

Data on the distribution of amphibians and reptiles from North and West Africa, with emphasis on *Acanthodactylus* lizards and the Sahara Desert

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NORTH and West Africa support large numbers of amphibian and reptile species (Schleich *et al.*, 1996; Chippaux 2001; Trape & Mané 2006). Morocco and Western Sahara are undoubtedly the North African regions best explored with comprehensive atlases available on the distribution of these taxonomic groups (Bons & Geniez 1996; Geniez *et al.*, 2004). However, the inhospitality and remoteness of the Sahara desert mean that there is a paucity of knowledge of most taxa in this area. Social and political instability have long hampered access to certain areas, such as Niger's Ténéré or Libya's Fezzan. Despite the classical works (e.g. Duméril & Bibron 1839), French and Italian exploratory missions in the first half of the 20th century (e.g. Witte 1930; Pellegrin 1931; Angel 1933, 1938; Scortecci 1937; Roux 1939), several works concerning the most studied countries – Morocco, Tunisia and Western Sahara (Domergue 1959a,b; Blanc 1986; Nouira & Blanc 1993; Bons & Geniez 1996; Geniez *et al.*, 2004), country checklists (Padial 2006), and occasional expeditions (Papenfuss 1967; Böhme 1978; Joger 1981; Böhme *et al.*, 1996; Ineich 1996; Joger & Lambert 1996; Böhme 2000; Böhme *et al.*, 2001; Brito 2003), the geographic distribution of many species in the Sahara is poorly known. Within the scope of a research project on phylogenetic relationships of *Acanthodactylus* lizards, two of us (JCB & HR) had the opportunity to travel through North and West Africa. This note reports

observations of amphibians and reptiles for this region, with emphasis on *Acanthodactylus* lizards and the Sahara desert.

The study area covered North and West Africa (Figure 1) and data were collected in an overland expedition of 96 days, between September, 9 and December, 13 of 2004. The sampling strategy involved a transect covering in the following order: Tunisia, Libya, Niger, Burkina-Faso, Mali, Senegal, Mauritania, Western Sahara and Morocco (Figure 1). The transect crossed North and West Africa ecosystems diversity and specific biotopes, such as sand deserts (*erg*) and firm ground deserts (*reg*), banks of salt lakes (*chott*) and temporary ponds (*daya*), rocky plateaus (*hammada*) and dry river beds (*oued*). Sampling points were selected along transect based on the diversity of biotopes, and visual encounter surveys were used to detect specimens. A total of 13 localities for three amphibian species and 213 localities for 52 reptile species were recorded (see Appendix). From almost all specimens, a tissue sample was collected and photographs with a digital camera were taken. The spatial location of specimens was georeferenced using a Global Positioning System (GPS), using the WGS84 coordinate system, and downloaded into a database with an interface for a Geographical Information System (GIS). Remarks are made when the observations expand distribution limits or when they contribute to the knowledge of the natural history of the species (confront localities marked with ** in Appendix).

Amphibians and reptiles from North and West Africa

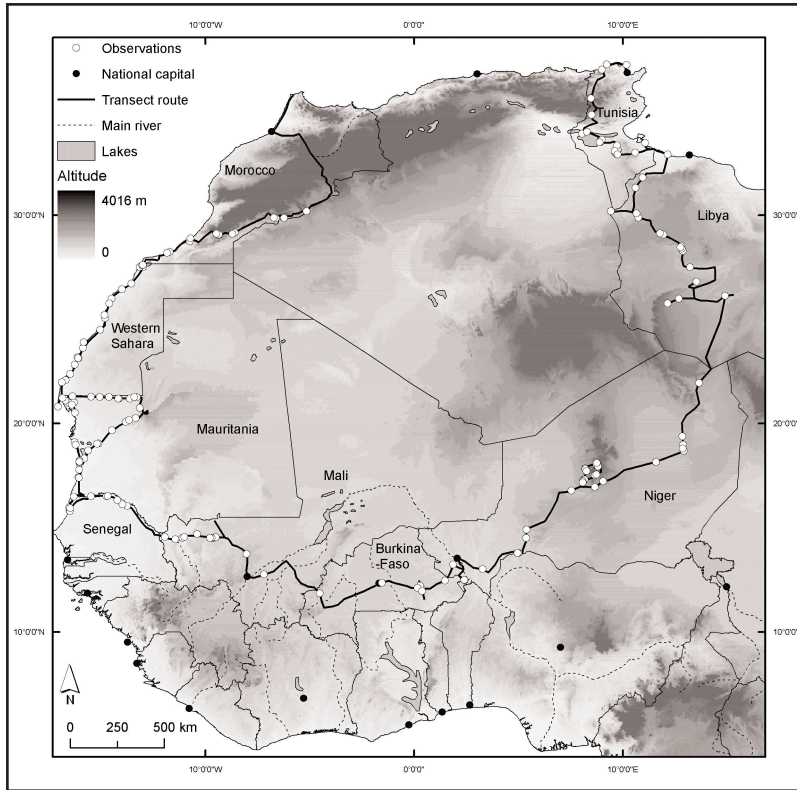


Figure 1. Geographic locations of all observations collected during fieldwork.

Amphibians

Bufo xeros Tandy, Tandy, Keith & Duff-McKay, 1976 – Guelta of Timia, Niger (record D368): from a total of 14 active specimens found, nine (65%) had skin ulcers on the dorsum. These lesions were perfect circumferences with a radius of about 2.5mm or less and presented, to some extent, a pale aspect above the muscle as well as pale borders. Possible causes for the lesions include parasitic as well as fungus or viral infections, but secondary opportunistic infections, caused by fungus or bacteria, could also be responsible for the damaging of the cutaneous tissue (for details see Brito *et al.*, 2005). Researchers heading for this remote region should be observant for this situation as well as in other populations also. In the Air massif, *Bufo xeros* is a Sahelian relict and occurs in isolated populations, probably with small population size (Joger 1981).

Reptiles

Tropicolotes cf. steudneri (Peters, 1869) – Timia, Niger (record D386): *Tropicolotes steudneri* is currently known from southern Algeria, Libya, Sudan and Egypt with an isolated record from Mauritania (Baha el Din 2006), suggesting that it could also occur until the southern limit of the Sahara desert (see also Schleich *et al.*, 1996). The present record confirms this suggestion and as far as it was possible to determine, this is the first record for Niger. The specimen from Timia differs obviously in several features from typical *steudneri* from Egypt, pointing to the necessity of further research on the systematics of the central and western populations currently assigned to this species.

Agama cf. impalearis Boettger, 1878 – Air populations (records D367 to D384): populations of northern Air (Arlit) and the nearby Algerian Hoggar Mountains are sometimes assigned to *Agama agama* (e.g. Le Berre 1989) or to *A. impalearis* (Joger 1981; Le Berre 1989 who mentions both species). Their systematics is still currently unresolved: while they are similar to *A. impalearis* in several features (6 to 7 supralabial scales before the anterior border of the eye) they also differ in other characters (pers. obs.). In the Air mountains, typical *Agama agama* have been reported from the south (Joger 1979; Kriska 2001) while animals similar to the Hoggar specimens and currently designed as *Agama cf. impalearis* are found in the north (Arlit; Joger 1981).

Acanthodactylus aureus Günther, 1903 – Between Dakhla and Fort Guerguerat, Western Sahara (record A376 to A392): Crochet *et al.* (2003) and Geniez *et al.* (2004) noted a possible disjunction in the range of this lizard in the area between Dakhla and the border with Mauritania. The present records fill out the gap between El Argoub and

Fort Guerguerat. In addition, one of us (PAC) has observed several specimens in this area, PK.207 before Lagwera coming from Dakhla [22.4688°N / 16.4434°W] on September 11, 2006.

Acanthodactylus boskianus (Daudin, 1802) – Birni N’Konin, Niger (record A207): sub-Saharan populations of this lizard are rare and were previously known from two localities in Niger, Tahoua and Dogondoutchi (Joger 1981; Salvador 1982), and to a few localities in extreme northern Nigeria (Papenfuss 1969; Salvador 1982). The present record further suggests that a fragmented population of this lizard occurs in the Sahelian regions of southern Niger and northern Nigeria.

Acanthodactylus cf. *busacki* Salvador, 1982 – sebkha Oum Dbâ, Western Sahara (record A433): the specimen observed in this locality was an adult male with vivid red coloration in the ventral side of the tail. This tail coloration pattern is unreported for this species since juveniles have a bluish tail and adults generally have a dull coloration (Geniez *et al.*, 2004). Phylogenetic analysis of 12S and 16S rRNA sequences demonstrated that this specimen was very divergent from two other samples from Morocco (oued Massa), making *A. busacki* paraphyletic (A433 in Fonseca *et al.*, 2007). Indeed, northern populations of the species (eg. Tamri, Souss valley and Souss-Massa National Park) exhibit a different general aspect compared with those of Western Sahara (M. Geniez pers. com., own observations, compare also photo 108 and 109 in Geniez *et al.*, 2004). The taxonomic status of southernmost populations of this species should thus be further investigated.

Acanthodactylus dumerili (Milnes Edwards, 1829) – Zuara (record A129), Nalut (records A139–140) and Fezzan regions (record A169 to A155), Libya: the two records south of Nalut and the three observations in the Fezzan increase the previously known range in Libya (Salvador 1982) and suggest that the contact zones between *A. dumerili* and *A. scutellatus* should be broader than previously suspected (Crochet *et al.*, 2003). In fact both species were found in sympatry in the coastal dunes east of Zuara.

Acanthodactylus longipes Boulenger, 1921 – Between Choum and Nouadhibou, Mauritania (records A310 to A334): observations in the

Azeffâl and Akchâr dune fields fill the previously apparent gap between the Adrar Atar and coastal areas (Crochet *et al.*, 2003; Geniez *et al.*, 2004; Padial 2006). Nevertheless, at local scale the species occurs in fragmented populations restricted to sand dunes.

Acanthodactylus maculatus (Gray, 1838) – Nefza and Cap Serrat, Tunisia (records A71–72): populations from northern coastal areas of Tunisia were described as *Acanthodactylus mechriguensis* Nouira & Blanc, 1999 based on morphological characters (Nouira & Blanc 1999). Phylogenetic analysis of 12S and 16S rRNA sequences demonstrated that these coastal populations form a monophyletic group with typical *maculatus*, that there was no genetic support for the species status of *mechriguensis* and that this form should be included in *A. maculatus* (A71 and A72 in Fonseca *et al.*, 2007). Therefore, the records for coastal northern Tunisia belong to *A. maculatus*.

Acanthodactylus cf. *maculatus* – Hamadath al Hamrah plateau, Libya (records A151–152): two specimens were observed in extremely fragmented and vulnerable populations. They were restricted to small patches of soft sand (about 100 x 100 m) covered with herbaceous vegetation which were very isolated on the flat rocky plateau. Only two specimens were observed, thus population size should be extremely low, rendering these populations susceptible to extinction. The two specimens formed a distinct clade in a phylogenetic analysis of 12S and 16S rRNA sequences (A151 and A152 in Fonseca *et al.* 2007). In one of the patches *Trapelus mutabilis* was also found.

Acanthodactylus senegalensis Chabanaud, 1918 – Tazolé, Niger (record A191), and Atar and Choum, Mauritania (records A287 to A295): the record for central Niger expands the range 1400 km inland. The most inland localities previously known were in the Malian regions of M’Bouna and Goundam (Salvador 1982). Records for south-western Adrar Atar and in the area of Choum also expand the known range of the species in Mauritania (Crochet *et al.*, 2003; Geniez *et al.*, 2004; Padial 2006).

Mesalina pasteuri (Bons, 1960) – Between Choum and Nouadhibou, Mauritania (record D526): few localities are known for this lizard and

Amphibians and reptiles from North and West Africa

they are scattered along southern Morocco, Algeria, Western Sahara (Auhaifrit and Aouadi), and Mauritania (near F'dérik) (Schleich *et al.*, 1996; Geniez *et al.*, 2004; Padial 2006). The present record increases the range of the species in Mauritania.

Psammophis aegyptius Marx, 1958 – Dirkou and Bilma, Niger (records D340–341): previously known from Egypt and Libya (Schleich *et al.*, 1996; Baha el Din 2006), it has been reported recently from Niger and Algeria (Trape & Mané 2006). The present records in two Ténéré oases confirm the presence of this poorly known species south of its classic range. Although this snake occurs in the Air and Hoggar Mountains, the hyper-arid character of the Ténéré renders populations fragmented and restricted to humid habitats of oases. These two specimens show all the typical features of the species (as seen in Egypt, pers. obs.), especially the dorsal pattern and the uniform brick red ventral coloration. These specimens formed a distinct clade from *Psammophis schokari* specimens in a phylogenetic analysis of ND4 rRNA sequences (D340 and D341 in Rato *et al.* 2007).

Psammophis schokari Forsskål, 1775 – South of Dakhla, Western Sahara (records D538 to D545), and Nouakchott, Mauritania (record D491): Geniez *et al.* (2004) noted a possible disjunction in the range of this snake in the area between Dakhla and the border with Mauritania. The present records for Western Sahara fill out the gap between El Argoub and Fort Guerguerat. Sequencing of ND4 rRNA showed that *P. schokari* specimens from Western Sahara together with Morocco form a distinct genetic lineage and differentiated from the individual of Nouakchott (D491 in Rato *et al.*, 2007).

Psammophis sibilans (Linnaeus, 1758) – Fada N'Gourma, Burkina-Faso (record D421), Fama, Mali (record D432), and east of S. Louis, Senegal: the systematics of this complex of sand-dwelling sand snakes is still unresolved and West African populations could belong to *P. phillipsi* or *P. rukwae* (Chippaux 2001). However, these specimens from Sahelian Senegal, Mali and Burkina-Faso conform well to the general features of *Psammophis sibilans* from Egypt (cf. Baha El

Din 2006; pers. obs.) and agree with the geographical distribution given by Trape & Mané (2006). Also, specimens from Burkina-Faso and Mali formed a distinct clade from *Psammophis schokari* specimens in a phylogenetic analysis of ND4 rRNA sequences (D421 and D432 in Rato *et al.*, 2007).

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Amphibians and reptiles from North and West Africa

Table 1. Geographic location (WGS84 datum), code of tissue sample and photo availability for the specimens observed. BFA: Burkina-Faso; LIB: Libya; MAL: Mali; MAU: Mauritania; MOR: Morocco; NIG: Niger; SEN: Senegal; TUN - Tunisia; WSA: Western Sahara. Observations with particular comments are marked with (**).

Species	Latitude	Longitude	Locality	Country	Tissue sample code	Image
<i>Amphibia</i>						
<i>Bufo viridis</i>	N 32.988367	E 9.639800	4km SE of Ksar Ghilane	TUN	D317	yes
<i>Bufo xeros</i>	N 11.962333	E 0.392783	10km S Fada N'Gourma	BFA	D417	yes
	N 12.060333	E 0.369333	Fada N'Gourma	BFA	D423	
	N 14.504000	E -11.090983	20km W of Kayes	MAL	D460	yes
	N 14.505667	E -9.633000	220km E of Kayes	MAL	D445	yes
	N 14.511500	E -9.702700	210km E of Kayes	MAL	D452	yes
	N 14.545417	E -11.943033	60km W of Kayes	MAL	D462	
	N 14.683100	E -10.384917	120km E of Kayes	MAL	D455	yes
	N 12.474800	E 2.427600	Tapoua	NIG	D410	
(**)	N 18.094950	E 8.761267	Air: Guelta of Timia	NIG	D368	yes
	N 16.178167	E -13.997233	300km SE of S.Louis	SEN	D473	yes
<i>Rana saharica</i>	N 33.487500	E 8.925017	10km W of Douz	TUN		
	N 35.582150	E 8.482633	3km E of Haidra	TUN	D310	yes
<i>Reptilia</i>						
<i>Ptyodactylus ragazzii</i>	N 12.220017	E 0.301900	20km N Fada N'Gourma	BFA	D422	yes
	N 12.060333	E 0.369333	Fada N'Gourma	BFA	D418	yes
	N 12.113683	E 0.170033	Diapango	BFA		
	N 12.353250	E -1.527017	Ouagadougou	BFA	D429	yes
	N 14.555833	E -10.999817	60km E of Kayes	MAL	D458	
	N 12.474800	E 2.427600	Tapoua	NIG	D409	yes
	N 16.773333	E 7.553300	50km SW of Agadez	NIG	D396	yes
	N 16.951667	E 8.674133	Tourayet	NIG	D345	yes
	N 17.219600	E 8.099783	Air: 30km N of Agadez	NIG	D350	yes
	N 17.710817	E 8.274167	Air: 5km S of Elmiki	NIG	D387	yes
	N 17.929183	E 8.823067	Air: 25km S of Timia	NIG		
	N 18.098383	E 8.766733	Air: 5km S of Timia	NIG	D382	yes
<i>Tarentola annularis</i>	N 21.251400	E -13.282933	20km W of Choum	MAU	D523	yes
	N 18.091667	E -16.030000	Nouakchott	MAU	D504	yes
	N 20.982917	E -16.512167	90km S of Nouadhibou	MAU	D532	yes
	N 21.303300	E -16.366767	90km E of Nouadhibou	MAU	D531	yes
<i>Tarentola chazaliae</i>	N 28.191900	E -11.824500	60km S Tan-Tan Plage	MOR	D564	yes
	N 27.502367	E -13.135900	40km N of Laayoune in coastal dune field	WSA	D561	yes
	N 26.713600	E -13.545133	70km S of Laayoune	WSA	D559	yes
<i>Tarentola parvicarinata</i>	N 14.448650	E -11.438700	Kayes	MAL	D461	yes
	N 20.747567	E -13.140867	35km N of Atar	MAU	D521	yes
<i>Tropicolotes</i>	N 17.816667	E 8.228333	Air: S of Timia	NIG	D386	yes
<i>T. cf. steudneri</i> (**)						
<i>Tropicolotes tripolitanus</i>	N 32.908233	E 9.752533	17km SE Ksar Ghilane	TUN	V318	yes
<i>Chamaeleo africanus</i>	N 13.787150	E 4.969133	20km W Birni N'Konin	NIG	D401	yes
<i>Chamaeleo chamaeleon</i>	N 28.230783	E -11.701650	50km S Tan-Tan Plage	MOR		yes
<i>Agama agama</i>	N 12.102083	E 0.248050	15km W Fada N'Gourma	BFA	D425	
	N 14.511500	E -9.702700	210km E of Kayes	MAL	D451	yes
	N 14.522000	E -9.550067	240km E of Kayes	MAL	D443	
	N 14.508533	E 5.376967	50km S of Tahoua	NIG	D399	yes
<i>Agama boueti</i>	N 17.392733	E -16.062067	80km S of Nouakchott	MAU	D489	yes
	N 13.785933	E 5.012817	15km W of Birni N'Konin	NIG	D400	yes
	N 13.787150	E 4.969133	20km W of Birni N'Konin	NIG	D402	yes
	N 17.710817	E 8.274167	Air: 5km S of Elmiki	NIG	D389	yes
<i>Agama cf. impalearis</i> (**)	N 18.012517	E 8.741033	Air: 10km of Timia	NIG	D367	yes
(**)	N 16.951667	E 8.674133	Tourayet	NIG	D342	
(**)	N 17.302500	E 8.170200	Air: 50km N of Agadez	NIG	D353	yes
(**)	N 17.522100	E 8.667200	Air: Abardokh	NIG	D355	yes
(**)	N 17.985600	E 8.765067	Air: 20km S of Timia	NIG	D361	
(**)	N 17.998417	E 8.753983	Air: 15km of Timia	NIG	D366	yes
(**)	N 18.098383	E 8.766733	Air: 5km S of Timia	NIG	D384	yes
<i>Agama impalearis</i>	N 29.100867	E -9.466700	6km W of Taggit	MOR		
<i>Trapelus mutabilis</i>	N 29.128717	E 11.785050	175km SE of Derj	LIB	D330	yes
<i>Uromastyx acanthinura</i>	N 29.879317	E 10.757183	45km SE of Derj	LIB		yes
	N 29.155433	E -8.593267	60km W of Akka	MOR	D575	yes
<i>Uromastyx geyri</i>	N 17.555333	E 8.748783	110km NE of Agadez	NIG	D357	
<i>Uromastyx geyri</i>	N 17.219600	E 8.099783	Air: 30km N of Agadez	NIG	D351	

Amphibians and reptiles from North and West Africa

	N 17.302500	E 8.170200	Air: 50km N of Agadez	NIG	D352	yes
	N 17.303833	E 8.175600	Air: 50km N of Agadez	NIG	D354	yes
	N 17.816667	E 8.228333	Air: S of Timia	NIG	D385	yes
	N 17.845817	E 8.216933	Air: S of Elmiki	NIG		
<i>Acanthodactylus aureus</i>	N 21.218250	E -16.843233	40km S of Nouadhibou	MAU	A369	yes
	N 20.801583	E -17.053233	4km N of Cape Blanc	MAU	A370	yes
	N 21.097867	E -16.699867	70km S of Nouadhibou	MAU	A365	yes
	N 28.744733	E -10.743850	25km S of Aoreora	MOR	A435	yes
	N 28.873167	E -10.702733	15km E Aoreora - Plage Blanche	MOR	A443	yes
(**)	N 21.981350	E -16.877600	70km N of Fort Guergerat	WSA	A376	yes
(**)	N 22.370967	E -16.471050	240km S of Dakhla	WSA	A382	yes
(**)	N 22.820467	E -16.251933	190km S of Dakhla	WSA	A391	yes
(**)	N 23.133917	E -16.084333	140km S of Dakhla	WSA	A392	yes
	N 23.625050	E -15.852067	2km N of EL Argoub	WSA	A394	yes
	N 23.890017	E -15.823950	20km N of Dakhla	WSA	A395	yes
	N 24.497533	E -15.033050	100km N of crossroad for Dakhla	WSA	A409	yes
	N 25.198317	E -14.827067	110km S of Boujdour	WSA	A410	yes
	N 26.713600	E -13.545133	70km S of Laayoune	WSA	A423	yes
	N 27.502367	E -13.135900	40km N of Laayoune, in coastal dune field	WSA	A432	yes
	N 27.587633	E -13.018967	NW margin of sebkha Oum Dba	WSA	A434	yes
<i>Acanthodactylus blanci</i>	N 37.206900	E 10.190733	Siouine; 2km N of Raf-Raf	TUN	A69	yes
<i>Acanthodactylus boskianus</i>	N 30.076583	E 10.665683	22km SE of Derj	LIB	A149	yes
	N 25.762667	E 12.166467	Wadi Matendous; 145km SW of Tesawa	LIB	A166	yes
	N 25.992383	E 12.693117	Messak Mallet; 95km W of Tesawa	LIB	A168	yes
	N 28.511733	E 12.812983	Hamadath al Hamrah; 120km N of Idri	LIB	A153	yes
	N 17.403267	E -16.069967	80km S of Nouakchott	MAU	A237	yes
	N 29.052467	E -9.345883	4km E of Taggit	MOR	A447	yes
	N 29.052950	E -9.373850	3km E of Taggit	MOR	A446	yes
	N 29.056033	E -9.334883	6km E of Taggit	MOR	A449	yes
	N 29.880167	E -6.711900	30km E of Fout Zguid	MOR	A455	yes
(**)	N 13.787167	E 4.968983	20km W Birni N'Konin	NIG	A207	yes
	N 14.903433	E 5.392900	15km NE of Tahoua	NIG	A206	yes
	N 17.164200	E 8.093217	20km N of Agadez	NIG	A199	yes
	N 33.451583	E 11.080483	7km S of Zarzis	TUN	A128	yes
	N 33.615833	E 9.007033	18km N of Douz	TUN	A97	yes
	N 34.809733	E 8.513583	15km S of Feriana	TUN	A85	yes
<i>Acanthodactylus busacki</i>	N 28.873167	E -10.702733	15km E of Aoreora - Plage Blanche	MOR		
	N 28.744733	E -10.743850	25km S of Aoreora	MOR		
(**)	N 27.595650	E -12.998367	NW margin of sebkha Oum Dba	WSA	A433	yes
<i>Acanthodactylus dmerili</i> (**)	N 25.992383	E 12.693117	Fezzan: 95km W of Tesawa	LIB	A169	yes
(**)	N 28.378083	E 12.832267	Fezzan: 105km N of Idri	LIB	A154	yes
(**)	N 28.276650	E 12.882750	Fezzan: 95km N of Idri	LIB	A155	yes
(**)	N 31.299567	E 10.624650	72km S of Nalut	LIB	A140	yes
(**)	N 31.789533	E 10.955800	10km S of Nalut	LIB	A139	yes
(**)	N 32.896867	E 12.153600	Jadi Resort; 7km E of Zuara	LIB	A129	yes
	N 17.785217	E -16.041683	30km S of Nouakchott	MAU	A238	yes
	N 18.145250	E -16.028867	10km N of Nouakchott	MAU	A247	yes
	N 18.169783	E -16.028217	12km N of Nouakchott	MAU	A255	yes
	N 18.215017	E -16.034317	15km N of Nouakchott	MAU	A264	yes
	N 21.011117	E -16.290633	160km S Nouadhibou	MAU	A337	yes
	N 21.267150	E -15.055617	250km E Nouadhibou	MAU	A327	yes
	N 21.277733	E -15.470317	200km E Nouadhibou	MAU	A331	yes
	N 21.303300	E -16.366750	90km E Nouadhibou	MAU	A333	yes
<i>Acanthodactylus dmerili</i>	N 29.850700	E -6.621967	40km E of Fout Zguid	MOR	A456	yes
	N 30.184933	E -5.146600	60km E of Tagounite	MOR	A476	yes

Amphibians and reptiles from North and West Africa

	N 15.969967	E -16.512433	S.Louis peninsula	SEN	A215	yes
	N 32.908917	E 9.758167	Pipeline track,	TUN	A121	yes
	N 32.997433	E 10.607950	20km SE of Ksar Ghilane			
	N 33.074750	E 9.615983	17km NE of Tataouine	TUN	A127	yes
	N 33.106783	E 9.769667	Ksar Ghilane at the	TUN	A115	yes
	N 33.148767	E 9.760833	Roman fort			
	N 33.338933	E 9.725000	Pipeline track,	TUN	A114	yes
	N 33.487350	E 8.906550	22km NE of Ksar Ghilane			
	N 33.615833	E 9.007033	Pipeline track,	TUN	A108	yes
	N 33.900000	E 8.048883	22km NE of Ksar Ghilane			
	N 26.120233	E 14.904333	Pipeline track,	TUN	A107	yes
	N 26.804833	E 13.540067	40km N of Ksar Ghilane			
	N 27.493000	E 13.227617	11km NW of Douz	TUN	A92	yes
	N 30.176150	E 9.441067	18km N of Douz	TUN	A102	yes
	N 18.318667	E -15.798717	7km W of Tozeur	TUN	A91	yes
	N 19.043167	E -15.116183	Crossroad to Al Katrun;	LIB	A170	yes
	N 19.104850	E -16.261983	100km E of Murzuq			
	N 20.508083	E -16.238067	Lake Gabrun	LIB	A161	yes
	N 21.194050	E -13.618433	17km E of Idri	LIB	A160	yes
	N 21.194483	E -14.138117	7km NW of Ghadames	LIB	A148	yes
	N 21.198583	E -14.160617	20km NE of Nouakchott	MAU	A274	yes
	N 21.261200	E -14.617200	100km SW of Akjoujt	MAU	A286	yes
	N 21.261867	E -13.392400	Akchar dunes;	MAU	A271	yes
	N 21.277733	E -15.470317	115km N of Nouakchott			
	N 21.303300	E -16.366750	15km S of Bir el Gareb	MAU	A344	yes
	N 29.854567	E -6.225583	60km W of Choum	MAU	A310	yes
(**)	N 21.194483	E -14.138117	100km W of Choum	MAU	A311	yes
(**)	N 21.198583	E -14.160617	100km W of Choum	MAU	A317	yes
(**)	N 21.261200	E -14.617200	140km W of Choum	MAU	A318	yes
(**)	N 21.261867	E -13.392400	50km W of Choum	MAU	A302	yes
(**)	N 21.277733	E -15.470317	200km E of Nouadhibou	MAU	A332	yes
(**)	N 21.303300	E -16.366750	90km E of Nouadhibou	MAU	A334	yes
	N 29.854567	E -6.225583	Erg Mhazil -	MOR	A462	yes
	N 18.155867	E 11.611333	80km E of Foug Zguid			
	N 18.788233	E 12.886033	Fachi	NIG	A187	yes
	N 19.371683	E 12.864567	15km North of Bilma	NIG	A184	yes
	N 21.945767	E 13.658117	40km N Dirkou	NIG	A183	yes
	N 33.074750	E 9.615983	Madama	NIG	A181	yes
	N 33.487350	E 8.906550	Ksar Ghilane at	TUN	A116	yes
	N 35.583317	E 8.482633	the Roman fort			
	N 36.972183	E 9.006750	11km NW of Douz	TUN	A94	yes
	N 37.214883	E 9.246183	3km E of Haidra;	TUN	A80	yes
	N 29.060550	E 11.954483	W of Thala			
	N 29.128717	E 11.785150	South of el Berrak dam;	TUN	A72	yes
	N 32.896867	E 12.153600	6km W of Nefza			
	N 17.392733	E -16.062067	Cape Serrat beach	TUN	A71	yes
	N 17.785217	E -16.041683	Hamadath al Hamrah;	LIB	A152	yes
	N 18.145250	E -16.028867	190km SE of Derj			
	N 18.169783	E -16.028217	Hamadath al Hamrah;	LIB	A151	yes
	N 18.215017	E -16.034317	172km SE of Derj			
	N 18.703617	E -15.609700	Jadi Resort;	LIB	A133	yes
	N 20.062450	E -13.808700	7km E of Zuara			
	N 20.164300	E -13.651650	80km S of Nouakchott	MAU	A226	yes
	N 21.251400	E -13.282933	30km S of Nouakchott	MAU	A243	yes
	N 20.508083	E -16.238067	10km N of Nouakchott	MAU	A248	yes
	N 20.905100	E -16.402917	12km N of Nouakchott	MAU	A252	yes
	N 17.228267	E 9.066383	15km N of Nouakchott	MAU	A263	yes
	N 15.799150	E -16.494367	70km NE of Nouakchott	MAU	A280	yes
	N 15.812700	E -16.508467	110km SW of Atar	MAU	A287	yes
	N 16.509417	E -14.732483	90km SW of Atar	MAU	A288	yes
	N 17.228267	E 9.066383	40km W of Choum	MAU	A295	yes
	N 15.799150	E -16.494367	15km S of Bir el Gareb	MAU	A348	yes
	N 15.812700	E -16.508467	110km S of Nouadhibou	MAU	A357	yes
	N 16.509417	E -14.732483	Tazolé well	NIG	A191	yes
	N 15.799150	E -16.494367	Piste S.Louis - Louga;	SEN	A220	yes
	N 15.812700	E -16.508467	PN Langue Barbarie			
	N 15.812700	E -16.508467	Piste S.Louis - Louga;	SEN	A219	yes
	N 16.509417	E -14.732483	PN Langue Barbarie			
	N 16.509417	E -14.732483	200km of S.Louis	SEN	A212	yes

Amphibians and reptiles from North and West Africa

<i>Latastia longicauda</i>	N 13.229967	E 1.874167	60km S Niamey	NIG	D581	yes
	N 15.795867	E -16.494183	Piste S.Louis - Louga;	SEN	D585	yes
<i>Mesalina guttulata</i>	N 28.443267	E 12.779983	PN Lanque Barbarie			
			Military checkpoint	LIB	D331	yes
			300km SE of Derj			
	N 29.100867	E -9.466700	6km W of Taggit	MOR	D571	yes
<i>Mesalina olivieri</i>	N 32.908917	E 9.758167	Pipeline track:	TUN	D595	yes
			20km SE of Ksar Ghilane			
	N 33.451583	E 11.080483	7km S of Zarzis	TUN	D321	yes
	N 34.000883	E 8.284733	Cedada at NE of	TUN	D312	yes
			Chott el Jerid			
	N 35.582150	E 8.482633	3km E of Haidra	TUN	D308	yes
	N 25.984100	E -14.489317	10km S of Boujdour	WSA	D555	yes
<i>Mesalina pastauri</i> (**)	N 21.277733	E -15.470317	200km E of Nouadhibou	MAU	D526	yes
<i>Ophisops occidentalis</i>	N 35.587783	E 8.489767	4km E of Haidra	TUN	D307	yes
<i>Timon pater</i>	N 37.206900	E 10.190733	Raf-Raf	TUN		
<i>Sphenops boulengeri</i>	N 29.880167	E -6.711900	30km E of Fom Zguid	MOR	D579	yes
<i>Sphenops</i>	N 18.169783	E -16.028217	20km N of Nouakchott	MAU	D498	yes
<i>sphenopsifoumis</i>						
<i>Trachylepis affinis</i>	N 14.511500	E -9.702700	210km E of Kayes	MAL	D453	yes
<i>Trachylepis perrotetii</i>	N 12.468933	E 1.495117	10km W of border	BFA	D412	yes
	N 16.510050	E -15.479383	120km of S.Louis	SEN	D483	yes
<i>Trachylepis</i>	N 11.846967	E -4.517917	30km S of border	BFA	D431	yes
<i>quinquetaeniata</i>	N 11.961417	E 0.393383	10km S Fada N'Gourna	BFA	D420	yes
	N 12.113683	E 0.170033	Diapango	BFA		
	N 12.468933	E 1.495117	10km W of border	BFA	D414	yes
	N 17.164183	E 8.092983	Air: 20km NE Agadez	NIG	D346	yes
	N 17.710817	E 8.274167	Air: 5km S of Elmiki	NIG	D388	yes
<i>Varanus exanthematicus</i>	N 16.515600	E -14.673067	210km of S.Louis	SEN	D481	yes
<i>Varanus griseus</i>	N 17.402750	E -16.065367	80km S of Nouakchott	MAU	D492	yes
	N 18.169783	E -16.028217	20km N of Nouakchott	MAU	D499	
	N 19.020283	E -15.175617	120km SW of Akjoujt	MAU	D505	yes
<i>Varanus niloticus</i>	N 14.509633	E -9.770600	210km E of Kayes	MAL	D454	yes
	N 16.486117	E -16.297083	35km E of the border	MAU		yes
	N 15.932100	E -16.470267	Piste S.Louis - Louga;	SEN	D466	yes
			PN Lanque Barbarie			
<i>Gongylophis muelleri</i>	N 14.521117	E -9.557850	240km E of Kayes	MAL	D444	yes
	N 14.543883	E -9.496033	25km W of Diema	MAL	D439	yes
	N 16.049067	E -13.741167	330km SE of S.Louis	SEN	D469	yes
<i>Crotaphopeltis hotamboeia</i>	N 12.495950	E 2.408617	10km of Tapoua	NIG	D408	yes
<i>Natrix maura</i>	N 35.582150	E 8.482633	3km E of Haidra	TUN	D309	
<i>Psammophis aegyptius</i> (**)	N 18.976233	E 12.895933	2km SE of Dirkou	NIG	D340	yes
(**)	N 18.690617	E 12.922433	Bilma oasis	NIG	D341	yes
<i>Psammophis elegans</i>	N 13.735567	E -8.019500	15km S Didieni	MAL	D434	yes
<i>Psammophis schokari</i> (**)	N 17.392733	E -16.062067	80km S of Nouakchott	MAU	D491	yes
(**)	N 22.078217	E -16.688433	280km S of Dakhla	WSA	D538	yes
(**)	N 23.126300	E -16.068033	S of Dakhla	WSA	D545	
(**)	N 23.179767	E -16.114283	150km S of Dakhla	WSA	D543	yes
	N 25.043983	E -14.805800	120km S of Boujdour	WSA	D551	yes
	N 26.434667	E -13.994750	60km N of Boujdour	WSA	D557	yes
<i>Psammophis sibilans</i> (**)	N 12.220017	E 0.301900	20km N of Fada	BFA	D421	yes
(**)	N 12.758400	E -7.191750	N'Gourna			
(**)	N 16.120917	E -13.963483	20km W of Fama	MAL	D432	yes
<i>Scutophis moilensis</i>	N 19.667633	E -14.469400	310km SE of S.Louis	SEN		yes
	N 20.248900	E -13.336283	10km SW of Akjoujt	MAU	D513	yes
	N 29.085000	E -8.689850	45km SW of Atar	MAU	D518	yes
	N 27.500867	E -12.97305	80km SW of Akka	MOR	D574	yes
<i>Spalerosophis diadema</i>	N 33.487350	E 8.906550	10km N of Dawra	WSA	D562	yes
<i>Cerastes cerastes</i>	N 31.299567	E 10.624650	12km W of Douz	TUN	D315	yes
<i>Cerastes vipera</i>	N 18.979133	E -16.209900	73km S of Nalut	LIB	D325	yes
	N 21.261867	E -13.392400	15km S Akchar dunes	MAU	D503	yes
	N 25.758483	E -14.600000	40km W of Choum	MAU	D524	yes
<i>Echis leucogaster</i>	N 16.318333	E -14.211667	40km S of Boujdour	WSA	D553	yes
<i>Echis ocellatus</i>	N 11.961417	E 0.393383	270km E of S.Louis	SEN	D478	yes
	N 12.495950	E 2.408617	10km S Fada N'Gourna	BFA	D419	yes
			10km of Tapoua	NIG	D407	yes