# COLLEGIATE RANGE ELK MANAGEMENT PLAN

DATA ANALYSIS UNIT E-17

GAME MANAGEMENT UNITS 48, 481, 56, 561

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# Collegiate Range Elk Management Plan

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# DAU E-17 (Collegiate Range) EXECUTIVE SUMMARY

GMUs: 48, 481, 56, and 561

Land Ownership: 981 sq. mi. (19% Private, 75% USFS, 4% BLM, 2% State of Colorado)

Posthunt Population: 2009 Estimate 3,300;

Current Obj 2,000 - 2,200; Recommended Obj 3,150 - 3,850

Posthunt Sex Ratio (Bulls:100 Cows): 2009 Observed 19; 2009 Modeled 28;

Current Obj 35-40 (modeled); Recommended Obj 30-35 (modeled)

Figure 1. Posthunt population estimate for E-17 since 1990.

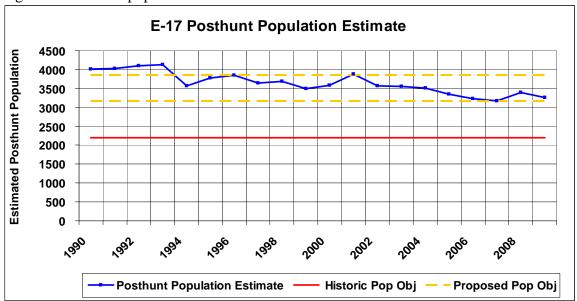
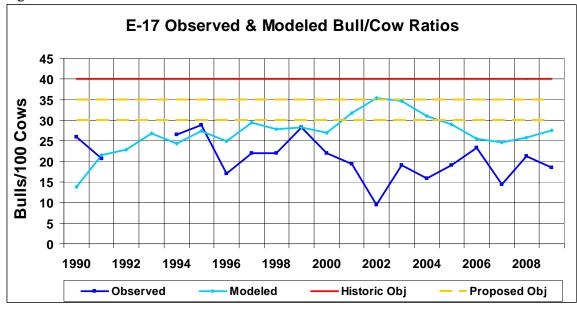


Figure 2. Observed and model-estimated bull:100 cow ratios in E-17 since 1990.



E-17 Posthunt Population Estimate & Harvest 4500 450 4000 400 3500 350 3000 300 2500 250 2000 200 1500 150 1000 100 500 50 0 'ૹ<sub>ૢ</sub>'ૹ<sub>ૢ</sub>'ૹૢ'ૹૢ૾ૹ<sub>ૢ</sub>'ૹૢ'ૹૢ'ૹૢ'ૹૢ'ૹૢ<sup>'</sup>ૹૢ<sup>'</sup>ૹૢ<sup>૽</sup>ઌૢ૽૽ૺઌૢ<sup>૽</sup>ઌૢ Posthunt Population Estimate **Bull Harvest Cow Harvest** 

Figure 3. Harvest in E-17 since 1990.

#### E-17 Background

Elk Data Analysis Unit (DAU) E-17 (Collegiate Range Herd) is located on the eastern edge of the Continental Divide in central Colorado and includes Game Management Units (GMUs) 48, 56, 481, and 561. E-17 has been managed as a quality elk hunting area with limited licenses for over 30 years. Since 1996, antlerless licenses and harvest have been increased to keep the population relatively stable within the long term objective. The previous post-hunt population objective of 2,000 – 2,200 and bull:cow ratio of 35-40:100 were established in 1988 and approved again in 2005. However, since the DAU Plan was approved in 2005, CDOW has updated its elk population monitoring techniques and refined the E-17 population and bull/cow estimates. These refinements have increased the projected number of elk within the DAU and lowered bull:cow ratio estimates and are likely a more accurate representation of actual herd numbers and ratios. As such, it is prudent to adjust the population and sex ratio objectives and, thus, the DAU Plan. Current numbers of elk and sex ratios within the DAU seem to be reasonable and CDOW recommends a population objective and sex ratio consistent with the current stable population and ratio estimates.

This is a relatively small DAU with somewhat limited winter range. Much of the floor of the Arkansas Valley is in agricultural production or has been subdivided for residential development, hence the historically relatively small population objective. The occasional alfalfa hay field in the Buena Vista to Salida portion of the winter range attracts some use by elk. A few alfalfa fields have been fenced with elk proof fencing to alleviate game damage complaints. Many other

complaints have been successfully resolved with the extended private land only cow elk seasons in GMU 481 and 56 and the use of dispersal hunts. These techniques have directed hunting pressure at the actual animals causing the conflicts and typically result in the offending animals leaving the area.

Public comments obtained in 2005 and 2010 during the DAU planning process generally support an increase in the previous population objective to match current herd estimates, with 68% in 2005 and 62% in 2010 of the respondents supporting an increase and only 11% in 2005 and 8% in 2010 supporting a decrease in the population. Support for the quality (limited license) designation of the DAU also remains strong, with 80% in 2005 and 93% in 2010 responding that they were in support.

It is common within E-17 for large cow/calf groups to congregate during winter at low elevations along the Arkansas River Valley floor, while bulls often winter on higher elevation windswept ridges and alpine terrain near the Continental Divide. Due to the rugged terrain and sexual segregation of the herd during winter within this DAU, observed bull/cow ratios have traditionally been below what is predicted by the population model. Observed post-hunt ratios generally range from 10 to 30 bulls per 100 cows within the DAU, while harvest and population model estimates suggest actual post-hunt ratios generally range from 25 to 35 bulls per 100 cows.

#### E-17 Management Alternatives

#### <u>Population Objective Alernatives:</u> (Post-hunt 2009 estimate = 3,300)

- 1) 2,000 2,200 (Status Quo; approved in 2005 based on previous population model estimates. This alternative would require CDOW to increase antlerless licenses and reduce herd size)
- 2) 3,150 3,850 (**Preferred Alternative**: Allows CDOW to manage for stable population of 3,500 <u>+</u> 10%)
- 3) 4,000 5,000 (This alternative would be a population increase based on current population estimates. This alternative would potentially increase game damage issues and could potentially negatively impact overlapping mule deer populations)

#### Sex Ratio Objective Alternatives:

#### (Post-hunt 2009 observed = 19; modeled = 28)

- 1) 30-35 bulls:100 cows (**Preferred Alternative:** Allows CDOW to manage for current high quality limited hunt without drastically reducing bull licenses)
- 2) 35-40 bulls:100 cows (Status Quo; approved in 2005 based on previous population model estimates)

3) 40-45 bulls:100 cows (This alternative would require drastic decrease in bull licenses and may be unattainable given close proximity to overthe-counter bull GMUs)

Recent refinements to population modeling techniques have increased the estimated number of elk existing in the E-17 herd, and thus it is prudent to adjust the population objective accordingly. The current model estimates herd numbers to be steady between 3,000 – 4,000 animals and raising the herd objective to within this range (3,500 +/- 10%; 3150 -- 3850) would allow CDOW to maintain the herd at its current size. Though the majority of public comment supports an increase in elk numbers within E-17, CDOW recommends stabilizing this herd near current numbers due to the potential for excessive winter habitat use and increased conflicts due to localized concentrations of elk in agricultural production areas. The loss of winter range to residential subdivision in the DAU has already caused high concentrations of elk on certain winter ranges and prevented harvest in some traditional habitats. While current management strategies have been largely successful in limiting and reducing conflicts, a substantial population increase would likely exacerbate those conflicts.

Three alternatives were considered in 2005 for the sex ratio objective and the same alternatives were considered again in 2010: 1) 30 to 35 bulls per 100 cows; 2) continue at 35 to 40 bulls per 100 cows; and 3) 40 to 45 bulls per 100 cows. Previous modeled estimates of bull:cow ratios were likely biased high; revised modeling techniques estimate post-hunt bull:cow ratios ranging between 25-35. Given high hunt quality and hunter success under current conditions, CDOW recommends a slight decrease in the post-hunt bull:cow ratio objective to 30-35:100 cows to align the ratio with current herd demographics. This revised sex ratio objective allows CDOW to maintain the current high quality hunt conditions within E-17 without having to drastically reduce hunter opportunity from its current availability.

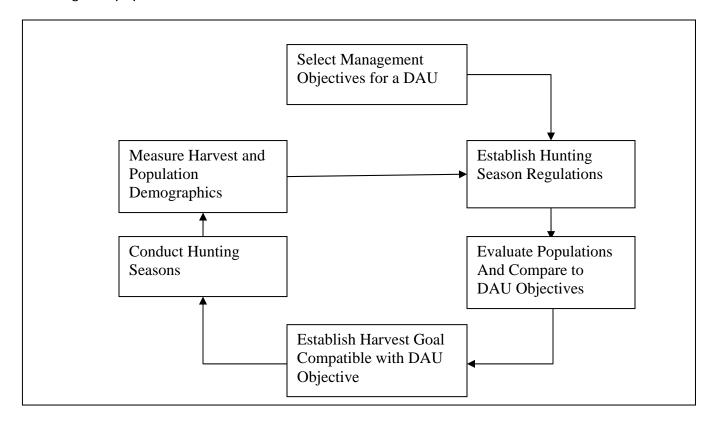
This DAU plan was approved by the Colorado Wildlife Commission on January 5, 2011

#### INTRODUCTION AND PURPOSE

The Colorado Division of Wildlife (CDOW) manages wildlife for the use, benefit and enjoyment of the people of the state in accordance with the CDOW's Strategic Plan and mandates from the Wildlife Commission and the Colorado Legislature. Colorado's wildlife resources require careful and increasingly intensive management to accommodate the many and varied public demands and growing impacts from people. To manage the state's big game populations, the CDOW uses a "management by objective" approach (Figure 4). Big game populations are managed to achieve population and sex ratio objectives established for data analysis units (DAUs). Each DAU generally represents a geographically discrete big game population. The DAU planning process establishes herd objectives that support and accomplish the broader objectives of the CDOW's Strategic Plan.

#### COLORADO'S BIG GAME MANAGEMENT BY OBJECTIVE PROCESS

Figure 4. Management by objective process used by the CDOW to manage big game populations on a DAU basis.



The DAU planning process incorporates public input, habitat capabilities, and herd considerations into management objectives for each of Colorado's big game herds. The general public, sportsmen, federal land management agencies, landowners, and agricultural interests are involved in determining DAU plan objectives through questionnaires, public meetings, comments on draft plans, and input to the Colorado Wildlife Commission. Limited license numbers and season recommendations result from this process.

Each DAU is managed to meet herd objectives that are established through the DAU planning process. The DAU plan establishes post-hunt herd objectives for the size and structure of the population. Once the Wildlife Commission has approved DAU objectives, they are compared with modeled population estimates. Model inputs include:

- Harvest estimates determined by hunter surveys
- Post-hunt sex and age ratios determined by counts
- Estimated wounding loss, illegal kill, and survival rates based on field observations and telemetry studies.

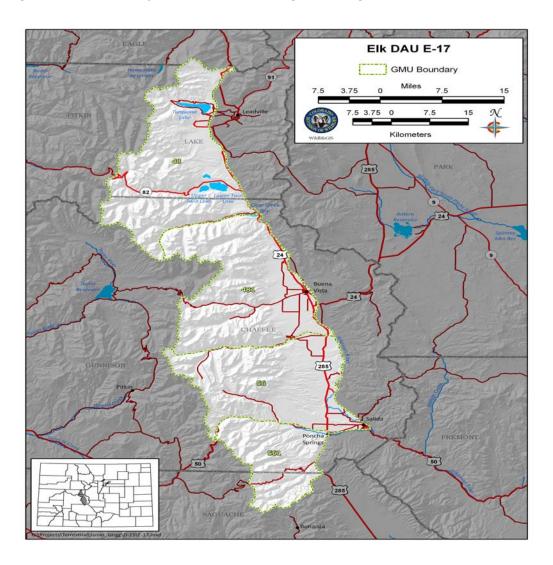
A computer model calculates the population's size and structure based on the most accurate information available at the time. The final step in the process is to calculate harvest recommendations that will align population estimates with the herd objective.

## Description of Data Analysis Unit E-17

#### Location

The Collegiate Range elk data analysis unit (DAU) encompasses an area of 981 square miles in central Colorado, 60 miles west of Denver and Colorado Springs (Figure 5). It includes game management units 48, 481, 56, and 561. The DAU is bounded on the north and west by the Continental Divide, on the east by the Arkansas River and on the south by the divide between the Arkansas and Rio Grande river drainages and the Chaffee/Fremont county line. The DAU includes the western two thirds of Lake and Chaffee counties and a small part of northern Saguache County.

Figure 5. Data Analysis Unit E-17 (Collegiate Range elk herd).



## Physiography

The area comprises the eastern slope of the Continental Divide east to the Arkansas River from Tennessee Pass to Poncha Pass. The four game management units descend steeply, from the top of the Sawatch Range to the broad flat river valley. Elevations range from the highest point in Colorado, 14,433 feet, at Mount Elbert to the point that the Arkansas River leaves the DAU near Salida, 6,800 feet above sea level. Side drainages generally run west to east to terminate at the Arkansas River at the eastern boundary of the unit.

## Vegetation

The western border of the DAU is alpine tundra (above 11,500') and is characterized by sedges, forbs and stunted willows. As the elevation drops, the next ecosystem is subalpine forest (9,000'-11,500') dominated by subalpine fir, Engelmann spruce, aspen and bristlecone pine. The montane forest (5,600'-9,000), contains primarily ponderosa pine, Douglas-fir, lodgepole pine, and aspen. The semidesert shrubland areas (7,000'-8,000'), support sagebrush, rabbitbrush, mountain mahogany, grasses and numerous forbs. The pinon-juniper woodlands (6,800'-8,000'), contain primarily pinon pine, juniper, mountain mahogany, rabbitbrush, forbs and cactus. The riparian ecosystems extend along all of the drainages and include narrowleaf cottonwood, willow, cinquefoil, current and forbs and grasses. Agricultural cropland in the DAU consists mainly of native grass and alfalfa hay fields in the Arkansas River valley bottom and along tributaries.

#### Climate

As with all of mountainous Colorado, the climate varies significantly with season, elevation and aspect. Elevations below 7,500 feet are usually hot and dry in the summer and generally remain snowfree during most of the winter. Elevations between 7,500 feet and 8,500 feet have slightly cooler and wetter summers with persistent snow cover during the winter. South facing slopes normally remain open or have minimal snow cover throughout the winter. Above 8,500 feet elevation is much cooler and wetter during the summers and snowcovered all winter except for windswept ridges above timberline. Annual precipitation varies from nine inches per year on the valley floor to over 25 inches along the Continental Divide. Snowfall accounts for the majority of the precipitation in the DAU with thunderstorms adding significant localized volumes in the summer.

Average daily high temperatures range from 41 degrees in winter to 82 degrees in summer, in Salida. Average lows range from 12 degrees in winter to 46 degrees in summer. In Leadville, daily high temperatures range from 30 degrees

in winter to 67 degrees in summer while daily low temperatures average 0 degrees in the winter and 36 degrees in the summer.

#### Land Status

The Collegiate Range elk DAU encompasses 981 square miles (Figures 6 and 7). Private lands total 185 square miles which is 19% of the DAU. The higher elevation portions of the DAU are in San Isabel National Forest divided between the Leadville and Salida Ranger Districts. Forest Service lands total 705 square miles and comprise 74% of the DAU. Lower elevation public lands, managed by the Royal Gorge field office of the Bureau of Land Management, are generally scattered between the lower edge of the USFS lands and private lands. BLM lands total 35 square miles which is 4% of the DAU. Occasional parcels of State Trust Lands are dispersed through the private land portion of the DAU totaling 21 square miles (2% of the DAU).

Figure 6. Land Ownership within Data Analysis Unit E-17 (Collegiate Range elk herd).

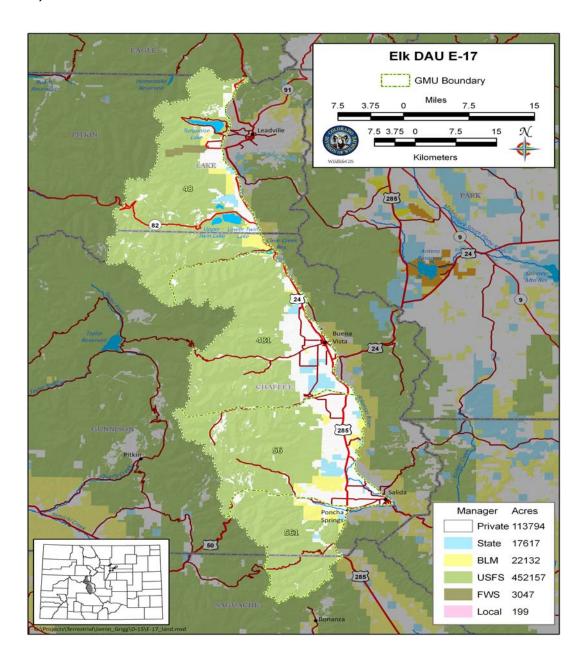


Figure 7. Land ownership within E-17 (square miles, percent of GMU).

J		%		%		%	•	%
GMU	Private	Private	USFS	USFS	BLM	BLM	Colorado	Colo.
48	41	14%	245	81%	9	3%	2	1%
481	60	21%	210	74%	3	1%	11	4%
56	73	31%	143	60%	15	6%	7	3%
561	11	8%	107	84%	8	6%	1	1%
<b>Total DAU</b>	185	19%	705	74%	35	4%	21	2%

#### Land Use

Land use in this DAU has changed significantly in the last 20 years. Multiple use of the public lands in the DAU includes heavy recreational use of both USFS and BLM lands throughout the year. Additionally, much of the public lands have seasonal grazing allotments. There is a small amount of logging, primarily for disease control or salvage timber sales of beetle killed trees or for habitat improvement for deer and elk. Mining has been a significant historic use of public and private lands but has decreased to a very low level of activity at the current time. Private lands are generally in agricultural production, either for livestock grazing or hay production, however, there has been a steady and accelerating rate of conversion from agricultural status to subdivision for residential development. Much of the important winter range for this elk herd has already been converted or is vulnerable to this change in land use.

#### Elk Distribution

Elk occupy all of the DAU at some time of the year. Densities are low in the lower elevation habitats during the summer when most elk move up to traditional calving and summering areas in higher elevation habitats. During the winter, most elk move to lower elevation winter ranges as snow accumulates on the higher elevations and north slopes. Some elk will use windswept ridges at higher elevations during the winter. Approximately one third of the DAU is winter range in normal winters with some concentration occurring in preferred habitats. During severe winter periods, habitat utilization is reduced to approximately a quarter of the size of the overall range (Figures 8 and 9). In recent years an increasing number of elk are remaining in lower elevation habitats that have traditionally been used primarily by deer. Elk are often observed seeking refuge in new subdivisions which have created de facto refuges where elk cannot be hunted.

Figure 8. DAU E-17 winter range.

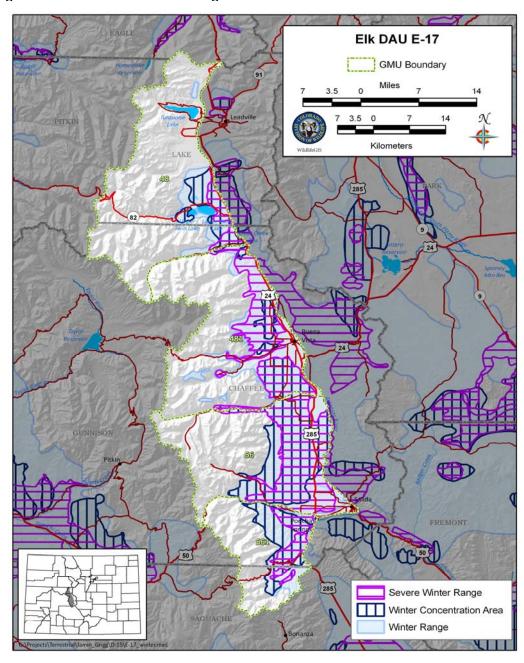


Figure 9. DAU E-17 winter range (square miles).

rigure 7. DAO E-17 Winter range (square filles).						
Overall		Winter	Severe Winter	Winter Concentration		
GMU	Range	Range	Range	Area		
48	299.8	35.5	19.0	21.9		
481	282.4	94.0	54.8	19.3		
56	241.4	129.9	106.0	109.7		
561	127.9	51.2	21.3	36.9		
DAU Total	951.5	310.6	201.1	187.8		

## Herd Management

Management of the E-17 elk herd is conducted in similar fashion as other herds in Colorado, with hunting season regulations and license numbers are set based on the current estimated post-hunt population and the long term population and sex ratio objectives established by the Wildlife Commission in this DAU Plan. Those population objectives are considered to be the most reasonable goal for this herd based on the quantity and quality of available habitat for elk, the recreational, economic and political desires of the people of the state, the level of conflicts between the elk herd and agricultural producers in the area, and the comments of land management agencies.

The post-season population size (Figure 10) is estimated each winter from a computer model utilizing annual harvest data gathered by CDOW, age and sex ratio samples obtained through winter aerial surveys counts conducted by CDOW personnel, estimated survival rates of young and adult animals, and population trend estimates based on all of the above data. Estimating numbers of free ranging elk over this large of a geographic area is an extremely difficult and approximate science. Thus the population objectives considered in this plan are given as ranges to reflect the fact that each year's population estimate may vary according to changes in hunting and survey conditions, survival rates, and winter snow conditions.

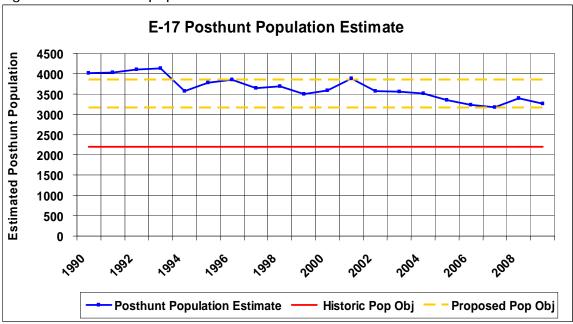


Figure 10. Posthunt population estimate for E-17.

E-17 has had limited antlered elk hunting for over 30 years. While not affecting the population size, this management has allowed the bull/cow ratio to remain higher than unlimited bull hunting would have allowed. Additionally, managing the DAU as a quality area has limited hunter crowding and increased hunt quality.

## Post Season Herd Composition

Herd composition data has been acquired through aerial surveys conducted by DOW personnel each winter. Post-hunt calf:100 cow ratios have averaged 51.0 over the last 5 years (Figure 11). Because of the limited amount of snow this DAU typically receives and the tendency of mature bulls to winter in heavier cover and at higher altitudes, bulls tend to be more difficult to locate and are likely often under-represented in classification counts in this DAU. Observed ratios of bulls, therefore, are often somewhat lower than calculated bull/cow ratios. Observed post-hunt bull:100 cow ratios have fluctuated between 10 and 30 bulls:100 cows; however population model estimates and harvest stats both indicate the actual post-hunt bull:cow ratio generally has ranged 25-35 bulls:100 cows (Figure 12).

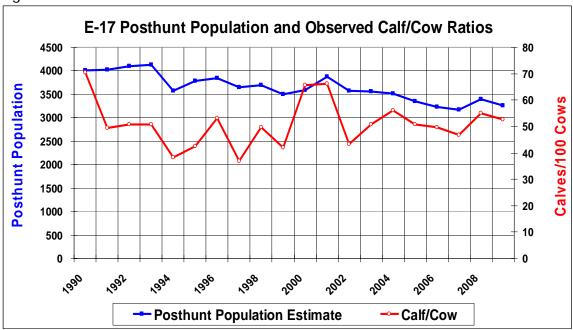


Figure 11. Observed calf: 100 cow ratios in E-17 since 1990.

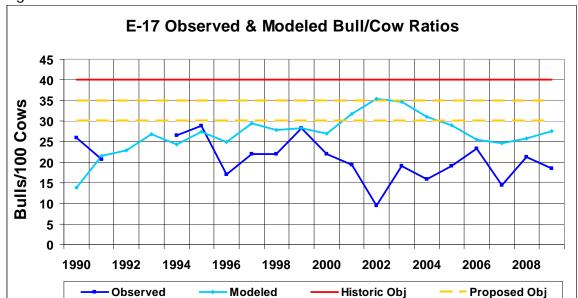


Figure 12. Observed and modeled bull: 100 cow ratios in E-17 since 1990.

#### Harvest

Harvest in E-17 has varied through the years, primarily due to weather conditions during the hunting seasons. Total license numbers have doubled in the last 20 years as the population approached, and on occasion, exceeded the objective. Antlerless permits have made up the bulk of the increase in the effort to hold the population at the current goal. Bull harvest has fluctuated between 250 – 350 animals annually since the late 1990s, while antlerless harvest has generally fluctuated between 200 – 400 animals annually during the same time period (Figure 13).

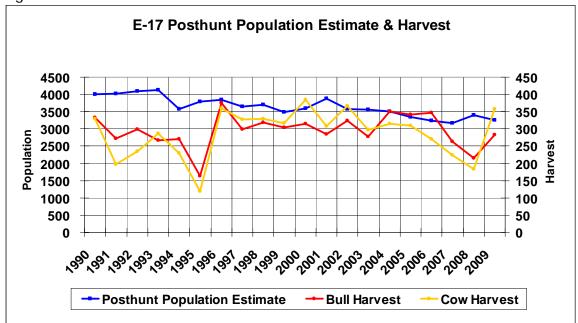


Figure 13. Harvest in E-17 since 1990.

## **Current Herd Management**

The E-17 population has been managed as a quality elk herd for over 30 years. The previous post-hunt objectives, established in 1988 and re-approved in 2005, included a post-hunt population size of 2,000 – 2,200 with a post-hunt modeled bull:cow ratio of 35-40:100. However, since 2005, refinements to population modeling techniques have increased the post-hunt herd estimate while decreasing modeled post-hunt bull:cow ratios. Total population size estimates have increased by approximately 1,000 animals and the revised population model indicates herd numbers are holding relatively steady between 3,000 – 4,000 animals, with modeled post hunt bull:100 cow ratios ranging from 25-35 bulls per 100 cows. Thus, CDOW recommends updating the E-17 population and sex ratio objectives to parallel current herd estimates and maintain current quality hunting opportunity.

## Current Management Concerns

This is a relatively small DAU with limited winter range, hence the relatively small population objective. While some elk winter on the alpine and wind-swept ridges, many elk winter on the valley floor. Much of the valley floor is in agricultural production, either livestock grazing or hay production. There has been a significant loss of elk winter habitat on the valley floor due to changes in land use in this DAU. Most of the conversion from agricultural to residential use has occurred in winter and transitional ranges which are critical in determining

the carrying capacity of this area. Impacts from development include direct loss of habitat capability as well as the loss of the ability to use hunting to maintain the population at objective.

Game damage complaints about elk use of alfalfa and grass hay fields have increased somewhat in recent years. The attractiveness of these fields occasionally draws elk use away from available native ranges in the DAU. While there is adequate forage to support a larger elk population, the concentration of elk in these conflict areas limits the ability to manage for a significantly larger population size. The Arkansas River Habitat Partnership Program committee has been very active in the Arkansas Valley in providing habitat improvement projects in an effort to attract elk away from conflict situations. They have also contributed to administrative expenses of landowners wishing to place their lands under conservation easements to protect the existing habitat values.

Additional habitat improvement has resulted from the current increase in pine beetle-caused mortality in the transitional zone and winter ranges on the west side of the valley. The control efforts of the U. S. Forest Service to limit this mortality, as well as the tree mortality itself, has resulted in opening up previously heavily forested areas that are now better able to attract and support wintering elk.

Establishment of extended private land only antlerless elk hunting seasons in game management units 56 and 481, the two units with the majority of hay lands, has been successful in reducing the level of conflicts in many cases. Additionally, distribution hunts have also directed hunting pressure at the actual elk causing damage conflicts and reduced claims. In a few cases, elk proof exclusionary fences have been used to eliminate conflicts where the alfalfa fields proved too attractive or adjacent land uses prohibited the use of distribution hunts.

One long term objective for this DAU is maintaining an elevated sex ratio; However, monitoring actual bull/cow ratios can be challenging due to steep, rugged terrain and sexual segregation of the herd during winter. Due to the relative mild climate on the lee side of the Collegiate/Sawatch Range of mountains, bull elk are able to spend the winter in areas where they are difficult to classify. For these reasons E-17 sex ratio objectives are based on the modeled estimates rather than actual observed ratios. Observed sex ratios have ranged from 12 to 27 bulls per 100 cows in recent years, while harvest calculations and population model estimates suggest the actual bull/cow ratios range from 25 to 35 bulls per 100 cows.

#### **Public Involvement**

The draft DAU Plan was posted on the CDOW website in September 2010 for a 30-day public comment period, with questionnaire attached. A public DAU planning meeting was conducted in Buena Vista in June, 2010 and was attended by 13 participants, along with 6 CDOW personnel. Both the E-17 elk herd and overlapping D-15 deer herd were discussed, as both DAU Plans are simultaneously being revised. Herd history and management strategies were presented and a basic questionnaire about population and sex ratio alternatives was handed out. Because this was not a random survey, results may not represent all interest groups or even adequately represent specific interest groups. Survey responses do provide opinions of those able to attend the meetings (Appendix 1). A similar presentation was made to the Arkansas River Habitat Partnership Program committee in July, 2010 and copies of the draft DAU Plan and management alternatives were presented to Chaffee and Lake County Commissioners and local USFS and BLM offices. Comments from the HPP Committee, County Commissioners, and federal land agencies were supportive of the CDOW Preferred Alternative recommendations for herd size and sex ratios.

## **Development of Alternatives**

Three population alternatives and three sex ratio alternatives were considered for long term objectives for E-17 during the previous revision in 2005. The population alternatives included: 1) 1,800 to 2,000 elk which is a 10% reduction from the previous objective 2) 2,000 to 2,200 which is the current objective approved in 2005; and 3) 2,200 to 2,400, a 10% increase from the current objective. Sex ratio alternatives included: 1) 30 to 35 bulls/100 cows; 2) 35 to 40 bulls/100 cows; and 3) 40 to 45 bulls/100 cows.

Two public meetings were held to discuss this plan and the alternatives in 2001 and two meetings in September, 2005. Additionally, a mail survey was sent to sportsmen, landowners and businesses in the area in 2001. Another public meeting was held in June, 2010 to discuss the current DAU Plan revision and the Draft Plan was posted on the CDOW webpage for a 30-day public comment period.

CDOW is currently presenting 3 revised population objective alternatives: 1) the status quo population objective of 2,000 – 2,200 approved in 2005; 2) the recommended population objective increase of 3,150 – 3,850 to align the objective to recent model revisions; and 3) a population increase to 4,000 – 5,000. The same 3 sex ratio objective alternatives from 2005 were presented again in 2010, with CDOW recommending a sex ratio objective of 30-35 bulls:100 cows to parallel current population model estimates and maintain

current high hunt quality and hunter satisfaction. These alternatives and CDOW rationale and justification were discussed at the June, 2010 public meeting.

# Population Alternative Discussion

1) 2,000 – 2,200 (Status Quo; approved in 2005 based on previous population model estimates)

Approved in 2005 based off of an outdated model, this objective range would require a dramatic increase in antlerless harvest in an attempt to lower the population from its current size.

2) 3,150 - 3,850 (**Preferred Alternative:** Allows CDOW to manage for stable population of  $3,500 \pm 10\%$ )

Recent refinements to population modeling techniques have increased the estimated number of elk existing in the E-17 herd, and thus it is prudent to adjust the population objective accordingly. The current model estimates herd numbers to be steady between 3,000 - 4,000 animals and raising the herd objective to within this range (3,500 + 1.0%); 3150 --3850) would allow CDOW to maintain the herd at its current size.

3) 4,000 - 5,000

This alternative would result in a population increase based on current population estimates and would potentially result in increased game damage issues. Further, this alternative could potentially negatively impact overlapping mule deer populations. Though the majority of public comment supports an increase in elk numbers within E-17, CDOW recommends stabilizing this herd near current numbers due to the potential for over-use of winter habitats and increased conflicts due to localized concentrations of elk in agricultural production areas. The loss of winter range to residential subdivision in the DAU has already caused high concentrations of elk on certain winter ranges and prevented harvest in some traditional habitats. While current management strategies have been largely successful in limiting and reducing conflicts, a substantial population increase would likely exacerbate those conflicts.

#### Sex Ratio Alternative Discussion

1) 30-35 bulls:100 cows (**Preferred Alternative:** Allows CDOW to manage for current high quality limited hunt without drastically reducing bull licenses)

Previous modeled estimates of bull:cow ratios were likely biased high;
revised modeling techniques estimate post-bunt bull:cow ratios ranging

revised modeling techniques estimate post-hunt bull:cow ratios ranging between 25-35. Given high hunt quality and hunter success under current

conditions, CDOW recommends a slight decrease in the post-hunt bull:cow ratio objective to 30-35:100 cows to align the ratio with current herd demographics. This revised sex ratio objective allows CDOW to maintain the current high quality hunt conditions within E-17 without having to drastically reduce hunter opportunity from its current availability.

- 2) 35-40 bulls:100 cows (Status Quo; approved in 2005 based on previous population model estimates)
- 3) 40-45 bulls:100 cows Alternatives 2 and 3 would require drastic decreases in bull licenses and may be unattainable given close proximity to over-the-counter bull GMUs.

# Appendix 1. Public survey results from DAU planning public meeting (13 attendees, plus one survey received though mail) – June, 2010.

#### DAUs D-15 and E-17 Management Plans Public Survey

# Name (Optional):

1) Which group(s) bes	t represents your	intere	sts in de	er and elk r	management ir
this area?					
_100%_hunting	_8%_ agricul	tural	con	nmercial (g	uide/outfitter)
viewing opportunit	es/non-consumpt	tive	ag	ency perso	nnel (specify)
business owner	_8%_ other	(speci	fy)(Lar	ndowner)	_
2) Agriculture Produ	<b>cers</b> – Have you	had p	roblems	with deer a	ınd/or elk in
the past five years?					
Describe problem: <b>S</b>	ee Comments E	Below			
What species were invo	lved		Numbe	er of anima	ls
Was DOW contacted? Y	es / No	Action	ıs taken l	by DOW	
Is this a continued or g	rowing problem?	No/Ye	S		
3) Hunters					
What is your satisfactio	n with <b>elk</b> huntin	g in G	MUs 48,	56, 481, 56	51?
0% Poor 58% Good	42% Excellent				
What is your satisfactio	n with <b>deer</b> hunt	ing in	GMUs 48	8, 56, 481,	561?
21% Poor 64% Good	15% Excellent				
Circle which GMU you u	sually hunt: 7%	48	14% 56	72% 481	7% 561

What is most important to you? Mark your **TOP TWO** choices.

- 4) Would you like the number of **elk** in GMUs 48, 56, 481, and 561 to:
  \_57%\_Increase \_29%\_Stay the same \_7%\_Decrease \_7%\_ Don't know
  Why?
- 5) Would you like the number of **deer** in GMUs 48, 56, 481, and 561 to:

  \_28%\_Increase \_57%\_Stay the same \_15%\_Decrease \_0%\_ Don't know
  Why?
- 6) The number of bucks maintained in a population is related to levels of hunting opportunity. For the purposes of **deer** hunting, should GMUs 48, 56, 481, and 561 be managed for:

\_29%\_Increased buck to doe ratio (increased numbers of bucks but it would become more difficult to draw a license).

\_64%\_Same buck to doe ratio (similar numbers of bucks and opportunity to draw a license as we now have).

\_7%\_Decreased buck to doe ratio (fewer numbers of bucks but easier to draw a licenses than current).

7) Similarly, the number of bulls maintained in a population is related to levels of hunting opportunity. For the purposes of **elk** hunting, should GMUs 48, 56, 481, and 561 be managed for:

\_36%\_Increased bull to cow ratio (increased numbers of bulls but it would become more difficult to draw a license).

\_57%\_Same bull to cow ratio (similar numbers of bulls and opportunity to draw a license as we now have).

\_7%\_Decreased bull to cow ratio (fewer numbers of bulls but easier to draw a licenses than current).

# Please provide any additional comments on the future management of DAUs D-15 or E-17 below:

#### **Question 2:**

As many as 30-100 elk getting into haystacks and grazing spring feed for cattle. DOW has implemented dispersal hunts in the past.

I have a rural home 3 miles NW of Buena Vista. I am overrun with as many as 60-100 deer on my 2 acres and they have destroyed trees and shrubs I am trying to establish. DOW has not been contacted yet about the problem.

#### Question 4:

The elk pop in this area appears to be adequate (status quo).

The elk spend winter months on private lands (decrease).

More elk would disperse hunters across a wider area (increase).

Want more elk to choose from (increase).

Want more mature bulls (increase).

More elk would increase hunter success (increase).

CDOW doing a good job with current elk management (status quo).

Increased elk pop would increase chance to draw a license (increase).

Current management seems to be working (status quo).

Increased elk pop would increase chance to draw and success rates. Also just enjoy seeing them (increase).

#### **Question 5:**

Seems to be a healthy pop at current numbers (status quo).

Increased deer pop would increase chance to draw and success rates. Also just enjoy seeing them (increase).

Increased deer pop would increase chance to draw a license (increase).

Too many deer being hit by cars (decrease).

Deer herd seems to be a good size, but mostly on private land during hunting seasons (status quo).

The deer pop in this area has exploded in recent years. As more and more rural subdivisions are developed it removes those areas from hunting. Harvest is reduced, the deer population grows, and the size and quality of the animals diminishes (decrease).

I'd like to see more deer on public lands. They are all over the place at low elevation, but you don't see enough of them where they can be hunted during the regular rifle seasons. Not sure what can be done to alter distribution, other than to lay off the doe hunting on public land animals. I'm guessing that very few fawns born in the private lands would ever find reason to leave them. Therefore, in order to encourage more public land deer, I wouldn't shoot the public land does. If you want to offer doe tags, please keep them to private land only tags (Increase).

#### **Question 6:**

Would like more mature bucks (increase).

Decrease population level and increase buck quality.

#### Question 7:

CDOW doing a good job with current elk management (status quo).

Current bull ratios are good (status quo).

Would like more mature bulls (increase).

#### **General Comments:**

I believe the purpose of management is to ensure the health of the herd and a high quality of sportsmanship. A small increase in trophy animals would be desireable.

CDOW is doing a good job with current management. Please maintain your current high quality management of these herds.

Elk tend to migrate through this area and don't stay in any one area for long. The deer are the opposite and stay in one area for extended periods. The area I live in is a rural subdivision that is closed to hunting, like many others in the area. As a result, the deer are runts with no vigor or quality. The only option appears to me to be fencing my entire property with a deer fence if the landscaping is to have any chance at survival. I would rather not do that, but with the current deer population around the subdivisions I may have no choice.

Too many deer around Buena Vista. Need more doe licenses.

I'd like to see a high country mule deer hunt offered. I know it isn't a useful herd management tool, but it might be a nice recreational opportunity.

#### If returning by mail, send to:

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