HERMOSA ELK HERD MANAGEMENT PLAN
DATA ANALYSIS UNIT E-30
Game Management Units 74 and 741

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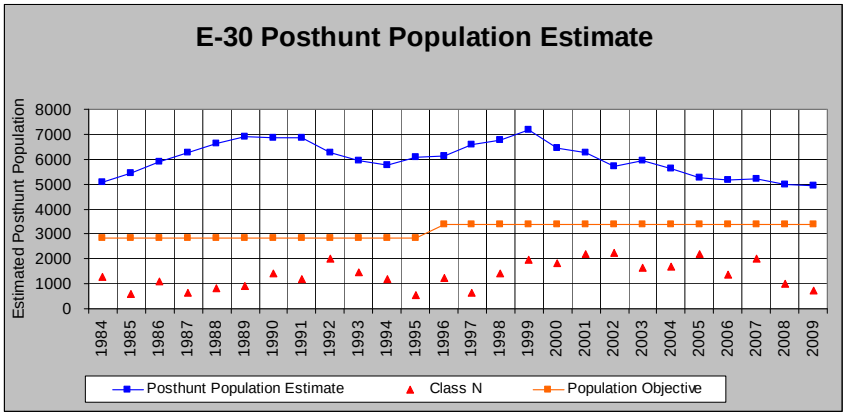
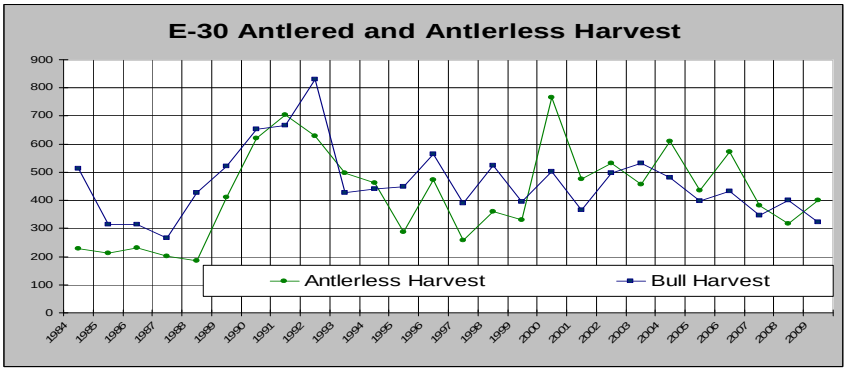
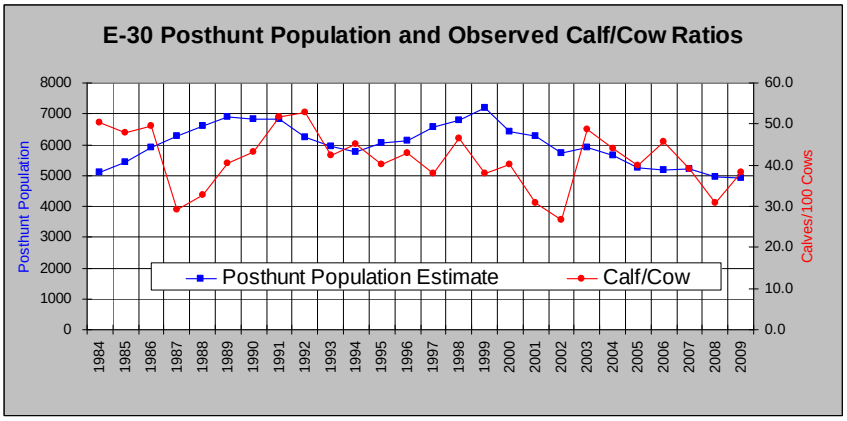
DAU E-30 (Hermosa)
EXECUTIVE SUMMARY

GMU's: 74 and 741
Land Ownership: 32% Private, 17% Southern Ute Tribe, 42% USFS, 5% BLM, 1% State, 1% BOR, 2% SLB
Post-hunt Population: Previous Objective 3400, 2009 Post-hunt Estimate 4900
New Population Objective Range: 5,000 to 6,000
Post-hunt Sex Ratio (Bulls:100 Cows): Previous Objective: 16, 2009 Observed: 25, 2009 Modeled: 29
New Sex Ratio Objective Range: 15-25 bulls:100 cows







E-30 Background

Data Analysis Unit (DAU) E-30 is located west of Durango and contains Game Management Units (GMU's) 74 and 741. The primary goal of this DAU plan revision is to set the population objective closer to the number of elk that exist, and have existed, in the DAU. The previous population objective of 3,400 was set at the population size believed to exist at the time but was based on models that underestimated population size. New modeling techniques and biological information from research projects, such as higher elk survival rates observed in radio-telemetry studies, will adjust population objectives closer to the current population size. Additional years of experience and data should also improve our population estimation and objective setting abilities.

The post-season elk population increased from about 5,000 in 1984 to between 6,000 and 7,000 in the 1990's. Liberal antlerless harvest has reduced the population to the current post-hunt population estimate of 4,900. Cow licenses have been essentially unlimited and List B (Additional, hunters can obtain two licenses). Cow harvest has exceeded bull harvest in 8 of the last 10 years in an attempt to reduce the herd to population objective. Attempting to reduce this herd to 3400 has resulting in declining hunter success and satisfaction.

Observed sex ratios averaged 16 bulls:100 cows from 1984 to 2009 and 20 bulls:100 cows from 2005 to 2009. Applying antler point restrictions and limiting 1st and 4th rifle seasons have put bull:cow ratios on an increasing trend since 1994 (2009 observed 25 bulls:100 cows). This framework has shown to result in 15-25 bulls:100 cows observed post-season and seems to have a good balance of opportunity and quality.

E-30 Significant Issues

GMU 74 in the north half of DAU E-30 is primarily public land. The southern half is GMU 741 which is mostly private property. Management of this elk herd is complicated by the fact that many elk migrate from 74 onto private property and Southern Ute Tribal Lands in 741 and private portions of GMU 74 along the Animas River. This results in incongruent harvest management and objectives across the herd's range. There is low tolerance for elk on much of the private land in GMU 741 and along the Animas River. Private and tribal land refuges have permitted an increase in non-migratory, resident herds. The establishment of extended and liberal PLO seasons and distribution management hunts has attempted to reduce the resident elk component of this herd. This DAU plan and the higher population objective are not intended to change the liberal seasons and licenses numbers in these conflict areas.

Conflicts with agriculture have resulted in social limits on population size below biological carrying capacity. Population size has been reduced by liberal cow harvest; however, winter range is ultimately the limiting factor for this elk herd, especially in GMU 74. In E-30, 50% of winter range is privately owned. The Southern Ute Tribe owns 29% and the remaining 21% of winter range is publicly managed. Relatively small acreages of public land winter range do not afford a lot of management flexibility with respect to herd size. Considerable winter range already has been lost to exurban development which, along with energy development poses increasing threats to winter range.

E-30 Management Alternatives

Three post-season population objective range alternatives for E-30 were evaluated: 1. 4,500 to 5,500 (Current Population), Preferred Alternative 2. 5,000 to 6,000 (10% increase), Alternative 3. 5,500 to 6,500 (20%) increase. Alternative 1 maintains current elk numbers. Alternative 2 is the preferred alternative that would allow for a 10% increase in the elk population. Alternative 3 is approximately a 20% increase in current population size, but is still below population peak of 6,500 to 7,000 in the 1990's when game damage issues were much greater. The preferred alternative of 5,000 to 6,000 is appropriate given habitat capabilities and was selected to attempt to balance population size between current poor hunter satisfaction and low game damage at 4,900 and higher game damage and hunter satisfaction at 6,500 to 7,000. Licenses are issued annually to manage for a target population size within the population objective range.

The new bull:cow ratio objective is the status quo of limited 1st rifle season, 4th rifle season, and muzzleloader season and over-the-counter bull licenses in archery, 2nd rifle season, and 3rd rifle season.

New Population Objective Range: 5,000 to 6,000 elk post-season

New Sex Ratio Objective: bull:cow ratio objective range of 15-25 bulls:100 cows

INTRODUCTION AND PURPOSE

The Colorado Division of Wildlife (CDOW) manages wildlife for the use, benefit and enjoyment of the people of the state in accordance with the CDOW's Strategic Plan and mandates from the Wildlife Commission and the Colorado Legislature. Colorado's wildlife resources require careful and increasingly intensive management to accommodate the many and varied public demands and growing impacts from people. To manage the state's big game populations, the CDOW uses a "management by objectives" approach (Figure 1). Big game populations are managed to achieve population and sex ratio objectives established for Data Analysis Units (DAU's). Each DAU generally represents a geographically discrete big game population. The DAU planning process establishes long term objectives that support and accomplish the broader objectives of the CDOW's Strategic Plan.

COLORADO'S BIG GAME MANAGEMENT BY OBJECTIVE PROCESS

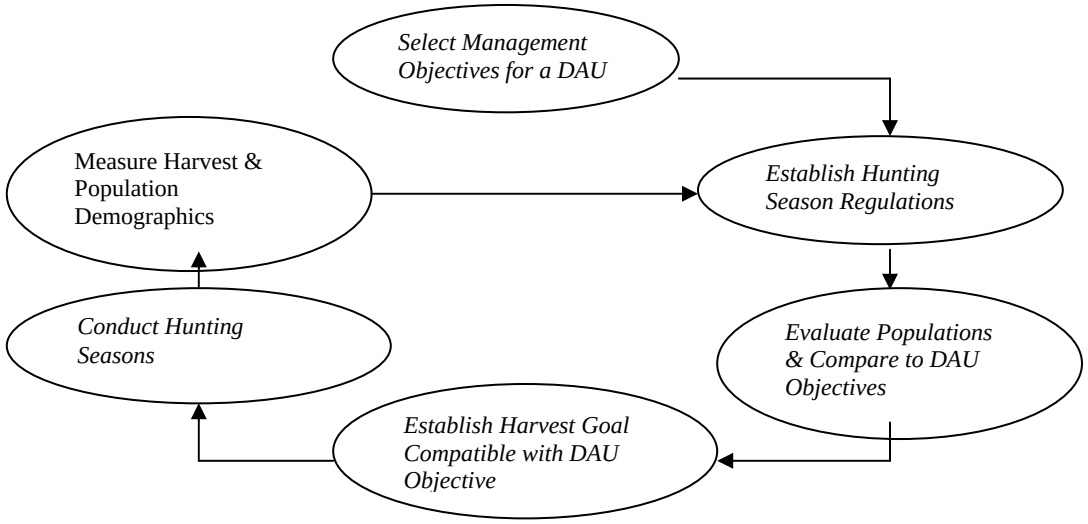


Figure 1. Management by objectives process used by the CDOW to manage big game populations on a DAU basis.

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

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

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

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

Objectives are set for population size and bull:cow ratio during the DAU planning process. Population objectives influence, and are influenced by: current herd size, carrying capacity, antlerless harvest, reproduction and survival, viewing opportunity and hunter success. Bull:cow ratio objectives influence hunter opportunity, hunter density, bull harvest, trophy potential, and hunter success.

Population Objective	Male to Female Ratio
Herd size	Hunter opportunity
Habitat quality and herd capability	Hunter density
Antlerless harvest and antlerless opportunity	Male harvest rate
Reproduction and survival (density-dependence)	Male age structure and trophy potential
Wildlife viewing	Hunter success
Hunter success	
Game damage	

Table 1. A summary of what factors are influenced by the two DAU plan components, population objective and male to female ratio.

DESCRIPTION OF DAU E-30

Elk DAU E-30 is located in Southwest Colorado, west of Durango, and contains GMU's 74 and 741. The DAU is 1,000 mi^2 and includes portions of La Plata and San Juan counties and is bounded on the south by the Colorado-New Mexico state line. The towns of Durango, Silverton, Hesperus, and Breen are included in E-30. (Figure 2). Dominant geographical features are the La Plata Mountains on the west, the Animas River valley on the east, the Hermosa Creek and Upper Animas River watersheds to the north, and the Red Mesa/Fort Lewis Mesa area to the south.

The climate is a highland or mountain climate, characterized by cool springs and falls, warm summers and moderately cold winters. Average precipitation and snowfall for Durango are 18.1 and 63 inches per year respectively. Snowfall increases dramatically to 250-300 inches per winter at higher elevations in northern portions of the DAU.

This area is in the Colorado Plateau Ecoregion, which consists of shrublands and forests. Vegetation types include: alpine over 12,000 feet elevation; spruce/fir stands down to 10,000 feet; Gambel oak, serviceberry, and ponderosa pine above 6,500 feet; and pinyon/juniper/sagebrush and agricultural fields below 6,500 feet. Land ownership is composed of U.S. Forest Service (42%), Bureau of Land Management (5%), private land (32%),and Southern Ute Tribal lands (17%).

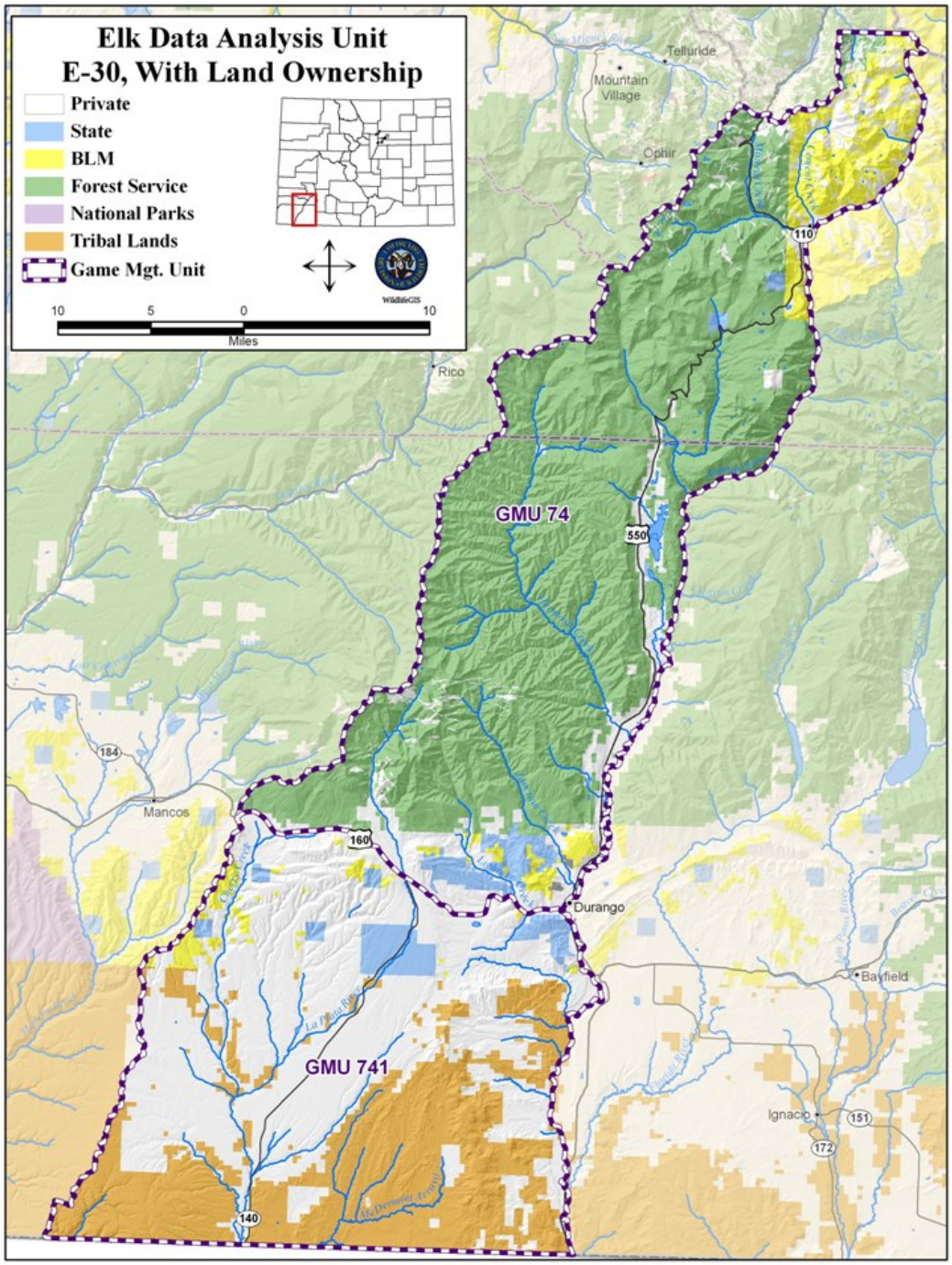


Figure 2. Figure shows DAU E-30 boundaries, GMU's, towns, and land ownership.

HERD MANAGEMENT HISTORY

Post-Season Population Size

Elk were rare following years of over-exploitation. The Durango Silverton train was used to transplant 25 elk from Yellowstone National Park into Hermosa Creek in 1913.

The past 14 years of experience with this particular herd, new research, and better population estimation techniques will allow us to better refine population objectives. The post-season elk population increased from about 5,000 in 1984 to between 6,000 and 7,000 in the 1990s (Figure 3). Liberal antlerless harvest has reduced this herd to the current post-hunt population estimate of 4,900.

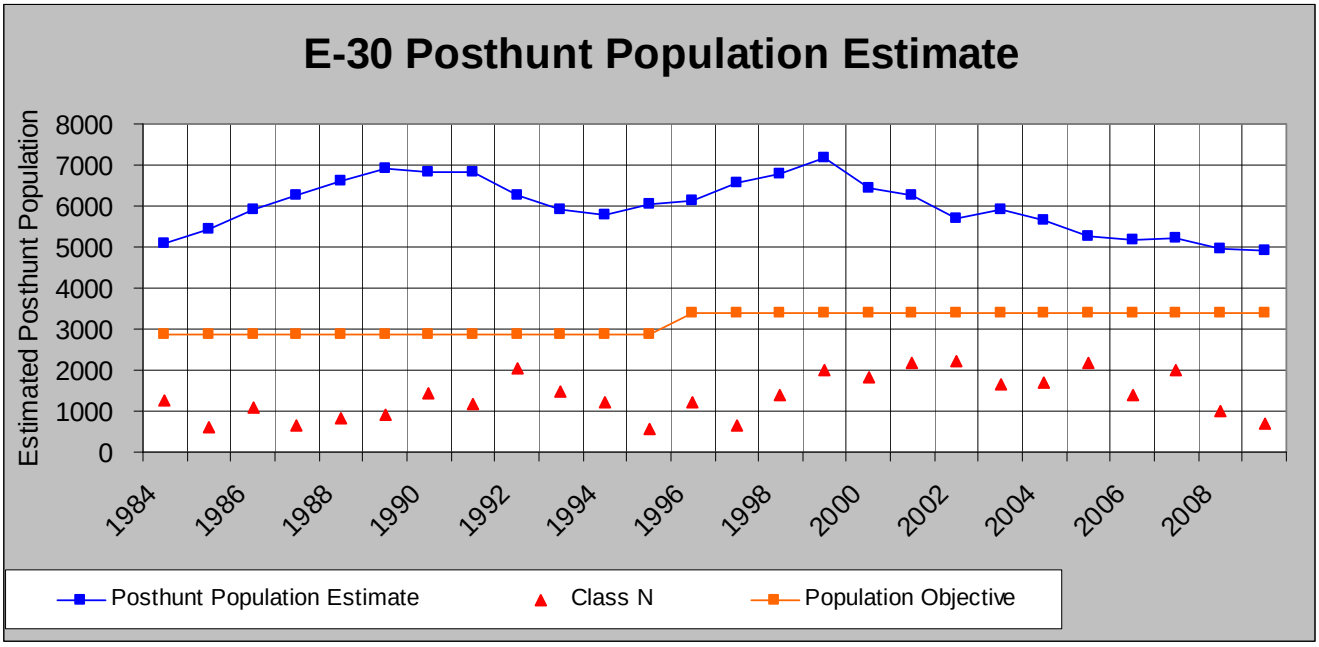


Figure 3. E-30 post-season modeled population estimates, population objectives, and number of elk classified during helicopter inventory from 1984 to 2009.

Post-Season Herd Composition

Environmental variability, such as drought and severe winters, can influence calf production. Post-season age ratio estimates, observed from helicopter inventory, averaged 41 calves:100 cows from 1984 to 2009 (range = 27 to 53) (Figure 4). A mean of 39 calves:100 cows was observed over the last 5 years. No obvious long-term density dependent relationships between population size and reproduction are evident. Herd size may not have gotten high enough to reach biological carrying capacity because it first achieved social carrying capacity.

Post-season sex ratio estimates can be variable. This is related to the unlimited nature of bull licenses and effect of weather on harvest. Aerial estimates are biased low because not all potential wintering areas are flown, and bull groups are more difficult to detect from the air than larger groups of cows and calves in pinyon-juniper, ponderosa pine, and Gambel oak wintering areas. The population model for E-30 allows modeled bull:cow ratios to be higher than those observed during helicopter inventory to account for this bias (Figure 5). However, post-season bull:cow ratio estimates from aerial inventory have increased (Figure 5). This is likely resulting from changes in harvest management such as antler point restrictions in 1986, limited 1st and 4th rifle seasons, declining over-the counter bull licenses sales, declining success rates, and increased cow harvest. From 1984 to 2009, the mean of observed bull:cow ratios was 16 bulls:100 cows (range = 6 in 1984 to 25 in 2009). The mean of the observed bull:cow ratios for the last 5 years is 20 and ratios have been on an increasing trend since 1994. Antler point restrictions for 1st and 2nd rifle season bull hunters began in 1986 and in 1996 antler point restrictions went into effect for all bull elk hunters. First season was limited in 2000 and 4th season was limited in 2005. Muzzleloader licenses are limited by DAU starting in 2010. A good balance of quality and opportunity seems to have been achieved with some limited and some unlimited seasons allowing sex ratios to slowly increase.

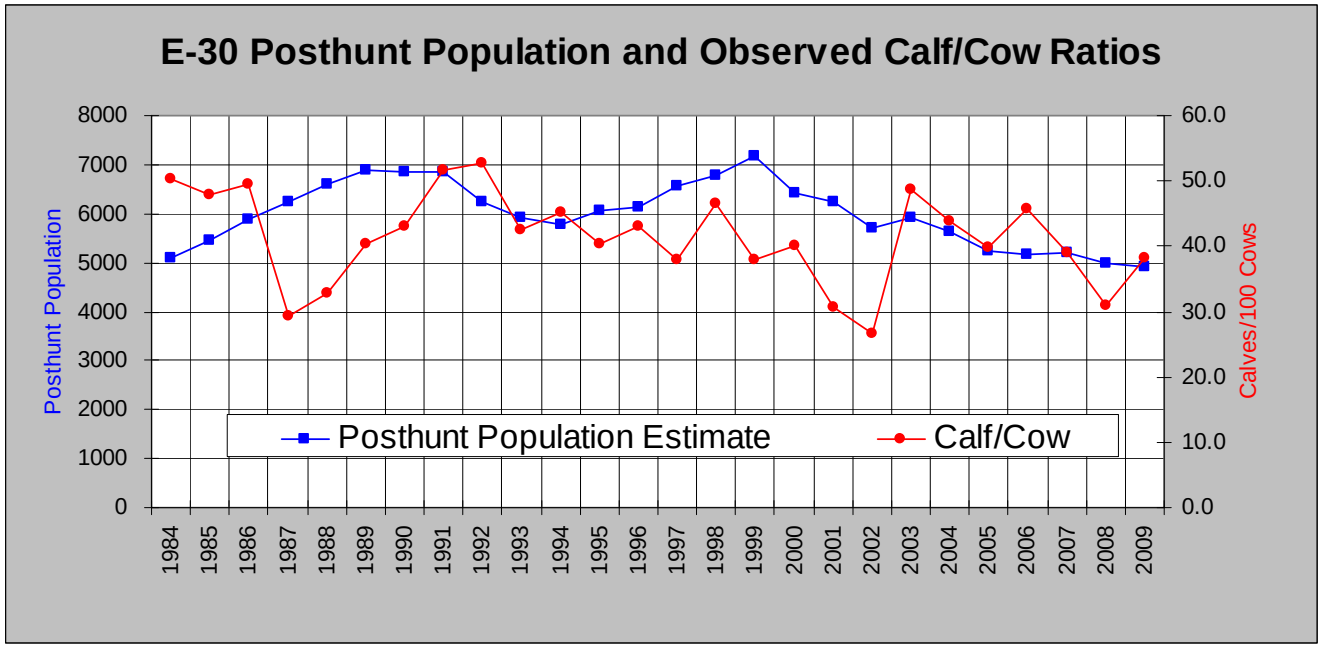


Figure 4. E-30 calf:cow ratio estimates from post-season helicopter inventory.

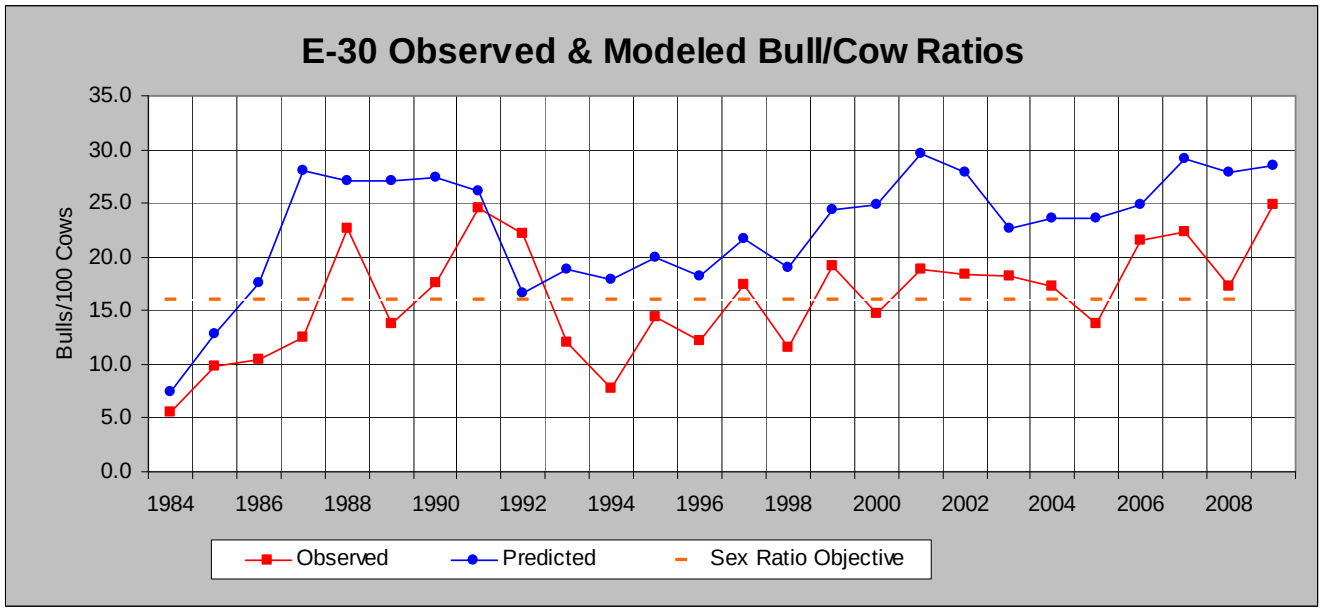


Figure 5. Post-season sex ratios estimated from helicopter inventory from 1984 to 2009 compared to model predicted ratios.

Harvest

All antlerless licenses are limited and set annually to meet population objectives. In addition to aforementioned regulations changes, weather affects hunting success which causes large fluctuations in harvest (Figures 6). Antlered harvest has ranged from 265 in 1988 to 830 in 1992 (mean 460 from 1984 to 2009) (Figure 6). Mean bull harvest from 2005-2009 was 380 and mean annual anlterless harvest was 421.To achieve elk population objectives, antlerless licenses quotas have been increased substantially since 1988 (Figure 6). Cow licenses have been essentially unlimited and List B (additional, hunters can obtain two licenses). Cow harvest has ranged from 186 in

1988 to 767 in 2000 (mean 425 from 1984 to 2009). Cow harvest has exceeded bull harvest in 8 of the last 10 years and has been approximately 14% of the pre-hunt female segment of the population. Antlered and antlerless harvests have been similar for the last few years (Figure 6).

Harvest Management Challenges within the DAU
Exurban development often creates refuges where no hunting is allowed making harvest objectives difficult to achieve. Many of these refuges are adjacent to agricultural properties where game damage occurs and tolerance for elk is low. Resident herds have increased in many of these areas even though we have reduced overall elk numbers in the DAU.

Very high elk license and hunter numbers can shift elk distribution to private land refuges. This DAU has some public land areas without motorized access that reduces these distribution shifts. When evaluating travel management, it is important that these areas remain off limits to motorized travel to keep elk on the National Forest.

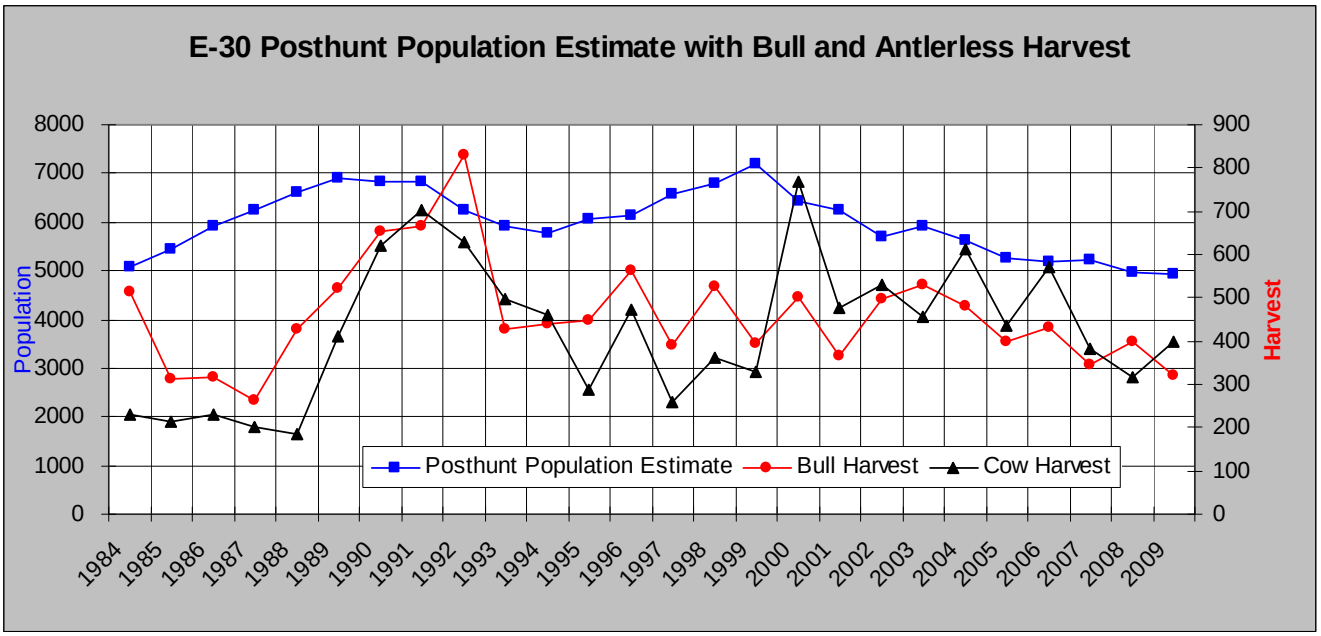


Figure 6. Antlered and antlerless harvest estimates from E-30 from 1984 to 2009.

Hunters
This DAU attracts a significant number of elk hunters because of abundant public land access. A high proportion of these hunters are nonresidents because Durango is the nearest over-the-counter elk hunting to many surrounding states. The average annual number of elk hunters for all methods of take since 1996 is 4,790 with an average success rate of 23%. Success is significantly higher in GMU 741 because the majority of property is private and access is limited (Figure 7). This difference has increased as population size has been reduced. Hunter success has generally declined in GMU 74 in the last 9 years.

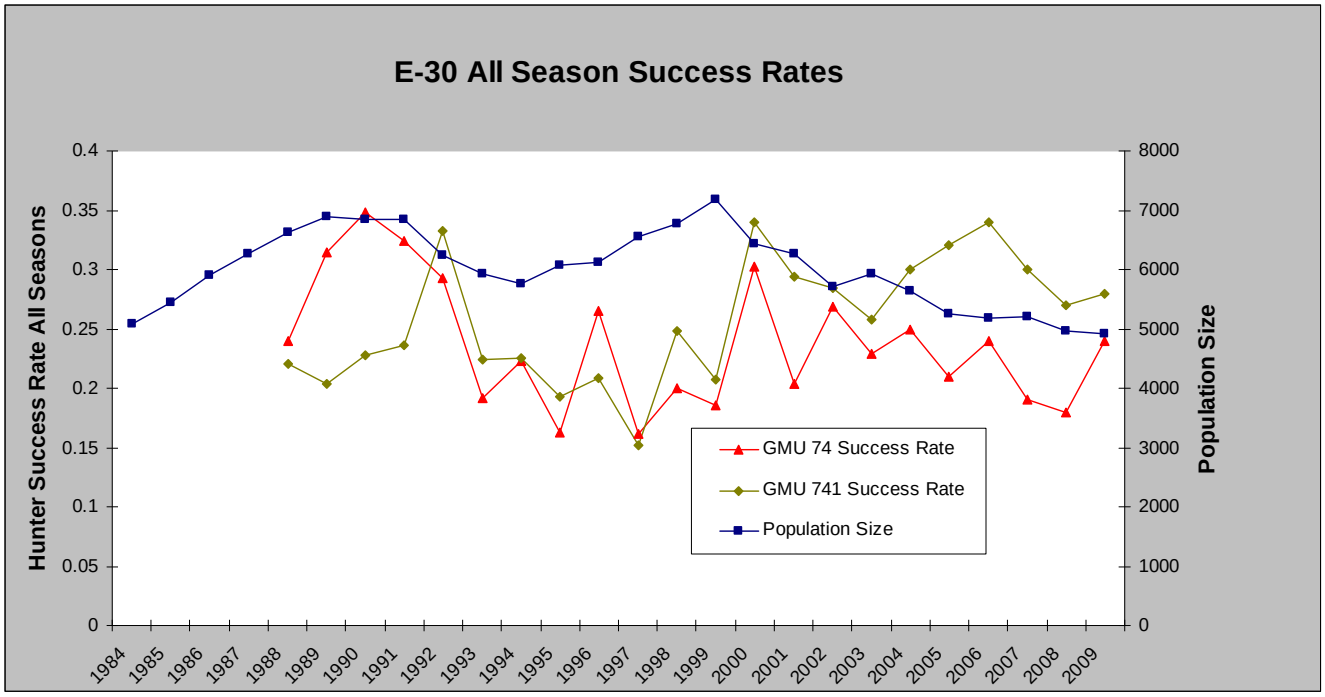


Figure 7. Success rate by GMU in relation to population size.

HABITAT CAPABILITY

Conflicts with agriculture have resulted in social limits on population size below biological carrying capacity. Population size has been reduced by liberal cow harvest; however, winter range is ultimately the limiting factor for this elk herd, especially in GMU 74. In E-30, 50% of winter range is privately owned. The Southern Ute Tribe owns 29% (Table 2). Only 21% of winter range and 46% of severe winter range are publicly managed (Table 2). Drought also can play a significant role in habitat capability by affecting winter and year-round forage condition.

Elk migrations generally are southerly in direction and are initiated by increased human activity, snow depth, and forage availability. Elk winter range generally includes all of GMU 741, and the part of GMU 74 within 3 miles of Highway 160, a corridor along the Animas River 4 miles wide north to Hermosa, and a large part of the Junction Creek and Hermosa Creek watersheds. This includes approximately 618 mi^2, or 58% of the DAU. Severe winter range, where most of the elk are concentrated in severe winters (for example, the winters of.1992-1993, 2007-2008, and 2009-2010) is only 28 mi^2 (3% of DAU) and is a narrow corridor approximately 2 miles wide along the Animas River from Hermosa south to the state line, and on select south-facing slopes west of Durango. Winter concentration areas, where elk normally concentrate in a range of winter severities, make up approximately 4% (41 mi^2) of the DAU. Elk winter concentrations during normal winters are centered on the Ridges Basin, Bodo and Perins Peak State Wildlife Areas, along the Animas River, and in Hermosa and Junction Creeks.

		WINTER RANGE	WINTER CONCENTRATION	SEVERE WINTER RANGE	DAU E-30
	PRIVATE	312 50%	20 49%	12 43%	346 32%
	SLB	16 3%	2 5%	1 4%	18 2%
	SUIT	178 29%	0	2 7%	178 17%
PRIVATE ACCESS SUBTOTAL		506 82%	22 54%	15 54%	542 51%
	BLM	17 3%	3 7%	2 7%	57 5%
	BOR	6 1%	3 7%	3 11%	6 <1%
	USFS	76 12%	3 7%	4 14%	452 42%
	CDOW	14 2%	10 24%	4 14%	14 1%
PUBLIC ACCESS SUBTOTAL		113 21%	19 45%	13 46%	529 49%
DAU E-30 TOTAL		618 58%	41 4%	28 3%	1071 100%

Table 2. Land ownership and elk winter, winter concentration, and severe winter range areas in square miles.

Managers and the public are increasingly concerned over cumulative and prolonged impacts disrupting migration corridors and decreasing quality and quantity of winter range. Extensive exurban development has occurred around Durango, specifically along the Animas River north of Durango, and along Highway 160, Ridges Basin, and Red Mesa, causing elk to winter near subdivisions, on golf courses, and along Highway 550 and other roadways. Indirect impacts from recreation and dogs are added stress to wintering big game animals that are trying to conserve energy. Seasonal closures on public lands are important to reduce impacts. Highway mortality is exacerbated by increased road density and human population. It is a concern both for herd welfare and human safety. The direct and indirect impacts of energy development also reduce winter range quantity and quality. Energy development impacts are likely to increase. Additionally, Lake Nighthorse was constructed on some of the highest quality deer and elk winter range in the DAU. The cumulative effects of all human activities lower the habitat capability and ultimately reduce the size of big game populations the habitat can sustain.

Fire suppression has increased canopy cover and reduced winter range quality. Exurban development makes large scale treatment difficult, expensive, and challenging. However, big game winter range habitat improvement projects have been completed on Perins Peak SWA and in numerous fuels reduction projects on the San Juan National Forest. A large prescribed burn was completed in Hermosa Creek in 2008 to improve elk winter range condition.

One of CDOWs best habitat management tools is to keep big game populations below biological carrying capacity. This often means managing for herd sizes that can be sustained in a severe winter or extended drought. Populations at biological carrying capacity exhibit density dependence in reproduction, recruitment, and survival. Over-stocked ranges can also suffer long-term damage. Deep snow in severe winters has the benefits of protecting some plants for browsing and providing good moisture for spring growth. Severe winters may adjust population size in line with habitat as well. Drought impacts may be especially insidious because plant communities can take decades to recover if over-grazed.

HPP Habitat Assessment Model

The Southwest Habitat Assessment model was developed by Wockner et al. with Colorado State University for the Habitat Partnership Program (HPP) committees to quantify forage production and utilization. Results should be interpreted cautiously because these models use satellite imagery to estimate plant production with no field data; however, they do have some application for DAU planning and the setting of population objectives. The Southwest model does not have a winter severity component but does have the ability to evaluate drought. The current proportion of deer and elk in the DAU are 47% elk (2009 post-hunt 4900) and 53% deer (2009 post-hunt 5500). Simulations using mean annual precipitation and 10-year average livestock numbers result in a population of 6300 elk utilizing forage to the "low threshold," which is 25% utilization. The new population objective range for elk is below 6,300. Therefore, based on these simulations with average precipitation, habitat in the DAU can support the new population objectives for deer and elk and stay at or below 25% forage utilization. Simulations with 10-year average livestock numbers and a dry year with the new deer and elk population objectives result in the high utilization threshold being reached where 32% of production is consumed. Proposed population objective ranges would allow management for the lower end of the objective if drought conditions were persistent.

Conflicts with Agriculture

Winter range that is free of agricultural conflicts is extremely limiting and generally at higher elevations in Gambel oak and ponderosa pine. Wildlife conflict areas are south of US 160 and the Animas River valley. Tolerance for elk in these areas can be very low. Many of the animals in conflict are non-migratory, resident elk. Conflicts on lower elevation agricultural lands are addressed with private-land-only and distribution management licenses. CDOW also has liberalized season dates and license numbers to address resident elk numbers in these areas before migrants arrive. In 2010, these seasons will start on September 1 and last until January 15, so they are available whenever damage occurs. Area Wildlife Manager kill permits also are available when damage exists without a season to address it. Spring conflicts can also occur as elk stay on private lands as they green up, and move onto higher elevation ranges later as they green up. Southern Ute Tribe biologists radio-collared 20 resident elk on SUIT tribal lands in GMU 741 in June 2008. Twelve of these elk were harvested (2 on the reservation and 10 off the reservation) in the following 2 hunting season. This demonstrates how aggressively elk are pursued in GMU 741.

Generally, game damage will decrease with fewer elk. However, many game damage situations would persist even with drastic reductions in elk numbers in the DAU and are best dealt with on each property with special seasons, distribution management hunts, and AWM kill permits, rather than on a DAU population scale.

E-30 DAU planning has been discussed at the local HPP committee and no concerns have been raised with the preferred alternative. HPP members understand the issues in E-30 with elk population estimation and population objective selection. Specific damage problems have been addressed by reducing the elk population size, special PLO season, distribution management hunts, and HPP fence and forage programs. HPP is dedicated to continuing to address elk fence and forage issues to reduce elk conflicts.

There have been conflicts with livestock in the Hermosa Creek drainage over summer forage. Permitted livestock producers believe that elk are contributing to resource damage. The USFS Hermosa Landscape Grazing Analysis EIS was signed in May 2009, selecting Alternative 3, Adaptive Management. This alternative shortened the grazing seasons on the Dutch Creek and Elbert Creek allotments and instituted adaptive management

protocols because these allotments were not meeting their desired range condition targets. The USFS analysis does not mention elk grazing in the analysis but elk are certainly herbivores influencing that system.

CURRENT HERD STATUS , ISSUES, and STRATEGIES

Population Estimation and Population Objective Range Setting

Previous DAU plan objectives (1996)
Population = 3,400
Sex Ratio = 16 bulls:100 cows

Post-season 2009 estimates
Population = 4,900
Sex Ratio = 25 bulls:100 cows

The previous population objective of 3,400 was based on earlier population models that underestimated population size. The intent at the time was to manage for the existing population size. Estimating free-ranging ungulate population size in complex landscapes is challenging. The primary goal of this DAU plan revision is to set the population objective closer to the number of elk that exist, and have existed, in the DAU. New modeling techniques and biological information, such as higher elk survival rates observed in radio-telemetry projects, will allow this DAU plan revision to adjust population objectives closer to the current population size.

Attempting to reduce this herd to the previous population objective of 3,400 has resulted in decreasing hunter success and satisfaction. Long-time hunters and outfitters in this DAU are very disappointed with the current population size. A point of diminishing returns can be reached where additional hunters in the field don't necessarily increase harvest because elk seek refuge on private property.

This is a long, narrow DAU which complicates population estimation ability because animals are able to easily move across DAU boundaries. Bull dispersal and differing migration patterns of bulls and cows further confound population estimation. For example, if cows migrate out of the DAU to winter at a higher proportion than bulls, the bull:cow ratio estimate is inflated. The 2002 Missionary Ridge Fire was a 73,000 acre fire in the adjacent DAU E-31. It removed canopy cover and regenerated aspen and oakbrush stands creating excellent elk forage. Greater forage availability changed elk habits and short-stopped elk migration in E-31. Elk distribution in E-30 may have been changed as well.

Population Objective Indexing
Population modeling is an evolving process whereby modeled estimates can change over time based on additional data or improved modeling methodology. As such, when modeled estimates change irrespective of an actual change in the population, it might be reasonable to adjust or index population objectives relative to the new modeled estimate. The basis of harvest-based population management is to increase harvest when a population exceeds objective, decrease harvest when a population is below objective, and maintain harvest when a population is at objective. Because population objectives are only meaningful in the relative context of the population estimates available at the time the objective was established, indexing the objective maintains the integrity of the objective based on the fundamental criteria of whether there are too many, too few, or the desired number of animals in the population.

Chronic Wasting Disease
Chronic Wasting Disease (CWD) is a neurological disease occurring in members of the cervid family, including deer, elk, and moose. CWD has not been detected in or around DAU E-30. From 2002 to 2009, 203 E-30 elk and 277 D-52 deer (GMUs 74 and 741) were tested for CWD. CDOW will continue surveillance for CWD on a voluntary basis. The nearest CWD-positive herds are deer and elk in the La Sal Mountains of Utah, approximately 100 miles away. If CWD is detected in or around DAU E-30, managers may need to reevaluate management objectives if they are deemed incompatible with CWD risks.

Public Involvement
A public DAU planning meeting conducted in Durango was attended by 28 participants. Herd history, conflicts, and management strategies were discussed. Basic questionnaires about population and sex ratio alternatives were handed out. Because this was not a random survey, results may not represent all interest groups or even adequately represent specific interest groups. Survey responses do provide opinions of those able to attend the meetings (Appendix I). That said, there seemed to be a good representation of different interests in attendance. For surveys returned at the meeting, 52% were primarily hunters, 14% had agricultural interests, 18% were outfitters or guides, 7% had non-consumptive and wildlife viewing interests, 5% were business owners, and 4% were other (Appendix I). Almost half (42%) had poor satisfaction with the elk hunting, 53% thought the elk hunting was good, and 5% considered it excellent. Most (60%) would like to see more elk in GMU 74, 28% preferred the same, and 4% wanted a decrease in herd size. For GMU 741, 35% would like to see more elk, 35% preferred the same, zero wanted a decrease in herd size, the rest were unsure. A large majority (82%) preferred the same bull:cow ratio objective and management strategy with 18% desiring increased bull:cow ratios. Of these hunters 24% thought it was very important to hunt every year and 20% considered harvesting mature animals a priority.

Mail-in surveys demonstrated much different hunting interests. This survey was of a different, and less diverse, group. Most had not attended the public meeting so were not as aware of herd management strategies and data with respect to herd status. Responses were so different that combining surveys seemed inappropriate. Twenty six surveys were mailed in, 90% were hunters and 10% had agricultural interests (Appendix II). Of these respondents 83% had poor satisfaction with the elk hunting, 17% thought the elk hunting was good, and none considered it excellent. They overwhelmingly (96%) wanted more elk in GMU 74, 4% preferred the same, and none wanted a decrease in herd size. Results were similar for GMU 741, 85% would like more elk, 4% preferred the same, none wanted a decrease in herd size, and the rest didn't know. Contrastingly, a large majority preferred increasing the bull:cow ratios (75%) with 25% desiring current bull:cow ratios. Only 8% of these respondents viewed hunting every year as a priority and 42% considered harvesting mature animals most important.

ALTERNATIVE DEVELOPMENT and PREFERRED OBJECTIVE RECOMMENDATION

Population Objective Range Alternatives
Population objective alternatives were developed relative to the current population estimate of 4,900. Ranges are presented in each alternative to allow for management flexibility in response to changing conditions such as drought. Licenses are issued annually to manage for a target population size within the range. The following 3 population objective alternatives are being proposed:

Alternative 1. 4,500 to 5,500 elk post-season (current population)
Preferred Alternative 2. 5,000 to 6,000 elk post-season (10% increase)
Alternative 3. 5,500 to 6,500 elk post-season (20% increase)

Alternative 1 maintains the current number of elk. Alternative 2 is the preferred alternative that would allow for a 10% increase in the elk herd resulting in higher hunter satisfaction. Alternative 3 is approximately a 20% increase in current population size, but is still below population peak of 6,500 to 7,000 in the 1990s when game damage issues were much greater. The preferred alternative of 5,000 to 6,000 is appropriate given habitat capabilities and was selected to attempt to balance population size between current poor hunter satisfaction and low game damage at 4,900 and higher game damage and hunter satisfaction at 6,500 to 7,000 elk.

The preferred alternative of 10% increase in population objective will not change the current strategy of liberal cow licenses and seasons in areas in GMU 741 and the Animas Valley where tolerance for elk is minimal.

Higher population objectives support a higher harvest by hunters, and the fiscal benefits to the local economy will increase.

Sex Ratio Alternatives
The preferred alternative is the status quo of limited 1st rifle season, 4th rifle season, and muzzleloader season and over-the-counter bull licenses in archery, 2nd rifle season, and 3rd rifle season. The existing bull harvest framework seems to have a good balance of opportunity and quality and has shown to result in 15-25 bulls:100 cows observed post-season.

An alternative to totally limited elk licenses would require a public nomination process through the Wildlife Commission. Consequently, a goal of this DAU plan revision is not to make the complex decision of going totally limited.

New Post-season Population Objective Range = 5,000 to 6,000 elk post-season

New Sex Ratio Objective Range = 15-25 bulls:100 cows

APPROVAL / SIGNATURES

On behalf of the Colorado Division of Wildlife and the Colorado Wildlife Commission, we herby accept and approve this DAU E-30 herd management plan.

_____ Date _____
Thomas E. Remington, Director
Colorado Division of Wildlife

_____ Date _____
Tim Glenn, Chairman
Colorado Wildlife Commission

Appendix 1. Public Survey Results from DAU planning public meeting (28 attendees)
Sample Size 23
DAU's E-30 and D-52 Management Plans Public Survey

Name (Optional):

1) Which group(s) best represents your interests in deer and elk management in this area?
52%__ hunting 14%_ agricultural _18%___ commercial (guide/outfitter)
_7%_ viewing opportunities/non-consumptive _0%__ Agency personnel
__5%__ Business Owner _5%__ other (specify)_____

2) **Agriculture Producers** – Have you had problems with deer and/or elk in the past five years?
Describe problem:__**See comments below**_____
What species were involved _____ Number of animals _____
Was DOW contacted? Yes / No Actions taken by DOW_____
Is this a continued or growing problem? No Yes

3) **Hunters**
What is your satisfaction with **elk** hunting in GMU 74 and 741? 42% Poor 53% Good 5% Excellent
What is your satisfaction with **deer** hunting in GMU 74 and 741? 50% Poor 38% Good 13% Excellent
Circle which GMU you usually hunt: 72 % 74 17% 741 11% Both

What is most important to you? Mark your **TOP TWO** choices.
_24%_ hunting every year __26%__ hunting quality with fewer hunters
_12%___ high harvest success rates___20%_ potential to harvest mature animals
__16%__ hunting for meat other _2%_____

4) Would you like the number of **elk** in GMU 74 to**:**
_60%_Increase __28%_Stay the same _4%_Decrease _8%__ Don't know
Why?

5) Would you like the number of **elk** in GMU 741 to**:**
_35%__Increase __35%_Stay the same _0%__Decrease __30%_ Don't know
Why?

6) Would you like the number of **deer** in GMU's 74 and 741 to**:**
__50%_Increase __45%_Stay the same __0%_Decrease _5%__ Don't know
Why?

7) The number of bucks maintained in a population is related to levels of hunting opportunity. For the purposes of **deer** hunting, should GMU's 74 and 741 be managed for:

_21% Increased buck to doe ratio (greater trophy potential but it would become more difficult to draw a license).

_63% Same buck to doe ratio (same trophy potential and opportunity to draw a license as we now have).

_16%_ Decreased buck to doe ratio (less trophy bucks but easier to draw a licenses than it currently is)

8) Totally limiting bull licenses requires a separate public nomination process from DAU planning. However, for our information, we are interested in your preference below.

For the purposes of **elk** hunting, should GMU's 74 and 741 be managed for:

__18% Increased bull:cow ratio (greater trophy potential but all hunting by application only and less hunting opportunity).

__82%_ Same bull:cow ratio (same trophy potential and hunting opportunity).

Please provide additional comments on the future management of DAU's E-30 or D-52 below:

Question 1.
Also interested for scientific studies

Question 2:

200+ Elk eating grass and causing fence damage. Is a continued problem, but have received HPP money.

200+ Elk Eating our hay, and have participated in HPP; We allow free hunting on our land but it is not popular with the drive by observers. They (the drivers) don't see the benefit of game management. We often also take people hunting they see bigger bucks in the valley.

100-150 Elk graze fall pasture, graze 1st green growth in spring, try to eat livestock feed during the winter months in Animas Valley. HPP has helped with the fencing, but is still a continued problem. "I have built a level of tolerance on the premise that this is the cost of farming in the Animas Valley, I enjoy seeing the herds in the summer in the high country; and so do my clients that ride with me. I also depend on work generated from hunting activity in the fall." (Question- Why hunting is important) Hunting opportunity for out of state hunters who hire outfitters to guide them and bring dollars to our region.

80-100 Elk eating hay field, DOW provided fertilizer, continued problem

Elk, Deer in the hundreds causing Crop damage, No DOW contact, but a continued problem.

Question 3:
Switched to 75-78 unsuccessful in 74 and 741- no access

Elk population good, but declining; Maintain good elk in 74

Excellent hunting in Both; We agree with buck:doe ratio, 30-100, We have seen quality improved in 741 (bucks) We are happy with elk numbers. We have altogether- 4000 acres under wildlife management in 741

Question 4:
Good to see animals during hunt, not overtax winter range. It is important to me to hunt elk and deer every year. Quality seems good, please keep quality.
Increase- See More animals in the woods.
Increase 20%; Provide for better hunting and viewing
Last 4-5 years we have seen significantly fewer elk and our harvest rates have been poor.
- Land access in 741 is very limited- Properties have been taken from hunting by govt. entities for swaps and water- need more areas open to the public or these same areas opened- if even to limited hunting.

Increase- Numbers are down,
better hunting opportunity
Same-Population healthy- increase in numbers means increase in tags and out of state hunters
Increase-To increase the potential of hunting mature animals.

Increase Proportional to carrying capacity
Don't know- Whatever is best for the health of the herds and hunting yearly!

Access is a huge problem in 74. Hunters are very concentrated during seasons. Mostly 74 is not hunted.

Increase- increase success

Question 5
Numbers are down
- Increased numbers should provide higher % of trophy animals- not necessarily record book, but better quality!
All private and no access;
Elk herds are becoming permanent (Non-Migratory) in 741

Question 6
Enjoy seeing them and better hunting opportunity; DOW should get a method to get homeowners to allow free access to hunt to reduce crop damage- There are a lot of youth, senior citizens, meat hunters, etc. who would welcome the opportunity to hunt and harvest an animal regardless of sex.

Seems like a good amount

Same- herd is presently large enough

Question 7 and 8
This is not the area (region) to be managing for trophy big game hunting-too much private land is needed to support herds in winter and too many people generally wanting to drive too fast creating road kill hazard. It is important to provide hunting opportunity so those folks don't lose interest waiting for the chance to hunt. I'm concerned that down the road if hunter numbers continue to decline, we will not have this important tool to manage big game populations.

Issue licenses to outfitters if limiting Lisenses

General Comments
We hunt because we love to be in the woods and eat quality meat. So anything that helps those goals is positive! Thanks

Appendix II: Mailed in forms
Sample size 26

DAU's E-30 and D-52 Management Plans Public Survey

Name (Optional):

1) Which group(s) best represents your interests in deer and elk management in this area?
__90% hunting __10% agricultural ____ commercial (guide/outfitter)
____ viewing opportunities/non-consumptive ___ Agency personnel
____ Business Owner ___ other (specify)_____

2) **Agriculture Producers** – Have you had problems with deer and/or elk in the past five years?
Describe problem____**See comments below**_____
What species were involved _____ Number of animals _____
Was DOW contacted? Yes / No Actions taken by DOW_____
Is this a continued or growing problem? No Yes

3) **Hunters**
What is your satisfaction with **elk** hunting in GMU 74 and 741? 83% Poor 17% Good Excellent
What is your satisfaction with **deer** hunting in GMU 74 and 741? 79% Poor 21% Good Excellent
Circle which GMU you usually hunt: 64% **74** 8% **741** 28% **Both**

What is most important to you? Mark your **TOP TWO** choices.
_8%_ hunting every year _24%_ hunting quality with fewer hunters
_14%_ high harvest success rates __42% potential to harvest mature animals
_12%___ hunting for meat other _____

5) Would you like the number of **elk** in GMU 74 to**:**
__96%_Increase __4%_Stay the same _____Decrease _____ Don't know
Why?

9) Would you like the number of **elk** in GMU 741 to**:**
__88%_Increase __8%_Stay the same __0%_Decrease __4%_ Don't know
Why?

10) Would you like the number of **deer** in GMU's 74 and 741 to**:**
_85%__Increase _4%__Stay the same __0%_Decrease _12%__ Don't know
Why?

11) The number of bucks maintained in a population is related to levels of hunting opportunity. For the purposes of **deer** hunting, should GMU's 74 and 741 be managed for:

__77%_ Increased buck to doe ratio (greater trophy potential but it would become more difficult to draw a license).

_19%_ Same buck to doe ratio (same trophy potential and opportunity to draw a license as we now have).

_4%_ Decreased buck to doe ratio (less trophy bucks but easier to draw a licenses than it currently is)

12) Totally limiting bull licenses requires a separate public nomination process from DAU planning. However, for our information, we are interested in your preference below.

For the purposes of **elk** hunting, should GMU's 74 and 741 be managed for:

__75%_ Increased bull:cow ratio (greater trophy potential but all hunting by application only and less hunting opportunity).

_25%__ Same bull:cow ratio (same trophy potential and hunting opportunity).

Please provide additional comments on the future management of DAU's E-30 or D-52 below:

Question 1

Question 2.

Mule Deer eating trees, No DOW contact, Not a continued problem

Question 3.

Problem- Too few elk

WE NEED MORE ELK!!!

I have hunted 74 for elk the last 14 years and have noticed a marked decline in cow numbers. While bull numbers seem steady, I feel the herd will suffer if this trend continues

To Whom It May Concern- we need less of a cow elk harvest

Question 4.

Increase-Too many hunters killing cows and young bulls

Populations have declined from historic levels and the quality of horns have decreased

Same- Increase Quality

Increase- Lack of cows makes herd unhealthy
Increase- would like to see more animals in the woods

Increase-Improve hunting success more potential for older bulls

Question 5.
Populations have declined from historic levels and the quality of horns have decreased

741 is winter range for many elk in 74. The only way to stabilize the herd is to increase cow numbers in 741

Same- Conflict with farmers

To keep numbers in unit 74 up

Question 6.
74 and 741, in the past, has maintained high head counts for deer. Numbers have decreased in recent years

Question 7 and 8

Would like to see more mature bucks

I would like to see bull tags as usual, I see lots of bulls but only a 1/3 of cows in the La Platas. Where I hunt and have seen the decline of cows in the last 10 years. So I worry about the quality of the herd.

General Comments

The DOW needs to be more user friendly- You work for the hunter -

Hunting seasons on even year only, hunting only every other year. Both Deer and Elk state-wide. Give the Herds a break. Less stress, close some units down to vehicle traffic. Make non-hunters pay a fee to enter National Forest.

Appendix III. San Juan Basin HPP comment letter.

San Juan Basin Habitat Partnership Program Committee

June 20, 2010

Andy Holland, Terrestrial Biologist/Statewide Big Game Coordinator
Colorado Division of Wildlife
151 East 16th Street
Durango, CO 81301

RE: San Juan Basin HPP Committee comments on Elk DAU-30 and Deer DAU-52

Dear Mr. Holland,

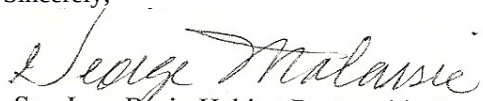
This letter is in response to your request for formal comment regarding the Division of Wildlife DAU E-30 and D-52 herd management planning process. The San Juan Basin HPP Committee has had significant discussion over the past year regarding future deer and elk population objectives for E-30 and D-52. The recommendations outlined below are based on the current 2009 post hunt population estimate of 4,900 elk (E-30) and 5,500 deer (D-52) you provided the committee. After considerable discussion the following recommendations are put forward by this committee.

- It is a general consensus that the current elk population objective should be increase slightly following the preferred alternative, which set the objective range between 5,000 to 6,000 animals. There remains to be individual groups of elk, primarily in the Animas River Valley and on some private lands south of Highway 160, that tend to congregate in and around agricultural fields and raise overall agricultural concerns in these isolated areas. Continued liberal licenses in these areas to address agricultural concerns and reduce resident/non-migrating herd size are needed to aid in efforts to resolve these isolated distribution conflicts. Given the recent history of sustained drought and USFS efforts to reduce livestock stocking rates within portions of E-30 the committee would recommend that the lower range (5,000 animals) be the target of short term elk management in E-30. We would like to see this target met gradually over a period of years by only slight reductions in overall hunting opportunity.
- It is a general consensus of the committee that the Division of Wildlife manage E-30 for a 15-25 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 muzzle loading, 1st rifle and 4th rifle season bull elk 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.
- Over the past several 10 years the committee has seen a substantial increase in recreation pressure on the San Juan National Forest within E-30. This pressure is occurring earlier in the spring each year and persists continually into the fall resulting in the potential decreased utilization of important public land calving grounds, summer range, and winter range for both deer and elk populations. 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 San Juan National Forest to evaluate current and potential seasonal access restrictions. We would like to see efforts made to keep elk on the forest as much of the year as possible. This would help to keep spring, late summer, and early fall agricultural conflicts to a minimum. Specific conflict areas continue to be the Animas River Valley and private lands south of highway 160.
- The committee agrees with the conclusion that despite a 25 year effort to increase the D-52 population, the biological carrying capacity of the remaining habitat is limiting this deer herd. The current pace of all forms of development and continued loss of winter range supports the recommendations of the preferred alternative requesting a reduction in the population objective to a range of 4,000-6,000. The committee foresees continued reduction in agriculture production areas and loss of winter range indefinitely into the future. These reductions will continue to diminish the carrying capacity of the habitat in D-52. Future management for the preferred population range will allow the greatest flexibility in harvest and hunter opportunity.

- It is a general consensus of the committee that the Division of Wildlife managed D-52 for 25-30 bucks per 100 does sex ratio. The committee agreed that we would like to see this herd sex ratio to continue at the upper end of this range. The current average ratio of 30:100 has resulted in a good balance of buck quality and hunter opportunity throughout D-52.
- 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. The continued loss of winter range to all forms of development (urban, energy, trail, etc.) remains the limiting factor for the future of these deer and elk herds.

On behalf of the San Juan Basin HPP committee we thank you for your request and opportunity to comment.

Sincerely,



San Juan Basin Habitat Partnership Program Committee