HABITAT USE BY *AONYX CAPENSIS* AND *LUTRA MACULICOLLIS* IN THE NATAL DRAKENSBERG (SOUTH AFRICA): PRELIMINARY RESULTS

CATERINA CARUGATI*, DAVID T. ROWE-ROWE**&. MICHAEL R. PERRIN**

** Department of Zoology and Entomology, University of Natal, P.O. Box 375, Pietermaritzburg, 3200 South Africa*

*** Natal Parks Board, P.O. Box 662, Pietermaritzburg, 3200 South Africa*

ABSTRACT – Habitat prcfercncc of two sympatric otter species *(Aonyx capensis* and *Lutra muculicollis)* was defined recording sprainting sites along the banks of three rivers. The use of the riverine habitats was similar between the otter species and stretches of river characterized by emerging rocks, either covered or uncovered by vegetation, were particularly selected. Nevertheless, the sprainting sites of both species were located where dense vegetation cover occurred in the surrounding of the site (within *2* m radius).

Key words: *Aonyx capensis, Lutra tnaculicollis,* Sprainting sites, Habitat use.

RIASSUNTO – *Uso dell'habitat di* Aonyx capensis *e* Lutra maculicollis *nella catena montuosa delle Drakensberg (Natal, Sud Africa): risultati preliminari* – Sono qui analizzate le preferenze ambientali di due specie simpatriche di lontra ***(Aonyx capensis*** e *Lutra maculicollis),* definite sulla base dci siti di marcamento rilevati lungo le rive di tre fiumi. L'uso degli ambienti ripariali è simile per entrambe le specie che selezionano in particolare tratti di rive caratterizzati dalla presenza di rocce emergenti sia coperte sia prive di vegetazione. Tuttavia, la distribuzione dei siti di marcamento per entrambe le specie è associata alla presenza di densa copertura vegetale circostante il sito (2 m di raggio).

Parole chiave: *Aonyx capensis, Lutra maculicollis*, Siti di marcamento, Uso dell'habitat.

INTRODUCTION

In order to provide management recommendations for the conservation of the Cape clawless otter ***(Aonyx** capensis)* and the spotted-necked otter *(Lutra maculicollis)* in South Africa, a study addressed to determine the area requirements of these sympatric species and the ecological factors affecting their survival was undertaken. Some preliminary results regarding habitat preference of both species are here presented.

STUDY **AREAS** AND METHODS

The study was done in three areas which arc part of the 240 km^2 Natal Drakensberg Park in Western Natal. Data were collected from ***5*** km stretches of the Polela, Loteni and Mooi rivers at Cobham, Loteni and Kamberg Reserves respectively. The riverine habitat was characterized by stretches of bush and shrub *(Leucosidea sericea, Buddleja salvifolia*), wetland grass (*Mexmuellera* sp.), and *Themenda triandra* and *Tristachya leucothrix* grassland. Stretches of river were only formed by alluvial material (mud, sand, gravel, rocks and stones)

From March to August 1993 sprainting sites of both otter species were recorded following the procedure used by Rowe-Rowe (1992). Four main habitats of bank were recognized and

their proportion quantified for a 5 km stretch of each river (Tab. 1). Habitat preference of both otter species was determined using the following index (Robel et al., 1970):

$$PI = \frac{OUPi}{HAPi}$$

where OUPi is the observed proportion of use of each habitat expressed as number of sprainting sites found in each habitat over the total number of sites, and HAPi is the proportion of availability of each habitat on a 5 km stretch of each river investigated. When PI < 1 the habitat is avoided, when PI = 1 is used in proportion to its availability, and when PI >1 the habitat is selected. The hypothesis that the distribution in use of the habitats is the same for both otter species, was tested by the Kolgomorov-Smirnov non parametric test (DV) (Siegel, 1956).

In order to assess the association between the distribution of sprainting sites and the bank cover, the vegetation cover, surrounding the sites for 2 m radius, was evaluated using the Wight method of density board (De Vos and Mosby, 1963). Three covering categories were considered and the number of sprainting sites was counted in each category. The distribution of sprainting sites in relation to the covering categories was tested using the chi-square goodness of fit test between observed and expected frequencies on the basis of an equal partition of observations.

Tab. 1 – Main bank habitats recognized in Drakensberg.

BANK HABITATS	DESCRIPTION
Grass = GR	bank covered by short and tall grass
Shrub, bush and reed = SH	bank densely covered by shrubs and trees, and by reed
Alluvium = AL	bank of mud, sand, gravel and stones
Rocks = RK	bank of emerging rocks
Rocks with vegetation = RV	banks with emerging rocks and vegetation

RESULTS AND DISCUSSION

Seventy-one sprainting sites of the Cape clawless otter and 40 sprainting sites of the spotted-necked otter were recorded along the banks of the investigated rivers. The use of the riverine habitats was similar between the otter species (DV = 0.6 P = 0.33) and stretches of river characterized by emerging rocks, either covered or uncovered by vegetation, were particularly selected (Fig. 1). Sprainting sites of both otters were associated with dense vegetation cover (cape clawless otter: $\chi^2 = 21.9$ d.f. = 2 P <0.001; spotted-necked otter: $\chi^2 = 12.8$ d.f. = 2 P =0.001) (Fig. 2).

For the European otter (*Lutra lutra*) several studies pointed out the relationship between sprainting intensity and habitat utilisation where cover riparian vegetation is a remarkable factor (for a review see Mason and Macdonald, 1987). This evidence is substantially confirmed by our data. Stretches of river characterized by rocky habitats with or without vegetation seem to offer a wide possibility of resting sites and secure holts for both otter species. However, their different feeding habits could play an important role in the use of the habitat (Rowe-Rowe, 1977a and 1977b). The development of the present study will be mainly addressed to clarify the use of the resources by both otter species.

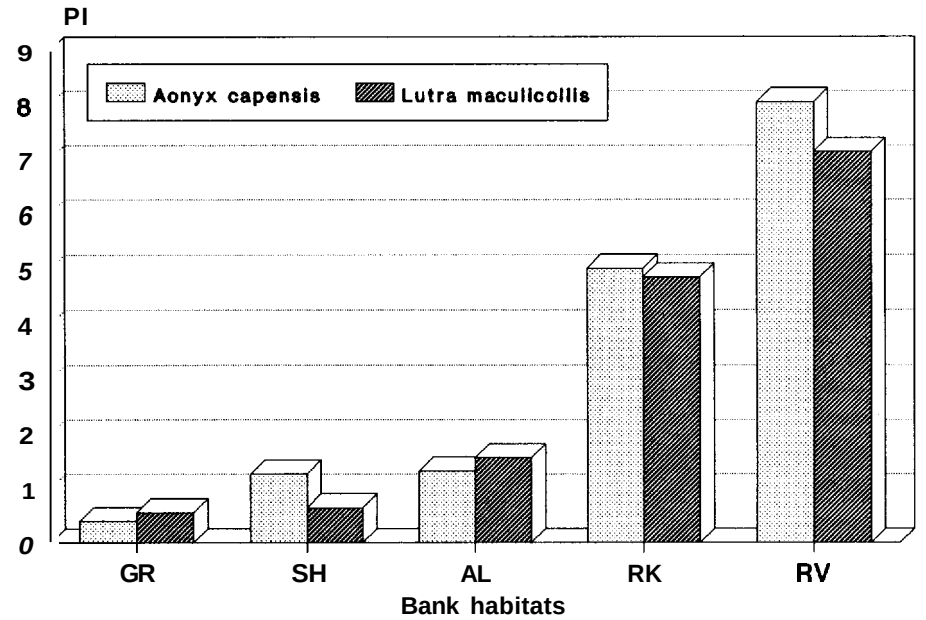

Fig. 1. – Preference index (PI) of rivcrinc habitats by both otter species (GR = Grass; SH = Shrub,bush and reed; **AL** = Alluvium; RK = Rocks; RV = Rocks with vegetation).

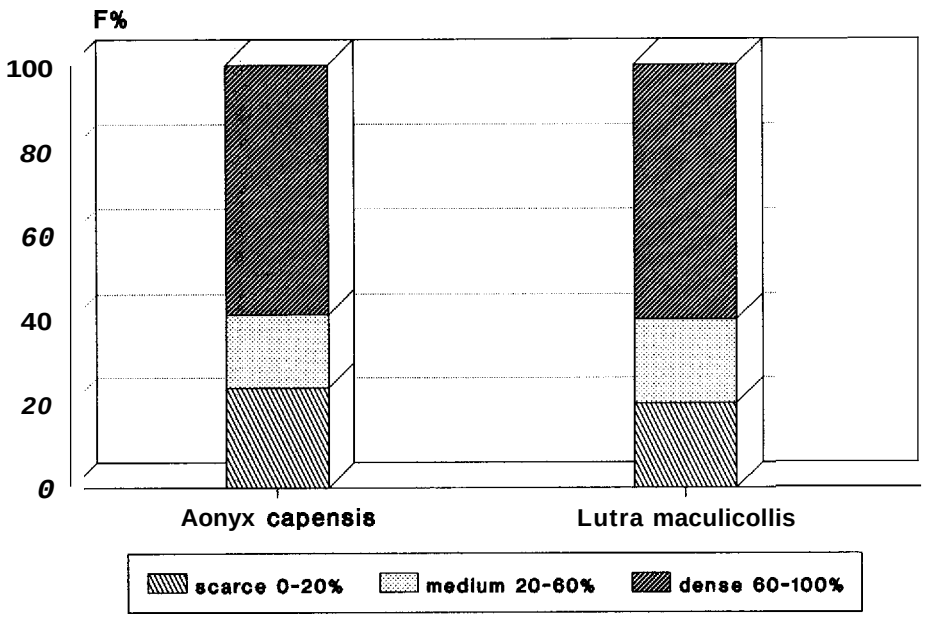

Fig. 2. – Distribution of sprainting sites (F% = percentage of frcqucncy) of both otter species in relation to three categories of vegetation cover.

REFERENCES

DEVOS, **A.** & H.S. MOSBY. 1963. Evaluation of habitat. In Mosby **H.S.** and Hewitt, O.H. (eds): Wildlife Invcstigational Techniques. The Wildlife Society, Michigan, 52-88.

MASON, C.F. & S.M. MACDONALD. 1986. Otters. Ecology and Conservation. Cambridge University press, Cambridge, 236 pp.

MASON, C.F. & S.M. MACDONALD. 1987. The use of spraints for surveying otter Lutra lutra populations: an evaluation. Biol. Conserv. 41: 167-177.

ROBEL, P.G., J.N BRIGGS, J.J CEBULA,., N.J. SILVY., C.E. VERS. & P.G. WATT. 1970. Grater prairie chicken ranges, movements, and habitat usage in Kansas. Journal Wildlife Management, 34: 286-306.

ROWE-ROWE, D.T. 1977a. Food ecology of otters in Natal, South Africa. Oikos, 28: 210-219.

ROWE-ROWE, D.T. 1977b. Prey capture and feeding behaviour of South African otters. Lammergeyer, 23: 13-21.

ROWE-ROWE, D.T. 1992. Survey of South African otters in freshwater habitat, using signs. S.A. Journal Wildl. Rcs., 22: 49-55.

SIEGEL, S. 1956. Non parametric statistics for the behavioural sciences. Ed. Hill Book, Inc., New York, 269 pp.