

Ecological Classification of the Amphibian and Reptilian Fauna in the City of Plovdiv

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Introduction & Aim

Invariable component of urban ecosystems are the amphibians and reptiles. The problem for clarification of the processes synanthropy and changes that occur in populations of amphibians and reptiles in urban environments is contemporary trend in studies in this area and the data from such research will contribute to the efficient planning of activities for the conservation and restoration of urban batraho- and herpetofauna.

The aim of the current study is to classify the amphibian and reptile species, occurring in Plovdiv City in ecological groups, based on ecological plasticity and habitat preferences; temperature regime; humidity and level of synanthropy.

Material & Methods

In the current study the amphibians and reptiles are classified the ecological groups, based on: 1) ecological plasticity and habitat distribution; 2) temperature regime; 3) humidity; 4) level of synanthropy. For these classifications we used the works of Angelov & Kalchev (1961), Beshkov (1972), Kamenov (1988), Beshkov & Naney (2002), Mihov (2002) and Biserkov et al. (2007), with some modifications as well as the author's personal observations, done during many field studies in Plovdiv City in the period 2002-2012. The polytopic/stenotopic dichotomy was defined in the following sense: polytopic species were defined as ecologically tolerant species that occur in more than 5 habitat types, while stenotopic species were ones occurring in less than 5 habitat types (see Mollov, 2011). The systematics of the species follows Biserkov et al. (2007).

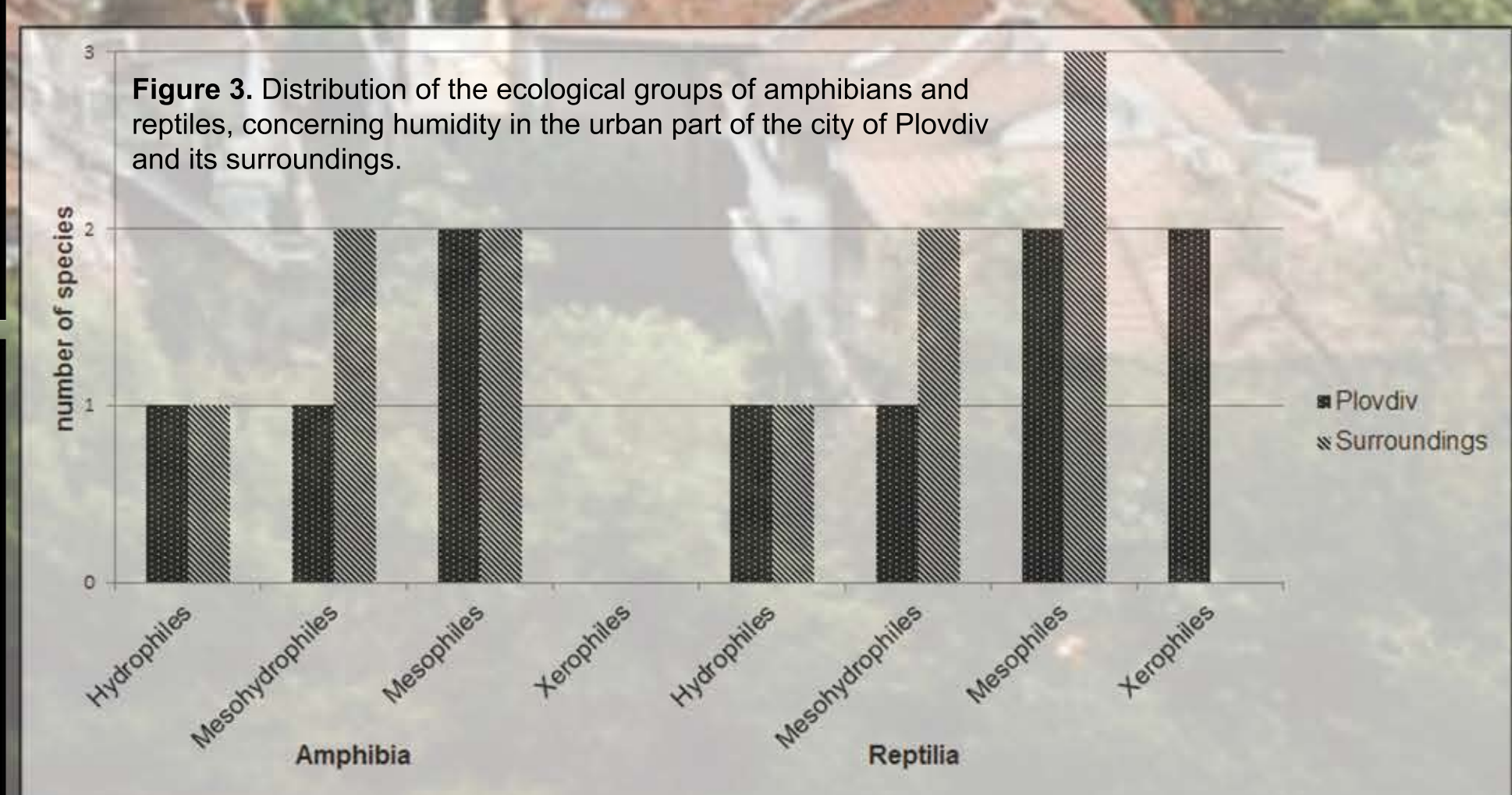
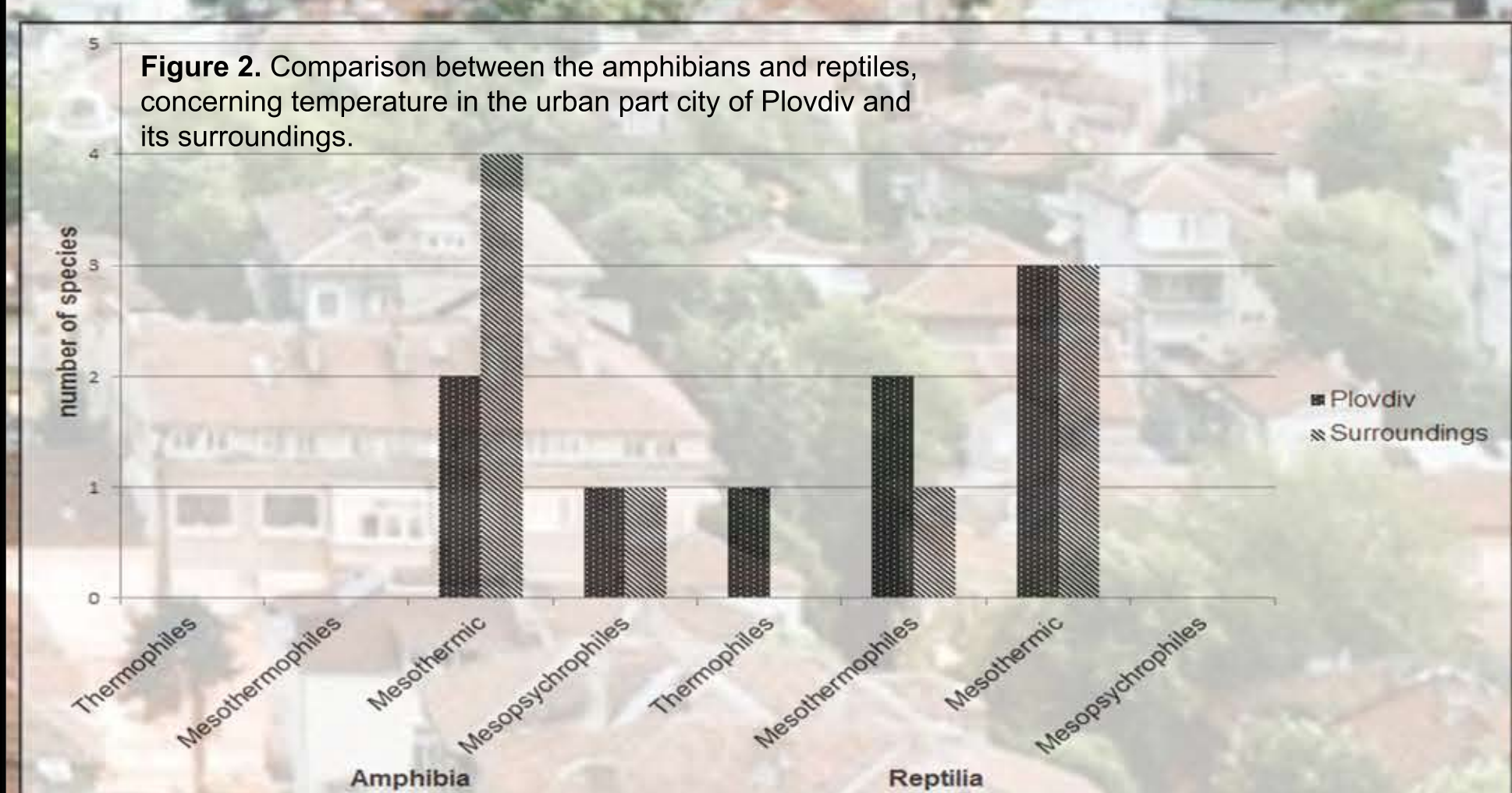
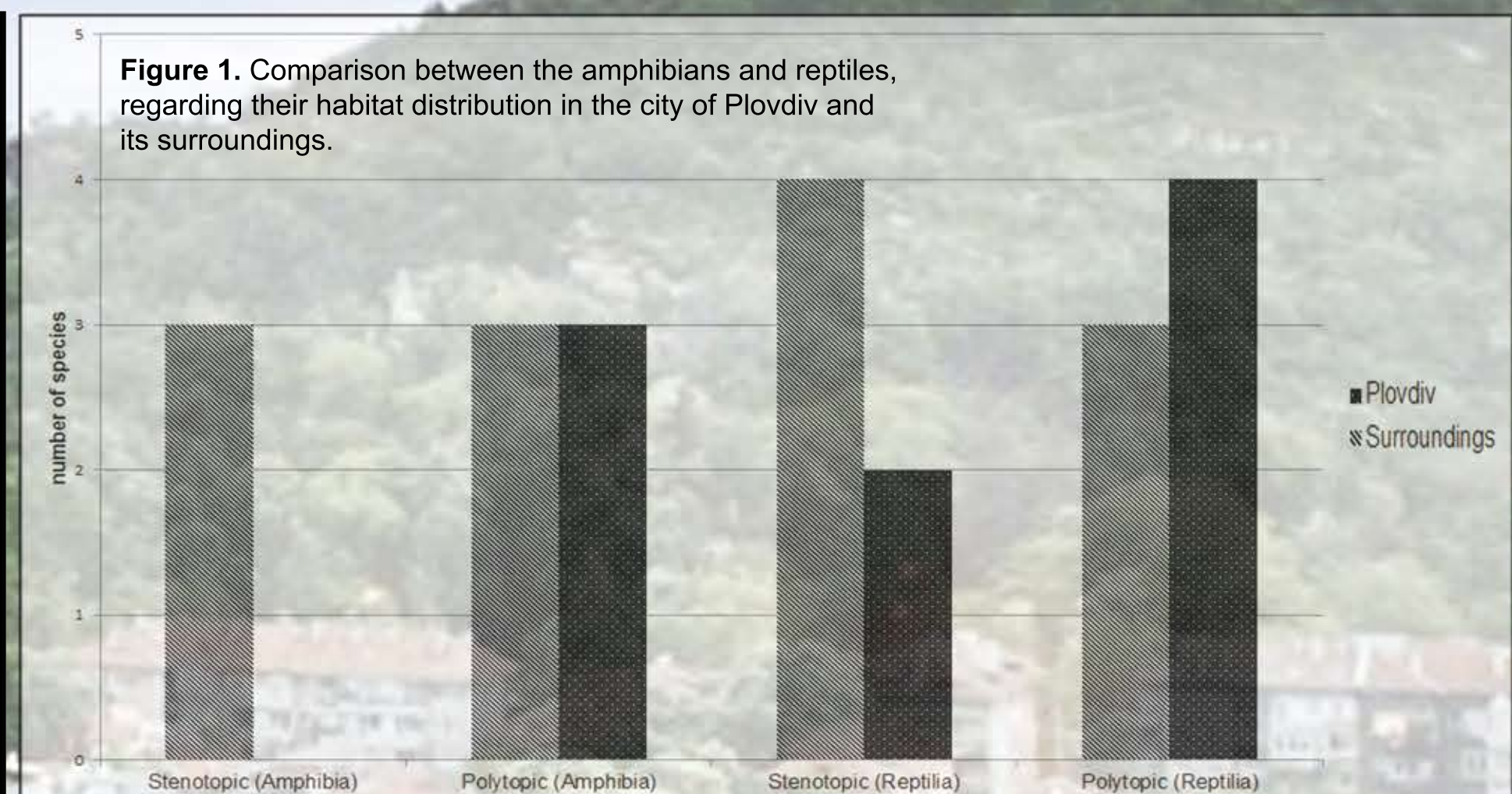
Results & Conclusions

In the city of Plovdiv we identified seven amphibian species (*Bufo bufo*, *B. viridis*, *Hyla arborea*, *Pelobates syriacus*, *Rana dalmatina* and *Pelophylax ridibundus*) and eight reptiles (*Mediodactylus kotschyi*, *Lacerta viridis*, *L. trilineata*, *Podarcis tauricus*, *Emys orbicularis*, *Natrix natrix*, *N. tessellata* and *Dolichophis caspius*). According to their habitat distribution - 4 amphibians are classified as "polytopic" and 3 as "stenotopic" and from the reptiles - 4 species are classified as "polytopic" and 4 as "stenotopic". There is a trend in both classes - an increase of the number of polytopic species and reduction of the number of stenotopic species from the surrounding to the city center.

Regarding the temperature regime the amphibians and reptiles are classified in four ecological groups - thermophiles, mesothermophiles, mesothermic and mesopsychrophiles. There are no amphibian species that are thermophiles and mesothermophiles and mesothermic species are predominant in the surroundings of the city. For the reptiles there is only one thermophilic species and there are no mesopsychrophiles.

Based on their humidity preferences the amphibians and reptiles are classified in four groups - hydrophiles, mesohydrophiles, mesophilic, and xerophiles. From the amphibians there are no xerophilic species. For both classes there is a visible trend of increase of drought-resistant species from the city center to the surroundings.

According to their level of synanthropy amphibians and reptiles are classified in four ecological groups - synanthropes, hemerophiles, hemerodiaphores and hemerophobes. For full classification of the amphibians and reptiles, registered in the city of Plovdiv, based on their level of synanthropy, see Mollov (2014).



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