

Pelusios adansonii (Schweigger 1812) – Adanson's Mud Turtle

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SUMMARY. – *Pelusios adansonii* (Family Pelomedusidae), is a moderate-sized freshwater turtle of up to 238 mm carapace length, identified by its keeled carapace with tawny and ornate radiating dark brown spots and dashes, and by the long forelobe of the yellow plastron. The species occurs in sub-Saharan Africa in the Sahelo-Sudanese belt and, at present, does not appear to be under any major threat.

DISTRIBUTION. – Benin (probably), Cameroon, Central African Republic, Chad, Ethiopia, Mali, Mauritania, Niger, Nigeria, Senegal, Sudan. Occurs in three largely disjunct populations in sub-Saharan Africa along the relatively arid Sahelo-Sudanese belt from Senegal to Sudan.

SYNONYMY. – *Emys adansonii* Schweigger 1812, *Hydraspis adansonii*, *Pelomedusa adansonii*, *Sternotherus adansonii*, *Sternotherus adansonii*, *Pentonyx adansonii*, *Pelusios adansonii*, *Pelusios adansonii adansonii*.

SUBSPECIES. – None currently recognized. Some authorities in the past recognized two subspecies, including *Pelusios adansonii nanus* Laurent 1956, but that taxon is now considered a distinct species, *Pelusios nanus*.

STATUS. – IUCN 2007 Red List: Not Listed (= Least Concern, LR/lc) (assessed 1996, needs updating); CITES: Not Listed (previously on Appendix III for Ghana).

Taxonomy. – This species was described by Schweigger (1812) as *Emys adansonii* from a carapace collected in Senegal (Cap Vert) by Michel Adanson in 1750. The absence of a plastron in the type specimen led early authors (Duméril and Bibron 1835; Fitzinger 1835; Gray 1844) to place the species within the genus *Pentonyx* (= *Pelomedusa*).

Examination of complete specimens, originating from Sudan, brought Duméril and Duméril (1851) and following systematists to include the species in the genus to which it presently belongs, *Sternotherus* (= *Pelusios*). The specific identity of *P. adansonii* has never been in question, but its relationships have been unclear. The proportionally long



Figure 1. *Pelusios adansonii* from Lac de Guiers, Senegal. Photo by Roger Bour.



Figure 2. *Pelusios adansonii* carapace and plastron of an adult. Photos by Roger Bour.

forelobe of the plastron was suggestive to several authors that the species was closely related to *P. gabonensis*, but its affinities are more evident with *P. nanus*, *P. marani*, and above all with *P. broadleyi* (Bour 1986).

Description. — The carapace length (CL) of animals from Senegal typically reaches 220 mm (maximum CL 238 mm) in females and 200 mm in males, with maximal masses of 1620 g for females and 650 g for males (Diagne et al. 2004). The typical and maximal lengths are variable depending on the locality; until recently the largest known specimens of *P. adansonii* were from Sudan at only 185 mm CL, and the average length of adults along the range of the species was closer to 150–160 mm CL.

The outline of the shell is oval-shaped, wider towards the rear; the carapace of males is comparatively narrower and the shell flatter. The median keel is uninterrupted, high and wide, forming a crest in subadults; it is partially worn off only in some old individuals. The lateral borders of the first vertebral scute are, in adults, sinuous and contracted, the scute being roughly T-shaped. The forelobe of the plastron is at least twice as long as the common abdominal sulcus; the intergular is short, diamond-shaped, and with antero-lateral sides converging forward. The rear lobe is strikingly narrow; the anal scutes are medially deeply notched, making a sharp angle.

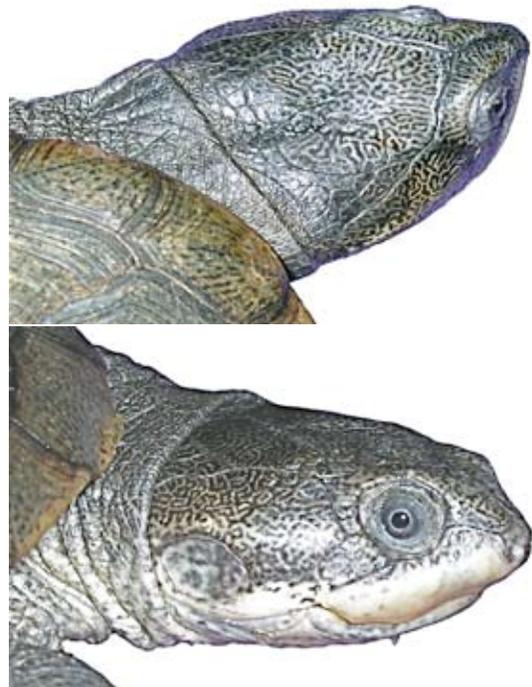


Figure 3. *Pelusios adansonii*. Photos by Roger Bour.



Figure 4. *Pelusios adansonii* juvenile from Krebedje (=Fort Sibut), Central African Republic. Photos by Roger Bour.

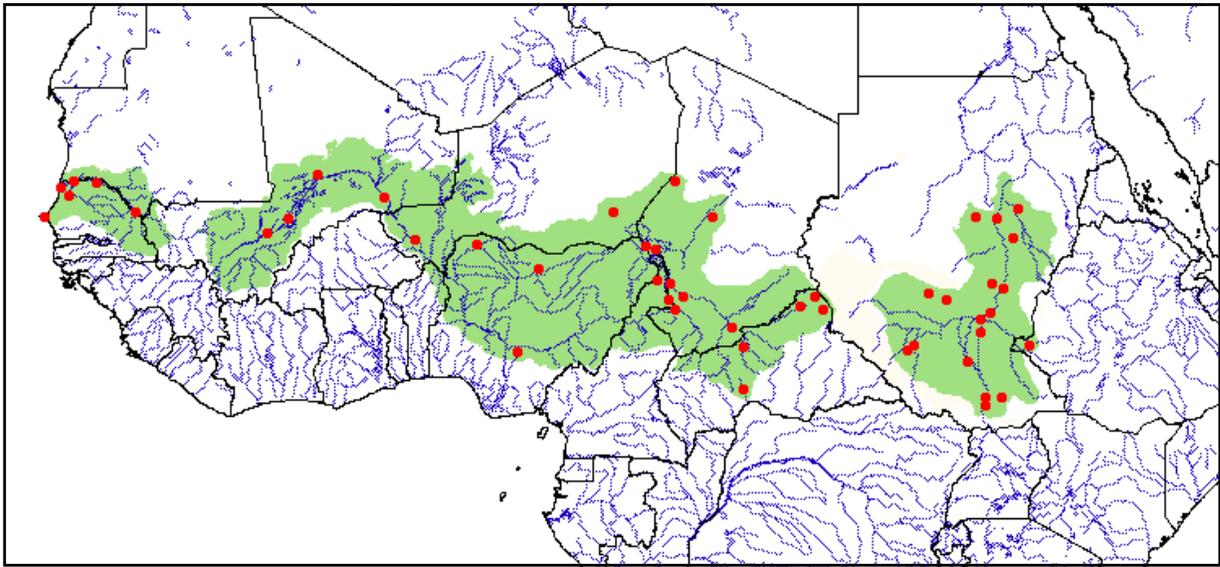


Figure 5. Distribution of *Pelusios adansonii* in sub-Saharan Africa. Red points = museum and literature occurrence records based on Iverson (1992) plus more recent and author's data; green shading = projected distribution based on GIS-defined hydrologic unit compartments (HUCs) constructed around verified localities and then adding HUCs that connect known point localities in the same watershed or physiographic region, and similar habitats and elevations as verified HUCs (Buhlmann et al., unpubl. data), and adjusted based on author's data.

On the top of the head, parietal scutes are spread out (4–5 big scales); the supralabial (between the postocular and masseteric) is well developed; three mentals (in front of the barbels) are distinct. The maxillary beak is slightly notched in front, without any bordering cusp. The front face of the forelimbs is covered with 3–5 rows of falciform (i.e., sickle-shaped) scales.

The neural bones series is reduced to seven bony elements in front. The mesoplastra are very short, their common suture is only 20–25% of that of the hyoplastra.

The carapace color is a warm tawny tinge, typically ornate with numerous radiating small dots or dashes, dark brown to blackish. The plastron is almost entirely or wholly bright yellow, sometimes superficially covered with an ochreous to black deposit. Soft parts are grayish to yellowish; the upper and lateral parts of the head are dark brown with a narrow pattern of dark yellow vermiculations that are absent from the rhamphothecae (Bour 1986).

Distribution. — *Pelusios adansonii* is found in the major water bodies of the otherwise relatively arid sub-Saharan Sahelo-Sudanese belt from Senegal in the west through Mauritania, Mali, Niger, Benin (probably), Nigeria, Cameroon, Chad, Central African Republic, Sudan, and Ethiopia. It is also known from fossils unearthed in Mali and Ethiopia. It does not appear to occur in Gambia (Håkansson 1981; Emms and Barnett 2006). It has been reported by some as also occurring in the Cape Verde Islands (e.g., Ernst and Barbour 1989), but this was a misinterpretation of the type locality of Cap Vert, Senegal.

As a result of large regions of arid highland habitat without major rivers or lakes where *P. adansonii* does not apparently occur, the species appears to be separated into three largely disjunct populations: 1) in the west in the Senegal River basin, including Senegal and adjacent Mauritania and

western Mali, but not apparently Gambia; 2) in the west-central regions in the Niger River basin from central Mali, western Niger, northeast Benin (probably), and central and eastern Nigeria, and continuing eastward into the internally draining Komadougou and Chari River basins flowing into Lake Chad from northeastern Nigeria, southeastern Niger, southern Chad, northeastern Cameroon, and northern Central African Republic; and 3) in the east in the upper White Nile River basin in Sudan and southwestern Ethiopia.

Habitat and Ecology. — The biology of *P. adansonii* is poorly known. The species inhabits very dry regions, and is only found in major rivers and lakes, where the water is quiet, shallow and warm. Diagne et al. (2004) recorded its presence in shallow lakes in Senegal with water temperatures around 35 to 40°C. During the dry season, it can aestivate in the mud of dried waterbodies. The species is predominantly carnivorous, feeding on invertebrates comprised mainly of mollusks and vertebrates including fish and amphibians, probably as a scavenger. Werner (1924) found 7 eggs (29.5–33 x 18–19 mm) in a female from Sudan. According to Diagne et al. (2004) and Devaux and Diagne (2004), in Senegal 4–5 clutches of typically 7–10 eggs of the same size are deposited annually. Hatchlings have emerged in August and September from eggs bred in captivity in Senegal (Diagne et al. 2004). A maximal clutch size of 24 eggs was recorded for a large old female in Senegal by B.O. Ndiaga (pers. comm. in Diagne et al. 2004).

Population Status. — This species has a wide geographic range, and is probably difficult to catch or even observe, making population estimates very difficult. It does not appear to be uncommon in its preferred habitats.

Threat to Survival. — Due to its modest size, one may deduce that the turtle is only marginally captured for food. Fishermen at Lac de Guiers in Senegal do not make

special efforts to catch this species, but especially large animals caught (and drowned) in their nets (usually at night) are often roasted and eaten (Bour et al. 2001; Diagne et al. 2004). Advancing aridification of the Sahelo-Sudanese area associated with climate change could gradually cause freshwater habitat loss and induce the progressive extirpation of vulnerable populations. Coupled with increasing human agricultural and irrigation use of freshwater resources in these arid regions, the species could become increasingly vulnerable or threatened.

Conservation Measures Taken. — *Pelusios adansonii* is probably not threatened at present. It is not currently listed on either the IUCN Red List or the CITES Appendices, though Ghana listed it on CITES Appendix III until recently, even though it does not appear to occur there. The species is not presently given any official measure of protection.

Pelusios adansonii occurs in the Manovo-Gounda St. Floris National Park in the Central African Republic (Bour 1986) and probably in other protected areas in its range as well.

Conservation Measures Proposed. — Continued and enhanced monitoring of populations, especially as regards the potentially deleterious effects of increasing aridification of preferred habitats.

Captive Husbandry. — No data known.

Current Research. — Tomas Diagne continues his research efforts in Senegal.

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LITERATURE CITED

- BOUR, R. 1986. Note sur *Pelusios adansonii* (Schweigger, 1812) et sur une nouvelle espèce affine du Kenya (Chelonii, Pelomedusidae). *Studia Geologica Salmanticensia* 2:23-54.
- BOUR, R., DEVAUX, B., PRITCHARD, P.C.H., AND WOOD, R.C. 2001. Observations sur *Pelusios adansonii* au Sénégal. *Manouria* 4(11):23-32.
- DEVAUX, B. AND DIAGNE, T. 2004. Michel Adanson; le baobab et la tortue. *La Tortue* 68:52-59.

- DIAGNE, T., CLOT, A.-G., DERNONCOURT, T., FLAMENT, T., AND KAMMENTHALER, F. 2004. Étude préliminaire d'une population de la Péluse d'Adanson [*Pelusios adansonii* (Schweigger 1812)] sur les abords nord-ouest du lac de Guiers (Sénégal). Unpublished report, 35 pp.
- DUMÉRIL, A.M.C. AND BIBRON, G. 1835. *Erpétologie Générale ou Histoire Naturelle Complète des Reptiles*. Roret, Paris, 680 pp.
- DUMÉRIL, A.M.C. AND DUMÉRIL, A.H.A. 1851. *Catalogue Méthodique de la Collection des Reptiles*. I. Gide & Baudry, Paris, 224 pp.
- EMMS, C. AND BARNETT, L.K. 2006. *Gambian Biodiversity: A Provisional Checklist of all Species Recorded within The Gambia, West Africa. Part Two: Vertebrates. Fourth version. Report to the Darwin Initiative*, pp. 39-90. <http://www.darwingambia.gm/checklist2.pdf>.
- ERNST, C.H. AND BARBOUR, R.W. 1989. *Turtles of the World*. Washington, DC: Smithsonian Institution Press, 313 pp.
- FITZINGER, L.J.F.J. 1835. Entwurf einer systematischen Anordnung der Schildkröten nach den Grundsätzen der natürlichen Methode. *Ann. Wiener Mus. Naturgeschichte* 1:103-128.
- GRAY, J.E. 1844. *Catalogue of the Tortoises, Crocodiles, and Amphisbaenians in the collection of the British Museum*. British Museum, London, 80 pp.
- HÅKANSSON, N.T. 1981. An annotated checklist of reptiles known to occur in the Gambia. *Journal of Herpetology* 15(2):155-161.
- IVERSON, J.B. 1992. *A Revised Checklist with Distribution Maps of the Turtles of the World*. Richmond, IN: Privately printed, 363 pp.
- LAURENT, R.F. 1956. Contribution à l'herpétologie de la région des grands lacs de l'Afrique centrale. I. Généralités. II. Chéloniens. III. Ophidiens. *Annales du Musée Royal du Congo Belge Tervuren, Sciences Zoologiques* 48:5-390.
- SCHWEIGGER, A.F. 1812. *Prodromus Monographiae Cheloniorum*. *Koenigsberger Arch. Naturwiss. Math.* 1:271-368, 406-462.
- WERNER, F. 1924. *Wissenschaften Ergebnisse der mit Unterstützung der kaiserlichen Akademie der Wissenschaften in Wien aus der Erbschaft Treitl von F. Werner unternommenen zoologischen Expedition nach dem Anglo-ägyptischen Sudan (Kordofan) 1914. XVIII. Schildkröten*. *Akademie der Wissenschaften zu Wien, Math. Naturwiss. Kl.*, 99:263-273.

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