



XII European Symposium on Saproxylic Ecology

Book of Abstracts

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S.6.05 Distribution and habitat selection of Western (*Osmoderma eremita*) and Eastern hermit beetle (*O. barnabita*) in the contact area in Slovenia

Speaker: Al Vrezec - al.vrezec@nib.si

Authors: Al Vrezec^{1,2}, Špela Ambrožič Ergaver¹, Andrej Kapla¹, Maarten de Groot³, Andrej Kobler³, Klemen Čandek¹, Alenka Žunič Kosi¹

1. National Institute of Biology, Ljubljana. Slovenia

2. Slovenian Museum of Natural History, Ljubljana. Slovenia

3. Slovenian Forestry Institute, Ljubljana. Slovenia

The Hermit Beetle (*Osmoderma eremita*) is a priority species of European conservation concern, which was first described by J. A. Scopoli in 1763 after specimens from Carniola (nowadays W Slovenia). However, it was suspected that two *Osmoderma* species inhabit Slovenia, what opens several research questions: (1) had Scopoli really described what is today regarded as *O. eremita*, (2) do *Osmoderma* species form larger hybrid zone, and (3) do Western (*O. eremita*) and Eastern Hermit Beetles (*O. barnabita*) exhibit similar habitat selection patterns? We collected Hermit Beetles across Slovenia using pheromone traps and analyzed their genetic structure with the COI marker. The analysis confirmed presence of both species in Slovenia with sharp non-overlapping border between species following Ljubljana basin in the central Slovenia. Western hermit beetle thus inhabits Western Slovenia (territory of the former Carniola), what corresponds with Scopoli's description of the species. Although Scopoli did not cite the exact type locality, we identified two type locality candidates, the vicinity of Idrija and Ljubljana with the city park, where *O. eremita* is still abundant species. Further modelling of habitat selection revealed clear contrast between species, with Western hermit beetle being more confined to open forest stands and non-forest habitats with tree vegetation, while Eastern hermit beetle being more a forest species, especially in the stands with higher amount of deciduous tree wood stock and high proportion of mature trees.



Figure: Two *Osmoderma* species from Slovenia (males): *O. eremita* (Scopoli, 1763), left, and *O. barnabita* Motschulsky, 1845, right, and in between the illustration of *O. eremita* type specimen given by Scopoli (1763). photo: Andrej Kapla