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AUSTRALIAN NATIONAL PARKS AND WILDLIFE SERVICE  
RESEARCH AND SURVEYS CONSULTANCY PROGRAM 1988/89

Title

Macropod Conservation - Fox Control Studies Phase 3 17545

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The following report is divided into sections as defined under Clause 2 of the Principal Agreement (see Scope of the Consultancy Services).

**2.1 Home ranges of foxes in Watheroo National Park.**

An extensive fox radio-tracking program in Watheroo National Park has recently been completed. Data on a number of individuals are being subjected to home range analysis to determine home range dimensions and patterns of use.

**2.2 Social structure, behaviour and movement of fox populations resident in Watheroo National Park.**

Once the home range data, outlined above, have been analysed aspects of social structure, behaviour and movement of foxes in the park will be apparent.

**2.3 Fox density in Watheroo National Park.**

Fox density within the park will be calculated by firstly using the radio-tracking data to map home/territorial ranges and then by relating the social structure of the fox population to territorial behaviour.

**2.4 Calibration of density indices against known densities in Watheroo National Park.**

Once we have determined fox density for given areas within the park it will be possible to calibrate the CPUE (Catch Per Unit Effort) indices of abundance against actual abundance. The CPUE is defined as the number of fox kills per 100 cyanide capsules laid. Five transects, in the northern area of the park, were used to calibrate density indices. Manipulation of the population size following the 1080 baiting, outlined below, enabled us to examine density indices at lower fox levels on a further 4 transects in the southern area of the park.

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## 2.5 Assessment of the effectiveness of baiting trials

Watheroo National Park was aerially baited with 1080 meat baits at an intensity of 6 baits/square km. Retrieval of killed radio-collared animals is still being conducted. At the study's completion, the proportion of the collared population killed will allow us to determine the efficiency for this baiting regime.

## 2.6 & 2.8 Bait longevity trials, micro-biological agents capable of degrading 1080 in soils and in bait materials, and non-target species at risk from 1080 poison baits.

This work is still in progress and results will be made available at a later date.

## 2.7 Population biology of the fox with respect to age and sex structure, and reproductive status at Watheroo National Park.

Laboratory analysis of the age and sex structure, and reproductive status of retrieved cyanide baited foxes is in progress. Results of these analyses will be made available at a later date.

## 2.9 Exploratory investigations of fox densities in a remote area (Gibson Desert Nature Reserve).

Work in the Gibson Desert will commence on the 9/5/89. CPUE indices are to be conducted along 100km of track over a 3 week period. Results of this preliminary study will provide information on fox densities in the area, age and sex structure and food habits.