

REPTILE FAUNA OF THE MUTUN REGION (SANTA CRUZ DEPARTAMENT, BOLIVIA): SPECIES LIST AND CONSERVATION STATUS

LA FAUNA DE REPTILES DE LA REGION DEL MUTUN (DEPARTAMENTO DE SANTA CRUZ, BOLIVIA): LISTA DE ESPECIES Y ESTADO DE CONSERVACION

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INTRODUCTION

The Mutún region is located in the southeast of the Bolivian lowlands and at the north of the National Park and Natural Area of the Integrated Management Pantanal de Otuquis (PN-ANMI Pantanal de Otuquis), but its herpetofauna has not been properly studied, because the region was scientifically explored in few opportunities or has sporadic observations. Additionally, the region contain the Cerro Mutún that is said to be the most important reserve of iron ore in the world, and a large mining operation is already underway on the lower southwest slope and summit of the cerro since 2008. Physiographically the region is a landscape of gently rolling plains of the Brazilian shield (Montes de Oca, 1995), with altitudinal variations since 100 in the plains to 800 m.a.s.l. in the Cerro Mutún (Villarroel *et al.*, 2009). The vegetation is composed primarily of Chiquitano dry forest, Cerrado sensu lato and in some sectors Campos rupestres (Villarroel *et al.*, 2009). Present a marked seasonality (dry winter and humid summer). The mean annual temperature fluctuates between 20 to 31°C, with a minimum of 15° C due to the southerly winds (surazos). The mean annual rainfall ranges from 900 to 1100 mm, with approximately 3-5 dry months (SENAMHI, 2015). The region is mainly for livestock (extensive livestock) economic activity that is develop in natural grasslands (Pinto-Ledezma & Rivero, 2013), although in recent years, present an accelerated land use change due the mining project Mutún and the highest rates of immigration that the project caused.

Because the iron mining activities are completely stripped all vegetation and habitats, and consequently affect the local biodiversity the main goal of this study was to report a list of reptiles that occur in the Mutún region and surrounding areas in order to rescue the biological knowledge before disappears and to contribute with conservation actions in the region. Data were collected using a combination of field observation (during day and night), and bibliographic sources. In sum field work extended for ~70 days (between 2007, 2012, 2013 and 2014). We follow the taxonomy of Uetz & Hošek (2014 [The Reptile Database]), and to assign the conservation status we used the categories of the IUCN (2015).

RESULTS AND FINAL CONSIDERATIONS

A total of 39 (13 families [Table 1]) species were recorded using all sampling methods. We recorded 17 snakes' species (five families). *Tropidurus etheridgei*, *Ameiva ameiva*, *Tupinambis merianae*, *Tupinambis teguixin* (Lizards), *Philodryas olfersii*, *Oxyrhopus rhombifer*, *Bothrops matogrossensis* (snakes) were the most common species recorded during the field work. According IUCN conservation status, most species (29 species) were not evaluated (Table 1), eight species are listed in the category of Least Concern (LC). Only one specie (*Kinosternon scorpioides*) is listed as Near Threatened (NT) and one specie the South American Bushmaster (*Lachesis muta*) as Vulnerable (VU).

Although in the last 10 years has witnessed an increase in the study of the herpetofauna in Bolivia, knowledge of the reptiles in the Mutún region is still fragmentary, such that the number of species could increase with additional research in the region. In this sense, the creation of a network of collectors in various geographic units (e.g., towns), based on protocols for collecting and preserving specimens for subsequent transfer to research centers, could help obtain information on the distribution, ecology and general biology of the region's fauna (Maillard, 2005).

Table 1. List of reptiles of the Mutún region, according with the taxonomy proposed by Uetz & Hošek (2014). The classification of conservation status corresponding to the IUCN code (2014).

Tabla 1. Lista de reptiles de la región del Mutún, de acuerdo a la taxonomía propuesta por Uetz & Hošek (2014). La clasificación del estado de conservación corresponde al código de la UICN (2014).

Family / Species	Common name	Conservation Status
Testudinidae (1)		
<i>Chelonoidis carbonaria</i>	Red-footed Tortoise	NE
Kinosternidae (1)		
<i>Kinosternon scorpioides</i>	Scorpion Mud Turtle	NT
Alligatoridae (1)		
<i>Caiman yacare</i>	Yacare Caiman	LC
<i>Caiman latirostris</i>	Brown-snouted Caiman	LC
Phyllodactylidae (1)		
<i>Phyllopezus pollicaris</i>	Brazilian Gecko	NE
Gekkonidae (1)		
<i>Hemidactylus mabouia</i>	House Gecko	NE
Tropiduridae (2)		
<i>Tropidurus etheridgei</i>	Etheridge's Lava Lizard	NE

Family / Species	Common name	Conservation Status
<i>Tropidurus spinulosus</i>	Spiny Lava Lizard	NE
Sphaerodactylidae (1)		
<i>Gonatodes humeralis</i>	Trinidad Gecko	NE
Teiidae (5)		
<i>Ameiva ameiva</i>	Giant Ameiva	NE
<i>Cnemidophorus ocellifer</i>	Spix's Whiptail	NE
<i>Salvator merianae</i>	Argentine Black and White Tegu	LC
<i>Tupinambis cf teguixin</i>	Black Tegu	LC
<i>Teius teyou</i>	Four-toed Tegu	NE
Boidae (3)		
<i>Boa constrictor</i>	Boa Constrictor	NE
<i>Epicrates cenchria</i>	Rainbow Boa	NE
<i>Eunectes notaeus</i>	Yellow Anaconda	NE
Colubridae (6)		
<i>Chironius exoletus</i>	Linnaeus' Sipo	NE
<i>Chironius flavolineatus</i>	Boettger's Sipo	NE
<i>Echinanthera occipitalis</i>	Jan's Forest Snake	NE
<i>Drymarchon corais</i>	Eastern Indigo Snake	LC
<i>Leptophis ahaetulla</i>	Parrot Snake	NE
<i>Mastigodryas boddaerti</i>	Boddaert's Tropical Racer	NE
Dipsadidae (12)		
<i>Clelia clelia</i>	Mussurana	NE
<i>Hydrodynastes gigas</i>	False Water Cobra	NE
<i>Liophis sp.</i>	NA	NE
<i>Leptodeira annulata</i>	Banded Cat-eyed Snake	NE
<i>Xenodon pulcher</i>	False Coral Snakes	NE
<i>Erythrolamprus poecilogyrus</i>	Goldbauch-Buntnatter	NE
<i>Philodryas olfersii</i>	Lichtenstein's Green Racer	NE
<i>Oxyrhopus rhombifer</i>	Amazon False Coral Snake	NE
<i>Oxyrhopus guibei</i>	False Coral Snakes	NE
<i>Pseudoboa nigra</i>	Black False Boa	NE
<i>Thamnodynastes cf pallidus</i>	Amazon Coastal House Snake	LC
<i>Xenodon merremi</i>	Wagler's Snake	NE
Elapidae (1)		
<i>Micrurus pyrrhocryptus</i>	Argentinian Coral Snake	LC
Viperidae (3)		
<i>Bothrops matogrossensis</i>	NA	NE
<i>Crotalus durissus</i>	Cascabel Rattlesnake	LC
<i>Lachesis muta</i>	South American Bushmaster	VU

VU=Vulnerable, NT=Near threatened, LC=Least concern, NE=Not evaluated, NA=No common name

On the other hand, the large mining operation that already underway in the region caused a rapid habitat transformation and fragmentation and is the major threat for the local wildlife (Pinto-Ledezma & Ruiz, 2010). In light of the current human activities, it is necessary to develop novel resource use plans, and generate new policies to improve conservation of the habitats in order to maintain the species richness observed. Therefore, the implementation of an adequate management system with the ability to protect land, enhance the resource base and provide higher net returns in a sustainable manner, is an alternative to reduce the advancement of deforestation and its influences on loss biodiversity (Pinto-Ledezma & Rivero, 2013). Finally, it is necessary that the results reported here must be used as a baseline for conservation activities and to set out recommendations about land use.

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