FIRST RECORD OF THE SOUTH EUROPEAN ROACH, S*ARMARUTILUS RUBILIO* (BONAPARTE, 1837) IN THE ASINARO RIVER BASIN (SICILY, ITALY).

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Abstract

The first record of the South European Roach *Sarmarutilus rubilio* (Bonaparte, 1837) introduced to the Asinaro river basin (SE Sicily) is reported. The species, alien to Sicily, was sampled/observed in May-June 2025 almost along the entire main river, from near the headwaters up to about 3 km from the mouth. The SE Roach is able to reproduce in this environment, as evidenced by the presence of recent born juveniles and of sexually active adults.

Riassunto

Prima segnalazione della Rovella, Sarmarutilus rubilio (Bonaparte, 1837), nel Fiume Asinaro (Sicilia, Italia). La rovella (*Sarmarutilus rubilio*), autoctona in diversi bacini dell'Italia peninsulare ma alloctona in Sicilia, è stata riscontrata per la prima volta nel Fiume Asinaro (SE Sicilia). La specie è stata campionata/osservata nel Maggio-Giugno 2025 pressochè in tutta l'asta fluviale, dalla prossimità alle scaturigini fino a circa 3 chilometri dalla foce,. La Rovella è in grado di riprodursi nel sito, come evidenziato dalla presenza di novellame dell'anno e d'individui adulti sessualmente attivi.

Keywords: aliens, allochthonous species, Cyprinids, freshwaters, invasion

1. Introduction

The South European Roach *Sarmarutilus rubilio* (Bonaparte, 1837), alien to Sicily, after having been found for the first time on the island (Tigano and Ferrito, 1986), has shown a continuous and significant spread in various Sicilian river basins, as well as in both natural and artificial lakes (Duchi, 2022). The present paper reports a new occurrence in a watercourse in the Hyblean area (SE Sicily).

2. Material and methods

2.1. Study Area

The Asinaro River, also known as the River of Noto, is about 20 km long from its origins in Testa dell'Acqua to its mouth in the Ionian Sea. The catchment area is 86 km^2. The main watercourse (but not the various tributaries) has been surveyed as part of the Ichthyologic Management Plan of the Syracuse Province (Salpietro, 2005), which reports 7 fish species: *Anguilla anguilla, Cyprinus carpio, Onchorynchus mykiss, Gambusia spp., Liza saliens, Mugil cephalus, Dicentrarchus labrax*.

2.2. Field activity.

Samplings were carried out in the middle-upper section of the watercourse, in two almost contiguous sites: the downstream reach (coordinates: 36° 55' 39.19'' N, 15° 1' 20.77''E) was sampled on 28.5.2025 and the upstream reach (coordinates: 36° 55' 45.61''N, 15° 1' 7.50''E) on 13.6.2025. The sampled areas were 115-150 m long with a minimum width of 1.30 m and a maximum of 11.5 m at a pool in the downstream section. The maximum depth varied between 80 cm upstream and 105 cm downstream. There was a variable presence of pools, riffles and glides. The downstream stretch had a variety of substrates (silt, sand, gravel, pebbles, boulders) while the upstream area had only gravel, pebbles and boulders. Water velocity was low and the transparency was maximum. Shading was 70-85%. Water temperature was 18.3° - 19.7° C, pH was 7.81 - 8.10 and conductivity was 450-510 µS/cm. A single electrofishing pass was carried out using a battery-powered backpack shocker (IS 200/2B Scubla) with pulsed direct current. Only larger individuals were measured (Total Length to the nearest mm) after anesthesia with clove oil solution. Subsequently, the fish were placed in buckets with clean water to recover and then returned to the river. Observations were also carried out at two sites further downstream, up to approximately 3 km upstream of the mouth.

3. Results

The South European Roach was found at both sampling sites, with individuals ranging in size from juvenile yearlings to adults. The biggest individual caught was 153 mm long. There were still individuals in active reproductive phase (i.e. males with sperm). The species was also observed at sites further downstream, again with both newborn juveniles and adults.

4. Discussion and conclusions

The South European Roach is reported for the first time in the Asinaro River, as it had not been sampled in the Ichthyologic Management Plan of the Syracuse Province. It remains to be verified whether the species is present also in the tributaries, as well as in the last stretch of the main course itself. As already pointed out by Duchi (2022), while

the fish monitoring of the Sicilian river network is being carried on, or updated, unreported populations of South European Roach are being found. Again, its discovery is undoubtedly due to human-induced spread, given its recent occurrence in an environment that had already been sampled and where the species had not been reported. The progressive expansion of the species in the Sicilian basins, as well as the periodic discovery of new allochthonous fish (Duchi, 2024), undoubtedly indicates a lack of controls on the management of fish fauna, as well as a lack of education of the population, which is evidently unaware of the potential risks associated with the spread of allochthonous species.

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References

Duchi A. 2022. Nuove segnalazioni ed aggiornamento della distribuzione di rovella, *Sarmarutilus rubilio*, (Bonaparte, 1837), in Sicilia. *It. J. Fresh. Ichthyol*. 8: 41 – 45.

Duchi A. (2024). First record of the alien *Abramis brama* (L., 1758; Cyprinidae) in Sicily. *Cybium* 48(3): 265-266. https://doi.org/10.26028/cybium/2024-024.

Salpietro L., (2005). La carta ittica della Provincia di Siracusa. Provincia Regionale di Siracusa. 143 p.

Tigano, C., Ferrito, V. (1986). Sulla presenza di *Rutilus rubilio* in Sicilia. *Animalia* 13: 109-124.