GRAND MESA DATA ANALYSIS UNIT D-12

MULE DEER MANAGEMENT PLAN

Prepared For
COLORADO DIVISION OF WILDLIFE

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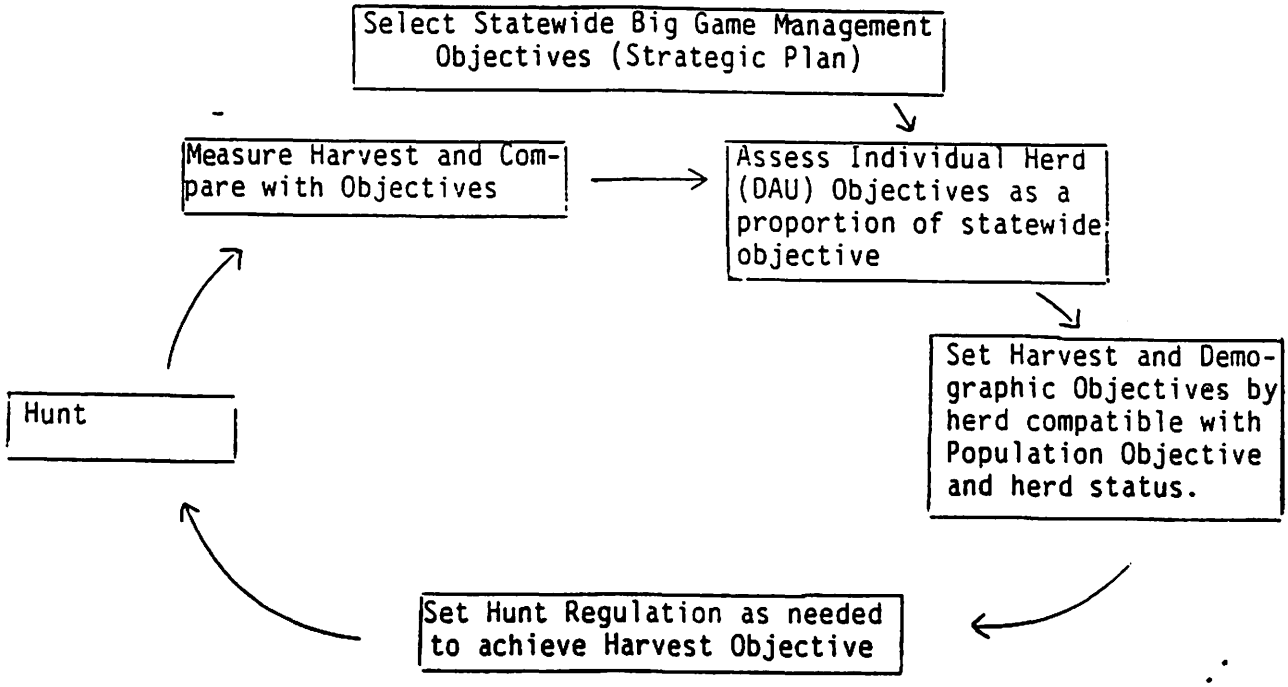
DAU PLANS AND WILDLIFE MANAGEMENT BY OBJECTIVES

Historically, big game seasons were set either as a result of tradition or political whims. Often the seasons that resulted little resembled what was going on with big game habitat. To some lesser degree, the setting of big game hunting seasons are still traditional and political, but something has changed in Colorado. The growing human demand for a finite wildlife resource dictates accountability. The Division approach to accountability is to manage our big game objectively. Herd by herd decisions have been made on how many elk or how many deer should be in each Data Analysis Unit (DAU). The current target date is 1988. In general, the numbers established for the 1988 long term objective were based on maximum historic population estimates tempered by current (1983) conditions. These include changes in land use and game damage problems. The Colorado Wildlife Commission is unique among Wildlife Commissions. Not only do they set season structure, season dates and limited license numbers, but through the objective setting process they establish short and long term objectives for each herd unit of DAU.

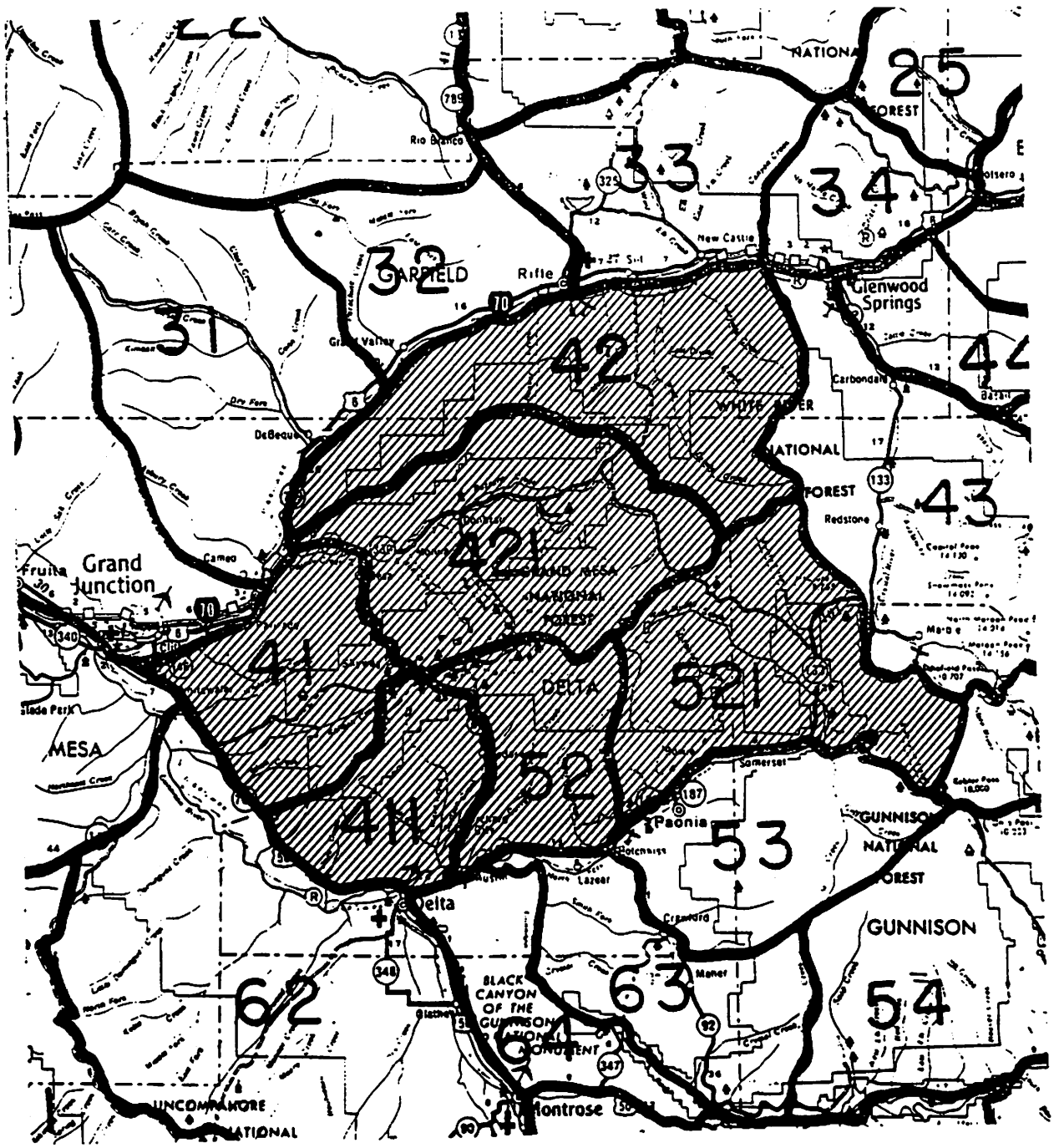
Figure 1. Colorado's Objective Cycle of Big Game Management and Harvest (adapted from Conolly in Wallmo 1981, pp 263)



The objective approach is an annual and long term cycle of information collection, information analysis and decision making that culminates each year in hunting seasons. The cyclic objective setting approach is designed to key the decision making process to the collection and analysis of information. It also focuses decision makers, the Division staff and the Wildlife Commission, on "what it is we want".

The DAU plan process is designed to examine the public desires and herd capabilities and result in the setting of long term objectives for the big game herds the plan covers. The public is involved in the determination of these goals by way of public meetings, comments and the Colorado Wildlife Commission.

GRAND MESA DAU



DEER

GRAND MESA DAU

POPULATION SIZE

Mule deer in the Grand Mesa DAU were on the increase during the 1950's. The peak post hunt population was reached in 1960 with approximately 59,000 deer. Throughout the 1960's deer numbers showed a decline. During the 1970's until 1985, the population has fluctuated, in response to hard winter, between a high of 37,700 in 1978 and a low of 29,600 in 1984. In 1985 the population was 3,1660. The historic average for the period from 1953-1972 is approximately 42,800.

HARVEST

Deer harvest peaked in 1962 with 15,051 animals harvested. The recent low harvest occurred in 1971 when 2,103 bucks were killed during a statewide "antlered only" hunt. Severe winters in 1973-74, 1978-79 and 1983-84 have also resulted in decreased in harvest. Antlerless harvest reached a peak in 1962 with almost 8700 does and fawns taken. Throughout the 1960's antlerless harvest averaged greater than 50 percent of total harvest. The "antlered only" season of 1971 reversed the trend and in 1975 the Division begun further limiting antlerless harvest by issuing limited either sex permits. In 1981 to present, the Division manages antlerless harvest by limited antlerless permits. Total antlerless harvest since 1975 has averaged around 1,000 does and fawns.

HUNTING PRESSURE

Deer hunting pressure was increasing through the 1950's. In 1954 the DAU had 3,100 hunters and increased to 10,700 in 1962. It stayed fairly uniform through the remainder of the 60's around 8,000. In the early 1970's deer hunting pressure took off again and reached an all time high of 16,400 in 1974. The next three years, 1975-77, showed reduced pressure averaging 9,100 hunters. Since 1978 to the present, hunting pressure has been relatively level, averaging 13,600 hunters.

Table 1. Post-hunt population, total harvest and number of hunters for Grand Mesa deer DAU D-12, 1953-85.

Year	Post-hunt Popln	Total Harvest	Hunters
1953	32865	1364	?
1954	36993	1839	3072
1955	41560	2134	3735
1956	46264	2609	4459
1957	46225	7139	6773
1958	50111	4444	6849
1959	54213	4982	6670
1960	58609	5379	5463
1961	57229	10876	7365
1962	50125	15051	10668
1963	48127	10251	8974
1964	44086	6385	7597
1965	40913	7938	9836
1966	40176	5583	7906
1967	38131	5706	7019
1968	35889	5937	7964
1969	33709	6060	6743
1970	31012	6733	13547
1971	34720	2142	4382
1972	35182	4490	8036
1973	33324	6473	14916
1974	30389	7063	16389
1975	31814	2714	9698
1976	35506	2514	6920
1977	36824	4668	10800
1978	37706	5925	13426
1979	31108	4326	13277
1980	31454	5512	13558
1981	34894	5961	13966
1982	36403	7017	14959
1983	36473	6075	14999
1984	29614	4942	12332
1985	31660	4456	11917

MANAGEMENT ISSUES

Three public meetins were held in 1986. The issues raised during these meetings were as follows:

Division of Wildlife Issues

1. The current deer population is at its lowest level since 1953.
2. Male to female ratios are at the lowest level since systematic classification surveys were started in 1971.
3. Increasing development and changes in land use are causing the destruction and degradation of critical habitats for the deer herd.
4. Deer are causing damage to young non-producing fruit trees in the Cedaredge and Paonia area of the North Fork of the Gunnison River.
5. Increasing numbers of deer are staying on winter ranges year-around.
6. Competition with elk is increasing.

Landowner Issues

1. Construct more fences to prevent damage to orchards.
2. Improve review process of game damage claims to insure they are handled objectively.
3. Develop a system whereby the state compensates landowners for animals harvested on private lands by the general hunting public, to provide hunters with better access to private lands.

U. S. Forest Service

1. The long term objective for mule deer (40,000) is too high.
   If the deer herd would be maintained at this level, range condition and trend will deteriorate.

2. There is a problem with hunter crowding on opening day.
3. Hunters cause damage to Forest Service roads during period of inclement weather.
4. Deer herds no longer follow historic migration patterns between summer and winter ranges.
5. Post-hunt buck:doe ratios are too low.

Bureau of Land Management Issues

1. Long term objective for mule deer is too high and would cause deterioration of range conditions if maintained at that objective for numerous years.
2. Planned public access routes may cause problems with critical habitats.

User Group Issues

1. Payment for game damage should come from the general fund instead of the game cash fund.
2. Reduce DOW's liability for game damage.
3. Purchase more critical habitats.
4. Reduce hunting season violations via enforcement and education.
5. Recommend more restrictive hunting seasons.
6. Improve low buck:doe ratios.

Local Government Issues

No specific concerns or issues were stated.

Developers Issues

No specific concerns or issues were stated.

ALTERNATIVE DEVELOPMENT

This section presents 15 alternatives based on different post season deer population levels and different post season buck-doe ratios. Five alternatives are presented on various population levels (20,000; 30,000; 35,000; 40,000; and 45,000); under each population level alternative, three alternatives on different buck-doe ratios are presented (10-15 bucks per 100 does; 20-25 bucks per 100 does; and 30-35 bucks per 100 does). To choose a preferred alternative, both a desired population level and a buck-doe ratio must be selected.

The information presented in Table 2 was generated from the Wang Pop 3 Population Model. The past five year (1981-1985) average of 77 fawns per 100 does was used at all population levels. Buck-doe ratios of 12, 22, and 32 were used in the models to represent the buck-doe ratio alternatives of 10-15, 20-25, and 30-35, respectively.

The 1985 post-season deer population in the Grand Mesa DAU was approximately 31,660 animals. The average 1985 post-season buck-doe ratio for the DAU was 12 bucks per 100 does.

Population Level Alternatives

Additional habitat manipulation projects would not be necessary under the lower population alternatives. Under the higher population alternatives, additional habitat projects should be initiated in critical habitat areas. Existing habitat projects on DOW, BLM, and USFS lands should be maintained under all alternatives.

Game Damage should decrease under lower population alternatives and will probably increase under higher population alternatives. However, game damage should decrease under all alternatives with the construction of additional permanent orchard fencing.

Buck-Doe Ratio Alternatives

The lower (10-15) buck-doe ratio alternative would provide maximum hunter harvest with unlimited antlered licenses. The 20-30 buck-doe ratio alternative would provide moderate harvest and quality and antler point restrictions would be requirred annually. The high (30-35) buck-doe ratio alternatives would provide low hunter harvest but high quality. Limited antlered licenses would be required annually.

The lower buck-doe ratio alternatives would have no significant fiscal impacts to the DOW or local and state economies. The high buck-doe ratio alternatives would have significant negative impacts to all economies!

PREFERRED ALTERNATIVE

The Division of Wildlife's preferred alternative is number 11: population level of 40,000 deer with 20-25 bucks per 100 does.

The Division of Wildlife feels that the DAU can support 40,000 deer without detrimental effects to the habitat. The majority of the people who attended public input meetings stated that they would like to have as many deer in the DAU as the habitat would adequately support. The public also stated that they would like to have more bucks in the population.

Table 2. Grand Mesa DAU Deer Alternatives; Harvest, Number of Hunters and Fiscal Impacts.

Alternative Number	Popln. Level	Bulls per 100 cows	Harvest[a]			Hunters[b]			DOW[c] License Sales	Econ.[d] ($)
			Antlered	Antlerless	Total	Resident	Non-Res	Total		
1.	20000	12	2503	1171	3674	6981	2204	9185	383,157	7,553,819
2.	20000	22	2268	1111	3379	6421	2028	8448	352,517	6,948,971
3.	20000	32	2048	1057	3105	3933	1242	5175	215,901	4,256,127
4.	30000	12	3756	1740	5496	10442	3298	13740	573,274	11,300,618
5.	30000	22	3400	1665	5065	9624	3039	12663	528,288	10,414,470
6.	30000	32	3072	1584	4656	5898	1862	7760	323,706	6,381,842
7.	35000	12	4380	1805	6185	11752	3711	15463	645,104	12,717,302
8.	35000	22	3981	1723	5704	10838	3422	14260	594,886	11,727,702
9.	35000	32	3587	1632	5219	6610	2088	8698	362,930	7,153,934
10.	40000	12	5007	2182	7189	13659	4314	17973	749,883	14,782,065
11.	40000	22	4532	2100	6632	12600	3979	16579	691,680	13,635,262
12.	40000	32	4095	2026	6121	7754	2448	10202	425,578	8,390,182
13.	45000	12	5631	2216	7847	14910	4708	19618	818,430	16,134,394
14.	45000	22	5107	2192	7299	13868	4380	18248	761,356	15,008,236
15.	45000	32	4640	2100	6740	8537	2696	11233	468,649	9,238,527

[a]Harvest figures derived from Pop 3 simulation for 1989 based on 77 fawns/100 does and assumption that the reproductive rate, natural mortality and wounding loss will all remain constant for all 15 alternatives.

[b]Based on five-year average (1979-1983) resident:non-resident ratio of 76:24. Average hunter success for all anterless and antlered deer by resident and nonresident hunter from 1980-1984 equals 40 percent for the 12 and22 bucks:100 doe alternative; used 60 percent success for the 32 bucks:100 doe alternatives.

[c]Based on 1985 license fees.

[d]Based on information from McKean and Nobe report, January, 1983.