## Supplementary distribution data of *Centrochelys sulcata* (Miller, 1779), in northern Nigeria (West Africa)

The African Spurred Tortoise*, Centrochelys sulcata* (Miller, 1779), is native to the southern border of the Sahara Desert and the Sahel, a transitional ecoregion of semiarid grasslands, savannas, and thorn shrublands found in the countries of Burkina Faso, Chad, Eritrea, Ethiopia, Mali, Mauritania, Nigeria, Senegal, Sudan, Niger, Central African Republic and Cameroon (Trape et al. 2012). Adults of this largest among all the mainland tortoises (Ernst & Barbour 1989) weigh 45-91 kg, but specimens heavier than 100 kg have been reported. Their diet consists of many types of grasses and plants rich in fiber and poor in protein (Ernst & Barbour 1989).

Despite its potentially wide range area across dry savannas in Africa, this species' distribution is comparatively little known and certainly highly fragmented (Cadi et al. 2006). All its populations are reported to be declining (Branch 2008). It is possibly the first reptile species that has become extinct in Cameroon (Chirio & LeBreton 2007); in Nigeria the species is probably threatened with immediate extinction. As for West Africa, the authors are not aware of any locality where this species is still abundant, with most of the specimens detected being only occasionally encountered by scientists in the field. In Nigeria, it is known only from undefined localities of dry savannas situated in the northernmost territories at the border with Niger (Vetter 2005). In addition, it is certain that several of the specimens exported from Togo for the pet trade have been illegally collected in Nigeria (Vetter 2005).

IUCN (2012) considers this species as 'Vulnerable' (A1 cd), but the recent IUCN/SSC TFTSG workshop in Lomé, Togo (August 19-23, 2013), assessed it as 'Endangered', because of sound evidence that the population has declined, given the high rates of habitat loss which is going on in much of its range. The species is also reported to be in serious decline due to competition for food with domestic livestock (Branch 2008).

This note reports some recent records of the African Spurred Tortoise in northern Nigeria. The study was carried out during 2013 and 2014, mainly in the months of November to February. Tortoise presence was established based on random searches throughout northern Nigeria, mostly guided by interviews with local people reporting their own recent observations of these large distinctive tortoises. The observation sites were georeferenced (GPS Garmin CE-12), and on-site vegetation type was recorded. Detected tortoises were individually marked by notching a plate of their carapace.

Overall, the authors located seven sites of potential presence of the species in Nigeria, allocated to two distinct vegetation zones (zones no. II and III, Fig. 1; vegetation zones classified according to a map provided by the University of Texas at Austin; < http://www.lib.utexas.edu/maps/africa/nigeria_veg_1979.jpg >). In these seven localities, eight individuals were encountered, five captive adults, reportedly captured in the near surroundings, and three apparently free-ranging animals. Yet, not even the free-ranging individuals' membership to the wild population can be verified with certainty. These tortoises are frequent-

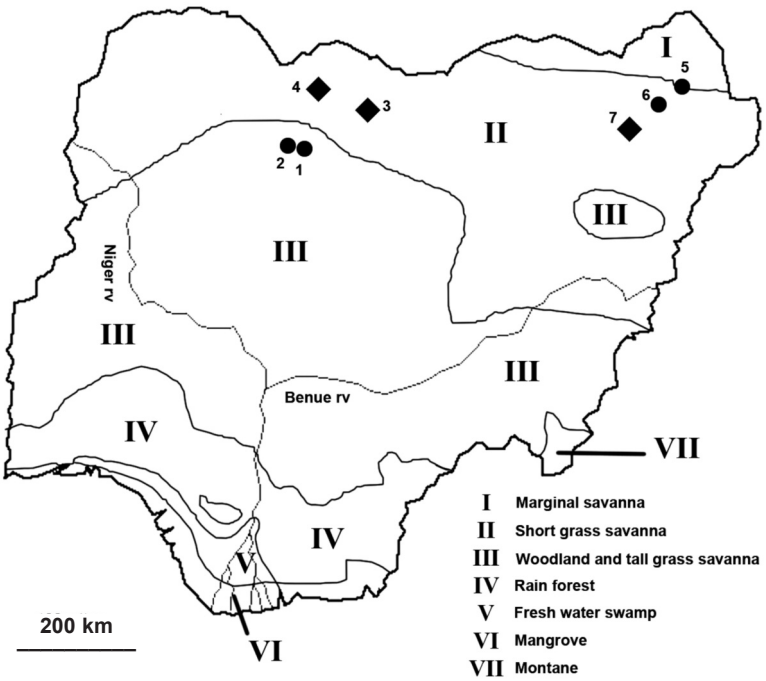


Fig. 1: Distribution records of *Centrochelys sulcata* (MILLER, 1779), in Nigeria relative to its vegetation zones. Vegetation zones are classified according to a map made available by the University of Texas at < http://www.lib.utexas.edu/maps/africa/nigeria_veg_1979.jpg >. Dots - captive individuals; rhombs - free-ranging individuals. Localities: 1 - Jaji; 2 - Muya; 3 - Ungongo; 4 - Katsina; 5 - Zunfur; 6 - Magumeri; 7 - Nkaé.

ly kept as pets by the Sahelian people, and many caged *C. sulcata* may occasionally escape and continue to live in the wild. However, the three apparently feral individuals, two adults and one young, were sighted in the northernmost sites (Ungongo, Kano State; surroundings of Katsina, Katsina State; and Nkaé, Borno State; numbers 3, 4 and 7 in Fig. 1). Most sites are situated inside the 'short-grass savanna' vegetation zone (III in Fig. 1), with two of them (Zunfur and Magumeri; numbers 5 and 6 in Fig. 1) being near the limits of the 'marginal savanna' vegetation zone (zone I in Fig. 1). Zone II represents the typical dry savanna habitat of *C. sulcata*, thus reinforcing the hypothesis that the specimens originate from adjacent free-ranging populations. Indeed, these localities are situated at similar latitudes as those where this species had been already detected in Nigeria in the past (TRAPE et al. 2012).

The two southernmost records (1 and 2 in Fig. 1), which would considerably extend the known range of this species towards the Nigerian south into the 'woodland and tall-grass' savanna vegetation zone (zone III in Fig. 1), refer to captive individuals. Before these latter can be accepted as autochthonous records, some more supporting evidence is required. This paper conveyed some supplementary data on the local distribution of the African Spurred Tortoise in a poorly known region of its range. Northern Nigeria is unfortunately very unsafe, given the ongoing attacks conducted by Boko Aram people. Thus, the present surveys were severely constrained logistically by safety reasons. Since the paucity of distribution information is critical for con-

servation strategies, it is suggested that, in the next years, particular effort should be made to survey the extreme north of the Sudanese savanna vegetation zone, where additional populations may be discovered.

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