

DEPARTMENT OF AGRICULTURE AND NATURE CONSERVATION

NATURE CONSERVATION BRANCH

PROGRESS REPORT

OF THE BIOLOGIST, ELOSHA NATIONAL PARK

FOR THE PERIOD OCTOBER 1980 TO SEPTEMBER 1981

THE ECOLOGY, BEHAVIOUR AND POPULATION DYNAMICS OF

LARGE PREDATORS AT THE ELOSHA NATIONAL PARK

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PHASE 1 : FIRST APPROXIMATION OF THE POPULATION STRUCTURE OF  
LIONS Panthera leo.

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A B S T R A C T

Ten years (1972-1981) analysis of punch cards' data (n = 4 927 lions) revealed that adult males comprised 31% of the population and adult females 43%. The difference in adult sex ratios was significant, but not significant for immatures. Mean pride size was 6,2 (range 2 - 27) and mean litter size was 2,7 (range 1 - 5). These parameters compared favourably with free-ranging lions in the Serengeti National Park. Initial estimates set the total lion population at Etosha between 300 - 500.

## 1. INTRODUCTION

The purpose of this phase of the project is to examine the structure of the lion population and to estimate its size at Etosha. Thereafter, comparisons can be made with other African conservation areas to see if significant differences occur and whether management of Etosha's lions is necessary.

Preliminary observations (Berry, 1980) indicate that predator control at Etosha is desirable and here we report on more detailed analyses of the Etosha lion population's structure.

## 2. METHODS

### 2.1 Population Structure

Punch card data (Joubert, 1972) for 10 years (1972 - 1981) were stored in a UNIVAC 1106 computer. A total of 995 observations on the age-sex-social composition of 4 927 lions were subsequently sorted and tested statistically by Chi-square.

### 2.2 Population Size

This part of the investigation is still in progress and uses the Lincoln Index. The intention is to capture and mark a sufficient number of Etosha's lions to obtain a valid estimate of population size. During the period May to September 1981 a total of 18 lions (9 males, 9 females) have been captured and marked by hot branding for subsequent identification. In 1982 we will try to mark a further 100 lions.

## 3. RESULTS

### 3.1 Population Structure

The demography is given in Table 1 and the results of the statistical tests in Table 2.