

SOUTH REPUBLICAN DATA ANALYSIS UNIT

D-47

Game Management Units

103, 109, 116, 117

DEER MANAGEMENT PLAN

PREPARED FOR

THE COLORADO DIVISION OF WILDLIFE

BY

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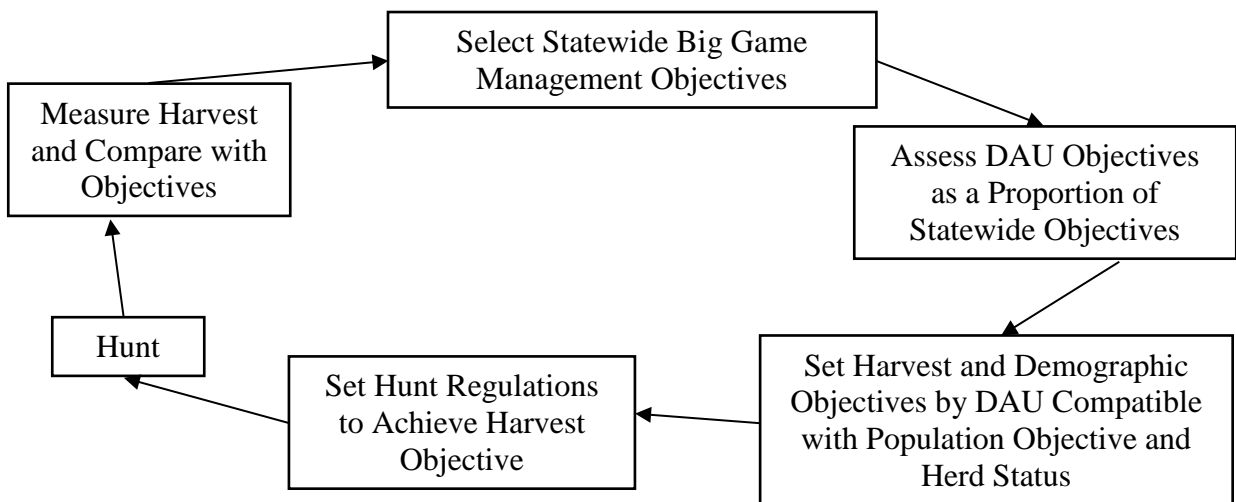
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DATA ANALYSIS UNIT PLANS

Historically, big game seasons were set by tradition and /or political whims. Seasons that resulted did not reflect what was occurring with wildlife populations or habitat. To a degree big game seasons are still traditional and/or political, but in response to a growing demand for finite wildlife resources, the Division of Wildlife must be more accountable. Managing our wildlife resources by management objectives creates accountability. The current approach is to make decisions on big game numbers by Data Analysis Unit (DAU) five years in the future. Planning is now taking place for the 2004 objective. Numbers established for the 2004 long term objectives are based on historic population estimates tempered by current conditions including land use changes and game damage conflicts.

DAU's are utilized to manage populations of big game animals. Each DAU is established to contain a discrete population of animals utilizing geographic boundaries that minimize movements between DAU's. Each DAU may contain one to 10 or more Game Management Units (GMU) to which specific management practices are applied to reach the DAU population and sex ratio goals. DAU management plans are designed to support and accomplish the objectives of the Division of Wildlife Long Range Plan and meet the public's needs and desires for their wildlife recreation while minimizing human/wildlife conflicts.

Figure 1. Colorado's Objective Cycle of Big Game Management and Harvest.
(Adapted from Conolly in Walmo 1981, pp263)



The objective approach is an annual and long term cycle of data collection, analysis and decision making that culminates each year in hunting seasons. The cyclic objective setting approach is designed to base the decision making process on the collection and analysis of data, primarily harvest data and inventories. It also focuses decision makers, the Division staff and the Wildlife Commission on population goals.

The DAU Plan process is designed to examine the public desires, habitat condition and herd capabilities and result in the setting of long term goals for big game populations. The public, other agencies and organizations and landowners are involved in this process through public meetings, written requests for comments and the Colorado Wildlife Commission.

SOUTH REPUBLICAN DAU

PHYSIOGRAPHY

The South Republican deer Data Analysis Unit (DAU), D-46, is located in east-central Colorado and comprised of Game Management Units (GMU) 103, 109, 116, and 117 (Figure 2). This DAU is bounded on the north by U. S. Highway 36; on the east by the Colorado-Kansas border; on the south by U.S. Highway 40/287 and on the west by Colorado Highway 59, within portions of Cheyenne, Kit Carson, Washington and Yuma Counties. The DAU covers 2,572 square miles ranging in elevation from about 4800 feet near Siebert to 3,540 feet where the South Republican River flows out of Colorado. Topography ranges from flat farm lands to rolling hills to some small breaks along rivers. Precipitation averages 12-14 inches which falls as winter and spring snows and spring and summer rains.

Major rivers and streams are: South Republican River, Hell Creek, Landsman Creek, Beaver Creek, North Fork, Smokey Hill Creek, East Spring Creek, Spring Creek, Sand Creek and Big Timber Creek. Bonny Reservoir is the only significant lake in the DAU.

Of the 2,572 square miles in the South Republican DAU, The Division of Wildlife controls 13,140 acres (20.5 square miles) which is the South Republican State Wildlife Area and makes up 0.7% of the DAU. The Bureau of Land Management

(BLM) controls about 380 acres (0.6 square mile) or 0.02% of the DAU and the State Land board controls 99.25 square miles or 3.8% of the DAU. The remaining 2451.6 square miles, 95.3%, is in private ownership.

Agriculture is the predominant land use in D-47. Livestock operations occur through out the DAU. Corn and wheat are the major crops with significant amounts of livestock forage being produced. In recent years significant acres of land is being put into the Conservation Reserve Program (CRP) and reseeded to grasses.

POPULATION DYNAMICS

Deer Distribution

Mule deer are most frequently found along river and creek bottoms in the South Republican DAU (Figure 3). Mule deer are often found in smaller drainages that have no trees, croplands (especially standing corn), sagebrush habitat and increasingly in Conservation Reserve Program (CRP) fields. Deer tend to seek out habitat that is most suited to their needs at different times of the year and may be forced out of riparian habitats by flood water or drifting snow.

Historically, white-tailed deer were found in riparian areas with fairly dense cover. These animals are being observed in areas remote from typical white-tailed deer habitat in croplands, range land and CRP fields and windbreaks.

Both types of deer occasionally concentrate in areas where crops are being grown and may cause conflicts with landowners due to crop depredations. The primary complaints are deer eating corn and grazing in alfalfa fields

Population Numbers

The post-season deer population, which includes both mule and white-tailed deer, increased steadily from about 700 animals in 1975 to a high of over 1700 animals in 1993 and 1994. The 1998 post-season population estimate is 1550 animals (Figure 4). For many years deer in the South Republican DAU were scarce and

landowners were very protective of the animals and often restricted hunting access. As population numbers increased landowners allowed more hunting and if deer were causing damage complaints, even more access was allowed. Since 1988 the population goal has been 1000 animals. Population numbers and sex ratios are derived from field observations, aerial census utilizing helicopters, and harvest data. These data are entered into the POP II population modeling program (Fossile Creek Software, 1992 v. 7.03, Fort Collins, CO) which generates population parameters and projections.

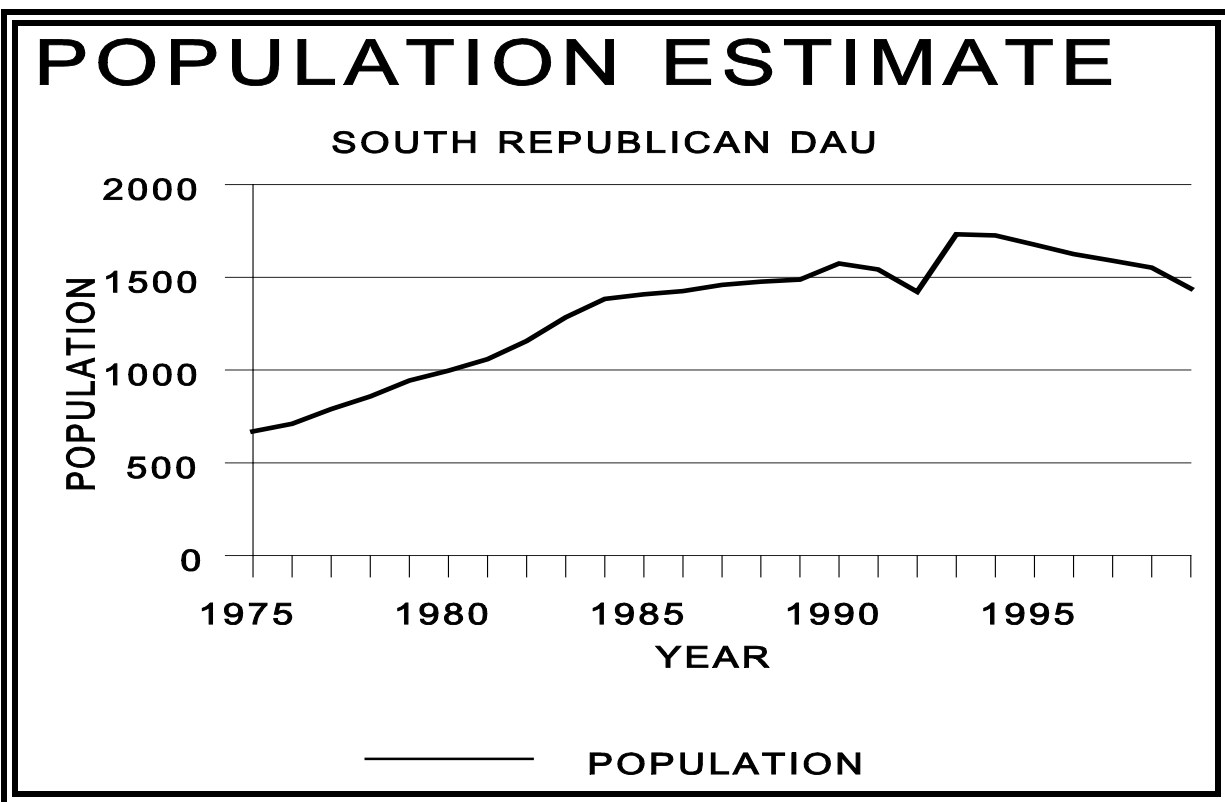


Figure 4. Projected population numbers for the South Republican DAW 1975-1999. The 1999 figure is a projection based on the estimated 1999 deer harvest.

Post-hunt Sex Ratio

Post-hunt sex ratios have been derived from field observations and the POP II model. Current estimates are about 50 bucks per 100 does. Aerial counts have shown buck doe ratio's as low as 15 bucks per 100 does in 1985 to as high as 57 bucks per 100 does in 1982. Numbers of deer in riparian areas can vary greatly and this is reflected in the numbers of deer classified in a given year.

There are a significant number of trophy sized bucks in this DAU which is reflected by the difficulty in drawing buck licenses and requires about 2 points in units 116/117, 3 points in unit 109 and 6 in unit 103.

Harvest

Deer harvest in the South Republican DAU is very dependent upon access onto private property. As the deer population has increased more landowners are allowing hunter access to their property, resulting in increased harvest (Figure 5). Since 1975 harvest has averaged 174 deer per year (96 bucks, 69 does, 9 fawns). The largest harvest was in 1996 with 322 deer being harvested (158 bucks, 158 does, 6 fawns) and the least harvest in 1977 when 43 deer (16 bucks, 20 does, 7 fawns) were harvested.

Between 1989 and 1998 hunter success has ranged from a high of 73% in 1991 to a low of 60% in 1997 and 1998, averaging 66% for the 10 year period. Success rates are dependent upon weather and the hunter's ability to gain permission to hunt. The only significant public land that is open to hunters is the South Republican SWA in unit 103. The public land in unit 103 is one significant reason why it requires 6 preference points to draw a buck license in unit 103, the other major factor is the presence of large bucks.

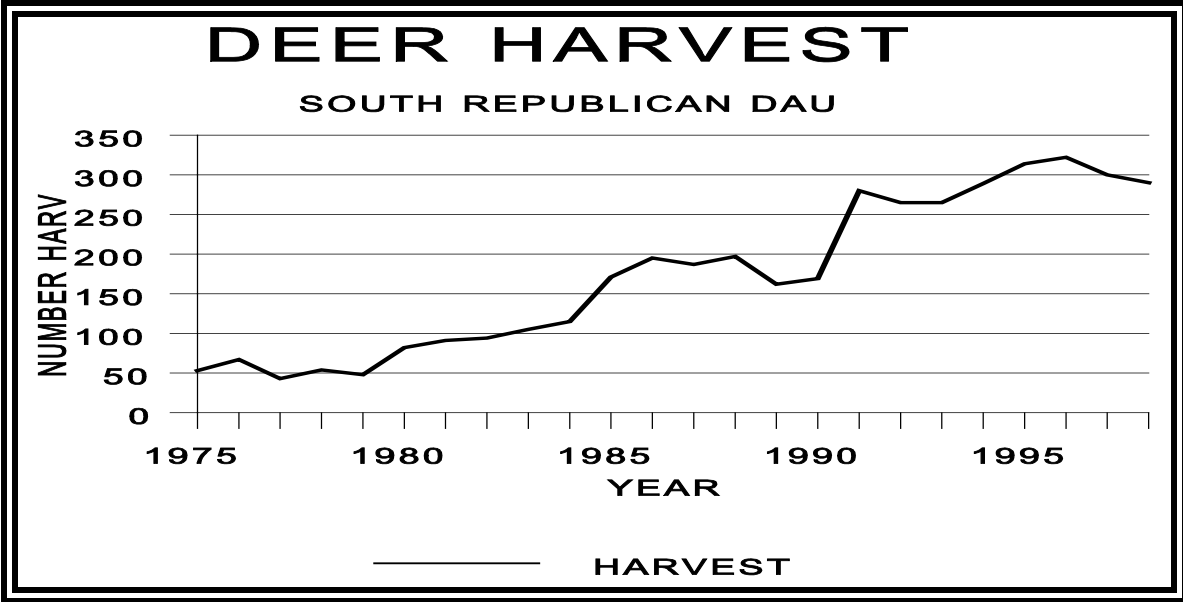


Figure 5. Deer harvest in the South Republican DAU 1979 through 1998.

Hunting Pressure

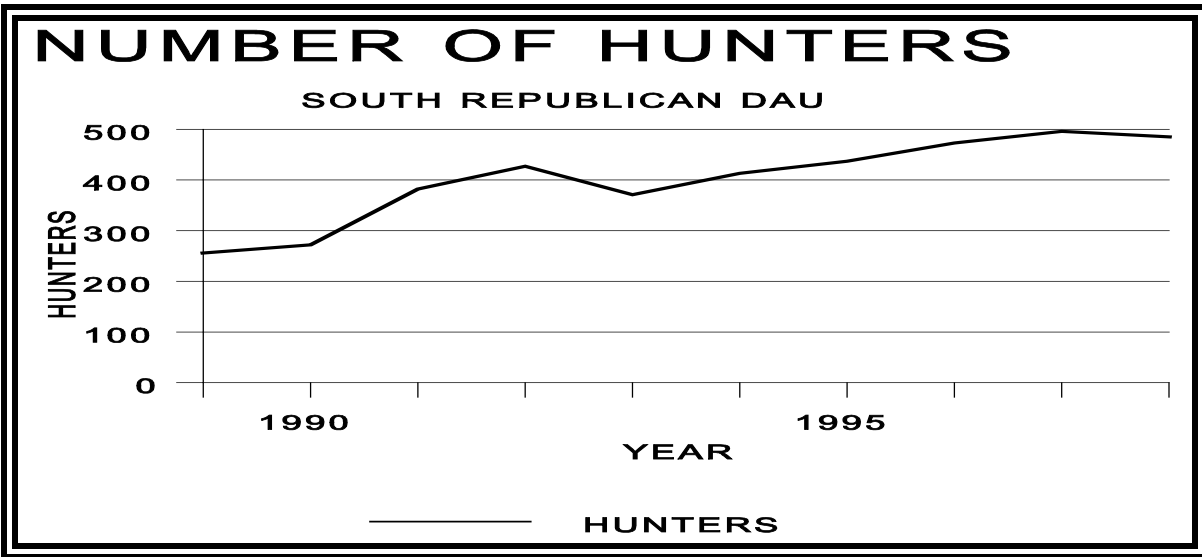


Figure 6. Hunter numbers in the South Republican DAU 1989 through 1998

As the deer population has increased, license numbers have been increased to prevent the deer population from growing. In the last 10 years, 1989 to 1998, hunter numbers have increased from 256 in 1989 to 496 in 1997 (Figure 6). The 10 year average is 401 hunters per year. As landowners have been willing to allow more hunters on private property, license numbers have been increased. There is a large demand for buck licenses in this DAU, but there are often doe licenses leftover after the drawings.

Current Herd Management

The 1998 post-hunt population estimate for the South Republican DAU is 1550 animals with a buck:doe ratio of 51 bucks per 100 does. For the last 10 years licenses have been increased as much as possible while trying not to greatly exceed the numbers of hunters landowners will allow access onto their property. This strategy has been working adequately and the deer population is slowly decreasing. Game damage complaints average about 3 per year and usually deal with deer in corn fields or grazing on alfalfa.

Issues and Strategies

Adequate deer census techniques are unavailable. The number of deer in the plains areas of Colorado need to have a better method of determining population estimates. Additional resources are needed to fund additional aerial surveys east of I-25. Additional research is needed to develop better deer census techniques that will provide adequate data for plains deer units.

Game damage is of concern. To date complaints have been alleviated by utilizing scare techniques or changing farming practices on the South Republican SWA.

Hunter access is limited. The problem is compounded by hunters or sportsman organizations leasing properties. These leases are often by outfitters who cater to hunters after large bucks and these properties are then unavailable for the harvest of does. Due to the large number of trophy bucks in this DAU the demand is for buck licenses and many of the hunters are not interested in hunting does. The DOW is exploring ways to increase doe harvest. One suggestion is establish a

license that will allow the taking of two animals, but the hunter must harvest a doe before being able to hunt a buck. Another option is to allow the taking of 2 deer. At this point in time the administration of either of these options is too cumbersome to implement. Other options will be explored as well.

Development of Alternatives

To gather input from the public, organizations, governmental agencies and DOW field personnel, letters were sent to all District Wildlife Managers that cover this DAU, Governmental Agencies and organizations (Appendix A and B) and 2 public meetings were held. There were no written responses from the various public and private organizations. The following public meetings were held:

| <u>Location</u> | <u>Date</u> | <u>Number of Attendees</u> |
|-----------------|-------------|----------------------------|
| Limon | May 25 | 2 |
| Burlington | May 26 | 11 |

Comments from public meeting participants voiced a desire for more deer and suggested increasing the population goal to 1,500 or 2,000 or 2,500. The majority felt 2,000 deer would be the best. The participants felt that the current sex ratio goal of 40 bucks:100 does was good.

Preferred Alternative

The preferred alternative for the population objective is 2,000 deer, an increase of 1,000 deer over the current population objective which was established in 1988. The preferred sex ratio objective of 40 bucks:100 does is the same as was established in 1988.

SOUTH REPUBLICAN DEER DAU PLAN

Executive Summary

DAU: D-47 South Republican Deer

GMU's: 103, 109, 116, 117

Current Population Estimate: 1,440

Old Population Objective: 1,000

New Population Objective: 2,000

Current Sex Ratio: 49 bucks:100 does

Old Sex Ratio Objective: 40 bucks:100 does

New Sex Ratio Objective: 40 bucks:100 does

Changes from current objectives/management:

This new population objective will allow increasing the population slowly over the next 5 years. As this population is increasing in spite of the numbers of doe licenses available, there should not be any significant change in license or hunter numbers.

Significant issues raised by the public and how the plan addresses those issues:

The population estimate is too low. The DOW is working on additional census effort to obtain a better estimate. Units 116 and 117 should be split to distribute hunters. This is an issue item for the November Commission meeting. Additional issues are beyond the scope of this plan: white-tailed deer cause more damage than mule deer and too many landowners are using landowner preference to get a license and hunting in other units or on property other than their own.