6. RESEARCH ON THE OTTER POPULATION IN THE ROOSCI 0065 PROTECTED AREA

IBĂNESCU Daniela Cristina¹, CRISTESCU Mihaela², POPEȘCU Adina¹, NICA Aurelia¹

¹ "Dunarea de Jos" University of Galati, 111 Domneasca Street, 800201 Galati, Romania
² "Răsvan Angheluță" Natural Sciences Museum Complex Regimentul 11 Siret 6A Street, 800340, Galati, Romania
E-mail for correspondence: dgheorghe@ugal.ro

Abstract: The eurasian otter (Lutra lutra) is a semi-aquatic mammal species strictly protected under national and international law. It is a species of carnivore that is at the top of the food chain and is considered an important bioindicator of the well-being of aquatic ecosystems both in terms of water quality and riparian habitat. In Romania, the otter is widespread throughout the country, especially in lakes and valleys of large waters, which have rich food resources (fish, shellfish and amphibians) but especially in ponds and the Danube Delta.

The present paper aims to present a case study, conducted between October 2019 - October 2021 in the floodplain (dam – shore) of the Danube River (between the Grindu village and Tulcea city) and Somova - Parčez aquatic complex.

This paper presents aspects of the abundance of signs of presence, the preference of defecation for the type of substrate, their temporal and spatial distribution.

The abundance of the signs of presence found shows us that this species has an intense activity in the studied area.

Key words: water, eurasian otter, distribution, Danube.

INTRODUCTION

The Eurasian otter, also called otter or river dog, is a protected carnivorous species that belongs to the Mustelidae family that lives in the meadow ecosystems, streams, next to the flowing and stagnant fresh waters.

The species is widespread, being able to be found from the western and northern coastal areas of Europe (France, Spain, the Scandinavian Peninsula) to the eastern coastal areas of Asia (Kamchatka, Vietnam, Sri Lanka, Thailand), climbing up to the Himalayan alpine areas.

Because it is at the top of the food chain, this species is a good indicator of the quality of the habitats it inhabits.

Some factors that limit the geographic distribution of otter include prey abundance, available shelter, and human-induced.

In the second half of the XX century, otter populations have dropped dramatically due to either hunters (for their prized fur) or pollution of aquatic ecosystems. Mucci (et al. 2010) considers that the majority of threats to otter populations are pollution and habitat alterations.

In our country, the presence of otters has been reported in all regions of the country, mainly along large rivers and their tributaries, from the Danube Delta to the mountains (Brehm, 1964; Botnariuc & Tatoie 2005).

Otter populations have varied numerically over time, as follows:

- after Georgescu (1994), in 1980, in Romania there was a population of approximately 2200 specimens and in 1993 it would have decreased to 920 individuals.
- after Ionescu et.al. (1994), the otter population in our country has decreased from a number of approximate 3200 otters (in 1955) at approximate 1700 (in 1994).
- in 2005, Botnariuc et.al., estimated the otter population in our country at about 3000 specimens.
Scientific Annals of the Danube Delta Institute, vol. 27, 2022
© Danube Delta National Institute for Research and Development, Tulcea Romania

✓ after, Yoxon P., et.al., (2019) the number of otter populations at national level was estimated at between 7,500 and 10,200 specimens.

MATERIALS AND METHODS

Study area
The study area was represented by the Danube River and its floodplain from Grindu village to Tulcea city and the Somova - Parcheș aquatic complex. It is part of the ROSCI0065 protected area, a site of Community importance for the Danube Delta. The study took place between October 2019 and October 2021.

![Figure 1. Area of study](image1.png)

Data collection and analysis
The study method used followed the guidelines of the standard method recommended by the IUCN / SSC Otter Specialist Group (Reuther et al., 2000). The surface of the studied area was divided into units of sample or sample markets (5 x 5 km). 1200 m transects were made in the units of sample (according to the methodology). Any signs of the presence of the species (faeces, spraints, anal jellies, footprints, prey) have been recorded in a field sheet.

Also, the degree of freshness of the excrement and spraints, the substrate on which we found the sign (type of vegetation, sand, soil, stone) and the distance from the water gloss were recorded. Coordinates were recorded for each trace of presence identified.

![Figure 2. Sample markets on the study area](image2.png)
RESULTS AND DISCUSSIONS

The abundance of presence signs indicates an intense activity of this species in the investigated area. During the study period, traces of the presence of the species were reported in all established units of sample and not only in them. A number of 243 traces of presence in the investigated area and an adult otter specimen, found dead in the fishermen's nets, were identified. The most common signs are spraints (found either singly or in latrines, n = 211), followed by footprints (n = 20) and anal jellies (12).

![Figure 3 Abundance of presence signs](image)

The preferred substrate for defecation was wood substrate (stumps, tree roots) 78.24%, pieces of rock (12.5%) and the least on the soil (Figure 4).

![Figure 4 Distribution of spraints by substrate types](image)

The distribution of the abundance of signs during the study period and by seasons is as seen in Figure 5. Thus, it is observed that most signs of presence were encountered in 2020 in the autumn season. The year 2021 was atypically hydrological, with very high levels and also for a long time which led to the deletion of many of them.
Comparing the abundance of signs of presence on the two types of investigated habitats, it was observed that 61.2% of the signs were found on the Danube bank and in its flood zone and 38.8% in the Somova - Parcheș aquatic complex (figure 6).

The spatial distribution of the signs of presence in the Somova - Parcheș aquatic complex is shown in figure 7. Most signs of presence are concentrated in 3 high density areas: the hill of the Somova backwater, the hill of the Ivanova channel and the hill of the Parcheș - Telincea channel.
The spatial distribution of the signs of presence on the river bank as well as in its flood zone, included in ROSCI 0065 is presented in figure 8. There are 3 high density areas of signs: one near Tulcea and two near Isaccea. The area with the most signs of presence is the one near Tulcea.

![Spatial distribution of presence signs in the Danube floodplain](image)

**CONCLUSIONS**

The abundance of signs of presence indicates an intense activity of this species in our study area and may be an indicator of the size of the otter population. The most common signs are spraints or excrements (found either singly or in latrines), followed by footprints and anal jellies.

Habitat use in terms of defecation is known from the literature to be influenced by environmental factors such as fish stocking densities, water levels, and coastal vegetation (Kemenes & Demeter, 1995; Mason & Macdonald, 1986). In this study, the woody substrate (willow roots, fallen tree trunks, etc.) was the most preferred for defecation and the least defecated on the ground, which shows that the otter prefers dry places for this physiological process.

In terms of abundance by years and seasons, most traces were observed in the autumn 2020 season. Most of the traces were found on the banks of the river, and the highest densities can be considered: most of the traces were found on the banks of the Danube and in the neighboring forest between Tulcea and Somova. For this species, places forested or covered with vegetation are good places for hiding, moving, playing, marking territorial boundaries.

The second density of signs is found on the banks of the Danube near Isaccea. This habitat is very different from that of Tulcea in the sense that parts of the shore is very stony (~16 - 17%), the largest part (~63 - 64%) is sandy-clayey and a smaller part is covered by trees (~19 - 20%). Most traces were found in the stony region.

In the aquatic complex Somova - Parcheș, were also found 3 high densities of the abundance of signs of presence, which are associated with the presence of fishing gear, which results in the developed opportunism of this species in terms of how to procure the food.
REFERENCES


