Upper Rio Grande Deer D-36 Herd Management Plan

Game Management Units 76, 79, and 791

Revised By

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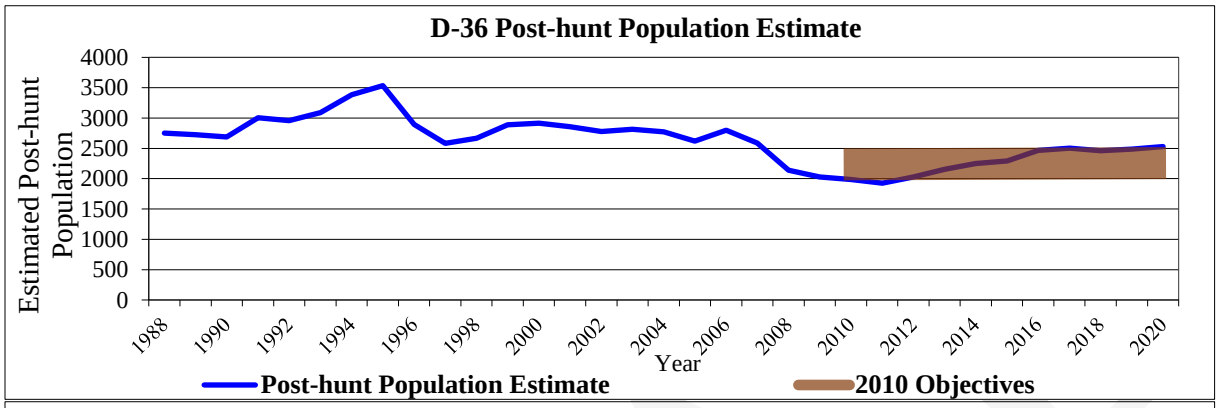
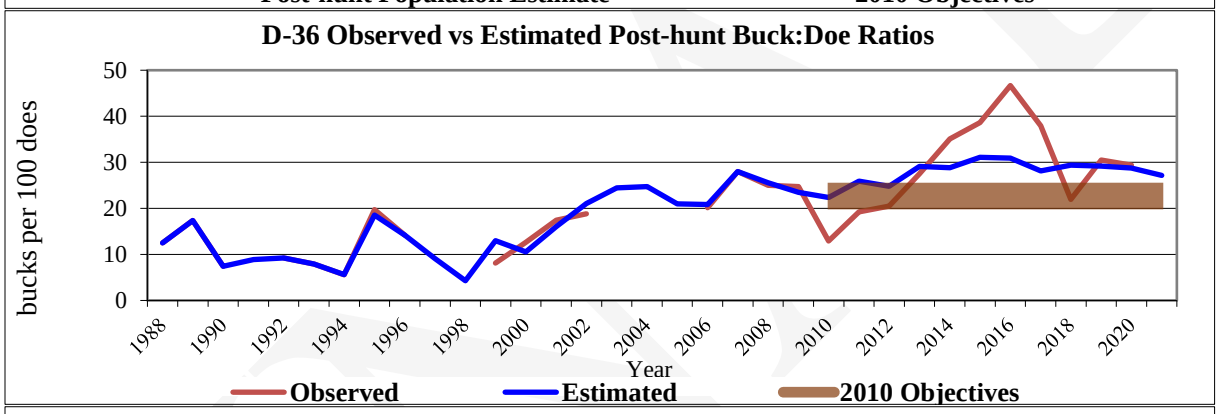
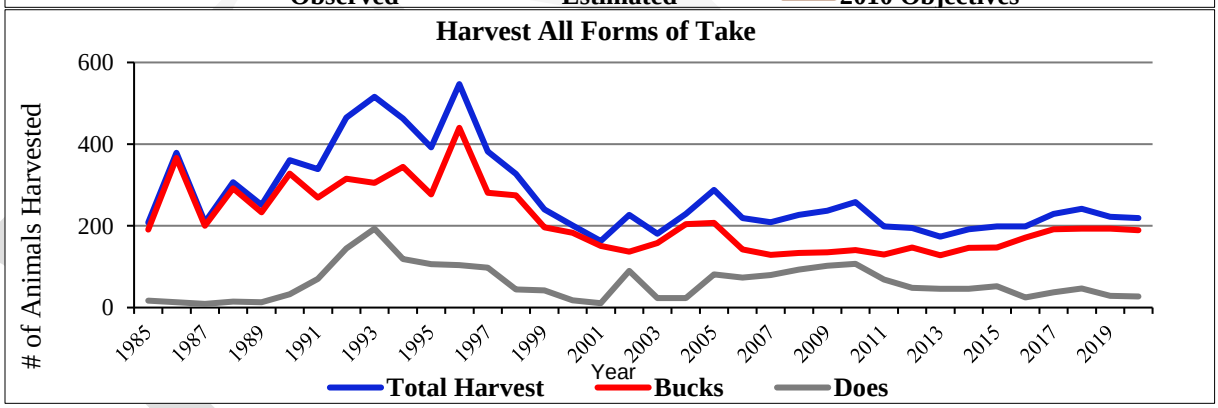
Upper Rio Grande D-36 HMP Executive Summary

GMUs: 76, 79, and 791	**Land Ownership:** 2% BLM, <1% CO State, 66% USFS, <1% USFWS, <1% State land Trust, and 32% Private.
2020 Post-hunt Population Estimate: 2,500 deer	**Post-hunt Sex Ratio (Bucks per 100 Does):** 29 (Estimated 3-yr average)
2010-2021 (Previous Herd Plan Objectives):	2,000 to 2,500 deer; 20-25 Bucks per 100 Does.
2022-2032 (Preferred Herd Plan Objectives):	2,200 to 2,800 deer; 23-28 Bucks per 100 Does.







The D-36 mule deer herd is in the western region of the San Luis Valley. The DAU (geographic area) comprises Game Management Units (GMUs) 76, 79, and 791, approximately 1,806 square miles. Mule deer winter range within the DAU includes roughly 352 square miles, whereas the summer range encompasses about 1,469 square miles. Portions of Alamosa, Hinsdale, Mineral, Rio Grande, Saguache, and San Juan counties make up the entire area. Public land constitutes about sixty-eight percent of the DAU, while almost thirty-two percent of the area is privately owned.

The estimated post-hunt population size for D-36 has been around 2,500 animals for the past five years. The population estimate reached its peak at around 3,500 mule deer in 1995. The population declined over the next few years, ranging between 2,500 and 2,900 animals, until 2007. After that, the population declined further to its lowest level at roughly 1,900 animals in 2011. However, within the timeframe of the previous HMP, the population climbed to the upper end of the objective range.

The D-36 observed sex ratio fluctuated but closely followed the model estimate until 1999, around 12 bucks per 100 does, at which time buck licenses became limited. From 2000, the sex ratio rose until 2009 (approximately 25 bucks per 100 does), then dropped in 2010 to about 13 bucks per 100 does. After that, the observed sex ratio continued rising to its highest level in 2016 (roughly 47 bucks per 100 does), fluctuating annually. In contrast, the model-estimated sex ratio has been trending above the 2010 objective range, around 29 bucks per 100 does). Since 2019, the observed sex ratio has been closer to the estimated value. In 2020, CPW detected a low prevalence of Chronic Wasting Disease (CWD) in the neighboring DAU (D-30), raising concerns about heightened sex ratios.

Before CPW limited buck licenses in 1999, the annual buck harvest averaged approximately 294 animals in the DAU. Over the past ten years, buck harvest has averaged about 164 animals yearly. With a rising observed sex ratio, CPW increased the buck licenses slightly in 2017 in GMU 79 and 791 and again in 2018 throughout the DAU to curb the ascent and reduce it to the upper end of the objective range. Harvest from the additional licenses has leveled further increases, and the sex ratio is currently trending downward.

Doe harvest has fluctuated since 1985, averaging roughly 60 animals annually. CPW removed doe licenses in GMU 76 in 2000. Over the previous ten years, the annual doe harvest from GMU 79 and 791 combined has averaged around 43 animals. Private-land-only (PLO) licenses, addressing depredation issues, are the most significant source of doe harvest.

The combined hunting-season success rates from 2011 to 2020 have averaged approximately fifty-four percent. However, harvest success rates are skewed between the archery, muzzleloader, and rifle seasons. The average archery success since 2010 is around twenty-three percent. Comparatively, the second and third rifle seasons have averaged roughly fifty-four to fifty-five percent, and the fourth rifle season's success has averaged about seventy-nine percent over the past ten years. Since 2011, the muzzleloader season success has fallen between the rifle and archery seasons, at almost thirty-seven.

Significant factors limiting the D-36 population are the quantity and quality of winter range habitat. The winter range continues to diminish, with increased development on private land and competition with domestic livestock. Similarly, summer recreational activities continue to increase throughout the DAU. The various anthropogenic impacts may affect distribution, reproduction, and fawning efforts restricting population growth. Since 2015, CPW field personnel have observed improved fawn recruitment. The increased forage availability resulting from the 2013 West Fork Complex Fires may support a more robust deer herd; however, resulting in a lack of cover for deer during significant winter storms.

Mule deer are not a significant problem on agricultural land in the DAU, and depredation concerns are minimal. CPW continues to provide game damage and dispersal licenses to private landowners to address issues. Localized problems may result from restricted mule deer distribution during the winter months. Private landowners who experience mule deer depredation issues can access various management tools offered by CPW.

Management Alternatives

In Data Analysis Unit D-36, four alternatives were considered for the **post-hunt population size** and three alternatives for the post-hunt **sex ratio** objectives:

Post-hunt Population Objective Alternatives:			**Post-hunt Observed Sex Ratio Objectives**	
1,800 to 2,300	**Approximately 10% decrease in objectives**		**20 to 25 Bucks per 100 Does**	
2,000 to 2,500	**Remain the same**		**23 to 28 Bucks per 100 Does**	**Preferred**
2,200 to 2,800	**Approximately 10% increase in objectives**	**Preferred**	**25 to 30 Bucks per 100 Does**	
2,400 to 3,000	**Approximately 20% increase in objectives**			

Preferred Objectives:

Post-hunt Population

The preferred management objective for D-36 is a post-hunt **population of 2,200 to 2,800 mule deer**, aiming to maintain management and sustain the herd at its current estimated population level, allowing for a slight increase. This objective range provides the best balance for managing the herd, hunting recreational opportunities, minimizing agricultural conflicts, and maintaining habitat carrying capacity.

Post-hunt Sex Ratio

The preferred post-hunt sex ratio objective range for the D-36 mule deer herd is increasing the objective to **23-28 bucks per 100 does**. The range supports most stakeholder desires, preferring a slightly higher sex ratio objective in the DAU. A higher objective would reduce the need for an aggressive harvest from what CPW has observed. However, higher sex ratios would increase the risk of CWD. The preferred range allows for the best balance between satisfactory hunting experiences and the desired hunting opportunities.

Strategies for Achieving the Preferred Objectives:

Post-hunt Population – CPW will continue collecting annual inventory data and managing to the preferred mule deer population objectives. The population should persist as long as fawn recruitment remains strong without public land doe hunting licenses. Tools to control private land depredation issues will remain in place. CPW will consider doe harvest opportunities once the population estimate reaches the upper region of the preferred objective range or a significant deterioration in habitat conditions occurs.

Post-hunt Sex Ratio – CPW may need to increase buck-hunting opportunities until the observed sex ratio falls within the preferred objective range. After that, CPW will monitor the herd to maintain a balance between buck-hunting opportunities and the mature buck level relevant to the objective range. Harvest from these licenses should sustain an acceptable mature buck population and stakeholder satisfaction. The preferred objective would reduce the risk of CWD from the sex ratio levels CPW has observed in recent years.

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Herd Management Plans and Wildlife Management by Objectives

Figure 1. The objective process used by Colorado Parks and Wildlife to manage big game populations on a DAU basis.

Colorado Parks and Wildlife (CPW) writes Herd Management Plans (HMPs) for big game populations in specific geographic areas represented as Data Analysis Units (DAUs). A DAU comprises one or more Game Management Units (GMUs). The area also represents the year-round distribution of a specific big game herd. CPW manages big game populations using a "management by objective" approach. The management style guides a cycle of data collection, data analysis, and the resulting decision-making processes (Figure 1). HMPs establish long-range (10-year) management objectives and describe how CPW proposes accomplishing these in a specific DAU. A significant outcome is the availability of hunting seasons for big game harvest opportunities.

CPW designed the HMP process to use big game harvest as a tool to achieve the identified objectives. The method incorporates public desires, habitat conditions, and herd biological capabilities into the final management strategy. The general public, hunters, commissioners, federal land management agencies, private landowners, and agricultural interests are involved in developing the HMP objectives. Biologists from CPW use input from all stakeholders to contemplate the preferred objectives. Finally, the HMPs go through the Colorado Parks and Wildlife Commission (PWC) approval process before implementation. CPW manages individual herds to meet the specific HMP objectives. First, biologists compile data and transfer it into population models to derive estimates. The parameters used in the models include harvest data calculated from hunter surveys, sex and age composition collected from aerial flight inventories, and mortality factors. Mortality factors comprise roadkill reports, wounding-loss estimates, and deaths from winter severity received during field observations. Thereafter, biologists compare the computed population estimates to the herd objectives. CPW then establishes the number of hunting licenses to manage the population to the preferred objectives.

Description of the Data Analysis Unit (DAU) D-36

Location

The Upper Rio Grande mule deer herd is in south-central Colorado, in the western region of the San Luis Valley (SLV). This herd comprises game management units (GMUs) 76, 79, and 791 (Figure 2). The Continental Divide bounds the DAU on the western side, U.S. Highway 160 on the southern side, U.S. Highway 17 on the eastern side, and the Continental Divide and Rio Grande/Saguache Creek divide to the north. D-36 is approximately 1,806 square miles in area, containing roughly 352 square miles of winter range and about 1,469 square miles of summer range. The DAU comprises portions of Alamosa, Hinsdale, Mineral, Rio Grande, Saguache, and San Juan counties. Primary drainages in the area are Alder Creek, Bear Creek, Bellows Creek, Embargo Creek, Goose Creek, Rio Grande, Squaw Creek, Trout Creek, and Ute Creek.

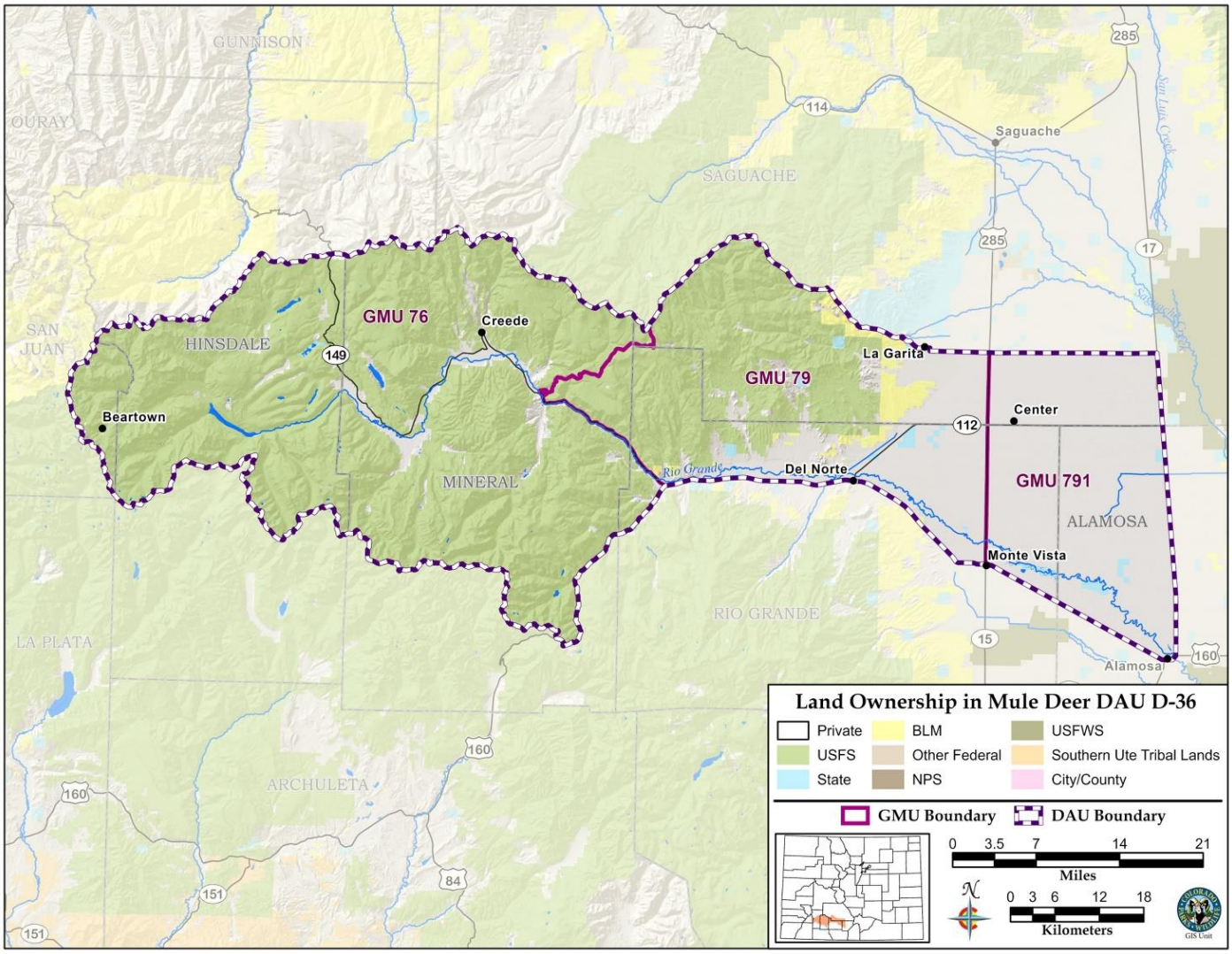

Figure 2. Geographic boundaries and land ownership for the D-36 (GMUs 76, 79, and 791) mule deer herd in southwestern Colorado.

Landownership, Climate, and Vegetation

The D-36 elevation ranges from around 7,500 feet on the valley floor to almost 14,000 feet along the Continental Divide. Public land comprises about sixty-eight percent of the DAU, and almost thirty-two percent of the area is privately owned (Figure 2, Table 1).

At the lower elevations, grassland, shrub, and agriculture are predominant. As the elevation rises, precipitation levels increase, and the vegetation changes to oakbrush, pinyon-juniper, and ponderosa pine. After that, Douglas fir and white fir combined with extensive stands of aspen groves flourish. Engelmann spruce, lodgepole pine, and subalpine fir become predominant between 9,500 and 12,500 feet in elevation. Alpine tundra prevails above 12,500 feet in elevation.

Table 1. Land ownership in the summer range, winter range, winter concentration areas, and severe winter range for the D-36 mule deer herd.

	Summer Range	Winter Range	Winter Concentration Areas	Severe Winter Range	Total DAU Area
Total Area within the DAU	**81%**	**20%**	**3%**	**14%**	**100%**
BLM	**<1%**	**1%**	**<1%**	**<1%**	**2%**
Colorado State (CPW)	**<1%**	**<1%**	**0%**	**<1%**	**<1%**
U.S. Fish and Wildlife Service (FWS)	**0%**	**0%**	**0%**	**0%**	**<1%**
Private	**14%**	**9%**	**2%**	**7%**	**32%**
State Land Board (SLB)	**<1%**	**<1%**	**0%**	**<1%**	**<1%**
U.S. Forest Service (USFS)	**66%**	**9%**	**<1%**	**5%**	**66%**

D-36 has a highland or mountain climate, with cool summers and cold winters. Heavy snowfalls can occur, especially at higher elevations. The higher elevation areas of the San Juan Mountains receive approximately 50 inches of precipitation annually. Precipitation comes mainly in the form of winter snow. The foothills receive 12-16 inches, while the valley floor gets 6-8 inches annually; the San Luis Valley is a high desert environment.

Habitat Resources

The most significant limiting resources for the D-36 mule deer herd are the quantity and quality of winter range habitat. Quality forage is essential in winter range and production areas for successful mule deer survival (Figure 3). As the winter conditions deteriorate, the need for food, water, and cover forces deer into the pinyon-juniper woodlands, lower elevation riparian areas with limited browse and understory forage, or onto agricultural fields.

In 2013, the West Fork Fire Complex (West Fork, Papoose, and Windy Pass fires), all caused by lightning strikes, burned over 109,000 acres in the western area of the DAU; the majority (West Fork and Papoose fires) occurred in GMU 76 (USDA – Forest Service, 2013). The U.S. Forest Service believes that dead spruce trees, killed by Spruce Beetles prior to the fires, were one of the most significant fuel loads that proliferated the enormity of the fires. The fires burned immense swaths of the Rio Grande and San Juan National Forest, opening extensive areas of canopy cover. Before the fires, forage availability below the mature old-growth trees was limited. Subsequently, since the fires and the lack of old-growth canopy cover, forage conditions and availability for deer have improved considerably. The enormous tracks of supplementary forage may increase carrying capacity and

potentially support a more robust deer herd. However, as the winter conditions decline, there is a lack of cover for the animals during extreme winter storm events.

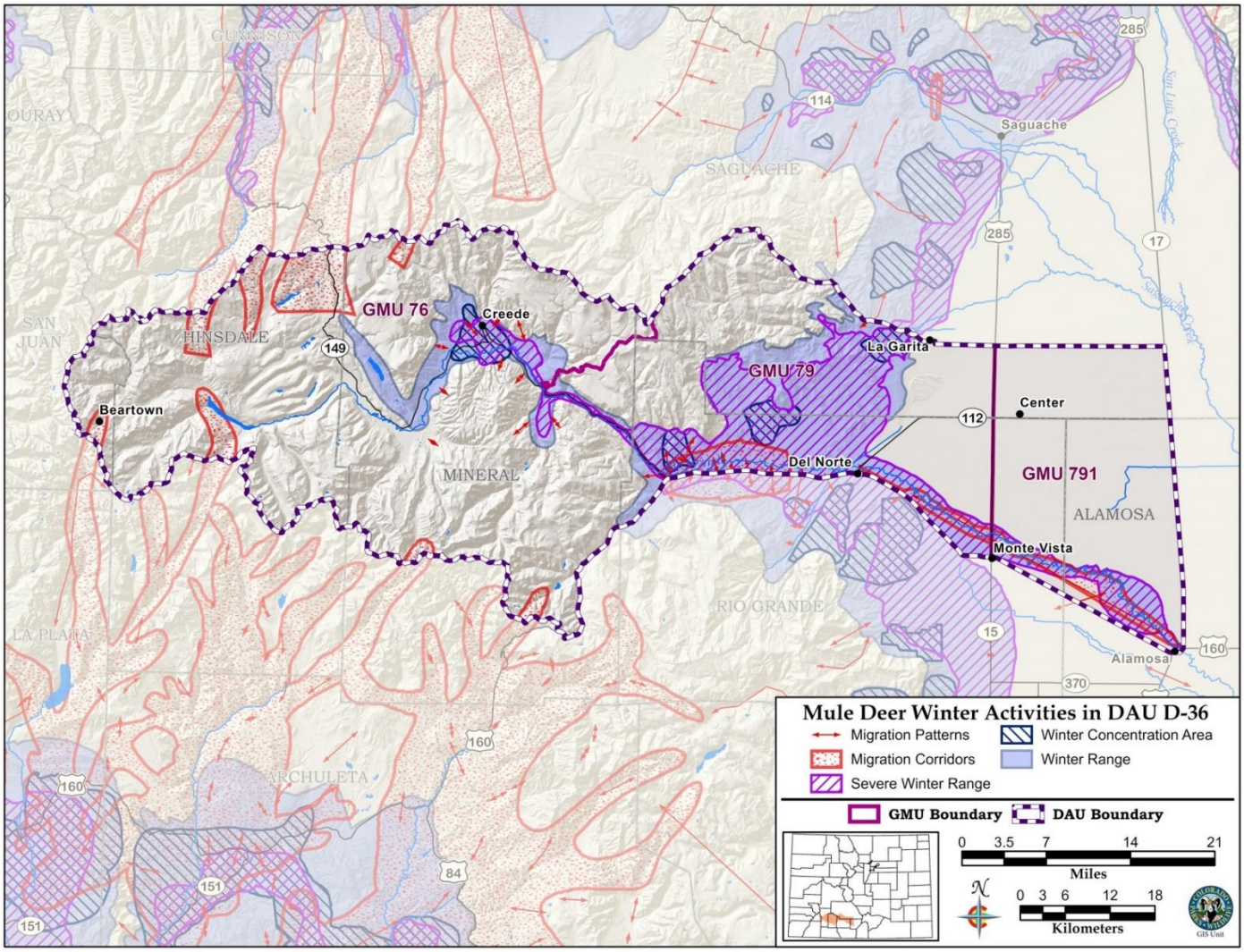

Figure 3. Winter range, severe winter range, and winter concentration areas for the D-36 mule deer herd. (For definitions: https://cpw.state.co.us/learn/Maps/CPW-Public-GIS-Species-Activities-Definitions.pdf#search=winter%20range%20definition).

Mule Deer Range and Movement

Mule deer are usually distributed throughout the mountain range of the DAU during late spring, summer, and early fall. In contrast, deer are situated along the foothills amongst the grassland-shrub, pinyon-juniper woodlands, or oak brush vegetation types during the winter months. Drainages in the area provide significant water resources, wherein native vegetation in these riparian regions contributes to vital forage conditions.

A resident population of mule deer appears to be establishing itself for most of the year near riparian regions adjacent to agricultural areas, particularly along the Rio Grande. Mule deer typically move to the lower elevations of the south- and east-facing slopes during the late fall and early winter migration. The timing depends on the winter severity and residual forage quality and availability. The movement to summer range is elevational, dependent on snowmelt and green-up. A segment of the population that

summers in the Creede area may spend winter in the Gunnison drainage to the north. Likewise, several mule deer that summer along the Continental Divide at the headwaters of the Rio Grande spend winter in the San Juan drainage to the south. Mule deer migration typically occurs during the spring, summer, and early fall months.

Herd Management History

Most people would not consider the Upper Rio Grande a geographic region plentiful in mule deer. GMU 79 has the bulk of the wintering deer because of forage availability on winter ranges. In contrast, GMU 76, higher in elevation, has limited winter range forage, making it marginal for wintering deer. The higher elevation, lack of abundant forage, and brutal winters combine to lower the forage quality of the entire DAU for most deer.

In 1999, all buck licenses became limited; thus, management of the deer herd in the DAU currently includes buck hunting during the archery, muzzleloader, and regular rifle seasons. PLO seasons in GMUs 79 and 791 also allow doe harvest to address deer damage on agricultural fields along the Rio Grande. No doe harvest has occurred during the archery and muzzleloader seasons in the DAU since the 1990s. In 2008, CPW added a restricted number of buck licenses to the fourth rifle season in GMU 79. Subsequently, the agency has provided additional buck licenses to GMU 79 in 2012 (10), 2017 (30), and 2018 (40). In 2018, the agency also provided ten additional buck licenses in GMU 76. CPW implemented the additional buck licenses to help curb an increasing sex ratio rising above the 2010 objective range. Besides these minor management actions, CPW has done little in terms of active management to adjust the total herd size.

Post-hunt Population Size

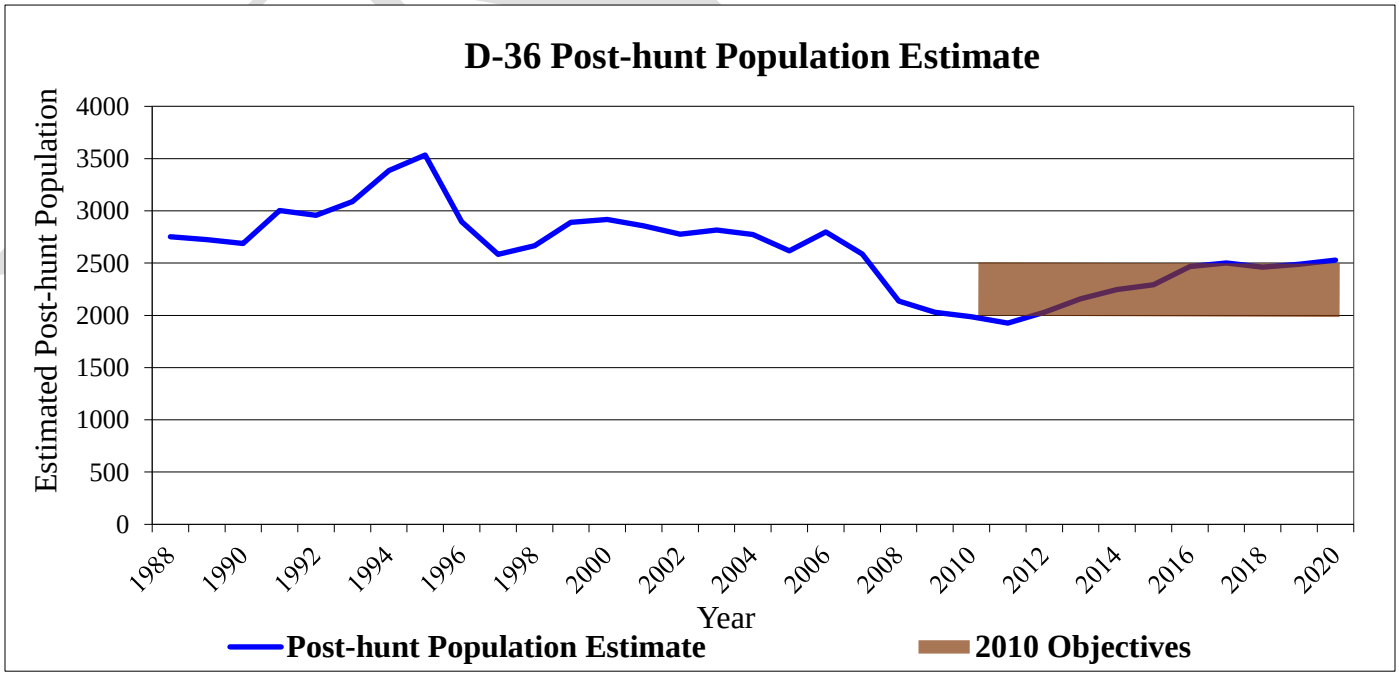

Figure 4. D-36 post-hunt population estimate from 1988 to 2020.

CPW sets hunting season regulations and license numbers for deer herds in Colorado based on the current estimated post-hunt population and the long-term population and sex ratio objectives (ten-year periods) established in HMPs, approved by the Colorado Parks and Wildlife Commission. Those population objectives are considered to be the most reasonable goal for each herd based on the quantity

and quality of available habitat for deer, the recreational, economic, and political desires of the people of the state, the level of conflicts between the deer herd and agricultural producers in the area, and the goals of land management agencies.

Each winter, the post-season population size is estimated from a computer model utilizing annual harvest data, age and sex ratio surveys conducted by CPW personnel, and statewide measured survival rates for does and fawns. Estimating population size over a large geographic area is difficult. Thus, the population objectives considered in this plan are given as ranges to reflect each year's population estimate variance according to changes in hunting, counting conditions, survival rates, and winter snow conditions.

Established population objective range alternatives rely significantly on the population estimates when revising the HMP. Population modeling is an evolving process whereby modeled estimates vary over time based on additional data or improved methodology. When modeled estimates change, irrespective of an actual change in the population, it is reasonable to adjust population objectives relative to the latest modeled estimate with a Commission-approved HMP adjustment. The basis of harvest-based population management is to increase female harvest when a population exceeds the objective, decrease female harvest when a population is below the objective, and maintain female harvest when a population is within the objective. The adjustment is based on the fundamental criteria of whether there are too many, too few, or the desired number of animals in the population. Therefore, improving modeled estimates may make it necessary to adjust the population objectives accordingly.

CPW prepared the previous HMP for D-36 in 2010, and the Commission adopted it in July 2010. The spreadsheet model used to prepare that plan used data from 1988 to 2008. The model accumulates data (primarily post-hunt age and sex ratios, harvest, and survival rates from the DAU) annually and builds a good representation of the population historically but less so presently. As CPW adds more data in the future, the model should continue to refine the estimates.

According to the model (2020), the estimated post-hunt population size for D-36 has been relatively stable at around 2,500 animals for the past five years (Figure 4). The population estimate reached its highest level at approximately 3,500 mule deer in 1995. The population dropped sharply over the next couple of years, ranging between 2,500 and 2,900 animals until 2007. Thereafter, the herd declined to its lowest level since CPW started collecting inventory data on this herd, at approximately 1,900 animals in 2011. CPW believes that the severe winter at the end of 2007 may have caused the population reduction. However, within the timeframe of the previous HMP, the population has gently climbed to the upper end of the objective range.

The average estimated mule deer population size throughout the 1990s was approximately 2,970 animals (Table 2). Subsequently, through the 2000s, the average population dropped slightly to around 2,630 animals. From 2010 until the present, the mule deer population estimate has averaged about 2,280 animals, with a stable trend.

Post-hunt Herd Composition

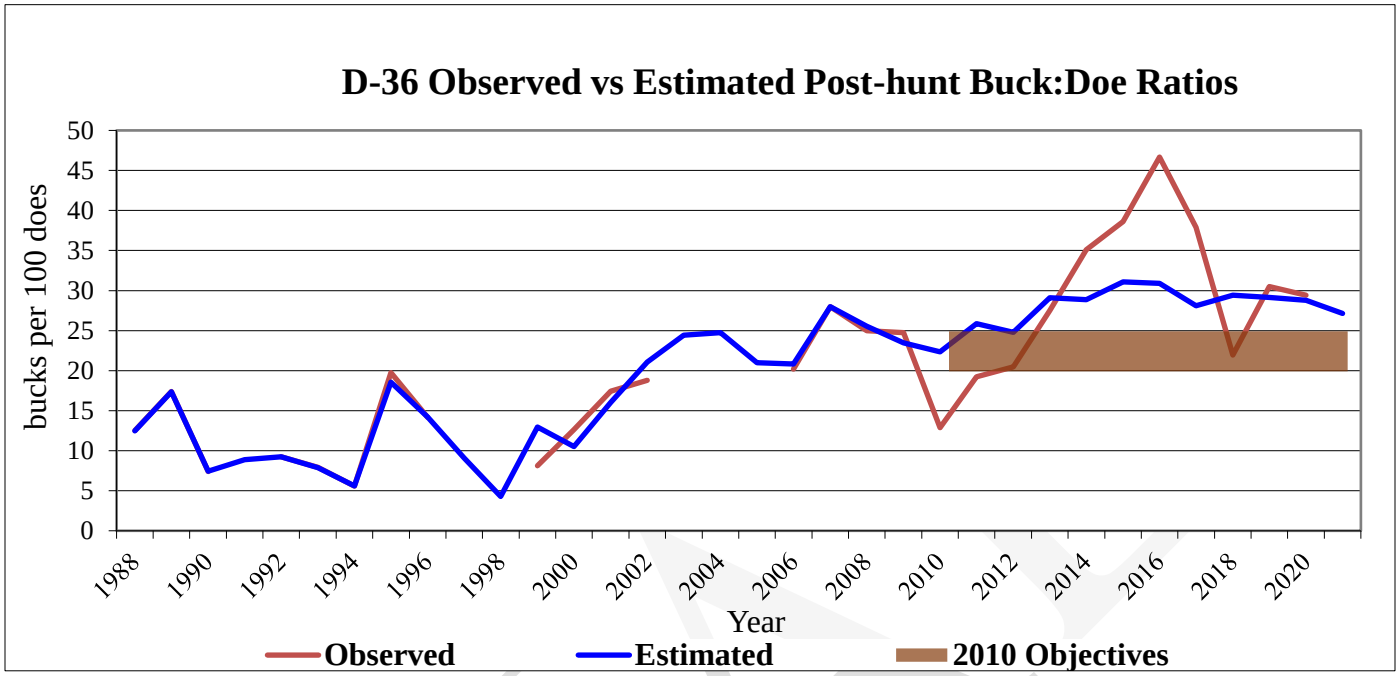

Figure 5. D-36 observed vs. estimated post-hunt sex ratios from 1988 to 2020.

CPW uses aerial classification surveys to gather observed post-hunt herd composition data. These surveys usually take place in winter, January for D-36, using a helicopter. The classification flights do not result in a population census but a sample large enough (ten to forty percent) to establish the DAUs age and sex ratios. CPW determines the sex ratio objectives by comparing the post-hunt population estimate to the calculated three-year-average sex ratios combined with stakeholder desires. Since 1988, there have been five years in which CPW has not collected inventory classification data. Nevertheless, averaging the observed sex ratios helps stabilize annual fluctuations. The mechanisms to determine the herd status relevant to the objectives should be consistent throughout the life of the HMP.

The D-36 annual observed sex ratio fluctuated but closely followed the model estimate until 1999, hovering around 12 bucks per 100 does, at which time buck license allocation became limited. From 2000 until 2009, the observed sex ratio rose slightly (approximately 25 bucks per 100 does), then dropped significantly in 2010 to about 13 bucks per 100 does. After that, the observed sex ratio continued rising to its highest level in 2016 (roughly 47 bucks per 100 does). Since 2016, the observed sex ratio has fluctuated annually. The fluctuation depends on locating animals; few mule deer remain in GMU 76 during the January classification period, and in GMU 79, they are tough to find. In contrast, the estimated sex ratio since 2013 has been trending slightly above the 2010 objective range at approximately 29 bucks per 100 does. Despite that, since 2019, the observed sex ratio has been following closer to the estimated value.

A higher sex ratio in D-36 may cause concern relating to Chronic Wasting Disease (CWD). Adult males (greater than two years old) are more likely to contract CWD (Miller and Conner, 2005). Furthermore, data collected throughout Colorado supports that CWD is typically higher in male deer than in female deer (Colorado Parks and Wildlife, 2018). Miller and Fischer (2016) suggested that increasing male-to-female ratios or the adult male age ratio could facilitate CWD persistence. In 2019, CPW estimated a low (less than one percent) prevalence of CWD in D-30, the San Juan Basin deer herd, south of GMU 76 and west of the Continental Divide. CWD's presence in a neighboring unit cautions proposals to increase sex ratio objectives significantly over the next ten years.

Harvest

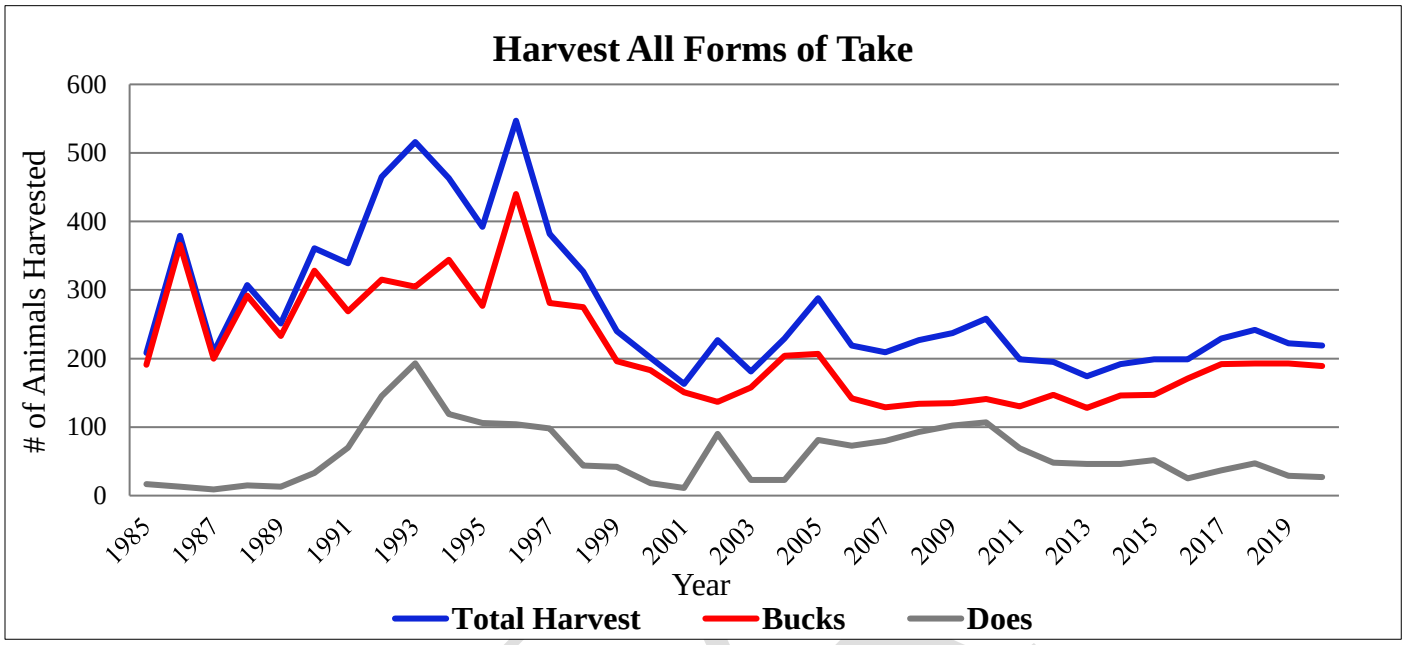

Figure 6. D-36 Total harvest, buck harvest, and antlerless harvest from 1985 to 2020.

Harvest success is primarily affected by the number of licenses issued, season structure, weather, and population size. Statewide, buck licenses became limited in 1999. Before that, the annual buck harvest averaged roughly 294 animals in D-36 (Figure 6). Since the limitation, buck harvest dropped to about 162 animals and remained relatively consistent, averaging almost 164 animals over the past ten years. In addition, the observed and predicted sex ratio rose after CPW implemented the limitation. Subsequently, the sex ratio remained relatively stable through 2012, after which it started climbing gently above the objective range set in 2010. The observed and estimated ratios have been trending above the objectives from 2013, with an observed exception in 2018 (approximately 22 bucks per 100 does). In 2017, CPW increased buck licenses slightly in GMU 79 and 791 and again in 2018 throughout the DAU, attempting to curb the heightened sex ratio trend and reduce it to the upper end of the objective range. Harvest from the increased licenses appears to have leveled any further increase, and the sex ratio is trending gently downward.

Doe harvest has fluctuated since 1985, averaging roughly 60 animals annually. CPW removed doe licenses from GMU 76 in 2000. Over the previous ten years, doe harvest from GMU 79 and 791 combined has averaged around 43 animals, with a high of 69 and a low of 25. Private-land-only (PLO) licenses, which mainly address game damage issues, are currently the most significant source of doe harvest.

The combined hunting-season success rates for GMUs 76, 79, and 791 from 2011 to 2020 have averaged approximately fifty-four percent. However, harvest success rates are skewed between the archery, muzzleloader, and rifle seasons. The average archery success since 2010 is around twenty-three percent, with a low of six percent in 2017 and a high of forty-five percent in 2019. Comparatively, the second and third rifle seasons have averaged roughly fifty-four to fifty-five percent, and the fourth rifle season's success has averaged about seventy-nine percent over the past ten years. Since 2011, the muzzleloader season success has fallen between the rifle and archery seasons, at almost thirty-seven percent.

Herd Management Status

Summary of Current Conditions

The post-hunt population estimate of approximately 2,500 animals is at the upper end of the objective range. The population has been at that level and has been relatively stable since 2016. (Figure 4). The upward trend may reflect increased fawn:doe ratios observed during the winter classification periods. Current doe harvest in the DAU results from PLO licenses relating to game damage issues.

Observed fawn-to-doe ratios fluctuate annually but appear to be trending downward since their peak in 2017. CPW believes that variation in annual precipitation may affect the fluctuations. CPW management has little control over most fluctuations. Variables, such as weather, forage quality and availability, water resources, predation, or disease, usually impact reproduction and fawn recruitment more than management actions.

Since 2013, the observed sex ratio has been above the objective range, except in 2018. The observed sex ratio rose from 2010, reaching its peak in 2016, after which it dropped again. The past five- and ten-year average model-estimated sex ratios have been roughly 29 bucks per 100 does. CPW set the objectives in 2010 to provide desirable buck hunting opportunities and sustain a relatively mature buck population. Stakeholders in the field have commented positively on this and are generally receptive to seeing more mature bucks at the cost of limited licenses. However, increasing the mature buck population may generate higher license limitations. Raising the sex ratio or the adult buck age structure could simultaneously increase CWD transmission risk. On the contrary, reduced sex ratios may increase hunter opportunities.

Management Concerns

The significant factors limiting this population are the quantity and quality of winter range habitat. The winter range continues to diminish, with increased development on private land and competition with domestic livestock. The South Fork area has seen an extensive conversion of private ranches to housing development and the establishment of a golf course. From Alamosa to Monte Vista, the conversion of large ranches to 35-acre home-sites has fragmented the habitat. Reduction in winter range habitat could restrict the growth of the D-36 population. The DAU experienced severe droughts during the late 1990s and early 2000s. Forage conditions declined because of the lack of moisture. CPW provided additional doe licenses in 2002 for GMU 79 to prevent population growth during the droughts and excessive forage herbivory at lower elevations.

Summer recreational activities continue to increase throughout the DAU. Activities include camping, hiking, horseback riding, mountain biking, fishing, and all-terrain vehicle (ATV) usage. The U.S. Forest Service and Bureau of Land Management (BLM) lands receive most recreationists. The same lands are also where most of the summer range within the DAU is located. The impacts of these various forms of recreation are unknown, but CPW believes they disturb deer to some degree, affecting their distribution and, more importantly, reproduction and fawning.

The modeled population estimate rose since 2010 and has been relatively stable over the past four years. Fawn recruitment appears to have increased appreciatively since 2015, but it has been on a gentle downward trend over the past three years. The satisfactory fawn recruitment coupled with reduced doe harvest may have resulted in population growth. However, the estimate remains at the higher end of the objective range.

CWD is continually a threat to the health and viability of the D-36 mule deer herd. In August 2001, at the Anta Grande Elk Farm west of Del Norte on Hwy 160 (adjacent to the DAU), a domestic cow elk was found dead and later determined to be infected with CWD. After testing the remaining animals in the herd (approximately 200 elk), one additional elk tested positive for CWD. Eventually, the entire domestic elk population on the farm was depopulated. In the fall of 2001, after CWD was detected, CPW (DOW at the time) built a second ten-foot-high fence around the perimeter of the elk holding pens to create a barrier between the domestic herd and wild animals. CPW conducted significant efforts to monitor the risk of spreading CWD into wild populations through culling and extensive testing of deer and elk in the immediate and adjacent areas. In 2020, CPW implemented mandatory CWD testing of all mule deer in the SLV. An adjoining unit, D-30 (San Juan Basin mule deer herd), south of GMU 76, had a CWD prevalence of less than one percent of the male population tested. In the future, testing results should allow CPW to determine the CWD status and its prevalence more accurately. If any mule deer test positive for CWD in D-36, CPW may need to re-address future mule deer management. Management actions would depend on the CWD results and risk to other ungulates, such as elk.

Mule deer are not a significant problem on agricultural land in the DAU, and any accompanying depredation concerns are minimal. CPW may provide game damage and dispersal licenses to private landowners to address any issues should they arise. Localized problems may result from restricted mule deer distribution during the winter. Private landowners who experience mule deer depredation issues accept the ability to access various management tools CPW offers. The agency will deal with future concerns on an individual basis.

The development of private lands is a growing concern in the DAU; however, it is less of a threat than in other areas of Colorado. Nevertheless, there are potential impacts on the mule deer populations from further development:

a) loss of limited habitat.
b) redistribution of animals from their historic winter range.
c) migration and movement barriers created by increasing road and fence establishment.

Given the San Luis Valley's agricultural-based economy, development occurs slowly, generally focused around municipalities. Still, private land development within the winter or fawning range is of concern throughout the DAU. The threat from low-density residential development depends on the amount and distribution of private land and the area used for ranching. Johnson et al. (2016) analyzed a 40-year relational and correlative study. The study looked at land-use changes from 1970 to 2010 and the impacts on mule deer populations in DAUs throughout Colorado. In D-36, the proportion of "undeveloped" private land (0 housing units/acre) has decreased from nine to three percent; the reduction has been relatively steady since 1970. From 1970 to 2010, rural land development (> 82 acres/housing unit) belonging to the private sector increased slowly but steadily from approximately 242,180 to 288,200 acres. Exurban expansion (4-82 acres/housing unit) has almost tripled over the same period from about 7,090 acres to 20,600 acres. Notable, however not significant, from 1970 to 2010, urban development (< 0.5 acres/housing unit) in D-36 increased from almost five acres to 42 acres.

Oil, gas, geothermal, and solar energy development and their potential impact on wildlife are concerns throughout western states. Exploration of energy development continues in the San Luis Valley (SLV). To date, no cost-effective gas, oil, or geothermal extraction techniques are available to justify commercial expansion. Currently, the threat of oil and gas development to the mule deer population in D-36 remains low. Similar to oil and gas development are solar farms. Proposals for solar power development on private and public land in the SLV have increased. Fortunately, solar-panel power companies have predominantly installed their facilities away from mule deer habitats in greasewood vegetation-dominated areas. The focus areas on public land have been in Conejos, Saguache, and Alamosa Counties, mainly in the mule deer winter range. Suppose the expansion of solar energy development or oil and gas extraction in the unit becomes lucrative. Their impacts could further affect

the limited winter range and mule deer population viability through loss of habitat, habitat fragmentation, or disturbance to population dynamics.

Public Involvement

In the summer of 2021, CPW held a local public meeting in Creede, CO. Local constituents representing different community stakeholder groups attended the meeting. The overall view from the attendees was that they were somewhat pleased with deer management in the DAU.

CPW provided an initial draft document online to the public for 30 days. In addition, CPW sent the draft to the BLM, local county commissioners, the local Habitat Partnership Program (HPP) committee, and the U.S. Forest Service for commentary and feedback. The draft allowed all constituents to participate in the public process, including non-consumptive recreationists, hunters, landowners, local stores, or business owners.

Management Strategies

The Herd Management Plan's primary purpose is to determine the long-term (typically 10-years) post-hunt population and sex ratio objectives. The objectives are a basis for setting hunting licenses and as an annual management reference. Management actions can usually manipulate sex ratios, whereas age ratios are more likely affected by environmental or biological factors.

When updating HMPs, population objectives may need to be adjusted to fit more accurately with updated model estimates. CPW provides an objective range to allow for flexibility in management. The bases for management flexibility are uncontrolled environmental or biological effects on the mule deer herd or its habitat. These impacts could emanate from extreme weather events, droughts, severe winters, disease outbreaks, forest fires, or other agency management actions.

Habitat improvement in the DAU may be crucial for sustaining a viable deer population. The financial and physical investment effort needed for habitat improvement would likely be lower with lower population objectives. As the population increases, the investments required may be more significant. Habitat improvements may vary in labor intensity, cost, size, and life expectancy of the projects. CPW proposes continual efforts towards habitat improvement practices such as prescribed fires, fertilization, seeding, water-retention facility implementation, fencing, timber management, travel management, or range management. Private land game-damage problems would likely decrease under lower population objectives or public-land habitat improvements.

If the mule deer population increases or the public-land habitat deteriorates, private-land conflict issues may intensify. Conversely, heightened population levels may benefit hunter harvest success. In addition, increased numbers of mule deer may help satisfy hunter demand and increase fiscal benefits to state and local economies.

Private land game damage issues are usually correlated with winter severity and mule deer distribution. Increased deer numbers can occupy healthy landscapes, but only when their distribution minimizes conflict. CPW will retain various tools to address potential game damage issues. Public land habitat improvement and increasing water retention efforts should enable deer to withstand years of lowered precipitation levels. Working with partner agencies in habitat improvement and enhancement projects should also help maintain a healthy, viable mule deer population.

A rising population also has the potential for increased highway motor-vehicle collisions. In 2019, the Colorado Department of Transportation and CPW completed the West Slope Wildlife Prioritization Study (WSWPS) to "improve human safety and wildlife movement needs throughout Colorado's west slope transportation system" (Kintsch et al., 2019). CPW will continue working cooperatively with CDOT to reduce animals involved in vehicle collisions as much as possible. Increasing signage and deploying other traffic warning mechanisms could significantly reduce animal-vehicle collisions. Furthermore, to mitigate significant prioritized areas of concern according to the WSWPS or newly rising conflict areas, there is the potential to construct highway crossing structures (overpasses or underpasses) or exclusion fencing if warranted.

Post-hunt Population 2010 Objective – 2,000-2,500 2020 Population ~ 2,500

ALTERNATIVE 1: 1,800 to 2,300 deer (approximately 10% decrease from the present population estimate).
CPW estimated the 2020 population to be approximately 2,500 animals. Alternative 1 would aim for a population below the existing levels. The last time the population was in this range was during the first half of the previous HMP. Game damage by deer in the DAU has been minimal, and this alternative would most likely continue to minimize problems. Doe hunting opportunities could become a possibility to reduce the present estimate towards the upper end of this objective range, creating greater hunting opportunities in the short term but significantly reducing opportunities in the long term.

ALTERNATIVE 2: 2,000 to 2,500 deer (remain the same as the previous objective range).
According to the models, the population estimate has been within this alternative for seven of the past ten years. As the population decreases, so would hunter opportunity, and there would be a reduction in game-damage potential. Demands on the resources would remain relatively stable and are not likely to negatively impact the habitat. Minimal doe hunting opportunities would remain, i.e., PLO and dispersal licenses in GMUs 79 and 791 only. Enhanced habitat manipulation, particularly in the winter range, would continue to be encouraged; however, intense habitat management would not be necessary.

ALTERNATIVE 3: 2,200 to 2,800 (approximately 10% increase from the present population estimate). **Preferred**.
CPW proposes this alternative to maintain current management to stabilize the population and sustain it within this objective range. The range exceeds the 2010 population objectives but encompasses the model estimate of approximately 2,500 animals. This range allows the best balance for managing the herd for recreational opportunities, minimizing agricultural conflicts, and maintaining habitat carrying capacity. The population has been running around the midpoint of this alternative for the past five years. Alternative 3 would offer the ability for a slight increase in population growth. The ability of this herd to be maintained at this level during the next ten years is feasible as long as fawn recruitment remains strong. If the population estimate reaches the upper level, CPW may conservatively implement public-land doe licenses. Encouragement of habitat improvement and water retention efforts will continue on public land, particularly in low deer density areas. Improvements may promote distribution from private property and sustain a viable mule deer population on public land. CPW will continue providing damage and dispersal licenses to address private land conflicts. Conflicts should remain relatively low unless severe winters push animals onto agricultural lands.

ALTERNATIVE 4: 2,400 to 3,000 deer (approximately 20% increase from the present population estimate).
This alternative would encompass the current population estimate within its lower levels. It offers the ability to increase population growth. CPW could maintain the deer herd at this size during the next ten years as long as fawn recruitment and forage availability remains strong. This alternative could stress habitat conditions and require significant efforts to improve public land. CPW would likely maintain the

desired buck-hunting opportunities. However, game damage conflicts may increase, particularly along riparian zones. CPW will continue providing damage and dispersal licenses to address private land conflicts.

Herd Composition (Buck to Doe Ratio) 2010 Objective: 20-25 bucks per 100 does.

ALTERNATIVE 1: 20 to 25 bucks per 100 does.
This is the 2010 objective range; however, the average observed sex ratio has been above the upper level of this objective range since 2006. Therefore, this alternative would require an increase in buck licenses to achieve increased harvest while maintaining the 2010 sex ratio objective. It would also increase hunter opportunities throughout the DAU to reduce the sex ratio.

ALTERNATIVE 2: 23 to 28 bucks per 100 does - **Preferred**
For CPW to achieve this objective, buck harvest opportunities may initially need to increase slightly for a few years, based on the most previously observed and estimated sex ratios. Once the sex ratio falls within the objective range, CPW may restrict licenses based on the sex ratio performance. This alternative would likely result in a slight decrease in the maturity of the buck population component from what CPW has observed over the previous two years; however, it still allows for respectable and acceptable harvest opportunities.

ALTERNATIVE 3: 25 to 30 bucks per 100 does.
This alternative would maintain buck harvest at the present levels, limiting hunting opportunities the most. In return, the maturity level of the buck population would be held at currently observed levels. However, the license restriction may increase preference point requirements as demand for these licenses rises. In addition, the increased maturity of the buck proportion of the population could increase the risk of CWD within the herd.

Post-hunt Population Objective

The preferred population objective is Alternative 3 for the D-36 mule deer herd. The intent is to maintain management to stabilize the population and sustain it at its current estimated level. That would support a post-hunt population objective of **2,200 to 2,800 deer**. This objective range provides the best balance for managing the herd, hunting recreational opportunities, minimizing agricultural conflicts, and maintaining habitat carrying capacity. If the populations estimate trends towards the upper level, CPW may conservatively implement public-land doe licenses. Implementation of these licenses would depend on the population status, the herd's productivity, or other biological or landscape constraints. CPW will continue providing damage and dispersal licenses to address private land conflicts. Collaborative efforts with partner agencies towards habitat improvement and water retention would continue on public land, particularly in low deer density areas. Public land habitat improvements should promote distribution from private property and sustain a viable mule deer population.

Herd Sex Ratio Composition – (Three-year-average observed number of bucks per 100 doe ratio)

Most stakeholders, who have asserted their opinions and desires to local field personnel, prefer a slightly higher sex ratio objective in the DAU. A higher objective would reduce the need for an aggressive harvest of the buck population in a relatively small mule deer herd. However, stakeholders are also concerned about the risk of CWD with an increased buck population, especially above the levels that CPW has observed recently. Thus, the D-36 preferred sex ratio objective range is **23 - 28 bucks per 100 does**. Annual management would strive to maintain the sex ratio composition within this range. The most recent observed sex ratio is slightly above this range; however, with the expected continued harvest from the additional licenses implemented in 2018, CPW believes the trend is downward. The preferred

range creates the best balance between the desired hunting experience and harvesting a mature mule deer buck in the DAU.

Public Input and Preferred Objectives

CPW attempted to solicit as much stakeholder feedback and comments as possible with available resources. The local biologist analyzed all stakeholder responses to the draft plan to determine the preferred objectives. The biologist also reviewed response letters from the BLM, Hinsdale county commission, the local HPP committee, and the U.S. Forest Service. After combining all feedback from the public and partner agencies on the draft document, the biologist selected the final preferred population and sex ratio objectives. CPW field personnel continued communicating directly with recreationists, hunters, and private landowners throughout the draft process. Furthermore, the biologist evaluated biological herd capabilities, land tolerance levels, and other factors mentioned earlier.

After combining feedback from all stakeholders, the overwhelming consensus supported maintaining the mule deer population at its current estimated level, allowing for slight herd growth and expansion. The outcome would be reflected by managing to an increased deer population objective of 2,200 to 2,800 animals (Alternative 3). In addition, most stakeholders wanted more mature mule deer bucks on the landscape but were cautious of CWD risk; thus, managing to a preferred higher sex ratio objective of 23-28 bucks per 100 does (Alternative 2).

CPW is particularly grateful to the Bureau of Land Management (BLM), which manages a portion of the mule deer winter range, for their response to the draft. After thoroughly reviewing the draft document, the BLM indicated their agreement with the ecological constraints on the D-36 herd. The agency approved the preferred management objectives of managing to a population of 2,200 to 2,800 mule deer and a sex ratio of 23 to 28 bucks per 100 does. The BLM believes the preferred objectives provide the best balance for managing the herd, minimizing the spread of chronic wasting disease (CWD), supporting hunting recreation opportunities, minimizing agricultural conflicts, and maintaining habitat carrying capacity. The notion is consistent with the BLM's efforts to enhance and restore rangeland function. Furthermore, the agency suggests that the preferred objectives should minimize the financial and physical investments associated with improving the habitat. They acknowledge the cooperative work with CPW on habitat improvement projects, but the area urgently requires continued habitat-monitoring programs. Such programs would significantly help quantify carrying capacity and assist CPW herd management decisions. Future management actions would likely alleviate any adverse effects on the habitat and the mule deer herd. The BLM also notes that the interspecific competition between elk and mule deer simultaneously with reduced habitat and resources could exceed ungulate carrying capacity.

CPW sincerely appreciates the U.S. Forest Service (USFS) feedback on the draft D-36 HMP. The USFS expressed solid support for the preferred population objective range (2,200 to 2,800 mule deer). The agency does not expect any significant conflicts with the preferred objective range. The agency recognizes that the quantity and quality of winter range are critical limiting factors for the mule deer population. The DAU carrying capacity should increase by implementing additional habitat improvement projects. The USFS also agreed with management towards the increased preferred sex ratio range (23 to 28 bucks per 100 does), supporting the desires of the stakeholder community. The range provides equal opportunities for recreational experience and harvesting a mature buck while minimizing CWD risk.

The San Luis Valley HPP committee discussed the HMP on October 12, 2021. They fully supported the preferred population objective of 2,200 to 2,800 mule deer and the sex ratio objective of 23-28 bucks per 100 does. The committee believes that the winter habitat is constrained by topography, periodic drought conditions, ranching development, and interspecific competition with other ungulates. Despite these constraints, the committee does not expect game damage issues to increase significantly. They acknowledge CPW having resources in place should conflicts arise.

Hinsdale County provided commentary on the D-36 HMP, for which CPW is exceptionally grateful. The county recognizes that megafauna and associated recreational activities are a significant part of Hinsdale County. The county thoroughly supports CPW's preferred objectives for managing the mule deer herd. In addition, the county supports increased winter range projects, increased water accessibility and storage projects, continued research and monitoring impacts on deer herds (beetle-kill, drought, widescale fires, restoration work to reduce impacts and improve big game travel corridors, livestock, hunters, and recreationists), continued monitoring of CWD, enhanced monitoring of moose populations, re-assessment of predation and disease, and increased youth hunting program opportunities. Contrarily, the county has expressed opposition to increasing licenses for any species or sex.

In summation, after accumulating all input for D-37, the **Preferred Population objective is 2,200 to 2,800** mule deer, and the **Preferred Sex Ratio objective is 23 to 28 bucks per 100 does**. CPW staff re-evaluates management towards the accepted objectives annually. Under current conditions, management towards these objectives will occur for the next ten years unless they become socially or biologically unacceptable. If so, CPW may re-address the objectives in an earlier timeframe.

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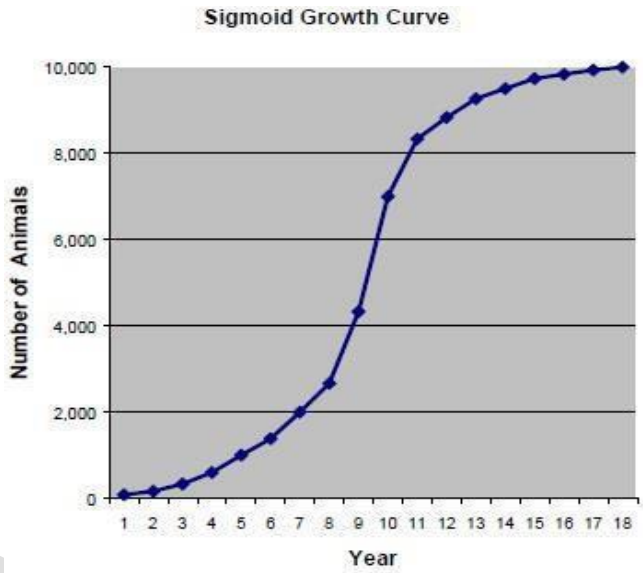
Miller, M.W., and J. R. Fischer. 2016. The first five (or more) decades of chronic wasting disease: Lessons for the five decades to come. *Transactions of the North American Wildlife and Natural Resources Conference* 81: *in press.* Available online at: *http://cwd-info.org/wp-content/uploads/2018/12/81st-NAWNRC-Transactions_FINAL-CWD-Excerpt.pdf*.

Appendix A. Population Dynamics and Managing for Maximum Sustained Yield

Numerous studies of animal populations, including species such as mice, rabbits, and white-tailed deer, have shown that the populations grow in a mathematical relationship referred to as the "sigmoid growth curve" or "S" curve (right). 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 the population.



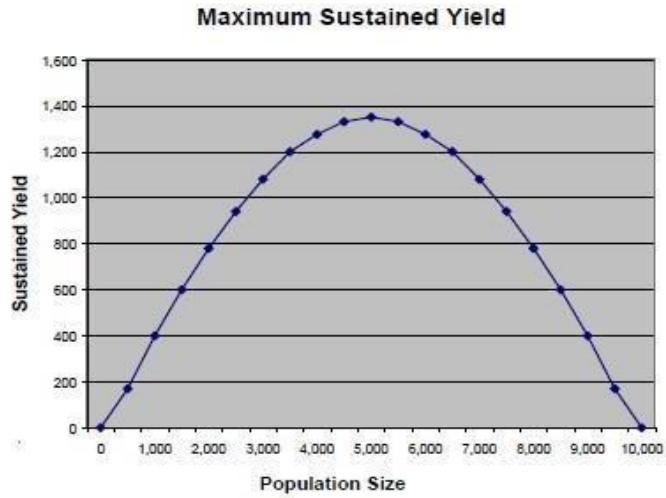
The second phase occurs when the population number is at a moderate level. This phase is characterized by a very high reproductive and survival rate. During this phase, food, cover, water, and space (habitat) is not a limiting factor. In addition, during this phase, animals such as white-tailed deer 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 the deer (bucks, does, and fawns) are at maximum rates during this phase.

The final or third phase occurs when the habitat becomes too 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. This phase is characterized by a decrease in reproduction and survival. In addition, during this phase, 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 the adult doe. The severe winters thus affect the future buck to doe ratios by favoring more does and fewer bucks in the population. Also, since the quality of a buck's antlers is somewhat dependent upon the quantity and quality of his diet, the antlers are stunted during this phase. 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 equals the number of deaths; therefore, to maintain the population at this level would not allow for any "huntable surplus." The animals in the population would be in relatively poor condition, and when a severe winter or other catastrophic event occurs, a large die-off is inevitable. A recent example of such a population die-off occurred in the relatively un-hunted Northern Yellowstone elk herd during the severe winter of 1988-89. This winter followed the forest fires of the summer of 1988 that raged in the National Park.

What does all this mean to the management of Colorado's big game herds? It means that if we attempt to manage for healthy big game herds, we should attempt to hold the populations at about the middle of the "sigmoid growth curve." Biologists call this "MSY" or "maximum sustained yield." At this level, which is exactly half the maximum population size or "K", in this example it would be 5,000 animals, the population should provide the maximum production, survival, and available surplus animals for hunter harvest. In addition, at this level, range condition should be good to excellent, and range trend should be stable. Game damage problems should not be significant, and

economic return to the local and state economy should be at the maximum. 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 (right). 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 exactly the same number of deer each year with 3,000 or 7,000 deer in the population. This phenomenon occurs since 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.



Actually, managing deer and elk populations for MSY on a DAU basis is difficult, if not impossible, due to the amount of detailed information required because of the complex and dynamic nature of the environment. In most cases, we would not desire true MSY management, even if possible, because the number and quality of bulls and bucks are minimized. However, the concept of MSY is useful for understanding how reducing densities and pushing asymptomatic 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 can be used to gauge the effectiveness of reduced population size on harvest yield.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SAN LUIS VALLEY FIELD OFFICE
1313 East Highway 160
Monte Vista, Colorado 81144

In Reply Refer To: 25 October 2021
6521 (LLCOF03000, TLA)

Brent Frankland,
Terrestrial Wildlife Biologist
0722 South Road 1 East
Monte Vista, CO 81144

Dear Mr. Frankland,

Thank you for the opportunity to comment on the proposed D-36 and E-34 Herd Management Plans. As the agency providing the majority of crucial winter range for big game in the San Luis Valley, we thought it important to provide comments on any changes Colorado Parks and Wildlife may implement. The Bureau of Land Management (BLM) San Luis Valley Field Office (SLVFO) has a strong commitment to providing quality wildlife habitat as one of our important "multiple uses". The BLM SLVFO has appreciated our longstanding working relationship with Colorado Parks and Wildlife (CPW) and partnership in managing wildlife habitats throughout SLVFO-managed lands.

After reviewing the draft D-36 and E-34 plans, we agree with the many current and emerging ecological constraints identified by CPW when considering elk and deer herd objectives for this area, including increasing fragmentation from development, increasing recreation pressure, limited winter range and forage availability, prolonged drought, game damage issues, disease, and competition with other wild ungulates.

The BLM agrees with CPW's proposed management objective to remain the same with a mule deer population of 2,200 to 2,800 and a sex ratio of 23 to 28 bucks per 100 does, as it provides the best balance for managing the herd, minimizing the spread of Chronic Wasting Disease (CWD), supporting hunting recreational opportunities, minimizing agricultural conflicts, and maintaining habitat carrying capacity. This position is consistent with BLM's continuing efforts to enhance or restore proper rangeland functions, in particular, by attempting to reduce the intensity and duration of collective growing season use by wild and domestic ungulates through improved livestock management, noxious weed control, carrying capacity analyses, more aggressive implementation of our Fire Management Plan, and through the development of climate change adaptation strategies. We feel that land management applied with an emphasis toward deer would continue to complement balanced management of woodland and shrubland communities across BLM lands in GMU 79. Additionally, we support the proposed management objective because it will minimize the overall financial and physical investments associated with improving habitat in the DAU—crucial for sustaining a viable deer population long-term.

In the draft E-34 HMP you state, "The principal factors limiting the E-36 population are the availability of water resources affecting the quantity and quality of forage, essential in the winter range and production areas. The winter range continues to diminish with increased development on private land and competition with domestic livestock". Additionally, you describe the litany of anthropogenic impacts on summer and winter range that could alter elk distribution, reproduction, calving efforts, and ultimately restrict population growth. However, the population has been on a gentle upward trend to its current (2020) estimated level of roughly 7,000 animals since 2013. In light of this trend and the identification that carrying capacity is limited/decreasing in the area, the proposed population objective alternative within the E-34 plan that includes an approximate 44% increase from 2010 objectives is concerning. We recommend a more moderate approach as identified in either of the other three alternatives until studies are initiated that quantify current condition of the crucial winter range and the carrying capacity of those areas. We are aware that if increases in numbers create land health impacts, CPW can moderate heard sizes with game management tools, but land health impacts are more difficult to reverse and can take many years to see improvement, especially in times of drought.

Although not explicitly stated in the plans, the long-term success of the D-36 herd is partially contingent on the successful management of the E-34 herd objective levels. We believe that continued interspecific competition between elk and mule deer and the reduction of habitat and resources available to the respective herds could eventually lead to a partial population collapse from exceeding the carrying capacity.

The draft HMPs list winter range forage availability and quality as the limiting factors to herd size. Therefore, continued habitat partnership projects between CPW and the BLM will be critical to improve availability of browse and to ensure the long-term health and stability of both herds. To assist CPW in making management decisions within each herd area, the BLM would like to encourage CPW to gather utilization data in elk and mule deer winter concentration areas. This data would help inform the decision between alternatives identified in the Herd Management Plans. Because of the uncertainties regarding ecological constraints, we believe a program to monitor habitat conditions is warranted, particularly to determine if population objectives need to be adjusted to fit more accurately with updated model estimates and to assist in quantifying carrying capacity. However, the BLM does not have the capacity to implement a monitoring program specific to wild ungulates but is willing to partner on an effort to accomplish monitoring habitat conditions.

If you have any questions regarding this matter, please contact me at (719-239-0494).

Sincerely,

Melissa S. Garcia
Field Manager
San Luis Valley Field Office

CC: Rick Basagoitia, Area Wildlife Manager

United States Department of Agriculture
Forest Service
Rio Grande National Forest
1803 West Highway 160
Monte VistaCO81144
719-852-5941719-852-6271719-852-6250

File Code: 2600
Date: November 9, 2021

Brent Frankland
Terrestrial Wildlife Biologist
Colorado Parks and Wildlife
722 Henderson Rd
Monte Vista, CO 81144

Dear Brent,

Thank you for the opportunity to comment on the Draft DAU Plans for D-36 and E-34. The Rio Grande National Forest (RGNF) appreciates your continued commitment of involving the land management agencies within the boundaries of the DAUs.

Mule Deer
The preferred management objective for D-36 is a population of 2,200 to 2,800 mule deer, aiming to maintain population size at its current level and allowing for slight increase. This objective increases the post-hunt season objective from the previous plan and aligns it more with the post hunt observed population estimates.

The preferred post-hunt sex ratio objective for this herd is to increase the current objective to 23-28 bucks per 100 does over the previous plan. CPW acknowledges this higher sex ratio supports stakeholder desires but may increase Chronic Wasting Disease (CWD) risk.

Both the population and sex ratio objectives ranges support the desires of the stakeholder community including the RGNF. The range would continue to allow for satisfactory hunting experiences and the desired hunting opportunities while minimizing risk of CWD to the extent practicable. There are currently no known conflicts with mule deer and RGNF lands associated with the DAU. Current management appears to be adequate and can support RGNF objectives for wildlife and range.

Elk

The preferred management objective for E-34 is to raise the objective to a population of 5,800 to 7,800 elk (above previous objectives) and maintain the population at its current size.
The expected post-hunt sex ratio would remain at 20-25 bulls per 100 cows. These ranges continue to support the desires of the stakeholder communities including the RGNF. It also allows for a satisfactory hunting experience with the desired hunting opportunities while minimizing CWD risk. There are currently no known conflicts with elk regarding RGNF lands within the DAU. Current management appears to be adequate and can support RGNF objectives for wildlife and range.

The RGNF wishes to share some considerations regarding tag allocations. Increases in tag allocation without longer seasons may increase conflicts with other forest users and impact road conditions. Please consider that any future increase in tags proposed for these DAUs may result in additional use on forest, including dispersed camping, camping in campgrounds, and road and trail use. This has the potential to intensify overlap with other forest users – recreationists, livestock operators, and firewood cutters for example - and increase the intensity of use on roads and trails, particularly during short hunting seasons. The area has received increased duration and intensity of recreation in recent years and there is potential for conflict between users where high hunting and recreational pressure overlap. Compressed seasons may also encourage hunters towards riskier, more resource-damaging behavior because of the limited time for harvest. When developing future season dates and tag allocations in these DAUs, consideration of both timing and intensity of hunting pressure would be beneficial. We would welcome the opportunity to work with CPW on avenues to educate hunters on forest etiquette and to educate other forest users on hunting seasons.

Overall, the RGNF supports the approval of the 2022-2032 DAU D-36 and E-34 Management Plans with these considerations in mind. Thank you again for the opportunity to comment and we appreciate working with CPW on big game management in these DAUs.

Sincerely,

X

Signed by: DAVID TOPOLEWSKI

David Topolewski
Wildlife Biologist
Rio Grande National Forest

Appendix D

The San Luis Valley HPP Committee has reviewed the Draft Herd Management Plans for Deer D-36 and Elk E-34. The Committee also appreciated Terrestrial Biologist Brent Frankland providing an overview of the plans at our October 12 meeting.

Upper Rio Grande Deer D-36 Herd Management Plan (GMU Units 76, 79 and 791)

The Committee supports CPW's proposed Alternative 3 regarding the *post-hunt population* objective which is an approximate increase in 10% over the 2010 objective of 2,000-2,500 to 2,200-2,800 mule deer. This objective range provides the best balance for managing the herd, hunting recreational opportunities, minimizing agricultural conflicts, and maintaining habitat carrying capacity.

Additionally, Alternative 2 *post-hunt sex ratio* as proposed, is supported by the Committee which increases the 2010 current objective of 20-25 to 23-28 bucks per 100 does. The proposed range creates the best balance between the desired hunting experience and for harvesting a mature mule deer buck in the DAU.

Upper Rio Grande Elk E-34 Herd Management Plan (GMU Units 76 and 79)

CPW is proposing Alternative 4 to maintain current management to stabilize the elk population and sustain it within the proposed *post-hunt population* objective range of 5,800 – 7,800.

The current modeled population is approximately 7,000 elk, which is over the 2010 objective of 4,000 – 5,500. Alternative 4 offers the ability for a slight increase in population growth over the current modeled population. Under this alternative, cow hunting opportunities may initially increase slightly to curb potential upward trend in population growth. The Committee is supportive of Alternative 4.

The Committee also supports CPW's proposed Alternative 2 of 20-25 bulls per 100 cows which maintains the 2010 *post-hunt sex ratio* objective. This sex ratio range would maintain the desired bull-maturity level and provide adequate hunting opportunities, based on the current observed and estimated sex ratios.

The San Luis Valley HPP Committee appreciates the opportunity to review and comment on the Draft Herd Management Plans and commends CPW personnel on their efforts to involve the public in the planning process.

/s/ Dale Gomez 10/13/2021
San Luis Valley HPP Sportsmen Representative and Chairman

STATE OF COLORADO

Comments on E-34 HMP and D-36 HMP

Kristie Borchers <district2@hinsdalecountycolorado.us> Tue, Nov 2, 2021 at 9:33 PM
To: "Frankland - DNR, Brent" <brent.frankland@state.co.us>

[*** This email originated from outside Hinsdale County - PLEASE USE CAUTION OPENING LINKS, ATTACHMENTS OR REPLYING ***]

Dear Mr. Frankland -

Thank you for your patience in allowing me these comments.

-megafauna and associated watching and hunting are a part of the fabric of Hinsdale County
-we would not like to see any licenses increase over any species or any sex
-the data is demonstrating a stabilization of herds
-we support increased winter range projects
-we support increased water accessibility and storage projects that may impact and increase water availability for foraging and vegetation
-the restoration and improvement of range following the West Fork Complex fire is noted
- we support the continued research and monitoring of impacts on deer and elk herds such as the beetle-kill, drought, and widescale fires and restoration work to reduce impacts and improve travel corridors for big game, livestock, hunters, recreationists, and safety for response to emergency or wildfire
- we support the continued attention to neighboring herds and the monitoring of Chronic Wasting Disease
- we support continued monitoring of moose populations on deer / elk
- we appreciate the ongoing re-assessment as natural predation, disease, and seasonality impacts herds; we believe this will need for assessment and corrective action may increase in importance with the reintroduction of wolves
-we understand the taking of big game in Hinsdale County provides intergenerational, shared experiences for our families and repeat hunting visitors and support youth hunting programs

Please let me know if you would like to speak further. Thank you for your work.

With much respect,
Commissioner Kristie Borchers

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