

**DAU E-24 DISAPPOINTMENT CREEK ELK MANAGEMENT PLAN
EXECUTIVE SUMMARY
FINAL 01/2006**

GMU's: 70, 71, 711, 72, and 73

Land Ownership: 30% Private, 31% BLM/National Monument, 23% USFS, 14% Indian Reservation, 2% National Park, 1% State

Posthunt Population: Objective 10,200 2004 Estimate 18,250 Proposed Objective 16,000-18,000

Posthunt Sex Ratio: Objective 16 2004 Observed 17.5 2004 Modeled 18.5 Proposed Objective 17-19

Figure 1. E-24 Population

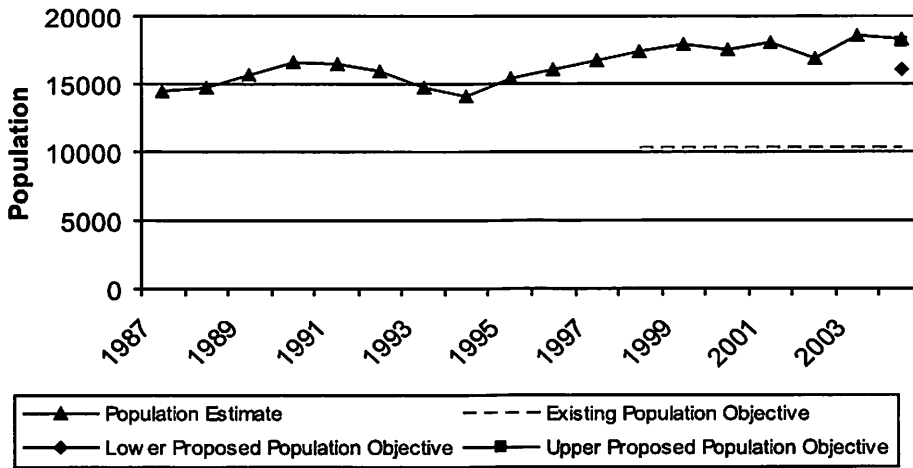


Figure 2. E-24 Harvest

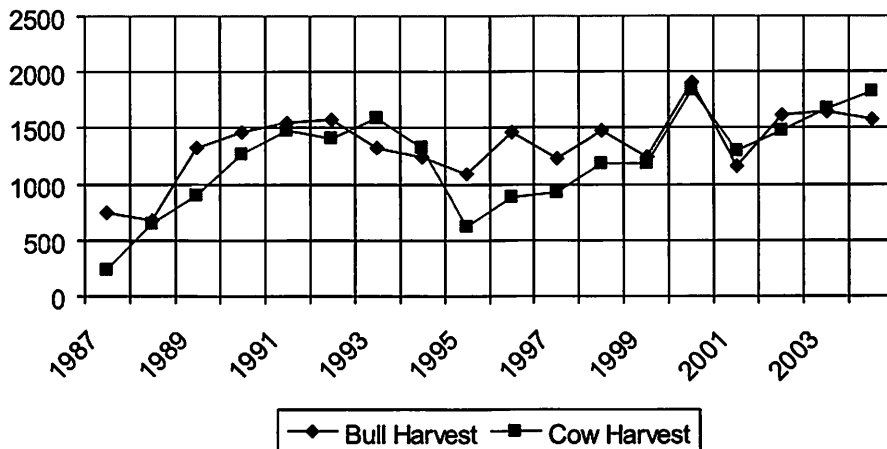
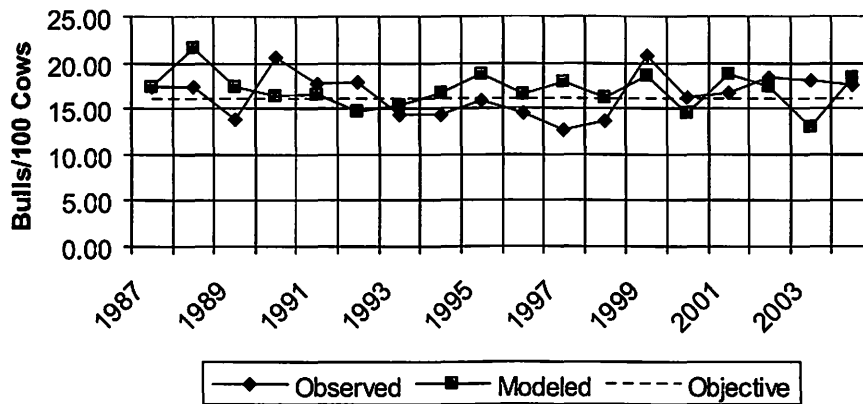


Figure 3. E-24 Posthunt Sex Ratios



Background

Data Analysis Unit (DAU) E-24, the Disappointment Creek elk management area, consists of Game Management Units (GMUs) 70, 71, 711, 72, and 73. All units have been managed similarly as over-the-counter (OTC) bull hunting units. In addition, all units have had generous numbers of antlerless licenses since the early 1990's, with a variety of private land only (PLO) seasons in all GMUs except 73. The DAU is usually in the top 5 in the State for total harvest, antlerless harvest, antlered harvest, and hunting pressure.

In 1987, the estimated population was approximately 14,500, and was probably rapidly growing. In 1989, cow harvest was increased dramatically in an attempt to stop the herd growth, and stayed relatively high through 1994. Concurrently, the estimated population exceeded 16,000, but then was reduced to approximately 14,000. Local managers at that point felt the herd had been "reduced" sufficiently and relaxed the cow harvest. This allowed the herd to rapidly grow again, and even though antlerless harvest has been ramped up since 1998, the herd has continued to increase and may now exceed 18,000.

Observed posthunt sex ratios have remained fairly stable in the 17-18 bulls/100 cow area, but have ranged from 13 to 20 following years of very high or very low bull harvest. With unlimited bull licenses, the harvest has ranged from 1100 to over 1600, largely dependent on hunter success rates related to hunting season weather. The sex ratio has averaged 18/100 for the last 3 years, and 16.4/100 for the last 10 years.

Observed posthunt age ratios have ranged from 28 to 48 calves/100 cows through the last 15 years. The last 3 years have averaged 41/100, and the last 10 years 39.6/100.

The DAU was formed by combining two DAUs (24 and 29) in 1998. The current DAU more fully incorporates the geographic distribution because of movements between GMUs 71 and 73 and GMUs 711 and 72.

The current posthunt population objective for E-24 is 10,200 elk. This objective was based on early population models that underestimated the population and is unrealistically low. The current posthunt sex ratio objective is 16/100. This was based on the condition that spike bulls were legally harvested in 72 and

73 through 1997. With antler point restrictions currently in all units, the sex ratio seems to naturally fall into the range of 17-18.

Posthunt Population Objective Alternatives

A population range is proposed to acknowledge that current models are still an approximation, and will likely fluctuate from year to year, and will allow the CDOW to react to changing habitat conditions (drought and wet cycles). A range of posthunt population objectives are being proposed for E-24: (1) 17,000-19,000, (2) 14,000-16,000, and (3) 11,000-13,000. The first range corresponds to current population levels, whereas the second and third prescribe for a 15% and 30% decrease in elk numbers, respectively.

Posthunt Sex Ratio Objective Alternatives

Under current management with OTC bull licenses, the sex ratio seems to be consistently in the 17-18/100 range. Management objectives for E-24 include: (1) 16-18 bulls/100 cows, (2) 20-24 bulls/100 cows, and (3) 30+ bulls/100 cows. The first alternative represents the current management scheme. The second and third alternatives would require limiting bull hunting for all seasons, with the second alternative requiring a cut in bull hunters of approximately 50%, and the third alternative a cut of about 75% or more.

Preferred Alternative

Most public input preferred a population objective close to the present estimate, or slightly lower, in the range of 17,000-19,000. This was also favored by CDOW staff and the Montelores HPP Committee. The USFS/BLM Dolores Field Office, however, preferred an alternative of 14,000-16,000, based on observational inventory that the forage base is being fully utilized by the current

DISAPPOINTMENT ELK HERD

DATA ANALYSIS UNIT E-24

GAME MANAGEMENT UNITS 70, 71, 711, 72, AND 73

October 2005

EXECUTIVE SUMMARY

DRAFT 8/24/05

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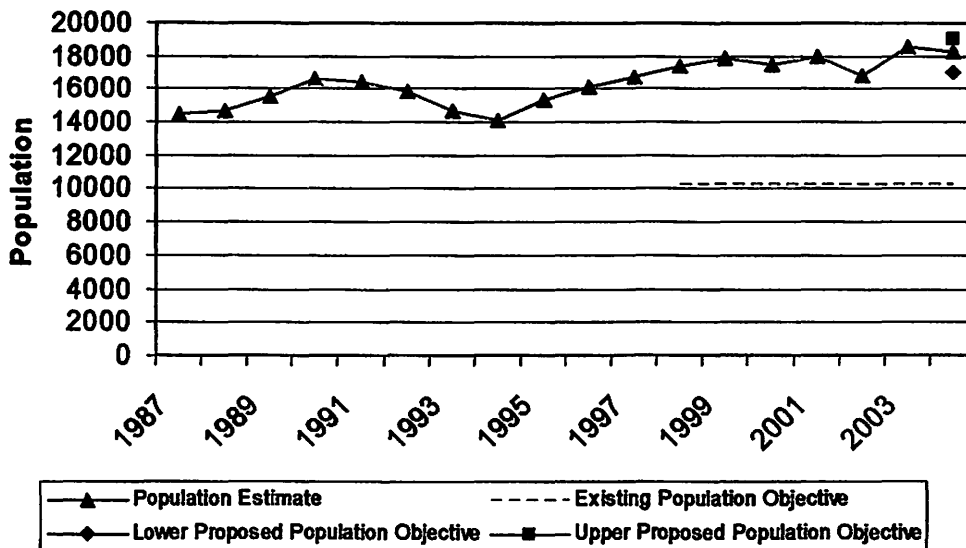


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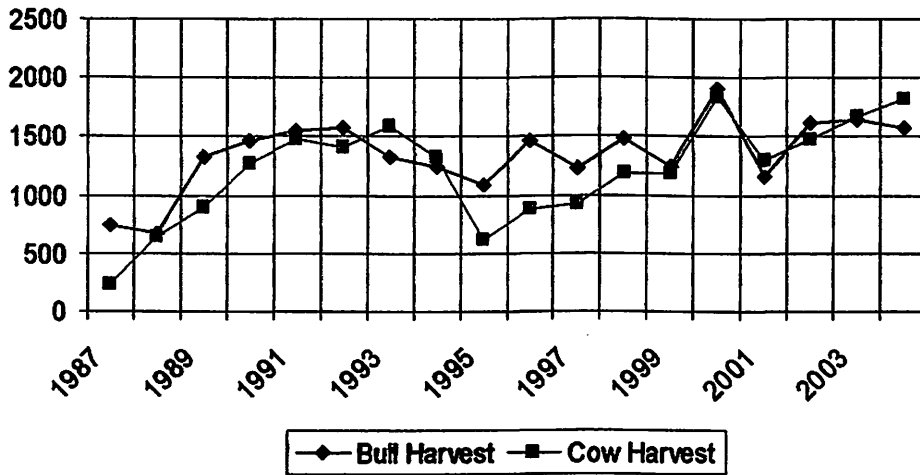
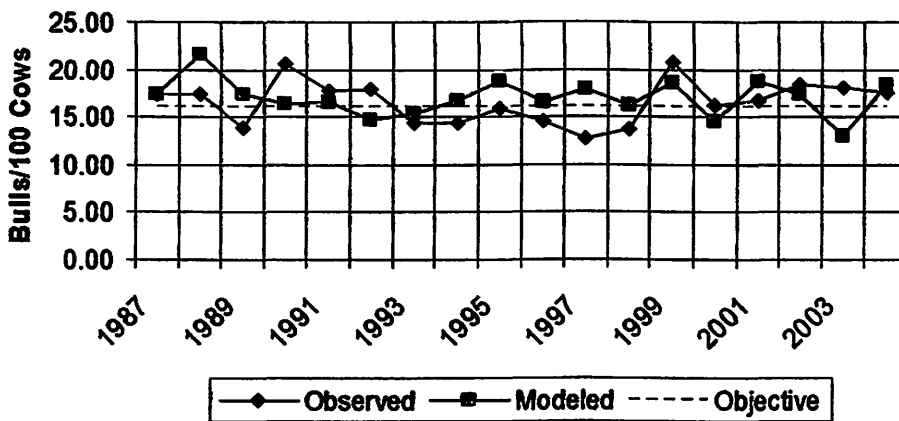


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seasons, with the second alternative requiring a cut in bull hunters of approximately 50%, and the third alternative a cut of about 75% or more.

Preferred Alternative

The preferred alternative after considering staff and public input is to have a population close but slightly below the current population estimate, therefore within a range of 17,000-19,000 elk, with a sex ratio of 17-19 bulls/100 cows.

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DISAPPOINTMENT ELK HERD
DATA ANALYSIS UNIT E-24
GAME MANAGEMENT UNITS 70, 71, 711, 72, AND 73
 October 2005

1. DAU PLANS AND WILDLIFE MANAGEMENT BY OBJECTIVES

The growing human demand for a finite wildlife resource dictates wise management of Colorado's resources. The Colorado Division of Wildlife employs a "management by objectives" approach to big game populations (Figure 1). The Division's Long Range Plan provides direction and broad objectives for the Division to meet a system of policies, objectives and management plans such as the Data Analysis Unit Plan, and directs the actions the Division takes to meet the legislative and Wildlife Commission mandates.

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

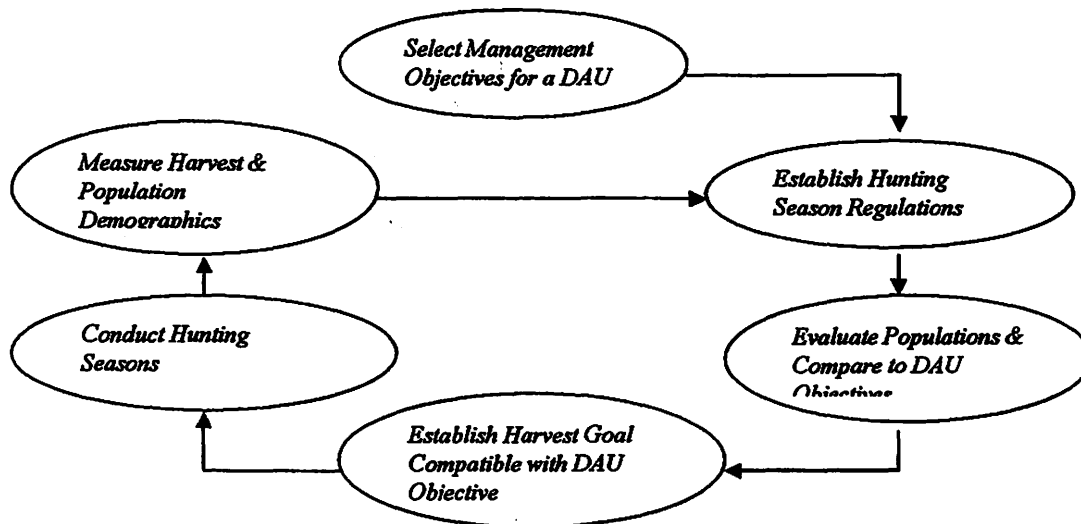


Figure 1. Management by objectives process used by the CDOW to manage big game populations on a DAU basis.

Data analysis units (DAU's) are used to manage herds of big game animals. The DAU's are generally geographically discrete big game populations. The Data Analysis Unit Plans are designed to support and accomplish the objective of the Long Range Plan and meet the public's objectives for big game. The DAU Plan establishes the short and long term herd objectives. The objective approach is the guiding direction to a long term cycle of information collection, information analysis, and decision making. One of the products of this process is hunting seasons for big game.

The DAU Plan process is designed to incorporate public demands, habitat capabilities, and herd capabilities into a management scheme for the big game herds. The public, sportsmen, federal land management agencies, landowners, and agricultural interests are involved in the determination of the plan objectives through goals, public meetings, comments on draft plans, and the Colorado Wildlife Commission.

Individual DAU's are managed with the goal of meeting the herd objectives. This is done by gathering data and then putting it into population models to get a population estimate. The parameters used in the model include harvest data which is tabulated from hunter surveys, sex and age composition of the herd which is acquired by aerial inventories, and mortality factors such as wounding loss and winter severity which are generally acquired from field observations. Once these variables are entered into the population models a population estimate is obtained. The resultant computer population projection is compared to the herd objective, and a harvest calculated to align the population with the herd objective.

2. DESCRIPTION OF THE DATA ANALYSIS UNIT

The Data Analysis Unit for the Disappointment elk herd is located in southwest Colorado, and includes the Dolores River basin and part of the San Miguel and San Juan River basins. It consists of Game Management Units 70, 71, 711, 72, and 73. It has an area of 5055 square miles and encompasses portions of Dolores, Montezuma, Montrose, and San Miguel Counties. The DAU is bounded on the north by the Dolores and San Miguel Rivers, State Highway's 90 and 62, on the east by the Ouray/San Miguel, San Juan/San Miguel, Dolores/San Juan, Montezuma/La Plata County lines, on the south by New Mexico, and on the west by Utah (Figure 2).

Land ownership in the DAU is 30% private, 31% BLM and National Monument, 23% U.S. Forest Service, 14% Indian Reservation, 2% National Park, and 1% Division of Wildlife and State Land Board.

The elevation in the DAU ranges from a low of 4700 feet near the Four Corners to a high of nearly 14,000 feet at several places between Dolores and Telluride.

The lower elevations along the Dolores, San Juan, and San Miguel Rivers are high desert vegetation types and have dominant canyon-mesa geographic features, with some agricultural areas in the river flood-plain areas. As elevations increase, the vegetation changes to grassland/shrub, pinyon-juniper, ponderosa pine often with an oak understory, mountain shrub, aspen, and Douglas-fir. At the highest elevations, sub-alpine spruce fir and Englemann spruce lead into alpine areas of willow or grass/sedge/forb communities above 12,000 feet.

The climate is termed highland mountain, with cool summers at high elevations but very warm at the lowest, and with very cold winters throughout. Snowfall is very heavy throughout the mountainous areas, but is very variable at lower elevations. The low elevations receive 8 inches or less of precipitation annually, but some areas in the mountains receive over 30 inches of precipitation.

The Disappointment elk herd is an important resource which has an economic value to the State of Colorado of over 8 million dollars annually, to the local economy of over 4 million dollars, and provides hunting opportunities to over 12,000 hunters. In addition, it provides a watchable wildlife experience to many citizens, not only from Colorado, but nationwide.

Elk generally occupy the entire DAU, but occur at highest densities in the central montane portions comprised of pinyon-juniper, mountain shrub, ponderosa pine, aspen, spruce and fir. Lower density of elk are observed in the low desert and canyon areas.

Elk movement to winter range is usually initiated by increasing snow cover and decreasing forage availability, along with hunting pressure. This movement generally begins in late October and continues into December. The movement is elevational and generally to the west and to the north. Wintering concentrations of elk are usually found in Dry Creek Basin, Disappointment Valley, and southwest of McPhee Reservoir and the Dolores River. In most winters, elk are fairly concentrated in these relatively large areas. Elk movement back to summer range usually follows the snowline and vegetation green-up, and in the summer and fall elk are distributed throughout the northeastern two-thirds of the DAU.

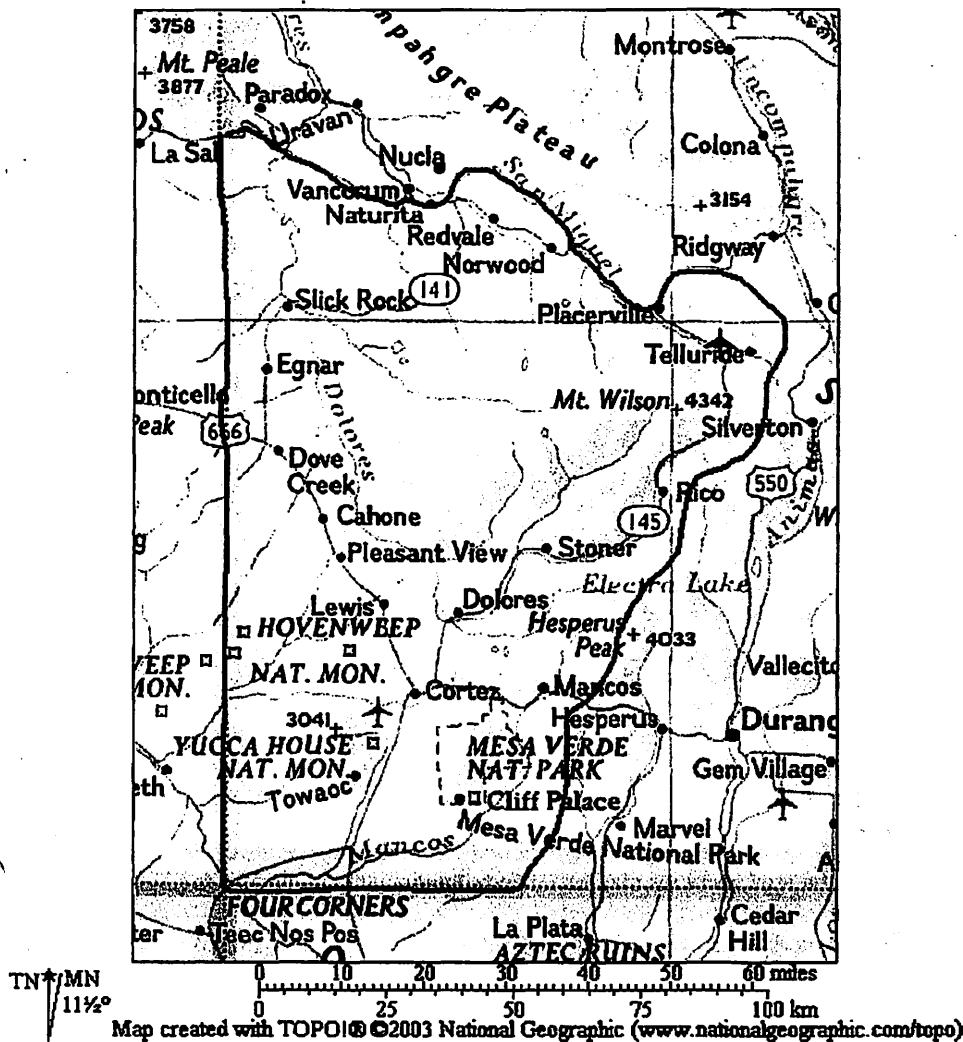


Figure 2. Vicinity map of E-24 in southwest Colorado.

3. HERD MANAGEMENT HISTORY

3.1 Post-hunt Population Size

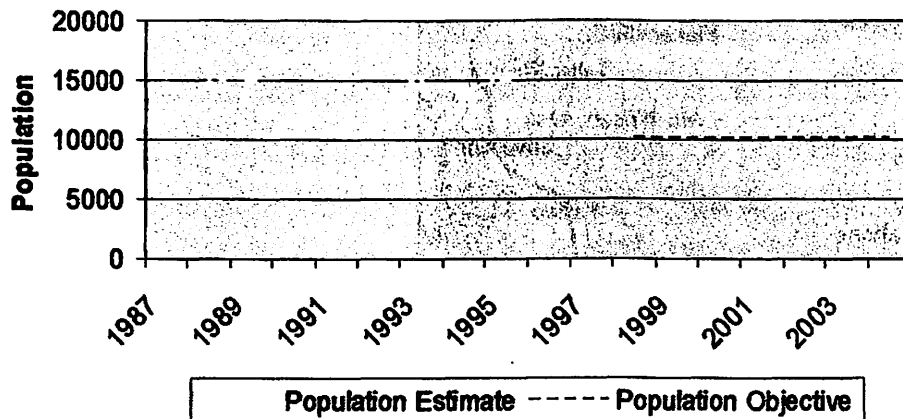
Post-hunt population size is a product of computer modeling, using a spreadsheet model, and the best information available at the time, but may change as new information becomes available. Computer modeling should be viewed as an approximation, not an exact science, and should represent trends well even if the final number is not exactly correct.

Elk models used until 1999 significantly under-estimated populations, largely due to using artificially low survival rates for both adults and young, and significantly under-estimating the lifespan of elk. Since the completion of research projects in western Colorado, more realistic survival rates and elk longevity are known, and incorporated into current models. A management plan for this herd was written and accepted in 1998 and projected the current population was in the neighborhood of 10,500-11,000 elk. At that time, most participants in the planning process wanted to maintain the elk population close to where it was. In reality, there were probably closer to 17,000-18,000 elk. The DAU Plan was

accepted with a population objective of 10,200.

The population in the mid 1980's was approximately 14,500 elk (Figure 3). Because of conservative management applied to elk throughout most of Colorado, as well as this DAU, the elk herd continued to grow to approximately the current level. For the last 7 years, the population has been kept in the 17-18,000 range.

Figure 3. E-24 Population

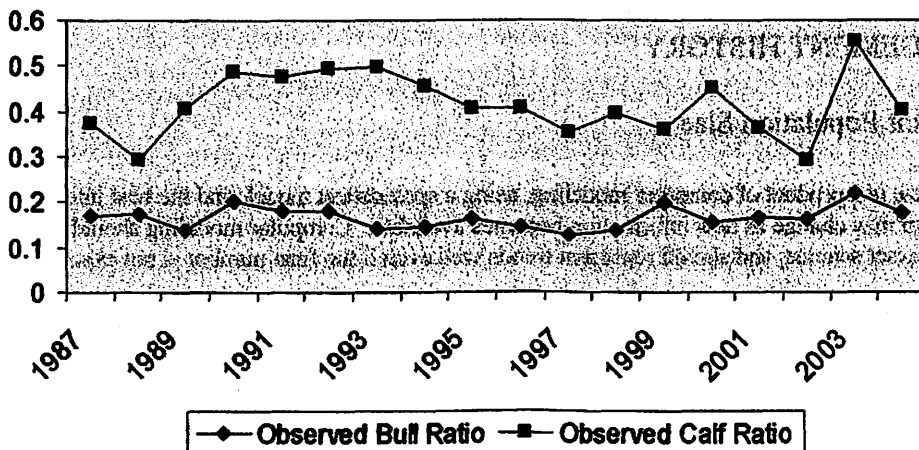


3.2 Post-Hunt Herd Composition

Post-hunt age ratios have averaged 41 calves:100 cows during the period 1987-2004, and have ranged from 37 to 60. Very little data is available prior to 1982, but it appears ratios may have been slightly higher in the 1970's (Figure 4).

Post hunt bull:cow ratios from 1998-2004 have averaged 18 during the inventory. The implementation of the 4-point antler restriction in 1986, in units 70, 71, and 711, raised the post-season ratio from a low level earlier in the 1980's of 5-7 bulls to 14-17 bulls (Figure 4).

Figure 4. E-24 Observed Ratios

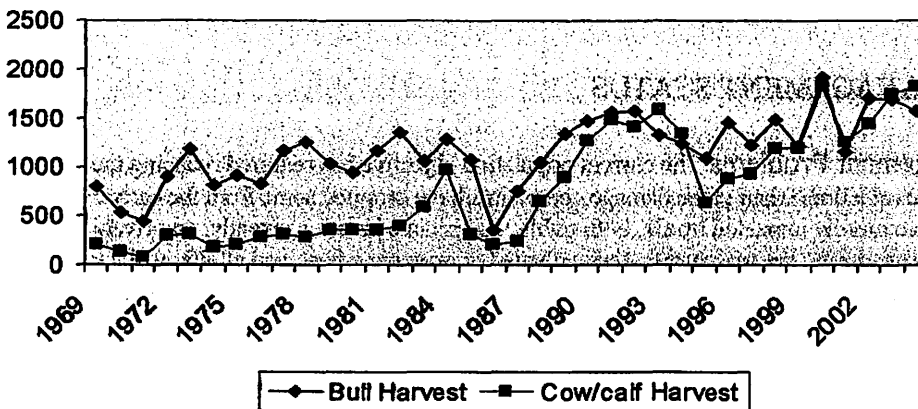


3.3 Harvest

Figure 5 shows harvest in the Disappointment elk herd from 1969 through 2004. There are three different phases of elk management represented, for both antlered and antlerless harvest. Bull harvest has been unlimited throughout the period, but from 1969-1976, bull harvest averaged 792 per year. From 1977 until antler point restrictions were implemented in 1986, there were an average of 1140 bulls harvested each year. After two years of very low bull harvest due to spikes being protected, bull harvest has averaged 1400 since 1988.

Antlerless harvest (Figure 5) in the 1970's represents conservative elk management, when harvest averaged 263 cows and calves. Figure 3 shows rapid growth in the population during this time. In the early 1980's, management philosophy changed somewhat realizing the herd had grown significantly, and cow/calf harvest increased to 642 per year. That increased harvest slowed the growth of the population, but did nothing to reduce it. In 1990, antlerless harvest doubled to an average of 1216 per year through 2004, and Figure 3 shows a concurrent stabilization in the population.

Figure 5. E-24 Harvest

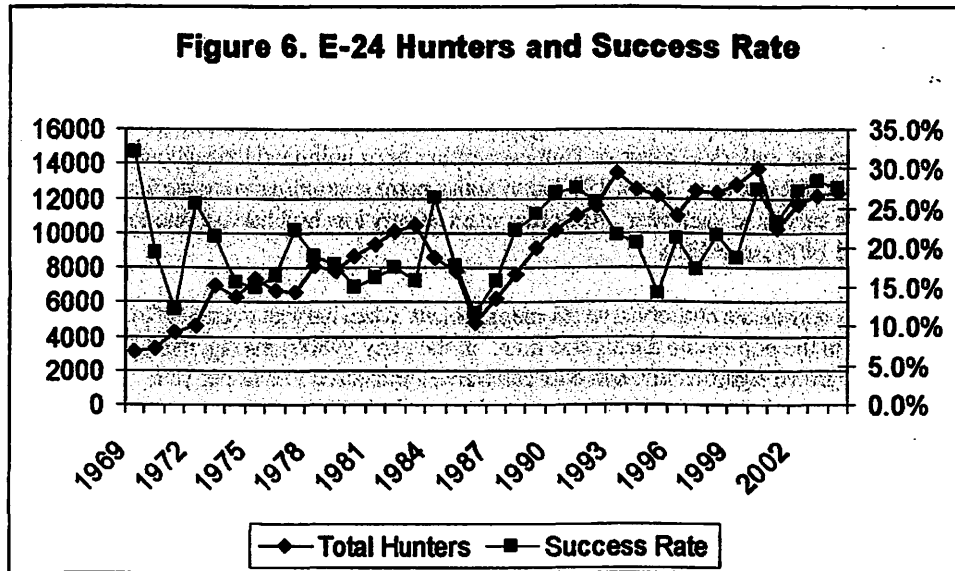


3.4 Hunting Pressure

From 1969 through 2004, the number of hunters has ranged from 3147 to 13,717, and has averaged 9086. Throughout the period, there has been a gradual increase (Figure 6). Since 1989, there appears to have been a significant increase in the number of hunters, and has averaged 12,000, versus 60% of that previous to 1988.

Hunter success (Figure 6, right axis) has averaged 20.8% for all hunters for the whole period, but has averaged 22.1% since 1983, probably due to the increased number of antlerless licenses issued.

Figure 6. E-24 Hunters and Success Rate



4.0 CURRENT HERD MANAGEMENT STATUS

4.1 Current Management Problems The current population objective has required reducing the population with antlerless licenses at a time when game damage complaints have dropped some from the early 1990's. There is no doubt certain areas are heavily impacted by elk, both public and private lands. Currently, on private lands, most of these conflicts are occurring during the spring with newly planted or growing wheat, and alfalfa, while the soil has just thawed out, but the elk have not moved out yet. There are also instances on public lands where elk use is heavy. Despite these situations, there are many areas in the DAU with light elk use, and that are improving in condition. These situations can be viewed as distribution problems, that are addressed in Distribution Management Plans prepared by the Montelores Habitat Partnership Program Committee. This DAU Plan does not isolate certain portions of the elk herd, or problem areas, but rather is the management document for the entire elk herd. The question being addressed here is whether the entire elk herd needs to be reduced (as dictated by the existing DAU Plan) or whether the herd is acceptable as it is now, but certain problems need to be addressed to handle conflicts.

There is a great deal of private land in the higher elevations of Game Management Units 70, 71, and 711. Most of this land is hunted, at least lightly, and most of it is leased by outfitters for hunting purposes. Despite this, there is a strongly held belief by both the public and Division employees that this private land is creating a "refuge" situation, where the elk move onto this private land to avoid heavier hunting pressure on public land adjacent. In the past, this created great difficulty in achieving needed harvest to achieve population goals. Currently, this problem has been reduced by "Private Land Only" antlerless licenses in seasons concurrent with public land hunting. These licenses have achieved a relatively good antlerless harvest and have helped reduce the elk population. Besides population management, there is still the perception that bull elk move onto these private lands during hunting seasons, do not feel enough pressure to move off, and are therefore unavailable to public land hunters.

At several public meetings held to discuss this DAU Plan, there were several comments made about the amount of recreational activity on public lands during the June-September period, and the effect this may be having on elk distribution. Several people expressed the belief that elk may spend a shorter period of time in the "high country," other elk may never go there, and that it may be leading to a problem of elk moving to lightly used private lands before the hunting seasons, and are therefore less available for viewing or hunting. This DAU is heavily used by backpackers and day-hikers with several major trails, as well as by wood gatherers, campers, high country fishermen, etc.

4.2 Synopsis of ongoing telemetry project A cooperative study involving the CDOW, Montelores HPP, Rocky Mountain Elk Foundation, and landowners was initiated in the winter of 1999-2000 to help identify movement and distribution of several wintering and summering sub-populations of elk in GMU's 71, 711, and 73. Part of the project has helped to identify "refuge" areas during hunting season and has contributed to discussions to develop harvest strategies. In January 2000, 6 cow elk were radio-marked on the south side of the Dolores River in 711. In August 2001, 10 additional cows were radio-marked on private lands near Groundhog Reservoir. In February-March 2002, 6 additional cows were radio-marked on the south side of the Dolores River and 9 were radio-marked in the "East Pines" area east of Dove Creek. The movements of these animals have indicated a relatively intact DAU with numerous movements into GMU 70, but no significant movements out of the DAU. All of these sub-populations are intertwined and also include elk that winter in Disappointment Valley, with all of the elk summering in areas above 9000 feet elevation in GMU's 70, 71, and the eastern portion of 711. Movements have also revealed a significant number that move onto (or stay on) private lands near Groundhog Reservoir during hunting season, and then eventually are forced off by deeper snows to winter along the Dolores River or Disappointment Creek. Even with this hunting season concentration, the private lands are not totally a "refuge" because many of these elk have been harvested in later seasons elsewhere. Hunting season harvest has been between 60-70% for each trap location over a 4 year period.

Elk caught in the winter along the Dolores rim exhibit a north-south seasonal migration to summer in the Groundhog, Stoner Mesa, Lizard Head, and Lone Cone areas. Elk caught in the East Pines move more east-west to summer near Groundhog and Lone Mesa State Park. Elk caught during the summer near Groundhog primarily winter on the Dolores rim, but some movements through Disappointment Valley and even to the East pines occurred.

The study is continuing with 4 additional cows from Mancos, 8 from south of Dolores, and 6 from Disappointment Valley being added in early 2005. Additional captures during early 2006 are planned as well as 20 summer captures in the La Plata Mountains.

5. HABITAT RESOURCES

Wildlife populations should be managed on a habitat basis as well as a popular/political basis. A habitat basis would include forage available for all herbivores, condition and trend of the habitat, and desired future conditions of the habitat. This system requires allocation of forage between domestic herbivores, wild herbivores including insects, and residual plant matter (or that which is left after grazing for soils management, erosion, plant vigor, nesting cover, etc.). A popular and political basis represents the desire of the public at large, economy of local communities, conflicts between wildlife and people or uses of land, etc. In a sense, this is "ecosystem management" and is the direction most land and resource agencies are heading. At the present, however, forage availability information is lacking on an ecosystem basis, and the allocation decisions can not be made.

5.1 Public Lands. There is an abundance of public land in this DAU, with over half of the DAU under Federal or State management. In addition, over two-thirds of winter range, winter concentration areas, and severe winter range are on public lands. Public land management plays a crucial role in elk population and elk habitat management. A moderate proportion of the DAU is winter range (36%) and most (67%) of that is on public lands (Figure 7). A much smaller proportion of the DAU is severe winter range for elk (21%), and 71% of that is on public lands (Figure 7). Winter range is fairly abundant in the DAU, but severe winter range is less widespread, and is mostly located in the Disappointment Valley and Dry Creek Basin areas.

5.2 Private Lands. Even though the bulk of the DAU is public land, the one-third of the unit that is privately owned also provides a significant part of the winter and severe winter ranges and winter concentration areas. Because these elk ranges occur on private lands, cooperation with the owner and consideration of the impacts is necessary. In severe winters, many of the elk in the southern portions of Game Management Unit 711 are forced onto private areas of 711 and 72. A large part of this private land is enrolled in the Conservation Reserve Program of the USDA/NRCS, but there is also a great deal of producing agricultural land. There are conflicts for forage, and some of these conflicts can be addressed through the Montelores Habitat Partnership Program.

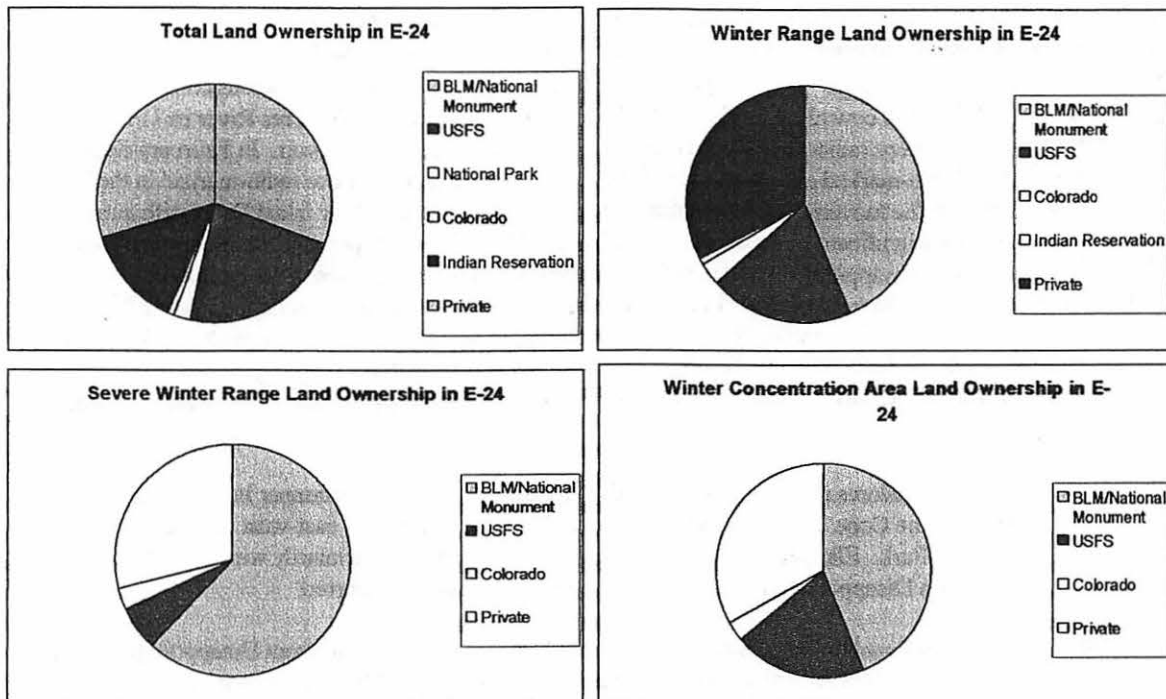


Figure 7. Land ownership patterns in Data Analysis Unit E-24.

6. DEVELOPMENT OF ALTERNATIVES

The main purpose of this DAU Plan is to establish new long-term post-hunt population and herd composition objectives. Listed below are a range of alternatives considered and discussed at public meetings.

Each alternative also needs to be considered in context with the level of habitat management that may be necessary for that population level, whether game damage complaints would likely change, and relative economic impacts of the various alternatives. Generally, the lower the population objective the lower the level of intensity of habitat management necessary, the lower the game damage complaints, and the lower the economic benefit to the area. As the objective population increases, the larger the investment needs to be, but the larger the economic benefit may be to area businesses.

6.1 Population Objective

6.1.1 – 11,000-13,000 elk. This population is about 33% below the current population. The population would need to be reduced with a great number of antlerless licenses to achieve a harvest of 1600-1800 for several years, and then be maintained with a sustained harvest of 575-600 cows and calves.

6.1.2 – 14,000-16,000 elk. This population is about 15% below the current population. The population would need to be reduced with abundant antlerless licenses for a few years, and then would be maintained with a sustained harvest of 650-675 cows and calves.

6.1.3 – 17,000-19,000 elk. This represents the current population of elk. Antlerless licenses would immediately be leveled off at approximately 1750 (compared to 3740 for the 2005 season) to harvest 700 cows and calves.

6.2 Herd Composition Objective

The second component of a DAU Plan is herd composition. The ratio of bulls to cows can be manipulated by the availability of bull licenses. In order to manage for a high ratio, bull licenses must be cut in number. This is because success rates tend to increase as licenses are restricted. Very high ratios are popular with some hunters, landowners, and outfitters, but they are only possible when most hunters are willing to forgo hunting bulls every year, possibly hunting with antlerless licenses for several years until a bull license is drawn. Fiscal impacts of reduced bull licenses are usually negative because there are fewer hunters, even though the area becomes a very popular area to hunt. Game Management Unit 61, immediately north of this DAU, is already a totally limited unit for bull hunting, so many of the local hunters would either need to forgo elk hunting or settle for antlerless licenses.

The ratio of "mature" bulls to younger bulls is presently managed by increasing the total number of bulls in the population. The antler point restrictions implemented in the late 1980's has increased total bull:cow ratios as well as increasing the number of "mature" bulls.

The second and third alternatives were presented at public meetings for discussion and illustration purposes. The public was informed that the Wildlife Commission considers these alternatives after receiving nominations from the public.

6.2.1 – 17-19 bulls:100 cows. This ratio reflect the current situation and would require no changes in regulations. There is no change in fiscal impact from the present.

6.2.2 – 24-30 bulls:100 cows. This ratio might reflect implementation of a quality hunt experience strategy, where bull harvest would be reduced 25% by a 35-45% cut in the historic number of bull hunters. There would be a negative impact to most segments of the economy.

6.2.3 – 30+ bulls:100 cows. This ratio reflects a more severe reduction in bull hunters by 50-70% in order to reduce bull harvest by 40-50%. This could be a 55% reduction in economic benefits.

7. SELECTION OF PREFERRED ALTERNATIVE

The preferred alternative is a **population objective of 16,000-18,000 elk, with a bull:cow ratio of 16-18:100**. There is a strong consensus on this objective. The USFS and BLM are preparing their response which will be incorporated into the final draft, and may result in the modification of the preferred alternative. The Montelores HPP Committee endorsed a recommendation of 16,000-18,000 elk. Division of Wildlife field staff feel that this is a sustainable and achievable objective population, that minimizes conflicts with elk, and maintains the current level of recreation and watchable wildlife opportunity.