



# SPREAD OF THE COYPU *MYOCASTOR COYBUS* (MOLINA, 1782) ALONG THE DRAVA RIVER IN HUNGARY

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The coypu is a South American rodent that was introduced to Europe more than a century ago and it has since then spread over a large area. It appeared in the north-western and northern part of Hungary only in recent years. The first coypu observation in the South Transdanubian region was in July 2023 near BÉlavár on a side arm of the Drava River in the Danube-Drava National Park. During the autumn a coypu was spotted in the vicinity of Barcs, and the number of observations along the Drava River continued to increase during the winter. In two locations, adults with younglings were observed, which indicates that the coypu reproduce in that area. The coypu most likely arrived in the areas along the Drava in Somogy county with the large flood waves of 2023 coming from the north-west of the Drava watershed, and it can be expected to spread further along the watercourses and canals on both the Hungarian and Croatian sides.

**Key words:** nutria, distribution, alien species, semi-aquatic invasive rodent

**Purger, T. J., Horváth, Z., Csór, S. & Purger, J. J.: Širenje nutrije *Myocastor coypus* (Molina, 1782) uz rijeku Dravu u Mađarskoj. *Nat. Croat.*, Vol. 33., No. 1, 175-181, 2024, Zagreb.**

Nutrija je južnoamerički glodavac unesen u Europu prije više od stoljeća, od kada se spontano širi na sve veće područje. U sjeverozapadnom i sjevernom dijelu Mađarske pojavila se tek posljednjih godina. Prvo opažanje nutrije u južnom Prekodunavlju bilo je u srpnju 2023 u blizini BÉlavára na rukavcu rijeke Drave u području Nacionalnog parka Dunav-Drava. Tijekom jeseni zabilježena je i u okolici Barcsa, a broj opažanja uz rijeku Dravu se tijekom zime povećavao. Na dva mjesta opažene su odrasle jedinke s mladuncima, što ukazuje da se na tom području i razmnožava. U Podravinu u županiji Somogy nutrija je najvjerojatnije stigla s velikim poplavnim valovima 2023. godine sa sjeverozapadnog dijela sliva Drave, a može se očekivati da će se dalje širiti duž vodotoka i kanala na mađarskoj i hrvatskoj strani.

**Ključne riječi:** nutrija, rasprostranjenost, strana vrsta, semiakvatični invazivni glodavac

## INTRODUCTION

The coypu *Myocastor coypus* (Molina, 1782) is a rodent native to the subtropical and temperate regions of South America (STUBBE, 1982). Due to its semi-aquatic lifestyle, it is primarily an inhabitant of slow-flowing streams, rivers, tributaries, backwaters, la-

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goons, swamps, natural and artificial lakes. It prefers riparian areas where it can build burrows and find suitable food. It consumes natural herbaceous vegetation, and also vegetables, fruit, crops, and other agricultural products. The body weight of an adult animal is usually between 4 and 8 kg, but it can reach 12 kg. The daily food requirement is about 25% of its body weight, so where present in high densities, it can cause significant damage (STUBBE, 1982). The coypu was introduced to Europe at the end of the 19th century and was bred on farms for its valuable fur and meat (TEDESCHI *et al.*, 2023). With the decline in the demand for fur, most of the farms were forced to close and the animals were released (STUBBE, 1982; CARTER & LEONARD, 2002). The well-adapted, prolific, thermophilic rodent spread rapidly along watercourses depending on the climatic conditions, and the number of individuals living in nature in new areas increased (SCHERTLER *et al.*, 2020; VAISSI & REZAEI, 2023). Its spread was similar on most continents and, due to the ecological and economic damage it causes, the coypu is one of the top 10 most invasive species with the highest number of different impacts on ecosystem services in Europe (VILÀ *et al.*, 2010;), as well as being among the world's worst invasive mammals (LOWE *et al.*, 2000; VAISSI & REZAEI, 2023). The expansion of the coypu has been limited by cold winters, so it has not yet reached all potentially suitable regions of Europe (SCHERTLER *et al.*, 2020). The Atlas of the Mammals of Hungary, based on literature published between 1950 and 2006, does not mention the coypu (BIHARI *et al.*, 2007). A decade later, in 2016 there were already data on individuals capable of reproducing in the invaded area (BÁLDI *et al.*, 2017), and since 2017 there have been observations of young animals that survived the winter (VÁCZI, 2022). The coypu spread to Hungary along the Danube and its tributaries, presumably from the direction of Austria and Slovakia, where there were already stable populations (SCHERTLER & ESSL, 2022; POLÁČKOVÁ & JUREČEK, 2023). In Croatia in the last century individuals were observed along the Drava River at Donja Dubrava, Pitomača and the area of Kopački-rit, but these animals may have escaped from farms (HIRTZ, 1937; PURGER & KRYŠTUFEK, 1998). Currently, smaller populations are living in the continental part of Croatia, along the Kupa and Sava Rivers (BORŠIĆ *et al.*, 2018; AUGUSTINOVIĆ *et al.*, 2021), and there are also new observations between the Mura and Drava Rivers (INVASIVE ALIEN SPECIES, 2024). However, the presence of the coypu on the section of the Drava River bordering with Hungary is thus far not known.

The aim of our study was to summarize new occurrences of the coypu in Hungary and to point out possible directions in which it might spread in the area near the Drava River.

## MATERIALS AND METHODS

The Drava River is a more than 700 km long right tributary of the Danube. It is joined by the Mura River near Legrad and Őrtilos settlements and forms part of the Croatian-Hungarian border. The catchment of the Hungarian part of the section covers 1,143 km<sup>2</sup>. On this 75 km-long Drava section, there are 20 major side channels, 13 tributary streams and 19 major cut-off meanders with oxbow lakes in the floodplain (LÓCZY *et al.*, 2019). The Drava River runs from NW to SE, and the width of its floodplain is 10–45 km, getting wider toward the confluence with the Danube River in Croatia (KISS & ANDRÁSI 2019).

Since the establishment of the Danube-Drava National Park in 1996 (IVÁNYI & LEHMANN 2002) rangers have been regularly present along the Hungarian side of the Drava River. A monitoring system was established at priority locations in the 2000s and since then

researchers have frequently visited the region. Due to the presence of experts, the appearance and spread of invasive species in the operational area of the national park cannot go unnoticed. After the first observation of the coypu in 2023, we drew the attention of the rangers, researchers and hunters working in the area to its presence and asked them to report their observations. The obtained data are arranged in chronological order according to the date of observation, and the 10×10 km squares of the UTM grid (Tab. 1).

**Tab. 1.** Coypu *Myocastor coypus* observations along the Drava in chronological order.

Date of observation	Settlement (UTM 10×10 km) Locality	Latitude °N Longitude °E	No. of individuals	Observer
01.07.2023	Bélavár (XM70) Side arm of Drava River	46.11653142 17.21161253	1 ad. alive	Purger, J. J.
11.09.2023.	Barcs (XL89) Viktorpuszta, dog shelter	45.95967079 17.42820821	1 ad. alive	Csór, S.
12.10.2023.	Bélavár (XM70) Side arm of Drava River	46.11436442 17.21613027	1 ad. shot (2.8 kg)	Bence, Á.
10.11.2023.	Barcs-Drávaszentes (XL89) Farm, caught by fox trap	45.99514059 17.41840058	1 ad. trapped	Csór, S. Horváth, Z.
14.12.2023.	Barcs-Drávaszentes (XL89) Györgyös-creek	45.99335444 17.42117781	1 ad. shot	Horváth, Z.
15.12.2023.	Barcs-Drávaszentes (XL89) Györgyös-creek	45.99253021 17.42142189	1 ad. alive	Horváth, Z.
27.12.2023.	Barcs-Drávaszentes (XL89) Barcs-Komlósi-Rinya stream	45.99685239 17.39886854	1 ad. alive	Horváth, Z.
28.12.2023.	Barcs-Drávaszentes (XL89) Györgyös-creek, Hollós forest	45.98448768 17.41779008	1 ad. alive	Horváth, Z.
30.12.2023.	Barcs-Drávaszentes (XL89) Györgyös-creek	45.99253021 17.42142189	1 ad. alive	Horváth, Z.
02.01.2024.	Barcs-Tarcsapuszta (XL89) Arable land	45.98347422 17.40691438	2 ad. shot	Horváth, Z.
03.01.2024.	Komlósi (XL89) Barcs-Komlósi-Rinya stream	46.00913320 17.39148492	1 ad. alive	Horváth, Z.
09.01.2024.	Berzence (XM61) Dombó-canal	46.20509170 17.12750563	1 ad. alive	Mezei, E.
12.01.2024.	Barcs-Drávaszentes (XL89) Györgyös-creek	45.99253021 17.42142189	1 ad. shot (3.7 kg)	Horváth, Z.
14.01.2024.	Barcs (XL89) Old-Drava oxbow	45.96646102 17.38561261	3 ad.+2 juv. (+1 dead)	Purger, J. J.
22.01.2024.	Barcs (XL89) Old-Drava oxbow	45.95606933 17.38747372	1 ad. alive	Csór, S.
22.01.2024.	Barcs-Drávaszentes (XL89) Barcs-Komlósi-Rinya stream	45.98647931 17.40629462	1 ad. alive	Csór, S.
25.01.2024.	Babócsa (XM80) Babócsai-Rinya stream	46.03495460 17.35342761	1 ad. alive	Horváth, Z.
26.01.2024.	Curgó (XM62) Dombó-canal	46.22741809 17.07500673	2 ad.+2 juv. alive	Mezei, E.
29.01.2024.	Barcs (XL89) Old-Drava oxbow	45.96434521 17.39052513	1 ad. alive	Bence, Á.
31.01.2024.	Barcs (XL89) Old-Drava oxbow	45.96627665 17.38478698	1 ad. alive	Purger, T. J. Purger, J. J.

## RESULTS AND DISCUSSION

The first coypu was observed on 1st of July 2023, in a side arm of the Drava River near the village of Bélavár (Fig. 1, Tab. 1). About 25 kilometres southeast of this site, the appearance of another individual was registered on September 11th near the town of Barcs. A month later, hunters shot an animal in a side arm of the Drava River near Bélavár. In November, a fox trap caught a coypu near the livestock farm of the national park in Barcs-Drávaszentes (Fig. 2, Tab. 1). During the winter months, in December and January, the number of observations in the Barcs-Drávaszentes area rapidly increased (Tab. 1), which may also be a consequence of the fact that the Györgyös-creek flows very close to the buildings and the farm of the national park. In January, coypu were found near Babócsa, Berzence and Csurgó (Tab. 1), i.e. away from the previously mentioned locations. In most cases, the observed, caught and killed animals were probably solitary adults. In January, in the Old-Drava oxbow near Barcs and along the Dombó-canal south of Csurgó, adult and young animals were observed together (Fig. 3, Tab. 1) indicating breeding along the Drava (Fig. 4). These cases also prove that winters are now mild enough not to inhibit the reproduction of the coypu, which facilitates its expansion. Its appearance and spread in the areas along the Drava River in Somogy County is most probably consequence of the expansion of populations that are already present in the western part of Hungary and in the continental part of Croatia. We assume that the large floods of the Drava River in spring and late summer 2023 helped the spread of the coypu. It was present in the upper section of the Mura River



**Fig. 1.** The first observations of the coypu were at a side arm of the Drava River near Bélavár. Photo by J. J. Purger.



**Fig. 2.** A coypu caught in a fox trap at the livestock farm of the Danube-Drava National Park in Barcs-Drávaszentes on the 10th of November 2023. Photo by Z. Horváth.

for several years prior to 2023 (INVASIVE ALIEN SPECIES, 2024), therefore it is likely that the coypu could have come downstream from this tributary of the Drava River. Documented data on its occurrence along the Drava indicate a stable presence in the southern part of Hungary (Tab. 1). Current knowledge suggests that Križnica could be one of the starting points for the spread of coypu toward Croatia.

Our results indicate that the expansion of coypu along the Drava is still in an early phase, but it is expected that the number of individuals in the occupied areas will increase. Further expansion over a significant area of Hungary in the near future is highly probable. Under the current climate conditions, more than 90% of the country's territory and more than half of neighbouring Croatia are suitable habitat for the coypu (SCHERTLER *et al.*, 2020). The increase in average temperature and dry periods can help its further expansion (SCHERTLER *et al.*, 2020; TEDESCHI *et al.*, 2023); although the pace cannot be predicted, it can be assumed that the invasion of the coypu is only now beginning to unfold (SCHERTLER *et al.*, 2020; VÁCZI, 2022).



**Fig. 3.** Two young coypu on the frozen Old-Drava oxbow near Barcs on the 14th of January 2024. Photo by J. J. Purger.



Fig. 4. Current distribution of coypu along the Drava River in Hungary. Map by Z. Újvári.

In Europe, the natural enemies of coypu are the red fox (*Vulpes vulpes*) and the golden jackal (*Canis aureus*), but they can also be killed by stray dogs (*Canis lupus familiaris*) (e.g. SCHERTLER & ESSL, 2022; VÁCZI, 2022; KOYNOVA *et al.*, 2023). Natural predators are unable to control coypu populations, as the numbers of these predators are regulated by humans. The expansion of coypu and the increase in their number can have serious consequences, for example, transmission of the bacterial disease leptospirosis, degradation of native vegetation, damage to agricultural crops, riverbanks, and irrigation systems, and disturbance or destruction of bird nests among the vegetation or on the water surface (e.g. BERTOLINO *et al.*, 2012; BORŠIĆ *et al.*, 2018; GETHÖFFER & SIEBERT, 2020). If the coypu invasion continues at the present rate with populations reaching significant densities, it will be necessary to introduce eradication measures in Hungary and the continental part of Croatia to mitigate the damage they cause. Further collection of data, combined with monitoring local populations is therefore an imperative.

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