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New data on *Psammodromus blanci* (Lataste, 1880) a near threatened species of Lacertidae (Reptilia: Squamata)

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Abstract

The Blanc's sand racer *Psammodromus blanci* (Lataste, 1880) is a small species of Lacertidae (Squamata). This species occurs the North West of Algeria and it is noted as very rare in Morocco and Tunisia. According to the International Union for Conservation of Nature (IUCN) assessment of 2009, this species is listed as near threatened. The objective of our work is to update the information about this species basing on recent investigations between May and June 2019 in Sidi Bel-Abbès (North West of Algeria). Some remarks on the activity and ecology of this species are also noted with describing of a new locality in Aflou (Laghouat) North West of Algeria.

Keywords: *Psammodromus blanci*; Lacertidae; threatened species; new locality; Algeria.

Introduction

The old notes on Herpetology of Algeria showed an important diversity of Amphibians and Reptiles [1,2,3,4,5,6]. In the important work about Amphibians and Reptiles of North Africa, it is recorded 92 species in Algeria [6], with more than 50% of this species are listed as protected species [7]. On this list, Lacertidae family is represented only with 4 species (4.34%): *Ophisops elegans* Ménétries, 1832, *Psammodromus algirus* (Linnaeus, 1758), *Psammodromus blanci* (Lataste, 1880) and *Scelarcis perspicillata* (Duméril & Bibron, 1839).

According to IUCN assessment of 2009, *P. blanci* was the unique species of Lacertidae which listed as near threatened species [8].

Several herpetological investigations on in North West of Algeria [4,5,9] showed a constant presence of this species. But without describing the habitat or ecological affinity of this species.

This note concern the *P. blanci* with aim to give information on the habitat, activity and ecology of this species and to describe it repartition in Algeria with a new locality in Aflou (Laghouat) North West of Algeria.

Materials and Methods

Study area

Psammodromus blanci specimens were collected between May and June 2009 from two different regions in North West of Algeria: Sidi Bel Abbes and Laghouat (new locality) (fig. 1).

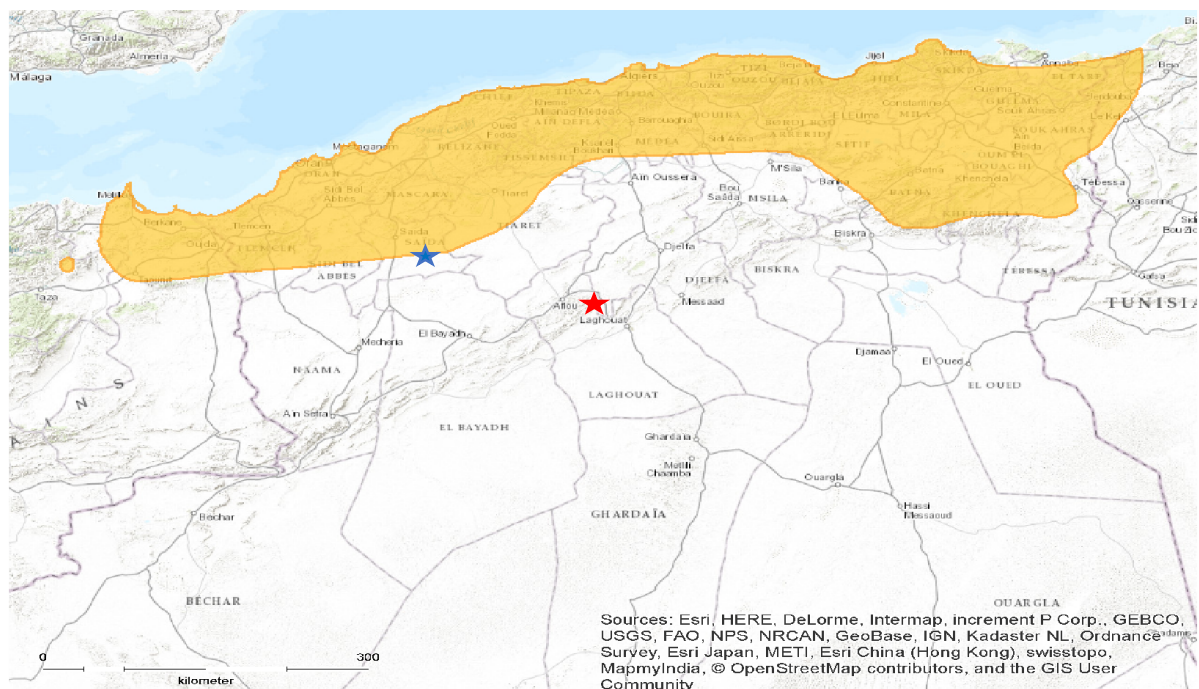


Figure 1: Map of Algeria, showing distribution of the *Psammodromus blanci* following Joger et al., 2009 (Yellow area) [8]; the Study area (blue star); New locality (red star)

Sidi Bel Abbas region is located at the moderate arid bioclimatic with cold winter [10]. it constitutes a buffer zone between the Western coastal Algeria and the Western Saharan Algeria. Climate generally Mediterranean and semi-arid to cool winter [11], characterized by an annual rainfall varies from 125 to 200 mm. The maximum temperatures are between 34.5 and 35°C [12].

The xeric calcimagnesian soils are highly represented in this region with limestone present in diffuse form. Also, this region is distinguished by brown limestone xeric soil [13]. They are characterized by a depth ranging from 30 to 40 cm and a texture which is sandy clay at the surface and clay in depth, based on a more or less indurated calcrete. These soils have an average rate of 0.4 of organic matter.

Laghouat (Aflou, new locality) located in North West of Algeria inside the steppe regions, characterized by an arid to semi-arid climate. The continental semi-arid with rainfall varying between 300 and 400 mm in the Saharan Atlas, to arid climate with rainfall varying between 50 and 150 mm in the Saharan Platform [14].

The geological structure includes part of the Saharan Atlas, which is composed mainly of sandstones and limestones, and the Saharan Platform, formed by the Hamada sand ergs [15, 16].

Specimens examined

Algeria, Region of **Sidi Bel Abbas**, Merine (34° 57' N., 00° 30' E.), in montane landscape, 700 m, 13/V/2019 (M. El Bouhissi). Region of **Sidi Bel Abbas**, Merhoum (34° 25' N., 00° 15' E.), in steppe formation, 1143 m, 29/V/2019 (M. El Bouhissi). Region of **Laghouat**, Aflou (34° 07' N., 02° 04' E.), in steppe formation, 1300m, VI/2019 (W. Dahmani). Those specimens were photographed and released into the wild.

Results and Discussion

Diagnosis of *P. blanci*

Blanc's Sand Racer is the smallest representatives of the family of Lacertidae [17]. This specie is characterized with a narrow neck and an elongate body which is 2-2.5 times as long as the distance between snout and collar. Dorsal large, strongly keeled and imbricate; a striking light pattern of 4 longitudinal stripes on brown ground colour [6].

Ecology and Activities pattern of *P. blanci*

P. blanci as shown before occurs different biotopes according the regions. This species is found generally in pine forest (*Pinus halepensis* Mill.), pastures lands and open areas as steppes (Figure 3) [8].

Contrariwise, it can live in littoral region of North Est of Algeria [4,18,19,20,21].

In Sidi Bel Abbès region this species was foun in lawns with scattered forest species composed of Holm Oak (*Quercus ilex* L.), Juniper (*Juniperus oxycedrus* L.) with low density [22].



Fig 2. Photographs of *Psammodromus blanci* (a) General view in natural Habitat; (b) lateral; (c) dorsal; (d) ventral view of the head

The new locality of Laghout (Aflou) is characterized by vegetation varies from afforested and scrub areas present in the Saharan Atlas relief, with steppe vegetation found [23,24]. Where, many authors mentioned its affinity to steppe formations and it can inhabit the plain covered with thyme (*Thymus vulgaris* L.), Mediterranean dwarf palm (*Chamaerops humilis* L.), Spart (*Lygeum spartum* Loefl.) or Alfa (*Stipa tenacissima* L.) [4,20].

The *P. blanci* activate in most of the year, but, it afraid of the heat [4], that's why we have observed it only in the morning between the stones.

In recent exploration of Sidi Bel Abbes (Tafessour and Tindfelt), we met an important population of *P. blanci* esteemed with 04 individuals / hectare.

The important remark is the presence of different stages of this species in this region, which reflects an adaptation of this species in this region.

Threats causes

Psammodromus blanci is listed as near threatened [8], but the threats causes are not known yet, in the following we summarize some causes thus making this species close to qualifying for vulnerable such as: Climate change, Wildfire and Agro-pastoral activities.



Figure 3: Natural Habitat of *Psammodromus blanci* typical steppe formations Sidi Bel Abbes region.

The consequences of climate change, are the isolation on the reliefs of the massif of species with more humid requirements, such as *Coronella girondica*, *Chalcides mertensi* and *Psammodromus blanci* [25].

Forest fires influence biological diversity in many ways. Globally, they are a major source of carbon emissions and contribute to climate change, which could lead to changes in biodiversity at regional and local levels, which modify the volume of biomass. smoke from Forest fires can significantly reduce photosynthetic activity and often endangers the health of humans and animals [26].

Every year, during the summer, fires attack thousands of hectares of forests in Merine, Sidi Bel Abbes region (fig 4).



Figure 6: Forest fire in Merine, Sidi Bel Abbes region (2016)

Pastoral and agricultural activities (fertilization, pesticides ...) affect the size and dynamics of several biological groups [27,28, 29].

Our study area (Sidi Bel Abbes and Aflou) is well known for its pastoral vocation. Hellal et al (2014) indicated that the the steppes have been widely exploited by nomadic pastoral communities with a large number of domestic animals [30].

Reference

- [1] Gervais P. (1844) Sur les animaux vertébrés de l'Algérie. Annales des sciences naturelles (Paris) 3 (10): 202–208
- [2] Strauch A. (1862) Essai d'une herpétologie de l'Algérie. Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg. 85p.
- [3] Lallemand C. (1867) Herpétologie de l'Algérie ou catalogue synoptique et analytique des reptiles et amphibiens de la colonie. Paris, 41 p.
- [4] Doumergue F. (1901) Essai sur la faune herpétologique de l'Oranie avec des tableaux analytiques et des notions pour la détermination de tous les reptiles et batraciens du Maroc, de l'Algérie et de la Tunisie. Oran, Algérie, L. Fouque. 404 p.
- [5] Gauthier R. (1967) Ecologie et éthologie des reptiles du Sahara Nord- Occidentale (région de Béni- Abbés). Mus. Roy d'Afrique centrale. Annal 8(155): 80.
- [6] Schleich H. H., Kästle W., & Kabisch K. (1996) Amphibians and Reptiles of North Africa. Koletz Scientific Books, Koenigstein. 630 p.
- [7] Décret exécutif (n°12-235) fixant la liste des espèces animales non domestiques protégées. Journal Officiel de la République Algérienne 35: 5-11
- [8] Joger U., Slimani T., El Mouden H., Martínez-Solano I. & Geniez P. (2009) *Psammmodromus blanci*. The IUCN Red List of Threatened Species 2009: e.T61559A12491750. <http://dx.doi.org/10.2305/IUCN.UK.2009.RLTS.T61559A12491750.en>
- [9] Dahmani W. (2006) Contribution à l'étude des Reptiles et Amphibiens de la région de Tiaret. Mémoire Ing. Univ. Tiaret, 104p.
- [10] Emberger L. (1942) Un projet de classification des climats du point de vue phytogéographique. Bulletin de la Société d' Histoire Naturelle de Toulouse, 77, 97-124.
- [11] Benyahia M., Benabdeli K. & Moueddene K. (2001) Geology, Soil and Production Systems in the Mountains of Tessala (Sidi Bel Abbes). Journal of Science of Nature and Environment (Ecosystems) 1: 70-75.
- [12] Bensaid A. (2006) Sig et télédétection pour l'étude de l'ensablement dans une zone aride: Cas de la wilaya de Naâma. Thèse de Doctorat, Université d'Es Senia, Algérie, 318p.
- [13] Halitim A. (1988) Sols des régions arides d'Algérie. OPU, Alger, 384 p.

- [14] Saadoud D., Guettouche M.S., Hassani M. & Peinado F.J.M. (2017) Modelling wind-erosion risk in the Laghouat region (Algeria) using geomatics approach. Arab J Geosci 10: 363 (2017). <https://doi.org/10.1007/s12517-017-3139-1>
- [15] Pouget M. (1980) Les relations sol-végétation dans les steppes sud algéroises. Mémoire de thèse. Travaux et documents de l'ORSTOM 116 : 555
- [16] Peron A. (1883) Description géologique de l'Algérie. Paris, G. Masson, Editeur 204p.
- [17] Boulenger G. A. (1887) Catalogue of the Lizards in the British Museum (Natural History). Second Edition. Volume III. Lacertidæ, ... London: Trustees of the British Museum (Natural History). (Taylor and Francis, printers). XII + 575 pp. + Plates I-XL. (Psammmodromus blanci, pp. 48–49).
- [18] Zulueta A. (1909) Nota sobre reptiles de Melilla. Boletín de la Real Sociedad Española de Historia Natural 10: 351–354.
- [19] Joleaud L. (1934) Considérations générales sur la faune des mammifères du Maroc. Terre et Vie 4: 259-271.
- [20] Llabador F. (1947) Contribution à la faune des vertébrés de l'Oranie Occidentale. La faune erpétologique de Nemours. Bulletin trimestriel de la Société de Géographie et d'Archéologie d'Oran 68: 177-185.
- [21] Caputo V. & Mellado J. (1992) A new species of Chalcides (Reptilia: Scincidae) from northeastern Morocco. Boll. Zool. 59: 335-342
- [22] Ouici H., Mehdadi Z., Cherifi K. & El Zerey-Belaskri A. (2015) Inventory and Analysis of Phytodiversity along an Altitudinal Gradient in the Southern Slope of the Mount of Tessala (Western Algeria). Open Journal of Ecology 5 : 552-562.
- [23] Djebaili S. (1984) Steppe Algérienne phytosociologie et écologie OPU, Alger 177p.
- [24] Quezel P. (2000) Réflexions sur l'évolution de la flore et de la végétation au Maghreb méditerranéen. Ibis Press, Paris 117p
- [25] Chibio L. & Blanc C. P., 1997. Analyse biogéographique du peuplement reptilien de l'Aurès (Algérie). Biogeographica 73(1): 13-22.
- [26] Davies S.J. & Unam L. (1999) Smoke-haze from the 1997 Indonesian forest fires: effects on pollution levels, local climate, atmospheric CO₂ concentrations, and tree photosynthesis. Forest Ecology and Management 124: 137-144.
- [27] De Ruiter P., Neutel A.M. & Moore J., (1994) Modelling food webs and nutrient cycling in agro-ecosystems. Trends in Ecology & Evolution 9: 378-283.
- [28] Hinsley S.A. & Bellamy P.E., 2000. The influence of hedge structure management and landscape context on the value of hedgerows to birds: A review, Journal of Environmental Management 60: 33-49. doi.10.1006/jema.2000.0360.

- [29] De Ruiter P., Griffiths B. & Moore J. (2002) Biodiversity and stability in soil ecosystems: patterns, processes and the effects of disturbance. *Biodiversity and Ecosystem Functioning: Synthesis and Perspectives*. N. S. Loreau M, Inchausti P. Oxford, Orford University Press. 102-113.
- [30] Hellal T., Hellal B., Bardadi A., Ayad N. & Bensmira Z. (2014) Incidences de la pluviométrie sur la culture des céréales dans la steppe du Sud de la préfecture de Sidi Bel-Abbès (Algérie occidentale). *European Scientific Journal*10(17): 11.