Atlas surveys of the mammal and herpetofauna from Mkhuze

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Introduction

The 2006 Mkhuze survey was implemented in order to assess the methodology necessary for completing equal survey effort across 5km squares for herpetofauna and mammals as part of a larger Atlas programme. Methodology included the utilisation of pitfall trapping, active searches, bat mist nets and live trapping for small mammals. Pitfall traps were dug into the ground at 10m intervals with drift fences along a transect line measuring 90m in length and emptied each day for a period of 7 days. Daily active searches in each of 8 target 1km squares, lasting approximately two hours in length were also carried out. Investigators searched under stones, amongst dead wood, and on tree trunks in order to gauge the diversity of the full complement of species. In addition investigators also examined the area for spoor and scat. 18 Willun traps (small-mammal pressure traps) baited with small amounts of honey and oatmeal were set alongside the transects and emptied daily for a 7 day period. 2 hour night drives with spotlights were also completed to assist in recording nocturnal species. 27m of bat nets were set for 2 hour periods in a range of habitats within the 5km square to maximise the catches. Specimen identifications were confirmed by researchers based at the Durban Natural Science Museum and Port Elizabeth Museum.

Results & Discussion

Mammal fauna

A total of 71 species of small mammal were sampled during this survey period (70 via trapping and 1 via active searching). The most abundant species captured was the Bushveld gerbil (*Tatera leudcogaster*) which is a data deficient mammal. This is a particularly important find for the study as the observed high capture rate might be a good indication that future mark/recapture studies could be initiated for quantifying overall densities within Mkhuze. Important mouse species encountered in this survey include the Pouched mouse (*Saccostromus capenstris*) and Pygmy mouse (Mus mus minutoides)- both of which are Data Deficient. Additional mice species encountered include the Chestnut Climbing Mouse (*Dendromus mystacilis*), Woodland Thicket Rat (*Grammomys dolichurus*) and Natal Multimammate Mouse (*Mastomys natalensis*). A number of shrews were collected in the pit fall traps, which is a valuable result as all are currently Data Deficient. Species encountered include the Reddish Grey Musk Shrew (*Crocidura cyanea*), Lesser Red Musk Shrew (*Crocidura hirta*), Lesser Gray Brown Musk Shrew (*Crocidura silacea*) and Greater Dwarf Shrew (*Suncus lixus*). The Bicoloured Musk Shrew (*Crocidura fuscomurina*) is a new record for Mkhuze.

70 specimens of small mammals were caught along the transects with a further 1 located through active searching (shrew- Crocidura genus). The main animal captured was the Bushveld gerbil (*Tatera leudcogaster*)- a data deficient mammal and a great find for the study. The density of the gerbils may be a good indication a further mark/recapture could be initiated for quantifying overall densities within the park. The rest were mice species; including pouched mouse (*Saccostromus capenstris*), and pygmy mouse (*Mus mus minutoides*)- both of which are Data Deficient. Further mice species included Chestnut Climbing Mouse (*Dendromus mystacilis*), Woodland Thicket Rat (*Grammomys dolichurus*) and Natal Multimammate Mouse (*Mastomys natalensis*). A number of shrews were collected in the

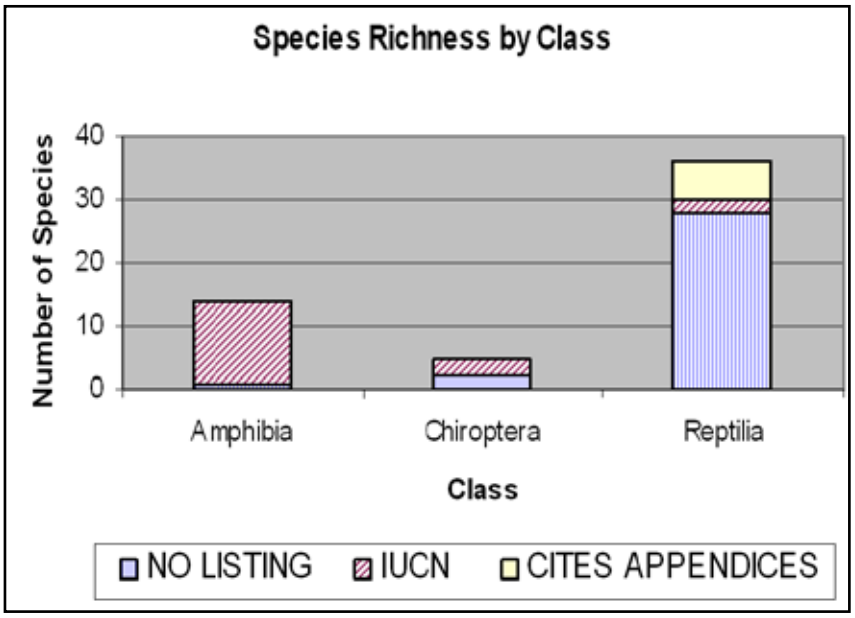

Figure 1. Number of species encountered during 2006 Survey.

Figure 2. *Homoroserelaps dorsalis*. Photo by X. Combrink.

Figure 3. *Epomophorous wahlbergi*. Photo by N. C. D'Cruze.

pit fall traps, which is an excellent find since all are Data Deficient and included Reddish Grey Musk Shrew (*Crocidura cyanea*), Lesser Red Musk Shrew (*Crocidura hirta*), Lesser Gray Brown Musk Shrew (*Crocidura silacea*) and Greater Dwarf Shrew (*Suncus lixus*). The Bicoloured Musk Shrew (*Crocidura fuscomurina*) was a new record for Mkhuze.

A total of five species of bats (one Megachiroptera and four Microchiroptera) and 69 individuals were captured in Mkhuze during this survey (Fig. 1). One species (*Epomophorous wahlbergi*, photo Fig. 3) is a new record for Mkhuze. The five species encountered during this survey represent 28% of the 18 species that are now represented by voucher specimens taken from this section of the GSLWP. 13 of these 18 species are listed on the 2006 IUCN Red List of Threatened Species, highlighting the conservation importance of Mkhuze.

Herpetofauna

A total of 49 species (14 amphibians and 35 reptiles) were encountered in Mkhuze during this survey (Fig. 1). This study suggests that the site is particularly diverse as it contains 30% of the 164 species that have been recorded from the entire GSLWP (Combrink and Kyle 2006). Three of these species (Lycophidion pygmaeum, Leptotyphlops incognitos and Homoroselaps dorsalis, photo Fig. 2) require special mention as their occurrence in Mkhuze significantly contributes to the current information regarding their distribution in South Africa. Two species are listed on the 2006 IUCN Red List of Threatened Species and six are listed on the CITES Appendices (Fig. 1.), further highlighting the conservation importance of uMkhuze. The species accumulation curve for this study calculated by combining data collected from the two 5km squares indicates that the curve has not reached a plateau and that additional surveys in 2008 will further add to the herpetofaunal species records (Fig. 4).

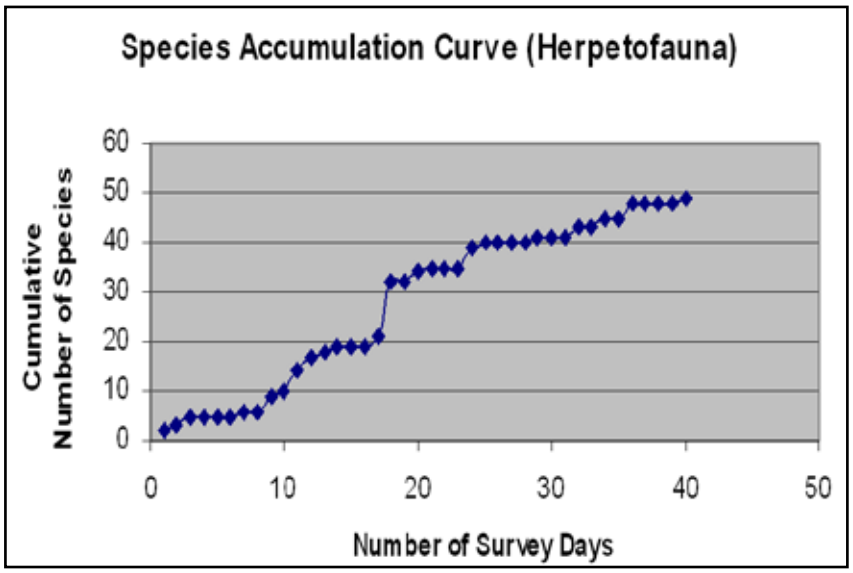

Figure 4. Species accumulation curve (herpetofauna).

Relevant Publications

IUCN Red List of Threatened Species (2006) IUCN Species Survival Commission, Gland, Switzerland. http://www.iucnredlist.org. Cited 20 March 2007.

POOLEY, 1965. A preliminary checklist of the reptiles found within the Ndumu and Mkuzi Game Reserves in northern Zululand. Lammergeyer. 3 (2): 41-65.

PORTER, R., SANDWITH, T. AND BAINBRIDGE, B. 1999. Nomination proposal for the Greater St Lucia Wetland Park to be listed as a world heritage site. Department of Environmental Affairs and Tourism Republic of South Africa.

RUTHERFORD, M.C., WESTFALL, R.H. 1994. Biomes of southern Africa - an objective categorization. Second Edition. Memoirs of the Botanical Survey of South Africa. 63: 1-94.

Publications Resulting from the Project

D'CRUZE, N.C., McDONNEL, Z. A., LANGEVELD, T. A., BROOKS, P.S., COMBRINK, X. & SEAMARK, E.C.J. (in press). Bat Survey in Mkhuze Game Reserve, Kwazulu-Natal, South Africa. African Bat Conservation News.

D'CRUZE, N.C., McDONNEL, Z. A., LANGEVELD, T. A., BROOKS, P.S. & COMBRINK, X. A rapid assessment of the amphibians and reptiles in the uMkhuze section of the Greater St Lucia Wetland Park.