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Abstract: The cheetah is cited among the species needing a particular care because of their scarcity or number diminution. The species is scarce because of over hunting and lack of suitable open habitat. Several observations were made each year and their number was estimated to 3 or 4 pairs. The accent is made on the necessity to struggle against poaching and the ways to insure its efficiency, the illegal pasture and the fire, the problems related to water, the lack of adequate transport and tourist activity development.

Le guépard est cité parmi les espèces qui méritent une attention particulière en raison de leur rareté ou de la diminution de leur effectif. L'espèce est rare en raison d'une chasse irraisonnée et du manque d'habitat ouvert. Plusieurs observations sont faites chaque année et l'on estime leur nombre à trois ou quatre couples. L'accent est mis sur la nécessité de lutter contre le braconnage et les moyens à mettre en œuvre pour assurer son efficacité, le pâturage illégal et les feux, les problèmes liés à l'eau, au réseau routier et au développement de l'activité touristique.

# W National Park for urgent

John Grettenberger

W National Park is shared by Niger, Upper Volta and Benin, and is recognised as being one of the most important parks in West Africa by virtue of its size—11,320 sq km—and its diversity of habitats and species\*. Both its proximity to the rapidly growing capital of Niamey, Niger, and the burgeoning trans-Saharan tourist traffic give it great tourist potential. The park and its wildlife, however, are under constantly increasing pressure from poaching, illegal grazing, uncontrolled bush fires, the possibility of phosphate mining, and the lack of financial and material means to combat these problems. The author is a US Peace Corps biologist who worked in Niger for four years, for part of the time attached to the IUCN/WWF aridlands project. He describes conditions and problems in the Niger sector of W National Park and discusses possible solutions.

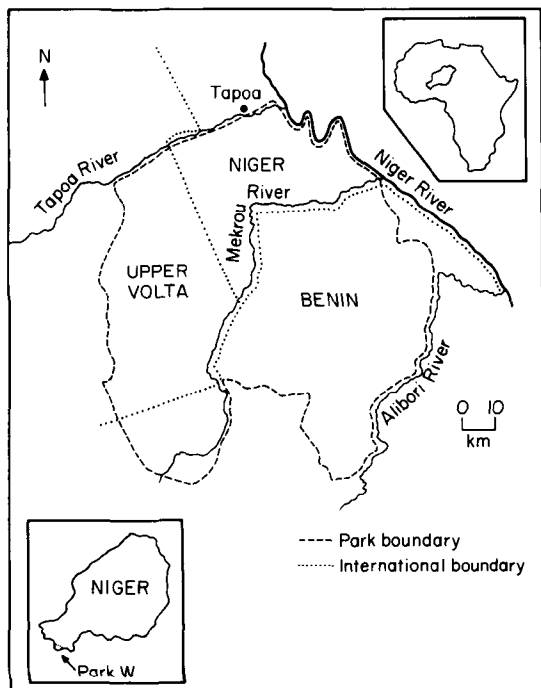
The Niger sector of W National Park is situated in the south-west of the country, between 11°55' N and 12°35' N and 2°5' E and 2°50' E. It is bordered by the permanently flowing Niger River on the east, two seasonal rivers, the Tapoa and the Mekrou, on the north and south respectively, and the Upper Volta frontier on the west. It covers approximately 2190 sq km and its average elevation is 250 m. The soils are generally shallow

\*Douglas-Hamilton, 1979; IUCN, 1981.

and infertile with a high iron content, particularly in the upland areas in the interior. Depressions and stream valleys tend to have deeper, more fertile soils while extensive rock outcroppings are found along the Niger and Mekrou Rivers. The rainy season lasts from May to early October, with an average rainfall of 700-800 mm, while the dry season is divided into a cold and a hot season.

## Infrastructure and facilities

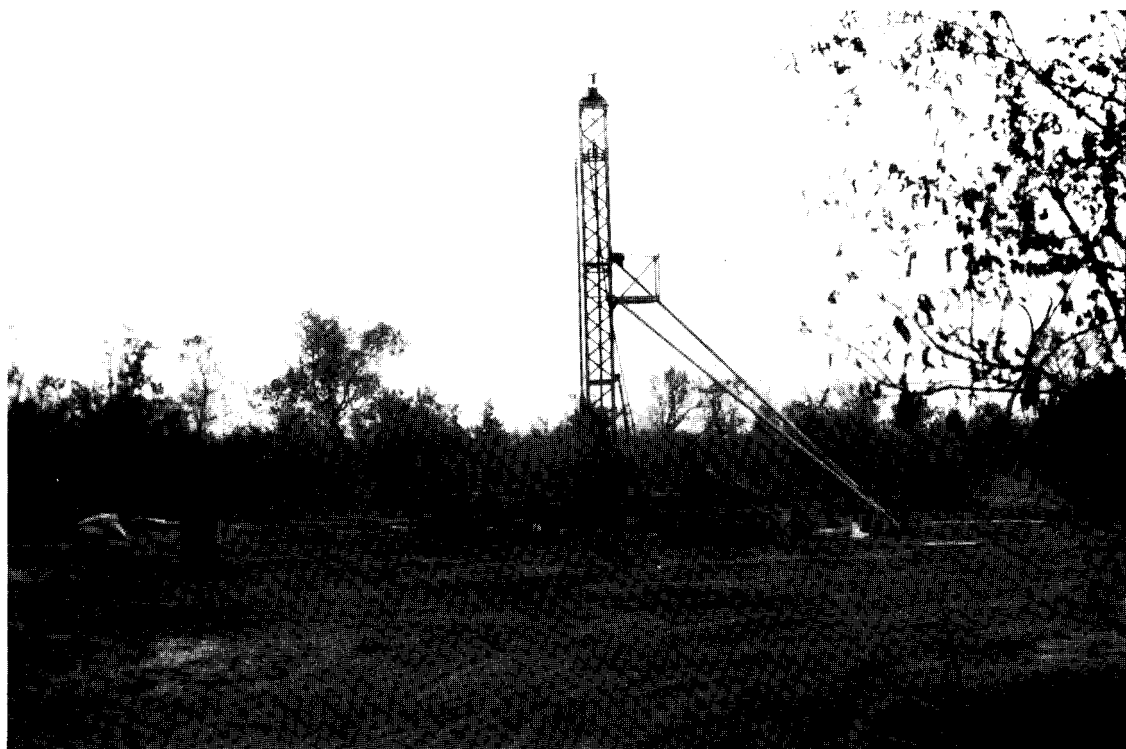
W National Park of Niger is administered by the Direction of Forests and Wildlife, which is part of



# in Niger — a case assistance

the Ministry of Hydrology and Environment. The staff comprises a park director, two technical agents, three mid-level agents, 10 guards posted at Tapoa, the park headquarters, and one technical agent posted on the Niger River. Equipment includes a Land Rover, a dump truck, and a road grader, although these are often non-functional

because of lack of funds for repairs and fuel. The budget for the park in 1982, excluding salaries for personnel, was 3,800,000 cfa (US \$11,000). A 25-room tourist hotel was constructed in 1981 and a small museum is maintained at the park entrance.



Phosphate exploration in W National Park, Niger (*John Newby*).



Mekrou River and its gorge, W National Park, Niger (John Newby).

## Vegetation

The park lies within the Sudan Savanna vegetation zone and the vegetation types have been described by Koster (1981). A total of 454 species of plants have now been recorded (Grettenberger, 1983). *Combretum* shrub savanna is the most widespread vegetation type occurring on shallow infertile soils, with the dominant shrubs, *Combretum micranthum*, *C. nigricans*, *Guiera senegalensis* and *Acacia ataxacantha* usually 1—3 m in height, and the grass cover dominated by annuals such as *Loudetia togoensis*, *Ctenium elegans* and *Hyparrhenia involucreta*. *Combretum* wooded savanna, which occurs on deeper, more porous soil, is quite variable but the usual dominant trees are *Combretum glutinosum*, *C. collinum*, *C. nigricans*, *Crossopteryx febrifuga*, *Terminalia avicennioides* and *Piliostigma reticulatum*. Grass cover ranges up to 3 m in height and is characterised by the annuals *Hyparrhenia involucreta*, *Andropogon pseudapricus*, *A. fastigatus* and the perennial *A. gayanus*. Riparian forest is found along all seasonal and permanent watercourses, although the width, density and species composition vary greatly with terrain, soil and moisture availability. Dominant woody species include trees such as *Mitragyna inermis*, *Vitex chrysocarpa*, *Daniellia oliveri*, *Cola laurifolia*, *Diospyros* spp. and *Anogeissus leiocarpus* and shrubs such as *Mimosa pigra*, *Combretum micranthum* and *Acacia* spp.

W National Park is the only large relatively undisturbed tract of savanna wildland remaining in Niger and this is reflected in the large number of plant species occurring there that have not been found elsewhere in the country. Species of interest include the only two orchid species recorded in Niger, *Eulophia cucullata* and *E. guineensis*, and the insectivorous plant, *Drosera indica*, all of which are very sensitive to grazing and trampling. The park also contains the only significant remaining tracts of riparian forest in Niger, those outside the park having been largely cut down or degraded.

## Fauna

Poche (1976) listed 79 species of mammals as having once occurred in the Niger sector of W National Park. The hunting dog *Lycaon pictus*, African clawless otter *Aonyx capensis*, and the African manatee *Trichechus senegalensis* were all listed as being extinct there, although the manatee is still occasionally reported just south of the park on the Niger River. Large mammals include all the species occurring in the West African savanna except the giant eland *Tragelaphus derbianus* and the giraffe *Giraffa camelopardalis*. The last census of large mammal populations took place in 1978 (Koster, 1981) and another is now needed. Several species merit attention because of their rarity or recent changes in their numbers.

Elephant-damaged riparian habitat. W National Park, Niger (*John Grettenberger*).



## Elephant

In the early 1970s the elephant population in the park during the dry season was reported to be 95 (Poche, 1974a), although this estimate was probably low. Large numbers of elephants were instead reported to spend the dry season around permanent water up to 150 km north of the park. The 1978 aerial census, however, estimated the population at  $600 \pm 90$  and their numbers appear to have increased in the last three years, despite increased poaching. Increased hunting and grazing and the expansion of agriculture have been causing elephants to migrate into the park, as has been described elsewhere in Africa (Buechner *et al.*, 1963; Myers, 1973). There has also been an influx of elephants from the Benin and Upper Volta sectors of W National Park, where law enforcement is minimal. Even within the Niger sector, the amount of illegal activity along the borders has resulted in concentrations of elephants in the middle of the park, which has caused increasing habitat damage, particularly in the riparian zones. Damage has been most severe along the Tapoa River, where the construction of a dam in 1980 created a permanent water source near the park headquarters where elephants are relatively safe from poaching.

## Buffalo

Previously the most common large ungulate in the park, buffalo suffered from a rinderpest epi-

demic in 1981, which affected their populations in the entire region. An estimated 50–60 per cent reduction in their population occurred and no young were observed until late 1982.

## Topi

This once widespread antelope has now become very rare in West Africa (Sayer, 1982), and the region of W National Park, Arly National Park in Upper Volta and Pendjari National Park in Benin now harbours the only viable population remaining west of Cameroon. W National Park is therefore a key area for the conservation of this species. An estimated 50–100 are present in the Niger sector.

## Hippotamus

Although at one time common in the Niger and Mekrou rivers, hunting has reduced the population to probably fewer than 10 individuals in the portion of the Niger River bordering the park.

## Leopard

Koster (1981) reported three leopard sightings in 1974–78, but no reliable sightings were obtained during the author's stay in the park in 1980–83, although tracks were occasionally reported. The difficulty of observing this secretive, nocturnal species makes its status difficult to ascertain, but it is undoubtedly very rare because of hunting.



Confiscated traditional poaching weapons, Niger (John Newby/WWF).

## Cheetah

This cat is also very rare because of overhunting and lack of suitable open habitat. Several sightings are made each year, however, and an estimated three or four pairs are probably present.

More detailed descriptions of some of the mammals can be found in Poche (1974a,b, 1975, 1976a,b) and Koster (1981). Koster and Grettenberger (1983) have recorded 283 bird species and a wide variety of reptiles is also found, including the Nile crocodile *Crocodylus niloticus*, Nile monitor *Varanus niloticus*, pythons *Pythos sebae* and *P. requis* and the land tortoise *Testudo sulcata*.

## Management problems and solutions

### Poaching

Poaching is the most severe problem and increases in intensity each year. Hunting is primarily carried out with hand-made muzzle-loaders, which fire poison spears or slugs, or with steel cable snares, and not with the modern weapons

used elsewhere in Africa. However, these weapons are very inefficient, and it is not unusual to see elephants slowly dying from festering wounds caused by poison spears, or roan antelope *Hippotragus equinus* and buffalo trailing snares.

Poaching is most intense during the dry season, after the crops have been harvested and wildlife has concentrated around water. Typically, poachers set up their camps in the Benin portion of W National Park or in Upper Volta, where there is little law enforcement and Nigerien authorities cannot follow. They then hunt as well as fish in the Niger part. The poached meat is smoked and transported with other commercially valuable products such as ivory and skins by bicycle, dugout or donkey. The meat is often shipped, via the Niger River to Nigeria, where a large sack of meat reputedly brings up to 50,000 cfa (\$175).

If poaching is to be controlled, several problems must be addressed:

#### (1) Guards

The present contingent of 10 guards is far from adequate to control 2190 sq km, particularly when training is minimal and morale is poor because of difficult living conditions. The number of guards needs to be greatly increased and they need to be trained in firearm handling and care, patrol methods and bushcraft. They and their families also need to be provided with adequate living conditions.

#### (2) Guard posts

One of the great barriers to effective law enforcement is the lack of a permanent presence of guards in the park. In the past there were two permanent guard posts, but these were abandoned. The construction of a network of guard posts, which should be permanently manned, is the only efficient means to control illegal activity, particularly along the frontiers.

#### (3) Transport

The lack of adequate transport, either from mechanical problems or lack of fuel, is a severe barrier to law enforcement. It also lowers morale among the personnel, because they are not able to get food and medical treatment, which are not available locally. A minimum of two properly maintained four-wheel drive vehicles with adequate fuel is a necessity. A motor-boat is also

needed for patrolling the riparian areas along the Niger River.

#### (4) *Tri-national co-operation*

Each part of W National Park is administered separately and no agreement has been reached between Niger, Upper Volta and Benin to co-ordinate law enforcement activities. Particularly important would be an agreement allowing the right of pursuit into another country when following poachers. This sort of agreement would most logically be reached under the auspices of the Parks and Reserves Committee of the Conseil de l'Entente.

#### (5) *Education*

This final point is perhaps the most important because, in the long run, no park can exist without some degree of co-operation and understanding from the people living around it. There needs to be a programme, perhaps similar to that in Senegal (Dupuy, 1982), to educate the people as to the value of wildlife, which would go hand in hand with another to provide more employment through the park and to raise the standard of living in the area.

### Illegal grazing

Illegal grazing greatly increased during the 1970s as a result of increased vaccination of live-stock against trypanosomiasis, and the difficulty of discouraging herders in a country where food shortages are chronic, and where the only effective means seems to be occasionally shooting cattle. The problem is most acute along the Niger River and the upper Tapoa River, where up to 10,000 sheep and cattle can be found during the dry season. They have effectively displaced wildlife from the most productive habitat in the park and changes in the vegetation and erosion caused by trampling, overgrazing and cutting of browse are quite obvious. Predators are often poisoned or trapped and the scarcity of large predators is a direct result of these actions.

### Fire

Burning is a valuable management tool in savanna parks in West Africa, but if improperly used can have negative impacts on the soil, vegetation and water. In the past, park personnel have conducted widespread burning in the areas most

frequented by tourists to improve visibility for wildlife viewing, to induce a flush of perennial grasses for grazing animals, and to create fire-breaks to prevent large-scale late-season fires. In addition, large areas, particularly in the east and west, are burned by poachers and herders, resulting in over 75 per cent of the park being burned each year. This fire regime can lead to a decrease in perennial grasses, an increase in fire-resistant woody species, primarily *Combretum* spp., degradation of the soil and destruction of riparian forest. Another effect is the loss of unburned habitat particularly favoured by elephants, buffalo and bohor reedbuck *Redunca redunca*.

With these considerations in mind, a fire-management plan was drawn up and implemented in 1982. Its basic goals were to decrease the area burned, to be more specific in the vegetation type chosen to be burned, and to burn early in the wet season to control woody vegetation. This plan was flexible, because of a lack of firebreaks other than roads and rivers, but it worked quite effectively, although fires set by poachers and herders are still a significant problem.

### Water

Water is one of the most important factors affecting animal distribution in the park. A large number of natural waterholes exist outside of the major riverbeds, but most of these dry up by January or February. To improve the situation, a number of waterholes were created or improved, primarily along seasonal drainages. In addition, a concrete dam was constructed in 1980 across the Tapoa River, which backs up water for 2–3 km at the end of the dry season. These waterholes provide alternative sources of water to the heavily poached Mekrou River Valley, and distribute wildlife into areas that would not normally be accessible. However, no maintenance has been done since 1978 on the waterholes, and erosion and trampling have greatly reduced their usefulness. An upgrading of the waterholes is urgently needed.

### Roads

A more than adequate network of 470 km of roads exists, which are repaired each year after the rainy season by a road grader and a small crew of

four or five workers. However, because of poor road placement, soil erosion, and the lack of permanent crossings on seasonal streams, the condition of the roads has deteriorated alarmingly, and maintenance becomes more difficult every year. A large crew of workers needs to be employed to put in rock crossings, fill in gullies and dig run-off channels. The possibility of employing crews of workers for annual road maintenance, as described by Sayer (1981) in Benin, should also be explored. This would avoid the mechanical and fuel problems associated with the grader and would also provide economic benefits for the local populations.

## Tourism

The park enjoys a fairly good tourist trade, primarily from residents of Niamey, but the potential exists for greatly increasing revenue and the number of visitors. During the 1981–82 season 1700 season permits were sold, each costing 1000 cfa (US \$2.5) for non-Nigeriens, which is the same price that it cost in 1954 when the park was created, and is much lower than for other African parks. The price could reasonably be raised to 2000 cfa (US \$5) for a three-day pass and 5000 cfa (US \$12.5) for the season. Nigeriens are admitted free.

There is a lack of transport for visitors; to enter the park one must own a vehicle, or rent one in Niamey, which is very expensive. The purchase of a vehicle, either by the Bureau of Tourism or the hotel, would greatly increase visits, particularly by international travellers. The development of boating, sport fishing, hides and camping would greatly enhance the park's attractiveness to tourists.

## Conclusion

Niger is one of the poorest countries in the world and is beset by a host of problems, ranging from periodic drought and desertification to a drop in world uranium prices, its primary export commodity. Not unexpectedly, wildlife has not received a particularly high priority. Niger has continued to support wildlife conservation, however, and the recent creation of the National Nature Reserve of the Air and Ténéré is evidence of this.

Because of a lack of trained personnel and financial means, Niger can only provide limited support for wildlife conservation and must continue to rely on international assistance if it is to be effective in protecting and developing its parks. This aid has not been forthcoming for W National Park, despite its importance, and it continues to function on the limited means available to it. The situation has reached very serious proportions, and if assistance is not given in the near future, a valuable part of Niger and West Africa's natural heritage will be irrevocably lost.

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## References

- Buechner, H.K., Buss, I.O., Longhurst, W.M. and Brooks, A.C. 1963. Numbers and migration of elephants in Murchinson Falls, Uganda. *J. Wildl. Mgmt.* **27**, 36–53.
- Douglas-Hamilton, I. 1979. *IUCN/WWF/NYZS African Elephant Action Plan*. Final Report. Gland, Switzerland. 174 pp.
- Dupuy, A. 1982. *Anti-poaching efforts in Senegal's national parks*. Paper presented at 3rd World National Parks Congress, Bali. 4 pp.
- Grettenberger, J. 1983. *Une liste des plantes vasculaires du Parc National de W, Niger*. Mimeo. 14 pp.
- IUCN 1981. *Conserving Africa's natural heritage*. Gland, Switzerland. 271 pp.
- Koster, S. 1981. A survey of the vegetation and ungulate populations in Park W, Niger. *MS thesis*. Michigan State University, East Lansing. 134 pp.
- Koster, S.H. and Grettenberger, J.F. 1983. A preliminary list of birds of Park W, Niger. *Malimbus*, **5**(2), 4, 62–72.
- Myers, N. 1973. Tsavo National Park, Kenya and its elephants. An interim appraisal. *Biol. Conserv.* **5**(2), 123–132.
- Poche, R.M. 1974a. Ecology of the African elephant (*Loxodonta africana*) in Niger, West Africa. *Mammalia*, **38**(7), 568–580.
- Poche, R.M. 1974b. Notes on the roan antelope (*Hippotragus equinus*) in West Africa. *J. appl. Ecol.* **11**(3), 963–968.
- Poche, R.M. 1975. The bats of National Park W, Niger, Africa. *Mammalia*, **39**, 39–50.
- Poche, R.M. 1976a. A checklist of the mammals of National Park W, Niger, Africa. *Nig. Fld* **41**(3), 113–115.
- Poche, R.M. 1976b. Notes on primates in Parc National du W du Niger, West Africa. *Mammalia*, **40**(2), 187–198.
- Sayer, J.A. 1981. Tourism or conservation in the national parks of Benin. *Parks*, **5**(2), 13–15.
- Sayer, J.A. 1982. The pattern of the decline of the korrigum (*Damaliscus lunatus*) in Wet Africa. *Biol. Conserv.* **23**, 95–110.

John Grettenberger, 616 Hall Blvd, Mason, MI 48854, USA.

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