

Conservation activities for European pond turtles (*Emys orbicularis*) in Bulgaria

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Introduction

In Bulgaria, the European pond turtle (*Emys orbicularis*) is distributed along rivers, streams, irrigation canals and in marshes, ponds, dams and fisheries throughout the country up to 1100 m a.s.l. (Beshkov and Nanev, 2002; Petrov, 2007; Stojanov et al., 2011). Several studies on the European pond turtle have used Bulgarian pond turtles since the beginning of the nineties. Information on biometry and systematics (Fritz, 1992; Fritz and Obst, 1995; Lenk et al., 1998), phytogeography (Fritz et al., 2007; Lenk et al., 1999), habitat distribution (Mollov, 2011), helminthology (Kirin, 2001) and paleontology (Schleich and Böhme, 1994) have become available, along with numerous studies reporting new localities of the species in Bulgaria. Most of the literary data on the species distribution is summarized and mapped by Naumov and Stanchev (2010) (Fig. 1). However, only a few studies have focused on the conservation biology of *E. orbicularis* in Bulgaria (e.g., Beshkov, 1998; Tzankov and Stojanov, 2009). Furthermore, there are still data lacking about the species' ecology, population structure, reproductive biology and ethology in the country.

In Bulgaria, *Emys orbicularis* has a high conservation value and is protected by the national legislation by the "Biodiversity Protection Act of Bulgaria" (promulgated in an official gazette No 77 on August 9th, 2002), listed in the annexes II – "Species, for which conservation, preservation areas are established for their habitat protection" and III – "Species protected in the whole

country territory". It is also listed in the annexes II and IV of the Habitat Directive (Council Directive 92/43/EEC, 1992); listed in the annex II (Strictly protected fauna species. Status in force since March 1st, 2002) of the Bern Convention, which came into effect in Bulgaria on May 1st, 1991 (Bern Convention, 1979); listed as NT "Lower Risk/near threatened" category in the IUCN-RedList (IUCN, 2012).

According to Tzankov and Stojanov (2009) the main threats for the species in Bulgaria are: predation on eggs, juveniles and adults, habitat destruction, human consumption, collecting for trade and possible competition with the red-eared terrapin (*Trachemys scripta elegans*), which is still very poorly studied in Bulgaria. According to Beshkov (1998) this species is not as acutely endangered. It has suffered eradication throughout much of its traditional range due to the drainage of marshes, corrections or changes in the river channels and basins, and capture by terrarium enthusiasts. Many turtles are also killed when they are caught by line or captured by the nets of fishermen. However, the European pond turtle has reestablished itself along newly built micro dams, ponds, and fish farms. Special measures for the species' protection will need to be undertaken in the near future.

Conservation projects

Location: Bulgaria (national level).

Project duration: 2011-2013.

Funding agency: Ministry of Environment and Water of Bulgaria.

Conservation project responsible: Consortium „Natura Bulgaria“.

Main contacts: Dobrin Dobrev (dddobrev1@gmail.com)

Local *E. orbicularis* conservation problems: Absence of sufficient data on the distribution, abundance and habitats of *E. orbicularis* in the protected areas.

Conservation project activities and main results:

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„Mapping and determine the conservation status of habitats and species - Phase I“. A comprehensive project whose herpetological part consists in mapping the distribution and habitats of the target species of amphibians and reptiles (including *E. orbicularis*) in NATURA2000 sites (under the Habitats Directive) in Bulgaria. During the field work (2011-2012) dozens of new localities of *E. orbicularis* have been identified throughout the studied territories.

Location: Bulgaria (national level).

Project duration: 2008-2013.

Funding agency: Bulgarian Herpetological Society.

Conservation project responsible: Bulgarian Herpetological Society.

Main contacts: Borislav Naumov (herpetology_bg@yahoo.com)

Local *E. orbicularis* conservation problems: Absence of sufficient data on the distribution of *E. orbicularis* in Bulgaria.

Conservation project activities and main results: „Atlas of the Distribution of Amphibians and Reptiles in Bulgaria“. Year-long project aimed at exploring and mapping the distribution of all species of amphibians and reptiles in Bulgaria, using the 10 kilometer UTM

grid. In 2013, pending a summary of the data collected and printing a monographic work with high volume.

Location: Osogovo Mts. (SW Bulgaria).

Project duration: 2007-2009.

Funding agency: Frankfurt Zoological Society.

Conservation project responsible: Bulgarian Biodiversity Foundation.

Main contacts: Borislav Naumov (herpetology_bg@yahoo.com).

Local *E. orbicularis* conservation problems: Absence of any data for *E. orbicularis* in the area.

Conservation project activities and main results: „Balkan Green Belt - Osogovo“. Field studies were conducted on the fauna diversity in Bulgarian part of Osogovo Mts. (Kyustendil District). A series of new for the area species were recorded, as well as many new localities of the known species. *Emys orbicularis* is found in several places in the lower parts of the mountain. Four different sites in the territory of Osogovo Mts. are identified as Herpetological Important Areas. These are areas with high diversity of amphibians and reptiles, and with presence of species of high conservation value, including *E. orbicularis*.

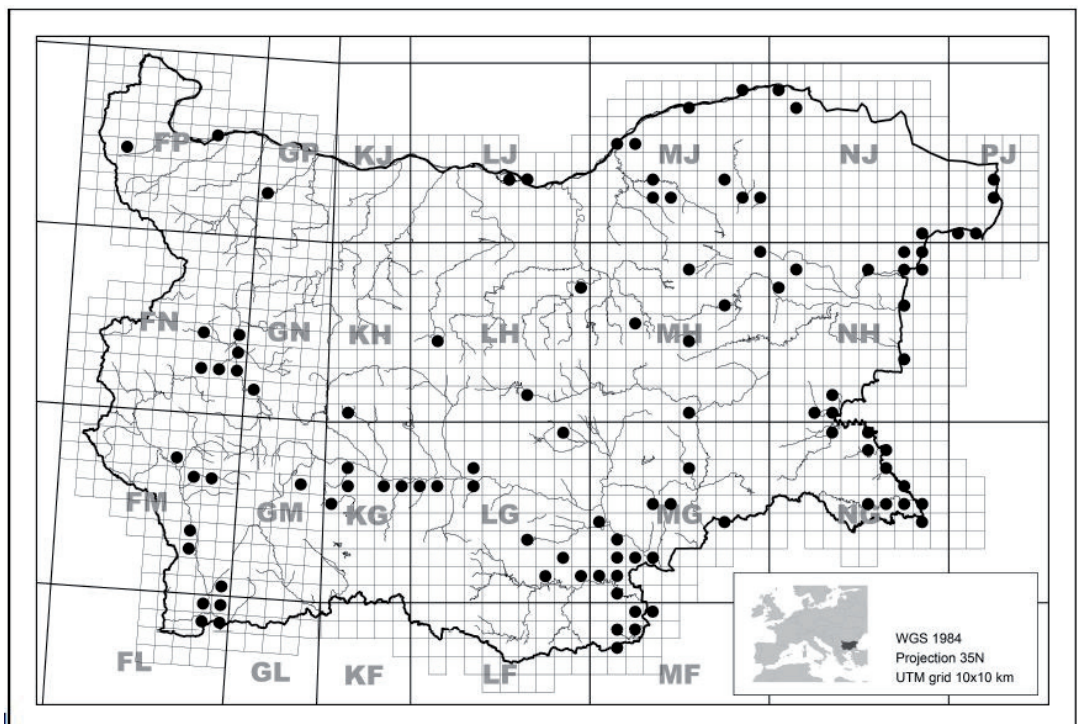


Figure 1. Distribution of *Emys orbicularis* in Bulgaria by UTM grid according to Naumov and Stanchev (2010) with some additions (includes data coming from more recent publications).

Location: Besaparski Heights (S Bulgaria) and Ponor Mt. (NW Bulgaria).

Project duration: 2009-2010.

Funding agency: UNDP-GEF.

Conservation project responsible: Bulgarian Society for the Protection of Birds.

Main contacts: Gergi Popgeorgiev (georgi.popgeorgiev@gmail.com)

Local *E. orbicularis* conservation problems: Absence of sufficient data on the distribution, abundance and habitats of *E. orbicularis* in these areas.

Conservation project activities and main results: „Conservation of globally important biodiversity in high nature value semi-natural grasslands through support for the traditional local economy“. Field studies were conducted on the fauna diversity in Besaparski Hills (Pazardzhik District) and Ponor Mt. (part of the Western Stara Planina Mts.). Partly, this herpetological research includes study of the distribution and abundance of species and determination of Herpetological Important Areas. Some preliminary results for the herpetofauna (including *E. orbicularis*) are reported by Popgeorgiev et al. (2010).

Location: Districts of Pazardzhik and Plovdiv (S Bulgaria).

Project duration: 2009-2012

Funding agency: Bulgarian Science Fund, Ministry of Education, Youth and Science of Bulgaria.

Conservation project responsible: Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences.

Main contacts: Georgi Popgeorgiev (georgi.popgeorgiev@gmail.com), Ivelin Mollov (mollov_i@yahoo.com).

Local *E. orbicularis* conservation problems: Mortality caused by the automobile traffic on “Trakia” highway and a secondary road in the section between the towns of Pazardzhik and Plovdiv.

Conservation project activities and main results: „Impact of “Trakiya” Highway Traffic in the Section between the Town of Pazardzhik and the Town of Plovdiv on the Biodiversity“. The aim of the study is to explore the effects of “Trakiya” highway traffic and one control road section (between the towns of Belovo and Plovdiv) on birds, amphibians, reptiles (including *E. orbicularis*), small mammals and adjacent water bodies in the region. The results of the project will contribute to more effective preliminary planning of road infrastructure in Bulgaria and its consequent management, especially

during the next years when the responsible institutions plan to rehabilitate and broaden the road network. The results of the study could be used for the preparation of Environmental Impact Assessments and ecological assessments of investment offers for rehabilitation or construction of new road sections. Some preliminary results are published by Kambourova-Ivanova et al. (2012).

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