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Abstract: The following study was performed in the 1990s in W National Park, Niger, one of the last protected areas in West Africa where cheetahs *(Acinonyx jubatus)* are still found. The purpose of this study was to establish a base of information on the cheetah population in the park and its reserves: estimated number of individuals, migration pattern, preferred prey and habitat, and relationship with herders and villagers. It was intended to be a preliminary effort, in hopes of encouraging further studies of the cheetah in Niger and other areas.

The Cheetah

in

W National Park,

Niger, West Africa

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PCV- Tapoa, Park W
Niger, West Africa
7 Feb., 1995

"The cheetah has been revered by humans for almost 5000 years, for good reasons. If it were allowed to become extinct it would not only leave a large hole in nature, but also in the very psyche of the human mind that so naturally feels and knows the uniqueness of this creature."

-Daniel Kraus

The following study was performed in W National Park, Niger, one of the last protected areas in West Africa where cheetah (Acinonyx jubatus) are still found. The purpose of this study was to establish a base of information on the cheetah population in the park and its reserves: estimated number of individuals, migration patterns, preferred prey and habitat, and relationship with herders and villagers. It was intended to be a preliminary effort, in hopes of encouraging further studies of the cheetah in Niger and other areas.

INTRODUCTION:

In 1900, it was estimated that there were over 100,000 cheetahs throughout Africa and Asia, found in at least 44 countries. Today that estimate falls to less than 12,000 cheetahs found in 24 to 26 countries in Africa and 200 animals in Iran. All populations are listed in CITES Appendix I classified as vulnerable or endangered by IUCN (International Union for the Conservation of Nature and Natural Resources). Cheetah populations continue to decline due to loss of habitat, decline of prey species and conflict with livestock farming. Also, their lack of genetic diversity makes the species more vulnerable to ecological and environmental changes (Kraus and Marker-Kraus, 1993).

The most viable cheetah populations are found in East and South Africa, usually outside of protected areas where they are in direct conflict with herders and livestock farmers. Studies on cheetah living inside parks and reserves have shown that they are struggling there as well, due in part to competition from larger predators and area restriction. Cheetah are also found in parts of West Africa, but these populations are very small and widely scattered. It is questionable whether these small, isolated populations can sustain themselves in the face of exploitation and habitat loss.

BACKGROUND INFORMATION:

W National Park is a protected game park and reserve, located in the southwest corner of Niger. It is bordered on 3 sides by rivers and one side by Burkina Faso. The Niger River forms its eastern border, while its tributaries, the Tapoa and the Mekrou, make up its northern and southern borders, respectively. Niger's Park W is part

of a tri-national game park, which is shared with the countries of Benin and Burkina Faso. The entire park comprises over 11,000 sq. km, with Niger's portion being about 2200 sq. km.

The park is located in the Sudan Savanna vegetation zone, receiving an average rainfall of 700-800 mm per year. The soils are generally shallow and infertile with a high iron content. The vegetation varies throughout the park, depending on the soil content and available water. Combretum shrubland and Combretum wooded savanna are commonly found in the park, as well as riparian forest which is located on all seasonal and permanent waterways. Grasscover usually ranges from 1 m to 3 m in height and is often interspersed with shrublands and trees.

The fauna of Park W includes at least 79 species of mammals, many of which are rare or endangered, such as the African elephant, wild dog, leopard, African manatee and the cheetah. Other species include the lion, roan antelope, waterbuck, African buffalo, kob, topi, gazelle, oribi, reedbuck, duiker, baboon, patas monkey and green monkey. The giraffe occurs in other areas of Niger, but is not found in Park W.

CHARACTERISTICS OF THE CHEETAH:

The cheetah is often regarded as the most elegant of the big cats, with many of its physical characteristics specifically adapted to its unique hunting behavior. Its long, slender body and proportionally long legs are built for speed and its long tail acts as a rudder for sharp turns at high speeds. Other distinctive characteristics include non-retractable claws, which improve traction and an elongated spine to increase stride length. The tawny coat with small black spots and the black "tear stains" that run from eyes to mouth help camouflage the cheetah while hunting.

Although specifically designed for high-speed sprints (60-70 mph), the cheetah lacks stamina. To capture prey, it must first get within sprinting range, then quickly overtake the animal within 300 yards. The ideal cheetah habitat is a mosaic of woodland and grassland, which allows for high-speed chases, but also offers cover. Some people believe that thick brush is detrimental to a cheetah's hunting technique, but they have been observed hunting in dense woodland (Eaton, 1974). Their preferred prey varies among regions, but includes the gazelle, impala, springbok, duiker, reedbuck, oribi, young roan and sable antelope, warthog and sometimes rabbits.

Cheetahs are diurnal, usually hunting in the morning and evenings, and resting during the hottest part of the day. They are rarely active during the night, unlike lions and leopards (Estes,

1991). This may be an adaptation to avoid competing predators such as lions, leopards and hyenas. They are often chased away from their kills and sometimes attacked by other animals, including vultures. Because of their timid nature and delicate build, cheetahs rarely fight back. Also, they are rarely seen to scavenge or return to an abandoned kill.

Cheetahs are primarily solitary animals, but they are sometimes observed in groups. These groups are usually made up of mothers with cubs, young adult siblings recently separated from their mother or coalitions of males (Estes, 1991). They often have large ranges, especially when following migrating herds. Males compete for hunting grounds, but often defend smaller territories than females, which is the reverse situation for most carnivores. Males may range outside of these territories, however (Estes, 1991).

Hunting is usually carried out individually, but occasionally male coalitions or females with subadult young will work together to bring down larger prey. Their hunting technique depends on the terrain, but it usually involves a careful approach to within sprinting distance (50 m or less) by stalking, using all available cover, then the final rush. Lone animals and young are often singled out, but healthy adults are taken too. In a study of Serengeti cheetahs, 41% of attempted kills were succcessful (Estes, 1991). The technique used for bringing prey down is specialized for the high-speed hunt. As the prey is running, the cheetah strikes its rump or hindleg with a forepaw, or simply trips it. The victim falls on its side or flips over, often breaking a leg. The cheetah then holds the animal down with its legs and chest and grabs the prey's throat in its jaws to suffocate it. The cheetah drags it off to cover to eat, wary of other predators who may try to steal the kill.

METHODS:

The study of the cheetahs in Park W evolved systematically, beginning with research of cheetah ecology and distribution, interviews with local people about the area and their knowledge of cheetahs, and correspondance with conservation groups and individuals studying the cheetah. I found very little documentation in the park's files on cheetahs or sightings of them, so I gathered articles and reports from books, magazines and journals found at IUCN in Niamey. My correspondance with individuals and groups such as the Cheetah Conservation Fund also provided me with some very valuable information. While working in the park, I was able to familiarize myself with the vegetation and terrain of the area, as well as talk with park employees about their knowledge of cheetahs and

their history in the park. I shared information with them about cheetah behavior, habitat preferences and status in West Africa.

Because of a limited budget and few resources, the study required assistance from park employees and local herders. I asked the tourist guides and park workers to report all cheetah sightings to me so that I could record the information. I developed data sheets for this purpose, which I filled out each time there was a sighting (see attached). In addition, I marked each sighting on a map (see attached), indicating whether actual cheetah or just signs were seen. I also investigated reports of cheetah attacks on herd animals in the reserves and talked to local villagers about the cats' activities in the area. Tracking of the cheetahs was done on foot, on a bicycle or in a truck. When I received a report of a cheetah sighting, I would investigate the area to gather as much information as I could. Cheetah sightings were rare, which made collection of data difficult.

RESULTS:

The results of this study indicate that there is a stable, yet small population of cheetahs in Park W and its reserves, and they appear to be healthy and reproducing. Over 2 years time, 22 cheetah observations were made in 8 separate sightings. On three occasions, tracks were found along roads in the park. Although the amount of data gathered is small, some similarities were observed.

In the area along the Niger River, there were 4 separate observations made. In July1993 and March 1994, a solitary female was spotted in this region. In December 1994, a female was seen with two young cubs. Later, in January, a female with 2 cubs and another unidentified cheetah was observed in the same place. It appears that this is the same female each time. She has been spotted very close to the river (about 100 meters away) on each occasion. This area of the park is rich with roan antelope, Buffon's kob and gazelle. The Niger River is a permanent river, which insures water year-round (often difficult to find during the hot season). It is dominated by shrubby grassland with woodland areas along the river.

Another area with multiple sightings was the laterite road leading out of the park into the reserves. On 2 separate occasions, a group of 5 cheetahs were seen next to the road. In September1993, 2 adults and 3 sub-adults were observed close to the road. They were surprisingly close (about 200 meters) to Tapoa, the park's headquarters. Later, in January 1995, another group of 5 cheetah were seen laying under a tree, about 100 meters from the road. Their age and sex were not determined, but all were at least of sub-

adult age. Tracks of an adult cheetah were found on the road in the same area as the other sightings. All 3 sightings were within a 10 km stretch of road. The habitat here is more dense than along the Niger River, containing about 50% shrub cover, with grassland area and some scattered trees. The herbivore population here is varied and plentiful year-round. This area is an important travel corridor for animals going to the Tapoa River to drink. During hot season, this is one of the few places that still holds water. During the rainy season, the lion population increases in this area, thus increasing competition with the cheetahs. Herders who live in the reserve villages noted a decrease in cheetah sightings and activity during this time. Apparently, they are forced south towards the park by pressure from lions.

An adult female cheetah was observed drinking at a watering hole in the center of the park. This area (Nyafarou) is also rich with wildlife, especially roan antelope, buffalo and elephants. It is more lush than much of the park because it is actually a valley in a large watershed. There are scattered patches of open grassland within the woodland zone. There are also areas of rocky hills among the grass valleys. This varied terrain offers substantial cover as well as open areas for hunting. It was interesting to note that this cheetah showed apparently little fear of our approaching car (about 30 meters away). She rolled over onto her side and watched us for several minutes. Only when a car door was opened did she show fear and run away.

Tracks of cheetah were spotted in 2 other areas of the park. On Moussiemou road, also near the center of the park, the tracks of a large cheetah, most likely an adult male, were found. This area is different than the regions already mentioned. It is mostly flat grassland, with some shrubland. South of this area, it becomes denser and more wooded, however. Once again, the tracks were near an important watering hole.

Another set of tracks were seen on Fofo, the road that runs along the park's southern border, the Mekrou River. This is a temporary river, but usually holds some water into the hot season. The area is dominated by the gallery forest along the river, but contains mostly open shrubland away fron the river. Potential prey here includes Buffon's kob, waterbuck, reedbuck, duiker and gazelle. The tracks were those of an adult, but the sex was not determined.

Finally, cheetah were observed in Baniguitti, a village located in the reserves, about 30 km from Tapoa. Herders there reported several sightings of cheetahs, as well as attacks on their animals. I investigated these reports and am fairly certain that the animals

these villagers were describing were cheetahs and not lions or hyenas. The cheetah were active near dusk in this area and usually attacked sheep and goats that were kept untied but grouped together. One herder reported that a cheetah approached his herd while he was sitting among his animals. The cheetah attacked one of his sheep and dragged it away to eat it. Another interesting report was that at least 2 donkeys had been attacked and killed by cheetahs. From information that I have gathered from other sources, this is a rare occurrence.

CONCLUSIONS AND RECOMMENDATIONS:

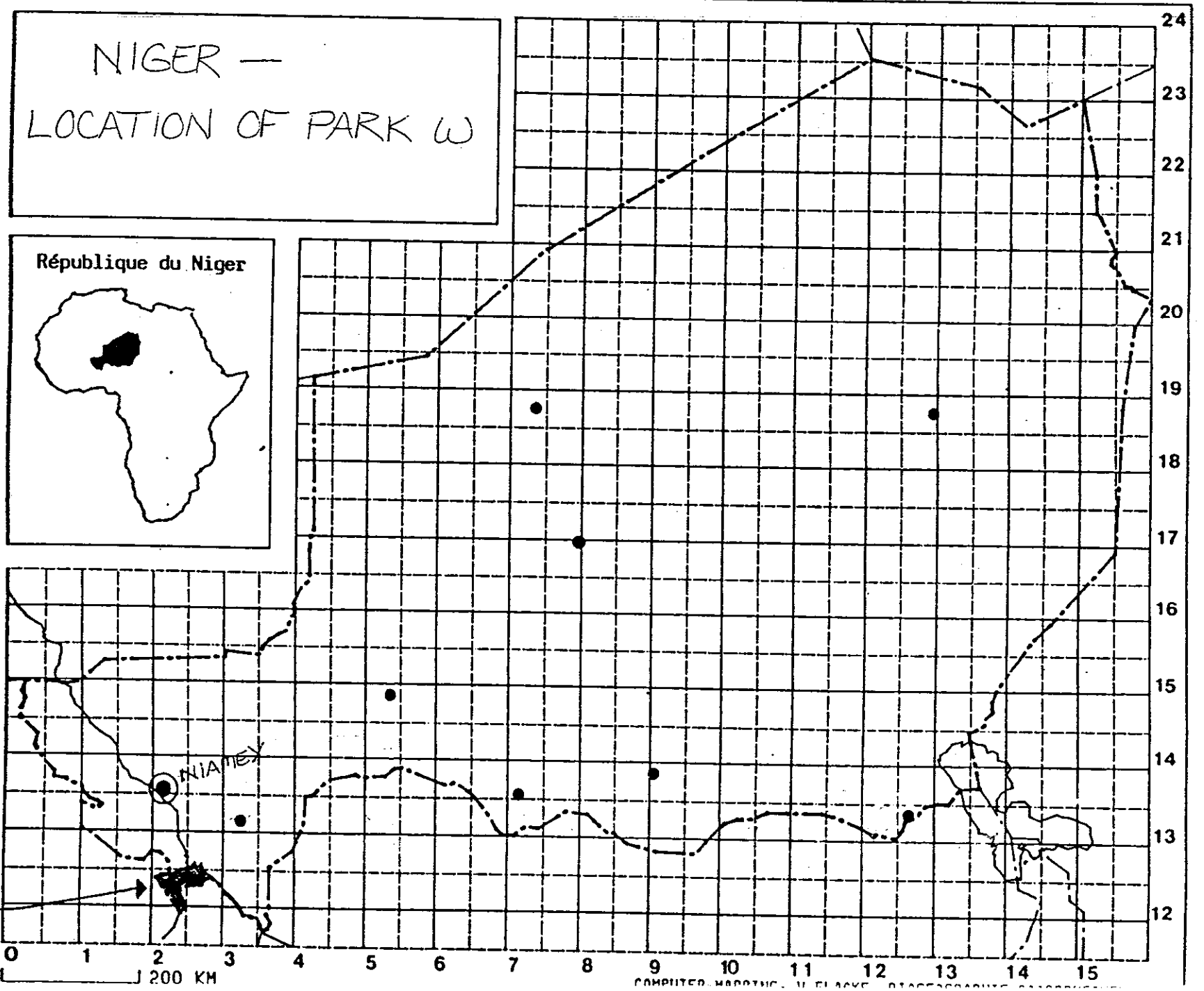
From the data gathered, I have concluded that there are at least 9 cheetahs living in Park W and its reserves. I have made this assumption based on the 5 cheetahs observed on the laterite road out of Tapoa and the 4 cats seen near the Niger River. The individuals spotted in the park and the reserves could be members of these groups or they could be solitary animals, which would bring the total number even higher. It is possible that more cheetahs exist, as they are very shy and difficult to observe. Another possibility which was not discussed is migration of cheetahs into and out of the park from Burkina Faso and Benin. A few years ago (1992 ?) a poacher was reported to have been caught with the skin of a King cheetah, presumably captured in Burkina Faso. It is believed that there is a small population of cheetahs surviving in this country, possibly in the protected areas or their reserves. Niger's Park W population (those observed) seems to be fairly sedentary within the park's boundaries. During rainy season, as previously stated, the cheetahs move out of the reserves towards the park as the lion population increases in that area. Besides this, I was not able to identify any regular or seasonal migration of the cheetahs. In addition to Park W's cheetah population, there is also a small population reported to be in the Sahara Desert, in the northern part of the country. They are an isolated group and have adapted well to their desert environment with lighter coats and smaller bodies (Dragesco-Joffe, 1993).

Upon examination of the data, several similarities have been noted. All cheetahs and the tracks were found in areas near water. The herbivore population was also high in these areas, possibly also due to the availability of water. The habitat and terrain varied, but was characterized by some proportion of open grassland, ideal for the cheetah's high-speed chases. They seemed to use woodland habitat also, most likely for cover.

It was difficult to study their behavior in depth because of the rarity of sightings, but I did notice some consistencies. Athough cheetahs are by nature very timid, they all seemed undisturbed, even curious, when approached by cars. They only fled when the car came within about 50 meters of them or the observers disturbed them with noise or sudden movements. Until that time, the cheetah seemed to take an interest in the observers. It should be noted that all observations were made from a vehicle, except for the herder who was sitting among his sheep. It is unknown what reaction the cheetahs would have to a person on foot or bicycle. Many animals in the park, especially bigger game such as the lion and elephant, often show greater fear when approached by a person on foot rather than in a car. There are exceptions to this, such as a group of elephants who frequently come right up to the village to browse, but it is generally found to be true. This could be due to the fact that poachers travel through the park and approach the animals on foot or bicycle, while tourists and park employees travel in vehicles. It may be a learned response, which was found to be exhibited by cheetahs in the Maasai Mara National Reserve in Kenya. The cats sometimes even took advantage of the vehicles distracting herbivores, which gave them an advantage while hunting. (Burney, 1991).

This study would not have been possible without the help of the park guides and the local people. They were invaluable to me in reporting observations of cheetahs, offering information about the area and the wildlife and helping to raise awareness of cheetah conservation to local people. The results of this study have shown that there is a substantial cheetah population that requires protection. Poaching and illegal grazing, which leads to habitat loss for wildlife, are two of the major problems that Park W faces. Both of these are direct threats to survival of the cheetah. They must contend with human encroachment on their territory, which often leads to conflicts with herders. Park W struggles to manage its park on a very small budget, leaving little money for funding research or other management projects. Peace Corps has been working in the park for over 25 years and has contributed a large amount of data to its information base. They also function on a limited budget and therefore, do not have the resources and technical equipment necessary for in-depth research. This leaves much of the responsibility of conservation with the people of the area: villagers, herders and park employees. Biologists and researchers may be able to offer technical assistance and support, but ultimately the cheetah's future in this area depends on the activities and attitudes of local

people. Unless they take an active role in protecting the cheetah and preserving its habitat, Park W and possibly West Africa could lose an extraordinary animal.


NIGER —
LOCATION OF PARK W
République du Niger
NIAMEY
PARK W
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
200 KM
24 23 22 21 20 19 18 17 16 15 14 13 12

OBSERVATIONS DES GUÉPARDS

DATE _____ HEURE _____ OBSERVATEUR(S)_____

TOTAL OBSERVÉ _____

NO. INDIVIDUS:

ADULTE MALE _____ ADULTE FEMELLE _____

NON-ID _____ SUB-ADULTE _____ JEUNE _____

NOM DE PISTE _____

LOCALISATION (mare, colline, etc.) _____

DISTANCE _____

HABITAT _____

* ESPÈCES ARBRES DOMINANT_____

COUVERTURE % _____ ÉTAT_____

* ESPÈCES ARBUSTES DOMINANT _____

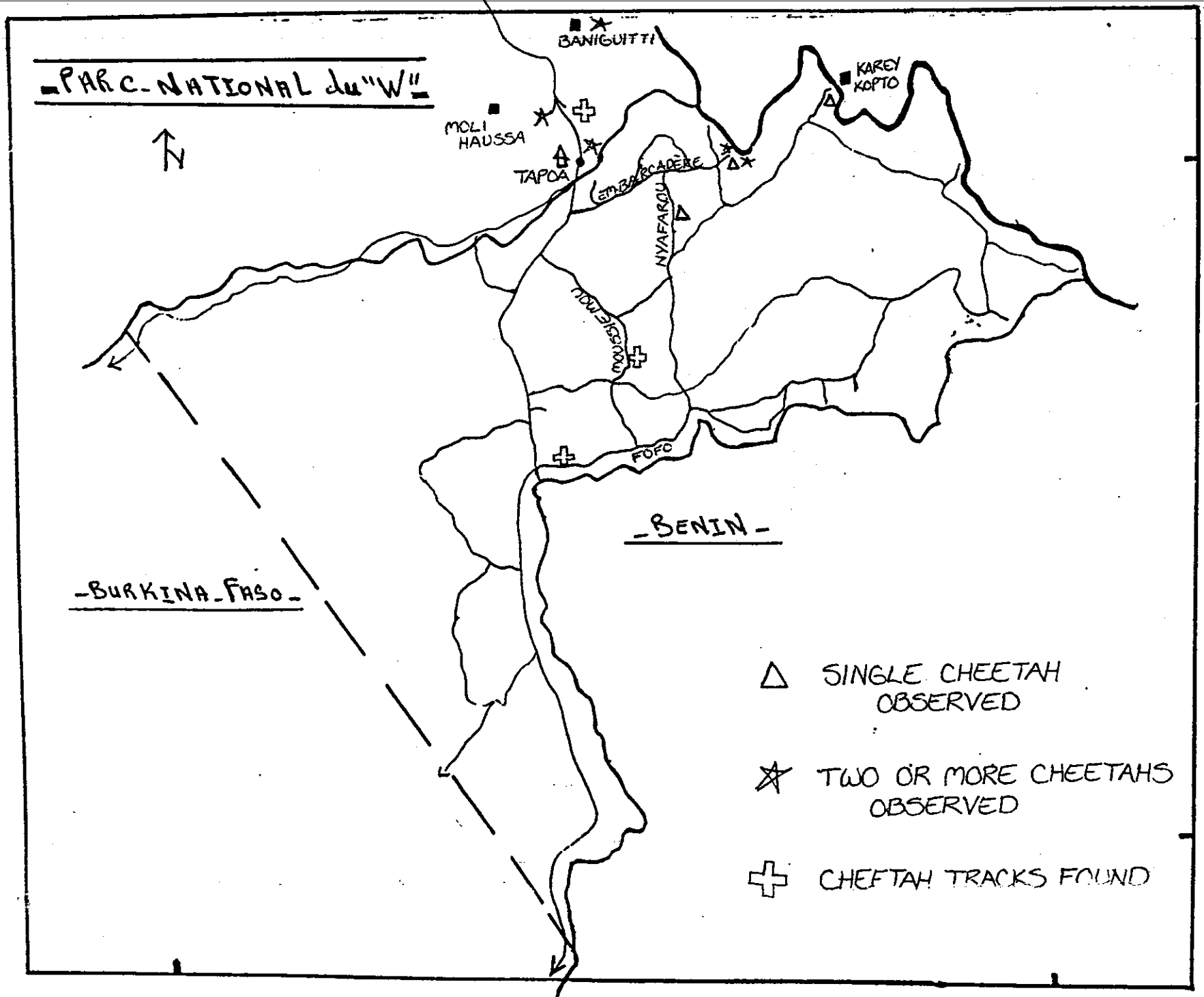
COUVERTURE % _____ ÉTAT _____

* ESPÈCES HERBES DOMINANT _____

COUVERTURE % _____ ÉTAT _____

BRULÉE _____ NON-BRULÉE _____ RÉPOUSSE _____

OBSERVATIONS (manières, particularités ou conditions inhabituelles, fuite, autres animaux observé dans la même zone, etc.):


PARC NATIONAL du "W"
BANIGUITTI
KAREY KOPTO
MOLI HAUSSA
TAPOA
EMBARCADERE
NYAFARGU
FOFO
BENIN
BURKINA FASO
SINGLE CHEETAH OBSERVED
TWO OR MORE CHEETAHS OBSERVED
CHEETAH TRACKS FOUND

CHEETAH SIGHTINGS

• Niger River (Karey Kopto) July 1993: 1 AF
• Niger River (Embarcadere) March 1994: 1 AF Dec. 1994: 1 AF, 2 JUV Jan. 1995: 1 AF, 2 JUV, 1 N-ID
• Niamey Road Sept. 1993: 1 AM, ! AF, 3 SUB-A June 1994: 1 A N-ID (tracks only) Jan. 1995: 5 A N-ID
• Nyafarou Jan. 1993: 1 AF
• Moussiemou Nov. 1994: 1 AM (tracks only)
• Fofo Feb. 1994: 1 A N-ID (tracks only)
• Baniguitti Feb. 1994: 1 AM, ! N-ID

*KEY:

A-adult; AF-adult female; AM-adult male; JUV-juvenile; SUB-A-sub-adult; N-ID-not identified

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