

Pelusios subniger parietalis Bour 1983 – Seychelles Black Mud Turtle

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SUMMARY. – The Seychelles subspecies of black mud turtle, *Pelusios subniger parietalis* (Family Pelomedusidae), is restricted to six islands of the Seychelles group. Five breeding populations exist and the wild population was estimated to be about 660 adults in 2005. Populations continue to decline due to ongoing marsh drainage. Legal protection of wetland habitats is urgently required and ongoing reintroduction to protected areas need to continue to secure the future of this species.

DISTRIBUTION. – Seychelles. Found only in the granitic Seychelles on Mahé, Cerf, Silhouette, Praslin, La Digue, and Frigate islands; extirpated from St. Anne and Cousin islands.

SYNONYMY. – *Pelusios subniger parietalis* Bour 1983.

STATUS. – IUCN 2007 Red List: Critically Endangered (CR A2c; B2ab(ii,iii)) (assessed 2003);
CITES: Not Listed; Seychelles WAPR: Protected.

Taxonomy. – Animals of this subspecies from the Seychelles were first recorded as *Sternothaerus nigricans* (Peters 1877) and confused with *P. seychellensis*. Recognized as distinct and described as a Seychelles endemic subspecies by Bour (1983).

The nominate subspecies (*P.s. subniger*) occurs in Africa and Madagascar (Bour 1983). The two subspecies appear to be very closely related but distinct.

Description. – The carapace is round, and in large individuals it may be distinctly wider posteriorly than anteriorly. The vertebrals are usually wider unkeeled, but young individuals may have a low, unserrated keel. Marginal borders are not serrated. The color is uniformly black.

The anterior lobe of the plastron is slightly longer than the length of the abdominal scutes, and the interpectoral seam is about 75% of the length of the interhumeral seam. The

intergular is 1.5–3 times as wide as the gulars. The femorals are only notably constricted at the base of the posterior lobe. The plastron is yellow with dark brown triangular patches at the lateral edges of the sutures. The marginals along the bridge are yellow with brown patches; anterior and posterior marginals are black.

On the head the parietal scales are enlarged and extend anteriorly to meet the postocular scales; a supralabial (between the postocular and the masseteric) is present, separating the postocular and masseteric scales; and the mental scales are large. The anterior forelimb lacks enlarged scales. The first neural bone is reduced or absent (Bour 1983). The skin is gray, and darker on the dorsal surfaces.

Females have a rounded anal notch. The notch in males is straight-sided, male plastron may be slightly concave. Differences in anal notch shape are marginal and difficult to



Figure 1. *Pelusios subniger parietalis*: an adult from the Seychelles. Photo by Justin Gerlach.



Figure 2. *Pelusios subniger parietalis*: carapace and plastron of an adult from the Seychelles. Photos by Justin Gerlach.

discriminate. The maximum size is 200 mm curved carapace length for females and 158 mm for males (normal range 100–166mm).

Hatchlings have orange color (on black) at the back of the inframandibular scale on the lower jaw. There are yellow patches in the center of the margins of plastral scutes.

No significant geographical variation has been detected within the Seychelles population and no mtDNA variation has been found (S. Rocha et al., unpubl. data). The Seychelles subspecies is distinguished from the nominate subspecies



Figure 4. *Pelusios subniger parietalis*: hatchlings bred in captivity in the Seychelles. Photo by Justin Gerlach.



Figure 3. *Pelusios subniger parietalis*: head of an adult from the Seychelles. Photo by Justin Gerlach.

by the elongated triangle of parietal scales reaching to the postoculars.

Distribution. — *Pelusios subniger parietalis* is endemic to the Seychelles, and presently occurs on the islands of Mahé, Cerf, Silhouette, Praslin, La Digue, and Fregate. Eight distinct populations survive. It has been extirpated from St. Anne and Cousin islands (Gerlach 2008).

Habitat and Ecology. — *Pelusios subniger parietalis* occurs only in marshes and temporary pools with standing water, with population densities reaching as high as 125 turtles per ha (Gerlach and Canning 2001; Gerlach 2008).

Growth of captive bred individuals shows that adult size is reached after 4–5 yrs, male sexual activity has been observed in a 5-yr old individual but the age of fertility is not known. There are no data on longevity. Mating occurs throughout the year, with nesting recorded from November through April (but mainly December–January). A clutch of 6–12 elongate and soft-shelled eggs weighing 6.8–9.7 g each are laid in shallow nests in sandy soil (Gerlach 2008). Incubation at 29°C results in hatching after 45–55 days (Gerlach 2003). Hatchlings weigh 5.0–6.5 g. Males and females are both produced from clutches incubated at different temperatures and genetic sex determination is thought to occur.

Most adults have damaged carapaces, often with puncture marks indicating dog attacks. Predation levels from dogs, cats, and rats are probably high. Turtles are crepuscular, but also spend long periods aestivating on dry land. This occurs in both wet and dry seasons, and adult females will spend 2–3 months on land without feeding. The purpose of this behavior is unknown. The diet includes aquatic invertebrates, fish, amphibians, and aquatic plants.

Population Status. — The wild *P. subniger parietalis* population has declined from approximately 950 adults in 1996–2000 to about 660 in 2001–05 (Gerlach 2008). Eight distinct populations are known, but only five show evidence of recent breeding activity. Turtles were reintroduced to Silhouette experimentally in 2001 (Gerlach 2002a, 2004), but no evidence of breeding has been found to date. A population introduced to Fregate island in the 1940s probably

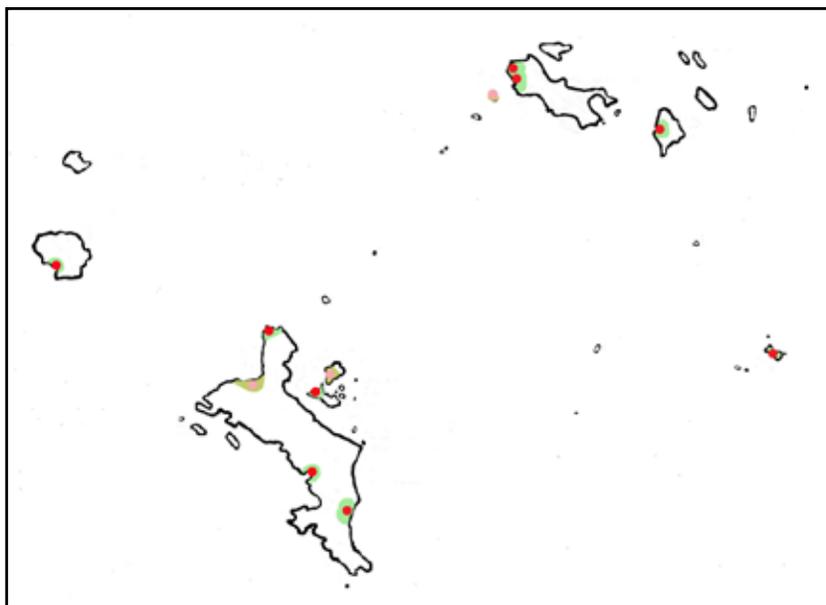


Figure 5. Distribution of *Pelusios subniger parietalis* in the Seychelles islands, east of Africa in the Indian Ocean. Red points = museum and literature occurrence records based on recent and current author's data; green shading = projected distribution based on author's data; pink points = extirpated populations; olive shading = areas of extirpated distribution.

numbered slightly more than 10 individuals in 1983 (Bour 1984) and remained critically low until 1999. Habitat creation in that year allowed rapid expansion to over 100 adults today (Gerlach 2008).

Threats to Survival. — As with the other Seychelles mud turtle, *P. castanoides intergularis*, *P. s. parietalis* is threatened by drainage of wetlands, canalization reducing access to nesting areas, invasion of aquatic habitats by introduced plants (especially water hyacinth and water lettuce) and possibly predation of adults by dogs and of juveniles and eggs by cats and tenrecs (*Tenrec ecaudatus*). Historically these turtles were captured for food and the curio trade, but these uses ceased 30–40 years ago.

Conservation Measures Taken. — Protected under Seychelles law by the 1966 Wild Animals (Seychelles Pond Turtle) Protection Regulations (WAPR) which prohibit their capture. However, habitats are not protected. The declining status of the subspecies was documented by Gerlach and Canning (2001) who also proposed that it be listed on the IUCN Red List as Critically Endangered; this was soon accomplished (Gerlach 2003b; IUCN 2007). The subspecies occurs in some protected areas in the Seychelles; it is present in the La Vev Reserve on the island of La Digue.

The Nature Protection Trust of Seychelles 'Seychelles Terrapin Conservation Project' includes monitoring, research, and captive breeding. The first captive breeding occurred in 2001, and to date 32 individuals have been bred. Small numbers are kept in captivity in Europe, but no other breeding pairs are known to exist.

Conservation Measures Proposed. — The Seychelles Terrapin Action Plan (Gerlach 2002b) proposed site protection and reintroduction for this species. Reintroduction could result in the establishment of at least four more secure populations totalling about 350 individuals; reintroduction

to North Island is planned for July 2008. All areas occupied by this species need to receive legal protection as a matter of urgency. Effective protection is needed to prevent any further habitat loss. Sites occupied by the species should be restored to allow breeding and recruitment. Reintroductions at secure sites are needed.

Captive Husbandry. — The only assurance colony for *P. s. parietalis* is maintained by the Nature Protection Trust of Seychelles (Gerlach 2003a). These turtles need both aquatic areas and land for both nesting and aestivation. They are omnivorous, with a high demand for animal protein and calcium in the breeding season. Commercial terrapin food is suitable.

Current Research. — Research is currently being undertaken on ecology, distribution, population size, and population genetics.

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