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Occurrence of Tortoises and Freshwater Turtles (Pelomedusidae, Testudinidae, and Trionychidae) in the National Parks of Gabon—2006 Status of Knowledge

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Introduction

The terrestrial and freshwater chelonian fauna of Gabon, western central Africa, is currently known to include 9 species: *Pelusios carinatus* Laurent, 1956; *P. castaneus* Schweigger, 1812; *P. chapini* Laurent, 1965; *P. gabonensis* Duméril, 1856; *P. marani* Bour, 2000; *P. niger* Duméril and Bibron, 1835 (Pelomedusidae); *Cycloderma aubryi* Duméril, 1856 (Trionychidae Cyclanorbinae); *Trionyx triunguis* Fosskål, 1775 (Trionychidae Trionychinae); and *Kinixys erosa* Schweigger, 1812 (Testudinidae). Three additional species (*Kinixys homeana* Bell, 1827; *Pelomedusa subrufa* Lacepède, 1788; and *Cyclanorbis senegalensis* Duméril and Bibron, 1835) were mentioned without localities from Gabon in the literature, but their presence was actually never documented. Maran and Pauwels (2005), in their synthetic work on the biology and distribution on the nonmarine chelonians of Gabon, hence decided to at least provisionally delete these 2 species from the country's reptile list. In order to protect Gabon's biodiversity and to promote ecotourism, the President of Gabon, Omar Bongo Ondimba, declared in 2002 the establishment of a net of 13 national parks, covering about 11% of the country's territory. The biological inventories of the parks are still at their early beginning, and the herpetofauna of these parks is still poorly known, with provisional reptile lists being available for only 4 (Pauwels et al. 2006b). Gramentz (1999a), Maran (2002, 2006a, 2006b), Maran and Pauwels (2005), and Pauwels et al. (2006b) showed that all chelonians in Gabon, and especially sea turtles and trionychids, suffer human predation pressure. No Gabonese law regulates nonmarine chelonians hunting. Ensuring that viable populations of each species live in protected areas is thus an urgent conservation priority. We hereafter present the current (December 2006) status of knowledge on the representation of terrestrial and freshwater chelonian species in the national parks of Gabon and provide recommendations for needed conservation actions.

Species Representation in National Parks

A synthetic overview of the currently known representation of nonmarine chelonians per national park (NP) is presented in Table 1, and the geographical position of all parks and their currently recorded chelonian fauna is presented in Fig. 1. We hereafter detail the distribution per park for each species, and, based on ecological requirements of Gabonese chelonian species and their distribution within Gabon (see Maran and Pauwels 2005 and the exhaustive literature cited in their paper), we indicate in which additional park the species can most probably be expected to occur. Descriptions of the national parks were provided by Anonymous (no date).

Pelomedusidae

Pelusios carinatus

Not a single record of this species in a Gabonese NP is known (Pauwels et al. 2006b). It was recorded in Gabon from only a handful of localities situated just north and west of Bateke Plateaux NP (Maran and Pauwels 2005; see distribution maps in Maran 2002) where the species can be expected to occur, especially since these plateaus offer the savannah rivers and gallery forests that this species preferentially inhabits. Figures 2 and 3 show specimens from a locality situated ca. 25 airline km west of Bateke Plateaux NP.

Pelusios castaneus

In view of the circa 20 localities from where the species is known in Gabon, this species seems limited to the coastal plains, although it penetrates inland up to Lambaréné along the Ogooué River (Maran 2002; Maran and Pauwels 2005). Only 2 Gabonese parks are so far known to house this species, Loango and Moukalaba-Doudou NPs (Pauwels et al. 2006a, 2006b). The coastal Akanda, Mayumba, and Pongara NPs offer biotopes similar to those where the species was already found in the country, and the species should be searched there. Figure 4 illustrates an individual from a lagoon which borders Mayumba NP.

Pelusios chapini

This species is known from about 30 localities in the savannahs of southwestern and southeastern Gabon (Maran 2002; Maran and Pauwels 2005), but not a single known locality lies within a NP. Some are however very close, geographically and in terms of biotopes, to Bateke Plateaux and Moukalaba-Doudou NPs where specific searches would probably be rewarding. The individual in Fig. 5 was found at less than 25 airline km north of Moukalaba-Doudou NP.

Pelusios gabonensis

With about 30 localities in 7 of the 9 Gabonese provinces, this is the most widely distributed of the *Pelusios* in Gabon (Maran and Pauwels 2005). Surprisingly, no Gabonese NP is currently known to house the species (Pauwels

Table 1. Currently known representation of tortoises and freshwater turtles in the national parks of Gabon (indicated by X). Question marks indicate highly probable occurrences that should be verified through surveys in the field.[a]

National park / species	*Pelusios carinatus*	*Pelusios castaneus*	*Pelusios chapini*	*Pelusios gabonensis*	*Pelusios marani*	*Pelusios niger*	*Cycloderma aubryi*	*Trionyx triunguis*	*Kinixys erosa*
Akanda		?		?		?	?	?	?
Bateke Plateaux	?		?	?					?
Crystal Mountains				?					X
Ivindo				?				?	?
Loango		X		?		X	X	X	X
Lopé								?	X
Mayumba		?		?		?	?	?	?
Minkebe				?					X
Mount Birougou									?
Moukalaba-Doudou		X	?	?	X	?	?	X	X
Mwagna				?				?	?
Pongara		?				?	?	?	?
Waka									?

[a] See species accounts. Predictions of occurrences are mainly based on ecological requirements and geographical data presented by Gramentz (1999b, 1999c, 2000, 2001a, 2001b, 2005) and Maran and Pauwels (2005).

et al. 2006b). Its occurrence in swamp forest and rivers in Rabi oilfields between Loango and Moukalaba-Doudou NPs (Pauwels et al. 2006a) makes its presence in these parks very possible. Its global distribution in Gabon (see maps in Maran 2002) and ecological requirements (see Maran and Pauwels 2005) allow expecting it also in Akanda, Bateke Plateaux, Crystal Mountains (see Pauwels et al. 2002b), Ivindo, Mayumba, Minkebe, and Mwagna NPs. Figure 6 shows a *P. gabonensis* from about 90 airline km west–northwest of Bateke Plateaux NP.

Pelusios marani

Discovered and described only in 2000, this near-endemic species was since found in a dozen localities in Gabon and one locality near Brazzaville in Congo (Maran 2002; Pauwels et al. 2002c; Maran and Pauwels 2005). A single specimen was found in a Gabonese national park, Moukalaba-Doudou (Pauwels et al. 2006a). Its current distribution in Gabon (see maps in Maran 2002) does not obviously allow a prediction of occurrence in another park, so an assessment of the population within Moukalaba-Doudou NP seems necessary first. The *P. marani* on Fig. 7 was photographed about 40 km west of Waka NP.

Pelusios niger

The distribution in Gabon of this species is very similar to that of *P. castaneus*. It also inhabits coastal plains, with a penetration inland up to Lambaréné along the Ogooué River (Maran 2002; Maran and Pauwels 2005). Among the parks, it was so far recorded only from Loango NP, but might also be expected to occur in Akanda, Mayumba, Moukalaba-Doudou, and Pongara NPs, all also situated in the coastal plains. The individual shown in Fig. 8 was found at more than 100 km from any NP but about 20 airline km west of the Ogooué Delta, which was proposed as a UNESCO Biosphere Reserve, and where the species is well represented.

Trionychidae

Cycloderma aubryi

In Gabon this species seems limited to lagoons, mangroves, rivers, and lakes in the lowlands of the western part of the country, where it is currently known from 2 dozen localities, including some in Loango NP (Maran 2002; Pauwels et al. 2004; Maran and Pauwels 2005). Its distribution and ecological requirements make its occurrence in Akanda, Mayumba, Moukalaba-Doudou, and Pongara NPs very

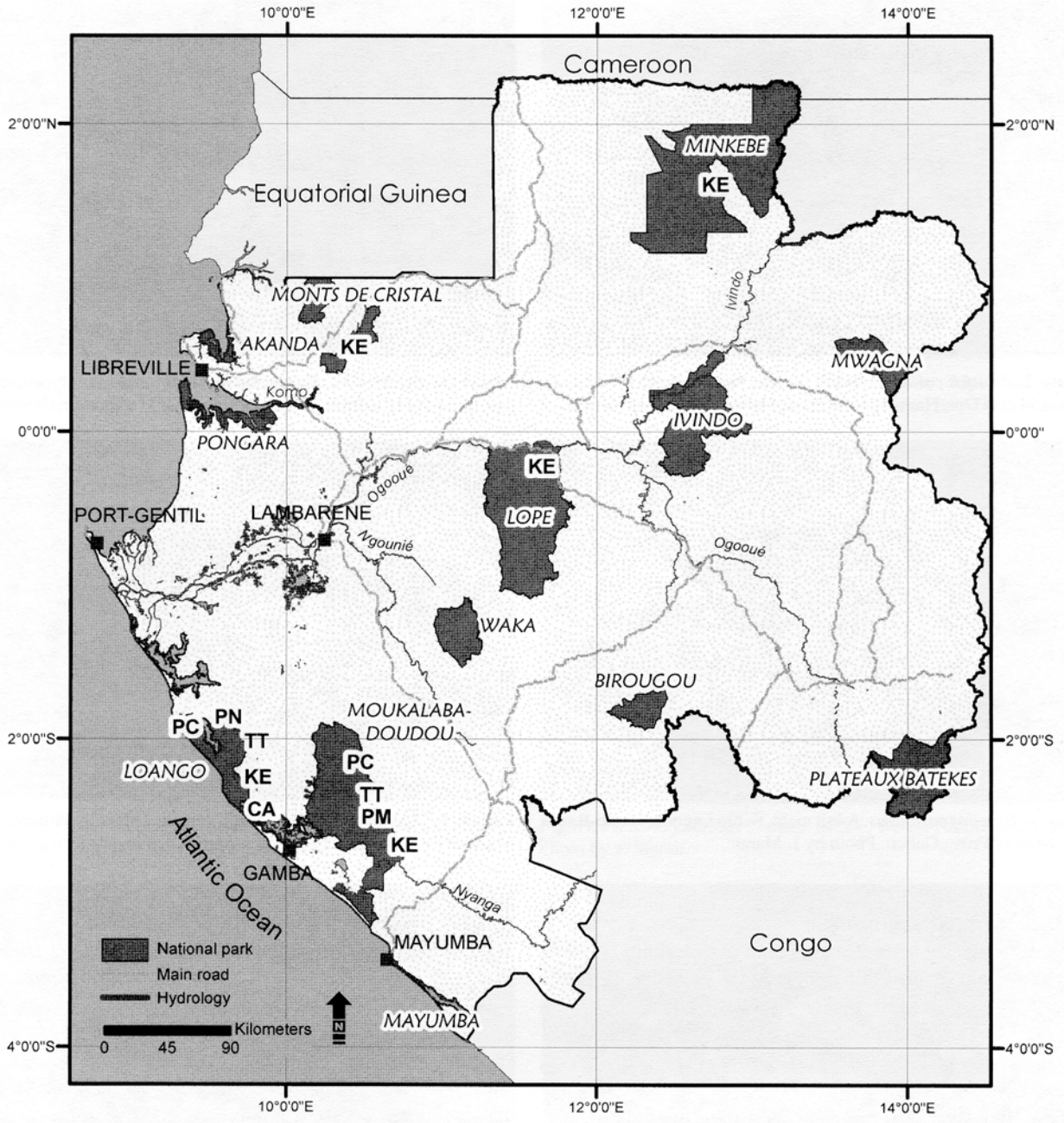

Figure 1. Map of Gabon showing the national parks boundaries with the documented occurrences of tortoises and freshwater turtles in the parks (CA = *Cycloderma aubryi*; KE = *Kinixys erosa*; PC = *Pelusios castaneus*; PM = *P. marani*; PN = *P. niger*; TT = *Trionyx triunguis*). Map by A. Honorez.

probable. Figure 9 shows an individual from a river situated in the Ogooué Delta, within the limits of the proposed Biosphere Reserve.

Trionyx triunguis

This species is known in Gabon from more than 30 localities distributed in all provinces except the Woleu-Ntem; some localities are situated in Loango and Moukalaba-Doudou NPs (Maran 2002; Pauwels et al., 2004; Maran and Pauwels, 2005). Its wide distribution and ecological plasticity allow it to be reasonably expected from Akanda, Ivindo, Lopé, Mayumba, Mwagna, and Pongara NPs. The *T. triunguis* in Fig. 10 was found in a lagoon bordering Loango and Moukalaba-Doudou NPs.

Testudinidae

Kinixys erosa

This is the most common nonmarine chelonian of Gabon, with more than 80 documented localities in all the country's provinces (Maran 2002; Maran and Pauwels 2005). It was

Figure 2. *Pelusios carinatus*. Adult female, head portrait. Boumango, Ogooué-Létili Dpt, Haut-Ogooué Prov., Gabon. Photo by J. Maran.

Figure 3. *Pelusios carinatus*. Juvenile. Boumango, Ogooué-Létili Dpt, Haut-Ogooué Prov., Gabon. Photo by J. Maran.

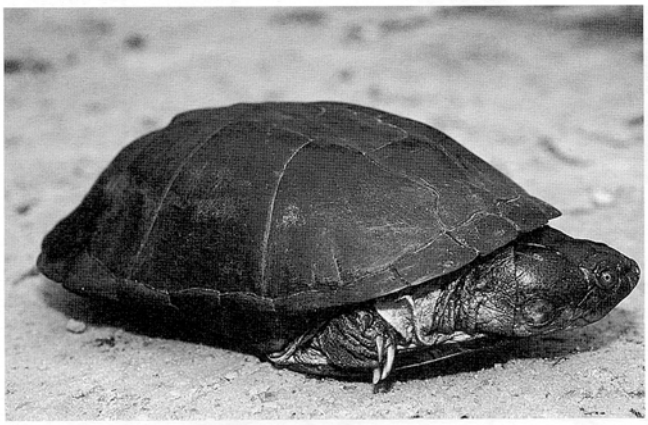

Figure 4. *Pelusios castaneus*. Adult male. Banio Lagoon, Haute-Banio Dpt, Nyanga Prov., Gabon. Photo by J. Maran.

Figure 5. *Pelusios chapini*. Adult female. Mandji, Ndolou Dpt, Ngounié Prov., Gabon. Photo by J. Maran.

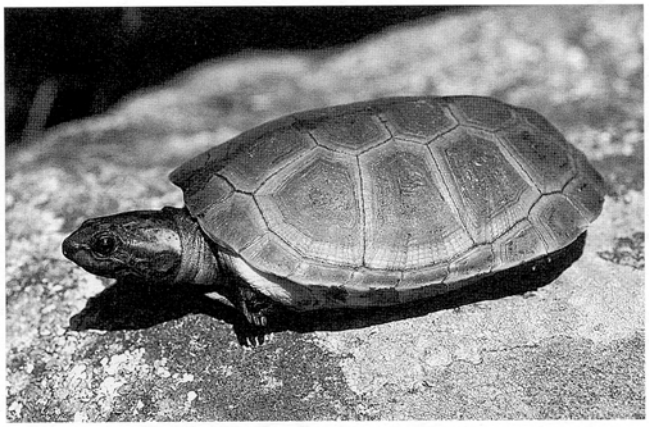

Figure 6. *Pelusios gabonensis*. Subadult. Bakoumba, Lékoko Dpt, Haut-Ogooué Prov., Gabon. Photo by J. Maran.

Figure 7. *Pelusios marani*. Subadult. Fougamou, Tsamba-Magotsi Dpt, Ngounié Prov., Gabon. Photo by J. Maran.

already recorded from 5 Gabonese parks (Pauwels et al. 2004, 2006a, 2006b). It is ubiquitous and found in numerous biotopes, and there are few doubts the species will eventually be found in all parks (see also Pauwels et al. 2002a for localities close to Mount Birougou NP). Figure 11 shows a specimen found ca. 100 airline km east of Crystal Mountains NP and ca. 100 airline km north of Lopé NP.

Conclusion

Only 6 of the terrestrial and freshwater chelonians of Gabon are currently known from an NP in this country. *Pelusios carinatus*, *P. chapini*, and *P. gabonensis* were indeed not yet found in any Gabonese NP. Predictions of occurrence in parks based on ecological requirements and global distribution of the species however permit thinking that their representation

Figure 8. *Pelusios niger*. Adult male. Port-Gentil, Bendjé Dpt, Ogooué-Maritime Prov., Gabon. Photo by J. Maran.

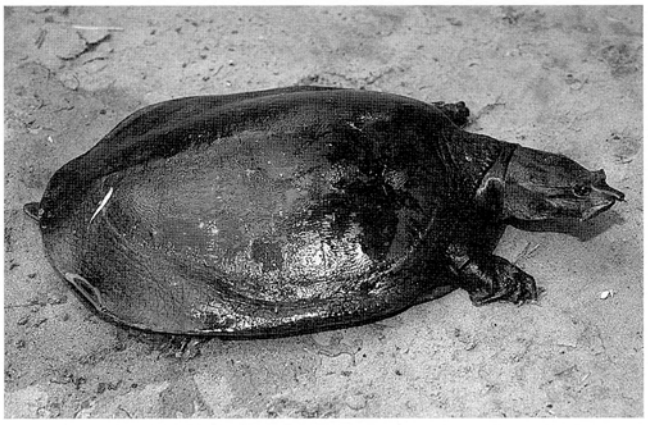

Figure 9. *Cycloderma aubryi*. Adult female. Mpolounè River, Etimboué Dpt, Ogooué-Maritime Prov., Gabon. Photo by J. Maran.

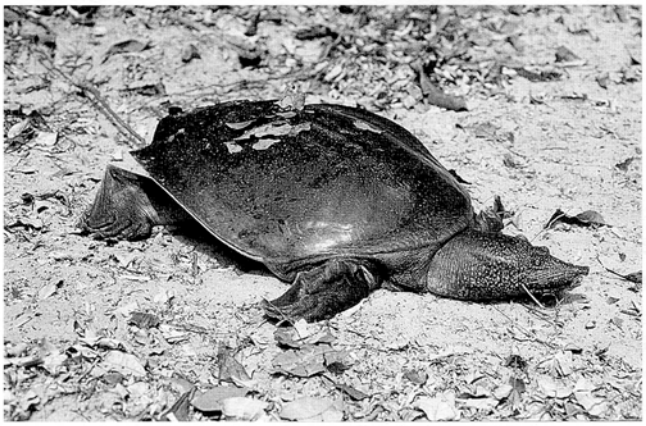

Figure 10. *Trionyx triunguis*. Adult male. Ndogo Lagoon, Ndougou Dpt, Ogooué-Maritime Prov., Gabon. Photo by J. Maran.

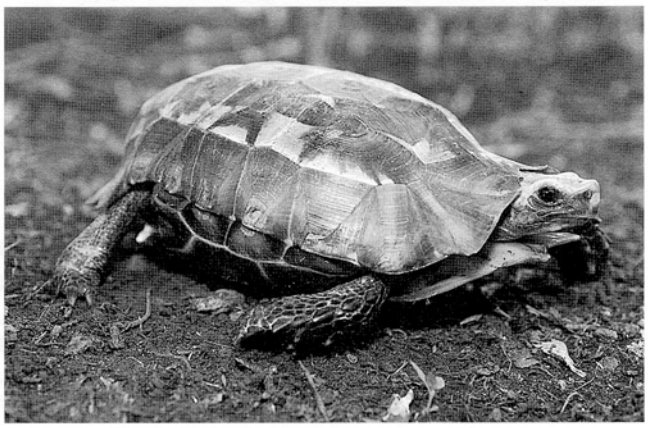

Figure 11. *Kinixys erosa*. Female. Mitzic, Woleu-Ntem Prov., Gabon. Photo by J. Maran.

should be much higher, with a possible representation of all species in national parks. Field surveys in Gabonese NPs, as well as population assessments for the least-represented species are needed. The survey of Akanda, Bateke Plateaux, Mayumba, Moukalaba-Doudou, and Pongara NPs, each with at least 4 additional expected chelonian species, should have priority. A search in Bateke Plateaux NP dedicated to *P. carinatus* should be led. These actions should be taken parallel to the law changes proposed by Pauwels et al. (2006b) who suggested to partly protect *Cycloderma aubryi* which suffers from overhunting in numerous localities.

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