
Monitoring of insect pollinators in Serbia – pilot project

Snežana Radenković^{*†1}, Mihajla Djan¹, Marija Miličić², Snežana Popov¹, and Ante Vujić¹

¹University of Novi Sad, Faculty of Sciences, Department of Biology and Ecology, Novi Sad, Serbia – Serbia

²University of Novi Sad, BioSense Institute – Research Institute for Information Technologies in Biosystems, Novi Sad, Serbia – Serbia

Abstract

The decline of number of insect pollinators can negatively influence the functioning of ecosystems and food security (Doyle et al. 2020). To tackle this issue European Commission established Pollinators Initiative and set up Pollinator Monitoring Scheme (EUPoMS) that becomes obligatory for all countries of EU. Unfortunately there is a significant data gap in many countries, especially in Southeast Europe (including Serbia) that should be overcome. In Serbia, the national pollinator initiative or strategy has not been established yet. Serbian Pollinator Advice Strategy (SPAS) Project has started in 2022, aiming to perform the monitoring of hoverflies, bees and butterflies on 30 sites throughout Serbia, three times annually, for three years, by transect walks and pan traps. Simultaneously, different environmental parameters potentially influencing the occupancy, diversity and abundance of pollinators (such as flower and vegetation covers, weather conditions, soil type, land use and land cover changes) are observed. In order to ensure the identification, detect cryptic species, identify conservation management units, locally declined populations and signals of genetic erosion, as well as to enrich DNA databases, pollinators collected in the field are analyzed using molecular markers. Additionally, usage of restriction-site associated DNA method (ddRAD-seq) for analyzing genome-wide sequence data from hoverflies (useful for detection of adaptive signals) is also planned. Here we will present the first results of monitoring from spring and summer seasons 2022 and the challenges we are already facing.

Reference: Doyle T, Hawkes WLS, Massy R, Powney GD, Menz MHM, Wotton KR. 2020 Pollination by hoverflies in the Anthropocene. *Proc. R. Soc. B* 287: 20200508.

Acknowledgements: This research was supported by the Science Fund of the Republic of Serbia, #GRANT No 7737504, Serbian Pollinator Advice Strategy - for the next normal - SPAS, as well as the Ministry of Education, Science and Technological Development of the Republic of Serbia (Grant Nos. 451-03-68/2022-14/200125 and 451-03- 68/2022-14/200358).

Keywords: abundance, bees, butterflies, COI, ddRAD, seq, diversity, EUPoMS, hoverflies, pan trap, transect walk

^{*}Speaker

[†]Corresponding author: snezana.radenkovic@dbe.uns.ac.rs