

New Herpetological Data from ROSCI0067 Deniz Tepe (Romania)

*Date despre herpetofauna
sitului ROSCI0067 Deniz Tepe (România)*

Alexandru IFTIME, Oana IFTIME

Abstract

The Deniz Tepe SCI is a small protected area in northern Dobroudja, an enclave of steppe vegetation surrounded by agricultural land. We present the results of our field investigation in this area, resulting in distribution and ecological data for 9 amphibian and reptile species, including some species of special conservative interest.

Keywords: *Deniz Tepe, SCI, records, amphibians, reptiles, conservation*

Introduction

The SCI site of Deniz Tepe is centered on an isolated interfluvial hill formation, with a maximal altitude of 270 m a.s.l. The exposed rocks consist mainly of Jurassic (Liasic) sandstone; the soils are characteristic for steppe or forest-steppe, large areas being covered by loess, in which rain water has carved characteristic ravines. The vegetation is steppic, with a limited component of clumps of broadleaf bushes and trees, being classified into two Natura 2000 habitat categories: 62C0* – Ponto-Sarmatic steppes and 40C0* – Ponto-Sarmatic deciduous thickets (***, 2016). Deniz Tepe represents a steppic "island" surrounded on all sides by agricultural land; irrigation canals (which are periodically, but not permanently, filled with water) come relatively close to the steppe area. Several microhabitat types can be distinguished in the area: agricultural monocultures, which, are, however, crossed by irrigation canals which are accompanied by ruderal and water-loving vegetation; steppe grasslands, utilized as pastures (even within the site) by sheep and goat flocks; loess ravines, which are formed at the base of the slope of the hill; upper, rocky slopes; and clumps of bushes and trees, sporadically found on the upper, rocky slopes. We were able to notice that the human impact to the SCI is limited to the pastoral use and some littering. However, while we have not witnessed such actions in this site, the shepherds may do significant damage to the herpetofauna if, as commonly seen in Romania, they commonly tend to kill all snakes they encounter, and even other reptiles as well. In September 2017 there appeared to be no overgrazing, the grass cover being substantial despite the (likely continuous) pastoral use.

From a herpetological point of view, the site is relatively well investigated (see COGĂLNICEANU *et alii*, 2013a,b; TÖRÖK, 2006, 2009; TÖRÖK *et alii*, 2013; MORARU *et alii*, 2016; SAHLEAN *et alii*, 2016); most studies are limited to faunistical records (except for TÖRÖK, 2009, and SAHLEAN *et alii*, 2016). Our effort was directed towards a better comprehension of the ecological peculiarities of the local amphibian and reptile populations.

Materials and Methods

Fieldwork was performed in 2007, 2008, 2010 and 2017 using the active transect method (see, e.g., COGĂLNICEANU, 1997). Photographs were taken whenever possible.

Results and Discussion

The following species were encountered in the field: *Bufotes viridis*, *Hyla (arborea) orientalis*, *Pelophylax ridibundus*, *Testudo graeca*, *Lacerta viridis*, *Lacerta trilineata*, *Podarcis taurica*, *Dolichophis caspius*, *Elaphe (quatuorlineata) sauromates*.

Of these, *P. ridibundus* and *Hyla* were recorded by TÖRÖK *et alii* (2013) *T. graeca* by MORARU *et alii* (2016); *L. viridis* by TÖRÖK (2009); *P. tauricus* by COGĂLNICEANU *et alii* (2013); *Dolichophis caspius* by TÖRÖK *et alii* (2013); *E. sauromates* by TÖRÖK (2006); *Bufotes viridis* and *Lacerta trilineata* are newly recorded for the studied area.

Bufotes viridis (the Green Toad) was found in rocky pasture areas, sheltering under stones (Photo 1), in the southern area of the SCI; it probably reproduces in irrigation canals. The species appears to be quite rare in the area.



Photo 1. *Bufotes viridis*
Photo by Al. Iftime



Photo 2. *Pelophylax ridibundus*
Photo by O. Iftime

Hyla (arborea) orientalis (the Tree Frog) was found outside the proper SCI area, at the edge of an irrigation canal, in ruderal vegetation; it probably also reproduces in irrigation canals.

Pelophylax ridibundus (the Marsh Frog) was found wherever humidity persisted, in artificial declivities, wells, pipes, ravine bottoms (Photo 2), irrigation ditches and canals. Its occurrence in the protected area fluctuates along with the humidity; the species was found in May but not in September, when it was restricted to the irrigation canal, filled with water at that time. It reproduces in irrigation canals (tadpoles were observed there).

Testudo graeca (the Greek Tortoise). One juvenile was found by us in a loess ravine, at the south-western edge of the SCI (Photo 3); excavations typical for this species were also seen in loess ravines nearby. MORARU *et alii* (2016) also found the species in habitat of pasture with rocky outcrops, on the territory of Lăstuni village – likely on or near Deniz Tepe hill. The species appears to be very rare – it was not found by TÖRÖK *et alii*, 2013, despite thorough survey; either the population is very much reduced (but still reproducing), or small specimens were dropped by birds of prey.



Photo 3. *Testudo graeca*
Photo by O. Iftime



Photo 4. *Lacerta viridis*
Photo by Al. Iftime



Photo 5. *Podarcis tauricus*
Photo by O. Iftime

Lacerta viridis (Green Lizard) was found on rocky outcrops with bushy vegetation (Photo 4), within the polygon delimited by TÖRÖK (2009) for its occurrence in this area.

Lacerta trilineata (the Three-lined Lizard) was found in loess pasture and associated ravines, on the edge of agricultural land, at the south-western limit of the SCI. We can corroborate the conclusion drawn by TÖRÖK (2009) that where the two species occur together, *L. viridis* is found higher on slopes than *L. trilineata*. In Deniz Tepe SCI the abundance of both species is limited.

Podarcis tauricus (the Balkan Wall Lizard) is the most frequent and abundant reptile of this site, being found in a variety of (micro) habitats: rocky outcrops, loess pasture, ravines, edge of agricultural area (Photo 5) – but not in the summit area.

Dolichophis caspius (the Balkan Whip Snake) was found in the southern and central parts of the SCI, in a diversity of (micro) habitats, which are the same as in *Podarcis* and cover almost all the ecological spectrum of the area. Our observation in the Deniz Tepe SCI area indicate that this species has a quite regular pattern of activity, which can be described as temperature-dependent; in spring and autumn it tends to be active towards the middle of the day, while as the temperature increases its activity tends to shift towards early morning and late afternoon / evening. It moves a lot and probably has a feeding

strategy which is preponderantly characterized by active foraging (cf. SPEYBROECK *et alii*, 2016). Its defensive behaviour is dominated by evasive action; this rapid species firstly attempts to flee by rapidly slithering over great distances, and then it will attempt to take shelter (in holes, among rocks, dense vegetation etc.). Only if these defensive actions are unsuccessful it will attempt to defend itself by striking, which, however, does with great force and determination (FUHN, 1969).



Photo 6. *Elaphe (quatuorlineata) sauromates*
Photo by O. Iftime.

Elaphe (quatuorlineata) sauromates (Four-lined or Blotched Snake). This Natura 2000 species, one of those for which the SCI was designated, was recorded here by TÖRÖK (2006) – 1 specimen, by TÖRÖK *et alii* (2013) and by SAHLEAN *et alii* (2016) – 1 specimen. We add three more records, one of which is outside the protected area. It was found in the southern part of the SCI, in loess ravines, but also outside the SCI, near an irrigation canal (Photo 6). An elusive species, we could not discern an activity pattern for it. However, observations on the behaviour of the encountered specimens allows us to draw the tentative conclusion that the species is less mobile than *D.*

caspius and that its feeding strategy is less dominated by active foraging, ambush having, very likely, a far greater role. Its defensive behaviour may start with tail vibrating, which, when the animal is found in vegetation, may confuse about the position of the head and deflect a potentially fatal hit (by a bird predator or a human). The snake further attempts to shelter itself in holes in the ground or in dense, spiny vegetation, from whose cover it apparently does not stray far.

No dead specimens of either *D. caspius* or *E. (quatuorlineata) sauromates* were found but there is a risk of killing by shepherds.

Conclusions

The fluctuating occurrence of amphibians (especially *Pelophylax*) in the site, as a function of ambient humidity, and the occurrence of amphibians along the irrigation canals even while they do not occur within the site indicates that irrigation canals are routes for herpetofauna to reach the site, which appears thus far less isolated than it may seem. As for the presence of *Testudo*, it may be present as a resident population very low in numbers, but the hypothesis that it may be dropped by birds of prey (especially as juvenile *Testudo* may be transported by medium-sized raptors, such as *Buteo*, which is very common in the area) cannot be excluded for now.

Our data, although far from complete, suggest apparent niche partitioning between *Lacerta viridis* and *Lacerta trilineata* (cf. TÖRÖK, 2009) but probably also between *Elaphe (quatuorlineata) sauromates* and *Dolichophis caspius*.

On the whole, the permeable isolation surrounding the SCI coupled with the observed persistence of comparable conditions over 10 years indicates good conservation prospects for this site, at least from the point of view of herpetofauna.

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Alexandru IFTIME¹, Oana IFTIME²

¹ „Grigore Antipa” National Museum of Natural History, Bucharest
e-mail: aiftime@antipa.ro

² University of Bucharest, Faculty of Biology
e-mail: oiftime@gmail.com