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To cite this article: N. Tzankov, B. Naumov, A. Grozdanov, D. Peshev & A. Vasilev (2009) The Herpetofauna of Northern Black Sea Coast, *Biotechnology & Biotechnological Equipment*, 23:sup1, 123-126, DOI: [10.1080/13102818.2009.10818381](https://doi.org/10.1080/13102818.2009.10818381)

To link to this article: <https://doi.org/10.1080/13102818.2009.10818381>



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Published online: 15 Apr 2014.



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THE HERPETOFAUNA OF NORTHERN BLACK SEA COAST

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ABSTRACT

We are present a brief review of the herpetofauna of the northeastern part of the Black sea coast. A total twenty seven species was recorded. Of which two newt species (*Lissotriton vulgaris*, *Triturus karelinii*), nine species of tailless amphibians (*Bombina bombina*, *Pelobates fuscus*, *P. syriacus*, *Bufo bufo*, *Epidalea viridis*, *Hyla arborea*, *Rana dalmatina*, *Pelophylax ridibundus*, *P. esculentus*), ten species of lizards (*Mediodactylus kotschyi*, *Angius fragilis*, *Pseudopus apodus*, *Ablepharus kitaibelii*, *Lacerta agilis*, *L. trilineata*, *L. viridis*, *Podarcis muralis*, *P. tauricus*) and seven species of snakes (*Natrix natrix*, *N. tessellata*, *Dolichophis caspius*, *Elaphe sauromates*, *Zamenis longissimus*, *Coronella austriaca*, *Vipera ammodytes*). Their conservation status was stated and their presence in the protected areas in the study area was analyzed. A map of the herpetologically important areas was draw.

Keywords: amphibians, Bulgaria, conservation, herpetofauna, reptiles

Introduction

Up to now data about the herpetofauna of North Bulgarian Black sea coast was cited in Kovachev (15), Lepši (16), Müller (18), Buresch & Zonkow (5, 6, 7, 8, 9), Băcesco (2), Bachvarov & Popov (3), Beshkov (4), Stojanov (19), Christov & Beshkov (10), Schlüter (20, 21, 22, 23), Mollov et al. (17) and Cogălniceanu (11). Few data are available from the actions plans for the protected areas in this region (1, 13, 14, 24, 25, 26). Concerning the herpetofauna the Dobrudza region was determinate as on of the important places on the Balkan Peninsula (12).

Materials and methods

The standard 10 km x 10 km UTM squares was divided into four 5 km x 5 km squares in order to present in detail the species distribution. Thus every standard square, e.g. PJ10 was split and further considered as four: PJ10a, PJ10b, PJ10c and PJ10d (Fig. 1). The study area includes twenty five squares. Using the available data from the literature (1-26) and data obtained during authors field studies (1992-2008) in this region we classify the squares according to their richness.

Results and Discussion

The observed 31 species represent 59% of the Bulgarian herpetofauna. Of which amphibians are 12 species, 2 species of newt and 10 species toads and frogs. They respectively represent 29 % and 83 % of the Bulgarian batrachofauna. Reptiles are presented by 19 species, 3 turtles and tortoises species (50 %), 9 species of lizards (respectively 69 %) and 7 species of snakes (respectively 41 %).

For amphibians five UTM squares was determined to be the most important, each include more than 5 species (Fig. 1, appendix 1). They correspond to already establish protected areas e.g. natural park Zlatni Pyasatsi (NH89a), reserve Baltata (NJ80b), reserve Kaliakra (PJ10d) and protected area Durankulak (PJ23d). The territory of square PJ00b near Kavarna fall into the Natura 2000 protected area but future more restricted measures are needed to ensure much more directed protection.

For the reptiles twelve squares was determinated which includes more than 12 species (Fig. 2, appendix 2). Four fall in to the range of natural park Zlatni Pyasatsi (NH88c, NH89a,c,d), reserve Baltata (NJ80b), protected area Botanical garden Balchik (NJ90c), reserve Kaliakra (PJ10c,d) and protected area Yaylata (PJ21b). The territory of surroundings of Balchik (NJ90c.d) partly fall in to the range of Natura 2000 protected area. The territories of square PJ00d near Kavarna fall into the Natura 2000 protected area.

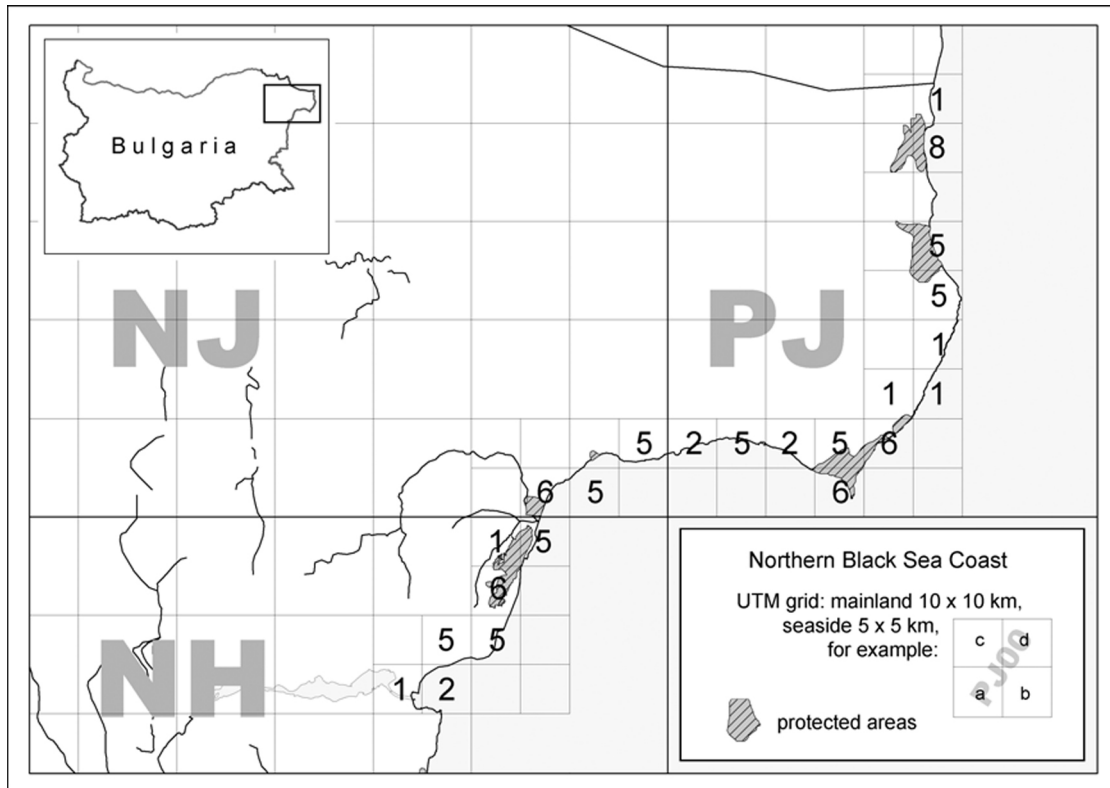


Fig. 1. Number of amphibian species given for 5 km x 5 km UTM squares. Protected areas from south to north are: natural park Zlatni Piasatsi (NH89a,c,d), reserve Baltata (NJ80b), protected area Botanical garden Balchik (NJ90c), reserve Kaliakra (PJ10b,d; PJ20c), protected area Yaylata (PJ20c, PJ21a,b), protected area Shabla Lake (PJ22,b,d) and protected area Durankulak Lake (PJ23d; PJ24b)

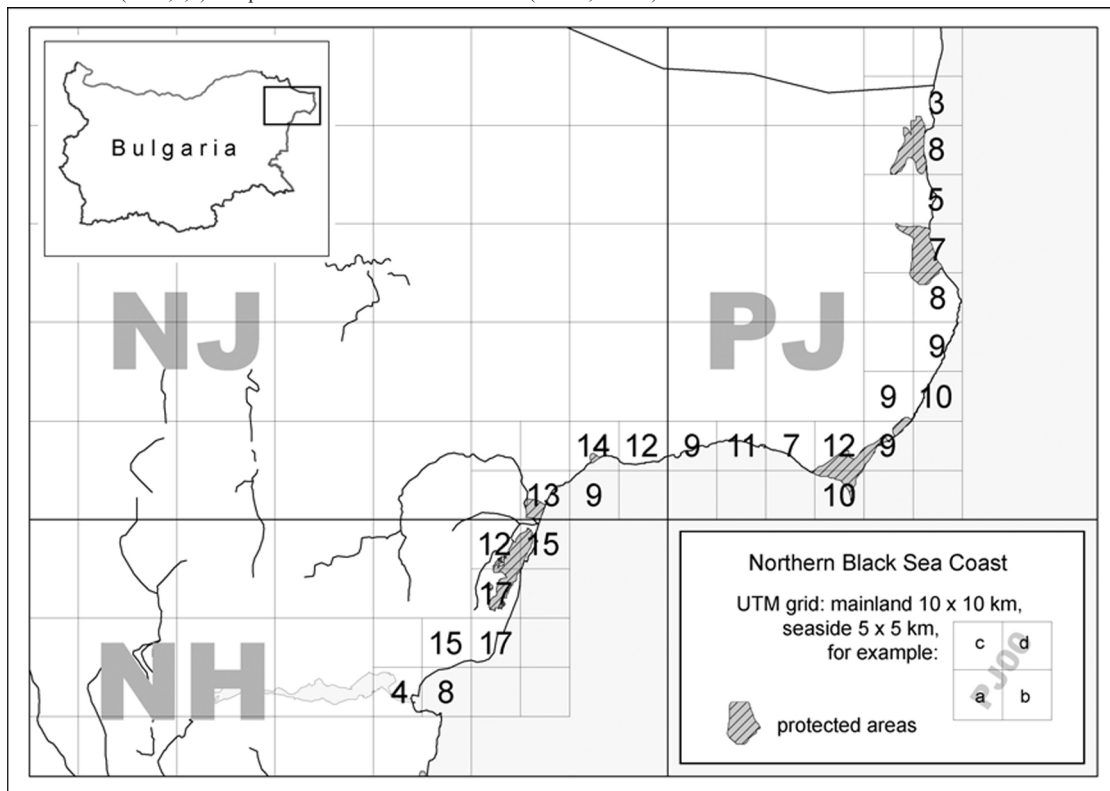


Fig. 2. Number of reptile species given for 5 km x 5 km UTM squares.

Combined analyze for amphibians and reptiles clearly indicate that the protected areas in the study region are of primary importance for the herpetofauna protection. On the other hand the areas between these zones are also very important as they represent a biocorridor for these species. The mass habitat destruction in the last decade impact directly amphibians and reptiles. The conservation status and species richness of the herpetofauna from this region, was determined it to be one of the most important places for this group in the Balkans (12).

Appendix 1:

UTM (5 x 5 km) distribution of the amphibians along the northern black sea coast in Bulgaria.

Lissotriton vulgaris - NH89a; *Triturus karelinii* - NH89a, PJ10b, d? (proved only close to the sea in Bolata); *Bombina bombina* - PJ23d, PJ10b?, d? (need verification), *B. variegata* - PJ10b?, d? (1) (not stated probably wrong determination), *Pelobates fuscus* - PJ10b,c, PJ22b,d, PJ23d; *Pelobates syriacus* - NJ80b, PJ10b,d, PJ20c, PJ22b,d, PJ23d; *Bufo bufo* - NH78d, NH88c, NH89a,d, NJ80b, NJ90a,d, PJ00d, PJ10d, PJ20c; *Epidalea viridis* - NH78a,b,d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00c,d, PJ10b,c,d, PJ20c, PJ21a,b,d, PJ22b,d, PJ23d, PJ24,b; *Hyla arbea* - NH78d, NH88c, NH89a,d, NJ80b, NJ90a,d, PJ00d, PJ10b,d, PJ20c, PJ22b,d, PJ23d; *Rana dalmatina* - NH78d, NH88c, NH89d, NJ80b, NJ90a,d, PJ00d, PJ20c, PJ23d; *Pelophylax ridibundus* - NH78b,d, NH88c, NH89a,d, NJ80b, NJ90a,d, PJ00c,d, PJ10b,d, PJ20c, PJ22b,d, PJ23d; *Pelophylax esculentus* - PJ23d.

Appendix 2:

UTM (5 x 5 km) distribution of the reptiles along the northern black sea coast in Bulgaria.

Emys orbicularis – NH78d, NH88c, NH89d, NJ80b, PJ10b,d, PJ22b,d, PJ23d; *Testudo graeca* – NH78d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00c,d, PJ10b,c,d, PJ20c, PJ21a,b,d, PJ23d; *Eurotestudo hermanni* - NH78d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00c; *Mediodactylus kotschy* – NH78d, NH88c, NH89a,d, NJ80b, NJ90a,d, PJ00c; *Ablepharus kitaibelii* – NH78d, NH88c, NH89a,c, NJ90c; *Anguis fragilis* – NH78d, NH88c, NH89a,c, d, PJ10d; *Pseudopus apodus* - NH88c, NH89d, NJ80b, NJ90d, PJ00c,d, PJ10b,d, PJ20c, PJ21a,b,d; *Lacerta agilis* – NJ90c, PJ22d; *Lacerta trilineata* – NH78b,d, NH88c, NH89a,c,d, NJ80b, NJ90c, PJ00d, PJ10b,c,d, PJ20c, PJ21a,b,d, PJ22b, PJ23b; *Lacerta viridis* – NH78b,d, NH88c, NH89a,c,d, NJ80b,

NJ90a,d, PJ00c,d, PJ10d, PJ20c, PJ21a,b,d, PJ22b,d, PJ23b,d, PJ24,b; *Podarcis muralis* – NH78a,b,d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00c,d, PJ10b,c,d, PJ20c, PJ21a,b,d, PJ22b,d; *Podarcis tauricus* - NH78d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00c,d, PJ10b,c,d, PJ20c, PJ21a,b,d, PJ22b,d, PJ23b,d, PJ24,b; *Dolichophis caspius* NH78b,d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00c,d, PJ10b,c,d, PJ21a,b,d, PJ22b,d, PJ23b,d; – *Elaphe sauromates* –NH88c, NH89a, PJ00d; *Zamenis longissimus* NH78b,d, NH88c, NH89a,c,d, NJ80b, NJ90d, PJ21a,b; – *Coronella austriaca* – NH89a; *Natrix natrix* – NH78a,b,d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00d, PJ10d, PJ20c, PJ21a,b,d, PJ22b,d, PJ23b, PJ24,b; *Natrix tessellata* – NH78a,b,d, NH88c, NH89a,d, NJ80b, NJ90a,c,d, PJ00c,d, PJ10b,c,d, PJ20c, PJ21a,b,d, PJ22b,d, PJ23b,d, PJ24,b; *Vipera ammodytes* - NH78d, NH88c, NH89a,c,d, NJ80b, NJ90a,d, PJ00c,d, PJ10b,c,d, PJ20c, PJ21a, PJ23d.

Acknowledgment

We thank M. Naumova, B. Tsvetkov and R. Trayanov sharing their data from field researches.

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