



Conservation significance of the karst steppes in Western Bulgaria as the southernmost refugium of the steppe biome in Europe. A case study of the ground beetles

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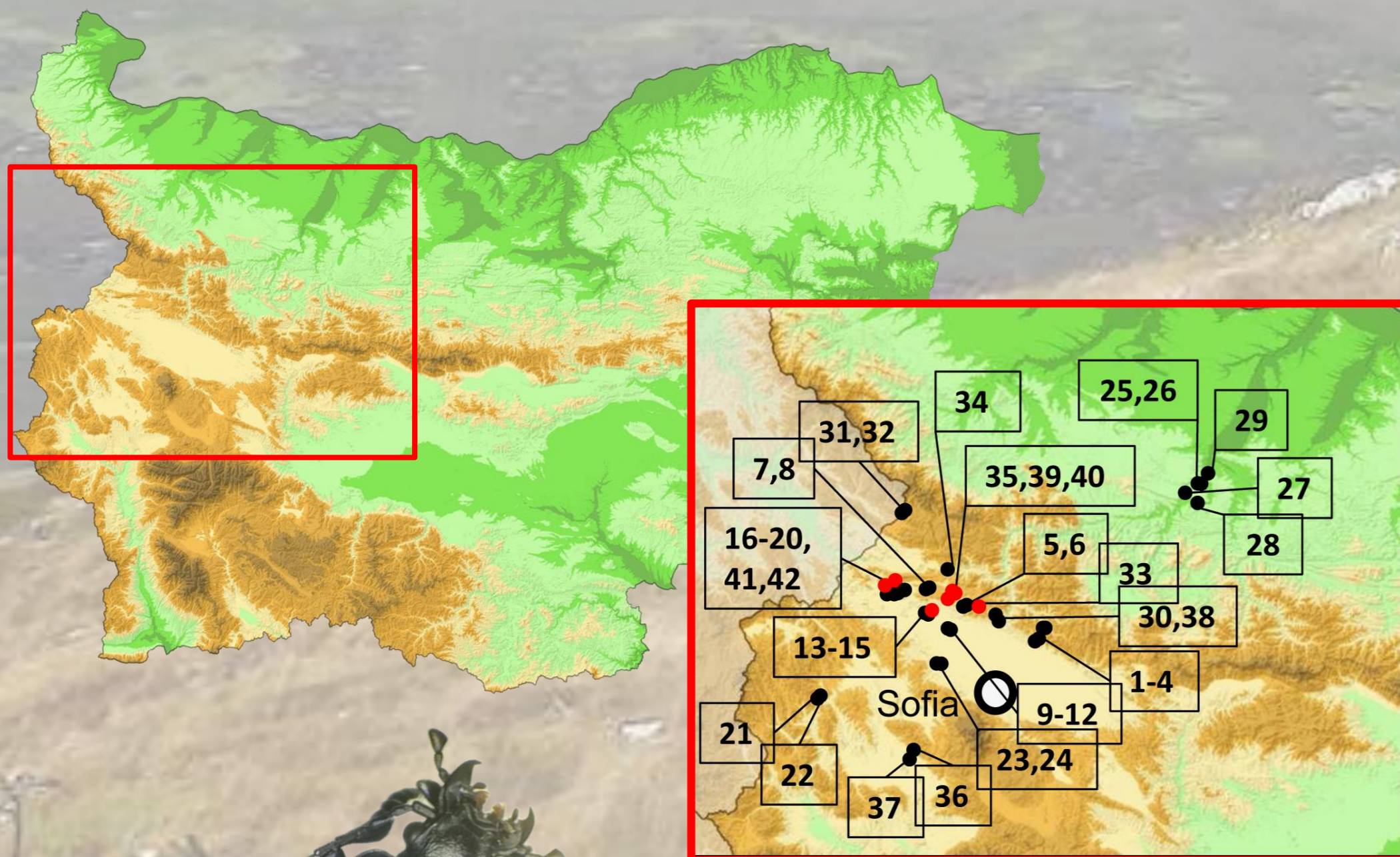
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INTRODUCTION & AIM

During a study on the distribution and status of the protected steppe beetle *Carabus hungaricus* (Coleoptera: Carabidae) in the xerophytic landscapes in central-western Bulgaria, 42 sample plots were surveyed. We attempted to establish qualitative indicators of the type, origin and successional changes of the steppified and steppe habitats, according to their specific fauna.

METHOD

In the period 24 May 2021 – 10 December 2023, with the help of 252 pitfall traps, 69903 effective trapdays were realized.



C. b. tangra



P. fuscus

RESULTS & DISCUSSION

A total of 15333 carabid individuals were identified, belonging to 184 species, of which about 30% were characteristic of the specific steppe biota. Among them, the newly established *Carabus bessarabicus tangra*, and indicators *C. hungaricus*, *C. torosus*, *C. cavernosus*, *Calathus distinguendus*, *Licinus depressus*, etc. The study also provided some novelty about the distribution of the species across the country.

The studied region represents the southernmost part of the entire Eurasian steppe biome, and is unique both in terms of its location, and the complex of specific steppe species forming communities, most of which have long since disappeared from the European Union. Along with the significant carabids found in this steppe complex, some other animals of conservation importance were established – *Bradyporus macrogaster* from the Orthopterans, and Common spadefoot toad (*Pelobates fuscus*) and Ural field mouse (*Apodemus uralensis*) from the vertebrates.

The main environmental gradients showed the strong importance of the anthropogenic impact on landscapes for the distribution of steppe biota, in the context of contemporary climatic conditions and changes.

CONCLUSION

⚠ The conservation of this unique for Bulgaria and Europe steppe biota requires an urgent declaration of the two mountains as protected areas and the identified steppe species and their habitats as priority, along with their inclusion in national and European conservation documents with strictly protected status.

