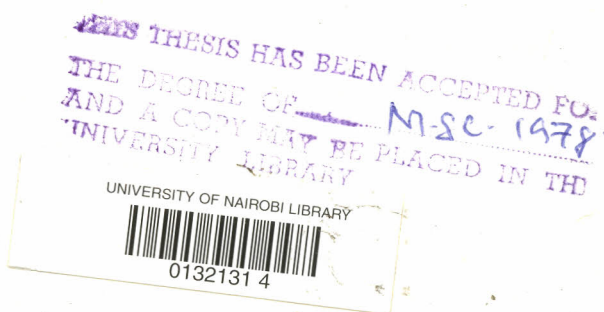


POPULATION STRUCTURE, ACTIVITY AND DISTRIBUTION OF GRANT'S GAZELLE  
IN NAIROBI NATIONAL PARK.

by

Elizabeth Sandra Duggan



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## ABSTRACT

An autoecological study of the Grant's gazelle population in Nairobi Park was carried out between September 1972 and October 1973. The object of the study was to define the population in terms of abundance, activity and distribution and to investigate some independent environmental factors of control. No previous study of this species in the Nairobi area has been published and except for the behavioural work of Walther (1965, 1972), similar studies elsewhere have been of short duration.

The principal method of investigation was direct observation. In order to define their ecological niche, it was necessary to make quantitative measurements of the vegetation. A small sample of gazelles was taken and the stomach contents examined, thereby providing some data on feeding habits.

The results showed that Grant's gazelle exists at a relatively high density in the park. There was little fluctuation in the total population within the duration of the study and while there appeared to be continuous breeding, two small calving peaks were noted just before the rains. The sex ratio amongst the adult population is consistently 2:1 in favour of females. The reasons for and significance of this imbalance are discussed. Group types were found to coincide with Walther

observations of gazelle groups associated with bush areas as opposed to those on the open plains. Group size of the characteristic group (i.e. the male-female group) was also found to be the optimal (as defined by Walther) for group stability. Group fragmentation was observed in the dry months.

Daytime group activity was monitored in the three most common group types : the male-female group, the female group and the bachelor group. A clear activity pattern emerged consisting of two periods of coordinated mobile activity for the first and last hours of the day with an intermediate period of less coordinated static activity. This pattern is compared with the available literature on the recorded activity of other ungulates. Factors of control may be highly complex but it is tentatively suggested that temperature and relative humidity may be 'trigger' factors for rest and activity periods. Temporary variations on the basic activity pattern were often associated with the presence of rainfall, predators, tourist vehicles and aircraft. It was also suggested that factors such as a continuous period of low or high rainfall or temperature, or vegetation type may also produce changes in the duration of the static and active periods.

The distribution of Grant's gazelle in Nairobi Park was found to be non-random. Factors such as shade, the presence of surface water or other animal species were considered, but found to be relatively unimportant in determining distribution when compared with vegetation parameters. Grant's gazelle was observed in five of the nine available vegetation types. The largest of these five types was the least used. There was a slight seasonal movement down the catena in the dry months. It is suggested that

the variety of grass species and the high densities of grass, herbs and shrubs in the short grass areas attract the gazelles in the wet months while the relative condition and the variety and density of shrubs on the river sides attracts them to these areas in the dry months. It was also found that these two preferred vegetation types are usually included in the home range of Grant's gazelle.

In conclusion, Gazella granti granti was existing at a high density in Nairobi Park during the study period so that the park habitat can be considered as being an appropriate environment for the survival and perpetuation of the species at that time.