Sand Dunes Elk E-11 Herd Management Plan Extension

Game Management Unit 82

Revised By

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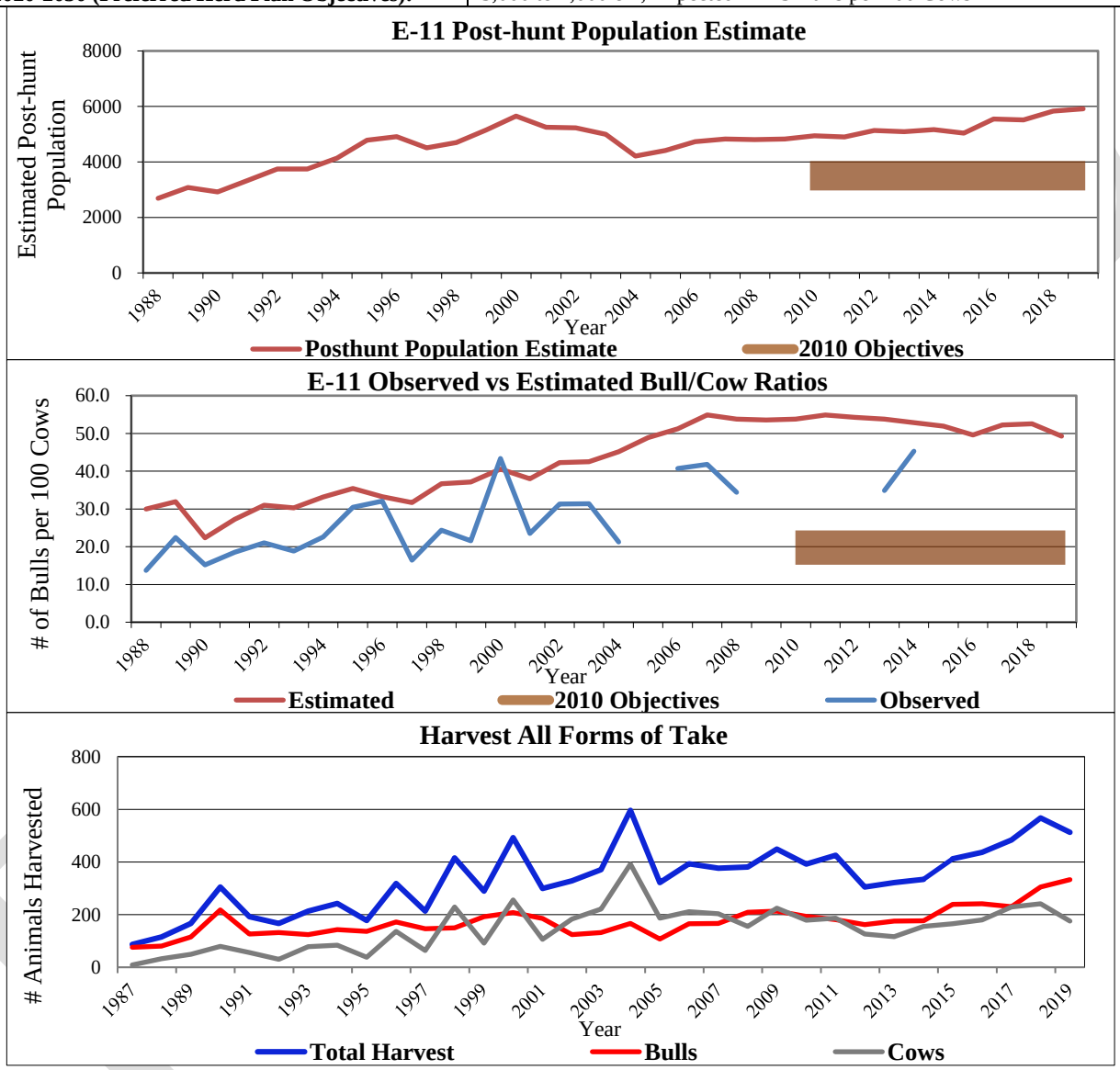
Sand Dunes Elk E-11 HMP Extension Executive Summary

GMU: 82	**Land Ownership:** 10 % BLM, 20% GRSA, 19% USFS, 12% USFWS, 8% State Land Trust, 3% CO State, and 29% Private.
2019 Post-hunt Population: 5,900	**Post-hunt Sex Ratio (Bulls to 100 Cows):** 39 (observed 3-yr average)
2010-2020 (Previous Herd Plan Objectives):	3,000 to 4,000 elk; Expected 17-23 Bulls per 100 Cows.
2020-2030 (Preferred Herd Plan Objectives):	3,000 to 4,000 elk; Expected 17-23 Bulls per 100 Cows



The E-11 elk herd is in the northeastern section of the San Luis Valley. The DAU (geographical area) comprises a single Game Management Unit, GMU 82, approximately 1,088 square miles. Elk winter range within the DAU includes roughly 526 square miles, whereas the summer range encompasses about 803 square miles of summer range. Portions of Alamosa and Saguache counties make up the entire area. Public land constitutes about 71% of the entire DAU, while the private sector owns almost 29% of the area.

The estimated post-hunt population size for E-11 reached its peak, about 5,900, in 2019. From 2000 to 2004, the population declined almost to the upper end of the current objective range. Reduced calf recruitment and drought conditions combined with high antlerless harvest may have been the cause. Thereafter, the population has been increasing slowly to the current estimated population size of roughly 5,900 animals.

The observed sex ratios in E-11 have steadily been increasing since the early 1990s. In 2016, the observed sex ratio reached its highest point at roughly 40 bulls per 100 cows since Colorado Parks and Wildlife (CPW) began collecting classification data for this herd in the late 1980s. In 2019, to increase management efforts towards reducing the E-11 population and sex ratio, CPW implemented an extended fall bull- and cow-hunt season, and the early summer bull-hunt, on private land in the DAU. The additional pressure ought to distribute elk to more accessible public land. Current sex ratio objectives remain a long way below the observed ratio level. Thus, managing towards the expected sex ratio should continue providing abundant hunting opportunities and a desirable mature bull population.

Elk harvest in E-11 depends on hunters getting access to the animals. Significant numbers of elk move to the US Fish and Wildlife Service (USFWS) property, also known as the Baca National Wildlife Refuge (BNWR) and the Great Sand Dunes National Park and Preserve (GRSA) when the hunting seasons begin, reducing hunter access. Substantial numbers of elk also move onto private agricultural lands. Bull harvest averaged approximately 152 animals from 1987 through 2009. In the last ten years, the average bull harvest has risen to about 224 animals. The majority of the antlerless harvest is limited, except during the archery either-sex season and on private land. Cow harvest rose significantly from 1987 through 2004, from nine animals to 392 animals. In 2005, cow harvest dropped to about 187 animals and has remained relatively stable since then. Over the previous ten years, cow harvest has averaged around 182 animals.

E-11 is an over-the-counter (OTC) unit during the archery season for either-sex and second and third rifle seasons for bulls on public land. Public-land success rates for all seasons in this DAU are relatively low (20%) and have remained the same since 1987. In contrast, rifle success on private land tends to be higher because of the availability of dispersal and private-land-only (PLO) licenses, with 68% and 84% success, respectively. These licenses allow hunters with landowner permission easier access to harvest animals on private land.

The E-11 elk herd continues to increase. Controlling the DAU population through harvest has been challenging because of the restricted or no hunting areas of the BNWR, the GRSA, and private land. CPW and local partner agencies are concerned about the herd's adverse impact on marginal and sensitive vegetation, particularly along riparian areas. The rising elk herd may have interspecific pressure on other ungulates, potentially exceeding carrying capacity. CPW would like to continue reducing the population and sex ratio and distribute the elk through the DAU. The GRSA has proposed implementing an elk management strategy – an Ungulate Management Plan. The Plan's goals would help reduce the number of elk utilizing the winter range within the Park and distribute the animals to more accessible public land.

Game damage issues continue to occur in the DAU. Beginning in 2019, CPW has been dealing with most private land depredation issues through vouchers to harvest elk on private land. The harvest would come from an extension of the fall-bull and cow-hunt season, and early summer bull-hunt to facilitate the population and sex ratio reduction and distribute the animals from private land.

Preferred Objectives:

Post-hunt Population

The preferred management objective for E-11 is to remain at **3,000 to 4,000 elk**. This objective aims to decrease the current population. Management for the life of this HMP would use the strategies mentioned below.

Expected Three-year Average Observed Post-hunt Sex Ratio

For an OTC unit, the expected post-hunt sex ratio would remain at **17-23 bulls per 100 cows**. This range continues to support the desires of the stakeholder community. It also allows for a satisfactory hunting experience with the desired hunting opportunities, reducing the potential risk of CWD disease.

Strategies for Achieving the Preferred Objectives:

Post-hunt Population – To achieve the preferred elk population objective, CPW will collect annual inventory data for the models to function more accurately and conduct appropriate management. CPW will also continue pursuing different strategies and working with partner land management agencies to allow hunter access to the elk herds. Continued pressure on the entire herd is critical, particularly from partner agencies, to encourage increased distribution and harvest. CPW will continue aggressively addressing preventative measures to depredation issues. Hunter harvest success should increase by distributing the elk off the BNWR, GRSA, and private land to more accessible locations. Agricultural land depredation issues should also decrease with the reduced assembling of large groups.

Expected Post-hunt Sex Ratio – CPW will pursue management towards reducing the observed sex ratio by providing abundant hunting opportunities. CPW will continue working closely with federal partner landowners to promote the harvest and distribution of elk concentrations. The agency will also attempt to manage the bull population minimizing dispersal to high depredation areas on private land. The additional pressure from the BNWR, GRSA, private landowners, and the Nature Conservancy should allow hunters access to the elk. Harvest from these licenses should reduce the sex ratio, distribute the animals, and maintain stakeholder satisfaction.

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Herd Management Plans and Wildlife Management by Objectives

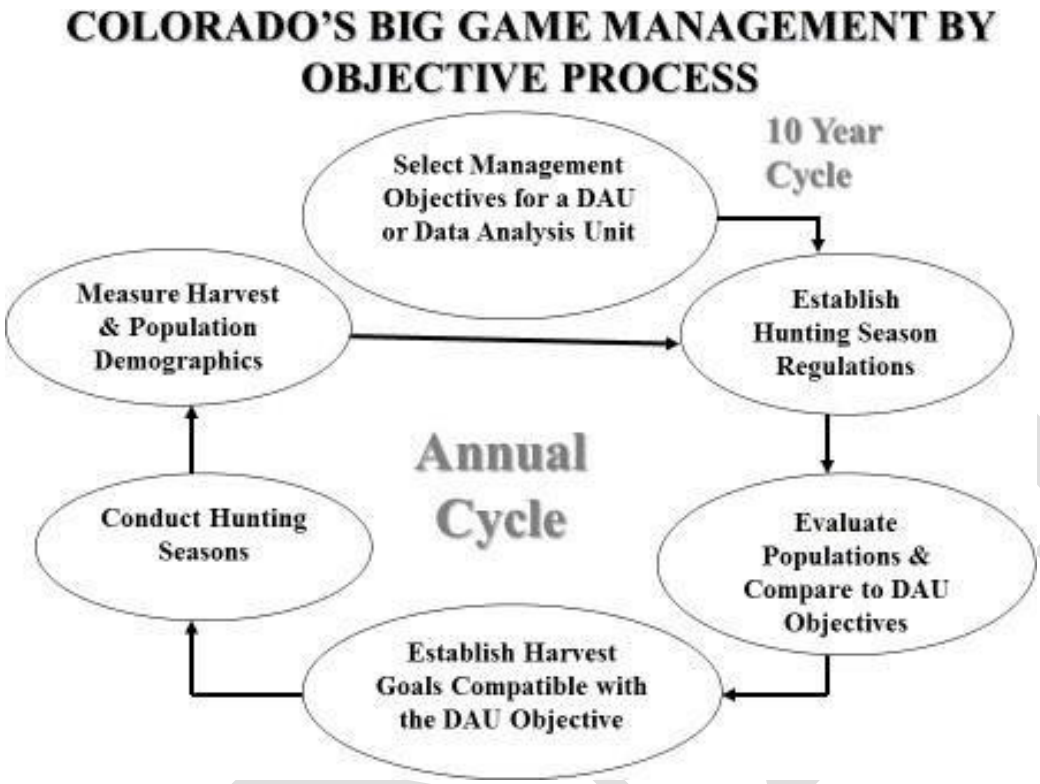


Figure 1. The objective process used by Colorado Parks and Wildlife to manage big game populations on a DAU basis.

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. This 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 expectations, and they 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. This method incorporates public desires, habitat capabilities, 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 and expectations. Biologists from CPW use input from all stakeholders to contemplate the preferred objectives. Finally, they go through the Colorado Parks and Wildlife Commission (PWC) approval process before implementation.

CPW manages individual herds to meet the specific HMP objectives or expectations. Biologists compile data and transfer it into population models to derive population 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) E-11

Location

The Sand Dunes elk herd is located in south-central Colorado, on the northeast side of the San Luis Valley (SLV). It comprises a single game management unit, GMU 82 (Figure 2). The Sangre de Cristo Mountains bound the DAU on the eastern side, US Highway 160 and the Alamosa-Costilla County line on the southern side, Colorado Highway 17 and US Highway 285 on the western side, and the divide between the Arkansas drainage and the San Luis Valley to the north. E-11 is approximately 1,088 square miles in area, comprising roughly 526 square miles of winter range and about 803 square miles of summer range. The DAU consists of portions of Alamosa and Saguache counties. Primary drainages in the area are Crestone Creek, Deadman Creek, Medano Creek, Rito Alto Creek, Sand Creek, San Isabel Creek, and San Luis Creek.

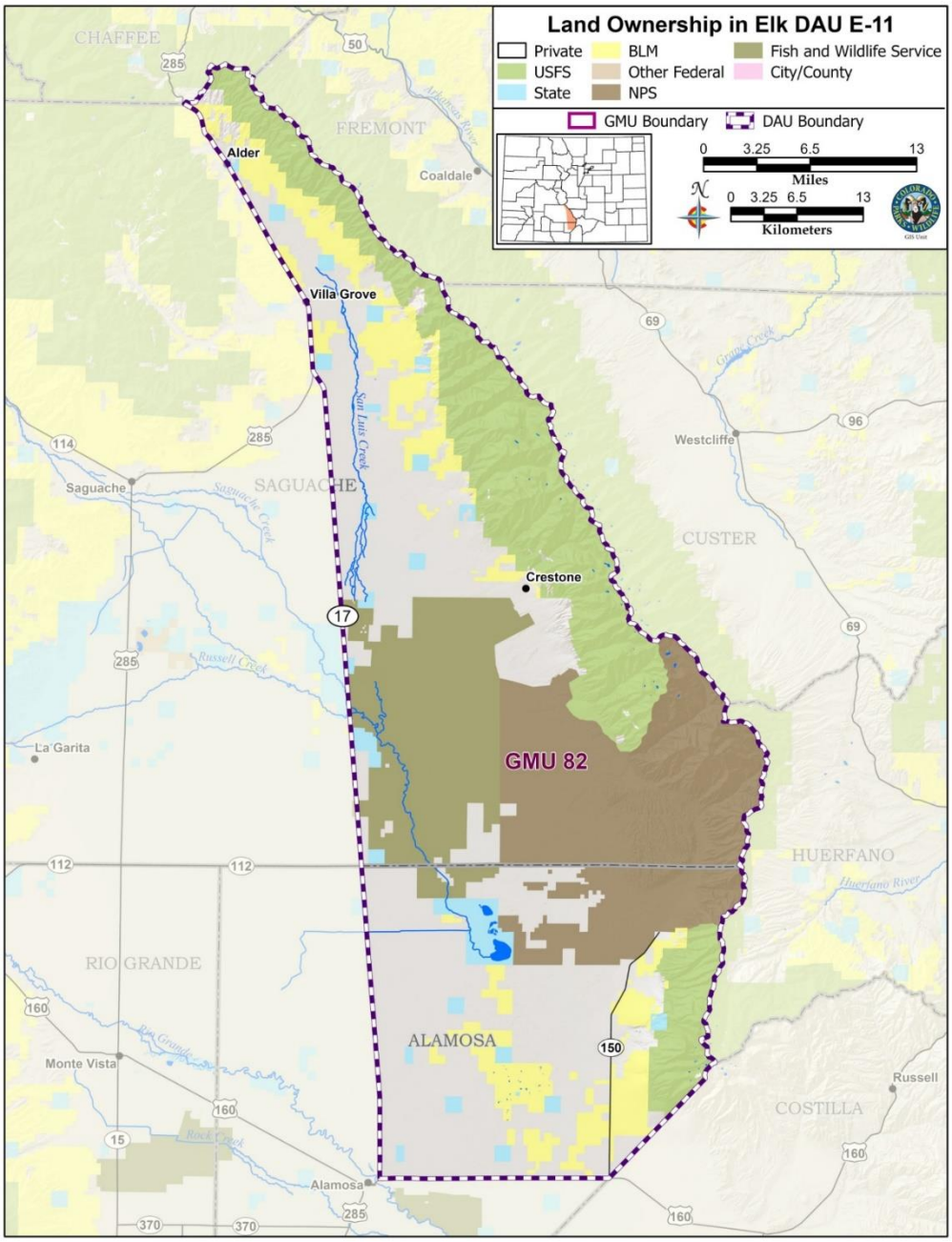


Figure 2. Geographical boundaries with landownership for the E-11 (GMU 82) elk herd in southwestern Colorado.

Landownership, Climate, and Vegetation

The DAU has an elevation ranging from approximately 7,500 ft. on the valley floor to over 14,000 ft. in the Sangre de Cristo Mountains. Public land makes up around 71% of the DAU, and about 29% of the DAU area is privately owned (Figure 2, Table 1).

At the lower elevations, grassland, shrub, and agriculture are predominant. As the elevation increases, precipitation levels become higher, 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.

	Summer Range	Winter Range	Winter Concentration Areas	Severe Winter Range	Total DAU E-11 Area
Total Area within the DAU	**66%**	**40%**	**8%**	**16%**	**100%**
BLM	**6%**	**6%**	**1%**	**2%**	**10%**
Colorado State (CPW)	**0%**	**0%**	**0%**	**0%**	**<1%**
US Fish and Wildlife Service (USFWS)	**8%**	**2%**	**0%**	**<1%**	**12%**
State Land Trust	**1%**	**5%**	**0%**	**<1%**	**7%**
National Park Service (GRSA)	**18%**	**15%**	**4%**	**6%**	**20%**
Private	**13%**	**9%**	**1%**	**6%**	**29%**
State Land Board (SLB)	**1%**	**<1%**	**<1%**	**<1%**	**3%**
US Forest Service (USFS)	**19%**	**3%**	**1%**	**<1%**	**19%**

Table 1. Land ownership in the summer range, the winter range, the winter concentration areas, and the severe winter range for the E-11 elk herd.

E-11 has a highland or mountain climate, with cool summers and cold winters. Heavy snowfalls can occur, especially at higher elevations. The Sangre de Cristo mountain range is in the San Juan Mountain rain shadow, resulting in drier conditions. Total precipitation at the Sangre de Cristo Mountains' higher elevations can vary annually between 20 and 40 inches. Precipitation comes mostly in the form of winter snow. The foothills receive 10-12 inches, while the valley floor gets 6-8 inches annually; the valley is considered a high desert environment.

Habitat Resources

The principal limiting factor for the E-11 herd is the availability of water resources affecting the quantity and quality of forage. Quality forage is essential in winter range and production areas (Figure 3). Significant proportions of quality forage exist on the BLM and Forest Service public lands. Once the hunting seasons begin, the elk move and coalesce in large groups on the US Fish and Wildlife (USFWS) property, also known as the Baca National Wildlife Refuge (BNWR) and the Great Sand Dunes National Park (GRSA), having marginal and sensitive habitats. The large groups of elk likely result in severe impairment to these habitats.

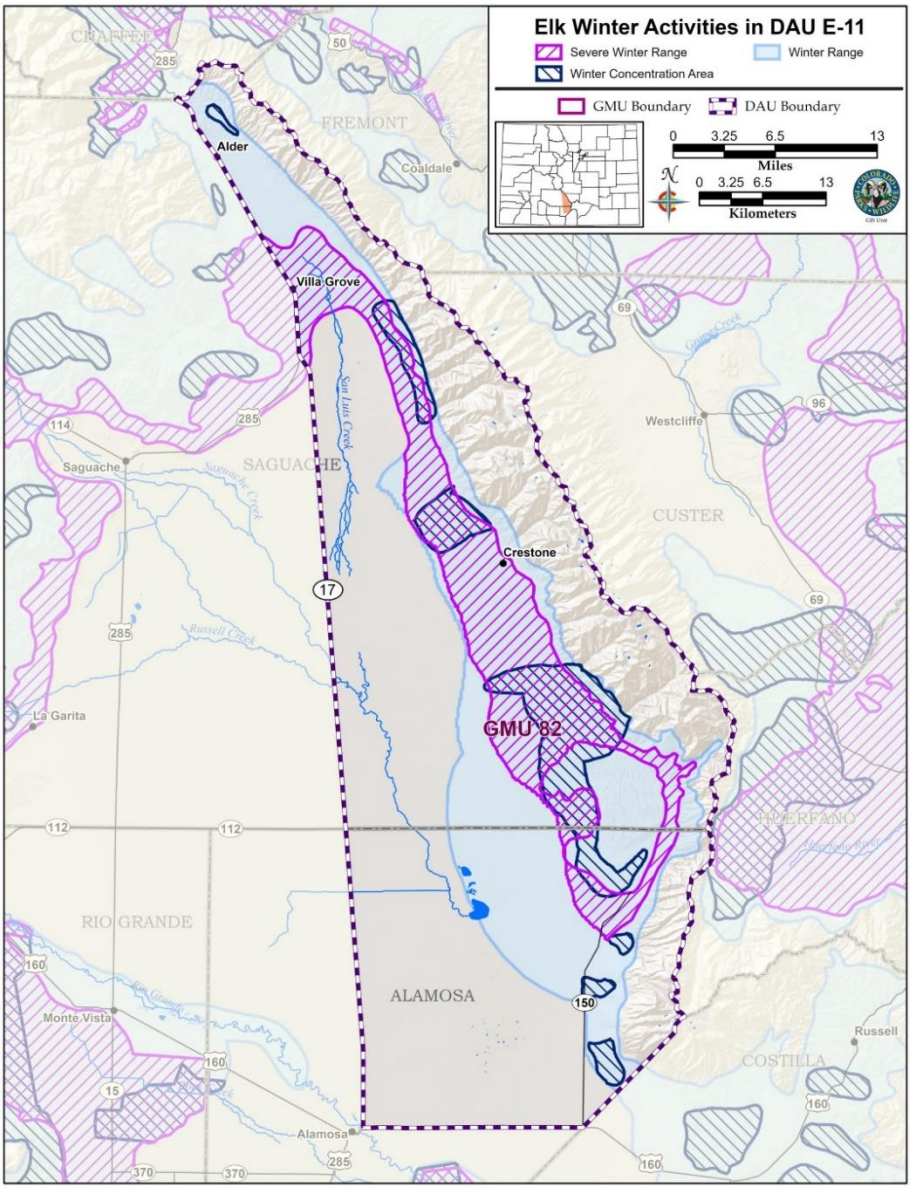


Figure 3. Winter range, severe winter range, and winter concentration areas for the E-11 elk herd. (For definitions: https://cpw.state.co.us/learn/Maps/CPW-Public-GIS-Species-Activities-Definitions.pdf#search=winter%20range%20definition).

Elk Range and Movement

Elk are usually scattered throughout the DAU during the summer and early fall, with a few large groups on the BNWR and the GRSA. The migrational movement to the winter range is usually initiated by a combination of pressures on the elk, such as hunting, snow depth, and deterioration in forage quality. Elk typically move to the south and west-facing slopes during the fall and winter migration. The timing depends on the winter severity and availability of forage. During the winter months, most elk are situated on the BNWR and the GRSA, with smaller groups in the pinyon-juniper stands or oakbrush habitat. Several groups of elk also winter on or near private agricultural fields. Significant drainages in the DAU may supply water resources most of the year, providing quality forage.

Elk migration to the summer range is general dispersal throughout the foothills and higher elevation levels of the Sangre De Cristo mountain range. A few large groups remain on the BNWR, GRSA, and private land. Most movement occurs during the spring, summer, and fall months.

In 2019, the GRSA deployed 35 Global Positioning Satellite (GPS) collars on resident elk to monitor distribution. The data collected from the collars during the 2019 hunting season showed that many elk groups were congregating on the GRSA, particularly during the rifle hunting seasons. The gathering of large numbers of elk on the GRSA likely causes overutilization of sensitive habitats. Elk on the GRSA property prevents hunters from accessing the animals for a successful harvest.

Herd Management History

CPW manages E-11with unlimited bull licenses in the rifle seasons and unlimited either-sex licenses during the archery season. A four-point antler restriction has been in effect since 1986. Conversely, CPW will not be enforcing antler restrictions for bull elk harvested on private lands, beginning in 2020. Antlerless licenses are available during all rifle seasons.

Before the late 1990s, elk were rarely seen in the southern three-quarters of the DAU. In the early 1990s, people began seeing elk around the Sand Creek area.

Post-hunt Population Size

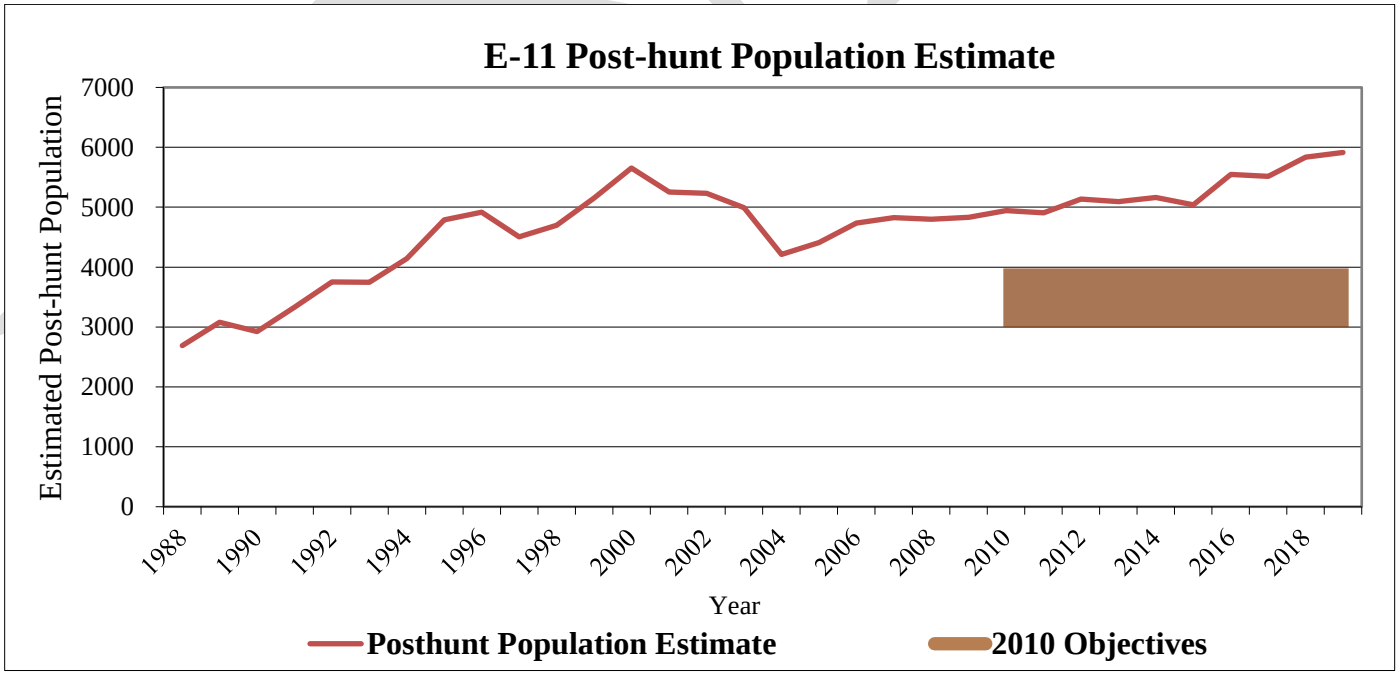


Figure 4. E-11 post-hunt population estimate from 1989 to 2019.

CPW uses a computer modeling process to estimate the size of elk populations in each DAU. The computer modeling programs used by biologists have transformed since the early 1970s. The most recent change occurred in 2006, with CPW embracing a spreadsheet instrument. Modeled post-hunt population estimates are generated by solving the best fit between observed vs. predicted post-hunt sex and age ratio data. Biologists make changes as new or improved information becomes available. Computer modeling is not an exact science and may not produce a precise final number. Observed post-hunt sex and age ratio samples vary annually. The variance may be due to weather, drought conditions, animal distribution, or flight time limitations. Variation makes alignment between observed and predicted values difficult because the models work to align the ratios over time. In E-11, biologists compare the observed 3-year average sex ratio to the expected range for management actions and hunting license allocation.

The average population size in E-11 throughout the 1990s was about 4,200 animals rising from roughly 2,900 animals in 1990 (Table 2). From 2000 through to 2004, the population declined almost to the upper end of the current objective range. CPW believes that reduced calf recruitment and drought conditions combined with high antlerless harvest may have been the cause. Thereafter, the population model depicts a gentle incline to the current (2019) estimated population size of roughly 5,900 animals (Figure 4).

In 2010, CPW set the population objective at 3,000-4,000 animals (Figure 4). The intent was to reduce the population to a more sustainable level. The reduction in population numbers has proved to be a significant challenge. Since the establishment of the 2010 HMP, the estimated post-hunt population has averaged approximately 5,310 elk. Currently, the population remains above the 2010 objective.

Management Herd	1990s	2000s	2010s	2010 Post-hunt Population Management Objective
	Population Average	Population Average	Population Average	
Elk – Sand Dunes E-11	4,200	4,890	5,310	3,000 – 4,000

Table 2. Approximate population averages for the 1990s, 2000s, and 2010s determined from the population model for 2019.

Post-hunt herd Composition

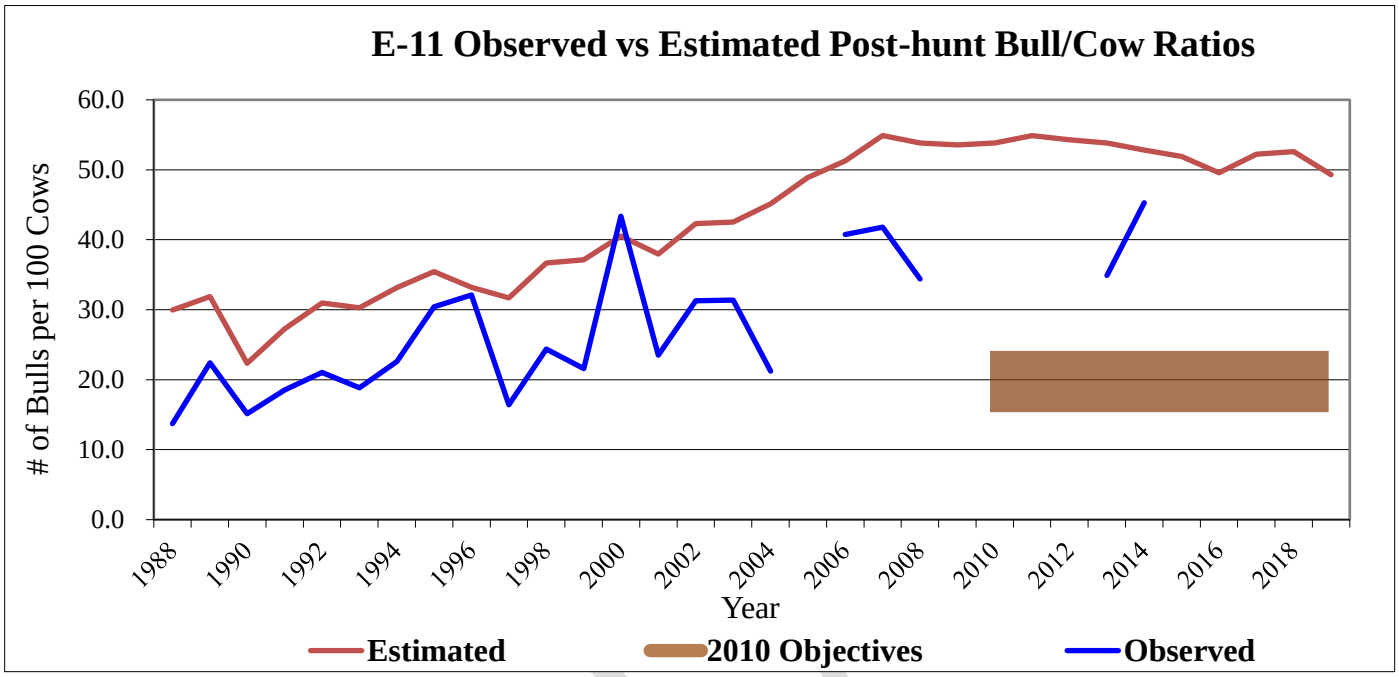


Figure 5. E-11 observed vs. estimated post-hunt sex ratios from 1988 to 2019.

CPW uses aerial classification surveys to gather observed post-hunt herd composition data. These surveys usually take place in winter, January for E-11, using a helicopter. The classification flights do not result in a population census but a sample large enough (10-40%) to establish the DAUs age and sex ratios. CPW determines the expected sex ratios by comparing the post-hunt population estimate to the calculated three-year-average observed sex ratios combined with stakeholder desires. Since 1988, CPW has not collected inventory classification data for several years. Nevertheless, averaging the observed sex ratios helps stabilize annual fluctuations. The mechanisms to determine the herd status relevant to the expected ratios should be consistent throughout the life of the HMP.

The E-11 observed sex ratios have steadily been increasing since the early 1990s. In 2014, the observed sex ratio reached its highest point since CPW first recorded classification data in the late 1980s, at over 40 bulls per 100 cows. In 2019, to extend management towards reducing the E-11 population and sex ratio to the current objective range, CPW extended the fall bull- and cow-hunt seasons, and the early summer bull-hunt, on all private land in the DAU. CPW anticipates private land hunting pressure to distribute elk to more accessible public land locations. The current sex ratio objectives remains below the observed ratio level. CPW and partner agencies believe that maintaining the expected range should continue to provide abundant hunting opportunities and a desirable mature bull population.

Harvest

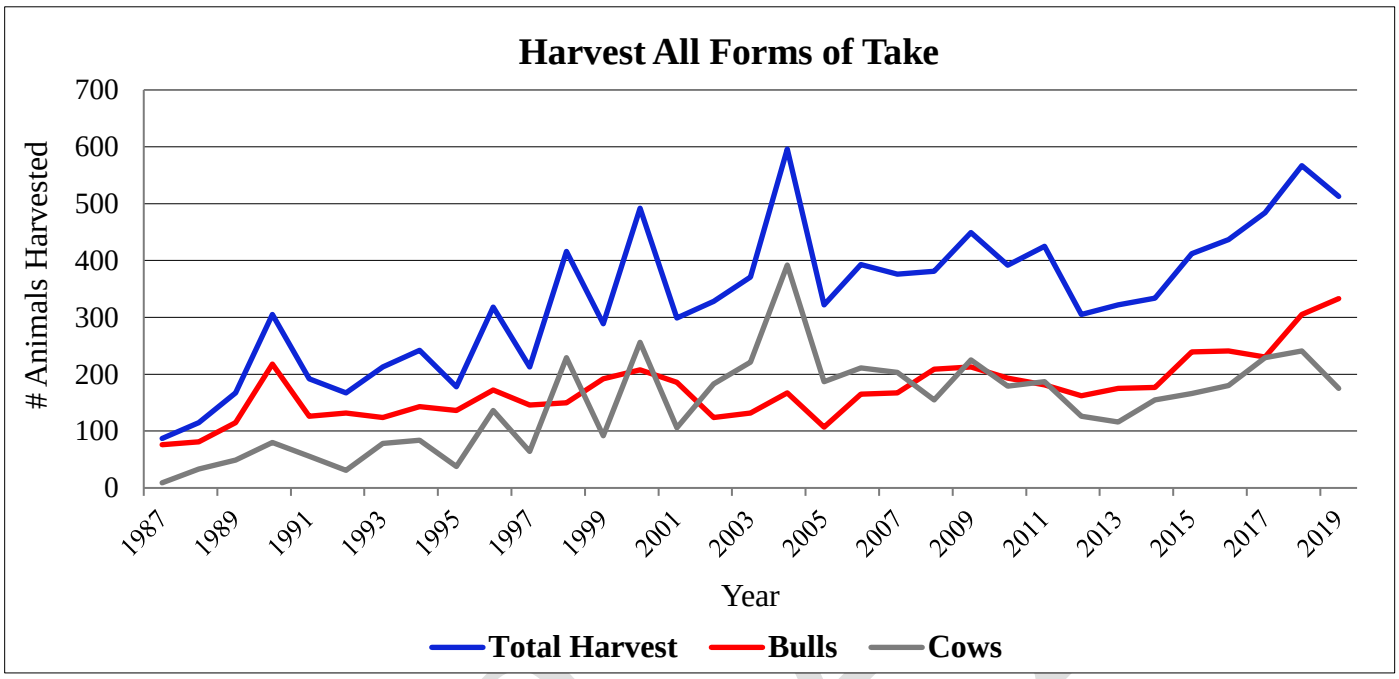


Figure 6. E-11 total harvest, bull harvest, and antlerless harvest from 1987 to 2019.

Elk harvest in E-11 depends primarily on getting access to the animals. Significant elk numbers move to the BNWR, the GRSA, and private agricultural land when the hunting seasons begin. The movement to these lands reduces hunter access and success.

Bull harvest averaged around 152 animals from 1987 through 2009. In the last ten years, the average bull harvest has risen to about 224 animals, the highest being 333 in 2019 and the lowest being 162 in 2012. Most of the antlerless harvest is limited, except during the archery either-sex season and on private land in GMU 82. Cow harvest rose significantly from 1987 through to 2004, from nine animals to 392 animals. Subsequently, in 2005, cow harvest dropped slightly to about 187 animals and has remained relatively stable since then. Over the previous ten years, cow harvest has averaged approximately 182 animals. The bulk of the cow harvest occurred on private land.

The restricted access to available and permissible public land has resulted in reduced harvest success rates. E-11 is an over-the-counter (OTC) unit during the archery season for either-sex, and bulls during the second and third rifle seasons on public land. OTC seasons are unlimited in license numbers and associated with increasing numbers of hunters. The increase in hunters may also cause reduced harvest success rates. Rifle success on private land is higher with the availability of private land voucher licenses, with up to 84% success. These licenses allow hunters with landowner permission easier access to harvest animals on private land.

Current Herd Management Status

Summary of Current Conditions

The current E-11 post-hunt elk population estimate of about 5,900 animals remains above the objective range established in 2010. Since then, the population trend had been relatively stable, around 5,000 animals, until 2015. The population estimate has been rising slightly since 2015 because of increased calf recruitment. The difficulty for hunters accessing these animals has been a significant factor in preventing CPW from effectively managing this herd. The majority of the elk herd moves onto the BNWR, GRSA, and private lands once the hunting seasons begin. Since 2016 (San Luis Valley National Wildlife Refuge Complex Plan, 2015), the BNWR has permitted hunting during hunt-seasons to distribute the animals to more accessible public land. Subsequently, in 2019, CPW implemented additional harvest management (voucher) licenses available for all private land in GMU 82. The intent was to increase elk harvest on private land and distribute the animals onto accessible public land. The additional harvest should contribute to curbing the growth in the elk population. CPW continues to offer game damage licenses in GMU 82 to minimize depredation issues.

The observed calf-to-cow ratios appear to have increased over the past few years, contributing to continued herd growth. Management has little control over this. Variables, such as weather, forage quality, forage availability, water resources, predation, or disease, may have higher effects on reproduction and calf recruitment than management actions. The elk herd's ability to find safe refuge areas on the BNWR and the GRSA may also contribute to the increased calf survival.

In 2010, CPW set the post-hunt sex ratio objective range at 17-23 bulls per 100 cows. However, since 2006 the observed sex ratio has been well above the established objectives. The most recent observed sex ratio data collected by CPW was in 2018 at roughly 33 bulls per 100 cows. Although E-11 is an OTC unlimited hunting unit, the refuge areas on the BNWR, GRSA, and private lands prevent or restrict hunter access to many elk. The voucher hunts on private land have no antler restrictions. Thus, harvest from these combined hunts should help in decreasing the overall sex ratio. CPW set the previous HMP objectives to reduce the E-11 population and sex ratios.

Current Management Concerns

The E-11 elk herd continues to increase. Controlling the population through harvest has been exceptionally challenging for CPW. The primary challenges are zero or restricted hunting on the BNWR, GRSA, and private lands. CPW and local partner agencies are concerned about the herd's adverse impact on marginal and sensitive vegetation, particularly along riparian areas. The rising elk herd may have interspecific pressure on other ungulates, potentially exceeding carrying capacity. CPW would like to increase the elk harvest success in E-11 to reduce the population and observed sex ratio. The agency is currently working with the BNWR, GRSA, and the Nature Conservancy to allow increased elk harvest on their properties. The pursuit of elk on these properties should help distribute the animals.

Based on the model, the population trend has remained above the objective range throughout the previous HMP. The elk population estimate is currently at about 5,900 animals. Significant effort is needed to reduce the population to levels within the objective range. The GRSA is implementing an elk management strategy, called an Ungulate Management Plan, which went into effect in 2020. The Plan's goals would help reduce large elk numbers utilizing the Park's winter range, dispersing elk across the landscape. The elk distribution would allow enhanced public hunting opportunities and should ultimately reduce the DAUs elk population. CPW is currently working with the GRSA, allowing public volunteers to harvest elk on the GRSA property. The efforts should help reduce the number of elk and create greater pressure on the gathering herds, distributing them to other accessible public lands.

CWD is a potential threat to the health and viability of the E-11 elk herd. To date, CPW has not had an elk test positive in the E-11 or adjacent elk DAUs. CPW bases this information on an average of less than one animal tested per year over the previous ten years through all DAUs in the SLV. In 2019, the D-34 Wet Mountain mule deer herd on the east side of the Sangre de Christo mountain range had a CWD prevalence of less than 1% of the male mule deer population tested. In 2020, CPW will implement mandatory CWD testing of all mule deer in the SLV. Over a few years, the testing results should allow CPW to determine the CWD status and its prevalence more accurately. If any mule deer test positive for CWD from the mandatory testing, CPW may need to re-address future elk management. Management actions would depend on the CWD prevalence and risk to the elk and deer herds.

Game damage issues continue to occur in the DAU. CPW handles landowner concerns individually. However, since 2019, CPW has dealt with most depredation issues using vouchers to harvest animals with landowner cooperation on private land. Harvest would come from an extension of the fall bull- and cow-hunt season, and the summer bull-hunt to facilitate reducing the E-11 population and sex ratio to the objective ranges. The additional pressure should also help distribute the animals to hunter-accessible public land.

The development of private lands is a growing concern in the DAU; however, it is less of a threat than other areas of Colorado. There are potential impacts on the elk populations from further development: a) loss of limited habitat, b) redistribution of animals from historic winter range, and 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 current municipalities. The development of private land within the winter range, calving, or production areas could be a problem 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. Although this analysis was done with mule deer, the results may have implications for elk management in the area. The study looked at land-use changes from 1970 to 2010 and the impacts on deer populations in DAUs throughout Colorado. In E-11, the proportion of "undeveloped" private land (0 housing units/acre) has decreased from 22% to 6%. The reduction has been relatively steady since 1970. During the period 1970 to 2010, rural land development (< 82 acres/housing unit) belonging to the private sector has more than tripled. This development occurred predominantly between 2000 and 2010, from almost 47,600 acres to around 63,200 acres. A significant increase in suburban development (4-82 acres/housing unit) has also taken place in the DAU from about 1,586 acres in 1970 to almost 8,604 acres in 2010. The overwhelming majority of the suburban development took place in the elk winter range.

Oil, gas, geothermal, and solar energy development and their potential impact on wildlife are a concern 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 elk population in E-11 remains low. Proposals for solar power development have increased. Saguache County has approved a few private land segments in the DAU for solar-panel establishment or expansion. These developments have no significant detrimental effects on elk or other wildlife because of their location. Solar-panel power companies have predominantly installed their facilities away from elk habitat in greasewood vegetation-dominated areas. If the expansion of solar energy development or oil and gas extraction becomes lucrative, their impact could affect the elk winter range and population viability.

Public Involvement

CPW provided an initial draft document online to the public for 30 days. CPW also sent the draft to the BLM, the BNWR, the GRSA, local county commissioners, the local HPP committee, and the USFS for commentary and feedback. The draft allowed all constituents, including non-consumptive recreationists, hunters, landowners, local stores, or business owners, to participate in the public process.

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 or expectations 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 elk herd or the herd's 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 viable elk populations. 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 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 with public-land habitat improvements.

Private-land conflict issues may intensify if the elk population size increases further or if the public-land habitat deteriorates. However, increased elk numbers 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 elk distribution. Increased elk 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 could enable elk to withstand years of lowered precipitation levels and help distribute animals away from private land. Working with partner agencies in habitat improvement and enhancement projects should help maintain a healthy, viable elk population.

A rising population also has the potential of increased highway motor-vehicle collisions. CPW will work 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.

Post-hunt Population Objective

CPW proposes continuing the aggressive harvest management on the E-11 elk herd. The intent is to sustain management pressure to decrease the population and maintain it within the preferred objective range. That would continue to support a post-hunt population objective of **3,000 to 4,000 animals**. This objective range allows the best balance for managing the herd, recreational opportunities, minimizing agricultural conflicts, and maintaining habitat carrying capacity. Once the population estimate stabilizes within the objective range, CPW may conservatively maintain public-land cow licenses. The number of cow licenses depends on the population status and productivity of the herd. If necessary, CPW will continue providing depredation licenses to address private land conflicts. Collaborative efforts towards habitat improvement and water retention efforts will continue on public land. Habitat improvements may promote distribution from the BNWR, the GRSA, and private lands to sustain a viable and accessible elk population on public land throughout the DAU.

Expected Herd Sex Ratio Composition – (Three-year-average observed number of bulls per 100 cows ratio)

CPW proposes no changes to the expected sex ratio range for the E-11 elk herd. Thus, the expected sex ratio remains at **17 to 23 bulls per 100 cows**. Annual management on accessible public land would strive to maintain the herd composition within this range. CPW will continue to work collaboratively with partner agency landowners allowing for the elk harvest, sex ratio reduction, and increased animal distribution. The expected range creates the best balance between the hunting experience and the opportunity of harvesting a desired elk bull in the DAU.

Public Input and Preferred Objectives

CPW provided a draft version of the HMP to the public for a 30-day review period. The local biologist analyzed all public responses to the draft document to determine the preferred objectives. CPW also examined response letters from the BLM, the BNWR, the GRSA, the local HPP committee, and the USFS. CPW field personnel continue to hear directly from many stakeholders, consumptive and non-consumptive. Biologists also evaluated biological herd capabilities, land tolerance levels, and other factors mentioned earlier.

CPW attempted to solicit as much public feedback and comments as possible with the resources available. After combining feedback from the public and partner agencies on the draft document, the overwhelming consensus is to maintain the elk population objective. The preferred objective range would remain at 3,000 to 4,000 elk.

CPW is grateful to the Bureau of Land Management (BLM), which manages a portion of the elk winter range, for their response. They approve of the proposed population objectives. The agency has observed a significant increase in resource damage from the rising elk population. BLM biologists recognize that reducing the elk numbers would benefit the habitat significantly, but it may be tough to accomplish given the current distribution. The agency notes, "the success of the deer herd may be contingent on the successful reduction of the elk herd." They acknowledge the current cooperative work with CPW on habitat improvement projects, but the area urgently needs a continued habitat-monitoring program. Such a program would significantly help quantify carrying capacity and assist CPW herd management decisions. Future management actions would likely alleviate any adverse effects.

CPW is also grateful to the Greater Sand Dunes National Park and Preserve (GRSA) for offering feedback. The GRSA has noted their support for the preferred population objective range of 3,000 to 4,000 elk. They indicate the collaborative efforts with CPW to redistributing elk from the Park to protect natural resources. Over the next few years, the efforts should intensify, denying elk refuge and allowing more animals available to hunters. The GRSA does not have any sex ratio management goals, but they support CPWs' expected sex ratio range of 17 to 23 bulls per 100 cows.

CPW sincerely appreciates feedback provided by the US Forest Service (USFS). The USFS supports the population objective range (3,000 to 4,000 elk). They noticed elk had overused several drainages in the area because of the continued increase in numbers. The agency acknowledges that additional pressure from partner agencies' should allow further hunter access to the elk, reducing the sex ratio and distributing the animals more. The USFS agrees with management towards the expected sex ratio range of 17 to 23 bulls per 100 cows. They recognize that these objectives would support the desires of the stakeholder community.

The US Fish and Wildlife Service (USFWS), also known as the Baca National Wildlife Refuge (BNWR), provided commentary for which CPW is exceptionally grateful. They thoroughly support a 3,000 to 4,000 elk population objective and an expected sex ratio of 17 to 23 bulls per 100 cows. The agency alleges that elk are attracted to the refuge during the summer, which provides optimal calving habitat because of the wet meadow habitat. They also note that areas on the refuge can become refugia for elk during the hunting seasons. With the implementation of the San Luis Valley National Wildlife Refuge Complex Plan in 2016, the BNWR permitted hunting opportunities to protect sensitive habitats and distribute elk. The Plan has allowed access for hunters to most of the refuge property. However, the BNWR continues to seek assistance in preventing elk from gathering in areas of the refuge closed to hunting.

The Mount Blanca HPP committee discussed the HMP on November 16, 2020. They gave their full support of the preferred population objective of 3,000 to 4,000 elk and the expected sex ratio of 17-23 bulls per 100 cows. They recognize the considerable pressures that elk have on the habitat and the difficulty in managing the population growth. The HPP and CPW field personnel are working closely to alleviate depredation issues. They are also working collaboratively with the GRSA and BNWR to distribute the animals to more accessible public land.

In addition to the partner agencies, CPW is also appreciative and acknowledges the Zapato Ranch, the Nature Conservancy, the Orient Land trust, and the numerous private ranches for their continued collaborative efforts to achieve the desired elk herd objectives. Several of these landowners have helped significantly improve the wildlife habitat through restoration or mitigation treatment endeavors. Many have tolerated the movement and distribution of elk to and from their properties, subsequently allowing hunters access to harvest elk using vouchers provided by CPW. The landowners have likely noticed resource damage to their properties. Thus, they support a reduction in the elk population to the preferred objective of 3,000 to 4,000 elk and an expected sex ratio of 17 to 23 bulls per 100 cows, favoring a wider distribution of the animals throughout the DAU.

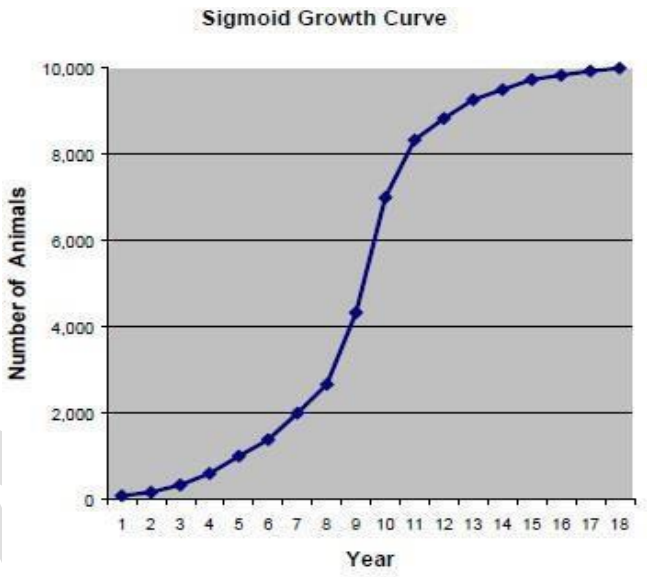
For E-11, the **Preferred Population objective is 3,000 to 4,000 elk**, and the **Expected Three-year-average Sex Ratio is 17 to 23 bulls per 100 cows.** CPW staff re-evaluates management towards the accepted objectives annually. Management towards these objectives will occur for the next ten years under current conditions unless they become socially or biologically unacceptable. If so, CPW may address the objectives in an earlier timeframe.

Literature Cited

Johnson, H.E., J. R. Sushinsky, A. Holland, E. J. Bergman, T. Balzer, J. Garner, and S. H. Reed. 2016. Increases in residential and energy development are associated with reductions in recruitment for a large ungulate. *Global Change Biology* 23 (2): 578-591. Available online at *http://onlinelibrary.wiley.com/doi/10.1111/gcb.13385/full*.

US Fish and Wildlife Service. 2015. Comprehensive conservation plan—San Luis Valley National Wildlife Refuge Complex. Lakewood, CO: US Department of the Interior, Fish and Wildlife Service, Mountain-Prairie Region. Available online at *https://www.fws.gov/mountain-prairie/refuges/planningPDFs/SLV/SLV%20CCP%20HIGH%20RES.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.

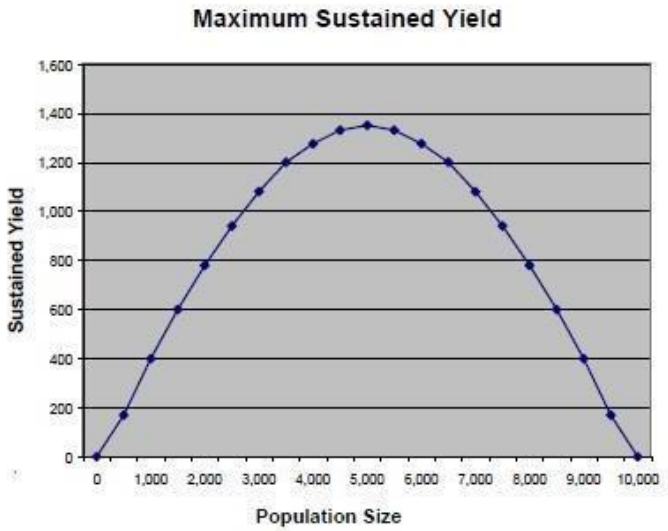
The second phase occurs when the population number is at a moderate level. This phase is characterized by a very high reproductive and survival rate. During this phase, food, cover, water, and space (habitat) is not a limiting factor. In addition, during this phase, animals such as white-tailed deer 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 do. 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, the 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:
6521 (COF03000, TLA)

23 November 2020

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-37 and E-11 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 San Luis Valley Field Office (SLVFO) has a strong commitment to providing quality wildlife habitat as one of our important "multiple uses".

After reviewing the draft D-37 and E-11 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 increasing D-37 buck-hunting opportunities until the observed sex ratio falls within the newly established preferred objective range of 25-29 bucks per 100 does in an effort to be proactive in reducing the spread and proliferation of Chronic Wasting Disease (CWD). We also agree with not increasing herd objectives (post-2019 data/model rectification) in D-37 and E-11, specifically aiming to decrease the rising E-11 elk population of roughly 5,900 animals back down to the herd objective of 3,000-4,000 animals. The BLM has observed a marked increase in Elk use and resource damage at Blanca Wetlands. We believe reducing the E-11 population to herd objectives will be a difficult endeavor due to elk distribution to Baca National Wildlife Refuge (BNWR) and Great Sand Dunes National Park (GRSA) when the hunting seasons begin. Considering additional E-11 herd management strategies may be necessary to reduce interspecific competition with the D-37 mule deer herd, especially given the ongoing drought and the potential, but undocumented, impacts of reduced quality and availability of winter forage on public lands.

Although not explicitly stated in the HMP, the long-term success of the D-37 herd is partially contingent on the successful reduction of the E-11 herd to objective levels. We believe that

continued interspecific competition with elk and the reduction of habitat and resources available to the D-37 herd could 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. The BLM and CPW are currently working together on wild ungulate habitat improvement projects via vegetation treatments on BLM land within the D-37 and E-11 DAUs. 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 funding to implement a monitoring program specific to wild ungulates.

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

Sincerely,

MELISSA GARCIA

Digitally signed by MELISSA GARCIA
Date: 2020.11.23 08:37:49 -07'00'

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
Divide Ranger District
13308 West Highway 160
Del Norte, CO 81132
(719) 657-3321 TDD 657-6038

Date: October 26, 2020

Brent Frankland
Terrestrial Wildlife Biologist
Colorado Parks and Wildlife

Thank you for the opportunity to comment on the Draft DAU Plans for D-37 and E-11. The Rio Grande National Forest appreciates your continued commitment of involving the land management agencies within the boundaries of the DAUs.

Mule Deer

The preferred management objective for D-37 is a population of 2,300 to 3,000 mule deer, aiming to increase the population. This objective increases the post-hunt season objective from the 2010-2020 plan and aligns it more with the 2019 post hunt observed population estimate of 2,570.

The preferred post-hunt sex ratio objective for this herd is to increase the current objective to 25-29 bucks per 100 does over the previous plan.

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.

There are currently no known conflicts with mule deer and those lands within the DAU associated with mule deer. Current management appears to be adequate. It is interesting to note that even with the extremely limited doe licenses in the last two decades, that the population has increased, but only by fairly small incremental amounts. This limited increase supports the thought that the quality and quantity of wintering range along with private development are the key limiting factors on this population.

The RGNF supports the approval of the revised 2020-2030 DAU D-37 Management Plan.

Elk

The preferred management objective for E-11 is to remain at a population of 3,000 to 4,000 elk (same as 2010-2020 objective) and to decrease the current population which is currently estimated at 5,900.

The expected post-hunt sex ratio would remain at 17-23 bulls per 100 cows. This range continues to support the desires of the stakeholder communities including the RGNF. It also allows for a satisfactory hunting experience with the desired hunting opportunities, reducing the potential risk of CWD disease.

There are several drainages on the Forest currently with noticeable overuse by elk, most notably Deadman Creek on the Saguache Ranger District.

The E-11 elk herd continues to increase. Controlling the population through harvest has been difficult because of the BNWR, the GRSA, and private lands where hunting does not occur or is restricted. The Rio Grande National Forest supports CPW's continued efforts to help reduce the population and sex ratio and distribute elk throughout the DAU.

The additional pressure from the BNWR, GRSA, private landowners, and the Nature Conservancy should allow hunters' access to elk. Harvest from these licenses should reduce the sex ratio, distribute the animals, and maintain stakeholder satisfaction.

The RGNF supports the approval of the 2020-2030 DAU E-11 Management Plan.

Sincerely,

/s/ Dale Gomez
Dale Gomez
RGNF Wildlife and Fisheries/Range Program Lead
Rio Grande National Forest

Appendix D

United States Department of the Interior
NATIONAL PARK SERVICE

Great Sand Dunes National Park and Preserve
11500 State Hwy. 150
Mosca, CO 81146

November 16, 2020

CPW Colleagues,

I am writing on behalf of Great Sand Dunes National Park and Preserve to comment on the Colorado Parks and Wildlife 2020 D-37 Deer and E-11 Elk herd management plans.

Deer:
Great Sand Dunes National Park and Preserve has not observed resource concerns associated with mule deer populations within the park; therefore, we do not have any objections to the proposed objectives that would allow the mule deer herds to grow to 3,000 animals unit wide. Great Sand Dunes is not planning management actions on mule deer herds within the park. If circumstances change or CWD or other issues arise, the park would seek to collaborate with our State partners to determine what is best for the resource. Mule deer on the National Preserve are hunted per the regular state seasons prescribed by Colorado Parks and Wildlife. Great Sand Dunes supports the CPW objectives for managing mule deer within D-37 unit wide and on portions of D-37 within Great Sand Dunes National Preserve.

Elk:
Great Sand Dunes National Park and Preserve supports CPW's population objectives of 3,000-4,000 elk for E-11. Under the park's Ungulate Management Plan (UMP), Great Sand Dunes is currently collaborating with CPW to redistribute elk from sanctuary areas within the park to protect resources identified in the UMP. As the park intensifies these redistribution efforts over the next few years in cooperation with CPW, it is our hope that our efforts will make more animals available to hunters by denying elk refuge during hunting seasons. Through our combined efforts, this redistribution will contribute to CPW's ability to manage E-11 at biologically sustainable levels. We do not have any goals to manage elk at a specific sex-ratio but would support CPW if such management became necessary to control CWD within E-11. Elk on the National Preserve are hunted per the regular state seasons prescribed by Colorado Parks and Wildlife. Great Sand Dunes supports the CPW objectives for managing elk within E-11 unit wide and on portions of E-11 within Great Sand Dunes National Preserve.

Dewane Mosher
Biologist

Pamela Rice
Superintendent

United States Department of the Interior

FISH AND WILDLIFE SERVICE
69812 Co. Rd. T
Crestone, Colorado 81131

In Reply Refer to:
FWS/IR05/IR07

November 23, 2020

Brent Frankland, Terrestrial Wildlife Biologist
Colorado Parks and Wildlife, Area 17
0722 South Road 1 East Monte Vista, CO

Dear Mr. Frankland,

We are writing this letter on behalf of the U.S. Fish and Wildlife Service (Service), in response to your request for comments on the proposed updates for Herd Management Plans (HMPs) for deer and elk in GMU82. Thank you very much for this opportunity to provide feedback.

SAND DUNES DEER D-37 HERD MANAGEMENT PLAN EXTENSON

Deer associated with the Sand Dunes Deer D-37 Herd occasionally venture on to the northeastern corner of the Baca National Wildlife Refuge (Baca Refuge), and usually are only in this small portion of the refuge for a short time. We have constructed ungulate exclosures to protect sensitive riparian habitats from the browsing deer and other ungulates here. As such, we support Colorado Parks and Wildlife's (CPW) proposed increase to the herd objectives from 1,500-2,000 deer to 2,300-5,000, knowing that the most recent estimate shows they are currently within that range. In addition, we support CPW's proposed increase in the buck/doe ratio from 20-25 bucks per 100 does to 25-29 bucks per 100 does.

SAND DUNES ELK E-11 HERD MANAGEMENT PLAN EXTENSON

As stated in CPW's SAND DUNES ELK E-11 HERD MANAGEMENT PLAN EXTENSON (E-11 Plan), elk from this herd (E-11) frequent the San Luis Valley floor including the Baca Refuge. The Service understands that many animals in the E-11 herd are attracted to the Baca Refuge during Summer months because the habitats there, primarily wet meadows, provide optimal calving habitat for the elk. In addition, the Service also understands that the Baca Refuge which remains largely closed to public access, can become refugia for elk during hunting seasons. We feel it is important to note, however, that Service staff have and continue to work diligently with CPW to address the issue of elk using the refuge as sanctuary during hunting seasons. In 2016 the Service implemented the carefully designed *San Luis Valley National Wildlife Refuge Complex Migratory Game Bird, Big Game, and Upland Game Hunt Plan* (Hunt Plan), with primary objectives of; protecting sensitive habitats on the refuge, providing quality public hunting opportunities, and assisting CPW in meeting herd (E-11) objectives. In addition to providing public hunter access on over half the refuge, the plan also allows for agency (CPW or Service) actions (including lethal) on the entire refuge, designed to redistribute elk on the landscape to protect sensitive habitats and/or to distribute elk to areas where more harvest by public hunters can be effected. The Service continues to manage the elk hunting program on the Baca Refuge adaptively, as to ensure that the above mentioned objectives can best be met. In addition, the Service has prompted CPW and the Mt. Blanca Habitat Partnership Committee (Mt. Blanca HPP) to take steps to assist in our attempts to prevent elk from congregating on portions of the refuge closed to hunting due to safety and conflict concerns.

The Service fully supports CPW's proposed population objective of 3,000-4,000 elk and a sex ratio of 17-23 Bulls per 100 cows in the Sand Dunes E-11 Herd Management Plan Extension, and looks forward to continued collaboration with CPW, Mt. Blanca HPP and the Great sand Dunes National Park in working to meet these objectives.

Thank you again for this opportunity to provide feedback. If you have any questions, please contact Project Leader Vaughn or myself.

Best Regards,

Ron Garcia
Refuge Manager
Baca National Wildlife Refuge

Sharon Vaughn
Project Leader
San Luis Valley National Wildlife Refuge Complex

November 20, 2020

Brent Frankland
Colorado Parks and Wildlife
0722 S. CO Rd 1 East
Monte Vista, CO 81144

RE: Mount Blanca Habitat Partnership Program Comments - DAU E-11

Dear Brent:

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 the Mount Blanca HPP committee (3 livestock growers, Forest Service, BLM, USFWS, CPW and sports persons representatives) provide a good cross section of local interests to review DAU proposals and respond accordingly for CPW consideration.

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

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

The Mount Blanca committee supports the draft alternative to keep the current population objective. We believe this alternative responsibly balances local range and habitat conditions with sportsmen desires and landowner concerns. We understand that the current population is above the objective and is still increasing, and we agree that the population needs to be reduced to meet the objective. There are concerns about the herd's impact on habitat in the area, as they tend to congregate in area with limited hunting such as the Baca National Wildlife Refuge and the Great Sand Dunes National Park. Reducing the population and improving the dispersal of animals is very important.

The Mount Blanca committee also discussed the proposed sex ratio alternative. We believe the current sex ratio objective is a good balance and provides ample hunting opportunity while also providing for a reasonable number of mature animals for those hunters who want to take a larger bull. We understand that the observed sex ratio is above the objective and needs to be reduced. Reducing the current observed sex ratio to meet the objective will reduce the risk of CWD and will lead to better distribution.

As stated above, HPP is also directed by statute to assist the Division to meet game management objectives. The Mount Blanca committee is working with both public land managers and private landowners to help improve elk distribution in DAU E-11. We have committed to partnering with

public agencies to implement a dispersal coordinator that will improve elk dispersal and increase harvest opportunities. Also, the committee is committed to maintaining and improving habitat in this area as opportunities arise.

Our committee is confident about CPW being able to achieve the proposed objectives due to:

- Refuge situations exist that prohibit hunting entirely or allow for only very limited hunting, which has made population management difficult in the past. However, public land agencies are making changes to allow controlled dispersal efforts. We are confident that this will help to manage the population.

- We have worked with numerous landowners who want to implement positive improvements for big game on their property. We will continue to work with landowners to increase hunting access on their properties where appropriate in order to help manage the population and reduce any conflicts they experience.

- Federal land managing agencies place a high priority on habitat improvement and our committee will work with them as opportunities for habitat projects arise.

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

Sincerely,

Mike Maldonado

Mike Maldonado, Chair
Mount Blanca HPP Committee