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A NEW RECORD OF THE INVASIVE FISH, *Perccottus glenii,* IN OLTENIA REGION, SOUTH-WESTERN ROMANIA: BLAHNIȚA PLAIN, MEHEDINȚI COUNTY

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ABSTRACT. *Perccottus glenii is an invasive fish species originating from Asia. It spreads rapidly in the freshwaters of Europe, Romania included. This note mentions two new records of this species (Jiana and Scăpău localities) in south-western Romania, in Blahnița Plain, western Oltenia region. The Amur sleepers were identified in the autumn of 2018 and 2019 when 17 individuals, both adults and juveniles, were observed, indicating the existence of reproductive populations in the area. Probably, P. glenii migrated upstream from the neighboring Danube, where the species was previously mentioned. On both sites, the Amur sleepers were found in drainage ditches with rich aquatic vegetation and muddy substratum. P. glenii was caught using a herpetological net instead of equipment traditionally used in ichthyologic studies. Considering the six years that have passed since the Amur sleepers were observed, the period without fieldwork activity because of the Covid-19 pandemic, and the small area that was investigated, it is quite possible that this invasive fish species is already firmly established and well-represented in the region, negatively affecting the native freshwater fauna.*

KEYWORDS*: aquatic habitats, non-native species, negative impact, biodiversity, Danube.*

Perccottus glenii is an invasive fish species in Romania, where it has been mentioned approximately 200 times in the last two decades (Drăgan et al. 2024). However, the majority of observations were made in the country's eastern regions, in the Siret River basin and the Danube Delta, followed by the Timiș and Bega Rivers basins in the Banat region (Drăgan et al. 2024).

The higher number of records from the Siret basin is most probably a result of the fact that the species was encountered in the area for the first time in Romania (Nalbant et al. 2004). In the rest of the country, there are only sporadic mentions, and the species was not registered in some hydrographic basins (Drăgan et al. 2024). The species has a high rate of expansion in Europe, where new distribution sites are permanently discovered (e.g. Horvatić et al. 2022, Pihlström et al. 2022, Honcharov & Drohvalenko 2024, Šmejkal et al. 2024), a fact also valid in Romania in the last years (e.g. Covaciu-Marcov et al. 2017 a, b, Năstase et al. 2019, 2022). Because of this, a wider distribution of this species is also expected in Romania, because most of the country seems suitable for it (Reshetnikov & Ficetola 2011). In this context, the present note focuses on a new record of *P. glenii* in Blahnița plain, Oltenia region, southwestern Romania.

Percottus glenii (Figure 1) was first identified in Blahnița Plain in the autumn of 2018. Fifteen individuals, both adults and juveniles, were identified near the Jiana village. In the autumn of 2019, two juvenile individuals were also found near Scăpău village. The two localities are situated approximately 6 km distance from each other and approximately 40 km southeast of Drobeta-Turnu Severin municipality. They belong to the Oltenia region and are located in Blahnița plain, in the Blahnița River hydrographic basin, which is a small Danube tributary (Ujvári 1972). The two new distribution records are situated between 5 and 10 km from the Danube and Blahnița rivers' main courses. Nowadays, the region is mainly covered by agricultural lands and artificial drainage ditches, but former records show the presence of natural habitats, made up of forests and wetlands, in the area (e.g., Prăvălie 2013, Prăvălie & Sîrodoev 2013, Pravalie et al. 2014, Răducă et al. 2019, 2021). The Amur sleepers were encountered in both localities in the aforementioned artificial ditches. The habitat from Jiana was a 4 to 5 m width ditch with abundant aquatic vegetation and a water level lower than the surrounding agricultural areas. At the time of our visit, it was used as a watering hole for cattle. At Scăpău, the ditch was narrower, had concrete edges, and was situated in the nearby vicinity of the agricultural fields. Rich aquatic vegetation was present here as well. A large quantity of domestic waste was observed in the water of this habitat. In both cases, the Amur sleeper individuals were captured with the help of a net commonly used in herpetological studies, as this method was used in other studies, as well (e.g., Covaciu-Marcov et al. 2017a,b, 2018a,b). Thus, the habitats populated by *P. glenii* in Blahnița plain correspond with the species requirements, as

they are small-sized habitats with a lot of aquatic vegetation (e.g. Copilaș-Ciocianu & Pârvulescu 2011, Rechulicz et al. 2015, Covaciu-Marcov et al. 2011a, 2017a,b, 2018a, Horvatić et al. 2022).

Figure 1. *Percottus glenii* individuals from Jiana, Mehedinți County, Romania.

According to the latest literature (see Drăgan et al. 2024), the presence of *P. glenii* in the two studied sites is a premiere for the Blahnița plain and Blahnița River hydrographic basin. At the same time, it confirms the continued advance of this invasive species on the direct tributaries of the Danube, even on those of smaller sizes (Covaciu-Marcov et al. 2017b). In the past, *P. glenii* was mentioned in the western areas of Oltenia region only once, in the Danube's principal watercourse, near Drobeta-Turnu Severin city (Popa et al. 2006). Other neighboring distribution sites were found more than 100 km away to the southeast, in the Balasan River (Covaciu-Marcov et al. 2017b). This suggests that *P. glenii* was probably present in the ditches from Blahnița Plain for quite some time because it was already mentioned downstream (Covaciu-Marcov et al. 2017b). Nevertheless, records of the Amur sleeper are known from the Danube in the neighboring countries (e.g., Jurajda et al. 2006, Reshetnikov 2013). The species was, however, not mentioned in a study from 2015, dedicated to the fish fauna of the main course of the Blahnița River (Ureche & Ureche 2015). This absence can be easily explained by the species' habitat preferences for small water bodies with dense vegetation cover (e.g., Copilaș-Ciocianu & Pârvulescu 2011, Rechulicz et al. 2015, Covaciu-Marcov et al. 2017a,b, Horvatić et al. 2022)

and the use of traditional ichthyologic methods in the survey (Ureche & Ureche 2015). These methods proved unsuccessful in capturing the small fish within vegetation (Telcean et al. 2014, Covaciu-Marcov et al. 2017a). Consequently, there is a further need for more thorough studies on similar water courses in the neighboring region, as the *P. glenii* populations could be much larger and more widespread than expected.

The presence of *P. glenii* in the Blahnița Plain raises a few conservation issues. First of all, in the habitat from Scăpău in the past, there were present paedomorphic smooth newts (Covaciu-Marcov et al. 2011b), and *P. glenii* is a well-known threat to newt populations (e.g. Reshetnikov 2003, Pupins et al. 2023), as it was even observed to feed on newts (Telcean & Cicort-Lucaciu 2016). Even though, in Romania, Amur sleepers were observed to cohabit with the paedomorphic smooth newts, this may only be a consequence of the recent advance of the fish in that area, as eliminating the newts may take a more extended period (Covaciu-Marcov et al. 2018a). Paedomorphic smooth newts probably disappeared in Blahnița Plain because, during our study, we did not identify any newts at Scăpău. Secondly, *P. glenii* is known to have a negative impact on the endemic fish species, *Umbra krameri,* by competing for food resources (e.g. Grabowska et al. 2019, Bănăduc et al. 2022), and also, by preying on their juveniles (Somogyi et al. 2023). This might be the reason why *U. krameri* was present in the Blahnița River basin in the past (Bănărescu et al. 1995) and was not recently found there (Ureche & Ureche 2015). Our concern is related to the spread of the Amur sleeper into other favorable habitats of the Oltenia region, where *U. krameri* have been recently found (Covaciu-Marcov et al. 2018b, Cupșa et al. 2021, Lațiu et al. 2023). Thirdly, Blahnița Plain is known for the occurrence of numerous relict species (Covaciu-Marcov et al. 2009, 2017c, Ferenți & Covaciu-Marcov 2014, 2018, Groza et al. 2021). The unexplained recent disappearance of the stone crayfish, immediately after its identification in the area (Groza et al. 2021) could be linked to the unconfirmed presence of *P. glenii*. This could be a valid explanation, as the small watercourse is a direct tributary of the Danube (Groza et al. 2021), and fish are well-known vectors for the deadly crayfish plague (see Oidtmann et al. 2002) that could have rapidly wiped out the stone crayfish population from the region (Groza et al. 2021). In conclusion, the successful invasion of *P. glenii* in Blahnița Plain has seemingly negatively influenced at least three different species in a relatively small area. This indicates the seriousness of the impact of this species on the biodiversity of the newly invaded territories.

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