

SHORT NOTE

Marking and subsequent movement patterns of Springbok lambs in the Etosha National Park, South West Africa/Namibia

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INTRODUCTION

A study of the biology of springbok *Antidorcas marsupialis* began in the Etosha National Park in 1984. We needed to obtain information on age specific mortality and fecundity rates from individually identifiable animals of known age. A primary requirement was to determine a method of tagging which was permanent, visible at a distance and would allow for individual identification for about three years.

Marking animals for identification in research presents a variety of difficulties and is largely dependent on the purpose for making (Taber 1956). Temporary marking has included dyes (Melchior & Iwen 1965), freeze-branding (Farrell 1966), tags, pelage shearing and telemetric devices (Griben *et al.* 1984). Permanent marking has included removal of appendages (Griben *et al.* 1984), branding and freeze-branding (Hadow 1972).

In the present study the priority was that the method of capture and marking be applied quickly and easily to a large number of springbok lambs. This paper describes the methods of marking springbok lambs using ear tags and reports on their local movement patterns during a 24 month period.

METHODS

Capture

All the springbok lambs tagged were captured within 24 h of birth, during the month of January in 1986 and 1987. Springbok lambs tagged were initially captured during the day, by searching an area where springbok herds were seen. Lambs were stalked and caught by hand. Daily captures ranged from 2-8 lambs. Subsequently, lambs were caught at night, when they were easier to find, by means of a spotlight. Hidden lambs were located by the reflection of their eyes. The lambs were weighed, measured, tagged and released within 2 min of capture. Nightly catches ranged from 12-27 lambs.

Marking

Hasco monel metal tags (National Band and Tag Company) with coloured polyvinyl covered nylon straps (Sterkolite) 2,4×4,0 cm were used to mark the lambs. From 1986, tags were attached to both ears to minimise tag loss. One of the tags identified the tagging locality and the other the individual animal.

Research and management personnel in the Park recorded the locations of marked springbok over a 24 month period and tourists provided additional records.

RESULTS AND DISCUSSION

Tagging

During 1985 and 1986, 126 springbok lambs were ear-tagged in four different areas of Etosha (Figures 1-4). Approximately 93% (117) of the lambs were resighted during the monitoring. Eleven lambs were resighted more than once. The numbers tagged in each area are given in Table 1 below.

TABLE 1: Number of male and female springbok lambs tagged during 1985 and 1986.

Location	Males	Females	Total
1985			
Okaukuejo	7	9	16
Namutoni Area	5	-	5
Gemsbokvlakte	-	4	4
1986			
Okaukuejo	19	19	38
Namutoni Area	7	9	16
Gemsbokvlakte	6	7	13
Charisau Plains	20	14	34
Total	64	62	126

All resighted springbok reported had retained both ear tags.

MOVEMENT PATTERNS

Movements of the springbok lambs during the rainy season February to April and after the rains from May to December are shown in Figures 1-4.

The resightings of the 21 springbok marked in the Namutoni area are shown in Figure 1. Ten (48%) of those marked were within 100 km of the tagging location. The resightings suggests a westerly pattern of movement during the rains.

Figure 2 shows the movement patterns of the 34 springbok marked on the Charisau Plains. During the rainy season 29 (85%) were within 50 km of the tagging location while 24 (71%) were within 12 km of the area where they were born.

Of the 54 springbok lambs marked in the Okaukuejo

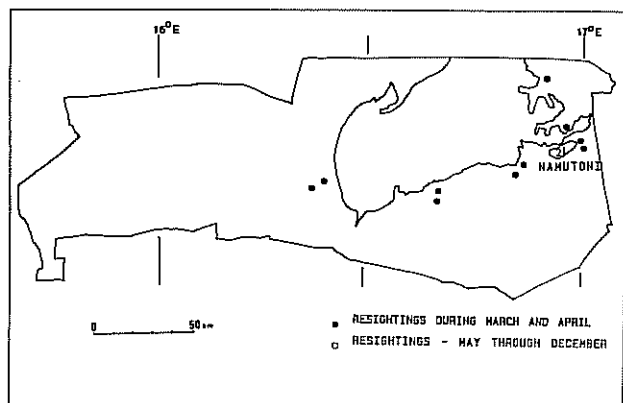


FIGURE 1: Resightings of 21 springbok lambs marked in the Namutoni area during March 1985 and December 1986.

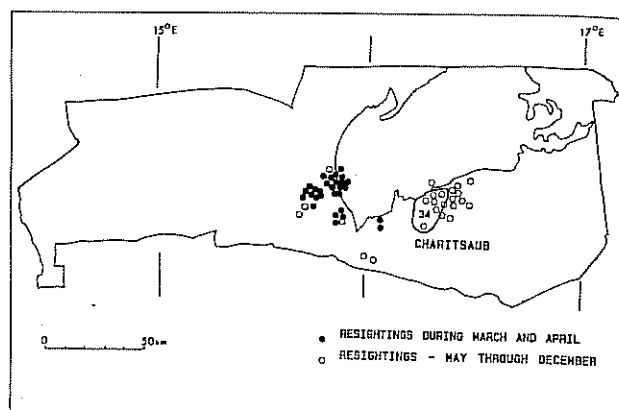


FIGURE 2: Resightings of 34 springbok lambs marked in the Charitsaub area during March 1985 and December 1986.

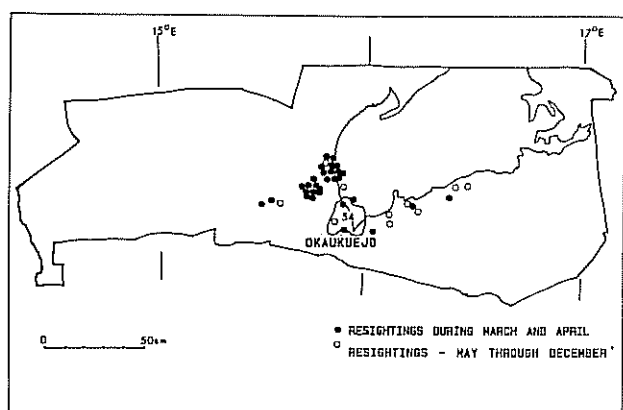


FIGURE 3: Resightings of 54 springbok lambs marked in the Okaukuejo area during March 1985 and December 1986.

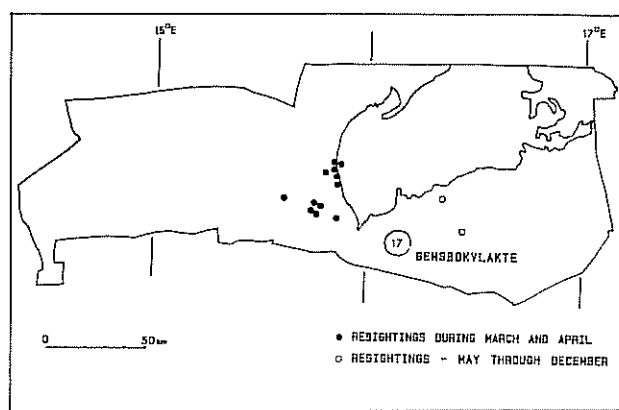


FIGURE 4: Resightings of 17 springbok lambs marked in the Gemsbokvlakte area during March 1985 and December 1986.

area 29 (54%) were within 12 km of the tagging location during the rains and 10 (19%) subsequently (Figure 3). Most springbok marked in this area showed limited movement.

Of the 17 springbok marked in the Gemsbokvlakte area (Figure 4), 12 (71%) were within 50 km of the tagged area at the Okaukuejo plains during the rains. Only 2 (12%) were within 20 km of the tagged area after the rains. Thus, the animals born in this area moved to the adjacent plains areas where grazing may have been more attractive.

INDIVIDUAL MOVEMENTS

Individual movements of eight springbok lambs are given below (Table 2). Distance moved by marked springbok ranged from 1–80 km between the tagging and resighting locations. Two males moved more than 80 km's, one marked in the Charitsaub plains and resighted north of Okaukuejo some 60 days later, the other tagged in the Okaukuejo area and resighted 60 days later at Okondeka. This second lamb was resighted at the Charitsaub plains 20 days later, having moved a farther 80 km.

The movement of springbok lambs for the first 12 months after birth seems localised. The lambs remain in the general area where they were born. The one ex-

TABLE 2: Location of eight marked and resighted springbok lambs giving approximate distances moved.

Marked		Resighted		Approx. Distance (km)
Area	Date	Area	Date	
Charitsaub	10/1/86	Charitsaub	1/5/86	1
Gemsbokvlakte	13/1/86	Charitsaub	1/5/86	37
Charitsaub	14/1/86	Charitsaub	1/5/86	1
Charitsaub	14/1/86	Charitsaub	1/5/86	1
Charitsaub	14/1/86	Okondeka	22/4/86	80
Okaukuejo	15/1/86	Okondeka	10/4/86	28
		Charitsaub	1/5/86	80
Gemsbokvlakte	15/1/86	Leeubron	16/2/86	55
Okaukuejo	17/1/86	Okaukuejo	30/4/86	1

ception was the springbok in the Namutoni area, which moved westwards to better grazing. The boundary fence in the Namutoni area restricts movement further to the east and may result in the animals returning to the plains in the west. Based on total game counts in the plains areas of Etosha, Grobler (1978) stated that an extensive easterly pattern of movement seemed to occur, with springbok moving on the plains skirting the Etosha Pan in the direction of Namutoni. This pattern of movement seems to have changed during the period since 1978 possible because of different rainfall patterns in the area. The present

study suggests limited movement by springbok. Movement patterns seem to be determined by the amount of green grass available, with adult springbok and their young moving to the improved grazing areas. In a study in the Western Transvaal Van Zyl (1965) found that grass was the most important food item of springbok during the rainy season followed by shrubs in the dry season, possible because the nutritional value of grass is important only when green, whereas shrubs retain much of their food value throughout the year (Leistner 1967). The movement of springbok in Etosha appears to be determined by the amount of green grass present in the areas where they are born. The lambs move with their mothers to the nearest plain areas as the grass begins to dry.

ACKNOWLEDGEMENTS

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