Distribution update for the invasive Pond Slider (*Trachemys scripta*) in Bulgaria with possible successful breeding in the wild

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INTRODUCTION

The Pond Slider, *Trachemys scripta* (Thunberg in Schoepff, 1792) is a North American turtle species and its native range is across the central and eastern parts of the continent, extending north almost up to the region of the Great lakes (lake Michigan). It has been introduced by man to almost every continent (Bringsøe, 2006) and is listed among the 100 “World’s Worst Invaders” (Lowe et al., 2000).

The species is the only invasive alien species for the Bulgarian herpetofauna, becoming popular as a pet in the 1990’s, with mass releases into the wild and the corresponding sightings starting after 1996, although there is no data on the exact number of released Sliders (Tzankov et al., 2015). Until recently, almost all sightings have been of the Red-eared Slider subspecies, with only two records of the nominate subspecies *T. s. scripta* – in Stomopolou lagoon near the town of Primorsko (Tzankov et al., 2015). The aim of the current study is to present an update of the expanding range of the different Pond Slider subspecies in Bulgaria, as well as evidence for possible successful breeding of the Red-eared Slider in the wild.

MATERIALS AND METHODS

The dataset for the Pond Slider sightings was complied by the authors’ own observations for the period 2015–2019, with additional localities provided by colleagues and the citizen science project www.SmartBirds.org. Surveys were performed throughout the country on various natural, semi-natural, and artificial water bodies and the surrounding terrain, representing potentially suitable habitats for freshwater turtles. The dataset of Pond Slider presence/absence with exact geographic coordinates for each record was summarised and plotted on a national level using a 10×10 km UTM grid.

Evidence for the possible successful breeding of the Red-eared Slider has been observed by the authors near the protected area of Rupite in SW Bulgaria. The climate is very specific, transitional between continental and Mediterranean and characterized by hot dry summers and mild winters. The hot springs issuing in the area reach a temperature of 71-78°C and have an average discharge of 35 l/sec. Several small ponds (the largest with surface area about 0.02 ha) with varying temperatures (from over 60°C to 20°C) are formed near the springs and drain into a canal.



RESULTS

A total of 46 new sightings were registered during the observation period, and the species distribution was expanded with additional five UTM squares compared to 1990–2015 data (Fig. 1). The vast majority of the registered individuals belong to the subspecies *T. s. elegans*, but in recent years there have also been sightings of the nominate subspecies *T. s. scripta*; *T. s. trootsi* is yet to be reported for the country.

On two separate occasions during the summer of 2017 a total of three different newly hatched Red-eared Sliders were observed in the small ponds around the hot springs near the protected area of Rupite. These were the first records of hatchlings in the wild and were documented for the Atlas of invasive alien species of concern to the European Union (Tzankov et al., 2017). In May 2018, another newly hatched Red-eared Slider was collected from a small pond near the canal (Fig. 2) and a female exhibiting nesting behaviour was observed next to the road along the canal. By comparing photographs of the four hatchlings, it was established that the one found in 2018 was not only different in coloration but also smaller in size than the three found in 2017.

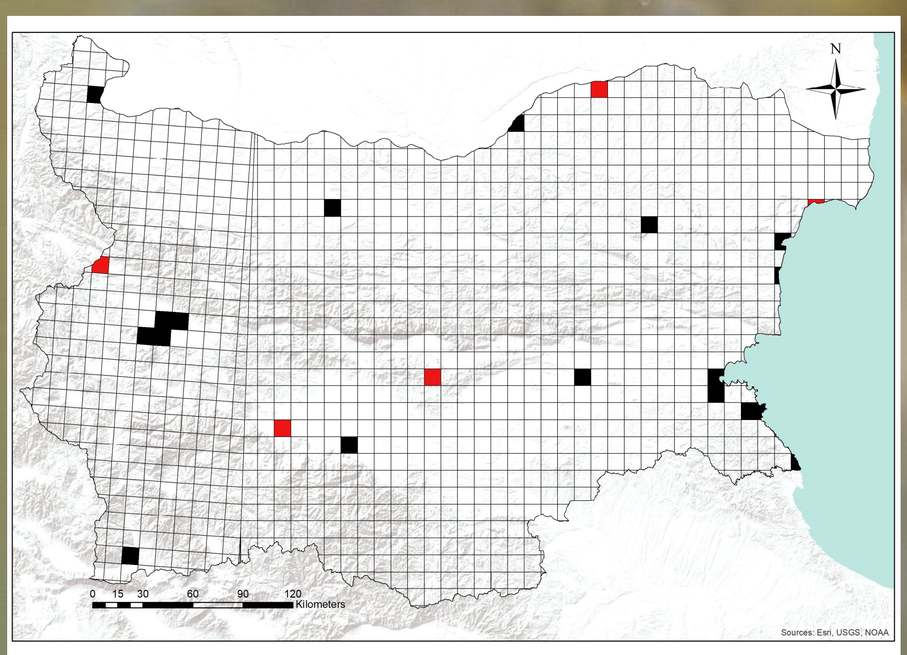


Fig. 1: Updated distribution of the Pond Slider in Bulgaria; presence recorded on a UTM grid 10×10km with old records in black and new records in red.



Fig. 2: A hatchling Pond Slider, Rupite, 2018. The coin is 2.5 cm in diameter.

CONCLUSIONS

We can conclude that the species has a wider distribution in Bulgaria than previously thought and is also beginning to breed successfully in certain localities in the wild.

References. (1) Bringsøe, H. 2006. NOBANIS – Invasive Alien Species Fact Sheet – *Trachemys scripta*. Online Database of the North European and Baltic Network on Invasive Alien Species. http://www.nobanis.org; **(2)** Lowe, S., Browne, M., Boudjelas, S., De Poorter, M. 2000. 100 of the World’s Worst Invasive Alien Species A selection from the Global Invasive Species Database. The Invasive Species Specialist Group (ISSG) a specialist group of the Species Survival Commission (SSC) of the World Conservation Union (IUCN); **(3)** Tzankov, N., Popgeorgiev G., Kornilev Y., Natchev N., Stoyanov A., Naumov B. & Ivanchev I. 2015. First survey on the invasive Pond slider (*Trachemys scripta*) in Bulgaria: historic development and current situation. Hyla 1: 18-27; **(4)** Tzankov N., Stojanov A., Dobrev D., Lukanov S., Kornilev Y., Andonov K., Vergilov V., Popgeorgiev G. 2017. *Trachemys scripta* (Thunberg in Schoepff, 1792). In Trichkova T., Vladimirov V., Tomov R., Todorov M. (eds.): Atlas of invasive alien species of concern to the European Union, IBER-BAS, ESENIAS, Sofia, p.: 110-113.