which also makes it hard to manage the deer heard. Now for unit 21, which is where I've done all my deer hunting. In my opinion the major reason for the decrees in deer population in this unit was over hunting and to many predators, mostly mountain lions, but the dry summers have had some impact too. The wild horses are getting out of hand in unit 21, they are eating most or all of the deer's winter feed before they ever get there, so they need to be rounded up and taken else where!!! And I also feel that there needs to be a horn restriction for the bucks along with it staying a draw unit, because there are to many small bucks (spikes, 2 points and small 3 points) that are being taken and not reaching full horn growth and breeding potential. So I feel that there should be a 4 point or better horn restriction for both units 21 and 30. I hope my views and opinions will help in making our deer and elk heards bigger and stronger for future generations!!

I am VERY concerned that employees of the CPW have bought into the thought that Older Age class Bucks is the reason for Herd decline. As an avid outdoor enthusiast I can attest this is not the case. The CPW Must recognize that predator control is the Major contributing factor along with poor Winter Habitat brought on by sustained drought. Watching Bear, Cougar, and Coyotes in the Spring decimate fawns and the herd going into Winter not at full strength so they are easy prey for all Predators is what needs to be recognized. For the CPW to not even list predators in this survey is very troubling. The Predators are taking up to 20% of fawns in the Spring along with 10% of new born calves (cattle). The CPW should allow land owners more access to predator control. The CPW should also reward land owners who improve there land with more water resources and improve forage for winter.

If you were really concerned about the deer you were discontinue hunting of deer in area 21 and 30 Remove all the grazing permits from public lands and have the Rangers pay private landers to graze on their property put a bounty on coyotes because they have evolved and are killing numerous Fonz in the spring and summer open up spring bear hunting install water troughs collection units in dryer areas Allow more mountain lion hunting in the wintering grounds and don't let CSU experiment on our wild animals and give them see WDCWD then release them into the wild like they did

Hunting seasons to allow Mule deer buck maturity

overcrowding due to lease changes along calamity ridge, very sad to see generations of hunters displaced and angry. Those people and myself will never return to this area-very sad after 20 years of going there.

to many lions coyotes and bears also to many wild horses fighting for the same food supply

I am concerned about how many wild horses are in the area. I think that there is way to many horses for the area and they are part of the decline of the deer in the area.

Great job Mr. Terry Wygant. Full hunter support to bring up the deer heard health. How do we decrease the Cattle ranching negative impact to wildlife and remove a water source competitor? Special thanks to the cattle rancher blowing out all the game one week before hunting season.

Baxter Pass area - from my experience on Baxter Pass since 2013, drought has been an issue the last several years, and the doe to buck ratio is extremely high now as compared to years ago. Many of the water holes were dry or at extremely low levels this year, and bucks were not really observed until after the snowfall the day after Labor Day.

Offer bounty on coyotes, and make more mountain lion tags available.

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

I've been hunting (primarily elk) in this region for more than 10 years, in that time I've seen the numbers of buck and doe decline along with the trophy potential of the bucks in the Rathole ridge, Douglas, and Baxter pass areas.

stop pampering the ranchers and start managing wildlife. wildlife should come first

Private land access blocking roads is a real problem in these units!

During the 2019 season, large bucks appeared to be considerably less prevalent than in seasons over the past 20 years.

There should be more predator control.

If ur truly concerned about the population decrease why no mention of predation? Or is this just another feel good approach?

Far too many wild horses in Unit 21 - likely diminishing range conditions.

I would like to see a more hunter friendly atmosphere between hunters and landowners. Not necessarily the ability to hunt on private property but cooperation for access to public lands across private property. I cannot see any problem for landowners on that subject. Unless they not only want their land to use but the public land also. Many times their livestock uses public lands for grazing. Why not a trade-off? Public grazing rights for access to public lands. One more thing would be the right of hunters to recover wounded game that does on private property. Even if the hunter were not allowed vto take a weapon on the private property. Just the right to retrieve the downed game.

I grew up in Rangely but live out of state now. My hunting experience last year was great, the toughest thing is waiting 23 years to draw. The buck population did seem diminished a little from when I accompanied my dad on a hunt in 21 in 2013. I wish it just didn't take so long to draw because Rangely is still home:)

Area rehabilitation following the Pine Gulch Fire will take time but there are few variables and the process is well understood. It would be my hope that there are no knee-jerk or ill conceived management plans made during the interim.

It took me and my brother six rejection points to get drawn for a deer tag. We had to put in for muzzle loader to finally draw a tag. I think that is too long of a time so more licenses need to be issued.

Saw many bucks, but Unit 21 takes too many 2nd season points for puny deer.

Cut back on some licenses especially with the lower fires pushing the deer into D-11.

Doe and buck less than 4x4 should be off limits like it was years ago

I know you've heard it before, and your "studies" do not show it, predation is a huge problem, this is directly responsible for your low fawn doe ratio. CWD is present, has been for a long time, of course monitor it, but decreasing the herd in an already to small of herd is not the answer.

General consensus from hunters is there's a major predation problem also.

Predator control is helping in other states, why invent the wheel???

Thank you for all the work you do protecting our natural resources.

Wild horse population negatively effecting native game

Never have killed a buck in GMU 21 To many years to obtain buck tag for unit#21 I am 73 ears old may have only a trip or two left in me.

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

Very disappointed. I think your models are wrong. I don't think the deer population is as high as the models show. And need to take out the damn Wolves

The continued ability for CPW and BLM to communicate with landowners where public lands are landlocked needs to continue. There are too many acres of public land that is non accessible here and across the country.

I think predator control is more important than most other issues. The lion kills the deer, the bears and coyotes finish it off. The lion kills another deer. Too many coyotes so they kill too many fawns.

Thank you for the work that you all do for us hunters.

I'm no expert, so I trust the biologists who are intimately familiar with the herd

Deer are found in small pockets and the deer numbers appear to be dropping. Increased pressure and a lack of food and water are contributing factors.

I observed several bear and could find sign of them everywhere I hunting. A lot of coyote activity.

Eat more venison!

Don't agree with items 13 & 15. You failed to address the most prevalent problem with the reduced numbers and how to remedy this decline. Predator control. I have hunted these GMUs for 70 plus years and have witnessed the deer numbers decline while the predator numbers steadily increase. Just this week (09/13-17/2020) I spent time in Unit 30 scouting for deer. Walking up several canyons the only tracks I found were mountain lion, coyote and a few fox. Predator control is the main thing that would assist in bringing the herd back. Increase the number of lion tags, encourage more trapping for bobcats and coyote. Consult with the BLM and jointly form a trail program that places a moratorium on trail construction of mountain bikes and OHV trails until a complete inventory is completed and then and only then allow the placement of a new trail if it meets all requirement of wildlife management. If these two objectives were met the only concern would be CWD and how liberal of a season do you need to have to address the herd size. Thanks for the opportunity to participate.

Until the fire. Area was very over grown. Hopefully there fire will establish new grasses higher in nutrients to better the herd.

unit 21 was agood deer hunt until they put out more tags a few years a go it really hurt the herd

Hunting unit 21 for deer for the first time this year.

Archery hunters wound and don't recover way too many bucks each year.

More available deer tags for residents. Like in the early 90's

I've studied Livestock Management for years and am an avid hunter. Through my research and studies, I have found a correlation between the health of wildlife after a "disaster" and livestock. At this time I know rancher and livestock owners who leased range land in that area will be hurting, however I do think that for a year-two that those range animals shouldn't be permitted to graze in that area for rehabilitation of the wildlife and land. Compaction to the soil and the amount of potential sick (due to smoke) animals in the area may need some separation from livestock. Please not I am not an expert, just personal experience. Thank you for listening.

Would like to see some type of water development for wildlife benefits.

A buddy an had Muzzleloader tags for 21 an 30 this year. We turned them back in because in 3 days all we saw were 6 dang does. We covered the Eastside from Calmity Ridge to Douglas Pass to Baxter Pass to west of Rangely no deer. Your biologists need to have a serious look at this zone for the future of it for right now whatever they are doing is not working !

I think predators are a major cause for low fawn survival

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

I think there is a larger predator problem than you think. The ongoing drought is a big impact on forage to maintain habitat and reduce human interactions in the unit

Forage will improve after the pine gulch fire. The fire is a good thing for the long term deer population. once again I do not see anything regarding predators affecting numbers

Would like to see this unit, and others, managed for antler size and herd health even if it means a decrease in available antlered tags.

Hunting in this area is a family tradition. While harvesting higher caliber animals is always a goal, the overall health and safety of the herd is of utmost importance for us to continue this tradition for generations to come!

Keep ranchers and free range cattle out for more forage. And better hunting for out of state hunters.

Private property owners strategically closing off roads and trails through their property to limit public access to public land.

Stop giving out so many licenses until the herd can have time to recover. Hunting's seasons go on way too long.

I highly value road closures in the Texas Mountain area during deer season. If a person can't get off their ass and walk, they need to hunt another unit. I love that the oil and gas roads that are closed to motorized makes this a special place to hunt. I believe you should extend those road closures for deer season through the Missouri Creek, Baxter Pass, Rat Hole, Wild Rose, Texas Mountain in general. Also, I worked for BLM for years. CPW needs to loudly support BLM on removing horses from West Douglas.

Having hunted in the bookcliffs for the last 20 years I feel that the decline in deer population is due to predators. This year I watched a coyote trying to take a fawn and have also come across numerous lion and bear tracks. I also have not personally seen any deer that appear to be visibly sick with CWD.

All my years of hunting this 21 is one of the best

Traffic and over hunting in areas, some of these hunts look like the great land grab!

Screw off with this slanted survey. The buck To die ratio is so low in this unit for seeing 500+ doe's in the 10 days I was here I saw two small bucks.

The deer herd had dropped off dramatically due to lions and bears but I'd don't see any ting about that in your survey? Why? Deer where fine until it was to hard to manage the predators because of rules and regulations. Put out less deer tags and less doe tags and make it 3 points or less restriction and let the big deer breed stop killing off all of our wild game so you guys can sell more tags that's all you guys put in this survey was how to kill more deer.

I think there should be a significant decrease in number of licenses administrated. Parks and wildlife need to better manage funds , especially in upper management

Recent fires should increase habitat. Guzzlers might help the herd

More landowner tags for farmers with smaller farms to help cull herd

We need to limit the amount of tags given out in unit 21, along with decreasing the bear population.

Remove feral horses and limit cattle grazing on public lands

Currently do to increased hunter pressure and decreased access to public land due to road closures and private land blocking access the hunting experience has been greatly reduced. I have hunted this area since 1986 and have seen the changes brought about by both of the reasons mentioned above.

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

The fire should help deer numbers. Increasing antlerless harvest won't increase deer numbers. Anyone who says so isn't being realistic, but most likely has some other agenda.

I accompanied my son on his muzzloader deer hunt in D11 this year and was pleased with the number and herd composition we observed.

More CWD studies. More studies on impact of energy and roads in area impacting migration and herd health will help solve more problems than adjusting just harvest numbers.

Older age class on bucks. Maybe management hunts for bucks with lesser genetics or antler growth would help. I have no issue with managing the number of bucks but fee there are effective ways to do so without killing of all the older age class bucks

This use to be one of the best deee units in Colorado and no longer is close. The quality of the buck needs to go back. Predator control especially on the winter range along with wild horse control needs to be more of a priority for the habitat

Overall herd health and quality mature buck management

It seems to me that the population of deer is already low so decreasing the herd further on purpose would result in lower hunting quality. This is concerning with a GMU like 21 which is supposedly a trophy unit for deer. Energy development is biggest issue in this area. There is not a ridgeline or mountain that doesn't have an oil rig and a road on it. Places like rabbit mountain that should be crawling with deer yielded minimal deer even seen while I was hunting there. It's really unfortunate that energy development has gotten this bad and I understand that it's mostly the BLM, not CPW which controls this but wildlife suffers as a result.

Get rid of the wild horses in the area and that should help the deer herds. Making it easier to hunt mountain lions and bears in this and other areas will also help improve fawn survival rates. Why are these issues nor even raised or discussed? Pretty ridiculous in my opinion.

The biggest threat to deer / elk in gmu 21/30 is wolves. CPW has completely ignored this for years. When will you take a stand??!! Wolves have been in that area for at least 10 years according to local ranchers. I have hunted 3rd season cow elk in unit 21/30 for ~20years and I have personally seen deer / elk populations decline drastically in that time. I have actually seen a wolf there and I have heard them screaming at night. Colorado will continue to see herd numbers decline because of wolves. YOU NEED TO REALIZE THAT WOLVES ARE A PROBLEM AND FIX THAT PROBLEM IMMEDIATELY - QUIT BEING BULLIED BY THE BOULDER TREE-HUGGERS. 2nd reason for declining population (in my opinion) is increasing numbers of people in colorado which means more people in the woods stressing pregnant, very young, and nursing animals. You cannot control the people population, you can control the wolf population.

I feel predator control need to be higher on list list of concern. CPW doesn't seem to make that as big of priority as they should. No antlerless tags should be issued for several years to try and get our deer population back up in addition to lowering the number of buck tags issued.

I hunted in GMU 30 last year during 2nd rifle season. I found many hunters and no deer. I do not plan on hunting GMU 30 again due to the lack of animals.

Improving the sage habitat will never hurt the deer!

Energy companies are ruining the area. They take up a huge amount of land without allowing access for hunters. I hope the energy companies don't get landowner tags. Only private persons owning land should get these tags. Not large companies.

I think there are too many tags given out for this area. I've lived in this area most of my life and the lack of quality animals is not related to anything other than too much nunting pressure. There are some years that drought or other singular events may cause a dip but, there is plenty of food for deer that is not being touched.

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

I have hunted East Douglas creek every time I could draw for 20 years. The land owners are out of control in that area. They stop hunters on a daily basis and tell them they're trespassing. I have for years shown the land owners my GPS and explained to hem where their property lines are. However, they continue to harass law abiding hunters. When will this be addressed and resolved. This has the ability to turn into a really bad situation.

I hunted unit 30 in 2016 and I thought more buck tags could have been been available. Not a bunch more, but tag allocation seemed a bit too conservative. Keep up the good work. Rick Bulloch

If you guys are truly worried about the carting capacity of this unit, and are looking to make a change to your management, I think the question you guys should really be asking us is do "we as hunters and you as Wildlife Managers" want a unit for quality bucks, or a unit that is managed for a fun hunt. Because these options are managed completely different. As you well know. If this area is loosing habitat to natural energy companies making roads, platforms, and putting in infrastructure, then a quality unit might not even be possible. Let's be honest here. We all know deer/elk/antelope/etc need food, water, solitude, and a safe passage to good winter grounds. If this is possible then please manage this are for quality. Figure out what the current overall state is for reoccurring food for the animals is, make your over all population adjustments slowly, come up with a great buck management plan (put point requirements on seasons. 2nd season has to be 3 point on each side or better, 3 season has to have one side with 4 points, 4 season has to be a 4x4. Allow for youth/management hunts for mature deer that are forkies or a crabbed 2x3. You keep your tag sales up with youth/management hunts and you can use this to adjust buck to die ratios, we as hunters still have opportunities to hunt while a so so unit returns to a better state of quality. Let the old timers say "boy I have not seen this area this great since I was a young man".

take revenue out of the equation and management from there. that is the challenge!

Stop letting outfitters sell wildlife!!dont let hunting turn into a sport just for elite rich Texas is a good example Not much left for the public. Have to buy into a club and pay outfitters. Sad this is what they are doing all over the place should stop!!!

I believe it is important, especially now when our deer herd is likely stressed and displaced from loss of habitat, to not take a blanket approach in population management. We DO NOT need to decrease antlerless numbers across the board. Does need managed in areas where vegetation is sparse and pregnancy numbers are low. I firmly believe that crop damage tags need to stop being issued in such high numbers in unit 30. I also believe that educating the hunting population on proper buck management would go a long way in increasing the quality of bucks available in both units. Keep CWD testing mandatory so we can get a good grasp on what exactly we are dealing with within these units and then manage accordingly. We cannot make management decisions at this time based off assumed CWD numbers withing the unit. Keep the public education pieces coming! Buck hunting in these two units is one of my favorite things and I would hate to see the herd size, quality, or health decrease any further.

Good hunting

I have hunted that area for 40 years and the last time I drew was 10 years ago. I do go for the Elk hunt just to get out in the woods. My time is now limited for deer and this year will more than likely be my last for deer. I encourage you to continue to let the deer population grow for future generation to come. I will still come for the Elk. I will be to the Bookcliffs in Utah next year after 18 years of drawing:)

Over all herd size and Quality buck size

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

In my opinion, this survey address symptoms. Not the underlying problems in 21. I will probably stop hunting 21 after my horse experiences. I do not know much for facts and stats on CWD so I really cannot comment. I do not think Parks and Wildlife knows that either. Just an opinion. I leave those questions to the scientists. If CWD gets out of control, then I guess that will be another reason I quit deer hunting. I do not enjoy eating them anyway. Give me a ribeye. The underlying problems I mention are with society today. Not your fault. I long for the good ol' days, if you are old enough to know what I mean. Thanks

Would like to know how the bear Poland mountain lion populations are affecting the deer in that area as there is a large amount of bears in the area from my experience.

i HAVE HUNTER UNIT 30 FOR OVER 30 YEARS. THE NUMBER HAVE DEER HAVE DECLINED FOR SURE. I FEEL PREDATION IS ANOTHER FACTOR YOU NEED TO CONSIDER. INCREASE THE QUOTA ON MTN. LIONS AND RETURN THE SPRING BEAR HUNT TO SAVE FAWNS AND CALVES.

Do your research, the reason there is less and less food and water in 21 is because of those wild horses. Last season I hunted every day of the season and every day I saw more wild horses than deer. I saw them destroy deer and elk habitat and it's disgusting.

I feel that loss of Habitat is biggest culprit.

The number of natural predators of deer, fox/coyote.

I generally prefer a more conservative approach to changing things. While I am concerned about the deer population, I generally prefer more smaller changes than waiting longer and making larger changes. For CPW concerns, I prefer small changes and more testing. However, due to the Pine Gulch fire, it might make sense to add a late doe season this year to help manage the herd. CPW's current management system using hunters and an annual draw to manage herd size is slow because it would take more than a year to respond to a natural disaster (e.g., a wildfire or an unusually heavy, early snow). For example, CPW could add doe licenses to the 2021 area 21 hunt, but that is likely a late solution to effectively respond to the herd displacement caused by the Pine Gulch fire. As one possible future solution, CPW should look at Montana's Master Hunter program. CPW could build a cadre of experienced hunters that CPW could tap at a time like this. Imagine if CPW could open a limited draw to Master Hunters to take 50 or 100 doe due to the wildfire (and perhaps in limited regions not following the traditional 21, 31 GMU boundaries); or opening doe tags for Master Hunters with a bounty that if a Master Hunter harvests a doe with CWD in a specified GMU or region within a GUM that the hunter will get a preference for a buck tag in the unit the next year (that would give the Master Hunter an incentive to search for deer with CWD, harvest a deer with CWD, get the deer tested, and perhaps provide feedback to a biologist about observed field conditions). The annual draw has served Colorado well, but CPW might look at solutions that are more flexible for conservation management in response to natural disasters. BTW, I grew up in Rangely, and that is my tie to area 21. I enjoy hunting area 21 because it gives me a good excuse to get back to my old "stomping grounds."

The unit has sharply increased camping and off main roads OHV since I've hunted there beginning 15 years ago. During that time the numbers of deer seen by me and others in my group have sharply declined. I believe the DOW and various land management agencies have to halt the influx of this intrusion if hunter numbers and recruitment are to be sustained. I won't be returning to these units. The hunting is too poor. Thank you.

Comments - Please provide any additional feedback related to D-11 deer herd issues that you feel are important. CONTINUED

I hunted D-11 last year and had a very good experience. Weekends, especially opening weekend, the hunter numbers were pretty high, but during the week it wasn't bad. My fundamental issue with just about any hunting area is that the private land owners benefit from all the public management but don't allow public hunters. I don't know how to address that, but it irritates me when I see large areas of public land locked up because a private land owner controls the road into that land.

I appreciate the opportunity to participate in these surveys. I would like to see the use of these continued.

CPW should work more with private land owners to increase public access to public lands that are currently severely restricted by one locked gate in a valley bottom, which occurs throughout 30 and 21.

Hunter numbers should be reduced to allow male deer to reach maturity. making the area trophy caliber.

I believe there needs to be more range management in these areas controlled burns and the like the gas industry is the only ones improving the land I'm not sure were you get your buck to for ratio but I think your numbers are drastically off way to the heavy side there needs to be more predator control lions bears coyotes in both units 21-30 quite frankly I fill as a land owner the cpw spent way to much time on elk and not enough on deer and have screwed up both and the habitats for every animal involved

Deer numbers are way down it is hard to find a mature buck anymore. to many people in the field. deer don't do that much damage to the farmers crops stop giving crop damage tags.

Limit motorized access to midday hours for game retrieval purposes.

we need to stop shooting doe's and put an antler restriction back on the bucks. we also need to stop giving crop damage deer tags to the farmers in the valley.....

Overhaul the current Preference Point System so that all hunters will have a chance to hunt the D-11 deer herd at least once in their lifetime if so desired.

Dates need to be later by a week or more to catch the rut

I love that this is considered A trophy unit, but buck size has gone down, more people are shooting small deer. Use to see 180-200 in deer all the time now your lucky to see one or two that are 170-180

in my area rangely 21, doe fawn tags are needed to many hit on the road and people here would use the meat

APPENDIX VI: PUBLIC COMMENTS OF THE DRAFT PLAN

The following comments were received from the public during our 30-day public comment period (January 21 - February 21, 2022) for the draft plan. Note that some of these comments were submitted as feedback for the D-11 Herd Management Plan (HMP) as well as two other HMPs that were posted for comment simultaneously (D-42 and E-10).

All Draft Plans

Thank you for your team's research and effort regarding this matter. I have lived in Colorado since 1964 and have hunted for over 30 years in this state. The current habitat for our wildlife continues to degrade, and putting the massive wildfires on top of that is not good. Then the animals get crowded out due to the massive population growth in Colorado. Not to mention CWD. Tough conditions for our wildlife. Thanks for doing this and I support the these plans.

I don't agree with your proposal to reduce the herd population of elk and deer. With the reintroduction of wolf's, CWD and all the other negatives these animals are facing including roadways and human interactions. It's a wonder they still exist.

How does one expect a uneducated, unknowing public to understand herd management, let alone make decisions on the health and well-being of the animals? People barely pick up their dog waste on a trail. Why are we not asking experts?

Where do you get your population estimates? After spending many days afield and speaking to many hunters, I certainly do not agree with your premise. Deer and elk populations are a tiny fraction of the numbers you estimate. Please use realistic numbers!!

The current draft herd management plans for the Yellow Creek Elk, Bookcliffs Deer and Rifle Creek Deer herds are unacceptable because not even the current target herd levels were able to be maintained and there is no evidence the new targets can be maintained.

The constant drop in herd numbers should be alarming to everyone in Colorado, especially long-term residents that have watched herd numbers plummet across the board over the last 35 years. The data actually supports doing the opposite of the draft plan and raising management target numbers to help support long-term recovery. The draft plan continues mismanagement of Colorado's natural resources through consumptive approaches that never allows growth in herd sizes. You will continue to lower the herd numbers each plan period until there are no herds left with this approach.

This is a easy situation to solve. The herds are large or smaller than expected. All units in Colo (not just a few BUT ALL) that if any money a land owner receives either from the state or federal then all of their property is open to public hunting no matter what . This includes outfitters going in and leasing all of a landowners property exclusively to stop it also. The money the landowner receives include for farming aid , crp , animals killed by bears mountain lion wolves.... , crops destroyed by deer elk The landowners complain about all this and they

get subsidized by the state or federal government, but who is paying the bills to them the tax payers. Also take all away the landowners tags.

I have lived in Colorado all my life, my comments are for Big game species as a whole. what i see are adjustments made to herd size lowering there populations because previous goals can't be met. Those plans were put in place with confidence of obtaining them. Previous plans have higher population goals so why do they get lowered? Why lower the population goal instead of improving them to meet previous objectives and populations that once existed. could there be a predator influence here, Bears, Cats, Coyotes, over hunting pressure, and soon wolves.

I believe the ways of managing have changed.

I see funding a problem that the wildlife itself is burdened for.

I have seen many changes good and bad for all species, I believe in balancing the populations but thru true game managing (what is best for the animals) not business managing or political managing

You first represent the animals please do that

what I see is you guys are seeing dollar signs yet again. The numbers are already low and you wanna cut them even lower. Why are you trying your best to get rid of them???. Breeding predators, introducing more of them on top of that, trying to cut the cat hunting.. I know it's tree huggers that push this shit through but they aren't even part of having anything to do with the wildlife, they don't pay a dime into any of it, only stopping it .Hunting the elk six months out of the year.. Doesn't make much sense.. Here is an idea, cut out all the late season hunts, you're destroying the elk herds,, and as for the deer, they're just trying to make a little bit of a comeback, stop killing all the damn does... I myself am about tired of giving my money that supports this kinda bullshit. Why should I keep buying tags over and over when nothing is done to improve the herds.?

Leave them alone

My input is to NOT decrease populations, and NOT decrease buck/doe ratios. I would like to see CPW make efforts to increase populations and buck/doe ratios for a change.

The solution is simple. The state needs to move the deer crossing signs away from I-70 so the deer know that they can't cross there and instead put the deer crossing signs where deer hunters hunt. This keeps them off the interstate and keeps hunters happy.

E-10 (Yellow Creek) and D-11 (Bookcliffs)

I have spent a significant amount of time in units 30, 21, and 22 over the past two years. Winter range (sagebrush and mountain shrub) communities are in very poor condition due to lack of fire and domestic cattle/feral horse overgrazing. Commerical cattle grazing on these public lands should be greatly reduced or eliminated in order to restore habitat for native wildlife. Feral horse activity is completely out of control as well and it is extremely frustrating to see the damage these animals are having on the landscape and the impact they have on native animals. In units 21 and 22 feral horses are congregating at water sources and denying access to deer and elk. They erode the sides of water sources which cause them to become shallowed and evaporate more quickly. During times of drought must be causing many hundreds of

native animals to die. Feral horses also have no predators and are multiplying at unsustainable levels. The number of horses should be greatly reduced or the entire population eliminated. If these feral animals are to be given status similar to native wildlife we need to manage them with a feral horse hunting season similar to the way all other species are managed. I love these desert units and it is extremely sad to see the destruction that feral horses are causing.

I currently live in Mesa county, De Beque, Colorado and I have a serious proposal for you about the I-70 area just west of the De Beque exit. This area is where the river comes close to I-70 going east bound and west bound where I-70 goes over the Colorado river. I would like to propose a natural cross over for the deer herds on the east bound side of I-70. I see deer being killed and struck by traffic here ALL the time, due to the fact of herd migration to and from their water source in the area. They have a path they travel across I-70 which we as humans put right in the path of their natural migration. I do understand that this is not the proposal that was technically asked about, but this is a very important issue that is responsible for numbers and counts of the deer herds. Please consider my proposal seriously, because not only are deer being affected but people's lives are as well. Thank you so much for your consideration and time to read this. I would love and appreciate a response in return to the regards of this proposal.

Local awareness will save lives both in animals and humans, thank you,

D-11 (Bookcliffs)

I would give you my opinion on cutting the deer head in the bookcliff area. I have hunted in unit 21 and 30 for the last 30 years. You say you want to cut the deer numbers by killing more bucks wont solve the problem, and your reason behind it is do to the drought and fires?? I call BS on that one!!! Cutting the numbers is not a good idea considering that there aren't that many deer left in unit 21 and 30. And in my opinion the real problem is the predators, there is to many mountain lions, bears and coyotes, and it doesn't seen like you do anything to control the coyote population at all. So I totally disapprove of cutting the deer numbers in the bookcliff area.

I am writing in regards to your Draft Management Plan for the Bookcliffs Deer D-11 herd. After reading the 78 page document, I would be in favor of the "no change" option as opposed to the "slight" and moderate" options. Here is why. The herd hasn't grown in the last 20 years, but a lot of that would have to do with the five severe droughts that have occurred in that time-2002, 2012, 2018, 2020, and 2021. That coupled with increase of the predator factor- lions, bear, coyote, have also increased in that time frame, and soon to be wolf, is why the herd is where it is. The Pine Gulch Fire will prove to be beneficial for all wildlife given a bit of time. This will work in the deer's favor going forward. I believe that the "no change" option coupled with patience, and active predator monitoring , will yield a deer herd increase toward the current herd objective. Consideration needs to be given to the fact that wolves will also be a factor in up coming years, and their effect on herd numbers in the future will be negative to the deer. My observation comes from the perspective of having lived in this area for over 50 years , and also from having ranched in the Bookcliff D-11 region for the last 33 years. In short , I know the country, the deer herd, and have witnessed the change in that time. Thank you for your time and consideration.

APPENDIX VII: Letters of Support



February 25, 2022

Darby Finley
Colorado Parks and Wildlife
73485 Highway 64
Meeker, CO 81641

RE: White River Habitat Partnership Program Comments - HMP D-11

Dear Mr. Finley:

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, sportsperson, Forest Service, BLM, and CPW) provide a good cross section of local interests to review Herd Management Plan (HMP) 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 White River HPP committee has discussed your presentation, reviewed the draft alternatives, and offer these comments for consideration.

The White River committee supports the draft alternative to decrease the population objective within this DAU and within our committee area. The committee also discussed the proposed sex ratio alternative and is in support lowering the current sex ratio objective. The committee has heard from landowners and land managers about poor range conditions due to a variety of factors including feral horses, drought, and wildfires.

As stated above, HPP is also directed by statute to assist the Division to meet game management objectives. The committee has worked with both public land managers and private landowners to improve the quality and quantity of the habitat in D-11. 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 through the proposed strategies. The White River HPP committee will support this management effort in partnership with the numerous local landowners and federal land management agencies that place a high priority on implementing valuable habitat improvement projects, and have expressed the desire to continue this work. Thank you for the presentation and the opportunity to provide these comments.

Sincerely,

Bailey Franklin, CPW Representative
White River HPP Committee