

Ethnozoology of the large fauna in the Gadabedji biosphere reserve (Niger)

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Abstract

An ethnozoological study of mammals, reptiles and birds was carried out in 11 surrounding villages of Gadabédji biosphere reserve. In this area, conservation actions must be reconciled with the use of biodiversity by local populations in order to satisfy some of their socio-cultural needs. Therefore, for the sustainable management of this biodiversity in general and that of wildlife in particular, it is important to improve knowledge of diversity, local knowledge and the usefulness of wildlife for local populations. Thus, a survey was conducted among three ethnolinguistic groups in the area (Peulh, Hausa and Tuareg). The study made it possible to draw up an inventory of 16 species of mammals, 12 species of reptiles and 40 species of birds. Several species are used in traditional pharmacopoeia, in crafts, in mystical needs and others involved in cultural practices (myth, tale and legend) in the area. A dozen species, almost all mammals such as the dama gazelle (*Nanger dama*) and the addax (*Addax nasomaculatus*) that existed in the reserve, have disappeared. Also, this study showed that several threats on this wildlife at the level of this reserve, the most cited of which are poaching (30%), drought pressure (26%), drought and habitat loss (20%). All listed species are observed by local residents with different frequencies and at different times in the reserve. Ultimately, the local populations of the Gadabédji biosphere reserve have a good knowledge of the wildlife living in the said area and affirm that the latter plays a crucial role in the socio-cultural life of these populations.

Keywords: Ethnozoology, Biosphere reserve, Gadabédji, Species, Wildlife.

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I. Introduction

Biodiversity is an integral part of life on earth in general and human well-being in particular (CBD, 2000). The African natural environments constitute, for the local populations, a vital domain at the ecological, economic and social levels. They represent important reservoirs of biodiversity. Their disappearance has increased in recent decades to the point of threatening the civilizations of the populations who are largely dependent on them (Daniel, 1992; Yaokokoré-Béibro et al., 2010).

In Africa, among the potential resources of natural environments, wildlife holds a special place (Wolf, 1991; Brousseau, 1992). Thus, the totemic or forbidden animals linked to each family are often explained by the choice of a common ancestor belonging to an animal species (Czudek, 2001). The respect, adoration or humanist attitude towards wild animals finds its essence in the belief in the interference of supernatural forces between human society and that of forest animals (Kabré, 1996).

However, the threats to wild fauna and flora are now more serious than ever. Many animal or plant species are decreasing in a worrying way and risk rapidly extending the sad list of those that man has exterminated in the past. Indeed, human actions are one of the major causes of this decline in biodiversity (IUCN, 2021).

In Niger, the regression of wildlife is due to the general degradation of the natural environment and plant and wildlife resources. Statistics on the state of wildlife heritage conservation are lacking. Despite this, it is estimated that the current potential is only about 10% of what existed 40 years ago. Knowledge remains limited for most animal species (mammals, birds, reptiles, amphibians, fish, invertebrates, etc.) (IUCN/PACO, 2010).

This is why, in the logic of conservation of the faunal richness of protected areas, especially biosphere reserves, it would be important to emphasize the local knowledge of neighboring populations.

In this perspective to better reconcile management objectives and the interests of these populations for sustainable development. It is in this context that this study was initiated. Its objective is to determine the past and current faunal richness of the Gadabédji biosphere reserve, to inventory, on the basis of empirical knowledge, the threats which weigh on the wild fauna of the zone and to carry out the typology of the uses of the wildlife by the population living in the Gadabédji biosphere reserve.

II. Materials And Methods

STUDY SITE

The Gadabédji biosphere reserve covers an area of 1,413,625 ha divided into three zones of varying sizes including the central zone of 69,026 ha; the buffer zone which occupies 163925 ha and a transition zone of up to 1180657 ha. This reserve is located in the rural commune of Gadabédji, Bermo department, Maradi region, Republic of Niger, between 14°79 and 14°97 North latitude and 6°59 and 7°34 East longitude (Figure 1). It is located. The climate of the region is of the semi-arid Sahelian type characterized by three seasons including the cold dry season from October to February, the hot dry season from March to June, and the rainy season from July to September (Mairie de Gadabédji, 2011).

Annual rainfall is on average around 300 mm with large annual variations. The rainiest months are July-August. Minimum temperatures are around 15°C between November and February with nocturnal peaks (Souley Ranaou, 2020). On the other hand, maximum temperatures are recorded from March to June with more than 40°C on average between April and May. The biosphere reserve straddles the Sahelian zone and the Saharan zone of Niger, with a plant formation of the clear wooded savannah type (Souley Ranaou, 2020). The population of the reserve belongs to two main ethnic groups: the Tuaregs and the Peulhs whose main activity is pastoralism with a nomadic way of life (Souley Ranaou, 2018).

DATA COLLECTION

The data was collected on the basis of interviews and discussions with the populations bordering the reserve, using a survey sheet established for this purpose. The interviews were individual and the interviews in the form of a focus group at the level of the meeting places of the population (Fada). The study was conducted in 11 of the surrounding villages of the reserve (Figure 1). The choice was based on their position in relation to the central core (inside or on the periphery of the reserve), and the distribution of faunal species. Thus, 9 villages are contiguous to the central core and two in the middle of the buffer zone (Figure 2).

The survey concerned the cooperation of foresters, eco-guards, village chiefs, breeders, traditional healers and the president of the association of hunters in the area. The main questions relate to the past and present wildlife richness of the reserve, empirical knowledge on the threats to the wildlife of the area and the typology of the uses of wildlife by the population living in the biosphere reserve of Gadabédji.

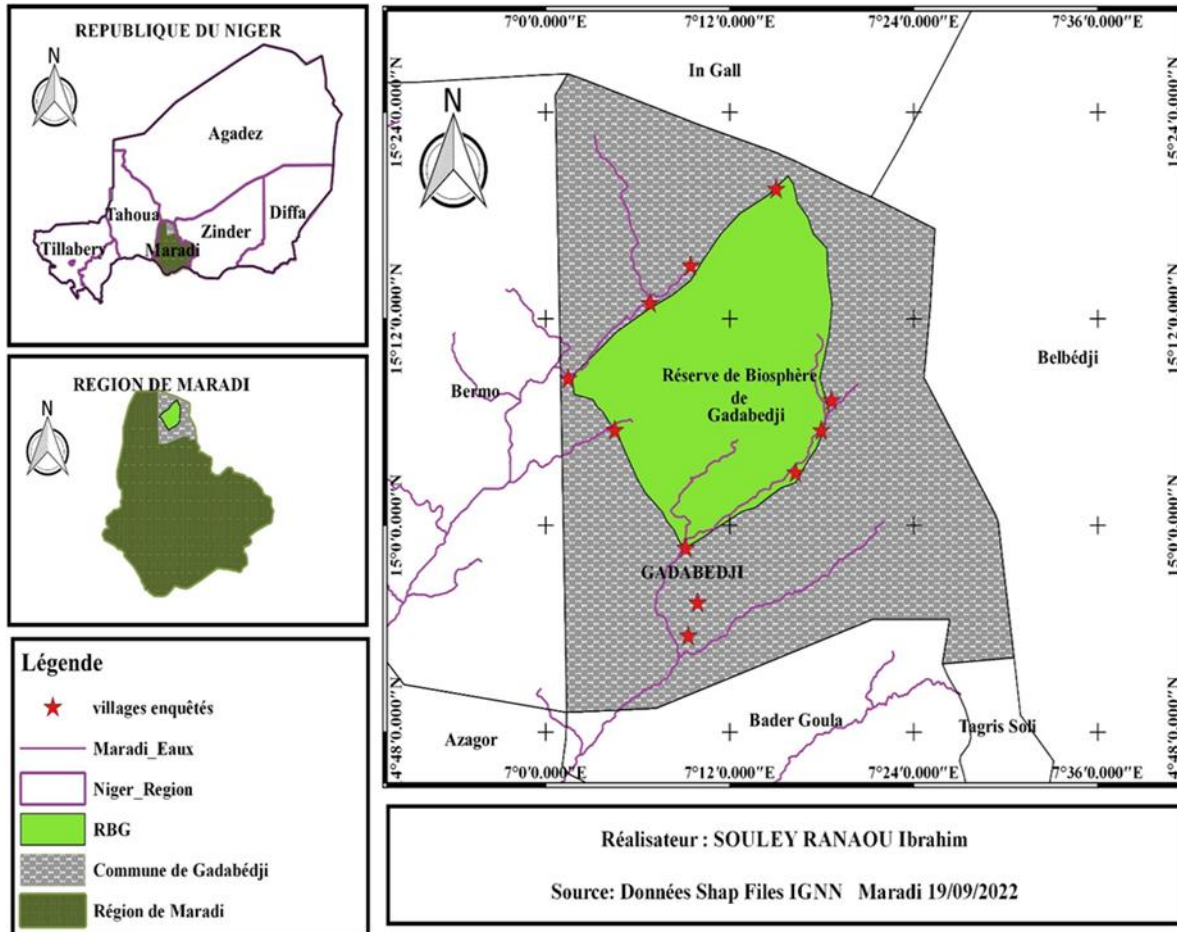


Figure 3: Localisation of the Gadabédji biosphere reserve and selected villages

III. Data Analysis

The data collected was entered using an Excel spreadsheet and the codified. SPSS 20.0 software was used to perform the chi-square test to compare frequencies.

IV. Results

Diversity of large fauna

The surveys carried out among the surrounding populations of the reserve has made it possible to inventory a range of species in the ranks of mammals (16), birds (40) and reptiles (12).

The class of birds is the most diverse followed by the class of mammals and reptiles. The chi-square test shows a significant difference between the numbers of the different classes (chi-square = 20.235; df = 2; p = 0.000).

Table 1: Classification of mammal species known by residents living near the reserve

Orders	Families	Scientific names
Artiodactyla	Giraffidae	<i>Giraffa camelopardalis peralta</i> , Thomas 1898
	Bovidae	<i>Gazella dorcas</i> Linnaeus, 1758
Primates	Cercopithecidae	<i>Erythrocebus patas</i> Schreber, 1775
Rodents	Sciuridae	<i>Sciurus vulgaris</i> Linnaeus, 1758
Carnivora	Felidae	<i>Felis silvestris lybica</i> Forster, 1770
	Canidae	<i>Canis aureus</i> Linnaeus, 1758
		<i>Vulpes pallida</i> Cretzschmar, 1827
	Mustelidae	<i>Ictonyx striatus</i> Perry, 1810
		<i>Melivora capensis</i> Schreber, 1776

	Viverridae	<i>Genetta genetta</i> Linnaeus, 1758
	Herpestidae	<i>Bdeogale crassicauda</i> Peters, 1852
	Nesomyidae	<i>Crisetomys Gambianus</i> Waterhouse, 1840
Rodentia	Muridae	<i>Apodemus sylvaticus</i> Linnaeus, 1758
Lagomorpha	Leporidae	<i>Lepus capensis</i> Linnaeus, 1758
Eulipotyphla	Erinaceidae	<i>Erinaceus europaeus</i> Linnaeus, 1758
Chiroptères	Vespertilionidae	<i>Chiroptera sp</i>

Table 2: Classification of bird species known by the populations of the reserve

Orders	Families	Scientific names
Stuthioniformes	Struthionidae	<i>Struthio camelus camelus</i>
Anseriformes	Anatidés	<i>Alopochen aegytiaca</i> Linnaeus, 1766
		<i>Sarkidiornis melanotos</i> Pennant, 1769
		<i>Dendrocygna viduata</i> Linnaeus, 1766
Galiformes	Numididés	<i>Numida meleagris</i> Linnaeus 1758
	Otontophoridés	<i>Ptilopachus petrosus</i> Gmelin, JF, 1789
Columbiformes	Columbidés	<i>Columba guinea</i> Linnaeus, 1758
		<i>Spilopelia senegalensis</i> Linnaeus, 1766
		<i>Oena capensis</i> Linnaeus, 1766
		<i>Streptopelia vinacea</i> Gmelin, JF, 1789
		<i>Streptopelia seminatorquata</i> Ruppell, 1837
Passeriformes	Corbidés	<i>Corvus albus</i> Muller, PLS, 1776
		<i>Corvus ruficollis</i> Lesson, RP, 1831
		<i>Passer domesticus</i> Linnaeus 1758
		<i>Ploceus cuculatus</i> Muller, PLS, 1776
		<i>Bubalornis albirostris</i> Vieillot, 1817
		<i>Lamprotornis caudatus</i> Muller, PLS, 1776
Passeriformes	Alaudidés	<i>Galerida cristata</i> Linnaeus 1758
Accipitriformes	Accipitridae	<i>Terathopius ecaudatus</i> Daudin 1800
		<i>Torgos tracheliotos</i> Forester 1791
		<i>Gyps rueppelli</i> Brehm, 1852
		<i>Trigonoceps occipitalis</i> Burchell, 1824
		<i>Elanus caeruleus</i>
		<i>Milvus migran</i> Boddaert, 1783
		<i>Aquila rapax</i> Temmink, 1828
Falkoniformes	Falkonidae	<i>Falco ardosiaceus</i> Vieillot, 1823
Ciconiformes	Ciconidae	<i>Ciconia ciconia</i> Linnaeus, 1758
		<i>Ciconia nigra</i> Linnaeus, 1758
Otidiformes	Otididés	<i>Eupodotis senegalensis</i> Vieillot, 1821
		<i>Ardeotis arabs</i> Linnaeus 1758
Bucerotiformes	Bucerotidés	<i>Lophoceros nasutus</i> Linnaeus 1766
		<i>Tockus erythrorhynchus</i> Temminck, 1823

Pelecaniformes	Ardeidés	<i>Bulbulcus ibis</i> Linnaeus, 1758
		<i>Ardea cinerea</i> Linnaeus, 1758
Strigiformes	Strigidés	<i>Bubo africanus</i> Temminck, 1821
		<i>Asio capensis</i> Smith,A, 1834
	Tytonidés	<i>Tyto alba</i> Scopoli, 1769
Bucerotiformes	Upupidés	<i>Upupa epops</i> Linnaeus, 1758
Pterocliiformes	Pteroclidés	<i>Pterocles exustus</i> Temminck, 1825
Coraciiformes	Coracidés	<i>Coracias abyssinicus</i> Hermann ,1783

Table 3: Classification of reptiles known by residents living near the reserve.

Orders	Families	Scientifics names
quamata	Varanidae	<i>Varanus exanthematicus</i> Bosc, 1792
		<i>Varanus niloticus</i> Linnaeus 1766
	Lacertidae	<i>Acanthodactylus boskianus</i> Daudin ,1802
	Elapidae	<i>Malpolon moilensis</i> REUSS, 1834
	Viperidae	<i>Cerastes cerastes</i> Linnaeus 1758
	Scincinae	<i>Scincus scincus</i> Linnaeus ,1758
	Agamidae	<i>Agama Agama</i> Linnaeus 1758
	Chamaeleonidae	<i>Chamaeleo africanus</i> Laurenti, 1768
	Gekkonidae	<i>Gekko gekko</i>
	Boidae	<i>Eryx muelleri</i> Boulenger, 1892
<i>Eryx colubrinus</i>		
Testudines	Testunidae	<i>Centrochelys sulcata</i> Gray, 1872

Mammal sighting frequencies

According to surveys carried out among local populations, the most frequently observed mammal species are the giraffe, the golden jackal, the patas monkey, the Cape hare, the hedgehog and the zorilla (52.7%). But the latter two are more observed at night, they say. The Libyan Cat, the Squirrel, and the Dorcas Gazelle have an average sighting frequency (30.3%); on the other hand, the honey badger, the pal fox, the genet and the Gambian rat have a low observation frequency (17%). These observations are made throughout the year for the other species, except for the honey badger whose chance of observing it is higher at night during the cold season. The chi-square test shows a significant difference between the observation frequencies (chi-square = 19.94; df = 2; p = 0.000).

Good times for watching bird

The different bird species in the Gadabédji reserve are observed by local residents at different times. Thus species such as the hoopoe, the helmeted guinea fowl, Mesh Dove, Collared Dove, Slaty Dove, Masked Dove, Pied Crow, Brown Crow, Lesser Black-billed Hornbill, Lesser Red-billed Hornbill, Cattle Egret, Bateleur Eagle, Cape Owl, Barn Owl Arabian Bustard and Senegal Bustard, White-billed Allecto, Brown-bellied Sandgrouse, Crested Larks are observed at practically all times of the year.

On the other hand, species such as the Black Stork, the White Stork, the Black Kite, the Weaver, and the Gray Heron are more frequently observed during the rainy season.

Favorable periods for observing reptiles.

As with mammals and birds, reptiles are also observed at different times and with different frequencies. Thus species such as the terrestrial monitor; the Nile monitor; the African Spurred Tortoise; the two sand boas (*Eryx colubrinus* and *Eryx muelleri*); and the Chameleon are frequently observed during the rainy season according to the respondents. While some species such as the Gecko; Settler Agama and Acanthodactyle are observed throughout the year. On the other hand, the Viper; the sand fish and the false cobra are more observed after the rainy season.

The Gadabédji biosphere reserve extinct animal species

According to the surveys carried out among the local populations of the biosphere reserve, several animal species have disappeared from the area. These include *Oryx dammah* Cretzschmar, 1827 ; *Damaliscus lunatus korrigum* Ogilby, Burchell, 1824 ; *Nanger dama*, Pallas, 1766 ; *Gazella rufifrons*, Gray, 1846 ; *Phacochoerus africanus*, Gmelin, 1788; *Oryctéropus afer*, Pallas, 1766 ; *Acinonyx jubatus*, Schreber, 1775 ; *Hyaena hyaena*, Linnaeus, 1758 ; *Lycaon pictus*, Temminck, 1820 ; *Panthera pardus*, Linnaeus, 1758 ; *Panthera leo*, Linnaeus, 1758 ; *Gyps fulvus*, Hablizl, 1783.

Causes of disappearance of animals at the level of the Gadabédji biosphere reserve

The causes of disappearance of certain wild animals of the biosphere reserve of Gadabédji especially in the rank of mammals and birds, are according to the investigations; poaching (30%), and recurrent drought (26%) that the Gadabédji area had experienced in the past. Apart from these two major causes, there is also the loss of habitat (20%) linked to a problem of regeneration and massive death on the vine of certain woody species and the pastoral pressure of recent decades linked to the concentration of breeders. at the level of the buffer zone (Figure 2). The chi-square test shows a significant difference between the observation frequencies (chi-square = 33.44; df = 5; p = 0.000).

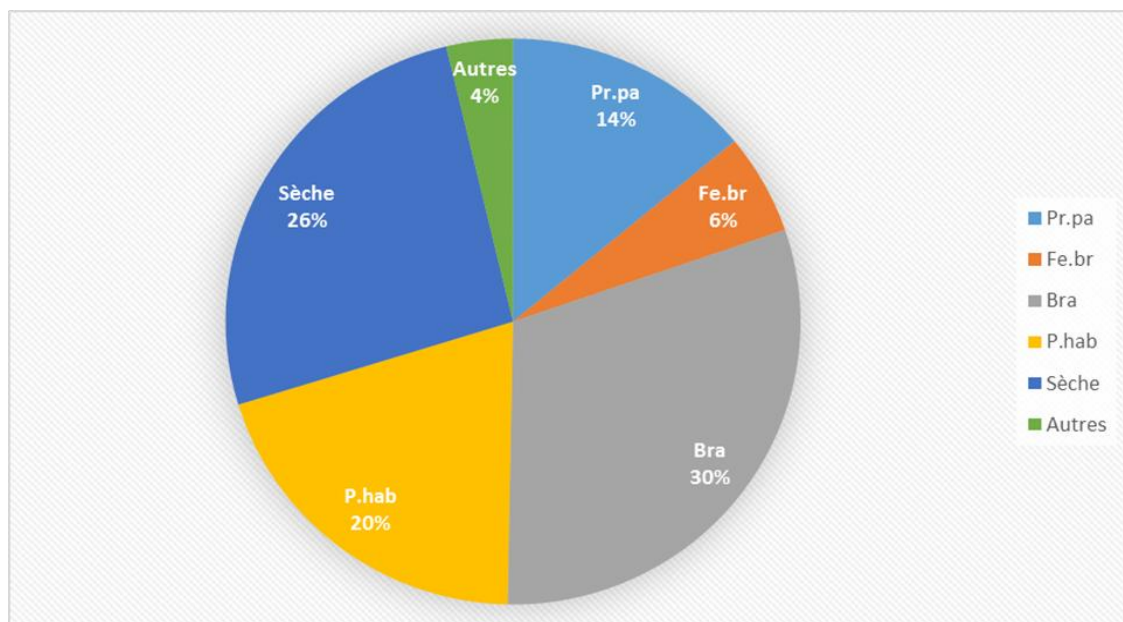


Figure 5: Causes of disappearance of some wild animals in the RBG

Typology of use of wild animals

Use in traditional and mystical pharmacopoeia

A total of 18 species in all listed species are used in traditional treatments for several diseases (Table 4).

Among other things, they cited diseases such as red blood cells, rheumatism, infection, tuberculosis, fracture, burns, malnutrition of children, intense phobia especially of small children, stomach aches. Similarly, certain animal species are used to sharpen intelligence, i.e. to increase the degree of intuition of children who have a problem of understanding, whether in Koranic or secular school.

Wild animal species are also used in the mystical context, especially in the fight against devils, in sacrifice, in the manufacture of false biases, to cast a bad spell on someone and or the counter of bad luck, the increase in luck, power and clairvoyance especially in the context of conquest and exercise of customary power, in other words traditional chieftaincy. This wildlife is also used to liquidate an adversary whether in politics or otherwise, making him unpopular with voters and even in society in general. Similarly, wildlife is used to oppose certain people, to make them hate each other. The species most used by local residents in rituals and pharmacopoeia are mammals.

The organs used are the head, the feather, the eggs, the skin, the hairs, the fat, the eyes, the spinal cord, the bone marrow, the shell, the intestines, the kidneys, the meat for certain species and the completeness of individual for the other species.

It should also be noted that the faeces of certain species, and the nests of certain birds, especially the magpie crow, the black stork and the vultures, are also sought after and used by local residents, always within the pharmacological and mystical framework.

Artisanal use

The skin of the Gazelle dorcas is used to make the scoop, the knife and machete cover, the monais doors commonly called Alabay and Ilgam, an object that is worn on the horses before going to the race. The land monitor skin and that of the Nile monitor are used for the manufacture of the traditional guitar, the manufacture of shoes and their embellishment.

Use as human food

The wild animals of the Gadabédji biosphere reserve help to feed the local populations, even if the latter capture these animals illegally and informally. Indeed, the Tuareg and the Fulani, who make up most of the inhabitants of the area, have a preference for the Dorcas gazelles and the helmeted guinea fowl compared to the others; while the Hausa consume practically everything except carnivores and certain birds, notably storks and the Pied Crow.

Use as Cultural Values

On a mythical level, certain animals such as vultures, especially lappet-faced vultures (Mayki), bustards and jackals are mentioned in the myth from generation to generation by the populations living near the RBG.

Species such as ground monitor, hyena, squirrel, hare, monkey, jackal and Zorilla are usually mentioned in proverbs according to the traditions of the different ethnic groups in the area.

The species traditionally involved in the context of the tale and legend are the hyena, the hare, the jackal and the hedgehog.

The Peulhs and the Tuaregs of the area have prohibitions on species such as the lappet-faced vulture or the ground monitor, the Nile monitor, the hare, and the squirrel, which are not found among the Hausa. Religious point of view all ethnic groups cite the jackal, the monkey and the fox as prohibited species.

V. Discussion

The fauna of the Gadabédji biosphere reserve inventoried by means of surveys of the populations bordering the said reserve is diversified. Thus, this method made it possible to identify 16 mammalian species well known by local residents. Among these species are some classified as vulnerable by the IUCN. These are the West African Giraffe currently present in the reserve, and the Dorcas Gazelle. This number is very different from that found by Yaokokoré-Beibro (2010) who worked on the mammalian fauna of the Badénou classified forest (Côte d'Ivoire), using the same method, he found 45 species. This great difference in mammal species between the Gadabédji biosphere reserve (Niger) and the Badénou classified forest (Côte d'Ivoire) can be linked to the ecological and environmental conditions between the two environments. The first environment has a Sahelo-Saharan climate and a plant formation of the clear wooded savannah type and the other environment has a Sudano-Guinean climate and a sub-Sudanese phytogeography with a mosaic of forests and savannahs where there are small islands, dense dry forests, open forests, gallery forests, wooded savannahs, shrubby savannahs, and grassy savannahs. This same number also remains lower than the 31 species of mammals found by Dibloni et al. (2011) using the same method at the hippopotamus pond biosphere reserve in the southern Sudanian zone of Burkina Faso.

This great difference in mammal species may also be due to the ecological conditions between these two reserves, of which the Gadabédji biosphere reserve straddles the Sahelian zone and the Saharan zone of Niger; and the Hippopotamus Pond Biosphere Reserve (RBMH) located in the southern Sudanian zone of Burkina. The Gadabédji biosphere reserve has a wide variety of bird species known to local residents. This avian diversity is made up of 40 species; among them are some migratory species including storks and many others that are present only during wintering. Some are also among the species classified on the red list by the International Union for Conservation of Nature (IUCN) as critically endangered species, notably the Lappet-faced Vulture, the White-headed Vulture, the Red-necked Ostrich, and endangered like Ruppell's Vulture. For reptiles, twelve (12) species were also identified, this number is higher than the 6 avian species revealed by Dibloni et al. (2011) at the RBMH level.

The present study also revealed a difference in the frequencies of observation of animal spaces. Seasonal and daily differences were also noted by respondents. Some observe throughout the year while others are observed in the winter or dry season. Some are observed by local residents during the day; for species with diurnal feeding behavior and the others are encountered at night; this is the case of species with nocturnal feeding behavior. Due to the rich fauna that characterized this reserve, during the period of its classification, we unfortunately note today the disappearance of several species. This erosion of animal species at the level of the Gadabédji biosphere reserve notified by this study is more important in the class of Mammals followed by the class of Birds. Among the extinct species, we note among others: *Oryx dammah* ; *Damaliscus lunatus korrigum* ; *Nanger dama* ; *Gazella rufifrons* ; *Phacochoerus africanus*.; *Oryctéropus afer* ; *Acinonyx jubatus* ; *Hyaena hyaena*. ; *Lycan pictus* ; *Panthera pardus* ; *Panthera leo*. ; *Gyps fulvus* .

The Gadabédji biosphere reserve used to be a classified forest whose vocation was to conserve animal species. This protected area during the period of its classification in 1955, abounded in a great faunal diversity

as well in the rank of reptiles, birds, as in mammals. Since this period, the Gadabédji reserve has always faced both natural pressures, in particular the episodic drought of the 70s, 80s and 90s, which the area in particular and Niger in general experienced through the past. To these natural pressures are added those of an anthropogenic nature such as the intense poaching which characterized the years of famine and especially during the period of the rebellions, the pastoral pressure of these last decades, the demographic pressure gradually leading to the massive installation of camps in the said reserve, the bush fire often caused by certain transhumant and local residents, the lack of surveillance of the reserve due to the lack of forest agents who can regularly control all the edges of the said reserve and climatic hazards (warming, variability, and climate change). All of this had the corollary of the degradation of the habitat of many wild animals, particularly in the ranks of mammals, which obviously caused the disappearance of several species in the area. These results corroborate those of Dibloni et al. (2011) who specify that eight factors would lead to the disappearance or reduction of wild animals at the level of the hippopotamus pond biosphere reserve in Burkina Faso, the most dangerous of which would be poaching, bush fires, the impact of livestock, monitoring excessive cutting, clearing, demography, lack of surveillance and desertification.

Of all the species listed at the level of the Gadabédji biosphere reserve, 18 are used in traditional and mystical pharmacopoeia by the local populations of the said reserve. This number of species remains lower than that of Dibloni et al. (2011), who state that 35 species are used in traditional medicine or for occult forces. Among these 18 species traditionally used by residents in pharmacopoeia and mystery, eight (8) are birds. This number is lower than that reported by Koue Bi et al. (2017) who worked specifically on the inventory of birds used in the traditional pharmacopoeia of the Gouro people. In their study carried out in 19 villages in the region of Marahoué, in the center west of Côte d'Ivoire, 44 species of birds are used in traditional pharmacopoeia. This great difference in the use of birds in the pharmacopoeia between these two environments can be linked not only to the diversity of birds, to the diversity of local knowledge of the use of birds between the two study areas, but also and above all linked to the scale of the study, the number and size of the villages targeted as well as the sample size of the people surveyed.

Only one association of hunters is recognized in the area. This association is authorized to exercise its activities freely in accordance with article one of the texts governing its functioning, article two (2) which specifies the number of members (42 people) and article four (4) which deals with the structural organization at the level of said association.

Of all the people surveyed, 97% know about the reserve. This clearly explains that local residents have a good knowledge of Gadabédji biosphere reserve. However, it should be noted that people who do not know the Gadabédji biosphere reserve are mainly women and some transhumant people. This may be because they are not directly tied to resources.

Several bird species are more frequently seen during the rainy season. This explains why their frequency in the area is linked to favorable ecological conditions. During this period of the year the entomofauna is available, which could explain the greater frequency of observation of the avifauna during the rainy season. While species like Egyptian Goose; Helmeted duck; Rock pullet; Slate Falcon are more observed at the various water points such as the Heltema and Filio pond which are located in the center of the reserve and the Tigitou pond according to certain forest agents. For vulture species, they are also observed during the two main seasons, including the rainy season and the dry season, but the latter are more frequently observed during the dry season, which is a period of high livestock mortality. This provides a good opportunity for these scavengers as there is good food availability.

The Tuaregs and the Peulhs have practically prohibitions around the same species. This commutativity of prohibitions may be due to their nomadic way of life. The prohibitions of these main ethnic groups in the area around these animal species constitute an effective means of traditional conservation of these species of the Gadabédji biosphere reserve by the populations. This would allow these species to be able to multiply compared to other species around which there is no traditional prohibition.

The Hausa of the area have no animal as sacred as totem, but religious prohibitions on certain species in common with the two other ethnic groups of the area.

VI. Conclusion

At the end of this study carried out among the local populations of the Gadabédji biosphere reserve on the ethnozoology of the wild fauna of the said reserve, it appears that the latter still abounds in a diversified faunal richness both in the class of mammals, reptiles and especially birds notwithstanding all threats of any kind to which it is subject. The local populations have a good knowledge of the reserve, as well as of the fauna it contains. In all three classes studied, the overwhelming majority of species are increasing, despite the regression of some. Species are observed by local residents at different times and frequencies. Eighteen species, mostly mammals, are used in traditional pharmacopoeia, some of which have mystical characteristics. Several factors were responsible for the disappearance of many essentially mammalian species from the so-called Gadabédji

biosphere reserve. The most serious are poaching, drought, pastoral pressure, bush fires and habitat loss. Three species have an artisanal use with local residents and many species have cultural values, particularly mythical, and also in tales and legends. The wildlife of the reserve therefore plays a very important socio-cultural role for the local populations of the Gadabédji biosphere reserve.

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