ELK MANAGEMENT PLAN
FOR
E-2 (Bear's Ears) DATA ANALYSIS UNIT

Including Game Management Units: 3, 4, 5, 14, 214, 301, 441

Prepared By

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Colorado Wildlife Commission Approval: October 2, 2008

GMUs: 3, 4, 5, 14, 214, 301, and 441
Land Ownership: 50% Private, 25% USFS, 19% BLM, 6% State
Posthunt Population: Recommended Objective 15 – 18,000 **2008 Estimate 15,875**
Posthunt Sex Ratio (Bulls/100 Cows): Objective 25 **2007 Observed** 34 **2007 Modeled** 43
Recommended Objective 20 - 25

E-2 Background

The E-2 (Bear's Ears) DAU is located in northwest Colorado and includes 7 game management units (GMU): 3, 4, 5, 14, 214, 301, and 441 (Figure 1). The DAU encompasses portions of Moffat and Routt counties and is bounded on the north by the Colorado/Wyoming state line, the west by the Little Snake River, the south by the Yampa River, Colorado Highway 318, and U.S. Highway 40, and on the east by the Continental Divide. Major towns within the DAU include Steamboat Springs (pop. 10,000), Craig (pop. 9,500), Hayden (pop. 1,700), and Maybell (pop. 400). The DAU covers 2,816 mi^2.

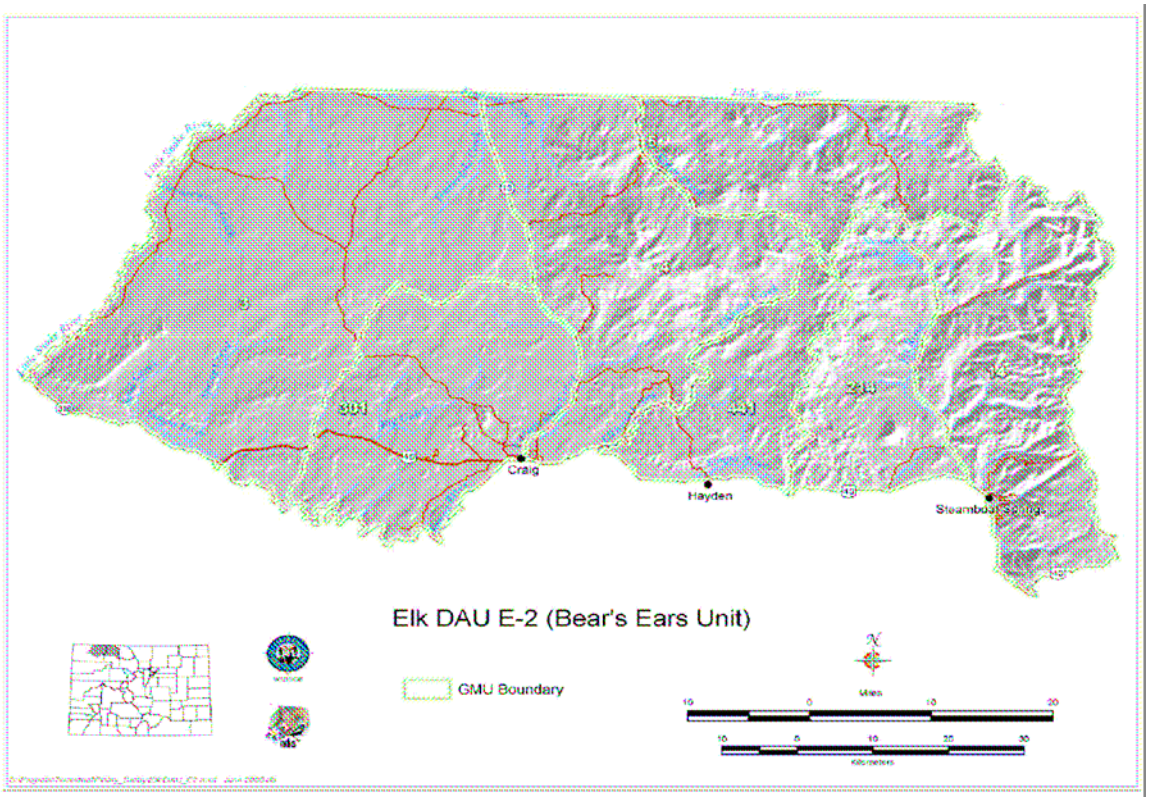
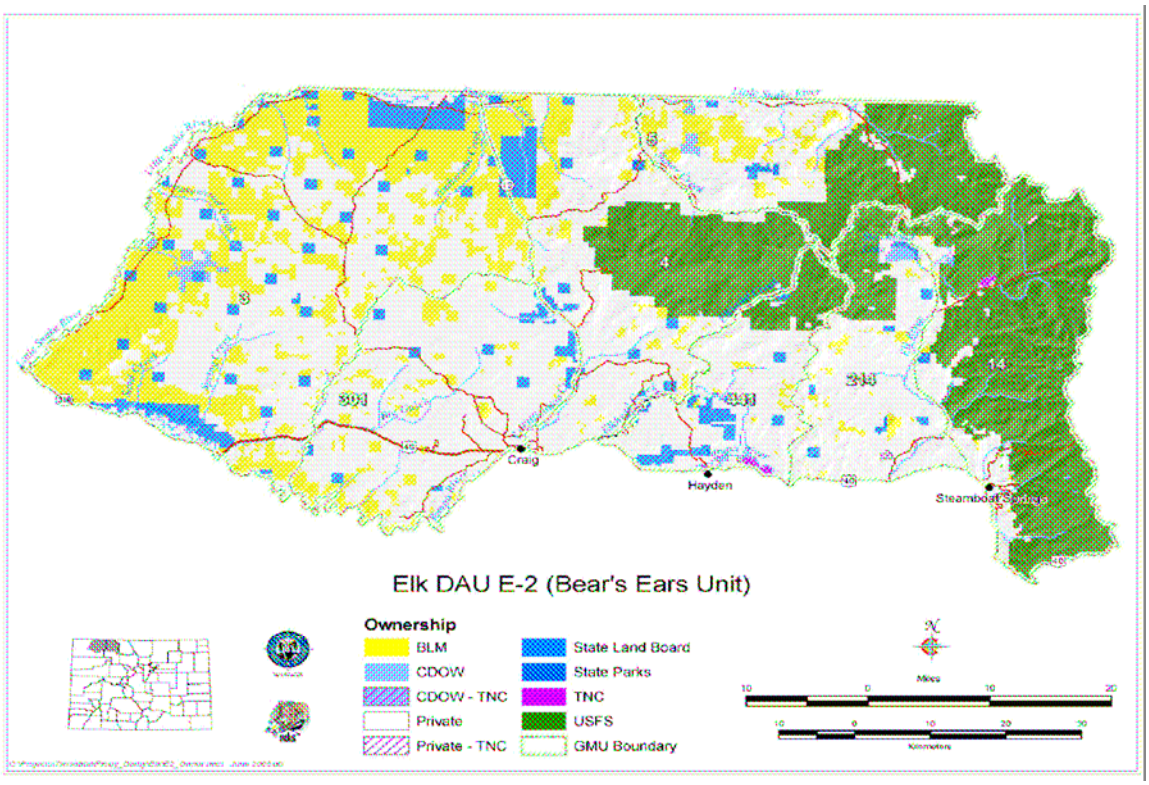


Figure 1. Geographic boundaries for the Bear's Ears DAU E-2 in northwest Colorado. GMUs within E-2 include 3, 4, 5, 14, 214, 301, and 441.

Private land comprises 51% (1,420 mi^2) of the Bear's Ears DAU, while 25 % (703 mi^2) is administered by the U.S. Forest Service (USFS), 19 % (537 mi^2) by the Bureau of Land Management (BLM), 5% (143 mi^2) by the State Land Board, and < 1% (9 mi^2) as State Wildlife Areas (SWA) (Figure 2).



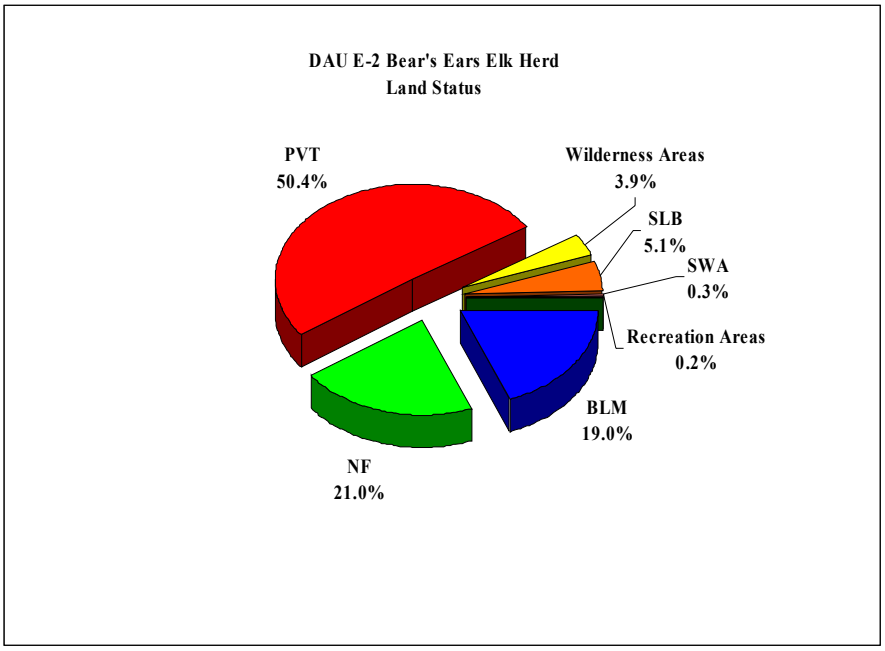


Figure 2. Surface land status for the Bear's Ears DAU E-2.

Approximately 35,000 people live in Routt and Moffat counties. Land development related to growing human populations and energy resource extraction is taking place across much of the Bear's Ears DAU, a great extent of it in transitional and wintering areas used by elk (Figure 3). Since much of the DAU is interspersed with large tracts of private land, the management of elk will continue to be a challenge as conflicts between elk and humans will likely increase as the area is developed further and as habitat fragmentation due to energy development increases across the landscape.

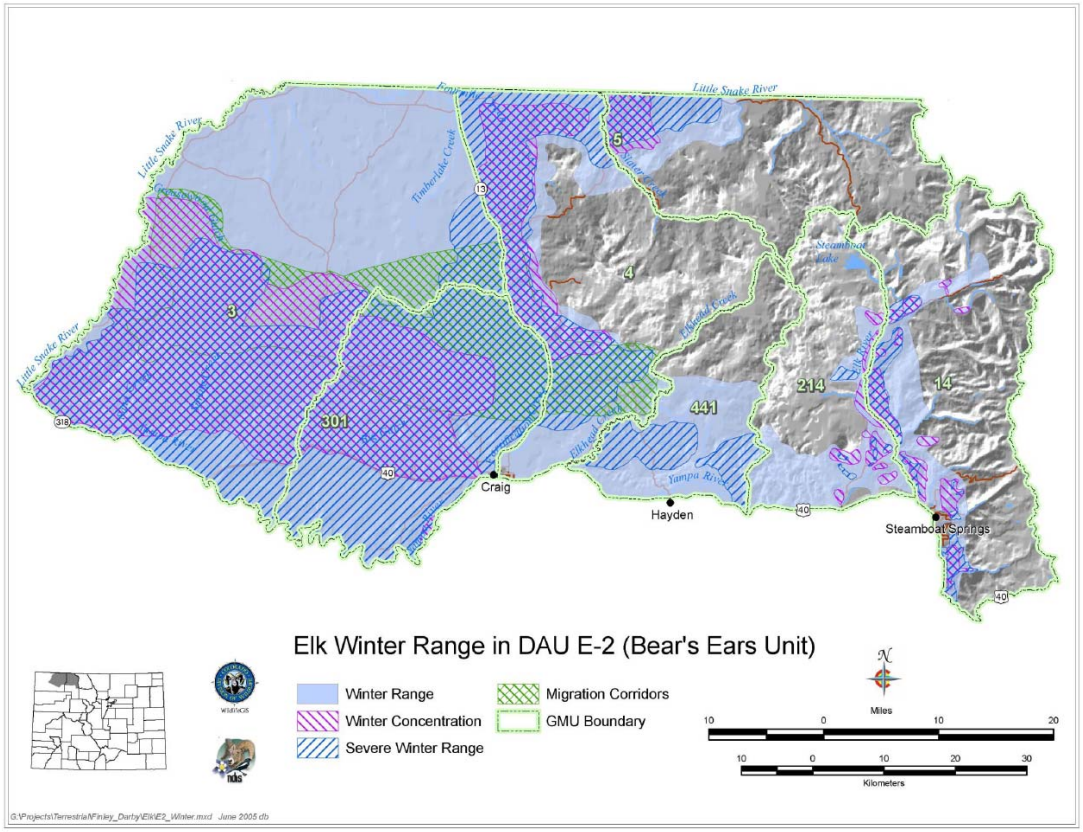


Figure 3. Elk winter range in the E-2 Bear's Ears DAU.

Recent population estimation techniques and refinements to computer modeling procedures have substantially increased estimates of the E-2 elk population over previously-used population models. Refined models using harvest statistics, aerial survey data, winter and annual survival data from radio collared animals, and other information indicate the herd increased steadily from 1975, when the E-2 elk herd is estimated to have consisted of approximately 10,000 animals, through 1999, at which point it peaked at approximately 37,000 animals.

Since 1999, CDOW has made a concerted effort to drastically reduce the E-2 population and has done so through increased license allocation and new and restructured hunts. A total of 133,794 licenses were issued for E-2 for years 2000-2008 (average 14,866/year). This does not include "statewide" and "OTC" licenses. Of those licenses, 19,314 were Ranching for Wildlife (RFW) licenses (average 2,146/year), averaging 14% of annual license allocation for E-2. During this same time period, CDOW greatly increased allocation of private-land-only (PLO) antlerless licenses and late-season (December) antlerless licenses.

Since 2000, hunters have harvested approximately 52,000 elk from E-2 (22,000 bulls and 30,000 antlerless) (Figures 6 & 7). Female segment rate harvest for E-2 has averaged 27% of the pre-hunt population during the last five years. Stable elk populations generally cannot sustain a female segment harvest rate above 20% of the pre-hunt population and, thus, the herd is currently experiencing a rapidly declining growth curve. The modeled population estimate for the 2007 post-hunt elk population was approximately 21,000 elk. Model estimates project this population to decline to approximately 16,000 by post-hunt 2008 and potentially decline below 10,000 animals by post-hunt 2009 given current license allocation and harvest rates. If realized, this would represent a 73% herd reduction in the span of 10 years.

CDOW has investigated several other methods of population estimation in an attempt to test current population models. At the request of Moffat County Commissioners, CDOW conducted an aerial photography survey during the spring of 2006 in an effort to photograph and survey elk numbers using a different technique. The results from this effort were that the resolution on the photographs was not adequate to identify elk vs. other objects on the ground including cattle, deer and antelope. This project cost over $20,000 plus personnel time, and CDOW was the sole funding source. Further, in February of 2007 CDOW conducted an extensive elk quadrat survey involving 3 helicopters flying simultaneously on various strata

within E-2 boundaries, to estimate elk densities in E-2. The helicopter survey alone cost over $60,000 with total project cost exceeding $100,000 and CDOW was the sole funding source. The E-2 quadrat survey estimated 32,000 animals, with a 95% confidence interval spanning 23,000 – 45,000 animals.

In an attempt to estimate relative carrying capacity of ungulates within E-2, CDOW and the Habitat Partnership Program (HPP) recently funded the production of a habitat model to estimate habitat capability by using readily available inputs such as projected vegetation production values, mapped wildlife winter range polygons, wild ungulate offtakes, and livestock offtakes (Gary Wockner et al. 2005). The habitat model produces a range of population values with related management implications that can be used in the DAU planning process. The model is run using model inputs which include a pre-winter precipitation level and additional parameters based on the area being assessed. This model, using a mean precipitation rate, an estimated pronghorn population of 16,000, an estimated mule deer population of 38,000 animals, and 10 year average livestock numbers, estimates a sustainable elk population for E-2 of approximately 16,500 elk.

Additionally, the CDOW has managed its resources to alleviate game damage and range condition concerns on winter ranges in the western portion of the E-2 DAU. In another cooperative project with HPP, during the winter of 2007-2008 CDOW fitted 35 radio-collars on adult female elk caught in traps placed in Round Bottom, near Maybell and Sunbeam, and along the Little Snake River in an effort to quantify winter movement of elk across the Yampa River (E-2/E-6 DAU boundary). Summer locations of these radio-collars indicate approximately a 50/50 split of E-2 and E-6 elk dispersing from trap sites. These results indicate both E-2 and E-6 elk are contributing to game damage concerns on winter ranges along the Yampa and Little Snake Rivers, particularly during winters when CRP fields in E-2 are covered with snow and elk are pushed to low-elevation areas along river bottoms. Further, these results inform the E-2 quadrat population estimate and the estimate from the E-2 population model. Another 30 radio-collars will be deployed during the winter of 2008-09 to compare elk distribution on winter ranges across multiple years.

The CDOW has also expanded the hunting area for the early cow elk hunt in units 2, 3 and 11 along the Little Snake River for the 2008 hunting season. The intent of this season is to harvest elk early (Aug-Oct before elk migrate into this area) to reduce the numbers of elk staying in this winter range area year round. Further, CDOW is also considering adjusting the late cow elk hunts that currently occur during the month of December to maximize elk harvest while reducing game damage.

The Bear's Ears elk herd has been managed to maintain a sex ratio of 20 – 25 bulls: 100 cows since 2005, using the 4-point limitation since 1986. Under this system, only bull elk with at least 4 antler points on one side can be legally harvested. Since the antler point restriction was implemented in 1986 the bull:cow ratios have increased substantially, averaging 24 bulls:100 cows with a range of 16.1 to 37.5 bulls per 100 cows.

The post-hunt age ratio (calves:100 cows) has averaged 55 since 1975. The highest age ratio was 81 calves:100 cows in 1977 and the lowest was 43 calves per 100 cows in 1997. The long-term trend for the cow:calf ratios is stable. This trend has been tempered by up and down years with lows occurring in the early 1980s and early to mid-1990s. The long term trend from this data set indicates that this elk herd is still very productive.

The E-2 elk herd is currently the second largest elk herd in the United States, and thus management of this herd has high profile state and regional implications. This herd provides valuable opportunities for hunters and wildlife watchers alike and is an important economic variable for local communities. According to a 2004 *"Hunting, Fishing, and Wildlife Watching Economic Report*" prepared by BBC Research & Consultants for the CDOW, Moffat County was identified as one of the top 10 counties in the state for the largest proportion of employment related to hunting and fishing. An estimated 330 jobs in Moffat County are related to hunting and fishing, 4.4% of the jobs in the county. It is estimated that $46.8 million in expenditures is contributed to the economies of Moffat and Routt Counties from hunting. Elk hunting makes up approximately $18.5 million of the direct expenditures for the two counties (2004 estimates).

Significant Issues Concerning E-2 Population Objective Setting

Animal distribution

Population management issues identified for the E-2 herd are primarily associated with elk distribution, winter range habitat capability, and early spring elk use of public lands as elk migrate back to summer ranges. One of the biggest challenges in achieving an adequate harvest annually in the DAU is elk seeking refuge on large blocks of private lands to avoid hunting pressure. This is particularly a problem in this DAU since 50% of the land is privately owned, 62% of which is elk winter range. Private landowners with hunting operations can make a substantial portion of their income from leasing to or outfitting for hunters, primarily for bull hunting. Many landowners will not jeopardize their bull hunting operations by allowing cow hunters on their property during the regular seasons. The minimal hunting pressure on private land during the regular hunting seasons often results in sanctuary situations for antlerless elk, making them unavailable for harvest and increasing the potential for these elk to become problem/damage causing animals later in the winter as elk migrate west. Further exacerbating elk distribution issues among public and private lands, is a significant increase in off-road motorized vehicle use during summer months on the Routt National Forest over the last 15-20 years. In addition to elk distribution issues created by the private land refuge situations and increased motorized recreation on public lands, changing climate patterns resulting in range expansions and year-round elk use in non-traditional areas, and habitat loss and encroachment to development have all contributed to the challenges of managing this elk herd. It should be recognized that local issues and problems associated with elk distribution can and will occur at any population level.

E-2 elk winter ranges contain approximately 42,000 acres of Conservation Reserve Program (CRP) land. It is important to note that the majority of CRP contracts were set to expire in 2007 which may result in significant land use changes that could potentially have negative impacts on elk winter ranges, deer, pronghorn, sharp-tail grouse, and other wildlife in the DAU. During the relatively heavy winter of 2007-08 many CRP fields were covered with several feet of snow, precipitating increased elk movements down towards lower elevation river bottoms and resulting in increased game damage issues near Maybell and Sunbeam.

Public land grazing

For the purpose of the DAU planning effort, CDOW requested information concerning the land health status of public rangelands, present utilization rates specific to livestock, and any specific concerns regarding the BLM and Forest Service public lands. Additionally, the Resource Management Plans and Environmental Assessments for each of the agencies were reviewed regarding grazing management on public lands within the DAU. The USFS administers 1 ranger district on the Medicine Bow-Routt National Forest within the E-2 DAU, the Hahn's Peak-Bear's Ears District. The district has 60 grazing allotments within the DAU that comprise 400,000 acres. All allotments are currently being used for livestock grazing. The major issues identified on allotments that are not meeting FS rangeland health criteria include moderate to heavy use by livestock and wildlife, poor browse condition, localized moderate to heavy big game use along migration routes, high elk use in the spring, 50% utilization by elk on umbel type plants by late June prior to livestock turnout, excessive spring elk numbers causing heavy utilization of desirable forbs, and riparian sites showing heavy use by big game during spring and early summer. Elk are implicated in most of the allotments that are not meeting rangeland health standard evaluations in the Hahn's Peak-Bear's Ears District.

The BLM Little Snake Field Office (LSFO) identified concerns and conflicts with the elk herd size within DAU E-2. Their general concern relates to the intensity of elk use in the spring and early summer prior to livestock turn out potentially causing depletion in forage quantity and quality. The LSFO identified allotments in the Great Divide area where elk utilization on perennial grasses is consistently exceeding the BLM's established limit of 50% utilization. The BLM LSFO stated their permittees have taken voluntary reductions in livestock use in reaction to the drought and level of forage being utilized by elk. BLM claims the expected benefits of the reduced livestock numbers have been negated by high elk numbers.

Habitat Partnership Program

Input on habitat conditions and capability on private land was sought in public meetings, through the HPP committees, and contacting the Natural Resource Conservation Service (NRCS). The Upper Yampa River HPP Committee has stated that landowners have a greater tolerance for elk than they have had in the past and the majority of the committee is comfortable with current elk numbers in this DAU. However, the committee identified conflicts in DAU E-2 relating to private land elk refuge situations, herding of elk onto private lands, RFW seasons not concurrent with regular seasons, and conflict areas in and west of the California Park area. They've stated that the conflicts in the California Park areas relate more to distribution issues and that the Division should address these issues by continuing to implement late season and private land only hunts and aggressively manage public land habitat to create a mosaic of successional stages to help with elk distribution. Finally, the committee has encouraged the Division to manage elk based on habitat suitability.

The Northwest HPP committee has identified elk conflicts in DAU E-2 associated with elk distribution, current elk population levels, and the impacts current elk numbers may be having on drought stressed winter ranges. The committee is concerned about large individual groups of elk present in this area. These groups tend to congregate in and around agricultural fields, cause isolated forage conflicts on the Routt National Forest, and raise overall agricultural concerns in this area. The committee stated that they believe distribution issues are leading to the biggest elk-related problems in E-2, but also stated a desire for a further reduction in the overall population to aid in alleviating distribution problems. Given the current state of sustained drought and lack of conclusive evidence regarding its end, the committee recommends a 15-25% herd reduction from current numbers (post-hunt 2007) for E-2.

Private landowners

Concerns expressed by some of the private landowners at the public meetings and a letter received from the Colorado Woolgrowers Association (CWA) stated that the drought conditions over the past several years have severely impacted the forage base in the DAU and recommended reducing elk numbers to allow the range to rest and recover. Similarly, the State Land Board (SLB) identified drought and wildlife use as causal factors for range degradation on lands under their administration in DAU E-2. Further, several ranchers in the Bear's Ears DAU have expressed concerns about elk competition with cattle and sheep on private land and on public lands permitted for livestock grazing. Some livestock producers believe that elk are significantly reducing their useable forage yields by grazing spring and summer rangelands prior to livestock turn out. There is also concern that the potential benefits of controlled livestock grazing are not realized when subsequent elk grazing is uncontrolled.

Public input

CDOW has also conducted numerous recent public meetings regarding the E-2 elk herd and has solicited comments from other agencies and organizations. Comments compiled from public meetings generally indicate local landowners would like a further reduction of 15-25% in the E-2 herd. Some sportsmen have voiced concern that the herd has indeed come down significantly during the last few years and fewer elk are being seen in the field, particularly on public lands during the fall.

In addition to comments compiled during numerous public meetings, CDOW also contracted a phone survey of 500 sportsmen who hunted E-2 during the fall of 2007. The sample consisted of 250 Colorado residents who live outside of Moffat and Routt counties, and 250 non-Colorado residents. Results from this survey generally indicate that E-2 hunters who live outside of Moffat and Routt counties would like to see the E-2 herd increase in size or at least maintained at current levels.

Chronic Wasting Disease

Lastly, Chronic Wasting Disease was discovered on the western slope of Colorado in 2002. CWD

was first discovered in E-2 through voluntary head submission by hunters in 2002. Currently, voluntary head submission by hunters is being used as a surveillance tool to identify the distribution and prevalence of CWD in DAU E-2. CWD has been detected in all GMUs within the DAU except for GMU 214. The 2005 – 2007 CWD prevalence estimates from 2289 tests for elk in E-2 were approximately 0.2%, with a 95% confidence interval spanning 0.1% to 0.4%. The goals for managing CWD in this population include minimizing the prevalence of or eradicating the disease if possible and to keep the disease from spreading. The goal in areas that do have CWD is to maintain a less than 1% prevalence rate at the GMU level and less than 2% prevalence rate at the DAU level. Current strategies to manage for CWD in this DAU include using public hunter harvest head submissions to monitor for the prevalence and distribution of the disease.

E-2 Management Alternatives

Two post-hunt population objective alternatives are being considered for E-2: the previous population objective of 11-15,000 animals and the new CDOW recommendation of 15-18,000 animals. The CDOW does not recommend managing for more than 18,000 elk in E-2 because of habitat and conflict concerns. The majority of public and agency comments received thus far support no change to a slight decrease (15-25%) from post-hunt 2007 elk population levels (21,000) for E-2.

CDOW Recommendation to the Wildlife Commission – Approved Oct 2, 2008

Population Objective: 15,000 – 18,000

A long-term E-2 population objective of 15 – 18,000 represents a 25% reduction from post-hunt 2007 population size (Figure 4) and is consistent with recommendations from USFS, BLM, SLB, the Northwest HPP Committee, and comments gathered from recent public meetings. This objective range is also consistent with recent sustainable herd estimates produced from the HPP habitat model. It is expected that a long-term population objective below 15,000 animals would result in significant levels of complaints from sportsman, landowners, businessmen, and other local constituents, who all depend on elk hunting opportunities. As this elk herd approaches the long term population objective, the numbers of licenses issued for regular season hunts, ranching for wildlife, and late season opportunities will necessarily be reduced.

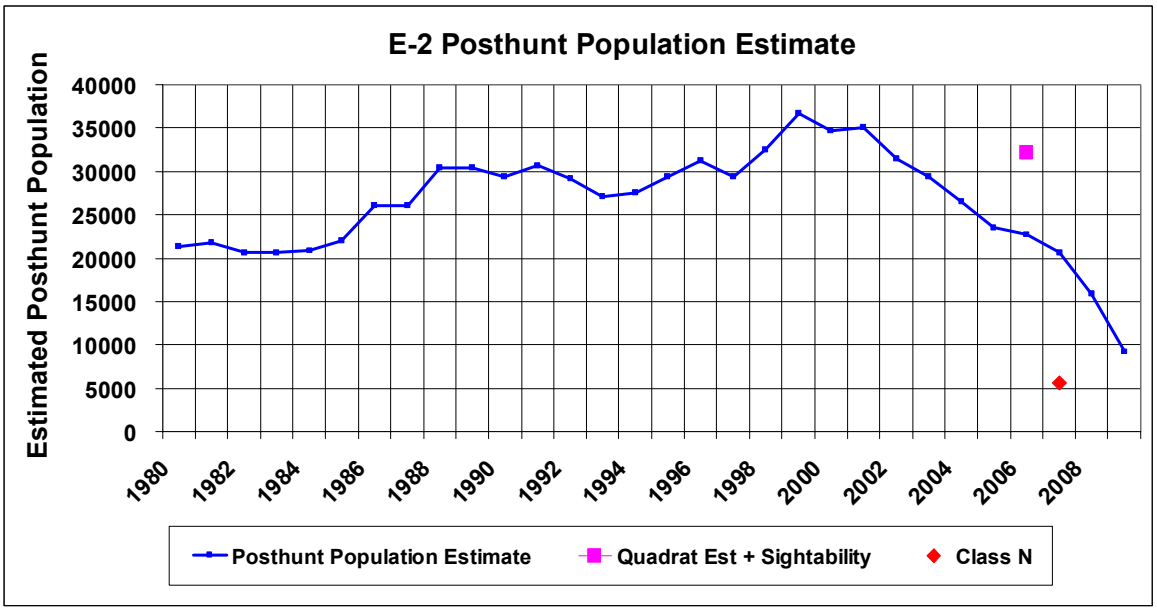


Figure 4. Post-hunt population estimates for the Bear's Ears DAU E-2 since 1980. Estimates for years 2008 – 2010 assume current hunting license allocation and success rates are maintained.

Sex Ratio: 20 – 25 bulls:100 cows

The CDOW recommendation is to manage the sex ratio objective within a range of 20-25 bulls:100 cows. During the past 5 years (2003-2007), the herd has averaged 32 bulls:100 cows with a range of 24-38 bulls:100 cows (Figure 5). Statewide bull:100 cow ratios, including E-2, have increased slightly during the last few years. This likely has to do with increased antlerless harvest rates and may also be a function of elk use of private land refuge areas from hunting pressure.

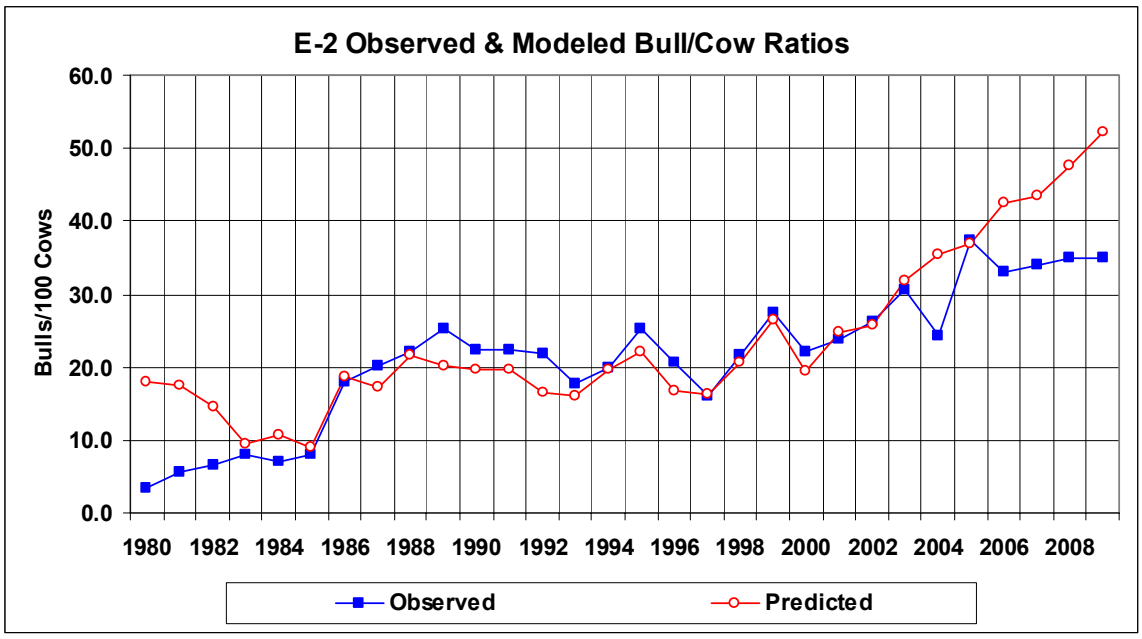


Figure 5. Post-hunt observed and modeled bull:cow ratio estimates for the Bear's Ears DAU E-2 since 1980.

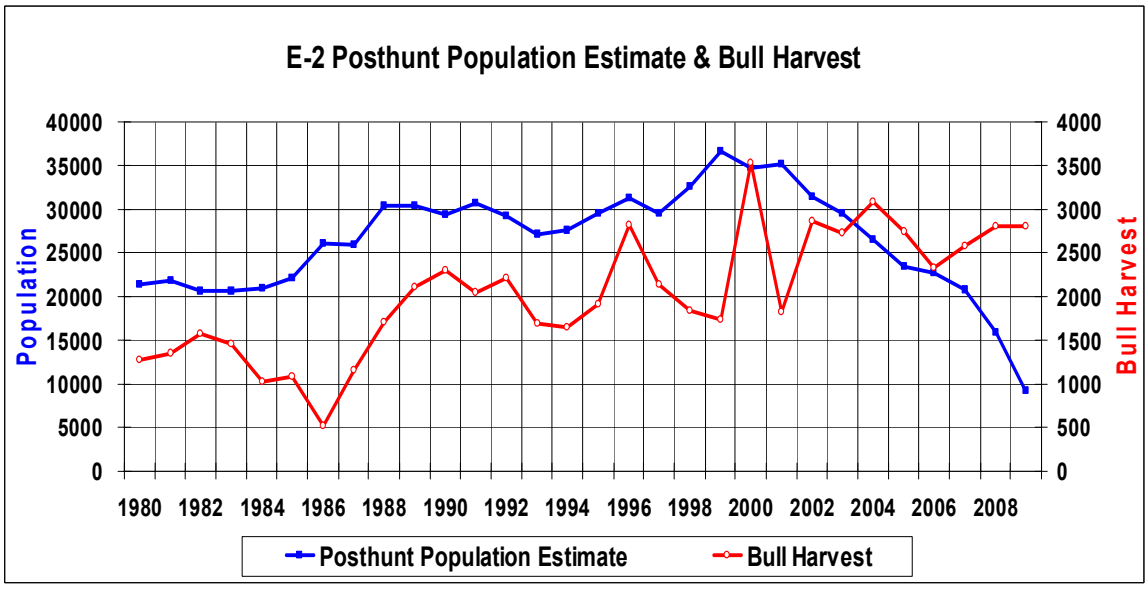


Figure 6. Post-hunt bull harvest and population estimate for the Bear's Ears DAU E-2 since 1980.

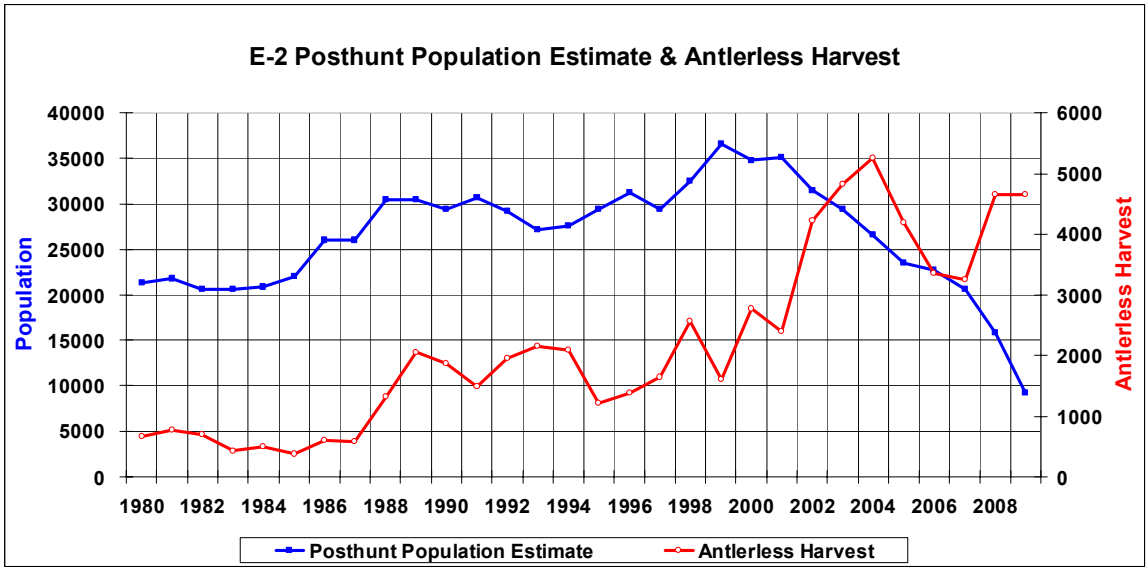


Figure 7. Post-hunt antlerless harvest and population estimate for the Bear's Ears DAU E-2 since 1980.

INTRODUCTION AND PURPOSE

Primary Goals

The current population objective for DAU E-2 the Bear's Ears Elk Herd is 12,200. This population objective was set in 1992. Recent refinements to the CDOW computer modeling procedures have substantially increased modeled estimates of post-season elk populations. These changes were largely due to more accurate estimates of adult and calf survival, which appear to be much higher than previously thought. It is proposed that the long term population objective for this herd be managed as a population range as opposed to a point estimate number. The flexibility to manage this elk herd within a range would allow the CDOW to be more adaptive in their management and take the appropriate steps needed to increase or decrease elk numbers depending on climatic and/or habitat conditions. The short tem goal is to manage this elk herd at the lower end of the objective range to allow for range rest and recovery. The long term goal for the ten year period of this plan is to manage to the most appropriate population level within the population objective range recommended in this plan based on climatic and/or habitat conditions.

Secondary Goals

Several different management strategies have been implemented to increase antlerless harvest and reduce elk numbers. These strategies include, additional antlerless licenses, extended PLO antlerless seasons, Ranching for Wildlife special management licenses, late season antlerless hunts, over the counter 4th season antlerless licenses, coordinated HPP antlerless hunts, and 1st and 4th season bull licenses were changed to an either sex license in an effort to increase antlerless harvest without increasing hunting pressure. Reductions in this elk herd should produce an elk herd that is healthier and more productive, allow for range rest and recovery, potentially decrease elk distribution issues, decrease deer/elk competition on winter ranges, and reduce localized elk/livestock competition.

Management by Objective

The purpose of this document and the DAU planning process is to provide the CDOW with an elk population management objective for the E-2 Bear's Ears DAU that is biologically, socially, and politically acceptable. Specifically, the DAU plan identifies desired population and sex ratio (number of bulls per 100 cows) objectives that guide CDOW's elk management practices within the E-2 Bear's Ears DAU. The CDOW is required by statute to manage all wildlife species for the benefit of all Colorado residents and visitors to the state. To ensure public needs are met, it is imperative the CDOW maintain big game herds at population levels agreed upon through a public review process (DAU planning) and approved by the Wildlife Commission. In addition to state and federal agencies, there are a wide range of stakeholders with various interests in the management of Colorado's big game, including livestock producers, guides and outfitters, sportsmen, wildlife viewers, recreationists, and local businesses.

Elk populations are generally managed by herds that occupy specific geographic areas, referred to by the CDOW as a Data Analysis Unit (DAU). Each DAU is typically composed of several game management units (GMU) that divide the DAU into smaller areas designed to control hunter distribution and harvest. The boundaries of a given DAU should encompass those areas that provide year-around habitat for most of the elk herd, including breeding, parturition, winter range, security areas, and summer range. Ideally, movement of elk into or out of the DAU is minimal. However, because elk are highly mobile movement among DAU's is not uncommon. When elk move across DAU boundaries, management becomes more

difficult and population estimates less precise.

The CDOW recently adopted a 5-year objective setting process based on the preparation of a DAU Plan. Stakeholders help determine population goals through public meetings sponsored by the CDOW and written comments are incorporated into the plan that is then sent directly to the Colorado Wildlife Commission. Federal land management agencies are also included in the process to assist with habitat condition assessment and ensure USFS and BLM land-use practices are consistent with CDOW's elk management. Local committees of the Habitat Partnership Program (HPP) may play a significant role in the DAU planning process by identifying potential problems or areas of concern. The HPP program brings together representatives from the BLM, USFS, CDOW, livestock producers and hunting interests into working groups. HPP participation in DAU planning helps ensure private land habitat issues are considered, conflict areas identified, and solution strategies are appropriate.

The CDOW then compiles and summarizes all relevant issues identified during the public input process and consultation with federal land management agencies. Issues are ranked according to importance and categorized as biological, social, recreational, or economical. It is then the CDOW's responsibility to develop biologically acceptable population objectives that consider the issues identified during the public planning process. Population objectives and associated management strategies developed by CDOW are referred to as the 'preferred alternative', and include both a desired population level and sex ratio objective. The preferred alternative requires approval from the Wildlife Commission before being adopted as the active DAU plan. The Wildlife Commission generally supports the preferred alternative. However, if the Wildlife Commission finds the preferred alternative unacceptable, a list of other alternatives are also included that represent different management objectives identified during the public planning process.

Following review and approval by the Wildlife Commission, the population objectives in the DAU plan become management targets that guide the annual permit setting process. Management by objective is an annual process or cycle that involves data collection, analysis, evaluation, and adjustments (if necessary) made in the type and number of permits allocated to the GMU's of the DAU. The population and sex ratio objective in the DAU plan determine how many and what types of animals need to be harvested. For example, if the herd were over the population objective, the number of antlerless licenses would likely be increased. Or if the sex ratio (number of bulls:100 cows) exceeds objective levels, more bull tags would become available. Properly implemented, this cyclic approach and annual evaluation not only measures progress toward objectives, but also identifies any lack of progress. Successful management must be approached as a cyclic process that continually feeds back upon itself for evaluation, adjustment, and fine-tuning.

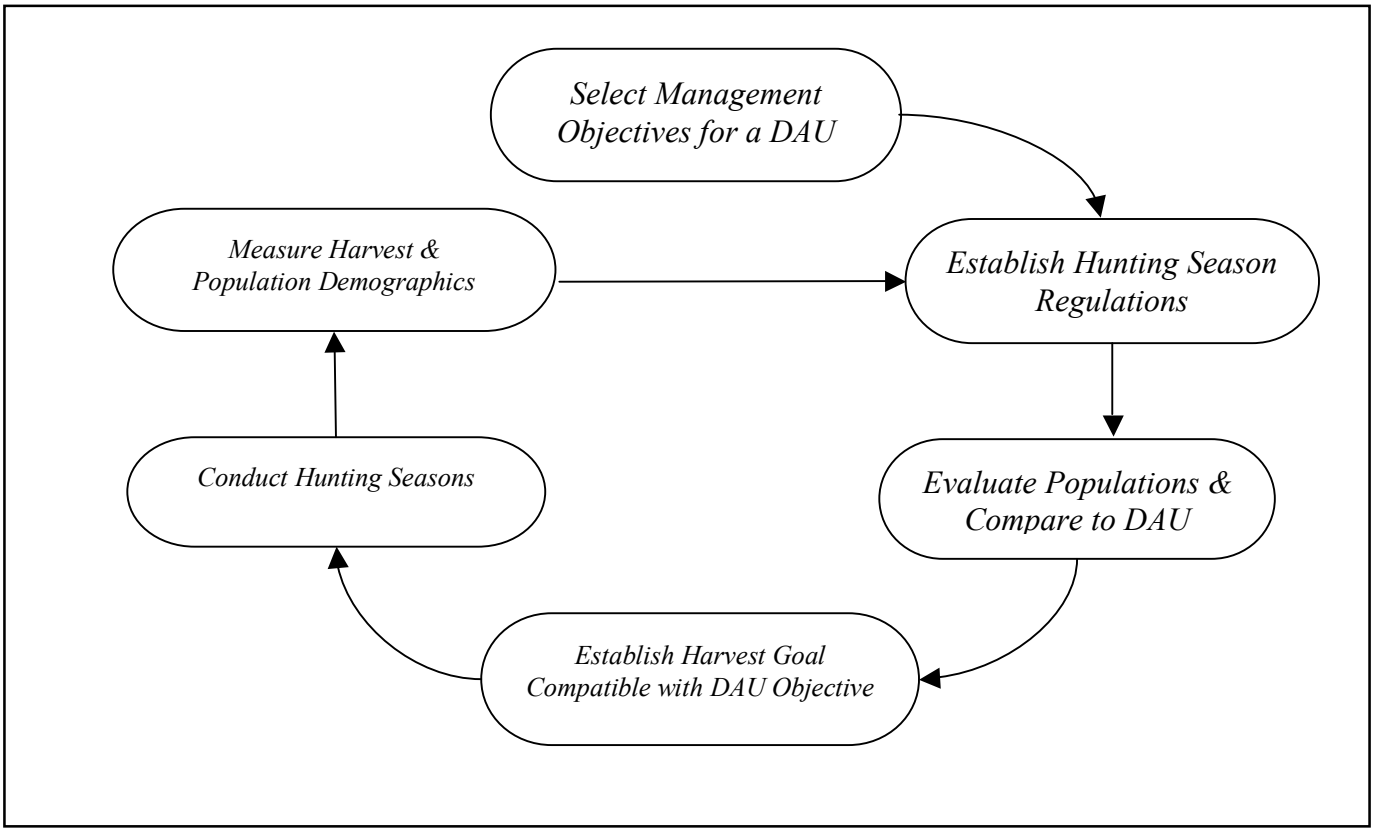
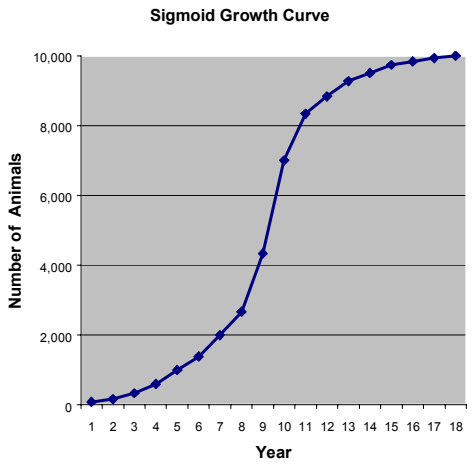


Figure 1. Annual management cycle used by the Colorado Division of Wildlife

Population Dynamics and Managing for Maximum Sustained Yield

Numerous studies of animal populations, including such species as mice, rabbits and white-tailed deer, have shown that the populations grow in a mathematical relationship referred to as the "sigmoid growth curve" or "S" curve (right). There are three distinct phases to this cycle. The first phase occurs while the population level is still very low and is characterized by a slow growth rate and a high mortality rate. This occurs because the populations may have too few animals and the loss of even a few of them to predation or accidents can significantly affect the population.



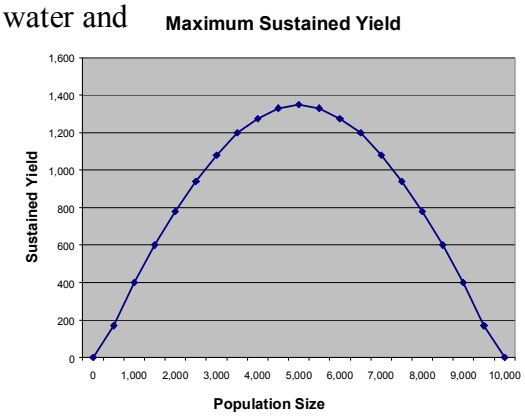
The second phase occurs when the population number is at a moderate level. This phase is characterized by a very high reproductive and survival rate. During this phase, food, cover, water and space (habitat) is not a limiting factor. Also, during this phase, animals such as white-tailed deer have been known to successfully breed at six months of age and produce a live fawn on their first birthday and older does have been known to produce 3-4 fawns that are very robust and healthy. Survival rates of all the deer (bucks, does and fawns) are at maximum rates during this phase.

The final or third phase occurs when the habitat becomes too crowded or habitat conditions become less favorable. During this phase the quantity and quality of food, water, cover and space become scarce due to the competition with other members of the population. This phase is characterized by a decrease in reproduction and survival. Also, during this phase white-tailed deer fawns can no longer find enough food to grow to achieve a critical minimum weight that allows them to reproduce; adult does will usually only produce 1-3 fawns; and survival of all deer (bucks, does and fawns) will decrease. During severe winters, large die-offs can occur due to the crowding and lack of food. The first to die during these situations are fawns, then bucks followed by the adult do. The severe winters thus affects the future buck to doe ratios by favoring more does and fewer bucks in the population. Also, since the quality of a buck's antlers is somewhat dependent upon the quantity and quality of his diet, the antlers are stunted during this phase. If the population continues to grow, it will eventually reach a point called "K" or the maximum carrying capacity. At this point, the population reaches an "equilibrium" with the habitat. The number of births each year equal the number of deaths, therefore, to maintain the population at this level would not allow for any "huntable surplus." The animals in the population would be in relatively poor condition and when a severe winter or other catastrophic event occurs, a large die-off is inevitable. A recent example of such a population die-off occurred in the relatively unhunted Northern Yellowstone elk herd during the severe winter of 1988-89. This winter followed the forest fires of the summer of 1988 that raged in the National Park.

What does all this mean to the management of Colorado's big game herds? It means that if we attempt to manage for healthy big game herds, we should attempt to hold the populations at about the middle of the "sigmoid growth curve." Biologists call this "MSY" or "maximum sustained yield." At this level, which is exactly half the maximum population size or "K", in this example it would be 5,000 animals, the population should provide the maximum production, survival and available surplus animals for hunter harvest. Also, at this level, range condition should be good to excellent and range trend should be stable.

Game damage problems should not be significant and economic return to the local and state economy should be at the maximum. This population level should produce a "win - win" situation to balance sportsmen and private landowner concerns.

A graph of a hypothetical deer population showing sustained yield (harvest) potential vs. population size is shown (right). Notice that as the population increases from 0 to 5,000 deer, the harvest also increases. However, when the population reaches 5,000 or "MSY", food, water and cover becomes scarce and the harvest potential decreases. Finally, when the population reaches the maximum carrying capacity or "K" (10,000 deer in this example), the harvest potential will be reduced to zero. Also, notice that it is possible to harvest exactly the same number of deer each year with 3,000 or 7,000 deer in the population. This phenomenon occurs since the population of 3,000 deer has a much higher survival and reproductive rate compared to the population of 7,000 deer. However, at the 3,000 deer level, there will be less game damage and resource degradation.



Actually managing deer and elk populations for MSY on a DAU basis is difficult if not impossible due to the amount of detailed information required and because of the complex and dynamic nature of the environment. In most cases we would not desire true MSY management even if possible because the number and quality of bulls and bucks is minimized. However, the concept of MSY is useful for understanding how reducing densities and pushing asymptomatic populations towards the inflection point can stimulate productivity and increase harvest yields. Knowing the exact point of MSY is not necessary if the goal is to conservatively reduce population size to increase yield. Long term harvest data can be used to gauge the effectiveness of reduced population size on harvest yield.

DESCRIPTION OF DAU

LOCATION

The E-2 DAU is located in northwest Colorado and includes 7 game management units (GMU); 3, 301, 4, 5, 14, 214, and 441 (Figure 2). The DAU encompasses portions of Moffat and Routt counties and is bounded on the north by the Colorado/Wyoming state line, the west by the Little Snake River, the south by the Yampa River, Colorado Highway 318, and U.S. Highway 40, and on the east by the Continental Divide. Major towns include Steamboat Springs (population 9,000) and Craig (population 9,500). The DAU covers 2,815 mi^2.

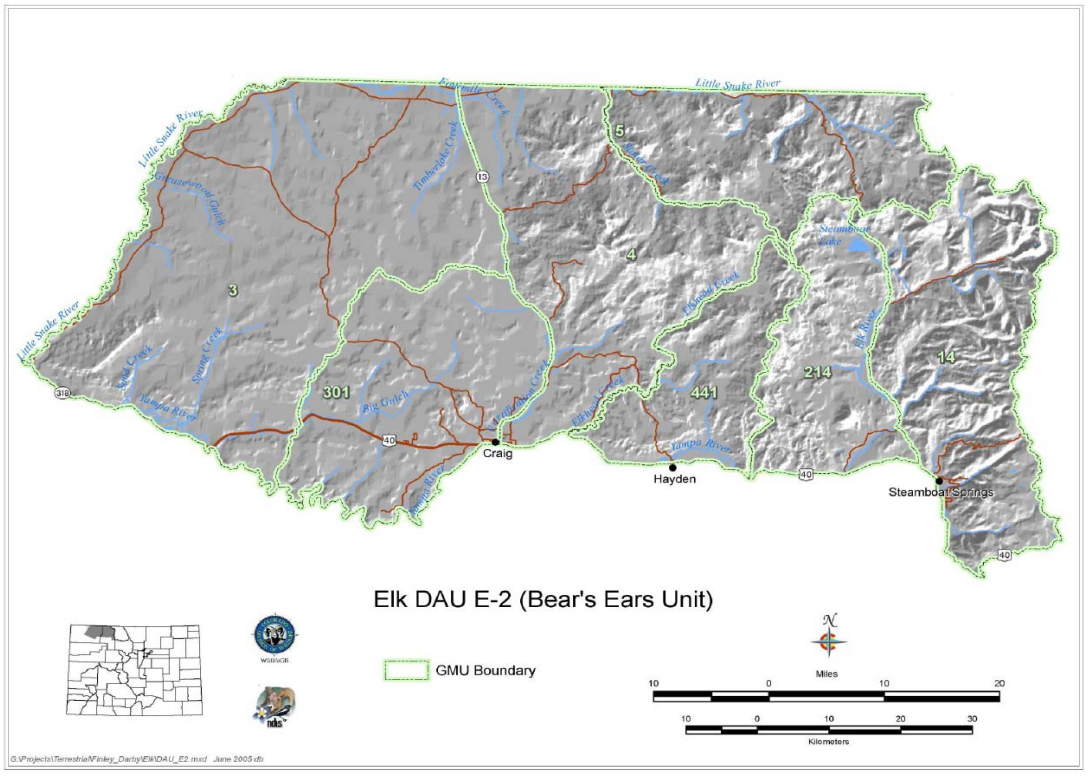


Figure 2. Geographic boundaries for the Bear's Ears DAU E-2 in northwest Colorado.

PHYSIOGRAPHY

Topography

The east portion of the DAU is characterized by high-elevation mountainous terrain, while the western portion is a high desert plateau with rolling hills. The outstanding topographic feature in the west is the Great Divide, which is a region of higher hills that bisect the plateau. Prominent features in the east include the Zirkle Range, Sierra Madre Range, and the Elkhead Mountains, which include Bears Ears Peaks and Black Mountain. Elevations range from 12,180 ft. on Mount Zirkle to 5,680 ft. at the confluence of the Little Snake and Yampa Rivers.

Climate

The climate varies greatly, east to west across the DAU. Generally, mean precipitation increases with elevation while temperature decreases. Mean annual precipitation at 10,000 ft. in the Routt National Forest is about 40 in., while approximately 12 in. fall at 6,185 ft. near Craig. The eastern portion of the DAU has higher precipitation totals and lower temperatures than lower elevation areas found in the western portion of the DAU.

Vegetation

Vegetation patterns follow a general elevational gradient across the DAU, beginning with high-elevation subalpine zones in the east, to mid-elevation mountain shrub zones, and then to low-elevation desert/basin zones in the west. Table 1 lists the percentage of major vegetation types found in each GMU.

The subalpine/montane zone is characterized by spruce-fir and aspen *(Populus tremuloides)* vegetation types. Engelmann spruce *(Picea engelmannii)* and subalpine fir *(Abies lasiocarpa)* regularly occur in uneven-aged stands at high elevations (9,000-11,000ft.). Spruce/fir stands provide good summer and fall forage for elk, as well as excellent security areas during the hunting seasons. Aspen stands are usually found in areas with high soil moisture content and are often associated with diverse, productive grass and forb understories. Aspen stands provide high quality elk forage throughout the spring, summer, and fall. Additionally, aspen habitats provide moderate cover and are commonly used by elk for parturition areas.

Vegetation of the mid-elevation (6,500-8,500 ft.) zone is characterized by mountain shrubs, dominated by Gambles oak *(Quercus gambelii)* and interspersed with sagebrush *(Artemisia sp.)*. serviceberry *(Amelanchier alnifolia),* snowberry *(Symphoricarpos sp.),* mountain mahogany *(Cercocarpus montanus)* and chokecherry *(Prunus viginiana)* are also common. Mid-elevation mountain shrub communities and associated native grasses provide extremely important food and cover sources for elk through most of the year. Lower elevations (<7,000 ft.) of this zone serve as elk winter range during mild/average winters.

The desert/basin zone generally occurs below 6500 ft. and is dominated by sagebrush steppe and grasslands. This zone is used primarily as winter range by elk although isolated year-around populations exist. North aspects of high ridges throughout this zone and extending into the mountain-shrub zone are pinyon-juniper which serves as important winter cover and limited winter forage. In areas where sufficient irrigation water exists, native vegetation has been converted for hay production of alfalfa or native grasses such as timothy or smooth brome. Much of the native vegetation near Craig has been converted to agricultural fields in the last 20 years. The apparent loss of native shrubs has likely created habitat more suitable to elk than deer and has contributed to elk distribution patterns.

Wetland/riparian vegetation types are found along the river bottoms and associated irrigated meadows. Most notable is the Yampa river corridor running east to west across southern portions of the DAU. This area is dominated by narrowleaf cottonwood and willow. This area is extremely valuable as wildlife habitat and supports the greatest abundance and diversity of wildlife.

Table 1. Percentage of major vegetation types found in GMU's 3, 4, 5, 14, 214, 301, and 441.

GMU	3	4	5	14	214	301	441	DAU Total
Aspen	--	23%	34%	27%	30%	--	23%	15%
Oak	--	7%	1%	5%	30%	--	30%	7%
Sagebrush	57%	36%	28%	2%	6%	67%	18%	37%
Bitterbrush	5%	--	--	--	--	--	--	2%
Dryland Crops	3%	13%	--	--	7%	31%	13%	8%
Irrigated Crops	2%	2%	--	--	8%	1%	5%	2%
Juniper	3%	2%	--	--	--	1%	--	1%
Saltbrush	30%	--	--	--	--	--	--	9%
Riparian	--	--	3%	1%	--	--	--	1%
Douglas Fir	--	1%	--	1%	--	--	--	<1%
Lodgepole Pine	--	--	22%	8%	8%	--	1%	4%
Spruce/Fir	--	12%	4%	48%	4%	--	4%	10%
Mountain Meadow	--	3%	6%	8%	1%	--	5%	3%
Mountain Shrub	--	--	--	--	6%	--	--	<1%

LAND USE

Land Status

The Bear's Ears DAU covers a total of 2,816 mi^2. Private land comprises 51% (1,420 mi^2), 25 % (703 mi^2) is administered by the U.S. Forest Service (USFS), 19 % (537 mi^2) by the Bureau of Land Management (BLM), 5 % (143 mi^2) by the State Land Board, and < 1% (9 mi^2) as State Wildlife Areas (SWA) (Table ?).

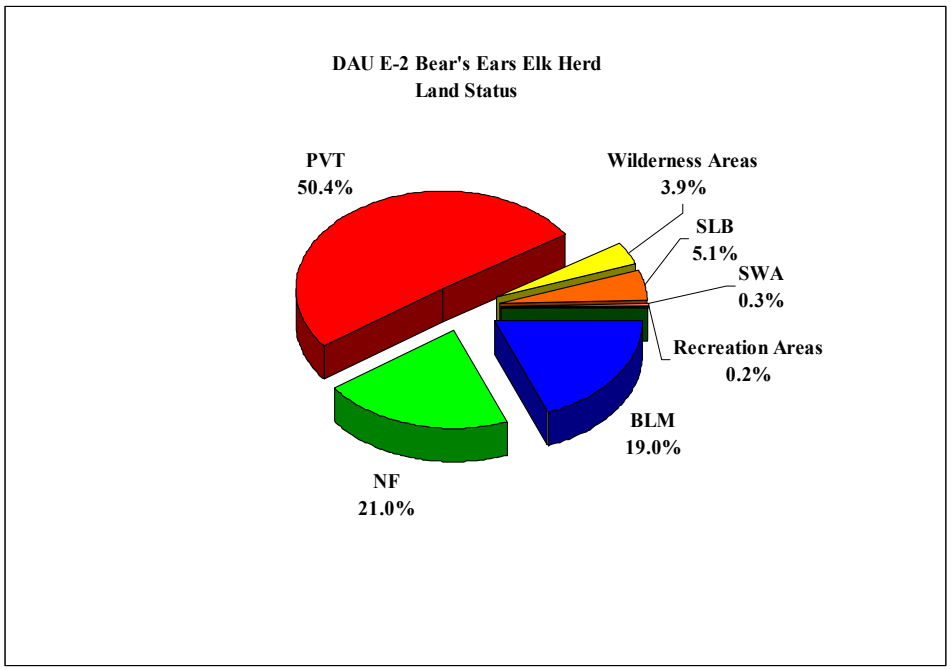


Table 2. Land area and ownership by GMU in the Bear's Ears DAU.

	PVT		BLM		NF		WILDA		SLB		SWA		ORA		Total
GMU	**mi²**	**%**	**mi²**	**%**	**mi²**	**%**	**mi²**	**%**	**Mi²**	**%**	**mi²**	**%**	**mi²**	**%**	**mi²**
3	381	45%	386	46%	0	0%	0	0%	73	9%	7	1%	0	0%	847
4	242	52%	52	11%	143	31%	0	0%	31	7%	1	0%	0	0%	468
5	122	41%	37	12%	136	46%	0	0%	3	1%	0	0%	0	0%	298
14	58	14%	2	0%	238	58%	110	27%	1	0%	0	0%	0	0%	409
214	167	73%	11	5%	41	18%	0	0%	5	2%	0	0%	4	2%	228
301	312	84%	45	12%	0	0%	0	0%	14	4%	0	0%	0	0%	370
441	138	70%	4	2%	35	18%	0	0%	17	9%	1	1%	0	0%	195
Total	**1420**	**50%**	**536**	**19%**	**592**	**21%**	**110**	**4%**	**143**	**5%**	**10**	**0%**	**4**	**0%**	**2,816**

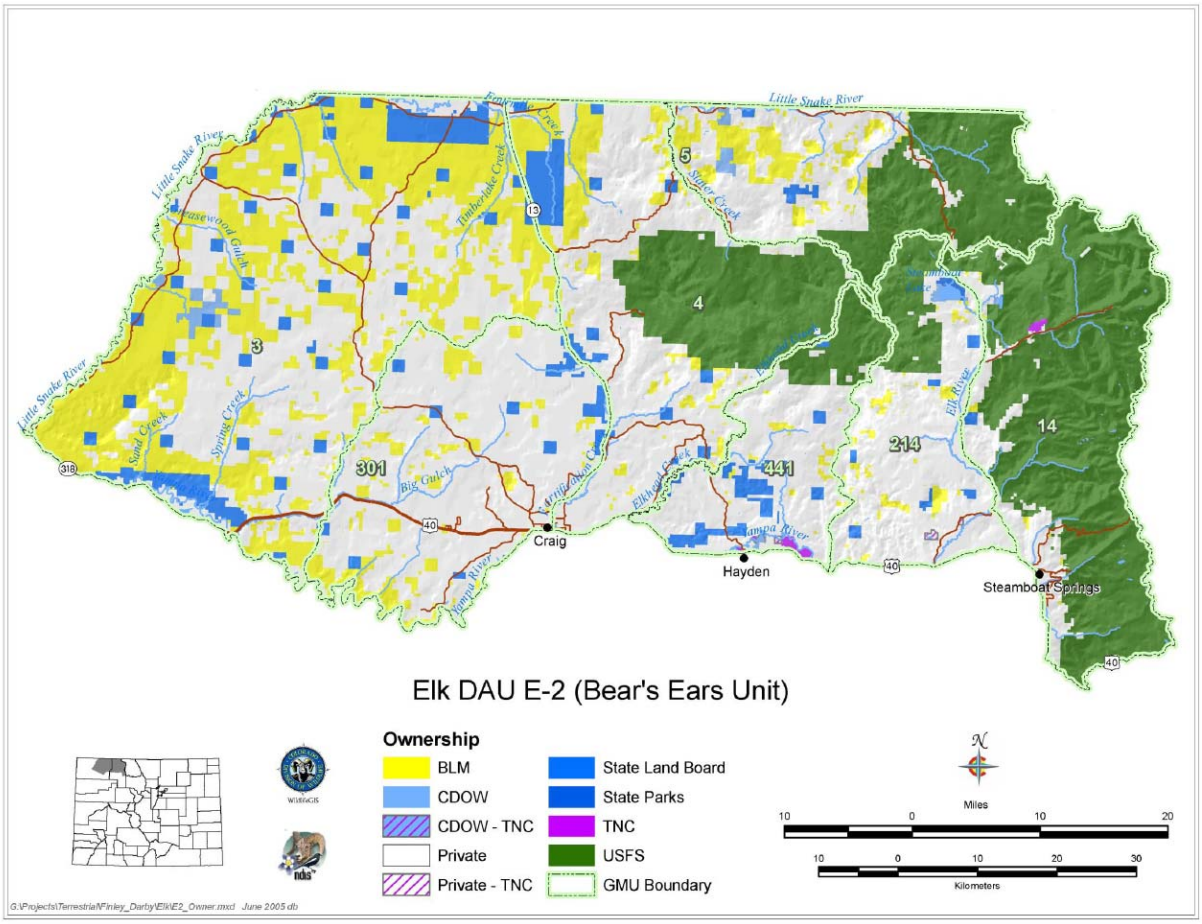


Figure 3. Surface land status for the E-2 Bears Ears DAU.

Ownership

Land ownership in DAU E-2 is 50% private, 25% US Forest Service, 19% BLM, and 5% state. Municipalities that border the DAU are Steamboat Springs, Hayden, Craig and Maybell.

Development

Growing human populations and land development is taking place in the southern and southeastern portions of the Bear's Ears DAU. Most of the growth and development in the DAU is occurring in the Elk River Valley northwest of Steamboat Springs and in the winter range habitats along the southern portion of the DAU around the towns of Hayden and Craig. In addition to the development occurring around the major towns, there are two mountain subdivisions north of Craig near Baker's Peak and northwest of Black Mountain. Approximately 25,000 people live in Routt and Moffat counties.

Habitat loss due to development and fragmentation is primarily a concern along the periphery of the DAU with the exception of the development in the Elk River Valley and the mountain subdivisions north of Craig. Much of the development around the Steamboat Springs area consists of non-resident property owners who do not allow hunting. This creates refuge issues with elk that are causing damage to adjacent working ranch operations. Most of the development taking place is in transitional and wintering areas used by elk. Conflicts between elk and humans will likely increase as these areas are developed further.

Agriculture

Ranching is spread throughout the DAU, generally including private lands mostly for livestock grazing during winter and summers months and hay production. Domestic livestock grazing was first introduced into the DAU in the 1860's and 1870's. Large herds of cattle and sheep were grazed into the early years of the 20th century. Most ranges were grazed seasonally by these herds of livestock. Livestock grazing on federal lands was unregulated until the 1930's after the adoption of the Taylor Grazing Act and the formation of the U.S. Grazing Service. Livestock numbers gradually began to decline during the 1930's. Declines accelerated during the late 1980's and early 1990's. Most recently drought conditions and markets have resulted in declining numbers of livestock. Many ranches converted from sheep to cattle grazing operations. This trend continues today. Season and duration of use also changed considerably during this period. Large, common allotments were split into smaller individual allotments. Opportunities to rotate livestock or to use ranges seasonally have changed on a landscape scale. These changes in historic livestock management through grazing duration, intensity, timing, and frequency associated with these livestock trends have improved range conditions over time.

There are two major types of farming that occur in the DAU, dryland grain production and irrigated grass and alfalfa hay production. Irrigated hay production primarily occurs on irrigated private lands. In the south central portion of the DAU around Craig and Hayden, mostly in Units 301 and 441 large areas of sagebrush rangelands were converted to winter wheat production in the early 1970's. The amount of total acreage converted into cropland has not changed dramatically since 1977. However, since 1977, much of the cropland has been incorporated into the Conservation Reserve Program (CRP) (approximately 42,000 acres). It is important to note that the majority of CRP contracts expire in 2007 which may result in significant land use changes that could potentially have negative impacts on elk winter ranges, deer, pronghorn, sharp-tail grouse, and other wildlife in the DAU.

Lands administered by the USFS and BLM are managed for multiple uses that include livestock grazing, timber harvest, and energy exploration/mining. Energy development in the Bighole Gulch, Greasewood Gulch, Scandanavian Gulch, and Fourmile drainages will certainly have impacts on winter range carrying capacities and may influence elk distribution. It is important to recognize the potential impacts oil and gas development will have on elk populations and distribution, however, it is beyond the scope of this plan to address these impacts within this document.

Recreation

The eastern portion of the Bear's Ears DAU is a popular destination for recreation. Winter recreation is centered around the Routt National Forest and Steamboat Springs, where skiing, snowmobiling, snowshoeing, and other winter activities are extremely popular. Spring and summer recreation primarily consists of fishing, camping, off-road motorized recreation, and tourism. The Yampa River, Elkhead Reservoir, and various other small reservoirs on the National Forest are common destinations for fishermen. Most of the camping and ATV/motorcycle use occurs on the Routt National Forest.

Off-road motorized vehicle use during summer months on the Routt National Forest has significantly increased in the last 10-20 years and has caused a redistribution of elk. This is especially a problem in the Upper Snake River Valley located in the northeast corner of the DAU. This area is mostly elk summer range and calving grounds on the Routt National Forest. In past years several hundred elk would move into this area as the snow receded to calve. There were very large undisturbed areas where cow elk could calve undisturbed by people. There is abundant forage and dense forest cover in this area where elk should thrive in the summer. Today, there is a vast network of hundreds of miles of motorized trails in this area. On many summer weekends, it is not unusual to have hundreds of campers with several hundred motorcycles and ATVs scattered throughout the area. Due to the disturbance in this area caused by the increase in off-road motorized vehicle use, most of the elk have abandoned the northeast corner of the DAU on the Routt National Forest during the summer. Hundreds of elk that would normally occupy this area have been displaced onto private land further down the Snake River. The displacement of elk onto private land results in elk and livestock conflicts. In addition to the conflict issues on private land, these elk are not available for harvest during hunting seasons on public land.

HERD MANAGEMENT HISTORY

The CDOW uses a computer modeling process to estimate the size of elk populations by DAU. The computer modeling programs used by CDOW biologists have changed significantly since the early 1970's. The most recent change in modeling programs occurred in 1999, when the DOW switched from a program called POP II to a computer spreadsheet model. All of the programs have worked in basically the same manner using: an initial population size, sex ratio at birth, survival rates, wounding loss, harvest success, winter severity, and sex/age data to estimate a population. Modeled post-hunt population estimates are generated by solving for the best fit between measured vs. predicted post-hunt sex ratio data for E-2. The DOW uses these computer population models as the primary method for estimating the number of deer, elk, and pronghorn in Colorado. The quadrat census and line transect techniques have been used in other parts of the state to give a second, independent estimate of population size for deer and pronghorn. The CDOW is currently working on developing a quadrat survey methodology for obtaining more refined elk population estimates. Conducting quadrat surveys for elk is expensive, time consuming and risky for personnel flying the surveys. The primary reason quadrat survey methods have not been used to estimate elk populations in the past is because of the inherent variability associated with conducting these surveys, due to the social nature of elk and their tendency to congregate in large groups across their wither ranges. Currently, no other western states conduct quadrat surveys for estimating elk populations.

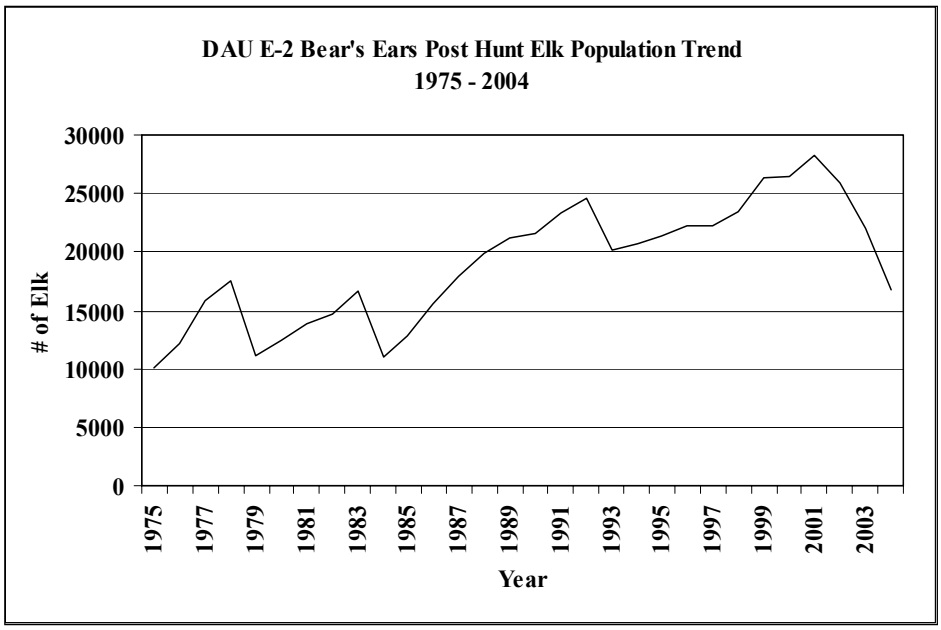
Disclaimer for Population Size Estimate

It is recommended that the population estimate presented in this document be used only as an index or trend, rather than a precise calculation of the number of elk in the DAU. Estimating numbers and sex/age composition of free-ranging animals over large geographic areas is extremely difficult. In addition to budget and time constraints, the accuracy of population estimates and sex/age composition surveys may be influenced by weather, habitat type, species, group size, and a number of other factors. The CDOW recognizes these limitations and strive to produce the best estimates with the resources available. Additionally, CDOW reports statistical variation and error associated with the population estimation procedures currently being used.

Most population estimates are derived from computer model simulations using basic population parameters, such as adult survival, calf survival, calf production, sex/age composition, wounding loss rates, sex ratios at birth, and harvest data. Computer simulations are typically adjusted to align with observed post-hunt age and sex composition data because these data tend to be the most reliable. Although CDOW uses the latest technology and most accepted methodologies, we are aware that the precision of population estimates may be variable. As more reliable or accurate information becomes available on survival rates, wounding loss, and density estimates, and whenever new modeling techniques and programs have emerged, these have been assimilated into the process for population estimates. These changes may result in significant differences in the population size estimate and make new management strategies more appropriate. It is recommended that the population estimates presented in this document not be viewed as an exact representation of the number of animals in the DAU; instead, their utility is in helping to evaluate population trends over time.

Post-Hunt Population Size

Computer modeling data as well as other information, including harvest and aerial surveys, show that the elk herd in the DAU had increased steadily until 2001. In 1975, post-hunt population estimates were at 10,000 animals. The current computer model indicates the elk population had been growing exponentially until 4 years ago when population trends started to show declines due to significant increases in harvest. Current modeled population estimates are 15,000 – 20,000 elk (post-hunt 2004). Efforts to decrease or curb the growth of this elk herd have been successful the past three years. Historical declines in this elk herd coincide with severe winters. Minimal declines occurred during the winters of 1978-79, 1983-84, and 1992-93. Despite these events, the elk herd has rebounded and shown significant rates of growth.

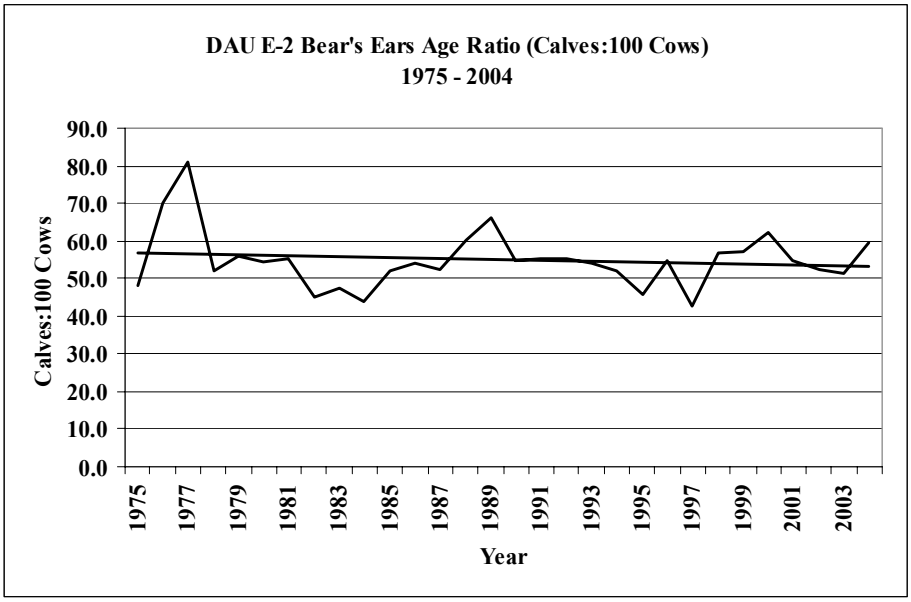


The Bear's Ears elk herd has averaged about 19,000 animals since 1975. During the 1980's the herd averaged 15,200 animals. This compares to the past 5 and10 year averages of 25,000 and 23,000 elk, respectively. Prior to the winter of '83-'84 elk did not winter west of Highway 13 in Units 3 and 301. Currently, it is estimated that 70+% of the elk in the DAU winter in GMU's 3 and 301. The pioneering of elk into the winter range west of Highway 13 has allowed this elk herd to grow significantly compared to historical population numbers. In conjunction with the distributional shifts elk exhibited after the winter of '83-'84 there have also been some significant land use changes and large scale burns that have influenced winter ranges for elk in Units 3 and 301. Significant tracts of land in Unit 301 and eastern portions of Unit 3 were converted from sagebrush range lands to cultivated farmland in the late 1960's and '70's. In the late '70's, early '80's the farmland was converted from wheat production to the Conservation Reserve Program. A series of fires in the late '80's and early '90's in Unit 3 converted large areas of rangeland dominated by sagebrush and bitterbrush to grasslands that are prime winter ranges for elk.

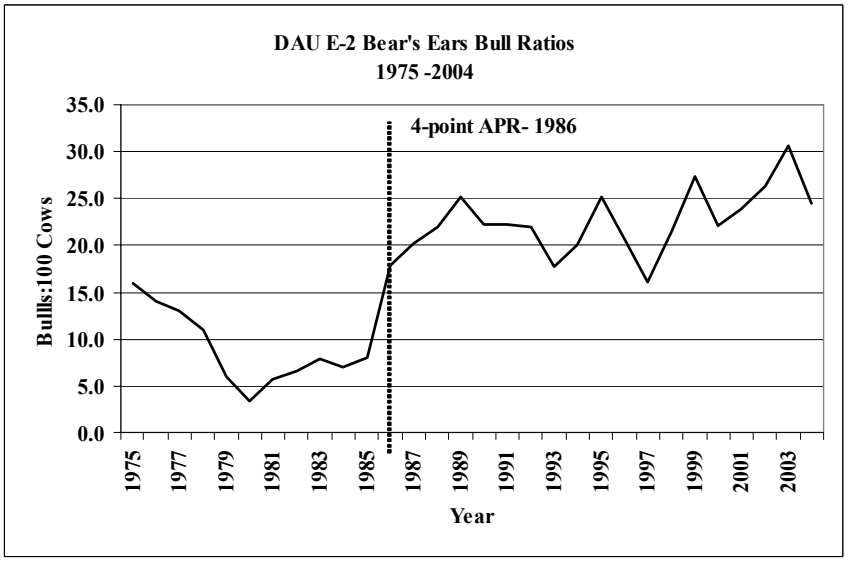
Post-Hunt Herd Composition

Post-hunt age and sex ratio of this herd has been annually monitored since 1970 with helicopter classification flights, usually conducted in late December or early January. To conduct the survey, a helicopter is used too position the observer over the elk, then each elk in the group is classified into one of five categories: cows, calves, yearling bulls, young bulls, and mature bulls. After the flight, the data are summarized by drainage and game management unit, and then the age (calves per 100 cows) and sex ratio (bulls per 100 cows) are computed. The flights do not result in a total count, but rather a sample large enough (10-25%) to estimate the sex and age ratio.

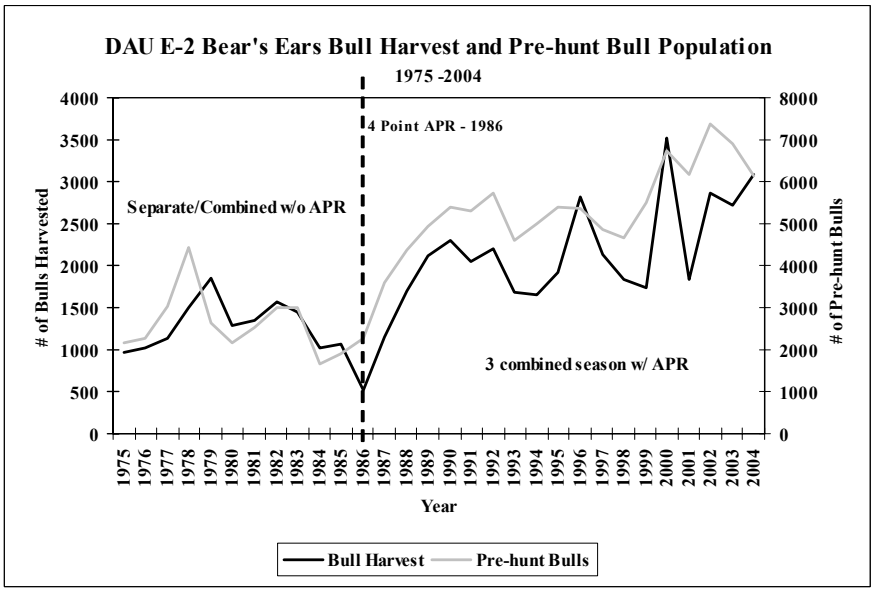
Calf Ratios-- the post-hunt age ratio (calves: 100 cows) has averaged 55 since 1975. The highest age ratio was 81 calves per 100 cows in 1977 and the lowest was 42.7 calves per 100 cows in 1997. During the past five years (1996-2001) calf:cow ratios have averaged 55. The long-term trend for the cow:calf ratios appears to have a slight downward trend. This trend has been tempered by up and down years with lows occurring in the early 1980s and early to mid-1990s. In recent years there has been an increasing trend with the exception of the 2001 post-hunt survey. The long term trend from this data set appears to indicate that this elk herd is still productive but the slight downward trend since 1975 could be an indication of reduced production and survival due to competition and deteriorating range conditions. It is important to note that surveys are conducted in early winter prior to the end of January. Loss of calves due to starvation and predation typically occurs after this time. During severe winters, the number of calves surviving could be much lower than this early winter estimate.



Bull Ratios-- The management objective of the Bear's Ears elk herd has been to maintain the sex ratio at 15 - 20 bulls / 100 females since 1986, using the 4-point limitation. Under this system, only bull elk with at least 4 antler points on one side can be legally harvested. Since the APR was implemented in 1986 the bull:cow ratios have increased substantially, averaging 22 bulls: 100 cows with a range of 16.1 to 27.4 bulls per 100 cows. Prior to 1986, the regulations on bulls required that bull elk only have an antler length of 5 inches or more. Nearly all the legal bulls, yearling and older, were harvested every year. This management strategy resulted in bull:cow ratios that averaged 6 bulls:100 cows between 1980 and 1986. In 1992, the 4-point antler point restriction was amended to include any bull with a 5-inch brow-tine. Since the amendment, the bull:cow ratio trend has not changed. The current sex ratio objective for the DAU is 24 bulls per 100 cows. The highest sex ratio was 27.4 bull per 100 cows in 1999. The lowest the sex ratio has ever been is 3.3 in 1980.

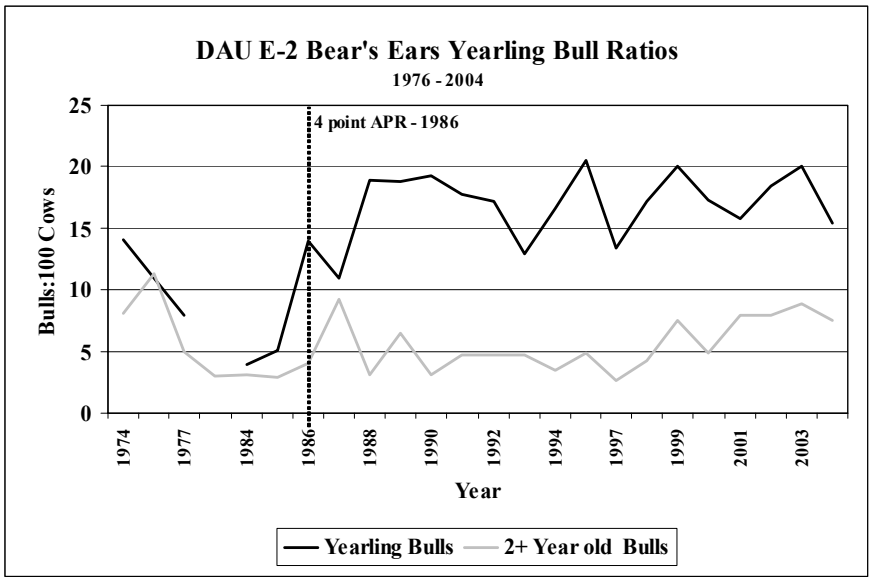


The below graph illustrates the effect antler point restrictions have had on the number of pre-hunt bulls in the population and the male harvest. The bull harvest and the number of bulls in the population have continued to increase since the APR and given hunters more opportunities to harvest a bull elk.



Mature Bull Ratio-- There has also been an increasing trend in the number of 2 + year old bulls is this DAU since the initiation of APR. This is likely due to some learning ability of older bulls to avoid hunters and also, some years when hunting conditions are poor due to weather, such as 1999 and 2001. Since the APR, 2 plus year old bulls have averaged 5 mature bulls per 100 cows. The highest 2 + year old bull ratio was observed in 1987 of 9.2 mature bulls per 100 cows and the lowest ratio was observed in 1997 of 2.7 mature bulls per 100 cows.

Yearling Bull Ratios-- Yearling bulls were first distinguished in the age and sex surveys in 1967. Overall, the yearling bull ratio has had an increasing trend. Since 1975 the yearling bull ratio has averaged 14.0 bulls per 100 cows for those years that data has been collected. The highest ratio for yearling bulls in this time period was 20.5 bulls per 100 cows in 1995 and the low was 3.2 yearlings in 1982. The yearling bull ratio has had an increasing trend since 1975. Heavy hunting pressure resulted in low yearling bull ratios in the early 1980s.



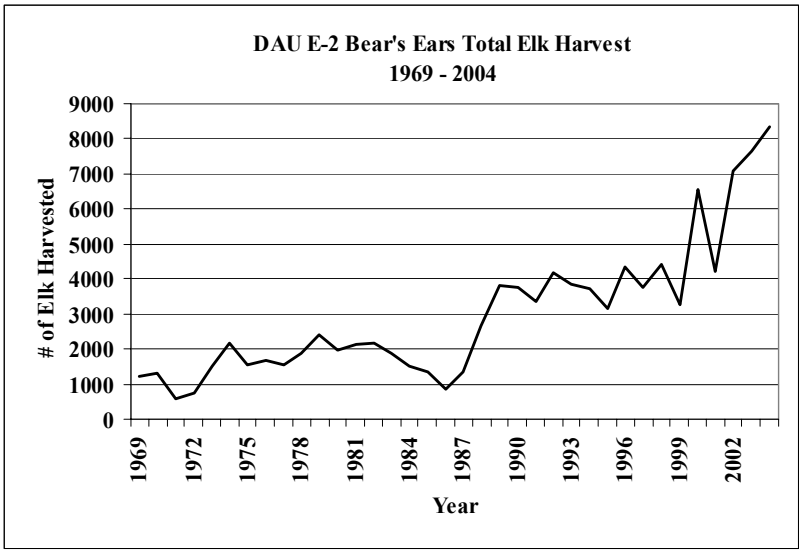
As mentioned above, APRs have been in effect in E-2 since 1986. Since this time there has been an increasing trend in the number of yearling bulls. In addition to the initiation of APR, a decrease in the number of illegal bulls killed by hunters has likely contributed to an increase in yearling bull ratio. Typically, yearling bull elk do not have a 5-inch brow tine and have less than 4-antler points. Yearling bull ratios are used by biologists as a measure of recruitment. Recruitment is the survival of calf elk to

the yearling age class.

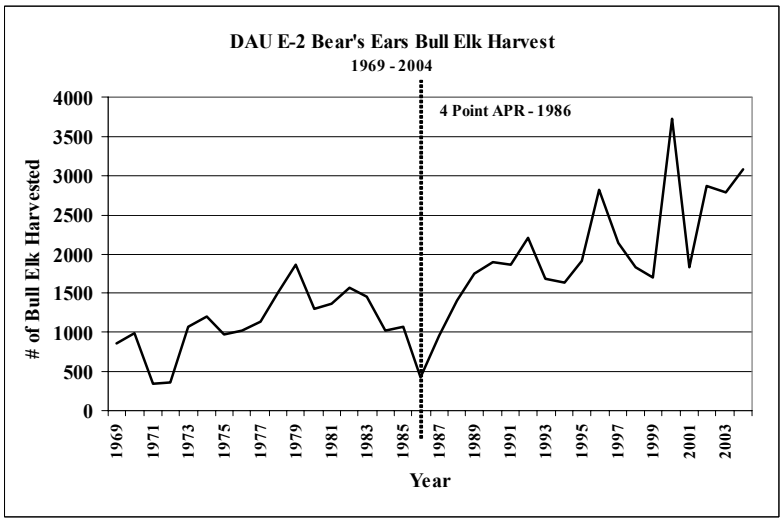
Yearling bulls are readily identified while conducting classification surveys. In addition, it is assumed that for every yearling male in the group there is a yearling female. Once a calf reaches the yearling age class its survival rate increases greatly. However, for yearling bull elk, the increased survival rate lasts for only one year, until the next annual hunting season when they reach the two-year old age class.

Harvest History

Harvest estimates are produced by typical statistical sampling techniques, not by any attempt of a total sample or count. The CDOW conducts telephone surveys annually to.

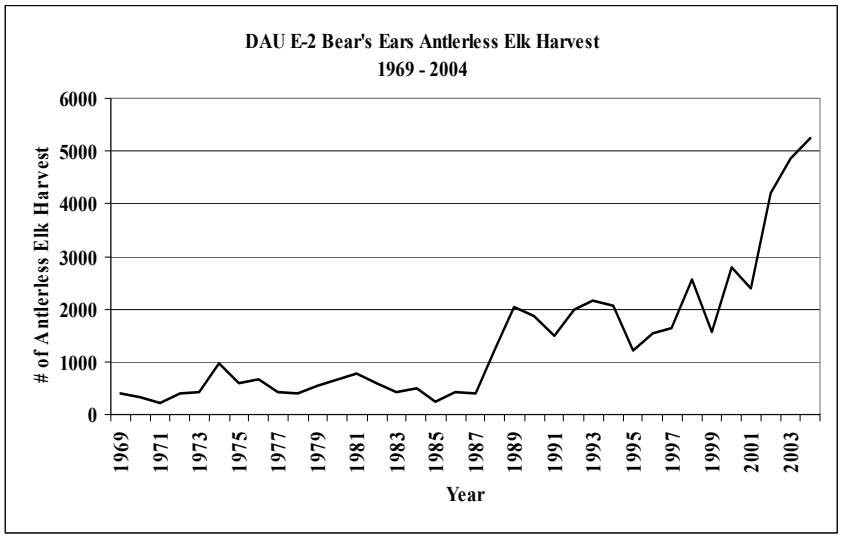


Harvest figures are available for this DAU back to 1953. In that year, a total of 150 elk were harvested in E-2. Since that time, total harvest has slowly climbed to a high of 6,300 animals in 2000. The average number of elk harvested since 1975 is 3000 elk. In an attempt to decrease the elk population the number of licenses issued in the DAU have been increased in recent years in an effort to increase antlerless harvest. The highest antlerless harvest was 3,772 animals in 2000.



Bull Harvest- Bull harvest statistics are one of the better indicators for measuring an increasing elk population. During the last 25 years bull elk harvest has increased dramatically. Bull harvest averaged 1300 animals in the 1980s and has increased to an average of 2100 animals in the last 10 years. The highest number of bulls harvested was 2,525 in 2000. The lowest bull harvest, 514 animals, occurred in 1986, the year APR took affect. The history of hunting seasons and the structure of those seasons has varied along with the changes in migratory patterns of the animals. Since 1969-2000, all rifle bull elk hunting for all seasons has been unlimited. Starting in 2000 under the adoption of five year season structure first season rifle has limited bull hunting.

Antlerless harvest- Antlerless harvest is somewhat influenced by management objectives since the harvest is regulated by the number of limited licenses issued by the DOW. In recent years, the DOW has been liberal in setting antlerless licenses in an attempt to reduce the elk populations. The trend of antlerless harvest is similar to bull harvest, increasing substantially since the 1970s. From the mid 1970s to the mid 1980s antlerless harvest averaged 550 animals and in 2000 the antlerless harvest was more than 2500 animals, almost five times the average number of antlerless elk harvested in the mid-1970s and '80s. Since 1988 the percentage of antlerless elk harvested has increased greatly. The DOW is concerned about the number of elk in DAU E-2 and the primary method to reduce the elk population is to increase the antlerless harvest.



Hunting Season History

For the past 30 years, annual elk hunting seasons in E-2 have generally had either sex archery seasons, limited muzzleloader season, unlimited bull, and limited cow rifle seasons.

In 1986, the Wildlife Commission approved the three combined deer and elk rifle season structure to spread increasing hunter pressure after hunter crowding became an issue. These three combined seasons ran 5, 12, and 9 days in length for a total of 27 days of elk and deer rifle hunting. Low bull ratios in the 1970s and 1980's prompted the Wildlife Commission to approve bull antler point restrictions (APR) in 1985 for the White River Elk herd and in 1986 APR took effect for the Bear's Ears DAU.

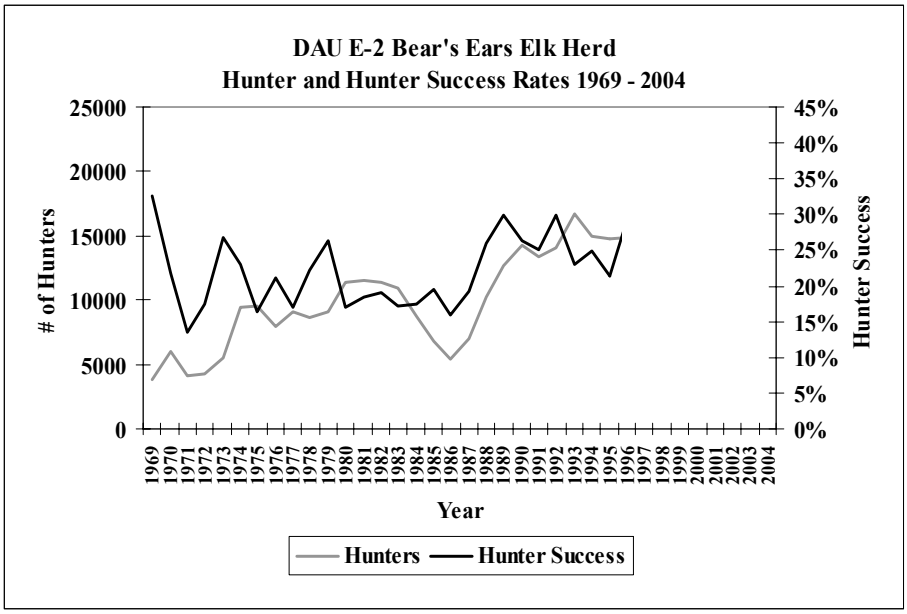
Mild winters, dry hunting seasons, limited hunting access to private lands, large private land refuges, and increased development have all resulted in reduced hunting opportunities and/or inadequate harvest. All of these factors have contributed to an increasing elk population in E-2. Two management tools have been used in an attempt to slow this population growth. First, there have been significant increases in antlerless licenses to try and increase antlerless hunting opportunities. Secondly, the DOW initiated many new cow elk hunting seasons such as regular private land only (PLO) seasons in 1993, late PLO and public land cow elk seasons, and starting in 1990, increased public hunting opportunities for cow elk on private lands with the DOW Ranching For Wildlife Program. Since 2000, the number of licenses for antlerless hunts has dramatically increased. For example in 1998 the total number of antlerless licenses equaled 1,330, in 2003 the number of antlerless licenses increased to 14,922.
In 2005, the DOW began a new 5-year season structure that included:

1) an unlimited either-sex archery season (except GMU 12, 23, 24, 33 are limited)
2) a limited muzzleloading season for bulls and cow elk
3) a limited first elk season for bull and cow elk
4) two combined rifle seasons (second and third season) for unlimited bull elk and limited cow elk
5) a limited fourth elk season for bull and cow elk

In addition to the regular season hunts, there are still many late season and regular season PLO antlerless hunts available throughout the DAU.

Hunting Pressure

Hunting pressure has increased steadily in the DAU over the last 40 years, corresponding to the increase in the elk population. Records show a low of 733 hunters in 1954 and a high of 20,586 in 2004. During the last 5 years 2000 - 2004 the numbers of hunters have averaged almost 18,000. The drop in number of hunters in 2001 was the result of an increase in the non-resident license hunting fees.



Overall, harvest success has had an increasing trend since 1969 ranging from 13.6 to 40.5%. The average success since 1969 has been 24.2% for bulls and cows combined. The high hunter success observed in 2000 was influenced by an ideal weather year that caused movement of elk making them accessible to hunters.

Economic Impacts

Hunting for both big and small game is a principal business in the DAU. According to a 2004 *"Hunting, Fishing, and Wildlife Watching Economic Report*" prepared by BBC Research & Consultants for the CDOW, Moffat County was identified as one of the top 10 counties in the state that has the largest proportion of employment related to hunting and fishing in 2002. An estimated 330 jobs in Moffat County are related to hunting and fishing, 4.4% of the jobs in the county. It is estimated that $46.8 million in expenditures is contributed to the economies of Moffat and Routt Counties from hunting. Elk hunting makes up approximately $18.5 million of the direct expenditures for the two counties (2002 estimates). It should be noted that these estimates in expenditures are conservative due to the fire, drought, and poor economic conditions experienced in 2002. Hunters can pursue elk, deer, antelope, hear, mountain lion, rabbits, sage grouse, blue grouse, sharp-tail grouse, waterfowl and numerous other game animals in the DAU.

CURRENT HERD MANAGEMENT

CURRENT POPULATION AND SEX RATIO OBJECTIVES

DAU: E- 2 (Bear's Ears Elk Herd)

GMU's: 3, 4, 5, 14, 214, 301,and 441

Current Population Estimate: 16,700 (Post-Season 2004)

Current Population Objective: 12,200

Current Sex Ratio Objective: 22 bulls:100 cows

Current Sex Ratio: 24 bulls:100 cows

CURRENT MANAGEMENT STRATEGIES

Currently E-2 is a combination of management strategies including seasons managed for a quality hunting experience and seasons managed for hunter opportunity. Archery and muzzleloader seasons are limited on public lands in GMUs 4, 5, and 441 and unlimited in Units 14 and 214. The 1st and 4th rifle seasons provide hunters a quality hunting experience with limited either-sex and antlerless licenses available. Unlimited antlered licenses are available during the 2nd and 3rd rifle seasons. Various antlerless hunts outside the regular seasons have been implemented in an effort to reduce the elk population in E-2. Hunts such as private land only hunts, early hunts, late hunts, damage hunts, and distribution hunts all provide hunters with several different opportunities to harvest an elk. Hunter success in the DAU would remain relatively high under this strategy. Success has averaged 37% over the last 5 years. Hunter pressure would be moderate during archery, muzzleloader, and 1st and 4th rifle seasons with higher hunter pressure experienced during the 2nd and 3rd combined rifle seasons. The opportunities created by the various types of non-traditional hunts and liberal numbers of antlerless licenses made available in an effort to reduce the E-2 elk population have resulted in significant economic benefits for local businesses, landowners, guides and outfitters, and the DOW. It is important to note that as the herds approach long term population objectives, the numbers of licenses issued for regular season hunts and late season opportunities will be reduced to maintain the elk population at the long term objective levels. Maintaining this elk population at a desired population level will require significantly fewer licenses than the number needed to reduce elk population levels which in turn will affect local economies (Table 6).

Table 6. Economic analysis outlining the fiscal impacts of license reductions once the population objective for DAU E-2 is achieved.

Year	PH Pop	Observed Bull Ratio	Bull Harvest	Bull Success	Cow Harvest	Cow Success	Bull Hunters	Cow Hunters	Total Expenditures
2001	28315	23.9	1826	0.28	2401	0.41	6616	5873	$ 7,473,202.00
2002	25922	26.3	2866	0.39	4217	0.47	7298	9055	$ 9,423,644.00
2003	22060	30.6	2719	0.51	4828	0.48	5513	10158	$ 8,638,263.00
2004	16716	24.4	3081	0.51	5249	0.50	6073	10597	$ 9,244,205.00
2005	11366	22.0	2500	0.42	4092	0.46	6000	9000	$ 8,460,000.00
2006	11630	22.0	1227	0.42	1320	0.46	3000	3000	$ 3,543,000.00
2007	12200	22.0	1135	0.42	1283	0.46	2700	3000	$ 2,278,500.00

CURRENT MANAGEMENT CONCERNS

Elk Distribution and Movement

Comments received during both the public and interagency meetings were focused on the changes in distribution of elk during certain times of year. In the past, there was a popular perception held by most landowners and DOW field people that the archery season, starting in August, caused elk to move off of the summer range and onto winter range earlier than normal or necessary. In response, archery and muzzleloader licenses were limited in 1999 in an attempt to prevent the early movement of elk off of public land. Although demonstrated by studies conducted on the White River, the idea that archery hunting causes early movement of elk off of public land has been strongly contested by archery enthusiasts. Archery hunters sight the presence of livestock on public lands as the reason for early elk movement. It was also often expressed that the long season structure, starting with archery in August and extending through December with the late season, was changing elk distribution. Radio telemetry studies in Colorado have indicated that archers had a substantial effect on early elk movement. Since the archery and muzzleloader limitations were implemented there has been increased harvest and hunter success on public land during the first rifle season in GMUs 4, 5, and 441.

Weather and hunting season structures have also contributed to changes in elk distribution and movement. For instance, DOW field personnel did not observe the first elk in DAU E-2 move west of Highway 13 until the winter of 1978-79, and it wasn't until the winter of 1983-84 that resulted in significant numbers of elk moving west of Highway 13. The season structure of 1985 – 1991 also contributed to the early movement of elk to the lower private lands. The season structure during this time included 3 combined deer and elk seasons, but only bucks and bulls legal in the first 5 day season. Antlerless elk could not be harvested until the second season and by then many had moved off the public areas to private lands. Changes were made in the 1992 – 1994 season structure to address this problem with a portion of the antlerless licenses available in the first season. These changes in season structure have been maintained in an effort to continue harvesting antlerless elk. In addition, a late season, in December, was initiated in 1990 to increase cow harvest on public land. The primary focus of December hunts is now in the western portion of DAU E-2 in GMUs 3 and 301. The late seasons have become very popular with hunters and have been successful at increasing antlerless harvest, however, the late seasons may have contributed to an increasing number of resident elk on winter ranges in the western portions of GMUs 3 and 301 and the western expansion of elk into an adjacent DAU. Many of the elk harvested through damage hunts conducted in GMUs 3 and 301 in August are yearling animals which may suggest that late season cow harvest in these Units may result in orphaned calves on winter ranges that have not learned the traditional migratory patterns of the elk herd and have become resident animals on winter range. Elk grazing is a contributing factor to winter range degradation on already drought stressed plants, especially, in the western portions of the DAU where the drought has had more significant impacts on the range.

Elk hunting is a large economic force in northwestern Colorado, with some private landowners making a substantial portion of their income from leasing to or outfitting for hunters. The demand is for bull hunting. Many landowners will not jeopardize their bull hunting operations by allowing cow hunters on their property during the regular seasons. The minimal hunting pressure on private land during the regular hunting seasons often results in a sanctuary situation for antlerless elk, making them unavailable for harvest and increases the potential for these elk to become problem/damage causing animals later in the winter as they move west. For management purposes, more of an emphasis has been placed on 3rd, 4th, and late season hunts to achieve antlerless harvest objectives due to the inaccessibility of elk to hunters during earlier regular rifle seasons.

To address this problem, the Wildlife Commission made available, beginning in 1992, additional antlerless elk licenses for "private land only" seasons. This meant private land hunters in selected problem units could take a bull and a cow. Providing this additional antlerless license has proven successful and resulted in increased antlerless harvest on private land in recent years. In 2001, more liberal efforts were taken to increase antlerless harvest including making leftover antlerless licenses additional, which allows hunters to harvest 2 elk. The availability of additional antlerless licenses along with more liberal license numbers has resulted record elk harvest 4 out of the last 5 years.

Elk Damage

The state of Colorado is liable for compensating landowners for documented damage to commercial agricultural products, livestock forage, and fences by elk and other big game animals provided the landowner allows reasonable hunting access and charges no more than $100 per hunter. The CDOW also provides stackyards and fencing materials at no charge to qualifying landowners to mitigate big game damage problems.

As elk have become a marketable resource in the DAU, the tolerance for elk has increased and there have been few elk damage claims submitted to the CDOW in E-2 in the last decade. Although fewer elk damage claims have been submitted to the CDOW in recent years, many landowners in E-2 have expressed concern about potential and realized elk conflicts. Primary conflicts are spring use by elk on the National Forest prior to livestock turn out, winter range use in the western portions of the DAU and fence damage. The major conflict areas identified by the BLM include the Great Divide area and areas near the Little Snake River. The State Land Board (SLB) identified drought and wildlife use as causal factors for range degradation on lands under their administration in DAU E-2. The SLB stated that based on discussions with lessees and inspections on state trust lands across the DAU that many of the lessees have taken grazing reductions. SLB personnel also feel that based on inspections of state trust lands, it is apparent from the range usage that the number of elk is higher than the resource will currently support. Furthermore, SLB is concerned about what the level of wildlife usage should be due to the fact that the peak of estimated elk populations coincided with the worst of the drought years in 2002 and it may be a few years before the effects of damage that occurred at that time recovers.

As a general rule, elk will go where they are least disturbed given adequate food resources. Hunting pressure is the best way to disturb an elk and habitat improvement projects are the best way to actively manage for adequate food resources away from conflict areas. The USFS, BLM, CDOW and other public interests should work cooperatively to improve habitat conditions for deer, elk, and other wildlife species in the DAU that will help to alleviate damage in conflict areas.

Elk Competition with Mule Deer

Potential competition and conflicts between elk and mule deer are largely undetermined. Several studies in the western United States have found that mule deer and elk generally show only moderate diet overlap except during periods of food shortage such as during severe winters. An elk's larger body and rumen size allow it to utilize diets higher in fiber and lower in digestibility than those tolerated by deer. Elk generally prefer to graze on grass, sedges and forbs during much of the year where as deer often elect to browse during the winter and select forbs, succulent young grass, and new leader growth during the growing season. Deer are not able to utilize high fiber, grass diets as effectively as elk and therefore have a narrower dietary tolerance. Although deer are probably better adapted to browse diets than elk (e.g. deer have tannin binding proteins in their saliva), elk can effectively utilize browse diets when necessary.

In periods of food shortage, elk will out-compete deer. During most winters, there is spatial segregation between the majority of elk and deer.

Other potential interspecific conflicts between deer and elk such as negative social interactions (e.g. species intolerance, competition for calving and fawning areas) are complex and poorly understood. For example, it has been hypothesized that large numbers of elk might force deer into less preferred habitat where the deer are more susceptible to predation. Researchers on the Uncompahgre Plateau made casual observations during a 3 year neonatal fawn survival study that there was little evidence that elk were negatively impacting deer during fawning. Elk calving on the Plateau occurred 2-4 weeks prior to fawning and by the peak of fawning elk had already grouped into nursery herds. During this study deer were often observed in close proximity to elk with no apparent negative interaction.

The mule deer population in the Bear's Ears DAU has shown much more dramatic fluctuations in population trends since the 1980's when compared to elk population trends. Mule deer population trends in this DAU have been increasing since populations declined significantly after the winter of 1992-93. Historically, deer population trends in this DAU have shown increasing growth curves after a severe weather event. Mild winters since '92-93, high production and recruitment, and limited deer licenses implemented in 1999 have likely contributed to the growth of the Bear's Ears deer herd.

Elk Competition with Domestic Livestock

Several ranchers in the Bear's Ears DAU have expressed concerns about elk competition with cattle and sheep on private land and on public lands permitted for livestock grazing. Some livestock producers believe that elk are significantly reducing their useable forage yields by grazing spring and summer rangelands prior to livestock turn out. There is also concern that the potential benefits of controlled livestock grazing are not realized when subsequent elk grazing is uncontrolled.

Studies across the west have shown that elk and cattle diets often have moderate to high overlap. However, elk and cattle use is often temporarily and spatially segregated. At times elk will graze among cattle but they generally avoid concurrent use. In areas where cattle occur, elk often prefer ridges and steeper slopes, avoid roads, and do more grazing near the edges of opening than cattle. Although elk can compete with livestock, each mouthful taken by an elk is not necessarily a mouthful taken from a cow or sheep.

The point where forage use by elk actually begins to negatively affect livestock production is difficult to determine. Recent studies in Utah have indicated that elk grazing rested pastures can have little effect on forage available to cattle the following year. A cattle/elk competition study conducted in the western portion of the Bear's Ears DAU during the 1980's by the CDOW compared calf weights in pastures grazed by varying densities of elk. The study failed to show a clear relationship between calf weights and elk numbers but did indicate a small reduction in calf weights at higher elk densities. It is important to recognize by artificially penning cattle and elk in the same enclosures, this study obviated any resource partitioning dynamics that might normally occur.

Interactions between elk and livestock can be positive. Elk often show a preference for areas that have been previously grazed by cattle because of the nutritious regrowth. Conversely, elk can help maintain openings and create trails used by livestock.

Chronic Wasting Disease (CWD)

Chronic Wasting Disease was discovered on the western slope of Colorado in 2002. CWD was first discovered in E-2 through voluntary head submission by hunters in 2002. Currently, voluntary head submission by hunters is being used as a surveillance tool to identify the distribution and prevalence of CWD in DAU E-2. CWD has been detected in all GMUs within the DAU except for GMU 214. The 2002 – 2004 average CWD prevalence estimates from harvest data for E-2 is .001%.

The goals for managing CWD in this population include minimizing the prevalence of or eradicating the disease if possible and to keep the disease from spreading. The goal in areas that do have CWD is to maintain a less than 1% prevalence rate at the GMU level and less than 2% prevalence rate at the DAU level. Current strategies to manage for CWD in this DAU include using public hunter harvest head submissions to monitor for the prevalence and distribution of the disease.

The Colorado Wildlife Commission policy is to manage the disease with three objectives:

1. Minimize the potential for the disease to spread beyond currently infected areas of the state.
2. Reduce the level of prevalence within the Class I CWD Established Areas.
3. To eliminate the disease in Class II CWD Elimination Areas.

CWD has been present in wild cervid populations since at least 1981, but probably much longer. Within the last 5 years Colorado has seen the concern over the disease increase due to a number of factors. The Colorado Wildlife Commission is committed to reducing the impact of this disease on wild and captive cervid populations in Colorado. The Division shall use the best scientific information available and take all reasonable and necessary steps, consistent with this policy, to achieve these three policy objectives. Further, the Division shall develop a process to monitor wild cervid populations and respond to new discoveries of CWD and annually report to the Commission the status of the disease and management efforts in Colorado.

HABITAT RESOURCE

Habitat Distribution

Winter Range

According to CDOW's Wildlife Resource Information System (WRIS), the E-2 Bear's Ears DAU contains approximately 1,842 mi^2 of elk winter range, 495 mi^2 of severe winter range, 98 mi^2 of winter concentration areas, 42 mi^2 of known production areas and 76 mi^2 of resident population areas. Severe winter range is defined as the area of winter range where 90% of the elk are located when the annual snowpack is at its maximum in the two worst winters out of ten. Ownership of the winter range is included in Table 3.

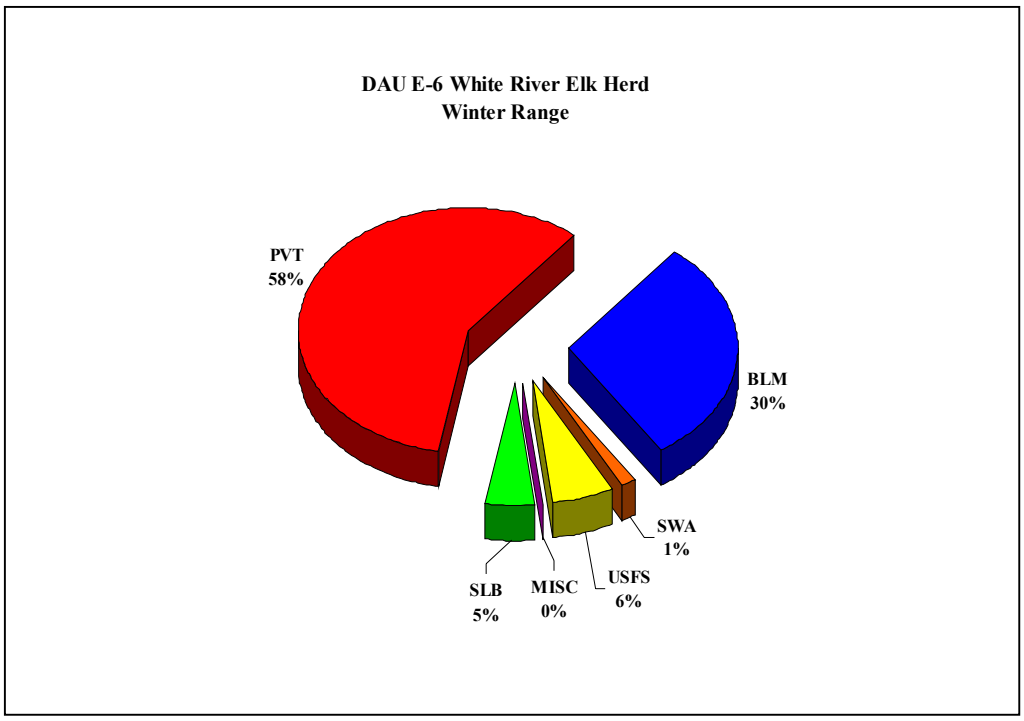


Table 3. Winter range land area and ownership by GMU in Bear's Ears DAU E-2.

	PVT	BLM	NF	WILDA	USFS	SLB	SWA	Total
GMU	*mi²*	*mi²*	*mi²*	*mi²*	*mi²*	*mi²*	*mi²*	*mi²*
3	347.3	367.9	---	---	---	71.7	7.3	794.2
301	310.6	44.5	---	---	---	13.8	---	368.9
4	181.7	46.7	---	---	---	29.0	1.0	258.4
5	38.7	21.2	---	---	---	0.7	---	60.6
14	49.5	1.1	46.4	0.3	46.7	1.0	---	98.3
214	79.9	2.8	---	---	---	---	---	82.7
441	107.1	4.0	---	---	---	15.5	1.2	127.8
Total	**1114.8**	**488.2**	**46.4**	**0.3**	**46.7**	**131.7**	**9.5**	**1422.0**

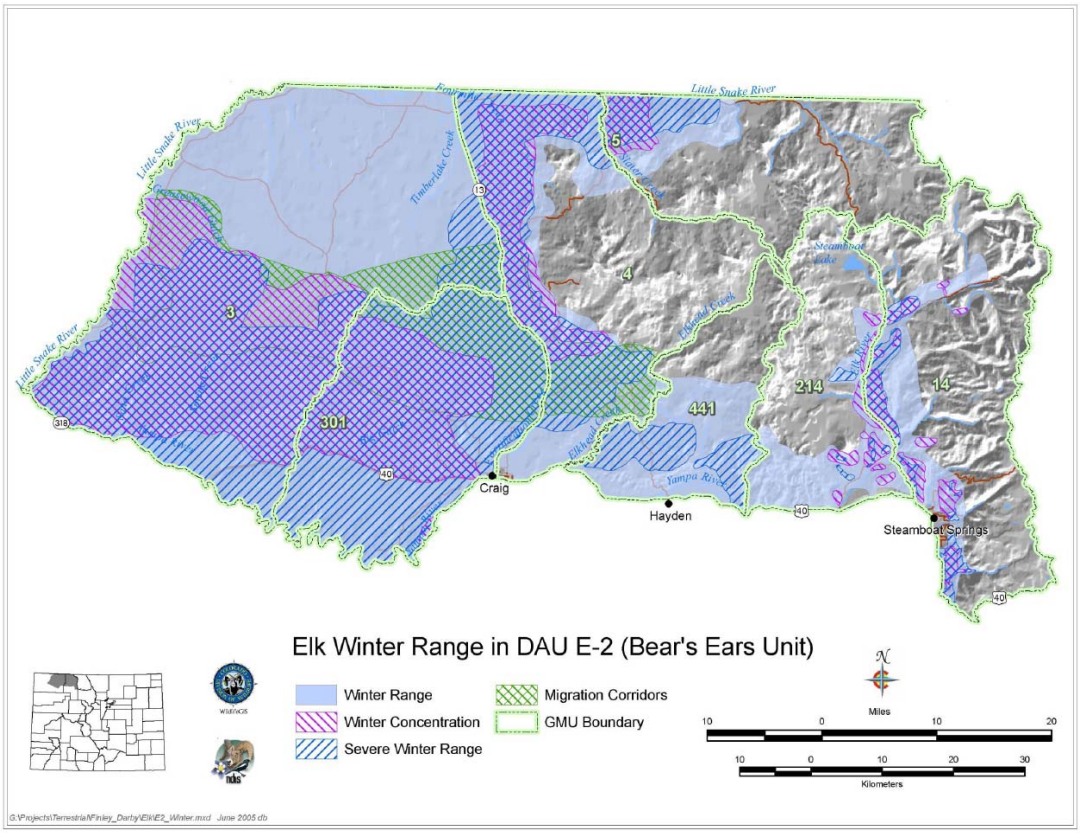


Figure 4. Elk winter range for the E-2 Bear's Ears DAU.

Habitat Condition and Capability

There is no easy or accurate way to assess habitat capability (i.e. carrying capacity) for elk on a DAU basis. Current elk numbers have exceeded estimates from 10-20 years ago. Recent habitat models developed through funding from the CDOW's Habitat Partnership Program (HPP) are attempts to estimate habitat capability by using readily available inputs such as projected vegetation production values, mapped wildlife winter range polygons, wild ungulate offtakes, and livestock offtakes (Gary Wockner et al. 2005). Although such models can be useful tools for evaluating different management options, they are a simplistic view of very complex systems that are impossible to ground truth for accuracy. Carrying capacity is dynamic and can shift dramatically depending on weather conditions, the arrangement of habitat components, animal distribution, disturbance factors, and multispecies interactions. Body condition and population productivity are probably the best indicators of density-dependent effects and habitat capability. Low reproductive success, high mortality of young, and poor body condition are indicators that a population is near or above the capacity of the habitat. No quantitative data are available to assess these indicators for DAU E-2 except post-hunt calf:cow ratios. These ratios show a stable to slight downward trend over the past 40 years and an increasing trend over the last 5 years in E-2 suggesting the E-2 elk population is still a productive and healthy elk herd.

Public Land

The BLM Little Snake Resource Area is the only management area within the DAU. The Resource Area contains 193 grazing allotments within the Bear's Ears DAU, totaling approximately 2,640,114 acres. Several of the allotments are split by DAU boundaries thus acreages and other allotment figures are approximate (Figure 5). The period of use varies, with summer and winter grazing depending on the allotment. Total AUMs were not identified.

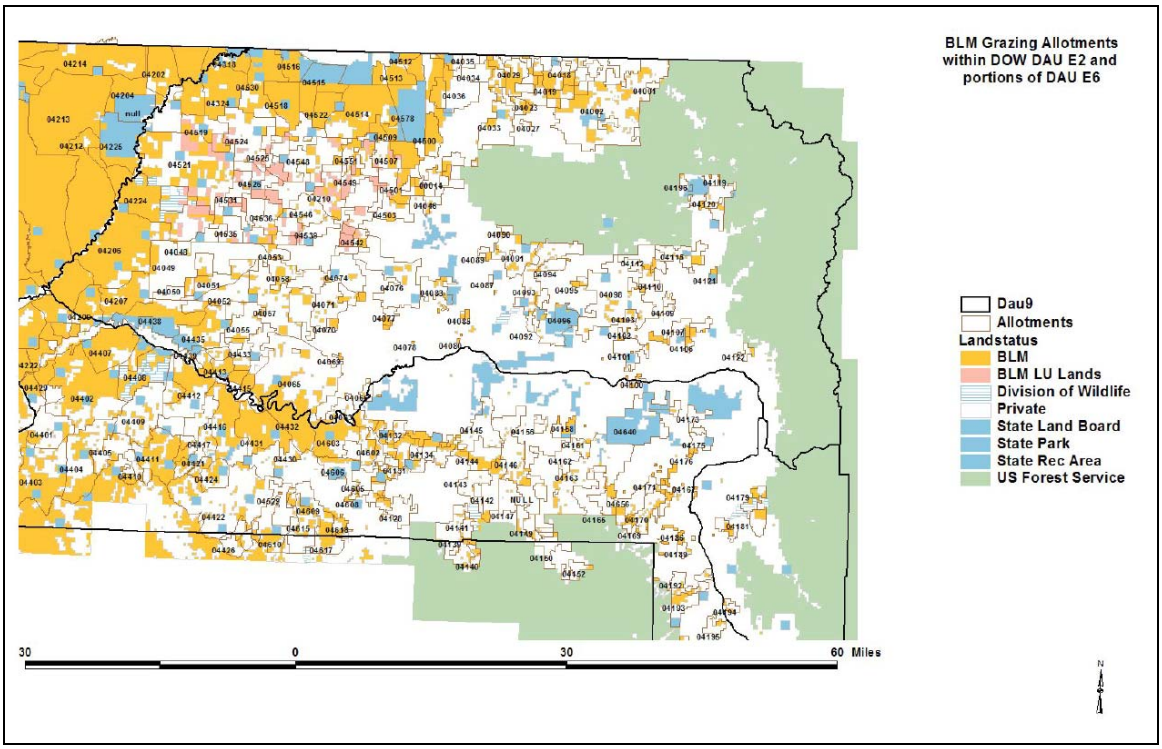


Figure 5. BLM grazing allotments for the Little Snake Resource Area in DAU E-2.

One of the recurrent themes in all the public and agency meetings was the discussion of how the forage resource should be divided between livestock and wildlife, particularly deer and elk. Much of the general and hunting public feels that stocking rates for livestock are too high, while landowners and land management agencies often point to high game populations being the cause of forage problems and conflicts.

It has been an established standard that land resource agencies such as the BLM and the Forest Service are primarily concerned with habitat management while the CDOW manages the animal populations. For the purpose of the DAU planning effort the CDOW requested information concerning the land health status of public rangelands, present utilization rates specific to livestock, and any specific concerns regarding the BLM and Forest Service public lands. Additionally, the Resource Management Plans and Environmental Assessments for each of the agencies were reviewed regarding grazing management on the public lands within the DAU (See Bibliography). For each environmental analysis, required to issue grazing leases, an assessment of land health status is conducted. Changes in allotment categorization, levels of management, and permit modifications can be made if evaluation and monitoring information indicates they are warranted in order to achieve or make significant progress toward achieving the standards for rangeland health.

The CDOW's fundamental assertion is that if the land is maintained in a healthy state it will support the proposed herd objective. If evaluation and monitoring data indicate that land health is impaired by wildlife use, then specific herd management changes would be implemented via the CDOW's " Management by Objective" framework.

The DOW will work closely with the land management agencies to establish better estimates of capacity and utilization, especially on forage conflict areas. The equitable allocation of the forage base between livestock and wildlife should be established across all habitat types, with special consideration given to critical habitats.

In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. The BLM conducts there Land Health Standard Assessments by watershed (Figure 6). There are 8 watersheds within DAU E-2. Each watershed assessment is based on 5 standards upland soils, riparian systems, native plant and animal communities, special status species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Assessments are conducted by an interdisciplinary team of BLM employees that randomly select multiple sites within a watershed boundary based on criteria that include past and current management, location of known riparian resources, and areas with special wildlife concerns. Assessments have been conducted on 6 of the 9 watersheds. A summary of the completed watershed assessments are included in the following table.

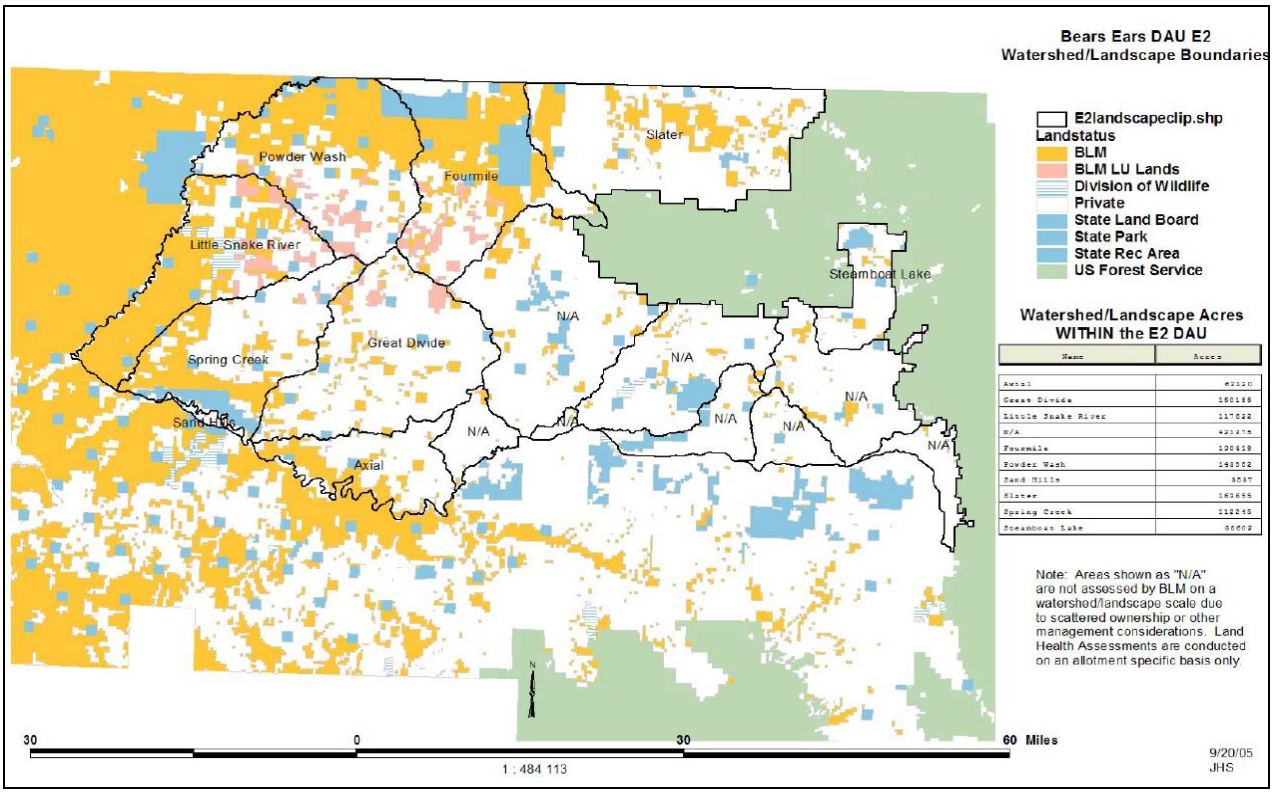


Figure 6. BLM watershed/landscape boundaries for the Bear's Ears DAU E-2.

Table 5. BLM Colorardo Land Health Standard Assessments by watershed for the Bear's Ears DAU E-2. NC denotes watershed land health assessments that have not been completed.

Watershed	Year Completed	Standard 1 Upland Soils	Standard 2 Riparian System	Standard 3 Plant/Animal	Standard 4 Special Species	Standard 5 Water Quality
Fourmile	2003	Standards Met	Standards Met	Standards Not Met	Standards Met	Standards Met
Powder Wash	2003	Standards Met	Standards Not Met	Standards Not Met	Standards Met	Standards Met
Little Snake River	1998	Standards Met	Incomplete Assessment	Standards Met	Standards Met	Standards Met
Sand Hills	2001	Standards Met	Standards Not Met	Standards Met	Standards Met	Standards Met
Slater	1999	Standards Met	Standards Not Met	Standards Met	Standards Met	Standards Met
Spring Creek	1998	Standards Met	Standards Not Met	Standards Met	Standards Met	Standards Met
Axial	NC	NC	NC	NC	NC	NC
Great Divide	NC	NC	NC	NC	NC	NC
Steamboat Lake	NC	NC	NC	NC	NC	NC

Although most watersheds met the standards set forth in Colorado Land Health Assessments conducted by the BLM, it should be noted that in some watershed assessments that met the standards were determined to "marginally" or "minimally" meet the criteria standards. The causative factors in the watersheds that did not meet the land health standards included sites dominated by weeds, drought stressed sites, sites with fire disturbance or lack of fire in the ecosystem, sites in late seral stages, and past and current grazing practices. Copies of the Colorado Land Health Assessments can be obtained by contacting the Terrestrial Biologist at the Meeker Service Center (970) 878-6064 or the BLM Little Snake Field Office in Craig (970) 826-5000.

The USFS administers 1 ranger district on the Medicine Bow-Routt National Forest within the E-2 DAU, the Hahn's Peak-Bear's Ears District. The district has 60 grazing allotments within the DAU comprise 400,000 acres. All allotments are currently being used for livestock grazing. The period of utilization varies, but usually occurs July through September. The 60 allotments comprised of a total of 44,608 AUMs available to sheep, goat, cattle, and horses.

The District is currently in the process of updating some allotment management plans in the DAU and is in the preliminary stages of collecting monitoring data. Many allotments have received partial livestock use throughout the drought period (last 5 years). Some allotments, particularly the Bear's Ears allotments, have been stocked at 50% of permitted stocking levels over the last 5 years. The majority of sheep and goat allotments in this District are permitted for sheep (ewe/lamb or yearling sheep). Cattle and horse allotments are permitted for cow/calves with some yearling permits. The major issues identified on allotments that are not meeting FS rangeland health criteria based on the most recent biomass studies and evaluations include moderate to heavy use by livestock and wildlife, poor browse condition, localized moderate to heavy big game use along migration routes, high elk use in the spring, 50% utilization by elk on umbel type plants by late June prior to livestock turnout, excessive spring elk numbers causing heavy utilization of desirable forbs, and riparian sites showing heavy use by big game during spring and early summer. Elk are implicated in most of the allotments that are not meeting rangeland health standard evaluations in the Hahns Peak-Bear's Ears District. Allotment summaries are provided in the table below.

Table 4. USFS allotments summaries for the Hahn's Peak-Bear's Ears District. The year listed in the AMP/EA column is the most recent year an allotment management plan or environmental assessment was done. S&G=Sheep and Goat, C&H= Cattle and Horse, AMP= Allotment Management Plan, and EA= Environmental Assessment.

Allotment Name	Type	AMP/EA Year	Trend/Condition
Hole in the Wall	S&G	1995	Fair or better
Fortification	S&G	1990	Above Satisfactory
Mill Creek	S&G	1970	Good
Devils Slide	S&G	1996	Upward/Stable
Floyd Creek	C&H	2001	Stable
Johnson-Oliver Crk	S&G	2001	Desired
Boulder Creek	C&H	1987	-----
Mt. Welba	S&G	1971	-----
Lost Park & Sawtooth	S&G	2005	Upward
Diamond-Adams-Slater	S&G	1970	-----
Armstrong Creek	S&G	1988	Fair-Good
California Park	C&H	1988	Poor-Fair
Stukey Creek	S&G	Unknown	Stable
East Quaker	S&G	1988	Stable to Slight Upward
Stewardship	S&G/C&H	1990	Fair-Good
Mt. Oliphant	C&H	1987	-----
Saddle Mountain	S&G	1965	Poor
Sand Mountain	S&G	1988	-----
Meaden Peak	S&G	Unknown	-----
Baldy Peak	S&G	1995	Fair or better
Potholes	S&G	1995	Good-Fair-Poor
West Quaker	S&G	1995	Fair or better
Slide Mountain	S&G	1981	Stable
Little Bear	C&S	1997	Stable-Upward
Quaker Knob	S&G	1995	Good
Black Mountain	S&G	1992	Stable
North Fork Elkhead	S&G	1969	Satisfactory

Public Land Wildlife Conflict Areas

The land use agencies were asked to identify areas where conflicts occur between livestock and elk within DAU E-2. Examples of conflicts were given as situations where elk had forced a change or delay in the period of use on an allotment, or forage utilization by elk had caused a reduction in AUMs of forage available for livestock.

The Hahn's Peak-Bear's Ears Districts reported problems with both present elk numbers and distribution in DAU E-2. The FS stated that livestock grazing levels have decreased on the Routt National Forest by 25% since 1980, however, during that same period elk populations were at there highest levels and this has resulted in forage allocation issues. The Forest Service identified California Park, the area immediately surrounding the Bear's Ears, and some of the area south of Black Mountain as potential

conflict areas between elk populations and existing range conditions. The general concern is the intensity of elk use in the spring and early summer prior to livestock turn out is causing depletion in forage quantity and quality. Forest Service monitoring has shown heavy bank trampling and moderate use on sedges in Elkhead Creek and First Creek prior to July 1 when livestock enter the forest. Elkhead Creek was also cited as an area where elk appear to be affecting riparian habitats and watershed function.

The BLM Little Snake Field Office (LSFO) identified concerns and conflicts with the elk herd size within DAU E-2. The LSFO identified allotments in the Great Divide area where elk utilization on perennial grasses is consistently exceeding the BLM's established limit of 50% utilization. The BLM LSFO stated their permittees have taken voluntary reductions in livestock use in reaction to the drought and level of forage being utilized by elk. BLM claims the expected benefits of the reduced livestock numbers have been negated by high elk numbers. Monitoring data and land health assessments conducted by the LSFO have noted decreases in perennial grass diversity, density, and abundance, however, in most cases, the BLM states, elk have not been identified as the primary causal factor but feel high elk numbers coupled with drought are almost certainly influencing adverse changes in plant communities within the DAU. BLM is also concerned about the about the impacts of high elk numbers on greater sage grouse habitat. Lastly, the BLM is concerned about the number of elk residing in the extreme western portion of the DAU year round, especially in areas along the Little Snake River. This is of particular concern since the plant communities that serve as winter habitat in this area are not well adapted to season long grazing pressure. The BLM would like the Division to reconsider the western boundary of DAU E-2 due to the increased westward movement of wintering elk in the DAU.

Private Land

Habitat Partnership Program

Colorado's Habitat Partnership Program was started in 1989 to better address the conflicts private landowners and federal land management agencies have had with big game animals. The program is designed to assist the Division of Wildlife in solving forage and fence problems directly with local input. A committee of local landowners, sportsmen and federal agency personnel is established to ensure appropriate public involvement in identifying range management problems and recommending solutions to these problems. Local HPP committees may attempt to alleviate problems in areas where elk management and agricultural interests conflict.

Individual HPP Committees are responsible for developing a 5-year Distribution Management Plan (DMP) that identifies locations and seasons of big game concentrations which the landowner/land manager considers to be conflict areas. The plan provides a framework to minimize or eliminate identified big game conflicts on public and private lands through habitat enhancements, special hunts, and/or other techniques. Whereas the DAU plan sets population goals for a large geographic area, the DMP focuses on management actions that are administered at the local or individual ranch level. Funding for HPP committees and DMP programs is generated from big game license sales from their region (5% of the annual 3-year average license revenues). Additionally, HPP is authorized to compensate landowners for actual damage to fence and forage caused by big game. Landowners participating in the Ranching for Wildlife Program may not claim game damage.

Another significant portion of each HPP committee's involvement in local big game management is participation in the DAU planning process. They insure that private land habitat issues are considered in setting the DAU objectives and conflict areas are identified and help develop appropriate strategies for

conflict resolutions. There are two HPP committee's included in this DAU, the Northwest Colorado HPP Committee and the Upper Yampa HPP committee. The Northwest Colorado HPP committee was established in 1991 to cover DAUs E-1, E-2, and a portion of E-21, excluding the Steamboat Springs area. The Upper Yampa HPP committee was established in 1992 and includes portions of DAUs E-2 and E-6.

The committee members have contributed to setting the objectives of this DAU plan and identifying conflict areas (Appendices D & E).

Habitat Assessment Model

In 2001, legislation required the Habitat Partnership Program to conduct an assessment of the habitat capability for their respective areas. As a result, the Habitat Assessment Model was designed as a tool to aid HPP committees in discerning the relationships between wildlife populations and habitat sustainability. The model incorporates general habitat based management principles utilizing ArcView GIS technology. The model includes existing information generated by local, state, and federal government agencies as well as input from local community members. The Habitat Model produces a range of population values with related management implications that can be used in the DAU planning process. The range of population values are based on low, mid, and high threshold values. The threshold values in the model represent a theoretical level of grazing use based on a landscape scale. For example, the low threshold in the model represents consumption of 25% of the total annual net primary production (ANPP), the midpoint equals 28.5%, and the high threshold value equals 32% consumption of ANPP. The model is run using model inputs which include a pre-winter precipitation level and additional parameters based on the area being assessed. For example, current habitat model projections for DAU E-2 using a mean precipitation rate, an estimated pronghorn population of 16,000, and 10 year average livestock numbers are consistent with the current modeled population estimates for DAU E-2 of 17,000 elk (Table 5).

Table 5. The Habitat Assessment Model output for DAU E-2 showing predicted, sustainable population numbers for both elk and mule deer based on the input critera of mean precipitaion rates, an estimated pronghorn population of 16,000, and 10 year average livestock numbers. The highlighted row shows the current midpoint elk and deer population estimates at 30% elk and 70% deer.

% ELK	ELK LOW	ELK MIDPNT	ELK HIGH	DEER LOW	DEER MIDPNT	DEER HIGH	% DEER
0	0	0	0	38214	93259	148305	100
10	3098	7562	12025	27882	68058	108225	90
20	5211	12717	20223	20844	50868	80892	80
30	**6744**	**16459**	**26173**	**15734**	**38399**	**61062**	**70**
40	7906	19295	30684	11859	28943	46026	60
50	8819	21521	34224	8819	21521	34224	50
60	9555	23319	37082	6364	15530	24697	40
70	10157	24788	39418	4357	10634	16910	30
80	10664	26026	41387	2666	6507	10347	20
90	11095	27076	43058	1232	3005	4779	10
100	11464	27978	44491	0	0	0	0

Private Land Wildlife Conflict Areas

Input on habitat conditions and capability on private land was sought in the public meetings, through the HPP committees, and contacting the Natural Resource Conservation Service (NRCS). The NRCS did not have records of habitat conditions and capability on private lands.

The Upper Yampa River HPP Committee feels that landowners have a greater tolerance for elk than they have had in the past and the majority of the committee is comfortable with current elk numbers in this DAU. However, the committee identified conflicts in DAU E-2 to be private land elk refuge situations herding of elk onto private lands, RFW seasons not concurrent with regular seasons, and conflict areas in and west of the California Park area. They felt the conflicts in the California Park areas were distribution issues and felt the Division should address these issues by continuing to implement late season and private land only hunts and aggressively manage public land habitat to create a mosaic of successional stages to help with elk distribution. Finally, the committee encouraged the Division to manage elk based on habitat suitability.

The Northwest HPP committee identified elk conflicts in DAU E-2 to be associated with elk distribution, current elk population levels, and the impacts current elk numbers may be having on drought stressed winter ranges. The committee is concerned about large individual groups of elk present in this area. These groups tend to congregate in and around agricultural fields, cause isolated forage conflicts on the Routt National Forest, and raise overall agricultural concerns in this area. There has been talk of this being a distribution issue, but the committee feels a further reduction in the overall population will aid in solving these distribution problems. Given the current state of sustained drought and lack of conclusive evidence regarding its end, the committee would recommend that the lower range (11,000 animals) be the target of short term elk management in E-2. We would like to see this target met by means of additional cow harvest.

To address current and future elk distribution issues and provide more public land hunting opportunity, the committee would like to see the Division of Wildlife work in conjunction with the Routt National Forest to evaluate current and potential seasonal access restrictions. We would like to see efforts made to keep elk on the forest and east of Highway 13 later in the year. This would help to keep late summer and early fall agricultural conflicts to a minimum.

The committee would urge the Division of Wildlife to closely consider all factors in regards to overall land health, carrying capacity, habitat loss and degradation, drought, and limitations of winter range in making their final decision. These factors as they relate to other animals including; deer, pronghorn, and the numerous small game species are of particular concern.

Concerns expressed by some of the private landowners at the public meetings and a letter received from the Colorado Woolgrowers Association (CWA) stated that the drought conditions over the past several years have severely impacted the forage base in the DAU and recommended reducing elk numbers to allow the range to rest and recover. However, since the advent of the 4 point antler restriction in 1986 the economic value of this elk herd to local communities and landowners has increased substantially. Many of the landowners depend on outfitting or leasing to hunters for a large portion of their annual income, thus, quality and quantity of the game herds is of importance to them beyond the usual concern for competition with livestock. Consequently, while caution to keep elk numbers in balance with habitat capacity was frequently mentioned, there is little landowner support for significantly reducing elk numbers below current levels.

ISSUES AND STRATEGIES

Issue Solicitation Process

An important aspect of the DAU planning process is obtaining input from all segments of the affected local populations, including the BLM, US Forest Service, HPP committees, and the interested public. Scoping meetings were held to gather input from all stakeholders that have an interest in elk management, including the BLM, US Forest Service, HPP committees, and the public on the best manner to achieve the desired DAU objectives. Meetings were held on July 25th and 27th, 2005, with officials from local BLM and Forest Service offices to solicit input regarding elk management in their Resource Areas. Input from the Upper Yampa and Northwest HPP committees was also sought during their monthly meetings on July 11th and 19th respectively. These issues and concerns were noted and incorporated into this plan (Appendix D & E).

In an effort to solicit recommendations on the goals and objectives of the DAU plan from the interested public, the CDOW held open public meetings in Steamboat Springs and Craig on August 2nd and 10th 2005. Current management objectives and alternatives were presented at these meetings. Input was requested from participants, in the form of an optional questionnaire regarding issues and concerns they might have with elk management in the DAU. Issues and concerns were noted during the meetings and incorporated into this plan (Appendix A).

The Boards of County Commissioners (BOCC) from Moffat and Routt Counties were also requested to provide input on the draft management plans. They were invited to the land management agency meeting and the local public meetings. Their comments and concerns were noted and incorporated into this plan.

Issue Identification

The primary purpose of the DAU planning process is to determine objectives for the size and structure of post-hunt population. The secondary purpose of the process is to gather input from the public that have an interest in elk management on the best manner to achieve the desired DAU objectives. In the case of DAU E-2 this includes determining objectives for the size and structure of the elk herd and various alternatives to achieve the desired objectives.

Population and Sex Ratio Objectives:

- Post-hunt population size
- Post-hunt bull:cow ratio

Management Objectives:

- Should the Bear's Ears DAU remain under the current management strategy?
- Should the Bear's Ears DAU be managed using over-the-counter licenses?
- Should the Bear's Ears DAU be managed as a quality elk DAU with all limited licenses?
- Should the Bear's Ears DAU be managed with moderate limitations on all licenses?

Issues and Concerns: BLM

The Bureau of Land Management introduced the following primary concerns and issues. Full text of the comments received from the BLM from meeting notes are available in Appendix B.

Some of LSFO's greatest concerns and conflicts with elk herd size lie within this DAU. The western portion of the DAU provides winter habitat for elk, pronghorn antelope, and deer and is also important for winter grazing by cattle and sheep. Current utilization monitoring has identified allotments in the Great Divide area where the contribution of elk utilization is causing BLM's established utilization limit of 50% on perennial grasses to be consistently exceeded. Some permittees in the DAU have taken voluntary reductions in livestock use in reaction to the level of forage that is being utilized by elk.

Of primary concern to both LSFO and permittees is the continual increase in elk numbers coupled with ongoing drought conditions. Throughout the DAU, most permittees have reduced livestock numbers in response to decreased forage production. Expected benefits of reduced livestock numbers have been negated by continued use by high numbers of elk over this period. As a result, both monitoring data and land health assessments have noted decreases in perennial grass diversity, density, and abundance. While, in most cases, elk have not been identified as the primary causal factor, high elk herd numbers coupled with drought are almost certainly influencing adverse changes in the plant communities within the DAU. Also of concern is the impact to greater sage grouse habitat. While BLM has, and has exercised, authority over livestock operators to change management for the benefit of sage grouse and other resources on public lands, continuing elk use continues to be a concern.

Of increasing concern is the amount of elk that are not migrating out of the extreme western portion of the DAU, instead to spending all year in the area. Information received from various sources, including DOW, indicate that orphaned yearlings left after the hunting season are staying in areas near the Little Snake River rather than migrating back to higher elevations in the east during the spring. This is of particular concern since the plant communities that serve as winter habitat in this area are not well adapted to season-long grazing pressure from any large ungulate. The permittee in the allotment most affected by this has accepted an 86% reduction in use until at least 2008.

We would also like you to keep in mind that the west boundary of this DAU may no longer be appropriate. Elk that are impacting areas along the Little Snake River appear to us to be from the same population. This population also appears to be moving in increasing numbers further to the west and into Sand Wash Basin, where there could be increasing issues with managing wild horses in the face of increasing elk numbers.

Issues and Concerns: US Forest Service

The US Forest Service introduced the following primary concerns and issues. Full text of the comments received from the US Forest Service from meeting notes are available in Appendix C.

The Hahn's Peak and Bear's Ears Districts reported problems with both present elk numbers and distribution. Specific areas identified where conflicts between livestock and elk occur were in the California Park and Slater Park areas. The general concern is that the intensity of elk use in the spring

and early summer, in conjunction with domestic livestock use, is causing depletion in forage quantity and quality

Issues and Concerns: HPP Committees

The Northwest and Upper Yampa HPP Committees introduced the following primary concerns and issues. Full texts of the comments received from the HPP committee meetings notes are available in Appendix D.

The majority of the Upper Yampa committee is comfortable with current elk population numbers in this DAU. However, the committee did feel that there are distribution issues, especially in and west of California Park, which the Division of Wildlife should address. The committee felt the late seasons and private land only hunts are good tools to remove elk from safe havens and they are concerned about the number of refuges that elk have found within the DAU. The committee encouraged the Division to do everything within its power to keep elk on public lands to obtain an adequate harvest to maintain current population levels.

The Northwest Colorado HPP Committee suggested that the current elk population should be decreased slightly too moderately with a set objective range being 11,000 to 15,000 animals. The committee reached this consensus due to the observations individual members have seen on the ground in E-2. There remains to be large individual groups of elk present in this area. These groups tend to congregate in and around agricultural fields, cause isolated forage conflicts on the Routt National Forest, and raise overall agricultural concerns in this area. There has been talk of this being a distribution issue, but a further reduction in the overall population will aid in solving these distribution problems. Given the current state of sustained drought and lack of conclusive evidence regarding its end the committee would recommend that the lower range (11,000 animals) be the target of short term elk management in E-2. We would like to see this target met by means of additional cow harvest. It is a general consensus of the committee that the Division of Wildlife manages E-2 for 25 bulls per 100 cows sex ratio. The committee agreed that we would like to see more mature bulls in the population and were in favor of the current limitations on archery, muzzle loading, and 4th rifle season bull harvest. The committee would not like to see the over-the-counter 2nd and 3rd seasons be limited or 4th season bull hunting be eliminated. To address current and future elk distribution issues and provide more public land hunting opportunity, the committee would like to see the Division of Wildlife work in conjunction with the Routt National Forest to evaluate current and potential seasonal access restrictions. We would like to see efforts made to keep elk on the forest and east of highway 13 later in the year. This would help to keep late summer and early fall agricultural conflicts to a minimum.

The committee would urge the Division of Wildlife to closely consider all factors in regards to overall land health, carrying capacity, habitat loss and degradation, drought, and limitations of winter range in making their final decision. These factors as they relate to other animals including; deer, pronghorn, and the numerous small game species are of particular concern.

Issues and Concerns: Board of County Commissioners

The BOCC for Routt and Moffat Counties introduced the following primary concerns and issues.

A comment letter has not been received from the Moffat or Routt county commissioners.

Issues and Concerns: Craig Chamber of Commerce

The Craig Chamber of Commerce introduced the following primary concerns and issues in an email.

Craig Chamber of Commerce believes that the E-2 area herd could have a reduction a bit more in size over the next 5 years and still have a healthy manageable herd. We have spoken with a variety of representatives and this is a shared consensus.

Issues and Concerns: State Land Board

The SLB introduced their primary concerns and issues in a letter. See Appendix D for the letter outlining their concerns.

Issues and Concerns: Summary of Public Comments

Public meetings were held in 2002 and 2005 as part of the DAU Planning process. A diverse array comments and recommendations were received from the many interested parties that attended the five public meetings that were held during the development of this plan in 2002 and 2005. The 2002 survey targeted both resident and non-resident hunters. One thousand questionnaires were mailed out to resident and non-resident hunters following the 2001 hunting season. Questionnaires were also made available at all of the 2002 public meetings. The 2005 survey focused on resident and local community input and questionnaires were made available at public meetings. A detailed summary of public comments and questionnaire results from the 2002 and 2005 surveys are included in Appendix A.

ALTERNATIVE DEVELOPMENT

MANAGEMENT STRATEGIES

There are three basic management strategies that the Colorado Division of Wildlife is currently using for elk DAU's. Ideally, all units within a DAU should be managed under the same strategy. These basic management strategies consider various types of hunting opportunities including ease of participation, quality of hunting experience, level of success rates, and opportunity to harvest a quality male animal.

Methods to achieve these various opportunities include offering readily available licenses, spatial and temporal distribution of hunters and license limitations. These different management strategies afford various types of hunting opportunities and are often mutually exclusive and therefore must be balanced among the desires of hunters, landowners, and economic interests.

Strategy 1. ***Management for Maximum Opportunity and Economic Benefits-***

This management strategy provides the best opportunity to hunt every year with the greatest likelihood of harvesting any age class of males and females in the population. Constraints on season lengths and antler-point restrictions are used to prevent excessive harvest of male animals and both over-the-counter and/or limited licenses are used to focus needed harvest on female animals to control populations. These types of hunts have higher hunter densities than other hunt types.

The current management strategy for DAU E-2 is to maximize hunter opportunity and local economic benefits and minimize landowner conflicts. This management strategy is characterized by a large number of bull hunters, low hunting success for bulls, and high annual removal of 2+ year old bulls resulting in post-hunt bull:cow ratios ranging from 15-20 bulls:100 cows. Archery and muzzleloader seasons are limited on National Forest to lessen the effects of hunters moving elk off of public lands prior to the 1st rifle season. Rifle either-sex licenses during the 1st season are limited and the season is managed for a quality hunting experience. Antlerless elk are limited and issued in numbers necessary to achieve population objectives, bull licenses during 2nd and 3rd rifle seasons are unlimited in number and sold over-the-counter (OTC). Either-sex licenses for the 4th season are limited to focus harvest efforts on cow elk.

Strategy 2. ***Management for Improved Experience and Reduced Impacts-***

This strategy limits the number of hunters for all methods of take for all seasons to reduce hunting pressure and improve the quality of the hunting experience. This type of hunt provides significant opportunity, but hunting opportunities are available less frequently with draw success occurring every 1 to 3 years which affects local economic benefits for both businesses and landowners. This type of management strategy would have more limited opportunity hunts increase the diversity in age class of males in a population and the likelihood of harvesting older age class males. Licenses are moderately limited during all seasons and are used to manage hunter pressure, prevent excessive harvest of male animals, and allow the flexibility to focus needed harvest on females for population control through limited licenses. These hunts have lower hunter densities than maximum opportunity hunts.

Strategy 3. Management for Quality Animals and Quality Experience-

This strategy significantly limits the number of hunters for all methods of take and for all seasons to reduce hunting pressure and improve the quality and opportunity to harvest older age class male animals. This type of management strategy has implications for local economies, landowner, and the achievement of management objectives in surrounding units. Quality management has the greatest "costs" implying not only monetary costs to local landowners and businesses but costs associated with reductions in the frequency of draw success for the hunter. License numbers are highly restricted. Hunts with this type of management strategy have very low hunter densities compared to the maximum and limited opportunity hunts.

MANAGEMENT ALTERNATIVE PROJECTIONS

Population Objective:	10,000 – 14,000
	14,000 – 18,000
	18,000 – 22,000
Sex Ratio Objective:	17 – 23 bulls:100 cows
	15 – 20 bulls:100 cows
	22 – 27 bulls:100 cows
	30 – 35 bulls:100 cows

Alternative 1 - Status Quo

Currently E-2 is a combination of management strategies including seasons managed for a quality hunting experience and seasons managed for hunter opportunity. Archery and muzzleloader seasons are limited on public lands in GMUs 4, 5, and 441 and unlimited in Units 14 and 214. The 1st and 4th rifle seasons provide hunters a quality hunting experience with limited either-sex and antlerless licenses available. Unlimited antlered licenses are available during the 2nd and 3rd rifle seasons. Various antlerless hunts outside the regular seasons have been implemented in an effort to reduce the elk population in E-2. Hunts such as private land only hunts, early hunts, late hunts, damage hunts, and distribution hunts all provide hunters with several different opportunities to harvest an elk. Hunter success in the DAU would remain relatively high under this strategy. Success has averaged 37% over the last 5 years. Hunter pressure would be moderate during archery, muzzleloader, and 1st and 4th rifle seasons with higher hunter pressure experienced during the 2nd and 3rd combined rifle seasons. The opportunities created by the various types of non-traditional hunts and liberal numbers of antlerless licenses made available in an effort to reduce the E-2 elk population have resulted in significant economic benefits for local businesses, landowners, guides and outfitters, and the DOW. It is important to note that as the herds approach long term population objectives, the numbers of licenses issued for regular season hunts and late season opportunities will be reduced to maintain the elk population at the long term objective levels. Maintaining this elk population at a desired population level will require significantly fewer licenses than the number needed to reduce elk population levels which in turn will affect local economies (Table 6).

Table 6. Economic analysis outlining the fiscal impacts of license reductions once the population objective for DAU E-2 is achieved.

Year	PH Pop	Observed Bull Ratio	Bull Harvest	Bull Success	Cow Harvest	Cow Success	Bull Hunters	Cow Hunters	Total Expenditures
2001	28315	23.9	1826	0.28	2401	0.41	6616	5873	$ 7,473,202.00
2002	25922	26.3	2866	0.39	4217	0.47	7298	9055	$ 9,423,644.00
2003	22060	30.6	2719	0.51	4828	0.48	5513	10158	$ 8,638,263.00
2004	16716	24.4	3081	0.51	5249	0.50	6073	10597	$ 9,244,205.00
2005	11366	22.0	2500	0.42	4092	0.46	6000	9000	$ 8,460,000.00
2006	11630	22.0	1227	0.42	1320	0.46	3000	3000	$ 3,543,000.00
2007	12200	22.0	1135	0.42	1283	0.46	2700	3000	$ 2,278,500.00

Alternative 2 – Management for Over-the-Counter (OTC) Licenses

This management alternative includes OTC antlered/ES licenses for all seasons and methods of take. This alternative would require that the current 1st and 4th limited rifle ES licenses be set high enough to meet hunter demand. An 80+% harvest rate on 2 ½ + year old bulls would be expected annually under this alternative. Limited antlerless licenses would remain specified under this alternative to manage to DAU population objectives. Various antlerless hunts outside the regular seasons could be implemented to address elk damage and distribution issues as well as provide hunters with late and early season opportunities. Income for local businesses, landowners, guides and outfitters, and the DOW would benefit from increased license revenues generated by the OTC license sales. Increased hunter pressure during limited archery, muzzleloader, and rifle seasons would likely lower success and lead to lower success rates. Elk distribution and damage issues would likely increase with increased hunter pressure on public lands.

Alternative 3 – Manage as a Premier DAU

The premier management alternative would require 50 – 70% reductions in the number of antlered licenses issued for the DAU to achieve 30+ bulls:100 cows. Limited antlerless licenses would remain specified under this alternative to manage to DAU population objectives. Various antlerless hunts outside the regular seasons could be implemented to address elk damage and distribution issues as well as provide hunters with late and early season opportunities. Income for local businesses and the DOW would decrease dramatically due to the limited number of licenses available. However, landowners, guides, and outfitters would likely see positive impacts over time, as license limitations would result in higher quality animals that would in turn increase fees they could charge for hunting. Hunter success would significantly increase and hunter pressure would be significantly less under this management scenario. This alternative would require a Wildlife Commission regulation change to accommodate the limitations needed to manage this as a premier DAU.

Alternative 4 – Manage for moderate license limitations

Managing for moderate license limitations would require a 30 – 40% reduction in antlered licenses for all seasons and methods of take. This alternative would require a Wildlife Commission regulation change to implement limited antlered licensing for the 2nd and 3rd rifle seasons. Limited antlerless licenses would

remain specified under this alternative to manage to DAU population objectives. Various antlerless hunts outside the regular seasons could be implemented to address elk damage and distribution issues as well as provide hunters with late and early season opportunities Income for local businesses and the DOW would decrease dramatically due to the limited number of licenses available. However, landowners, guides, and outfitters would likely see positive impacts over time, as license limitations would result in higher quality animals that would in turn increase fees they could charge for hunting. Hunter success would increase and hunter pressure would be significantly less under this management scenario.

PREFERRED OBJECTIVES AND ALTERNATIVES

CDOW Recommendation to the Wildlife Commission 2oo5 (Amended in Oct 2008)

Population Objective: 11,000 – 15,000 (Amended to 15-18,000 in Oct 2008)

The steadily increasing elk population trend in DAU E-2 has caused the CDOW as well as the Forest Service and BLM to be concerned with maintenance of acceptable range and forage conditions. Evidence presented in this document indicates that negative range impacts associated with current elk population levels and distribution may be occurring in localized areas. Site specific distribution issues will likely continue at a lower population level, however, the impacts in these localized areas may be lessened.

Mild winter conditions for the past 10 years combined with the adaptive nature of elk has allowed for herd expansion and continued maintenance of a stable reproductive status. The consensus of the management agencies recommendations based on concerns regarding drought stressed range conditions, the potential impacts of oil and gas development on winter ranges, and winter range elk/mule deer competition is a reduction in this elk herd from current population levels. The CDOW is in agreement with this recommendation.

The CDOW recommendation of managing this elk population in an objective range of 11,000 – 15,000 elk presented here represents a reduction of approximately 35%, to the lower end of the objective range, from current population estimates of elk in DAU E-2. Furthermore, it is recommended, the short term goal is for this elk population to be managed to the lower end of this population objective range (11,000) to allow the range rest and recovery from the past 5 years of drought. The proposed objective range is in with the previous population objective of 12,200 set in 1992.

At current population levels there are concerns regarding catastrophic impacts to elk and deer populations in a severe winter. Issues in this regard include actual loss of elk, damage to range, game damage to livestock forage and hay, and associated loss of herd health in subsequent years due to range damage.

In order to continue to reduce this elk population, it will be necessary to maintain the elk harvest numbers the Division has achieved in recent years through innovative harvest regimes including additional cow licenses, late season hunts, HPP distribution hunts, and liberal numbers of public and private antlerless licenses. Record elk harvests 4 out of the last 5 years since 2001, has resulted in a reduction of the E-2 elk population by 40%.

Sex Ratio: 20 – 25 bulls:100 cows

The CDOW recommendation is to manage the sex ratio objective within a range of 20-25 bulls:100 cows. During the past 5 years (2000-2005), the herd has averaged 25 bulls:100 cows with a range of 22-31 bulls:100 cows. The Division recognizes it may be difficult to manage within this sex ratio range when elk populations are reduced to near 32,000 with over the counter bull licenses available 2nd and 3rd regular rifle seasons, however, limited either sex licenses in the 1st and 4th rifle seasons will allow for some management flexibility within this range

Management Strategy: Status Quo

The DAU management strategy recommendation by the CDOW is status quo. Currently E-2 is a combination of management strategies including seasons managed for a quality hunting experience and seasons managed for hunter opportunity. Archery and muzzleloader seasons are limited on public lands in GMUs 4, 5, and 441 and unlimited in Units 14 and 214. The 1st and 4th rifle seasons provide hunters a quality hunting experience with limited either-sex and antlerless licenses available. Unlimited antlered licenses are available during the 2nd and 3rd rifle seasons. Various antlerless hunts outside the regular seasons have been implemented in an effort to reduce the elk population in E-2. Hunts such as private land only hunts, early hunts, late hunts, damage hunts, and distribution hunts all provide hunters with several different opportunities to harvest an elk. Hunter success in the DAU would remain relatively high under this strategy. Success has averaged 37% over the last 5 years. Hunter pressure would be moderate during archery, muzzleloader, and 1st and 4th rifle seasons with higher hunter pressure experienced during the 2nd and 3rd combined rifle seasons. The opportunities created by the various types of non-traditional hunts and liberal numbers of antlerless licenses made available in an effort to reduce the E-2 elk population have resulted in significant economic benefits for local businesses, landowners, guides and outfitters, and the DOW. It is important to note that as the herds approach long term population objectives, the numbers of licenses issued for regular season hunts and late season opportunities will be reduced to maintain the elk population at the long term objective levels. The overall DAU management recommendation is to maintain this unit as a general elk hunting DAU with unlimited over-the-counter bull licenses during the 2nd and 3rd regular rifle seasons. However, CDOW recommends maintaining limited archery and muzzleloading hunting in GMUs 4, 5, and 441 on public lands. This regulation was initiated in 1999 after CDOW determined that excessive hunting pressure was forcing a significant number of elk to move off Forest Service lands during early seasons. The limitation in archery and ML licenses has reduced these problems and has allowed for increased harvest during the 1st regular rifle season on Forest Service lands. It is important to note that as the herds approach long term population objectives, the numbers of licenses issued for regular season hunts and late season opportunities will be reduced to maintain the elk population at the long term objective levels. Maintaining this elk population at a desired population level will require significantly fewer licenses than the number needed to reduce elk population levels.

APPROVAL/SIGNATURE PAGE

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Appendix A

2002 Survey Results

The following is a summary of the 2002 questionnaire survey results used to assess public interest in elk management. The 2002 questionnaires were made available at public meetings and mailed out to both resident and non-resident hunters.

Survey Purpose and Intent

The purpose of this questionnaire was to assess public attitudes toward mule deer and elk management in the Bear's Ears/Craig area, specifically in Game Management Units (GMU) 3, 4, 5, 14, 214, 301, and 441. The Colorado Division of Wildlife (CDOW) is responsible for developing elk population management plans for this area.

In Colorado, big game populations are managed for specific geographic areas, called Data Analysis Units (DAU). The DAU plan analyzes information for two primary decisions: 1) how many animals should the DAU support, and 2) what is the herd's most appropriate male to female ratio, better known as the sex ratio. The DAU planning process examines the biological capabilities of the deer and elk herds, and public preferences. An appropriate balance of each is sought and reflected in the herd objectives, which are set for a five year period of time. Annual hunting seasons are then designed with the intent of keeping the population at or near the selected herd objectives.

Public input is an important part of the DAU planning process. It is vital that public desires are integrated into these plans so that established goals are widely accepted and biologically sound. In an attempt to maximize public input, a questionnaire was developed and sent to interested publics.

In the development of DAU plans, results of surveys such as this one are considered along with other forms of input the CDOW receives from land management agencies and the public, via public meetings, letters, phone calls, and testimony before the Colorado Wildlife Commission. All public input is integrated with other significant elements in making the final selection of a preferred alternative for population and composition (male/female ratios) objectives for the deer and elk herds in this area. The Colorado Wildlife Commission makes the final determination on the herd objectives which will then be in effect for five years.

Methods

The target population for this study consisted of residents of the area, private landowners, and individuals who hunted deer and/or elk in 2001.

Questionnaires were designed to survey public attitudes towards elk in the Bear's Ears DAU which includes GMUs 3, 4, 5, 14, 214, 301, and 441. Hunters were asked to complete the questionnaires and return them, by pre-paid mail, to the CDOW. Return postage was provided for each questionnaire.

One thousand questionnaires were distributed to hunters via mailings, license agent distribution, and distribution by DWMs during the 2001 hunting season.

Results

Of the 1000 questionnaires sent out by mail, a total of 80 (8%) individuals returned completed questionnaires. Ranching for Wildlife (RFW) hunters also returned ninety-two questionnaires. Results are presented in two sections. "Survey Highlights" summarizes the important results of this survey, particularly as they apply to the DAU plan objectives. The "Summary of Open-ended Comments" categorizes the additional comments received and provides insight into the main issues that people thought were important for the CDOW to consider.

The Appendix provides the percentage of valid responses for each question, and the questions are presented as they were asked in the original questionnaire.

BACKGROUND INFORMATION

1) Are you a resident of Colorado?
   61% Yes
   39% No

2) Do you live in GMU's 3, 4, 5, 14, 214, 301, or 441?
   40% Yes If yes, how many years and in what GMU? **Avgerage 21.3 years**
   60% No

3) Do you own or lease property in GMU's 3, 4, 5, 14, 214, 301, or 441?
   31% Yes If yes, how many years and in what GMU? **Average 14.7 years**
   69% No

4) During the last 12 months, have you participated in outdoor recreational activities other than hunting (e.g., camping, backpacking, snowmobiling, etc.) in GMU's 3, 4, 5, 14, 214, 301, or 441?
   69% Yes
   31% No

5) Which group(s) best represent your interests in elk management in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Check all that apply)*

	most represent if answered more than 1
18% A) Rancher/Farmer	**8%**
7% B) Business owner	**0%**
18% C) Landowner	**5%**
22% D) Guide/Outfitter	**10%**
94% E) Hunter/Sportsperson	**75%**
40% H) Environmental/Conservation	**3%**
0% I) Other, please explain _____	

6) If you checked more than 1 response in the above question, write the letter corresponding to the interest group which most represents your opinions. ____

PEOPLE AND ELK

- People are most interested in hunting elk (85%), seeing elk (77%), and participating in decisions about elk management (65%) in DAU E-2. Just over half of the respondents indicated they were "very interested" in learning more about elk management.

  In comparison, RFW respondents also indicated they were most interested in hunting elk (80%) and seeing elk (65%). Forty percent of the respondents had minimal interest in learning more about elk management.

- People are most concerned about the reduction in elk habitat due to increased human population and development with 56% of the people being very concerned. Forty six percent were very concerned about the potential for winter starvation, and 55% of the respondents were concerned to very concerned about deer and elk competition for habitat. Most hunters that had been effected by the concerns asked about in the questionnaire answered that they had personally been affected by the loss of elk habitat due to human development (42%).

  The two biggest concerns RFW respondents had were potential starvation of elk during the winter (74%) and potential competition between elk and deer for habitat (77%). Fifty six percent of the respondents were concerned with elk spreading disease to pets, livestock, or humans. Half of the respondents felt they had been personally affected by competition between elk and deer for habitat.

- Respondents were split on how they personally felt about elk in DAU E-2, 50% enjoy the presence of elk, but worry about the problems they may cause and 50% enjoy the presence of elk and do not worry about the problems they may cause.

  Significantly more RFW respondents (83%) compared to mail-in respondents (50%) enjoyed the presence of elk but were worried about the problems they may cause. Only 16% of the RFW respondents enjoy the presence of elk in E-2 and don't worry about the problems they may cause.

PEOPLE AND ELK

1) Please indicate how interested you are in doing each of the following. *(Circle one number for each item).*

	No Interest				Very Interested
Watching or photographing elk……..	**0%**	**3%**	**18%**	**30%**	**49%**
Hunting elk…….	**1%**	**0%**	**1%**	**13%**	**85%**
Seeing elk……	**0%**	**0%**	**7%**	**16%**	**77%**
Learning more about elk management……	**1%**	**4%**	**15%**	**27%**	**52%**
Providing input for decisions regarding elk management……..	**0%**	**6%**	**15%**	**14%**	**65%**

2) Please indicate how concerned you are about each of the following in GMU's 3, 4, 5, 14, 214, 301, and 441. *(Circle one number for each item).*

	No Concern				Very Concerned
A) Elk/Vehicle collisions……	**11%**	**35%**	**32%**	**8%**	**13%**
B) Economic losses to ranchers/farmers from elk damage to rangeland, crops, or fences……	**10%**	**18%**	**41%**	**23%**	**8%**
C) Damage to homeowners' trees, shrubs, and gardens caused by elk……	**30%**	**38%**	**25%**	**3%**	**4%**
D) Predation on the elk population by coyotes, bears and mountain lions……	**10%**	**17%**	**28%**	**18%**	**27%**
E) Loss of elk habitat due to increased human population & development……	**1%**	**0%**	**8%**	**34%**	**56%**
F) Potential starvation of elk during the winter……	**1%**	**3%**	**23%**	**27%**	**46%**

G) Elk spreading disease to pets, livestock, or humans	**15%**	**27%**	**18%**	**21%**	**18%**
H) Elk competing with livestock for forage	**13%**	**16%**	**24%**	**31%**	**16%**
I) Potential competition between elk and deer for habitat	**8%**	**10%**	**27%**	**25%**	**30%**
J) Revenue that elk hunting provides local business..	**1%**	**33%**	**33%**	**14%**	**19%**

3) Have you been personally affected by any of the concerns listed in Question 2 in GMU's 3, 4, 5, 14, 214, 301, and 441?

59% Yes
If yes, circle one: A B C D E F G H I or J
3% 6% 4% 6% 42% 1% 0% 10% 23% 7%
41% No

4) How do you personally feel about elk in GMU's 3, 4, 5, 14, 214, 301, and 441? *(Check ONE)*

0% I do not enjoy the presence of elk in GMU's 3, 4, 5, 14, 214, 301, and 441, AND regard them as a nuisance.

50% I enjoy the presence of elk in GMU's 3, 4, 5, 14, 214, 301, and 441, BUT worry about the problems they may cause.

50% I enjoy the presence of elk in GMU's 3, 4, 5, 14, 214, 301, and 441 AND do not worry about the problems they may cause.

0% I have no particular feelings about elk in GMU's 3, 4, 5, 14, 214, 301, and 441.

ELK MANAGEMENT

- Respondents were split on their opinions in regards to how they would like the elk herd to change in DAU E-2. A total of 34% of the respondents would like a decrease in the elk population, 24% a "moderate decrease" and 10% would like to see a "slight decrease". Thirty eight percent of the respondents would like some sort of increase. Twenty one percent would like to see a "slight increase", 14% a "moderate increase", and 3% a "great increase". Twenty four percent wanted no change and 4% had no opinion. Respondents had strong feelings about the change in the size of the elk population, the change in the population is "important" (31%) to "very important" (54%) to them. The average rating was 4.2, which is "no change". In this survey, an increase or decrease in the population was defined as slight, moderate, or great. A slight increase or decrease was defined as 1-25%, moderate 26-50%, and great over 50%. People who indicated they would like to see a decrease in the elk population were asked what methods they would support or oppose to decrease elk numbers. Fifty eight percent of the respondents "strongly supported" either sex licenses to decrease elk numbers and 77% "strongly supported" additional cow tags to reduce elk numbers.

			4.2			
Large decrease	Moderate decrease	Slight decrease	No change	Slight increase	Moderate increase	Large increase
1	2	3	4	5	6	7

In comparing responses from RFW respondents to mail in respondents, the majority of RFW respondents would like to see a decrease in the elk population. Forty seven percent would like to see a moderate decrease of 26-50% and 41% would like to see a slight decrease of 1-25%. The average rating by RFW respondents as to how they would like the elk herd to change is 2.6 which is a moderate to slight decrease. RFW survey respondents also felt strongly about the change in the size of the population. The change was very important to 71% of the respondents. Seventy percent of the RFW respondents strongly supported either sex licenses to decrease the elk population and 92% strongly supported additional cow tags.

2.6

Large decrease	Moderate decrease	Slight decrease	No change	Slight increase	Moderate increase	Large increase
1	2	3	4	5	6	7

- DAU E-2 is currently managed for a sex ratio of about 22 bulls per 100 cows, which allows for the harvest of any bull having 4 or more point on a side with over-the-counter licenses. People were asked if they would like to see a change in the number of bull elk in DAU E-2. Ninety percent of the respondents indicate they would like to see some type of increase in the number of bulls in E-2. Thirty one percent would like to see a slight increase (25 bulls per 100 cows), 31% would like to see a moderate increase (30 bulls per 100 cows), and 28% would like a great increase (40 bulls per 100 cows). The average response to this question was 5.8, which is close to a moderate increase the number bull in the population. The current ratio is 24 bulls per 100 cows.

5.8

Decrease greatly	Decrease moderately	Decrease Slightly	No Change	Increase slightly	Increase moderately	Increase greatly
1	2	3	4	5	6	7

Like mail-in respondents, RFW respondents also would like an increase in the number of bull elk in the DAU. Seventy three percent would like a moderate increase (30 bulls per 100 cows), 11% would like to see a slight increase, and 16% would like to see a great increase. The average response to this question from RFW respondents was 6.1, a moderate increase.

People were asked what methods they would support or oppose to increase bull elk numbers. The majority of the people surveyed are in support of the 4-point minimum antler-point restriction (91%). The other methods supported by the respondents to increase bull numbers were issuing fewer bull licenses (62%), eliminate 4th season bull hunting (65%), increase cow harvest and more restricted motorized vehicle access (63%). Respondents opposed maximum antler point restrictions (e.g. spikes only) (53%).

RFW respondents were in strong support of fewer bull licenses (90%), eliminating 4th season bull hunting (90%), and increasing cow harvest (90%) to increase bull numbers. Fifty seven percent strongly support minimum antler-point restrictions. Interestingly, 41% had no opinion on minimum antler-point restrictions.

- The average response to the method of eliminating 4th season bull hunting to increase bull numbers was 3.8, which is close to no opinion.

3.8

Strongly oppose	Somewhat oppose	Slightly oppose	No opinion	Slightly support	Somewhat support	Strongly support
1	2	3	4	5	6	7

ELK MANAGEMENT

1) How would you like the elk population in GMU's 3, 4, 5, 14, 214, 301, and 441 to change, if at all?
   0% Decrease greatly (over 50%)
   24% Decrease moderately (26-50%)
   10% Decrease slightly (1-25%)
   24% No Change
   21% Increase slightly (1-25%)
   14% Increase moderately (26-50%)
   3% Increase greatly (over 50%)
   4% Don't know

2) How important to you is the change in the size of the elk population that you indicated in Question 1 above? *(Circle One)*

Not Important	Slightly Important	Important	Very Important	Don't Know
1%	**11%**	**31%**	**54%**	**3%**

3) If you indicated that you would like a decrease in the elk population (in Question #1 above), what methods would you support or oppose to decrease elk numbers? (Circle one number for each item)

	Strongly Oppose	Oppose	No Opinion	Support	Strongly Support
Either sex licenses……	**13%**	**0%**	**3%**	**26%**	**58%**
Additional cow tags……	**6%**	**0%**	**3%**	**16%**	**77%**

4) How would you like the number of bull elk in GMU's 3, 4, 5, 14, 214, 301, and 441 to change, if at all?
   0% Decrease greatly (less than 5 bulls per 100 cows)
   0% Decrease moderately (10 bulls per 100 cows)
   1% Decrease slightly (15 bulls per 100 cows)
   8% No Change (20 bulls per 100 cows)
   31% Increase slightly (25 bulls per 100 cows)
   31% Increase moderately (30 bulls per 100 cows)
   28% Increase greatly (40 bulls per 100 cows)
   1% Don't know

5) If you indicated that you would like an increase in the proportion of bull elk in the population (in Question #4 above), what methods would you support or oppose to increase bull elk numbers? (Circle one number for each item)

	Strongly Oppose	Oppose	No Opinion	Support	Strongly Support
Minimum antler-point restrictions (e.g., 4 or more points) ……..	**0%**	**2%**	**8%**	**53%**	**38%**
Maximum antler-point restrictions (e.g., spikes only)……	**25%**	**28%**	**30%**	**15%**	**3%**
Fewer bull licenses……	**14%**	**6%**	**17%**	**45%**	**17%**
Eliminate 4th season bull hunting.…….	**10%**	**8%**	**17%**	**21%**	**44%**
Increased cow harvest……	**6%**	**5%**	**17%**	**25%**	**46%**
More restricted motorized access during hunting season……..	**18%**	**6%**	**13%**	**16%**	**47%**

Elk Hunting

- Seventy one of 72 respondents (99%) had hunted elk in Colorado with an average of 15.7 years. Of those, 99% have hunted elk in DAU E-2.

  Ninety one percent of the RFW respondents have hunted elk in Colorado in E-2 for an average of 5.4 years.

- The level of satisfaction with past elk hunting experiences was rated as 31% dissatisfied, as compared to 67% that were satisfied with their elk hunting experience.

  RFW respondents had similar results with 69% having satisfied elk experiences and only 19% being unsatisfied.

- Crowding is not an overriding issue with many hunters. Eleven percent felt "extremely crowded", 20% "moderately crowded", and 46% "slightly crowded", while 23% felt "not at all" crowded.

  It was interesting to note that RFW respondents felt more crowded than those that hunted on public and other private land. Thirty eight percent of the RFW hunters felt extremely crowded, 22% moderately crowded, 23% slightly crowded, and 16% not at all crowded.

- When asked to rank criteria in order of 1 to 5 that would most likely improve elk hunting experiences, 57% of the respondents ranked seeing mature bulls as the most likely item that would improve their hunting experience. Responses were mixed for the other items listed which included seeing more elk, less motorized vehicle access, less hunter crowding, and higher hunter success rate.

  A strong majority of RFW respondents (93%) ranked seeing more mature bulls as the factor that would most improve there elk hunting experience in DAU E-2. Similar to the responses from mail-in respondents answers were mixed for other criteria.

- The quality of the elk hunting opportunities in DAU E-2 was rated as "fair" by 23% of the respondents, "good" by 37%, "very good" by 24% and "excellent" by 14%. The average rating was 3.2, which is a "good" (3.0) score. Three percent felt the quality of the hunting was "poor".

  Over half of the RFW respondents ranked their elk hunting experiences as fair. Twenty four percent ranked their experience as very good, 13% good, and 4% excellent. Three percent felt the quality of the hunting was poor.

- The most important factor when hunting elk was for "obtaining meat", as selected by 48% of respondents. Thirty two percent of respondents selected "to get a trophy elk", and 20% chose "few contacts with other hunters".

  An overwhelming 97% of the RFW respondents selected harvesting a trophy elk as the one factor that was most important to their elk hunt.

ELK HUNTING

1) Have you ever hunted elk in Colorado?
   99% Yes If yes, how many years? **Average 15.7 years**
   1% No

2) Have you ever hunted elk in GMU's 3, 4, 5, 14, 214, 301, or 441?
   99% Yes
   1% No

3) Overall, how satisfied have you been with your elk hunting experience(s) in GMU's 3, 4, 5, 14, 214, 301, or 441 in the last 5 years? *(Circle ONE)*

Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied
4%	**27%**	**1%**	**35%**	**32%**

4) Overall, to what extent have you felt crowded by other hunters while elk hunting in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Circle ONE)*

Extremely Crowded	Moderately Crowded	Slightly Crowded	Not at all Crowded
11%	**20%**	**46%**	**23%**

5) Rank the following items from 1 to 5 in the order that they would most likely improve your elk hunting experience in GMU's 3, 4, 5, 14, 214, 301, or 441. (1=most likely to improve, 5=least likely to improve) Do not use any number more than once.

4= 32% Less hunter crowding
5= 38% Higher hunter success rate
3=28% Less motorized vehicle access
1= 57% Seeing more mature bulls
2= 31% Seeing more elk

6) Overall, how would you rate the quality of elk hunting opportunities available in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Circle ONE)*

Poor	Fair	Good	Very Good	Excellent	No Opinion
3%	**23%**	**37%**	**24%**	**14%**	**0%**

7) Which ONE factor is the MOST important to you when elk hunting in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Check ONE)*

20% Not seeing other hunters
48% Obtaining game meat
32% Harvesting a trophy elk

2002 Summary of Open-ended Comments

At the end of the questionnaire, people were asked to provide additional comments about elk management in E-2. Numerous comments were received. These comments provide insight into the main issues that important to people for elk management. The comments were analyzed by categorizing them into like groups and reporting the number of comments in each group. Comments were grouped into categories, reported below.

Bear's Ears Elk Herd E-2 --- Summary of Questionnaire Responses

Comments concerning access…….

- I know outfitters have to make a living but they should not be allowed to guide on public or BLM or National Forest land. Local people and guides have the advantage over non-resident hunters, who have paid 15 times more for a license to hunt the same land.

- Elk should be managed in developments (ex. Big Valley) with restrictive harvest methods (archery, shot gun) to control populations. Ranchers should not be paid for crop damage unless they allow the public on their property.

- However the old Jeep roads closed, the north boundary of the Mt. Zirkel Wild Area expanded moving north closing off roads into the Encampment River meadows. To fish and hunt the Encampment River, one must walk a considerable distance. I am now near 63 years of age, I can not walk into the Encampment Meadows. I am on a very low fixed income, as I stated I cannot afford horses or outfitters, so what is one to do "only remember". Only the wealthy and outfitters can enjoy the back-back country.

- I don't think ranchers should be compensated for elk damage unless they allow public access for the taking of cows/spikes. A minimal fee of $100 is acceptable.

- I understand that residents as well as non-residents want to have quality hunts and I believe it would improve the quality if you limited vehicle (ATVs included) and person access on trails and roads on public land. Horse and foot traffic only would improve all hunters' opportunities.

- If the problem is with elk eating ranchers hay, then the rancher should not be allowed to graze elk habitat with cattle or prevent hunters from crossing their land to get to hunting areas. If people who build homes, etc. where elk have lived before they built have problems, remember the elk and other animals were there first.

- Some large landowners keep the elk locked up until season is over for their own financial gain. Then we pay for their damages! Hunting is being made into a rich man's sport! This is not right. I want to be able to put meat in my freezer as well as be able to harvest a trophy on occasion.

- On page 3, question C-I am concerned about damage, but I feel if home owners keep us off BLM by posting theirs, then they are on their own. If the homeowners let us hunt, then I don't mind helping them out some.

- I think the only way to effectively decrease the herd size by harvesting antlerless elk is to open more private land where large herds congregate to hunting at affordable trespass fees.

Comments concerning antler point restrictions……

- After the 4 point law, we began seeing many legal bulls which we like. We mainly saw these bulls in the archery and muzzle loading season while seeing few in the other season.

- I think the 4 point antler restriction has helped the health of the bull herd. Elk take 3 ½ years to mature. The taking of spike bulls should be considered the equivalent of taking a cow. Good for meat production and herd reduction, but separate from a mature bull category.

Comments concerning ATV use……

- I believe that it would be better to use an ATV for game retrieval only that is to say we would be able to go into National Forest to get our elk out. Not just stay on roads. Like they do in Arizona and other states.

- I generally hunt in Units 4 & 441 in the early rifle seasons (1st or 2nd) on National Forest or State lands. Most of my hunts are in the Black Mountain, Sawmill Creek and Bears Ears areas. I feel the roads in the area should be left open to vehicle travel, but 4 wheelers should be severely restricted or eliminated. They do not belong deep in the timber where there are no roads or trails. Forest trails and fence lines should be closed to four wheelers and some enforcement of four wheeler violations should take place.

- I've had ATV's scare away elk before where I was hunting because I forgot a nearby trail was motorized, and they don't always stick to the trails as we all know. I still have a great time. I just wish I'd seen more elk when I'm out there.

- My grandfather was an outfitter for many years north of Steamboat, and I helped him all my youth. We did all of our packing in and hunting on horse back or on foot. The quality and enjoyment of those hunts was super. As opposed to now when you ride in for 3 hours before daylight and just at sunrise have a group of 4 wheelers, mostly out of state, come roaring up the trail shooting off of them. This has happened to us 3 out of the last 4 years. Something has to be done about those things.

Comments concerning bull:cow ratios……..

- As for the bull/cow ratio, I think a slight increase of bulls would be beneficial. Perhaps limiting bull licenses in the fourth season by draw only rather than totally elimination 4th season bull hunting could increase the number of bulls enough. The DOW has been trying to reduce herd size by harvesting more cows for several years, but the herd seems to be growing?? I could write more, but those are my main concerns.

- Special draw in some units would help the bull population. Take out more cows.

- The bull cow ratio in our portion of GMU 5 is atrocious. Post season counts show less than 15 bulls/100 cows, with no branch antlered bulls in this group. This tells us that every branch antlered bull is being harvested every year. We have spikes doing most of the breeding. They are inefficient at best, resulting in 2nd and 3rd estrus calves, and many barren cows. I believe this sex ratio should be 40 bulls/100 cows, with half being branch antlered in the post season count. Colorado's K-Mart approach to elk hunting, w/ offering bull tags over the counter has caused this situation.

Comments concerning elk and deer competition……

- I feel like we need to reduce the cow and calf population as they crowd out the deer. I've watched deer eating in an area and a herd of elk will push the deer out of the field even in late winter when the deer are eating sage brush the elk will push the deer out.

Comments concerning hunter crowding…….

- Another problem I see increasing is the abuse of the outfitters in their numbers of hunters. My grandfather & the outfitter I worked for limited each season week to 5 hunters per area. Two outfitters I know personally, one in Diamond Park and one in Corral Creek take as many as 30 in at one time. 6 & 8 spike camps in one basin

with others fanning out from the main camp. Looks more like a war. There should be some serious controls put on those that abuse these public areas. Thanks for your concern.

- I am an archery hunter. There could be more permits issued for the Bears Ears area. There were only 2 camps on 110 and the roads around Bears Ears the entire last 2 weeks.

- It seems this area is hit hard by hunters and it's hard to find a place to hunt where there are not a lot of other hunters.

- Still new to hunting. I like being out in the woods away from other hunters.

- There's way too many hunters in the high country. So you can't hunt there you have to wait for weather to bring them down.

Comments concerning hunting experiences……

- Most of my elk hunting has occurred in Units 33 and 681. 2001 was the first time in 301 and I was very impressed with the numbers of game I saw. Two-day hunt for cows, observed 800+ elk, 100 deer, 100 antelope, many Bald and Golden eagles. We filled 5 cow tags in 1 day. I want to explore more bull hunting opportunities in the DAU.

- I really enjoy hunting, to me this involves seeing animals (that includes elk, deer, badgers, etc.) and at the same time not seeing too many people. Also it is important to me that people clean up their camp sites clean (leave no trace). I appreciate your hard work maintaining a balance.

- I spend a lot of time in the field and enjoy seeing elk and I do think there is a good population.

- This was my first time hunting and I found the people working at the Blue Gravel Ranch to be extremely helpful in providing information and helping in the hunt as well

- This year (2001) was a disaster. Between three of us, we saw a total of 2 elk, a cow and calf. This was 9 hunter days(muzzle loader and rifle). What happened? Also, very few deer, about 10 in the same amount of time. Whatever changed up there in these units was very bad. Could it be the Ranching for Wildlife? Something needs to be done to restore game to these areas. Thanks for the opportunity to respond.

- My comments are not primarily Elk, but elk and deer hunting, fishing and four wheel drive roads, if you will Jeep roads. I am not into snowmobiles, ATVs or horses, trail bikes, etc. these are items that I for one cannot afford. I have enjoyed the back country in GMU 5 for near on 40 years. My first trip into GMU5 was June 1961, to Hahn's Peak Res. I have been traveling this area all these years, yes logging supplied new roads, super roads, that once were four wheel drive trails. Years past this was what was needed to hunt, fish, camp and enjoy area 5. Now one can drive a forty foot motor home across creeks and tributaries thanks to culverts and fill dirt installed by logging industries or the US Forest Service. In some ways this is good so more people can enjoy the beauty of the country side, see wild flowers, the colors of all seasons, and wildlife of all species in short the splendor.

Comments concerning herd structure…….

- On Oct 2, 2001, I watch an immature bull mount and breed a cow. Other bulls were in the area and even though these bulls were much larger, they paid no attention. This tells me there are much too many cows and not enough bulls in the herd.

- The bulls in these units need to live longer than the 2 ½ years. Most are getting killed by their third year, we need to eliminate the bull hunting in the 4th season and increase the cow harvest. Some how we must get the bulls through to their 5th and 6th year. The herd dynamics will improve and so will the hunter satisfaction. I don't care if you have a 4th season, but make it a cow only season and give out extra cow licenses for these areas. The elk will be better off if we can harvest more cows per year so issue more licenses for more cows and save more of the bulls to live just one or two years longer.

- I am a 42 year old man, and I have hunted since I was old enough to carry a gun, so I feel like I can speak from experience on the issues at hand. First of all, I have hunted in Colorado for ten years and I have had some good hunts and some not so good hunts. As with any where, weather plays a big roll, as in Alabama where I live and have always hunted. With that said, there are three areas in which I would like to see changes made that I believe would benefit both the resident and non-resident hunters. They are as follows: 1. I have hunted and hiked in Units 4 and 441 since 1975 and have always seen plenty of deer and elk. Up until 1983 we saw many big bucks but few elk and bulls. After the big winter kill of 1982-83 deer almost disappeared from these units seeing almost none for many years. But the elk herds became large.

Comments concerning licensing structure…….

- Bull elk draw only should mean what it says. Only the people who draw bull tags (resident or non-resident) should be allowed to buy and over the counter or additional cow tag at a reduced rate. No over the counter tags should be sold to hunt cow only, or when they are migrating to lower ground. Draw only should mean draw only.

- I am an archery hunter. The sheep are the real problem. I saw more of them than elk. I've had them come past my ground blind and tree stands several times including a large dog sit and stare at me while I ate a sandwich. There I am all camoed up, black face and all and here sits this large white dog! Also I've seen the sheep go through camps, crap all over and then go through some places three times. After the sheep were gone, the elk didn't come back 'til the 4th week of archery season. The sheepherder also rides around the ridges "looking for strays" long after the sheep are gone. What is he really doing? Chasing elk like his dogs do? They also leave their camps a mess while we try to leave ours like no one was there. My husband and I are in our 60's and really enjoy the hunt. Please don't close off access to Sugar Loaf, Bears Ears and Grizzly Park. We have physical problems and the closing would cut us off to our favorite hunts.

- I believe that the DOW needs to make the allocation of license to fit the migration of the elk instead of letting licenses for seasons 1 and 2 for cow elk. They should reduce cow tags and/or offer spike elk at the same time. The spike tags would be for just a year or two. They need to increase the number of licenses for the 3rd and 4th and December seasons.

- The #1 problem in unit 4 is the sheep get them out and keep them out. If they are going to graze they should be down by August 1. They totally destroy all the land they don't eat. Every year hunters have to hunt around where the sheep are and where they have been.

- The sheep drove the elk off the mountain in mid August. This area needs attn. The archery and black powder seasons are ruined for many hunters because of those sheep. We saw 100s of elk in early August and July. The first 2 weeks of archery I saw 9 elk. The 4th week I saw 50 or more elk as they came back up the mountain. Access to Sugar Loaf and Grizzly Park are a must for archery and black powder. Please do not close off the roads in this area! PS. I'm at my cabin June-October each year. How can I help the DOW?

- Too many cattle on Forest grazing leases. Ranches should be paying the same for Forest grazing leases as they do for private grass.

Comments concerning general elk management……

- I would like to see the elk population decrease in unit 3(211). I think this would help increase the mule deer population. I also realize this is impossible.

- To set numbers we need to first consider the forage availability which in my opinion is being severely depleted. The depletion is mainly due to excessive wildlife numbers as domestic livestock numbers in northwest Colorado are very depressed over numbers 20-30 years ago. We as land managers are in the plant management business and only use livestock and/or wildlife as a toll to harvest the plant material. We need to consider elk, deer, antelope and livestock numbers when trying to set population objective numbers.

Comments concerning non-residents…….

- Have more liberal bag limits if any are starving. Anything is better than starvation. Out of state hunters fee-we are being gouged for everything.

Comments concerning quality management…….

- I have not had a problem seeing or even taking a bull, the problem is taking a bull of any size. There seems to be a lot of small 6x6 bulls but nothing that would book. Though I would like to take a trophy bull, I don't make this a #1 priority. I love to hunt.

Comments concerning Ranching for Wildlife……..

- I think your Ranching for Wildlife programs are the most crooked-unfair programs you could ever come up with. You cheat everyone-stopping access for public land hunters, they get a real cheating! All you allow is high priced hunting for a few and allow them to kill the larger bulls during the rut. The public hunters get cheated on access to these areas. Some hunts access on public lands and the DOW looks away. These areas could be great but you must be fair to all and that would mean stopping all Ranching for Wildlife scams.

- More restrictions for Ranching for Wildlife. That program is a joke. I think it could be a good thing if it wasn't so abused by the one's in it. Force them to hunt during the regular season. What are people like Smith Rancho doing about improving habitat? Nothing.

- We hunted the Blue Gravel Ranch in the Ranching for Wildlife program. While I have hunted and enjoyed other ranches, Blue Gravel and its staff are absolutely top notch in their treatment of and assistance to public hunters. I would like to see this program opened to out of state relatives so I could invite them to hunt with me, as I did in the past.

Comments concerning season structure……..

- 2nd-the archery season for deer and elk starts too early. I suggest starting it around the 7th of September.

- I believe a 2-3 week hunting season (rifle) will help increase the mule population and increase the number of trophy bulls in GMU 3.

- Make the first & second season one week sooner. My reason for this would be to give hunters a chance to hunt the tail end of the rut. This is why we have an elk only season, for a chance at a more quality hunt. We already have a limited quota on that season. The second season in my opinion is the worst hunt of all of them so it would not really matter when it was but on week sooner might help.

- No 4th season hunt and more cow tags.

- The 4th season bull season is also a fiasco. Most of these hunters are meat hunters and would shoot a cow if a cow tag was available. With no cow tags available to purchase, they purchase a bull tag over the counter and shoot a brush head for meat. The 4th season bull tag has to go. The herd needs reduced in size on the female end. We have barren cows 8-9 years old. The only way they die is when they run out of teeth. The winter range is also showing the stress of too many elk. Someday Mother Nature will fix this problem for us, with a severe winter. Many animals will die of starvation and the publicity will be enormous. We have the means to solve this problem now.

2005 Survey Results

The following is a summary of the 2005 questionnaire survey results used to assess public interest in elk management. The 2005 questionnaires were made available at public meetings and targeted resident and local community input.

Survey Purpose and Intent

The purpose of this questionnaire was to assess public attitudes toward elk management in the Bear's Ears/Craig area, specifically in Game Management Units (GMU) 3, 4, 5, 14, 214, 301, and 441. The Colorado Division of Wildlife (CDOW) is responsible for developing elk population management plans for this area.

In Colorado, big game populations are managed for specific geographic areas, called Data Analysis Units (DAU). The DAU plan analyzes information for two primary decisions: 1) how many animals should the DAU support, and 2) what is the herd's most appropriate male:female ratio, better known as the sex ratio. The DAU planning process examines the biological capabilities of the deer and elk herds, and public preferences. An appropriate balance of each is sought and reflected in the herd objectives, which are set for a five year period of time. Annual hunting seasons are then designed with the intent of keeping the population at or near the selected herd objectives.

Public input is an important part of the DAU planning process. It is important the public desires are integrated into these plans so that established goals are widely accepted and biologically sound. In an attempt to maximize public input, a questionnaire was developed and presented to interested publics at meetings held in Craig and Steamboat Springs in August 2005.

In the development of DAU plans, results of surveys such as this one are considered along with other forms of input the CDOW receives from land management agencies and the public, via public meetings, letters, phone calls, and testimony before the Colorado Wildlife Commission. All public input is integrated with other significant elements in making the final selection of a preferred alternative for population and herd composition objectives for the elk herd in this area. The Colorado Wildlife Commission makes the final determination on the herd objectives which will then be in effect for 10 years.

Methods

The target population for this study consisted of residents of the area, private landowners, and individuals who hunt elk in the E-2 Bear's Ears DAU. Questionnaires were made available to people who attended the public meetings.

The questionnaire was prepared for people with an interest in elk management. The questionnaire were designed to survey public attitudes towards elk in the Bear's Ears DAU which includes GMUs 3, 4, 5, 14, 214, 301, and 441. Hunters were asked to complete the questionnaires and return them via the mail or returning the questionnaire to the CDOW at the public meeting.

Results

A total of 30 individual completed questionnaires were returned. Results are presented in two sections. "Survey Highlights" summarizes the important results of this survey, particularly as they apply to the DAU plan objectives. The "Summary of Open-ended Comments" categorizes the additional comments received and provides insight into the main issues that people thought were important for the CDOW to consider.

The Appendix provides the percentage of valid responses for each question, and the questions are presented as they were asked in the original questionnaire.

Background Information

- One hundred percent of the questionnaires returned were completed by residents. Sixty six percent have lived in either GMU 3, 4, 5, 14, 214, 301, or 441, for an average of 33 years. Fifty nine percent have either owned or leased property in these GMUs for an average of 18 years.
- Eighty percent of the respondents answered they had participated in other outdoor recreational activities other than hunting in the past year.
- When asked which group of people their interests most represent (e.g., rancher, landowner, sportsman, etc.), for the elk hunting survey 69% chose the "hunter/sportsperson" group, 45% chose the "rancher/farmer", 34% chose the "environmental/conservation" group, 31% chose the "landowner", 17% chose the "guide/outfitter" group, and 6% chose "business owner" and/or "other". Of those who checked more than 1 response, 53% answered they most represented the "hunter/sportsperson" group.

BACKGROUND INFORMATION

1) Are you a resident of Colorado?
   100% Yes
   0% No

2) Do you live in GMU's 3, 4, 5, 14, 214, 301, or 441?
   66% Yes If yes, how many years and in what GMU? **Total years 429, average 33 years.**
   34% No

3) Do you own or lease property in GMU's 3, 4, 5, 14, 214, 301, or 441?
   59% Yes If yes, how many years and in what GMU? **Total years 232, average 18 years.**
   41% No

4) During the last 12 months, have you participated in outdoor recreational activities other than hunting (e.g., camping, backpacking, snowmobiling, etc.) in GMU's 3, 4, 5, 14, 214, 301, or 441?
   83% Yes
   17% No

5) Which group(s) best represent your interests in elk management in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Check all that apply)*

Most represents interest in elk management:

45%	A) Rancher/Farmer	**12%** Rancher/Farmer
3%	B) Business owner	
31%	C) Landowner	**29%** Landowner
17%	D) Guide/Outfitter	**6%** Guide/Outfitter
69%	E) Hunter/Sportsperson	**53%** Hunter/Sportsperson
34%	H) Environmental/Conservation	
3%	I) Other, please explain	

6) If you checked more than 1 response in the above question, write the letter corresponding to the interest group which most represents your opinions. ____

People and Elk

The following is a summary of the results concerning people and how interested they are in elk and also concerns about possible elk problems and management.

- People are most interested in hunting elk (82%), seeing elk (75%), and participating in decisions about elk management (76%) in DAU E-2. Sixty eight of the respondents indicated they were "very interested" in learning more about elk management.
- People are most concerned about the reduction in elk habitat due to increased human population and development with 54% of the people being very concerned. Forty one percent were very concerned about the potential for winter starvation, and 62% of the respondents were concerned to very concerned about revenue that elk hunting provides local business. Most hunters that had been affected by the concerns asked about in the questionnaire answered that they had personally been affected by the loss of elk habitat due to human development (31%).
- Respondents were split on how they personally felt about elk in DAU E-2, 40% enjoy the presence of elk, but worry about the problems they may cause and 60% enjoy the presence of elk and do not worry about the problems they may cause.

PEOPLE AND ELK

1) Please indicate how interested you are in doing each of the following. *(Circle one number for each item).*

	No Interest				Very Interested
Watching or photographing elk……	**0%**	**0%**	**18%**	**32%**	**50%**
Hunting elk……	**7%**	**4%**	**4%**	**4%**	**82%**
Seeing elk……	**0%**	**0%**	**7%**	**18%**	**75%**
Learning more about elk management……	**0%**	**0%**	**11%**	**21%**	**68%**
Providing input for decisions regarding elk management……	**0%**	**0%**	**7%**	**17%**	**76%**

2) Please indicate how concerned you are about each of the following in GMU's 3, 4, 5, 14, 214, 301, and 441. *(Circle one number for each item).*

	No Concern				Very Concerned
A) Elk/Vehicle collisions……	**10%**	**24%**	**38%**	**21%**	**7%**
B) Economic losses to ranchers/farmers from elk damage to rangeland, crops, or fences……	**7%**	**14%**	**34%**	**21%**	**24%**
C) Damage to homeowners' trees, shrubs, and gardens caused by elk……	**21%**	**41%**	**17%**	**10%**	**10%**
D) Predation on the elk population by coyotes, bears and mountain lions……..	**10%**	**17%**	**24%**	**21%**	**28%**
E) Loss of elk habitat due to increased human population & development……...	**4%**	**11%**	**7%**	**25%**	**54%**
F) Potential starvation of elk during the winter……	**3%**	**7%**	**28%**	**21%**	**41%**
G) Elk spreading disease to pets, livestock, or humans……	**24%**	**14%**	**38%**	**7%**	**17%**
H) Elk competing with livestock for forage……	**10%**	**17%**	**31%**	**24%**	**17%**
I) Potential competition between elk and deer for habitat……...	**10%**	**21%**	**24%**	**14%**	**31%**
J) Revenue that elk hunting provides local business…	**7%**	**3%**	**28%**	**21%**	**41%**

3) Have you been personally affected by any of the concerns listed in Question 2 in GMU's 3, 4, 5, 14, 214, 301, and 441?

55%	Yes	If yes, circle one	A	B	C	D	E	F	G	H	I	J
45%	No		**0%**	**19%**	**4%**	**0%**	**31%**	**12%**	**0%**	**19%**	**8%**	**8%**

4) How do you personally feel about elk in GMU's 3, 4, 5, 14, 214, 301, and 441? *(Check ONE)*

0% I do not enjoy the presence of elk in GMU's 3, 4, 5, 14, 214, 301, and 441, AND regard them as a nuisance.

40% I enjoy the presence of elk in GMU's 3, 4, 5, 14, 214, 301, and 441, BUT worry about the problems they may cause.

60% I enjoy the presence of elk in GMU's 3, 4, 5, 14, 214, 301, and 441 AND do not worry about the problems they may cause.

0% I have no particular feelings about elk in GMU's 3, 4, 5, 14, 214, 301, and 441.

Elk Management

- Respondents varied on their opinions in regards to how they would like the elk herd to change in DAU E-2. A total of 30% of the respondents would like no change in the current elk population in DAU E-2, 36% would like to see a decrease in the elk population, and 31% of the respondents would like an increase in the elk population. Respondents felt strongly about the change in the size of the elk population, the change in the population is "important" to "very important" to 97% of the respondents. The average rating was 3.6, which is a "slight decrease". In this survey, an increase or decrease in the population was defined as slight, moderate, or great. A slight increase or decrease was defined as 1-25%, moderate 26-50%, and great, over 50%. People who indicated they would like to see a decrease in the elk population were asked what methods they would support or oppose to decrease elk numbers. Seventy nine percent of the respondents "strongly supported" either sex licenses to decrease elk numbers and 85% "strongly supported" additional cow tags to reduce elk numbers.

3.6

Large decrease	Moderate decrease	Slight decrease	No change	Slight increase	Moderate increase	Large increase
1	2	3	4	5	6	7

- DAU E-2 is currently managed for a sex ratio of about 22 bulls per 100 cows, which allows for the harvest of any bull having 4 or more points on a side with over-the-counter licenses. People were asked if they would like to see a change in the number of bull elk in DAU E-2. Sixty nine percent of the respondents indicate they would like to see some type of increase in the number of bulls in E-2. Twenty four percent would like to see a slight increase (25 bulls per 100 cows), 38% would like to see a moderate increase (30 bulls per 100 cows), and 7% would like a great increase (40 bulls per 100 cows). The average response to this question was 5.6, which is a slight increase in the number of bulls in the population. The current ratio is 24 bulls per 100 cows.

5.6

Great Decrease	Moderate Decrease	Slight Decrease	No Change	Slight Increase	Moderate Increase	Great Increase
1	2	3	4	5	6	7

People were asked what methods they would support or oppose to increase bull elk numbers. The majority of the people surveyed are in support of the 4-point minimum antler-point restriction (95%). The other

methods supported by the respondents to increase bull numbers were issuing fewer bull licenses (53%), eliminate 4th season bull hunting (48%), increase cow harvest (76%) and more restricted motorized vehicle access (65%). Respondents opposed maximum antler point restrictions (e.g. spikes only) (53%).

ELK MANAGEMENT

1) How would you like the elk population in GMU's 3, 4, 5, 14, 214, 301, and 441 to change, if at all?
   3% Decrease greatly (over 50%)
   14% Decrease moderately (26-50%)
   17% Decrease slightly (1-25%)
   31% No Change
   17% Increase slightly (1-25%)
   14% Increase moderately (26-50%)
   3% Increase greatly (over 50%)
   0% Don't know

2) How important to you is the change in the size of the elk population that you indicated in Question 1 above? *(Circle One)*

Not Important	Slightly Important	Important	Very Important	Don't Know
0%	**4%**	**36%**	**61%**	**0%**

3) If you indicated that you would like a decrease in the elk population (in Question #1 above), what methods would you support or oppose to decrease elk numbers? (Circle one number for each item)?

	Strongly Oppose	Oppose	No Opinion	Support	Strongly Support
Either sex licenses……	**0%**	**8%**	**0%**	**15%**	**77%**
Additional cow tags……	**0%**	**0%**	**0%**	**17%**	**83%**

4) How would you like the number of bull elk in GMU's 3, 4, 5, 14, 214, 301, and 441 to change, if at all?
   0% Decrease greatly (less than 5 bulls per 100 cows)
   7% Decrease moderately (10 bulls per 100 cows)
   3% Decrease slightly (15 bulls per 100 cows)
   21% No Change (20 bulls per 100 cows)
   24% Increase slightly (25 bulls per 100 cows)
   38% Increase moderately (30 bulls per 100 cows)
   7% Increase greatly (40 bulls per 100 cows)
   0% Don't know

5) If you indicated that you would like an increase in the proportion of bull elk in the population (in Question #4 above), what methods would you support or oppose to increase bull elk numbers? (Circle one number for each item)

	Strongly Oppose	Oppose	No Opinion	Support	Strongly Support
Minimum antler-point restrictions (e.g., 4 or more points) ……..	**0%**	**0%**	**0%**	**5%**	**95%**
Maximum antler-point restrictions (e.g., spikes only)……	**53%**	**35%**	**0%**	**0%**	**6%**
Fewer bull licenses……	**5%**	**14%**	**24%**	**43%**	**10%**
Eliminate 4th season bull hunting..……	**24%**	**10%**	**14%**	**24%**	**24%**
Increased cow harvest……	**5%**	**5%**	**10%**	**38%**	**38%**
More restricted motorized access during hunting season……..	**15%**	**5%**	**10%**	**30%**	**35%**

Elk Hunting

- Ninety seven percent of the respondents had hunted elk in Colorado with an average of 25.6 years. Of those, 86% have hunted elk in DAU E-2.
- The level of satisfaction with past elk hunting experiences was rated as 12% dissatisfied, as compared to 77% that were satisfied with their elk hunting experience.
- Crowding is not an overriding issue with many hunters. Four percent felt "extremely crowded", 28% "moderately crowded", 44% "slightly crowded", and 24% felt "not at all" crowded.
- When asked to rank criteria in order of 1 to 5 that would most likely improve elk hunting experiences, 64% of the respondents ranked seeing mature bulls as the most likely item that would improve their hunting experience. Responses were mixed for the other items listed which included seeing more elk, less motorized vehicle access, less hunter crowding, and higher hunter success rate.
- The quality of the elk hunting opportunities in DAU E-2 was rated as "fair" by 14% of the respondents, "good" by 21%, "very good" by 34% and "excellent" by 31%. The average rating was 5, which is a "very good" to "excellent" score.
- The most important factor when hunting elk was for "obtaining meat", as selected by 68% of respondents. Twenty five percent of respondents selected "to harvest a trophy elk", and 7% chose "not seeing other hunters".

ELK HUNTING

1) Have you ever hunted elk in Colorado?
   97% Yes If yes, how many years? **Total years of hunting 692, average 25.6 years.**
   3% No

2) Have you ever hunted elk in GMU's 3, 4, 5, 14, 214, 301, or 441?
   86% Yes
   14% No

3) Overall, how satisfied have you been with your elk hunting experience(s) in GMU's 3, 4, 5, 14, 214, 301, or 441 in the last 5 years? *(Circle ONE)*

Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied
4%	**8%**	**12%**	**27%**	**50%**

4) Overall, to what extent have you felt crowded by other hunters while elk hunting in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Circle ONE)*

Extremely Crowded	Moderately Crowded	Slightly Crowded	Not at all Crowded
4%	**28%**	**44%**	**24%**

5) Rank the following items from 1 to 5 in the order that they would most likely improve your elk hunting experience in GMU's 3, 4, 5, 14, 214, 301, or 441. (1=most likely to improve, 5=least likely to improve) Do not use any number more than once.

2-3 56% Less hunter crowding
3-4 52% Higher hunter success rate
1-2 48% Less motorized vehicle access
1-2 64% Seeing more mature bulls
4-5 52% Seeing more elk

6) Overall, how would you rate the quality of elk hunting opportunities available in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Circle ONE)*

Poor	Fair	Good	Very Good	Excellent	No Opinion
0%	**14%**	**21%**	**34%**	**31%**	**0%**

7) Which ONE factor is the MOST important to you when elk hunting in GMU's 3, 4, 5, 14, 214, 301, or 441? *(Check ONE)*

7% Not seeing other hunters
67% Obtaining game meat
26% Harvesting a trophy elk

E-2 Questionnaire 2005 – Written Comments

- I think the DOW biologist should be the final decision authorities. I will write state representatives on this. Elk herds should be maintained at high levels, more will benefit. Those that do not allow hunting on their private lands should be taxed accordingly since they are a cause to the impact on hunting. Hmmm I'll tell the state reps that too. I'll have to review some law on that. You all do a great job!

- I manage a 5,000 acre ranch within Unit 14. We have a large number of elk on the ranch and on adjacent private & Forest Service lands. There are a few concerns I want to convey: 1) Low bull to cow ratio, 2) We do not have too many elk. But, we as private landowners/CDOW/USFS need to aggressively manage & enhance elk winter range. We have a very aggressive program on this ranch. 3) Before decisions are made on "management objective numbers" better elk numbers are needed to determine how many are actually within E-2. 4) Limit greatly or eliminate 4 wheeler (ATV) use on public lands during hunting seasons. 5) Allow OTC either sex licenses for all hunting seasons on private lands (limit the numbers based on private land acreage). 6) Reduce the length of archery season. Restrict "Ranching for Wildlife" to existing hunting season dates (or eliminate "Ranching for Wildlife"). Before making any decisions please have all the baseline data available to you: numbers of elk, condition of range, bull/cow ratios, etc.

- 1) Have range management and carrying capacity studies been done for present ('90 to '04) existing land conditions and land available?? If so, what are the results of these studies? Is it possible to fine out the results of these studies? Where, how, etc… 2) The distribution of the elk population in each GMU differs. What works (range management & carrying capacity) in one GMU may be totally inappropriate for a contiguous GMU. To establish one regulation for E-2 could severely penalize some GMU's and be overly favorable for other GMU's within E-2. The numbers & conditions existing west of Craig are far different from What exist in the Yampa Valley east of Hayden to west of Steamboat. Other factors must be considered first before the desired number of elk in E-2 is determined.

- Less grazing by ranchers in National Forest. Seem to use this as a tool to move elk to their private property – "Ranching for Wildlife". Other forms of moving elk (shooting weapons from 8 AM to 4 PM) during archery. Over graze in forest, grass tall & green on their private property to keep animals. Decision through science – not special interest & money. DOW make decision not commission of guides/outfitters & ranchers.

- The majority of our private ranch land actually lies in GMU 15, but the winter range and hunter quality is impacted by several of these GMU's in this survey.

- 1) I feel that many good comments were presented. The explanation for the sudden jump in elk numbers was that the model was adjusted however the objective of 12,200, established in the early 70's remains constant. If you adjust 1 factor in the model you must adjust all factors. Do not make radical changes in the elk and/or license numbers until a true carrying capacity is established and gradually move toward that objective. 2) Private landowners/stockmen need to be part of the solution. On one hand, many make huge $$ off of hunting (often more than off of livestock). They also very often do their best to keep elk on the property for paid hunters. However, as soon as the seasons are done it's the Division's responsibility for damage. If they are truly concerned with range land they need to make efforts to break up the herds. If not DON'T COMPLAIN. 3) Revamp RFW program. I don't see the owners living up to their obligations to the program.

- I feel the Ranching for Wildlife program is broken and needs fixed. I've heard from several sources and there is work about that some people who have been lucky enough to draw a RFW tag that the ranches will restrict the hunt area to a non-productive area while giving the "paying customer" the better productive

area. What can be done to ensure equal opportunity for RFW draw tag hunters and the "paying customers"?

- Alternative #2. Stop ATV during hunting time. Up point restriction on bulls with more either sex licenses. More licenses to non-residents. You are losing more elk to wasting disease than you are willing to admit.

- Let's get creative – Create a trophy area for units 3, 4 & 5. Bulls must be 5 pts or better; manage bull/cow ratio by cow licenses. You can't apply for a bull license until you have harvested a cow (only one elk per year per hunter!). I vote for alternative 3, or as a second choice alternative 4.

- Very concerned about increasing the % of bull licenses available to landowners! Unfair to rest of hunters! Low lease price for Forest, BLM & State land.

- Ranching for Wildlife has to hunt when the public hunts. Let's hunt elk with rifles at the same time. That's the only way it will work. We have to work with the Forest Service and State Land Board as far as ranchers grazing these parcels. The ranchers eat the public land to the dirt with their livestock. That has to change. The government already subsidizes them enough, no more inexpensive pasture. All public lands should be accessible for all recreation. You talk about our elk numbers being too high. Let's analyze the number of stock on our public lands. Thank you.

- Manage the elk numbers to bring the winter range back to a higher standard. Make efforts to disperse elk off of private land and break up the large concentrations of elk especially on RFW ranches.

- I would like the ranchers input on these issues, pack more weight. They are on the land year around. They see more than the once a year hunter. They are generally good land stewards. They bear the financial burden of maintaining the roads and fencing, taxes. They deserve to gain financially from the game they feed along with their stock.

- The additional cow tags have been a great factor in being able to not shoot a small 5 pt bull during 1st season but get meat later with a private land only cow tag. I'm very much against selling the BLM land in the EML swindle. Public hunters have really lost out on this issue. Is it possible for the DOW to lease some ranches in this are to open up to public hunting? The Smith Ranch for example – hunters could pay a small fee to hunt DOW leased ground, say $200 - $300, with a limit on the # of hunters. I can never pay the $1000's of dollars outfitters are getting for a guided elk hunt.

- 1) From your presentation, it would seem that Alt 3 would work well for Unit 14. 2) Is there a difference between the east (Routt) and west (Moffat) part of AAU? Should DOW have objectives for just 14, etc.? 3) As I saw at the meeting your objective number is suspect. 4) I would recommend that the number of elk as an objective should be revised upward. 5) This is 2005. There is at least one other reason for managing elk other than for hunters, ranchers, economics, etc. The animals are owned by the State of Colorado. Seeing animals is a quality of life issue. Our citizens who are not hunters should be able to see elk.

- 1) I am concerned that sheep grazing in our national forests is promoting the spread of CWD to our elk and deer herds. Please require mandatory testing of all sheep herds before they are released into our national forests. 2) Muzzleloading ruins the hunting for everyone pushing the elk to private land in every area I have hunted. Please significantly reduce the number of hunters and only allow muzzleloading hunters in a few restricted areas. Better yet remove it altogether. 3) I think sheep have a greater impact on elk herd movement than you are aware of. On more than one occasion I have seen elk in an area and not return after a herd of sheep moved thru. 4) Reduce the amount private landowners can charge the public to remove elk for damage compensation.

- The DOW has to get people to believe the numbers that are presented to the public. What I hear is that is not the case. None of us really understand how classifying animals can arrive at a solid population estimate. That is the DOW biggest challenge is to convince landowners, sportsmen, public officials. There has been a lot of elk killed the last 3 years, but a lot has been born, and very little winter death loss. That is where landowners and commissioners have a hard time thinking the population is coming down as fast as the DOW claims. We want the elk population to be at a level that is sustainable. NW Colo. Needs a healthy vibrant elk herd to help our economy. That brings me to my main point. Elk, livestock or other wildlife are not the most important asset, the land is. Our habitat is the foremost important component of all this. It has to be in good condition and provide enough AUM's to handle all aspects of our economy. If we lost the ability for the habitat to continually reproduce with good forage then all AUM uses will suffer. Many people say the livestock should leave the landscape. Due to the drought there are far fewer numbers in N.W. Colo. And they have not been replaced. We cannot put the burden or blame on a single species or way of life. There must be a balance with all users and right now the elk are out of balance with the landscape. Determining the proper balance is truly a tough job. I hope I can be a positive participant in the solution. I have a lot of respect for those that are working on these issues even if I don't always agree with them.. That goes for DOW sportsman and landowners.

- I think that you guys did a good job of presenting the issues and data. I think though there should be more time for public input and non-resident response as well. I believe careful consideration must be given addressing landowners concerns to see if they are genuine as we see that there is a lot of complaining with their mouths full! Some of them benefit more from wildlife than they ever did on livestock. I do believe that elk numbers could increase and the habitat will support them provided the distribution area is utilized. I would also be willing to bet that the landowners who complain, don't have any distribution problems or have too many elk on their property during hunting seasons or damage problems. Thank you.

- 1) Increasing population is moot if sheep push them off to private land within the 1st weeks of hunting. 2) Does 17K population include private? Yes. 3) Does kill # include outfitters? How many do outfitters harvest? 4) If outfitters are primarily on private land, fill rate is not helpful. 5) It appears you're going out of your way to destroy bowhunting success. 6) The way they move sheep could be changed. CDOW by 8/22/05. 7) Lower herd population increases market for outfitters ATV's also. The biggest complaint by ranchers was too many elk. I believe the ranchers could reduce the elk herd if they truly wanted. Ranchers spent a lot of time on moot points to control meeting ie..getting population down in California Park. Suggest: Survey hunters.

- The cow elk numbers are too high. The DOW elk estimates are flawed due to underestimating the quantity of elk. I have flown over elk herds in the winter time and it looks as if the ground moves because of such large numbers. The ranchers west of Lay are impacted by the large numbers and can do very little about the problem. There were no elk in the Yampa River drainage west of Craig until 1973. Since that time the numbers have exploded. Some say the elk is a distribution problem but in reality it is an overpopulation problem. The DOW should reduce the numbers by selling more cow licenses or start paying AUM's like the ranchers have to do on BLM and US Forests.

- Early use of snowmobiles on Buffalo Pass road has ruined my hunt many years. The road is full of motor-head gonzo snowmobile users as soon as there is 6" of snow. This is ridiculous. Often the road "High Centers" with packed snow making it impassible for even the best 4-wheel drive vehicle/truck to travel. This shuts down access to thousands of acres of primo elk habitat. Snowmobile use needs to be shut down or outlawed until after big game seasons.

Comments received at Steamboat Spring public meeting August 2, 2005

1. Need more info to make a decision
2. Distribution is an issue
3. Move to WY to winter
4. Range is in trouble.
5. Is this plan premature? – A lot for Commission in the next few months.
6. RFW hunt same way everyone does
7. Recreational impacts on NF
8. Limited resources in interface zone – move cattle around more
9. ATV use
10. If baseline wrong, then model will be off. Impacts economically
11. How can sustain elk at higher end? Level that range can handle.
12. Economic benefit of higher pop.
13. Last catastrophic event – '83-'84
14. Economic projections major
15. Reconsider local climate
16. Is 12,000 right number?
17. Not such a precipitous decrease
18. Study of elk behavior/hunter behavior
19. Severe winter range availability should drive elk numbers.
20. Too many elk impact other species
21. Historic elk range has expanded since 1960's
22. Economics of grass
23. Economics of people conflicts with elk
24. E-6 – too many elk
25. E-6 – point restriction?
26. How elk affect private lands/ - transition away from lands that allow hunting
27. Elk distribution
28. Info before decision – quadrat
29. Disappointed in process – CDOW should set #'s & sex ratios – Use existing data.

DAU E-2 Public Meeting Minutes Shadow Mountain Clubhouse August 10, 2005

Comments taken at Public Meeting:

E-2 Discussion:

Wants PLO either sex tags in Unit 3—Fourth season; private land harvest important to

Bowhunter: Elk being pushed off forest by sheep, etc onto bordering private lands, bowhunters not responsible. If elk are moved off the forest, how are we going to get the harvest? Lack of elk on forest during archery season is ruining the hunt. Thinks that study of archery impacts in Bears Ears (White River study) is insignificant compared to effects of livestock movement of elk. (CDOW has seen a significant rifle success in first season following archery restriction—archery success went up too.) Also alleges intentional movement/harassment/driving of elk by livestock interests. ATVs have wrecked as many hunts as sheep have. Make elk herds more accessible to hunters during the hunting season. Better access could allow a smaller herd without restricting hunt quality.

Landowner—elk will go where no pressure, and where there's feed. Believes White River study. Says nothing moves elk faster that hunters jumping elk out of beds during the day.

Landowner—summer recreational use/pressure on elk during the summer is contributing to early movement of elk off forest. Heavy early scouting by archers and others is also a significant distributional issue. Elk moving to private earlier on than previously, or not leaving at all. DOW actions in past 15 years have been reactionary (especially to elk issues), not proactive. How do we turn this around to manage better for habitat, reduce problems that have occurred? Landowners have done a lot to reduce AUMs already, CDOW needs to do their part also. Elk herd got out of control because of delay in responding to issues.

Landowner/Permittee (outfitter?)—lack of enforcement of ATV violations on USFS is contributing to elk movement; ATV use is a predominant reason for moving of elk. USFS should enforce what they've got for rules for everybody. Elk should be spread out so that everybody has elk. Educate people, don't use heavy hammer of enforcement. Lighter enforcement would result in more public support. "Everybody is going to break some rule." Thinks Division LE should educate, not punish.

Landowner—what matters to him as a rancher is how CDOW perceives the issue of whether sheep herders move elk—wants CDOW to defend ranchers from these charges. Must be flexibility in any plan, status quo is always changing. Landowners shouldn't bear the whole burden of reasons for elk moving to private. What is USFS, BLM doing to enhance hunting experience—they should also be doing some land improvements to enhance hunting experience.

Landowner—thinks currently upwards of 20,000 elk in unit, doesn't believe numbers (a BIG LIE), thinks we should have independent person flying with CDOW to verify flights (counts—the belief that we're counting is the problem here). Benefit to CDOW to have increased number of elk and no cost because grazing is free. Elk damage to California Park, lambing areas, winter ranges is the issue—kill cows for control and limit/quit (?) killing bulls. Now running half of stock in California Park as used to. No quality in bulls. Should base numbers on habitat—look at habitat conditions and adjust herd numbers accordingly. No way that elk numbers have reduced by half in this population!! Elk are having significant vegetative impacts in CA Park—loss of cow parsnip, etc.

Landowner—seasons set so late that elk are on the desert before ends of seasons. Private owners (assuming east of Hwy 13) don't always have elk through the seasons. Late bull harvest west is the reason we don't have quality bulls. Mentioned RFW as an issue with late bull hunts.

USFS —CDOW working very hard to reduce elk in past few years, USFS supports that, believes that reductions are working but there's still a ways to go. USFS providing what habitat info they have, using this as an opportunity to partner with CDOW on harvest, road management, habitat management. Have to provide for all the uses. USFS carrying permittee concerns forward to CDOW. USFS is active with DOW on the entire scope of issues. Split authority makes coordination difficult. Coordinated LE and travel management approach with CDOW on ATVs. Have made progress, but still some areas where USFS needs to do additional work—Big Red Park, etc.

Landowner—why isn't USFS more in the limelight pushing CDOW to reduce elk so that private landowners aren't taking the whole public hit for pushing for reductions. Should broaden scope to look at things coming down the road—wolves, mountain sheep, etc. USFS should be more vocal in the paper. CDOW should be pushing USFS to do things to improve conditions on the forest for elk.

Landowner—really need to verify population number—thinks we're underestimating.

Landowner--Where do we fly in winter? DOW--- Fly in west, not up where their ground is. Sheep and elk won't band together, but are often close (an area used by sheep one day may be used by elk the next).

Sportsman (Denver)—wants to see more elk, would like to see the quality of hunting increase on the forest. Would like to see sheep removed from the National Forest. How can a handful of sheep ranchers control so much of the National Forest? Thinks that spread of CWD began with close confinement of elk with domestic sheep—are domestic sheep an issue in spreading CWD?

USFS--- said that sheep guys don't think they have a monopoly on the forest, think they're very restricted.

Landowner—could go back to the 60's solution, one long season from mid-October through mid-November (not sure if he supports it or not!?).

Outfitter—outfits on sheep ranches exclusively, has no problem with elk avoiding sheep areas.

E-2 Public Meeting 2007

A public meeting was conducted in Craig on Aug 23, 2007 to discuss results from the February 2007 quadrat survey and obtain public comments on the E-2 population estimates and trend. Comments compiled from the meeting were similar to comments from previous E-2 meetings and indicate local landowners would like a further reduction of 15-25% in the E-2 herd. Some sportsmen voiced their concern that the herd has indeed come down significantly during the last few years and fewer elk are being seen in the field, particularly on public lands during the fall.

E-2 Phone Survey 2008

In addition to comments compiled during the Aug 23, 2007 meeting, CDOW also conducted a phone survey of 500 sportsmen who hunted E-2 during the fall of 2007. The sample consisted of 250 Colorado residents who live outside of Moffat and Routt counties (Residency = 1), and 250 non-Colorado residents (Residency = 2). Results from this survey generally indicate that E-2 hunters who live outside of Moffat and Routt counties would like to see the E2 herd increase in size or at least maintained at current levels. Survey questions and results are compiled below:

As an elk hunter who has hunted in the Bear's Ears/Craig area, how would you like the size of that elk herd to change, if at all?

Count of Q2	residency		
Q2	1	2	Grand Total
1	4	2	6
2	21	6	27
3	113	100	213
4	63	87	150
5	33	41	74
6	16	14	30
Grand Total	250	250	500

1 = Decrease greatly (over 50%)
2 = Decrease slightly (1-49%)
3 = No Change
4 = Increase slightly (1-49%)
5 = Increase greatly (over 50%)
6 = Don't Know (skip to #5)

How important to you is [increasing/decreasing/not changing] the size of the Bear's Ears/Craig Area elk herd?

Count of Q3	residency		
Q3	1	2	Grand Total
1	28	33	61
2	103	88	191
3	102	112	214
4	1	3	4
	16	14	30
Grand Total	250	250	500

1 = Not Important
2 = Slightly Important
3 = Very Important
4 = Don't Know
skip

What is your primary reason for wanting to see the size of the Bear's Ears/Craig Area elk herd [increase/decrease/not change]?

Count of Q4	residency		
Q4	1	2	Grand Total
1	92	125	217
2	28	37	65
3	8	6	14
4	33	13	46
5	4	1	5
7	25	18	43
8	40	34	74
9	4	2	6
	16	14	30
Grand Total	250	250	500

1 = I would like a better chance of seeing/killing an elk
2 = I would like the opportunity to hunt elk every year
3 = I would like to see/hunt bigger bulls
4 = I am most concerned with the health and sustainability of the herd
5 = I am most concerned with reducing damage to private property
7 = Don't know/no reason
8 = Hunting is fine as is/Good hunting don't change
9 = No access to animals on private land
skip

How would you like the bull/cow ratio in the Bear's Ears/Craig Area elk herd to change, if at all?

Count of Q5	residency		
Q5	1	2	Grand Total
1	2	3	5
2	9	5	14
3	123	127	250
4	69	64	133
5	24	29	53
6	23	22	45
Grand Total	250	250	500

1 = Decrease greatly (over 50%)
2 = Decrease slightly (1-49%)
3 = No Change
4 = Increase slightly (1-49%)
5 = Increase greatly (over 50%)
6 = Don't know [skip to thank you]

How important to you is [increasing/decreasing/not changing] the bull/cow ratio in the Bear's Ears/Craig Area elk herd?

Count of Q6	residency		
Q6	1	2	Grand Total
1	45	43	88
2	116	97	213
3	63	86	149
4	3	2	5
	23	22	45
Grand Total	250	250	500

1 = Not Important
2 = Slightly Important
3 = Very Important
4 = Don't Know
skip

What is your primary reason for wanting to see the bull/cow ratio in the Bear's Ears/Craig Area elk herd [increase/decrease/not change]?

Count of Q7	residency		
Q7	1	2	Grand Total
1	62	42	104
2	17	25	42
3	44	63	107
4	21	12	33
5	2		2
7	41	20	61
8	37	63	100
10	3	3	6
	23	22	45
Grand Total	250	250	500

1 = I would like a better chance of seeing/killing an elk
2 = I would like the opportunity to hunt elk every year
3 = I would like to see/hunt bigger bulls
4 = I am most concerned with the health and sustainability of the herd
5 = I am most concerned with reducing damage to private property
7 = Don't know/no reason
8 = Hunting is fine as is/Good hunting don't change
10 = Prefer to hunt cows/not worried about bulls
skip

Additional comments:

Count of Q8	residency		
Q8	1	2	Grand Total
1	1	1	2

1 = Wants more antlerless/cow licenses

2		2	2	2 = Wants fewer antlerless/cow licenses
3	2	4	6	3 = Wants more either-sex licenses
4	1		1	4 = Wants fewer either-sex licenses
10		1	1	10 = Don't eliminate over-the-counter licenses for E-2
11		1	1	11 = Wants more motorized access on public lands
12	1	1	2	12 = Wants less motorized access on public lands
	245	240	485	none
Grand Total	250	250	500	

APPENDIX B

BUREAU OF LAND MANAGEMENT Little
Snake Field Office 455 Emerson Street Craig,
Colorado 81625-1129
http://www.co.blm.gov/lsra/index.htm

In Reply Refer To:
6800 (100)

Mr. Darby Finley
Colorado Division of Wildlife P.O.
Box 1181
Meeker, Colorado 81641

Dear Mr. Finley:

Thank you for the opportunity to comment on the elk management plans for the E-6 Flattops and E-2 Bear's Ears Data Analysis Units (DAU). As you know, the Littte Snake Field Office (LSFO) as well as livestock pelTIlittees administered by this office have had concerns over the current size of the overall elk population and the impact on forage resources. These comments will address concerns that have been raised by our staff through the Land Health Standards Assessment Process, monitoring studies, and consultation with livestock permittees and other members of the public.

E-6 Flattops DAU

Concerns with elk by LSFO are primarily limited to Axial Basin and areas south of Highway 318 in the Sand Hills and Cedar Springs Draw vicinities. As you know, DOW is involved with the Bureau of Land Management (BLM), livestock permittees, and other landowners on the Axial Basin Coordinated Resource Management Plan (CRM). This CRM has been successful in coordinating the diverse interests of the land users within Axial Basin and DOW's ongoing involvement has been invaluable. As a result of changes in livestock management and improved communication between the agencies and stakeholders, concerns with elk impacts, especially conflicts with livestock, have been largely addressed.

The current concern that has been raised within Axial Basin concerns areas of elk concentration during the spring in the area south of Iles Mountain and in the Danforth Hills above the head of Wilson Creek. We have been working with one grazing permittee to adjust livestock turnout in the spring to avoid excessive use in areas where elk are congregating. This is more an issue related to spring movement patterns than excessive numbers.

Increased elk numbers in the Sand Hills and Cedar Springs Draw areas have led to increased fence maintenance and, in the case of the Sand Hills Allotment, the delay in construction of a pasture fence to improve livestock rotation due to the high potential for elk damage. Much of . this area burned in 1988 and heavy elk use may be affecting recovery. Re-establishment of bitterbrush and other shrubs has been slower than expected (especially on the sandy soils in the area) in the years since this fire and elk pressure may be a contributing factor.

E-2 Bear's Ears DAU

Some of LSFO's greatest concerns and conflicts with elk herd size lie within this DAU. The western portion of the DAU provides winter habitat for elk, pronghorn antelope, and deer and is also important for winter grazing by cattle and sheep. Current utilization monitoring has identified allotments in the Great Divide area where the contribution of elk utilization is causing BLM's established utilization limit of 50% on perennial grasses to be consistently exceeded. Some permittees in the DAU have taken voluntary reductions in livestock use in reaction to the level of forage that is being utilized by elk.

Of primary concern to both the LSFO and permittees is the continual increase in elk numbers coupled with ongoing drought conditions. Throughout the DAU, most permittees have reduced livestock numbers in response to decreased forage production. Expected benefits of reduced livestock numbers have been negated by continued use by high numbers of elk over this period. As a result, both monitoring data and land health assessments have noted decreases in perennial grass diversity, density, and abundance. While, in most cases, elk have not been identified as the primary causal factor, high elk herd numbers coupled with drought are almost certainly influencing adverse changes in the plant communities within the DAU. Also of concern is the impact to greater sage grouse habitat. While BLM has, and has exercised, authority over livestock operators to change management for the benefit of sage grouse and other resources on public lands, continuing elk use continues to be a concern.

Of increasing concern is the amount of elk that are not migrating out of the extreme western portion of the DAU, instead to spending all year in the area. Information received from various sources, including DOW, indicate that orphaned yearlings left after the hunting season are staying in areas near the Little Snake River rather than migrating back to higher elevations in the east during the spring. This is of particular concern since the plant communities that serve as winter habitat in this area are not well adapted to season-long grazing pressure from any large ungulate. The permittee in the allotment most affected by this has accepted an 86% reduction in use until at least 2008.

We would also like you to keep in mind that the west boundary of this DAU may no longer be appropriate. Elk that are impacting areas along the Little Snake River appear to us to be from the same population. This population also appears to he moving in increasing numbers further to the west and into Sand Wash Basin, where there could be increasing issues with managing wild horses in the face of increasing elk numbers.

Again, we appreciate the opportunity to submit comments for your planning efforts on these DAU's. We look forward to your continuing cooperation and partnership in managing both wildlife and habitat on public lands in northwest Colorado. If you have any questions concerning these comments, please contact Hunter Seim at (970) 826-5074.

Sincerely,

John E. Husband
Field Manager

APPENDIX C

United States Department of Agriculture | Forest Service | Medicine Bow - Routt National Forests and Thunder Basin National Grassland | 2468 Jackson Street Laramie, WY 82070-6535 htt.e.:/ /www.fs.fed.us/r2/mbr

File Code: 2610
Date: August 29, 2005

Darby Finley
Terrestrial Biologist Colorado
Division of Wildlife
PO Box 1181
Meeker, CO 81641

Dear Darby:

Thank you for the opportunity to comment and be an active part of the process in developing herd management objectives for the E-2 (Bear's Ears Elk Herd) and E-6 (White River Elk Herd) DAU's. The following are comments from the D.S. Forest Service, Medicine Bow-Routt National Forest (MBR) in response to your request for agency comments outlining issues and concerns concerning elk herd management.

The National Forest System (NFS) lands make up a large proportion of the E-2 and E-6 DAU's. Most of the NFS lands provide summer range for deer and elk herds but also include areas identified as winter range. The MBR is directed to consider forage allocation and habitat for big game species in its management decisions. Like many of the other activities occurring on NFS lands, grazing by both domestic and wild ungulates must be carefully managed to avoid negative impacts to forest and rangeland ecosystems. Livestock grazing levels have decreased on the Routt National Forest by 25 percent since 1980. During this same period the E-2 and E-6 DAU's have, up until the last couple of years, had the highest elk populations known for these areas. This is creating forage utilization and cover problems in localized areas on Forest System Lands.

The Forest is supportive of lowering elk herd objectives for both the E-2 and E-6 DAU's. Winter range is a limiting factor for herd population capabilities, with the majority of the winter range located on BLM and private lands. Consequently, the MBR may have adequate summer forage to support more elk than the associated winter range can ecologically support. The small amount of winter range found on the Forest is felt to be in fair ecological condition over-all, but localized over use is occurring. A reduction in elk populations from current estimates should help bring populations into better balance with the capabilities of winter ranges, and should also benefit the recovery of deer populations.

Additionally, an adaptive management strategy could be developed that allows numbers to be targeted within a range (e.g. 10,000 to 12,000) depending upon various criteria and thresholds
(forage conditions, distribution, weather, drought, etc.). This would provide the Division and the land managers the flexibility needed to manage resources and wildlife. An adaptive strategy would allow our agencies the necessary time to complete the required detailed evaluations of all of the summer and winter ranges within these DAU's, and provide flexibility when conditions change.

The following information has been separated specific to each of the DAU's to facilitate in issue tracking.

(E-6 DAU):

The Yampa Ranger District is in the process of updating many of the allotment management plans (AMP's) in the DAU and is in the preliminary stages of collecting monitoring data on these allotments. The Yampa Ranger District has identified the following potential conflict areas between elk populations and existing range conditions:

- The Egeria cattle allotment has had high utilization over the last couple years and was purported to be from high elk numbers. The utilization data on this allotment from the last couple years is being summarized for the Egeria AMP Environmental Assessment. The preliminary data does not seem to suggest an over utilization problem created by elk.

- The Watson and Bear River cattle allotments have issues related to elk movement on and off the Forest during the spring. The permittees of these allotments are also the adjacent landowners who complain that elk move onto private lands damaging hay meadows. Forest Service and Division of Wildlife collaboration will continue to be needed to help identify habitat management opportunities on the Forest.

- In general, there are some localized high elk use areas in other cattle and sheep allotments, particularly in riparian areas or meadows. However, at a landscape scale these problem areas do not appear to be significant. No apparent utilization conflicts have been recorded on the sheep allotments located within the management unit.

Other information specific to the Flattops Elk Management Unit include the following:

- The Pagoda Geographic Area (area from Salt Park and east to Cyclone Park) is a large unmotorized area with limited motorized and public access. This area provides important habitat for elk, and in the lower elevations, provides transitional range in oak brush habitats. This geographic area has had previous interest from the oil and gas industry, and has existing oil leases in use. Although no recent permits have been filed, there is potential for oil and gas exploration in the future.

- The Yampa Ranger District is also actively pursuing landscape scale vegetation management objectives involving timber and fuels treatments in 5.11 or 5.12 Management Areas. Management Areas 5.11 and 5.12 occur in the Bear River, Dunckley, and PYramid Geographic Areas. Forest management direction to increase habitat structural diversity may conflict in areas having high elk numbers in potential treatment units, for example aspen vegetation types.

- In 2003 and 2004, the Hahns Peak -Bears Ears and Yampa Ranger Districts completed an extensive habitat assessment on deer and elk winter range surrounding the Yampa Valley (enclosed). The goal of the assessment was to identify and subsequently prioritize areas that will have vegetation manipulation either through pre-scribed fire or other mechanical methods. The Beaver Creek and Indian Run State Wildlife Area was identified and was ranked fifth out of eighteen potential sites to receive vegetation manipulation. Combined and coordinated agency efforts, along with reduced elk herd objectives in these areas will help insure success in habitat restoration efforts.

- The Yampa Ranger District has limited public access. The Pagoda Geographic Area in particular is hard to access by the public due to private ownership of lands surrounding the area. Continue coordination between the Forest and DOW to gain access through the private lands will be needed to help meet future herd management objectives.

- Noxious weed infestations and control is a concern for both the Yampa and Hahns Peak-Bears Ears Districts on portions ofE-6 and E-2 Units. The Pagoda Geographic Area (especially Salt Park, Horse Park, Corral Creek, and the South Fork of the Williams Fork) is one area of concern. The Districts maintain active partnerships with local Habitat Partnership Program and the Rocky Mountain Elk Foundation to control weeds in this area. Additionally, vegetation projects for habitat improvement (various species) and noxious weed control have also taken place in the California Park area with the help of the Division as well. Noxious weeds have the potential to significantly reduce habitat values for a variety of wildlife species and are a concern for all land managers.

(E-2 DAU):

The Hahns Peak -Bears Ears District is also in the process of updating some allotment management plans in this DAU and is in the preliminary stages of collecting monitoring data. The Hahns Peak-Bears Ears District has identified the following potential conflict areas between elk populations and existing range conditions:

- Elk rangeland forage utilization is creating problems in localized areas on the Hahns Peak-Bears Ears District. These include California Park, the area immediately surrounding the Bears Ears, and some of the area south of Black Mountain.

- While the Forest Service has the ability to control grazing patterns, seasons, and numbers of sheep and cattle in California Park, elk utilize these areas before the livestock are turned out. Our monitoring has shown heavy bank trampling and moderate use on sedges in Elkhead Creek and First Creek prior to July 1 when the livestock enter the forest.

Other information specific to the Bears Ears Unit include the following:

- Hunters in E-2 often have a limited opportunity to hunt successfully on Forest System lands, due to elk movement onto private lands. Early season hunting pressure prior to rifle season, along with motorized access to fall elk security areas has resulted in elk seeking refuge on private lands. The Hahns Peak-Bears Ears Ranger District has been working on travel management in the California Park and Black Mountain areas for the last several years to minimize early season elk movements off the National Forest. Limiting archery and muzzle loading licenses in Units 4 and 441, along with expanding it to Unit 214 will continue to help in this effort.

- The presence of *E. coli* and other bacteria in Forest streams is a concern for4:he Forest Service on at least three streams where bacteria levels may be attributed to any number of species including elk. In specific locations like Elkhead Creek, elk appear to be affecting riparian habitats and watershed function.

- Increasingly, we have seen the large ranches adjacent to many public lands being sold off to development, thus increasing or altering big game use on public lands. Increased efforts to coordinate with organizations such as The Nature Conservancy and the Yampa Valley Land Trust are needed to secure conservation easements in order to resolve future big game management problems.

- As a useful process for helping to determine herd management objectives, we encourage the evaluation of habitat capability of the lands within these DAU's. A landscape scale look at habitats across the full range for these herds would facilitate resource allocations on public lands. The Yampa Valley Winter Range Assessment (enclosed) is an example of such a collaborative effort between our agencies. This assessment has provided data useful for prioritizing winter range and other habitat improvement projects on the Forest.

Lastly, we recognize that hunting contributes significantly to the economies of local communities surrounding the Routt National Forest. At the same time, the forest expends a disproportionate amount of our dwindling resources in managing and dealing with impacts from hunting. These include road maintenance, law enforcement, sign/gate repair and replacement, and dispersed campsite cleanup. While the Forest recognizes DOW's help in law enforcement, resource concerns associated with hunting on public lands will continue to be an increasing concern in the face declining budgets.

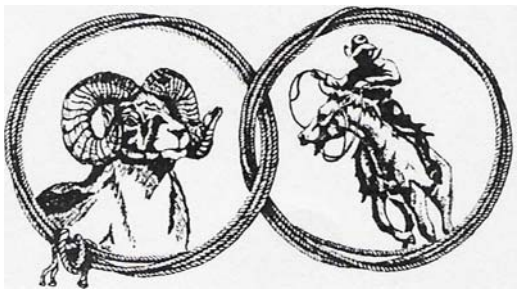
Thank you for actively pursuing our comments on elk management for the E-2 and E-6 DAU's. Again, we appreciate the opportunity to participate in your process and are hoping that you consider a flexible and adaptive strategy for setting herd objectives. We look forward to working with you on future landscape scale evaluation and monitoring to determine forage allocation and carrying capacity in a collective and cooperative manner. If you have any questions about these comments please contact Ric Rine at (307) 745-2410.

Sincerely,

DIANE M. CHUNG

Deputy Forest Supervisor

APPENDIX D



UPPER YAMPA RIVER HPP September 6, 2005

Darby Finley; Terrestrial Biologist
Colorado Division of Wildlife
PO Box 1181
Meeker, CO 81641

Ref: Committee comments on elk management in E-2 (Bears Ears DAU)

Dear Darby;

Thank you for taking the time to come to our July meeting to discuss elk management in both the Bears Ears and the Flattops DAUs. Our committee met on August 22nd and discussed how we would like to see the Division of Wildlife manage elk in the Bears Ears DAU Our recommendations are as follows:

We feel that landowners have a greater tolerance for elk than they have had in the past. No one wants to return to the days of elk being present only in the mountains. The majority of the committee is comfortable with current elk numbers in this DAU We do feel that there are distribution issues, especially in and west of California Park, which the Division of Wildlife should address.

There do appear to be conflicts in and around California Park, particularly between private landowners and hunters on public lands. This is probably reflective of elk distribution *issues.* We believe that late season and private land only hunts are good tools to remove elk from safe havens. We are concerned about the number of refuges that elk have found within the DAl I We would encourage the Division to do everything within its power to keep elk on public lands where there can be adequate harvest to maintain the population where it currently is. Aggressively managing public land habitat to create a mosaic of successional stages we feel will help to distribute elk in what we feel is a more appropriate manner.

We believe that herding animals may be an issue on some large parcels of land. We would also encourage the Division to ensure that Ranching for Wildlife hunts occur simultaneously with general hunting seasons.

And finally; we would encourage the Division to manage elk based on the habitat suitability;

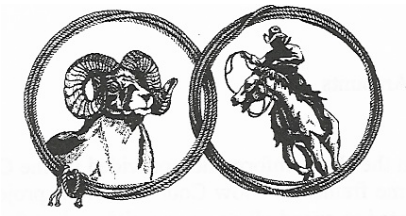
Thank you for allowing us to participate in this process.

Sincerely,

Larry Monger, Chair
UpperYampa **HPP** committee

Xc: Velarde

APPENDIX E



Colorado Habitat Partnership Program Committee

October 6, 2005

Darby Finley, Terrestrial Biologist
Colorado Division of Wildlife
P.O. Box 1181
Meeker, CO 81641

RE: Northwest Colorado HPP Committee comments on Elk DAU-2

Dear Mr. Finley,

This letter is in response to your request for formal comment regarding the Division of Wildlife DAU E-2 objective planning process. The Northwest Colorado HPP Committee has had significant discussion over the past months regarding future elk population objectives for E-2. On October 5th a special meeting was held dedicated to this discussion and the following recommendations are put forward by this committee. These recommendations are outlined in the bullet points below and are based on the current 2004 post hunt population estimate of 16,716 elk you provided the committee.

- It is suggested that the current elk population should be decreased slightly too moderately with a set objective range being 11,000 to 15,000 animals. The committee reached this consensus due to the observations individual members have seen on the ground in E-2. There remains to be large individual groups of elk present in this area. These groups tend to congregate in and around agricultural fields, cause isolated forage conflicts on the Routt National Forest, and raise overall agricultural concerns in this area. There has been talk of this being a distribution issue, but a further reduction in the overall population will aid in solving these distribution problems. Given the current state of sustained drought and lack of conclusive evidence regarding its end the committee would recommend that the lower range (11,000 animals) be the target of short term elk management in E-2. We would like to see this target met by means of additional cow harvest.
- It is a general consensus of the committee that the Division of Wildlife manage E-2 for a 25 bulls per 100 cows sex ratio. The committee agreed that we would like to see more mature bulls in the population and were in favor of the current limitations on archery, muzzle loading, and 4th rifle season bull harvest. The committee would not like to see the over-the-counter 2nd and 3rd seasons be limited or 4th season bull hunting be eliminated.
- To address current and future elk distribution issues and provide more public land hunting opportunity, the committee would like to see the Division of Wildlife work in conjunction with the Routt National Forest to evaluate current and potential seasonal access restrictions. We would like to see efforts made to keep elk on the forest and east of highway 13 later in the year. This would help to keep late summer and early fall agricultural conflicts to a minimum.
- The committee would urge the Division of Wildlife to closely consider all factors in regards to overall land health, carrying capacity, habitat loss and degradation, drought, and limitations of winter range in making their final decision. These factors as they relate to other animals including; deer, pronghorn, and the numerous small game species are of particular concern.

On behalf of the Northwest Colorado HPP committee we thank you for your request and opportunity to comment.

Sincerely,

Mary Lynne James
Northwest Colorado HPP Chairperson

APPENDIX F

STATE OF COLORADO

BOARD OF LAND COMMISSIONERS
1313 Sherman Street, Room 621
Denver, Colorado 80203
Phone: (303) 866-3454
Fax: (303) 866-3152

Department of Natural Resources

Managing
State Trust Lands
Since 1876

Bill Owens
Governor

Russell George
Department of Natural Resources
Executive Director

Britt I. Weygandt
State Board of Land Commissioners
Division Director

August 11, 2005

Mr. Darby Finley
Terrestrial Biologist
Colorado Division of Wildlife
P.O. Box 1181
Meeker, CO 81641

Re: DAU E-2 and E-6 Comments

Dear Mr. Finley:

Based on discussions with lessees and inspections of state trust lands across the area, I have prepared a spreadsheet that reflects the reduction in grazing use by our lessees and the dollar cost if they have a reduction in use or no use at all. The State Land Board did provide a 35% drought credit to lessees in 2002, but they have continued to cut numbers or not graze the lands in an effort to protect our lands as a result of the drought and wildlife use. Attached is a spreadsheet that reflects those reductions covering the area beginning north of Hayden to the Utah state line. I realize some of the leases are not in E2 or E6, but the information may be useful to you in any case.

I can provide you with a CD of the inventories and monitoring that have occurred on state trust lands throughout Moffat County for the past five years if you are interested. This might help in your evaluation of range condition and in determining what the range resource will support. Please let me know if you are interested in this information or have questions regarding the spreadsheet.

In areas I have inspected on state trust lands, it is apparent from the range usage that the number of elk is higher than the resource will currently support. It is difficult to determine what the level of wildlife usage should be, because coupled with the drought and the fact that the highest numbers existed in the worst of those conditions, damage that occurred in 2002 has not been able to recover. It would make sense to make the objective number of elk a range rather than a fixed number so there is flexibility to manage the herd for existing conditions. Realizing it can take at least two years to react if the numbers are too high, the objective number range should be conservative.

Thanks you for considering this information. We look forward to further discussions as the DAU process moves forward.

Sincerely,

Beverly Rave
Acting Field Operations Section Manager

Attachment: Lessee Spreadsheet

CC: Britt Weygandt
Lane Osborn

APPENDIX G

Colorado Wool Growers Association

Mr. Ron Velarde
Colorado Division of Wildlife 711
Independent Avenue Grand Junction,
CO 81505

September 5, 2005

Re: Proposed Elk Population Objective Changes *t:*

Dear Ron:

The Colorado Wool Growers Association has several concerns regarding potential changes in DAU elk population objectives. Changing from a specific population objective number to a range for a management objective does make sense within specific parameters. The upper limit of the range should be established by a direct correlation to habitat carrying capacity factoring in multiple-use activities. Livestock grazing and private land ownership patterns should weigh heavily in the formulation of maximum population objectives. Also, the population range should not be so broad as to prove to be meaningless. Establishing a population range should in no way be a smoke screen to obscure existing or future elk management problems.

The Division of Wildlife has spent considerable time carefully outlining modeling problems that have precipitated the perceived need to change population objectives. Specifically, in 1992 the DOW set the DAU objective for E-2 at 12,200; although improved modeling techniques now indicate that in 1992 there may have been as many as 24,000 elk in E-2. Similarly, in E-6 the DOW set the DAU objective at 28,500 in 1994 although improved modeling now suggests that there may have been at least 38,000 elk on the ground at that time.

For over a decade, private landowners have been telling the DO\V there are more elk on the ground than the DOW was acknowledging. In all of the discussion and documentation by the DOW regarding computer modeling, survey techniques, harvest results, and other data collection problems that have
created the disparity between original herd numbers and objectives; habitat carrying capacity and loss of viable habitat is scarcely mentioned. It is an inescapable fact that Colorado has significantly less visible big game habitat in 2005 than was available over a decade ago. Based on that fact alone, it does not make sense to raise population objectives.

Land ownership patterns and land use activities continue to rapidly change our western landscape, and our big game herds must be managed within that context, maintaining a strong partnership with private landowners. We encourage the Division to continue working with private landowners to reduce cow numbers. Our association appreciates the efforts of the Division of Wildlife to actively reduce cow numbers by I) increasing the number of antlerless licenses; 2) increasing the number of days for rif1e elk hunting seasons; 3) increasing the type of licenses such as private land only, either-sex licenses, additional licenses, special game damage hunts; and 4) adding additional seasons. Unfortunately, these measures have not always solved the problem.

We strongly encourage the DOW to significantly reduce the price of out-of-state cow tags; and enable hunters to take more than one cow in appropriate areas. Emphasis should also be placed on taking more elk on public land; the DOW needs to focus on refined hunting strategies for late season public land hunts.

H833 Ralston Road, Suite 200
Arvada, CO 80002

(303) 431-8310 office
(303) 431-2156 fax

www.coloradosheep.org
CWGA wool@aoLcom

Habitat degradation is unacceptable as a livestock producer, and should be unacceptable as a result of big game management as well. Raising elk population objectives does not address the fundamental issue of appropriately managing habitat to provide a resilient, renewable forage base for both wildlife and domestic livestock.

Sincerely,

CWGA President

CC: Wildlife Commission
Colorado Cattlemen's Association
Colorado Farm Bureau

Appendix A: Medicine Bow-Routt National Forest Comment Letter 12/03/07

United States Department of Agriculture **Forest Service** **Medicine Bow – Routt National Forests and Thunder Basin National Grassland** **Hahns Peak/Bears Ears Ranger District 925 Weiss Drive Steamboat Springs, CO 80487-9315 http://www.fs.fed.us/r2/mbr/hpbe.html**

File Code: 2610
Date: December 3, 2007

Darby Finley
Terrestrial Biologist
Colorado Division of Wildlife

Meeker, CO 81641

Dear Mr. Finley:

The Medicine Bow-Routt National Forests (MBR) would like to submit comments regarding the amendment to the 2005 Bears Ears Elk Herd (E2) DAU Management Plan. We do not have comments on the Cold Springs (E1) DAU Management Plan.

MBR National Forest System (NFS) land makes up a substantial proportion of the E2 DAU, totaling approximately 550,000 acres. Most of the NFS lands are utilized as summer range for the E2 elk herd, but there are also extensive areas officially designated and managed as winter range for deer and elk.

The Forest Service is mandated to manage the NFS lands for multiple uses, which include livestock grazing, habitat for all native wildlife (including elk), healthy watersheds, timber management, and recreational activities (including hunting, fishing and wildlife viewing). Maintaining a balance of resource management goals for many different uses and interested parties while keeping the land productive and healthy is a primary challenge of managing the National Forest.

The MBR is directed by national and regional policies to consider forage allocation for big game in its management decisions. Like many of the other activities occurring on NFS lands, grazing by both domestic and wild ungulates must be carefully managed to avoid negative impacts to the forest and rangeland ecosystems that support these animals, as well as other native species. While livestock grazing levels have decreased on the Routt National Forest by 25 percent since 1980, grazing by wild ungulates has increased considerably.

Historic estimates from the 1880s placed Yampa drainage elk herds at approximately 20,000 animals (Swift, 1945). By the early 1900s elk numbers had plummeted to just a few hundred elk statewide (CDOW website). Swift (1945) estimated that in the Yampa drainage elk were reduced to 120 animals by 1912 and that by 1945 the Yampa drainage population had expanded to approximately 800 animals. Although it is not entirely clear, the Yampa drainage (E2 and E6) now may support approximately 72,000 elk (E6 - 2006 post-hunt estimate of 40,000 and E2 2007 estimate of 32,000 elk). The National Forest acreage in the E2 DAU currently has the highest population of elk ever known to exist on these lands. The Routt National Forest supports significant summer range for the largest herd of elk in the entire world.

While the Forest Service has the ability to control grazing patterns, seasons, and levels of domestic ungulates, many of the allotment rotations designed to provide for vegetation recovery and rest are

currently ineffective at meeting the desired vegetative conditions because 'rested' portions of the allotments are generally occupied by large elk herds. Additionally, elk arrive on allotments before the livestock and before the range is ready, resulting in season-long use. This is resulting in unacceptable impacts and raises the risk of failure in meeting Forest Plan desired vegetation conditions on NFS lands in the E2 DAU. The Forest has noted declines in desirable species in the aspen-tall forb plant community as well as extensive riparian impacts. Additionally mountain shrubs in winter range areas are severely clubbed and hedged.

We have several recommendations regarding the amendment to the E2 DAU management plan:

1. **We suggest an interagency capacity study be completed regarding current elk herd objectives; we do not want to see the current elk herd objective raised until a study is completed that can provide guidance in making this type of decision**.

   The herd objective was raised in 2002 from 12,500 elk to be kept within the range of 11,000 to 18,000 elk. The revised population has a current estimate of 32,000 animals with a range of 23,000 to 45,000 elk.

   A study needs to evaluate if the existing herd and objective can be supported by the available forage and still maintain healthy forest and rangeland ecosystem conditions and multiple use objectives. Elk herd numbers must be set within the capacity of the land. We do not currently have sufficient information to justify increasing the elk herd objective. On the contrary, it is our suspicion that the objective may need to be decreased to allow some lands to recover.

   We suggest developing a partnership agreement between the FS and the CDOW over the course of this winter so data collection could begin in the summer of 2008.

2. We believe that hunting pressure on the National Forest is resulting in many elk leaving the National Forest before the unlimited rifle seasons start. This may be caused by many factors including early season hunting pressure (archery, muzzle loading, limited rifle season) as well as the current management of unit 214 and travel management issues on the National Forest. The result is that hunter success and satisfaction is low for many of the rifle seasons because the hunt is typically over on the National Forest by 10:00 am on opening day. These elk movements are limiting the ability to regulate the elk herd and contributing to dissatisfaction of public land hunters.

   This issue needs to be carefully evaluated. We have several recommendations to help evaluate this issue and correct it:

   - The CDOW should put satellite collars on enough elk from enough elk groups in the E2 herd so that elk movements can be critically evaluated. This will clarify when these animals arrive on the Routt National Forest and also clarify if these early season movements off the Forest are occurring as suspected.
   - Unit 214 needs to be included in the same management approach as applied to units 4, 5 and 441, with limited archery, muzzle loading and early rifle seasons. This should reduce early season hunting pressure in the Sand Mountain area and Shield Mountain areas, helping to keep elk on public lands.
   - Archery season in the 4, 5, 441 and 214 complex needs to be limited to two weeks. Archery should start no earlier than September 15. The current month-long season is putting too much pressure on the herd and causing early season movement of the herd off NFS lands.
   - The archery and muzzle loading seasons in 4, 5, 441 and 214 need to be further limited on

public lands reducing available number of licenses. The intent of this change is to reduce early season hunting pressure that is contributing to early season movement of elk off NFS lands.

- The early limited rifle season in units 4, 5, 441 should be maintained and expanded to include unit 214.
- We would like to work collaboratively with CDOW to improve hunter success on the National Forest. This may require focused travel management changes, including seasonal road closures as well as additional road or trail construction. Developing a partnership agreement that focuses on improving hunter success on National Forest lands in units 4, 5, 214, and 441 would be an important step in the ability to regulate the elk herd population as well as a tool for improving hunter success and satisfaction on public lands.

3. To further help control elk numbers we have the following recommendations for all of E2:
   - All bull tags in E2 should be either sex tags so that an individual may choose to take a cow at the end of the season if they have not found a legal bull during their hunt.
   - The long late season tags (11/19-1/31) need to be expanded to include public lands.

Thank you for considering these comments. We look forward to working with CDOW collaboratively to set elk herd objectives based on the capacity of the land as well as on opportunities for improving hunter success on the National Forest.

Sincerely,

/s/ Jamie Kingsbury
JAMIE KINGSBURY
District Ranger

cc: brad.petch
Jim.Haskins

Appendix B: Northwest Colorado HPP Committee Comment Letter 10/01/07

October 1, 2007

Darby Finley, Terrestrial Biologist
Colorado Division of Wildlife
P.O. Box 1181
Meeker, CO 81641

RE: Northwest Colorado HPP Committee comments for revision of population objectives for Elk DAU-2

Dear Mr. Finley,

This letter is in response to your request for formal comment regarding the Division of Wildlife DAU E-2 population objective revision process. The Northwest Colorado HPP Committee has resumed our discussion regarding future elk population objectives for E-2. On September 24th a special meeting was held dedicated to this discussion and the following recommendations are put forward by this committee. These recommendations are outlined in the bullet points below and are based on the current 2006 post hunt population estimate of elk ranging from 23,000 to 40,000. We recognize that these estimates are the result of a one year survey and that the actual number falls somewhere in the middle of the range. Any opportunity to refine the accuracy of the quadrat survey method and re-survey in subsequent years is strongly recommended.

- Our recommendation is that the current elk population be decreased by 15-20%. The committee reached this consensus based on observations individual members have seen on the ground in E-2. Large herds of elk still remain in this area. These herds tend to congregate in and around agricultural fields, cause isolated forage conflicts on the Routt National Forest, and raise overall concerns by agricultural producers in this area. We have discussed the issue of this being a distribution problem, but believe a further reduction in the overall population will aid in solving these distribution problems. Given the current state of sustained drought the committee would recommend that the lower range (23,000 animals), based on quadrat survey population estimates conducted in 2007, be the target of short term elk management in E-2. We would like to see this target met by means of additional cow harvest.

- It is a general consensus of the committee that the Division of Wildlife manage E-2 for a 25 bulls per 100 cows sex ratio. The committee agreed that we would like to see more mature bulls in the population and were in favor of the current limitations on archery, muzzle loading, and 4th rifle season bull harvest. The committee would not like to see the over-the-counter 2nd and 3rd seasons be limited or 4th season bull hunting be eliminated.

- To address current and future elk distribution issues and provide more public land hunting opportunity, the committee would like to see the Division of Wildlife continue to work in conjunction with the Routt National Forest to evaluate seasonal access restrictions. We would like to see efforts made to identify solutions to reduce impacts from spring elk use in areas like California Park and Slater Park, while evaluating current and potential seasonal access restrictions to encourage elk to remain on the forest and east of highway 13 later in the year. This would help to keep late summer and early fall agricultural conflicts to a minimum.

- The committee would urge the Division of Wildlife to closely consider all factors in regards to overall land health, carrying capacity, habitat loss and degradation, drought, and limitations of winter range in making their final decision. These factors as they relate to other animals including; deer, pronghorn, and the numerous small game species are of particular concern.

On behalf of the Northwest Colorado HPP committee we thank you for your request and opportunity to comment.

Sincerely,

/s/ Timothy Novotny

Timothy Novotny (acting)
Northwest Colorado HPP Chairperson