

The avifauna of Niokolo-Koba National Park (Senegal): a review of historical and recent ornithological records

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We present the results of a review of the bird species historically observed in Niokolo-Koba National Park, a 913 000 ha protected area in south-eastern Senegal. In carrying out this work we consulted both formal and informal literature, and contacted the original observers whenever possible to try to verify unusual observations. We conclude that there is sufficient evidence to support the historical presence of 400 species in and just outside the park, although two species can be considered as locally extinct. We also list 19 additional species whose presence can be considered as possible or probable. The historical patterns of the observations are briefly discussed; if only those species observed after 1992 are counted, 333 bird species would be considered as present in NKNP.

L'avifaune du Parc National du Niokolo-Koba (Sénégal): une analyse des signalements ornithologiques historiques et récents

Nous présentons les résultats d'une revue des espèces d'oiseaux observées historiquement dans le Parc National du Niokolo-Koba, aire protégée de 913 000 ha dans le sud-est du Sénégal. En réalisant ce travail nous avons consulté les publications informelles ainsi que formelles, et avons contacté les observateurs d'origine pour vérifier des observations exceptionnelles quand cela a été possible. Nous concluons qu'il y a d'éléments de preuve suffisants pour confirmer la présence historique de 400 espèces dans le parc ou à la limite de celui-ci, bien que deux espèces puissent être considérées comme localement éteintes. Nous listons aussi 19 espèces dont la présence peut être considérée comme possible ou probable. Nous discutons brièvement de l'évolution historique des observations des différentes espèces; si uniquement les espèces observées après 1992 étaient comptées, seulement 333 espèces d'oiseaux seraient maintenues comme présentes au PNNK.

Keywords: historical records, population trends, surveys, protected areas, Niokolo-Koba, Senegal

Introduction

Niokolo-Koba National Park (NKNP), situated in south-eastern Senegal, has an area of 913 000 ha, making it the largest protected area in the country and one of the largest and most important nature sanctuaries in West Africa. First established as a hunting reserve in 1926, NKNP was designated as a national park in 1954, and subsequently enlarged after the independence of Senegal, in 1962, 1965, 1968 and 1969 (Renaud et al. 2006). The exceptional biodiversity of the park was recognized in 1981 with its designation by UNESCO as a Biosphere Reserve (UNESCO 2018) and as a World Heritage Site (UNESCO 2021). However, since 2007 NKNP has been listed as a World Heritage Site in danger. Poaching, incursion of livestock and illegal mining are among the factors that have contributed to this situation, which has resulted in dramatic decreases in the populations of megafauna in the park (Renaud et al. 2006, Galat et al. 2015, UNESCO 2021).

Due to the conservation significance of NKNP, and also because of its potential role in tourism and sustainable development, it is important to have a comprehensive understanding of the avifauna of the park. However, its extensive area, of which a large part is difficult to access, combined with limited national support for avian conservation and research, have hindered the maintenance of a systematic ornithological inventory. The purpose of this article is to contribute to such an assessment by summarising the published and unpublished results of ornithological inventories from NKNP and to produce a baseline species list based on these results.

The main physical and ecological characteristics of NKNP are summarised below (Renaud et al. 2006):

i) Climate and hydrology

Annual precipitation in NKNP ranges from 900 to 1 200 mm with a rainy season lasting from June to October. The hydrological system of the park represents over 10% of the catchment of the Gambia River, which runs westward along the southern border of the park then north before forming the north-western border. The Niokolo-Koba stream traverses the park from east to west before joining the Gambia River. These two watercourses are quasi-permanent, although they may stop flowing continuously at the end of the dry season leaving large permanent pools in the Gambia River. More than 200 temporary or permanent wetlands have been identified in NKNP. The Mare de Simenti, at approximately 40 ha, is the largest in the central tourist area and is generally permanent because the level is managed by pumping in water from the Gambia River. Ten smaller seasonal wetlands in the central tourist area are also readily accessible for observations by visitors.

ii) Vegetation

The vegetation of NKNP transitions from Sudano-Sahelian savannah in the north to Guinean savannah in the south. The northern and central zones, where most of the ornithological observations have thus far been made, consist of a rich variety of habitats, including wooded and scrub savannah, small zones of open grassland and closed gallery forests. The topography is relatively flat, with an altitude in the central tourist area ranging from approximately 15 m to 70 m above sea level (JBR pers. obs. along the tracks with a Garmin eTrex 30 GPS unit). Seasonally flooded grasslands show a tendency towards encroachment and dominance by the invasive Giant Sensitive Tree *Mimosa pigra* and the native False Abura *Mitragyna inermis*, and these are actively removed by the park authorities. Towards the east of the park, the elevation rises to 311 m at Mount Assirik and the landscape includes outcrops, hills, rocky plains and lateritic layers. Botanical studies conducted in NKNP have identified around 1 500 different plant species.

iii) Wildlife

In addition to the 400 species of birds listed in the present article, including numerous “iconic” species which are difficult or impossible to observe in Senegal outside the park, 80 species of mammals, 36 species of reptiles, 20 species of amphibians and 60 species of fish have been identified within NKNP. The large- and medium-sized fauna that populates NKNP is representative of the African savannah biome, including the most northerly and westerly population of Lion *Panthera leo* in Africa (Dagorne et al. 2020), the last remaining African Forest Elephants *Loxodonta cyclotis* in Senegal (Elephant Crisis Fund 2020), a small number of savannah Chimpanzees *Pan troglodytes* (Lindshield et al. 2021), and the only known population of African Wild Dog *Lycaon pictus* in West Africa (Brugière et al. 2015). The common medium-sized mammals are widely distributed in the park, but, with the exception of the Roan Antelope *Hippotragus equinus* which is widespread, the large ungulates are largely limited to a central and southern zone, representing about a third of the park (Renaud et al. 2006).

A map of NKNP is presented in Figure 1 and a map of the central tourist area, where the overwhelming majority of wildlife observations have been made, is presented in Figure 2.

Two of the authors (JBR and OJLF) participated in a citizen-science programme of 20 ornithological inventories between November 2014 and June 2018, coordinated by the cooperative of the guides of NKNP (GIE NIOKOLO), which identified 262 bird species inside and just outside the park. Another author (BP) organised three visits to the Wassadou area, just outside the north-western border of NKNP (February 2018,

June 2019, December 2019), in order to systematically record and quantify all species present. The findings of these inventories are only included in the present article to the extent that they reported the first observations of species identified in the literature searches (six and three species, respectively) or confirmed doubtful or much older previous observations. The fourth author (PD) led or co-led three ornithological expeditions to NKNP (November 1990, March–April 1991, February 1992) which covered a large part of the park.

Methods

As a first step in establishing a baseline list of bird species historically present in NKNP, we undertook an analysis of inventories and compendia published between 1956 and 1998. The results of this analysis, presented in Appendix 1, yielded a total of 356 confirmed species after removing 27 which had been observed only outside the park or where sufficient justification had not been presented (of which seven have been included in our list of species possibly or probably present).

An extensive search of published data and informal reports which we judged to be credible was then conducted, in order to identify species present which had not been included in the published inventories and compendia discussed in Appendix 1. For this purpose, we analysed, *inter alia*, observational data from three series of ornithological expeditions which had not been taken into account by the sources discussed in Appendix 1:

- Victor Emmanuel Nature Tours (VENT) and Wings Birding Tours, commercial ornithological tourism companies in the United States, organised nine birding trips to Senegal between 1978 and 1986 all of which visited NKNP. The co-leader for all of these trips was Michel Kleinbaum, an expert birder and professional ornithological illustrator whose son provided the corresponding observational data (M Kleinbaum in litt.). Additional data which corroborated and enriched those of the 1984 trip were provided by the other co-leader of that trip, also an expert birder with wide experience in Africa (D Wolf in litt.);
- Ligue Française pour la Protection des Oiseaux (now known simply as the LPO) organised or sponsored four birdwatching trips to Senegal which visited NKNP between 1990 and 1992 and their unpublished reports (Delaporte et al. 1990, Carichiopulo and Delaporte 1991, Dubois 1991, Delaporte et al. 2023) were studied. One of the authors (PD) organised three of these expeditions, and the authors have been able to consult with the organisers of the fourth on doubtful cases;
- During the period 1983–1991, the Office de la Recherche Scientifique et Technique Outre-mer (ORSTOM, renamed as the Institut de Recherche pour le Développement (IRD)) facilitated numerous ornithological expeditions in Senegal, both amateur and professional, and documented the results in an unpublished manuscript (Baillon 1992a). ORSTOM organised at least five exploratory missions to NKNP and the internal reports of two of these were subsequently made available in the online library of the IRD (Baillon 1989, Baillon 1991), while the organiser was consulted on the others (F Baillon in litt.).

We also consulted the following citizen-science data archives: eBird Basic Dataset (eBird 2023), Observation.org (Observation.org 2023), and the BirdTrack database of the British Trust for Ornithology (<http://www.birdtrack.net>, OJLF pers. obs.).

New species were only added to the baseline list if the corresponding records were accompanied by photographic evidence or detailed descriptions, or if we were able to contact the observer to discuss and validate the observation. In addition, we have adopted a policy of not confirming observations by a single observer of a species observed well outside of its known required habitat or >150 km from known distribution ranges (Barlow and Wachter 1997, Borrow and Demey 2011, Borrow and Demey 2014). In certain cases of observations which seemed credible but for which the observer could not be contacted or had no documentation or definitive memory, we noted them for reference purposes as “unconfirmed” but did not use them as a criterion for inclusion of the corresponding species in the baseline list. To gain a better understanding of the rare and scarce species, we maintain in our baseline data, but itemise separately, observations made ≤8 km outside the park boundary. Certain species which we could not confirm but whose presence we considered to be possible or probable were added to our list of such species.

Among our source documents were the results of official inventories of waterbirds in major wetland areas in Senegal carried out on 15 January of 2016, 2017 and 2018 (Sall 2019). Twelve of the species identified in NKNP in these inventories have never been confirmed there and seem very unlikely to have all been present according to known distribution information (Barlow and Wacher 1997, Borrow and Demey 2011). These data do not include precision on the sites and observers, nor any information justifying the identifications. We were unsuccessful in obtaining more information from the responsible parties and have decided not to confirm these observations for the purposes of the present article.

We have used version 12.2 of the IOC World Bird List (Gill et al. 2022) as the reference taxonomy, but for this have had to convert observational data presented in other taxonomic systems and, in particular, from the eBird/Clements taxonomy (eBird 2022). This involved straightforward transposition of a number of scientific and common species names except for two specific cases:

- the IOC considers the resident Yellow-billed Kite as a full species *Milvus aegyptius*, as has been recently recommended (Andreyenkova et al. 2019), rather than as a subspecies of Black Kite *Milvus migrans* as in the eBird/Clements taxonomy. This decision should help to ensure, *inter alia*, that future sightings of the nominate, migratory *M. migrans* are not hidden within those of the morphologically distinct, resident and much more locally common *M. aegyptius*, but for historic observations recorded only at the species level it has not been possible to accurately quantify the relative frequencies of the two taxa;
- the IOC upgrades the resident subspecies of Red-rumped Swallow *Cecropis daurica domicella* to full species as West African Swallow *C. domicella*, while the eBird/Clements taxonomy maintains this taxon as a subspecies. This means that historic observations which were recorded at the species level cannot reliably be assigned to one of the two new species.

In awaiting new data based on these species splits, we attempt to infer the status of the new species from the available, partly ambiguous, data.

Results

The results of our analysis are presented below as three lists: i) New species confirmed since the published inventories and compendia discussed in Appendix 1, ii) species possibly or probably present, and iii) species reported but not retained in either of the previous lists. The new species confirmed have been combined with those of the list derived from the early inventories and compendia to form the integrated baseline list presented as Appendix 2.

New species confirmed since the early published inventories and compendia (44 species)

- Mottled Swift *Tachymarptis aequatorialis*: nine seen at the Grand Mirador on 15 February 1986 (Devisse 1992, R Devisse pers. com.); about 30 seen and one photographed at the Mare de Dalafourounté on 12 January 2012 (eBird 2023); one very worn bird photographed in NKNP on 20 February 2018 (Demey 2018); six were observed at the Campement Hôtel de Wassadou (hereafter referred to as the Campement de Wassadou) on 16 June 2018 (eBird 2023, BP pers. obs.) and two at the Niériko bridge on 14 February 2022 (eBird 2023);
- Blue Malkoha *Ceuthmochares aereus*: one photographed just outside NKNP at the Campement de Wassadou on 23 July 2015 (Figure 3; eBird 2023), an unusual observation away from its known range in the southwest coastal area of the country (Borrow and Demey 2011). The possibility of an escaped bird cannot be excluded, but this is unlikely because the keeping of wild birds is not part of the local culture (A Kanté pers. comm.);
- Rock Dove (Feral Pigeon) *Columba livia* [var. domestica]: at least one was observed on 20 January 2015 (Association des Naturalistes des Yvelines 2015) in dense wooded savannah several kilometres into NKNP from the main entrance at Dar Salam. Other recent observations include one just outside NKNP on 22 October 2016 (eBird 2023) seen from the track between the Campement de Wassadou and the N7 highway, an indeterminate number inside NKNP on 14 March 2017 (eBird 2023, T Galewski pers. comm.) and four definitely feral birds on 2 June 2018 in the Diambour Forest about 7 km north of

the park boundary (Rose and Dagorne 2018). These sightings were expected since Feral Pigeons are commonly raised, albeit on a small scale, by inhabitants of the villages to the north of NKNP (A Kanté pers. comm.). It is not clear whether this species was not included in previous inventories of species inside NKNP because it was absent from the area or because of lack of interest in recording feral and domesticated species;

- African Collared Dove *Streptopelia roseogrisea*: three seen around the Mare de Simenti on 4 March 1991 (Carichiopulo and Delaporte 1991, PD pers. obs.) and one near the Gué de Bantamba on 12 February 1992 (Delaporte et al. 2023). None of the observations listed in eBird (2023), in 2006, 2007, 2009, 2017, 2018 and 2023, provided sufficient justification and could not be verified with the observers;
- African Crane *Crecopsis egregia*: one photographed in tall grasses close to the border of the nearly dry Mare de Woëni in NKNP on 19 February 2022 (Figure 4; Observation.org 2023);
- Common Buttonquail *Turnix sylvaticus*: two seen at the Mare de Woëni on 6 April 1991 (Carichiopulo and Delaporte 1991);
- Grey-headed Gull *Chroicocephalus cirrocephalus*: undetermined number seen in NKNP on 14 February 1984 (eBird 2023, D Bishop pers. comm.);
- Gull-billed Tern *Gelochelidon nilotica*: one seen in NKNP on 30 January 1984 (M Kleinbaum in litt., D Wolf in litt.);
- Whiskered Tern *Chlidonias hybrida*: an unspecified number seen in NKNP on 29 March 1980 (M Kleinbaum in litt.) and one on 29 January 1984 (M Kleinbaum in litt., D Wolf in litt.);
- White-winged Tern *Chlidonias leucopterus*: one individual recorded flying over a pool in the Gambia River on 20 February 1984 (eBird 2023, K Overman pers. comm.);
- White-breasted Cormorant *Phalacrocorax lucidus*: one sighting of an unspecified number inside NKNP on 29 January 2011 (eBird 2023, B Garrigos pers. comm.); one at the Campement de Wassadou on 10 October 2016 (eBird 2023, JC Albero pers. comm.); one at the western border of NKNP on 20 November 2018 (Observation.org 2023, unvalidated) and two at the Campement de Wassadou on 7 January 2019 (eBird 2023, E Azkue pers. comm.). No descriptions or photos were available, but the three observers know this species well and, for the observations from 2016 and 2018, were accompanied by an experienced guide who confirmed the observations (A Lo pers. comm.);
- White-backed Night Heron *Gorsachius leuconotus*: one immature flushed at the Mare de Wouring on 12 February 1992 (Delaporte et al. 2023); one photographed on 10 March 2010 from a boat on the Gambia River about 9 km west of Simenti (Figure 5; Observation.org 2023, M Elf pers. comm.); three seen flying over the Gambia River near Mako <8 km outside the eastern NKNP boundary on 20 March 2016 and, presumably the same three seen the next day; at least two adults seen at the same site on 14–15 March 2017 (Blanc et al. 2018); several seen and their song and flight calls recorded in June 2018 at the Campement de Wassadou, on the Gambia River where it forms the northwest NKNP boundary (BP pers. obs., sound recording deposited on xeno-canto.org/421207); one was photographed at the Campement de Wassadou on 17 December 2022 and two seen there on 19 December 2022 (eBird 2023). This elusive and largely nocturnal species is thus almost certainly a widely distributed resident in the park along the waterways and other wetland habitat, and likely breeds around the Campement de Wassadou where it is now regularly reported;
- Booted Eagle *Hieraaetus pennatus*: one seen flying in NKNP on 29 January 1984 (M Kleinbaum in litt., D Wolf in litt.); one at Grand Mirador in NKNP on 25 December 1985 (F Baillon and C Rotheron in litt.); one pale morph at the Gué de Bantamba on 13 February 1992 (Delaporte et al. 2023); one observed within NKNP on 21 February 2006 (eBird 2023, M Villemagne pers. comm.); one dark morph at the Mare de Simenti (Bâlon and Burban 2008); one pale morph seen flying over the Gambia River at the Campement de Wassadou on 1 March 2018 (eBird 2023, BP pers. obs.); a pale morph seen flying inside NKNP from the Campement de Wassadou on 19 April 2019 (eBird 2023, M Lecoq pers. comm.);
- Ayres's Hawk-Eagle *H. ayresii*: one observed flying over the N7 highway near the Niokolo-Koba guard post on 6 March 2018 (Figure 6; Observation.org 2023, M Demeulemeester, J Heip and M Jarju pers. comm.). This observation is the only documented recent record from Senegal, although this species was previously reported from Casamance (Morel and Morel 1990);
- Eurasian Scops Owl *Otus scops*: one heard calling at dusk on 18 April 2019 from a *Borassus aethiopum* palm tree on the NKNP side of the Gambia River across from the Campement de Wassadou, by an

observer familiar with the calls of *O. senegalensis* and *O. scops* (eBird 2023, M Lecoq pers. comm.). This rare observation could have been a wintering individual or a passage migrant;

- African Wood Owl *Strix woodfordii*: one seen flying at Simenti in November 1990 (Delaporte et al. 1990); one heard calling at night at Simenti on 21 February 1991 (eBird 2023, Dubois 1991, O Benoist pers. comm.); one heard calling at night at the Campement de Wassadou just outside NKNP on 21 October 2016 (eBird 2023, M Iliff pers. comm.);
- White-throated Bee-eater *Merops albicollis*: a group of 15 on both sides of the Gambia River at the Campement de Wassadou on 21 October 2016 (Figure 7; eBird 2023, M Iliff pers. comm.);
- Brown-backed (Wahlberg's) Honeybird *Prodotiscus regulus*: one photographed at the Campement du Lion on 12 July 2017, the first documented observation for Senegal (Rose et al. 2022, further details in Appendix 2);
- Eurasian Hobby *Falco subbuteo*: one seen near Linguékountou on 22 February 1992 and one near Niakassi on 24 February 1992 (Delaporte et al. 2023);
- White-breasted Cuckooshrike *Cebblepyris pectoralis*: a single bird seen around 17 May 1989 apparently prospecting for food in the high branches of the gallery forest of Stella's Valley on the flanks of Mount Assirik (Baillon 1989, F Baillon pers. comm.);
- Eurasian Golden Oriole *Oriolus oriolus*: one female photographed on 19 April 2019 just outside NKNP at the Campement de Wassadou (eBird 2023, M Lecoq pers. comm.); a male had previously been reported on 19 November 2017 just outside NKNP between Mansadala and the Mare de Dalacounan (A Kanté pers. comm.) but we could not confirm the record due to insufficient evidence;
- Rufous-rumped Lark *Pinarocorys erythropygia*: one seen in NKNP on 19 February 1985 (M Beaman in litt.); two on a burnt area near Badoye in NKNP on 14 February 1992 (Delaporte et al. 2023). Delannoy (2016) presents the first published sighting in Senegal (120 km northeast of NKNP) of this species, widely distributed from South Sudan to Mali, and cites the two unpublished records from NKNP although specifying November 1992 instead of February;
- Chestnut-backed Sparrow-Lark *Eremopterix leucotis*: two seen at the Mare de Simenti on 20 January 2015 (Rose et al. 2022, further details in Appendix 2);
- Grey-rumped Swallow *Pseudhirundo griseopyga*: one seen on 7 February 2016 flying above the Mare de Simenti, sometimes coming low over the water with trees in the background allowing good but distant views. All alternatives, including juvenile Wire-tailed Swallow *Hirundo smithii* and hybrid Barn Swallow *Hirundo rustica* × Common House Martin *Delichon urbicum*, were eliminated (Observation.org 2023, G Spanoghe pers. comm.). Rare patchily distributed non-breeding Afrotropical visitor to Senegal (Borrow and Demey 2011);
- West African Swallow *Cecropis domicella*: this resident species is present in nearly the entire length of The Gambia (Morel and Morel 1990, eBird 2023), and Morel and Morel (1990) say that it is common in Senegal south of 14°N without mentioning NKNP. We have noted three confirmed observations of *C. domicella* in and just outside the park: Morel and Dupuy (1969) report an observation near the Niokolo-Koba guard post on 4 July 1967, and mention that the species nested in the huts of Wassadou village about 2.5 km north of NKNP while Delaporte et al. (2023) report seeing occupied nests under the Niokolo-Koba bridge in February 1992. Among the citizen-science records, the nearest confirmed observation of *C. domicella* to NKNP was of five individuals about 18.5 km from the north-western border of the park near the town of Missirah on 22 January 2019 (eBird 2023). However, it is probable that at least some of the 13 observations attributed to *C. daurica* in NKNP between February and April in 1991 and 1992 (Carichiopulo and Delaporte 1991, Dubois 1991, Delaporte et al. 2023) and of the eight additional citizen-science observations between 1985 and 2020 (eBird 2023) should actually refer to *C. domicella* which was considered as a subspecies in the eBird/Clements taxonomy;
- Western Bonelli's Warbler *Phylloscopus bonelli*: two seen on 21 February 2006 (eBird 2023, M Villemagne pers. comm.) and one at the Campement de Wassadou on 6 February 2020 (eBird 2023); other observations in 2005, 2012, 2013 (eBird 2023) could not be confirmed;
- Iberian Chiffchaff *P. ibericus*: one seen and heard singing at the Campement de Wassadou on 2 February 2017 (eBird 2023, C Clemente pers. comm.); two or three heard in bushes close to the water on the NKNP side of the Gambia River across from the Campement de Wassadou on 25 February 2018, including one singing (BP pers. obs., sound recording deposited on xeno-canto.org/404405, Isenmann et al. 2019) and one seen and heard at the Campement de Wassadou on 7 January 2019 (eBird 2023);
- Aquatic Warbler *Acrocephalus paludicola*: sighting of a single in February 2014 perched briefly on a

reed at the Mare de Léba, a pond 1.2 km outside the north-western boundary of NKNP (Diop et al. 2014). In Senegal, this species is only known to winter in or near the Parc National des Oiseaux du Djoudj (Walther et al. 2007) and we thus consider this observation to be one of a vagrant;

- Dorst's Cisticola *Cisticola guinea*: one seen and heard in NKNP on 22 January 2019 beside the N7 highway about 11 km east of Dar Salam (eBird 2023, D Hoddinott pers. comm.). Prior to this observation the populations of this species nearest to NKNP were in Upper Casamance near Velingara, about 45 km west of the NKNP border (APALIS 2022), and approximately the same distance away in the Upper River Region of The Gambia (Borrow and Demey 2011), and near Dindéfello, about 100 km southeast of the park where there were at least ten observations between 2016 and 2019 (eBird 2023);
- Yellow-breasted Apalis *Apalis flavida*: observed within a mixed-species group photographed in December 2004 in dense riparian woodland at Mako, about 8 km outside the eastern boundary of NKNP (Demey 2005); observed on four occasions at the Campement de Wassadou (two birds on 24 February 2018, one heard on 16 June 2018, two on 17 June 2018, two on 18 April 2019), including one visual observation in a mixed flock almost certainly on the NKNP side of the Gambia River, and one audio recording of an individual on the NKNP side (eBird 2023, M Lecoq pers. comm., BP pers. obs.). Given the presence of this species where the Gambia River enters and leaves NKNP, it is likely to be present but overlooked in the denser riparian forests of the park. With a song that is often mistaken for that of Grey-backed Camaroptera *Camaroptera brevicaudata*, and the park rules making it difficult to observe birds in the canopy, this species may have been overlooked;
- Eurasian Blackcap *Sylvia atricapilla*: one seen between the Koulountou stream and the western park boundary on 25 February 1994 (Observation.org 2023, J Zwaaneveld pers. comm., N Borrow pers. comm.) and a second at an unspecified location by the same group on that date (N Borrow pers. comm.); a female seen on 16 April 2017 in gallery forest along the Gambia River close to the Campement du Lion (eBird 2023, M Lecoq pers. comm.);
- Garden Warbler *S. borin*: one sighted at the Gué de Bentamba in NKNP on 28 March 1991 (Carichiopulo and Delaporte 1991); one photographed (Figure 8) on 16 October 2009 beside the Gambia River at the Campement de Wassadou; several seen, on both the NKNP and the Wassadou sides of the river, on 15 October 2016 (eBird 2023, JC Albero pers. comm.); two seen at the Campement de Wassadou on 21 October 2016 (eBird 2023, M Iliff pers. comm.); one sighted either at the Campement de Wassadou or in NKNP on 20 November 2017 (Heegaard et al. 2017). All of these observations are compatible with transient passages of this species which is known to winter further south in West Africa (Urban et al. 1997);
- Sardinian Warbler *Curruca melanocephala*: one sighted at the Campement de Wassadou on 22 January 2023; the observer was familiar with this species from Europe, and his description “black head, white throat, red eye-ring and eye, body greyish” is confirmatory (eBird 2023, A Kreusel pers. comm.). Previously, except for one observation in Lower Casamance, this species had only been reported in the extreme northwest of the country (Borrow and Demey 2011);
- Moltoni's Warbler *Curruca subalpina*: one sighted and responded to a recorded call in the vegetation on the bank of the Gambia River 1–2 km downstream from the Campement de Wassadou on the same side of the river on 10 November 2019 (eBird 2023, C de Dios Ruiz pers. comm.). In Senegal, this species had previously only been observed in the north, although its non-breeding range is believed to stretch throughout the western and central Sahelian and Sudano-Sahelian zones (Piot and Blanc 2017);
- Capuchin Babbler *Turdoides atripennis*: four to five seen together near the guard camp on Mount Assirik around 17 May 1989, moving noisily from tree to tree at low level (1.5–2.5 m) then descending down onto dry leaf litter, the observer was familiar with *T. reinwardtii* and *T. plebejus* (Baillon 1989, F Baillon pers. comm.);
- Chestnut-bellied Starling *Lamprotornis pulcher*: an unspecified number in NKNP in February 1982 (M Kleinbaum in litt.); frequently seen in small groups in November 1990 (Delaporte et al. 1990); probable observation of an unspecified number in the Simenti region on 10 February 2002 (eBird 2023, V Rufay pers. comm.);
- Spotted Flycatcher *Muscicapa striata*: at least two seen by the Gambia River near Simenti on 20 January 2015 (Rose et al. 2022);
- Common Nightingale *Luscinia megarhynchos*: one sighted at the Gué de Bentamba in NKNP on 28 March 1991 (Carichiopulo and Delaporte 1991); three heard singing near the Niériko bridge (1.5 km from the park boundary) on 23 October 2016 (eBird 2023); one heard singing on 24 February 2018 on

the NKNP side of the Gambia River across from the Campement de Wassadou (eBird 2023, BP pers. obs.);

- Whinchat *Saxicola rubetra*: a female near Bangaré on 24 February 1992 (Delaporte et al. 2023); one seen on 21 October 2016 in a patch of open savannah along the N7 highway traversing the park, halfway between Diéoundiala and the Niokolo-Koba bridge (eBird 2023, M Iliff pers. comm.);
- Anteater Chat *Myrmecocichla aethiops*: an unspecified number seen in NKNP in February 1982 (M Kleinbaum in litt.) and a single individual in January 2009 (eBird 2023, A Faustino pers. comm.);
- Sudan Golden Sparrow *Passer luteus*: several seen at the Mare de Sitandi in March 1991 (Carichiopulo and Delaporte 1991) and several at the Mare de Wouring in February 1992 (Delaporte et al. 2023);
- Heuglin's Masked Weaver *Ploceus heuglini*: a pair photographed at the Gué de Damantan on 9 August 2017 (Rose et al. 2022, further details in Appendix 2);
- Mali Firefinch *Lagonosticta virata*: three observed, including a pair photographed, halfway between Oubadji and Wouroli on 5 June 2018 (Rose et al. 2022); more recently, two birds were identified visually and by sound recordings on 14 April 2023 near the last remaining pool of the Gambia River at the Niokolo-Koba bridge (JF Blanc pers. comm.);
- White-rumped Seedeater *Crithagra leucopygia*: more than one were observed in NKNP in January 1978 (M Kleinbaum in litt.); at least three were at Simenti in April 1988 (F Baillon in litt.); probable sightings in NKNP in February 1991 (Dubois 1991, P Dubois pers. comm.).

Combining the above with our baseline literature search yields a total of 400 species reported in or just outside (≤ 1.2 km) NKNP. These species, representing 58% of the approximately 685 historically present in Senegal (Piot 2022), are listed in Appendix 2.

The five species which have thus far been observed only just outside (≤ 1.2 km) NKNP (Blue Malkoha, Eurasian Golden Oriole, Aquatic Warbler, Sardinian Warbler and Moltoni's Warbler) are marked in the **Extralimital** column of Appendix 2). Aquatic Warbler and Sardinian Warbler are unlikely to occur regularly in the park, Eurasian Golden Oriole and Moltoni's Warbler are likely to occur as rare/scarcely migrants, Blue Malkoha could occur naturally but limited movements between forest patches makes this fairly unlikely.

Figure 9 presents the distribution of the 757 partial or complete observation days we have analysed as a function of the year of observation, while Figure 10 presents the distribution by season. In both cases, we distinguish between data contributed to citizen-science archives and data contained in published and informal reports. When data have been presented in both citizen-science archives and in informal reports, we count them in the category of citizen-science archives. It can be seen from Figure 9 that scientific study leading to formal publications was significant only in the 1950s and 1960s, that very little observation was done in the 1970s, that informal reports provided a substantial amount of observational data in the 1980s and 1990s, and that citizen-science archives became a major data source starting in the 2000s, and expanded greatly in the 2010s. From Figure 10 we observe that the vast majority of the recorded data comes from the dry season (November to June) and that the lower amounts of data from the wet season (July to October) are in their majority derived from citizen-science postings. In this analysis we have not been able to determine the observational effort associated with observations cited by aggregated sources such as Dupuy (1970) and Morel and Morel (1990) except where we were able to locate the original expedition reports and, thus, the observational effort prior to 1990 is probably under-counted.

In Appendix 2, we present the encounter rate or frequency of observations in NKNP (**Frequency** column, categories adapted from Borrow and Demey (2011)) as calculated from the complete surveys in the eBird (2023) database which include 14 983 observations registered through January 2023, of which almost exactly half (49.2%) were in the park, and the rest outside, with a very large majority of the latter in the Wassadou area. For this calculation, the number of days on which the different observing groups reported a given species were summed and divided by the number of appropriate observation days for that species (all of the days for mainly resident species, those from November to April for Palearctic and other dry season migrants, and those from June to November for intra-African wet season migrants). Because some species which require extensive wilderness areas or specific habitats are likely to be undercounted outside the park, and others (probably the majority) are more likely to be undercounted inside the park because of the rules making meticulous surveys more difficult there, we have undertaken separate calculations for observations in the

park and its immediate surroundings and for only those within the park, and taken the higher frequency category of the two as the best estimate. To distinguish rare species (at most three total records or no observations after 1992) from scarce, we examined the full historical data (not only the eBird data) to count the absolute number of observations. We stress that these empirical encounter rates summarised in Table 1 are largely based on the observations of amateur birdwatchers or ornithologists inexperienced in West African avifauna and may well under-estimate actual population densities, particularly for nocturnal and smaller, more furtive species. Table 2 presents the number of species according to category of presence (**Status** column in Appendix 2).

Species possibly or probably historically present (19 species)

- Red-necked Nightjar *Caprimulgus ruficollis*: included on the strength of the assertion of Dupuy (1970) that this species was “present in the region, collected one time” (see Appendix 1). In The Gambia, this species has been counted mainly by roadkill (Barlow and Gale 1999) and, therefore, future analysis of nightjar road casualties in and around NKNP may highlight a presence that is currently overlooked;
- Quail-plover *Ortyxelos meiffrenii*: a pair of “miniature quail-like birds” seen crossing a track near Simenti in late May 1987 were identified as this species because of their pale colour and scaly upper parts (Sauvage and Rodwell 1998, R Devisse pers. comm.) and another brief observation on 29 March 1991 on a track near the junction of the Niokolo-Koba stream and the Gambia River yielded “a globally pale subject without any black or reddish marking on the chest or flanks” (Carichiopulo and Delaporte 1991). Because of the absence of photographic evidence or detailed description, we prefer not to validate these observations, noting possible confusion with Common Buttonquail *Turnix sylvaticus* for which there have been sightings closer to NKNP;
- Ruddy Turnstone *Arenaria interpres*: unspecified number seen in NKNP in January 1979 (M Kleinbaum in litt.) and one reported at Mako just outside NKNP in June 1990 (I Bindia in litt.) but no further details available;
- Glossy Ibis *Plegadis falcinellus*: an observation in February 1992 was included in the species list but not in the text of the report (Beecroft et al. 1992) and may have been confused with a juvenile Hadada Ibis *Bostrychia hagedash*, a species which was observed on the same day (RC Beecroft pers. comm.). An observation of an indeterminate number on 16 January 2005 (eBird 2023) and sightings of six on 15 January 2017 and of 15 on 15 January 2018 (Sall 2019) could not be verified. This Palearctic migrant is known to winter along the Gambia River and its occasional presence in NKNP would not be unexpected;
- Black Sparrowhawk *Accipiter melanoleucus*: unspecified number seen in NKNP in March 1980 (M Kleinbaum in litt.) but no details available;
- African Pied Hornbill *Lophoceros fasciatus*: one observation on 3 November 2018 of two birds flying northeast (and thus towards NKNP) in Sambailo, Guinea, 8.4 km from the southern border of NKNP (Observation.org 2023, B van Hoogstraten pers. comm.). Another observation from a moving vehicle on 8 February 2022 of one flying over the N7 highway within 1 km of Dar Salam on the northern border of NKNP should be considered as probable (Observation.org 2023, B van Hoogstraten pers. comm., E Korita pers. comm.). This species is normally limited to forest and adjacent wooded habitats in the Casamance area of Senegal and Lower River Region of The Gambia (Barlow and Wachter 1997, Borrow and Demey 2011) but may be present in NKNP as a vagrant;
- Brown-necked Parrot *Poicephalus fuscicollis*: although this species has been observed both west and east of NKNP (Morel and Morel 1990, Borrow and Demey 2011), the observation cited in Sauvage and Rodwell (1998) was not retained in the baseline list because there was no corroborating information, the observer was inexperienced in the zone and his list did not include the common but closely related Senegal Parrot *Poicephalus senegalus*;
- Emin’s Shrike *Lanius gubernator*: a single adult male was reported near Niakassi on the southern border of NKNP around 8 February 1991, observed at a distance of about 10–15 m. The subject, which had “quite deep reddish underparts, little or no white on the tail and a small white spot on each wing, effected two round-trip flights to the same bare branch about 2–4 m above the track” (F Baillon pers. comm.). This would be the only observation in Senegal of this species normally found in Ghana, Togo and further east with the closest presence being in northern Côte d’Ivoire and with some isolated observations in Mali (Borrow and Demey 2014). While the description matches Emin’s Shrike, no

details are available on rump colour or the extent of grey on mantle, and a hybrid shrike with some characteristics which do not match those of either parent (as in the example in Piot and Caucanas (2019)) cannot be ruled out. In the absence of photographic evidence or a formal publication, we cannot include such an exceptional first country record, but suggest that the southern border of NKNP be explored more meticulously for the possible presence of this species;

- Singing Bush Lark *Mirafra cantillans*: one observed in a tree near Simenti on 10 December 2003 but not confirmed because the observer is not certain that he eliminated Sun Lark *Galerida modesta* (Corre 2003, S Corre pers. comm.); two observed at the Hôtel Simenti on 25 January 2016 (eBird 2023) but not confirmed because the corresponding species list by an uncontactable observer included many improbable entries. A report of this species in NKNP in January 1987 (eBird 2023) has not been counted since this sighting took place on dry farmland well to the west of NKNP (P Thompson pers. comm.). This Sahelian species is widespread to the north of NKNP in more arid habitats;
- Brown-throated Martin *Riparia paludicola*: several dozen were reported at Simenti in November 1990 without detailed field notes (Delaporte et al. 1990). Such a large group more than 200 km from their regular range as a “scarce to rare non-breeding visitor” (Borrow and Demey 2011) would be a rare event although this species could well occur but be overlooked;
- Olive-green Camaroptera *Camaroptera chloronota*: in addition to the two unstudied specimens collected in 1956 (Dekeyser 1956, see Appendix 1), two birds were observed in gallery forests, one near Wouring on 12 February 1992 and the other next to the Niokolo-Koba stream on 22 February 1992 (Delaporte et al. 2023, PD pers. obs.). In both cases the observers were very experienced in the region and knew this species well. Thus, pending further study, we do not wish to exclude the possibility of past or present occurrence of this species in NKNP, particularly in the under-explored regions of the park;
- Splendid Starling *Lamprotornis splendidus*: normally a forest species limited to Casamance and a narrow strip of coast up to the Petit Côte south of Dakar (Barlow and Wacher 1997, Borrow and Demey 2011), this species was reported as present near the Mare de Simenti in November 1990 (Delaporte et al. 1990). Due to the possibility of confusion at a distance with the common savannah starlings, we prefer not to validate this observation without a detailed field description;
- Atlas Pied Flycatcher *Ficedula speculigera*: see below;
- Collared Flycatcher *Ficedula albicollis*: one vagrant, either a female or a non-breeding male, was reported near the Gambia River in NKNP on 16 January 1988 (Riddiford 1990). The principal argument for ruling out Atlas Pied Flycatcher *F. speculigera*, then considered a subspecies of European Pied Flycatcher *F. hypoleuca* and now considered to be a separate species, was the presence of a club-shaped white mark on the folded primaries which the author had shown to be present only in Collared Flycatcher (Riddiford 1991). Collared Flycatcher is known to migrate to western Africa but only far to the east of Senegal (Borrow and Demey 2014) while Atlas Pied Flycatcher has been reported but not confirmed in north Senegal (Borrow and Demey 2011). Given that more recent study has shown that Collared Flycatcher and Atlas Pied Flycatcher are, other than in adult male plumage, extremely difficult to differentiate and that Atlas Pied Flycatcher can have quite a substantial white primary patch, similar to adult female Collared Flycatchers (Shirihai and Svensson 2019), the observer wishes to withdraw this record (N Riddiford pers. comm.). Further research is needed to understand whether one and/or the other of these species is an occasional visitor to NKNP;
- Splendid Sunbird *Cinnyris coccinigastrus*: the known range extends eastwards only to the border of The Gambia (Borrow and Demey 2011) but undocumented observations include one male on 11 February 2002 near the Gambia River (probably around the Campement du Lion) by an experienced observer who knew this species well (eBird 2023, V Ruffray pers. comm.);
- House Sparrow *Passer domesticus*: two birds were reliably observed at Mako (about 8 km from NKNP) on 27 February 2017 and an unspecified number at or around the Campement de Wassadou (separated from NKNP by the Gambia River) on 10 November 2019 (eBird 2023), but contrary to the five retained species thus far only observed just outside NKNP, there is no reason to believe that this species, which generally only colonises human settlements, has established a presence inside the park;
- Green-winged Pytilia *Pytilia melba*: the limit of the estimated range lies just north of NKNP (Borrow and Demey 2011) but the observation cited in Sauvage and Rodwell (1998) was not retained in the baseline list because there was no corroborating information, the observer was inexperienced in the zone, and his notation was only “Beaumarquet” which may well have referred to Red-winged Pytilia

(*Beaumarquet aurore* in French) which is already known from NKNP;

- African (Blue-billed) Firefinch *Lagonosticta rubricata*: see Appendix 1;
- Sahel Paradise Whydah *Vidua orientalis*: NKNP is in the zone where the estimated distribution limits of this species and the similar *V. interjecta* merge and more data are required to determine whether the former species is present in the park (see Appendix 1). It should be noted that its host species, Green-winged Pytilia *P. melba*, has not been confirmed there (see above).

Species reported but not retained (28 species)

- White-backed Duck *Thalassornis leuconotus* (Sall 2019);
- Eurasian Wigeon *Mareca penelope* (Sall 2019);
- Eurasian Teal *Anas crecca* (Sall 2019);
- Harlequin Quail *Coturnix delegorguei* (see Appendix 1);
- Eurasian Stone-curlew *Burhinus oediconemus* (see Appendix 1);
- Water Thick-knee *Burhinus vermiculatus* (see Appendix 1);
- Senegal Lapwing *Vanellus lugubris* (see Appendix 1);
- Grey Plover *Pluvialis squatarola* (Sall 2019);
- Kittlitz's Plover *Charadrius pecuarius* (see Appendix 1);
- Lesser Jacana *Microparra capensis* (Sall 2019);
- Eurasian Whimbrel *Numenius phaeopus* (Sall 2019);
- Curlew Sandpiper *Calidris ferruginea* (Sall 2019);
- Spotted Redshank *Tringa erythropus* (see Appendix 1);
- Cream-coloured Courser *Cursorius cursor* (Sall 2019);
- Temminck's Courser *Cursorius temminckii* (see Appendix 1);
- Audouin's Gull *Ichthyaeetus audouinii* (Sall 2019);
- Yellow-legged Gull *Larus michahellis* (Sall 2019);
- Lesser Black-backed Gull *Larus fuscus* (Sall 2019);
- Caspian Tern *Hydroprogne caspia* (Sall 2019);
- Black Tern *Chlidonias niger* (see Appendix 1);
- Eurasian Spoonbill *Platalea leucorodia* (see Appendix 1);
- Little Bittern *Ixobrychus minutus* (see Appendix 1);
- Crowned Eagle *Stephanoaetus coronatus* (see Appendix 1);
- Little Green Woodpecker *Campethera maculosa* (see Appendix 1);
- Ethiopian Swallow *Hirundo aethiopica* (see Appendix 1);
- Olive Sunbird *Cyanomitra olivacea* (see Appendix 1);
- Olive-bellied Sunbird *Cinnyris chloropygius* (see Appendix 1);
- Red-collared Widowbird *Euplectes ardens* (see Appendix 1).

Discussion

Among the 400 species in our baseline list, we consider two as probably extinct in NKNP: Denham's Bustard *Neotis denhami*, which was said to have been common in the park particularly in the dry season (Dupuy 1970), but never the subject of a documented observation, and Secretarybird *Sagittarius serpentarius* which was last observed in 1990 (see Appendix 1). These large and distinctive birds would surely have been recognised if seen more recently.

Appendix 2 indicates the tendency for species to be observed only prior to 1993 or only after 1992 (**Tendency** column) and also which species observed in both periods show a clear increase or decrease in observations. If we count only those species observed after 1992, the number considered as present in NKNP falls to 333.

A significant number (67 or 18%) of the 376 bird species documented as present in NKNP prior to 1993 have not been confirmed there or in the close surroundings (≤ 8 km) during the past thirty years. This compares with only 24 species first recorded after 1992. These figures would seem to indicate a net decrease in species diversity, although it should be noted that prior to 1993 most observations come from scientific

missions which often covered the different habitat zones of NKNP, whereas after that date most records have come from citizen-science entries in eBird, the great majority of which are from the central tourist area or on the edge of the park at the Campement de Wassadou. Only three of the 67 species not recorded since 1993 were backed up by photographic evidence and, due to the inexperience of some observers in West African birds and shortcomings in the documentation then available, it cannot be excluded that some of the species were misidentified. 25 (37%) of the 67 species were only recorded once without photographic evidence (as compared to 12 (50%) of the 24 observed only after 1992), and we should not ignore a possible bias towards new species from 1956 to 1992 because of the discovery enhancement during this period (for either real or misidentified species). However, even if we count only the 42 species observed more than once prior to 1993 but not afterwards, or observed only once but photographed, a net decrease is still observed between the number of species observed during that period and the number observed during the period after 1992, although it is not possible to separate real frequencies from artifacts due to stochastic or data quality variations.

Conversely, at least 24 species have been observed within the decade from 2013 to 2022 after more than 30 years since the previous reported observations (see the **Observational Details** column of Appendix 2). This can probably be attributed, at least in part, to increased observational effort and especially to the increased use of citizen-science data archives, in particular with the posting of photographs which have been helpful in confirming observations. Thus, it would not be surprising if some of the 67 species not seen since 1992 are observed again in the near future.

Two species of migratory Anatidae (Garganey *Spatula querquedula* and Northern Pintail *Anas acuta*), present in winter months prior to 1993 have become progressively rarer and today are probably no longer encountered in NKNP (for details on these and the other examples mentioned below, see the **Observational Details** column of Appendix 2). In addition to the declines of these species, and the loss of Denham's Bustard and Secretarybird, we should mention Bluethroat *Luscinia svecica*, observed several times in the park before 1970 but not since then; recent observations of this species in Senegambia have been largely limited to the Senegal River delta and, to a lesser extent, along the coast of The Gambia and in the Saloum Delta, except for a male photographed on the Dande plateau near Dindéfello in February 2018 (BP pers. obs.). Observations of White-billed Buffalo-Weaver *Bubalornis albirostris* in NKNP have also decreased considerably between 1955–1992 and 1993–2022. However, this species is still fairly common in the agricultural area on the northwest border of the park, especially during the harvest season between October and November (A Kanté pers. comm.), and, therefore, it seems likely that the apparent decrease in occasional observations within the park is due more to stochastic factors and seasonality rather than to a fundamental population trend.

It has been shown empirically in the case of North American national parks that protected areas can be seen as biogeographic islands which experience a net decrease in the number of large mammal species over time, with the net rate of disappearance decreasing with the size of the protected area and increasing with the size of the animal and the temporal variability of its population (Newmark 1995). Although this study did not consider the different stresses on particular populations, and although the size of NKNP should largely protect it from species extinctions, it is possible that this analysis could help to explain the disappearance of large resident birds, such as Denham's Bustard and Secretarybird, as well as some smaller resident birds with highly varying populations.

Conversely (and counting only species with at least four total observations), Rock Pigeon (Feral Pigeon) has apparently relatively recently colonised the park, and other species, such as Adamawa Turtle Dove (first reported in 1991), Black Stork (first reported in 1982), White-breasted Cormorant (first reported in 2011) and White-backed Night Heron (first reported in 1992), have seen an increase in sightings in the intervening years. Red-billed Quelea has rapidly and markedly increased its population size with single observations in 1990, 1991 and 2006 (eBird 2023), 2008 (Bâlon and Burban 2008) and 2013 (eBird 2023), followed by 123 records in 2015–2020 (eBird 2023). Six, apparently scarce, species which have also shown increases in frequency since 1993 (Mottled Swift, Sedge Warbler *Acrocephalus schoenobaenus*, Garden Warbler, Common Nightingale, Familiar Chat *Oenanthe familiaris* and Yellow-crowned Bishop *Euplectes afer*) may well have been under-counted in earlier surveys. The “discoveries” of Brown-backed (Wahlberg's)

Honeybird in 2017 and of Yellow-breasted Apalis and Iberian Chiffchaff in 2018 provide examples of species that may have been overlooked in the past but are probably regular in the park, at least locally along the Gambia River.

The reasons behind variations in the frequency of observation of different species may include changes in species distribution, stochastic effects due to intrinsic local scarcity, or possible uncertainties in identifications. Changes in species distribution are likely to be due to i) anthropogenic disturbances, such as overgrazing, illegal burning, poaching and mining inside or around the borders of the park (Renaud et al. 2006, Tiomoko and van Merm 2015), ii) encroachment of wetlands (Tréca 1995, Tiomoko and van Merm 2015) and iii) climatic variations such as the exceptional drought throughout Senegal which lasted for about three decades starting in the late 1960s (Bodian 2014, Dacosta et al. 2002). As a secondary effect, drought and poaching between 1989 and 1998 have already been linked to the rarefaction of large herbivores in NKNP (Galat et al. 2015) which may in turn have had an influence on the birdlife.

Although the national authorities have made substantial progress in mitigating the various environmental threats to the park (Ministère de l'Environnement et du Développement Durable 2019), and the average rainfall has apparently returned to historical averages after the long period of drought discussed above and may be increasing (Bacci et al. 2013), it is not clear whether these factors have had an effect on the populations of bird species which may have been negatively impacted by such threats. On the other hand, it cannot be excluded that these developments may have been, at least in part, responsible for the apparent increasing populations of some species and the observation of several new ones.

NKNP is administered in the framework of a comprehensive management plan including regular inventories of the fauna, particularly of emblematic mammalian species (Ministère de l'Environnement et du Développement Durable 2019). However, early efforts to implement and maintain an inventory of the avifauna of the park (Dekeyser 1956, 1961, Morel and Dupuy 1969, Dupuy 1970, Tréca 1995) and to study the demographics of birds in the park (Dupuy 1969), all of which were either conducted by or supported by the park authorities, have unfortunately not been continued at a substantial level of engagement. The present study has attempted to bring together the historic and more recent data from diverse sources to constitute an updated inventory of bird species in the park. It is hoped that this work will serve as a basis for a continuing comprehensive ornithological inventory effort, supported and coordinated by the park authorities and fully taking into account independent scientific studies as well as citizen-science observations by visitors to the park.

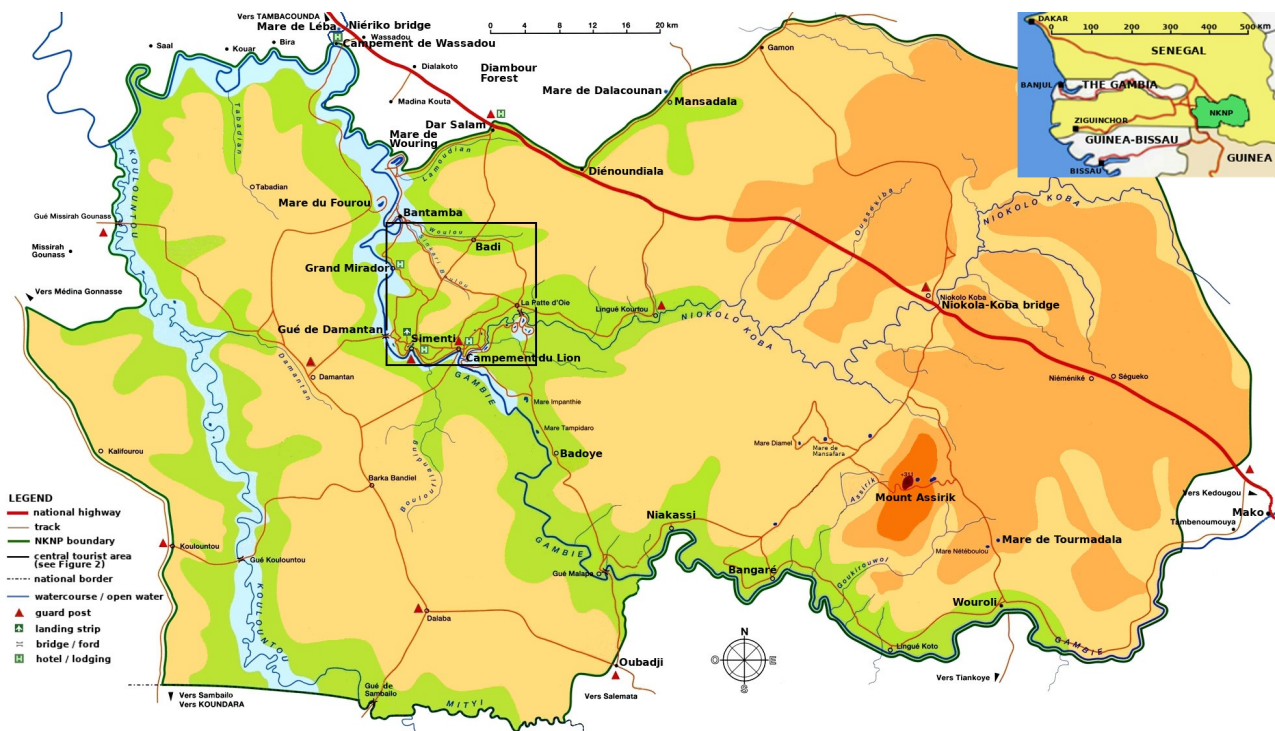


Figure 1. Map of Niokolo-Koba National Park and, inset, its location in south-eastern Senegal (sites mentioned in the text are in larger font; base map adapted from Galat et al. 1997)

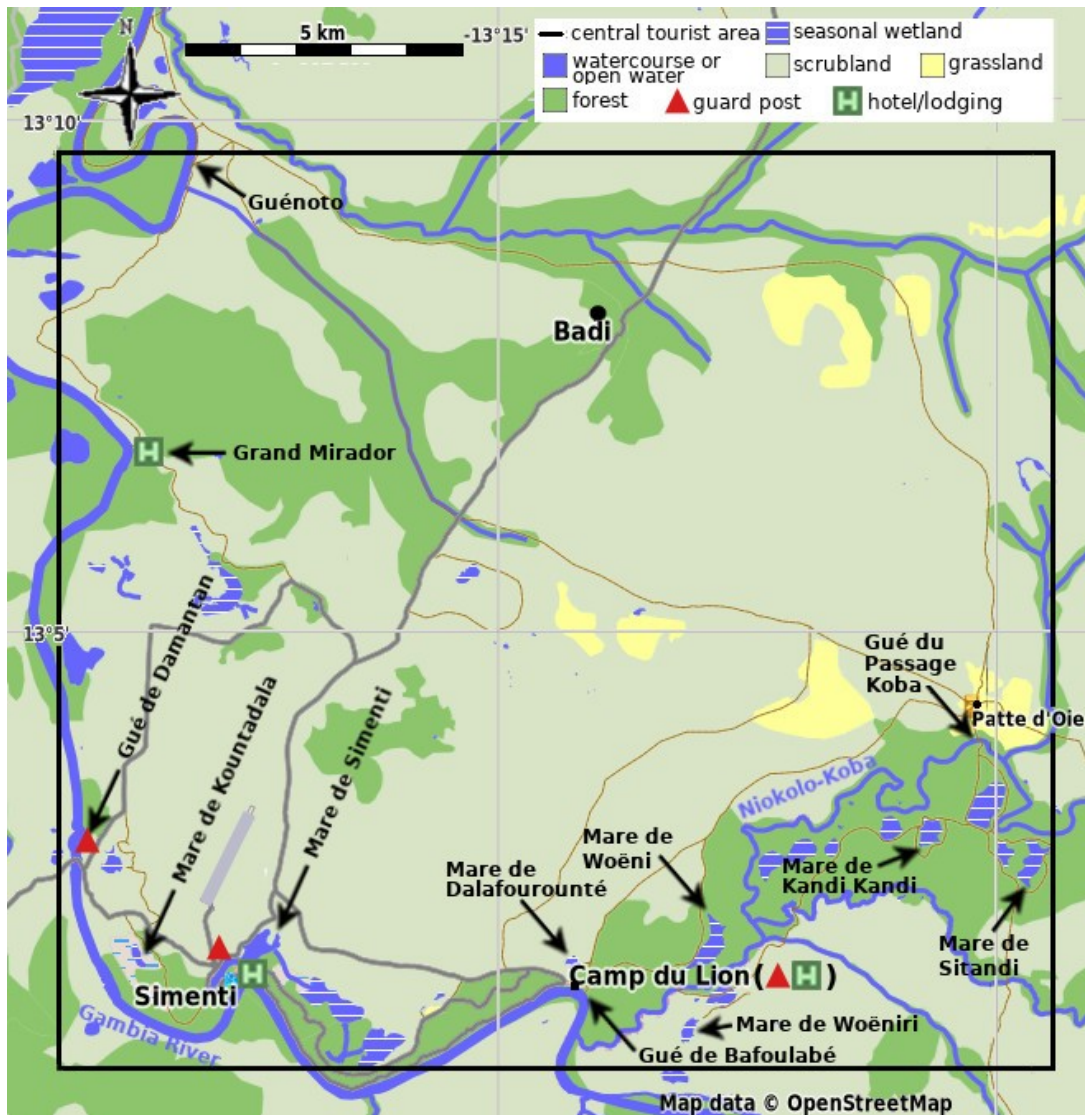


Figure 2. Map of the central tourist area of NKNP



Figure 3. Blue Malkoha *Ceuthmochares aereus* seen at the Campement de Wassadou on 23 July 2015 (Eamon Corbett)



Figure 4. African Crake *Crex egregia* seen at the Mare de Woëniri in NKNP on 19 February 2022 (Camille Montégu)



Figure 5. White-backed Night Heron *Gorsachius leuconotus* seen along the Gambia River about 9 km west of Simenti on 10 March 2010 (Maurice Elf)



Figure 6. Ayres's Hawk-Eagle *Hieraaetus ayresii* seen along the N7 highway through NKNP on 6 March 2018 (Johannes Heip)



Figure 7. White-throated Bee-eater *Merops albicollis* seen along the Gambia River at the Campement de Wassadou on 21 October 2016 (Chris Wood)



Figure 8. Garden Warbler *Sylvia borin* seen at the Campement de Wassadou on 16 October 2009 (Juan C. Albero)

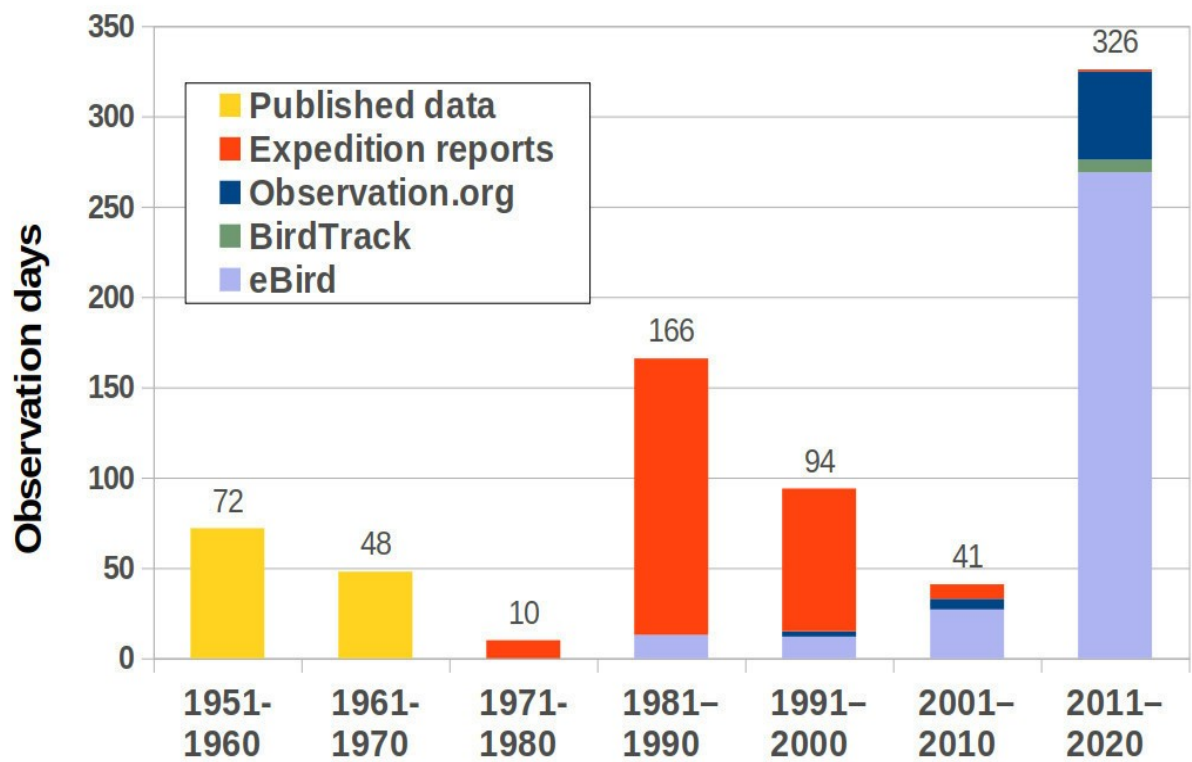


Figure 9. Partial or complete observation days as a function of 10-year period

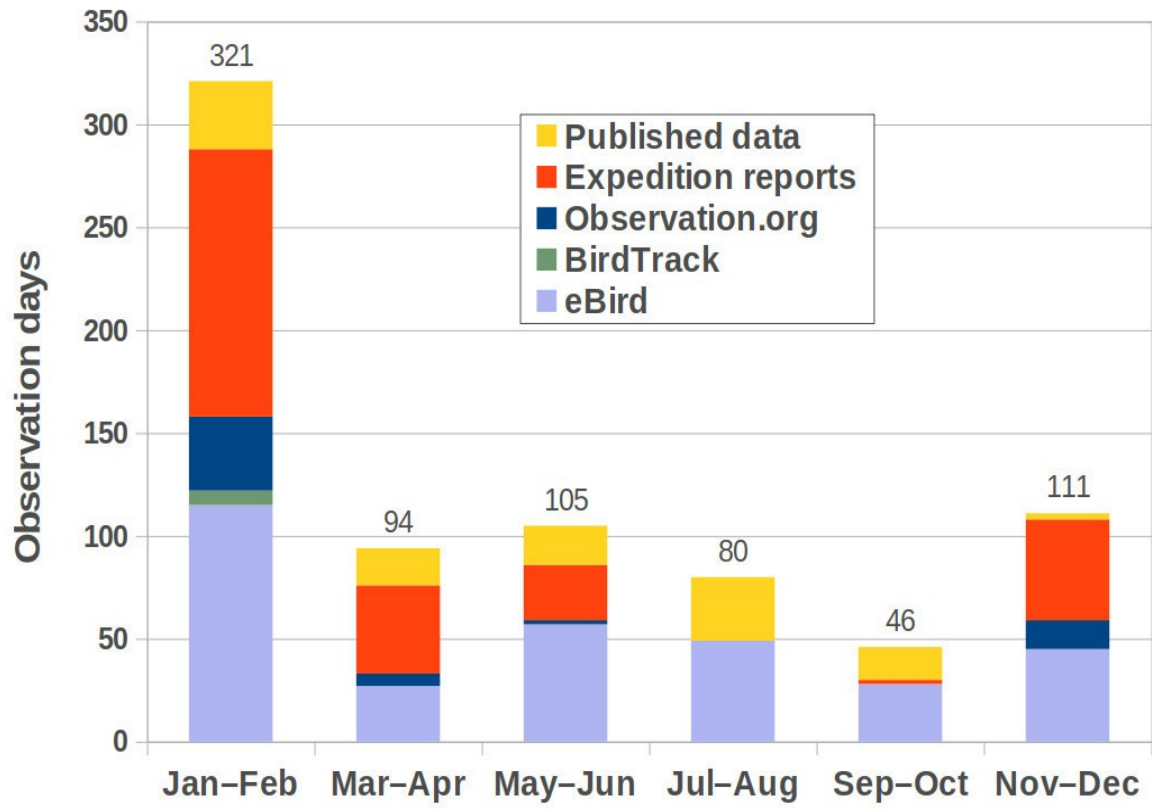


Figure 10. Partial or complete observation days as a function of season (1951–2020)



Figure 11. Blue-cheeked Bee-eater *Merops persicus* seen at Bangaré in NKNP on 24 December 1987 (Richard Devisse)



Figure 12. Pair of Yellow-crowned Bishops *Euplectes afer* (male on left) seen at the Mare de Simenti on 6 August 2012 (John B. Rose)



Figure 13. Zitting Cisticola *Cisticola juncidis* seen at the Mare de Kountadala in NKNP on 26 February 2017 (left, Bruce Mast) and at the Mare de Woëniiri in NKNP on 19 February 2022 (right, Camille Montégu)



Figure 14. Migrant Rufous-tailed Scrub Robin *Cercotrichas galactotes galactotes* photographed on 23 December 1987 in south-central NKNP (Richard Devisse)

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Acknowledgements

We are very grateful to Roger Beecroft, Oliver Benoist, Peter Browne, John Caddick, Simon Cavallès and Ron Demey for searching for past references, to Abdoulaye Kanté for field verifications and to Clive Barlow, Nik Borrow, Robert J. Dowsett, Philippe J. Dubois and Deane Lewis for scientific advice. We particularly acknowledge the contributions of François Baillon, who provided us with twelve unpublished reports of ornithological missions which he undertook or facilitated in NKNP between 1983 and 1991, and of Richard Devisse whose unpublished account of 14 visits to NKNP between 1986 and 1989 yielded many exceptional observations. Special thanks are given to Alain and Maggy Sauvage, Georges Kleinbaum and Patrick Triplet for providing historical documentation and facilitating contacts.

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Table 1. Frequency of encounter rates of bird species in baseline list (based on eBird 2023)

Encounter rate	Number of species
Common	13
Fairly common	41
Uncommon	106
Scarce	133
Rare	105
Presumed extinct	2
Total	400

Table 2. Distribution of species by status category

Status	Number of species
Resident	214
Intra-African migrant	34
Palaearctic migrant	75
Resident / Intra-African migrant	31
Resident / Palaearctic migrant	9
Intra-African / Palaearctic migrant	1
Resident / Intra- African and Palaearctic migrant	1
Vagrant	33
Presumed extinct	2
Total	400

Figure legends

- Figure 1. Map of Niokolo-Koba National Park and, inset, its location in the Senegambian region (sites mentioned in the text are in larger font; base map adapted from Galat et al. 1997)
- Figure 2. Map of the central tourist area of NKNP
- Figure 3. Blue Malkoha *Ceuthmochares aereus* seen at the Campement de Wassadou on 23 July 2015 (Eamon Corbett)
- Figure 4. African Crake *Crex egregia* seen at the Mare de Woëniri in NKNP on 19 February 2022 (Camille Montégu)
- Figure 5. White-backed Night Heron *Gorsachius leuconotus* seen along the Gambia River about 9 km west of Simenti on 10 March 2010 (Maurice Elf)
- Figure 6. Ayres's Hawk-Eagle *Hieraaetus ayresii* seen along the N7 highway through NKNP on 6 March 2018 (Johannes Heip)
- Figure 7. White-throated Bee-eater *Merops albicollis* seen along the Gambia River at the Campement de Wassadou on 21 October 2016 (Chris Wood)
- Figure 8. Garden Warbler *Sylvia borin* seen at the Campement de Wassadou on 16 October 2009 (Juan C. Albero)
- Figure 9. Partial or complete observation days as a function of 10-year period
- Figure 10. Partial or complete observation days as a function of season (1951–2020)
- Figure 11. Blue-cheeked Bee-eater *Merops persicus* seen at Bangaré in NKNP on 24 December 1987 (Richard Devisse)
- Figure 12. Pair of Yellow-crowned Bishops *Euplectes afer* (male on left) seen at the Mare de Simenti on 6 August 2012 (John B. Rose)
- Figure 13. Zitting Cisticola *Cisticola juncidis* seen at the Mare de Kountadala in NKNP on 26 February 2017 (left, Bruce Mast) and at the Mare de Woëniri in NKNP on 19 February 2022 (right, Camille Montégu)
- Figure 14. Migrant Rufous-tailed Scrub Robin *Cercotrichas galactotes galactotes* photographed on 23 December 1987 in south-central NKNP (Richard Devisse)

Appendix 1: Analysis of published inventories and compendia.

The first systematic study of the birdlife of NKNP was undertaken in 1955–1957 (Dekeyser 1956, 1961) and included 171 species. Specimens were collected and measured for the majority of these species, and have been preserved in the collection of Institut Fondamental d’Afrique Noire (IFAN) which is part of the Université Cheikh Anta Diop (UCAD) in Dakar. A supplement based on observations by two ornithologists in 1967–1968 brought the total number of species to 230 (Morel and Dupuy 1969). A comprehensive inventory of the birdlife of NKNP was compiled by André-Roger Dupuy, an ornithologist who was the first Chief Warden of the park and, subsequently, the first Director of the Direction des Parcs Nationaux (DPN), the government agency responsible for protecting and managing all of the national parks in Senegal. This inventory (Dupuy 1970), which lists 324 bird species for the park and the surrounding region, incorporated the species identified by Dekeyser (1956, 1961) and by Morel and Dupuy (1969), and also additional species observed by professional or amateur ornithologists who had visited the park, most often with details of specific sightings. This inventory was updated without descriptive information in a publication aimed at the general public (Dupuy 1973) that added five species (African Crake *Crecopsis egregia*, Common Moorhen *Gallinula chloropus*, Allen’s Gallinule *Porphyrio alleni*, Blue-naped Mousebird *Urocolius macrourus*, White Wagtail *Motacilla alba*) to the list in the original version; since these species may well not have been observed inside the park proper and the observers are not known, we prefer to not to validate them and to refer only to the original 1970 inventory (although all five of the additional species have subsequently been observed in NKNP). In both versions, there is an apparent duplication of Cardinal Woodpecker *Dendropicos fuscescens* (under its present name and its old name *D. lafresnayi*) and also a spurious reference to *Sitagra monacha* (now *Ploceus pelzelni monacha*) whose range extends northwards only to Liberia but whose then common name “Little Weaver” was, until at least 1990, often confused (Serle et al. 1977, Morel and Morel 1990) with that of the Little Weaver *Sitagra luteola* (now *Ploceus luteolus*) present in Senegal. Conversely, Black Kite and Yellow-billed Kite are lumped as *M. migrans* although both are stated to be present. We should also remove from the Dupuy list two species (White-breasted Cormorant *Phalacrocorax lucidus* and Glossy Ibis *Plegadis falcinellus*) which the author notes had only been observed at Kédougou, about 37 km from the NKNP boundary, and the following eight species for which the descriptions either i) do not confirm that the corresponding observations were made specifically within the park boundaries or ii) do not provide sufficient information on the dates, the observer or the conditions to constitute convincing evidence:

- Red-necked Nightjar *Caprimulgus ruficollis*: “present in the region, collected one time” but no details given; a scarce migrant whose known winter distribution includes The Gambia (Barlow and Gale 1999) but whose presence in Senegal is only known from some old records in the extreme north of the country (Barlow and Wacher 1997, Borrow and Demey 2011);
- Eurasian Stone-curlew *Burhinus oediconemus*: observed several times “in the region” in 1969; the cited observer did not know precisely where and did not publish this information (JM Thiollay pers. comm.) and no subsequent sightings near NKNP have been documented (Salewski and Becker 2009);
- Water Thick-knee *Burhinus vermiculatus*: in January 1969, this species was reportedly observed in NKNP along the banks of watercourses, often in groups (Dupuy 1970). These observations were confirmed by the original observer who did not publish them (JM Thiollay pers. comm.). Bannerman (1931) recorded that the Water Thick-knee was limited to coastal regions of southern West Africa (with Liberia at the northern limit) and this population (subspecies *buttikopferi*) has been described with a similar distribution by all other sources since then, including Snow (1978) and Urban et al. (1986), except for an inland population in Nigeria mentioned by Bannerman (1951). Urban et al. (1986) state that this species “occupies most river systems south of equator while Senegal Thick-knee (*B. senegalensis*) ... inhabits those north of equator”. In Senegambia, Urban et al. consider *B. vermiculatus* to be vagrant, and only two sightings have been recorded in coastal Casamance (Morel and Morel 1990). Since there have been no subsequent observations in Senegal, it is very unlikely that a relict population of such a large and distinctive bird would have been overlooked;
- Senegal Lapwing *Vanellus lugubris*: one observation cited with the caveat that there may have been confusion with the African Wattled Lapwing *V. senegallus*, and no sightings have been documented since then. In Senegal, this species is only known as a rare wet season visitor in coastal Casamance and from a single breeding record in the Saloum Delta (Borrow and Demey 2011);
- Spotted Redshank *Tringa erythropus*: “a single observation” without explicit reference to NKNP and without any detail on the site, the date, the observers or the circumstances;

- Temminck's Courser *Cursorius temminckii*: “present in the dry season and ‘seems to’ breed in the park”, but no specific sightings are documented. This listing may have been due to confusion with Bronze-winged Courser *Rhinoptilus chalcopterus* which is present in NKNP but not listed in Dupuy (1970);
- Black Tern *Chlidonias niger*: “observed several times at permanent ponds in the region” without referring explicitly to NKNP nor documenting specific sightings;
- Little Bittern *Ixobrychus minutus*: “present in the park” but no details provided.

In addition, we have chosen to remove from the baseline list Ethiopian Swallow *Hirundo aethiopica*. Dupuy (1970) cites a nesting observation at Bafoulabé in April 1969 (attributed to Jarry and Larigauderie), which was noted in Morel and Morel (1990) who also cite the ringing of a pair of birds at the same site by Dupuy on 15 April 1986. Morel and Morel (1990) consider that the prior identifications of this species in Casamance were almost certainly in error, due to confusion with the Wire-tailed Swallow *Hirundo smithii*, and no other observations than the above two have been reported for Senegal. The main populations of this species in West Africa range from Mali and Côte d'Ivoire in the west to Chad in the east (Borrow and Demey 2014) with a single validated observation in southern Guinea (Observation.org 2023). The original observer believes that his record may have been in error due to the insufficiencies in documentation available in 1969 (G Jarry pers. comm.), and it seems extremely unlikely that breeding could have been observed twice in NKNP without any additional observations, a view supported by two specialists (N Borrow and RJ Dowsett in litt.).

In summary, 312 species (including both *Milvus* taxa) should be counted from the Dupuy (1970) inventory.

Bernard Tréca, an ornithologist stationed in Senegal with ORSTOM, undertook an ornithological evaluation mission to NKNP in February 1995. The report from this expedition (Tréca 1995) provides a list of 111 species observed, and as an annex a broader complementary list of 331 bird species “already observed in NKNP” (during the mission and historically), but without references or descriptions associated with the individual species listed, nor with an indication of the methodology by which the list was compiled. A page of the complementary list is missing in the original document in the IRD database, but the complete list is available in a subsequent publication (Tréca 1996). Since the two lists are the same, we will only refer hereafter to Tréca (1995).

The bibliography of Tréca (1995) contains only general works except for the comprehensive compilation on the distribution of birds in Senegambia co-authored by Tréca's ORSTOM colleague Gérard Morel (Morel and Morel 1990), one short visit report which we have not been able to locate, and another which we have studied (Sauvage and Collet 1991). Although the inventories of Dupuy (1970 and 1973) are not cited in the bibliography of Tréca (1995), Morel and Morel (1990) do take account of Dupuy (1970).

Concerning the observations of Tréca himself, one reported species had not been listed as present in NKNP by Dupuy (1970) or by Morel and Morel (1990):

- African Emerald Cuckoo *Chrysococcyx cupreus*: one individual was observed on Mount Assirik and confirmed in a handwritten communication dated March 1995 (B Tréca in litt.). Although reports have otherwise been limited to the West Coast Region in The Gambia and the Lower and Middle Casamance areas of Senegal, and seasonally to the rainy season (Barlow and Wachter 1997, Borrow and Demey 2011), we have maintained this species in our Niokolo-Koba list.

We consider it appropriate to remove 12 species from the complete list of Tréca (1995), nine of which were apparently derived from insufficiently documented observations included in Morel and Morel (1990):

- Mottled Swift *Tachymarptis aequatorialis*: no justification given for inclusion and not cited by either Morel and Morel (1990) or Dupuy (1970);
- African Collared Dove *Streptopelia roseogrisea*: Morel and Morel (1990) cite one observation near Kédougou (about 37 km from NKNP) but none in the park;
- Kittlitz's Plover *Charadrius pecuarius*: Morel and Morel (1990) report one observation in grid square 26 (mostly outside of NKNP) with no mention of the park in the text;

- Spotted Redshank *Tringa erythropus*: the single observation without justification cited by Dupuy (1970) was apparently carried over into Morel and Morel (1990) and Tréca (1995);
- Glossy Ibis *Plegadis falcinellus*: an observation in March 1984 reported in Morel and Morel (1990) cannot be confirmed by the observer (N Coulthard pers. comm.);
- Eurasian Spoonbill *Platalea leucorodia*: no justification given for inclusion, and not confirmed in NKNP in any of the previous formal or informal literature, including Morel and Morel (1990) and Dupuy (1970);
- Little Green Woodpecker *Campethera maculosa*: Morel and Morel (1990) cite one observation but the corresponding mission report (Wauer 1982) provides no descriptive details to justify identification of this species normally confined to dense lowland forest in Lower Casamance (Borrow and Demey 2011);
- Eurasian Hobby *Falco subbuteo*: Morel and Morel (1990) cite an observation in NKNP in January 1970 (Thiollay and Dupuy 1970) but the original reference clearly indicates that this observation was made outside the park, although at an unspecified location;
- Ethiopian Swallow *Hirundo aethiopica*: apparently carried over from the Dupuy (1970) list from which we removed it (see above), via the reference to these same observations by Morel and Morel (1990);
- Olive-green Camaroptera *Camaroptera chloronota*: included by Dupuy (1970) on the basis of two specimens collected at Badi on 3 and 14 February 1956 (Dekeyser 1956) and an undocumented observation in the park in April 1969. Tréca (1995) presumably included this species on the basis of the reference in Morel and Morel (1990) to the Dekeyser specimens from 1956 and to one collected at Badi by the Morels in June 1967. Upon examination, the two 1967 specimens in the Morel collection at the IRD were determined to be Grey-backed Camaropteras *C. brevicaudata* (Dowsett-Lemaire and Dowsett 2005), which led the latter authors to propose that *C. chloronota* is not present in NKNP where the habitat does not appear suitable for this Guineo-Congolian endemic. Neither the latter authors nor ourselves were able to gain access to the two specimens collected in 1956, and it should be noted that they could possibly have been first-year *C. brevicaudata* which are olive-green on the back leading to conceivable confusion with *C. chloronota*. We have therefore decided to reject this record due to i) the incorrect habitat, ii) the long distance from known range, iii) the possible confusion with young *C. brevicaudata*, iv) the outcome of the assessment of the other specimens from Senegal, and v) the absence of subsequent confirmed reports since 1956 despite scrutiny by the ornithological community. Although Dupuy (1970) properly justified the inclusion of this species in his inventory, for consistency it should also be removed from that list;
- Olive Sunbird *Cyanomitra olivacea*: Morel and Morel (1990) cite one observation but the corresponding mission report (Wauer 1982) provides no descriptive details to justify identification of this species which is mainly confined to lowland forest in Lower Casamance (Borrow and Demey 2011);
- Olive-bellied Sunbird *Cinnyris chloropygius*: Morel and Morel (1990) cite one observation but the corresponding mission report (Wauer 1982) provides no descriptive details to justify identification of this species which is normally confined to lowland forest in Lower Casamance (Borrow and Demey 2011).

Two other species included by Tréca (1995) in his complete list, normally limited to south-western Senegal but reported in NKNP in 1982 (Morel and Morel 1990, Wauer 1982), are retained in our list because they have subsequently been confirmed in the park:

- Spotted Honeyguide *Indicator maculatus*: one seen at close range in trees near the Gambia River at the Hôtel Simenti on 16 January 2002 (Demey 2002, C Cox pers. comm., A Ndiaye pers. comm.);
- Crimson Seedcracker *Pyrenestes sanguineus*: three seen in a backwater near the Gué de Damantan on 24 February 1992 (Delaporte et al. 2023).

If we assume that both *Milvus* taxa are included in Tréca's entry for *Milvus migrans* and leave out his *Falco pelegrioides* (generally considered to be a subspecies of Peregrine Falcon *Falco peregrinus* (White et al. 2013, Gill et al. 2022)), 319 species (331 minus 12) remain from the original Tréca (1995) list.

The corrected complete list of Tréca (1995) leaves out 23 species which are present in the corrected Dupuy list if we assume that Tréca meant the rarely seen but much more common (Borrow and Demey 2011) African Scops Owl *Otus senegalensis* when he listed Eurasian Scops Owl *O. scops*. *O. senegalensis* was often considered to be a subspecies of *O. scops* although it can clearly be distinguished by its call (Marshall

1978), and this hierarchical relationship was maintained by Fry et al. (1988). Based on genetic evidence, recent publications have treated these taxa separately (König et al. 2008). Therefore, it seems likely that *O. scops* in Tréca (1995) referred to the same taxon as *O. s. senegalensis* in Dupuy (1970). In summary, the combined number of species from these two authors is 342 (319 plus 23).

Dupuy (1970) and Tréca (1995) both cite the Paradise Whydah *Vidua orientalis* (*Steganura orientalis* in the Dupuy list), but it is most likely that they both refer to the more southerly Exclamatory Paradise-Whydah *V. interjecta*, which was split from the former species in 1992 (Clements and Principe 1992). This hypothesis is strengthened by the fact that the host species of *V. interjecta* (Red-winged Pytilia *Pytilia phoenicoptera*) is present in NKNP while the presence of that of *V. orientalis* (Green-winged Pytilia *P. melba*) has not been confirmed (Borrow and Demey 2011). Several Exclamatory Paradise Whydahs were sighted along the Gambia River at the Campement du Lion in January 2009 (Bouard et al. 2009), but the observers did not attempt to distinguish this species from Sahel Paradise-Whydah *V. orientalis* (R Bussi re pers. comm.). In the absence of further research indicating the presence of *V. orientalis* in NKNP, we assume that Dupuy (1970), Tr ca (1995) and Bouard et al. (2009) all refer to *V. interjecta*, but maintain *V. orientalis* as a species possibly present in NKNP.

A review of notable bird sightings made in Senegal between 1984 and 1994 (Sauvage and Rodwell 1998) documented unpublished or informally disseminated observations of 140 species from NKNP, including 21 which were not included in the inventories of Dupuy (1970) or Tr ca (1995). We have been able to obtain nearly all of the source data for the observations in Sauvage and Rodwell (A Sauvage pers. comm.). Only four of the corresponding source documents (Beecroft et al. 1990, Devisse 1991, Sauvage and Collet 1991, Beecroft and Rogers 1992) are detailed formal reports, the others being lists of observations, only some of which provide details on the site, number of birds and precise date. None of the source documents provide photographs or descriptions of the birds concerned although we were able to contact seven of the original observers, two of whom provided additional details.

The 21 new species proposed by Sauvage and Rodwell (1998) with the date of observation(s) and the observer(s) are:

- Harlequin Quail *Coturnix delegorguei*: November 1989 (I Bindia in litt.);
- Adamawa Turtle Dove *Streptopelia hypopyrrha*: heard in February 1992 (Beecroft and Rogers 1992); listed as “non-confirmed” in Tr ca (1995) despite the published observation of up to 37 in February 1991 (Baillon 1992b);
- Allen’s Gallinule *Porphyrio alleni*: one at the Campement du Lion in February 1993 (A Sauvage in litt.);
- Quail-plover *Ortyxelos meiffrenii*: May 1987 (Devisse 1991);
- Black Stork *Ciconia nigra*: February 1992 (Beecroft and Rogers 1992); one at the Campement du Lion in February 1993 (A Sauvage in litt.); one in February 1993 (Biologische Station Rieselfelder M nster in litt.); two previous records: two seen in NKNP in February 1982 (Morel and Morel 1990, M Kleinbaum in litt.) and one along the Niokolo-Koba stream in February 1992 (Delaporte et al. 2023);
- Crowned Eagle *Stephanoaetus coronatus*: March 1992, precise date and place unknown but apparently during a side trip of the International Ornithological Expedition (IOE) which visited Parc National des Oiseaux du Djoudj and a few other sites in northwest Senegal between 1990 and 1994 for the purpose of catching and ringing Palearctic migrants;
- Blue-cheeked Bee-eater *Merops persicus*: one photographed at Bangar  in December 1987 (Figure 11; Devisse 1991);
- Yellow-rumped Tinkerbird *Pogoniulus bilineatus*: March 1992, precise date and place unknown but apparently during a side trip of an IOE mission;
- Brown-necked Parrot *Poicephalus fuscicollis*: November 1988 (I Bindia in litt.);
- Sedge Warbler *Acrocephalus schoenobaenus*: February 1993 (Biologische Station Rieselfelder M nster in litt.);
- Western Orphean Warbler *Curruca hortensis*: one at the Campement du Lion in February 1989 (Devisse 1991, R Devisse pers. comm.);
- Western Subalpine Warbler *Curruca iberiae*: two observations of a total of four birds in January 1991 (Biologische Station Rieselfelder M nster in litt.). This species, originally reported as Subalpine

Warbler *Sylvia cantillans*, has subsequently been split into three species in the genus *Curruca*; we assume that this observation and the subsequent ones, except for one record from November 2019 (see main text), refer to Western Subalpine Warbler *C. iberiae* and not to the rarer Moltoni's Warbler *C. subalpina*;

- Common Rock Thrush *Monticola saxatilis*: one in January 1988 (J Chevallier, F Deroussen and S Nicolle in litt.) and one near Bangaré in March 1988 (Devisse 1991);
- Familiar Chat *Oenanthe familiaris*: four near the Niokolo-Koba guard post in February 1989 (Devisse 1991);
- Red-billed Quelea *Quelea quelea*: April 1990 (Beecroft et al. 1990);
- Yellow-crowned Bishop *Euplectes afer*: mid-January 1988 at an unspecified location in NKNP (N. Riddiford in litt.);
- Red-collared Widowbird *E. ardens*: 22 March 1992 at Simenti according to version “0bis” of the Sauvage and Rodwell article, apparently during a side trip of an IOE mission;
- African Silverbill *Euodice cantans*: listed by Sauvage and Rodwell (1998) as Indian Silverbill *E. malabarica* which was at the time considered conspecific with the former species, April 1990 (Beecroft et al. 1990, RC Beecroft pers. comm.); previously more than one observed in NKNP on 21 January 1978 (M Kleinbaum in litt.) and subsequently at the Mare de Sitandi on 29 March 1991 (Carichiopulo and Delaporte 1991); three at the Campement de Wassadou on 2 December 2017 (eBird 2023, C Clemente pers. comm.) and six at this same site on 28 March 2023 (eBird 2023, D Lopez Velasco pers. comm.);
- Orange-breasted (Zebra) Waxbill *Amandava subflava*: January 1990 (I Bindia in litt.);
- Green-winged Pytilia *Pytilia melba*: February 1990 (I Bindia in litt.);
- African (Blue-billed) Firefinch *Lagonosticta rubricata*: April 1992 (Beecroft and Rogers 1992).

After examination of the expected distributions and habitat requirements of the concerned species (Barlow and Wacher 1997, Borrow and Demey 2011), the season of the observation, the justifications presented, the presence of subsequent observations, and, to a lesser extent, the birding experience of the observers (A Sauvage pers. comm., S Rumsey pers. comm.), we decided to exclude seven of the above species from our baseline list (Harlequin Quail, Quail-Plover (maintained as possibly or probably present), Crowned Eagle, Brown-necked Parrot (maintained as possibly or probably present), Red-collared Widowbird, Green-winged Pytilia (maintained as possibly or probably present) and African Firefinch (maintained as possibly or probably present).

The African Firefinch cited by Sauvage and Rodwell may have been confused with the similar Mali Firefinch *Lagonosticta virata* which was not known to be present in NKNP at the time, according to the original observer (RC Beecroft pers. comm.). Recently (2014–2017), the occurrence of African Firefinch was suspected at a site about 8 km east of NKNP near Mako, but again the birds observed there could not be safely separated from the similar Mali Firefinch (JF Blanc in litt., S Cavaillès in litt.). The closest confirmed populations of African Firefinch are in Guinea and Guinea-Bissau (Borrow and Demey 2014) at least 200 km from NKNP and in Lower Casamance in Senegal (BP pers. obs.), approximately 300 km from the NKNP boundary. Given that Mali Firefinch has recently been confirmed in NKNP on two occasions (see main text), and that the habitat at these sites, and at Mako, consists of rocky areas with bushes (corresponding to the preference of Mali Firefinch, as opposed to the forest-savanna mosaic preferred by African Firefinch (Borrow and Demey 2011)), we believe it is likely that all previous observations of African Firefinch in NKNP were actually of Mali Firefinch. However, due to the uncertainty, we maintain African Firefinch in our list of those species possibly or probably present in the park.

Yellow-rumped Tinkerbird was heard at the Campement Hôtel de Wassadou on several occasions in June 2018 and observed visually on 18 April 2019 (eBird 2023, M Lecoq pers. comm.). A pair of Yellow-crowned Bishops was photographed at the Mare de Simenti on 6 August 2012 (Figure 12; JBR pers. obs.) and this species has been reported 11 other times in and around NKNP since 2001 (eBird 2023) including an indeterminate number confirmed at the Campement de Wassadou on 15 June 2018 (BP pers. obs.). Several dozen Orange-breasted Waxbills were seen on 3 and 6 April 1991 at residual wetlands near the Niokolo-Koba stream (Carichiopulo and Delaporte 1991).

We thus add 14 species to those of Dupuy (1970) and Tréca (1995), yielding a total of 356 species. All of these additional species are apparently scarce or rare in NKNP, except for Adamawa Turtle Dove and Red-billed Quelea which should be considered as uncommon according to more recent observations (eBird 2023).

Appendix 2: Bird species recorded in Niokolo-Koba National Park combining published and verified unpublished observations.

Encounter rate categories (**Frequency**) are adapted from Borrow and Demey (2011) and calculated from the eBird Basic Dataset (eBird 2023): C = Common (almost always ($\geq 70\%$ of recording days) encountered in appropriate habitat and period of year), F = Fairly common (very frequently ($\geq 40\%$ but $< 70\%$ of recording days) encountered in appropriate habitat and period of year), U = Uncommon (relatively frequently ($\geq 10\%$ but $< 40\%$ of recording days) encountered in appropriate habitat and period of year), S = Scarce (only infrequently ($< 10\%$ of recording days) encountered in appropriate habitat and period of year), R = Rare (rarely encountered—at most three total records or not observed after 1992), E = probably Extinct (see main text). **Tendency:** ↓ = decrease of $\geq 50\%$ in observations in the period 1993–2022 relative to 1955–1992 (at least one observation in both periods and more than three observations in total), ↑ = increase of $\geq 100\%$ in observations in the period 1993–2022 relative to 1955–1992 (at least one observation in both periods and more than three observations in total), Δ = only one observation (1955–1992), O = only one observation (1993–2022), Δ+ = more than one observation but only during 1955–1992, O+ = more than one observation but only during 1993–2022. **Status** in NKNP based on Borrow and Demey (2011): R = Resident, I = Intra-African migrant, P = Palearctic migrant, V = Vagrant. **Biome**-confined species (Coulthard 2001): SG = Sudan-Guinea Savannah, GC = Guinea-Congo Forests, S = Sahel. **IUCN** threat status (IUCN 2022): CR = Critically endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, blank cells = Least Concern or Insufficient Data. **Extralimital:** species thus far only seen outside the NKNP boundary (≤ 1.2 km).

#	IOC 12.2	Common Name	Scientific Name	Frequency	Tendency	Status	Biome	IUCN	Extralimital	Observational Details
ANATIDAE										
1	253	White-faced Whistling Duck	<i>Dendrocygna viduata</i>	U		R				
2	259	Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>	S	↓	V				Rare in the region ≤ 1970 (Dupuy 1970); 50 in Feb 1983 (R Potuliège in litt.); X in Apr 1990 (Beecroft et al. 1990); 5 at the Campement du Lion in Mar 2010 (eBird 2023); observations of 41 in Jan 2016 and 3 in Jan 2018 (Sall 2019) are unconfirmed
3	352	Spur-winged Goose	<i>Plectropterus gambensis</i>	F		R/I				
4	357	Knob-billed Duck	<i>Sarkidiornis melanotos</i>	S		R/I				
5	361	Egyptian Goose	<i>Alopochen aegyptiaca</i>	R		I				X in Jan 1982 (Morel and Morel 1990, Wauer 1982); 2 in Jan 2015 (eBird 2023, JBR pers. obs.); 3 in Dec 2022 upstream from the Campement de Wassadou on the Gambia River
6	403	African Pygmy Goose	<i>Nettapus auritus</i>	R		R				X in 1969 (Dupuy 1970); 2 photographed at the Mare de Simenti in Jan 2017 (eBird 2023, I Kouyaté pers. comm.); 2 in Jan 2004 in NKNP and 3 at the Hôtel de Simenti in Jan 2016 (eBird 2023) but both unconfirmed
7	423	Garganey	<i>Spatula querquedula</i>	S	↓	P				Present in all of the ponds of the region from Dec to Mar (Dupuy 1970); 15 in Feb 1983 (R Potuliège in litt.); ≥ 30 in 1984–85 (eBird 2023, M Kleinbaum in litt.); 7 at the Gué de Damantan in Nov 1990 (Delaporte et al. 1990); X in Feb 1992 (Beecroft and Rogers 1992); ♂

8	439 Northern Shoveler	<i>Spatula clypeata</i>	R	Δ+	P		in Jan 2018 (eBird 2023, M Lecoq pers. comm.) Very rare ≤1970 with 1 record in Jan 1969 (Dupuy 1970); 8 in Jan 1985 (eBird 2023, M Kleinbaum in litt.); 3 in Feb 1992 (Delaporte et al. 2023); presence confirmed by Morel and Morel (1990)
9	488 Northern Pintail	<i>Anas acuta</i>	S	↓	P		Present on all ponds, from Dec until end-Mar (Dupuy 1970); >10 in Jan 1985 (eBird 2023, M Kleinbaum in litt.); ♂ at the Mare de Simenti in Nov 1990 (Delaporte et al. 1990); 4 on the Gambia River near Simenti in Nov 1998 (Bala El Din and Bala El Din 1998, S Bala El Din pers. comm.)
10	509 Marbled Duck	<i>Marmaronetta angustirostris</i>	R	Δ	P	VU	1 at the Mare de Sitandi in Jan 1969 (Dupuy 1970); presence confirmed by Morel and Morel (1990)
NUMIDIDAE							
11	779 Helmeted Guineafowl	<i>Numida meleagris</i>	C			R	
ODONTOPHORIDAE							
12	804 Stone Partridge	<i>Ptilopachus petrosus</i>	F			R	
PHASIANIDAE							
13	1439 White-throated Francolin	<i>Campocolinus albogularis</i>	S			R	
14	1517 Common Quail	<i>Coturnix coturnix</i>	R			P	Locally and irregularly present in southern Senegal but no specific mention of NKNP (Morel and Morel 1990); 1 near Bangaré in Dec 1967 (Morel and Dupuy 1969); 1 at Badi in Nov 1988 (Sauvage and Rodwell 1998, I Bindia in litt.); 1 probable heard on track between Simenti and Badi in Nov 1990 (Delaporte et al. 1990); 2 between Linguékountou and the N7 highway in Nov 2015 (eBird 2023)
15	1603 Double-spurred Spurfowl	<i>Pternistis bicalcaratus</i>	C			R	
CAPRIMULGIDAE (probably undercounted due to the paucity of nighttime surveys)							
16	1881 Plain Nightjar	<i>Caprimulgus inornatus</i>	R	Δ+		I	Common at nightfall along the N7 highway in Nov 1967 including 1 collected (Morel and Dupuy 1969); 1 near Niakassi in Feb 1992 (Delaporte et al. 2023)
17	1904 Long-tailed Nightjar	<i>Caprimulgus climacurus</i>	S			R	
18	1913 Standard-winged Nightjar	<i>Caprimulgus longipennis</i>	S			R/I	
APODIDAE							
19	2209 Mottled Spinetail	<i>Telacanthura ussheri</i>	S			R	
20	2291 African Palm Swift	<i>Cypsiurus parvus</i>	F			R	
21	2307 Alpine Swift	<i>Tachymarptis melba</i>	S			P	X in 1969 (Dupuy 1970); >60 in Feb 1995 (Tréca 1995, Tréca and Sakho 1995); <10 along Gambia River in Feb 2002 (eBird 2023, V Rufay pers. comm.); 1 at the Campement du Lion in Jan 2012 (eBird 2023) not confirmed; 1 photographed at the Campement de Wassadou in Jan 2023 (eBird 2023)

22	2318	Mottled Swift	<i>Tachymarpis aequatorialis</i>	S	↑	V			9 in Feb 1986; ~30 in Jan 2012; 1 in Feb 2018; 6 in Jun 2018; 2 in Feb 2022 [see text]
23	2326	Common Swift	<i>Apus apus</i>	S		P			
24	2333	Pallid Swift	<i>Apus pallidus</i>	S		P			
25	2361	Little Swift	<i>Apus affinis</i>	U		R			
26	2376	White-rumped Swift	<i>Apus caffer</i>	R	Δ	I			X in July 1967: small colony nesting with <i>Hirundo abyssinica</i> under the Niokolo-Koba bridge (Morel and Dupuy 1969)
MUSOPHAGIDAE									
27	3373	Western Plantain-eater	<i>Crinifer piscator</i>	C		R			
28	3389	Violet Turaco	<i>Tauraco violaceus</i>	U		R	SG		
29	3397	Guinea Turaco	<i>Tauraco persa</i>	R		R	CG		1 ≤1990 (Morel and Morel 1990); 1 near Mount Assirik in Jun 2018 (eBird 2023, Rose and Dagherne 2018); 1 near Kalifourou just outside western border of NKNP in Nov 2018 (Observation.org 2023, B van Hoogstraten pers. comm.)
OTIDIDAE									
30	3444	Denham's Bustard	<i>Neotis denhami</i>	E	Δ+	-		NT	Common in dry season ≤1970 (Dupuy 1970) but no subsequent sightings
31	3451	White-bellied Bustard	<i>Eupodotis senegalensis</i>	S		I			
32	3476	Black-bellied Bustard	<i>Lissotis melanogaster</i>	S		R			
CUCULIDAE									
33	3545	Senegal Coucal	<i>Centropus senegalensis</i>	F		R			
34	3575	Black Coucal	<i>Centropus grillii</i>	R		I			1 just outside NKNP in Jul 1969 (Dupuy 1970); 1 juvenile in Oct 2016 (eBird 2023, R Prum pers. comm.)
35	3623	Blue Malkoha	<i>Ceuthmochares aereus</i>	R	O	V	CG	X	1 just outside NKNP at the Campement de Wassadou in Jul 2015 [see text]
36	3665	Great Spotted Cuckoo	<i>Clamator glandarius</i>	R	Δ	V			♂ and ♀ collected on same day at Badi in Feb 1956 (Dekeyser 1956)
37	3666	Levaillant's Cuckoo	<i>Clamator levaillantii</i>	F		I			
38	3667	Jacobin Cuckoo	<i>Clamator jacobinus</i>	R	Δ+	V			2 records at the Gué de Bafoulabé ≤1970 (Dupuy 1970)
39	3752	Diederik Cuckoo	<i>Chrysococcyx caprius</i>	R		I			1 heard singing ≤1970 (Dupuy 1970); heard on 3 occasions (probably fewer than 3 birds) at the Niériko bridge 0.5 km north of NKNP in Oct 2016 (eBird 2023)
40	3753	Klaas's Cuckoo	<i>Chrysococcyx klaas</i>	U		R/I			
41	3755	African Emerald Cuckoo	<i>Chrysococcyx cupreus</i>	R	O	V	CG		1 in Feb 1995, outside of range but confirmed by experienced observer [see Appendix 1]
42	3851	Red-chested Cuckoo	<i>Cuculus solitarius</i>	R	Δ	I			1 ♀ carrying egg collected in Jul 1967 (Morel and Dupuy 1969)

43	3858 African Cuckoo	<i>Cuculus gularis</i>	S		I		
PTEROCLIDAE							
44	3888 Chestnut-bellied Sandgrouse	<i>Pterocles exustus</i>	S		R	S	Dekeyser (1956 and 1961) cites this species but his text seems to confuse with <i>P. quadricinctus</i> ; X in addition to <i>P. quadricinctus</i> in Apr 1990 (Beecroft et al. 1990); 9 at four sites in Feb 1992 (Delaporte et al. 2023); 9 in Feb 1995 between Badoye and Passage Koba (Tréca 1995), but possible confusion with <i>P. quadricinctus</i> which was not recorded
45	3920 Four-banded Sandgrouse	<i>Pterocles quadricinctus</i>	U		R		
COLUMBIDAE							
46	3930 Rock Dove (Feral Pigeon)	<i>Columba livia [var. domestica]</i>	S	O+	R		≥1 in Jan 2015; 1 just outside NKNP in Oct 2016; X in Mar 2017 inside NKNP; 4 in Diambour Forest ~7 km north of NKNP in Jun 2018 [see text]
47	3946 Speckled Pigeon	<i>Columba guinea</i>	F		R		
48	4074 European Turtle Dove	<i>Streptopelia turtur</i>	U		P		VU
49	4080 Adamawa Turtle Dove	<i>Streptopelia hypopyrrha</i>	U	↑	R	SG	First observed in Feb 1991 [see text]
50	4091 African Collared Dove	<i>Streptopelia roseogrisea</i>	R	Δ	V	S	≥3 in Mar 1991; 1 in Feb 1992 [see text]
51	4095 Mourning Collared Dove	<i>Streptopelia decipiens</i>	U		R		
52	4102 Red-eyed Dove	<i>Streptopelia semitorquata</i>	F		R		
53	4110 Vinaceous Dove	<i>Streptopelia vinacea</i>	C		R		
54	4121 Laughing Dove	<i>Spilopelia senegalensis</i>	C		R		
55	4201 Black-billed Wood Dove	<i>Turtur abyssinicus</i>	C		R		
56	4202 Blue-spotted Wood Dove	<i>Turtur afer</i>	S		R		
57	4208 Namaqua Dove	<i>Oena capensis</i>	U		R/I		
58	4585 Bruce's Green Pigeon	<i>Treron waalia</i>	U		R		
59	4590 African Green Pigeon	<i>Treron calvus</i>	R	Δ+	R		X in Nov 1967 (Dupuy 1970); 2 near the Gué de Bafoulabé in Apr 1991 (Carichiopulo and Delaporte 1991); 2 in Dec 2012 and X in Feb 2017 (eBird 2023) unconfirmed
HELIORNITHIDAE							
60	4892 African Finfoot	<i>Podica senegalensis</i>	U		R		
RALLIDAE							
61	5041 African Crane	<i>Creccopsis egregia</i>	R	O	R		1 in Feb 2022 [see text]
62	5144 Lesser Moorhen	<i>Paragallinula angulata</i>	R	Δ+	I		Several observations ≤1970 (Dupuy 1970); 1 near Simenti in Jan 1982 (Wauer 1982, Morel and Morel 1990)

63	5158	Common Moorhen	<i>Gallinula chloropus</i>	S		P/R?	
64	5189	Allen's Gallinule	<i>Porphyrio alleni</i>	R	O	I	1 in Feb 1993 [see Appendix 1]
65	5260	Black Crake	<i>Zapornia flavirostra</i>	U		R	
GRUIDAE							
66	5352	Black Crowned Crane	<i>Balearica pavonina</i>	U		I	VU
TURNICIDAE							
67	5480	Common Buttonquail	<i>Turnix sylvaticus</i>	R	Δ	R/I	2 in Apr 1991 [see text]
BURHINIDAE							
68	5554	Senegal Thick-knee	<i>Burhinus senegalensis</i>	F		R	
69	5558	Spotted Thick-knee	<i>Burhinus capensis</i>	S		R	
RECURVIROSTRIDAE							
70	5616	Black-winged Stilt	<i>Himantopus himantopus</i>	U		I/P	
71	5626	Pied Avocet	<i>Recurvirostra avosetta</i>	R	Δ+	V	X in Dec 1955 at Dialacoto, 7 km north of NKNP (Dupuy 1970); X in Feb 1984 in NKNP (eBird 2023)
CHARADRIIDAE							
72	5638	Spur-winged Lapwing	<i>Vanellus spinosus</i>	F		R	
73	5640	Black-headed Lapwing	<i>Vanellus tectus</i>	U		R	
74	5644	White-crowned Lapwing	<i>Vanellus albiceps</i>	U		R/I	
75	5652	African Wattled Lapwing	<i>Vanellus senegallus</i>	F		R	
76	5694	Common Ringed Plover	<i>Charadrius hiaticula</i>	S	↓	P	Present in NKNP during passage migration ≤1970 (Dupuy 1970); 2 singles in Feb 1984 (eBird 2023), 1 at the Gué de Malapa in Feb 1989 (Sauvage and Rodwell 1998, Devisse 1991); 1 at the Campement de Wassadou in Jan 2020 (eBird 2023)
77	5700	Little Ringed Plover	<i>Charadrius dubius</i>	S		P	
78	5722	Forbes's Plover	<i>Charadrius forbesi</i>	S		I	2 on highway N7 near the Niokolo-Koba guard post ≤1969 (Morel and Dupuy 1969); 1 collected in Jul 1967 (Dupuy 1970, Morel and Morel 1990); 1 in Jun 1990 near the Niokolo-Koba guard post and 1 in NKNP in Jan 1991 (Sauvage and Rodwell 1998, I Bindia in litt., Biologische Station Rieselfelder Münster in litt.); 1 photographed near the Niokolo-Koba bridge in Sep 2015 (Demey 2016); 4 photographed at Mount Assirik in Jun 2018 (Rose and Dagorne 2018)
PLUVIANIDAE							
79	5779	Egyptian Plover	<i>Pluvianus aegyptius</i>	F		R	
ROSTRATULIDAE							

80	5783	Greater Painted-snipe	<i>Rostratula benghalensis</i>	S			R/I	
JACANIDAE								
81	5792	African Jacana	<i>Actophilornis africanus</i>	F			R	
SCOLOPACIDAE								
82	5859	Black-tailed Godwit	<i>Limosa limosa</i>	R	Δ	P	NT	1 observation by JM Thiollay at the Mare du Fourou in Jan 1969 (Dupuy 1970)
83	5888	Ruff	<i>Calidris pugnax</i>	R	Δ+	P		Present ≤1990 but no descriptive detail (Morel and Morel 1990); 10 at the Campement du Lion in Mar 1982, 2 records in Feb 1984, 15 in Jan 1985 (eBird 2023)
84	5920	Little Stint	<i>Calidris minuta</i>	R	Δ+	P		X in Feb 1984 and in Feb 1991 (eBird 2023); ≥12 in ≥3 groups in Feb 1992 (Delaporte et al. 2023, Sauvage and Rodwell 1998, Beecroft and Rogers 1992)
85	5970	Common Snipe	<i>Gallinago gallinago</i>	S		P		
86	5993	Common Sandpiper	<i>Actitis hypoleucos</i>	F		P		
87	5996	Green Sandpiper	<i>Tringa ochropus</i>	U		P		
88	6006	Common Redshank	<i>Tringa totanus</i>	S	↓	P		Common in NKNP from Dec to Apr ≤1970 (Dupuy 1970); 2 records in Feb 1984 and a single in Feb 2020 (eBird 2023)
89	6013	Marsh Sandpiper	<i>Tringa stagnatilis</i>	S		P		Present during migration ≤1970 (Dupuy 1970); 1 in Jan 1985 (eBird 2023, M Kleinbaum in litt.); singles in Feb–March 1993 (Sauvage and Rodwell 1998, Biologische Station Rieselfelder Münster in litt.); singles probable but unconfirmed in Feb 1984 (eBird 2023, K Overman pers. comm.) and in Jan 2009 (eBird 2023, A Faustino pers. comm.)
90	6014	Wood Sandpiper	<i>Tringa glareola</i>	U		P		
91	6016	Common Greenshank	<i>Tringa nebularia</i>	U		P		
GLAREOLIDAE								
92	6055	Bronze-winged Courser	<i>Rhinoptilus chalcopterus</i>	S			R/I	
93	6060	Collared Pratincole	<i>Glareola pratincola</i>	R	Δ+	R/I/P		~10 at the Gué de Bafoulabé and 3 at the Mare de Sitandi in May 1967 (Morel and Dupuy 1969); ringed in Apr 1969 (Dupuy 1970); 3 records in Feb 1984 including flocks of 25–30 and of 4 in Jan 1985 (eBird 2023)
LARIDAE								
94	6111	African Skimmer	<i>Rynchops flavirostris</i>	R	Δ+	V		11 over Gambia River in June 1968 (Morel and Dupuy 1969); 2 over Gambia River between Wouring and Bantamba in Feb 1992 (Delaporte et al. 2023)
95	6136	Grey-headed Gull	<i>Chroicocephalus cirrocephalus</i>	R	Δ	V		1 in Jan 1984 [see text]
96	6218	Gull-billed Tern	<i>Gelochelidon nilotica</i>	R	Δ	P		1 in Jan 1984 [see text]
97	6312	Whiskered Tern	<i>Chlidonias hybrida</i>	R	Δ+	P		X in Mar 1980; 1 in Jan 1984 [see text]

98	6316	White-winged Tern	<i>Chlidonias leucopterus</i>	R	Δ	P	1 in Feb 1984 [see text]
CICONIIDAE							
99	6750	Yellow-billed Stork	<i>Mycteria ibis</i>	S		I	
100	6758	Black Stork	<i>Ciconia nigra</i>	S	↑	P	2 in Feb 1982, X in Feb 1992, 2 in Feb 1993 [see Appendix 1]; 15 records of ≥30 individuals 1996–2020 (eBird 2023)
101	6759	Abdim's Stork	<i>Ciconia abdimii</i>	R	Δ+	I	2 just outside NKNP near Wassadou in Aug 1956 (Dekeyser 1956); common in rainy season ≤1970 (Dupuy 1970); 1 at the Mare de Sitandi in Feb 1986 (Sauvage and Rodwell 1998, Devisse 1991, R Devisse pers. comm.)
102	6760	Woolly-necked Stork	<i>Ciconia episcopus</i>	U		R?	
103	6766	White Stork	<i>Ciconia ciconia</i>	R	Δ+	P	1 at the Mare de Sitandi in May 1967 (Morel and Dupuy 1969); X at the Mare de Sitandi in Mar–Apr 1969, X at an unspecified location in May 1969 (Dupuy 1970, Morel and Dupuy 1969)
104	6774	Saddle-billed Stork	<i>Ephippiorhynchus senegalensis</i>	U		R?	
105	6780	Marabou Stork	<i>Leptoptilos crumenifer</i>	U		I	
ANHINGIDAE							
106	6832	African Darter	<i>Anhinga rufa</i>	S		R	
PHALACROCORACIDAE							
107	6846	Reed Cormorant	<i>Microcarbo africanus</i>	U		R/I	
108	6879	White-breasted Cormorant	<i>Phalacrocorax lucidus</i>	S	O+	I	X in Jan 2011; 1 just outside NKNP at the Campement de Wassadou in Oct 2016; 1 just outside western border in Nov 2018; 2 at the Campement de Wassadou in Jan 2019 [see text]
THRESKIORNITHIDAE							
109	6925	African Sacred Ibis	<i>Threskiornis aethiopicus</i>	S		R	Possibly increasing: common in dry season ≤1970 (Dupuy 1970); 1 west of Simenti in Feb 2017, X in NKNP in Apr 2017, X in Feb 2020 (eBird 2023, G Sommeria-Klein pers. comm.)
110	6940	Northern Bald Ibis	<i>Geronticus eremita</i>	R	Δ	V	EN 1 at Simenti in Mar 1985 (Morel and Morel 1990)
111	6952	Hadada Ibis	<i>Bostrychia hagedash</i>	F		R	
112	6992	African Spoonbill	<i>Platalea alba</i>	S		R	Numerous in May 1967 at the Mare de Woëni, 3 in Apr 1968 at the Mare de Sitandi (Morel and Dupuy 1969); several records in 1969, including at the Mare de Sitandi (Dupuy 1970, Morel and Dupuy 1969); 1 juvenile photographed on the Gambia River in April 2012 (eBird 2023, JBR pers. obs.); >2 at a wetland in NKNP in Feb 2020 (eBird 2023, G Sommeria-Klein pers. comm.)
ARDEIDAE							
113	7049	Dwarf Bittern	<i>Ixobrychus sturmii</i>	S		I	

114	7058	White-backed Night Heron	<i>Gorsachius leuconotus</i>	S	↑	R	1 in Feb 1992; 1 in Mar 2010; 3 near Mako in Mar 2016; ≥2 near Mako in Mar 2017; ≥3 at the Campement de Wassadou in Jun 2018 [see text]
115	7060	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	U		R/P	
116	7091	Striated Heron	<i>Butorides striata</i>	F		R	
117	7114	Squacco Heron	<i>Ardeola ralloides</i>	F		R/P	
118	7123	Western Cattle Egret	<i>Bubulcus ibis</i>	F		R/I	
119	7126	Grey Heron	<i>Ardea cinerea</i>	F		P/R?	
120	7139	Black-headed Heron	<i>Ardea melanocephala</i>	U		R	
121	7143	Goliath Heron	<i>Ardea goliath</i>	R	Δ	V	1 at the Mare de Simenti in May 1968 (Morel and Dupuy 1969); 1 juvenile on bank of the Gambia River in Apr 1991 (Carichiopulo and Delaporte 1991); 4 reported in Apr 2001 (eBird 2023) but unconfirmed
122	7144	Purple Heron	<i>Ardea purpurea</i>	U		P/R	
123	7149	Great Egret	<i>Ardea alba</i>	U		R	
124	7154	Intermediate Egret	<i>Ardea intermedia</i>	U		R	
125	7170	Black Heron	<i>Egretta ardesiaca</i>	S		V	Common in the region ≤1970 (Dupuy 1970); 1 in Dec 1986 (Sauvage and Rodwell 1998); 2 at the Mare de Simenti in Nov 2014 (eBird 2023, JBR pers. obs.); 2 at the Campement de Wassadou in Jan 2023 (eBird 2023)
126	7179	Little Egret	<i>Egretta garzetta</i>	U		R/P	
127	7182	Western Reef Heron	<i>Egretta gularis</i>	S		I	
SCOPIDAE							
128	7193	Hamerkop	<i>Scopus umbretta</i>	F		R	
PELECANIDAE							
129	7203	Great White Pelican	<i>Pelecanus onocrotalus</i>	S		I	1 record at the Mare de Oudassy in Feb 1968 (Dupuy 1970); 2 records at the Mare de Simenti (2 birds in Jun 2016 and 7 in Jun 2017) and 61 birds flying north ≤7 km north of NKNP in Jun 2018 (eBird 2023)
130	7204	Pink-backed Pelican	<i>Pelecanus rufescens</i>	S		I	
SAGITTARIIDAE							
131	7247	Secretarybird	<i>Sagittarius serpentarius</i>	E	Δ+	-	EN 3 observations at same site in Jan– May 1969 (Thiollay and Dupuy 1970); 1 photographed at the Mare de Tourmadala in Jan 1986 (Baillon 1992a, F Baillon pers. comm.); 1 west of Mount Assirik in Feb 1990 (Baillon 1992a) but unconfirmed
PANDIONIDAE							

132	7251 Osprey	<i>Pandion haliaetus</i>	U		P		
ACCIPITRIDAE							
133	7259 Black-winged Kite	<i>Elanus caeruleus</i>	S		R		
134	7274 Scissor-tailed Kite	<i>Chelictinia riocourii</i>	S	↓	I	VU	Common ≤1970 but only in dry season (Thiollay and Dupuy 1969, Dupuy 1970), 1 in Jan 1985 (eBird 2023); 1 near the NKNP border at Dar Salam in Feb 1992; 1 photographed ~7 km north of NKNP in May 2017 (eBird 2023, D Svinarenko pers. comm.)
135	7276 African Harrier-Hawk	<i>Polyboroides typus</i>	F		R		
136	7281 Palm-nut Vulture	<i>Gypohierax angolensis</i>	U		R		
137	7287 Egyptian Vulture	<i>Neophron percnopterus</i>	S	↓	P	EN	1 adult at the Gué de Bafoulabé and 2 sub-adults at Wouroli in 1967 (Dupuy 1970); 1 at Wouroli in Feb 1968 (Morel and Dupuy 1969); 1 immature in Jul 1969 (Thiollay & Dupuy 1970); 7 records of 1-3 birds in Jan–Mar 1984-94 (Sauvage & Rodwell 1998); 1 immature photographed in Mar 2011 (eBird 2023); 5 birds (along with 16 White-backed Vultures) around a carcass at the Mare de Léba (about 1.2 km outside NKNP close to the Niériko bridge) in Aug 2015 (eBird 2023), but we choose not to validate this observation due its highly unlikely seasonality and the lack of supporting detail
138	7304 European Honey Buzzard	<i>Pernis apivorus</i>	R	Δ+	P		1 in Jul 1969 (Dupuy 1970); singles in Feb 1987, Apr 1990, Feb 1991 (Sauvage and Rodwell 1998); 1 reported at the Campement du Lion in Feb 2017 (Observation.org 2023), but unconfirmed
139	7325 African Cuckoo-Hawk	<i>Aviceda cuculoides</i>	S		I		1 at edge of gallery forest in Jan 1969 (Thiollay and Dupuy 1970, Morel and Morel 1990); 2 singles in Jan 1988 (Sauvage and Rodwell 1998; N Riddiford in litt.); 1 between Dalaba and Koulountou in Feb 1995 (Tréca 1995); 1 adult in Feb 2012 perched at close range (JF Blanc and S Cavaillès pers. comm.)
140	7358 Hooded Vulture	<i>Necrosyrtes monachus</i>	U		R	CR	
141	7360 White-backed Vulture	<i>Gyps africanus</i>	U		R	CR	
142	7364 Rüppell's Vulture	<i>Gyps rueppelli</i>	R	Δ+	R	CR	Uncommon ≤1970 (Dupuy 1970); 1 at the Gué de Damantan in Feb 1991 (Dubois 1991, eBird 2023); 2 records in NKNP and 2 at the Campement de Wassadou NKNP between 2001 and 2013 (eBird 2023) but all unconfirmed
143	7368 Griffon Vulture	<i>Gyps fulvus</i>	S		P		2 at the Mare de Kountadala in Feb 1991 (Dubois 1991, eBird 2023); 1 photographed in flight just outside the western park boundary in Nov 2019 (Observation.org 2023, J Janse pers. comm.); several photographed at the Mare de Woëni in Feb 2022 (Observation.org 2023, C Montégu pers. comm.)
144	7375 White-headed Vulture	<i>Trigonoceps occipitalis</i>	S	↓	R	CR	1 in Feb 1956 (Dekeyser 1956); uncommon ≤1970, 1 nest with chick at Dalaba in Jan 1969 (Dupuy 1970); 5 records of 1–3 birds in NKNP Jan–Mar 1983–93 (M Kleinbaum in litt., Sauvage and Rodwell 1998, Delaporte 2023, eBird 2023, N Lethaby and P Thompson pers. comm.); 2 in Feb 2006 (eBird 2023, M Villemagne pers. comm.); 1 at the Mare de Sitandi in Jan 2018 (OJLF pers. obs.); 1 adult ♀ and 1

145	7379	Lappet-faced Vulture	<i>Torgos tracheliotos</i>	R	Δ	R	EN	immature photographed at the Mare de Wöeni in Feb 2018 (Observation.org 2023, J Rabadán González and J Rengel pers. comm.) 2 at Patte d'Oie in Apr 1967 (Morel and Dupuy 1969); 1 at the Mare de Kountadala, 1 at the Gué de Malapa and 1 at Badoye in Feb 1992 (Delaporte et al. 2023)
146	7415	Short-toed Snake Eagle	<i>Circaetus gallicus</i>	S		P		
147	7418	Beaudouin's Snake Eagle	<i>Circaetus beaudouini</i>	S		R	VU	
148	7420	Brown Snake Eagle	<i>Circaetus cinereus</i>	U		R		
149	7422	Western Banded Snake Eagle	<i>Circaetus cinerascens</i>	U		R		
150	7428	Bateleur	<i>Terathopius ecaudatus</i>	F		R	EN	
151	7430	Bat Hawk	<i>Macheiramphus alcinus</i>	R		R		1 in dry season ≤1970 (Dupuy 1970, Thiollay and Dupuy 1970); 1 in Feb 1983 (Morel and Morel 1990); 1 flying into NKNP near the Campement de Wassadou in Feb 2019 (Observation.org 2023, S Cavaillès pers. comm.); 1 at the Campement de Wassadou in Dec 2021 (Observation.org 2023), not confirmed
152	7476	Martial Eagle	<i>Polemaetus bellicosus</i>	S		R	EN	
153	7478	Long-crested Eagle	<i>Lophaetus occipitalis</i>	S		R		
154	7488	Wahlberg's Eagle	<i>Hieraaetus wahlbergi</i>	U		I		
155	7489	Booted Eagle	<i>Hieraaetus pennatus</i>	S		P		1 in Jan 1984; 1 in Dec 1985; 1 in Feb 1992; 1 in Feb 2006; 1 in Feb 2008; 1 in Mar 2018; 1 in Apr 2019 [see text]
156	7492	Ayres's Hawk-Eagle	<i>Hieraaetus ayresii</i>	R	O	V		1 in Mar 2018 [see text]
157	7494	Tawny Eagle	<i>Aquila rapax</i>	S		R	VU	
158	7519	African Hawk-Eagle	<i>Aquila spilogaster</i>	U		R		
159	7526	Lizard Buzzard	<i>Kaupifalco monogrammicus</i>	U		R		
160	7530	Gabar Goshawk	<i>Micronisus gabar</i>	S		R		
161	7535	Dark Chanting Goshawk	<i>Melierax metabates</i>	U		R		
162	7571	Red-chested Goshawk	<i>Accipiter toussenelii</i>	S	↓	R		1 in Feb 1983 (Morel and Morel 1990); 1 in Apr 1990 (Beecroft et al. 1990); 1 at Simenti and 1 at the Gué de Damantan in Feb 1991 (Dubois 1991); 1 juvenile in Oct 2016 (eBird 2023, R Prum pers. comm.)
163	7584	Shikra	<i>Accipiter badius</i>	F		R/I		
164	7654	Red-thighed Sparrowhawk	<i>Accipiter erythropus</i>	R	Δ+	R	GC	1 in Aug 1973 (Morel and Morel 1990); 1 in Jan 1988 (Sauvage and Rodwell 1998, N Riddiford in litt.)
165	7687	Ovambo Sparrowhawk	<i>Accipiter ovampensis</i>	R	Δ	V		1 in wooded savannah in Jul 1969 (Thiollay and Dupuy 1970)

166	7737	Western Marsh Harrier	<i>Circus aeruginosus</i>	U		P	
167	7752	Pallid Harrier	<i>Circus macrourus</i>	R	Δ+	P	NT Uncommon from Nov to Apr ≤1970 (Dupuy 1970); 1 immature in Jul 1969 (Thiollay and Dupuy 1970); 1 adult ♂ over the Mare de Simenti in Feb 1984 (eBird 2023, K Overman pers. comm.); 1 adult ♂ between Diéounoualia and the Niokolo Koba guard post in Jan 1996 (eBird 2023) but not confirmed (P Haffner pers. comm.)
168	7754	Montagu's Harrier	<i>Circus pygargus</i>	S	↓	P	Large number wintered in NKNP ≤1970 (Dupuy 1970); X in Feb 1983 (M Kleinbaum in litt.); 1 probable adult ♂ in Jan 1984 (M Kleinbaum in litt. and D Wolf in litt.); 1 adult ♂ in Dec 1987 (Sauvage and Rodwell 1998, Devisse 1991); 1 adult ♀ at the Grand Mirador and Wouring in Jan 1991 and 1 (probably the same) in NKNP in Jan 1991 (Sauvage and Rodwell 1998, Sauvage and Collet 1991, Biologische Station Rieselfelder Münster in litt.); 2 at the Campement de Wassadou in Feb 2020 (eBird 2023)
169	7759	Black Kite	<i>Milvus migrans</i>	S		P	Possibly more common given the large number of observations where the distinction between Black and Yellow-billed Kites was not made
170	7765	Yellow-billed Kite	<i>Milvus aegyptius</i>	U		R	
171	7778	African Fish Eagle	<i>Haliaeetus vocifer</i>	F		R	
172	7793	Grasshopper Buzzard	<i>Butastur rufipennis</i>	U		I	
173	7958	Red-necked Buzzard	<i>Buteo auguralis</i>	S		I	1 in Jun 1969 and 1 in Jul 1969 (Dupuy 1970); 3 records of 1 bird at the Campement de Wassadou: 2 adults in June 2018 (possibly the same bird) and 1 bird in Nov 2019
TYTONIDAE							
174	7991	Western Barn Owl	<i>Tyto alba</i>	R		R	1 in May 1969 (Dupuy 1970); 1 dead near Bangaré in Feb 1992 (Delaporte et al. 1992); 1 at the Campement de Wassadou in Dec 2017 (eBird 2023, C Clemente pers. comm.)
STRIGIDAE							
175	8221	Pearl-spotted Owlet	<i>Glaucidium perlatum</i>	U		R	
176	8326	Eurasian Scops Owl	<i>Otus scops</i>	R	O	P	1 heard in Apr 2019 [see text]
177	8339	African Scops Owl	<i>Otus senegalensis</i>	S		R	
178	8414	Northern White-faced Owl	<i>Ptilopsis leucotis</i>	S		R	
179	8501	Greyish Eagle-Owl	<i>Bubo cinerascens</i>	R		R	1 near the Niokolo-Koba guard post in Jul 1967 (Morel and Dupuy 1969); 1 photographed in Jul 2017 north of Dialacoto ≤7 km from NKNP (eBird 2023, D Svinarenko pers. comm.); 1 photographed on nest at the Campement de Wassadou in Feb 2022 (eBird 2023, B Daniels pers. comm.)
180	8506	Verreaux's Eagle-Owl	<i>Bubo lacteus</i>	S		R	
181	8526	Pel's Fishing Owl	<i>Scotopelia peli</i>	S		R	
182	8704	African Wood Owl	<i>Strix woodfordii</i>	R		R	1 in flight in Nov 1990; 1 heard in Feb 1991; 1 heard at the Campement de Wassadou in Oct 2016 [see text]

COLIIDAE

183 8755 Blue-naped Mousebird *Urocolius macrourus* S V S

Observed several times by AR Dupuy ≤1990, notably near to Simenti and Bafoulabé (Morel and Morel 1990); X probable at the Campement de Lion in Feb 2002 (eBird 2023, V Rufraÿ pers. comm.); 2 unconfirmed at the Campement de Wassadou in Nov 2019 (eBird 2023, C de Dios Ruiz pers. comm.); X unconfirmed from highway N7 between Dar Salam and the Niokolo-Koba bridge in Dec 2020 (eBird 2023); 2 between Dar Salam and Simenti in Dec 2022 (eBird 2023, D Vasapolli pers. comm.)

UPUPIDAE

184 8923 Eurasian Hoopoe *Upupa epops* U P/R

PHOENICULIDAE

185 8943 Green Wood Hoopoe *Phoeniculus purpureus* F R

186 8957 Black Scimitarbill *Rhinopomastus aterrimus* U R

BUCORVIDAE

187 8971 Abyssinian Ground Hornbill *Bucorvus abyssinicus* F R VU

BUCEROTIDAE

188 8977 Western Red-billed Hornbill *Tockus kempî* C R

189 8995 African Grey Hornbill *Lophoceros nasutus* C R/I

CORACIIDAE

190 9087 Purple Roller *Coracias naevius* S R/I

191 9099 Abyssinian Roller *Coracias abyssinicus* C I

192 9103 Blue-bellied Roller *Coracias cyanogaster* F R SG

193 9108 Broad-billed Roller *Eurystomus glaucurus* F R/I

ALCEDINIDAE

194 9259 Grey-headed Kingfisher *Halcyon leucocephala* U R/I

195 9270 Striped Kingfisher *Halcyon chelicuti* S R

196 9273 Blue-breasted Kingfisher *Halcyon malimbica* F R

197 9278 Woodland Kingfisher *Halcyon senegalensis* U R/I

198 9402 African Pygmy Kingfisher *Ispidina picta* S R/I

199 9414 Malachite Kingfisher *Corythornis cristatus* U R

200	9428	Shining-blue Kingfisher	<i>Alcedo quadibrachys</i>	S		R	
201	9520	Giant Kingfisher	<i>Megaceryle maxima</i>	F		R	
202	9529	Pied Kingfisher	<i>Ceryle rudis</i>	F		R	
MEROPIDAE							
203	9621	Swallow-tailed Bee-eater	<i>Merops hirundineus</i>	R	Δ+	R/I	1 near the Niokolo-Koba guard post in Jul 1967 (Morel and Dupuy 1969); 1 in Jan 1985 (eBird 2023, M Kleinbaum in litt.), 1 at Simenti in Feb 1991 (eBird 2023, Dubois 1991); 1 near the Gué de Malapa in Apr 1992 (Delaporte et al. 2023); 1 reported at the Campement du Lion in Aug 2022 (Observation.org 2023) but unconfirmed
204	9626	Little Bee-eater	<i>Merops pusillus</i>	U		R	
205	9638	Red-throated Bee-eater	<i>Merops bulocki</i>	C		R	SG
206	9643	White-throated Bee-eater	<i>Merops albicollis</i>	R	O	I	15 in Oct 2016 [see text]
207	9645	African Green Bee-eater	<i>Merops viridissimus</i>	U		R/I	
208	9657	Blue-cheeked Bee-eater	<i>Merops persicus</i>	R	Δ	V	1 in Dec 1987 [see Appendix 1]
209	9671	European Bee-eater	<i>Merops apiaster</i>	R		P	1 record at Badi in Apr 1969 (Dupuy 1970); single between Dar Salam and Simenti in Feb 2016 and 12 flying north at the Campement de Wassadou in Apr 2019 (eBird 2023)
210	9673	Northern Carmine Bee-eater	<i>Merops nubicus</i>	U		I	
LYBIIDAE							
211	10128	Yellow-rumped Tinkerbird	<i>Pogoniulus bilineatus</i>	R		R	X in Mar 1992; ≥3 heard in Jun 2018; 1 in Apr 2019 [see Appendix 1]
212	10140	Yellow-fronted Tinkerbird	<i>Pogoniulus chrysoconus</i>	U		R	
213	10174	Vieillot's Barbet	<i>Lybius vieilloti</i>	S		R	
214	10203	Bearded Barbet	<i>Lybius dubius</i>	U		R	SG
INDICATORIDAE							
215	10236	Brown-backed Honeybird	<i>Prodotiscus regulus</i>	S	O+	R?	1 in Jul 2017 at the Campement du Lion (Rose et al. 2022) [first for Senegal]; 3 at the Campement de Wassadou in Feb–Mar 2018 and 1 at the Campement du Lion in Jun 2018 (Caucanas 2018, Demey 2018, Demey 2019)
216	10258	Lesser Honeyguide	<i>Indicator minor</i>	S		R	
217	10265	Spotted Honeyguide	<i>Indicator maculatus</i>	R		R	1 in Jan 1982; 1 in Jan 2002 [see Appendix 1]
218	10271	Greater Honeyguide	<i>Indicator indicator</i>	U		R/I	
PICIDAE							
219	10277	Eurasian Wryneck	<i>Jynx torquilla</i>	R	Δ+	P	1 heard in Jan 1968 (Dupuy 1970); 1 in Feb 1984 (eBird 2023, K Overman pers. comm.); 1 near Wouring in Mar 1991 (Carichiopulo

220	10473	Fine-spotted Woodpecker	<i>Campethera punctuligera</i>	U		R			and Delaporte 1991)
221	10579	Cardinal Woodpecker	<i>Dendropicos fuscescens</i>	U		R			
222	10597	African Grey Woodpecker	<i>Dendropicos goertae</i>	U		R			
223	10610	Brown-backed Woodpecker	<i>Dendropicos obsoletus</i>	S		R			
FALCONIDAE									
224	11225	Lesser Kestrel	<i>Falco naumanni</i>	R	Δ+	P			Common during migration season ≤1970 (Dupuy 1970), including ~30 in Jan 1969 mixed with <i>F. tinnunculus</i> (Thiollay and Dupuy 1970); several records in Jan 1982 (Morel and Morel 1990, Wauer 1982); 1 ♂ at the Mare de Kountadala in Feb 1992 (Delaporte et al. 2023)
225	11226	Common Kestrel	<i>Falco tinnunculus</i>	U		P/R			
226	11273	Fox Kestrel	<i>Falco alopex</i>	R	Δ+	V	SG		Present but uncommon ≤1970 (Dupuy 1970); X in Jan 1981 but without detail (Morel and Morel 1990); 1 between NKNP and Mako, 8 km east of NKNP, in Feb 1992 (Delaporte et al. 2023)
227	11274	Grey Kestrel	<i>Falco ardosiaceus</i>	U		R			
228	11277	Red-necked Falcon	<i>Falco chicquera</i>	U		R			
229	11303	Eurasian Hobby	<i>Falco subbuteo</i>	R	Δ+	P			2 in Feb 1992 [see text]
230	11307	African Hobby	<i>Falco cuvierii</i>	S		R/I			
231	11319	Lanner Falcon	<i>Falco biarmicus</i>	S		R			
232	11333	Peregrine Falcon	<i>Falco peregrinus</i>	S	↓	P			1 adult ♂ ssp. <i>minor</i> in Jul 1969 (Thiollay and Dupuy 1970); 1 ♀ ssp. <i>minor</i> in Mar 1980 (M Kleinbaum in litt.); 1 adult ♂ at the Mare de Simenti and the Mare de Kountadala in Nov 1990 (Delaporte et al 1990); 1 hunting doves over the Mare de Woëni in Apr 1991 (Carichiopulo and Delaporte 1991); 3 records of ssp. <i>pegrinoides</i> in NKNP 1984–94 involving 1–2 birds including single in Feb 1993 (Sauvage and Rodwell 1998, A Sauvage in litt.)
PSITTACIDAE									
233	11461	Senegal Parrot	<i>Poicephalus senegalus</i>	F		R	SG		
PSITTACULIDAE									
234	12044	Rose-ringed Parakeet	<i>Psittacula krameri</i>	F		R			
PLATYSTEIRIDAE									
235	17729	Senegal Batis	<i>Batis senegalensis</i>	U		R			
236	17762	Brown-throated Wattle-eye	<i>Platysteira cyanea</i>	U		R			
MALACONOTIDAE									

237	17781	Grey-headed Bushshrike	<i>Malaconotus blanchoti</i>	U			R		
238	17813	Orange-breasted Bushshrike	<i>Chlorophoneus sulfureopectus</i>	S			R		
239	17856	Black-crowned Tchagra	<i>Tchagra senegalus</i>	U			R		
240	17882	Northern Puffback	<i>Dryoscopus gambensis</i>	U			R		
241	17927	Yellow-crowned Gonolek	<i>Laniarius barbarus</i>	C			R		
242	17935	Brubru	<i>Nilaus afer</i>	S			R		
VANGIDAE									
243	18016	White-crested Helmetshrike	<i>Prionops plumatus</i>	U			R		
CAMPEPHAGIDAE									
244	18277	White-breasted Cuckooshrike	<i>Cebilepyris pectoralis</i>	R	Δ		V		1 in May 1989 [see text]
245	18379	Red-shouldered Cuckooshrike	<i>Campephaga phoenicea</i>	S			I		
LANIIDAE									
246	18825	Yellow-billed Shrike	<i>Corvinella corvina</i>	F			R	SG	
247	18899	Great Grey Shrike	<i>Lanius excubitor</i>	R	Δ		V		Several observations ≤1970 including 1 in Jan–Feb 1969 at the Mare du Fourou (no mention of subspecies but likely <i>L. e. elegans</i> which breeds in northern Senegal (Borrow and Demey 2011, Olsson et al. 2010))
248	18933	Woodchat Shrike	<i>Lanius senator</i>	S			P	NT	
ORIOOLIDAE									
249	19312	African Golden Oriole	<i>Oriolus auratus</i>	U			R		
250	19316	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	R	O		P	X	1 at the Campement de Wassadou in Apr 2019 [see text]
DICRURIDAE									
251	19460	Glossy-backed Drongo	<i>Dicrurus divaricatus</i>	F			R		
MONARCHIDAE									
252	19701	Red-bellied Paradise Flycatcher	<i>Terpsiphone rufiventer</i>	R	Δ+		R		X in Jul 1969 (Dupuy 1970); 1 ♂ in Jan 1988 and X in Jan 1989 (Sauvage and Rodwell 1998; J Chevallier, F Deroussen and S Nicolle in litt.; I Bindia in litt.); 1 between Simenti and the Gué de Bafoulabé in Mar 1991 (Carichiopulo and Delaporte 1991); 1 ♂ near Mansafara and 1 near Badoye in Feb 1992 (Delaporte et al. 2023) Upgraded from calculated “U” because seen 7/7 days inside and just outside NKNP in Feb 2018 (OJLF pers. obs.)
253	19716	African Paradise Flycatcher	<i>Terpsiphone viridis</i>	F			R		
CORVIDAE									
254	20296	Piapiac	<i>Ptilostomus afer</i>	F			R	SG	

255	20386	Pied Crow	<i>Corvus albus</i>	U		R	
STENOSTIRIDAE							
256	20795	African Blue Flycatcher	<i>Elminia longicauda</i>	U		R	
PARIDAE							
257	21081	White-shouldered Black Tit	<i>Melaniparus guineensis</i>	S		R	
REMIZIDAE							
258	21136	Yellow Penduline Tit	<i>Anthoscopus parvulus</i>	S	↑	R	SG X in Jan 1982 (Morel and Morel 1990, Wauer 1982); 2 in Jan 2009 and 2 at the Hôtel de Simenti in Jan 2016 (eBird 2023); 1 photographed ~7 km north of NKNP in Aug 2017 (eBird 2023, D Svinarenko pers. comm.); 1 in Nov 2017 (Heegaard et al. 2017); 2 records of 1 bird in Dec 2018 and 2 of 2-3 birds in Jan 2023 all at the Campement de Wassadou (eBird 2023), unconfirmed
ALAUDIDAE							
259	21230	Rufous-rumped Lark	<i>Pinarocorys erythropygia</i>	R	Δ+	V	1 in Feb 1985; 1 in Feb 1992 [see text]
260	21271	Chestnut-backed Sparrow-Lark	<i>Eremopterix leucotis</i>	S		R/I	X at the Mare de Sitandi in Feb 1991 (eBird 2023, O. Benoist pers. comm.); 10 near Mount Assirik in Feb 1992 (Delaporte et al. 2023); 2-3 near Simenti in Nov 1998 (Baha El Din and Baha El Din 1998, S Baha El Din pers. comm.); 2 at the Mare de Simenti in Jan 2015 (Rose et al. 2022); 2 in arid farmland 5-10 km outside NKNP from the Campement de Wassadou in Nov 2018 (eBird 2023, T. Theofanopoulos pers. comm.)
261	21484	Sun Lark	<i>Galerida modesta</i>	S		R	SG
PYCNONOTIDAE							
262	21683	Yellow-throated Leaflove	<i>Atimastillas flavicollis</i>	S		R	
263	22108	Common Bulbul	<i>Pycnonotus barbatus</i>	C		R	
HIRUNDINIDAE							
264	22143	Fanti Saw-wing	<i>Psalidoprocne obscura</i>	S		R/I	
265	22163	Sand Martin	<i>Riparia riparia</i>	S		P	
266	22254	Grey-rumped Swallow	<i>Pseudhirundo griseopyga</i>	R	O	I	1 in Feb 2016 [see text]
267	22300	Wire-tailed Swallow	<i>Hirundo smithii</i>	S		R	
268	22304	Barn Swallow	<i>Hirundo rustica</i>	U		P	
269	22314	Red-chested Swallow	<i>Hirundo lucida</i>	U		R	
270	22322	Common House Martin	<i>Delichon urbicum</i>	U		P	

271	22334	Red-breasted Swallow	<i>Cecropis semirufa</i>	S					I	
272	22337	Mosque Swallow	<i>Cecropis senegalensis</i>	S					R/I	
273	22341	Lesser Striped Swallow	<i>Cecropis abyssinica</i>	R	Δ				I	Nesting colony under the Niokolo-Koba bridge in Jul 1967 (Morel and Dupuy 1969)
274	22349	Red-rumped Swallow	<i>Cecropis daurica</i>	R	O				P	Morel and Morel (1990) document several observations in north Senegal but none south of 14°; recent unconfirmed data show strong bunching of observations in north Senegal with a lesser number further south near the coast but very few inland and none in NKNP (eBird 2023). 3 in Mar 2020 on islands in the Gambia River near the Campement de Wassadou (eBird 2023, P French pers. comm.); some or all of the 21 unspecified observations of <i>C. daurica/domicella</i> in NKNP between 1985 and 2020 were almost certainly of <i>C. domicella</i> [see text]
275	22358	West African Swallow	<i>Cecropis domicella</i>	S	Δ+				R	1 near the Niokolo-Koba guard post in Jul 1967 and occupied nests under the Niokolo-Koba bridge in Feb 1992; some or all of the 21 unspecified observations of <i>C. daurica/domicella</i> in NKNP between 1985 and 2020 were almost certainly of <i>C. domicella</i> [see text and comment for <i>C. daurica</i>]
MACROSPHENIDAE										
276	22413	Moustached Grass Warbler	<i>Melocichla mentalis</i>	S					R	
277	22441	Northern Crombec	<i>Sylvietta brachyura</i>	U					R	
PHYLLOSCOPIDAE										
278	22706	Western Bonelli's Warbler	<i>Phylloscopus bonelli</i>	R	O				P	2 in Feb 2006; 1 at the Campement de Wassadou in Feb 2020; others in 2005, 2012 and 2013 not confirmed [see text]
279	22746	Willow Warbler	<i>Phylloscopus trochilus</i>	U					P	
280	22756	Common Chiffchaff	<i>Phylloscopus collybita</i>	U					P	
281	22763	Iberian Chiffchaff	<i>Phylloscopus ibericus</i>	R	O				P	1 seen and heard at the Campement de Wassadou in Dec 2017; 2–3 heard in Feb 2018; 1 seen and heard at the Campement de Wassadou in Jan 2019 [see text]
ACROCEPHALIDAE										
282	23017	Aquatic Warbler	<i>Acrocephalus paludicola</i>	R	O	V	VU	X		1 just outside NKNP in Feb 2014 [see text]
283	23018	Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	S	O+				P	1 in Feb 1993 [see Appendix 1]; ≥9 during 2010–2020 (eBird 2023)
284	23030	Common Reed Warbler	<i>Acrocephalus scirpaceus</i>	S					P	
285	23061	Western Olivaceous Warbler	<i>Iduna opaca</i>	U					P	
286	23069	Melodious Warbler	<i>Hippolais polyglotta</i>	U					P	
LOCUSTELLIDAE										
287	23099	Savi's Warbler	<i>Locustella luscinioides</i>	R	Δ+				P	1 at Badi in Apr 1969 (Dupuy 1970, Jarry and Larigauderie 1974); X at an unspecified location in NKNP (Morel and Morel 1990)

CISTICOLIDAE

288	23295	Red-faced Cisticola	<i>Cisticola erythrops</i>	R		R		1 collected at Badi in Jun 1967 (Morel and Dupuy 1969); several records ≤1990 (Morel and Morel 1990); 1 seen and heard near Mako ~8 km east of NKNP in Jan 2019 (eBird 2023, D Hoddinott pers. comm.)	
289	23302	Singing Cisticola	<i>Cisticola cantans</i>	S		R			
290	23310	Whistling Cisticola	<i>Cisticola lateralis</i>	S	Δ+	R		1 collected near the Niokolo-Koba guard post in Jul 1967 (Morel and Dupuy 1969); common in NKNP in Jun 1969 (Morel and Dupuy 1969); X in Nov 2013 (eBird 2023) but unconfirmed	
291	23390	Winding Cisticola	<i>Cisticola marginatus</i>	R	Δ+	R		1 observation by JM Thiollay in July 1969 (Dupuy 1970); single in Feb 1983 (M Kleinbaum in litt.)	
292	23421	Croaking Cisticola	<i>Cisticola natalensis</i>	R	Δ	R		1 collected at Badi in Feb 1956 (Dekeyser 1956)	
293	23434	Dorst's Cisticola	<i>Cisticola guinea</i>	R	O	R		1 in Jan 2019 [see text]	
294	23436	Short-winged Cisticola	<i>Cisticola brachypterus</i>	R		R		1 in Simenti area in Jan 1982 (Morel and Morel 1990, Wauer 1982); 1 along the N7 highway between Diéoundiala and the Niokolo-Koba guard post in Mar 2018 (Observation.org 2023, M Demeulemeester pers. comm.); 1 in an open grassy area between Dar Salam and Simenti in Dec 2022 (eBird 2023, D Vasapolli pers. comm.)	
295	23446	Rufous Cisticola	<i>Cisticola rufus</i>	R		R	SG	1 collected at Badi in Feb 1956 (Dekeyser 1956); 1 photographed ~7 km north of NKNP in Jul 2017, 1 video-recorded in same area in Aug 2017 (eBird 2023, D Svinarenko pers. comm.)	
296	23462	Zitting Cisticola	<i>Cisticola juncidis</i>	R		R		1 observation in spring 1969 (Dupuy 1970); 1 photographed at the Mare de Kountadala in Feb 2017 and 1 at the Mare de Woëni in Feb 2022 (Figure 13; eBird 2023, C Montégu in litt.)	
297	23611	Tawny-flanked Prinia	<i>Prinia subflava</i>	U		R			
298	23654	Red-winged Prinia	<i>Prinia erythroptera</i>	S		R			
299	23723	Yellow-breasted Apalis	<i>Apalis flavida</i>	S	O+	R		1 at Mako just outside NKNP in Dec 2004; 4 at the Campement de Wassadou in 2018 and 2019 [see text]	
300	23790	Oriole Warbler	<i>Hypergerus atriceps</i>	U		R			
301	23800	Grey-backed Camaroptera	<i>Camaroptera brevicaudata</i>	U		R			
302	23921	Senegal Eremomela	<i>Eremomela pusilla</i>	U		R	SG		
SYLVIDAE									
303	23949	Eurasian Blackcap	<i>Sylvia atricapilla</i>	R	O+	P		2 records in Feb 1994 and 1 in Apr 2017 [see text]	
304	23955	Garden Warbler	<i>Sylvia borin</i>	S	↑	P		1 in Mar 1991; several in Oct 2009 and Oct 2016 at the Campement de Wassadou; 1 in Nov 2017 [see text]	
305	24007	Western Orphean Warbler	<i>Curruca hortensis</i>	R	Δ	P		1 in Feb 1989 [see Appendix 1]	
306	24025	Sardinian Warbler	<i>Curruca melanocephala</i>	R	O	V	X	1 at the Campement de Wassadou in Jan 2023 [see text]	
307	24031	Western Subalpine Warbler	<i>Curruca iberiae</i>	S	↑	P		1 in Jan 1991 [see Appendix 1]; 9 records of ≥12 individuals during 1985–2018 (eBird 2023)	

308	24032	Moltoni's Warbler	<i>Curruca subalpina</i>	R	O	V		X	1 outside NKNP at the Campement de Wassadou in Nov 2019 [see text]
309	24036	Common Whitethroat	<i>Curruca communis</i>	R		P			1 collected at Badi in Feb 1956; X in 1969 (Dupuy 1970); 1 in NKNP in Jan 2020 (eBird 2023); X in Mar 2005 and 1 in Jan 2023 at the Campement de Wassadou (eBird 2023) but both unconfirmed
ZOSTEROPIDAE									
310	24380	Northern Yellow White-eye	<i>Zosterops senegalensis</i>	U		R			
LEIOTHRICHIDAE									
311	25300	Capuchin Babbler	<i>Turdoides atripennis</i>	R	Δ	V	CG	VU	4-5 in May 1989 [see text]
312	25310	Brown Babbler	<i>Turdoides plebejus</i>	F		R			
313	25336	Blackcap Babbler	<i>Turdoides reinwardtii</i>	U		R	SG		
HYLIOTIDAE									
314	25558	Yellow-bellied Hyliota	<i>Hyliota flavigaster</i>	S		R			
CERTHIIDAE									
315	26295	African Spotted Creeper	<i>Salpornis salvadori</i>	R		V			1 in Apr 1969 (Dupuy 1970, Morel and Morel 1990); 1 ~8 km east of NKNP in Feb 2016 (Demey 2016b) [the only known records for Senegal]
STURNIDAE									
316	26631	Greater Blue-eared Starling	<i>Lamprotornis chalybaeus</i>	U		R			
317	26636	Lesser Blue-eared Starling	<i>Lamprotornis chloropterus</i>	S		R/I			
318	26638	Bronze-tailed Starling	<i>Lamprotornis chalcurus</i>	U		R			
319	26648	Purple Starling	<i>Lamprotornis purpureus</i>	F		R	SG		
320	26654	Long-tailed Glossy Starling	<i>Lamprotornis caudatus</i>	C		R			
321	26667	Chestnut-bellied Starling	<i>Lamprotornis pulcher</i>	S		V	S		X in NKNP in Feb 1982; frequently seen in small groups in November 1990; probable X in the Simenti region in Feb 2002 [see text]
322	26677	Violet-backed Starling	<i>Cinnyricinclus leucogaster</i>	S		I			2 ♂ collected at Badi in Apr 1957 (Dekeyser 1961); fairly common in Jun-Jul ≤1990 (Morel and Morel 1990); 1 at Beli Wamedaka ~5 km northeast of NKNP in May 1988 (Sauvage and Rodwell 1998, Devisse 1991, R Devisse pers. comm.); 2 birds (♂ and ♀) photographed ≤7 km north of NKNP on separate days in Jul 2017, 1 ♂ seen in the same area in Jun 2018, 4 birds in the west of NKNP and 1 near the southern boundary in Jun 2018 (eBird 2023)
BUPHAGIDAE									
323	26734	Yellow-billed Oxpecker	<i>Buphagus africanus</i>	U		R			
TURDIDAE									

324	27026	African Thrush	<i>Turdus pelios</i>	U		R/I	
MUSCICAPIDAE							
325	27339	Black Scrub Robin	<i>Cercotrichas podobe</i>	R		V	S
326	27342	Rufous-tailed Scrub Robin	<i>Cercotrichas galactotes</i>	R	Δ+	R/P	S
327	27421	Grey Tit-Flycatcher	<i>Myioparus plumbeus</i>	S		R	
328	27439	Northern Black Flycatcher	<i>Melaenornis edoloides</i>	U		R	
329	27446	Pale Flycatcher	<i>Melaenornis pallidus</i>	S		R	
330	27481	Spotted Flycatcher	<i>Muscicapa striata</i>	R	O	P	≥2 along the Gambia River in Jan 2015 (Rose et al. 2022)
331	27516	Swamp Flycatcher	<i>Muscicapa aquatica</i>	U		R	
332	27767	Snowy-crowned Robin-Chat	<i>Cossypha niveicapilla</i>	S		R/I	
333	27770	White-crowned Robin-Chat	<i>Cossypha albicapillus</i>	U		R	SG
334	27894	Bluethroat	<i>Luscinia svecica</i>	R	Δ+	P	X at the Mare de Kandi Kandi in Jul 1968 (Morel and Dupuy 1969); several observations on flooded plains ≤ 1970 (Dupuy 1970)
335	27910	Common Nightingale	<i>Luscinia megarhynchos</i>	S	↑	P	1 in Mar 1991; 3 heard 1.5 km from NKNP in Oct 2016; 1 heard in Feb 2018 [see text]
336	28048	European Pied Flycatcher	<i>Ficedula hypoleuca</i>	U		P	
337	28094	Common Redstart	<i>Phoenicurus phoenicurus</i>	S		P	
338	28124	Common Rock Thrush	<i>Monticola saxatilis</i>	R	Δ+	P	1 in Jan 1988 and 1 in Mar 1988 [see Appendix 1]
339	28143	Whinchat	<i>Saxicola rubetra</i>	R		P	1 in Feb 1992; 1 in Oct 2016 [see text]
340	28228	Mocking Cliff Chat	<i>Thamnolaea cinnamomeiventris</i>	R	Δ	R	1 on Mount Assirik ≤1990 (Morel and Morel 1990 citing AR Dupuy)
341	28241	Anteater Chat	<i>Myrmecocichla aethiops</i>	R		V	S
342	28258	Northern Wheatear	<i>Oenanthe oenanthe</i>	S		P	
343	28281	White-fronted Black Chat	<i>Oenanthe albifrons</i>	R	Δ+	R	SG
344	28296	Familiar Chat	<i>Oenanthe familiaris</i>	S	↑	R	1 near the Niokolo-Koba guard post in Jul 1967 (Morel and Dupuy 1969); 1 in Jan 1988 (Sauvage and Rodwell 1998); 1 pair on Mount Assirik in Feb 1989 (Sauvage and Rodwell 1998, Devisse 1991) 4 in Feb 1989 [see Appendix 1]; ≥2 photographed at Mount Assirik in Jan 2018 (Observation.org 2023, G Monchaux in litt.); 1 at Mount Assirik in Jun 2018 (eBird 2023, Rose and Dagonne 2018); 1 near

Simenti in Nov 2019 (Observation.org 2023)

NECTARINIIDAE

345	28635	Western Violet-backed Sunbird	<i>Anthreptes longuemarei</i>	S			R		
346	28660	Pygmy Sunbird	<i>Hedydipna platura</i>	U			R		
347	28672	Green-headed Sunbird	<i>Cyanomitra verticalis</i>	S			R	1 in Jul 1969 (Dupuy 1970); 1 near the Niokolo-Koba guard post in Jan 1982 (Wauer 1982) and at least one other in NKNP ≤1990 (Morel and Morel 1990); 1 photographed at the Mare de Dialabato 0.2 km north of NKNP in Jul 2017 and 2 seen at the Campement de Wassadou in Dec 2020 (eBird 2023)	
348	28724	Scarlet-chested Sunbird	<i>Chalcomitra senegalensis</i>	U			R		
349	28834	Beautiful Sunbird	<i>Cinnyris pulchellus</i>	F			R		
350	28879	Variable Sunbird	<i>Cinnyris venustus</i>	S			R/I		
351	28890	Copper Sunbird	<i>Cinnyris cupreus</i>	S			R	1 record in the Simenti area in Jan 1982 (Wauer 1982) and at least one other in NKNP ≤1990 (Morel and Morel 1990); 1 pair in Oct 2016 between Dar Salam and Simenti (eBird 2023, R. Prum pers. comm.); 2 in Oct 2016 at the Campement de Wassadou (eBird 2023); records of 1 bird in Dec 2012 and of 2 at the Campement de Wassadou in Jan 2023 (eBird 2023) could not be confirmed	
PASSERIDAE									
352	29120	Sahel Bush Sparrow	<i>Gymnoris dentata</i>	S			R	SG	
353	29137	Northern Grey-headed Sparrow	<i>Passer griseus</i>	F			R		
354	29197	Sudan Golden Sparrow	<i>Passer luteus</i>	R	Δ+		V	S	
PLOCEIDAE									
355	29204	White-billed Buffalo Weaver	<i>Bubalornis albirostris</i>	S		↓	R		
356	29218	Chestnut-crowned Sparrow-Weaver	<i>Plocepasser superciliosus</i>	S			R	SG	
357	29268	Little Weaver	<i>Ploceus luteolus</i>	U			R		
358	29275	Black-necked Weaver	<i>Ploceus nigricollis</i>	S			R		

359	29293	Heuglin's Masked Weaver	<i>Ploceus heuglini</i>	S		R		1 in Jan 1984 (D Wolf in litt.); 1 between Dar Salam and Simenti in Oct 2016 (eBird 2023, R. Prum pers. comm.); pair at the Gué de Damantan in Jun 2018 (Rose and Dagorne 2018, Rose et al. 2022); pair outside NKNP at the Campement de Wassadou in Nov 2019 (eBird 2023, C. de Dios Ruiz pers. comm.)	
360	29318	Vitelline Masked Weaver	<i>Ploceus vitellinus</i>	S		R			
361	29323	Village Weaver	<i>Ploceus cucullatus</i>	U		R			
362	29339	Black-headed Weaver	<i>Ploceus melanocephalus</i>	U		R			
363	29422	Red-headed Weaver	<i>Anaplectes rubriceps</i>	R	Δ	R		X in the Niokolo-Koba guard post area in Jan 1982 (Morel and Morel 1990, Wauer 1982); 1 in Feb 2009 (eBird 2023) but not confirmed	
364	29430	Red-headed Quelea	<i>Quelea erythrops</i>	S		R/I			
365	29431	Red-billed Quelea	<i>Quelea quelea</i>	U	↑	R/I		X in Apr 1990 [see Appendix 1]; ≥1 in Feb 1991 and 100 in Feb 2006 (eBird 2023); ≥200 at the Mare de Simenti in Feb 2008 (Bâlon and Burban 2008); 59 records of >1 800 individuals between 2015 and 2020 (Heegaard et al. 2017, eBird 2023)	
366	29450	Yellow-crowned Bishop	<i>Euplectes afer</i>	S	↑	R		Seen at an unspecified location in NKNP in mid-Jan 1988; 12 records between 2001 and 2018 [see Appendix 1]	
367	29461	Black-winged Red Bishop	<i>Euplectes hordeaceus</i>	S		R			
368	29465	Northern Red Bishop	<i>Euplectes franciscanus</i>	U		R			
369	29482	Yellow-mantled Widowbird	<i>Euplectes macroura</i>	R	Δ	V		Several ♂ acquiring breeding plumage near the Niokolo-Koba guard post, undated (Morel and Dupuy 1969); X in Jul 1967 (Dupuy 1970) [likely a single observation]	
ESTRILDIDAE									
370	29551	Bronze Mannikin	<i>Spermestes cucullata</i>	S		R			
371	29554	Magpie Mannikin	<i>Spermestes fringilloides</i>	R	Δ+	R		2 collected at Badi in Aug 1955 and Feb 1956 (Dekeyser 1956); X in the Niokolo-Koba guard post area in Jan 1982 (Morel and Morel 1990 who incorrectly specify Dec 1982, Wauer 1982); 8 at Nétéboulou 35 km west of NKNP (Sauvage and Rodwell 1998, Devisse 1991); 1 in Aug 2007 (eBird 2023) but not confirmed	
372	29564	African Silverbill	<i>Euodice cantans</i>	S		V	S	X in Jan 1978; X in Apr 1990; X in March 1991; 3 in Dec 2017 and 6 in Mar 2023 at the Campement de Wassadou [see Appendix 1]	
373	29762	Lavender Waxbill	<i>Glaucostrelda caeruleascens</i>	U		R	SG		
374	29779	Orange-cheeked Waxbill	<i>Estrilda melpoda</i>	U		R			
375	29805	Black-rumped Waxbill	<i>Estrilda troglodytes</i>	U		R			
376	29828	Cut-throat Finch	<i>Amadina fasciata</i>	S		R			
377	29836	Orange-breasted Waxbill	<i>Amandava subflava</i>	R	Δ+	R		X in Jan 1990; several dozen in Apr 1991 [see Appendix 1]	
378	29851	Red-cheeked Cordon-bleu	<i>Uraeginthus bengalus</i>	U		R			

379	29868	Crimson Seedeater	<i>Pyrenestes sanguineus</i>	R	Δ+	R		X in Jan 1982; 3 in Feb 1992 [see Appendix 1]
380	29881	Red-winged Pytilia	<i>Pytilia phoenicoptera</i>	S		R		
381	29899	Red-billed Firefinch	<i>Lagonosticta senegala</i>	F		R		
382	29916	Mali Firefinch	<i>Lagonosticta virata</i>	R	O	R	SG	3 between Oubadji and Wouroli in Jun 2018 (Demey 2019, Rose et al. 2022); 2 at the Niokolo-Koba bridge in Apr 2023 (JF Blanc pers. comm.) [see text] 1 captured in Jul 1969 (Dupuy 1970)
383	29919	Black-bellied Firefinch	<i>Lagonosticta rara</i>	R	Δ	R		
384	29922	Bar-breasted Firefinch	<i>Lagonosticta rufopicta</i>	S		R		
385	29926	Black-faced Firefinch	<i>Lagonosticta larvata</i>	S		R		
VIDUIDAE								
386	29933	Village Indigobird	<i>Vidua chalybeata</i>	U		R		
387	29947	Wilson's Indigobird	<i>Vidua wilsoni</i>	R		R		1 ♂ collected near the south-west border of NKNP in Aug 1986 (Morel and Morel 1990); 1 probable photographed at the Campement de Wassadou in Dec 2017 and 1 seen there in Dec 2020 (eBird 2023); other observations of singles at the Campement de Wassadou in Dec 2012 and Mar 2016 (eBird 2023) and at the Campement du Lion in Feb 2019 (Observation.org 2023) could not be confirmed
388	29951	Pin-tailed Whydah	<i>Vidua macroura</i>	S		R		
389	29959	Exclamatory Paradise Whydah	<i>Vidua interjecta</i>	S		R		
MOTACILLIDAE								
390	30024	Western Yellow Wagtail	<i>Motacilla flava</i>	U		P		
391	30057	White Wagtail	<i>Motacilla alba</i>	S		P		
392	30067	African Pied Wagtail	<i>Motacilla aguimp</i>	U		R		
393	30131	Tawny Pipit	<i>Anthus campestris</i>	R	Δ+	P		Several records ≤1970 (Dupuy 1970); Morel and Morel (1990) show presence without description
394	30165	Plain-backed Pipit	<i>Anthus leucophrys</i>	R	Δ+	R		1 collected at Badi in Aug 1955 (Dekeyser 1956); Morel and Morel (1990) show presence without description; 3 at the Campement du Lion in Mar 1982 (eBird 2023) but not confirmed; 2 at Simenti in Feb 1992 (Delaporte et al. 2023); 4 in NKNP in Jan 1988 (Sauvage and Rodwell 1998, J Chevallier, F Deroussen and S Nicolle in litt.)
395	30179	Tree Pipit	<i>Anthus trivialis</i>	S	↓	P		Present in Jan–Feb in NKNP ≤1970 (Dupuy 1970); 2 observations in Jan 1982 (Wauer 1982); single at the Mare de Kandi Kandi in Feb 1995 (Tréca 1995), X in NKNP and X in Mako in Mar 2017 (eBird 2023) but unconfirmed
396	30189	Red-throated Pipit	<i>Anthus cervinus</i>	R	Δ	P		X in the Simenti area in Jan 1982 (Morel and Morel 1990, Wauer 1982)
FRINGILLIDAE								

397	30598	White-rumped Seedeater	<i>Crithagra leucopygia</i>	R	Δ+	V	S	>1 in Jan 1978; ≥3 in Apr 1988; X probable in Feb 1991 [see text]
398	30615	Yellow-fronted Canary	<i>Crithagra mozambica</i>	U		R		
EMBERIZIDAE								
399	31015	Gosling's Bunting	<i>Emberiza goslingi</i>	S		R		Present in rocky areas in NKNP ≤1970 (Dupuy 1970); 2 photographed at Dar Salam just outside NKNP in May 2017, 1 seen in NKNP in Jun 2017, 2 at Mako 8 km east of NKNP in Mar 2018 and 1 at the Campement de Wassadou in Jan 2020 (eBird 2023)
400	31049	Brown-rumped Bunting	<i>Emberiza affinis</i>	S		R		