KRUGER NATIONAL PARK

DEPT. OF RESEARCH AND INFORMATION MEMORANDUM

MONITORING OF UNGULATE POPULATION STRUCTURE IN THE KRUGER NATIONAL PARK - REPORT ON A SURVEY DURING AUGUST, SEPTEMBER AND OCTOBER 1986

Compiled by

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MEMORANDUM

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INTRODUCTION

Data on age distributions (the proportions of different age-groups) and sex ratios pertaining within animal populations provide a useful basis for assessing recruitment and survival rates. While population trends reflect the interplay of numerous, often variable, environmental factors, they are effectively determined by the relative rates of natality and immigration versus mortality and emigration. Long term monitoring of ungulate populations is essential for understanding their dynamics *vis-á-vis* environmental variables and thereby providing a basis for enlightened management.

Monitoring of the major ungulate populations in the Kruger National Park (KNP) has largely depended on standardised aerial censusing techniques. These aerial surveys are conducted annually during the dry season and also provide some data on calf percentages and social structure for certain large herbivore populations, but not the more comprehensive data on sex and age composition that can be obtained from periodic sample counts on the ground. Moreover, apparent trends in population numbers based on aerial counts may be subject to counting variability between successive years. Field classifications of sex and age classes also have limitations, particularly in that they do not provide information on adult mortality, which is necessary for interpreting age ratios. Adult mortality rates may markedly influence estimates of juvenile mortality based on the proportions of juveniles and adults at different times, and increases or decreases in population size may occur without change in age ratios (see Caughley 1974). Ideally therefore, a combination of aerial and ground surveys should facilitate more reliable assessment of population trends by providing complementary data on population size and structure.

1 pair (1AM+1AF) - region A
1 bachelor group comprising 2AM - region E
1 bachelor group comprising 2AM - region M
1 bachelor group comprising 3AM - region M
1 lone AM - region M
1 breeding group (1AM+3AF) - region M
1 other group (1YM+2YF+1JF) - region M
1 lone AM - region N
1 breeding group of approximately 12 (including at least 3J) - region N
1 lone AM - region O
1 lone AM - region P
1 breeding group (1AM+3AF) - region P
1 breeding group (5AF+5J) - region P
1 breeding group (1AF+1YF) - region P
1 breeding group (3AF+1YF+2J) - region P
1 lone JF - region P
1 other group (1YM+1YF) - region P
At least 2 unsexed adults - region P

WHITE RHINOCEROS

Total sample = 28

Sex and age composition: The population sample comprised 23 adults (15M, 8F), 2 subadult males (estimated 2-3 years old), 2 yearling females, 1 juvenile male.

Social units: 9 lone AM, 2 bachelor groups (each comprising 2 AM), 1 (AM+AF) pair, 1 (AF+JM) pair, 2 (AF+YF) pairs, 1 association of 2AF+2SAM, 1 association of 2AF accompanied by 1AM.

Regions where sightings were recorded: A, B, C, D, F (46,4% of rhinos classified were from region C).

Note: SA = subadult (2-4 years)

The 1986 aerial count of white rhinos in the KNP exceeded 1 000 for the first time on record and the total of 1 179 represented at 26,0% increase over the 1985 count.

BLACK RHINOCEROS

None were observed during the fieldwork.

REFERENCES CITED

CAUGHLEY, G. 1974. Interpretation of age ratios. *J. Wildl. Mgmt.* 38: 557-562.