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# PRESCRIBED COYOTE CONTROL TO DEVELOP AN "OPEN WINDOW POLICY" FOR ENHANCING DEER SURVIVAL

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***Abstract:*** Management of white-tailed deer (*Odocoileus virginianus*) holds a high priority on many Texas ranches today The use of "prescribed aerial control" of coyotes to increase white-tailed deer productivity may provide wildlife managers with an economical management tool. I describe two case studies of ranches in the Lower Rolling Plains where prescribed coyote control has increased the deer herds

Today's wildlife managers are faced with producing a commodity that is acceptable to both landowners and hunters. The development of a productive white-tailed deer herd that can sustain an annual harvest will satisfy this need, by providing landowners with additional income and hunters with a quality recreational opportunity

However, there are many factors that affect the production of wildlife that is being managed Factors such as drought and above normal rainfall, with its associated flooding, are beyond the control of wildlife managers However, livestock grazing, harvest quotas, brush clearing and predation can be controlled, indeed manipulated, to enhance wildlife populations and their habitat.

The enhancement of wildlife habitat is of critical importance to the manager since habitat is the basis of production for any species. Other aspects of population management which are of prime importance to the wildlife manager are the genetic quality of the herd, deer density, sustained recruitment into the herd, and proper harvest quotas

I will report on two case studies (i e , ranches) where I have worked in recent years to manipulate coyote densities as a tool for increasing deer survival

**Davenport Ranch-Fisher County**

In September 1986, I had the opportunity to begin work with Mr Bob Davenport on a wildlife management plan for the 9,600-acre ranch he owns and operates in Fisher County, Texas. This ranch lies within the Lower Rolling Plains geographic area and is very typical of this region. The ranch is comprised primarily of low rolling hills bisected by one major drainage with numerous draws Mesquite (*Prosopis glandulosa*) is the dominant woody species inhabiting the upland, with light to moderate stands of western soapberry (*Sapindus drummondii*), chittam (*Bumelia lanuginosa*), elm (*Ulmus* spp ), cottonwood (*Populus deltoides*), and associated small brush species occurring in the water courses

A helicopter survey was conducted on September 23, 1986, to determine the status of the white-tailed deer herd and turkey population (Table l; Fig. 1). A total count of the ranch indicated a deer density of l deer per 105 acres; a low population level considering the availability and condition of the deer habitat on this ranch During the survey, we observed 17 coyotes and only 12 white-tailed deer fawns. When we calculated the fawn:doe ratio, this ranch had only a 21% fawn survival, compared to an average 61% fawn survival on other managed ranches in the same general area (Table l).

Deer management recommendations were made which included control of the coyote population, establishment of food plots, use of commercial high protein feed during vegetatively stressful periods and proper harvest of the deer herd A predator control program was initiated on the ranch during the winter and spring of
1986-87 which removed 54 coyotes by ground control (calling) and aerial hunting The majority of those coyotes were removed by aerial hunting

Controlling the coyote population just prior to the deer fawning period is referred to as the "*Open Window Policy*". The primary purpose is to allow deer fawns in a heavily-populated coyote area from 6 to 8 weeks of relative freedom from the coyote

**Table 1. Deer population data recorded from aerial surveys on the Davenport Ranch, Fisher Co., TX, 1986-94.**

| Year | No. Deer Observed | Acres/Deer | Fawn Survival for: *Ranch* (%) | *Area* (%) | No. Coyotes Removed |
|---|---|---|---|---|---|
| 1986 | 91 | 105 | 21 | 61 | 0 |
| 1987 | 146 | 66 | 74 | 65 | 54 |
| 1988 | 169 | 57 | 59 | 55 | 43 |
| 1989 | 168 | 57 | 56 | 51 | 62 |
| 1990 | 208 | 46 | 72 | 60 | 14 |
| 1991 | 202 | 48 | 67 | 59 | 5 |
| 1992 | 255 | 38 | 54 | 50 | 8 |
| 1993 | - | - | - | - | - |
| 1994 | 241 | 40 | 45 | 47 | 11 |

predation After 8 weeks, fawns are probably mature enough to start running with the does, hence less vulnerable to coyotes

The next year, a helicopter survey was conducted on November 1, 1987 This survey indicated a deer density of 1 deer per 66 acres, 74% fawn survival and a reduced coyote population, with just 7 coyotes being observed during the flight. The average fawn survival for other managed ranches in the area was 65%. The aerial hunting method, utilizing a helicopter, was again used to reduce the coyote population in April 1988, which resulted in the removal of 43 coyotes

The following fall, the aerial survey conducted on October 4, 1988, indicated a deer density of 1 deer per 57 acres, 59% fawn survival and 23 coyotes were observed during the flight The average fawn survival for other managed ranches was 55 %. Control measures, with the use of a helicopter, were again brought to bear on the coyote population during April 1989, when 37 coyotes were removed.

In the fall of 1989, due to the availability of the helicopter, aerial hunting of coyotes was implemented just prior to the aerial deer survey. On October 3, 1989, 25 coyotes were removed, bringing the yearly total for 1989 up to 62 coyotes removed from the ranch. The result of the aerial survey that fall indicated a deer density of 1 deer per 57 acres with a 56% fawn survival. The average fawn survival for other managed ranches was 51%.

In the following 3 years, 1990-92, a total of 27 coyotes were removed from the ranch by aerial hunting. This total includes 14 coyotes removed in October, 1990, 5 removed in October 1991, and 8 removed in November 1992. Aerial deer surveys conducted during 1990, 1991, and 1992 indicated deer densities of 46, 48 and 38 acres per deer, respectively The fawn survival percentages for this 3-year period were 72%, 67% and 54%, respectively. These data compare to an average fawn survival for other managed ranches in the area of 60%, 59% and 50%, respectively during the same 3-year period.

In 1993, no coyote control measures or aerial deer survey was conducted In the fall of 1994, aerial hunting of coyotes was used to remove 11 coyotes from the ranch. The aerial deer survey for 1994 indicated a deer density of 1 deer per 40 acres and a 45% fawn survival The average fawn survival for

other managed ranches in the area was 47%.

Since the start of the management program on the ranch in 1986, when 91 white-tailed deer were observed (1 deer per 105 acres) and predator control measures were subsequently implemented, the deer herd has been increasing with a concomitant decrease in the coyote population. By 1994, the observed deer population had increased to 241 animals with only 11 coyotes being seen and subsequently removed from the ranch.

**Hooker Ranch-Haskell County**

In 1992, I received a request from Jane Hooker, of the Hooker Ranches, for management recommendations on their 7,826-acre ranch in Haskell County. This ranch also lies in the Lower rolling Plains area. A helicopter survey conducted on October 9, 1992 counted 82 white-tailed deer (1 deer per 95 acres) (Fig. 2). Seventeen white-tailed deer fawns were observed, indicating a 50% fawn survival, and 34 coyotes were seen during the same flight The average fawn survival on other ranches in the area was also 50%

Based on these data, I recommended that a 2-hour helicopter flight be conducted for coyote control during the spring of 1993 to provide the deer herd with the "*Open Window Policy*" to enhance fawn survival. The flight was conducted on April 19, 1993, with 33 coyotes being observed and 32 removed.

On October 5, 1993, an aerial survey was conducted on the ranch with 106 white-tailed deer recorded (1 deer per 74 acres), 11 coyotes were observed during the flight Deer fawn survival was 87% based on the observation of 34 fawns during the survey. This compared to an average fawn survival of 57% for other area ranches during the same year

On April 19, 1994, a 2-hour helicopter flight detected and removed 14 coyotes. On September 29, 1994, an aerial survey counted 101 deer (1 deer per 78 acres) and only 2 coyotes Fawn survival was 62 % based on the observation of 28 fawns during the survey. The average fawn survival for other area ranches was 47% The area where the ranch is located was subjected to extremely dry conditions during the period from late- May through September.

During the aerial survey conducted on October 9, 1992, 3 feral hogs were observed. However, the next aerial survey (October 5, 1993) detected 33 feral hogs with 25 of them being young of the year. Additionally, numerous occurrences of rooting activity were located throughout the ranch during the flight. The September 29, 1994, aerial survey recorded only 14 feral hogs (5 of them young of the year) with no indication of fresh rooting being observed The extremely dry summer of 1994 may have forced the hogs to move the short distance south to the Lake Stamford area.

The "*Open Window Policy*" is an attempt to enhance fawn survival through the use of an economical control method for coyotes that can be applied to ranches in the Lower Rolling Plains area.. The average yearly cost of such a control method will be in $500 to $600 range. However, this cost can easily be justified with the increased revenue generated from the harvest of additional white-tailed bucks.

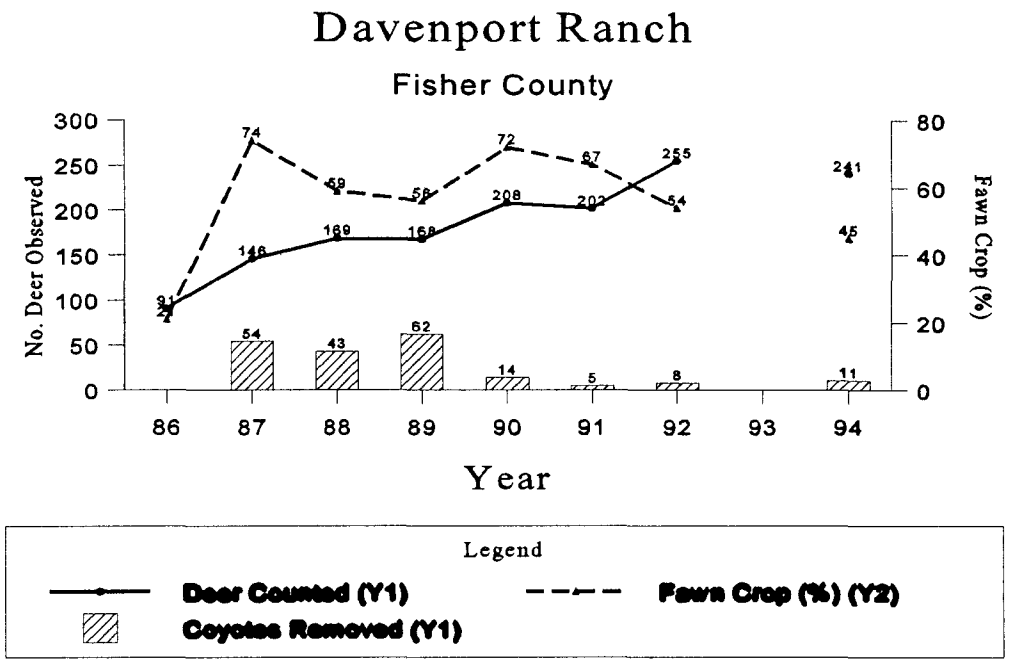


Figure 1. Deer population trends estimated by aerial surveys on the Davenport Ranch, Fisher Co., TX, 1986-94.

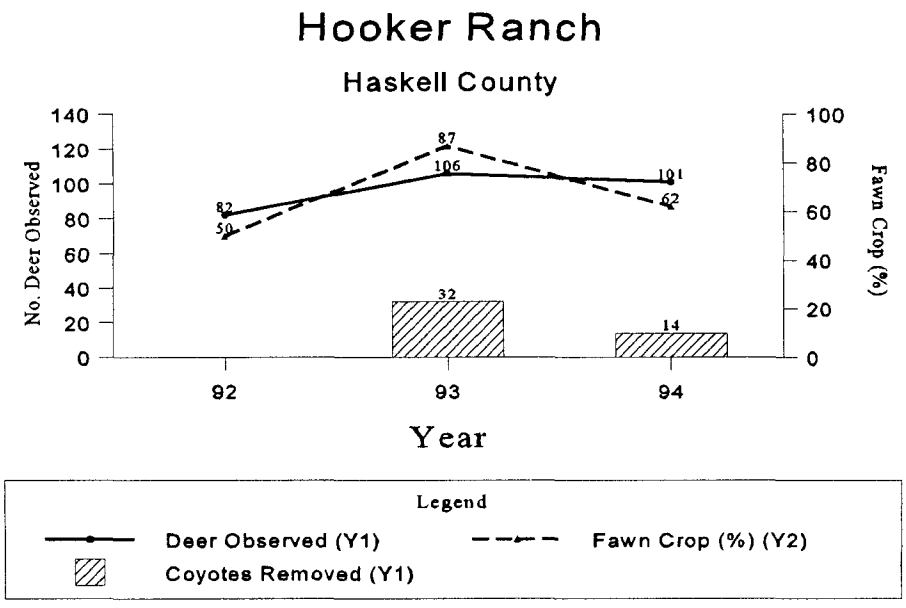


Figure 2. Deer population trends estimated by aerial surveys on the Hooker Ranch, Haskell Co., TX, 1992-94.