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Abstract: The general description of the cheetah, its world distribution and a more detailed distribution in Egypt with a map and data source are given. External, cranial characters and teeth based on four specimens examined are described, with a short description of its habitat, habits and food.

La description générale du guépard, sa distribution mondiale et une distribution plus détaillée en Egypte avec une carte et la source des données sont données. Les caractéristiques externes et crâniennes et la dentition basées sur l'analyse de 4 spécimens examinés sont décrites, avec une courte description de son habitat, de ses mœurs et de son régime alimentaire.

Niger's Threatened Park W

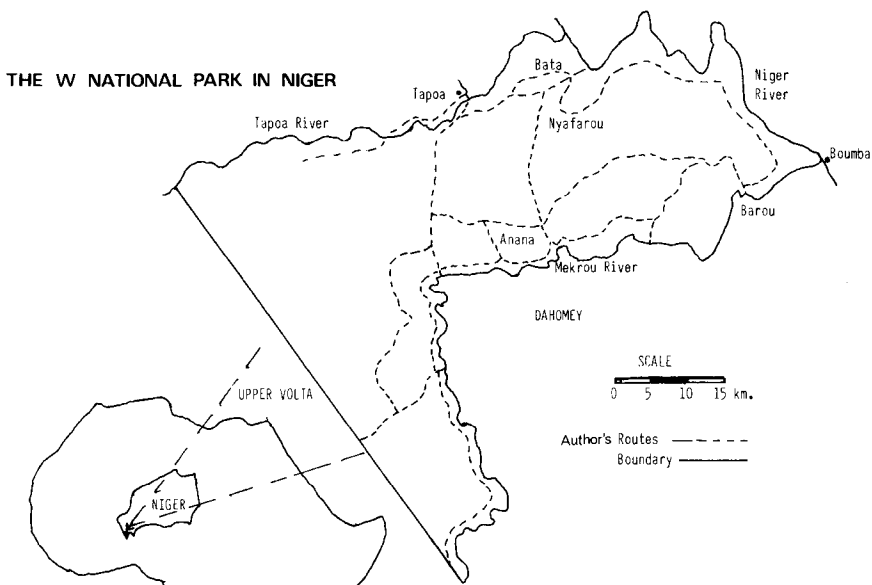
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The author spent three years (1969–1972) in Niger's National Park W (so called because of its shape), working for the Government as a wildlife biologist. This article contains notes on the three animals that have become extinct in Niger in the last few decades and also on those that are rapidly disappearing today.

One of the largest game reserves in West Africa, covering 11,320 square kilometres, Niger's National Park W (Parc National du W du Niger) hosts an impressive array of wildlife. The reserve was called 'W' because, 150 kilometres south of Niamey, the capital, the Niger River makes a series of turns forming the letter W. The Name was given in 1937, but it was not until 1954 that the territory was organised and the fauna protected. This is an international, three-country reserve, comprising territory in Upper Volta (3300 sq. km.) and Dahomey (5020 sq. km.), as well as Niger (3000 sq. km.): each sector is independently operated but all share the same name. The Dahomey sector of the reserve is completely undeveloped with no roads or game guards, and Upper Volta lacks the revenue to improve most of its territory. The Niger sector, both for research and tourism, is virtually untapped.

The Niger Department of Forestry is responsible for the park's maintenance, but Niger is one of the poorest countries in Africa, and lack of money means inadequate personnel, very little equipment, and virtually no control of poaching. These problems must be solved if the steady decline of animal numbers is to be halted.

Park W lies within the Guinea savanna, a homogeneous wooded



MAJOR LIMITING FACTORS

	1969	1970	1971
Park converted into farmland (hectares)	750	1000	1500
Animals poached per year*	350	375	250
Range destroyed by cattle (hectares)	8000	10400	15000
Fire (Dry season) hectares burnt	18000	16250	22000
Drought- % of waterholes drying (excluding rivers)	90	85	98

*Based on number of snares and traps removed; allowing 1 animal caught for 10 traps set. Does not include animals shot with guns or poisoned arrows.

grassland with an annual rainfall average of 50 inches. Plant growth is exuberant during the rains (May–September) with grasses shooting up to eight feet or more. In the dry season (October–April), with the *harmattan* winds blowing from the desert, brush fires occur in which numerous reptiles and tortoises, and thousands of insects and smaller mammals perish (Brown 1965). In 1971 a fire, started by a US firm conducting exploratory work in the reserve, got out of control and left over 1800 square kilometres in ashes. Accidental fires started by tourists and poachers also contribute to a situation which results in unstable carrying capacities and variable home ranges for most large mammals. Three have become extinct in Niger in the last fifteen years.

EXTINCT SPECIES

Wild dog *Lycaon pictus* This carnivore is similar in size and features to a large domestic dog, except that the latter have five digits on each paw whereas the wild dog has only four. It has a slender body, a colour pattern that differs in every individual, and, like the hyena, a large head. It is believed to inhabit much of Africa from Senegal across to Kenya and Ethiopia, and down to South Africa; in East Africa it ranges as high as the summit of Kilimanjaro. Elderly Nigerians say that wild dogs were once quite numerous in and around the park, hunting in organised packs and sometimes wandering close to villages bordering the park in search of bone scraps and other garbage. A game guard recalls seeing a pack of wild dogs attack and kill a subadult buffalo just north of Tapoa. Along the western Tapoa River they were at one time reportedly a menace to domestic stock. Tales of their viciousness and indiscriminate killings led to their eradication in Niger by cattlemen and hunters—old men still tell stories of those hunts—but

research in East Africa indicated that the wild dog does not kill more than it needs for food.

Surveys show that it has gone from Niger, and reliable sources in Upper Volta, Dahomey, and north-western Nigeria indicate that it has been eliminated in those countries as well.

Cape Clawless Otter *Aonyx capensis* Weighing up to 40 lb, and with no webs on its feet, this otter has, as its name indicates, no claws. Its colour is generally dark chocolate brown with lighter underparts. Fishermen say that it inhabited the Park W region and until about 1960 was even found in the Tapoa and Mekrou rivers. One old man tells of seeing otters preying upon guineafowl, and they are known to prey on the cane rat and other smaller mammals.

African manatee *Trichechus senegalensis* Inhabiting freshwater rivers and lakes in West Africa, this huge aquatic mammal weighs up to 1000 lb and may be 10 feet long, varying in colour from black to a dull grey. Its forelimbs have developed as flippers, each with rudimentary nails; its tail is paddle-shaped. Some of the older fishermen remember that the 'water elephant' once flourished along the banks of the Niger and Mekrou rivers, and its high-protein meat was available in many village markets along the Niger River. As a result of uncontrolled slaughter it is now extinct. A village chief I knew kept an African manatee's skull as a valued memento of times which he said 'would never again return'.

ENDANGERED SPECIES

The endangered animals in Park W include cheetah, leopard, serval, caracal, topi, red-flanked duiker, reedbuck, giant pangolin and ratel. Skins of spotted cats, including cheetah, leopard and serval, are readily available in small shops and markets in many large West African cities, and purses and luggage made of crocodile, ostrich, python and even pangolin skins are common. The most numerous of the larger ungulates is the Cape buffalo, with about 6000. Lion, roan antelope, western hartebeest, waterbuck, Senegal kob, bushbuck, grey duiker and oribi are also abundant. Other common mammals in the park are the anubis baboon, patas and tantalus monkeys, aardvark, civet, serval, species of genets and mongoose, side-striped jackal, sand fox, fennec, African wild cat, sand cat, porcupine, three species of squirrels, 16 species of bats and 20 species of rodents and other smaller mammals.

Giant Pangolin *Manis gigantea* This strongly built animal, with only three well developed claws, has broad, rounded, grey-brown scales, and inhabits forests and savannas in much of West and Central Africa. Strictly nocturnal and terrestrial, it spends the day sleeping in burrows dug with its powerful claws. Its diet consists mainly of termites and ants, of which there is a bountiful supply in Park W, so it hardly seems possible that the species could be in jeopardy.

In the thirty-six months I lived in Park W, I saw only one

SPECIES	HABITAT AFFINITIES		
	Wooded Savanna	Riparian	Savanna
Pangolin	90	10	-
Spotted-necked otter	95	5	-
Ratel	80	20	-
Leopard	50	40	10
Cheetah	30	50	20
Serval	20	20	60
Caracal	30	65	5
Topi	5	35	60
Red-flanked duiker	90	10	-
Reedbuck	30	50	20

Distribution of animals on percentile basis according to habitat preference.

pangolin: it was immobilised by the beam of the jeep headlights. The game guard and I, fearing the sharp claws, made no move to scare it.

Ratel *Mellivora capensis* Similar to the European badgers of the temperate zones, in its thick-set body, large head, small ears, short legs and powerful claws, this badger is black below with a band of white running dorsally from crown to tail. Limited to the central sector of the park, it is easy to recognise where a family may range, by numerous burrows in loose sandy areas in wooded savannas. It feeds on rodents, snakes, large insects, small antelopes (a newly born duiker may weigh only $1\frac{1}{4}$ lbs), roots, fruits, and the honey and pupae of wild bees. The ratel has an interesting association with the honey-guide *Indicator indicator*. When the bird finds a beehive, it searches out a ratel, and then leads it to the hive with a series of specific calls and tree gliding. With its powerful claws, the ratel tears open the nest and feeds on the contents; the bird is able to reach the larvae and share the meal. Africans have also learned to follow the honey-guide in searching for honey, and the honey-guide has learned to call on man when he wants a hive broken open.

Over a period of three years I made eleven sightings, most of which were at night. Once, digging up an aardvark hole, I uncovered two newly born badgers; a subsequent visit to the den, however, resulted in my being run up a tree by the protective mother.

Spotted-necked otter *Lutra maculicollis* Weighing no more than twenty lb, this small otter differs from the clawless otter because it has fully webbed toes with short, sharp claws. The upper parts of his body are usually chestnut in colour with paler underparts; the chin and side of the face are paler with brown spots.

I saw spotted-necked otters in Niger twice; one had been captured near Say, fifty kilometres down river from Niamey, and the other, caught north of Niamey, was in the city zoo. At one time the spotted-necked otter inhabited much of the Niger River, and on two occasions I saw tracks near the mouth of the Tapoa and Mekrou

rivers. The observations and information given by people living along the river seemingly indicate that the spotted-necked otter is in grave danger of extinction.

Leopard *Panthera pardus* Walking along a small creek near the Mekrou River on December 20, 1969, I came upon a leopard lying in a burned area near a small waterhole, apparently watching a watering roan antelope. That was the only leopard I saw during my stay in Niger. Several months later a game guard pointed out leopard tracks near Tapoa. The same animal made repeated trips to the village every two or three weeks. In 1971 the guards noted only one set of leopard tracks all year—near the Mekrou River, and in the 1971–72 tourist season no-one reported sighting leopards.

To get a leopard, poachers often bury a poisoned lance vertically in the ground, with only its pointed head above the surface, and hang a freshly killed baboon above it, just out of reach so that the leopard has to jump to grasp the meat. The leopard would spring and then fall upon the poisoned lance to a slow and agonising death.

Leopards once harassed cattlemen along the Tapoa River, and to this day most villages maintain large packs of domestic dogs to ward off such predators.

Cheetah *Acinonyx jubatus* The future of the cheetah in Park W is dim. Over a three-year period, I saw this graceful cat only six times. I observed a male cheetah stalk and kill a young hartebeest that was straggling behind a herd, and in February 1970 I saw a group of four adult cheetahs, five kilometres north of the Mekrou River, in thick vegetation that prevented further observation of the animals. In the tourist season of 1970–71, this group was not sighted anywhere in the park. A survey of the park's major carnivores revealed the cheetah population to be fewer than six. Several small populations are scattered about Niger: near Agadez, Lake Chad, and southwestern Niger, but the total number is fewer than fifty.

In the Bata region of the park, I observed a solitary cheetah chasing an African rabbit *Poelagus marjorita*. The cheetah stumbled in heavy sand, and stopped running. His physical condition appeared to be poor and he seemed to be exhausted after a run of no more than 40 metres.

Poachers enjoy telling of their exploits on cheetah hunts of years ago. Ironically, one commented that the cheetah population has now been so drastically reduced that it is no longer worth hunting it.

Serval *Felis serval* This medium-sized carnivore (30–40lb) is found throughout much of the African bush, from Senegal to Kenya and Ethiopia and down to southern Africa. Its coat is yellowish buff, with black spots, bands and stripes, and underparts vary from whitish to buff. Its diet consists mostly of rodents, francolins, guinea-fowl, rabbits and duikers. Preferring open savannas, its distribution is confined to the northern range of the park. Servals are mainly nocturnal, but several times I have seen them trotting along the Tapoa River in the mornings. Once, using smoke to flush bats

CHECKLIST OF OTHER MAMMALS FOUND IN PARK W

Ab-abundant In-infrequent
C-common

Species	No.	Species	No.
Elephant	C	Civit	Ab
Lion	C	Aardvark	Ab
Buffalo	Ab	Jackals	C
Roan Antelope	C	Baboon	Ab
Hartebeest	In	Patas	C
Waterbuck	C	Vervet	In
Senegal Kob	C	Galago	C
Bushbuck	C	Sand Fox	In
Oribi	C	Porcupine	C
Grey Duiker	C	Mongoose	C
Warthog	C	Rabbits	In

from an abandoned aardvark hole, I was surprised to have a serval dash for freedom, ripping a mist net I had placed over the hole.

An old village chief at Tapoa, after seeing a picture of the serval, remembered that once this animal was plentiful in the park. Guards said the same, placing its decline within the last fifteen years. Numbers are certainly low, though it is impossible at this point to give an estimate. Sadly, one is far more likely to see the serval's hide on a street seller's table in the capital than in the wild.

Caracal *Felis caracal* Weighing 35–40 lb, the caracal is reputed to be extremely aggressive and will stand its ground or even attack if someone approaches its kill. It feeds on an array of mammals and birds, and was once a menace to domestic goats and sheep. Its coat is uniform reddish-brown, the ears long and pointed with tassels of black hairs at the tips.

The caracal is confined to the western half of the reserve, mainly in open or wooded savannas. They are mainly nocturnal and can sometimes be seen walking along park roads in the early morning. Their rapid decline is due to poachers and cattle herders.

Red-flanked duiker *Cephalophus rufilatus* Of the two duikers found in Park W, the red-flanked is the less common; a road-strip census of over 3500 kilometres in the reserve produced only one sighting. Small populations are found near the Tapoa and Mekrou rivers, and I made several observations near Tapoa and also thirty km. west of the park entrance. The Tapoa River appears to be its northern limit in Niger. Upper Volta and Dahomey have larger populations because of their wetter climates. Its habitat is restricted to thick vegetation along rivers where it is found throughout much of the Guinean savanna.

The colour of this tiny antelope is orange rufous, often with a bluish-grey band from the nose to the tail. Adults grow to 18 in. and

may weigh up to 20 lb. It seems to be strictly solitary—only once did I see a pair. This duiker is easily snared and often falls victim to the hunter. I found the foreleg of an adult still in the grasp of a snare; apparently the animal had tugged until the leg was severed. Depletion is due mainly to widespread slaughter and destruction of habitat by domestic cattle, especially along the Niger River.

Reedbuck *Redunca redunca* A small antelope, averaging 80 lb, with a light fawn-coloured coat, the reedbuck prefers tall grass, often as high as 10 ft, near water.

There are fewer than 50 reedbuck in the Park W, found in scattered populations in the eastern half of the park, and also south along the Mekrou. They are generally solitary but sometimes associate in pairs or small families; the largest group I observed was five. A guard told me that they were once common near Tapoa, but were driven south by the influx of cattle and threat of poachers.

Topi *Damaliscus korrigum* One of the largest antelopes in Park W. Normally, topi are purely grazers and are attracted to short-grass pastures, but in Park W encroachment by man has forced them into the denser, less favourable, wooded savannas. The population is small and usually confined to a minute area near Tapoa and scattered open areas along the Mekrou River.

In East Africa, topi often aggregate into herds of as many as 12,000 individuals, but the picture is quite different in Niger where a road-strip census in 1971, which revealed the approximate populations of most of the ungulates, showed only about 400.

Further south, in Upper Volta and Dahomey, there is more favourable range, but topi do not migrate, even when brush fires destroy hundreds of square kilometres of pastureland.

Conclusion

Two-thirds of Niger is in the Sahara Desert. The abundance of wildlife in Park W is due to its ecotonal nature (location in the transitional zone between the desert and the Guinea woodlands) resulting in a diversity of species and life forms. Most of Niger's animal populations survive, and with adequate controls and financial assistance, they could even thrive. Aside from the biological and ecological value of the animals, a properly developed game reserve could mean increased and continuing tourist revenue, from which Niger, one of the poorest countries in Africa, would benefit greatly. But Niger needs help in this operation, and the time for such aid is now. Already it is too late for the African manatee, the wild dog, and the Cape clawless otter.

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