

The current distribution of the endangered and protected *Carabus hungaricus* Fabricius, 1792 (Coleoptera: Carabidae) in Bulgaria

Teodora M. Teofilova¹, Nikolay D. Kodzhabashev²

¹Institute of Biodiversity and Ecosystem Research (IBER), Bulgarian Academy of Sciences (BAS), Bulgaria
²University of Forestry, Department of Hunting and Game Management, Bulgaria



INTRODUCTION

Carabus hungaricus Fabricius, 1792 (Coleoptera: Carabidae) is a zoophagous, mesoxerophilic, stenotopic steppe species, endangered everywhere across its highly fragmented distribution range, from Central Europe to Eastern Siberia. The known range of the species in Bulgaria is limited to the western part of the Sofia Basin and, in particular, the neighbouring parts of the Western Stara Planina Mountains.

The results add four new points to the distributional map of *C. hungaricus* in Bulgaria and update the information about its altitudinal limit (the species was so far known from between 500 and 800 m a.s.l) elevating it to 1180 m, under the top of the Chepan Planina Mt. Most probably the species will be found at the very top (Petrovski Krast Peak, 1206 m), as well. The species was not found in the Western Forebalkan (the “exit” of the Iskar River Gorge) and in the Kraisthe Region (Lyubash and Golo Bardo Mountains).

The habitats in the seven plots where *C. hungaricus* was found in Bulgaria were quite similar, karstic steppes or steppe-like stony meadows, at altitudes between 646 and 1185 m.



METHOD

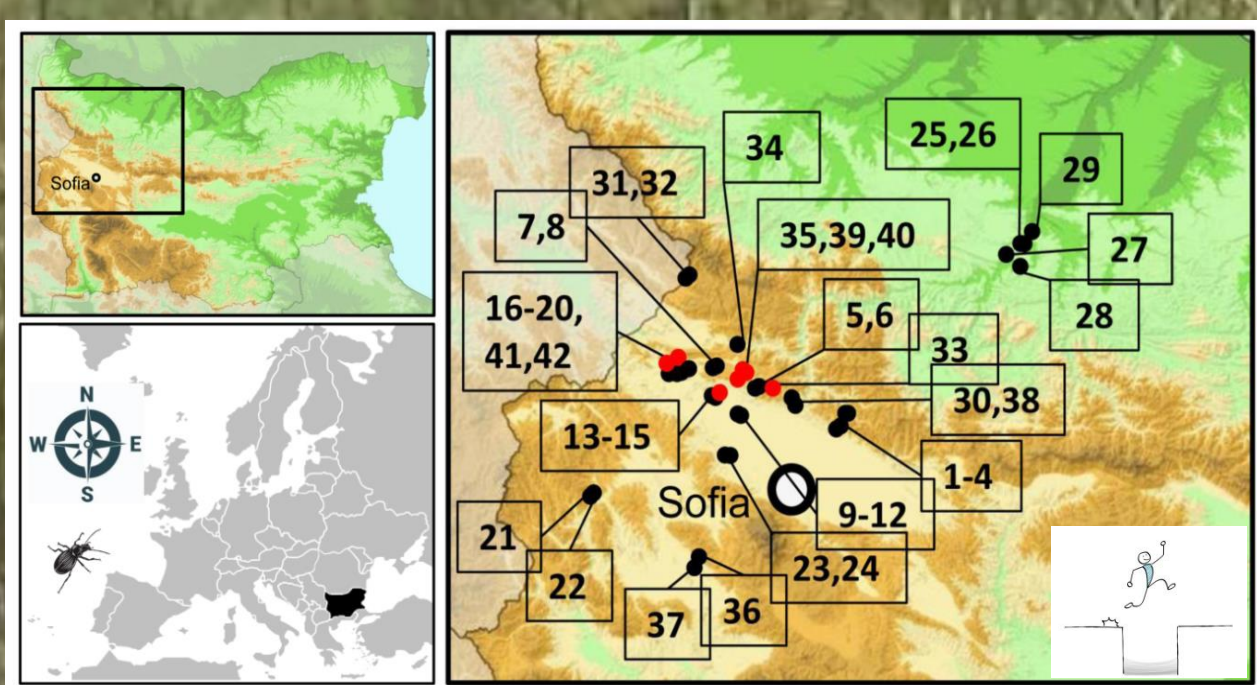
The results were obtained during a three-year study (24 May 2021 – 10 December 2023) with 252 pitfall traps set in 42 sample plots situated in xerophytic landscapes near the Sofia Basin and some similar regions in central-western Bulgaria.

Studied areas represent the southernmost limits of distribution of the steppe fauna in Eurasia and, in Bulgaria, *C. hungaricus* is found only there (and not in all of them).



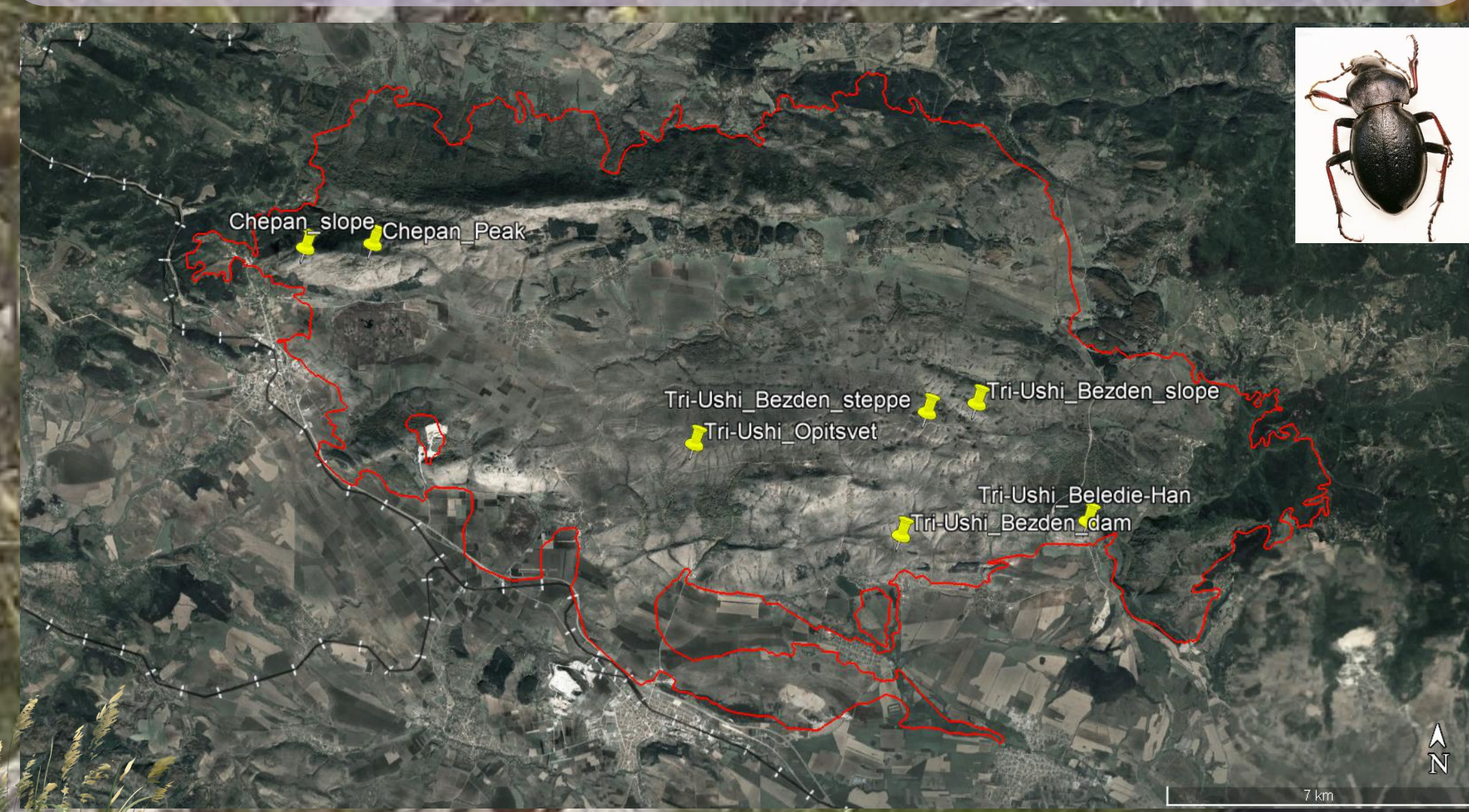
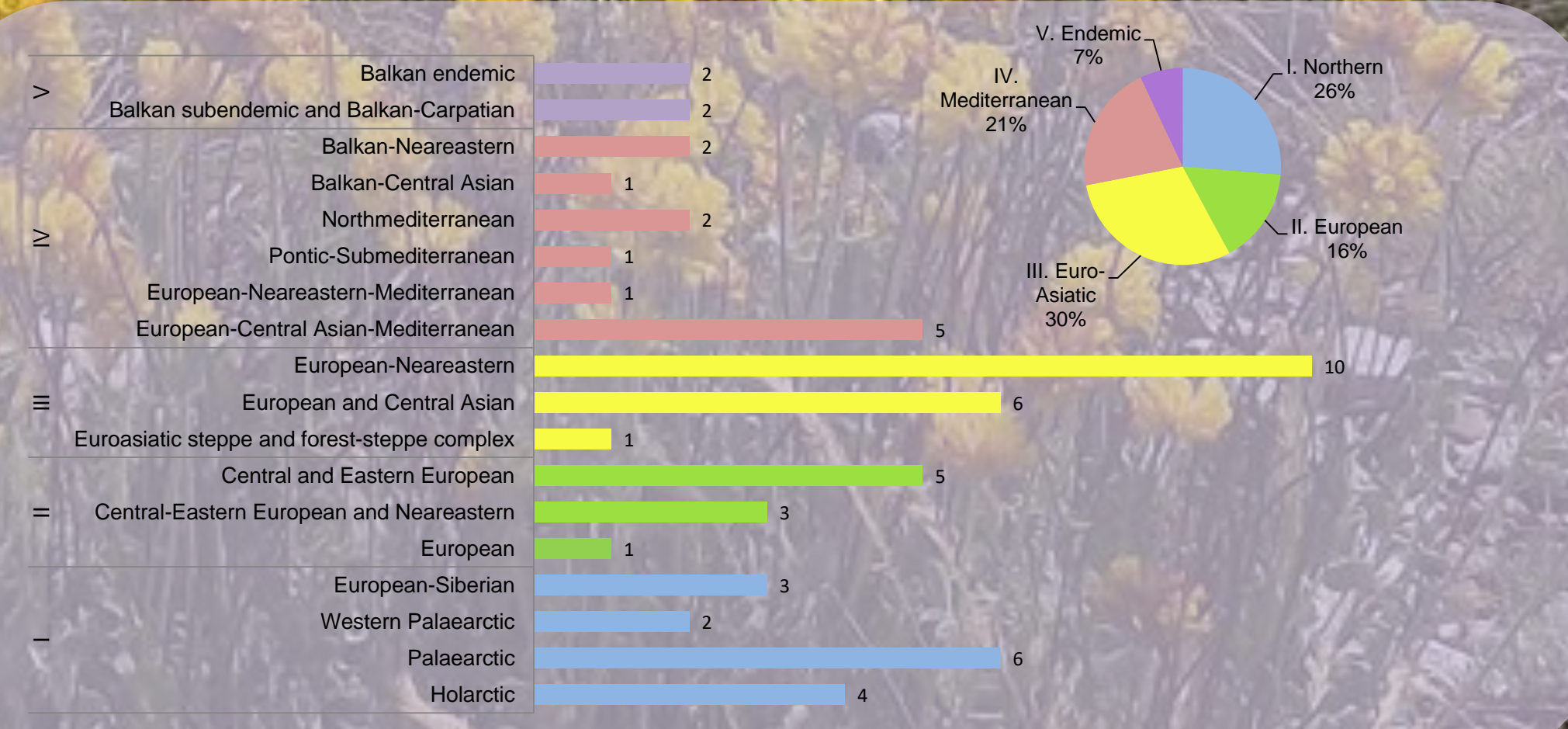
In the habitats of *Carabus hungaricus* we found 57 carabid species from 23 genera and 12 tribes. They belonged to 18 categories from the five main faunal types of Bulgarian carabids. The European-Asiatic complex prevailed.

The European-Neareastern (17.5%), Palearctic and European-Central Asian (10.5% each) zoogeographical elements were the most represented.



RESULTS & DISCUSSION

Carabus hungaricus was established in only seven of the sampling sites, with a total of 198 specimens. These sites are located in the Chepan Planina and Tri Ushi Mountains, both in the range of the Western Stara Planina Mts.



CONCLUSIONS

Generally, our results confirm that the distribution of *C. hungaricus* in Bulgaria seems limited exclusively within the boundaries of the Natura 2000 Site of Community Importance (SCI) BG0000322 “Dragoman”, but the discovery of new localities pointed that there are still gaps in the knowledge.

The high proportion of European-Asiatic steppe species in the assemblages is quite notable and emphasises the specificity of the stenobiont species studied here and its habitats.

The study confirmed the stenotopic nature of *C. hungaricus* and its strong attachment to the steppe biome, thus suggesting full conservation of its habitats.