

APPENDICES

Appendix 1

The Impala *Aepyceros melampus* (Lichtenstein, 1812)

The impala belongs to the Genus *Aepyceros*, and was originally described from a specimen from "southern Bechuanaland" which is the former British Bechuanaland and what is today part of the northern Cape Province. The name was most probably from the Tswana name "Phala", although it has been claimed to be derived from the Zulu name for the species. Ansell (1972; in Skinner & Smithers 1990) listed six sub species for the impala from the continent, only two of which occur in the southern African subregion: the impala *Aepyceros melampus melampus* (Lichtenstein, 1812), which has an eastern distribution and the isolated population of the black-faced impala *Aepyceros melampus petersi* (Bocage, 1879), which is found in northern Namibia and South Western Angola.

Distribution

Description

Impala are one of the most graceful and beautiful of the antelopes with their shiny reddish coats and long slender legs. The adult males of the *A. melampus* stand approximately 0.9 m at the shoulder and have a mean mass of about 50 kg; the females are slightly smaller, with a mean mass of about 40 kg.

Body measurements

The upper parts of the body are rich reddish brown. The flanks, from behind the shoulders are a pale fawn. The underparts such as the belly and throat are pure white. They have white patches above the eyes, which run down the face in narrow white

APPENDICES

bands in front of the eyes. They have a dark brown nearly black patch on top of the forehead. The insides of the ears are white and they have contrasting black tips.

Impala have black patches above the ankle joint these are oval in shape. The upper parts of the limbs are pale fawn like the flanks. There is a distinct black band on either side of the base of the tail. These bands are wider at the top than at the bottom and extend to the back of the thighs. The tail is white on the underside with a black band running over the top (Skinner & Smithers 1990).

Only male's carry the lyrate horns, which swing back from their heads, then bow outwards, then inwards and slightly forward to their sharp inwardly directed points. They are strongly ridged for about two thirds of their length, but smooth towards the points.

Distribution

Impala are widely distributed in the eastern woodland parts of Africa, from Northern Kenya south to northern Natal, extending westwards in more southerly parts of their range to the extreme southern parts of Angola. In the Subregion they have been introduced widely, and reintroduced to privately owned lands and game reserves in Zimbabwe, Northern Province, Mpumalanga and Natal where they are now distributed widely throughout.

APPENDICES

Habitat

The impala are associated with woodland, preferring semi open areas. In the Northern Province they are associated with mopane and *Acacia*, but are also associated with other veld types such as *Combretum* and *Terminalia*. Generally the impala avoid open Grasslands. However, they do occur on an ecotone which is a combination of woodland and open grassland. Cover and availability of surface water are essential habitat requirements.

Habits

Impala are gregarious animals, occurring in small herds of six to 15 or 20 in the dry season and they will congregate to herds of up to 50 to 100 animals in the wet and early dry season. Herds can be divided into three social organisations: bachelor herd, breeding herd and nursery herd.

Breeding herds

Breeding herds consist of adult females and juvenile females, juvenile males and at times, other than during the rut, include a number of adult males. Breeding herds are cohesive and stay together most of the time, though there are instances of females switching herds. The juvenile females will stay with the herd after they have reached adulthood. The dominant male, however, evicts juvenile males, from the herd when they reach sexual maturity at the age of 13 months.

APPENDICES

Bachelor herds

Bachelor herds consist of adult males and juvenile males, the adults being potential territorial males. The bachelor herds tend to occupy areas away from those of the breeding herds, where they are less subject to disturbance. This is most apparent during the rut when members of the herd are subject to aggression from the territorial males. They are less organized than the breeding herds and adults leave them during the rut to establish their territories, returning to the herd when the rut is over. Just prior to the rut adult members destined to become territorial become aggressive, and this leads to spacing within the herd, and therefore a loss of structure.

From January onwards, members of the bachelor herd become increasingly restless, alert and aggressive towards the other males. Adult males eventually break away from the bachelor herds and establish territories for themselves, which vary in size from 50 – 80 km². These territories are established by males between the ages of 4.5 and 8.5 years only during the rut and are relinquished thereafter.

Nursery herds

These herds are temporary and only consist of juveniles of both sexes, members of these herds will return to the breeding herds after a short period of time.

Impala are diurnal, with some nocturnal activity. They stand or lie down to rest during the hotter hours of the day. When active they keep moving with tails wagging, ears twitching and feet stamping.

APPENDICES

Reproduction

Impala are short-day breeders, with a restricted mating season in autumn. Though many researchers have found different breeding peaks, they all coincide with a peak of births at the beginning of the wet season. Males reach sexual maturity at the age of 13 months. Rams are able to mate with females in their second year of life but can only breed when they are three to four years old, due to the fact that they are physiologically unprepared for assuming territories. The male sexual cycle peaks in autumn and reaches a low point in the spring. This parallels a decline in body condition, fat reserves of male impala declining rapidly during the rut. Fat reserves of the female declines to a minimum in January when milk production is at its maximum.

The breeding herds are mobile and move through several male territories. Males will herd females from the herd and will determine oestrus by genital smelling and licking. The females will be courted and copulation will follow if the female is receptive.

The male will then mount the female repeatedly in brief contacts of up to ten seconds and after successful copulation the male usually snorts and roars.

The females conceive at just over the age of two years for the first time. The gestation period is approximately 197 days. The females break away from the herds to give birth in isolation, parturition taking place in thick underbush. The young are hidden for a period of a day or two. The young are seldom in close association with their mothers, except when suckling (Skinner & Smithers 1990).

APPENDICES

Predation by spotted hyenas and other large predators including cheetahs is high during the early stages of their life, when jackals and pythons also take their toll.

Diet

Impala are browsers and grazers (intermediate mixed feeders), the intensity of either depending on the locality in which they occur. The proportion of grass in the diet is reflected by the availability of abundant green grass in the area. The intake of grass can reach a proportion of 75 % of the diet, but can also be as low as 9 % during the dry season. Some grass species occur regularly in the diet of the impala, Finger grass, *Themeda triandra*, *Cynodon dactylon*, Guinea grass and many more.

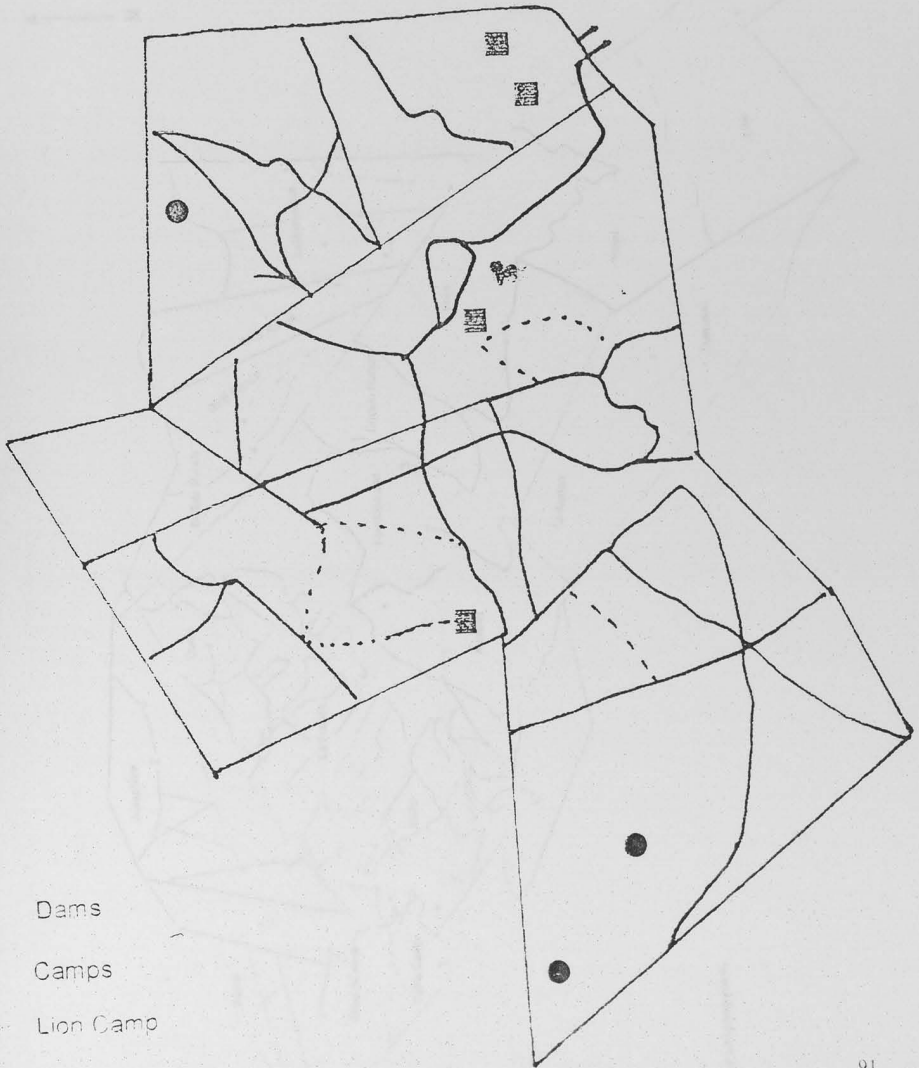
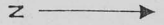
The browse consists of the leaves and fine twigs of shrubs and trees, either eaten while green or picked up dry from the ground. A wide range of browse plants is eaten. The impala are partial to wild fruits. The *Acacia* is common in most areas where the impala are found and the fine leaves and twigs are common in their diet. Other common species include: *Combretum* spp, *Grewia* spp, *Dichrostachys* spp, *Terminalia* spp, mopane.

Impala are dependent on availability of drinking water and remain within eight kilometres of it. Under certain circumstances they can obtain their moisture requirements from succulent foods.

APPENDICES

Appendix 2

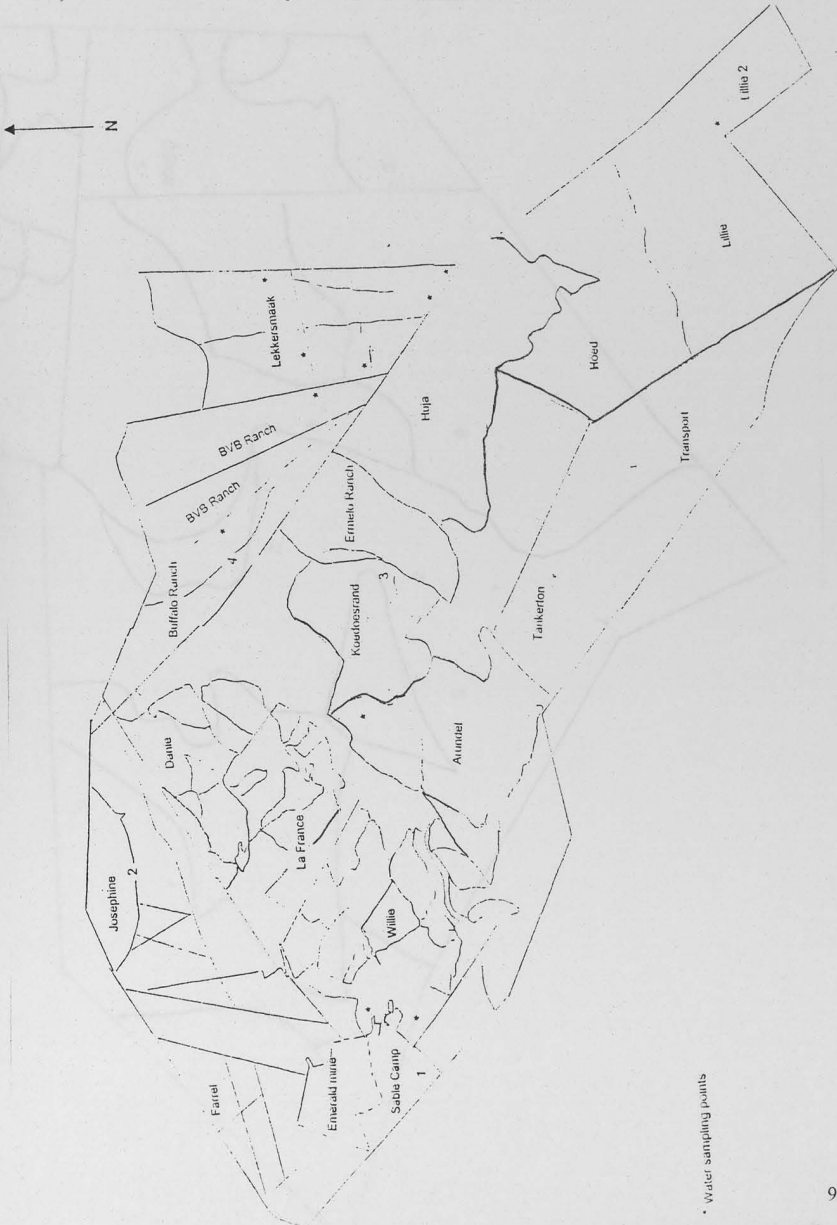
Map of Ndzalama Game Reserve



APPENDICES

Appendix 3

Map of Selati Game Reserve



APPENDICES

Appendix 4

Map of Mara Research Station

