HERMOSA DATA ANALYSIS UNIT D-52

DEER MANAGEMENT PLAN

GAME MANAGEMENT UNITS 74, 741

DIVISION OF WILDLIFE

151 E. 16th ST.

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1. DAU PLANS AND WILDLIFE MANAGEMENT BY OBJECTIVES

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

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

Figure 1. Colorado's Objective Cycle of Big Game Management and Harvest (Adapted from Conolly in Walmo 1981. pp.263).

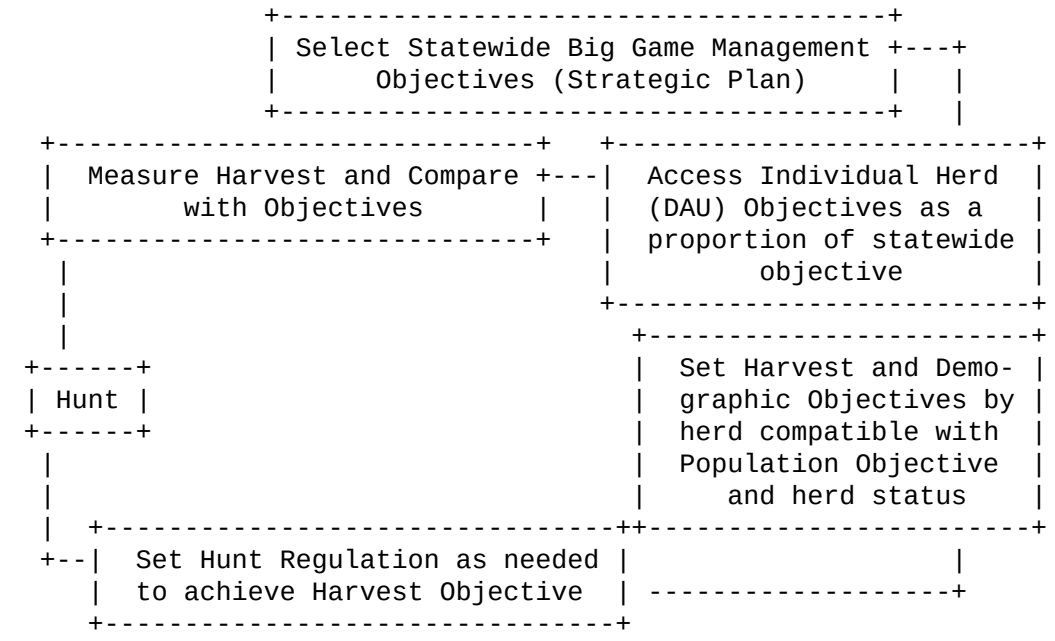

Figure 1 depicts the planning cycle involved in the management of big game populations. The DAU plan process is designed to incorporate public demands, habitat capabilities and herd capabilities into a management scheme for the big game herds. The public, sportsmen, federal land use agencies, landowners and agricultural interests are involved in the determination of the plan objectives through goals, public meetings, comments on draft plans and the

Colorado Wildlife Commission.

2. DESCRIPTION OF THE DATA ANALYSIS UNIT

Data Analysis Unit (DAU) D-52 is located in the southwest corner of the state in La Plata and San Juan counties, immediately west of Durango. The DAU contains Game Management Units 74, and 741. The area encompassed by the DAU is approximately 976 square miles and includes LaPlata County from the Colorado/New Mexico border on the southern end to the northern county line and from the western county line east to the Animas River. The northern section of the DAU lies in San Juan county and follows the county's western and northern border to the Animas river on the east (Figure 2).

Dominant geographical features are the La Plata mountains on the west that rise to 12,500 feet, the Animas River valley on the east, and the Red Mesa/Fort Lewis Mesa area to the south.

The climate is what is termed a highland or mountain climate, characterized by cool springs and autumns, warm summers and moderately cold winters. Precipitation in Durango averages 18.1 inches per year and is well distributed throughout the year. Snowfall averages 63 inches per year, falling October through April. At higher elevations, snowfall increases greatly, and Purgatory Ski Area receives approximately 250 inches of snow a year.

Nearly one-half of the Unit is public land under the control of the U.S. Forest Service (about 36%) and the Bureau of Land Management (5%) and other Government agencies (4%). The remainder is private land (35%) which is mostly along Highways 160 and 550 and the Animas and La Plata Rivers, and Southern Ute Indian Reservation lands (19%) which is completely south of Highway 160.

Vegetative types range from high alpine meadow types above 12,000 feet elevation, spruce/fir stands above 10,000 feet, shrubland communities of oakbrush and serviceberry occur down to approximately 7000 feet, and sagebrush and agricultural fields primarily occur below 8000 feet.

Deer winter range includes nearly all of Game Management Unit 741, and generally the area between Highway 160 and the National Forest boundary. This includes approximately 500 square miles, or 47% of the DAU (Figure 2, Table 3). Severe winter range, where most of the deer are concentrated in severe winters (for example, the winter of 92-93) is a very narrow corridor approximately one-half mile wide along the Animas River from Durango south to the State line, the Bodo Wildlife Area and the extreme southern part of the DAU from the La Plata River west to the County line (and south of the state line into New Mexico). Severe winter range is only 4% of the DAU (42 square miles). Deer winter concentrations during normal winters are around the Bodo Wildlife Area and the southwestern one-quarter of GMU 741, and comprises approximately 12% of the DAU. Deer movements are initiated by increasing snow accumulations and falling temperatures, and also by increasing activity on public lands associated with hunting seasons. Movements generally begin in mid-October and continue until early December, and are in a southerly

direction towards Red Mesa and the lower La Plata River.

3. HERD MANAGEMENT HISTORY

3.1 Post-hunt population size

Deer populations were probably much higher in the 1950's and 60's than they are today based on browse lines still apparent on winter ranges and memories of long time residents. During the mid 1960's through early 70's, hunting seasons and bag limits were fairly liberal, and coupled with several bad winters, the deer population declined dramatically. The seasons were more conservative again from 1975 to 1984, and the population was probably near 11,500 deer in 1982. Since then, the population has grown to approximately 13,000 in 1987, and has once again been reduced to near 10,100 following the 1994 hunting season.

3.2 Post-hunt herd composition

Since 1985 when annual post-season composition counts were initiated, the buck:doe ratio has been very consistent in the 13-15:100 range (Table 1). The fawn:doe ratio has varied from 44-79:100 over the same period, and has averaged 57.3:100 (Table 1).

3.3 Harvest

From 1972 to 1984 the total deer harvest in the Hermosa DAU fluctuated from a low of 435 in 1975 to a high of 1297 in 1973. During this time the antlered harvest ranged from 435 to 1002 and antlerless harvest ranged from 0 to 400 (Table 2, Figure 4). The mean success rate from 1970 to 1984 was 39% (Table 2, Figure 3).

From 1985 to 1994 the total deer harvest ranged from a low of 977 in 1985 to a high of 1875 in 1991. The antlered harvest ranged from 707 bucks in 1987 to 1133 in 1989, and the antlerless harvest increased from 216 in 1985 to 774 in 1991 (Table 2, Figure 4). The mean success rate increased to 41% (Table 2, Figure 3).

3.4 Hunting Pressure.

From 1972 through 1984, the number of hunters in the DAU fluctuated from a low of 1421 in 1976 to a high of 2757 in 1983. From 1985 to 1994, the number of hunters ranged from 2388 in 1984 to 4475 in 1991, and averaged 3369 (Table 2, Figure 3).

Table 1. Summary of aerial composition counts, Hermosa deer DAU D-52.

	Bucks/100 does	Fawns/100 does	Total deer counted
1982	21.4	62.4	1169
1985	13.5	48.0	2090
1986	13.7	79.0	1700
1987	13.1	49.8	955
1988	15.6	55.0	1684
1989	12.8	44.5	1965
1990	15.5	60.4	1200
1991	13.7	57.0	1235
1992	17.6	63.7	999
1993	13.9	58.6	1350
1994	14.4	52.3	1352
Average	15.0	57.3	

TABLE 2. Hermosa Deer DAU D-52 Harvest, Hunters, and Percent Success, 1972-94.

	Buck Harvest	Doe Harvest	Fawn Harvest	Total Harvest	Hunter Numbers	% Success
1972	883	0	0	883	1759	50
1973	897	360	40	1297	2606	50
1974	1002	13	2	1017	2555	40
1975	435	0	0	435	1505	29
1976	555	0	0	555	1421	39
1977	656	0	0	656	1622	40
1978	994	10	2	1006	2410	42
1979	663	0	0	663	2024	33
1980	598	25	14	640	2121	30
1981	804	16	4	824	2413	34
1982	721	33	4	758	1671	45
1983	883	83	9	975	2757	35
1984	713	74	10	797	1937	41
1985	761	185	31	977	2388	41
1986	854	322	12	1188	2877	41
1987	707	307	24	1038	2852	36
1988	1066	281	23	1370	3398	40
1989	1133	513	30	1676	3803	44
1990	1076	667	50	1793	4250	42
1991	1101	733	41	1875	4475	42
1992	913	456	2	1371	3159	43

1993	947	307	18	1272	3120	41
1994	944	281	9	1234	3060	40
Average	839	203	14	1056	2617	40

4. CURRENT HERD MANAGEMENT STATUS

4.1 Population and Sex/Age Ratios

The Hermosa deer DAU is a new DAU, split from DAU D-29, which included the Cortez/Mancos deer with the Hermosa/Ft. Lewis Mesa deer, so no long term objective exists for population or sex and age ratios. The 1994 post-hunt population estimate for the Hermosa DAU was approximately 10,100 deer. The current herd model shows that after a high population of 13,000 deer in 1987, the herd has been reduced, and will be maintained at about the same size in 1995 until a new long range objective is established.

4.2 Current Management Problems

Development and the increasing influence of humans is decreasing the quality and amount of habitat and redistributing the deer, but has not reached critical levels seen in other areas of Southwestern Colorado. This habitat loss will continue to accelerate in the DAU as large farmed areas are split into smaller "ranchettes" and planned subdivisions are developed.

There are some areas in the southern half of the DAU where landowner/deer conflicts have been severe in recent years. These areas are usually alfalfa or bean fields that are actively growing and attracting deer, where several hundred deer may be seen in one field at dawn or dusk.

5. HABITAT RESOURCES

5.1 Public Lands. The entire DAU is split nearly evenly between public and private lands. The distribution of winter and winter concentration range is skewed heavily however, with only 6% of each being on public land. The most limiting factor in the Hermosa DAU is the severe winter range which (in Colorado) is only 4% of the entire DAU, and less than 1% of the DAU is severe winter range on public lands (Table 3).

5.2 Private Lands. Once again, nearly 50% of the DAU is privately controlled lands, with about two-thirds of these lands being privately owned and about one-third being the Southern Ute Indian Reservation, and a very small part being State School Trust Lands. Approximately two-thirds of the winter range is private lands and one-third on SUI Reservation. Two-thirds of the severe winter range and concentration areas are on SUI Reservation (Table 3).

Figure 5 graphically displays that the overwhelming majority of the deer winter range, severe winter range, and winter concentration areas are on private or Reservation lands. Because of snow depths and habitat differences, it would be nearly impossible to shift very much of the wintering population onto public lands in Colorado.

TABLE 3

Land ownership and deer winter, severe winter, and winter concentration range areas. All calculations are in square miles and numbers and percentages have been rounded.

		WINTER RANGE	WINTER CONCENTRATION	SEVERE WINTER RANGE	DAU
	PRIVATE	275 55%	71 53%	8 19%	346 32%
	SLB	15 3%	1 <1%	1 2%	18 2%
	INDIAN	178 35%	56 42%	26 62%	178 17%
PRIVATE ACCESS		468 94%	128 96%	35 83%	542 51%
	BLM	12 2%	<1 <1%	<1 <1%	57 5%
	BOR	6 1%	3 2%	3 7%	6 <1%
	USFS	1 <1%	0	0	452 42%
	CDOW	14 3%	4 3%	4 10%	14 1%
PUBLIC ACCESS SUBTOTAL		33 6%	7 4%	7 17%	529 49%
DAU E-30 TOTAL		500 47%	134 13%	42 4%	1071 100%

6. ISSUES AND STRATEGIES

Development and the conversion of relatively large agricultural fields into smaller agricultural and residential areas is gradually decreasing the quality and quantity of habitat. This is a problem to be addressed by the La Plata County

Commissioners and Planning Commission during their neighborhood and Comprehensive Plan process. The Colorado Division of Wildlife will continue to provide comments to the county on individual projects and comprehensive impacts from an accumulation of projects, but the county controls the planning and permitting process.
Certain areas in the southern half of the DAU have rather serious conflicts between agricultural production and deer. In most cases these are impacts on growing crops (alfalfa, beans). Secondarily, the number of deer in certain areas (distribution problem) seems to be an issue, exacerbated by the fact that several hundred deer can be seen in a few fields at times.

A third issue in the DAU is hunter access in the southern half, and the restriction this puts on antlerless harvest. Many of the larger landowners lease the hunting rights. Because of the fees involved, most of the hunters are interested in buck hunting only. Since doe hunters are generally less willing to pay trespass fees than buck hunters, they are denied access, so antlerless harvest is not achieved or is redistributed to a few (overhunted) areas.

A fourth issue is that in severe winters most of the herd winters in northern New Mexico. This requires cooperative planning between the two wildlife agencies and the Indian Reservations. A committee with representatives of these entities, along with representatives of public land managers from both Colorado and New Mexico and sportsmen, has been meeting to coordinate objectives, seasons, harvest, and inventories. Although season structures are quite different in the two states, harvests have been coordinated by sharing license number and harvest projections.

7. DEVELOPMENT OF ALTERNATIVES

The main purpose of this DAU Plan is to determine the long term post-hunt population and herd composition objectives. Listed below are a few of the many possible alternatives that could be considered to accomplish these objectives.

Population estimates are derived using computer model simulations that involve estimates of mortality rates, hunter harvest, wounding loss, and annual production. These simulations are then adjusted to align on measured post-hunting season age and sex ratio classification counts.

Each alternative also includes a brief discussion of habitat management that may be necessary for that population level. Generally, the lower the population objective the lower the investment needs to be in habitat improvements. As the objective population increases, the larger the investment needs to be. Habitat management practices vary in labor intensity, costs, and life expectancy of the project. Individual practices that should be considered include prescribed fires, fertilization, seeding, water developments, fencing, timber management, travel management, range management, salting, and many others.

Game damage problems would probably decrease under the low population alternatives, and would increase with increasing population levels, and would probably exceed current levels at the highest population levels. On the other

hand, fiscal benefits to the counties involved would also increase. Based on economic models produced by consultants, resident deer hunters in 1994 contributed approximately $405,763 and nonresident deer hunters approximately $768,116 to the economies of the counties in the data analysis unit. A population objective that involves reducing the number of hunting licenses by 10% will also reduce the economic benefits to the counties involved by approximately 10%.

One other factor that should be considered strongly in determining new long range objectives is forage production, range condition and trend, and forage allocation between various consumers. Unfortunately, the Bureau of Land Management and the US Forest Service-San Juan National Forest (the two major land management agencies in the DAU) are currently unable to provide that information.

7.1 Population objective

7.1.1 - 8,000 deer This population is about 20% below the current population. Based on current harvest strategy, this population could be achieved in 1995 or 1996, and then the number of antlerless licenses would be reduced. This is a lower population than has ever occurred in the DAU (at least since the 1950's).

* reduced game damage conflicts
* habitat improvement projects needed only for distribution problems
* negative economic impact on CDOW and counties

7.1.2 - 10,000 deer This objective approximates the estimated population after the 1994 hunting season. Harvest strategy will be maintained following the 1995 season to maintain the population.

* current level of game damage conflicts
* habitat improvement projects needed to distribute deer in problem areas and to mitigate for habitat losses to other uses

7.1.3 - 12,000 deer This objective reflects the population that occurred in the mid 1980's. Antlerless harvest would be reduced to allow the population to increase once again to 12,000, then be managed to maintain that population.

* increase in game damage conflicts
* habitat improvement projects needed in problem areas, to mitigate habitat losses to other uses, and to maintain healthy habitat

7.1.4 - 14,000 deer This objective reflects the population that may have occurred in the mid 1960's prior to the herd reduction. Antlerless harvest would have to be immediately curtailed and the population would recover to this level in only 2-3 years.

* increase in game damage conflicts
* significant investments in habitat improvement projects would be necessary in many areas to maintain damage conflicts within tolerable (to most people) levels and to maintain a healthy habitat.
* positive economic impact on CDOW and counties

7.2 Post hunt herd composition

7.2.1- 14 bucks:100 does This composition is approximately what is observed in the DAU presently so buck harvest could stay at present levels. This ratio has been fairly stable since the mid 1980's, and has been achieved without any special regulations or limits, only by the mix of unrestricted access on public lands and restricted access on private lands that occurs in the DAU. Approximately 75% of the buck harvest occurs in GMU 741, which is predominantly private land and heavily influenced by leased hunting areas. These leased areas can have a profound effect on the DAU buck:doe ratio, as well as the DAU population.

7.2.2- 18 bucks:100 does This composition would require a reduced buck harvest, which would require changes in the Regulations made by the Wildlife Commission to totally limit the antlered deer licenses available, or through some widespread voluntary effort by hunters and landowners. The Wildlife Commission has established regulations for the period 1995-1999 which do not include limited buck licenses in the first two seasons for GMU's 74 and 741 so this option is probably not possible until the year 2000.

8. ALTERNATIVE SELECTION

The Division of Wildlife's recommended alternative is 10,000 deer and 18 bucks:100 does. The DOW feels that this approximates our current population and is slightly above the long term average buck:doe ratio (15:100). This is a new DAU and therefore population and composition objectives have not been established.

The majority of the deer are fall and winter residents in GMU 741 (the southern half of the DAU), which is primarily private land and is strongly influenced by leased hunting land. Because of the lease payments involved and self imposed restricted access, a fairly good buck:doe ratio has been achieved, and is very popular with landowners and sportsmen. Most landowners feel the total population is acceptable, but recognize there are some distribution problems, which will be addressed by the San Juan Habitat Partnership Program Committee. The US Forest Service and BLM also support these objectives. GMU 74 is mostly public land and summers many of the deer, with fairly good populations of the deer remaining for hunting during the fall with good sportsmen access.

The Wildlife Commission adopted a population objective of 10,000 and buck doe ratio of 18:100 at their November 1995 meeting.