# CHEYENNE PRONGHORN HERD MANAGEMENT PLAN

## DATA ANALYSIS UNIT PH-12, CHEYENNE

GAME MANAGEMENT UNITS 116, 117, 122, 127



Created for:



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Date: July 2020

#### **EXECUTIVE SUMMARY**

Cheyenne Pronghorn Herd (DAU PH12)

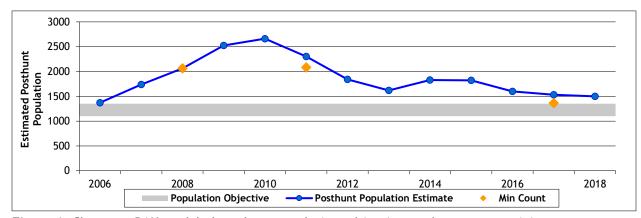
GMUs: 116, 117, 122, 127

Post-Hunt Population: Previous Objective: 1,100-1,350; Estimate for 2018: 1,500

Current Objective: 1,500-2,000

Post-Hunt Sex Ratio (Bucks:100 Does): Previous Objective: 33-40; Estimate for 2018: 59.7

**Current Objective: 35-45** 



**Figure 1.** Cheyenne DAU modeled posthunt population, objective, and postseason minimum counts from 2006-2018.

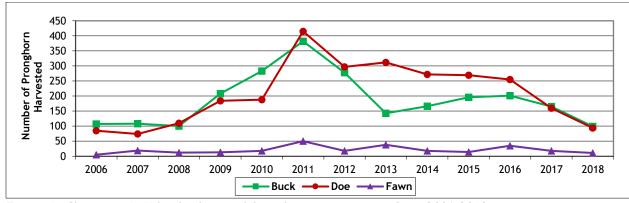
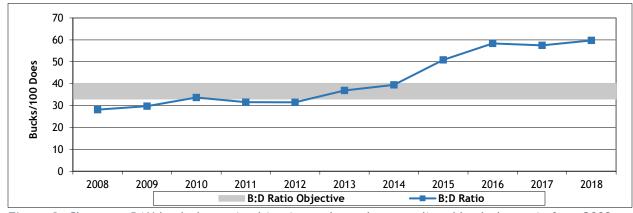


Figure 2. Cheyenne DAU buck, doe, and fawn harvest estimates from 2006-2018.



**Figure 3.** Cheyenne DAU buck: doe ratio objective and post-hunt predicted buck: doe ratio from 2008-2018 .

#### Background Information

The Cheyenne Data Analysis Unit (DAU), hereafter referred to as Cheyenne, encompasses a large area between the Arkansas River and Interstate Highway 70. Approximately 95% of the DAU is comprised of private lands. The primary public land holder is the State Land Board, owning 4% of the DAU. Only 0.4% of the DAU offers public pronghorn hunting opportunity.

Since 2006, Cheyenne's post season population estimates have ranged from 1,400-2,700 pronghorn. Historically, game damage has been the greatest significant issue in Cheyenne, and population objectives in previous herd management plans were set at levels to minimize game damage conflict. During the duration of the previous herd management plan, not a single pronghorn damage complaint was received by CPW personnel, even though the population reached a record high in 2008-2011.

To solicit input for this herd management plan, we sent mail surveys to 500 randomly selected landowners in the DAU (i.e. ~25% of the DAU's landowners). In addition, we surveyed 500 hunters who had hunted in Cheyenne in recent years. Survey results suggest that the pronghorn population and sex ratios should be managed close to levels observed in recent years.

#### Population Objective Alternatives

Alternative 1: 1,500-2,000 pronghorn (approved alternative): This alternative would maintain the population at the level observed in recent years. The survey suggests that this is the preferred alternative by the majority of landowners in Cheyenne.

Alternative 2: 1,100-1,350 pronghorn (status quo): This alternative was the objective of the previous plan, and would call for a ~15% decrease of the current estimated population. The majority of landowners and hunters do not support this alternative.

Alternative 3: 2,000-2,600 pronghorn: This alternative represents a ~25% increase in population size over current levels. The majority (70%) of hunters indicated that they would like to minimally see a 25% increase to population. The majority of landowners do not support this.

#### Sex Ratio Objective Alternatives (Post-Hunt)

Alternative 1: 35-45 bucks per 100 does (approved alternative): This alternative represents a sex ratio range that lines up fairly well with post-hunt buck: doe ratios over the last 10 years. CPW staff believes this to be a practicable ratio to manage for, while maintaining the population at the preferred level, and while maintaining buck permit numbers close to those issued in recent years. The majority of both hunters and landowners prefer to see buck permit numbers maintained close to their current levels.

Alternative 2: 33-40 bucks per 100 does (status quo): This alternative calls for a decrease below levels observed in recent years. This is not supported by the majority of landowners or hunters.

Alternative 3: 45-61 bucks per 100 does: This alternative is based off of the 5 year average for predicted buck: doe ratios. This ratio can only be achieved by driving doe numbers below preferred levels or by further limiting buck license numbers. Neither option is supported by the majority of landowners and hunters.

No significant changes in licenses would be needed to achieve the preferred objectives. Annual fluctuations in population due to weather (droughts, severe winters) will be addressed through adjustments in license allocations. Significant issues such as hunter crowding will be addressed by maintaining the population within the preferred objective, by adjusting the length of the regular rifle season, use of list B doe licenses, and/or maintaining a late doe season. Game damage issues will be addressed by conducting dispersal hunts when needed.

The Colorado Parks and Wildlife Commission approved this plan on July 16, 2020

## Cheyenne DAU Management Plan

## PH-12, GMU's: 116, 117, 122, 127

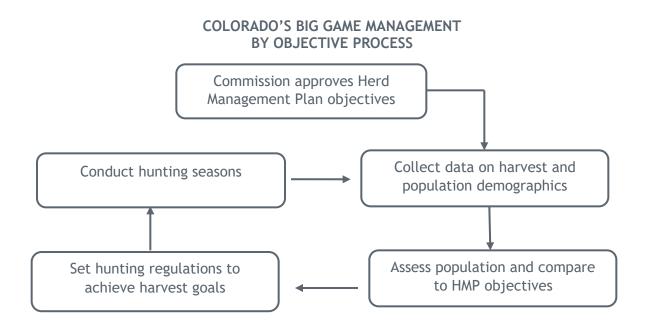
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#### INTRODUCTION AND PURPOSE

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



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

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

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

the herd and its habitat with the public's demand for wildlife recreational opportunities and public tolerance for game damage. Herd management plans are approved by the PWC and are reviewed and updated approximately every 10 years.

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

The purpose of this herd management plan is to set population and sex ratio objectives for the Cheyenne pronghorn herd (PH12). The herd management plan will be in place from 2020-2030 with the expectation that it will be reviewed and updated in 2030.

#### DATA ANALYSIS UNIT DESCRIPTION

#### Location

The Cheyenne DAU (PH12) is located in southeastern Colorado (Figure 5). Boundaries include CO Interstate Highway 70 on the north; the Kansas/Colorado border on the east; the Arkansas River on the south; and Highways 287 and 59 on the west.

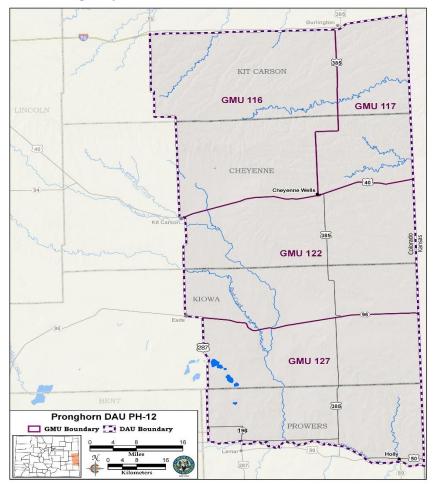


Figure 5. Location Map of PH12, Cheyenne, GMU's 116, 117, 122, 127

#### Physiography

Cheyenne includes four game management units and covers approximately 3,360 mi<sup>2</sup>. The topography of Cheyenne consists of flat to gently rolling plains. There are several drainages across the DAU, with the Arkansas River, the Smokey Hill River, Rush Creek, and Sand Creek being the most prominent. Cheyenne's dominant vegetative communities are shortgrass prairie and dryland farmland. Sand sagebrush covered flats and sand hills compose most of the area between Rush Creek and Sand Creek. The climate of the area is characterized by long, hot summers and mild winters. Temperatures vary from below freezing in winter to well over 100° F in summer. Annual precipitation ranges from 12-17 inches, with a high proportion of the precipitation often coming in the form of July-August monsoonal rains.

#### HABITAT RESOURCES and CAPABILITY

#### Land Ownership

The majority of land in Cheyenne is in private ownership (95%). The State Land Board (SLB) owns 4% of the DAU, which accounts for the majority of the DAU's public lands. Only 1% of Cheyenne is owned by other governmental agencies such as CPW, Bureau of Land Management, Bureau of Reclamation, various counties, and the National Park Service. Public pronghorn hunting opportunities are extremely limited in Cheyenne with only 0.4% of the DAU being available to public pronghorn hunters. Public opportunities include State Wildlife Areas, leased SLB properties, and a small amount of BLM.

#### Land Use

Land use (both public and private) is almost exclusively agricultural. Approximately half of the DAU's lands are non-irrigated farmland, and most of the other half consists of pastureland used for livestock grazing. The DAU does have some irrigated farmland, mostly found along the Arkansas River Valley along the southern border of the DAU, and in the northeastern portion of the DAU near Burlington. Land use in the DAU has not changed significantly in recent times. There are currently some land use changes taking place in the form of wind energy development. Three windfarms are currently under construction along the Kiowa/Kit Carson County border.

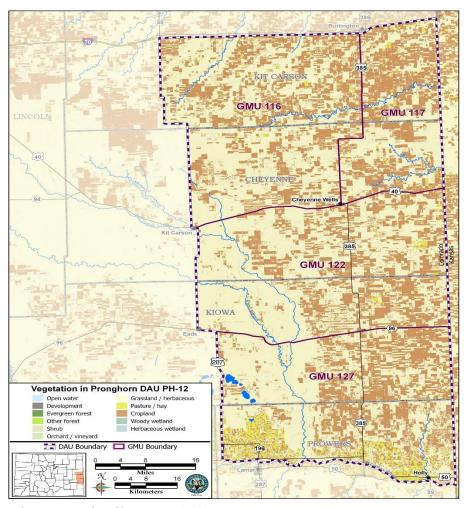


Figure 6. Land cover in the Cheyenne DAU.

#### Habitat Capability

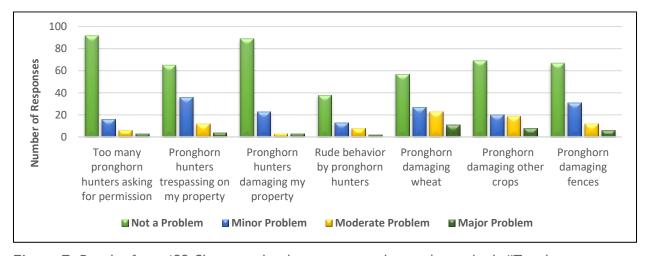
Cheyenne's pronghorn habitat is ideal for supporting large numbers of pronghorn. The current population is likely to be far lower than the DAU's biological carrying capacity. The greatest limiting factor on the population is hunter harvest. In some years, natural factors such as extreme drought or severe winter storms can, in conjunction with hunter harvest, cause population decline. In the absence of relatively aggressive license setting, this population would increase quickly. Ultimately, this herd is limited by a social carrying capacity because of conflicts with agricultural activities.

#### Conflicts with Agriculture

Most pronghorn related game damage in Cheyenne consists of damage to growing wheat, to other growing crops, and to fences. While pronghorn do cause game damage in Cheyenne, the number of landowner complaints has remained low even when the population has been well over objective. Between 2009 and 2018, Cheyenne's post season population ranged between 1,500 and 2,700 (record high) pronghorn. Over the course of that ten-year period, not a single formal game damage complaint was received by District Wildlife Managers.

To understand the perceptions of landowners towards pronghorn in Cheyenne, we created a survey that was mailed to 500 randomly selected landowners in the DAU (i.e. ~25% of the DAU's landowners). The survey and its results can be found in Appendix A. The survey was designed to get input on population objectives and on any potential issues with pronghorn. A total of 122 landowners submitted completed surveys to CPW. Through the survey, we found that landowners showed varied responses regarding their perception of pronghorn damage to their property (Figure 7). The survey asked landowners to what extent they had experienced problems with pronghorn damaging fences over the previous 5 years. Landowner responses are as follows: 57% No Problem, 27% Minor Problem, 11% Moderate Problem, and 5% Major Problem.

Of the 122 respondents to the survey, 105 of them stated that they owned cropland. Of those 105 farmers, when asked to what extent they had experienced pronghorn damage to wheat and other crops over the previous 5 years, the majority stated that pronghorn damage to wheat (49%) and other growing crops (59%) has not been a problem. Responses of the other farmers are as follows: 21% Minor problem with wheat, 16% Minor problem with other crops, 20% Moderate problem with wheat, 17% Moderate problem with other crops, 10% Major problem with wheat, and 8% Major problem with other crops.

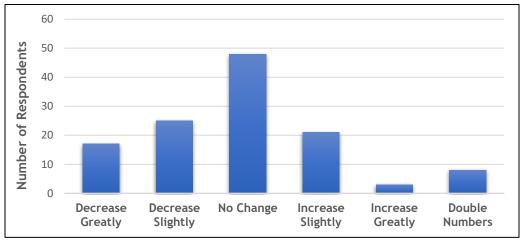


**Figure 7.** Results from 122 Cheyenne landowner respondents when asked; "To what extent have you experienced any of the following problems related to pronghorn and pronghorn hunters in the last 5 years?"

#### Social Carrying Capacity

The greatest indicator of general landowner sentiment towards pronghorn and the DAU's social carrying capacity is landowner's opinions regarding the population level. In the survey, landowners were asked how they would like to see the pronghorn population change relative to the current number of pronghorn in the Cheyenne DAU. Responses suggest that maintaining Cheyenne's population at the levels observed in recent years would be the best and most balanced course of action (Appendix A and Figure 8). The greatest proportion of landowners showed preference for the population to be maintained at the current level. The number of landowners calling for population decrease was close to the number that called for population increase (Figure 8). Of the landowners showing preference for a change in population, more landowners desired slight increases or decreases (i.e. 25% increase/decrease) than for major increases/decrease (Figure 8). By maintaining the population at its current level, CPW would be managing close to the median of landowner opinion towards the pronghorn population.

Another aspect of the social carrying capacity of a private lands pronghorn herd is the acceptance of landowners to the numbers of hunters required to manage a herd at a specific level. Most landowners in Cheyenne currently support pronghorn hunting by allowing it on their lands (landowner survey question #2, Appendix A). That support however, could wane if hunter numbers are so great that they cause landowners to become intolerant of pronghorn hunters. Survey results suggest that Cheyenne's contemporary pronghorn population size and corresponding hunter numbers have resulted in relatively low levels of hunter-caused problems for landowners. Most landowners indicated that they had no problems or only minor problems when asked to what extent they had experienced problems related to too many hunters asking for permission (93%), trespass (87%), and hunter-caused damage to property (95%; Figure 7). Managing to the proposed objectives would likely maintain these low levels of hunter-caused problems.



**Figure 8.** Results from 122 landowner responses to the question of "How would you like to see the Cheyenne pronghorn herd population change over the next 10 years"

#### HERD MANAGEMENT HISTORY

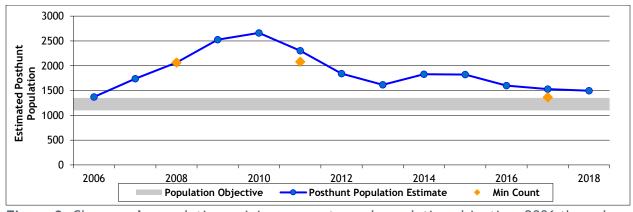
#### Population Inventory Techniques

The current modeled estimate for Cheyenne is, in part, based off an intensive monitoring program that consists of annual preseason sex/age classification flights and minimum counts. In Cheyenne, both sampling techniques use CPW fixed winged aircraft. Sex/age classification flights are conducted by flying North/South transects across the entire DAU. Transects are spaced evenly across the DAU, generally three miles apart. The distance between transects has varied some years due to a limit on airplane availability and/or higher densities of pronghorn that allowed for sufficient sample size with wider transects. Pronghorn classification flights are conducted between late July and early September. Prior to 2006, sex/age classification flights were conducted in Cheyenne every other year. Since 2006, the classification flights have been conducted annually to improve the accuracy of Cheyenne's modeled population estimates.

Minimum counts are used to verify population estimates from the model, making sure that the model isn't underestimating the population. Minimum counts of pronghorn in Cheyenne were conducted in 1986, 1989, 1991, 1993, 1995, 1999, 2001, 2003, 2005, 2008, 2011, and 2017. Minimum counts were flown post season, usually in December. They consisted of flying North/South transects across the entire DAU with 1-mile spacing between transects. A minimum count provides a minimum estimate of the number of pronghorn in the DAU, but since the number of pronghorn missed is unknown, it does not reflect a population estimate with an estimate of statistical precision.

#### Post-Hunt Population Size

Cheyenne's modeled population estimates have relied on data from harvest surveys, sex/age classifications, and minimum counts. Since 2006, Cheyenne's post-season population estimates have ranged from 1,400-2,700 pronghorn (average of 1,880; Figure 9). The population reached its 2,700 animal peak in 2010. Due to significant increases in hunting license numbers, the addition of a late doe-only season, and the change of all doe licenses to "list B", the population has been reduced to its current estimated post-season population of 1,500 pronghorn.



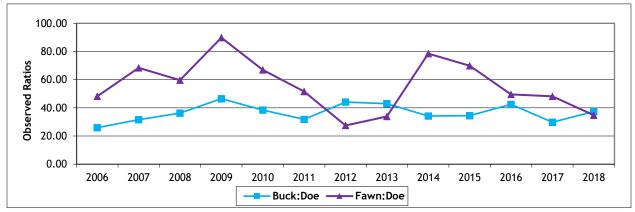
**Figure 9.** Cheyenne's population, minimum counts, and population objective; 2006 through 2018.

#### Post-Hunt Herd Composition

Sex/age classification flights were flown in Cheyenne during the following years: 2006-2012, and 2014-2018 (Figure 10). Across those years, pre-season observed sex ratios have ranged from a low of 25.9 bucks:100 does to a high of 46.5 bucks:100 does (average 36.6 bucks:100 does). The modeled post season buck:doe ratio from 2006 through 2018 has ranged from 9.8

to 59.7 bucks:100 does (average 37.1 bucks:100 does). The previous post season buck:doe ratio objective was a target of 36 with a range of 33-40. Over the last several years buck:doe ratios have increased significantly due to the high amount of doe harvest that was needed to reduce the population. Since 2011, doe harvest has equaled or exceeded buck harvest. In some years, doe harvest was more than double that of buck harvest.

Across Cheyenne's classification flights, the observed fawn: doe ratios ranged from a low of 27.5 fawns: 100 does to a high of 90 fawns: 100 does. The average across those years was 56 fawns: 100 does (Figure 10).

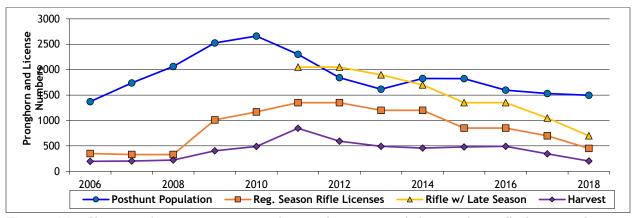


**Figure 10.** Observed and predicted pre-season sex and age ratios for Cheyenne; 2006 through 2018.

#### Harvest and Hunters

The Cheyenne DAU saw relatively consistent license and harvest numbers from 1986 through 2008. This time period of relative stability had annual license numbers that ranged from 210 to 485, and annual harvest that ranged from 171 to 325 pronghorn. In 2009, CPW began to increase license numbers in response to an increasing population. The estimated population went from 1,400 pronghorn in 2006 to its record high of 2,700 pronghorn in 2010. License increases continued until 2011 as managers tried to keep up with the population increase. By 2011, Cheyenne had 2,050 rifle licenses and a harvest of around 850 pronghorn.

In order to address the rapidly increasing Cheyenne population, CPW considered management options beyond regular rifle season license increases. In 2010, a late doe-only rifle season was instituted that is held during the entire month of December. Also in 2010, CPW made all doe licenses list B, allowing Cheyenne's hunters the opportunity to harvest more than one pronghorn per year.



**Figure 11.** Cheyenne's post-season population, harvest, and the number rifle licenses from 2006 through 2018.

CPW was successful in bringing the population close to objective by implementing license increases, list B doe licenses, and the addition of a late doe season. By 2018, the Cheyenne population was brought down to 1,500 pronghorn.

#### PUBLIC INVOLVEMENT

#### Landowner Solicitation

Landowner input is essential because of the predominance of private lands and the potential for game damage conflicts in the DAU. Historically, Cheyenne's pronghorn population objectives were derived with public input collected at public meetings. This was problematic because public meetings received little to no landowner attendance. For example, during the scoping period for the 2006 plan revision, public meetings were held in Lamar, Cheyenne Wells, and Eads. Those meetings were highly publicized through the Cattle Growers Association, local grazing associations, local radio stations, and local newspapers. Between the three public meetings, only 13 of Cheyenne's landowners attended. With such a low attendance rate, it was difficult for CPW managers to get a sense as to whether or not those 13 landowners offered opinions that were consistent with those of the landowner majority.

To better understand landowner opinions regarding pronghorn numbers, we conducted a mail survey for this herd management plan revision. In January of 2019, surveys were mailed to 500 randomly selected landowners, which represented ~25% of Cheyenne's landowners. Only landowners who owned a minimum of a quarter section (160 acres) of land were included in the landowner selection pool. This was done to eliminate owners of smaller residential properties from the list. The questionnaire included seven questions and a postage paid return envelope. We received completed surveys from 122 landowners.

#### Landowner Survey Results

The landowner survey consisted of seven questions covering multiple topics (Appendix A). Of primary concern for the herd management planning process are landowner opinions regarding how/if they would like to see the population changed and how/if they would like to see sex ratios change. The survey included one question related to population objective and one question related to sex ratio objective. The survey also included questions concerning other topics: game damage conflict, hunter conflict, hunter access on private lands, and the late doe-only season (see the following sections: Appendix A, Conflicts with Agriculture, and Harvest and Hunters).

When asked how they would like to see the pronghorn population change over the next ten years, relative to the current number of pronghorn, the majority of landowners (39%) think

that there should be no change to the current numbers of pronghorn. Some landowners indicated that they would like to see an increase in the population, with 17% having selected "increase slightly" and 9% having selected "increase greatly". Twenty-one percent of respondents preferred to see the population reduced slightly, and 14% preferred to see the population reduced greatly. (Question #5, Appendix A).

When asked about the approach to guide buck license allocation, landowner responses (Question #6, Appendix A) were fairly split on this question. Approximately 30% of respondents said they would like buck license numbers maintained, 23% chose an increase, 17% chose a decrease, and 30% were not sure. Overall, responses show support for maintaining the sex ratio at or near the sex ratios observed in recent years.

The survey also gave landowners the opportunity to offer additional comments. Those comments can be found in Appendix C.

#### **Hunter Solicitation**

In addition, we sought hunter input regarding the Cheyenne population and targeted sex ratio by sending surveys to 500 hunters who had received at least one Cheyenne rifle or muzzleloader license for the 2016, 2017, and/or 2018 seasons. We received completed surveys from 137 hunters.

#### Hunter Survey Results

The hunter survey consisted of nine questions covering multiple topics (Appendix D). The survey included two questions related to population objective and one question related to sex ratio objective. The survey also included questions concerning other topics: hunt quality, hunter crowding, and why some license holders chose not to hunt (see the following sections: Appendix A, and Harvest and Hunters).

When asked about the number of pronghorn and the number of hunters in Cheyenne, the majority of the respondents (50%) preferred pronghorn numbers and license numbers to remain the same (Question #6, Appendix D). Thirty-six percent of respondents preferred to see pronghorn numbers increased, even if that meant licenses would be more difficult to draw. Not a single hunter stated that they would like to see the pronghorn numbers decreased.

When asked how they would like to see the Cheyenne pronghorn herd change over the next 10 years, the majority (70%) would like to see the population increase at some level. Eighteen percent of the respondents thought the current numbers were acceptable (Question #7, Appendix D). Only 2% of respondents called for a decrease in the population.

When asked about the approach to guide buck license allocation, the majority (49%) of hunters would like to see current numbers of buck permits maintained at their current level (Question #8, Appendix D). A significant proportion (34%) of hunters indicated that they would be willing to have buck permits reduced in order to increase the buck:doe ratio. Only 6% of respondents stated that they would like to see the number of buck permits increased.

#### 30 Day Comment Period

In addition to the survey, this draft herd management plan was open for review by the public for a 30 day comment period. It was posted 11/20/2019 on the CPW website at: <a href="http://cpw.state.co.us/hmp">http://cpw.state.co.us/hmp</a>. A press release was issued by CPW on 11/15/2019 (Appendix H). Copies of this plan were also sent to the Colorado Cattleman's Association, State Land Board district manager for Districts 6, and the county commissioners for Prowers, Kiowa, Cheyenne, and Kit Carson (Appendix G). Comments from the 30 day comment period can be

#### MANAGEMENT ALTERNATIVES

As customary in herd management plans, we examined a range of both population objectives and sex ratios for the Cheyenne DAU.

#### Population Objective Alternatives

Alternative 1: 1,500-2,000 pronghorn (preferred alternative): This alternative would maintain the population at the level observed in recent years. The survey suggests that this is the preferred alternative by the majority of landowners in Cheyenne.

Alternative 2: 1,100-1,350 pronghorn (status quo): This alternative was the objective of the previous plan, and would call for a ~15% decrease of the current estimated population. The majority of landowners and hunters do not support this alternative.

Alternative 3: 2,000-2,600 pronghorn: This alternative represents a ~25% increase in population size over current levels. The majority (70%) of hunters indicated that they would like to minimally see a 25% increase to population. The majority of landowners do not support this.

#### Sex Ratio Objective Alternatives (Post-Hunt)

Alternative 1: **35-45** bucks per **100** does (preferred alternative): This alternative represents a sex ratio range that lines up fairly well with post-hunt buck: doe ratios over the last 10 years. CPW staff believes this to be a practicable ratio to manage for, while maintaining the population at the preferred level, and while maintaining buck permit numbers close to those issued in recent years. The majority of both hunters and landowners prefer to see buck permit numbers maintained close to their current levels.

Alternative 2: 33-40 bucks per 100 does (status quo): This alternative calls for a decrease below levels observed in recent years. This is not supported by the majority of landowners or hunters.

Alternative 3: 45-60 bucks per 100 does: This alternative is based off of the 5 year average for predicted buck: doe ratios. This ratio can only be achieved by driving doe numbers below preferred levels or by further limiting buck license numbers. Neither option is supported by the majority of landowners and hunters.

#### STRATEGIES TO ADDRESS MANAGEMENT CONCERNS

#### Game Damage

Evidence suggests that pronghorn damage has not been a major issue in Cheyenne in recent years (see sections: "Conflicts with Agriculture", pg. 10; "Social Carrying Capacity", pg. 11). CPW has instituted several tools that have helped to alleviate issues with pronghorn-caused crop damage. Since the establishment of the late doe season, game damage complaints in Cheyenne have been nearly non-existent. When pronghorn densities do become too great on fields with growing crops, dispersal hunts will be used to reduce damage and disperse pronghorn.

#### **Hunter Crowding**

For the hunter survey, the majority of respondents (40%) stated that they had experienced moderate levels of hunter crowding while hunting the primary rifle season (Question #5, Appendix A). An additional 11% stated that they had experienced high levels of hunter crowding. It's not a surprise that such a large proportion of hunters have experienced issues

related to hunter crowding in recent years. From 2009 to 2017 annual license quota was set at three to six times what it had been prior to 2009. CPW has been able to pull back on license numbers to reduce crowding as the population has been driven close to objective.

In order to maintain the population at the proposed objective of 1,500-2,000 pronghorn, it's estimated that Cheyenne's annual rifle license numbers will need to be in the range of 700 to 1,000 licenses. Those license levels will continue to offer significantly more hunter opportunity than what was available prior to 2009, where the average annual license quota was 350 from 1986-2008. Regarding crowding, the range of 700 to 1,000 annual rifle licenses is also significantly lower than the 2011-2017 average of 1,700 licenses. With the management required to keep the herd at the proposed objective, it's likely that hunter crowding levels will be reduced below levels reported on the survey.

In the past several years, CPW made some regulation changes that have resulted in reduced hunter crowding. When CPW established all doe pronghorn licenses as list B, allowing one hunter to use two doe licenses, it reduced the number of hunters required to get the desired harvest. With the addition of the late December doe season, regular season hunter crowding was reduced by shifting some of the regular season licenses to the late season. Another way in which CPW is helping to minimize hunter crowding is by increasing the length of the primary rifle season to include a second weekend. While it is expected that most of the hunters would still hunt on opening day, some hunters may choose to hunt on the second weekend in order to avoid hunter crowding.

#### STRATEGIES FOR ACHIEVING OBJECTIVES

CPW biologists and wildlife managers have experience with managing the Cheyenne population at the proposed population objective range of 1,500-2,000 animals. For 7 of the last 10 years, the post hunt population has fallen within that range. During that time, production has been highly variable with fawn:doe ratios as low as 27.5 and as high as 90. CPW biologists and wildlife managers have gained considerable understanding as to how license numbers should be set to manage at the proposed objective range even through the production extremes observed in Cheyenne.

The proposed post-hunt sex ratio objective is: 35-45 bucks:100 does. This is a higher buck:doe ratio than the previous objective (33-40), but is consistent with post season sex ratios that resulted from management over the last 10 years. Efforts will continue to achieve the sex ratio objective each year by using the observed pre-season buck:doe ratio, and using models to estimate the doe and buck harvest needed to achieve the objective. Managers are better equipped to achieve the buck:doe ratio goal in Cheyenne now that preseason classification flights are being conducted every year, instead of every other year.

Since 2006, CPW has been conducting consistent and intensive survey efforts to collect data for building robust population models for Cheyenne. As funding allows, CPW biologists and managers intend to continue carrying out the current data collection regimen of annual harvest surveys, annual pre-season classification flights, and periodic minimum count flights.

In recent years, CPW has added a couple of significant management tools to the Cheyenne management toolbox. The addition of the December late doe rifle season gives additional license setting flexibility. It allows CPW further opportunity to reduce the population as needed, while not increasing hunter crowding during the regular rifle season. It also helps landowners and CPW wildlife managers to reduce pronghorn damage on wheat fields, by conducting a 31-day hunting season that disperses pronghorn at the time of year when

pronghorn start to congregate on growing wheat. Another relatively recent change was the classification of all doe licenses in Cheyenne as list B. This gives CPW better ability to increase doe licenses when needed, without making significant increases to hunter crowing.

#### **APPENDIX A: Landowner Survey with Results**

Dear Landowner,

Colorado Parks & Wildlife (CPW) is interested in **your input** on the management of pronghorn antelope in the Cheyenne Pronghorn Herd Management Unit, Game Management Units (GMUs) 116, 117, 122, and 127.

**Your input** is a **very important part** of the planning process. The information you provide will help guide management of the pronghorn herd for the next 10 years!

Please help us learn what is most important to you about pronghorn management in this area. Your identity will be kept confidential and the information you provide will never be associated with your name.

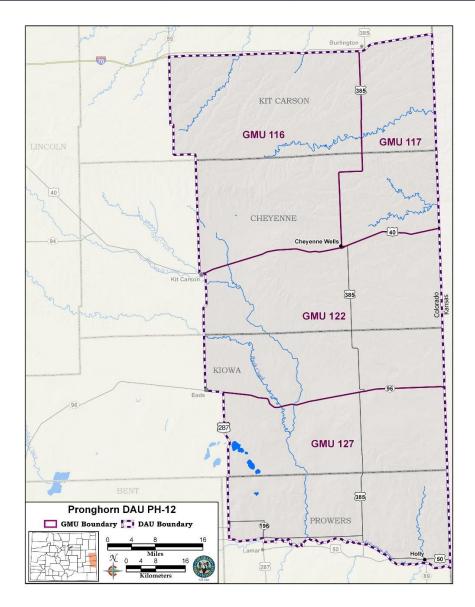
If you have any questions about the pronghorn herd please contact either:

- Jonathan Reitz, Wildlife Biologist, at (719) 691-9130; jonathan.reitz@state.co.us
- Travis Black, Area Wildlife Manager, at (719) 336-6603; <a href="mailto:travis.black@state.co.us">travis.black@state.co.us</a>

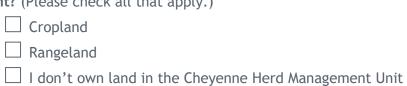
Please complete surveys before **January 31**.

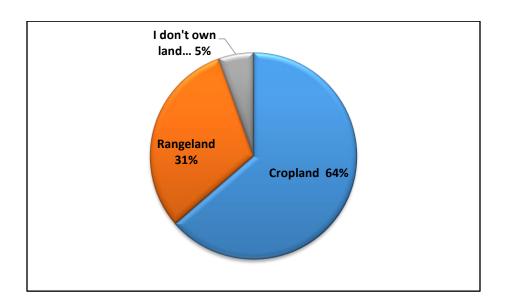
Thank you for participating!

This survey is specific to the Cheyenne Pronghorn Herd Management Unit. The map below is for reference. *Please answer the following questions concerning pronghorn management in this area only.* 



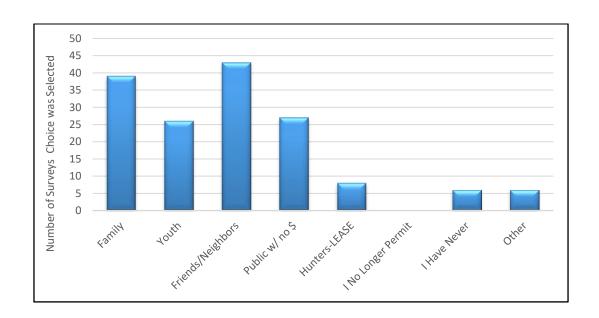
1. How would you describe the land that you own in the Cheyenne Herd Management Unit? (Please check all that apply.)





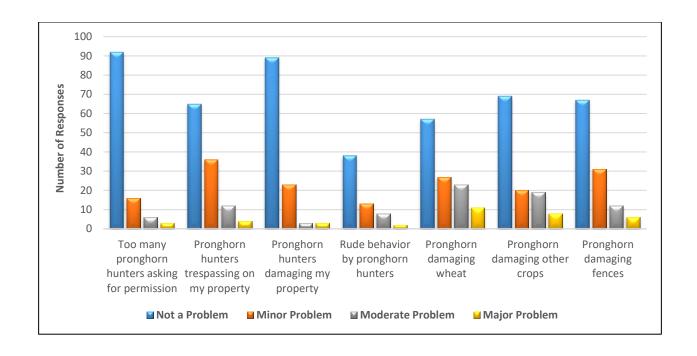
2. Over the last five years, which of the following did you allow to hunt pronghorn on your property? (Please check all that apply)

Family
Youth
Friends and/or neighbors
Public hunters who did not pay an access fee
Hunters or outfitters who have leased the land or paid an access fee
I no longer permit pronghorn hunting on my land
I have never allowed anyone to hunt pronghorn on my land
Other (Please specify):



3. To what extent have you experienced any of the following problems related to pronghorn and pronghorn hunters in the last 5 years? (Please check one response for each statement.)

	Not a Problem	Minor Problem	Moderate Problem	Major Problem
Too many pronghorn hunters asking for permission to hunt	0	0	0	0
Pronghorn hunters trespassing on my property	0	0	0	0
Pronghorn hunters damaging my property	0	0	0	0
Rude behavior by pronghorn hunters on my property	0	0	0	0
Pronghorn damaging growing wheat	0	0	0	0
Pronghorn damaging other crops (non wheat)	0	0	0	0
Pronghorn damaging fences	0	0	0	0

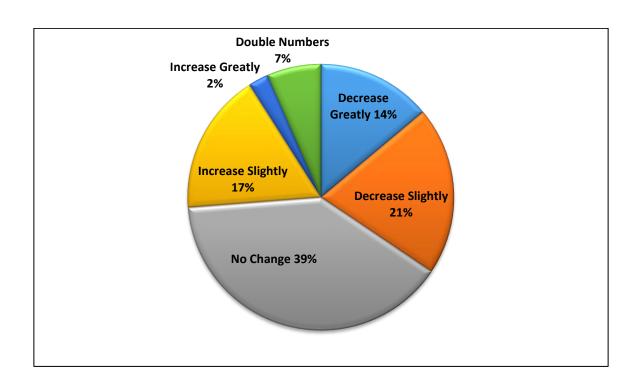


4.	. Have you experienced other problems related to pronghorn causing damage	and/or
pr	ronghorn hunters? (Please specify):	

## Answers in Appendix B

## . For the 2019-2029 time period, relative to the current number of pronghorn, how would you like to see the pronghorn population change in the Cheyenne Herd Management Unit?

	Decrease greatly (~50% fewer pronghorn)	Decrease slightly (~15% fewer pronghorn)	No change (Current numbers are acceptable)	Increase slightly (~15% more pronghorn)	Increase moderately (~50% more pronghorn)	Double numbers (i.e. numbers similar to those in years 2009 and 2010)
I would like the pronghorn population to:						

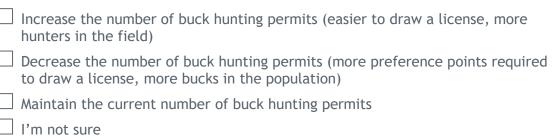


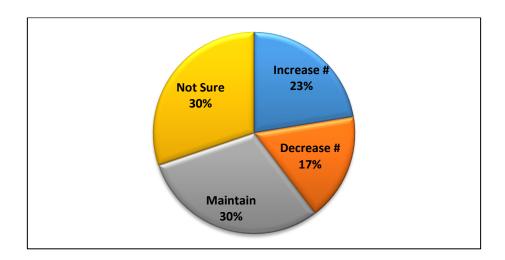
Please read the following brief description about managing male-to-female ratios before answering question 5 (below).

If a pronghorn herd is managed for **increased hunting opportunity**, more buck hunting licenses are made available and buck hunters are generally able to hunt more frequently. This can result in fewer total bucks in the herd (*lower buck-to-doe ratio*) and fewer mature bucks.

If a herd is managed for **increased buck quality**, fewer buck licenses are issued in order to increase the number of bucks in the population (*higher buck-to-doe ratio*). This generally results in less frequent hunting opportunities and fewer hunters in the field, but it can also result in a greater chance of encountering a mature buck.

**6.** Which of the following approaches should guide the number of buck licenses allocated in the Cheyenne herd unit?

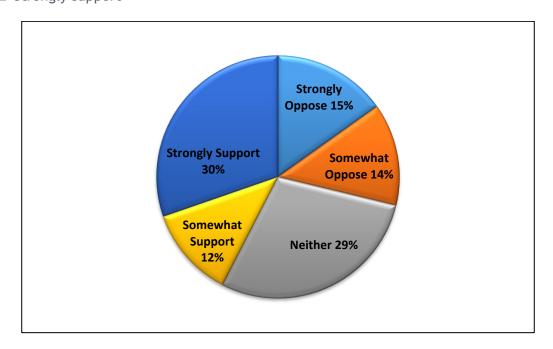




Since 2012, CPW has held a late season doe hunt in the Cheyenne herd unit. The purpose of this 31 day season is to increase CPWs ability to keep pronghorn numbers under control as well as to give landowners another tool to help keep pronghorn concentrations from getting too large on wheat fields. Some additional benefits of the season are that it increases hunter opportunity, and reduces hunter crowding during the primary season by shifting some of the doe licenses to the late season.

## 7. Do you support or oppose maintaining a late doe only pronghorn season in the Cheyenne Herd Management Unit?

□ Strongly oppose
 □ Somewhat oppose
 □ Neither oppose nor support
 □ Somewhat support
 □ Strongly support



Thank you very much for taking the time to complete this survey. Your input is very valuable to us and will help us better manage your wildlife resources. Please feel free to leave us any additional comments regarding pronghorn management below.

#### **APPENDIX B: Landowner Survey Question #4 Responses**

- Yes, antelope spread bindweed. They eat it and then their droppings will contain the bindweed seed
- No
- No
- In all honesty I haven't had a problem so far
- No
- No
- No
- No
- No
- No, our land is in CRP
- Absolutely no problem with the pronghorns or the hunters. We enjoy having the pronghorns, hunting them, and allowing hunters to hunt on our cropland.
- Over last three years population is down on my land. They knock insulators off, wouldn't call it major. Hunters sneaking in will always be a problem. Not as bad as in past.
- Bindweed seed being transported/planted
- No
- No
- No
- No
- Not that I am aware of
- Running through my young 2-10 inch corn and also hunters drive on posted property
- No
- No! Recently we talked and (name removed) about this because (name removed) bought the farm from us. Also has the lease on the farm ground in the past. Have seen the pronghorn or antelope south of our property. Have not seen any on our property.
- No
- SE Kit Carson County see big increase in pronghorn see herd of 15 to 30 head
- Mostly damaging crops and spreading bindweed. Bindweed is a major damage to my land.
- No
- No
- Pronghorns broadcast bindweed and other weeds
- No
- Pronghorn like to eat and thus spread field bindweed. It is a very troublesome weed for us. Most hunters are respectful, but a few we have had issues with.

- We've actually had more problems with pheasant hunters. Do not want hunters driving across stubble or crop.
- No
- We're getting too many pronghorn. We need more control!
- None
- There have not been big bucks in 116/117 for many years. Not sure why because I don't see that many hunters either.
- I believe spread bindweed seeds.
- No
- Growing numbers of pronghorn with that other problems start to be an issue as well!
- Road hunting/ poaching
- No
- No
- No
- Trespassing and poaching is major problem. Our concern is that there are a small number of pronghorn (15 to 20) that we want to stay on the ranch. And they are constantly pursued to the point of driving them through fences and chasing them through cattle.
- No
- No.
- I just don't like the attitude of some hunters thinking because they have a license they can do whatever they want.
- Bindweed spreading
- Pronghorns spreading bindweed.
- No
- Basically the major problem is the spread of bindweed.
- Pronghorns spread bindweed. Damage winter wheat, crops, tear up fences...
   Pronghorns do more damage. THE HERDS ARE OUT OF CONTROLL
- Sometimes usually gates left open
- No experience with hunters
- No cleaning catch facilities (tags) hotel rooms stink- towels damaged.
- No cleaning catch facilities (tags) hotel rooms stink- towels damaged.
- No
- Grain loss = revenue loss we don't need any more revenue loss! Spreading noxious weeds and seeds around the country.
- No
- No
- Looked inside storage facility without permission

- I own land in your survey area, however do not live there. I would support whatever you and residents there feel is positive to maintain a healthy area for both wildlife and crop production. Thanks for your interest in both.
- None that I know of.
- We don't see as many antelope on our land in Kiowa County as we do south of (unknown)
- I live out of state. My lease has not mentioned any problems
- Just my trees
- NO
- Some hunters telling others they cant hunt when both parties have permission
- Usually people that ask to hunt are cleared to hunt on our property. When some of those hunters tell other people with cleareance to hunt, they cant it is unacceptable

#### **APPENDIX C: Landowner Survey Additional Comments**

- The herds of antelope can easily destroy growing wheat crops and cause the land to blow. I am all for getting the antelope herds totally out of southeast Colorado where we have experienced a harsh drought for the last six to seven years.
- I don't want hunters on my place
- Haven't bothered me so far. I don't feel it fair to pass judgment on a situation that hasn't effected me so far. Thank you.
- We would like to see our local herd number substantially increase GMU 127
- I have no knowledge about this issue. I don't want antelope or hunting on my land. So I oppose the project. My land is in CRP so I have to follow the rules.
- For this question I suggest you contact (name removed) we are not out there very much. (cell number removed). If we were still living in that area we would probably support the late doe season and support the other farmers in the area that have problem with the pronghorn.
- Today numbers are much (seem to be) greater than 25 years ago. Management decisions might want to consider going back to those levels. Thank you for giving us the opportunity to voice our opinion in the matter.
- Too many unethical hunters shoot bucks with shedded sheaths.
- (Names removed) is no longer living. My stepfather (name removed) is also deceased. My wife (name removed) own about ½ of their property. I would like you to call me because I'd rather talk to somebody on the phone or in person. (Phone number removed) thanks.
- I still feel that landowners are being slighted in drawing of licenses. This last year hardly any of the landowners I talk to drew a license at all. I feel like landowners should have somewhat of a priority. We put up with all the animals and hunters. We deserve treated more fairly. Too many times we go without.
- Stop (name removed) from doing guided hunts.
- I truly believe the same should apply to deer hunting, the main problem with deer hunting I have especially buck deer there are way too many trophy hunters and that causes a major problem for me as you need a dominance of the older bucks in the herds for breeding purposes. Thanks (name removed)
- In our property we have had no problems thus far. But we would not be pleased to have them on our property. Do not number.
- Thank you for soliciting landowner input. (Location of farm removed). We don't have an antelope problem on our farms. Being a landowner and a hunter, I acknowledge that I don't have all the answers but I have seen how others have solved these problems. I have been very fortunate in that I have hunted around the world. In areas that were "overrun" with wildlife, the perception was that "something" was more valuable that the wildlife. In many of these areas the problem was solved by giving the animal more value that whatever was perceived to be lost. In Colorado this might be successful if wheat farmers realized that the antelope might bring in more revenue

than whatever wheat they thought they were losing. Some problem areas use a landowner tag system where the landowner could get tags based on game populations and damage. These tags could be sold to an outfitter who would guide and manage the access to his land. When this brings more revenue that whatever wheat was being lost suddenly the antelope has value and isn't a problem. Game populations in SE Colorado along the Arkansas River have changed in the last 70 years. In the 1950's, we had a migratory waterfowl and some pheasants and quail. When we had the big grasshopper infestation in the 50's, we lost a lot of the upland birds. There were very few deer in the area at that time. Now we see turkeys and deer regularly. We even see bobcats. I anticipate great challenges in wildlife management along the Arkansas in the coming years. (Company removed) is buying up land and water rights east of Lamar. If they are successful in building a large power plant, irrigation water will be taken away from farmland making its value and usefulness change. The nice way to describe these effected farms will be to say that they have become wildlife habitat. Now they can be managed for habitat and hunting, the land might have value again.

#### **APPENDIX D: Hunter Survey with Results**

Dear Hunter,

Colorado Parks & Wildlife (CPW) is interested in **your input** on the management of the Cheyenne Pronghorn Herd (Game Management Units 116, 117, 122, and 127).

**Your input** is a **very important** part of the planning process. The information you provide will help guide management of the pronghorn herd for the next 10 years!

Please help us learn what is most important to you about pronghorn management in this area. Your identity will be kept confidential and the information you provide will never be associated with your name.

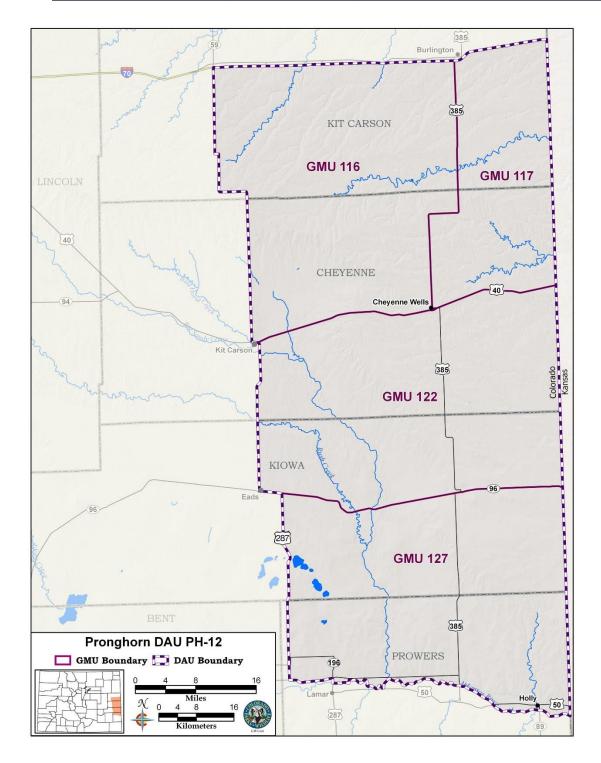
If you have any questions about the pronghorn herd please contact either:

- Jonathan Reitz, Wildlife Biologist, at (719) 691-9130; jonathan.reitz@state.co.us
- Travis Black, Area Wildlife Manager, at (719) 336-6603; <a href="mailto:travis.black@state.co.us.">travis.black@state.co.us.</a>

Surveys must be completed before **September 1**.

Thank you for participating!

This survey is specific to the Cheyenne Pronghorn Herd Management Unit. The map below is for reference. *Please answer the following questions concerning pronghorn management in this area only.* 

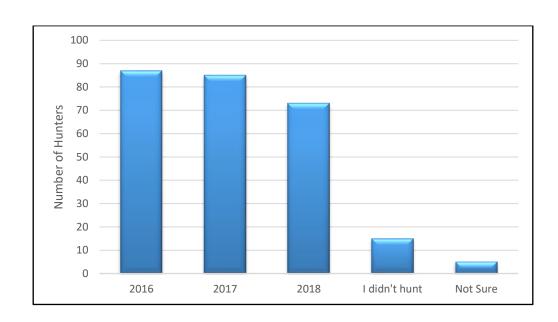


1. Which of the following year(s) have you hunted pronghorn in the Cheyenne Herd Management Unit? (Please check all that apply.)

2016
2017
2018
Lidd not hunt pronghorn in the Chevenne Herd Managemen

I did not hunt pronghorn in the Cheyenne Herd Management Unit during any of these years. (please skip to question #9)

☐ I am not sure



2. During the previous three years which of the following license(s) did you obtain for the Cheyenne Herd Management Unit? (*Please check all that apply.*)

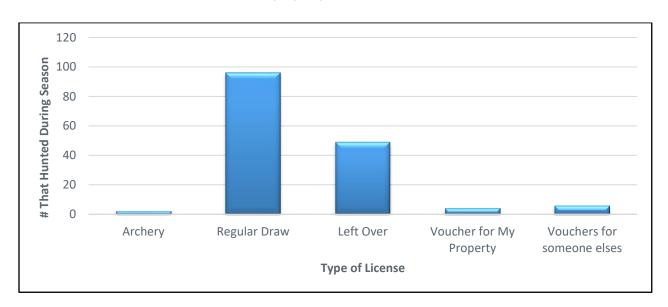
An over-the-counter either sex archery license

A regular draw license

☐ A left over license

A landowner voucher for the property I own or manage

A landowner voucher for another property

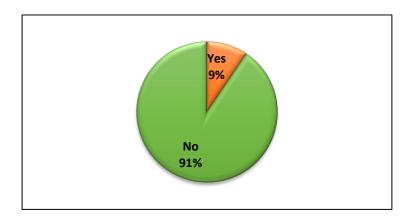


3. Do you live within the Cheyenne Herd Management Unit?

(See map above, and check only one).

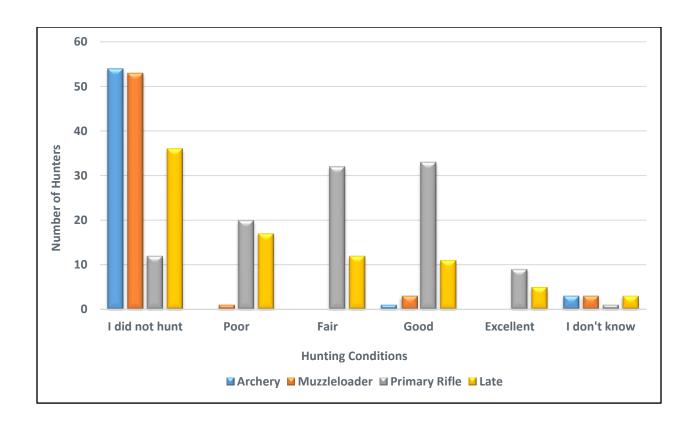
Yes

∐ No



4. How would you rate the <u>quality of pronghorn hunting</u> in the Cheyenne Herd Management Unit for any of the seasons that you hunted from 2016-2018? (*Please check only one response per season.*)

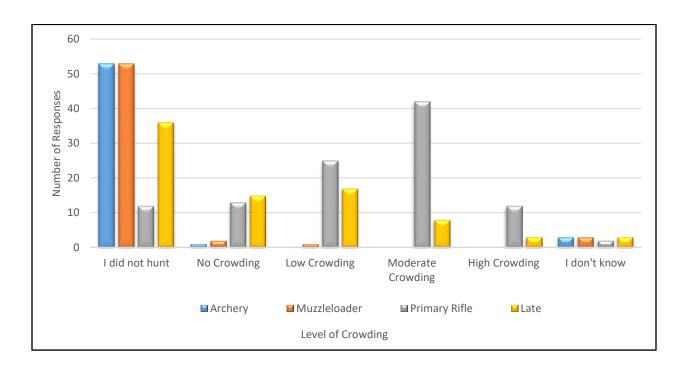
	I did not hunt this season	Poor	Fair	Good	Excellent	I don't know
Either Sex Archery Season	0	0	0	0	0	0
Muzzleloader Season	0	0	0	0	0	0
Primary Rifle Season (Early October)	0	0	0	0	0	0
Late Season Doe Only Rifle Season (December)	0	0	0	0	0	0



5. How would you rate the level of <u>hunter crowding</u> in the Cheyenne Herd Management Unit for any of the seasons that you hunted from 2016-2018?

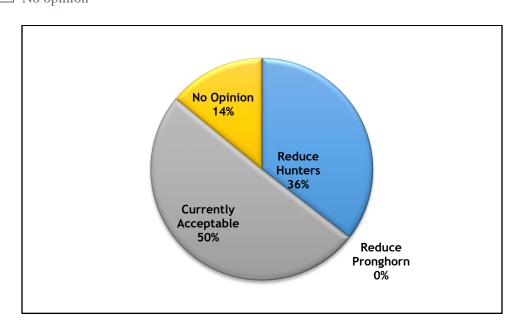
(Please check only <u>one</u> response per season.)

	I did not hunt this season	No Crowding	Low level of crowding	Moderate level of crowding	High level of Crowding	I don't know
Either Sex Archery Season	0	0	0	0	0	0
Muzzleloader Season	0	0	0	0	0	0
Primary Rifle Season (Early October)	0	0	0	0	0	0
Late Season Doe Only Rifle Season (December)	0	0	0	0	0	0



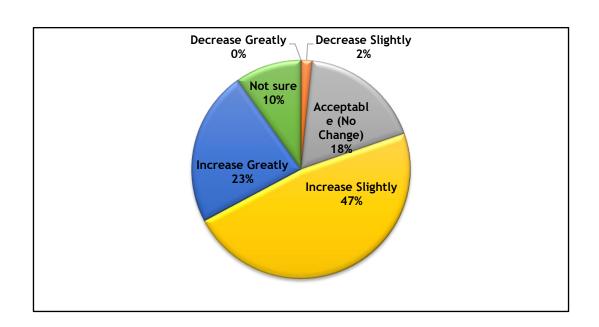
6. For the purposes of pronghorn management in the Cheyenne Herd Management Unit, what is your preference? (*Please check only one.*)

□ Reduce the number of hunters (more pronghorn, fewer hunters, harder to draw a license, higher harvest success rates)
 □ Reduce the number of pronghorn (fewer pronghorn, more hunters, easier to draw a license, lower harvest success rates)
 □ The current numbers of hunters and pronghorn in herd unit are acceptable
 □ No opinion



7. How would you like to see the Cheyenne pronghorn herd population change over the next 10 years? (*Please check only one.*)

	Decrease greatly (half population)	Decrease slightly (~25% fewer pronghorn)	No change (current numbers are acceptable)	Increase slightly (~25% more pronghorn)	Increase greatly (double population)	Not Sure
I would like the pronghorn population to:						

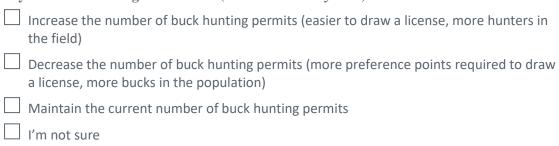


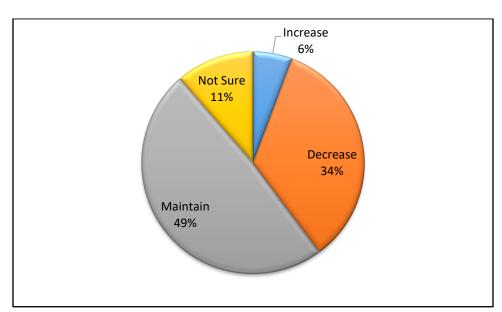
Please read the following brief description about managing male-to-female ratios before answering question 8.

If a pronghorn herd is managed for **increased hunting opportunity**, more buck hunting licenses are made available and buck hunters are generally able to hunt more frequently. This can result in fewer total bucks in the herd (*lower buck-to-doe ratio*) and fewer mature bucks.

If a herd is managed for **increased hunt quality**, fewer buck licenses are issued in order to increase the number of bucks in the population (*higher buck-to-doe ratio*). This generally results in less frequent hunting opportunities and fewer hunters in the field, but it can also result in a greater chance of encountering a mature buck.

8. Which of the following approaches should guide the number of buck licenses allocated in the Cheyenne Herd Management Unit? (*Please check only one.*)

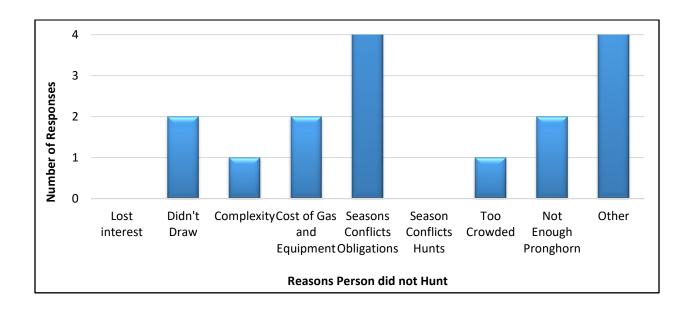




# If you HUNTED pronghorn in the Cheyenne herd unit from 2016-2018, you are DONE with this survey. Please SKIP question #9.

9. Why did you NOT HUNT pronghorn in the Cheyenne Herd Management Unit during 2016, 2017, or 2018? (Please check all that apply)

Answers in Appendix E
Utiler (please specify)
Other (please specify)
There were not enough pronghorn where I hunt
☐ The Cheyenne Herd Management Unit has become too crowded with hunters
Season conflicted with other hunts
Season conflicted with other obligations
The cost of gas, equipment, or other expenses
☐ The complexity of hunting regulations in Colorado
Did not draw a license
☐ I lost interest in hunting pronghorn the year(s) that I had a license



Thank you very much for taking the time to complete this survey. Your input is very valuable to us and will help us better manage your wildlife resources. Please feel free to leave us any additional comments regarding pronghorn management on the space below.

### APPENIDX E: Hunter Survey Question 10 "Other" Responses

- " Never have hunted in that unit"
- "Difficulty accessing herds on big ranches where the animals seek refuge as far from public roads as possible."
- "Spinal health problems"
- "I don't use the Cheyenne Herd management unit to hunt."
- "The private land owner that I was going to hunt with decided not to hunt with me so I no longer hd access to the area I planned to hunt in 116"
- "I did not hunt or get a license for the Cheyenne Hunt Management unit."

#### **APPENDIX F: Hunter Survey Additional Comments**

- "Moved to Denver for school. Not worth the drive and cost."
- "Over ran with hunters- I hunted almost every day and didn't get a shot."
- "I'd love to see bigger bucks. I think the genetics out here produce it, but most bucks are shot before they reach 12" so we never find out."
- "Love the peace and guite- and wide open spaces one of my favorite hunts!!!"
- "Just seems like there are less animals in unit 177 than 8 years ago, could only find one heard in the regular season last year, and two fawns in the late"
- "Bring back the big game walk in. No land to hunt out there all private. Makes it very hard to hunt"
- "Private land access, Pronghorn are majority on private."
- "It is getting to hard to hunt on private property without paying big money to hunt on any property no matter what your hunting."
- "I just started hunting in 2018 and the doe I harvested was my first"
- "Very poor numbers in the herd. Animals that are there see a human or a pickup over a mile away and take off. Will never hunt this unit again. Hunted for years every year it gets worse!"
- "I feel that antelope hunting is the greatest. They are the neatest big game animals
  out there. But its hard to find places to hunt its hard to find landowners to ask for
  permission I would like to see more opps for public land hunting expecilly during the
  archery seasons I would be great to be able to call your office or somebody and get
  some ideias or even on where to hunt its hard to find a place when you don't live
  around there"
- "I happened to be in area during the season. Otherwise it was challenging for me to get out there from the west slope."
- "I believe the current situation with permits is perfect it is almost guaranteed draw every other year for a buck tag. If the population increases the local farmer will be very upset and if the numbers go down the hunting community will be upset. So I believe the current situation is perfect."

#### APPENDIX G: Mailing List for 30 Day Comment Period

Prowers County Commissioners 301 South Main Street, Suite 215 Lamar, CO 81052

Cheyenne County Commissioners PO Box 567 51 South 1<sup>st</sup> Cheyenne Wells, CO 81054

Kiowa County Commissioners PO Box 100 Eads, CO 81036

Kit Carson County Commissioners 251 16th St #201 Burlington, CO 80807

Colorado Cattleman's Association 8833 Ralston Rd. Arvada, CO 80002

Michael Pollart State Land Board District Manager 700 S. Main Street Lamar, CO 81052

## APPENDIX H: Press Release Requesting Input for 30 Day Comment Period

Colorado Parks and Wildlife (CPW) is interested in receiving public input on the management of the Cheyenne Pronghorn Herd, which covers Game Management Units (GMUs) 116, 117, 122, 127 in Prowers, Kiowa, Cheyenne, and Kit Carson Counties.

Big game populations are managed to achieve population and sex ratio objectives established for Herd Management Units. A Herd Management Unit, also referred to as a DAU, is the geographic area that represents the year-around range of a big game herd and includes all of the seasonal ranges of a specific herd. Each Herd Management Unit is composed of several Game Management Units (GMUs).

The purpose of a Herd Management Plan is to integrate the plans and intentions of CPW with the concerns and ideas of land management agencies and interested public to determine how a big game herd should be managed. In preparing a plan, agency personnel attempt to balance the biological capabilities of the herd and its habitat with the public's demand for wildlife recreational opportunities.

The primary decisions needed for each DAU plan are how many animals should exist in the DAU and what is the desired sex ratio for the population of big game animals (e.g., the number of males per 100 females). The selection of population and sex ratio objectives (which are set for a 10-year period of time) drive important decisions in the big game season setting process, namely:

- How many animals must be harvested to maintain or move toward the objectives
- What types of hunting seasons are required to achieve the harvest objective

For the development of the Cheyenne Herd Management Plan, CPW has conducted various pronghorn population surveys, a landowner survey, and a hunter survey. Based off the results of those surveys, CPW is recommending that the population objectives be set to the level of the current estimated population of 1,500-2,000 pronghorn.

If you are interested in reviewing the draft Cheyenne DAU Plan, it can be found at:

http://cpw.state.co.us/thingstodo/Pages/HerdManagementPlans.aspx

CPW is requesting that those interested in commenting on the Cheyenne draft plan, submit comments by December 20th. If you would like to submit comments, instructions can be found on the website. Comments will be used to further develop the draft plan that will be presented to Colorado's Parks and Wildlife Commission.

### APPENDIX I: Comments from 30 Day Comment Period

No comments were received during the 30 day comment period.

This plan was approved by the Colorado Parks and Wildlife Commission on July 17, 2020.