

Status of the Fox (*Vulpes vulpes*) and burrows distribution within the lakes of Lungo and Ripasottile Nature Reserve.

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**INTRODUCTION**

This study was carried out thanks to the support of the Riserva Naturale dei Laghi Lungo e Ripasottile, and thanks to the cooperation with UNITUS. It derives from a period of my training carried out within the natural area and subsequently continued with the studies that led to the preparation of this final paper. The work concerns the species Fox (*Vulpes vulpes*), and was carried out with the aim of estimating the consistency of fox within the territory of the Nature Reserve and detecting the problems connected with its management.

**Study Area**

The study area is represented with the entire territory of the Nature Reserve, which is located in the Piana Reatina and covers about 3,300 hectares, including 500 hectares of lakes, smaller parts of water and low-lying areas that are erratically flooded, the rest of the territory it is mainly represented of flat and irrigated arable lands. Furthermore, there is an area designated as SIC (Sites of Community Importance) SPA (Special Protection Area) today SAC (Special Area of Conservation) IT6020011. For further information, see (Di Carlo, 1960; Di Carlo & Castiglia, 1981).

**MATERIALS AND METHODS**

The results derive from the analysis of data obtained in two different types of census: reproductive sites and the spot light census (count of individuals).

**Reproductive sites**

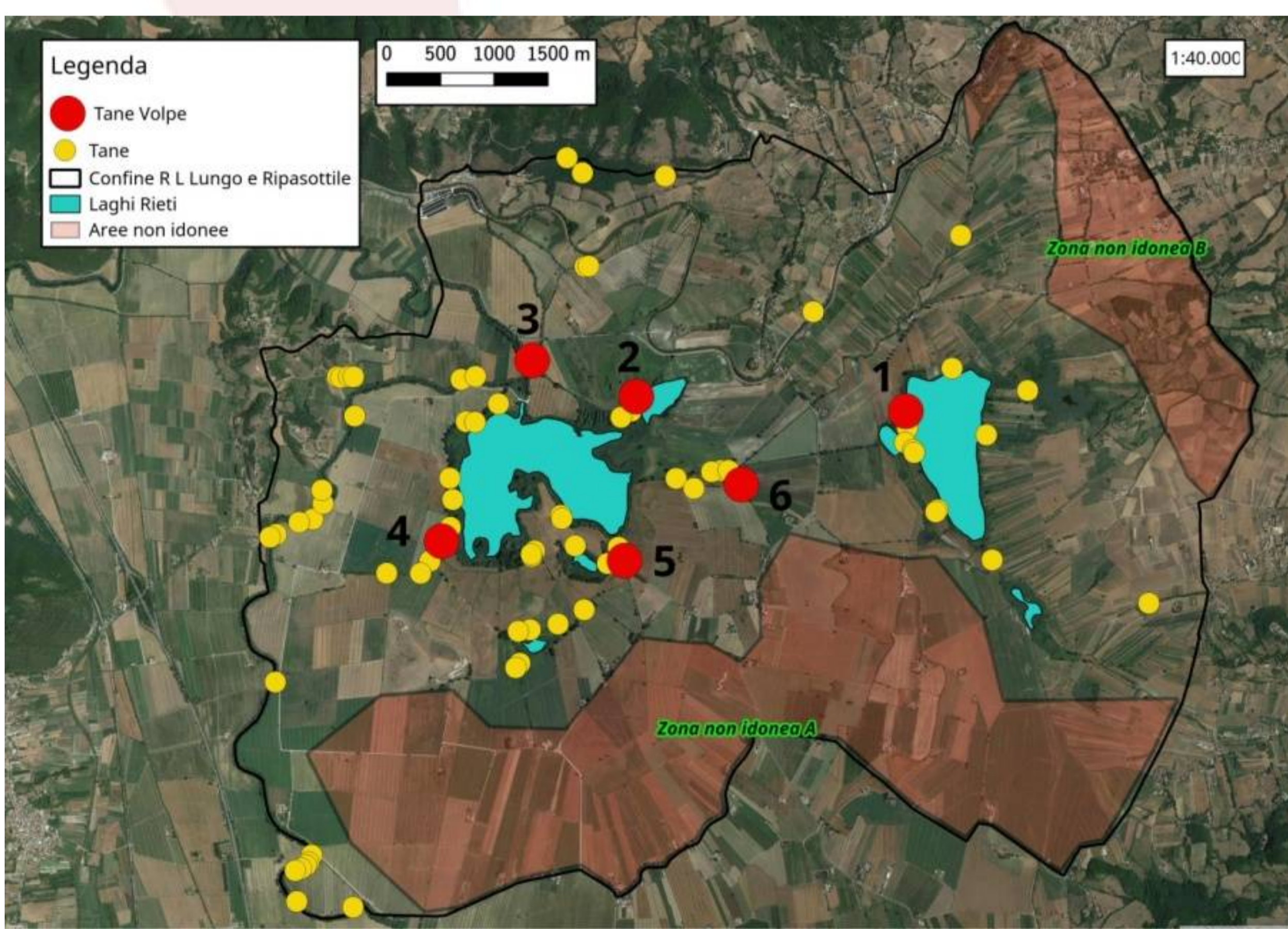
In the first case, the work teams, consisting of young undergraduates, trainees, volunteers and staff of the Nature Reserve, proceeded to cover the transects, searching for dens and / or signs of presence, signalling their possible finding and reporting the data on the field card. The latter specifically concerned the following parameters: the width and height of the "mouth", the slope of the first entrance section of the den, the direction of exposure in degrees of the mouth, the slope of the adjacent land, the possible use of the den, the type of surrounding vegetation, correlated with an estimate in % of the self-sown vegetation coverage, and the type of soil. A photograph of the den and subsequently georeferenced and numbered it finished the study.

**Spot light**

In the second case, special lights were used to send out a beam of light of about 70 meters, and which were installed on board the off-roads and / or convertibles vehicles, one on each side, in order to analyze about 140 meters of territory at the same time, counting only the members encountered of the species under examination inside the beam of light. These vehicles, with the two operators on board, travelled at low speed along some pre-determined transects, guaranteeing a minimum observation coverage of 10% and a maximum of 20%, of the entire study area.



Fox (*Vulpes vulpes*)



Burrow card present in the study area.

**RESULTS**

The spot light census allowed us to calculate an average presence of 17.87 individuals in the 362 hectares investigated, corresponding to 13% of the 2800 hectares (in the total territory minus the flooded areas) of the Nature Reserve. This data has led to a population estimated of about 275 individuals in the entire Nature Reserve area. The estimated density for the species *Vulpes vulpes* is about 1 individual every 20 hectares.

The census of the reproductive sites led to the survey of 90 dens, and with the use of camera traps we were able to certify the presence of 6 foxes. Moreover, as can be seen from the map, the distribution of the burrows is not uniform within the protected area but is influenced by anthropic interventions.

**DISCUSSION AND CONCLUSIONS**

The presence, in the protected area, of an individual Fox every 20-ha was higher than the average found in the literature, of one every 245-ha (Provincia di Rovigo 2011). This small predator can cause damages both to the wild and to the farms that have poultry. In addition to the predatory impact, which can be a restricting factor for zoocenosis (eggs, nestlings, babies of different species, etc.), the Fox can carry various pathologies that can be transmitted. This species is subject to hunting in accordance with Law 157/92, however it is not considered a interesting prey for Italian hunters and this allows a great increase in numbers, even more inside the Nature Reserve, where hunting is not allowed ( L. 394/1991) and trophic availability is quite high.

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