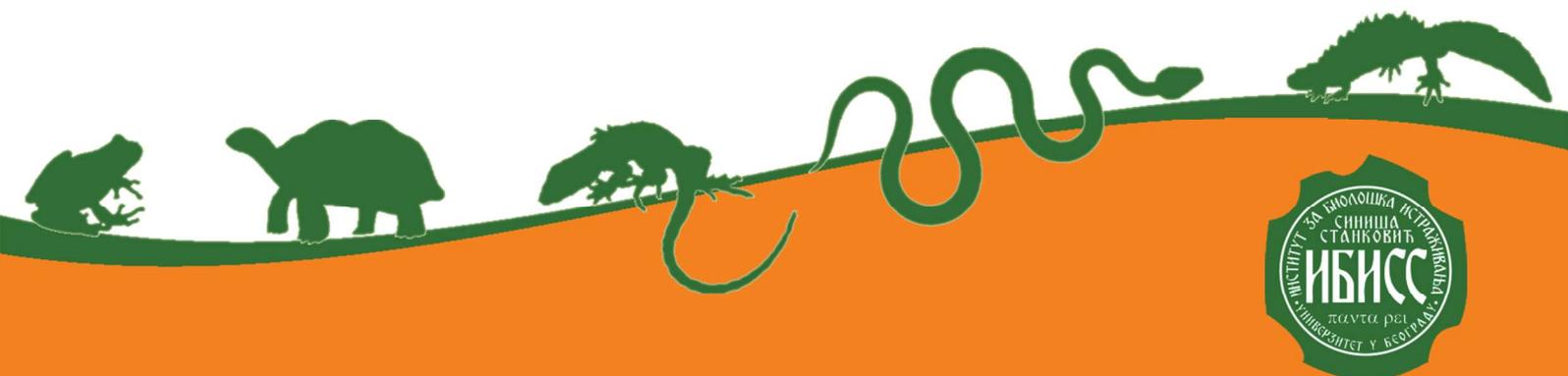




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Activity of the olm (*Proteus anguinus*) in surface habitats: ecological and evolutionary insights

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The olm is considered as a classic example of troglobiont organism. However, in the past different observations of individuals of the typical troglomorphic populations have been reported for springs of Venetia Giulia.

The aim of this work is to point out the non-random active use of surface habitats by the olm, providing a comparison with the occurrence observed in caves and performing an assessment of factors favouring ecotone habitats exploitation.

Since 2020 we started multiple day and night surveys of olms in both springs and caves. Each spring and cave habitat monitored has been characterised by respect to abiotic and biotic features, including planktonic and benthic prey availability.

We detected the olm at least once in 10 springs, with a maximum of 9 individuals occurring together. Detection probability in springs and caves was similar. Spring habitats provided higher density of potential prey available. Olms seems to prefer springs without predator fish and temporary hydroperiod. We recorded in one spring a larva of 3.5 cm which could be the smallest ever recorded in the field.

We suggest that epigeal habitats and borders with surface may have an underestimated importance for animals adapted to subterranean environments, including the olm. Our results stimulate for testing if exploitation of ecotones between surface and groundwater can lead to differentiation in populations/subpopulations of stygobiont animals.