



THE DENSITY OF BADGER SETTS IN A NATURAL RIVER CORRIDOR (NE ITALY)

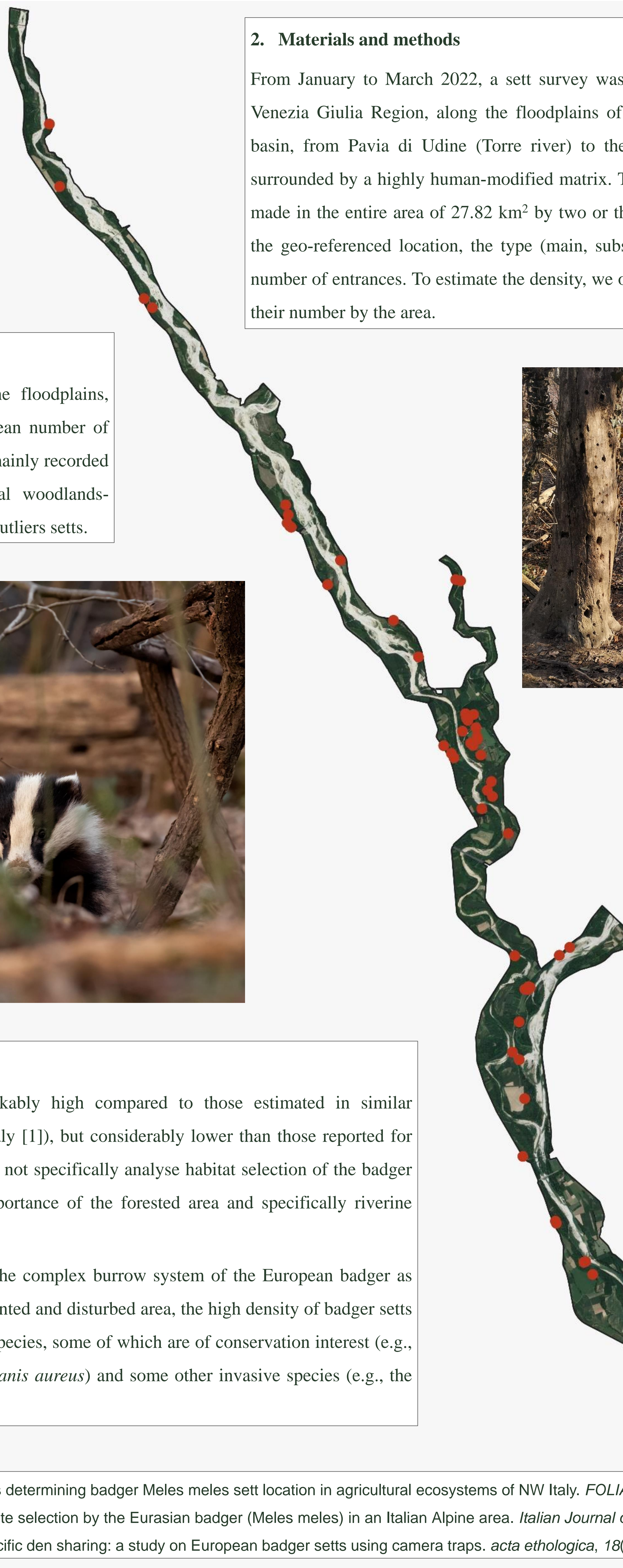
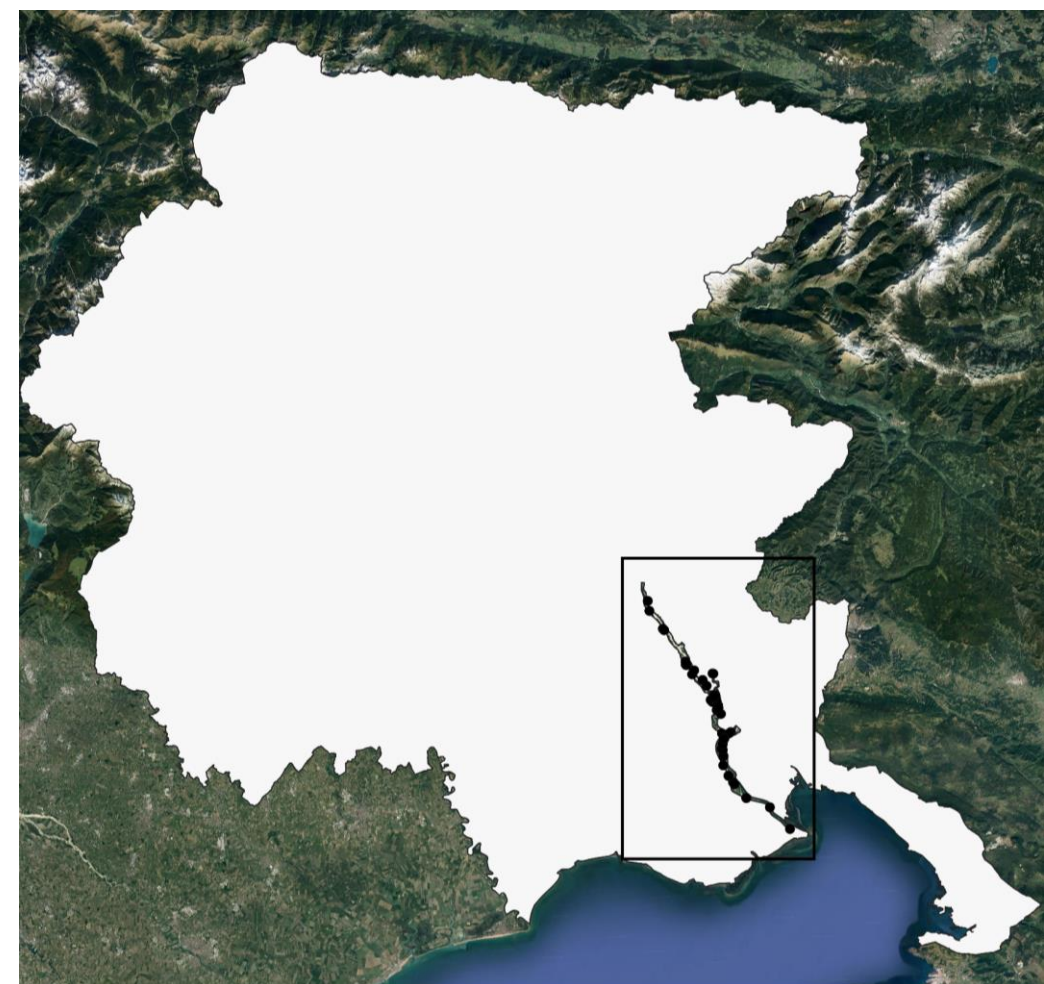


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1. Introduction

The European badger *Meles meles* (Linnaeus, 1758) is a common semifossorial mustelid species widely distributed throughout Europe. It also shows a high degree of plasticity, adapting its spatial and temporal behaviour to live in highly disturbed environments. Badgers live in social groups occupying underground systems called setts, which could be classified as “main” (i.e., the complex systems with a great number of entrances), and as “outliers”, “annexes” and “subsidiary” (i.e., the other burrows with a low number of entrances). An extensive scientific literature occurs on the ecology and biology of this species, and some information is available also for setts density in Europe and in Italy, too. However, since badgers may inhabit a wide variety of habitats, the setts density varies significantly both locally and on a large scale. We aimed to provide setts density in a river basin in the North-East of Italy.



2. Materials and methods

From January to March 2022, a sett survey was conducted in the eastern plain of Friuli Venezia Giulia Region, along the floodplains of the lowest reaches of Isonzo/Soča river basin, from Pavia di Udine (Torre river) to the Isonzo river mouth, a natural corridor surrounded by a highly human-modified matrix. Transects to collect setts information were made in the entire area of 27.82 km² by two or three operators. For each sett, we recorded the geo-referenced location, the type (main, subsidiary and outliers), the habitat, and the number of entrances. To estimate the density, we only considered active main setts, dividing their number by the area.

3. Results

A total of 22 main setts were identified within the floodplains, corresponding to a density of 0.79 setts/km². The mean number of entrances was 13.67 (min: 5, max: 28) and they were mainly recorded in forested patches (riverine forests and transitional woodlands-shrublands). We founded other 14 subsidiaries and 13 outliers setts.



4. Discussion

The density estimated in our study area is remarkably high compared to those estimated in similar environmental conditions (e.g., Po plain area, NW Italy [1]), but considerably lower than those reported for natural habitats (e.g., Alpine area [2]). Even if we did not specifically analyse habitat selection of the badger for the location of setts, our results confirm the importance of the forested area and specifically riverine forests for the badgers in agricultural matrices.

Furthermore, it is known that several mammals use the complex burrow system of the European badger as shelter or as a reproductive site [3]. In a highly fragmented and disturbed area, the high density of badger setts could favour the expansion and the survival of other species, some of which are of conservation interest (e.g., European wildcat *Felis silvestris* and golden jackal *Canis aureus*) and some other invasive species (e.g., the raccoon dog *Nyctereutes procyonoides*).

[1] Remonti, L., Balestrieri, A., & Prigioni, C. (2006). Factors determining badger *Meles meles* sett location in agricultural ecosystems of NW Italy. *FOLIA ZOOLOGICA-PRAHA*, 55(1), 19; [2] Prigioni, C., & Deflorian, M. C. (2005). Sett site selection by the Eurasian badger (*Meles meles*) in an Italian Alpine area. *Italian Journal of Zoology*, 72(1), 43-48; [3] Mori, E., Menchetti, M., & Balestrieri, A. (2015). Interspecific den sharing: a study on European badger setts using camera traps. *acta ethologica*, 18(2), 121-126.