TWO BUTTES PRONGHORN HERD MANAGEMENT PLAN

DATA ANALYSIS UNIT PH-18, TWO BUTTES

GAME MANAGEMENT UNITS 132, 139, 145



Created for:



By: Jonathan Reitz Wildlife Biologist

Date: July 2020

EXECUTIVE SUMMARY









Figure 2. Numbers of doe rifle licenses issued, numbers of doe rifle licenses purchased, and post-season minimum counts for the Two Buttes DAU since 2002.

Background Information

The Two Buttes Data Analysis Unit (DAU), hereafter referred to as Two Buttes, encompasses a large area between the Arkansas River and the Oklahoma/Colorado border. Approximately 93% of the DAU is privately owned. The primary public land holder is the US Forest Service, managing 4% of the DAU. Only 7% of the DAU offers public pronghorn hunting opportunity.

Due to Two Buttes' relatively low pronghorn population and limited resources, CPW has not conducted sex/age classification flights there since 2011. For the same reasons, it is unlikely that pre-season sex/age classification flights will be conducted for the foreseeable future. The lack of classification data results in models that inaccurately estimate populations and sex ratios. For this reason, we are proposing a wide range for the population objective. We are also proposing a wide ranging "expected sex ratio" instead of a standard sex ratio objective.

The management plan for the preferred alternatives include the following management actions:

• Conducting post-season minimum count flights every 3 years in order to verify that the population is within the objective.

- Conducting post-season ground surveys in years when no minimum count flight will occur. Ground surveys can be used to determine if the population is at least above the minimum of its range. This acts as a preventative measure of overharvest.
- If ground survey data suggests that the population may be below objective, then an additional minimum count flight may be conducted to verify that the population is below objective.
- Doe license numbers would be set above the level of leftover sale demand. Doe license numbers would be decreased if the population were to go below objective.
- Annual buck license numbers would be set close to the number of 1st choice applicants that applied for the license during the previous year. Buck license numbers may be decreased if the population were to go below population objective.
- The population objective would be set at a wide range: 300-1,500.
- There would be no sex ratio objective for the DAU, but instead an "expected sex ratio range". Expected sex ratio ranges have traditionally been utilized for over-the-counter elk DAUs, where it's difficult to control sex ratios.

CPW has 10 years of history managing Two Buttes with this license setting strategy. The strategy has shown to be successful. With doe license numbers set so high, hunter opportunity has been maximized and game damage issues have been minimized. Even with the liberal license allocation, the population has been increasing.

CPW conducted both extensive landowner and hunter surveys for the development of this plan. The landowner and hunter majority support a population at this level. One of the primary concerns with this strategy is that there is opportunity to overharvest pronghorn. This plan utilizes minimum counts and ground counts as safeguards against overharvest.

Population Objective Alternatives

Alternative 1: **300-1,500** pronghorn (approved alternative): This alternative would be paired with the license strategy of setting doe license numbers above demand and setting buck license numbers at demand, unless the population goes below the minimum of the range. This strategy lines up with the management strategy used for the previous ten years, and is supported by the majority of landowners and hunters.

Alternative 2: 300-500 pronghorn (status quo): This alternative was the objective of the previous plan, and would call for a ~50% decrease of the current estimated population. The majority of landowners and hunters do not support this alternative.

Sex Ratio Objective Alternatives (Post-Hunt)

Alternative 1: **Expected sex ratio range of 40-100 (approved alternative)**: This alternative takes into account the unlikelihood that sufficient data would be collected annually in this DAU to generate reasonably accurate sex ratio estimates. This alternative would be paired with the license strategy of setting doe license numbers above demand and setting buck license numbers at demand, unless the population goes below the minimum of the population objective range.

Alternative 2: 36-40 bucks per 100 does (status quo): This alternative would require managing with the use of annual sex/age classification flights. In order to manage within this range, CPW would need to utilize limited flight resources that may be better utilized in other pronghorn DAUs with higher populations and/or densities.

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

Two Buttes DAU Management Plan

PH-12, GMU's: 132, 139, 145

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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 3).



Figure 3. 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 3).

The purpose of this herd management plan is to set population and sex ratio objectives for the Two Buttes pronghorn herd (PH18). 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 Two Buttes DAU (PH18) is located in southeastern Colorado (Figure 4). Boundaries include the Arkansas River on the north; the Kansas/Colorado border on the east; the Colorado/Oklahoma border on the south; and Highway 287 on the west.



Figure 4. Location Map of PH18, Two Buttes, GMU's 132, 139, 145

Physiography

Two Buttes includes three game management units and covers approximately 2,326 mi². The topography of Two Buttes consists of flat to gently rolling plains. There are several drainages across the DAU, with the Arkansas River, Butte Creek, Horse Creek, Bear Creek, the Sand Arroyo, and the Cimarron River being the most prominent. Two Buttes' dominant vegetative communities are shortgrass prairie and dryland farmland. Significant portions of the DAU also consist of sand sagebrush prairie and center-pivot irrigated farmland. 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 12-18 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 Two Buttes is in private ownership (93%). The Comanche National Grasslands, administered by the US Forest Service, accounts for 4% (~54,000 acres) of Two Buttes. Other land managers include the State Land Board (2%), and CPW (1%). Each year, CPW enrolls several thousand acres of the DAU's private lands into the Walk-In Access program. However, most of those Walk-In properties offer very little pronghorn hunting opportunity as pronghorn are rarely found on them. Approximately 7% of the unit is open for public hunting.

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. Some areas in the DAU contain irrigated farmland. These irrigated areas are less frequented by pronghorn and are primarily found along the Arkansas River and in GMU 139. Land use in the DAU has not changed significantly in recent times, with the exception of some land use changes taking place in the form of wind energy development. The DAU currently has one wind farm along the GMU 132/139 border, and another wind development project is planned in the north half of GMU 139.



Figure 5. Land cover in the Two Buttes DAU.

Habitat Capability

Much of PH18'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. 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. Therefore, the greatest limiting factor on the population is hunter harvest to address landowner tolerance for pronghorn.

Conflicts with Agriculture

Most pronghorn related game damage in Two Buttes consists of damage to growing wheat, to other growing crops, and to fences. While pronghorn do cause game damage in Two Buttes, the number of landowner complaints over the last decade has remained low even when the population has remained well over objective. Between 2009-2019, no formal game damage complaint was received by District Wildlife Managers.

To understand the perceptions of landowners towards pronghorn in Two Buttes, we mailed a survey to 500 randomly selected landowners in the DAU (i.e. ~42% 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 118 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 6). 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: 56% No Problem, 18% Minor Problem, 13% Moderate Problem, and 13% Major Problem.

Of the 118 respondents to the survey, 102 of them stated that they owned cropland. Of those 102 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 (53%) and other growing crops (52%) has not been a problem. Responses of the other farmers are as follows: 19% Minor problem with wheat, 19% Minor problem with other crops, 13% Moderate problem with wheat, 14% Moderate problem with other crops, 14% Major problem with other crops.



Figure 6. Results from 118 Two Buttes 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 opinion 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 Two Buttes DAU. Responses suggest that maintaining the pronghorn population at the levels observed in recent years would be the best and most balanced course of action (Appendix A and Figure 7). The greatest proportion of landowners showed preference for the population to be maintained around the current level. The number of landowners calling for population decrease was close to the number that called for population increase (Figure 7).

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. Survey results suggest the DAU's contemporary pronghorn population size and its 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 (91%), trespass (80%), and hunter-caused damage to property (82%; Figure 6). Less than 20% of landowners indicated they had moderate or major problems with hunters trespassing (19.6%), hunter-caused property damage (18.2%), or too many hunters asking for permission to hunt (9.4%).

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, 24% chose an increase, 13% chose a decrease, and 33% 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.





HERD MANAGEMENT HISTORY

Population Inventory Techniques

Population estimates for most pronghorn DAUs in southeast Colorado are based off an intensive monitoring program that consists of annual preseason sex/age classification flights and aerial line intersect distance sampling. However, these techniques require sufficient pronghorn densities to produce precise estimates. Since pronghorn densities are low in this DAU, CPW has chosen to prioritize limited flight resources in other pronghorn DAUs. Two Buttes has not had a preseason classification flight conducted since 2011 due to its relatively low population. Distance sampling has never been conducted in Two Buttes because the pronghorn density is too low for the method to be practical.

Ultimately, flight resources are best utilized when their resulting data can inform decisions that may result in management changes. Regarding the Two Buttes DAU, CPW concluded that while managing according to the 2006 herd management plan objectives, no management would likely change as a result of collecting sex/age classification data. The DAU's population has been well over objective since 2007. In order to bring the population to objective, CPW initiated several management actions that included: setting doe license numbers above demand (including leftover demand), setting buck license numbers at 1st choice applicant demand, making all doe licenses list B, and creating a 31 day-long doe-only late rifle season. Even with the aggressive management actions, the population has remained above objective. CPW biologists recognized that sex/age classification flights would make no difference to license numbers set, as the numbers of licenses issued were consistently higher than the number of pronghorn hunters in the DAU.

While not practical to conduct annual sex/age classifications flights, CPW periodically conducts minimum counts in Two Buttes. 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. Minimum counts are used to verify population estimates from the model, making sure that the model is not underestimating the population. Minimum counts of pronghorn in Two Buttes were conducted in 1997, 1998, 2000, 2002, 2004, 2005, 2008, and 2019 (Figure 8). 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.

Post-Hunt Population Size

The current population estimate is based on a minimum count conducted in late October of 2019. That minimum count was not a true post-season minimum count, as it was conducted after the general rifle season, but before the December late season. There were 980 pronghorn observed on that flight. Since it's likely some pronghorn were missed on the minimum count, CPW is estimating that Two Buttes post season population is over 1,000 pronghorn. That is well over the previous herd management plan objective of 300-500.



Figure 8. Two Buttes DAU population objectives and post-season minimum counts since 1997.

Post-Hunt Herd Composition

Sex/age classification flights were last conducted in Two Buttes in 2011. The observed buck:doe ratio for the 2011 preseason flight was 63 bucks:100 does. Due to the lack of sex ratio classification data from recent years, the estimated sex ratio from PH18 models have little value.

To estimate the post-season sex and age ratios, pronghorn were classified by sex and age (i.e. fawn/doe) during the 2019 minimum count. It is difficult to classify doe vs. fawns at that time of year because fawns are nearly as large as does. As a result, the precision of the classification is less than it would be for a pre-season classification flight conducted in July or August. Based on the minimum count flight, the observed post-season buck:doe ratio estimate was 45.2 bucks:100 does. The fawn:doe ratio estimate was 56.4 fawns:100 does.

It should also be noted that given PH18's management over the last ten years, buck doe:ratios should be high. With close to a 1:1 buck:doe harvest ratio, the post-season sex ratio should approach 100 bucks:100 does. This may be offset though by other factors such as buck emigration to adjacent areas with lower buck:doe ratios and a difference in buck survival vs. doe survival.

Harvest and Hunters

In an effort to bring the Two Buttes population closer to objective, CPW has maintained doe license numbers above the level of demand since 2007 (Figure 9). Even as leftover licenses, the muzzleloader season doe, the general rifle season doe, and the late season doe licenses have not sold out. From 2011 to 2020, license allocation has remained constant with CPW issuing 400 general doe licenses and 400 late season doe licenses each year. During that time, the number of hunters purchasing those licenses has remained relatively consistent with around 200 general season doe licenses and 100 late season doe licenses purchased each year.

Since 2010, we have set buck licenses close to the numbers of 1st choice applicants. From 2011 to 2020, CPW issued 200 buck rifle licenses annually. The annual number of first choice applicants has remained close to 200 for that same time span (Figure 10).



Figure 9: Numbers of doe rifle licenses issued, numbers of doe rifle licenses purchased, and post-season minimum counts for the Two Buttes DAU since 2002.



Figure 10: Numbers of buck rifle licenses issued and numbers of first choice applicants for buck rifle licenses for the Two Buttes DAU since 2007.

Even with the liberal license numbers since 2011, the harvest has remained relatively constant (Figure 11). Each year, Two Buttes has yielded a harvest of around 100 does and 100 bucks. The harvest data suggest a relatively stable pronghorn population with hunter numbers and harvest remaining relatively constant from 2011-2019.



Figure 11. The numbers of rifle licenses purchased and the pronghorn harvest for Two Buttes from 2002 to 2019.

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, PH18's pronghorn population objectives were driven by 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 and Springfield. Those meetings were highly publicized through the Cattle Growers Association, local grazing associations, local radio stations, and local newspapers. Between the two public meetings, only 6 of the landowners in Two Buttes attended. With such a low attendance rate, it was difficult for CPW managers to get a sense as to whether or not those 6 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 December of 2019, surveys were mailed to 500 randomly selected landowners, which represented ~42% of PH18'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 six questions and a postage paid return envelope. We received completed surveys from 118 landowners.

Landowner Survey Results

The landowner survey consisted of six 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 likelihood of pronghorn being found on their land (see the following sections: Appendix A and Conflicts with Agriculture).

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 (28%) 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 6% having selected "increase greatly". Nine percent of respondents preferred to see the population reduced slightly, and 22% preferred to see the population reduced greatly. (Question #5, Appendix A).

Hunter Solicitation

In addition, we sought hunter input regarding the Two Buttes population and targeted sex ratio by sending surveys to 500 hunters who had received at least one Two Buttes rifle or muzzleloader license for the 2016, 2017, and/or 2018 seasons. We received completed surveys from 157 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).

When asked about the number of pronghorn and the number of hunters in Two Buttes, the majority of the respondents (46%) preferred pronghorn numbers and license numbers to remain the same (Question #6, Appendix D). Forty-one percent of respondents preferred to see pronghorn numbers increased, even if that meant licenses would be more difficult to draw. Six percent of hunters stated that they would like to see the pronghorn numbers decreased.

When asked how they would like to see the Two Buttes pronghorn herd change over the next 10 years, the majority (65%) would like to see the population increase at some level (Question #7, Appendix D). Twenty-one percent of the respondents thought the current numbers were acceptable. Ten percent of respondents called for a decrease in the population.

When asked about the approach to guide buck license allocation, the slight majority (47%) of hunters would like to see buck permit numbers maintained at their current level (Question #8, Appendix D). A significant proportion (41%) of hunters indicated that they would be willing to have buck permits reduced in order to increase the buck:doe ratio. Only 4% 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 04/21/2020 on the CPW website at: http://cpw.state.co.us/hmp. A press release was issued by CPW on 04/20/2020 (Appendix H). Copies of this plan were sent to the Colorado Cattleman's Association, State Land Board district manager for Districts 6, the Comanche National Grassland District Ranger and Biologist, and the county commissioners for Prowers and Baca Counties (Appendix G). Comments from the 30 day comment period will be found in Appendix I.

MANAGEMENT ALTERNATIVES

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

Population Objective Alternatives

Alternative 1: **300-1,500** pronghorn (approved alternative): This alternative would be paired with the license strategy of setting doe license numbers above demand and setting buck license numbers at demand, unless the population goes below the minimum of the range. This strategy lines up with the management strategy used for the previous ten years, and is supported by the majority of landowners and hunters.

Alternative 2: 300-500 pronghorn (status quo): This alternative was the objective of the previous plan, and would call for a ~50% decrease of the current estimated population. The majority of landowners and hunters do not support this alternative.

Sex Ratio Objective Alternatives (Post-Hunt)

Alternative 1: **Expected sex ratio range of 40-100 (approved alternative)**: This alternative takes into account the unlikelihood that sufficient data would be collected annually in this DAU to generate reasonably accurate sex ratio estimates. This alternative would be paired with the license strategy of setting doe license numbers above demand and setting buck license numbers at demand, unless the population goes below the minimum of the population objective range.

Alternative 2: 36-40 bucks per 100 does (status quo): This alternative would require managing with the use of annual sex/age classification flights. In order to manage within this range, CPW would need to utilize limited flight resources that may be better utilized in other pronghorn DAUs with higher populations and/or densities.

STRATEGIES TO ADDRESS MANAGEMENT CONCERNS AND ACHIEVE OBJECTIVES

Population and Inventory

Between 2009-2019, the Two Buttes population has grown slowly and has been well over the objective of 300-500 set in 2006. The following management actions have not reduced the Two Buttes population: the addition of a 31 day-long doe-only late season, changing doe licenses to list B, setting doe license numbers at levels high enough that they never sold out, and setting buck license numbers at the level of 1st choice applicant demand. Both landowner and hunter surveys showed support for managing the Two Buttes population at the levels seen in recent years. Area 12 wildlife managers and the biologist believe that this population can be maintained at those levels by setting license numbers as they have been set for the last 10 years (i.e. does licenses set above demand and buck licenses set at demand of 1st choice applicants).

The Area 12 wildlife managers and biologist suggest a management scheme for Two Buttes that would not include annual pre-season sex/age classification flights. The management plan for the preferred alternatives include the following management actions:

- Conducting post-season minimum count flights every 3 years in order to verify that the population is within the objective.
- Conducting post-season ground surveys in years when no minimum count flight will occur. Ground surveys can be used to determine if the population is at least above the minimum of its range. This acts as a preventative measure of overharvest.
- If ground survey data suggests that the population may be below objective, then an additional minimum count flight may be conducted to verify that the population is below objective.
- Doe license numbers would be set above the level of demand, where leftover licenses are unlikely to sell out for the regular rifle season, the late season, or the muzzleloader season. Doe license numbers would be decreased if the population were to go below objective.
- Annual buck license numbers would be set close to the number of 1st choice applicants that applied for the license during the previous year. Buck license numbers may be decreased if the population were to go below population objective.
- The population objective would be set at a wide range: 300-1,500. The bottom of the range coincides with the minimum of the range from the previous herd management plan. The top end of the range represents the maximum population

that wildlife managers think the population may reach under the proposed licensesetting scheme.

• There would be no sex ratio objective for the DAU, but instead an "expected sex ratio range". Expected sex ratio ranges have traditionally been utilized for overthe-counter elk DAUs, where it's difficult to control sex ratios. Using an expected sex ratio range would be appropriate for this management strategy due to the expected lack of sex classification data and the plan to set license numbers at or above demand.

CPW has 10 years of history managing Two Buttes with this license setting strategy. The strategy has shown to be successful. With doe license numbers set so high, hunter opportunity has been maximized and game damage issues have been minimized. Even with the liberal license allocation, the population has increased. The landowner and hunter majority support a population at this level. One of the primary concerns with this strategy is that there is opportunity to overharvest pronghorn. This plan utilizes minimum counts and ground counts as safeguards against overharvest.

Game Damage

Pronghorn damage has not been a major issue in Two Buttes in the last 10 years (see sections: "Conflicts with Agriculture", pg. 10; "Social Carrying Capacity", pg. 11). By setting doe licenses above demand, landowners have the ability to reduce game damage through hunting. Additionally, another major tool that CPW has given landowners is a late season that gives wheat farmers the ability to reduce pronghorn numbers and disperse them from their fields when they start congregating on them in early December. If game damage claims do occur outside the rifle season structure, dispersal hunts can be used when needed.

Hunter Crowding and Opportunity

For the hunter survey, only 18% of hunters stated that they had experienced a high level of hunter crowding. The comments from those hunters show that the majority of those respondents were hunting on the Comanche National Grasslands and did not have an enjoyable hunt. In most years, very few pronghorn can be found on the Comanche Grasslands during the primary rifle season. With it being the primary public lands in the DAU, it is common for there to be too many hunters for the number of pronghorn available. The Area 12 biologist and wildlife managers recommend creating a separate private-land-only license for PH18. This would allow CPW to limit hunter numbers on the Comanche, which would likely result in better hunt quality for those hunters.

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 Two Buttes Pronghorn Herd Management Unit, Game Management Units (GMUs) 132, 139, and 145.

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
- Todd Marriott, Area Wildlife Manager, at (719) 336-6603; todd.marriott@state.co.us

Surveys must be completed before January 31st.

Thank you for participating!

This survey is specific to the Two Buttes Pronghorn Herd Management Unit. This unit is bounded by the Oklahoma/Colorado border on the south, highway 287 on the west, the Arkansas River on the north, and Kansas/Colorado border on the east. 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 Two Buttes Herd Management Unit? (Please check all that apply.)

Cropland

Rangeland

I don't own land in the Two Buttes herd unit



2. 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	\bigcirc	\bigcirc	\bigcirc	0
Pronghorn hunters damaging my property	0	0	0	0
Rude behavior by pronghorn hunters on my property	\bigcirc	\bigcirc	\bigcirc	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



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

(Responses to Question #3 in Appendix B)

- 4. For what proportion of the year do you believe pronghorn can be found on your property?
 - I never see pronghorn on my property
 - Pronghorn are occasionally on my property
 - Pronghorn are likely on my property for **as much as three months** out of the year
 - floor Pronghorn are likely on my property for as much as six months out of the year
 - Pronghorn are likely on my **property most of the year**



5. For the 2020-2030 time period, relative to the <u>current</u> number of pronghorn, how would you like to see the pronghorn population change in the Two Buttes Herd Management Unit?





Please read the following brief description about managing male-to-female ratios before answering question 6 (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 Two Buttes herd unit?



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.

Additional Comments:

(Additional Comments in Appendix C)

APPENDIX B: Landowner Survey Question #3 Responses

- "I have government permits and have had lots of problems with hunters on government land."
- "Pronghorn are bad about carrying bindweed seed from other properties on to my land. It is very costly to control bindweed"
- "We have pronghorn hunters using the season to scout deer for the upcoming season."
- "Several years ago, someone erected a stand to hunt. No permission was given. We know who this was and notified this sheriff. Unfortunately, we had to post the property due to a lot of trespassing."
- "They spread noxious weeds across our fields."
- "Pronghorn cause some of the spread of the bindweed."
- "We don't have any on our land. We live in the south part of said unit."
- "The scattering of bindweed seed. An expense to keep it from spreading throughout the field."
- "Very minor crop damage. Hunters should be monitored by wardens and any abusive hunters should lose their right to hunt. Some hunters think that buying a license gives them more rights than landowners."
- "None, my property is on the South edge of *******, inside city limits."
- "Hunters leaving gates open and cattle getting out on road and hit by pickup and killed."
- "Hunters cut our fence."
- "Pronghorn causing the spread of bindweed and other noxious weeds."
- "The antelope eat bindweed and defecate the seeds all over the property. This requires chemicals to kill the bindweed creating yet another additional expense for landowners."
- "Someone driving across planted wheat. Possibly pronghorn hunters or coyote hunters??"
- "Pronghorn spread bindweed."
- "Haven't even seen a pronghorn and what few deer I've seen in a sight."
- "I am and out of state land owner and have had no complaints."
- "No, we like having them around and we do hunt them."
- "I am an out of state landowner- have no problems in this case."
- "Pronghorn come through fences rather than jumping like deer, so they damage wires. If the land is not posted "No Hunting", some hunters come onto the land without asking and also may damage fences."
- "Not sure it was all pronghorn hunters?"
- "Not enough pronghorn numbers remaining to do any damage. Issued extremely too many tags and killed of nearly all pronghorn herds in SE Colorado."
- "They drive across the pastures, they trespass, they run through fences. Too many antelope."
- "Not in this area. North of Coolidge and Holly Colo is another story. Too many Pronghorns."
- "No we are absentee landowners who usually see the land in question once a year so we may not be a representative of the issue in question."

- "Pronghorn hunters driven through electric fences."
- "Hunters tear up fencing- Don't ask permission and if we happen to see hunters they either run or avoid landowners or lie about having permission. Pronghorn don't cause much damage to my fencing mainly hunters are the problem- I do not have crops just pasture."
- "Pronghorn show up now and then especially when I am irrigating, but no problems."
- "They spread bindweed to new areas."
- "I do not know if this is a problem but we have had equipment and other things stolen from our property so not excited to invite any more problem or people onto property."
- "Have not heard any issues from those who lease our property."
- "Mainly fences damaged."

APPENDIX C: Landowner Survey Additional Comments

- "Pronghorn feast on bindweed increasing the increasing the spread. Do whatever the park and wildlife can do to reduce the overall population."
- "I'm tired of people getting on the internet and buying licenses and then showing up around here feeling entitled to hunt where they please. My family farms and ranches 20,000 acres in the area and ONE person has asked us for permission. We spend a lot of time and moneyputting signs up, driving around making sure no one is trespassing, and we always catch people. Even with us doing that there is always tracks through our fields from people we didn't catch. Luckily the damage from this has been minor to this point but eventually they will cause a fire or disaster that costs large amounts of money loss for us. To control sizes of herds of animals just shoot some and donate the meat to a food shelter or a welfare program."
- "Only 15 acres farm land on north border, regulate buck licenses as needed."
- "They are no problem, once in a while they will knock down fence. Hard to teach them how to jump LOL"
- "Offer doe tag at a discounted rate (price) to encourage more license sales."
- "The main problem we have is the fences they destroy."
- "There are way too many antelope out there. I commonly see herds of 30-50 head. Any cropland they cross is very difficult to stay ahead of the bindweed on. When it is dry like it is now they destroy what little crop we have as well as create an environment conducive to dirt blowing."
- "As landowner I am troubled by the DOW's approach. There are too many outfitters trying to hunt our area. You need to solicit more advice from the landowners and less from outside sources i.e. Outfitters. At the present, I would like to see less wildlife and hunters."
- "I live in ******** and only visit the property about once or twice a year. The land has been in CRP for the last 15 years and has a beautiful stand of grass."
- "To decrease herd size you're going to have to do something with the doe population."
- "There are too many does. Increase the number of doe tags. Even offer doe tags at a reduced price to encourage more people to hunt does."
- "We only have 40 acres."
- "Please do what's best for the herd so they can exist for another 60 years. I remember seeing the herd in the 1950's, 60's, 70's."
- "I appreciate and applaud your efforts. However, I have not been in the area for decades. I can't possibly answer the questions in your important survey, I'm very sorry I can't. Please accept my apologies."
- "There is just too many antelope on my property. I cannot understand why there is a need for so many animals? They are NOT endangered species. How about some prairie chickens or turkeys? Thank you for asking, I appreciate it."
- "I feel that there are adequate numbers of pronghorn in the unit 132, I don't know much about unit 139. I haven't encountered a lot of mature bucks in unit 132."

- "I do not reside at our little ranch south of ******so am not there on a daily basis. To my knowledge, we have not seen any pronghorn antelope on our property. The cuprite we have to deal with are coyotes. There is definitely an overabundance of them.
- "Thank you so much for asking the opinion of the land owners/operators who feed all these animals before writing policy for how to manage them. I love wildlife and watching them but I also need to make a living with the crops they eat and destroy. It's a delicate balance."
- "I have had hunters tear down fences and gates to hunt on my pasture land because the herds can get water the runs through my land. Not sure if some of the damage could be from deer and goose hunters?"
- "Quit issuing unsustainable tag numbers and killing off nearly all pronghorn herds in Eastern Colorado. Quit issuing doe tags whereby you kill bred does and cull the herds to nothing. Find a way to fund DOW without excessive tags for revenue. You are sacrificing Colorado wildlife for the sake of revenue. You are terrible stewards of our public game resources. Your herd count algorithms are so far off it is embarrassing- you show herd numbers much higher than actual counts."
- "Seems to me that the landowner has less say in the management of the herds. This was one of the worst years we have had with hunters. Don't like the outfitters. I feel that the outfitters have a bigger voice in the management than the landowners. Decrease the herds, decrease the hunters! DOW needs to let us (the landowners) have a bigger say in the hunting, in all of it. If there isn't a change just remove the herds. The landowners feeds the wildlife, we need more oversight."
- "I live in ****** so am not familiar with the numbers of pronghorn in this area-Most of my land is in grass(CRP) so the animals would love it. Perhaps ******* who rents some pasture from me may give you some information."
- "Absentee landowner only, not there very often, actually would like to see a few more."
- "Thank you for asking our input."
- "I only visit my property a couple of days annually."
- "I live out of state so my input isn't relevant."
- "They have a lot to do with our problem fighting Bindweed!"
- "I think the CPW does a great job on the whole."
- "Private citizen management not the answer. Feed the homeless with harvested. Direct damage to crops by overpopulation leads some type of disease likely that will attack the pronghorn herds equals then under population."
- "I would hope that whatever is decided the landowner property will be respected. We have had many things stolen- farm equipment etc. so patrols by officer would be appreciated and there should be checkpoints."
- "We lease the property and do not physically visit."
- "We don't live in ******. We live in ******* we ask some neighbors about the pronghorn problem."

• "Close to town. Seeing antelope is not common but occasionally occurs."

APPENDIX D: Hunter Survey with Results

Dear Hunter,

Colorado Parks & Wildlife (CPW) is interested in **your input** on the management of the Two Buttes Pronghorn Herd (Game Management Units 132, 139, and 145).

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; travis.black@state.co.us.

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

Thank you for participating!

This survey is specific to the Two Buttes 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 Two Buttes Herd Management Unit? (*Please check all that apply.*)
 - □ 2016 □ 2017
 - 2018

I did not hunt pronghorn in the Two Buttes 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 Two Buttes 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 Two Buttes 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 Two Buttes 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	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 Two Buttes 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 Two Buttes 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 Two Buttes pronghorn herd population change over the next 10 years? (*Please check only one.*)





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 Two Buttes Herd Management Unit? (*Please check only one.*)





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

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

🗌 I lost in	iterest in hunting pronghorn the year(s) that I had a license
Did not	t draw a license
The co	mplexity of hunting regulations in Colorado
The cos	st of gas, equipment, or other expenses
Season	conflicted with other obligations
Season	conflicted with other hunts
🗌 The Tw	o Buttes Herd Management Unit has become too crowded with hunters
There v	were not enough pronghorn where I hunt
🗌 Other (please specify)



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.

(Additional Comments in Appendix F)

APPENIDX E: Hunter Survey Question 9 "Other" Responses

No hunters responded to question #9

APPENDIX F: Hunter Survey Additional Comments

- "Gents, I scouted unit 145 and the very south end of unit 139 2 weeks prior to the start of the season. I spent 3 days in the area with 2 full days scouting. Saw only a single buck and one small band of one buck and three does (on private property). Very few watering holes with little if any sign around them. The area is a checkerboard of private, state and Comanche National Grasslands which makes it difficult at times to know if you are within legal hunting areas. I was aware of the potential difficulty of determining exactly where you might be but with correct maps and GPS it was not a hunt stopper.
- I was surprised at the lack of Pronghorn even though success rates were low in this area. My guess was this is not prime short grass habitat and even though it is beautiful prairie country it would not support a large population. Because of the lack of sightings and the lack of sign I decided not to hunt the area. Note: I had a leftover doe tag."
- "I would like to see more emphasis put on letting potential hunters know that most land in the area is private. Recently I have encountered other hunters hunting any herd they happen to drive by regardless of property ownership. I am from the area and know many landowners in the area."
- "I will not hunt there again I put in for pcms 142-3"
- "This hunt was a joke. This animals have been shot at for 12 months They are as wild as I have ever seen. Many people were chasing them with pickups. These animals need patrolled more. I will not do this hunt again. Pickups were everywhere chasing animals."
- "The years that I have went, we ran into a lot of hunters who were not from our area. Our experience has been that out of area hunters were rude and disrespectful to land owners."
- "Tired of trying to get permission to hunt. Land owners revoked and sold out to an outfitter."
- "I hunted unit 145 for 4 days and never saw even one pronghorn. I covered all the aviable public land and feel confident there are zero animals in the area. Very disappointed in the animal quantity in unit 145."
- "Limited access to public land with private parcels causing limited locations to hunt. Hunters seen shooting out of truck while vehicle was moving buck was injured and not recovered."
- "I personally feel that the quality of the hunters is the biggest drawback to this hunt. I always find animals but putting a spot and stalk on animals with people trying to run them down in trucks becomes quite frustrating."
- "Too many people hunting from their trucks and on the road."
- "I recommend that doe permits in this unit be issued as private land only. This would reduce crowding on the public land. Or issue only a percent of doe permits as eligible on public land."
- "Out of state hunters making it tough on locals to fill a tag as well as them having no respect for our land and people. Leaving gates open and letting livestock out, Its unacceptable."
- "We have seen a significant decline in pronghorn numbers in unit 139 in the past several years."
- "In my opinion it seems that there is a conflict between CPW and private property owners. CPW posts all these license to appease the land owners, but there are no goats on public land. Me

being from the other corner of the state do not know where to find private land owners to ask permission plus to hunt for 8 hours and only see 3 goats that did it for me."

• "I saw about 6 pronghorn, and drove 100's of miles, unless the population increases greatly, I will never hunt the east side of Colorado, ever again, thanks."

APPENDIX G: Mailing List for 30 Day Comment Period

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

Baca County Commissioners 741 Main Street, Suite #1 Springfield, CO 81073

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

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

John Linn District Ranger USFS Comanche NGL PO Box 127 Springfield, CO 81073

Cristi Painter Biologist USFS Comanche NGL PO Box 127 Springfield, CO 81073

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

April 20, 2020

CPW seeks public input on plan to manage far eastern Colorado pronghorn herd

LAMAR, Colo. – Public input is being sought by Colorado Parks and Wildlife (CPW) about how it proposes to manage the Two Buttes pronghorn herd in far southeastern Colorado over the next decade.

Big game populations are managed to achieve population and sex ratio objectives established for various herds.

CPW staff spent months drafting a management plan for pronghorn in the Two Buttes pronghorn herd, which covers Game Management Units (GMUs) 132, 139 and 145 in Prowers and Baca counties.

The draft plan, <u>now available online</u>, reflects CPW's efforts to balance the biological capabilities of the herd and its habitat with the public's demand for wildlife recreational opportunities.

The final plan will guide CPW officials as they decide how many pronghorn should exist in each GMU and the entire herd management region. The plan will also help CPW decide the proper ratio of males to females over the next decade.

Population goals and sex-ratio objectives drive important decisions including:

- 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.

To develop the draft plan, CPW staff conducted various pronghorn population surveys, a landowner survey and a hunter survey.

Based on the results of those surveys, CPW is recommending that the population objectives be set to the level of the current estimated population of 1,000 pronghorn.

If you are interested in reviewing the draft Two Buttes plan, it can be found at: https://cpw.state.co.us/thingstodo/Pages/HerdManagementPlans.aspx

Public comment on the draft must be received by CPW no later than May 21. To submit a comment, please follow the instructions on the website.

Comments will be used to further develop the draft plan that will be presented to Colorado's Parks and Wildlife Commission for approval.

APPENDIX I: Comments from 30 Day Comment Period

One comment was received during the 30 day comment period:

Being a private landowner and taxpaying citizen I am tired of government overreach. You have
no land ,do not pay for water where in hell do you think your putting them, ON THE PRIVATE
LANDOWNERS. You have to damn many out here already.We have to put up with hunters that
won't listen to you and don't have permission. If you have one antelope over the 300 you have
to damn many.

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

