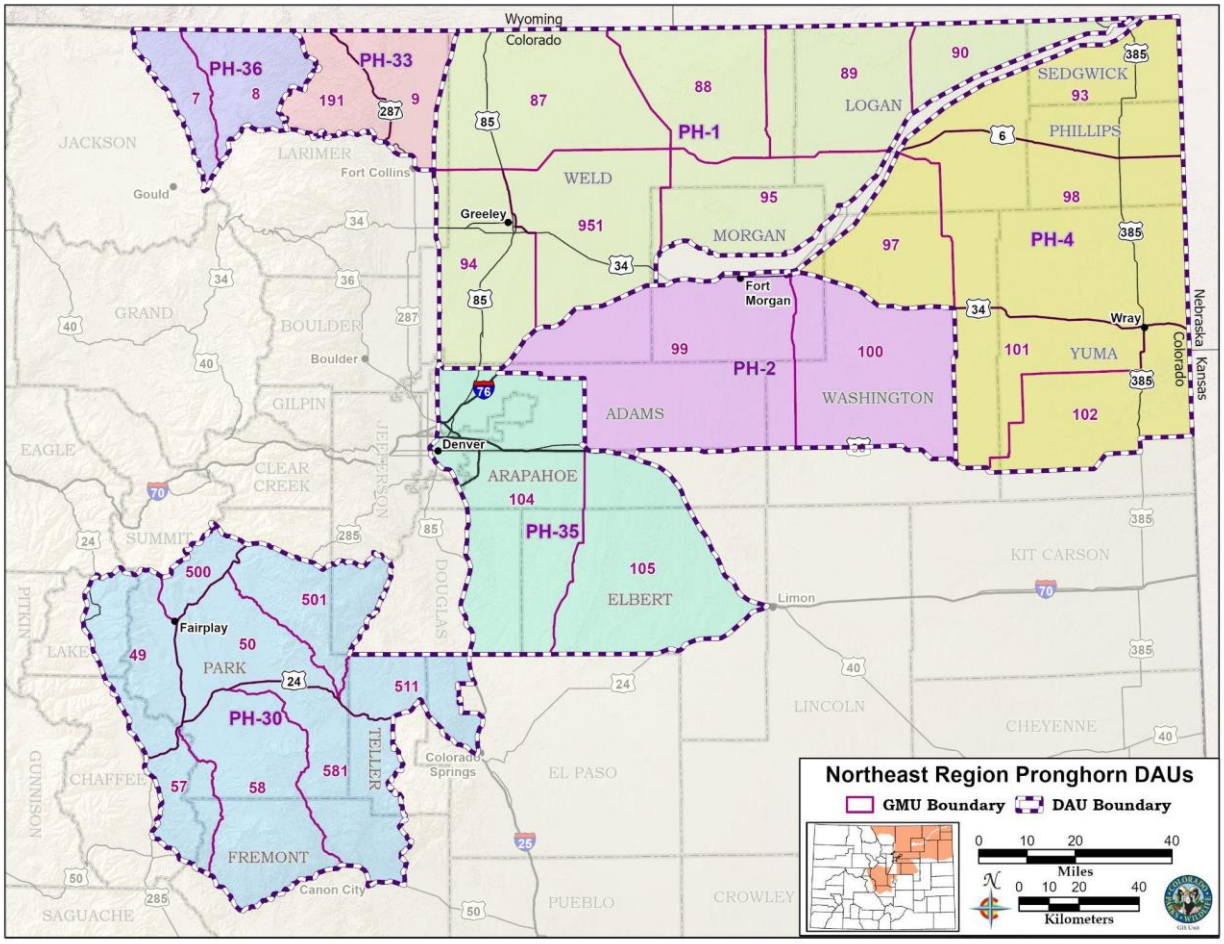
Draft Pronghorn Herd Management Plans

Colorado Parks and Wildlife

Northeast Region



PREPARED FOR
COLORADO PARKS AND WILDLIFE

BY
NE TERRESTRIAL STAFF

This plan was approved by the Colorado Parks and Wildlife Commission on XXXX XX, 2024

Executive Summary

Pronghorn are native to North America. However, it is a mistake to call them antelope. Although many people refer to Colorado pronghorn as antelope, their resemblance to the African antelope species (Old World members of the cow family) is superficial. The pronghorn family, Antilocapridae, originated in North America and has been around for 19 million years. Pronghorn are a unique species found only in North America. Their historic range is west of the Mississippi River from southern Canada to central Mexico. Interestingly, pronghorn have a DNA match closer to the giraffe than any other animal.

The name pronghorn is derived from the forward projection, or prong, on each horn. Sometimes up to seventeen inches long, the horn is composed of a fused hair (keratin) sheath covering a bone core. Unlike true horns, but similar to antlers, males usually shed this sheath after breeding each fall and then grow a new one. About 40 percent of females have horns, but these don't get any longer than their ears and never fork. Only males have a black patch on the jaw below the eye. They can maintain speeds of 40 miles per hour for several miles and purportedly run up to 60 miles per hour in short bursts. They are considered the fastest land animal in the Western Hemisphere.

The robust population of Colorado pronghorn is a game management success story. Colorado pronghorn numbered only around 5,000 in the 1940s. Colorado's pronghorn herds originally migrated mainly from Utah and Wyoming in the 1930s and 40s. Wildlife managers began transplanting pronghorn to other parts of Colorado in subsequent years. The first "live pronghorn trapping" event came in the winter of 1941 when wildlife officers captured 72 pronghorn by herding them into a corral and using a net. The pronghorn were transported in a covered truck like cattle, driven far from the Wyoming border, and released. Early conservation efforts like this have successfully restored this species throughout its historic range. Colorado maintains a herd of approximately 78,000 pronghorn statewide, and the population has increased by 20,000 since 2004.

Hunting, angling, and other wildlife-related recreation contributes over $5 billion annually to Colorado's economy. Funds generated by big game hunting license sales are used in the conservation of Colorado's wildlife in numerous ways, including habitat improvement and conservation projects that benefit a diversity of species. However, pronghorn populations in northeast Colorado currently face multiple threats, including loss of habitat to development on public and private lands, traditional and renewable energy development and production, loss of connectivity across the landscape as migration and travel corridors are restricted or blocked, competition with livestock, increased highway traffic, disease, and persistent drought related to climate change. These threats are compounded by booming human population growth in rural Colorado. These challenges present pronghorn and wildlife managers with an uncertain future as we work to manage and conserve pronghorn populations, other wildlife species, habitat, and natural ecosystems for generations to come.

Colorado Parks and Wildlife (CPW) and partner organizations continually engage with federal and state land management agencies and private landowners to promote habitat improvement projects that benefit pronghorn and other wildlife species. These ongoing efforts help ensure a future for pronghorn and other wildlife in Colorado. Conservation of Colorado's big game herds and wildlife habitat are among CPW's highest priorities[1].

[1] https://cpw.state.co.us/Documents/About/StrategicPlan/CPWStrategicPlan.pdf

The Herd Management Plans contained in this document will guide the management of the 7 pronghorn herds that inhabit the Northeast Region of Colorado for the next 10 years through 2034. These 7 herds contain approximately 15,250 pronghorn, representing about 20% of the statewide population of 78,000 pronghorn. For the 7 draft Herd Management Plans contained herein, CPW proposes full plan updates on four plans and extensions on three plans (Table 1). CPW staff proposes "Status Quo" management objective alternatives for 5 of the 7 pronghorn herds, with a slight increase in objectives for the Sandhills and South Park herds (Table 1).

Management objectives established in these plans must abide by statutes and policies set forth by CPW's Big Game Season Structure, CPW's Strategic Plan, the Parks and Wildlife Commission, and the Colorado State Legislature. The primary purpose of herd management plans is to establish management objectives for each herd in terms of a desired population size range and sex ratio (bucks:100 does) range. The management alternatives selected in these plans will drive annual pronghorn license-setting decisions. License setting and the resulting harvest modulate the pronghorn population numbers to meet the population and sex ratio objectives established in these plans. Each plan also describes additional strategies and techniques that will be used to achieve the desired herd objectives. The 10-year term of these plans aim to manage the most appropriate population level within the objective range based on climatic patterns, habitat conditions, forage availability, and public desires.

Table 1. Population and management status of 7 pronghorn herds occurring in NE Colorado.

DAU	Pronghorn Herd	Current Herd Management Plan Approved	Current Post-Hunt Modeled Population Objective	2023 Post-Hunt Modeled Population Estimate	Current Post-Hunt Modeled Sex Ratio Objective	3-Yr Avg Post-Hunt Modeled Sex Ratio	Proposed Post-Hunt Modeled Population Objective	Proposed Post-Hunt Modeled Sex Ratio Objective
PH-01	**Escarpment**	2010	6,500-7,500	6,290	30-35	27	Status Quo	Status Quo
PH-04	**Sandhills**	2006	550-650	770	25-30	24	550-750	Status Quo
PH-30	**South Park**	2011	1,000-1,200	1,185	30-35	39	1,100-1,400	35-40
PH-35	**Kiowa**	2012	4,000-5,000	4,170	30-35	43	Status Quo	Status Quo
PH-02	**Hardpan**	2018	1,400-1,700	1,100	25-30	32	Extension	Extension
PH-33	**Cherokee Park**	2020	1,000-1,200	1,170	25-30	42	Extension	Extension
PH-36	**Laramie River Valley**	2020	550-650	550	30-35	25	Extension	Extension

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Introduction and Purpose

Colorado Parks and Wildlife (CPW) manages big game for the use, benefit, and enjoyment of the people of the State following CPW's Strategic Plan (2015). 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 varied public demands and growing human impacts. CPW uses a "Management by Objective" approach to manage the State's big game populations (Figure 1).

Figure 1. Management by Objective process used by Colorado Parks and Wildlife to manage big game populations by Data Analysis Unit (DAU).

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

The primary purpose of HMPs is to establish population size and sex ratio (i.e., the number of males per 100 females) objectives for each DAU. The HMP also describes the strategies and techniques that will be used to reach these objectives. During the HMP planning process, CPW solicits and collects public input through questionnaires, public meetings, and comments to CPW staff and the PWC. CPW's mission as wildlife stewards is integrated with the concerns and ideas of various stakeholders, including the State Land Board (SLB), the Bureau of Land Management (BLM), United States Forest Service (USFS), city and county governments, hunters, guides and outfitters, private landowners, local chambers of commerce, and the public. In preparing an HMP, agency personnel attempt to balance the biological capabilities of the herd and its habitat with the public's demand for wildlife recreational opportunities. HMPs are approved by the PWC and are reviewed and updated approximately every 10 years.

HMPs serve as the basis for the annual herd management decision cycle. In this cycle, CPW assesses the size and composition of the herd and evaluates them relative to the objectives defined in the HMP, from which harvest goals are set. Based on these goals, CPW determines specific harvest strategies for the coming year to maintain the population or move it towards the established objectives (e.g., license numbers and allocation are determined). Hunting seasons are then conducted and evaluated, and the annual management cycle begins again (Figure 1).

These HMPs are intended to set population and sex ratio objectives for the pronghorn herds in the Northeast (NE) Region of Colorado for the next 10 years. They are expected to be reviewed and updated in 2034.

Types of Herd Management Plan Updates

When drafting HMPs, CPW may consider different types of updates, including full revisions or extensions. We use several factors to determine whether to revise or extend HMPs. These factors include the profile of the plan, the length of time since the last HMP was approved, and the level of contention we expect during the planning process. The various updates require different levels of public involvement, which allows CPW the flexibility to undertake a full planning process for HMPs warranting a high level of public participation, while streamlining the process for HMPs that do not require the same level of public input.

Revisions

We recommend full HMP revisions for PH-01, PH-04, PH-30, and PH-35 (Table 1). Because the HMPs were more than 10 years old, we undertook a full planning process, including public surveys for these DAUs. Survey results for these four DAUs are found in Appendix A (Landowner Preference Program Survey), Appendix B (Small Landowner Survey), Appendix C (Hunter Survey), and Appendix D (Hunter Opt-In Harvest Survey).

Extensions

We are recommending HMP extensions for PH-02, PH-33, and PH-36. These HMPs are current and were approved by the PWC in 2018 and 2020. These extensions will continue the current objectives, management actions, and strategies. Therefore, we are not proposing any changes to the objectives or management approach for these HMPs.

Common Management Issues and Strategies

The populations in the seven pronghorn herds in the NE Region of Colorado have remained relatively stable over the past decade, with an estimated population of 15,250 pronghorn in 2023. Over the last 10 years, some of these pronghorn herds have been reduced via hunting harvest in an effort to adjust for habitat loss or to limit game damage conflicts on private properties. These herds have also experienced extremes in moisture regimes, which has a significant impact, both positive and negative, on the production and viability of pronghorn herds. In the last nine years, these herds have experienced three years of good moisture, producing high-quality habitat and increased fawn production, followed by three years of drought, producing poor habitat quality, and lower fawn recruitment. There are a number of issues that impact pronghorn populations across the region. Those issues include stateline migrations, game damage, habitat loss, energy development, and climate change.

State-line Migrations

In PH-01, there is seasonal movement to the north into Wyoming, with increased pronghorn movement back into Colorado during the winter months. These seasonal movements across the state line are largely predicated on spring and early summer habitat conditions and the severity of winters, in Colorado and Wyoming. The largest migratory movements by pronghorn occur in PH-33. As many as 1,000+ pronghorn will migrate from Wyoming into GMU's 9 and 191 during harsh winters. The ingress of pronghorn has caused agricultural complaints by landowners. The pronghorn migrate back to Wyoming in the spring. In 2019, the Wildlife Commission passed a season structure that allows late antlerless pronghorn seasons to run until January 31st. The longer season allows landowners the ability to disperse and move pronghorn away from their fields through hunting pressure.

Game Damage

During the winter, when food resources are limited, pronghorn sometimes concentrate near green wheat and alfalfa fields, resulting in occasional game damage complaints from landowners. To address any game damage, CPW will offer dispersal licenses and Game Damage programs to landowners experiencing pronghorn conflicts, which cannot be addressed through the general hunting seasons, on an individual basis. CPW will continue looking for hunter access opportunities on or through private property. CPW will also work with land management agencies and landowners to make habitat improvements where possible.

Habitat Loss

Colorado's population increased from 4.3 million people in 2000 to 5.8 million people in 2021 (US Census Bureau, 2021), presenting increasing pressures on wildlife and their habitats. With Colorado's population expected to increase from 5.8 million to 8.1 million by 2050 (https://demography.dola.colorado.gov/population/), there are growing concerns about the continued increase in housing developments, infrastructure, roads, traffic, and recreation activities. Factors such as competition with livestock, fences, vehicle collisions, and predation all contribute to pronghorn population declines. However, habitat loss and fragmentation from residential and energy development, fueled by the effects of human population growth and climate change, present the greatest risks to the NE Region's pronghorn.

Over the last 12 years, low-density housing developments have reduced the available pronghorn habitat in PH-01 and PH-35 due to direct habitat loss and indirect factors such as human presence, pets, fences, and disturbance (Figures 2 and 3). In addition to housing, energy development including oil, natural gas, wind, and solar, in the western portions of PH-1 and PH-2, continue to increase for the foreseeable future. Likewise, PH-33 is experiencing growth of rural subdivisions and small acreage developments. These impacts have resulted in both direct and indirect losses to the amount of habitat available to pronghorn and other wildlife. The direct loss of pronghorn habitat, due to the footprint left by these activities, are often amplified by the indirect losses that occur from noise pollution or fragmentation of the remaining available habitat. The connectivity between the remaining available habitats is fractured, impacting the quality of habitat pronghorn use through their life cycle from summer to winter ranges. Ultimately, these losses in available habitat limit pronghorn populations. These development trends will continue to be the main areas of concern for managers of these DAUs.

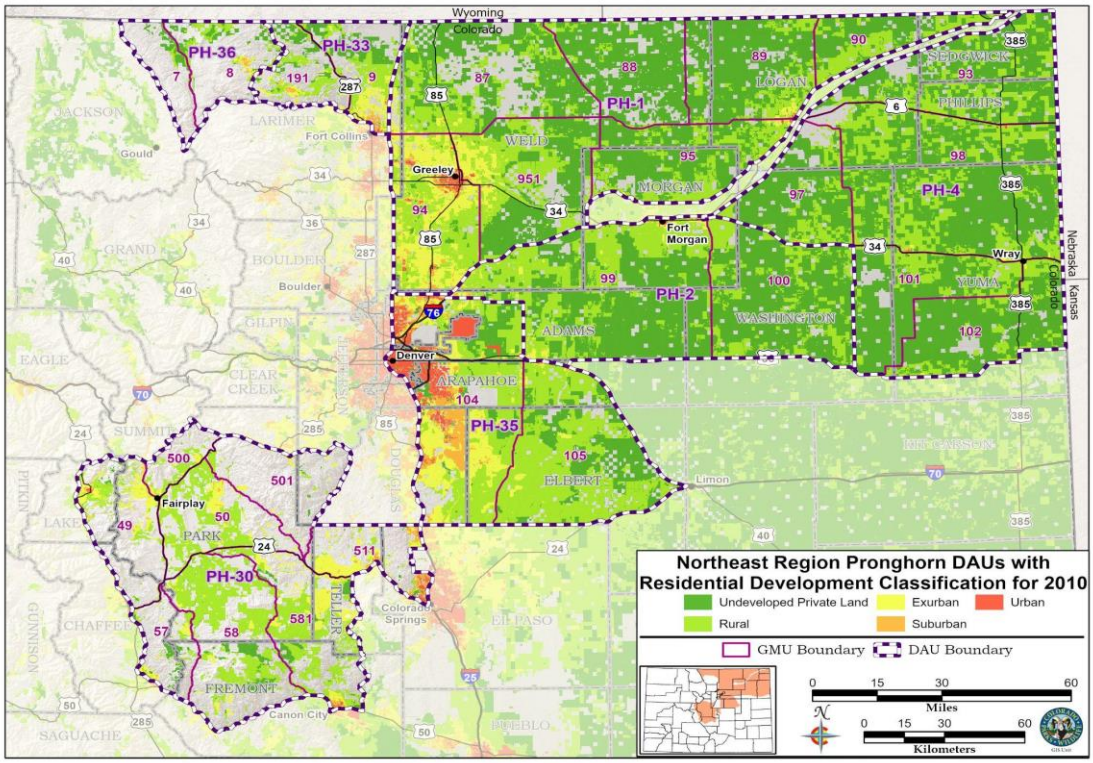


Figure 2. Northeast Region pronghorn DAUs with residential development classification for 2010.

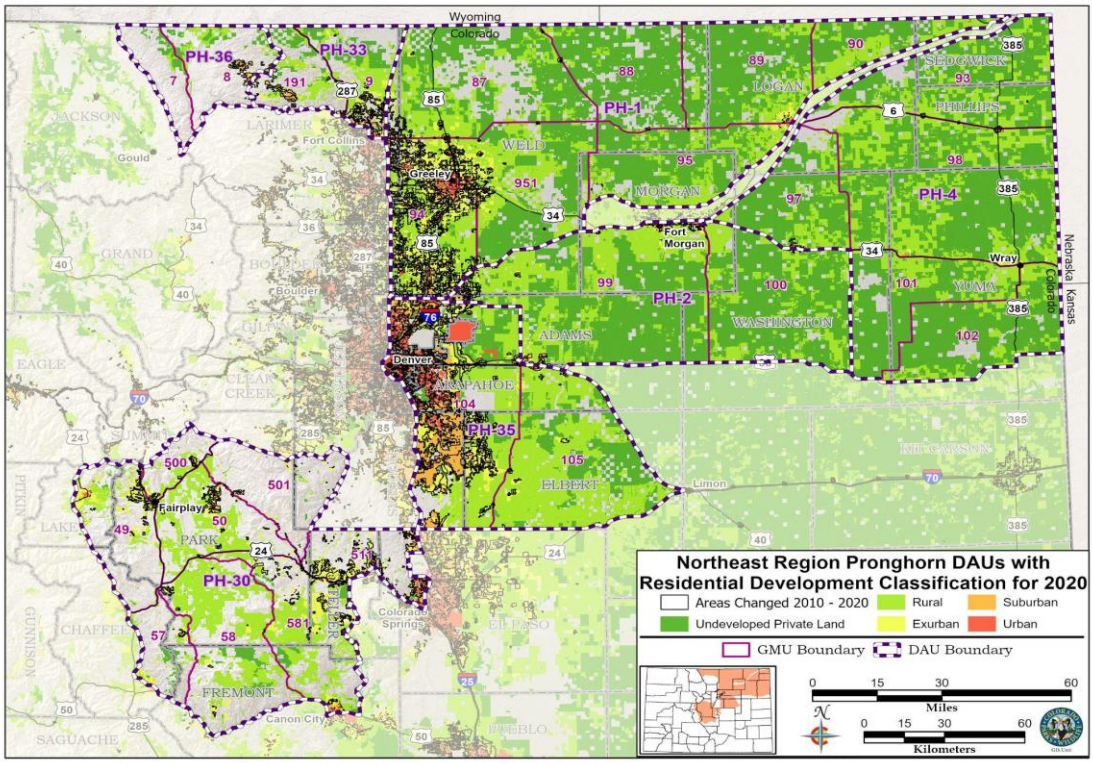


Figure 3. Northeast Region pronghorn DAUs with residential development classification for 2020.

Energy Development — Oil and Gas Development

Oil and gas locations (new and proposed) continue to be mainly sited in the NE Region, with approximately 80% of the statewide wells being drilled and 49% of the total statewide active wells in the NE Region. Extraction of oil and gas has the potential to affect pronghorn populations directly during the life of the wells (sometimes 40+ years) through habitat loss from pads, roads, and pipeline development and the associated spread of noxious weeds. Pronghorn populations are also affected indirectly from the increased human presence at pads and regular use of roads. Oil and gas development across the Denver-Julesburg Oil & Gas Basin that includes northeast Colorado has generally increased over the past 15 years, reaching a peak in 2018, and continued steadily into 2023. Figure 4 illustrates the oil and gas wells currently active (2023) in northeast Colorado.

Colorado's recently enacted (2021) Senate Bill 19-181 (SB-181) set forth oil and gas regulations that contain new provisions and requirements for the protection of wildlife resources during oil and gas development. In particular, the new regulations include measures; to reduce noise and light impacts, require compensatory mitigation to offset direct and indirect impacts to big game high-priority habitats (HPH), limit the density of oil and gas development within big game seasonal ranges, and analyze alternative development locations to minimize adverse impacts. These new regulations result in significantly greater wildlife protections compared to the State's previous House Bill 1298 oil and gas regulations and expand CPW's involvement and consultative role during the Energy and Carbon Management Commission (ECMC) permitting process.

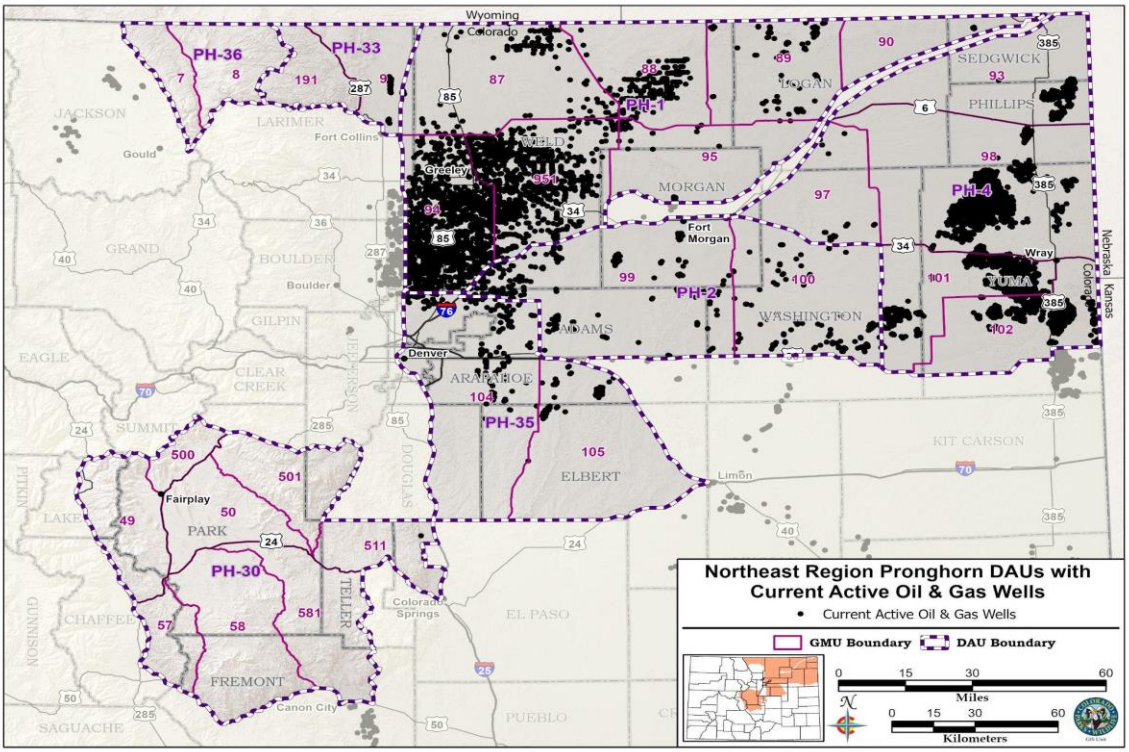


Figure 4. Northeast Region pronghorn DAUs with current (2023) active oil and gas wells.

Energy Development — Renewable Energy (Solar and Wind)

In addition to oil and gas development across the Northeast Region, renewable energy developments (existing, consulting, and proposed) bring individual and cumulative threats to sustaining these pronghorn populations. The preferred solar and wind project siting requirements of vast, flat lands overlap northeast Colorado's pronghorn overall and winter ranges.

The primary concern of new solar projects for pronghorn herds is that the National Electric Code requires that solar energy facilities be fenced for security. The 7-8 foot high exclusionary fencing requirement acts as a wildlife exclusion fence. Extrapolating that barrier around an average size of 880 acres for solar proposals in the Northeast Region, results in a complete loss of hundreds to thousands of acres of seasonal and wintering habitats crucial to pronghorn. This fencing also often creates a significant barrier to pronghorn herds' daily and/or seasonal movement patterns.

Proposed utility-scale photovoltaic (PV) solar project reviews have increased significantly in the past few years. From 2016 through 2023, CPW's Northeast Region has consulted on 158 proposed solar projects across 11 counties totaling more than 117,000 acres. Seventy solar projects and 43,712 acres were proposed for NE Regional review in 2023 alone. It should be noted that not all of these projects will be built. As of the end of 2023, 3,313 acres of solar farms (Table 2; Figure 5) were in operation in the NE Region with 2,580 acres within pronghorn DAUs.

Furthermore, recent state solar legislation to facilitate the construction of renewable energy projects (Senate Bill 24-212) will likely increase the number and acres of solar projects in the NE Region, as "Colorado will likely need to triple wind energy capacity and quintuple solar energy capacity by the year 2040". Table 2 describes the potential solar required in the NE Region in the next 16 years. However, while existing solar projects in the NE Region are currently at a modest 2,580 acres, current consults are 45 times that amount; combined with favorable policies, will likely lead to significantly more acreage (upwards of 40,000 acres by 2040) with wildlife exclusionary fencing.

Table 2. Existing and Potential Solar Facilities in Northeast Region Pronghorn DAUs.

NE Pronghorn DAU	Existing Solar (Acres) (as of 12/31/23)	Potential Additional Solar (5x Existing Acres)	Total Potential Solar by the year 2040 (Existing + 5x Potential)
PH-1	651	3,254	3,905
PH-4	48	240	288
PH-30	8	40	48
PH-33	361	1,804	2,165
PH-35	1,512	7,562	9,075
TOTAL	**2,580**	**12,990**	**15,481**

Finally, when locating sites for utility-scale solar projects, developers typically seek areas close to existing electrical transmission lines and substations to lessen the overhead costs of connecting their projects to the grid with a new transmission line. This results in a "Tetris effect", where multiple solar facilities strive to be centered around a substation, and a cumulative effect occurs when these combined solar developments are fenced with wildlife exclusion fencing, which renders thousands of acres inaccessible to pronghorn herds.

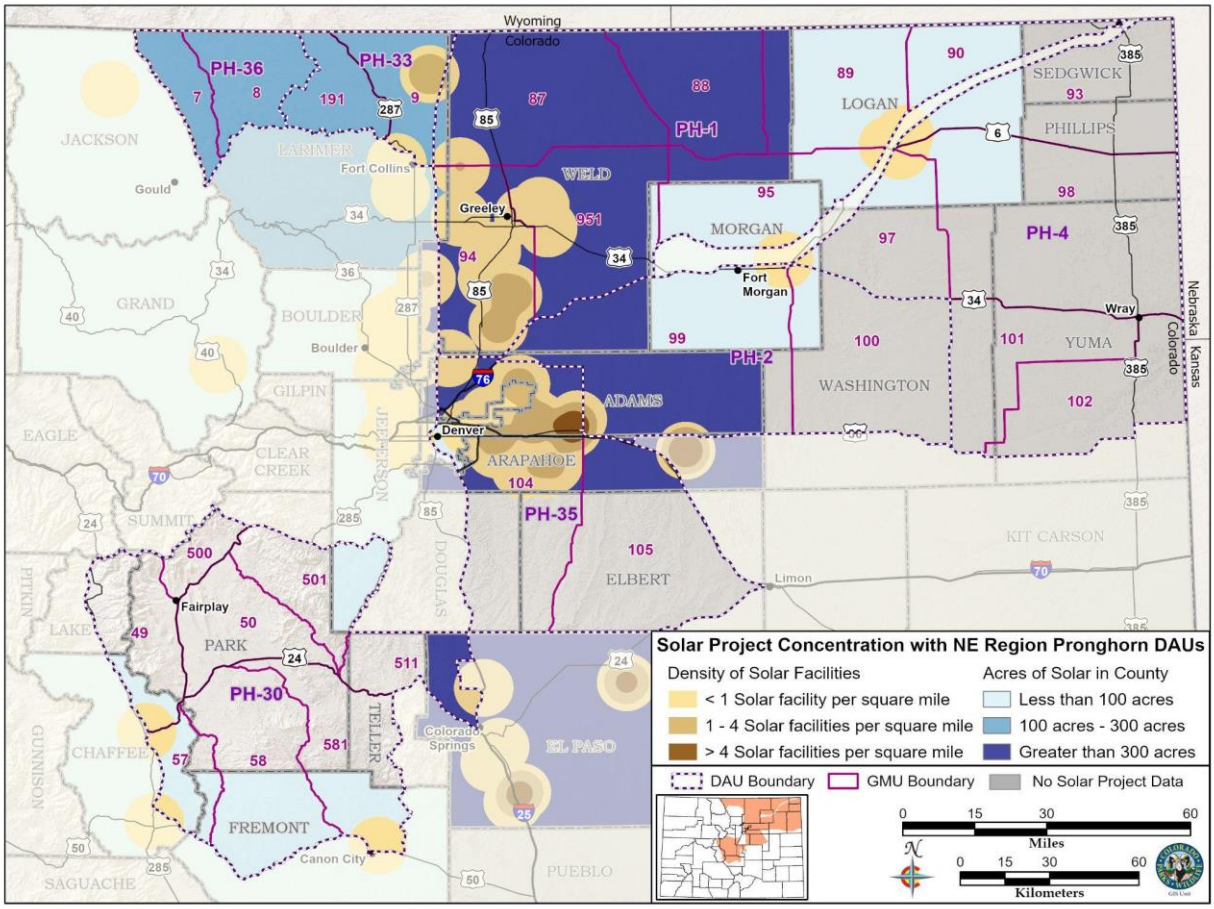


Figure 5. Existing Solar Projects within the NE Region Pronghorn DAUs, 2023.

Wind energy has less of an impact on pronghorn herds primarily due to the lack of wildlife exclusion fencing (except for the maintenance yards and substations). Wind energy consultations across northeast Colorado have also increased significantly in the past several years (Figure 6), with five new wind projects in 2022, six in 2023, and at least two in 2024. Similar to the solar discussion, Table 3 shows the existing and potential wind required in the NE Region over the next 16 years within the NE Region Pronghorn DAUs. Pronghorn may avoid areas of new wind construction, and individuals may be skittish around the rotation and/or shadows of the wind turbines. Also, developing new turbine access roads and installing turbines can fragment pronghorn winter and overall ranges, while increasing human activity in an interior portion of a previously undisturbed landscape.

Table 3. Existing and Potential Wind Facilities in Northeast Region Pronghorn DAUs.

NE Pronghorn DAU	Existing Wind (Acres) [# of Turbines]	Potential Additional Wind (3x Existing Acres) [3x turbines]	Potential Total Wind by the year 2040 [# of Turbines] (Existing + 3x Potential)
PH-1	157,427 [980]	472,281 [2,940]	629,708 [3,920]
PH-4	30,409 [133]	91,227 [399]	121,636 [532]
PH-35	2,337 [16]	7,011 [48]	9,348 [64]
TOTAL	**190,173 acres [1,129 turbines]**	**570,519 acres [3,387 turbines]**	**760,692 acres [4,516 turbines]**

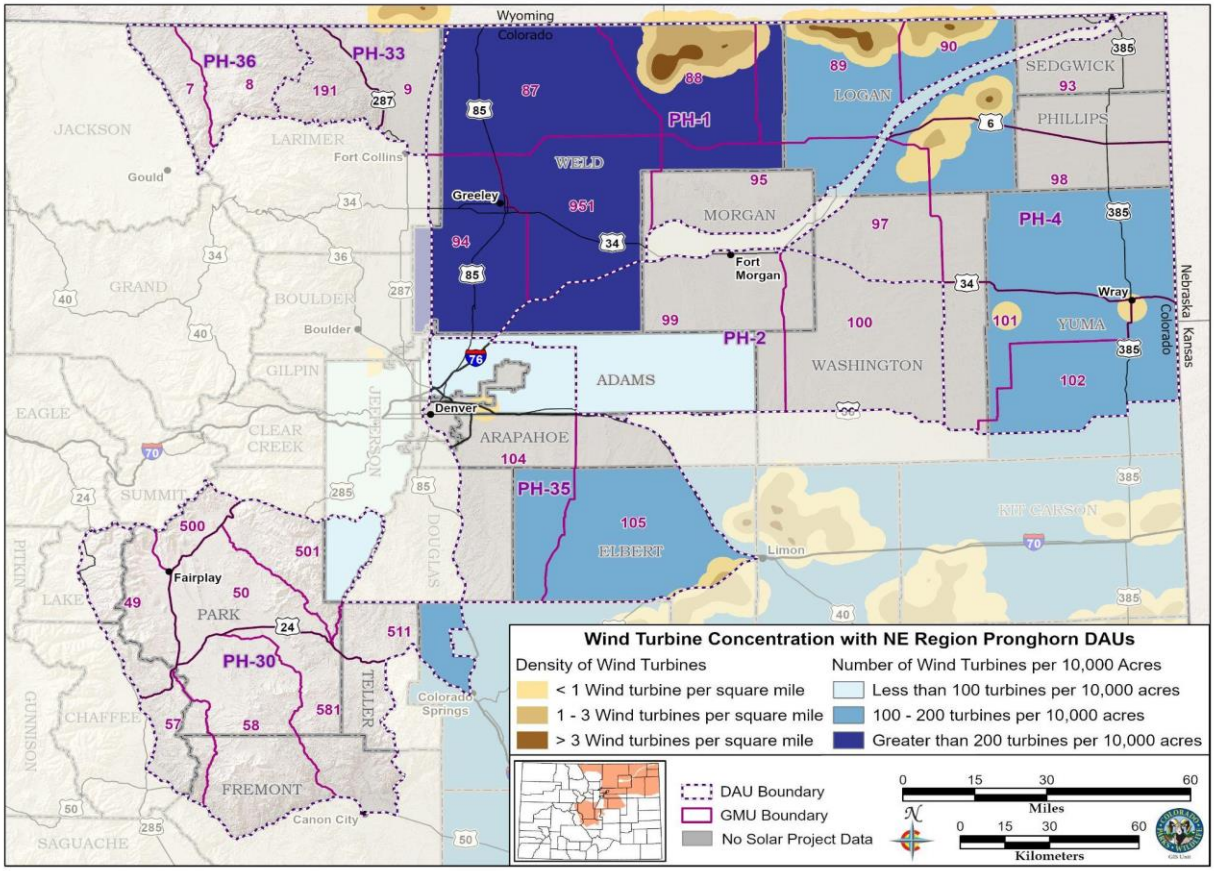


Figure 6. Current Wind Projects within the NE Region Pronghorn DAUs, 2023.

Climate Change

Colorado has warmed substantially in the last 30 years and even more over the last 50 years. Future estimates project the average temperature will rise an additional 2.5˚-5˚F by 2050 (https://cwcb.colorado.gov/focus-areas/hazards/climate). This means the warmest summers from our past may become the average summers in our future. With increasing temperatures, come shifts in snowmelt runoff, water quality concerns, stressed ecosystems, impacts on energy demands, and extreme weather events that can impact air quality and recreational opportunities. Furthermore, seasonal shifts in precipitation may result in more mid-winter precipitation throughout the state and, in some areas, a decrease in late spring and summer precipitation. The timing of runoff is projected to shift earlier in the spring, which may reduce late summer stream flows. Changes in the timing of runoff will likely occur regardless of changes in precipitation.

Changes in climate have had a noticeable impact on the pronghorn herds in northeastern Colorado, especially in recent years. Summers have been hotter and drier three of the last four years. Drought conditions across northeastern Colorado were variable, seasonally and annually (Figures 7-9). These drought conditions have reduced habitat quality and quantity, which in turn, has negatively affected fawn production in many of the pronghorn herds on the northeastern plains. Reduced water availability and habitat quality and competition with livestock for limited resources puts additional stressors on the long-term productivity of these herds into the future.

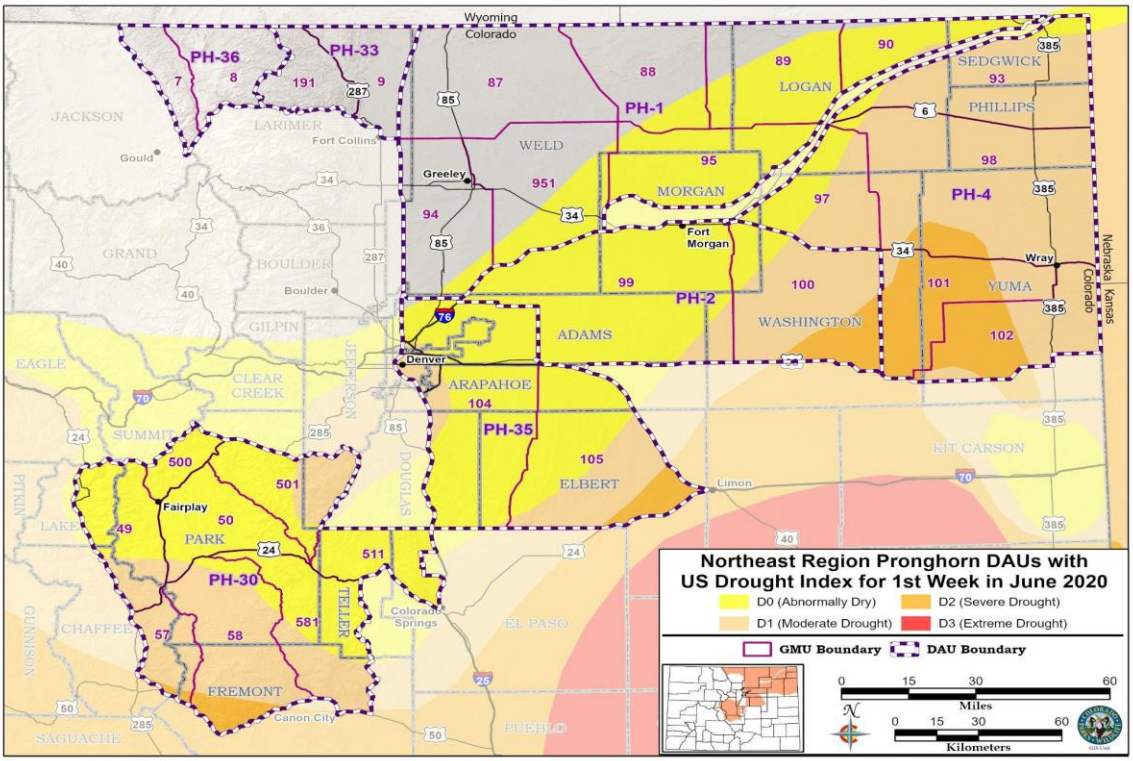


Figure 7. Northeast Region pronghorn DAUs with US drought index for the 1st week in June, 2020.

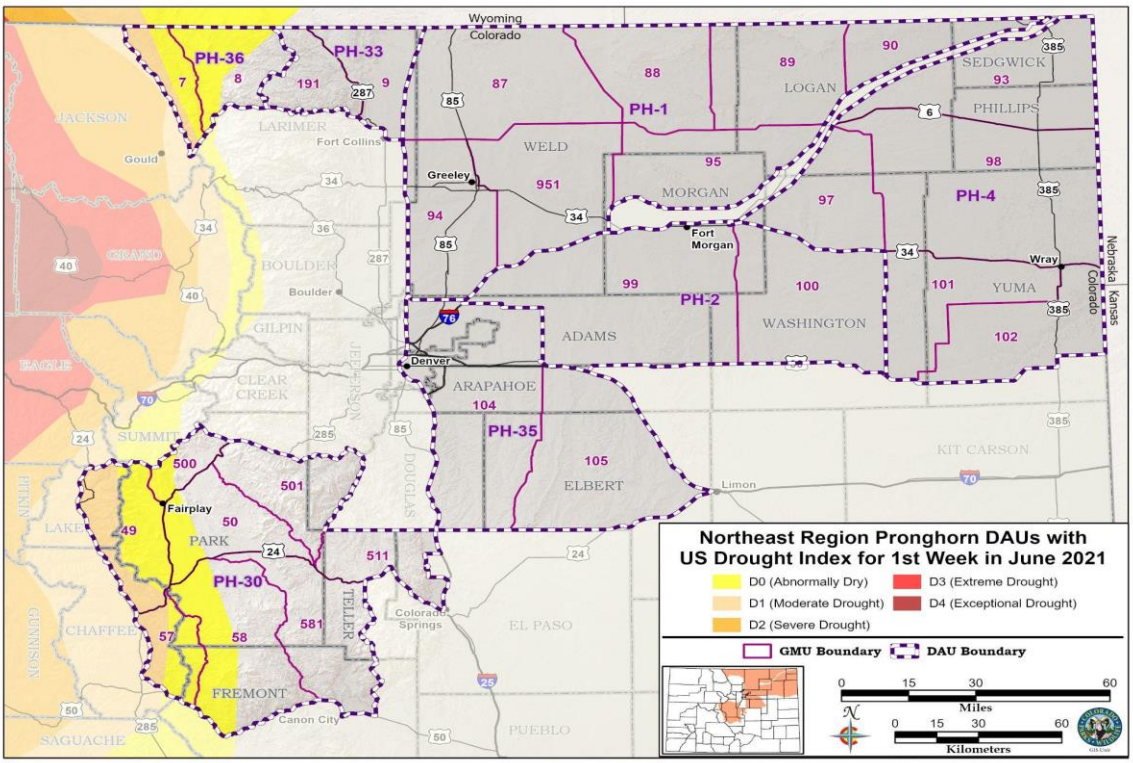


Figure 8. Northeast Region pronghorn DAUs with US drought index for the 1st week in June, 2021.

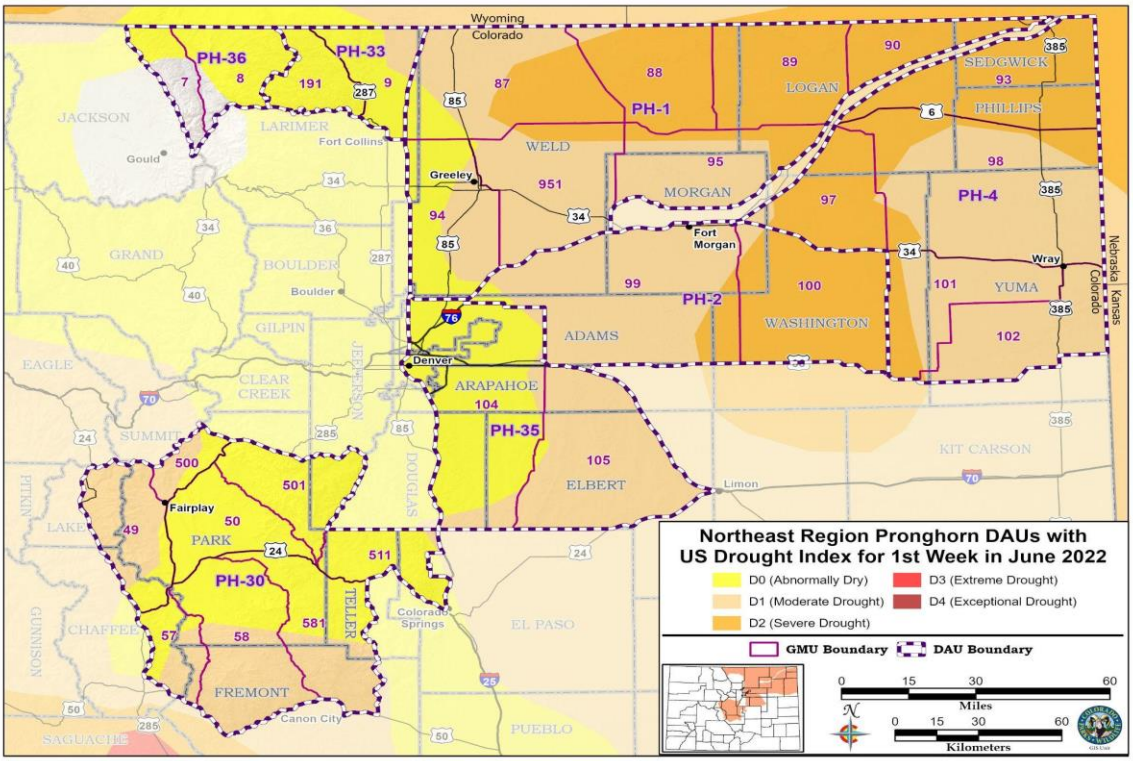


Figure 9. Northeast Region pronghorn DAUs with US drought index for the 1st week in June, 2022.

Within individual DAUs, there have been significant annual changes in fawn production across years. In the NE Region, above-average moisture occurred from 2014-2017, while 2020-22 exhibited moderate to severe drought conditions. Pronghorn are sensitive to these environmental changes. Fawn production and survival depend on spring and summer moisture and can decline dramatically in drought years. Using PH-01 as an example, fawn production from 2014-17 averaged 58 fawns per 100 does during those wetter years. In contrast, PH-01 averaged 38 fawns per 100 does during the drier years of 2020-22.

Annual variation in precipitation, and resulting pronghorn production, creates management opportunities and challenges for CPW. Pronghorn populations can grow quickly following years of high precipitation, which allows CPW to increase hunting opportunities. Following drought years, and subsequent low fawn recruitment, CPW often recommends substantial reductions in the number of doe licenses to manage herds within the population objective. This creates a challenge for hunters looking for predictable odds of drawing licenses. Additionally, CPW sets fall hunting license numbers in the spring, well before CPW knows how precipitation and summer age ratios might impact the trajectory of the population.

One option CPW can use to manage high annual variation in precipitation and pronghorn fawn recruitment is to set population objective ranges that align with the expected changes anticipated for pronghorn numbers within each DAU. For the NE Region, pronghorn HMPs are set at population objective ranges that are roughly +/-10% of a population target. These objective ranges provide CPW with management flexibility through high and low-fawn recruitment years.

Stakeholder Engagement and Input Process

Collaboration with Stakeholders

Wildlife management is affected by many environmental and external anthropogenic factors, often with no easy solutions, and requires collaboration and compromise. CPW will engage with various stakeholders, including local governments, federal land management agencies, private landowners, local land conservancies, conservation organizations, hunters, and wildlife enthusiasts to proactively manage Colorado's natural resources and habitats. These relationships and collaborations ensure pronghorn and other wildlife remain on Colorado's eastern plains and mountain valleys for generations. Colorado would not be the same without its pronghorn herds, and it is incumbent upon CPW and the citizens of Colorado to work together for the continued existence of pronghorn and other wildlife.

Landowner Outreach - Landowner Preference Program

Landowner input was essential to our HMP process because of northeastern Colorado's large amount of private land. Two distinct outreach efforts were conducted to better understand landowners' opinions regarding pronghorn management in the northeast region. In 2022, CPW staff surveyed landowners registered in the Landowner Preference Program (LPP) that owned 160 acres or more in PH-01 and PH-35 (Table 4). All enrolled landowners in each DAU were notified with postcards. The postcard described the survey and explained how to access the survey online using a provided QR code. We modified questions in each survey to address issues specific to PH-01 or PH-35. Survey results relevant to the proposed objectives are summarized in each HMP for each DAU, and the complete survey results can be found in Appendix A.

Table 4. Summary of the DAUs surveyed, the number of questions, landowners contacted, and landowner response rates in the 2022 LPP survey.

Data Analysis Unit	Number of Questions	Number of Postcards Mailed	Number of Respondents	Response Rate
PH-01	13	353	53	15%
PH-35	15	174	32	18%

Landowner Outreach - Small Landowners

In 2023, we conducted additional landowner outreach, focusing on small landowners with properties from 35-159 acres in size in PH-01, PH-4, PH-30, and PH-35. Using county parcel data, we randomly selected 300 landowners within each DAU (Table 5) for 1,200 total landowners in the northeast region. Selected landowners were mailed a survey letter to complete and return using a provided postage paid envelope. The survey letter also contained an online link if respondents preferred to participate online. Two weeks after the initial mailing, selected landowners were sent a reminder postcard with the online survey link. The small landowner survey that contained both a hard copy and digital option had a significantly higher overall response rate than the LPP survey, which only provided an online link via a QR code (Table 5). Survey results relevant to the proposed objectives are summarized in each HMP for each DAU, and the complete survey results can be found in Appendix B.

Table 5. Summary of the DAUs surveyed, the number of questions, landowners contacted, and the landowner response rates in the 2023 Small Landowner survey.

Data Analysis Unit	Number of Questions	Number of Surveys Mailed	Number of Respondents	Response Rate
PH-01	5	300	73	24%
PH-04	5	300	109	36%
PH-30	5	300	111	37%
PH-35	5	300	79	26%

Hunter Outreach - First-Choice Applicants

To better understand hunters' opinions regarding pronghorn management in PH-30, local staff surveyed a selection of the 6,300 first-choice applicants from all applicable pronghorn hunt codes within PH-30 for the 2019, 2020, and 2021 seasons. A random sample of 654 individual hunters was selected to participate in an online survey. In the fall of 2022, postcards were mailed to the sample of hunters, notifying them of the survey and how to access it online. Survey questions were specific to management concerns in PH-30. Survey results for PH-30 (Table 6) are summarized in the draft plan, and the complete survey results can be found in Appendix C.

Table 6. Summary of the number of questions, hunters contacted, and the hunter response rates in the 2022 PH-30 survey.

Data Analysis Unit	Number of Questions	Number of Postcards Mailed	Number of Respondents	Response Rate
PH-30	17	654	82	13%

Hunter Outreach - Hunter Harvest Attitude Survey

In addition, CPW staff reviewed the results from the optional hunter harvest attitude survey for PH-01, PH-04, PH-30, and PH-35 to gather additional input from hunters on their experience during the 2023 hunting season. Of the 5,676 pronghorn licenses sold in Northeastern Colorado, 1,452 hunters participated in the additional hunter harvest survey. The results and graphs of the hunter responses to the questions relating to their experience and observations for each pronghorn DAU in Northeastern Colorado can be found in Appendix D. The DAUs in each graph are ranked from most to least satisfied.

30-Day Public Comment Period

The draft plans were posted on CPW's webpage in January 2023 and July 2024 for a 30-day comment period. We also received written comments from members of the public, the US Forest Service, and various Habitat Partnership Program committees (Appendix E). We received general support for our proposed objectives.

Herd Management Plan Organization

We have organized the 7 NE Herd Management Plans according to the type of herd management plan update we are recommending. The first group of pronghorn draft plans presented are those that were revised and updated and that we are recommending status quo or slight increases to the management objectives. We then present the pronghorn HMPs that were approved within the last 5 years by the Parks and Wildlife Commission and that we are recommending extensions for those plans. Finally, we include the full survey results collected from landowners, hunters, and hunter opt-in responses, as well as, public comments and various support letters in the appendices.

Herd Management Plan Updates

DAU	Pronghorn Herd	Current Herd Management Plan Approved	Current Post-Hunt Modeled Population Objective	2023 Post-hunt Modeled Population Estimate	Current Post-Hunt Modeled Sex Ratio Objective	3-Yr Avg Post-Hunt Modeled Sex Ratio	Proposed Post-Hunt Modeled Population Objective	Proposed Post-Hunt Modeled Sex Ratio Objective
PH-01	**Escarpment**	2010	6,500-7,500	6,290	30-35	27	Status Quo	Status Quo
PH-04	**Sandhills**	2006	550-650	770	25-30	24	550-750	Status Quo
PH-30	**South Park**	2012	1,000-1,200	1,185	30-35	39	1,100-1,400	35-40
PH-35	**Kiowa**	2012	4,000-5,000	4,170	30-35	43	Status Quo	Status Quo

ESCARPMENT PRONGHORN HERD
DATA ANALYSIS UNIT PH-01
Joe Halseth, Wildlife Biologist, Fort Collins

GMUs: 87, 88, 89, 90, 94, 95 & 951 Last HMP Approval Year: 2010
Post-hunt Modeled Population: Previous Objective: 6,500-7,500 pronghorn; 2023 Estimate: 6,290 pronghorn **Preferred Alternative: (Status quo) 6,500-7,500 pronghorn**
Post-hunt Modeled Sex Ratio Objective (bucks:100 does): Previous Objective: 30-35; 2023 Observed Pre-hunt: 41; 3-yr Modeled average: 27 **Preferred Alternative: (Status quo) 30-35 bucks:100 does**

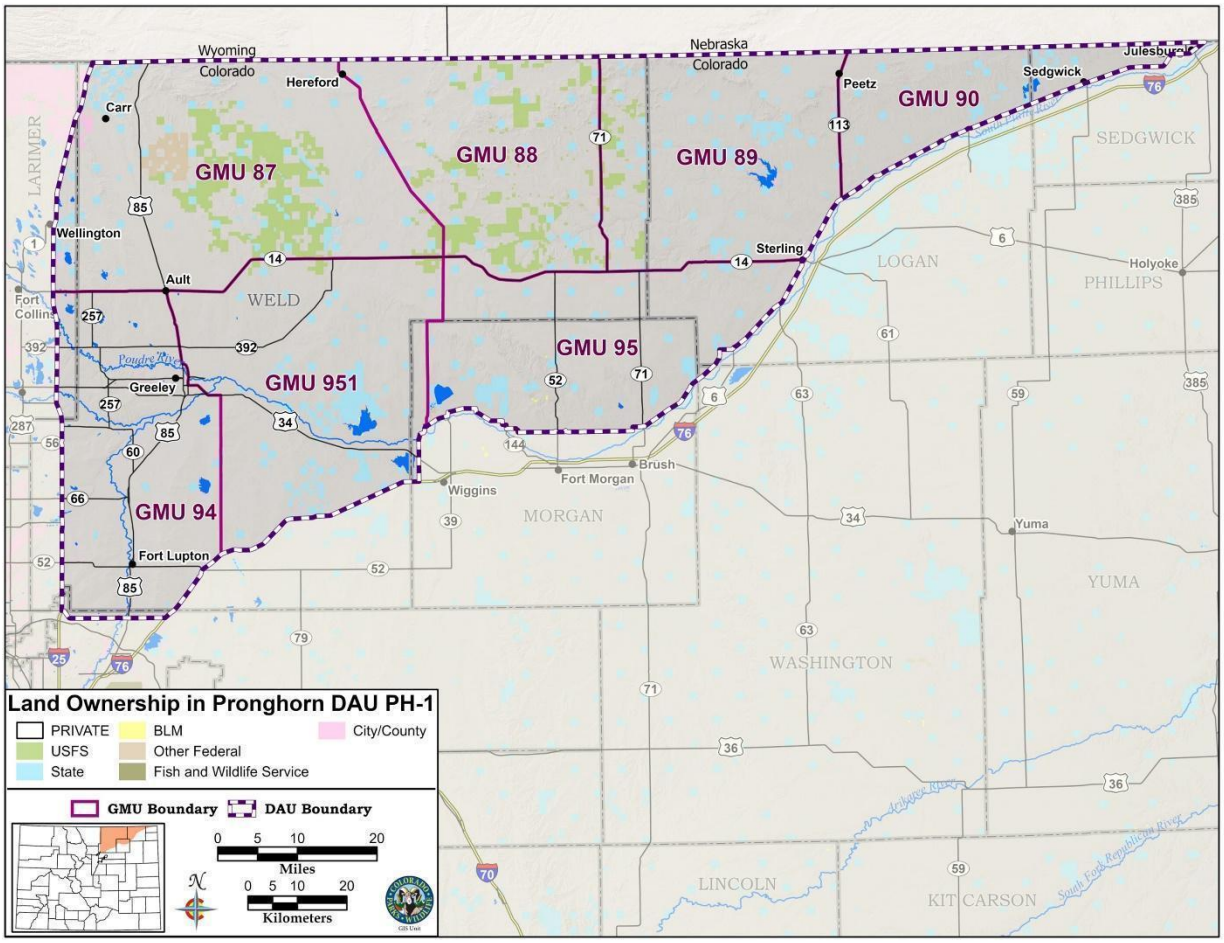


Figure PH01-1. Location of Pronghorn DAU PH-01 and associated Game Management Units (GMUs) in northeast Colorado.

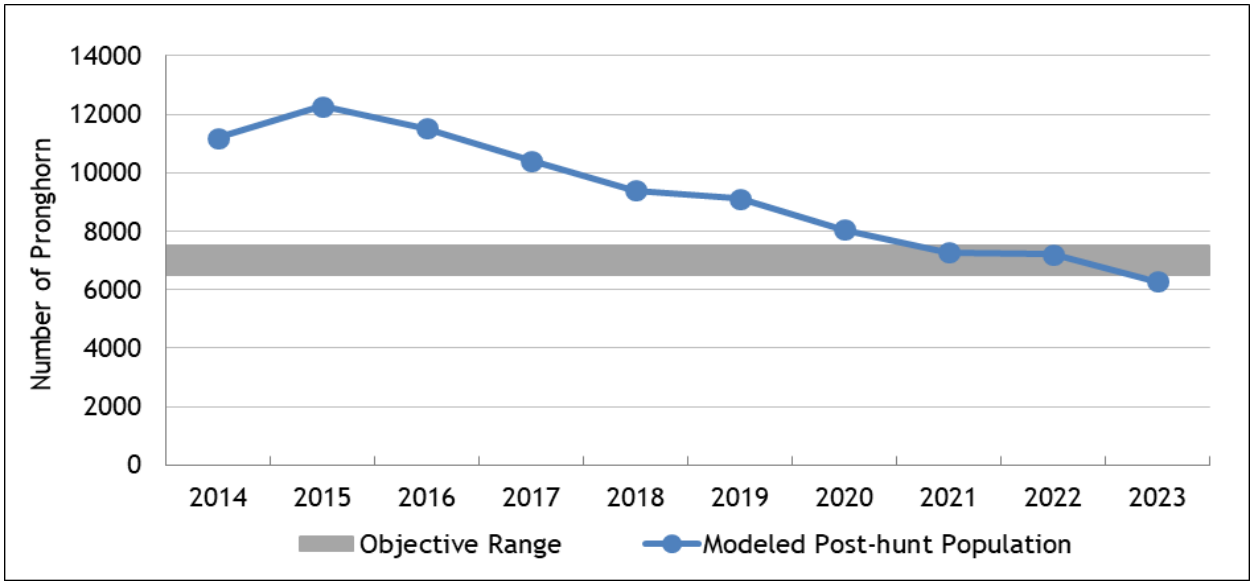


Figure PH01-2. Pronghorn DAU PH-01 modeled post-hunt population and objective range, 2014-2023.

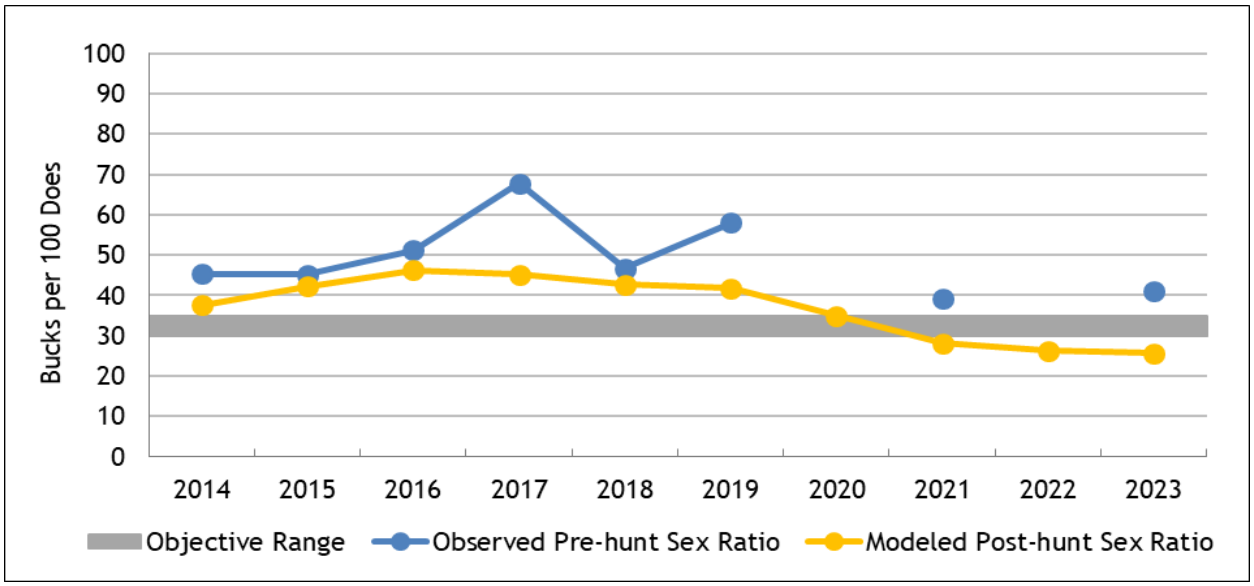


Figure PH01-3. Pronghorn DAU PH-01 observed pre-hunt and modeled post-hunt sex ratio (bucks:100 does), 2014-2023.

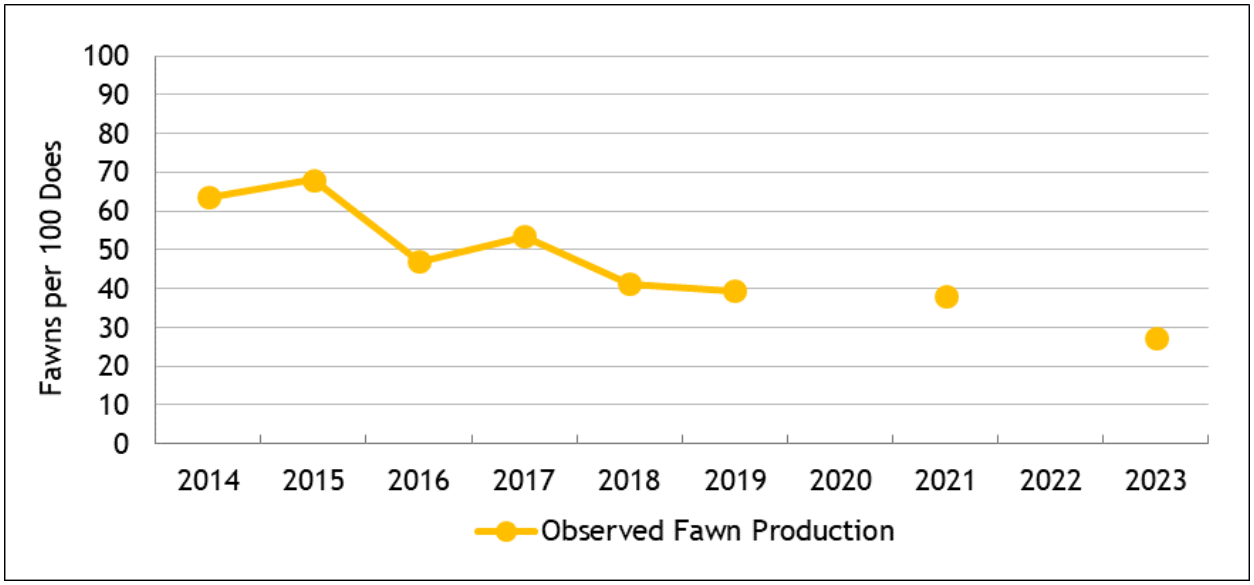


Figure PH01-4. Pronghorn DAU PH-01 observed fawn production (pre-hunt fawns:100 does ratio), 2014-2023.

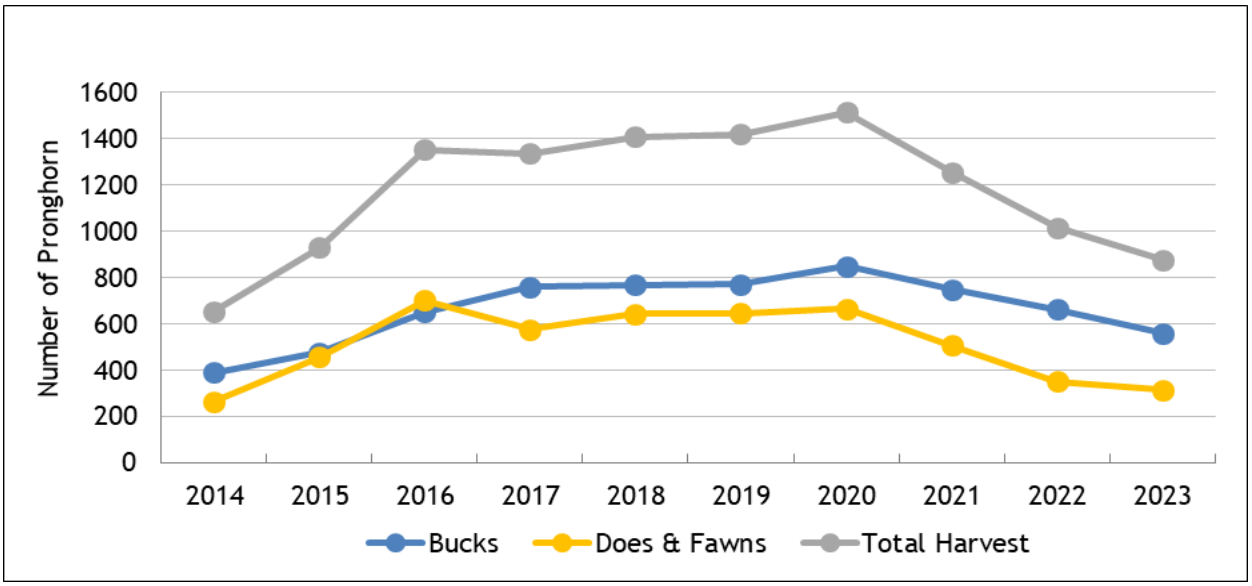


Figure PH01-5. Pronghorn DAU PH-01 harvest estimates, 2014-2023.

Background Information

The Escarpment DAU (PH-01) is located in northeastern Colorado and lies within portions of Weld, Logan, Morgan, and Sedgwick counties. It is 5,392 mi^2 and consists of Game Management Units (GMUs) 87, 88, 89, 90, 94, 95 & 951 (Figure PH01-1). Ninety-two percent (4,960 mi^2) of the DAU is privately owned. The Pawnee National Grasslands (300 mi^2) provides the majority of the public land, located in GMUs 87, 88, and 89. Higher concentrations of animals tend to be in the northern and western parts of the DAU, with lower numbers of animals in the eastern and southeastern parts. There have been seasonal pronghorn movements north into Wyoming, with movement back into Colorado during the winter months. The degree of seasonal movement between Colorado and Wyoming in PH-01 is

challenging to quantify and can change yearly depending on weather conditions and precipitation in winter and summer.

The 2023 PH-01 population model estimate was approximately 6,290 pronghorn in this herd, with a decreasing trend since 2019 (Figure PH01-2). Based on the point estimate of 8,426 pronghorn calculated from Distance Sampling in 2019, the population has intentionally been reduced to stay within the population objective.

Pre-hunt classification surveys for this herd are conducted via aerial transect counts, which occur in early August before the opening of the archery season. The number of animals classified during these surveys ranged from 1,619 to 2,653 animals since 2014, with an average of 2,058 pronghorn classified each year. During these surveys, ratios are collected for bucks:100 does and fawns:100 does. Pre-hunt buck ratios have averaged 46 bucks:100 does over the previous 5 years of surveys (Figure PH01-3), while pre-hunt fawn ratios have averaged 35 fawns:100 does during that same span (Figure PH01-4). Fawn ratios have been lower the past few years (2020-2023), due to drought conditions and above-average winters across the eastern plains. Classification data from these surveys and harvest data are entered into computer models that provide an annual population estimate.

Over the past 10 years, pronghorn harvest has ranged from a high of 1,486 animals in 2020 to a low of 655 in 2014 (Figure PH01-5). The average harvest since 2014 is 1,176 pronghorn. Buck harvest has ranged from a low of 390 bucks in 2014 to a high of 848 in 2020, averaging 664 bucks over the past decade. Doe harvest has ranged from a high of 631 does in 2016 to a low of 232 does in 2014.

The average buck and doe harvest each year over the past five years for limited archery, rifle and muzzleloader seasons is 780 and 606 pronghorn, respectively. On average, 44 bucks and 6 does are harvested during the OTC archery season.

Significant Issues

Significant management issues identified through the public input process include oil and gas development, renewable energy development, lack of private land hunting access, and game damage on agricultural land.

Management Alternatives

The long-term population objectives for this herd will be managed as ranges, rather than point values. Objective ranges better reflect the uncertainty inherent in wildlife population estimates. Also, having the flexibility to manage this pronghorn herd within a range is more appropriate for the annual variability in ecological conditions.

The PH-01 pronghorn herd has been managed under the current objectives of 6,500–7,500 pronghorn and 30–35 bucks:100 does that were established in 2010. Three alternatives were considered for both the post-hunt population size (Table PH01-1) and the sex ratio (Table PH01-2).

Table PH01-1. Proposed population alternatives for PH-01.

Population Objective Alternatives:	
5,000 to 6,000 pronghorn	(1) Approximately 25% reduction in the current population estimate
6,500 to 7,500 pronghorn	**(2) Status Quo (Maintain current population)**
8,000 to 9,000 pronghorn	(3) Approximately 20% increase in the current population estimate

Table PH01-2. Proposed sex ratio alternatives for PH-01.

Sex Ratio Objective Alternatives:	
20-25:100 buck:doe ratio	(1) Decrease buck ratio objective by 10 bucks per 100 does
30-35:100 buck:doe ratio	**(2) Status Quo (Maintain current sex ratio)**

Management Objectives

Preferred Population Objective: 6,500-7,500 pronghorn
Based on CPW and public input, we recommend maintaining the current population objective. Under this scenario, license levels (particularly antlerless licenses) would remain relatively similar.

Preferred Sex Ratio Objective: 30-35 bucks:100 does
Based on CPW and public input, we recommend maintaining the current sex ratio objective. Buck license numbers would remain relatively the same. Landowner and hunter satisfaction currently seems high, and CPW personnel see no reason to change the current management and license allocation for this herd.

Strategies for Addressing Management Issues and Achieving Objectives

CPW has limited ability to affect many of the issues identified through the plan's public outreach process. However, CPW will seek opportunities to conserve land through fee title purchases or conservation easements, especially when hunting access is included. We will work with land management agencies and private landowners to improve habitat quality and increase hunter access.

The current pronghorn population size (6,290 pronghorn) is below the range for the preferred alternative. The 3-yr average buck ratio (27 bucks:100 does) is slightly below the preferred alternative. We would expect to maintain current antlerless license levels, which have been reduced by 37% over the past 3 years, along with a slight decrease in buck licenses to achieve the preferred alternatives. This population will continue to be managed to sustain a viable population of pronghorn in the northern plains, while continuing to allow hunter opportunity.

Stakeholder Outreach and Input

In 2022, CPW surveyed landowners participating in the Landowner Preference Program in PH-01. We mailed 353 postcards notifying landowners of the survey, how to access the survey online, and when the 30-day participation period would close. The requested feedback

included information on the impacts of pronghorn and pronghorn hunters on their property and their preferences for pronghorn management in the DAU.

We received 53 landowner responses for a 15% response rate. Most landowners (57%) conveyed that the Escarpment pronghorn population has increased over the last ten years. Most respondents (73%) also stated that it was important to them to have the population size remain the same (Figure PH01-6). Finally, landowners also indicated that it was important to them to hunt pronghorn most years (either sex), while being able to hunt mature bucks. Landowner feedback did not mention severe issues with current or hunting management strategies, only concerns for property damage. Complete survey results can be found in Appendix A.

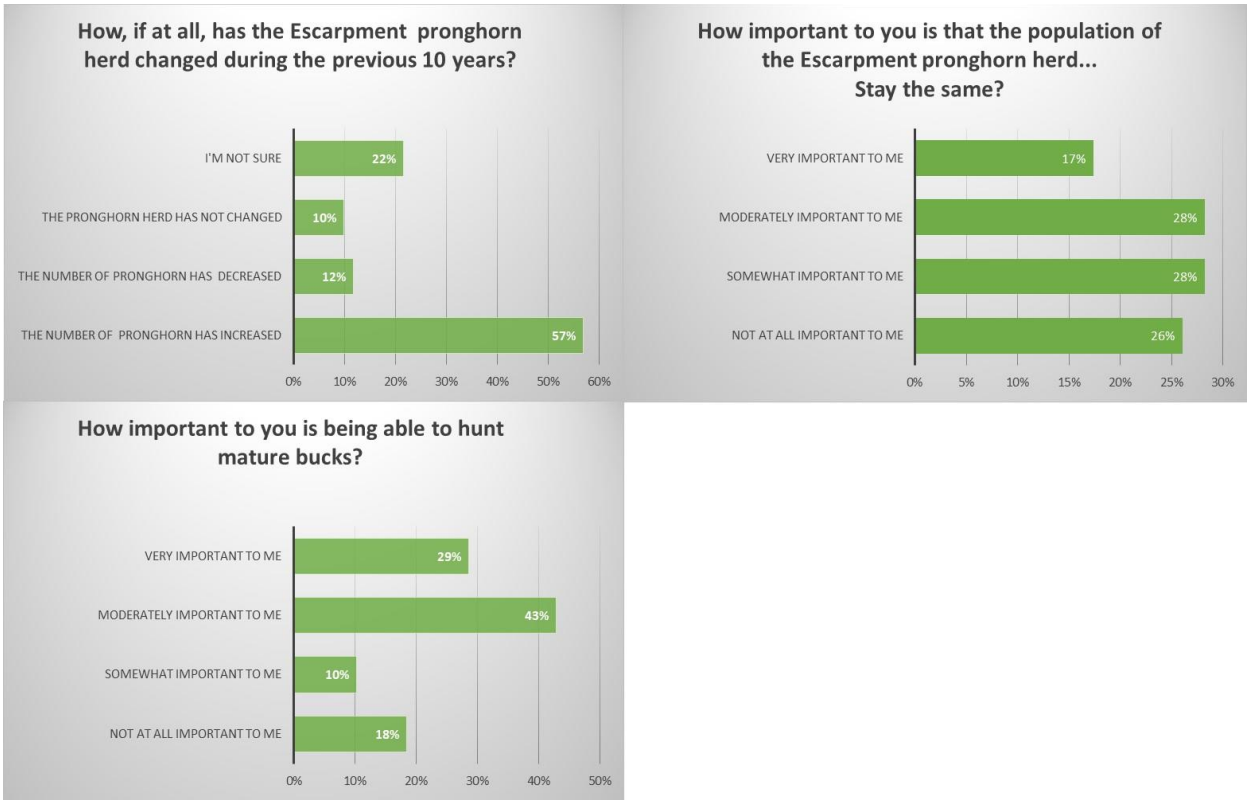


Figure PH01-6. Results from Questions 10, 11, and 12 from the PH-01 Landowner Preference Program survey, Appendix A, regarding the past pronghorn population size, inference on hunting mature bucks, and perspective on population management.

In 2023, another landowner survey was conducted in PH-01, this time focusing on small landowners owning property 35-159 acres in size. A sample of 300 landowners were mailed a survey and a postage-paid return envelope. The survey also contained a link to a digital option. Two weeks after the initial mailing, landowners were sent a reminder postcard with the online survey link.

We received 73 completed surveys from the 300 small landowners sampled for a 24% response rate. A majority (74%) of the respondents owned land over 100 acres in size and 80% of the respondents had never hunted pronghorn in this DAU. A majority (59%) of small landowners preferred a slight increase in the number of pronghorn, while 33% preferred no change to the

population. There was more variation in responses for managing the buck:doe ratio in the Escarpment pronghorn herd. Roughly 30% preferred a higher buck: doe ratio, 30% desired no change, and 19% preferred a lower buck: doe ratio. Complete survey results can be found in Appendix B.

Responses from the 2023 Opt-In hunter survey also indicated that the hunting community prefers no change to the current management objectives (Appendix D).

Because the 2023 modeled post-hunt estimate for this herd is 6,290, which is below the current objective of 6,500-7,500 individuals, CPW believes the status quo population objective alternative satisfies a majority (92%) of respondent desires to stay the same or slightly increase the number pronghorn in PH-01. Likewise, most respondents (60%) preferred the Escarpment pronghorn herd to be managed for ‘quality’ or ‘status quo’. The preferred (status quo) sex ratio objective for this DAU is 30-35 bucks:100 does. CPW considers this to be a moderate level that balances both ‘quality’ and ‘quantity’ management philosophies and this alternative satisfies the majority of respondents desires.

Input for these herd management objectives was further solicited by posting on the CPW website for 30-day public comment.

SANDHILLS PRONGHORN HERD MANAGEMENT PLAN
DATA ANALYSIS UNIT PH-04

Marty Stratman, Wildlife Biologist, Brush

GMUs: 93, 97, 98, 101, 102 Last HMP Approval Year: 2006
Post-hunt Modeled Population: Previous Objective: 550-650; 2023 Estimate: 770 pronghorn **Preferred Alternative: 550-750 pronghorn**
Post-hunt Modeled Sex Ratio (bucks:100 does): Previous Objective: 25-30; 2023 Observed Pre-hunt: 34; 3-yr Modeled average: 25 **Preferred Alternative: (Status quo) 25-30 bucks:100 does**

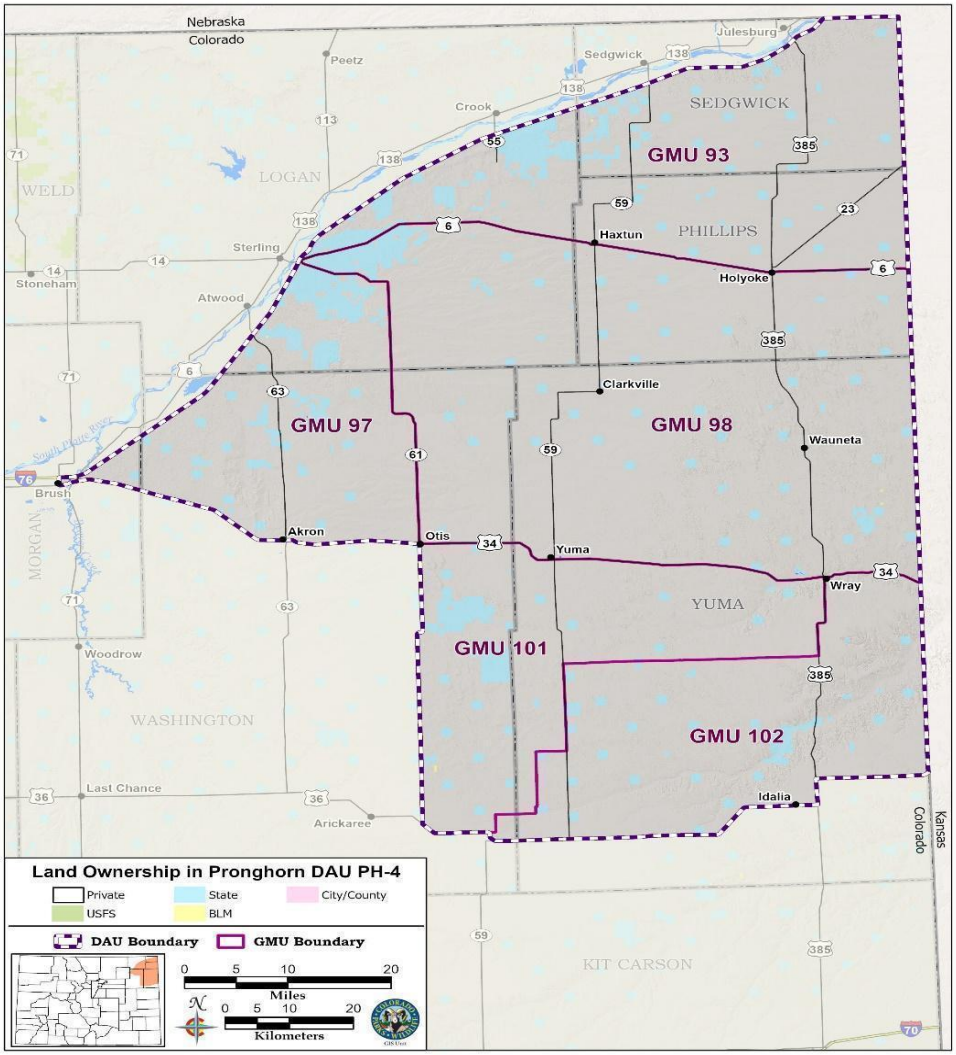


Figure PH04-1. Location of pronghorn DAU PH-04 and associated Game Management Units (GMUs) in northeast Colorado.

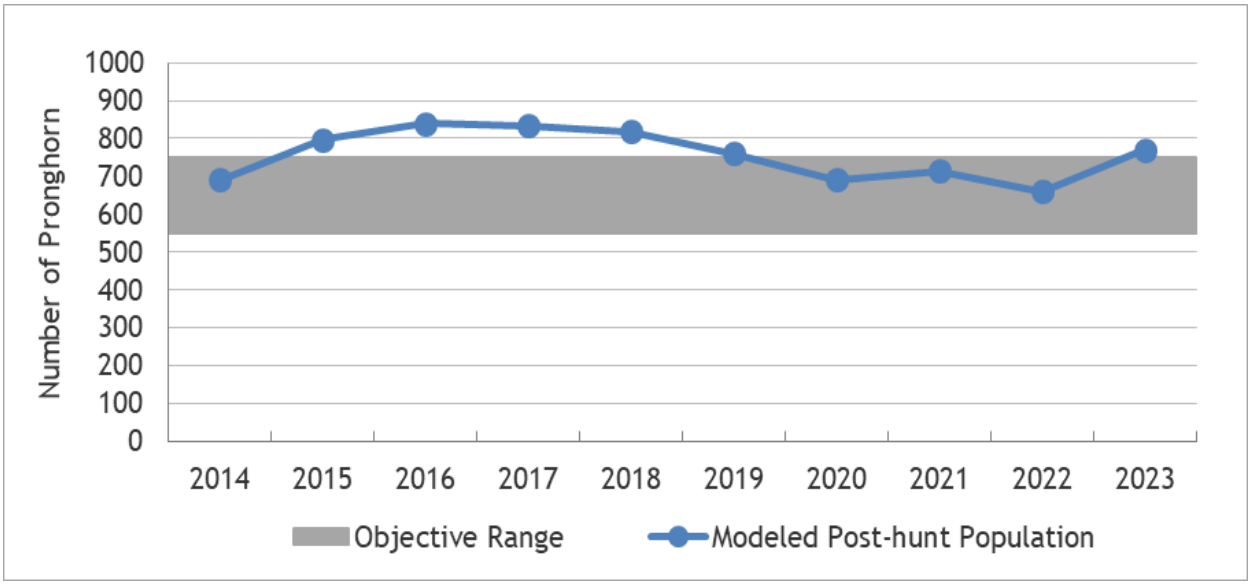


Figure PH04-2. Pronghorn DAU PH-04 modeled post-hunt population and objective range, 2014-2023.

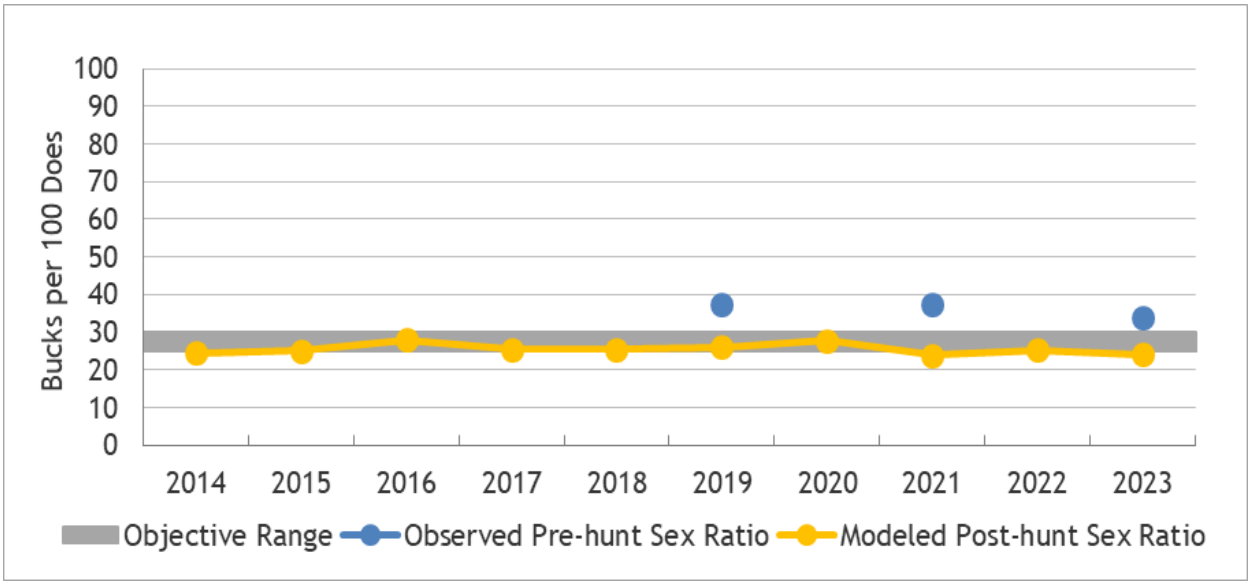


Figure PH04-3. Pronghorn DAU PH-04 observed pre-hunt and modeled post-hunt sex ratio (bucks:100 does), 2014-2023.

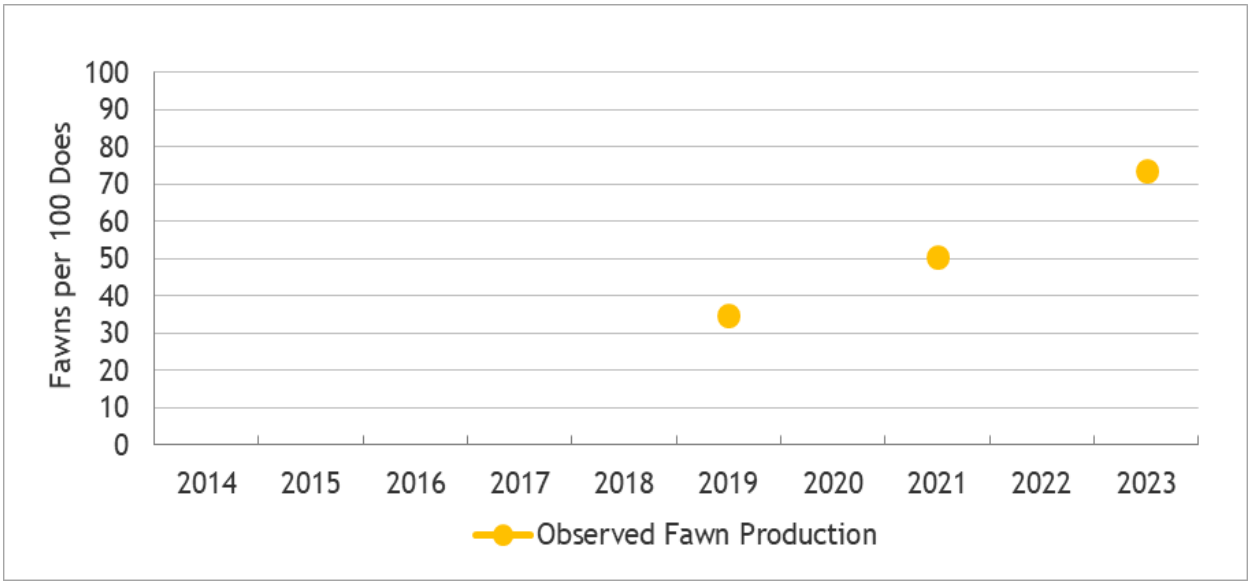


Figure PH04-4. Pronghorn DAU PH-04 observed fawn production (pre-hunt fawns:100 does ratio), 2014-2023.

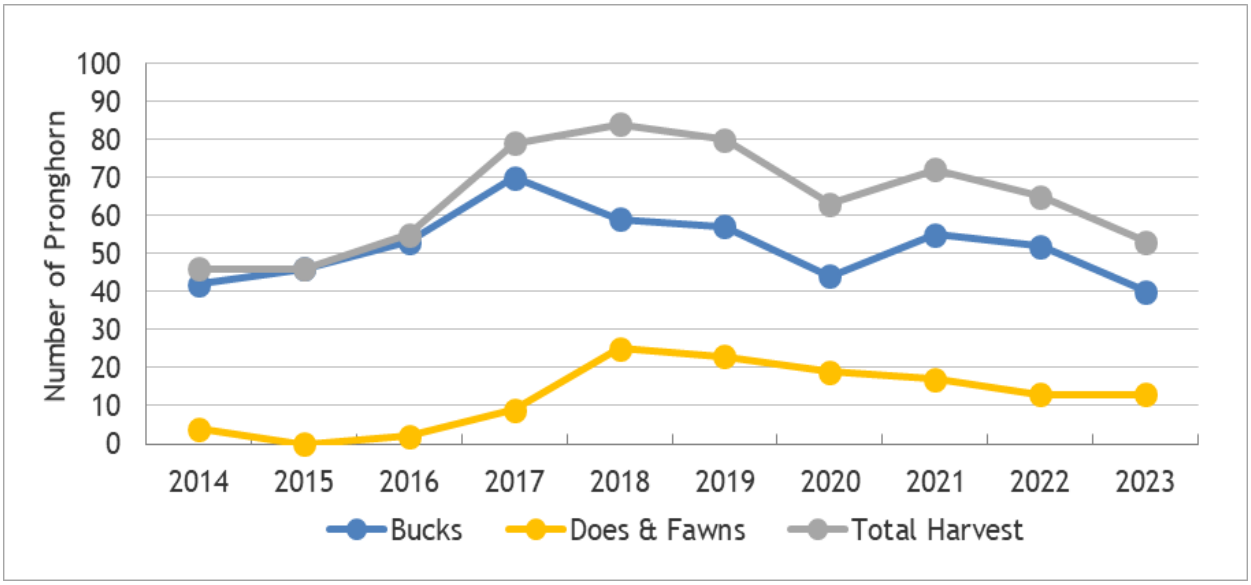


Figure PH04-5. Pronghorn DAU PH-04 harvest estimates, 2014-2023.

Background Information

The Sandhills pronghorn DAU (PH-04) encompasses approximately 4,755 mi^2 in northeastern Colorado and consists of Game Management Units (GMUs) 93, 97, 98, 101, and 102 (Figure PH04-1). There are several habitat types within PH-04, including dry cropland, irrigated cropland, sandsage/mid-grass prairie, short-grass prairie, Conservation Reserve Program (CRP) lands, cottonwood-riparian bottoms, and dry canyons. Nearly 50% of PH-04 consists of sandsage/mid-grass prairie sandhills. The sandsage/mid-grass prairie is part of two sandhill complexes that run through the management area. One extends along the entire northern boundary and the other runs from the southwest corner, northeast to the Nebraska border. The sandsage/mid-grass prairie has remained stable with little being broken out for farming

or development. Quality pronghorn habitat, primarily short-grass prairie, has decreased across the DAU due to their conversion to cropland and changing cropping practices that emphasize corn as an alternative to a wheat-fallow system. The largest blocks of short-grass prairie are adjacent to river corridors and intermixed in the sandhill complexes along the northern boundary and in the southwest portion of the Sandhills.

Land ownership within PH-04 is typical of eastern Colorado, with the majority of the area being in private ownership. Notable exceptions include the South Tamarack State Wildlife Area and several small parcels owned by the CPW, which collectively comprise <1% of PH-04. Land use within the Sandhills is almost exclusively agricultural-based. Grazing by livestock is the primary influence on short-grass and sandsage/mid-grass prairie conditions. Center pivot irrigation occurs throughout most of the area, including the sandhill complexes. Corn, wheat, and alfalfa are the primary crops under pivot irrigation.

Pronghorn are found throughout PH-04 with the highest densities frequently associated with parcels of shortgrass rangeland in proximity to winter wheat or wheat fallow fields. Generally, pronghorn densities are lowest in areas of intense agricultural use. During the winter months, pronghorn often concentrate near green wheat and alfalfa fields, which can result in occasional game damage complaints from landowners. The climate in the Sandhills is characterized by hot, dry summers and relatively mild winters. Annual precipitation ranges from 13–21 inches with most occurring during intense summer thunderstorms.

The pronghorn population in PH-04 has varied over the last 10 years from a low of 660 pronghorn in 2022 to 840 pronghorn in 2016 (Figure PH04-2). The 5 and 10-year population averages for PH-04 are 720 and 760 pronghorn, respectively. Observed data is limited for PH-4 primarily due to its lower priority in the region, which causes time constraints with other priorities for CPW aircraft. Thus, since 2014, the modeled post-hunt buck:doe ratio estimates have averaged 26 bucks:100 does ranging from 24 bucks:100 does in 2021 to 28 bucks:100 does in 2016 (Figure PH04-3). From the limited observed data, fawn:doe ratios varied from a low of 34 fawns:100 does in 2019 to 73 fawns:100 does in 2023 (Figure PH04-4).

Over the past 10 years, pronghorn harvest has ranged from a high of 84 pronghorn in 2018 to a low of 46 pronghorn in 2014 and 2015 (Figure PH04-5). The average harvest since 2014 is 64 pronghorn. Buck harvest has ranged from a low of 40 bucks in 2023 to a high of 70 in 2017, averaging 52 bucks over the past decade. Doe harvest has ranged from a high of 25 does in 2018 to a low of 0 does in 2015.

Significant Issues

Low recruitment rates have always been a concern as this population has struggled to maintain a consistent number of animals. Since the 1960s, this pronghorn herd has rarely surpassed 750 pronghorn. Over the past 40 years, there have been two extended periods, one from the 1970s through the early 1990s, and the other from 2005 to the present, when antlerless hunting was largely eliminated in most, if not all, GMUs in efforts to stabilize and maintain the number of pronghorn throughout the DAU. Because this DAU consists mostly of sandhills, pronghorn avoid these areas because the sandy substrates and broken hills are not conducive to sight and flight defenses that pronghorn rely on to survive. Thus, the annual changes in environmental conditions and below-average habitat quality have, and will always, play a key role in limiting this population. While habitat conditions in this DAU are not of the quality that is found in a shortgrass-dominated landscape, they are sufficient to sustain the

current pronghorn population. During the winter months, pronghorn sometimes concentrate near green wheat and alfalfa fields, which can result in occasional game damage complaints from landowners.

Management Alternatives

The PH-04 pronghorn herd has been managed under the current management objectives of 550–650 pronghorn and 25–30 bucks:100 does that were established in 2006. The new proposed population objective range was widened to provide more management flexibility, if fawn production improves to allow the population to grow above the current objective. Therefore, this Herd Management Plan (HMP) and the population and sex ratio objectives are merely a continuation of that plan. In addition, because of the historically low productivity in the PH-04 pronghorn herd and overall lower habitat quality within PH-04, the Sandhills pronghorn herd has been managed within the current objectives for several decades. Thus, CPW staff determined that other alternative objectives were neither practical nor achievable and that the proposed objectives have been and will continue to be the most feasible and sustainable biological option for this pronghorn herd. Thus, no management alternatives were developed.

Management Objectives

Preferred Population Objective: 550–750 pronghorn
Because of the biological limitations of this herd, we recommend maintaining the population at the current target objective of 610 pronghorn, but widening the objective range by 100 animals to provide more management flexibility.

Preferred Sex Ratio Objective: 25–30 bucks:100 does
Because of the biological limitations of this herd, we recommend maintaining the sex ratio at the current objective of 25–30 bucks:100 does. Buck license numbers would remain the same as the herd is projected to remain within the objective range. The demand for buck licenses will continue to be greater than the supply and should remain at current levels.

Strategies for Addressing Management Issues and Achieving Objectives

To address game damage, CPW will continue to offer dispersal licenses and other game damage programs for landowners experiencing pronghorn conflicts that cannot be addressed through the general hunting seasons. Additionally, CPW will continue to look for opportunities to improve habitat quality for pronghorn.

The current pronghorn population size (~770 pronghorn) is slightly above the current objective range. The buck:doe ratio (24 bucks:100 does) is slightly below the objective range. Doe licenses have been increased to reduce the population to objective and current buck license allocation projects the buck:doe ratio to be within objective in 2024.

To address the ongoing low fawn production in PH-04, doe rifle licenses have not been issued in some GMUs since 2004. While habitat conditions in this DAU are not of the quality that is found in a shortgrass-dominated landscape, they are sufficient to adequately sustain a pronghorn population of the size recommended in this plan.

Stakeholder Outreach and Input

In 2023, we expanded our outreach and surveyed a sample of 300 landowners in PH-04 who owned property 35-159 acres in size. Landowners were each mailed a survey and a postage-paid return envelope. The survey also contained a link to a digital survey option. The complete survey results for PH-04 can be found in Appendix B.

We received 109 survey responses from the 300 landowners sampled. Most (92%) of the landowners owned over 100 acres and 80% of the respondents had never hunted pronghorn in the DAU. The majority of respondents (58%) preferred a slight increase in the population objective, while 25% wanted to keep the population the same over the next 10 years. For managing the buck:doe ratio objective, responses were nearly equal, with 21% preferring an increase in the buck: doe ratio, 22% preferring the status quo, and 28% preferring a decrease in the buck:doe ratio over the next 10 years.

Historical attempts to increase this herd have proven challenging and the desire to increase this herd greatly is not a realistic management philosophy. CPW believes that sparse high-quality habitat limits the growth of this herd and it is in the best interest of the Sandhills pronghorn herd to maintain the population objective similar to what has been managed for in the past, which satisfies a majority of respondent desires. Half (50%) of the respondents preferred the buck: doe ratio objective to be kept the same or slightly lower for the Sandhills pronghorn herd. The preferred (status quo) sex ratio objective alternative in this DAU is 25-30:100, which satisfies many surveyed landowners and fits well with a smaller-sized pronghorn herd.

Responses from the 2023 Opt-In hunter survey indicated that the hunting community preferred a slight increase to the current management objectives (Appendix D). The proposed objectives were also presented to the local Habitat Partnership Program (HPP) for landowner input and the committee felt that landowners would be accepting of the objectives in this plan (Appendix E). Input for these herd management objectives was further solicited through posting on the CPW website for 30-day public comment.

SOUTH PARK PRONGHORN HERD MANAGEMENT PLAN
DATA ANALYSIS UNIT PH-30

Mark Fisher, Wildlife Biologist, Denver

GMUs: 49, 50, 57, 58, 500, 501, 511, 581 Last HMP Approval Year: 2012
Post-hunt Modeled Population: Previous Objective: 1,000-1,200; 2023 Estimate: 1,185 pronghorn **Preferred Alternative: 1,100-1,400 pronghorn**
Post-hunt Modeled Sex Ratio (bucks:100 does): Previous Objective: 30-35; 2023 Observed Pre-hunt: 40; 3-yr Modeled average: 39 **Preferred Alternative: 35-40 bucks:100 does**

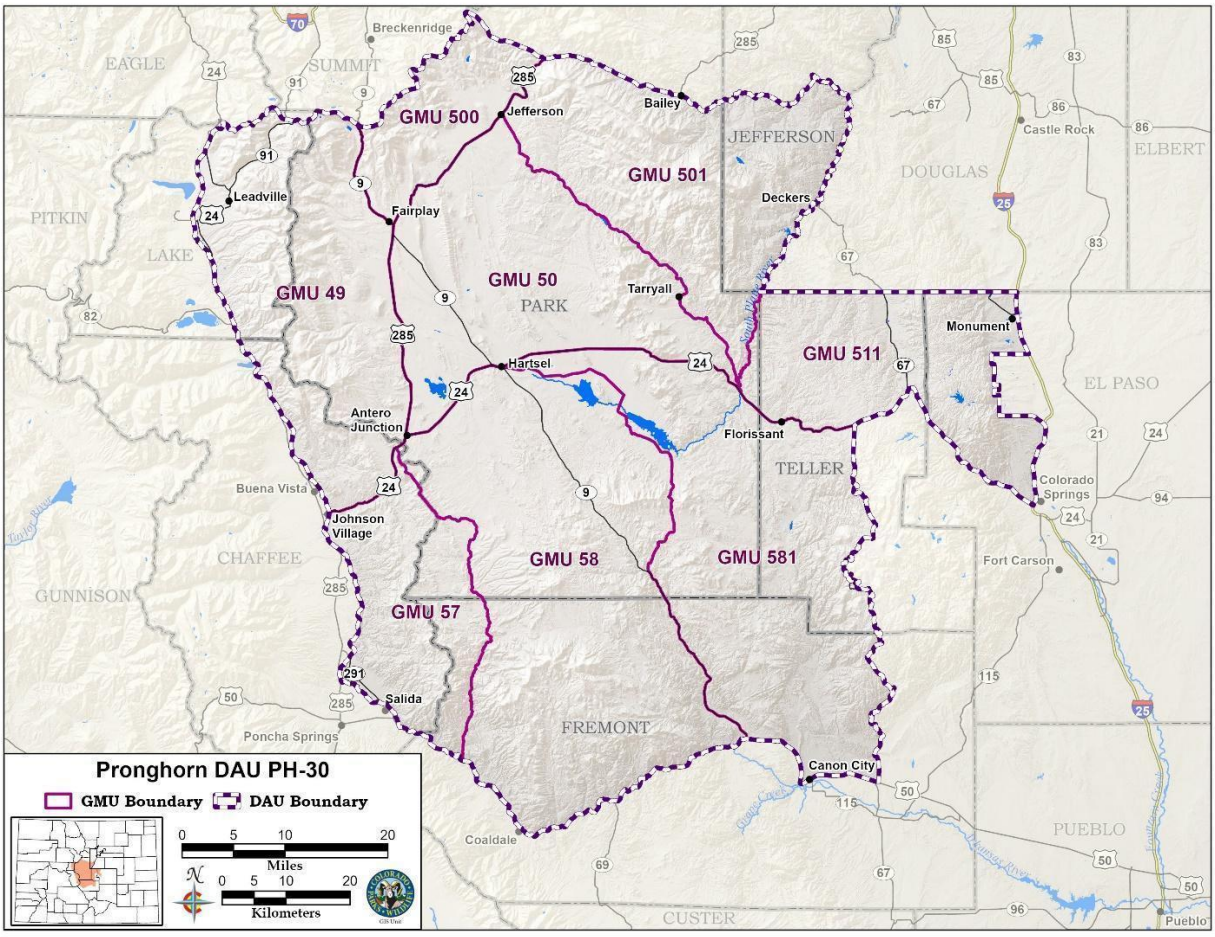


Figure PH30-1. Location of pronghorn DAU PH-30 and associated Game Management Units (GMUs) in northeast Colorado.

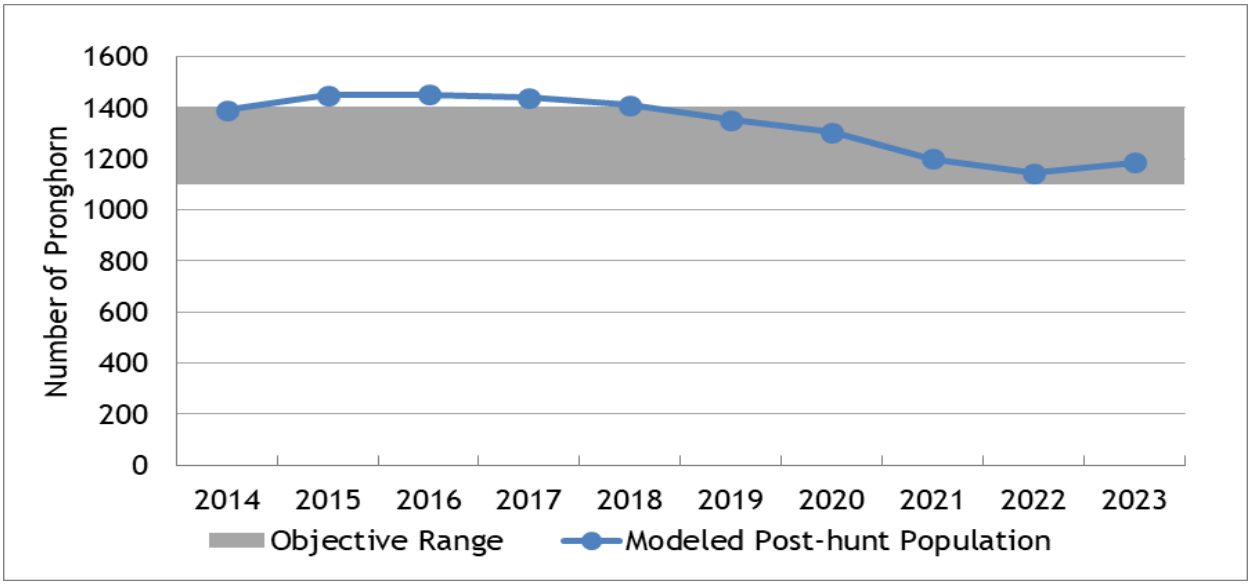


Figure PH30-2. Pronghorn DAU PH-30 modeled post-hunt population and objective range, 2014-2023.

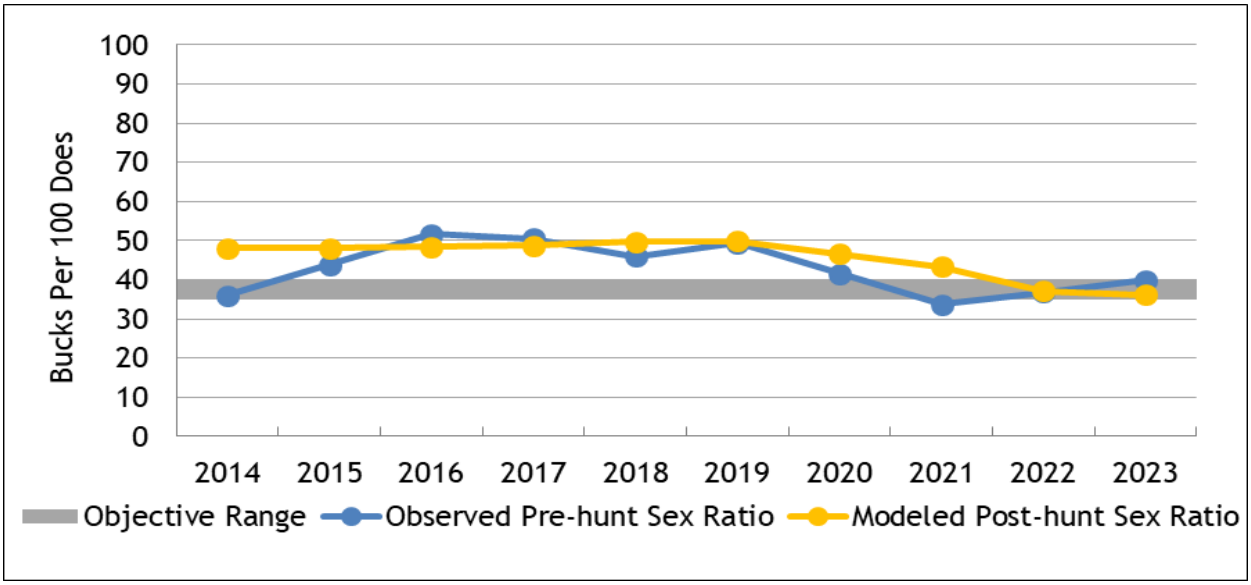


Figure PH30-3. Pronghorn DAU PH-30 observed pre-hunt and modeled post-hunt sex ratio (bucks:100 does), 2014-2023.

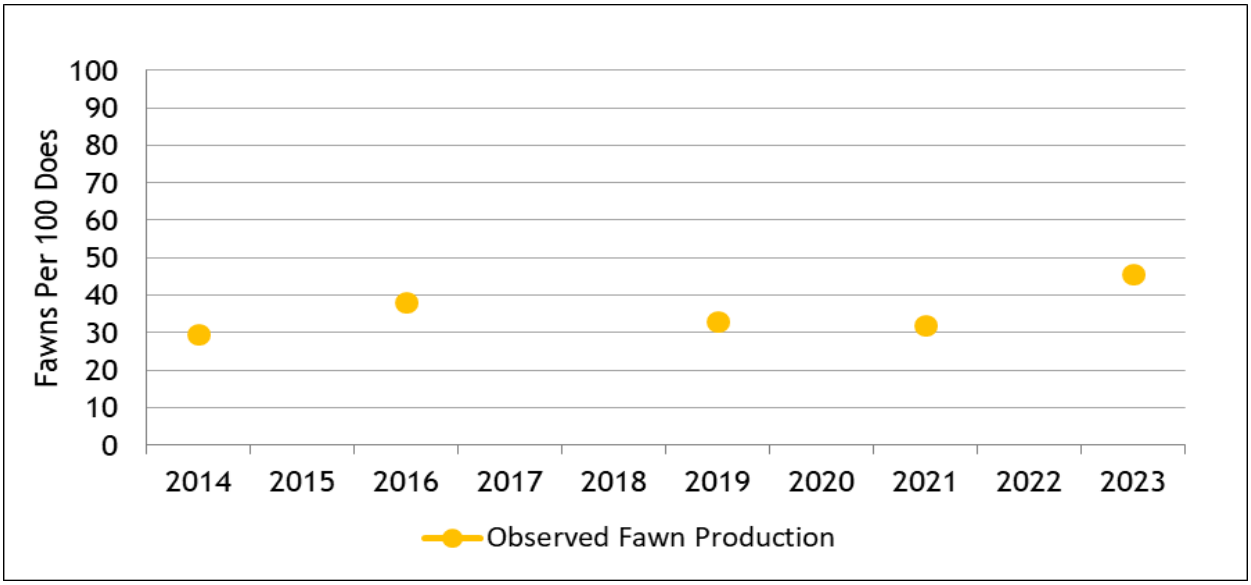


Figure PH30-4. Pronghorn DAU PH-30 observed fawn production (pre-hunt fawns:100 does ratio), 2014-2023.

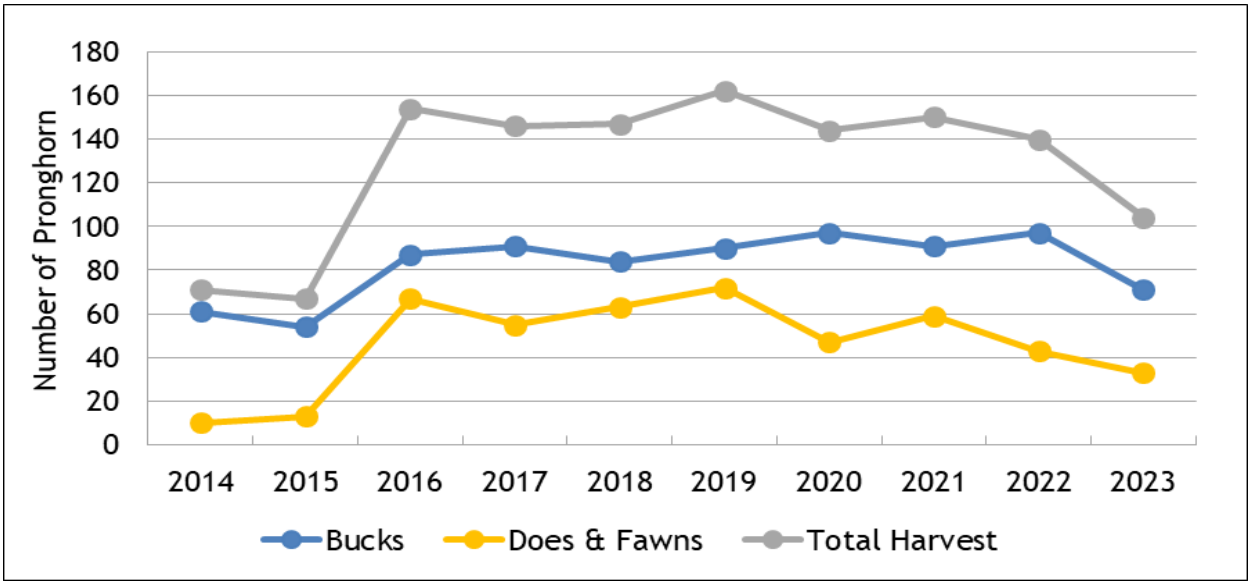


Figure PH30-5. Pronghorn DAU PH-30 harvest estimates, 2014-2023.

Background Information

The South Park pronghorn DAU (PH-30) encompasses approximately 3,896 mi^2 and consists of Game Management Units (GMUs) 49, 50, 57, 58, 500, 501, 511, and 581 (Figure PH30-1). This DAU contains Park County and portions of Fremont, Jefferson, Lake, Chaffee, and El Paso counties. Habitat varies widely from short-grass prairie to alpine tundra. Mountain slopes are dominated by mixed-conifer forests and aspen stands. However, pronghorn habitat is confined to the South Park basin, which is primarily grass-dominated steppe ecosystem. The Park basin also features some of the largest expanses of montane wetlands, primarily salt flats and marshes, in the western United States.

At just under 2.5 million acres, approximately 53% of the DAU is public land administered by the U.S. Forest Service (USFS) or the Bureau of Land Management (BLM). There is also a considerable amount of State-owned lands including several managed by CPW. State Wildlife Areas (SWA) within PH-30 total just over 35,000 acres, of which 28,000 acres are within overall pronghorn range. However, most of the pronghorn range is in private ownership (60%). Cattle ranching and residential development are the major land uses in the private portions of the DAU. Although most of the South Park DAU consists of rangeland, there is some farming, but it is primarily limited by climate and topography. Continued land conversion may make this pronghorn herd particularly vulnerable to decreasing habitat availability, especially in subdivided areas. Heavy recreational use of the public land occurs throughout the year and is expected to increase as a result of the increasing human population in the state.

The South Park pronghorn herd has the distinction of being the highest elevation herd in Colorado. This herd is likely at the extent of the pronghorn's habitat range, occupying a high elevation (9,000-10,000 ft) grassland steppe ecosystem. This herd is unique from other pronghorn herds in Colorado, as it will regularly use areas within aspen, ponderosa, or pinyon-juniper forest cover. The majority of pronghorn habitat is contained within GMUs 50, 58, and to a lesser extent, GMU 581. Winter range tends to be towards the eastern and southern edges of the Park. The climate varies significantly with season, elevation, and aspect. Winter temperatures can record daily averages into the negatives, while summer can reach into the 80-90°F range. Average precipitation is variable and averages 14 inches of rain and 84 inches of snow per year.

The pronghorn population in PH-30 has been on a generally decreasing trend after peaking in 2016 at 1,451 pronghorn (Figure PH30-2). The pronghorn herd has experienced normal population fluctuations associated with weather conditions, hunting pressure, and population dynamics. The modeled post-hunt buck:doe ratio has averaged 46 bucks:100 does over the past 10 years, ranging from 50 bucks in 2018 and 2019 to 36 bucks in 2023 (Figure PH30-3). Observed fawn:doe ratios have averaged 36 fawns:100 does, ranging from a high of 46 fawns in 2023 to a low of 30 fawns in 2014 (Figure PH30-4).

Over the past 10 years, the annual pronghorn harvest has ranged from a high of 162 pronghorn in 2019 to a low of 67 pronghorn in 2015 (Figure PH04-5). The average harvest since 2014 is 129 pronghorn. Buck harvest has ranged from a low of 54 bucks in 2015 to a high of 97 in 2020 and 2022, averaging 82 bucks over the past decade. Doe harvest has ranged from a high of 72 does in 2019 to a low of 10 does in 2015.

Significant Issues

Habitat loss is a primary threat to this herd, with increasing human activities and development on all land types. Limited habitat availability can potentially lead to a myriad of issues that include increased human/wildlife interactions, increases in property damage, decreased hunter access and opportunity, and decreases in wildlife viewing. Public feedback from individuals in the hunting community has suggested a concern for limited access due to the quantity of private lands in the DAU. The remaining public lands have seen an increase in recreational use year-round. While infrequent, the South Park herd has been documented in the past for causing property damage during severe winter months when food resources are limited.

Management Alternatives

The PH-30 pronghorn herd has been managed under the current objectives of 1,000–1,200 pronghorn and 30–35 bucks:100 does that were established in 2012. Three alternatives were considered for the post-hunt population size (Table PH30-1) and sex ratio (Table PH30-2).

Table PH30-1. Proposed population alternatives for PH-30.

Population Objective Alternatives:	
1,100 to 1,400 pronghorn	**(1) 18% increase from the current population estimate**
1,000 to 1,200 pronghorn	(2) Status Quo (Maintain current population objective)
900 to 1,000 pronghorn	(3) 14% decrease from the current population estimate

Table PH30-2. Proposed sex ratio alternatives for PH-30.

Sex Ratio Objective Alternatives:	
35-40:100 buck:doe ratio	**(1) Increase buck ratio objective by 5 bucks per 100 does**
30-35:100 buck:doe ratio	(2) Status Quo (Maintain current sex ratio objective)
25-30:100 buck:doe ratio	(3) Decrease buck ratio objective by 5 bucks per 100 does

Management Objectives

Preferred Population Objective: 1,100–1,400 pronghorn.
Based on CPW and public input, we recommend increasing the population objective range to 1,100-1,400 pronghorn.

Preferred Sex Ratio Objective: 35–40 bucks:100 does.
Based on CPW and public input, we recommend increasing the sex ratio target to an objective of 35-40 bucks:100 does.

Strategies for Addressing Management Issues and Achieving Objectives

The current pronghorn population (~1,185 pronghorn) is within and near the middle of the proposed objective range, and the current buck:doe ratio (39 bucks:100 does) is within the proposed objective range. A slight increase in population range and sex ratio objective will allow managers to bracket the current herd, with the ability to allow flexibility to meet public demand. CPW has a variety of tools available to manage this herd towards the preferred management objectives and staff will continue to collect population data to develop adaptive management recommendations.

The South Park herd is managed for hunter opportunity, while being recognized as a very unique and in-demand population. However, private lands and limited access are key considerations. Recent decreases in doe licenses will assist to manage the population within the population objective range as well as maintain the buck:doe sex ratio. CPW will continue to work with other land management agencies, landowners, county governments, and Non-Governmental Organizations.

Stakeholder Outreach and Input

In 2022, CPW surveyed a sample of first-choice hunter applicants for PH-30 from 2019, 2020, and 2021. We mailed 654 postcards notifying applicants of the survey and how to access the survey online. We received 82 hunter responses for a 12.5% response rate. Of those, 25% were landowners within the DAU. Fifty-eight percent of responses showed crowding from other hunters was not a concern (Figure PH30-5). Regarding the population size, 72% of respondents preferred no change or a slight increase in pronghorn numbers. Thirty-three percent answered that the herd should be managed to maximize buck hunting opportunity. Complete survey results can be found in Appendix C. Responses from the 2023 Opt-In hunter survey indicated that hunters also preferred no change or a slight increase in the population size and managing for mature bucks (Appendix D).

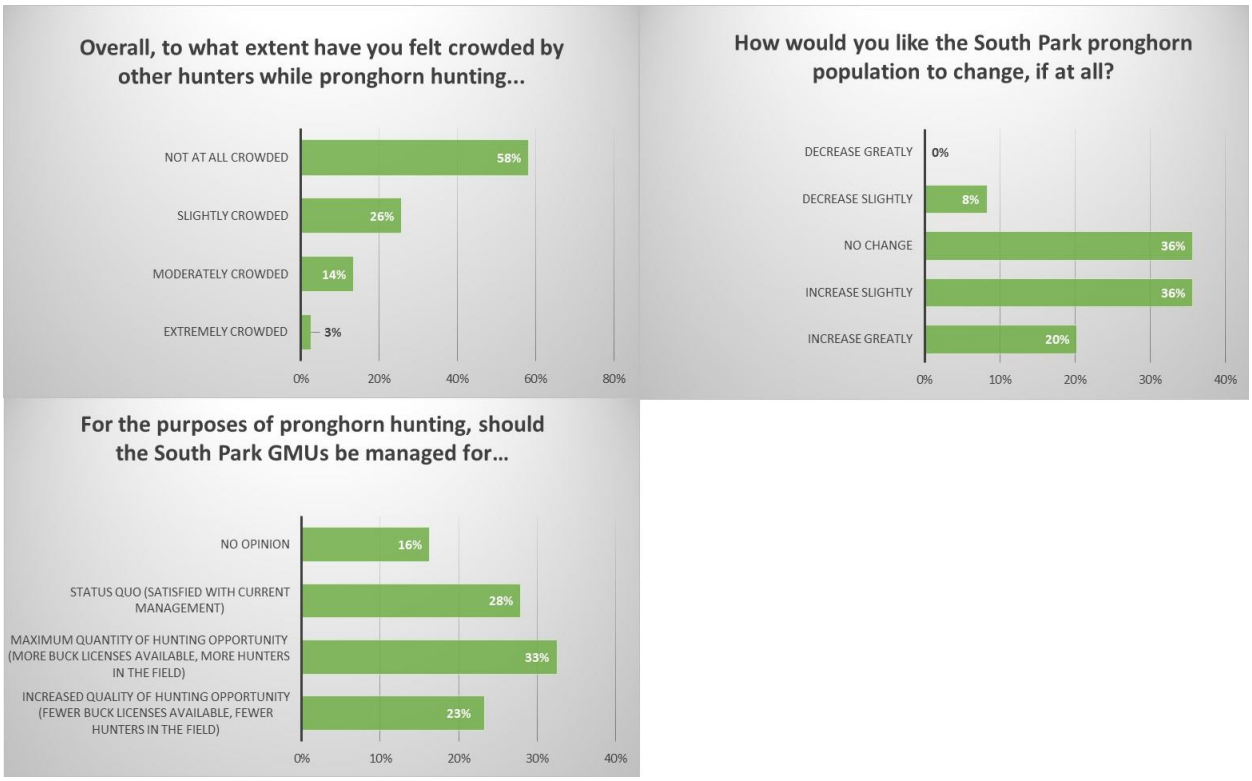


Figure PH30-5. Results from Questions 12, 15, and 16 from the 2022 PH-30 hunter survey, Appendix C, regarding hunter crowding, future population size, and pronghorn buck hunting opportunities.

In 2023, a small landowner survey was conducted in PH-30. A sample of 300 landowners owning property 35-159 acres in size was selected. Landowners were mailed a survey and a postage paid return envelope that also contained a link to a digital option. Two weeks after the initial mailing, landowners were sent a reminder postcard with the online survey link.

We received 111 survey responses from the 300 landowners sampled (37% response rate). A majority (55%) of the landowners owned under 50 acres and 97% of the respondents had never hunted pronghorn in the DAU. The majority of respondents (64%) preferred a slight increase or no change in the population objective over the next 10 years. For managing the buck:doe

ratio objective, the majority of responses preferred status quo (38%) or an increase (20%) in the sex ratio. Complete survey results can be found in Appendix B.
Input for these herd management objectives was further solicited through posting on the CPW website for 30-day public comment.

KIOWA PRONGHORN HERD MANAGEMENT PLAN
DATA ANALYSIS UNIT PH-35

Mark Fisher, Wildlife Biologist, Denver

GMUs: 104 & 105 Last HMP Approval Year: 2012
Post-hunt Modeled Population: Previous Objective: 4,000-5,000 2023 Estimate: 4,170 pronghorn **Preferred Alternative: (Status quo) 4,000-5,000 pronghorn**
Post-hunt Modeled Sex Ratio (bucks:100 does): Previous Objective: 30-35; 2023 Observed Pre-hunt: 51; 3-yr Modeled Average: 43 **Preferred Alternative: (Status quo) 30-35 bucks:100 does**

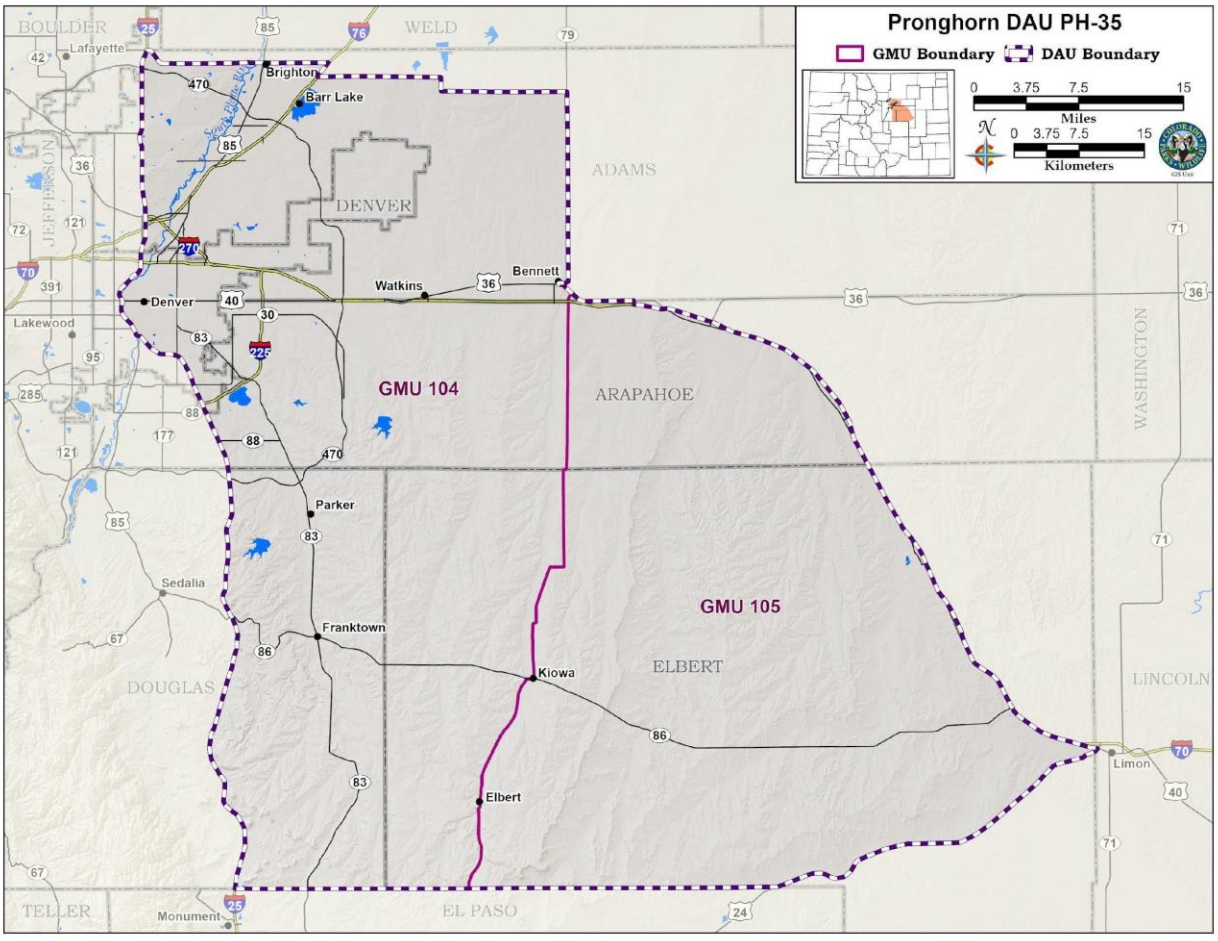


Figure PH35-1. Location of pronghorn DAU PH-35 and associated Game Management Units (GMUs) in northeast Colorado.

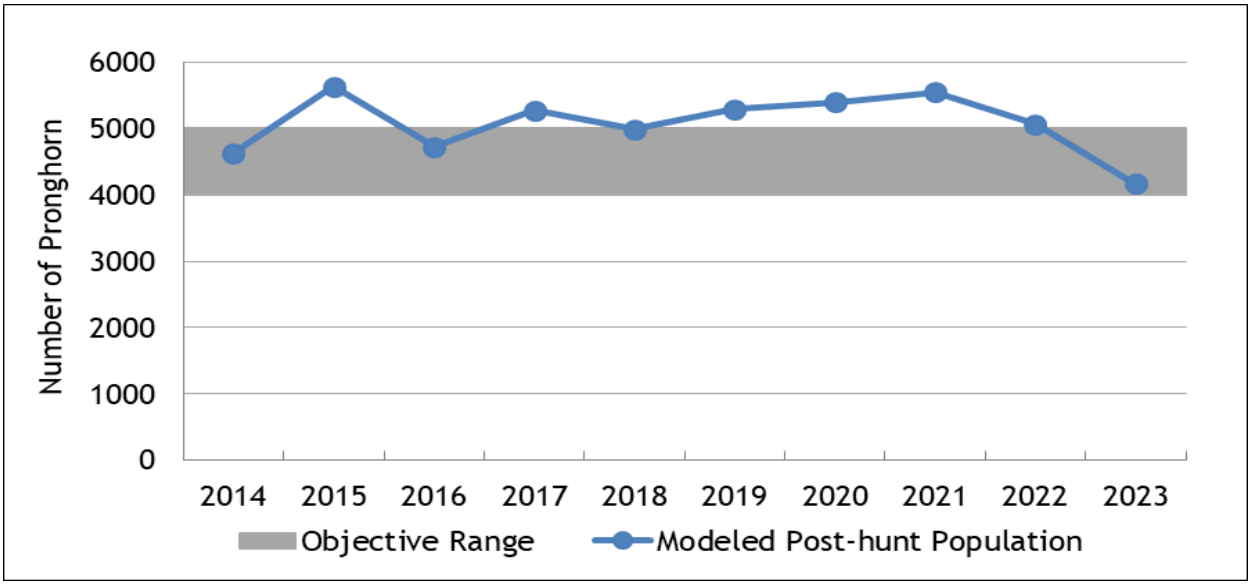


Figure PH35-2. Pronghorn DAU PH-35 modeled post-hunt population and objective range, 2014-2023.

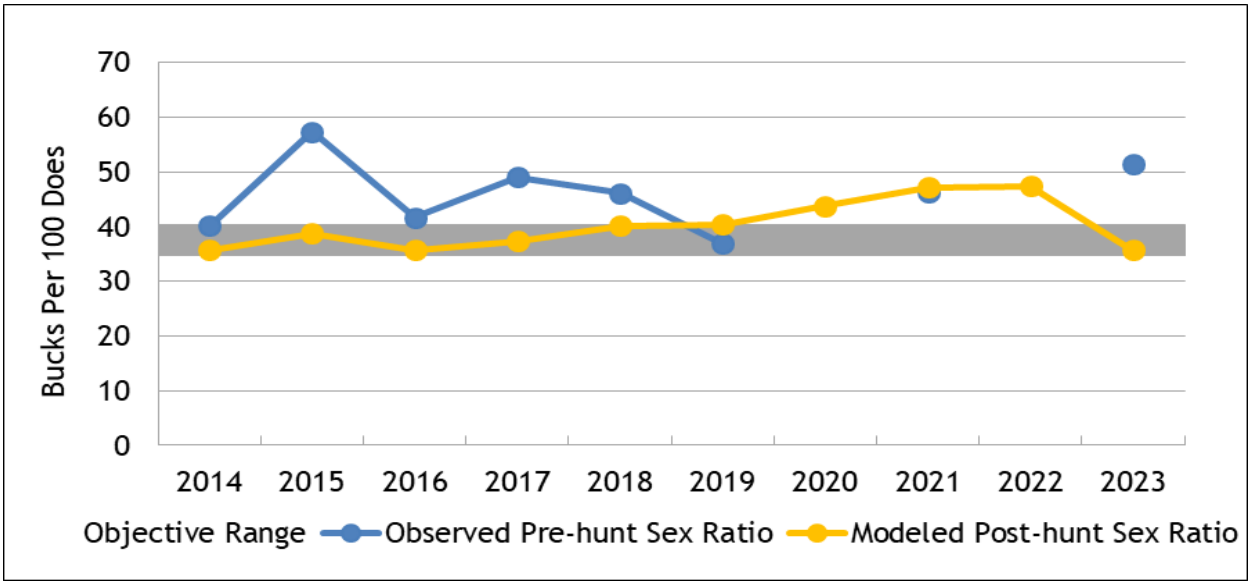


Figure PH35-3. Pronghorn DAU PH-35 observed pre-hunt and modeled post-hunt sex ratio (bucks:100 does), 2014-2023.

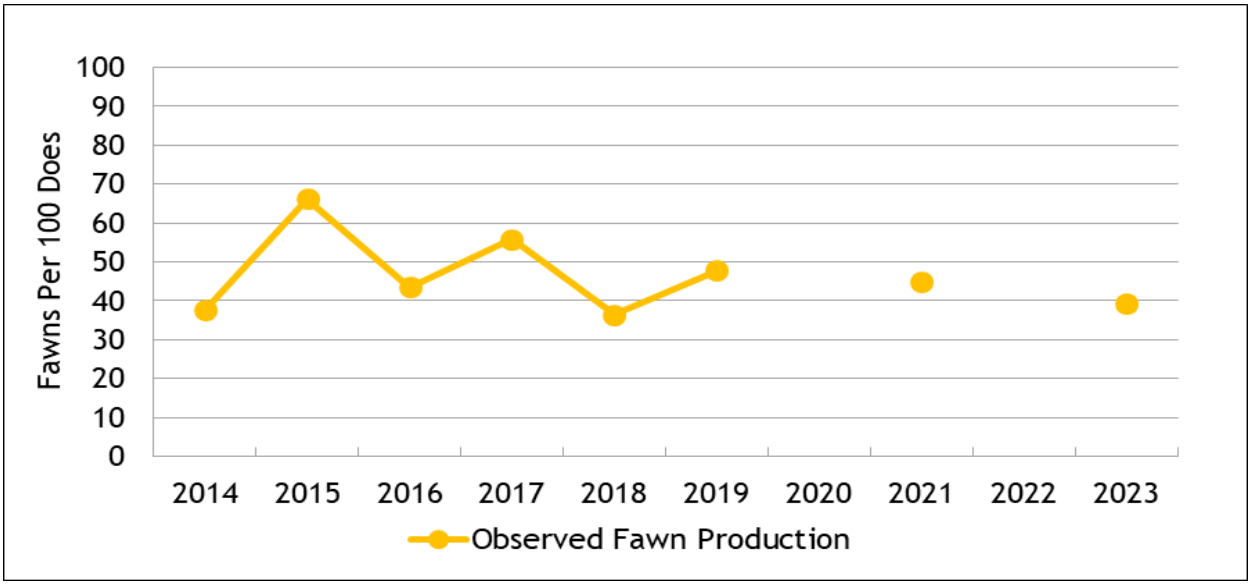


Figure PH35-4. Pronghorn DAU PH-35 observed fawn production (pre-hunt fawns:100 does ratio), 2014-2023.

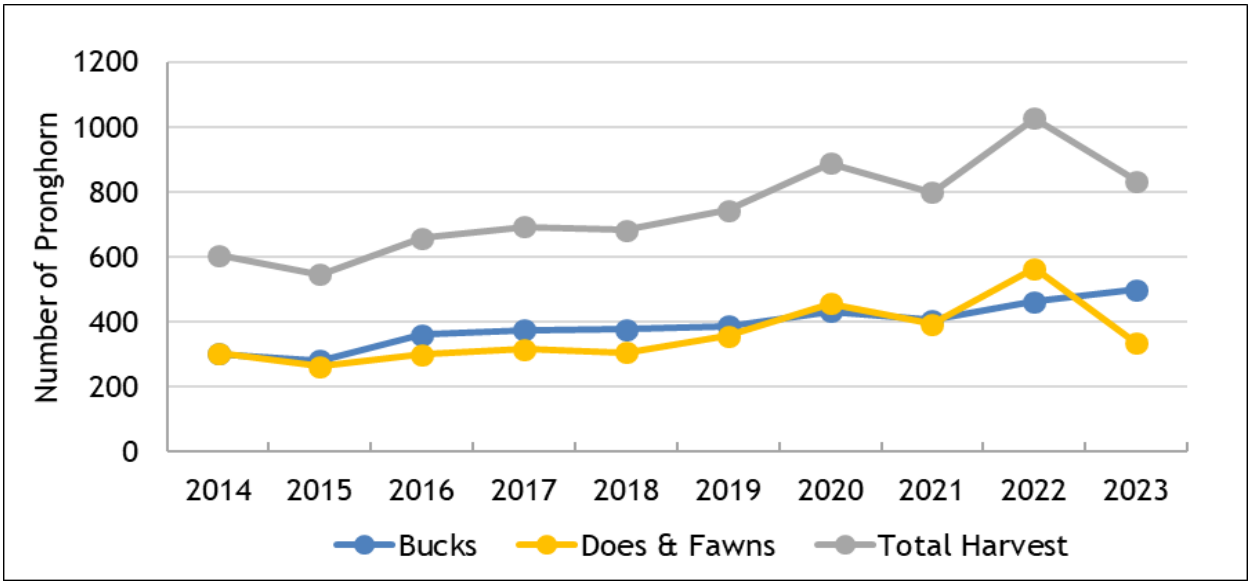


Figure PH35-5. Pronghorn DAU PH-35 harvest estimates, 2014-2023.

Background Information

The Kiowa pronghorn herd (PH-35) comprises Game Management Units (GMUs) 104 and 105 (Figure PH35-1). This DAU encompasses approximately 2,595 mi^2 in east-central Colorado and is bordered by I-25 to the west and I-70 to the east near Limon. The southern boundary is the Elbert-El Paso County line and U.S. Highway 24. In addition to much of the Denver metropolitan area and Denver International Airport, this DAU includes the towns of Castle Rock, Kiowa, Elizabeth, Parker, Bennett, Deer Trail, and Agate. Portions of Adams, Arapahoe, Denver, Douglas, and Elbert Counties are within the boundary. Topography is relatively flat and several habitat types exist, which include urban, shortgrass prairie, ponderosa pine

woodland, cottonwood-willow riparian, dryland agriculture, and irrigated agriculture. The climate is semi-arid with an average annual precipitation of approximately 14-18 inches per year. The snowiest months tend to be March and April and a wide range of weather conditions are common during the winter.

Approximately 90% of DAU PH-35 is private land. Just over five percent is state-owned property, scattered throughout the DAU, with the majority belonging to the State Land Board. Much of GMU 104 is densely populated metropolitan land, especially in the western part of the GMU, which includes Denver and associated suburbs. On-going commercial, residential, and energy development extending from Denver continues to reduce or fragment pronghorn habitat, particularly to the south and east of the metro area.

The Kiowa herd is typically concentrated in open grasslands in GMUs 104 and 105 and the majority of suitable habitat is privately owned. Most of the pronghorn in 104 are in the eastern half of the GMU, where less development has occurred. As development continues to increase, the fragmented habitat that is available will continue to decrease and decline in quality.

The pronghorn population in PH-35 has fluctuated over the last decade from a low of 4,170 pronghorn in 2023 to 5,640 pronghorn in 2015 (Figure PH35-2). The pronghorn herd has experienced normal population fluctuations associated with weather conditions, hunting pressure, and population dynamics. The 3 and 5-year population estimate averages for this pronghorn herd are 4,930 and 5,100 pronghorn, respectively. Since 2014, the modeled post-hunt sex ratio has averaged 42 bucks:100 does, ranging from 47 bucks:100 does in 2022 to a low of 36 bucks:100 does in 2014, 2016, and 2023 (Figure PH35-3). Observed fawn:doe ratios have averaged 46 fawns:100 does with a high of 66 fawns in 2015 and a low of 36 fawns in 2018 (Figure PH35-4).

Over the past 10 years, pronghorn harvest has ranged from a high of 1,027 pronghorn in 2022 to a low of 546 pronghorn in 2015 (Figure PH35-5). The 10-year average harvest is 750 pronghorn. Buck harvest has ranged from a low of 282 bucks in 2015 to a high of 499 in 2023, averaging 389 bucks per year over the past decade. Doe harvest has ranged from a high of 564 does in 2022 to a low of 264 does in 2015.

Significant Issues

Habitat loss is a primary threat to this herd with increasing human activities and development on all land types. Public feedback in DAU PH-35 has expressed a concern for the limited available habitat, while hunter access continues to be a challenge due to the 90% private land ownership. Limited habitat can lead to a myriad of issues that include increased human-wildlife interactions, increases in property damage, decreased hunter access and opportunity, and decreases in wildlife viewing.

Management Alternatives

The PH-35 pronghorn herd has been managed under 2012 approved management objectives of 4,000–5,000 pronghorn and 30–35 bucks:100 does. This Herd Management Plan (HMP) and the population and sex ratio objectives presented are a revision of that plan. Three alternatives were considered for the post-hunt population size (Table PH35-1) and the sex ratio (Table PH35-2).

Table PH35-1. Proposed population objective alternatives for PH-35.

Population Objective Alternatives:	
4,400 to 5,400 pronghorn	(1) 10% increase from the current population estimate
4,000 to 5,000 pronghorn	**(2) Status Quo (Maintain current population)**
3,600 to 4,400 pronghorn	(3) 10% decrease from the current population estimate

Table PH35-2. Proposed sex ratio objective alternatives for PH-35.

Sex Ratio Objective Alternatives:	
35-40:100 buck:doe ratio	(1) Increase buck ratio objective by 5 bucks per 100 does
30-35:100 buck:doe ratio	**(2) Status Quo (Maintain current sex ratio)**
25-30:100 buck:doe ratio	(3) Decrease buck ratio objective by 5 bucks per 100 does

Management Objectives

Preferred Population Objective: 4,000–5,000 pronghorn.
Based on CPW and public input, we recommend maintaining the population at the current objective of 4,000-5,000 pronghorn.

Preferred Sex Ratio Objective: 30–35 bucks:100 does.
Based on CPW and public input, we recommend maintaining the sex ratio at the current objective of 30-35 bucks:100 does.

Strategies for Addressing Management Issues and Achieving Objectives

The current pronghorn population (~4,170 pronghorn) is within the objective and the modeled buck:doe ratio (36 bucks:100 does) is slightly above the objective range. A status quo recommendation is being proposed with an emphasis to maintain the population at the lower end of the objective range, which would be the lowest the population will have been since 2002, based on current modeled estimates. Both buck and doe licenses were increased in 2022 and 2023 to reduce the population. In addition, CPW staff will continue to communicate hunter access concerns with landowners, as well as, discuss other methods to encourage hunters and landowners to utilize the doe licenses available.

Stakeholder Outreach and Input

In 2022, CPW surveyed landowners participating in the Landowner Preference Program in PH-35. We mailed 174 postcards notifying landowners of the survey and how to access the survey online. We received 32 landowner responses for an 18% response rate. The majority of landowners conveyed that the pronghorn population was too large and that many of them experienced damage to their crops and/or their fences, primarily during fall and winter months and preferred a population decrease. Landowner feedback did not mention severe issues with hunting management strategies, while 55% of responding landowners stated that they have allowed more hunters on their property in the last ten years (Figure PH35-6). Complete survey results can be found in Appendix A.

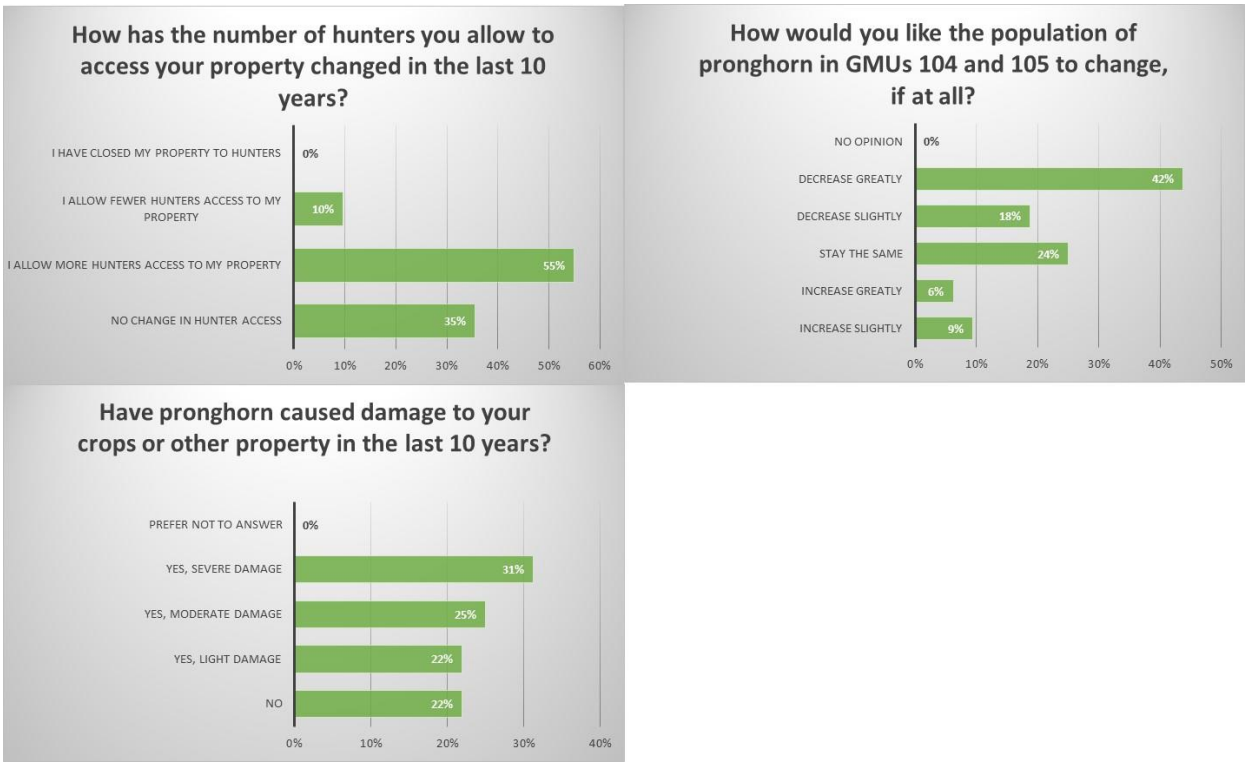


Figure PH35-6. Results from Questions 8, 9, & 11 from the 2022 PH-35 Landowner Preference Program survey, Appendix A, regarding hunter access, pronghorn population size, and property damage.

In 2023, a small landowner survey was conducted in PH-35. A sample of 300 landowners owning property 35-159 acres in size was selected. Landowners were mailed a survey and a postage paid return envelope that also contained a link to a digital option. Two weeks after the initial mailing, landowners were sent a reminder postcard with the online survey link. Complete survey results can be found in Appendix B.

We received 80 survey responses from the 300 small landowners sampled. Forty-one percent of landowners owned 35 to 50 acres, while 25% owned 101 to 159 acres. Eighty-three percent of the respondents had never hunted pronghorn in the DAU. The majority of respondents (51%) preferred a slight increase (24%) or no change (27%) in the population objective over the next 10 years. For the sex ratio objective, the majority of respondents preferred status quo (41%) or an increase (20%) in the sex ratio.

The 2023 modeled post-hunt estimate for this herd is 4,170 pronghorn, which is at the bottom end of the current objective of 4,000-5,000 pronghorn. CPW believes the status quo population objective alternative of 4,000-5,000 satisfies a majority of respondents' desires. Hunter opt-in survey respondents from the 2023 season were nearly evenly split with 52% preferring a quality management objective and 48% preferring the opportunity to hunt more often. Thus, the preferred sex ratio objective for this DAU is 30-35 bucks:100 does. CPW considers this to be a moderate level that balances both 'quality' and 'quantity' management philosophies and this alternative satisfies a majority of respondent desires. Input for these herd management objectives was further solicited through posting on the CPW website for 30-day public comment.

Herd Management Plan Extensions

DAU	Pronghorn Herd	Current Herd Management Plan Approved	Current Post-Hunt Modeled Population Objective	2023 Post-hunt Modeled Population Estimate	Current Post-Hunt Modeled Sex Ratio Objective	3-Yr Avg Post-Hunt Modeled Sex Ratio	Proposed Post-Hunt Modeled Population Objective	Proposed Post-Hunt Modeled Sex Ratio Objective
PH-02	**Hardpan**	2018	1,400-1,700	1,100	25-30	32	Extension	Extension
PH-33	**Cherokee Park**	2020	1,000-1,200	1,170	25-30	42	Extension	Extension
PH-36	**Laramie River Valley**	2020	550-650	550	30-35	25	Extension	Extension

HARDPAN PRONGHORN HERD MANAGEMENT PLAN
DATA ANALYSIS UNIT PH-02

Marty Stratman, Wildlife Biologist, Brush

GMUs: 99, 100 Last HMP Approval Year: 2018
Post-hunt Modeled Population: Previous Objective: 1,400-1,700 2023 Estimate: 1,100 pronghorn **Preferred Alternative: (Status quo) 1,400-1,700 pronghorn**
Post-hunt Modeled Sex Ratio (bucks:100 does): Previous Objective: 25-30; 2023 Observed Pre-hunt: 36; 3-yr Modeled average: 32 **Preferred Alternative: (Status quo) 25-30 bucks:100 does**

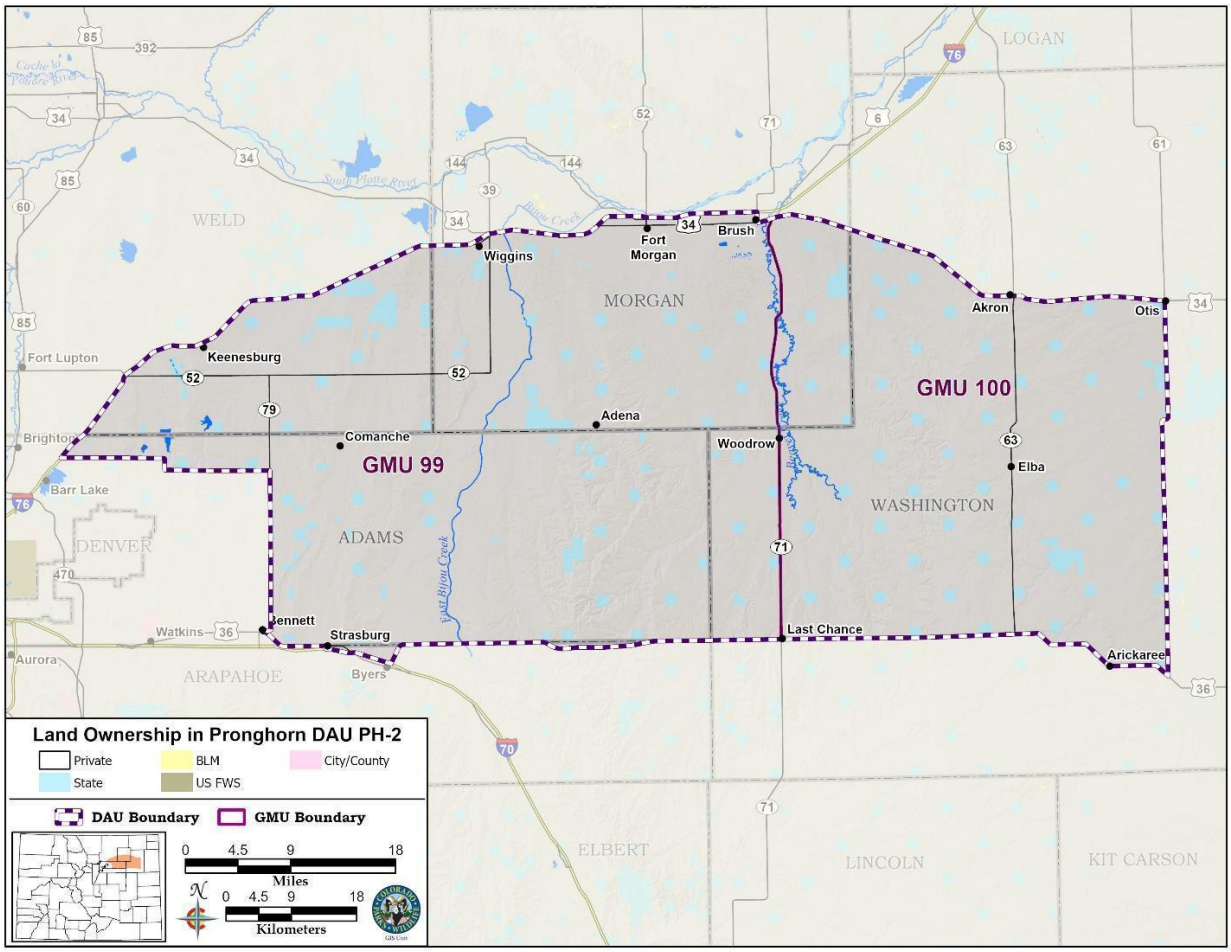


Figure PH02-1. Location of pronghorn DAU PH-02 and associated Game Management Units (GMUs) in northeast Colorado.

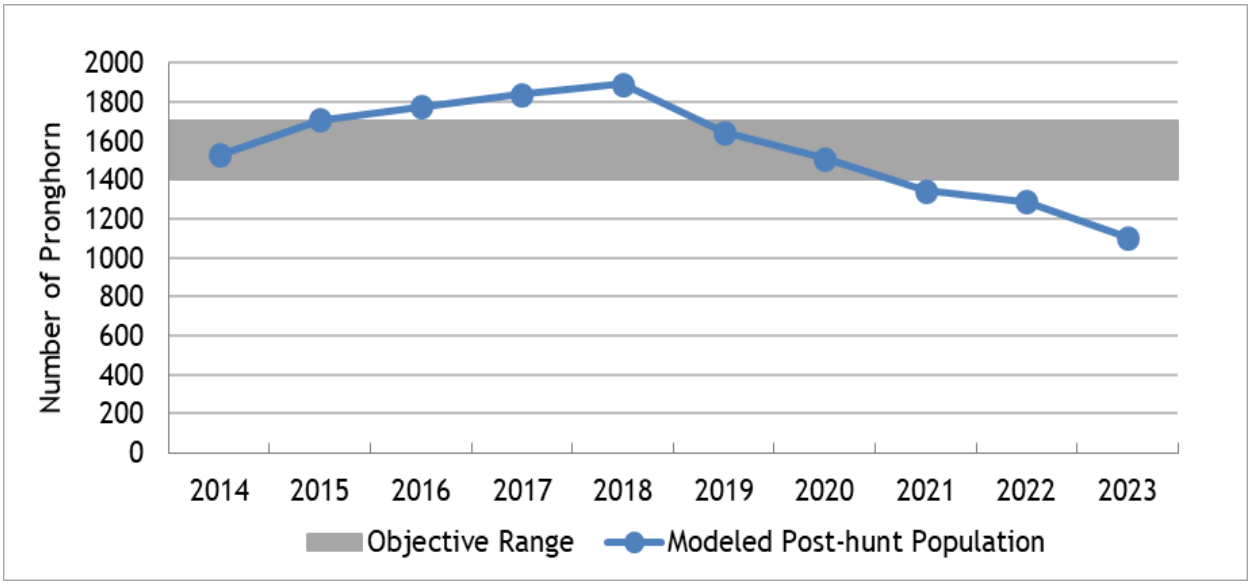


Figure PH02-2. Pronghorn DAU PH-02 modeled post-hunt population and objective range, 2014-2023.

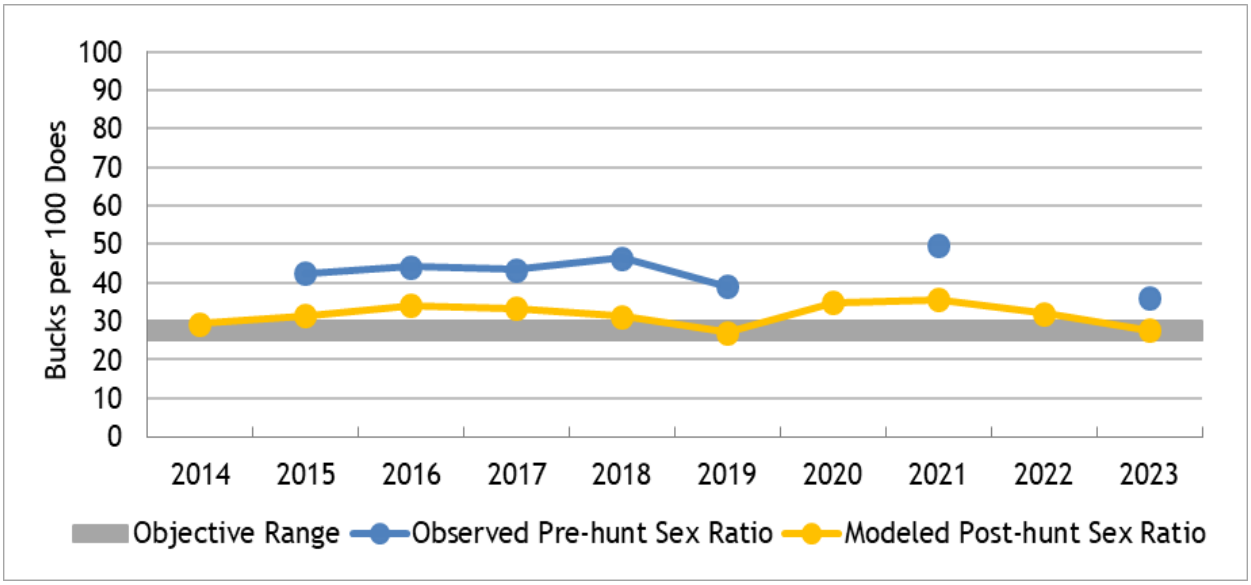


Figure PH02-3. Pronghorn DAU PH-02 observed pre-hunt and modeled post-hunt sex ratio (bucks:100 does), 2014-2023.

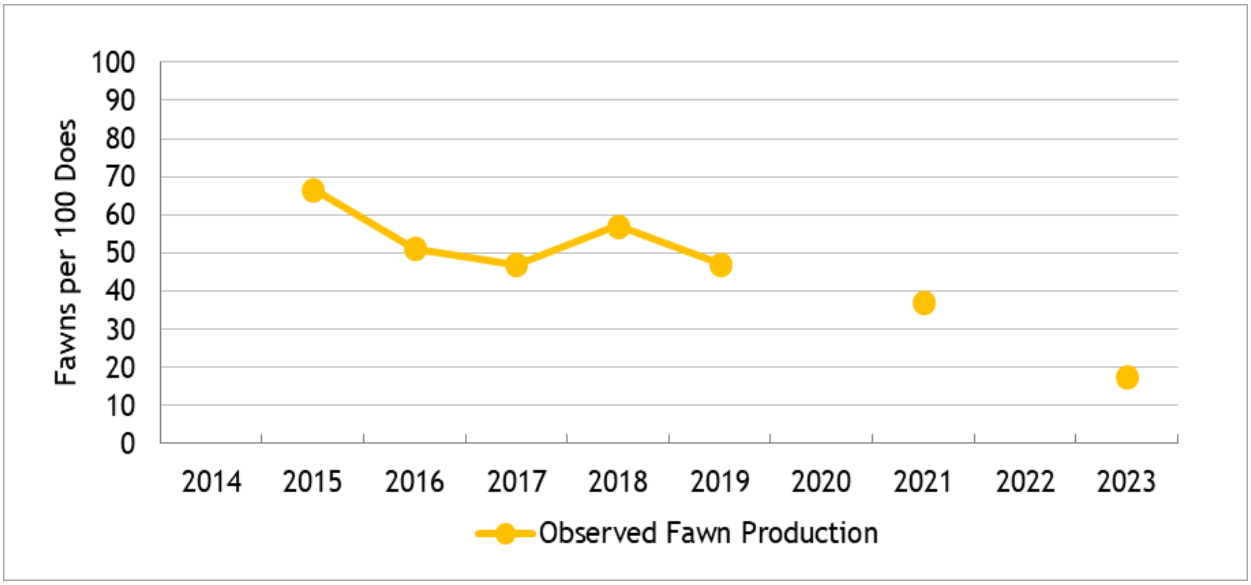


Figure PH02-4. Pronghorn DAU PH-02 observed fawn production (pre-hunt fawns:100 does ratio), 2014-2023.

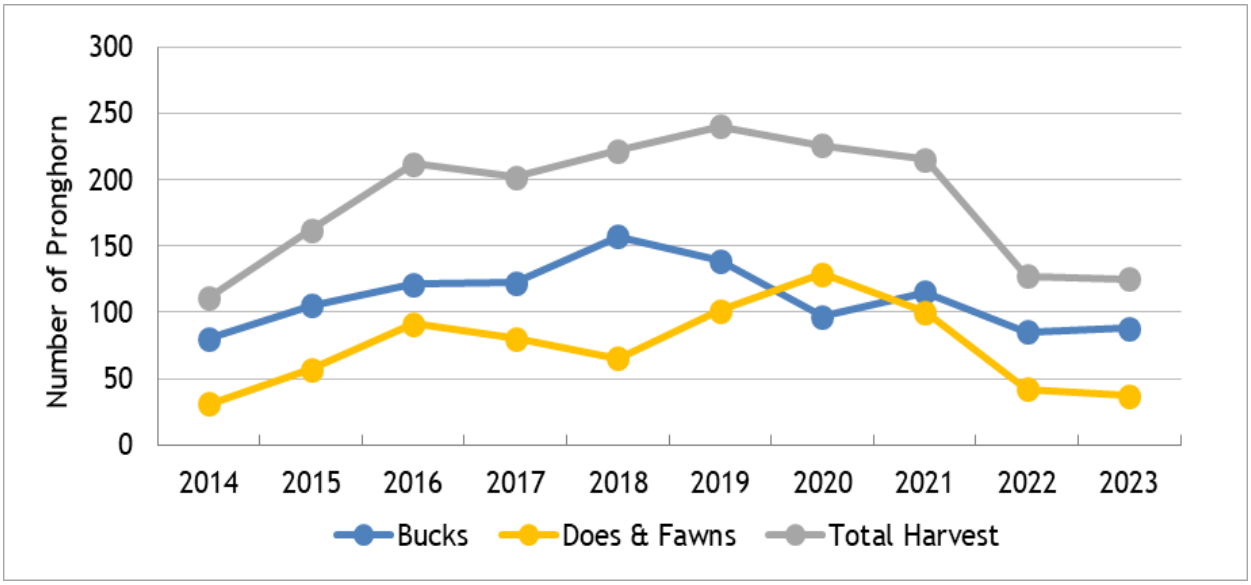


Figure PH02-5. Pronghorn DAU PH-02 harvest estimates, 2014-2023.

Background Information

The Hardpan pronghorn DAU (PH-02) encompasses approximately 2,710 mi^2 in northeastern Colorado and consists of Game Management Units (GMUs) 99 and 100 (Figure PH02-1). There are several habitat types within PH-02, including dry cropland, irrigated cropland, tall-grass prairie, sandsage/mid-grass prairie, short-grass prairie, and Conservation Reserve Program (CRP) lands. Nearly 20% of the area consists of sandsage/mid-grass prairie sandhills. The sandsage/mid-grass prairie is part of a sandhill complex that runs along the northern boundary of the Hardpan. The sandsage/mid-grass prairie has remained stable with little being converted to farmland or development. Quality pronghorn habitat, primarily short-grass prairie, has decreased due to conversion to cropland and changing cropping practices that

emphasize corn and domestic sunflowers as an alternative to a wheat-fallow system. The largest blocks of short-grass prairie are located in the south-central portion of the Hardpan and intermixed in the sandhill complexes along the northern boundary.

Land ownership within the Hardpan is typical of eastern Colorado, with the majority of this area being in private ownership. The only notable exception is the Brush Prairie Ponds State Wildlife Area, owned by CPW, which comprises <1% of this DAU. Land use within the Hardpan is almost exclusively agricultural based. Grazing by livestock is the primary influence on short-grass and sandsage/mid-grass prairie conditions. Center pivot irrigation occurs primarily in the northwest and north-central portions of the area, including the sandhill complex. On the western end of the Hardpan, residential development is encroaching into GMU 99, although to this point, little impact has occurred to pronghorn habitat.

Pronghorn are found throughout the Hardpan. The highest densities are in the southern portion of the Hardpan and are frequently associated with short-grass rangeland in proximity to winter wheat or wheat stubble fields. Generally, pronghorn densities are lowest in areas of intense agricultural use. During the winter months, pronghorn often concentrate near green wheat fields, which can result in complaints from landowners. The climate in the Hardpan is characterized by hot, dry summers and recently, relatively mild winters. Annual precipitation ranges from 13–15 inches, with most occurring during intense summer thunderstorms.

The pronghorn population in PH-02 has varied over the last decade from a low of 1,100 pronghorn in 2023 to 1,890 pronghorn in 2018 (Figure PH02-2). The pronghorn herd has experienced normal population fluctuations associated with weather conditions, hunting pressure, and population dynamics. The 5 and 10-year population estimate averages for the pronghorn herd are 1,375 and 1,560 pronghorn, respectively. Since 2014, the modeled post-hunt buck:doe ratio has averaged 32 bucks:100 does ranging from 27 bucks:100 does in 2019 and 2023 to 35 bucks:100 does in 2021 (Figure PH02-3). Observed fawn:doe ratios have varied from a low of 17 fawns:100 does in 2023 to a high of 67 fawns:100 does in 2015 and has averaged 46 fawns:100 does (Figure PH02-4).

Over the last 10 years, pronghorn harvest has ranged from a high of 240 pronghorn in 2019 to a low of 111 pronghorn in 2014 (Figure PH02-5). The average harvest since 2014 is 184 pronghorn. Buck harvest has ranged from a low of 80 bucks in 2014 to a high of 157 bucks in 2018, averaging 111 bucks over the past decade. Doe harvest has ranged from a high of 129 does in 2020 to a low of 31 does in 2014.

Management Alternatives

The PH-02 pronghorn herd has been managed under the current management plan objectives of 1,400–1,700 pronghorn and 25–30 bucks:100 does that were established in 2018. This Herd Management Plan (HMP) and the population and sex ratio objectives presented are a continuation of that plan. Therefore, no management alternatives were developed.

Management Objectives

Preferred Population Objective: 1,400–1,700 pronghorn.
Maintain the population at the current target objective of 1,600 pronghorn. Doe licenses have been reduced to increase the population to the target objective.

Preferred Sex Ratio Objective: 25–30 bucks:100 does.
Maintain the sex ratio at the current objective of 25–30 bucks:100 does. Buck licenses would remain relatively the same as the herd is expected to remain within the objective range. The demand for buck licenses will continue to be greater than the supply and should remain at current levels.

Strategies for Addressing Management Issues and Achieving Objectives

To address any game damage, CPW will continue to offer dispersal licenses and other game damage programs for landowners that are experiencing pronghorn conflicts, which cannot be addressed through the general hunting seasons, on an individual basis. Additionally, CPW will continue to look for opportunities for hunter access on, or through, private property.

The current pronghorn population size (~1,100 pronghorn) is below the current objective range. The buck:doe ratio (28 bucks:100 does) is within the objective range. Doe licenses have been reduced to increase the population to the objective and current buck license allocation will maintain the buck/doe ratio within objective. This population will continue to be managed to sustain a viable population of pronghorn while continuing to allow hunter opportunity.

Stakeholder Outreach

Input for the current herd management objectives were solicited through a public survey prior to their approval by the Wildlife Commission in 2018. This current herd management plan was posted on the CPW website for 30-day public comment. Responses from the Opt-In hunter survey indicated that the hunting community prefers no change or slight increase to the current management strategies (Appendix D). Input for these herd management objectives was further solicited through posting on the CPW website for 30-day public comment.

CHEROKEE PARK PRONGHORN HERD MANAGEMENT PLAN
DATA ANALYSIS UNIT PH-33
Joe Halseth, Wildlife Biologist, Fort Collins

GMUs: 9 & 191 Last HMP Approval Year: 2020
Post-hunt Modeled Population: Previous Objective: 1,000-1,200 2023 Estimate: 1,170 pronghorn **Preferred Alternative: (Status quo) 1,000-1,200 pronghorn**
Post-hunt Modeled Sex Ratio (bucks:100 does): Previous post-hunt Objective: 25-30 2023 Observed Pre-hunt: 36; 3-yr Modeled average: 42 **Preferred Alternative: (Status quo) 25-30 bucks:100 does**

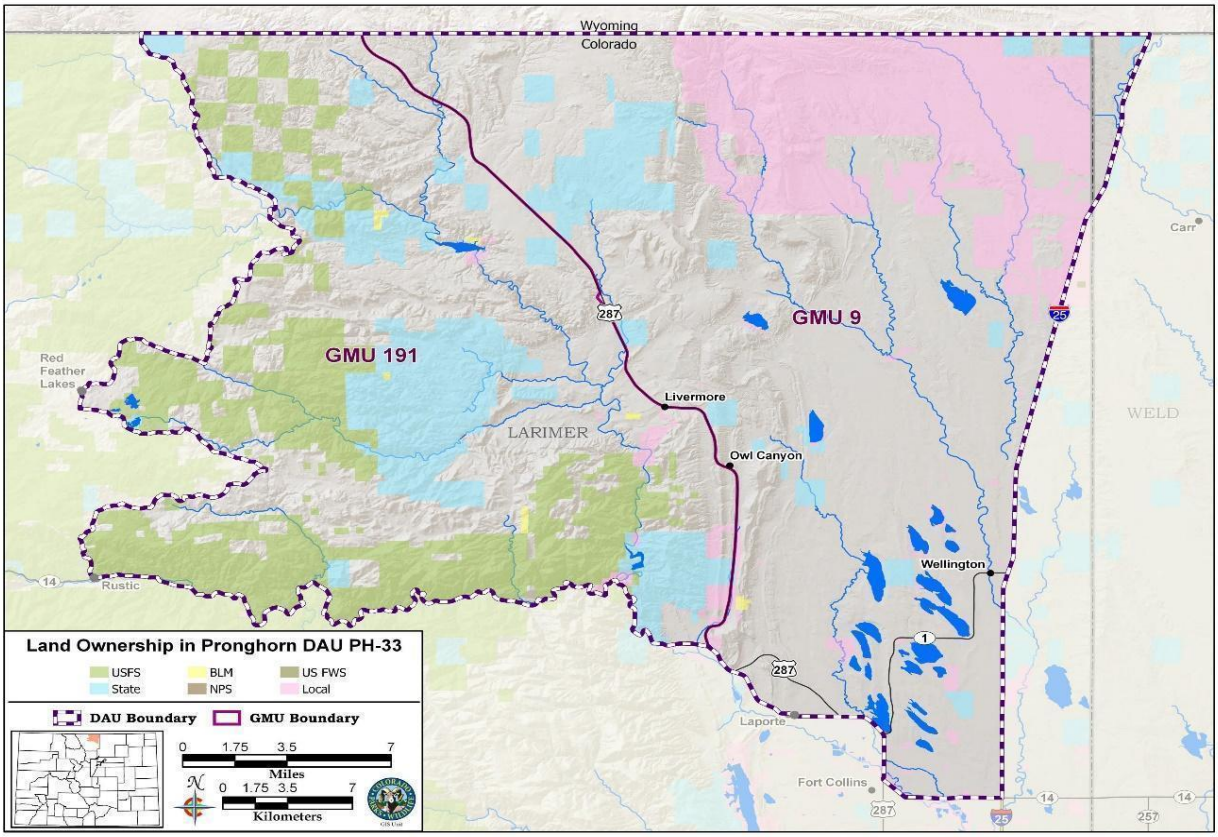


Figure PH33-1. Location of pronghorn DAU PH-33 and associated Game Management Units (GMUs) in northeast Colorado.

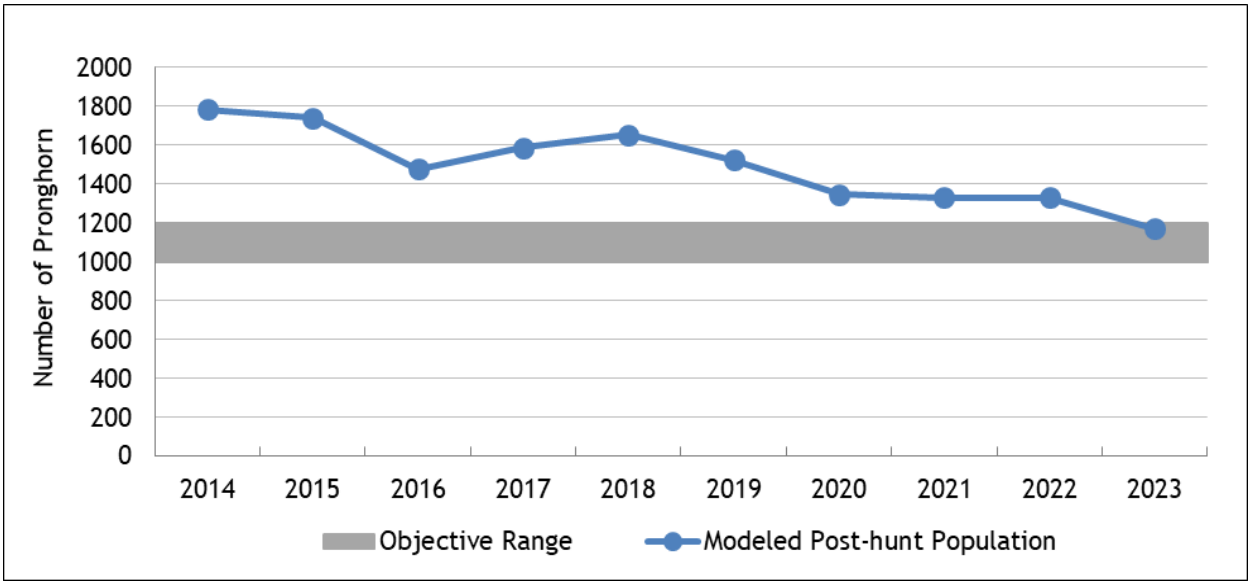


Figure PH33-2. Pronghorn DAU PH-33 modeled post-hunt population and objective range, 2014-2023.

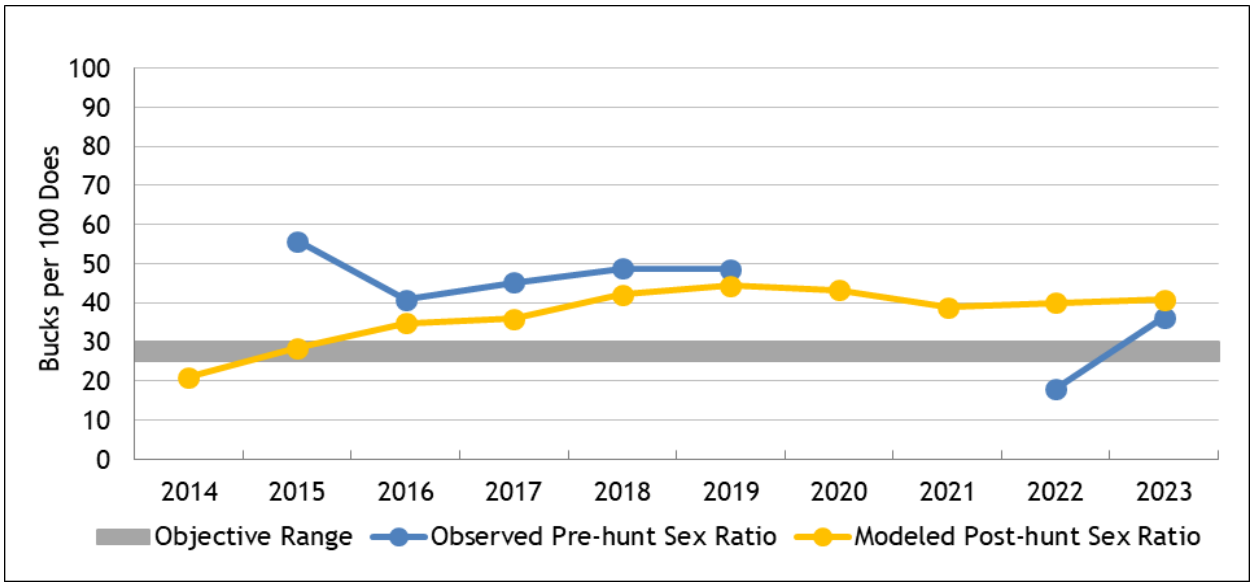


Figure PH33-3. Pronghorn DAU PH-33 observed pre-hunt and modeled post-hunt sex ratio (bucks: 100 does), 2014-2023.

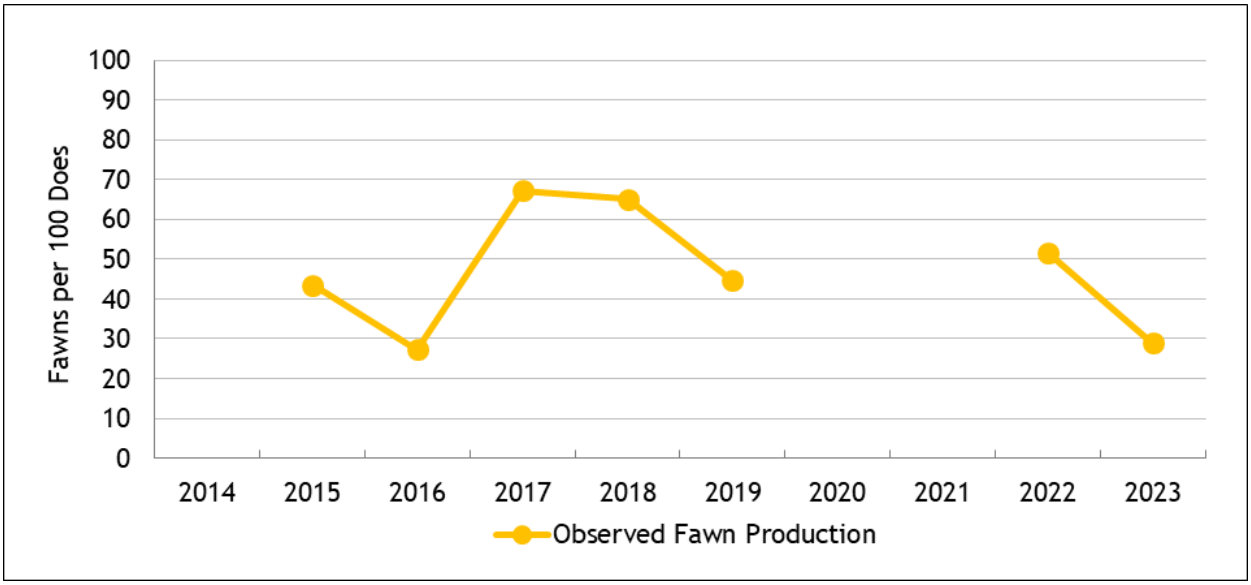


Figure PH33-4. Pronghorn DAU PH-33 observed fawn production (pre-hunt fawns:100 does), 2014-2023.

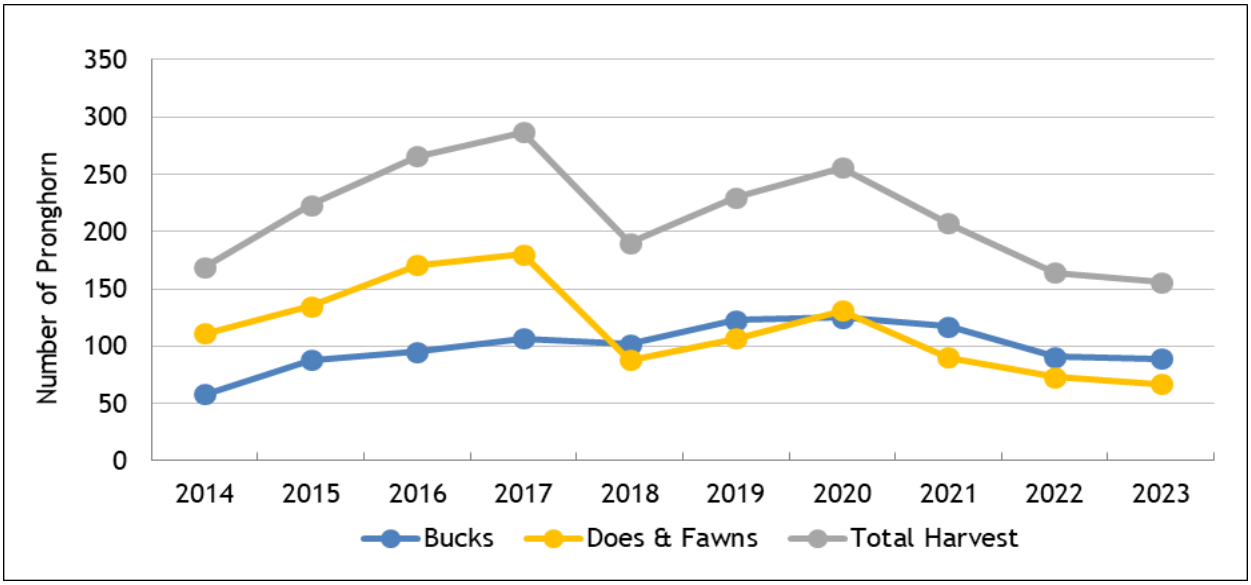


Figure PH33-5. Pronghorn DAU PH-33 harvest estimates, 2014-2023.

Background Information

The Cherokee Park pronghorn herd occupies primarily private land north of Fort Collins along the U.S. Highway 287 corridor and west of I-25. Seasonal migrations are a common occurrence across the border of Colorado and Wyoming. The DAU is 685 mi^2 and consists of Game Management Units (GMUs) 9 and 191 (Figure PH33-1). The majority (61%) of the landscape is private land. Public lands are administered by the U.S. Forest Service (USFS) (14%), city/county governments (14%), and state lands, largely managed by the State Land Board (SLB) or CPW. Development of land in PH-33 for housing and subdivision of larger ranches has contributed to a decrease in pronghorn habitat, mostly in the southern part of GMU 9.

The 2023 modeled population estimate is approximately 1,170 pronghorn (Figure PH33-2). The population is modeled for the resident summer herd and does not include the pronghorn that migrate from Wyoming in the winter. Classification surveys for this herd are conducted via aerial transect counts, which occurs every August prior to the opening of archery season. Since 2014, the number of animals classified during these surveys range from 92-709 pronghorn, with an average of 498 pronghorn classified each year.

Pre-hunt sex ratios have averaged 42 bucks:100 does over the past 10 years (Figure PH33-3) while fawn production has averaged 47 fawns:100 does during that same span (Figure PH33-4). The sex ratio has been trending upward which is expected with the large increases in antlerless licenses over the past 9 years and only a slight increase in buck licenses.

The immigration of pronghorn from Wyoming does not take place every year, sometimes resulting in the overharvest of does from the resident herd. Most of the pronghorn reside on private land, which limits hunter access to pronghorn. Over the last 10 years, pronghorn harvest has ranged from a high of 287 animals in 2017 to a low of 156 pronghorn in 2023 (Figure PH33-5). The average harvest since 2014 is 215 pronghorn. Buck harvest has ranged from a low of 58 bucks in 2014 to a high of 125 bucks in 2020, averaging 97 bucks over the past decade. Doe harvest has ranged from a high of 176 does in 2017 to a low of 65 does in 2023.

Management Alternatives

The PH-33 pronghorn herd has been managed under the current management plan objectives of 1,000–1,200 pronghorn and 25–30 bucks:100 does that were established in 2020. This Herd Management Plan (HMP) and the population and sex ratio objectives presented are a continuation of that plan. Therefore, no management alternatives were developed.

Management Objectives

Preferred Population Objective: 1,000–1,200 pronghorn.
Maintain the current post-hunt population objective of 1,000-1,200 pronghorn. Annual adjustments in licenses would be directed to harvest the migrating pronghorn from Wyoming.

Preferred Sex Ratio Objective: 25–30 bucks:100 does.
Maintain the current sex ratio objective of 25-30 bucks:100 does. This composition aligns with our management capabilities because the majority of the herd resides on private lands making it difficult to achieve a lower buck to doe ratio.

Strategies for Addressing Management Issues and Achieving Objectives

CPW has limited ability to affect several of the issues identified by stakeholders and staff, including habitat loss due to development and hunter access. To address game damage, CPW will offer dispersal licenses and Game Damage programs to landowners that are experiencing pronghorn conflicts, which cannot be addressed through the general hunting seasons, on an individual basis. Additionally, we will continue to look for opportunities for hunter access on or through private property. CPW will also work with land management agencies and landowners to make habitat improvements where possible.

The current pronghorn population size (~1,170 pronghorn) is within the objective and the modeled post-hunt sex ratio is above objective. We will continue to adjust buck and doe licenses until target objectives are achieved.

Stakeholder Outreach

Input for the current herd management objectives were solicited through a public survey prior to their approval by the Wildlife Commission in 2020. This current herd management plan was posted on the CPW website for 30-day public comment. Responses from the Opt-In hunter survey indicated that the hunting community prefers no change to the current management strategies (Appendix D). Input for these herd management objectives was further solicited through posting on the CPW website for 30-day public comment.

LARAMIE RIVER VALLEY PRONGHORN HERD MANAGEMENT PLAN
DATA ANALYSIS UNIT PH-36

Joe Halseth, Wildlife Biologist, Fort Collins

GMUs: 7 & 8 Last HMP Approval Year: 2020
Post-hunt Modeled Population: Previous Objective: 550-650 2023 Estimate: 550 pronghorn **Preferred Alternative: (Status quo) 550-650 pronghorn**
Post-hunt Modeled Sex Ratio (bucks:100 does): Previous Objective: 30-35 2023 Observed Pre-hunt: 30; 3-yr Modeled average: 25 **Preferred Alternative: (Status quo) 30-35 bucks:100 does**

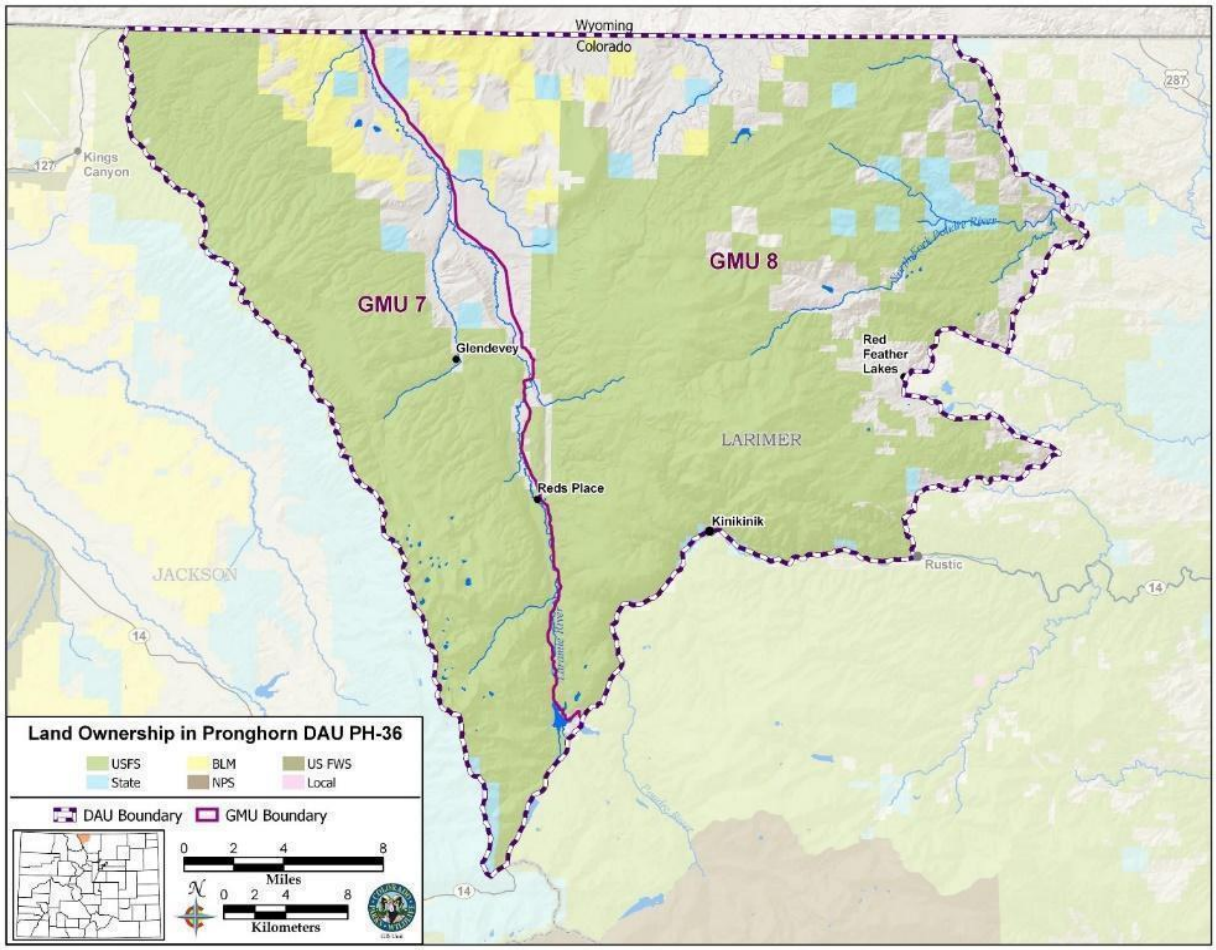


Figure PH36-1. Location of pronghorn DAU PH-36 and associated Game Management Units (GMUs) in northeast Colorado.

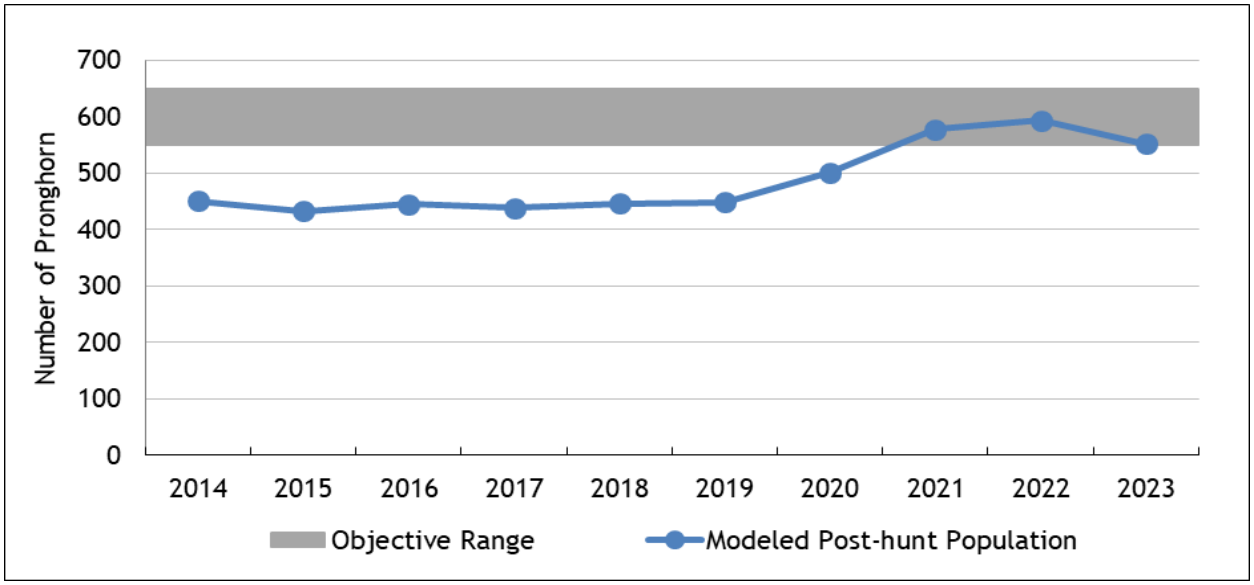


Figure PH36-2. Pronghorn DAU PH-36 modeled post-hunt population and objective range, 2014-2023.

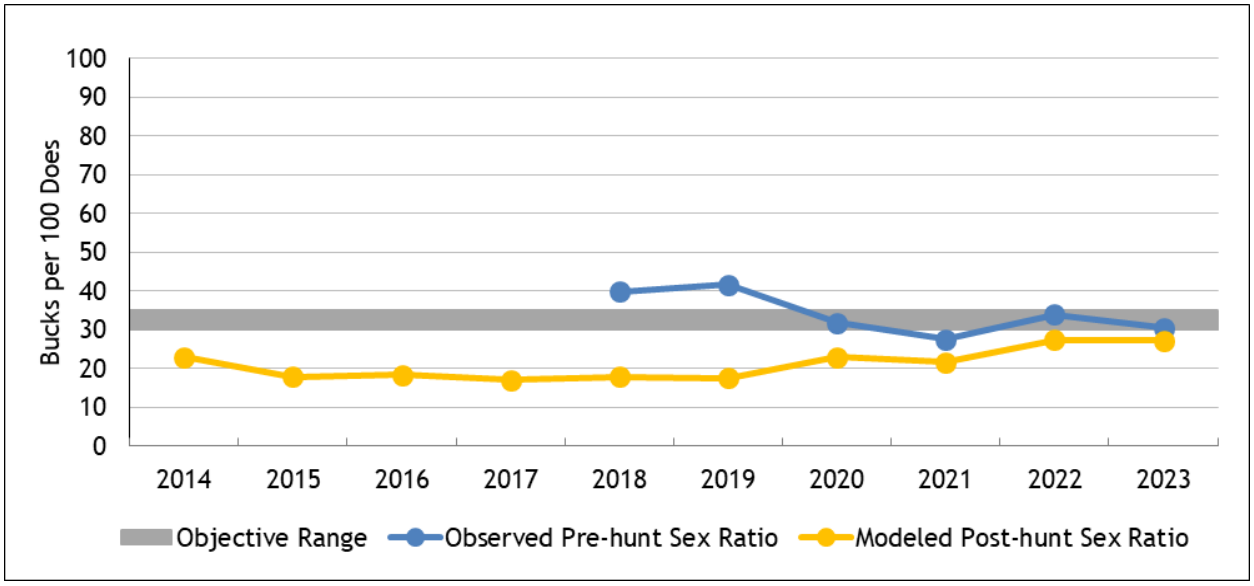


Figure PH36-3. Pronghorn DAU PH-36 observed pre-hunt and modeled post-hunt sex ratio (bucks:100 does), 2014-2023.

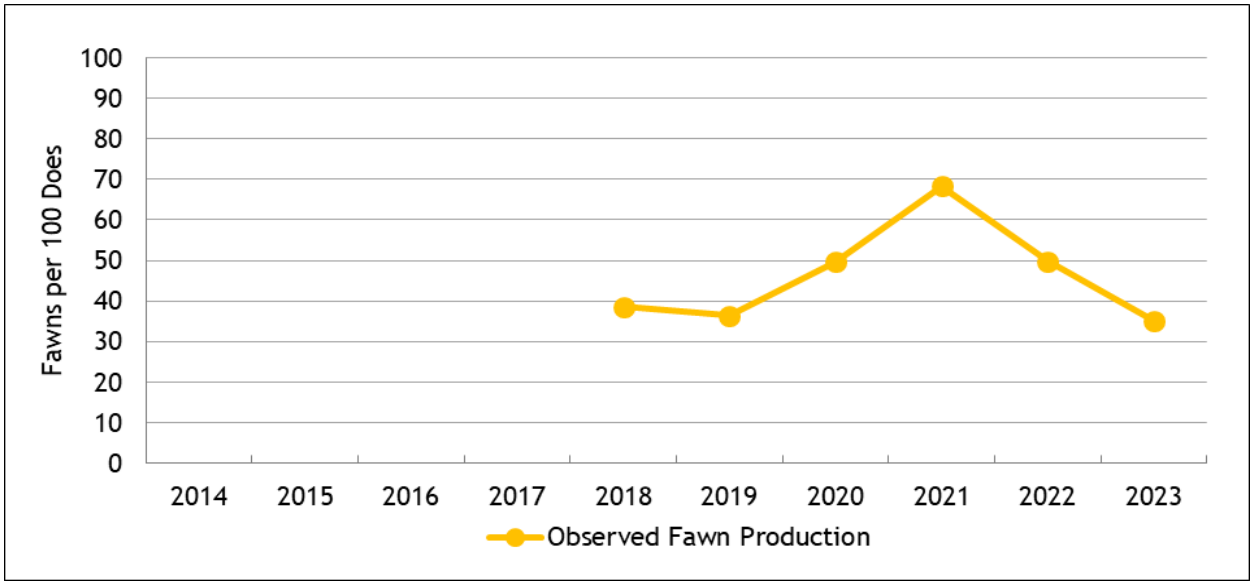


Figure PH36-4. Pronghorn DAU PH-36 observed fawn production (pre-hunt fawn:100 does), 2014-2023.

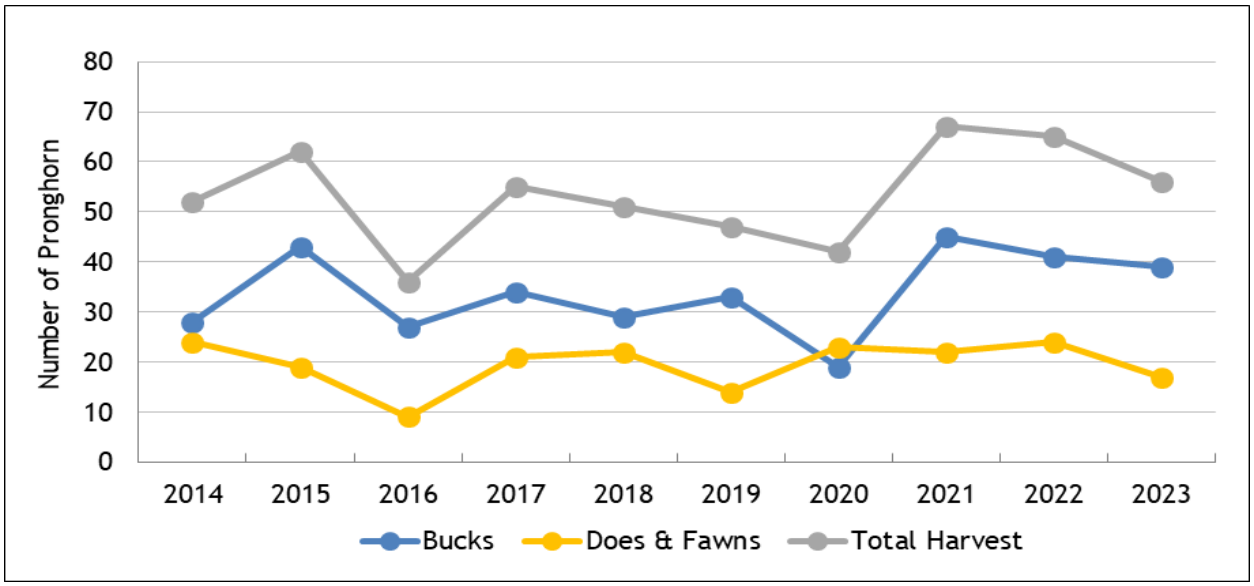


Figure PH36-5. Pronghorn DAU PH-36 harvest estimates, 2014-2023.

Background Information

The Laramie River Valley pronghorn herd is a small, state line herd that occupies primarily private land in the Laramie River Valley and Sand Creek area in northwest Larimer County. There are yearly migrations across the border of Colorado and Wyoming. The DAU covers 681 mi^2 and includes Game Management Units (GMUs) 7 and 8 (Figure PH36-1). The majority of the area (78%) is public land, of which 70% is managed by the U.S. Forest Service (USFS). Much of the public land is heavily timbered and is not considered pronghorn habitat. Private land encompasses most of the pronghorn habitat in the Laramie River Valley (20%). Bureau of Land Management (BLM) manages 6% of the DAU, most of which is pronghorn habitat. State lands, including State Wildlife Areas (CPW) and State Land Board (SLB) property manage the

remaining lands. Human occupation is limited in PH-36, particularly in the Laramie River valley. However, in the eastern portion of GMU 8 rural developments are more common. The main use in the western part of the DAU is irrigated hay and livestock ranching.

The 2023 PH-36 population estimate is approximately 550 pronghorn (Figure PH36-2). The population is modeled for the resident summer herd and does not include the pronghorn that migrate from Wyoming in the winter. Classification surveys for this herd are conducted via ground counts, which occurs every August, prior to the opening of archery season. The number of animals classified during these surveys range from 168-414 pronghorn since 2018, with an average of 285 pronghorn classified each year. Pre-hunt buck ratios have averaged 43 bucks:100 does over the previous 5 years (Figure PH36-3) of surveys, while pre-hunt fawn production has averaged 48 fawns:100 does during that same span (Figure PH36-4). The sex ratio has been trending down the last two years, but this is confounded by the state line effect where pronghorn cross the border regularly. Fawn production has been good the past few years despite the drought conditions during the same time period.

Harvest in PH-36 has been consistent over the past 10 years (Figure PH36-5). The small population size of this herd and private land access contribute to maintaining the number of pronghorn harvested each year. The majority of pronghorn in PH-36 are harvested on private property and nearly all of the harvest comes from the rifle season. The 10-year average harvest during the rifle season is 34 bucks and 20 does.

Management Alternatives

The PH-36 pronghorn herd has been managed under the current management plan objectives of 550–650 pronghorn and 30–35 bucks:100 does that were established in 2020. This Herd Management Plan (HMP) and the population and sex ratio objectives presented are a continuation of that plan. Therefore, no management alternatives were developed.

Management Objectives

Preferred Population Objective: 550–650 pronghorn.
Maintain the current post-hunt population objective of 550-650 pronghorn. Annual adjustments in licenses would be directed to maintain current levels of hunting recreation.

Preferred Sex Ratio Objective: 30–35 bucks:100 does.
Maintain the current sex ratio objective of 30-35 bucks:100 does. This maintains the current levels of hunting recreation and continuation to manage for a stable herd.

Strategies for Addressing Management Issues and Achieving Objectives

CPW has limited ability to affect several of the issues identified by stakeholders and staff, including habitat loss due to development and hunter access. However, we will seek any opportunities available to conserve large tracts of land through fee title purchase or conservation easements, which may contain a hunting access component. To address any game damage, CPW will offer dispersal licenses and Game Damage programs for landowners that are experiencing pronghorn conflicts, which cannot be addressed through the general hunting seasons, on an individual basis. Additionally, we will continue to look for opportunities for hunter access on or through private property. CPW will also work with land management agencies and landowners to make habitat improvements.

The current pronghorn population size (~550 pronghorn) is at the bottom of the objective range. The modeled sex ratio is below the post-hunt preferred alternative. This population will continue to be managed to sustain a viable population of pronghorn, while continuing to allow hunter opportunity.

Stakeholder Outreach

Input for the current herd management objectives were solicited through a public survey prior to their approval by the Wildlife Commission in 2020. Responses from the Opt-In hunter survey indicated that the hunting community prefers no change or a slight increase to the current management strategies (Appendix D). Input for these herd management objectives was further solicited through posting on the CPW website for 30-day public comment.

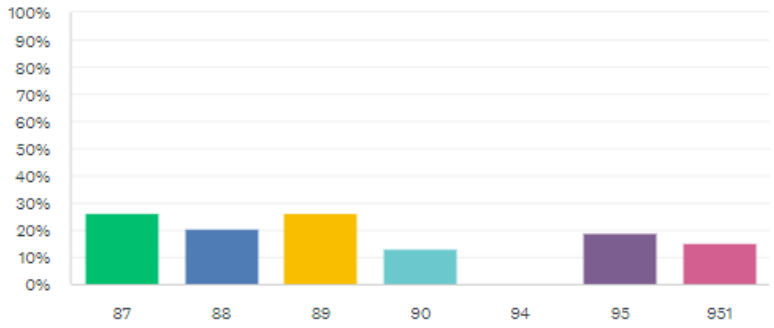
Appendix A. LPP Landowner Preference Program Survey

Colorado Parks and Wildlife surveyed participants in the Landowner Preference Program (LPP) for DAUs PH-01 and PH-35 to understand the landowner's perspective on pronghorn herd management over the past 10 years and how CPW should continue managing pronghorn populations. Questions asked were modified to address issues specific to management concerns in the respective DAUs. Postcards were sent by mail in August-October of 2022 to notify landowners of the survey and explained how to access the online survey for a 30-day period.

PH-01 ESCARPMENT PRONGHORN HERD – Data Analysis Unit PH-01

Q1 Which GMU(s) do you own land in?

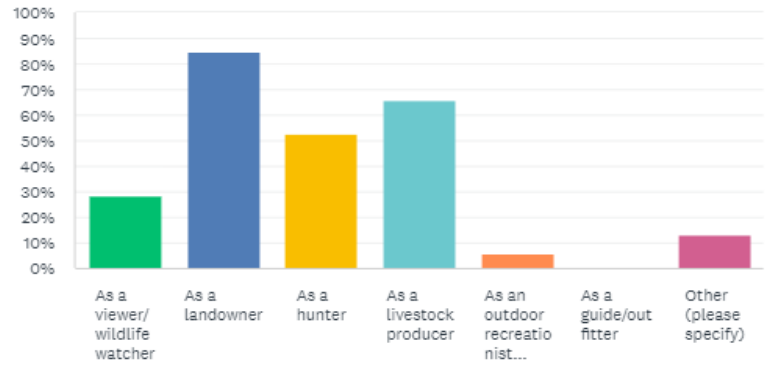
Answered: 53 Skipped: 0



ANSWER CHOICES	RESPONSES
87	14
88	11
89	14
90	7
94	0
95	10
951	8
Total Respondents: 53	

Q2 Which of the following best describes how you interact with pronghorn in the Escarpment GMUs? (Please check all that apply)

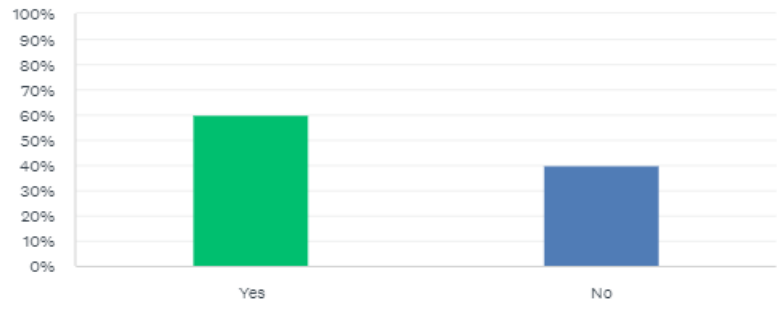
Answered: 53 Skipped: 0



ANSWER CHOICES		RESPONSES
As a viewer/ wildlife watcher		15
As a landowner		45
As a hunter		28
As a livestock producer		35
As an outdoor recreationist (e.g., hiker, mountain biker, horseback riding, etc...)		3
As a guide/outfitter		0
Other (please specify)	Responses	7
Total Respondents: 53		

Q3 Have you ever hunted pronghorn in any of the Escarpment pronghorn herd GMUs?

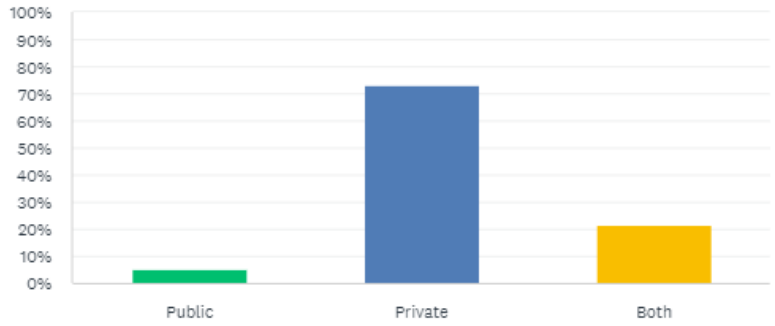
Answered: 50 Skipped: 3



ANSWER CHOICES	RESPONSES
Yes	30
No	20
TOTAL	50

Q4 If you have hunted pronghorn did you hunt on:

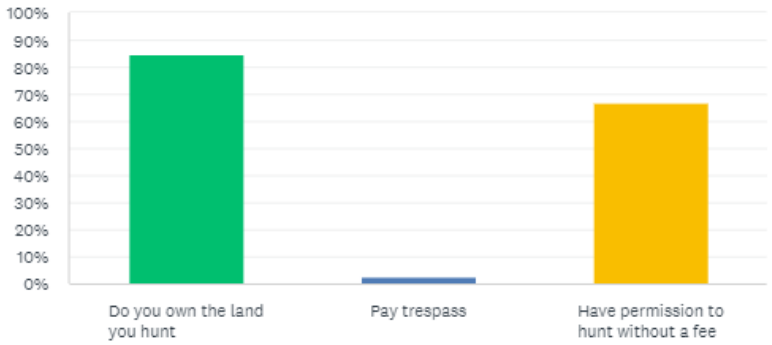
Answered: 37 Skipped: 16



ANSWER CHOICES	RESPONSES
Public	2
Private	27
Both	8
TOTAL	37

Q5 If you hunt private land: (Please check all that apply)

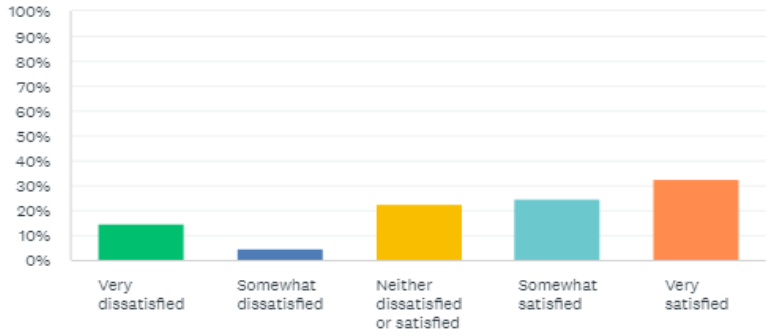
Answered: 39 Skipped: 14



ANSWER CHOICES	RESPONSES
Do you own the land you hunt	33
Pay trespass	1
Have permission to hunt without a fee	26
Total Respondents: 39	

Q6 Overall, how satisfied were you with your pronghorn hunting experience in any of the Escarpment pronghorn herd GMUs during the previous 10 years?

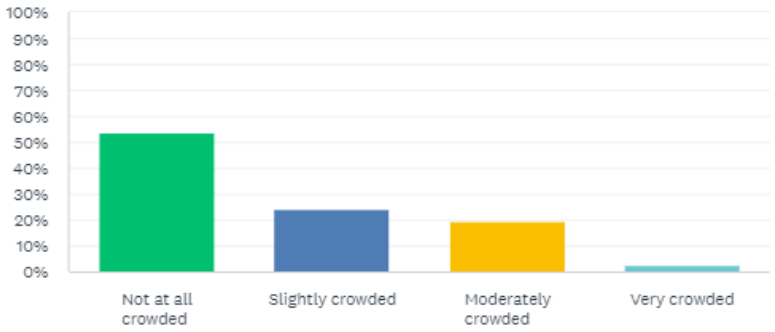
Answered: 40 Skipped: 13



ANSWER CHOICES	RESPONSES
Very dissatisfied	6
Somewhat dissatisfied	2
Neither dissatisfied or satisfied	9
Somewhat satisfied	10
Very satisfied	13
TOTAL	40

Q7 To what extent have you felt crowded by other hunters while pronghorn hunting in any of the Escarpment pronghorn herd GMUS?

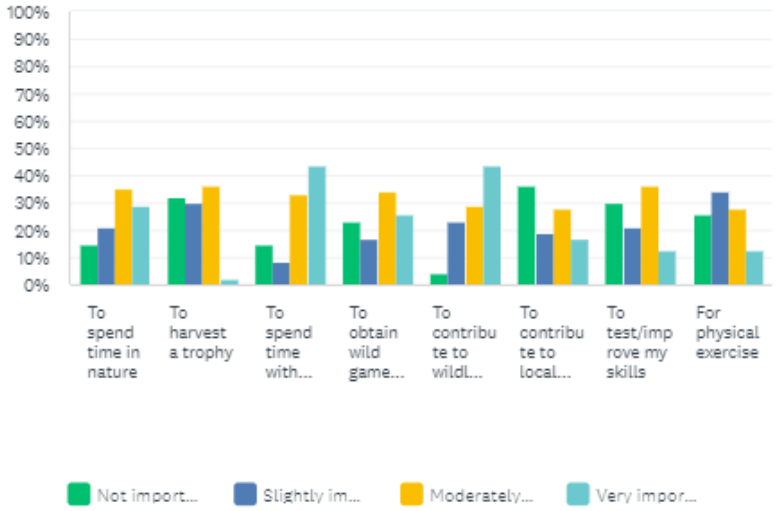
Answered: 41 Skipped: 12



ANSWER CHOICES	RESPONSES
Not at all crowded	22
Slightly crowded	10
Moderately crowded	8
Very crowded	1
TOTAL	41

Q8 How important to you is each of the following reasons to hunt pronghorn in Colorado? (Please check one response for each statement)

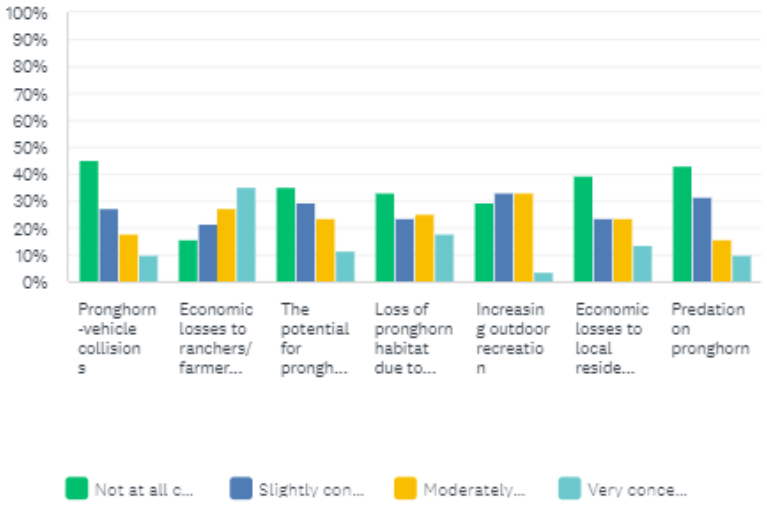
Answered: 48 Skipped: 5



	NOT IMPORTANT	SLIGHTLY IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	TOTAL
To spend time in nature	7	10	17	14	48
To harvest a trophy	15	14	17	1	47
To spend time with family/friends	7	4	16	21	48
To obtain wild game meat	11	8	16	12	47
To contribute to wildlife management	2	11	14	21	48
To contribute to local community (e.g, financial benefits from hunters)	17	9	13	8	47
To test/improve my skills	14	10	17	6	47
For physical exercise	12	16	13	6	47

Q9 Please indicate how concerned you are about each of the following in the Escarpment pronghorn herd GMUs: (Please check one response for each statement)

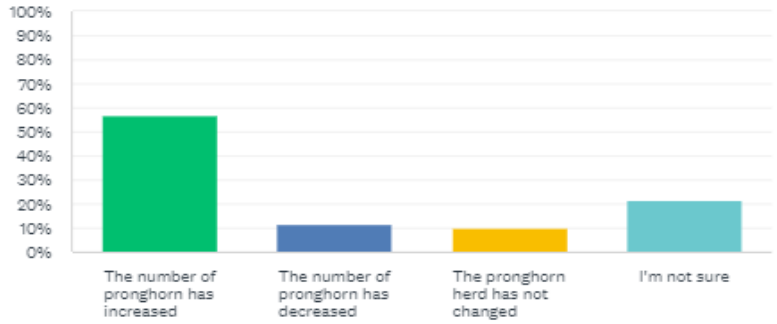
Answered: 51 Skipped: 2



	NOT AT ALL CONCERNED	SLIGHTLY CONCERNED	MODERATELY CONCERNED	VERY CONCERNED	TOTAL
Pronghorn-vehicle collisions	23	14	9	5	51
Economic losses to ranchers/farmers due to pronghorn damaging crops, fences, etc.	8	11	14	18	51
The potential for pronghorn to starve during the winter season	18	15	12	6	51
Loss of pronghorn habitat due to development	17	12	13	9	51
Increasing outdoor recreation	15	17	17	2	51
Economic losses to local residents due to decreased hunting opportunity	20	12	12	7	51
Predation on pronghorn	22	16	8	5	51

Q10 How, if at all, has the Escarpment pronghorn herd changed during the previous 10 years?

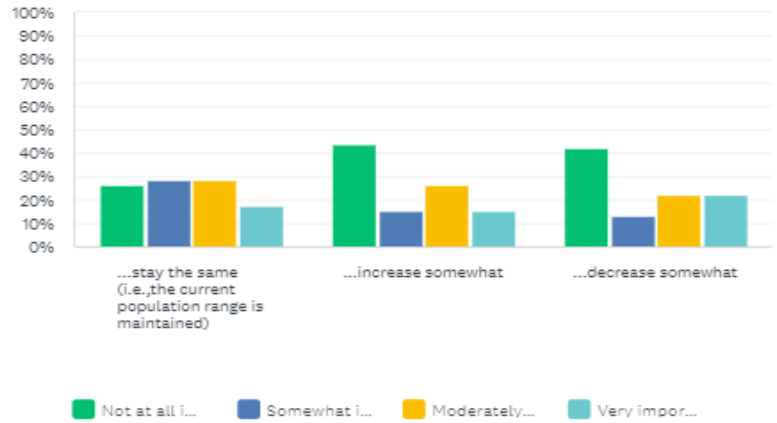
Answered: 51 Skipped: 2



ANSWER CHOICES	RESPONSES
The number of pronghorn has increased	29
The number of pronghorn has decreased	6
The pronghorn herd has not changed	5
I'm not sure	11
TOTAL	51

Q11 How important to you is that the population of the Escarpment pronghorn herd...

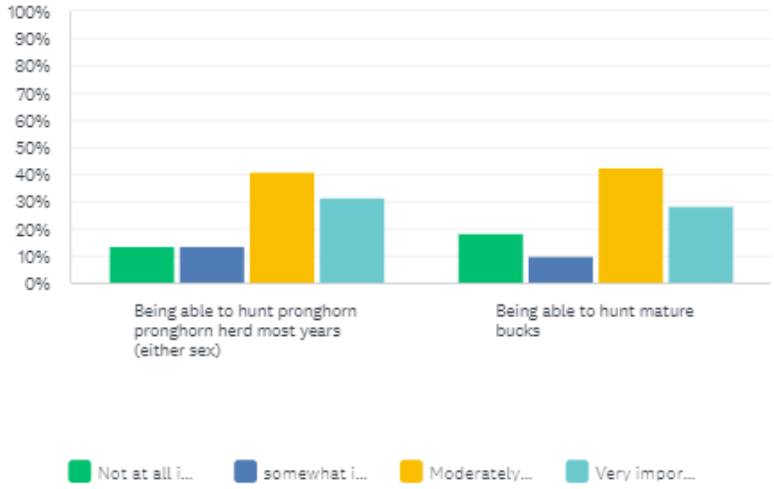
Answered: 52 Skipped: 1



	NOT AT ALL IMPORTANT TO ME	SOMEWHAT IMPORTANT TO ME	MODERATELY IMPORTANT TO ME	VERY IMPORTANT TO ME	TOTAL	WEIGHTED AVERAGE
...stay the same (i.e.,the current population range is maintained)	12	13	13	8	46	2.37
...increase somewhat	20	7	12	7	46	2.13
...decrease somewhat	19	6	10	10	45	2.24

Q12 How important to you are the following...

Answered: 51 Skipped: 2



	NOT AT ALL IMPORTANT TO ME	SOMEWHAT IMPORTANT TO ME	MODERATELY IMPORTANT TO ME	VERY IMPORTANT TO ME	TOTAL	WEIGHTED AVERAGE
Being able to hunt pronghorn pronghorn herd most years (either sex)	7	7	21	16	51	2.90
Being able to hunt mature bucks	9	5	21	14	49	2.82

Q13 Please write any concerns or comments you have about the Escarpment herd.

Answered: 22 Skipped: 31

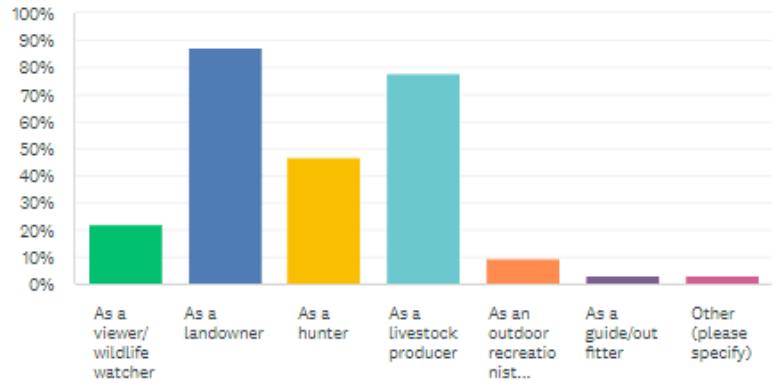
#	RESPONSES	DATE
1	when you have 80-100 herd on a wheat field it concerns me for the crop	10/26/2022 8:21 AM
2	More landowner buck tags need to be made available as well as doe tags. It should not take so long for someone to get a tag.	10/24/2022 4:28 PM
3	There is a need for more antelope.	10/23/2022 4:50 PM
4	The DOW is doing nothing at all to minimize the depredation of crops by wildlife. The DOW is totally out of touch with reality.	10/18/2022 9:21 PM
5	The pronghorn numbers are entirely too high and I cannot even get a landowner draw	10/16/2022 2:05 PM
6	Too many out of state hunters. Last time I was able to hunt buck pronghorn was after I had 7 preference points.	10/15/2022 3:15 PM
7	In #89 Herd is way to large. Biggest issue as a Landowner is they spread of Noxious Weed Seed by the Herd. If going to maintain herd population this big then need to start financial support for the Land Owners to control the noxious Weeds they are spreading.	9/26/2022 10:24 AM
8	Growing very fast Need to reduce herd	9/13/2022 8:28 AM
9	Herds have increased drastically over the past 10 years. Herds of 40 or more can be seen everywhere. They seem to be moving from the dryland fields and the pasture grass onto the irrigated farm ground. They need more severe control !!!!!	9/11/2022 12:18 PM
10	Extremely large herds are gathering on crops under sprinklers such as winter wheat and alfalfa. Landowner vouchers are too few, too small and absolutely inadequate	9/11/2022 9:37 AM
11	I'm a concerned landowner and not a hunter. This survey does not address me at all. I appreciate the vouchers I receive and do not want this program to end.	9/9/2022 8:38 AM
12	Animals are moving further east and south with numbers increasing. Crop damage and weed spreading is concerning.	9/8/2022 1:54 PM
13	They tear up up my small trees every spring	9/7/2022 7:09 PM
14	Landowner voucher program very important and useful to herd management.	9/7/2022 4:14 PM
15	This drought cycle we're in is affecting all the animals. Makes management difficult.	9/7/2022 8:10 AM
16	Too many large herds	9/7/2022 7:06 AM
17	There are plenty of Pronghorn within GMU 87 to hunt.	9/7/2022 7:03 AM
18	With the huge increase in mule deer numbers over the past 10 years the winter grazing pressures are huge ... I easily lose 25-50% of my stockpiled winter forage to deer and antelope	9/6/2022 10:07 PM
19	they do not issue enough tags	9/6/2022 6:34 PM
20	The extreme drought in the eastern part of the DAU will have a negative effect on the population, in my opinion.	9/6/2022 5:27 PM
21	BEING A LAND OWNER IT IS MY OPINION HAVE TWO FARMS THAT TO GET A DOE PERMIT AFTER 2 YEARS OF NO LICENSE IS NOT SOMETHING I FEEL IS GOING WELL WITH MY ATTITUDE TOWARD THE DOW. I FEEL LAND OWNERS SHOULD BE ABLE TO GET A DOE LICENSE EVERY YEAR. IF THIS CONTINUES, AT LEAST ON OUR PROPERTIES WE WILL BAN ALL HUNTING OF ANY LEGAL ANIMALS IN ANY FORM OF HUNTING IN ANY SEASON.	9/6/2022 5:22 PM

PH-35 KIOWA PRONGHORN HERD – Data Analysis Unit PH-35

Prior to drafting the alternative objectives for this HMP, CPW surveyed individuals participating in the Landowner Preference Program in PH-35. We mailed 174 postcards in October of 2022 notifying landowners of the survey, how to access the survey online, and when the 30-day participation period would close. A total of 32 responses were received, results are below.

Q1 Which of the following best describes how you interact with pronghorn in the Kiowa GMUs? (Please check all that apply)

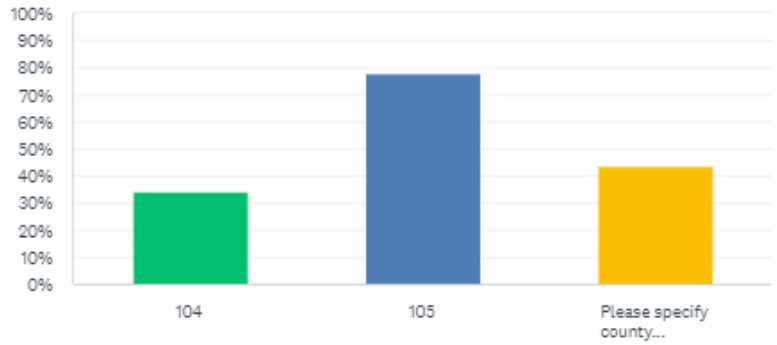
Answered: 32 Skipped: 0



ANSWER CHOICES		RESPONSES
As a viewer/ wildlife watcher		7
As a landowner		28
As a hunter		16
As a livestock producer		25
As an outdoor recreationist (e.g., hiker, mountain biker, horseback riding, etc...)		3
As a guide/outfitter		1
Other (please specify)	Responses	1
Total Respondents: 32		

Q2 Which GMU(s) do you own land in?

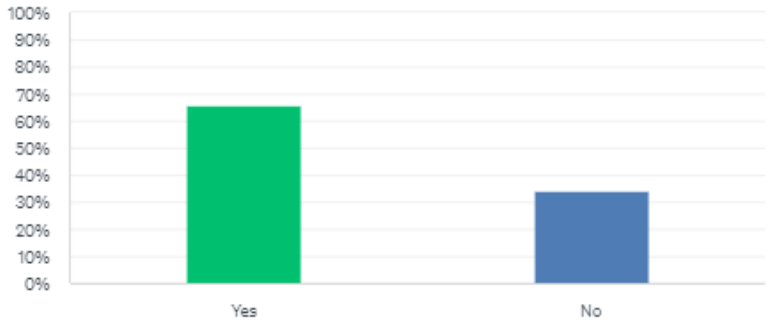
Answered: 32 Skipped: 0



ANSWER CHOICES		RESPONSES
104		11
105		25
Please specify county...	Responses	14
Total Respondents: 32		

Q3 Do you hunt pronghorn in GMUs 104 or 105?

Answered: 32 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	21
No	11
Total Respondents: 32	

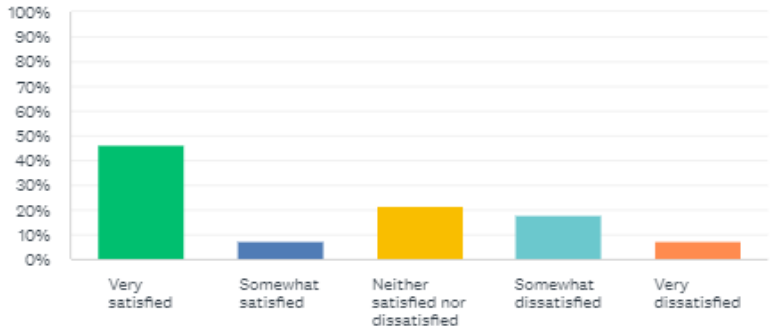
Q4 How did you obtain your license?

Answered: 29 Skipped: 3

ANSWER CHOICES	RESPONSES
On a regular draw license	6
On a landowner voucher for the property I own or manage	23
On a landowner voucher for another property	0
On a family only landowner license	2
N/A	4
Total Respondents: 29	

Q5 Overall, how satisfied were you with your pronghorn hunting experience in any of the Kiowa pronghorn herd GMUs during the previous 10 years?

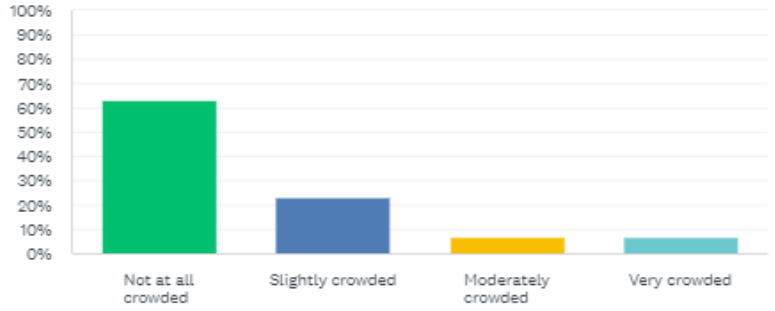
Answered: 28 Skipped: 4



ANSWER CHOICES	RESPONSES
Very satisfied	13
Somewhat satisfied	2
Neither satisfied nor dissatisfied	6
Somewhat dissatisfied	5
Very dissatisfied	2
Total Respondents: 28	

Q6 To what extent have you felt crowded by other hunters while pronghorn hunting in any of the Kiowa pronghorn herd GMUs?

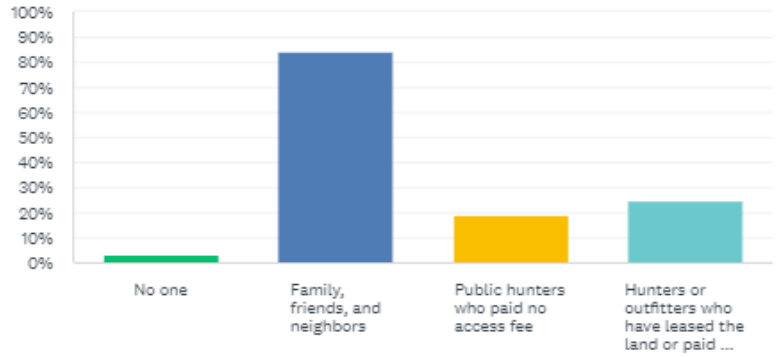
Answered: 30 Skipped: 2



ANSWER CHOICES	RESPONSES
Not at all crowded	19
Slightly crowded	7
Moderately crowded	2
Very crowded	2
Total Respondents: 30	

Q7 Whom did you allow to hunt pronghorn on land you control in the last 10 years?

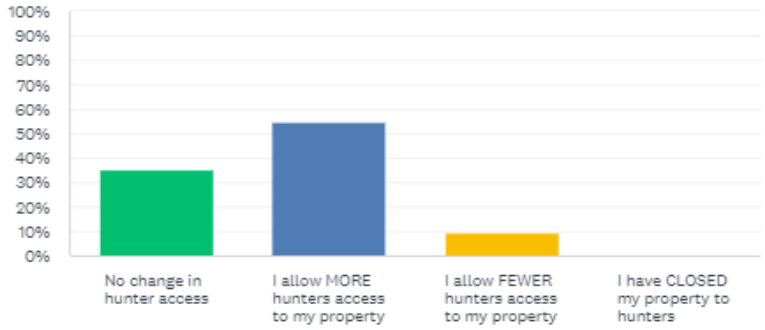
Answered: 32 Skipped: 0



ANSWER CHOICES	RESPONSES
No one	1
Family, friends, and neighbors	27
Public hunters who paid no access fee	6
Hunters or outfitters who have leased the land or paid an access fee	8
Total Respondents: 32	

Q8 How has the number of hunters you allow to access your property changed in the last 10 years?

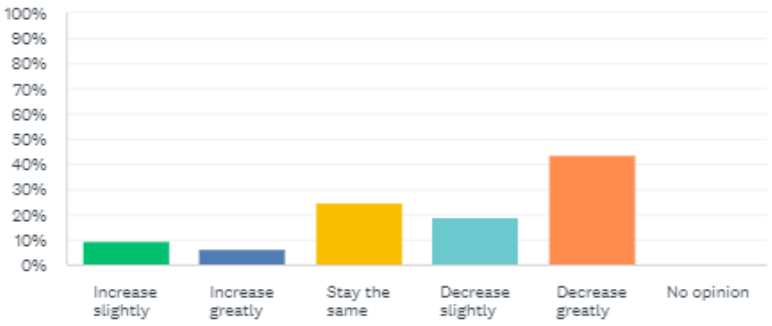
Answered: 31 Skipped: 1



ANSWER CHOICES	RESPONSES
No change in hunter access	11
I allow MORE hunters access to my property	17
I allow FEWER hunters access to my property	3
I have CLOSED my property to hunters	0
Total Respondents: 31	

Q9 How would you like the population of pronghorn in GMUs 104 and 105 to change, if at all?

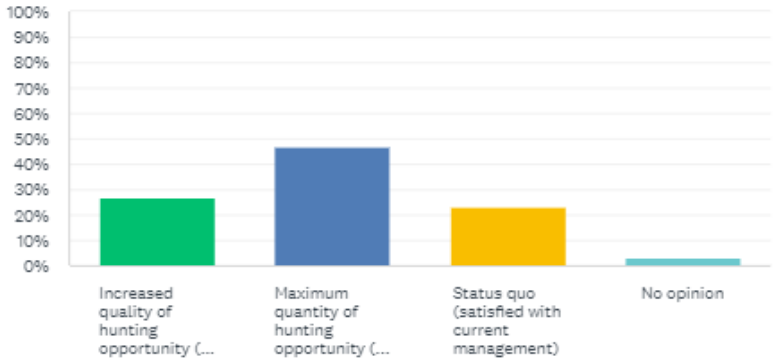
Answered: 32 Skipped: 0



ANSWER CHOICES	RESPONSES
Increase slightly	3
Increase greatly	2
Stay the same	8
Decrease slightly	6
Decrease greatly	14
No opinion	0
Total Respondents: 32	

Q10 For the purposes of pronghorn hunting, should GMUs 104 and 105 be managed for...

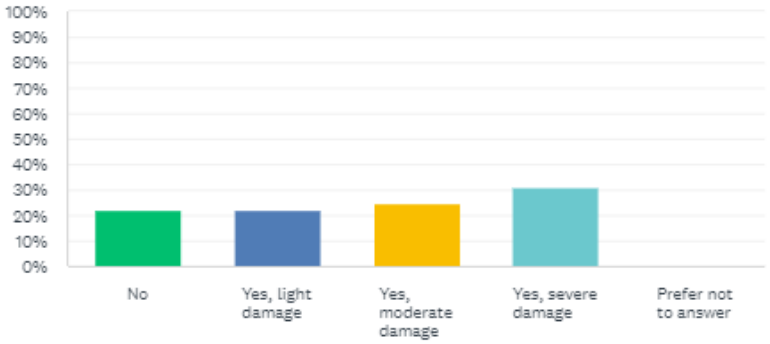
Answered: 30 Skipped: 2



ANSWER CHOICES	RESPONSES
Increased quality of hunting opportunity (ex. fewer buck licenses available, fewer hunters in the field)	8
Maximum quantity of hunting opportunity (ex. more buck licenses available, more hunters in the field)	14
Status quo (satisfied with current management)	7
No opinion	1
Total Respondents: 30	

Q11 Have pronghorn caused damage to your crops or other property in the last 10 years?

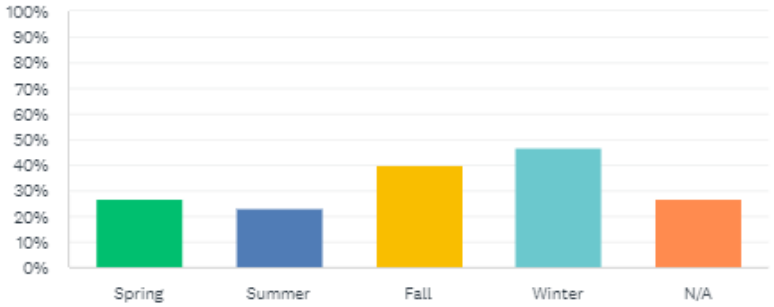
Answered: 32 Skipped: 0



ANSWER CHOICES	RESPONSES
No	7
Yes, light damage	7
Yes, moderate damage	8
Yes, severe damage	10
Prefer not to answer	0
Total Respondents: 32	

Q12 When does the majority of damage occur?

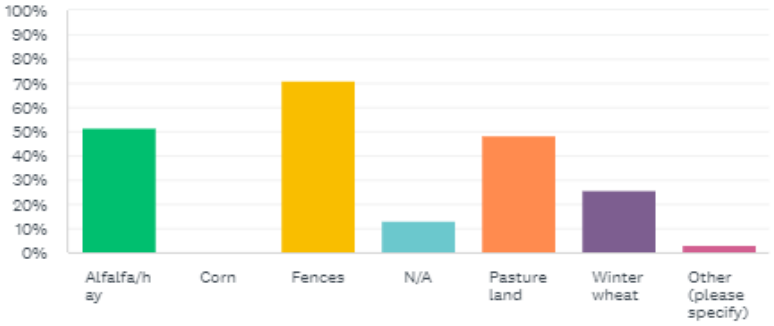
Answered: 30 Skipped: 2



ANSWER CHOICES	RESPONSES
Spring	8
Summer	7
Fall	12
Winter	14
N/A	8
Total Respondents: 30	

Q13 What type of crops/land did pronghorn cause damage to on your property?

Answered: 31 Skipped: 1



ANSWER CHOICES	RESPONSES
Alfalfa/hay	16
Corn	0
Fences	22
N/A	4
Pasture land	15
Winter wheat	8
Other (please specify) Responses	1
Total Respondents: 31	

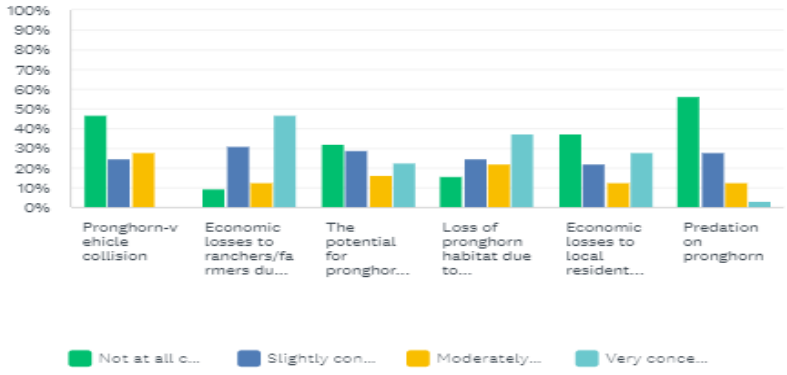
Q14 Please indicate how interested you are in doing each of the following in the Kiowa GMUs: (Please check one response for each statement)

Answered: 32 Skipped: 0

	NOT AT ALL INTERESTED	SOMEWHAT INTERESTED	MODERATELY INTERESTED	VERY INTERESTED	DON'T KNOW	TOTAL
Seeing pronghorn?	5	2	10	15	0	32
Hunting pronghorn?	5	6	8	13	0	32
Learning more about pronghorn management?	5	7	14	5	1	32
Providing input for decisions about pronghorn management?	0	5	6	20	1	32

Q15 Please indicate how concerned you are about each of the following in th Kiowa pronghorn herd GMUs: (Please check one response for each statement)

Answered: 32 Skipped: 0



	NOT AT ALL CONCERNED	SLIGHTLY CONCERNED	MODERATELY CONCERNED	VERY CONCERNED	TOTAL
Pronghorn-vehicle collision	15	8	9	0	32
Economic losses to ranchers/farmers due to pronghorn damaging crops, fences, etc.	3	10	4	15	32
The potential for pronghorn to starve during the winter season	10	9	5	7	31
Loss of pronghorn habitat due to development	5	8	7	12	32
Economic losses to local residents due to decreased hunting opportunity	12	7	4	9	32
Predation on pronghorn	18	9	4	1	32

Q16 Please feel free to leave us any additional comments regarding pronghorn management in GMUs 104 and 105.

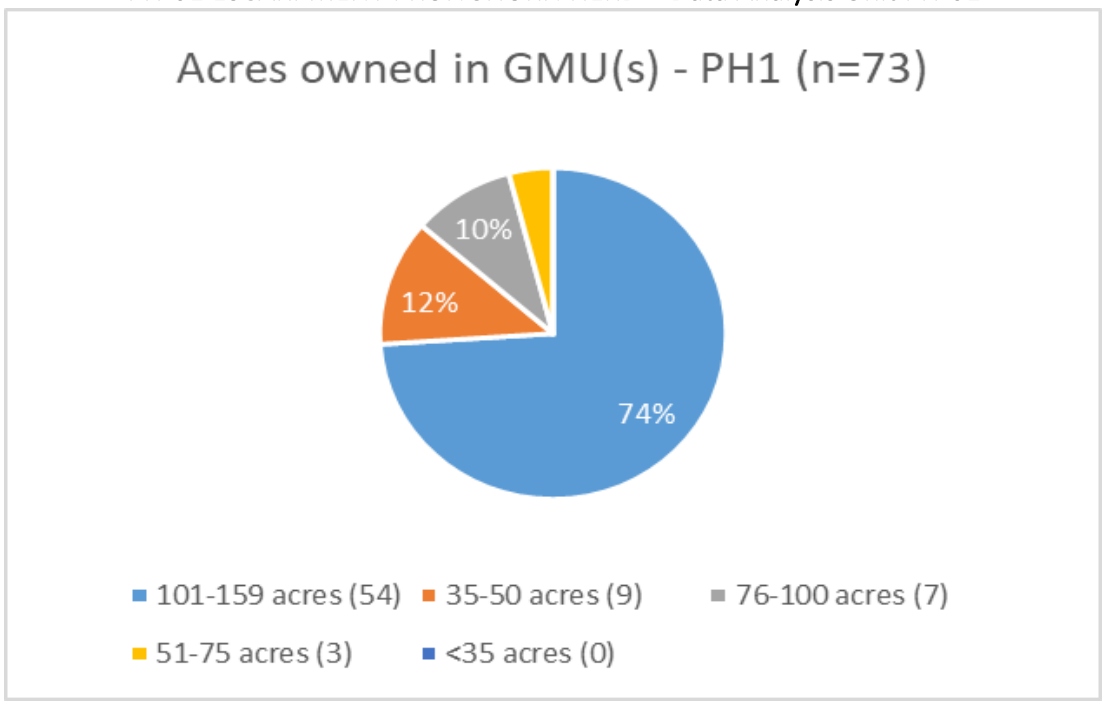
Answered: 13 Skipped: 19

#	RESPONSES	DATE
1	A few more licenses would be nice. Lots of quality bucks around.	12/9/2022 9:06 AM
2	I have seen pronghorn herds of over 100 animals on my land. This is way too many. However, licenses are apparently hard to get (I have not drawn any for at least two years[family tag excepted and these are worthless to me], and have not had even one hunter stop by to ask about hunting the past three years [tags not available], and the outfitter that I lease to has had fewer hunters because of the difficulty of getting desirable licenses--even female licenses are expensive). CPW has not managed the number of pronghorns properly.	11/25/2022 4:35 PM
3	Reduce the population of the anlope in the area	11/24/2022 12:20 PM
4	It's nice to see more antelope in the area. Keep up the good work!	11/18/2022 1:53 PM
5	This year in particular there have been too many hunters in area 105.	11/15/2022 11:28 AM
6	The Quota for landowner tags should be increased from 25% to at least 50% due to hunting access in an all private area. Many people draw tags and don't have any place to hunt. Giving landowners a better opportunity to allow their hunters on their land will increase harvest numbers and alleviate some undue trespassing from hunters not having permission to hunt on certain lands. Also if hunters(out of state in particular) could purchase a doe antelope tag at a very reduced rate after drawing a buck tag then we could lower the number of antelope by harvesting a few more animals. That would reduce the need for the late season doe tag which several bucks are mistakingly shot due to they have already shed their sheaths	11/3/2022 7:50 AM
7	There are far too many pronghorn in unit 105 that damage our crops. While it is rustic to have them here, and there is a place for some, there could be far fewer of them. DOW makes it impossible to get adequate tags, even as a landowner with 1000 acres. We have 40-60 on our property at any given time destroying our hay crop. The same comments about lack of tags would apply to deer. Thank you for asking about our landowner experiences.	11/2/2022 5:11 PM
8	I HAVE MIXED EMOTIONS ABOUT HUNTING . ON DRY YEARS THE HUNTERS ARE DOING ALMOST AS MUCH DAMAGE TO THE PASTURES AS THE ANTELOPE	11/2/2022 1:17 PM
9	The pronghorn population on my property seems to have grown over the 6 years and they are overwhelming my property. The damage to fences and pasture seems to increase each year. I would like to see more land owner vouchers awarded. I use my vouchers for myself, family and youth. Doubling the number of vouchers awarded wouldn't make even a dent in the herd.	10/31/2022 2:49 PM
10	DOW has let this population get OUT OF CONTROL. They destroy my crops/grass and don't come close to reimbursing me for my losses. Not to mention the red tape I have to go through to get what little I get for my loss.	10/27/2022 5:37 PM
11	Overrun by pronghorn in last few years. Any given day in winter I can look out my window and see herds of 40-100+. Recent years they didn't even move off creek bottoms and stayed damaging hay ground. Need pronghorn but they need to be thinned out. First season in October is a zoo around here with hunters with and without permission. Additional tags for first season probably isn't a good answer but second October season would be great or more open December tags.	10/27/2022 10:20 AM
12	As a land owner who runs cattle I have had about 200 antelope the past 3 winters on my pasture. At the same time we have applied for land owner tags and received 0, 1, and 2 during the same time. This does not seem fair as I have been sustaining this large herd.	10/27/2022 7:59 AM
13	Game management does NOT work w bucks See #10. Do I need to point this out?	10/26/2022 6:12 PM

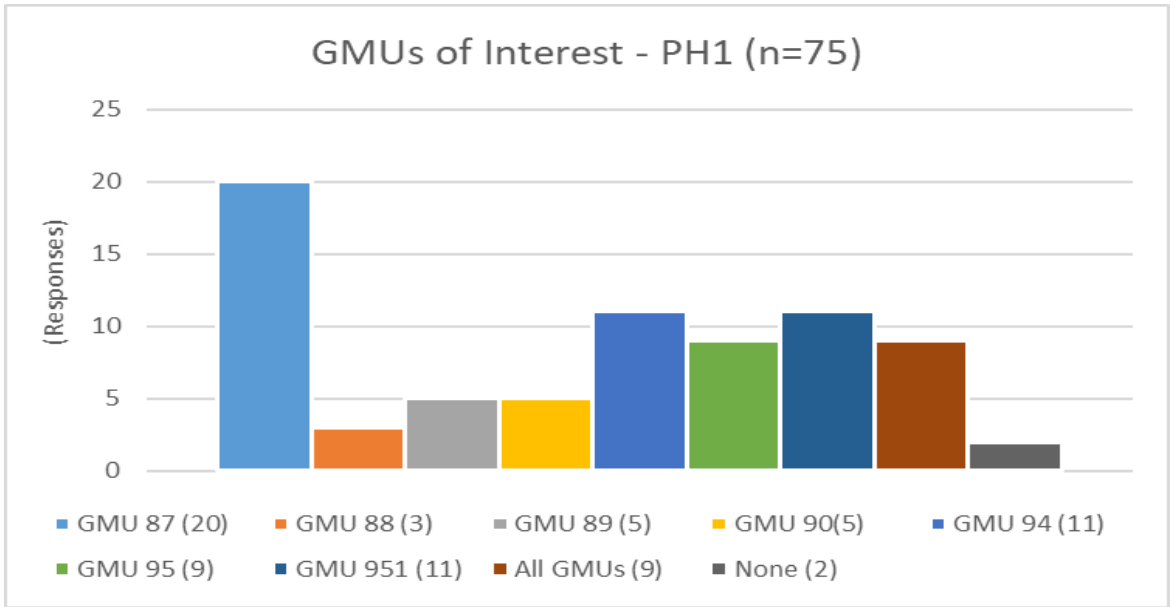
Appendix B. Small Landowner Survey

Colorado Parks and Wildlife surveyed small landowners in PH-01, PH-04, PH-30, and PH-35 to understand the small landowner's perspective on pronghorn herd management over the past 10 years and how CPW should continue managing pronghorn populations moving forward.

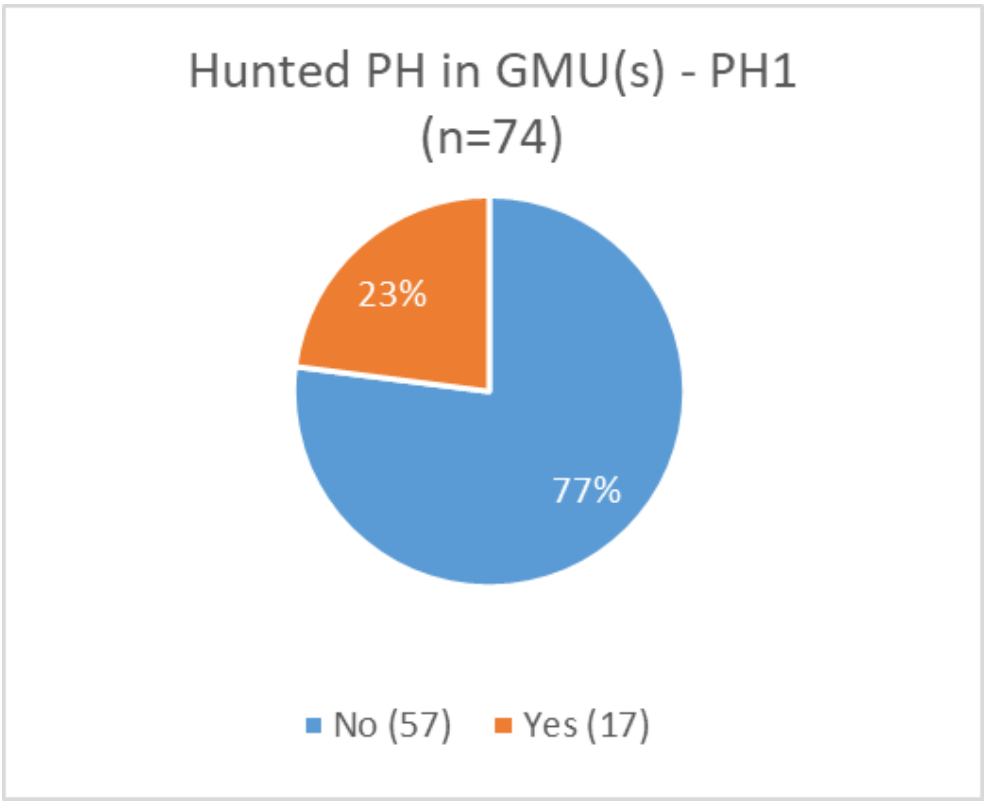
PH-01 ESCARPMENT PRONGHORN HERD – Data Analysis Unit PH-01



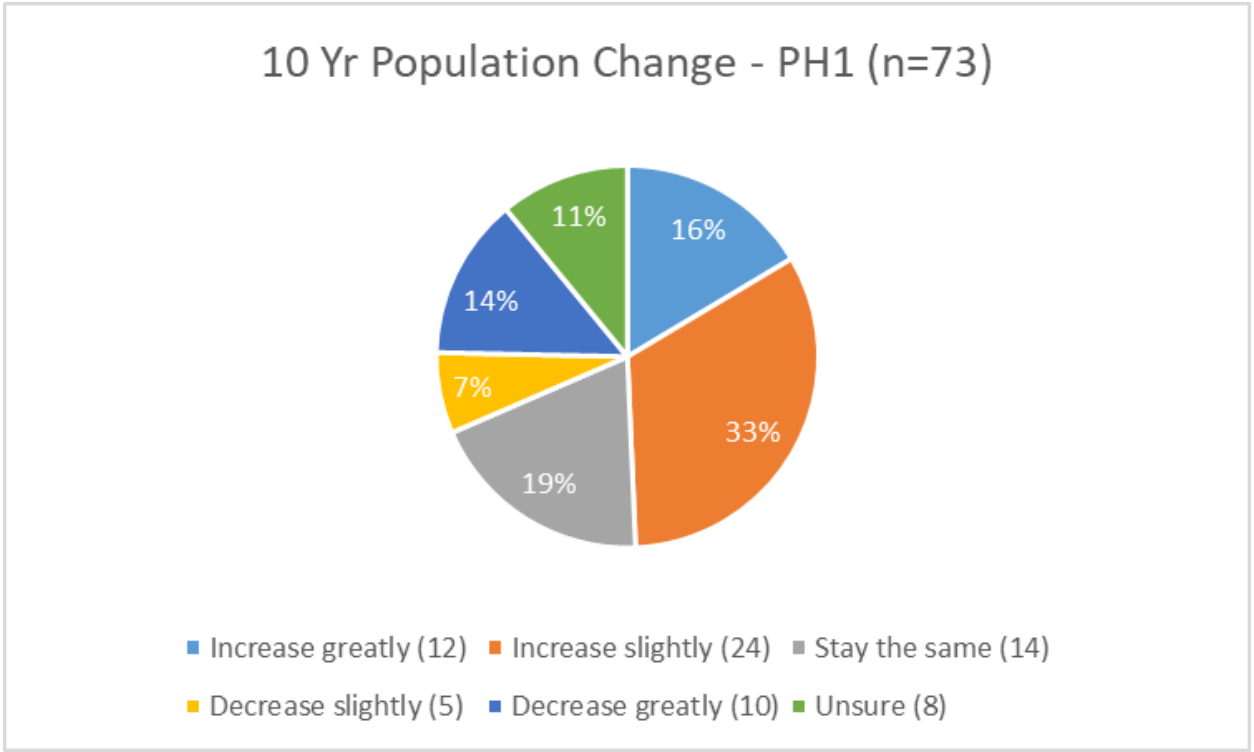
Question 1. Approximately how much land do you own in GMUs 87, 88, 89, 90, 94, 95, and 951?



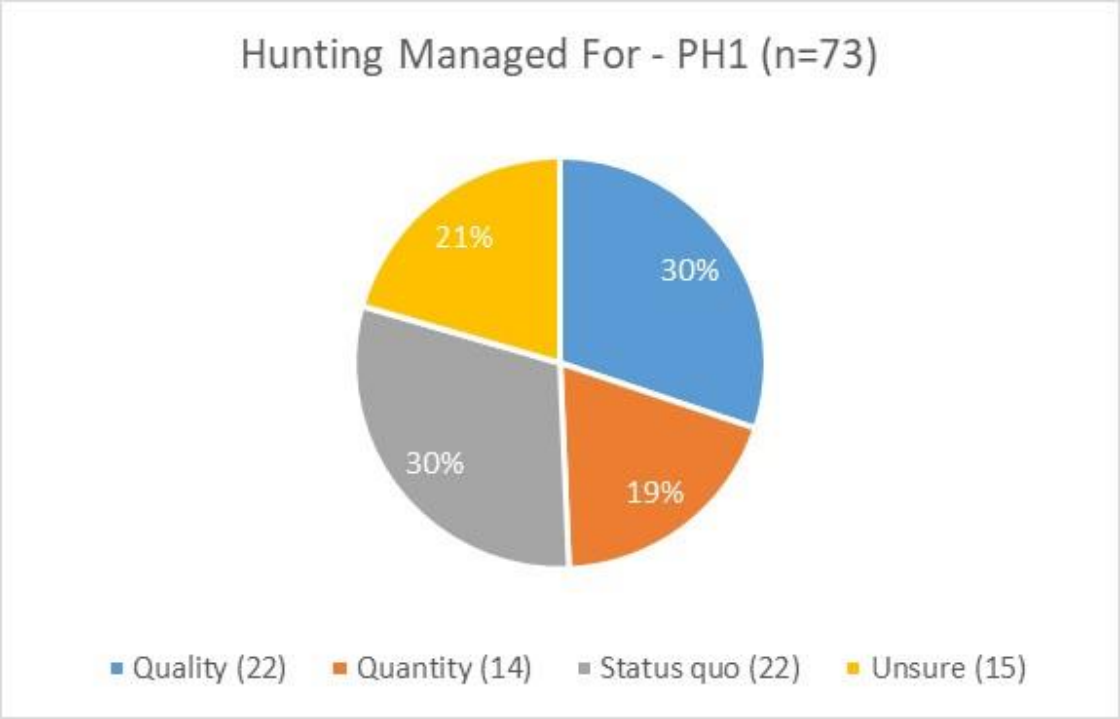
Question 2. Please indicate which GMU within the Escarpment Pronghorn Herd Management Plan you are most interested in.



Question 3. Have you ever hunted pronghorn antelope in GMUs 87, 88, 89, 90, 94, 95, and 951?

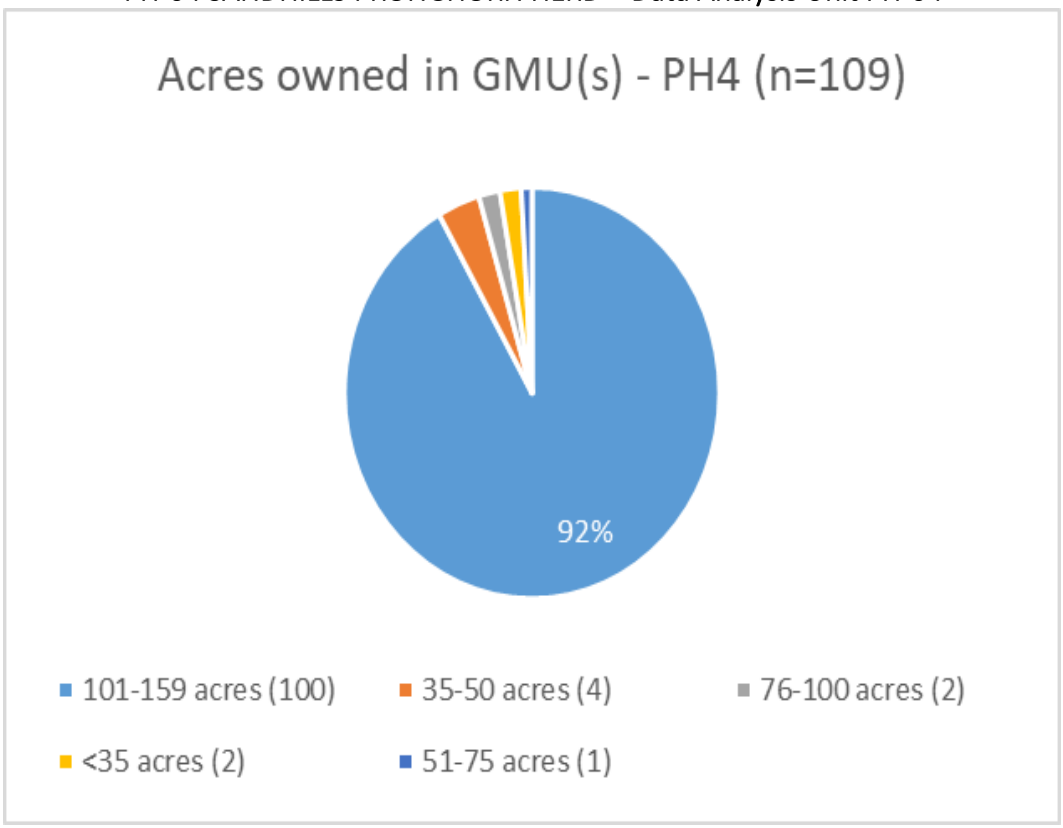


Question 4. How would you like the Escarpment pronghorn population to change over the next 10 years, if at all?

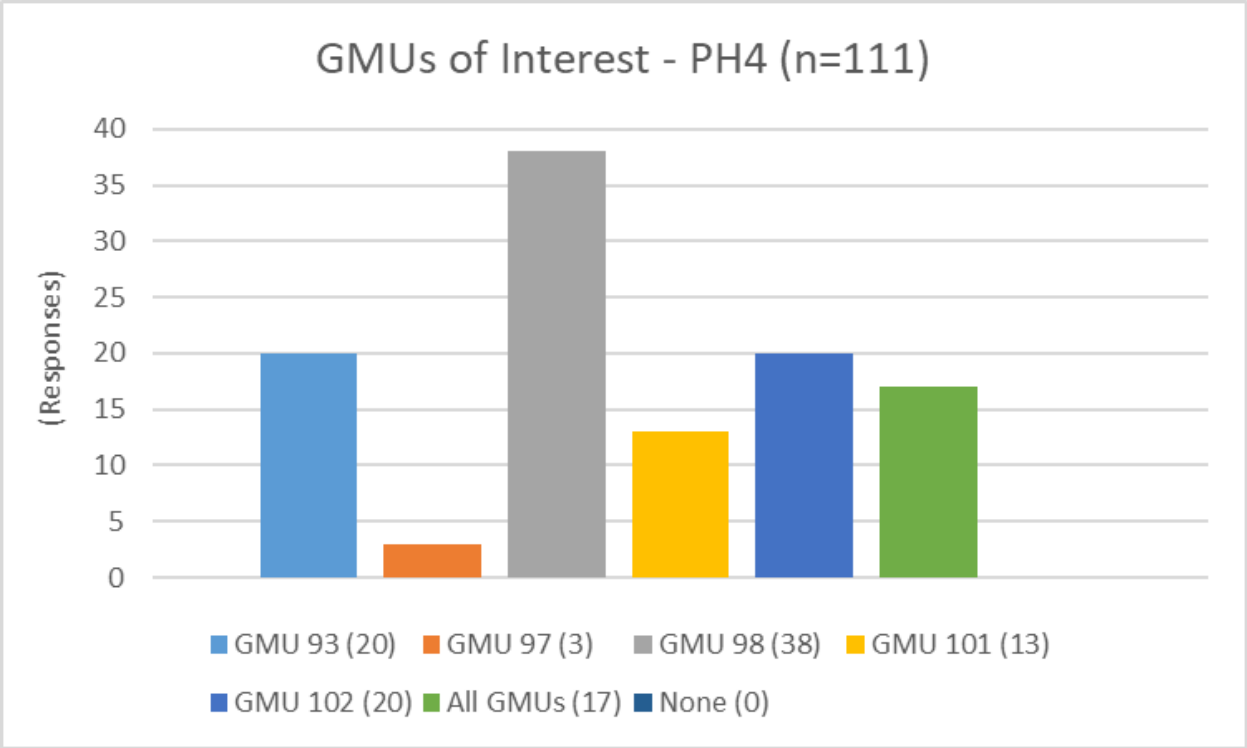


Question 5. For the purpose of pronghorn hunting, should the Escarpment Pronghorn be managed for…?

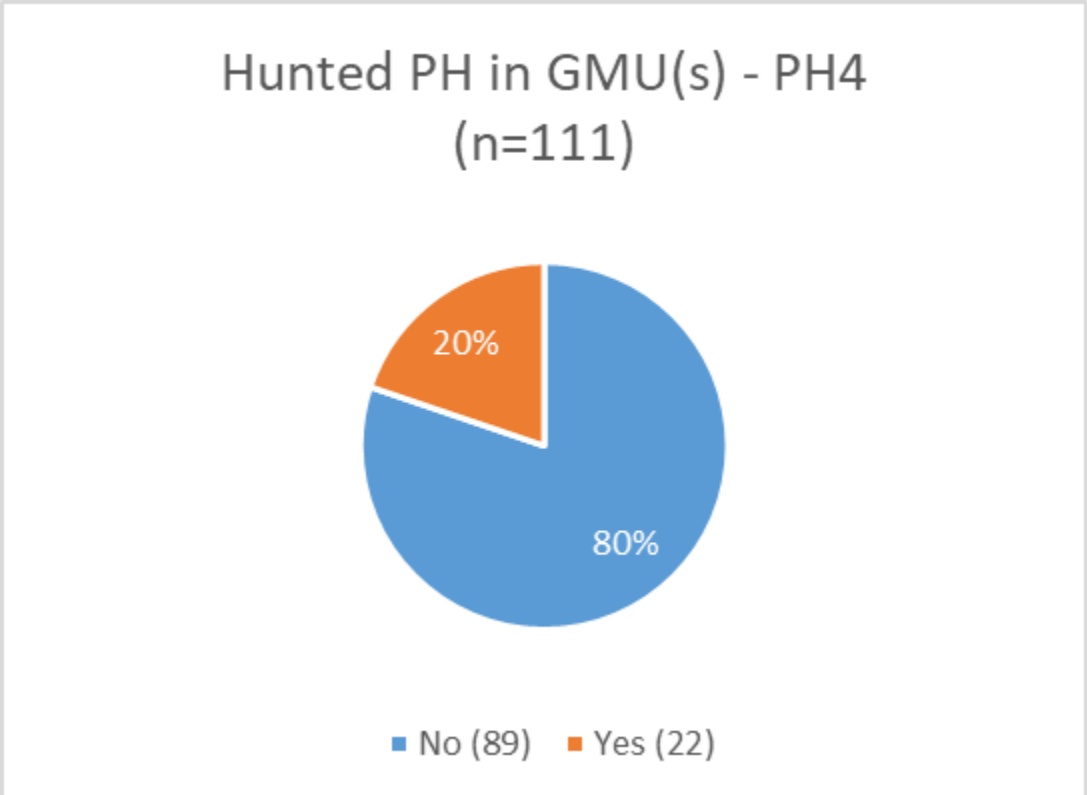
PH-04 SANDHILLS PRONGHORN HERD – Data Analysis Unit PH-04



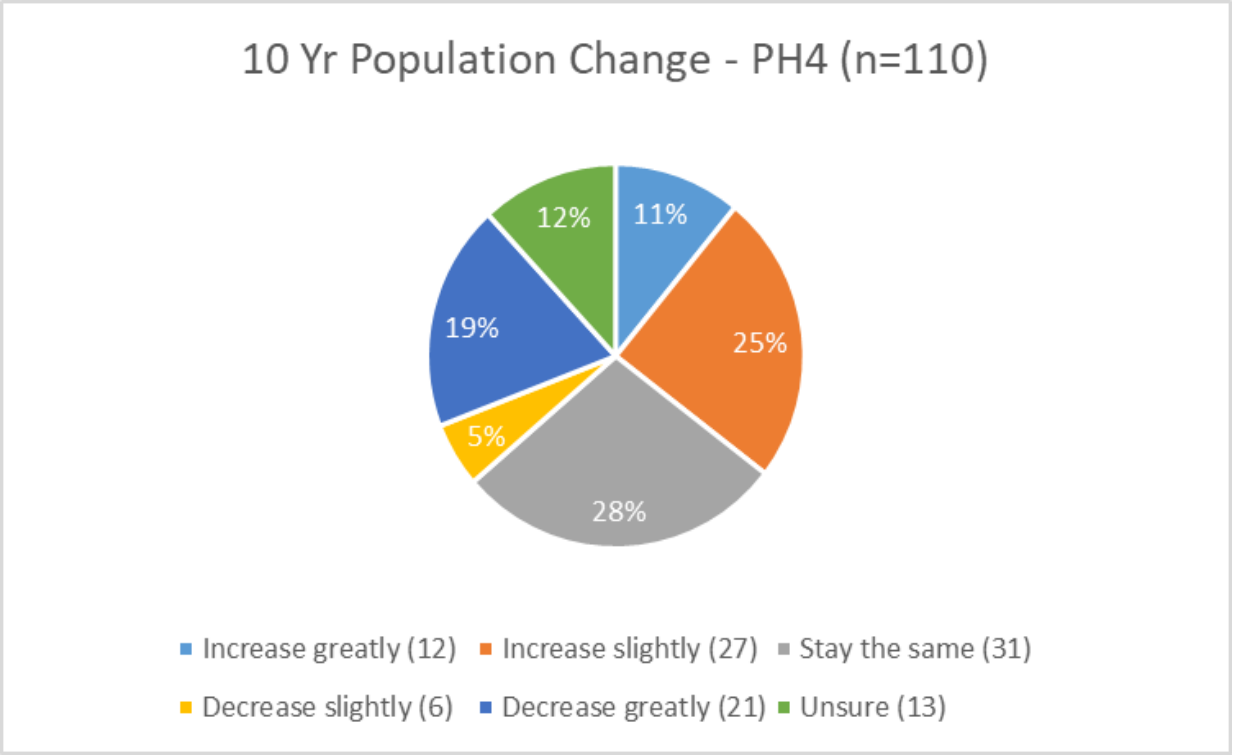
Question 1. Approximately how much land do you own in GMUs 93, 97, 98, 101, and 102?



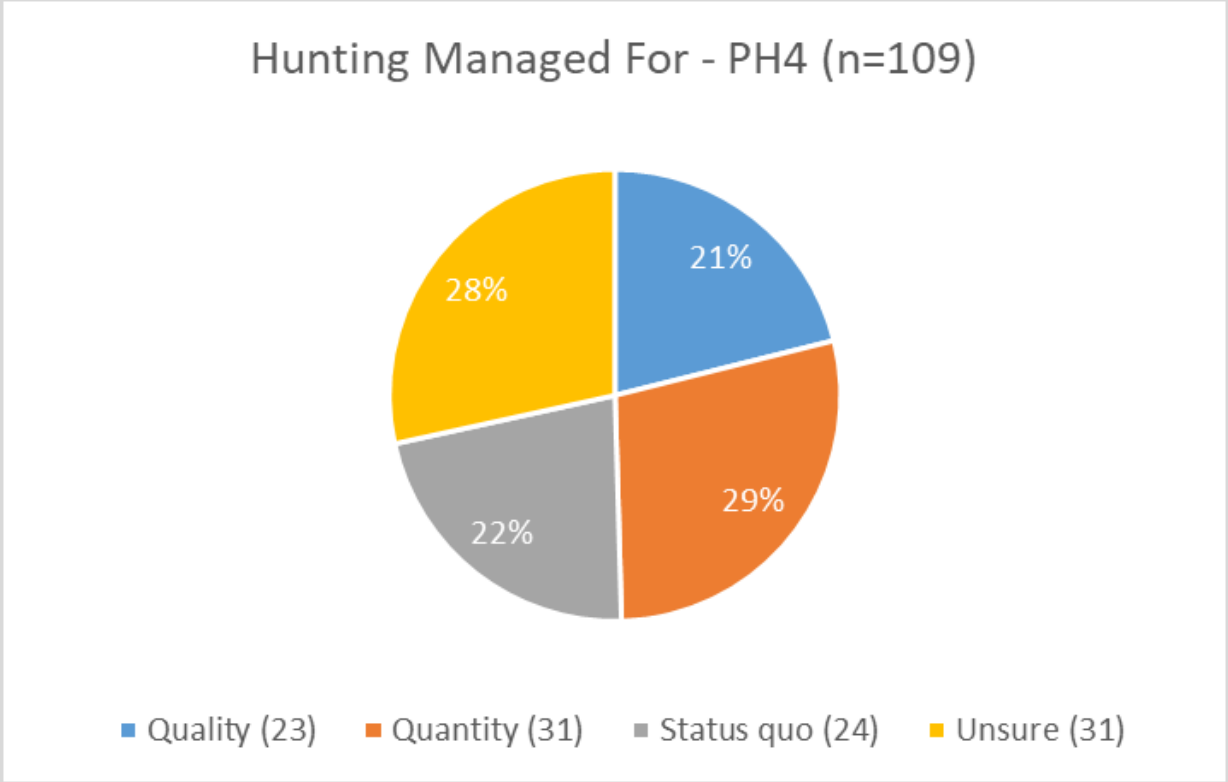
Question 2. Please indicate which GMU within the Sandhill Pronghorn Herd Management Plan you are most interested in?



Question 3. Have you ever hunted pronghorn antelope in GMUs 93, 97, 98, 101, and 102?

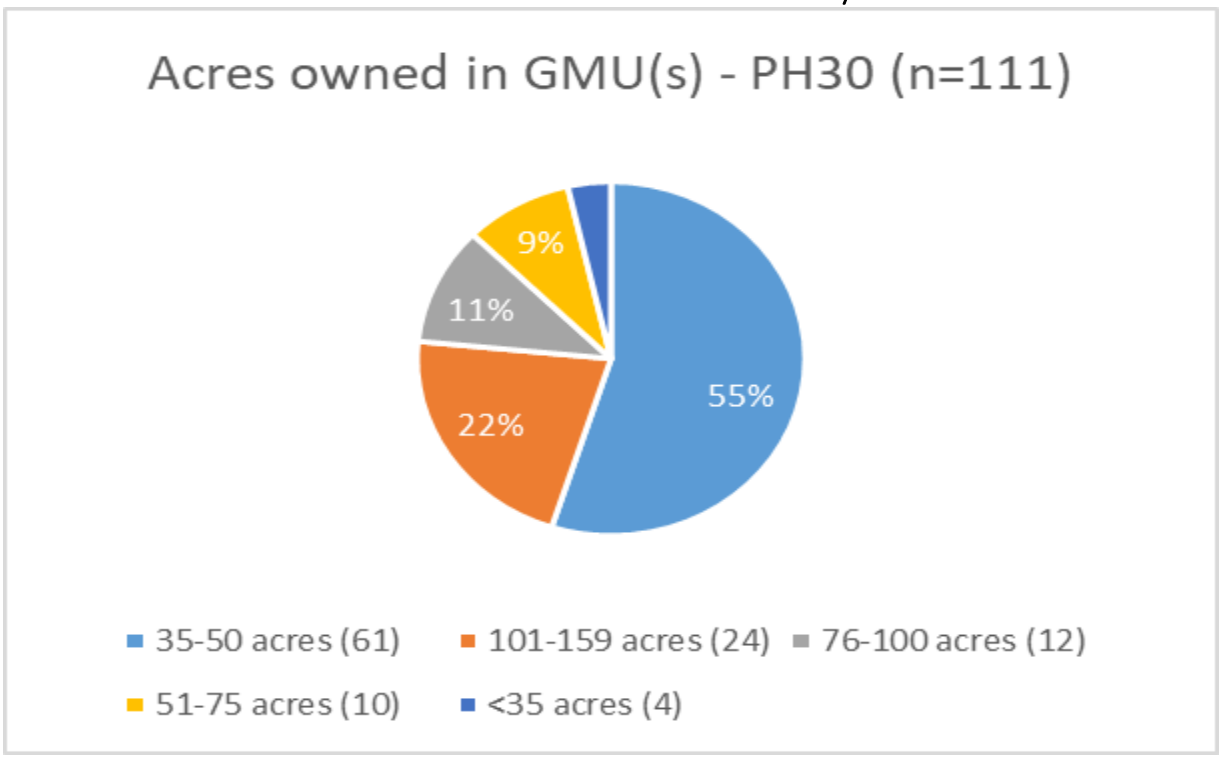


Question 4. How would you like the Sandhill pronghorn population to change over the next 10 years, if at all?

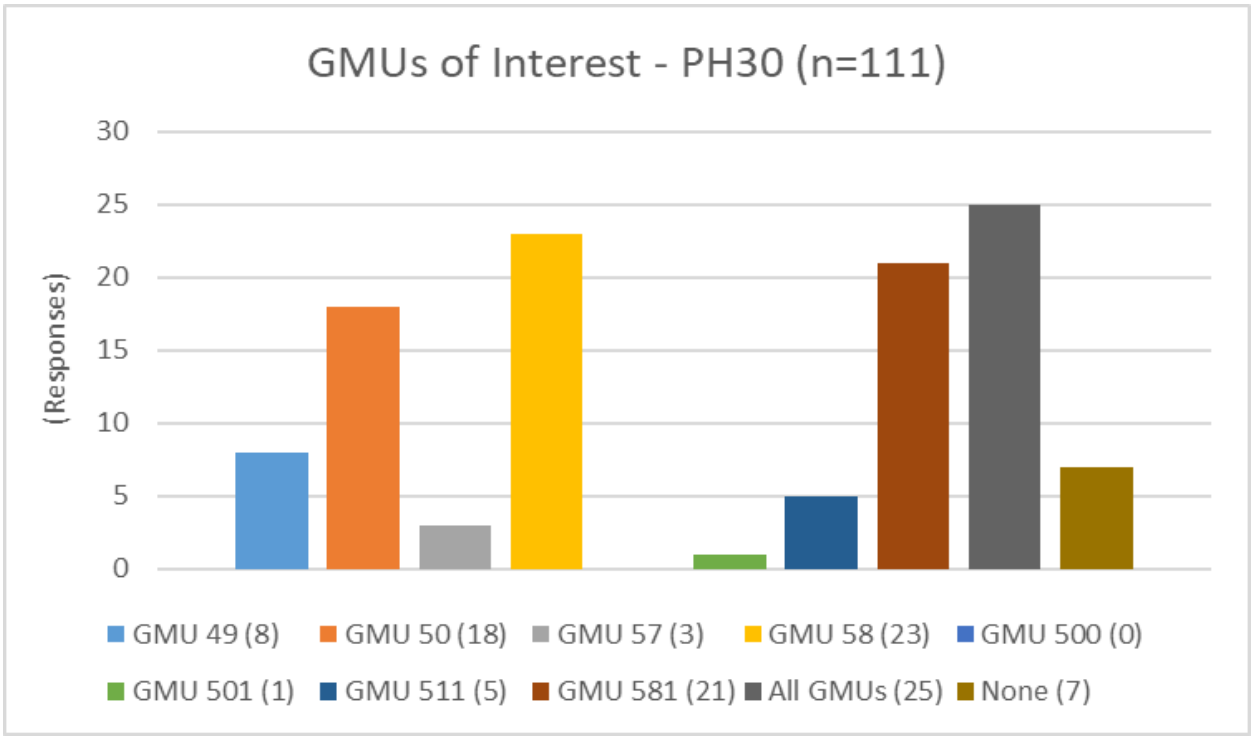


Question 5. For the purpose of pronghorn hunting, should the Sandhill Pronghorn be managed for…?

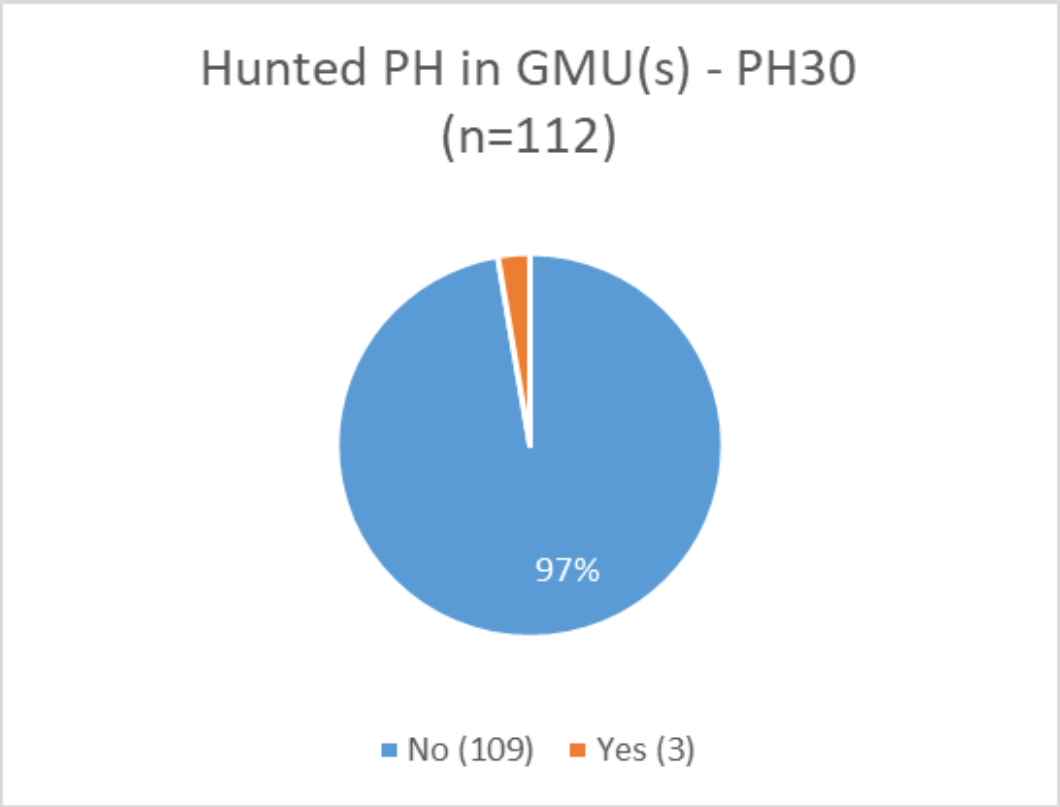
PH-30 SOUTHPARK PRONGHORN HERD – Data Analysis Unit PH-30



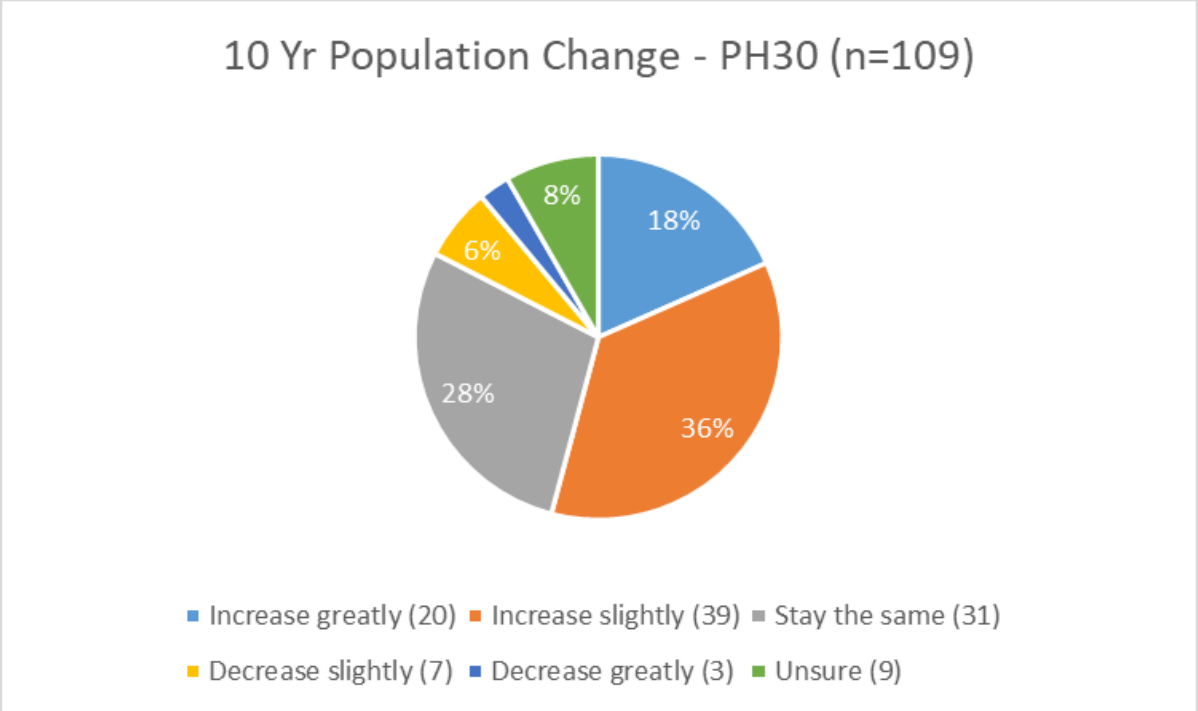
Question 1. Approximately how much land do you own in GMUs 49, 50, 57, 58, 500, 501, 511, and 581?



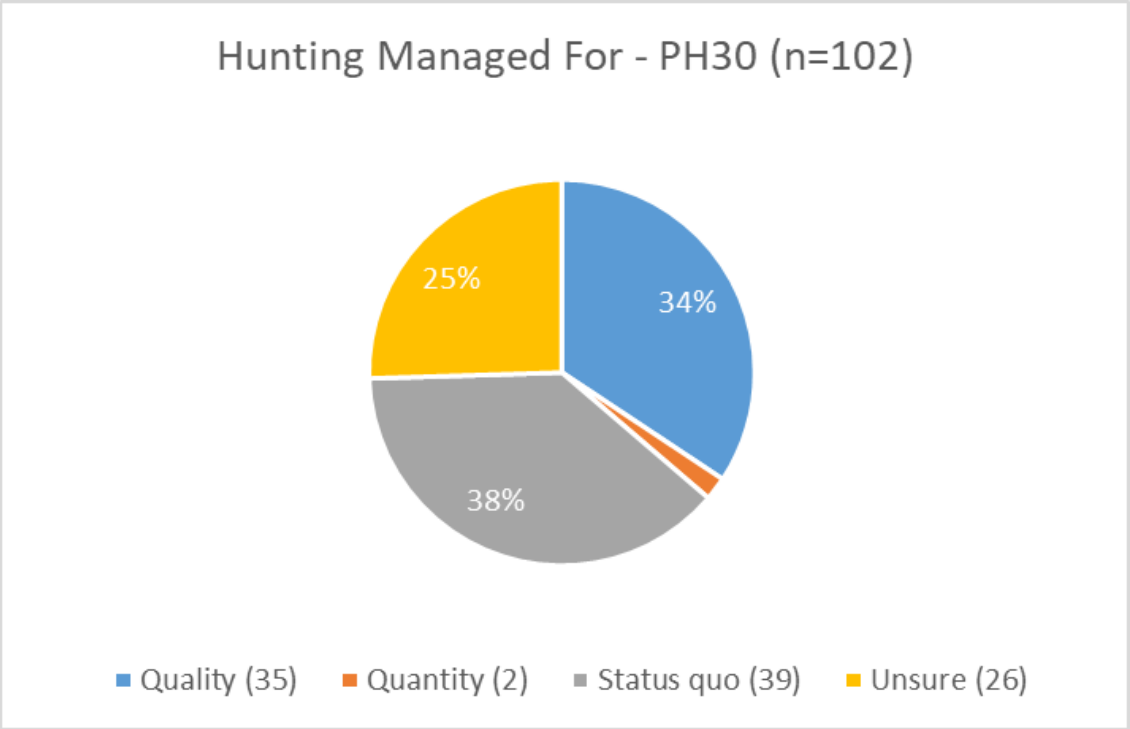
Question 2. Please indicate which GMU within the South Park Pronghorn Herd Management Plan you are most interested in?



Question 3. Have you ever hunted pronghorn antelope in GMUs 49, 50, 57, 58, 500, 501, 511, and 581?

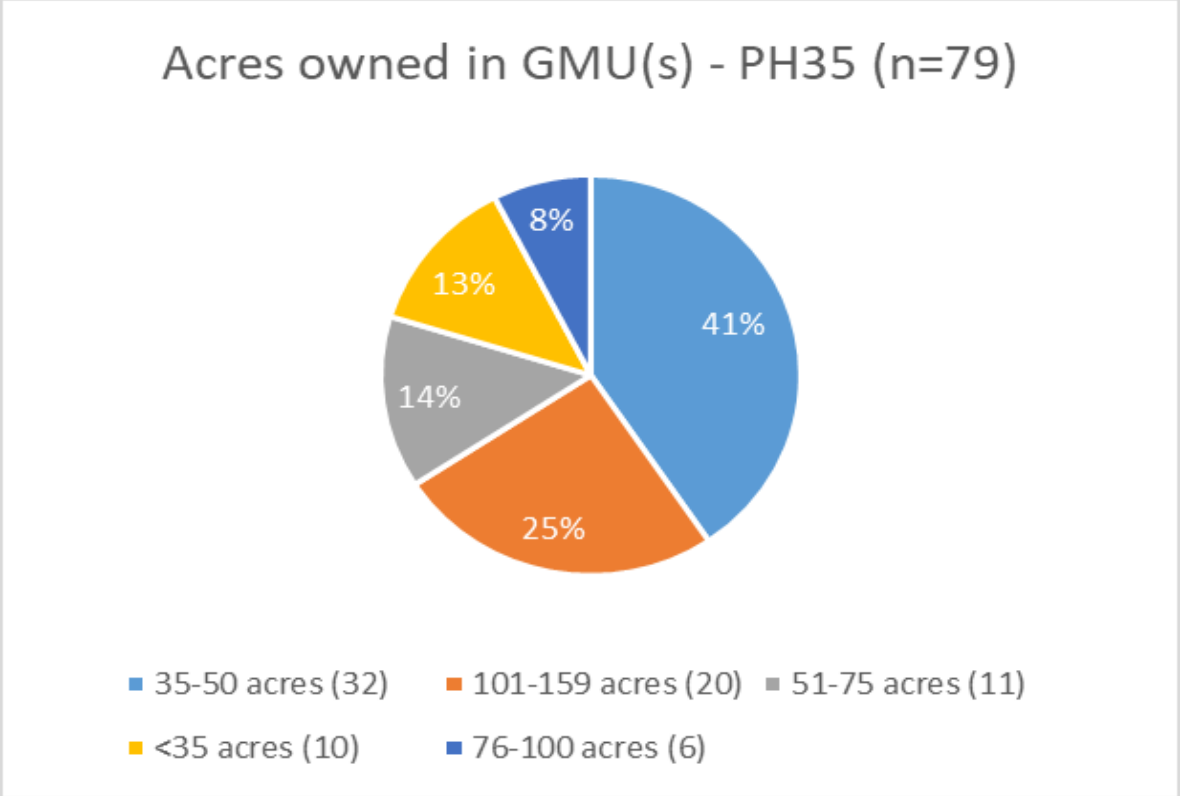


Question 4. How would you like the South Park pronghorn population to change over the next 10 years, if at all?

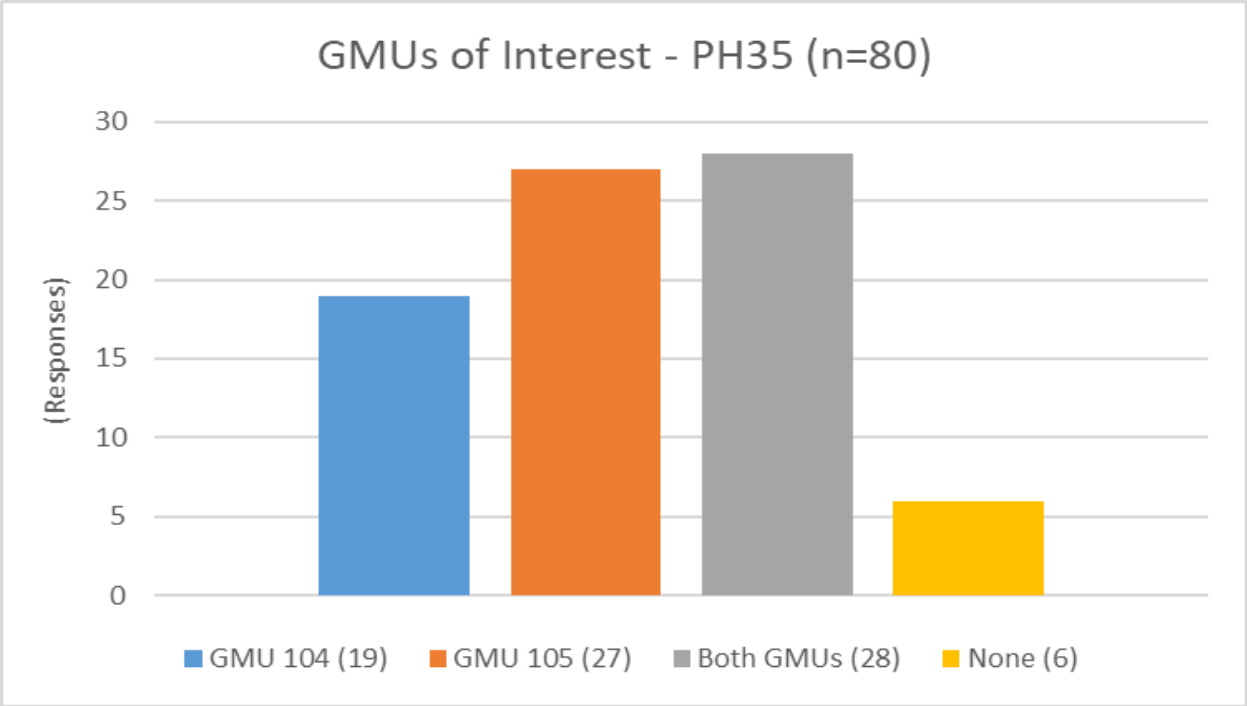


Question 5. For the purpose of pronghorn hunting, should the South Park Pronghorn be managed for…?

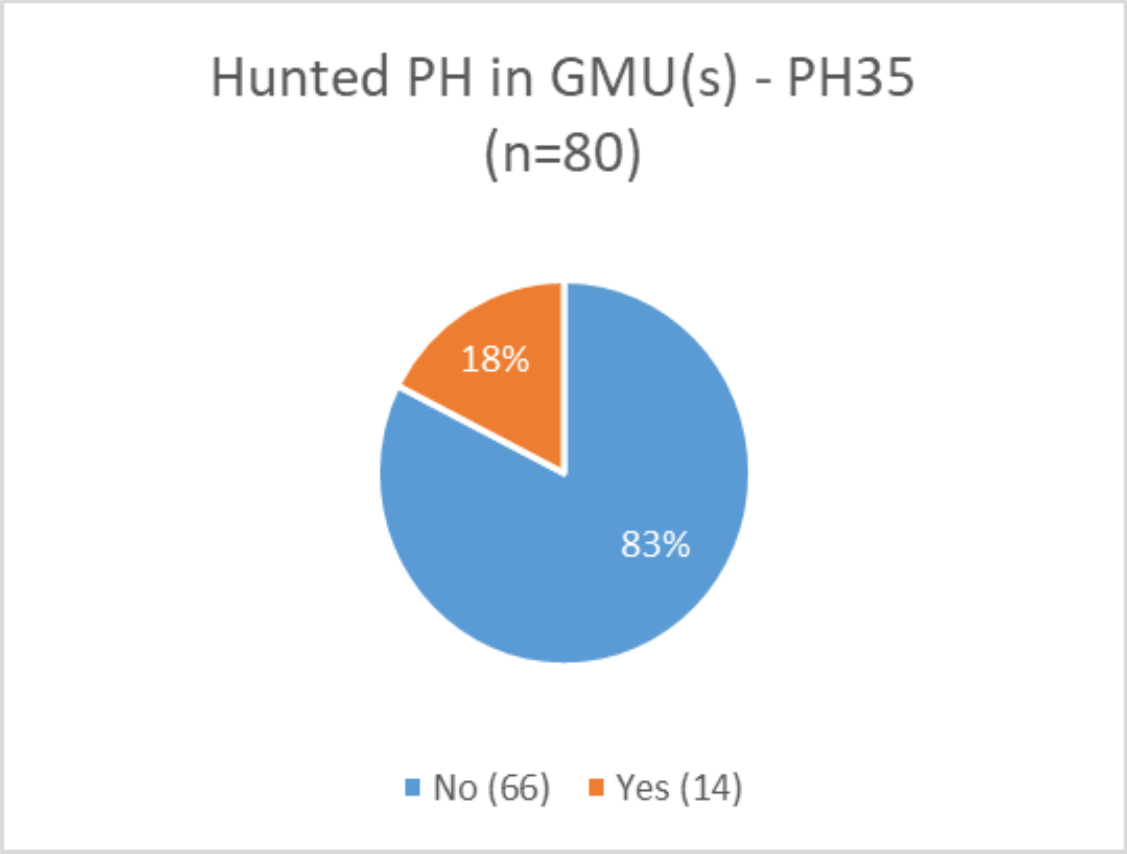
PH-35 KIOWA PRONGHORN HERD – Data Analysis Unit PH-35



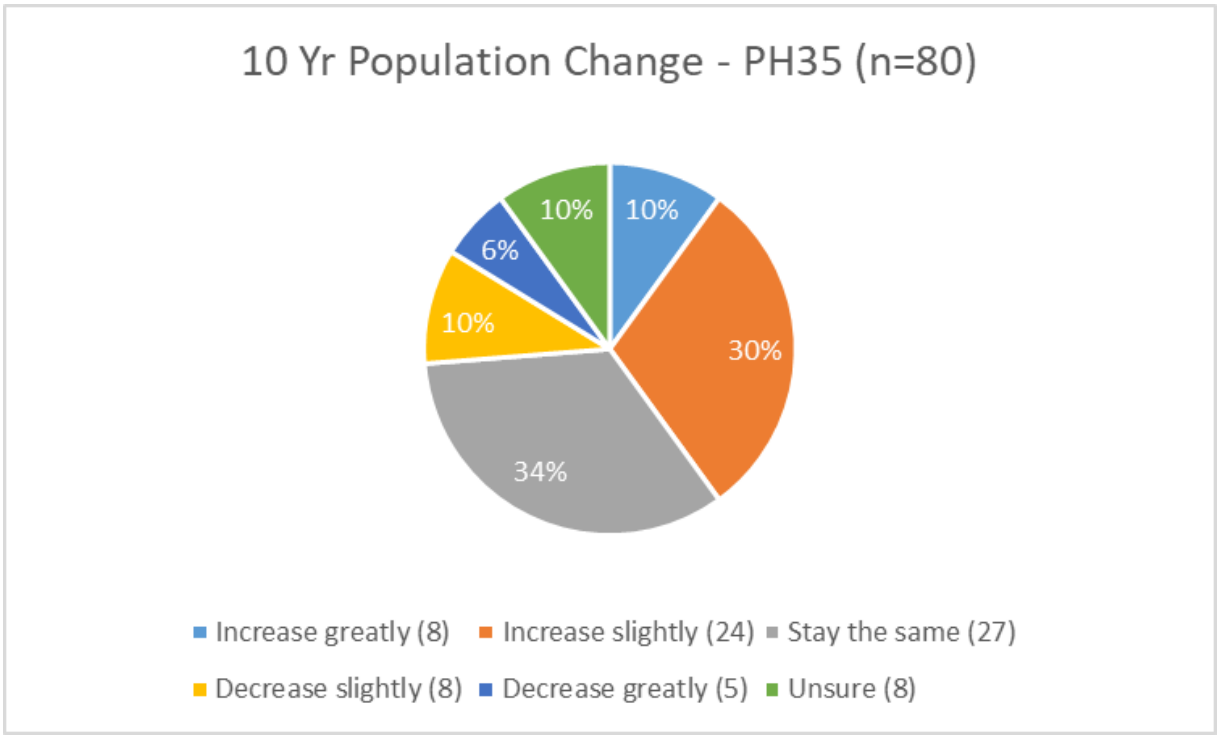
Question 1. Approximately how much land do you own in GMUs 104 and 105?



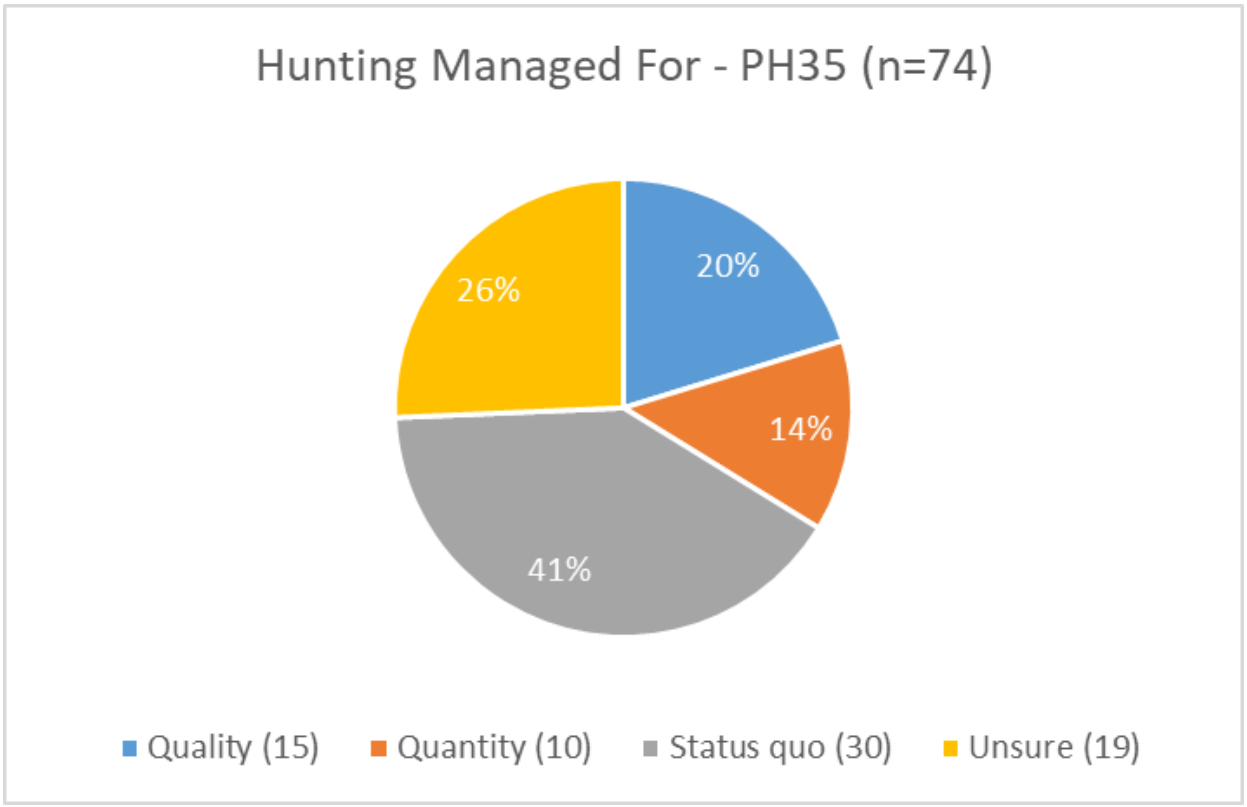
Question 2. Please indicate which GMU within the Kiowa Pronghorn Herd Management Plan you are most interested in?



Question 3. Have you ever hunted pronghorn antelope in GMUs 104 and 105?



Question 4. How would you like the Kiowa pronghorn population to change over the next 10 years, if at all?



Question 5. For the purpose of pronghorn hunting, should the Kiowa Pronghorn be managed for…?

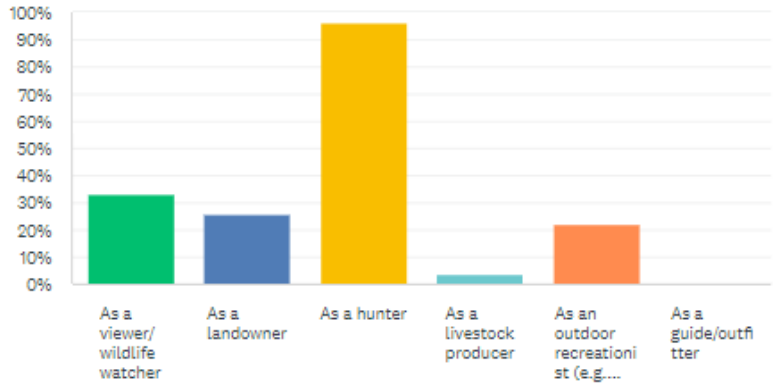
Appendix C. Hunter Survey

Colorado Parks and Wildlife surveyed the previous year's first choice applicants for DAU PH-30 to better understand the hunter/landowner perspective on pronghorn herd management over the past 10 years and how CPW should continue managing pronghorn populations moving forward. Questions asked were modified to address issues specific to management concerns in the respective DAUs. Postcards were sent by mail in October of 2022 to notify first choice applicants of the survey and explained how to access the survey online for a 30-day period.

PH-30 SOUTH PARK PRONGHORN HERD – Data Analysis Unit PH-30

Q1 Which of the following best describes how you interact with pronghorn in the South Park GMUs? (Please check all that apply)

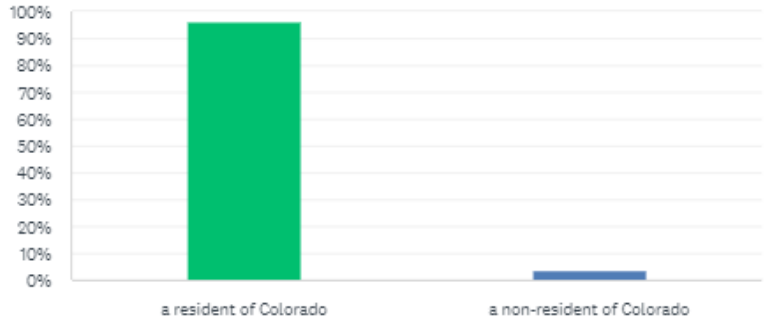
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
As a viewer/ wildlife watcher	27
As a landowner	21
As a hunter	79
As a livestock producer	3
As an outdoor recreationist (e.g., hiker, mountain biker, horseback riding, etc...)	18
As a guide/outfitter	0
Total Respondents: 82	

Q2 Are you...

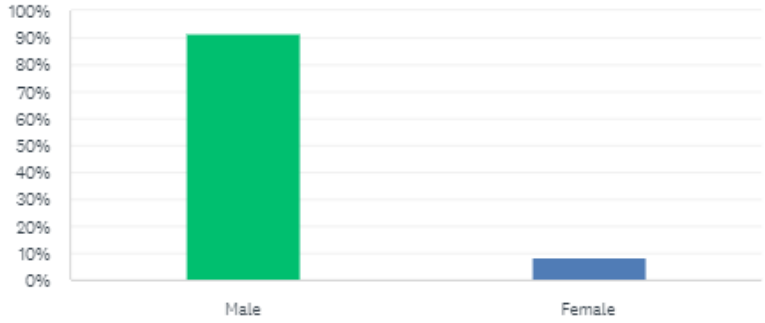
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
a resident of Colorado	79
a non-resident of Colorado	3
Total Respondents: 82	

Q3 Are you...

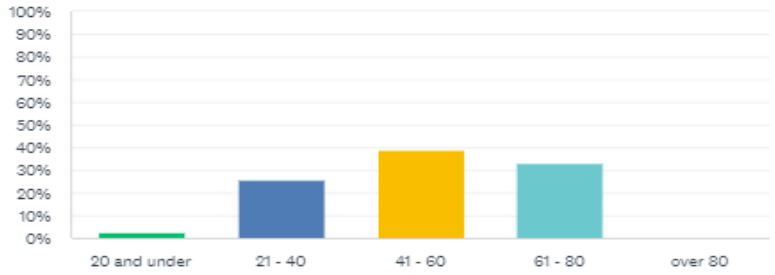
Answered: 81 Skipped: 1



ANSWER CHOICES	RESPONSES
Male	74
Female	7
Total Respondents: 81	

Q4 What is your age?

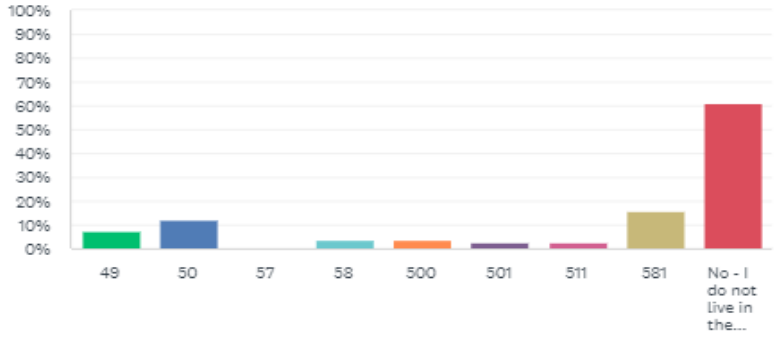
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
20 and under	2
21 - 40	21
41 - 60	32
61 - 80	27
over 80	0
Total Respondents: 82	

Q5 Do you live in any of the listed GMUs?

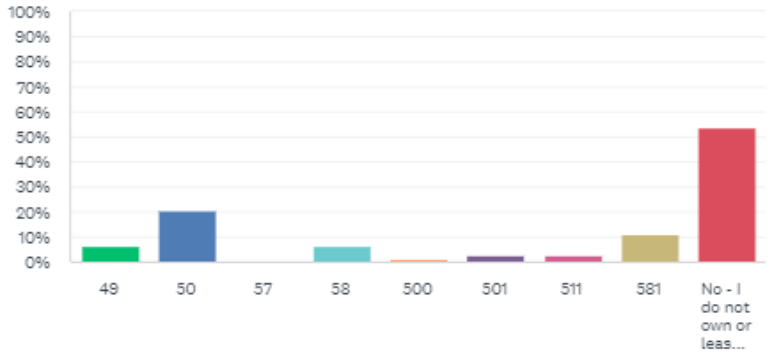
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
49	6
50	10
57	0
58	3
500	3
501	2
511	2
581	13
No - I do not live in the listed GMUs	50
Total Respondents: 82	

Q6 Do you own or lease property in the listed GMUs?

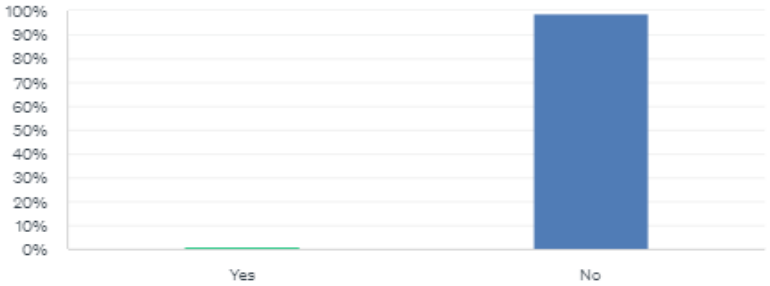
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
49	5
50	17
57	0
58	5
500	1
501	2
511	2
581	9
No - I do not own or lease property in the listed GMUs	44
Total Respondents: 82	

Q7 Do you guide or outfit for pronghorn hunters in the South Park GMUs?

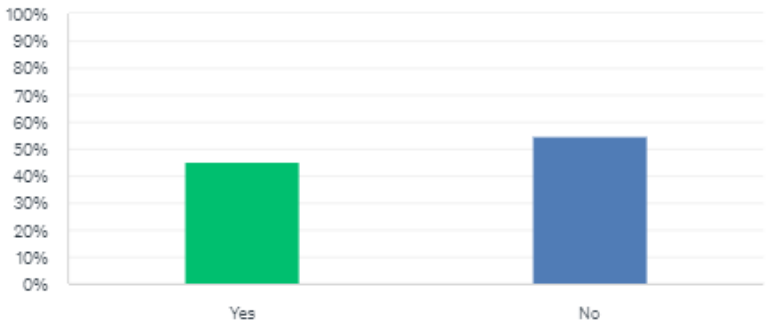
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	1
No	81
Total Respondents: 82	

Q8 Have you ever hunted pronghorn in the South Park GMUs (49, 50, 57, 58, 500, 501, 511 & 581)?

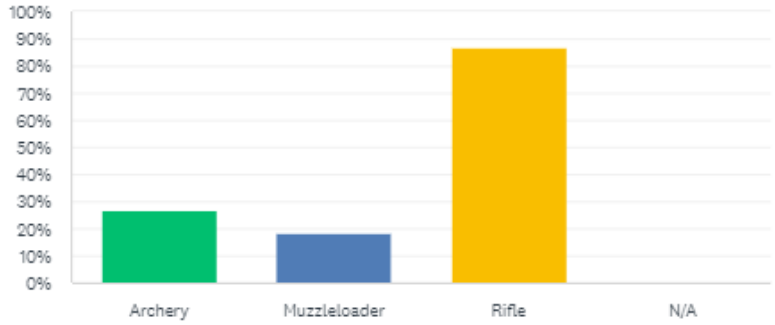
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	37
No	46
Total Respondents: 82	

Q9 What type of license do you prefer applying for in GMUs 49, 50, 57, 58, 500, 501, 511, & 581? Please check all that apply)

Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
Archery	22
Muzzleloader	15
Rifle	71
N/A	0
Total Respondents: 82	

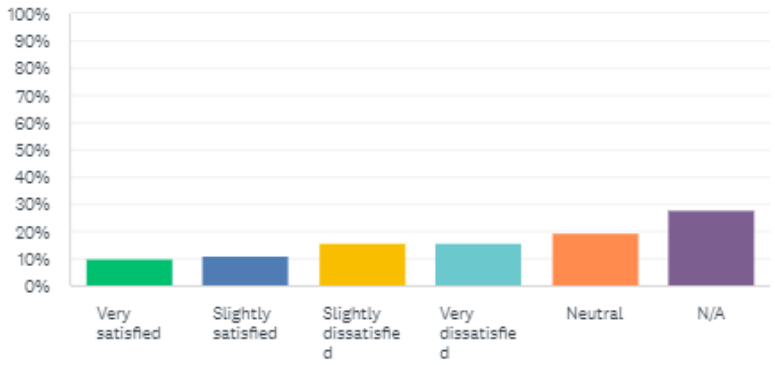
Q10 In the past 10 years (2012 - 2021), indicate the number of years (total) you have applied to hunt pronghorn in the following GMUs:

Answered: 80 Skipped: 2

ANSWER CHOICES		RESPONSES
49	Responses	36
50	Responses	45
500	Responses	21
501	Responses	16
511	Responses	8
57	Responses	22
58	Responses	32
581	Responses	25

Q11 Overall, how satisfied or dissatisfied have you been in the last 10 years with your pronghorn hunting experience(s) in the South Park GMUs?

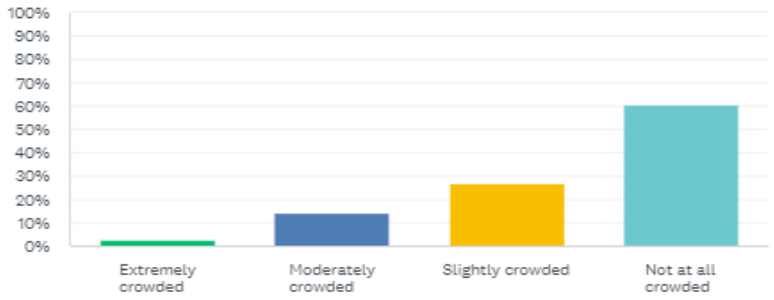
Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
Very satisfied	8
Slightly satisfied	9
Slightly dissatisfied	13
Very dissatisfied	13
Neutral	16
N/A	23
Total Respondents: 82	

Q12 Overall, to what extent have you felt crowded by other hunters while pronghorn hunting in GMUs 49, 50, 57, 58, 500, 501, 511 & 581?

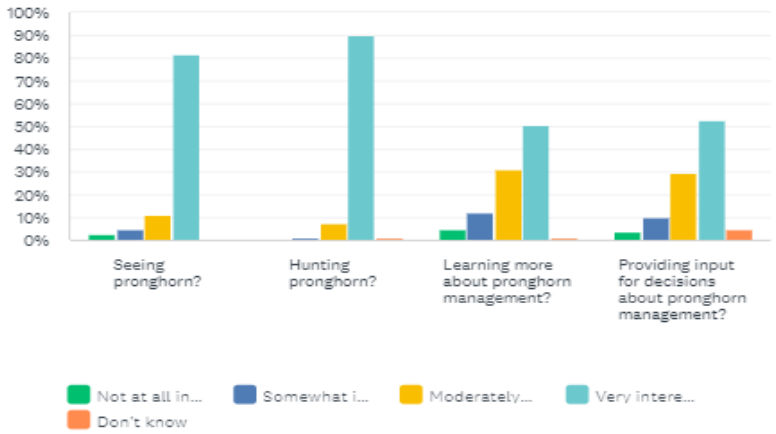
Answered: 71 Skipped: 11



ANSWER CHOICES	RESPONSES
Extremely crowded	2
Moderately crowded	10
Slightly crowded	19
Not at all crowded	43
Total Respondents: 71	

Q13 Please indicate how interested you are in doing each of the following in the South Park GMUs (49, 50, 57, 58, 500, 501, 511 & 581).

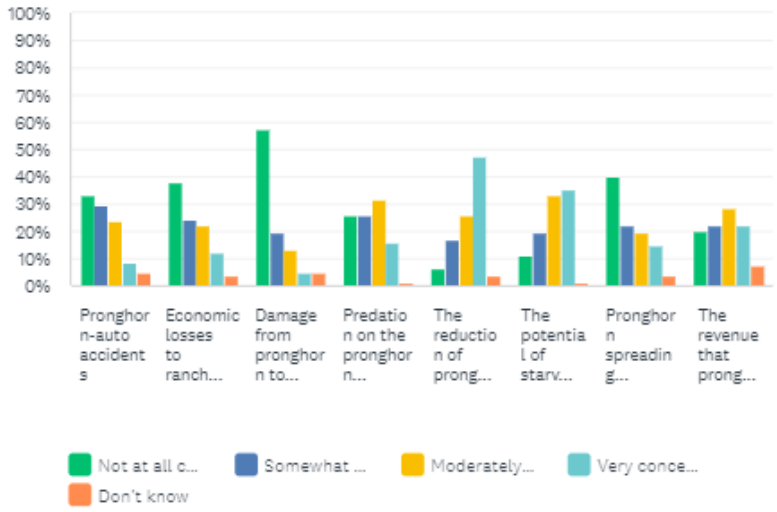
Answered: 82 Skipped: 0



	NOT AT ALL INTERESTED	SOMEWHAT INTERESTED	MODERATELY INTERESTED	VERY INTERESTED	DON'T KNOW	TOTAL
Seeing pronghorn?	2	4	9	66	0	81
Hunting pronghorn?	0	1	6	74	1	82
Learning more about pronghorn management?	4	10	25	41	1	81
Providing input for decisions about pronghorn management?	3	8	24	43	4	82

Q14 Please indicate how concerned you are about each of the following possible problems in the South Park GMUs (49, 50, 57, 58, 500, 501, 511 & 581).

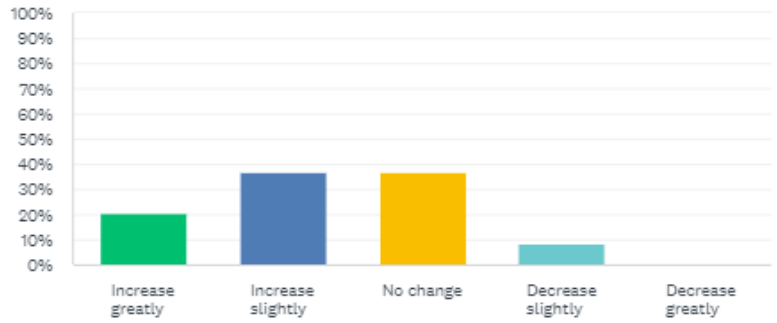
Answered: 82 Skipped: 0



	NOT AT ALL CONCERNED	SOMEWHAT CONCERNED	MODERATELY CONCERNED	VERY CONCERNED	DON'T KNOW	TOTAL
Pronghorn-auto accidents	27	24	19	7	4	81
Economic losses to ranchers/farmers from pronghorn damage to rangelands/hay/crops/fences	31	20	18	10	3	82
Damage from pronghorn to homeowners' trees, shrubs and gardens	47	16	11	4	4	82
Predation on the pronghorn population from coyotes, bears, and mountain lions	21	21	26	13	1	82
The reduction of pronghorn habitat due to increased human population and development	5	14	21	39	3	82
The potential of starvation of pronghorn during the winter	9	16	27	29	1	82
Pronghorn spreading diseases to livestock, pets, or humans	33	18	16	12	3	82
The revenue that pronghorn hunting and viewing provides for local businesses	16	18	23	18	6	81

Q15 How would you like the South Park pronghorn population to change, if at all?

Answered: 82 Skipped: 0



ANSWER CHOICES	RESPONSES
Increase greatly	17
Increase slightly	30
No change	30
Decrease slightly	7
Decrease greatly	0
Total Respondents: 82	

Q16 For the purposes of pronghorn hunting, should the South Park GMUs be managed for...

Answered: 82 Skipped: 0

ANSWER CHOICES	RESPONSES
Increased quality of hunting opportunity (fewer buck licenses available, fewer hunters in the field)	20
Maximum quantity of hunting opportunity (more buck licenses available, more hunters in the field)	28
Status quo (satisfied with current management)	24
No Opinion	14
Total Respondents: 82	

Q17 Please use the space below for any additional comments you would like to make about the South Park pronghorn herd (GMUs 49, 50, 57, 58, 500, 501, 511 & 581).

Answered: 42 Skipped: 40

#	RESPONSES	DATE
1	I grew up, worked in and hunted these GMUs and continue to hunt these GMUs. In my experience ranchers do not appreciate the pronghorn competing for feed on their property with their livestock. I do feel that the amount of points it takes to achieve tags to hunt pronghorn in these GMUs for residents is kind of high.	12/9/2022 9:58 AM
2	Thank you for this survey I do have 36 acres and the pronghorn population is increasing very well I would please like to get a chance to draw a tag	11/17/2022 9:58 AM
3	Although I have not had the chance to hunt the areas listed yet for pronghorn. I work with park county and drive by most of the units everyday. Along with living in the units. The buck population is strong. I do feel like the doe population is becoming to heavy. It's amazing to me we do not have more crashes involving pronghorn on highway 24 between Wilkerson pass and Hartsel.	11/14/2022 10:49 AM
4	In regards to question 16, I believe the quality of hunting should not be of major concern, but the quantity should be raised 12-14% or so in my opinion.	11/9/2022 9:22 AM
5	I have owned property in South Part for 37 years. It took me 10 points/years to get my first tag. Since, I now have 11 points and my son has 11 points. There are so many more pronghorns and many nice bucks I see every time I'm up there and in many locations throughout the park. yet at this rate I might get one more chance to pull a tag which will make only twice in my life. It makes you take the first buck you see instead of waiting for that huge buck. There should be a preference for land owners, especially life long term owners. Also, there are many moose now, I see them every time also yet I'll be long dead before I will ever pull a tag. Furthermore. I used to pull a buck and elk tags every year, now it takes a year or two. Yet there are thousands of elk and plenty of deer to be had. I think you need a disbursement/culling of the elk on the Denver Water District near Antero Res. There are maybe thousands of elk there right now. If there is anything I can do to help, please feel free to call me.	11/8/2022 4:10 PM
6	Nothing to add	11/8/2022 5:49 AM
7	I think this part of the state specifically offers a great opportunity to hunters especially because of the amount of public lands available. I do feel like this could be a great opportunity for youth or disabled people's to get out and hunt these pronghorn because the animal numbers are higher and terrain is fairly easy to access.	11/5/2022 6:43 PM
8	The way it is being managed currently is awesome in my book. It is nice to see some trophy size bucks in the areas.	11/5/2022 5:23 PM
9	I have been hunting Antelope in South park- since the 1980s- have hunted them with Rifle- Bow - and muzzleloader. The increase in people population and Reecrational use of the area is changing their habits- in migration and areas that they like to hangout. Hunting and patterning them changes each year- weather- pressure from increased development are 2 main factors. I wouldn't increase the amount of lisc draws. Would also reach out to landowners that are utilizing DOW resources in reimbursement of -,Wildlife damages- to allow hunters to access their land to harvest antelope. Could be a Win- Win for All	11/4/2022 2:37 PM
10	I enjoyed my time hunting there. I came home empty handed both years but it was still great. I've moved permanently away from Colorado. I'm not likely to hunt there again. Yes... I'm sad. Best of luck out there.	11/1/2022 5:20 PM
11	I understand it takes 10 years to get a buck license in Southpark. That is a bit much!	11/1/2022 5:09 PM

12	I think that the huge opportunity the Downares bring to the table allowing hunters access to their property is of the most concern since they have their property listed for sale. I LOVE the pronghorn opportunity in this unit. I have seen a slight decline in trophy quality the last few years. I would like to see the quality go up, but I also like hunting it.	11/1/2022 1:47 PM
13	I have two issues with hunting pronghorns and any early season hunting in unit 50 where i live. Unless you have a large tract of private land it becomes nearly impossible to hunt the public due to the over run forest service/public land by the general public with their off-road vehicles, camping and general shenanigans that goes on well into September. this involves not only pronghorn but archery elk as well. Secondly, although i have enough land to qualify for LO vouchers, I am not allowed to obtain one for pronghorn based on the overall presence of them on my property. They are there regularly, but apparently not enough. However, larger landowners are given multiple vouchers (and this applies particularly to elk as well) even though they have no animals on their property during the active seasons. However, they turn around and sell those tags at quite a profit and send the buyer elsewhere, primarily on public where its already overcrowded by the draw hunters or to other private tracts of ground. i feel its extremely unfair that as a landowner, i cannot even become eligible for one of these tags while others are selling them off for a profit. i understand the potential winter ground loss issues, however if a landowner has enough land to qualify for the system, then all animals should be available, since we do have them ALL. That being said, I am not in favor of increasing tag numbers, the quality of the herd in SoPark is something that should be maintained. Thanks	10/31/2022 3:52 PM
14	Provide more access to private land where most pronghorn seemed to end up when pressured by hunters. Allow unlimited female archery permits instead of having to draw one. Enlarge GMUs verses the current 8 units. Let hunters space themselves. What is management needs for all of these 8 units?? Thanks for the opportunity to participate.	10/30/2022 3:28 PM
15	I'd love a tag sometime, it's weird that I haven't gotten one yet out of the draw.	10/30/2022 9:28 AM
16	Thank you. Good luck!	10/30/2022 8:26 AM
17	Why is it so difficult to get a tag for nonresident?????	10/28/2022 11:40 AM
18	I have been applying in these units for years to no avail. I am not a fan of the DOW decision makers. Just a bunch of dead ass brass making decisions and they don't even hunt or know about harvesting in the field.	10/27/2022 7:03 PM
19	Maybe a web site to announce landowners who allow hunting with or without a trespassing fee.Kind of like a rod or shotgun fee for permission on private water or farm ground.	10/27/2022 10:26 AM
20	I'd like to see a slight increase in the number of doe licenses	10/26/2022 11:20 AM
21	Size of bucks have fallen 14"or smaller Cut buck tags in half for three years Allow one to two more vehicle access routes in James Jones SWA Thanks Jim Byers Hunted this area since 1984 used to live out there	10/26/2022 8:11 AM
22	na	10/25/2022 5:27 PM
23	I hunt for meat. I have pulled 3 doe pronghorn licenses in 8 years. I have been successful 2 out of 3 times. You have to put in the work, but they are there if you do. Current system seems to work well.	10/25/2022 12:16 PM
24	I am a resident, on property in one of these GMU's and still can't pull a tag. Out of state pays a guide or extra fees for a tag and gets his pronghorn. NOT FAIR!!!! You also do this for deer and elk and general public is running out of hunting space. Do not micro manage these herds to the point of ruing both the herds and hunting ops. I have seen it done in fishing waters.	10/25/2022 10:03 AM
25	With the large amount of privately owned land where these pronghorn preside, there are still areas where hunters can access land and be successful.	10/25/2022 5:58 AM
26	I am very concerned about the lack of availabel public lands to hunt Pronghorn in the stated GMU's	10/24/2022 9:42 PM
27	Way to many loud atv and utvs in the units. It's impossible to get away from them.	10/24/2022 4:26 PM
28	Way to many loud ate and ITV's in the units. It's impossible to get away from them.	10/24/2022 4:25 PM
29	I have never actually hunted pronghorn in this DAU. I've only recently started putting in for a buck tag in 57/58. I'm afraid with point creep I will probably never draw the tag.	10/24/2022 7:08 AM

30	Item 16 should offer a consideration for doe hunting. There appears to be a need for doe harvesting during the early fall season. I have failed to receive a draw for 4 consecutive years now - muzzle loader	10/24/2022 1:45 AM
31	I have 7 points, husband has 10. We are both concerned about point creep and the current system in place not allowing either of us to have opportunities to hunt pronghorn.	10/23/2022 8:33 PM
32	I'm very dissatisfied with the opportunities given to resident hunters. Resident hunters should be given priority over out of state hunters. It is ridiculous that I have to wait 3-4 years to pull a tag while the roads and woods are overcrowded with out of state hunters.	10/23/2022 2:48 PM
33	I haven't drawn yet for these units but always see a good amount when fishing or other stuff.	10/23/2022 1:39 PM
34	Your tag management for locals and state residents is bullshit. It is frustrating to wait years for tags and see nothing but out of state hunters clog the forest. Your treatment of residents is abysmal whole you chase dollars for out of state fees.	10/23/2022 10:45 AM
35	Again I have stated this in previous surveys completed for you. I feel as a resident of the above gmu (50), I should have priority along with my other residence for hunting not only pronghorn , but other game animals when it comes to the draw system and not out of state residence who have a better chance at drawing before I do . Would love to talk more about this and any other topics as it relates to wild life management . Being in law enforcement myself , I am very supportive of you .	10/23/2022 9:42 AM
36	N/A	10/22/2022 5:06 PM
37	At one time I drew a tag every other year the last tag took me 8 PP and now I have 7 PP at my age I will not be able to hunt much longer. Seniors need to get moved higher on the draw list.	10/22/2022 4:36 PM
38	These GMUs for pronghorn shouldn't take 3+ years to obtain.. residence should have better opportunities for tags!	10/22/2022 2:31 PM
39	The accessibility of some public land in 57/58/581 needs to be reviews by CPW to see if changes can be made.	10/22/2022 1:03 PM
40	You doing a great job with the pronghorn population. Seeing more pronghorn around. Thank you	10/22/2022 8:06 AM
41	I have not been able to draw a tag for my family's land. I believe going on four years now.	10/21/2022 6:56 PM
42	A few more tags issued would be nice	10/21/2022 1:08 PM

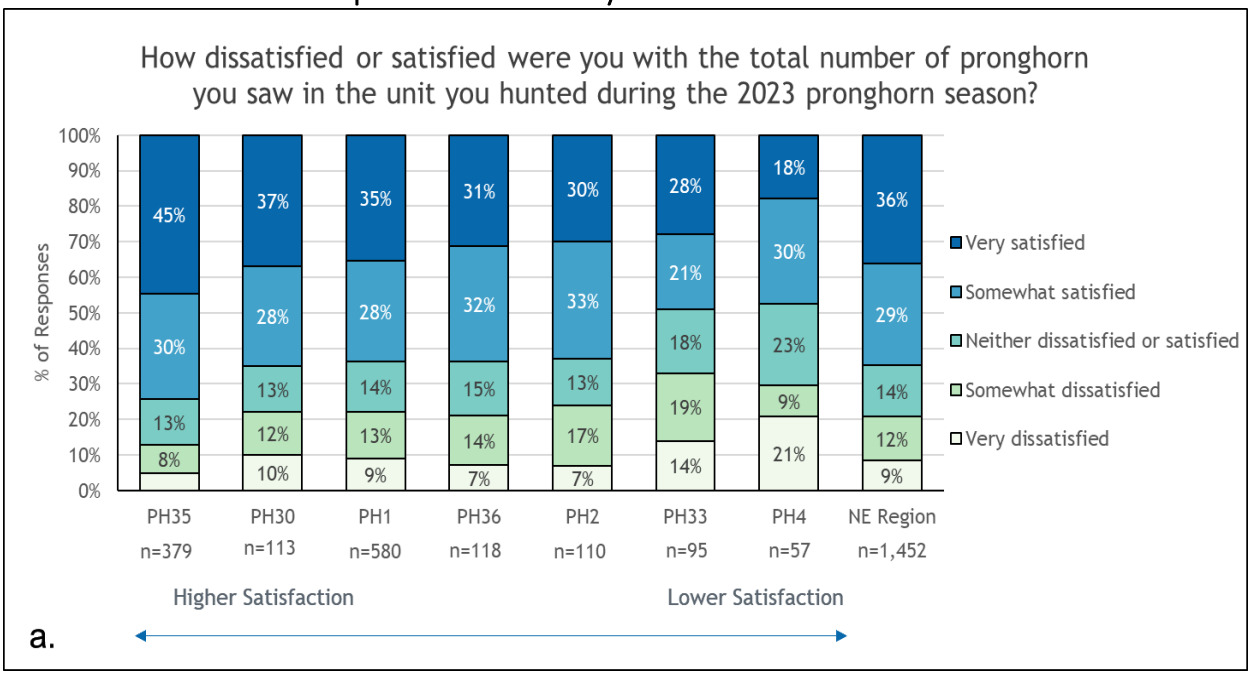
Appendix D. Hunter Opt-In Harvest Survey

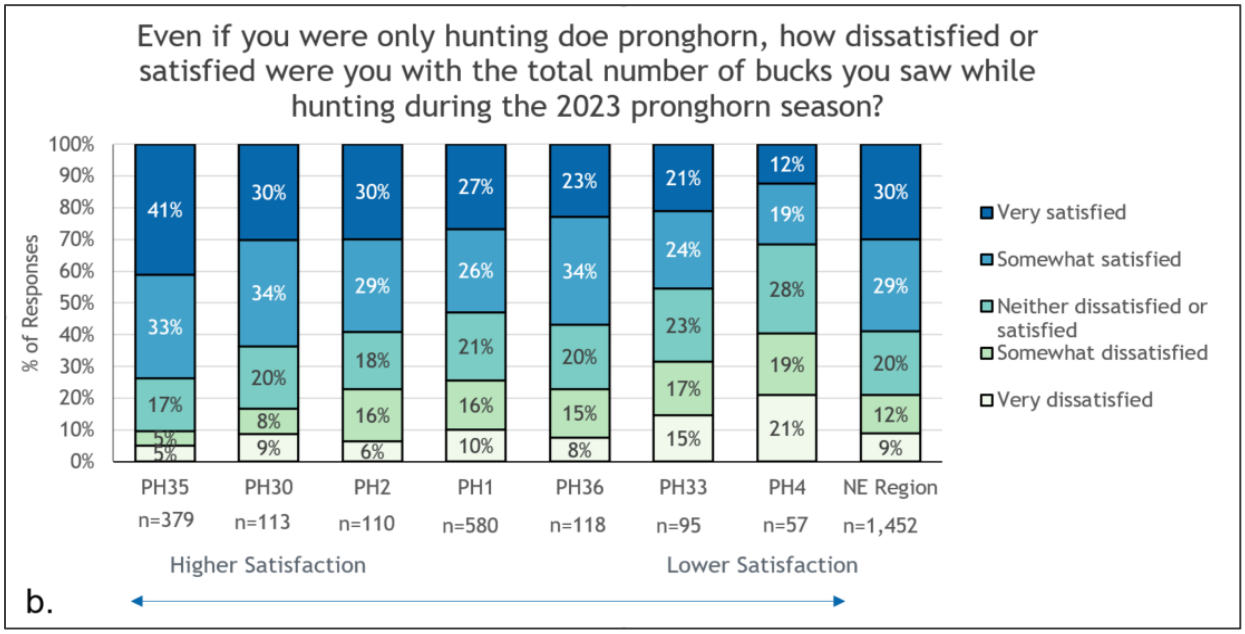
For this herd management planning process, we considered the results from the 2023 Big Game Harvest Opt-In Survey. Each year, Colorado Parks and Wildlife contracts with an outside firm to collect hunt and harvest information from pronghorn hunters for the Big Game Harvest, including questions that relate to where and when they hunted, did they harvest, what they harvested, were they satisfied with their hunt, and did they feel crowded by other people during their hunt. Each year Colorado has over 350,000 deer, elk and pronghorn hunters. Approximately 190,000 hunters are randomly selected to participate in the annual harvest survey, which is designed to estimate harvest and participation for all seasons and manners of take at the herd level. This information is then used with information collected by CPW biologists to estimate deer, elk, and pronghorn population numbers.

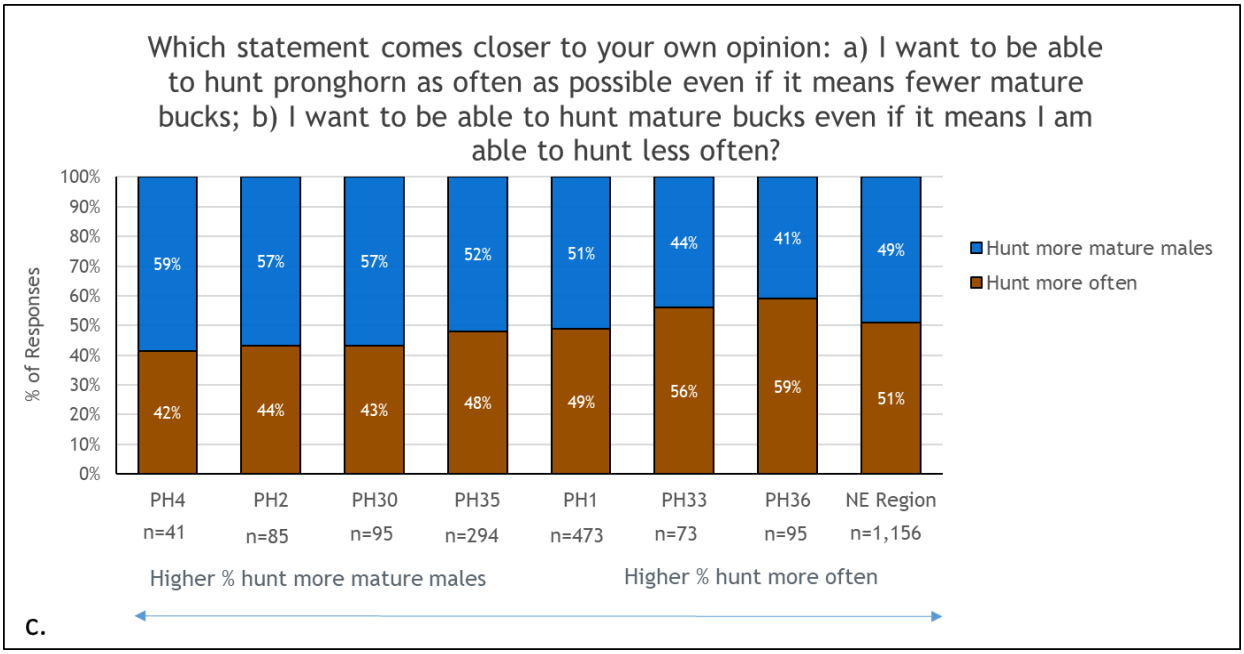
Beginning in 2021, 5 opt-in questions were added to the Big Game Harvest Survey. These questions were optional and presented at the end of the survey. They were designed to collect feedback from hunters to inform herd management. CPW was interested in hearing hunter preferences on herd populations and hunting opportunity, how satisfied hunters were with their hunt, and how crowded they felt.

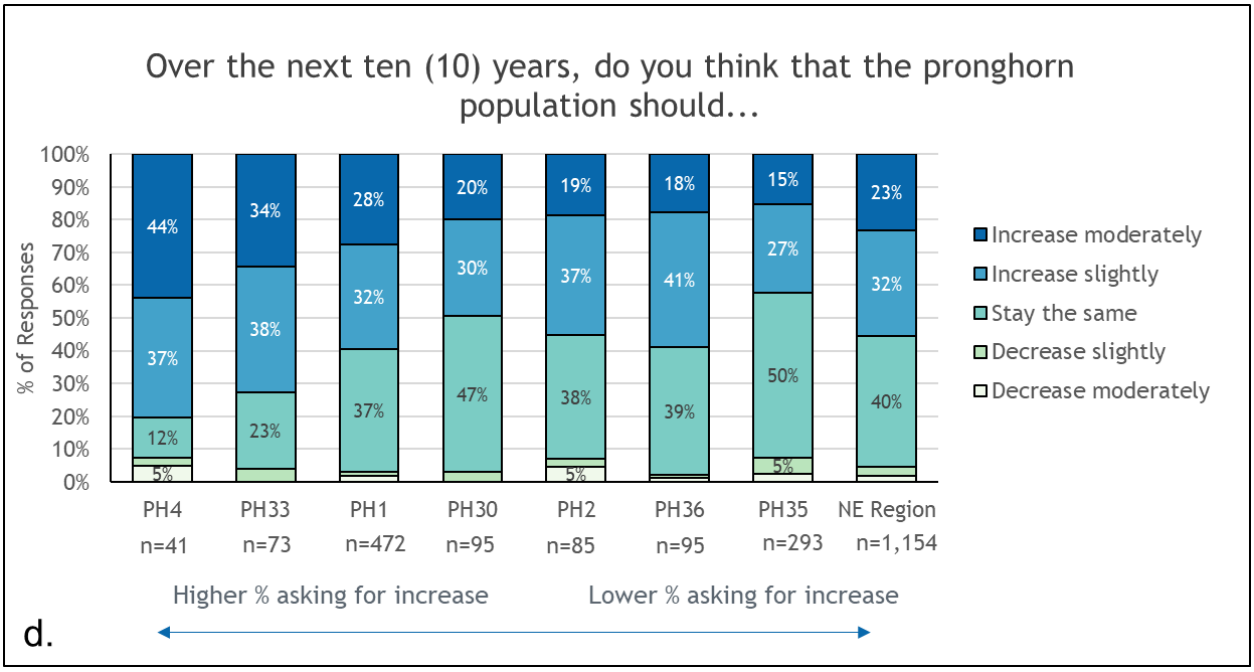
The seven graphs below depict the hunters' responses to seven questions relating to their hunting experience and observations in the 7 different DAUs in northeast Colorado. The DAUs in each graph are ranked from least satisfied to most satisfied.

Opt In Hunter Survey Results - 2023 Season

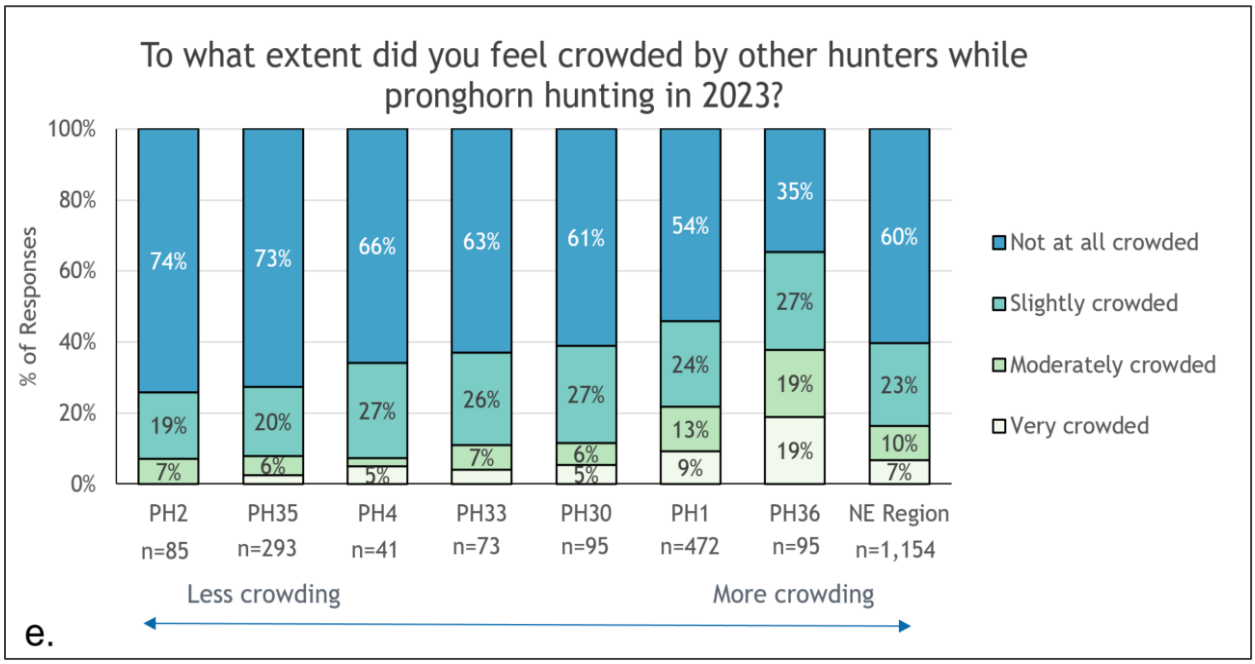



Even if you were only hunting doe pronghorn, how dissatisfied or satisfied were you with the total number of bucks you saw while hunting during the 2023 pronghorn season?
% of Responses
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
41%
33%
17%
5%
5%
30%
34%
20%
8%
9%
30%
29%
18%
16%
6%
27%
26%
21%
16%
10%
23%
34%
20%
15%
8%
21%
24%
23%
17%
15%
12%
19%
28%
19%
21%
30%
29%
20%
12%
9%
PH35 n=379
PH30 n=113
PH2 n=110
PH1 n=580
PH36 n=118
PH33 n=95
PH4 n=57
NE Region n=1,452
Higher Satisfaction
Lower Satisfaction
Very satisfied
Somewhat satisfied
Neither dissatisfied or satisfied
Somewhat dissatisfied
Very dissatisfied
b.

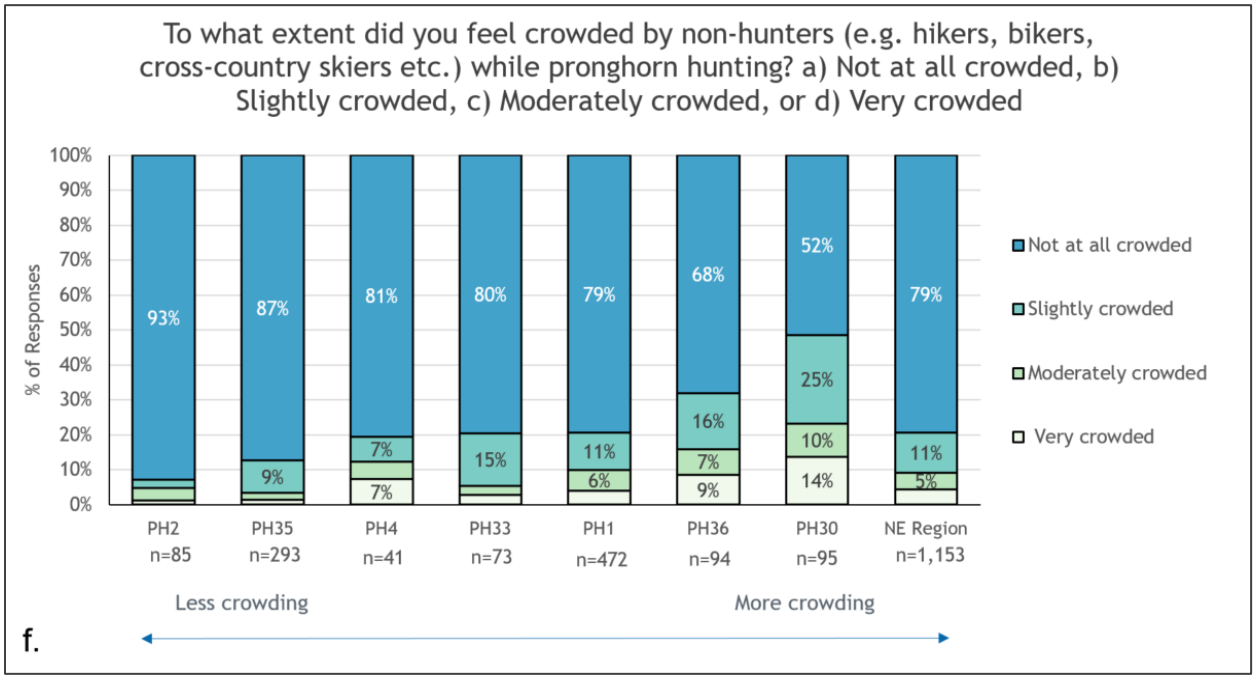

Which statement comes closer to your own opinion: a) I want to be able to hunt pronghorn as often as possible even if it means fewer mature bucks; b) I want to be able to hunt mature bucks even if it means I am able to hunt less often?
% of Responses
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
59%
42%
57%
44%
57%
43%
52%
48%
51%
49%
44%
56%
41%
59%
49%
51%
PH4 n=41
PH2 n=85
PH30 n=95
PH35 n=294
PH1 n=473
PH33 n=73
PH36 n=95
NE Region n=1,156
Higher % hunt more mature males
Higher % hunt more often
Hunt more mature males
Hunt more often
c.


Over the next ten (10) years, do you think that the pronghorn population should...
% of Responses
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
44%
37%
12%
5%
34%
38%
23%
28%
32%
37%
20%
30%
47%
19%
37%
38%
5%
18%
41%
39%
15%
27%
50%
5%
23%
32%
40%
PH4 n=41
PH33 n=73
PH1 n=472
PH30 n=95
PH2 n=85
PH36 n=95
PH35 n=293
NE Region n=1,154
Increase moderately
Increase slightly
Stay the same
Decrease slightly
Decrease moderately
Higher % asking for increase
Lower % asking for increase

d.


To what extent did you feel crowded by other hunters while pronghorn hunting in 2023?
% of Responses
100%
80%
60%
40%
20%
0%
74%
19%
7%
73%
20%
6%
66%
27%
5%
63%
26%
7%
61%
27%
6%
5%
54%
24%
13%
9%
35%
27%
19%
19%
60%
23%
10%
7%
PH2 n=85
PH35 n=293
PH4 n=41
PH33 n=73
PH30 n=95
PH1 n=472
PH36 n=95
NE Region n=1,154
Not at all crowded
Slightly crowded
Moderately crowded
Very crowded
Less crowding
More crowding

e.



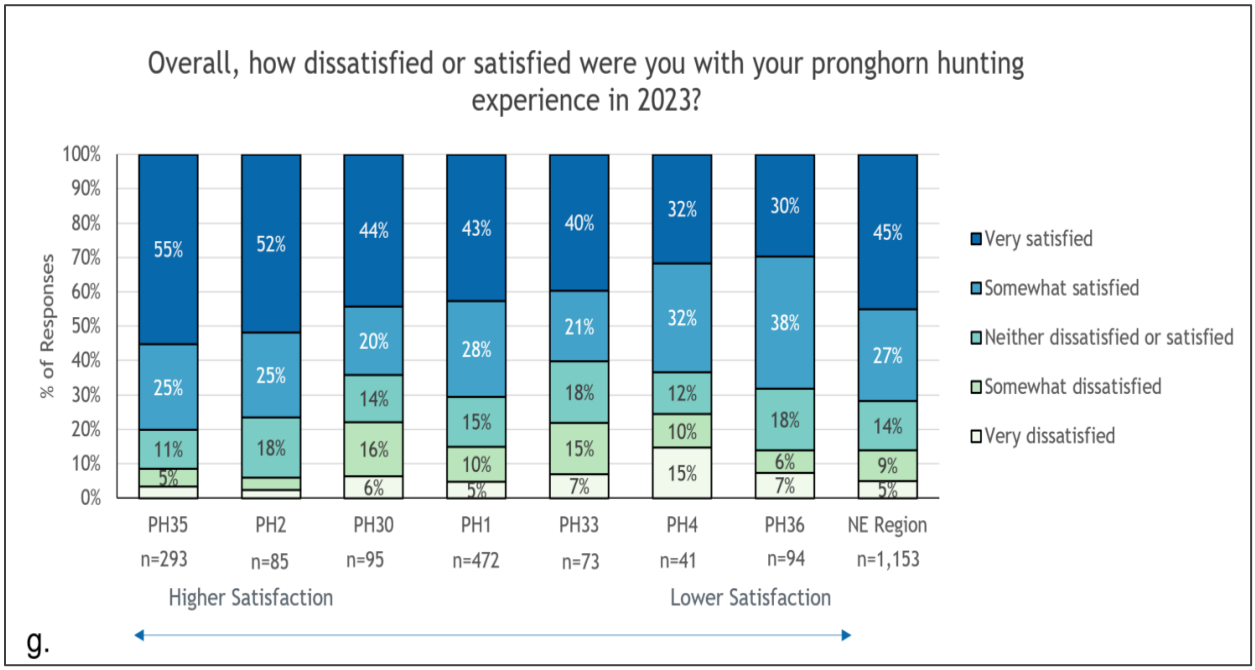


Figure 9 (a-g). Hunter harvest attitude survey questions and results for 2023. The seven pronghorn DAUs are ranked from high to low (left to right) in relation to the specific question.

Appendix E. Public Comments and Letters of Support

PH-01 ESCARPMENT PRONGHORN HERD – Data Analysis Unit PH-01

Oberlag, Dale -FS <dale.oberlag@usda.gov> Tue, Nov 29, 2022 at 12:08 PM
To: "Curtis - DNR, Angelique" <angelique.curtis@state.co.us>
Cc: "Oberlag, Dale -FS" <dale.oberlag@usda.gov>, "Youngman, Curtis -FS" <curtis.youngman@usda.gov>

Hi Angelique, I received replies from PNG folks on the Draft PH-1 Escarpment Herd Plan and recommended population and sex ratio objectives. We have no concerns, conflicts, or issues regarding pronghorn management on the PNG and support your recommendations for maintaining the status quo population range of 6,500-7,500 pronghorn and sex ratio of 30-35 bucks per 100 does during the 10-yr plan life. We do have one requested edit to correct "Pawnee Grasslands" with "Pawnee National Grassland" (p. 3 and wherever else PNG is noted). Thank you for the opportunity to review and comment on this proposed herd management plan.

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[Quoted text hidden]

Tue, Jan 24, 7:59 PM

Tim Brass

to me, julie.stiver

I appreciate the opportunity to provide comments on the current management plans. My comments on both regions are pretty focused on two things:

1) Please help boost populations in both regions. Current population levels are socially set lower than carrying capacity thus limiting hunting opportunities for a species that is becoming increasingly popular to hunt. I believe we can and should increase these population targets substantially in both regions

2) Expand public access to hunt antelope in both regions. Units 87 and 88 take multiple points to shoot a doe antelope because there's good access, good habitat and good populations. I think would be great to put together a management plan which seeks to replicate this elsewhere. –Sent from my iPhone

PH-04 SANDHILLS PRONGHORN HERD – Data Analysis Unit PH-04

February 2, 2023

Marty Stratman
Colorado Parks and Wildlife
28167 County Road T
Brush, CO 80723

RE: Republican Rivers Habitat Partnership Program Comments – PH-4

Dear Marty Stratman,

The Republican River HPP Committee is writing this letter in support of the DAU plan for PH 4. The committee members have all reviewed the plan as it was presented by Marty Stratman and unanimously voted to support the plan. We feel that the pronghorn numbers presented in the plan are acceptable and fit within the objectives of the HPP committee.

Our goals are: to increase the quality of hunts, as well as, manage the herd population, and the buck to doe ratio. The preferred objectives in the draft plan are to manage a post season population of 550–750 pronghorn with a sex ratio of 25 – 30 bucks per 100 does. We as a committee support the recommendations put forth in the plan and agree that the DAU can support a pronghorn population as proposed with no detrimental impacts to the habitat in this DAU. The committee felt like landowners would be accepting of the numbers in this plan.

Therefore, the RRHPP committee supports this plan and the preferred alternatives proposed by the Parks and Wildlife staff and recommends to the Colorado Parks and Wildlife Commission that the proposed management plan, the Sandhills Pronghorn Herd Management Plan (PH-4) be adopted.

Please feel free to contact any of our committee members if you have questions.

Sincerely,

Dustin Wise

Dustin Wise, Chair
Republican Rivers HPP Committee

PH-33 CHEROKEE PARK PRONGHORN HERD MANAGEMENT PLAN – Data Analysis Unit PH-33

April 30, 2020

Angelique Curtis
Colorado Parks and Wildlife
317 W Prospect Rd.
Fort Collins, CO 80526

RE: Larimer County Habitat Partnership Program Comments - DAU PH-33

Dear Angelique:

One of the initial reasons for creating the Habitat Partnership Program was to provide local landowners and other interests an opportunity to give input into big game management in their areas. The diverse makeup of local HPP committees (3 livestock growers, Forest Service, BLM, CPW and sportsmen representatives) provide a good cross section of local interests to review DAU proposals and respond accordingly for CPW consideration.

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

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

The Larimer County HPP committee supports the draft alternative to keep the current population objective. We believe this alternative responsibly balances local range and habitat conditions with sportsmen desires and landowner concerns. We have not heard of any concerns about the current population or any desires to increase the local herd size and so we believe the current levels are where they should be. Any issues we have are more likely related to distribution of the herds in the area and not the overall population size.

The Larimer County HPP committee also discussed the proposed sex ratio alternative. We support raising the current sex ratio objective to provide larger bucks for sportsmen to pursue. We agree that this objective aligns with current management capabilities considering the restrictions for hunting on private land and the increased development and habitat fragmentation in this area.

As stated above, HPP is also directed by statute to assist the Division to meet game management objectives. The Larimer County HPP committee has worked with both public land managers and private landowners to improve the quality and quantity of the habitat in DAU PH-33. Adequate

habitat is critical to meeting game management objectives and we remain committed to maintaining and improving habitat in this area.

Our committee is confident about CPW being able to achieve the proposed objectives. We feel that the extension of the late antlerless pronghorn rifle season will help CPW to achieve and maintain the proposed objectives. Dispersal hunting helps to alleviate game damage issues, especially during winter months when antelope migrate from Wyoming.

The Larimer County HPP committee feels there is adequate habitat with adequate plans in place, such as the extended hunting season, to achieve the desired objectives. While the committee has confidence in the plan's objectives over the next ten years, beyond that they are concerned residential growth and increased recreation demands could hinder future population objectives.

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

Sincerely,

Lars Larson, Chair
Larimer County HPP Committee

Wed, Apr 29, 4:16

Oberlag, Dale F -FS <dale.oberlag@usda.gov>

to Katie, Dale, me

Hi Angelique, just replying to your message below for the USFS/CLRD. I discussed these 2 Draft pronghorn herd management plans briefly with our District Ranger Katie Donohue also. As I said Monday on our Larimer County HPP video call, we support the CPW preferred alternatives for both herds for post-hunt population objective (status quo from previous 10-year plans) and the CPW preferred alternative for post-hunt sex-ratio for both herd plans as well (slight increase for both). According to the plan and CPW herd data, both of these herds have very limited habitat or use occurring on FS lands, especially the Cherokee Park herd, and we are not aware of any current resource issues or concerns with either of these herds on USFS lands. Thank you for the opportunity to comment on these draft pronghorn herd management plans for PH-33 and PH-36. -Dale-

Dale Oberlag
District Wildlife Biologist

Forest Service
Arapaho & Roosevelt NFs and Pawnee NG
Canyon Lakes Ranger District

p: 970-295-6765
dale.oberlag@usda.gov

2150 Centre Ave., Bldg E
Fort Collins, CO 80526
www.fs.fed.us

Caring for the land and serving people

Jeff Shamley Tue, Apr 14, 7:58 AM

Hi Angelique,

I am writing to voice my support for the proposal to build up the pronghorn herds in northern Larimer county, specifically in GMUs 7,8,9,191. I'd also like to see efforts to build up herds in southern Larimer county at some point too but I understand that may not be possible at this time.

Please add my contact information to the notification lists.

Thank you for all your hard work!
-Jeff

Jeff Shamley

PH-36 LARAMIE RIVER VALLEY - Data Analysis Unit PH-36

April 30, 2020

Angelique Curtis
Colorado Parks and Wildlife
317 W Prospect Rd.
Fort Collins, CO 80526

RE: Larimer County Habitat Partnership Program Comments - DAU PH-36

Dear Angelique:

One of the initial reasons for creating the Habitat Partnership Program was to provide local landowners and other interests an opportunity to give input into big game management in their areas. The diverse makeup of local HPP committees (3 livestock growers, Forest Service, BLM, CPW and sportsmen representatives) provide a good cross section of local interests to review DAU proposals and respond accordingly for CPW consideration.

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

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

The Larimer County HPP committee supports the draft alternative to keep the current population objective. We believe this alternative responsibly balances local range and habitat conditions with sportsmen desires and landowner concerns. We have not heard of any concerns about the current population or any desires to increase the local herd size and so we believe the current levels are where they should be. Any issues we have are more likely related to distribution of the herds in the area and not the overall population size.

The Larimer County HPP committee also discussed the proposed sex ratio alternative. We support raising the current sex ratio objective to provide larger bucks for sportsmen to pursue. We agree that this objective aligns with current management capabilities considering the restrictions for hunting on private land in this area.

As stated above, HPP is also directed by statute to assist the Division to meet game management objectives. The Larimer County HPP committee has worked with both public land managers and private landowners to improve the quality and quantity of the habitat in DAU PH-36. Adequate

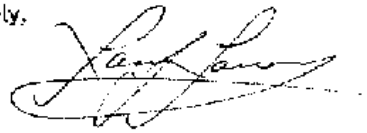
habitat is critical to meeting game management objectives and we remain committed to maintaining and improving habitat in this area.

Our committee is confident about CPW being able to achieve the proposed objectives. We have not heard any major complaints from landowners, and we have heard that hunter satisfaction in this DAU is high. We feel that the proposed management objectives are the most attainable and make the most sense for this area.

The Larimer County HPP committee feels there is adequate habitat with adequate protections in place, such as seasonal closures and use restrictions, to achieve the desired objectives. While the committee has confidence in the plan's objectives over the next ten years, beyond that they are concerned residential growth and increased recreation demands could hinder future population objectives.

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

Sincerely,



Lars Larsen, Chair
Larimer County HPP Committee

Wed, Apr 29, 4:16

Oberlag, Dale F -FS <dale.oberlag@usda.gov>

to Katie, Dale, me

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Dale Oberlag
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Jeff Shamley