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Abstract: Distribution maps and species accounts are presented for 32 indigenous carnivore species that have been recorded in Natal. Each species account deals with current distribution and former distribution where known, status, habitat preferences and living requirements, social organization, key life history features, threats, and importance to humans. Conservation importance is rated using a scoring system. Four species occur marginally in the extreme north-east, at the southernmost limit of their distribution (*Canis adustus*, *Civettictis civetta*, *Paracynictis selousi*, *Helogale parvula*). Two species (*Genetta genetta*, *Galerella pulverulenta*) reach the easternmost limit of their distribution in the drier upland grassland of western Natal, and another two species typical of more arid regions (*Otocyon megalotis*, *Felis nigripes*) have been recorded only once in the drier grassland. Four species (*Canis mesomelas*, *Genetta tigrina*, *Atilax paludinosus*, *Ichneumia albicauda*) occur throughout in all bioclimatic regions, and *Ictonyx striatus* occurs in most regions. *Vulpes charna*, *Cynictis penicillata*, and *Proteles cristatus* occur mainly in drier upland grassland of the north-west. Four species (*Poecilogale albinucha*, *Herpestes ichneumon*, *Felis serval*, *Felis lybica*) are confined to moist midland and upland grasslands, as well as coastal grassland. Both *Galerella sanguinea* and *Mungos mungo* occur throughout lowland woody vegetation, with the former extending into midland regions. *Lycaon pictus* (re-introduced) and *Mellivora capensis* are confined mainly to lowland bushveld regions. Two hyaenids (*Hyaena brunnea*, *Crocuta crocuta*) and three large felids (*Acinonyx jubatus*, *Panthera pardus*, *P. leo*) are confined almost exclusively to larger protected areas in bushveld. The two otters (*Aonyx capensis*, *Lutra maculicollis*) occur mainly along rivers and streams in the western highland areas. *Felis caracal* has shown greatest range extension during the past 20 years, currently present in all moist upland grassland areas. The most threatened species is *Poecilogale albinucha*: at risk owing to loss of habitat, use in traditional medicine, and predation by dogs. Other seriously threatened species are the two otters (habitat deterioration, catchment management), *Felis lybica* (hybridization with *F. catus*), and to a lesser extent *F. serval* (loss of habitat, human interference). For the larger species incompatible with human settlement (*Crocuta crocuta*, large felids), confined mainly to certain protected areas, population expansion is limited.

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THE CARNIVORES OF NATAL

D T Rowe-Rowe



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ABSTRACT

Distribution maps and species accounts are presented for 32 indigenous carnivore species that have been recorded in Natal. Each species account deals with current distribution and former distribution where known, status, habitat preferences and living requirements, social organisation, key life history features, threats, and importance to humans. Conservation importance is rated using a scoring system. Four species occur marginally in the extreme north-east, at the southernmost limit of their distribution (*Canis adustus*, *Civettictis civetta*, *Paracynictis selousi*, *Helogale parvula*). Two species (*Genetta genetta*, *Galerella pulverulenta*) reach the easternmost limit of their distribution in the drier upland grassland of western Natal, and another two species typical of more arid regions (*Otocyon megalotis*, *Felis nigripes*) have been recorded only once in the drier grassland. Four species (*Canis mesomelas*, *Genetta tigrina*, *Atilax paludinosus*, *Ichneumia albicauda*) occur throughout in all bioclimatic regions, and *Ictonyx striatus* occurs in most regions. *Vulpes chama*, *Cynictis penicillata*, and *Proteles cristatus* occur mainly in drier upland grassland of the north-west. Four species (*Poecilogale albinucha*, *Herpestes ichneumon*, *Felis serval*, *Felis lybica*) are confined to moist midland and upland grasslands, as well as coastal grassland. Both *Galerella sanguinea* and *Mungos mungo* occur throughout lowland woody vegetation, with the former extending into midland regions. *Lycaon pictus* (reintroduced) and *Mellivora capensis* are confined mainly to lowland bushveld regions. Two hyaenids (*Hyaena brunnea*, *Crocota crocuta*) and three large felids (*Acinonyx jubatus*, *Panthera pardus*, *P. leo*) are confined almost exclusively to larger protected areas in bushveld. The two otters (*Aonyx capensis*, *Lutra maculicollis*) occur mainly along rivers and streams in the western highland areas. *Felis caracal* has shown greatest range extension during the past 20 years, currently present in all moist upland grassland areas. The most threatened species is *Poecilogale albinucha*: at risk owing to loss of habitat, use in traditional medicine, and predation by dogs. Other seriously threatened species are the two otters (habitat deterioration, catchment management), *Felis lybica* (hybridisation with *F. catus*), and to a lesser extent *F. serval* (loss of habitat, human interference). For the larger species incompatible with human settlement (*Crocota crocuta*, large felids), confined mainly to certain protected areas, population expansion is limited.

Keywords

Carnivore, conservation, distribution, habitat, life cycle, population, social organisation, South Africa, status, threat

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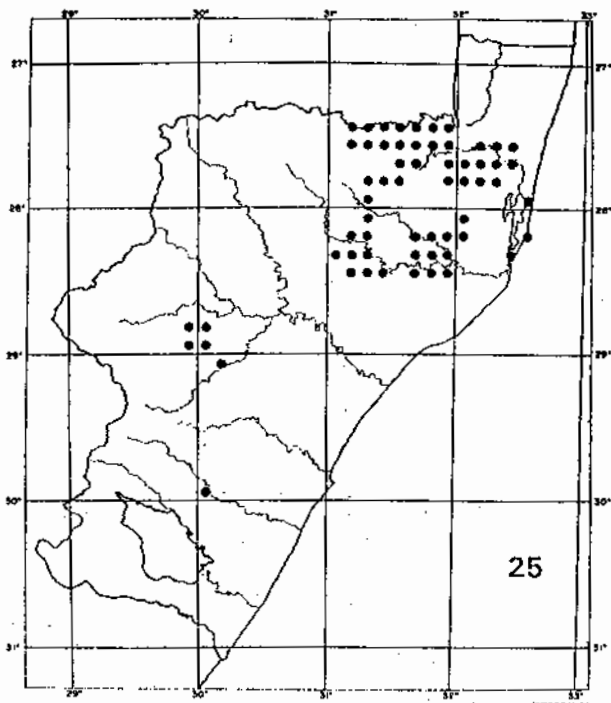
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Crocuta crocuta

Spotted hyaena

Legal status

Unprotected outside of reserves in Natal, and not listed in the SA Red Data Book nor on any CITES appendices.



Distribution and status

Spotted hyaenas currently occur mainly in the Bushveld bioclimatic regions of north-eastern Natal (Figure 25), more widely distributed than indicated by Pringle (1977). During the nineteenth century spotted hyaenas were encountered "all along the lower reaches of Natal and Zululand" (1861), mainly north of the Tugela River (1850), and in the old Pongola Game Reserve (1895) (NPB unpubl. records).

Protected areas in which they occur are Eastern Shores, Hluhluwe, Itala, Mkuzi, Sodwana State Forest, St Lucia, Umfolozi, and Weenen.

Living requirements

Favoured habitat appears to be open savanna, but they have been recorded from more open habitats and even forest in north-eastern Natal. In Mkuzi and Umfolozi Game Reserves the diet consists mainly of impala, nyala, warthog, grey duiker, and cane rats (Skinner *et al.* 1992). More prey is killed than is scavenged. The estimated density at Mkuzi GR is 1/770 ha (Skinner *et al.* 1992) and at Umfolozi GR it is 1/270 ha (Whateley 1981). A clan would require 4000-5000 ha (see below).

Social organisation

Clans dominated by an adult female are formed. Immigrant adult males serve the oestrus females. At Mkuzi GR mean clan size is seven (Skinner *et al.* 1992), and at Umfolozi GR it is 14 (Whateley 1981). At both of these reserves spotted hyaenas forage singly or in twos.

Population dynamics

Litters of one or two young are born aseasonally after

a gestation of 100 days. The interval between successive litters is ca 17 months. The young are suckled for 12-16 months, and start to forage with adults at 15 months. There is a preponderance of females among adults (Mills 1990).

Threats

Populations within protected areas appear to be safe. A limiting factor to population expansion is that spotted hyaena clans have large area requirements and the protected areas in which they occur are relatively small.

Human importance

Spotted hyaenas are used in traditional medicine (Cunningham & Zondi 1991). In areas where calves and small livestock are killed the spotted hyaena is regarded as a problem.

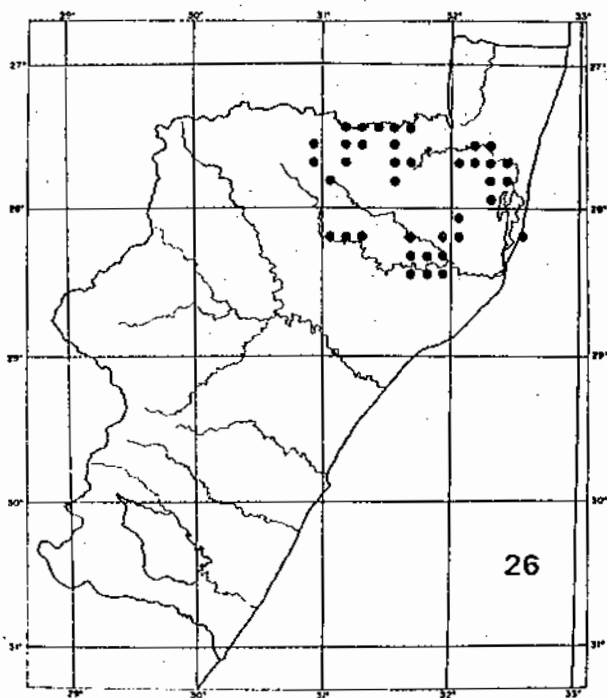
FELIDAE

Acinonyx jubatus

Cheetah

Legal status

Specially protected in Natal, listed as "Out of danger" in the SA Red Data Book, and on Appendix I of CITES.



Distribution and status

Cheetahs occur in the Bushveld regions of north-eastern Natal (Figure 26), where their status is very rare. During the nineteenth century cheetahs apparently occurred in Zululand, but were very rare. Pringle (1977) stated that they became extinct in Natal prior to 1930. Since 1966 a number of re-introductions have been made to protected areas in Natal: Hluhluwe-Umfolozi GR (64), Eastern Shores (18), Itala (13), Mkuzi (33), and Ndumu (14).

Current populations in protected areas are at Eastern Shores (rare), Hluhluwe (ca 3), Itala (< 10), Mkuzi (< 10), and Umfolozi (ca 10). Eight were recently released at

Phinda Holdings.

Living requirements

Drier open plains and open savanna are favoured, where visibility is good and prey can be run down (Grobler *et al.* 1984; Smithers 1986). In Natal prey consists mainly of impala, nyala, and reedbuck (Whateley & Brooks 1985). Home ranges are large: 50 - 200 km² per group of three in eastern Transvaal (Pettifer 1981; A.E. Bowland, pers. comm.), but overlap other ranges.

Social organisation

Most animals are solitary, but frequently small groups of three, up to six, are formed (Grobler *et al.* 1984; Whateley & Brooks 1985). Adult females are solitary except when accompanied by young. Males are either solitary or form permanent coalitions of 2 - 4 (A.E. Bowland, NPB, pers. comm.).

Population dynamics

Litters of up to six, usually three, are born aseasonally after a gestation of 90 - 95 days. Young are weaned at about six weeks but may suckle up to the age of six months, hunt on their own at 8 - 12 months, and reach sexual maturity at 21 - 24 months (Eaton 1970; Pettifer 1981).

Threats

Cheetahs are sparsely distributed outside of protected areas, and populations within reserves are small. Introductions to game reserves in Natal have generally not been successful, possibly owing to unsuitable physiognomy of the habitats combined with the limited sizes of the protected areas. What evidence there is, however, indicates that cheetahs were originally very rare in Natal.

Human importance

There is a demand for cheetah skin in traditional medicine; for use in making hunting dog charms and ceremonial dress (Cunningham & Zondi 1991). Very few incidents of predation on livestock have been reported.

Panthera pardus

Leopard

Legal status

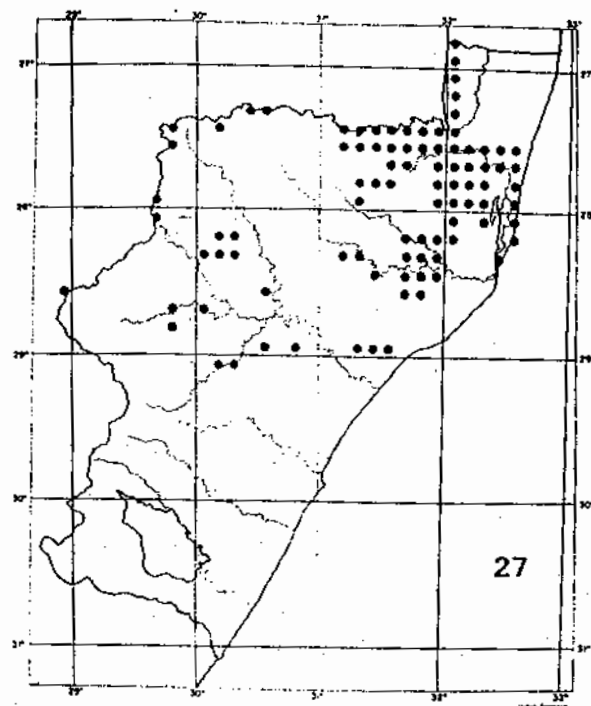
Categorised as "Specially protected game" in Natal, listed as "Rare" in the SA Red Data Book, and on Appendix I of CITES.

Distribution and status

Leopards currently occur in the Bushveld bioclimatic regions of north-eastern Natal, and are sparsely distributed elsewhere in central and western Natal (Figure 27). The range is greater than that reported by Pringle (1977). Although status remains rare because they are sparsely distributed, both distributional range and numbers are increasing. A survey conducted during 1989 revealed that there are roughly 200 leopards in Natal. Between 80 and 100 are in protected areas and ca 100 are on farmland, mainly in the Mkuze Village, Candover, Lower Mkuze, Magudu, Rooirand, Dwaarsrand, Louwsburg, and Ngome areas. Protected areas in which they occur are Cape Vidal, Eastern Shores, Entumeni Forest, Hluhluwe-Umfolozi complex (ca 50), Itala (5-10), Mkuzi (20-30), Pongola Bush, Sodwana State Forest, and St Lucia. Unconfirmed sightings

have been reported from Incandu, Karkloof, Oribi Gorge, and Vernon Crookes.

Information on former occurrence (NPB unpubl. records) indicates that leopards were fairly widely distributed: mainly north of the Tugela River or "throughout Zululand" (1824 - 1890), Pongola Game Reserve (1895), Durban (= Port Natal) area (1824 - 1847), Kranskop (1875), and Oliviershoek area (1863). Reports in *The Natal Witness* newspaper refer to leopards at Giant's Castle in 1908 and at Goodoo Pass (Royal Natal NPI) in 1910.



Living requirements

Cover is very important to leopards: both in the form of dense cover in which to lie-up and more open cover in which to hunt by stalking. In Natal favoured areas are forests, thickets, closed woodland, and rocky, wooded hills. Leopards prey mainly on medium-sized antelopes e.g. impala, bushbuck, nyala, and reedbuck (Whateley & Brooks 1985). They also take a high percentage of dassies and hares (Grobler & Wilson 1972). Area requirements differ in relation to terrain and food supply, ranging from 20 - 500 km²/individual (various references in Skinner & Smithers 1990). In the Umfolozi-Hluhluwe complex density is roughly 1/20 km².

Social organisation

Leopards are solitary. Adults occur together only when mating. Both sexes appear to be territorial, but territories overlap. Home ranges (= territories?) are large (see above).

Population dynamics

Breeding is not seasonal. Litters of two or three young are born after a gestation of ca 100 days. The eyes of the young open at 10 days, they suckle for 6 - 8 weeks and are weaned at 12 weeks, are able to kill on their own at 11 months, and become independent at 12 - 14 months. Roughly one cub per litter survives to this stage. Interval between litters is > 14 months. Adult sex ratio is 1 : 1 (Grobler *et al.* 1984; Skinner & Smithers 1990).