ICHTHYOFAUNA OF THE GILORT RIVER (JIU/DANUBE BASIN)

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KEYWORDS: Gilort River, Natura 2000, *Eudontomyzon mariae*, electrofishing, *Sabanejewia aurata*, *Rhodeus amarus*, *Barbus meridionalis*.

ABSTRACT

The study reports 18 fish species, identified during an electrofishing campaign in 2024 on the Gilort River, within the section of the river located in the ROSCI0362 site.

All species for which the site was designated were identified (*Barbus meridionalis*, *Eudontomyzon mariae*, *Romanogobio albipinnatus*, and *Sabanejewia aurata*). Notably, the presence of the species *Rhodeus amarus*, also of European conservation interest, was observed, and the authors propose its inclusion in the standard data form.

REZUMAT: Ihtiofauna râului Gilort (Bazinul Jiu/Dunăre).

Lucrarea prezintă un număr de 18 specii de pești, în urma unei campanii de pescuit prin electronarcoză în anul 2024 pe râul Gilort, pe sectorul de râu aflat în ROSCI0362.

Au fost identificate toate speciile pentru care a fost desemnat situl (*Barbus meridionalis*, *Eudontomyzon mariae*, *Romanogobio albipinnatus* și *Sabanejewia aurata*). Se remarcă și prezența speciei *Rhodeus amarus*, de asemenea, de interes european pentru conservare, pe care autorii o propun pentru a fi inclusă în formularul standard.

RÉSUMÉ: Ichthyofaune de la rivière Gilort (Bassin de Jiu/Danube).

L'étude présente un total de 18 espèces de poissons, identifiées lors d'une campagne de pêche électrique en 2024 dans la rivière Gilort, dans le secteur de cours situé dans le site Natura 2000 ROSCI0362.

Toutes les espèces pour lesquelles le site a été désigné ont été identifiées (*Barbus meridionalis*, *Eudontomyzon mariae*, *Romanogobio albipinnatus* et *Sabanejewia aurata*). On remarque également la présence de l'espèce *Rhodeus amarus*, également d'intérêt européen pour la conservation, que les auteurs proposent d'inclure dans le formulaire standard.

INTRODUCTION

The ecological role of fish is highly significant. One particularly important ecological role of fish is as bioindicator of water quality, since they are sensitive organisms to pollution, and any changes in water quality can be reflected in fish populations.

Fish also play a crucial role in various trophic chains, facilitating the transfer of matter and energy from producers to higher consumer levels (algae, invertebrates, etc.).

The area selected for this study is the Gilort River, a portion of which is a protected area and part of the Natura 2000 site "Râul Gilort," identified by the code ROSCI0362.

One of the reasons the Gilort River (Fig. 1) was designated as a Natura 2000 site is that it is one of the least human-impacted rivers in the Oltenia region.

Another important characteristic of the Gilort River is the presence of diverse habitats along its course. These include areas with fast-flowing water and rocky substrates, as well as sections with slow-moving water and muddy substrates.

This study aims to provide a more comprehensive list of species than the two previously reported in the scientific literature. The first list, published in 2007 (Chiriac et al., 2007), includes three species sampled from a single point on the Gilort River – Bengești (*Barbus petenyi*, *Phoxinus phoxinus* and *Orthrias barbatulus*). The second list was presented by Pecingina and Popa (2017), in a paperwork concerning the conservation status of four species in ROSCI0362 – *Eudontomyzon mariae*, *Gobio albipinnatus*, *Barbus meridionalis*, and *Sabanejewia aurata* (Pecingina and Popa, 2017).

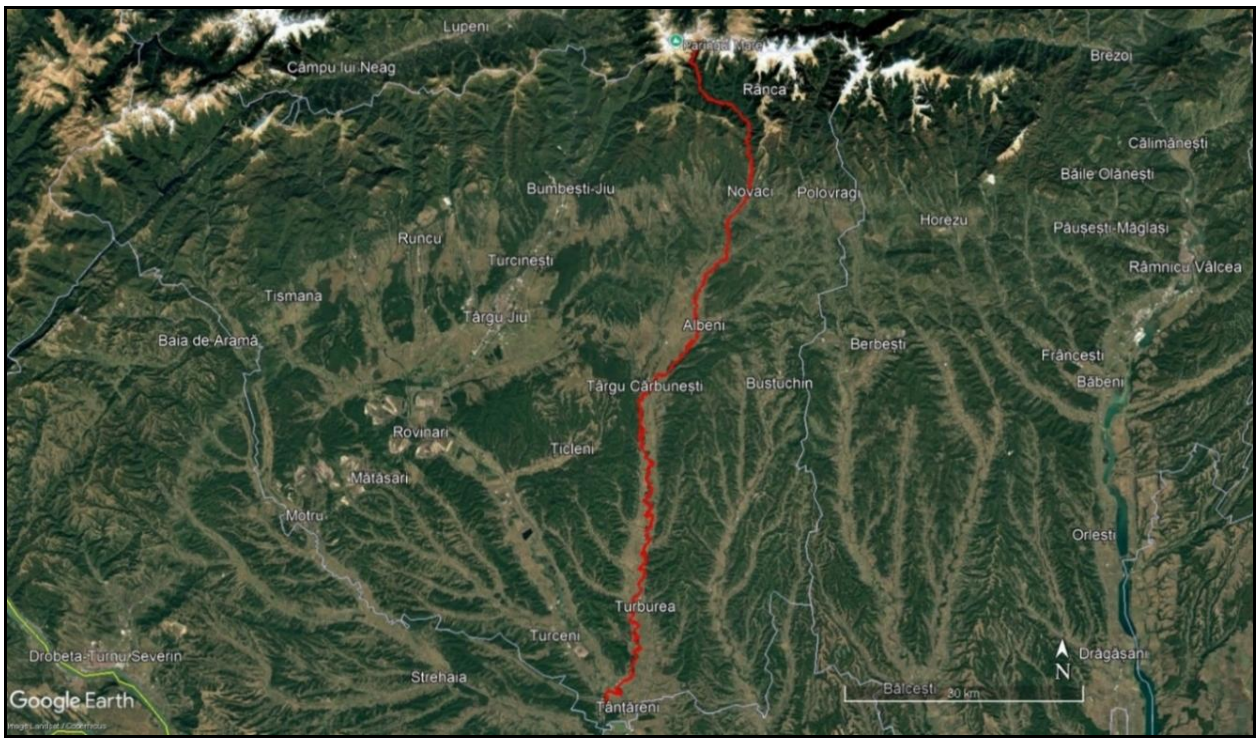

Figure 1: The course of the Gilort River (Google Earth).

MATERIALS AND METHODS

The Gilort River (Fig. 1) is located in the southwest of Romania, in Gorj County, and it is a right-hand tributary of the Jiu River. The Gilort River is characterized by changes in morphology from its upper to its lower sections.

The samplings collection method used was electrofishing. The electrofishing session was conducted as part of the LIFE16 NAT/RO/000778 project, "Refacerea culoarelor de migrație și a habitatelor pentru speciile de pești reofili din Râul Gilort" (Fish for LIFE), implemented by the Gorj Environmental Protection Agency.

Additionally, sampling was carried out also using nets, traps and fishing rods, with the investigation period spanning 12 months (from November 2023 to October 2024).

The systematic classifications required for this study were based on data from www.fishbase.se.

RESULTS AND DISCUSSION

A total of 18 fish species were captured in the Gilort River. Most of the species belong to the order Cypriniformes, with 14 species classified under this order (Tab. 1).

Table 1: The diversity of fish species caught in the Gilort River.

Nr.	Scientific name	Order	Family
1	*Alburnoides bipunctatus* (Bloch, 1782)	Cypriniformes	Leuciscidae
2	*Alburnus alburnus* (Linnaeus, 1758)	Cypriniformes	Leuciscidae
3	*Barbatula barbatula* (Linnaeus, 1758)	Cypriniformes	Nemacheilidae
4	*Barbus meridionalis petenyi* (Heckel, 1852)	Cypriniformes	Cyprinidae
5	*Carassius gibelio* (Bloch, 1783)	Cypriniformes	Cyprinidae
6	*Chondrostoma nasus* (Linnaeus, 1758)	Cypriniformes	Leuciscidae
7	*Eudontomyzon mariae* (Berg, 1931)	Petromyzoniformes	Petromyzonidae
8	*Lepomis gibbosus* (Linnaeus, 1758)	Perciformes	Centrarchidae
9	*Phoxinus phoxiunus* (Linnaeus, 1758)	Cypriniformes	Leuciscidae
10	*Pseudorasbora parva* (Schlegel, 1842)	Cypriniformes	Cyprinidae
11	*Rhodeus amarus* (Bloch, 1782)	Cypriniformes	Cyprinidae
12	*Romanogobio albipinnatus* (Lukasch, 1933)	Cypriniformes	Cyprinidae
13	*Romanogobio kessleri* (Dybowski, 1862)	Cypriniformes	Cyprinidae
14	*Sabanejewia aurata* (De Filippi, 1863)	Cypriniformes	Cobitidae
15	*Sabanejewia romanica* (Băcescu, 1943)	Cypriniformes	Cobitidae
16	*Salmo trutta fario* (Linnaeus, 1758)	Salmoniformes	Salmonidae
17	*Silurus glanis* (Linnaeus, 1758)	Siluriformes	Siluridae
18	*Squalius cephalus* (Linnaeus, 1758)	Cypriniformes	Leuciscidae

Among these 18 species, six (*Barbus meridionalis*, *Eudontomyzon mariae*, *Rhodeus amarus*, *Romanogobio albipinnatus*, *Romanogobio kesslerii*, and *Sabanejewia aurata*) are protected at a national level (Tab. 2) under Government Emergency Ordinance 57/2007, approved with amendments through Law no. 49/2011, and are included in Annex 3.

All of these species (*Barbus meridionalis*, *Eudontomyzon mariae*, *Rhodeus amarus*, *Romanogobio albipinnatus*, *Romanogobio kesslerii* and *Sabanejewia aurata*) are also protected at the European level under the Habitats Directive 92/43/EEC, being listed in Annex II.

The presence of *Barbus meridionalis*, *Eudontomyzon mariae*, *Romanogobio albipinnatus*, and *Sabanejewia aurata* in the Gilort River enabled the designation of a section of the river as a Natura 2000 site.

The presence of *Eudontomyzon mariae* in the Gilort River is particularly important because, at the national level, only 12 Natura 2000 sites (representing 2.9% of the total) have been designated for the protection of this species.

An important factor supporting the development of *Eudontomyzon mariae* (the Ukrainian brook lamprey) in the Gilort River is the presence of muddy substrate areas, which are crucial for larval development.

Additionally, *Eudontomyzon mariae* is listed in the Red Book of Vertebrates of Romania.

Table 2: The protection status of the fish species caught in the Gilort river, at the national and European level, as well as the inclusion on the IUCN red list.

Nr.	Scientific name	Present in GEO 57/2007	Habitats Directive 92/43	IUCN category
1.	*Alburnoides bipunctatus* (Bloch, 1782)			LC
2.	*Alburnus alburnus* (Linnaeus, 1758)			LC
3.	*Barbatula barbatula* (Linnaeus, 1758)			LC
4.	*Barbus meridionalis petenyi* (Heckel, 1852)	A3, A5	A2, A5	LC
5.	*Carassius gibelio* (Bloch, 1783)			LC
6.	*Chondrostoma nasus* (Linnaeus, 1758)			NT
7.	*Eudontomyzon mariae* (Berg, 1931)	A3	A2	LC
8.	*Lepomis gibbosus* (Linnaeus, 1758)			LC
9.	*Phoxinus phoxinus* (Linnaeus, 1758)			LC
10.	*Pseudorasbora parva* (Schlegel, 1842)			LC
11.	*Rhodeus amarus* (Bloch, 1782)	A3	A2	LC
12.	*Romanogobio albipinnatus* (Lukasch, 1933)	A3	A2	LC
13.	*Romanogobio kessleri* (Dybowski, 1862)	A3	A2	LC
14.	*Sabanejewia aurata* (De Filippi, 1863)	A3	A2	LC
15.	*Sabanejewia romanica* (Băcescu, 1943)			VU
16.	*Salmo trutta fario* (Linnaeus, 1758)			LC
17.	*Silurus glanis* (Linnaeus, 1758)			LC
18.	*Squalius cephalus* (Linnaeus, 1758)			LC

From a conservation perspective based on the IUCN status, out of the 18 species identified in the Gilort River, 16 are classified as LC (Least Concern).

The species not in this category are *Chondrostoma nasus* (common nase) and *Sabanejewia romanica* (Romanian loach).

Chondrostoma nasus is categorized as NT (Near Threatened). A potential cause for the decline of this fish is excessive poaching, as it is a large fish species, with most individuals reaching 40 cm in length (Bănărescu, 1964). Also, this fish undertakes significant migrations (Kottelat and Freyhof, 2007), making it easier to be captured compared to other fish of similar size.

Sabanejewia romanica is classified as VU (Vulnerable). This species, until recently, was considered endemic to Romania. However, it has also been discovered in the Rečka, Slatinska, and Zamna rivers in Serbia (Marić et al., 2022). In Romania, it can be found in the southwestern and central regions of the country (Fig. 2).

This species is also listed in the Red Book of Vertebrates of Romania (Botnariuc and Tatole, 2005).

Another species captured in the Gilort River that is included in the Red Book of Vertebrates of Romania is *Romanogobio kessleri* (Botnariuc and Tatole, 2005).

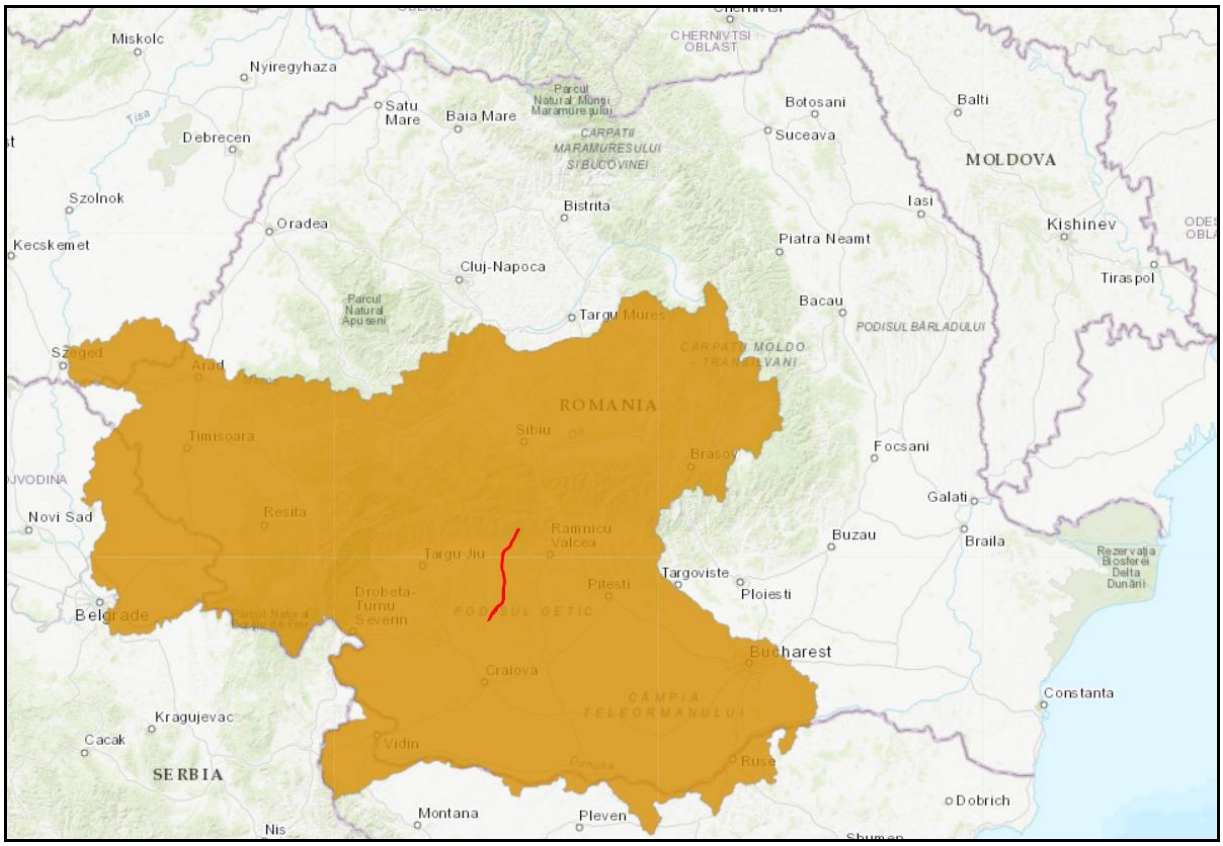

Figure 2: Distribution map of *Sabanejewia romanica* and the Gilort River sector where the species was identified (marked in red) (www.iucnredlist.org/species/5036/137328099)

Another interesting case is that of the species *Rhodeus amarus*, which is listed in Annex II of Directive 92/43/EEC. However, at the time of the designation of the Natura 2000 site, it was not present in the Gilort River section proposed as the Natura 2000 site, being recorded much further downstream, near the locality of Petrești.

Thanks to the riverbed modification works, including the construction of migration passages, and habitat restoration, the species was captured within the site in 2024, specifically in the area near the locality of Albeni.

CONCLUSIONS

Of the total of 18 fish species captured in the Gilort River, most belonging to the order Cypriniformes, four (*Barbus meridionalis*, *Eudontomyzon mariae*, *Romanogobio albipinnatus*, and *Sabanejewia aurata*) are also listed in the standard data form for the ROSCI0362 Gilort River site.

Other important fish species for the ichthyofauna of the Gilort River are *Romanogobio kessleri* and *Rhodeus amarus*, species which together with those mentioned above are protected by GEO 57/2007 and both of them are also protected by the Directive 92/43/EEC.

For a future revision of the standard data form for the ROSCI0362 site, we propose the inclusion of *Rhodeus amarus* to ensure the legal framework for the protection of this species.

The presence of a high number of fish species is made possible by the complex and diverse habitats in the Gilort River, which are in a favorable conservation status and are only minimally impacted by human interventions.

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