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THE FIRST RECORD OF BASTARD GRUNT *POMADASYS INCISUS* (BOWDICH, 1825) IN ALBANIAN WATERS (ADRIATIC SEA)

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ABSTRACT

The bastard grunt *Pomadasys incisus* (Bowdich, 1825), an Atlantic species that entered the Mediterranean through the Strait of Gibraltar, exhibits a discontinuous distribution within the basin and remains rare in the Adriatic Sea. Here, we report the first record of *P. incisus* in Albanian waters and only the third confirmed occurrence in the Adriatic Sea. A single individual was captured on 9 October 2025 in the Bay of Vlorë at a depth of 48 m near aquaculture facilities. The specimen was identified based on diagnostic morphological features and measured 21 cm in total length and 125 g in weight. This record fills an important gap in the species' Mediterranean distribution, although the exact route of entry into the Adriatic remains unclear. The rarity of records suggests limited establishment; however, recent warming trends in the Adriatic may facilitate further expansion.

Key words: *Pomadasys incisus*, bastard grunt, Albanian Coast, Adriatic Sea, Mediterranean Sea

PRIMO RITROVAMENTO DI *POMADASYS INCISUS* (BOWDICH, 1825) NELLE ACQUE ALBANESE (MARE ADRIATICO)

SINTESI

Il grugnitore bastardo *Pomadasys incisus* (Bowdich, 1825), una specie atlantica entrata nel Mediterraneo attraverso lo Stretto di Gibilterra, presenta una distribuzione discontinua all'interno del bacino e rimane raro nell'Adriatico. Gli autori riportano il primo ritrovamento di *P. incisus* nelle acque albanesi e solo la terza presenza confermata nell'Adriatico. Un singolo individuo è stato catturato il 9 ottobre 2025 nella Baia di Valona a una profondità di 48 m, in prossimità di impianti di acquacoltura. L'esemplare è stato identificato sulla base di caratteristiche morfologiche diagnostiche e misurava 21 cm di lunghezza totale e 125 g di peso. La rarità delle segnalazioni suggerisce un insediamento limitato; tuttavia, i recenti trend di riscaldamento dell'Adriatico potrebbero favorire un'ulteriore espansione.

Parole chiave: *Pomadasys incisus*, grugnitore bastardo, costa albanese, Adriatico, Mediterraneo

INTRODUCTION

The family Haemulidae comprises approximately 138 species distributed among 23 genera, inhabiting predominantly coastal waters of tropical and subtropical regions across the Atlantic, Indian, and Pacific Oceans. Members of this family are mainly marine, although some species occur in brackish environments and only a few inhabit freshwater systems (Fricke et al., 2022; Van der Laan et al., 2022). Within this family, the genus *Pomadasys* includes 29 species, of which three have been reported in the Mediterranean Sea: the striped piggy *Pomadasys stridens* (Forsskål, 1775), the bastard grunt *Pomadasys incisus* (Bowdich, 1825), and the silver grunt *Pomadasys argenteus* (Forsskål, 1775). Notably, all three species are considered non-indigenous to the Mediterranean basin.

Two of these species, *P. stridens* and *P. argenteus*, are Lessepsian migrants that entered the Mediterranean Sea from the Red Sea via the Suez Canal. *Pomadasys stridens*, native to the Indo-Pacific region, was first recorded in the Mediterranean around 1888 in Port Said and has since established populations throughout the eastern Mediterranean, where it is considered one of the most abundant Lessepsian fish, but also occasionally reaches the Italian coast (Golani et al., 2002; Bilecenoglu et al., 2009; Bodilis et al., 2013; Tüzün & Gücü, 2023). More recently, *P. argenteus* was recorded for the first time in the Mediterranean in 2022 near Misrata, Libya, representing the second Red Sea haemulid species to colonize the basin (Fitori et al., 2023).

In contrast, *Pomadasys incisus* has an Atlantic origin. Originally described from Gambia, it is widely distributed along the eastern Atlantic coastline, ranging from South Africa to the Iberian Peninsula, including Macaronesian archipelagos such as the Canary Islands, Madeira, and Cape Verde. The species entered the Mediterranean Sea through the Strait of Gibraltar, probably during the mid-19th century, likely facilitated by favorable oceanographic conditions, including prevailing currents, increasing sea temperatures, and the availability of suitable habitats, particularly soft substrates in shallow waters (Francour et al., 1994; Bodilis et al., 2013; Doumpas et al., 2020; Kovačić et al., 2021). Following its introduction, *P. incisus* established populations in the northwestern Mediterranean, where it has shown increasing abundance in areas such as the Málaga coast, the Catalan Sea, and the Gulf of Lion (Bodilis et al., 2013; Villegas-Hernández et al., 2014).

Despite its first documented occurrence in the Mediterranean dating back to 1840, it is possible that *P. incisus* was present earlier but remained undetected until the mid-19th century. Since then, the species has been recorded across a wide range of Mediter-

anean localities, including the coasts of Algeria, Tunisia, Spain, France, Italy, Libya, Egypt, Israel, Lebanon, Syria, Turkey, Greece, Malta, Cyprus and Croatia (Bodilis et al., 2013; Doumpas et al., 2020; Çoker & Akyol, 2021). Nevertheless, its distribution remains discontinuous and locally variable, suggesting a complex colonization pattern.

The successful dispersal of *P. incisus* is likely linked to its broad ecological tolerance and life-history traits. This gonochoric species exhibits relatively fast growth and a moderate lifespan of up to seven years (Pajuelo et al., 2003a,b). It inhabits both marine and brackish environments, typically at depths ranging from 10 to 100 m, and occupies a wide variety of habitats, including sandy and rocky substrates, seagrass meadows, as well as lagoons and estuarine systems. Its feeding ecology is similarly opportunistic, consisting mainly of benthic invertebrates. Reproductive patterns appear to vary geographically, e.g., in warmer waters of the eastern Atlantic and the southern central Mediterranean, spawning takes place during a more prolonged season from June to November, while in the north-western Catalan Sea spawning season is shorter, occurring between July and September, and between August and October in the Gulf of Tunis, while, in contrast, all year round in the Canarian Archipelago (Pajuelo et al., 2003a, 2003b; Fehri-Bedoui & Gharbi, 2008; Kapiris et al., 2008; Bodilis et al., 2013; Villegas-Hernández et al., 2014; Doumpas et al., 2020).

Despite this ecological flexibility and relatively broad distribution, *P. incisus* remains poorly studied in the Mediterranean, and available data on its biology and population dynamics are limited (Kapiris et al., 2008). Moreover, its occurrence is still sporadic, with only a few areas reporting consistent or high local abundances. This pattern suggests that both intrinsic biological factors and extrinsic environmental constraints may influence its establishment success and limit its wider expansion across the Mediterranean basin (Bodilis et al., 2013).

In this context, documenting new occurrences is essential for improving our understanding of the species' distribution and ongoing biogeographical changes in the Mediterranean Sea. Here, we report the first record of *Pomadasys incisus* in Albanian waters, representing only the third confirmed occurrence of the species in the Adriatic Sea. This finding contributes to filling a significant gap in the known distribution of the species and provides further insight into its range expansion within the Mediterranean basin.

MATERIAL AND METHODS

On 9 October 2025, a single individual of *Pomadasys incisus* was accidentally captured by a trammel net in the Bay of Vlërë (southern Albania)

(40.444600 °N, 19.383164 °E) (Fig. 1). The specimen was caught at a depth of 48 m, approximately 500 m from the nearest coastline, in proximity to marine aquaculture cages. The seabed in this area is predominantly muddy, likely influenced by organic enrichment associated with fish farming activities. After capture, the specimen was brought ashore, then photographed and measured (length to the nearest millimeter and weight in grams) by one of the authors (S. Durmishaj). Since the specimen was part of a commercial catch, it was returned to the fishermen and later sold at the Fishing Center Oriku in Radhimë, a coastal village near the city of Vlorë.



Fig. 1: The map of the area with the indicated location (*) of the record of *Pomadasys incisus*.

Sl. 1: Zemljevid obravnavanega območja z označeno lokality ulova (*) vrste *Pomadasys incisus*.

RESULTS AND DISCUSSION

The specimen was identified as *Pomadasys incisus* based on its diagnostic morphological features, including a relatively large head with a depth comparable to that of the body, a small and slightly oblique mouth, greyish coloration on the dorsum, and silvery-white coloration on the flanks and ventral side. Additional distinguishing characteristics included a dark spot on the posterior margin of the operculum and orange to yellowish fins (Fig. 2). These traits are consistent with previous descriptions of the species (Kapisir *et al.* 2008; Bodilis *et al.*, 2013; Akyol & Ünal, 2016; Doumpas *et al.*, 2020). Hence, the individual measured 21.0 cm in total length (TL) and weighed 125 g.

This record represents the first confirmed occurrence of *P. incisus* in Albanian waters and only the third documented sighting of the species in the Adriatic Sea. The first Adriatic record dates back to 15 August 2015, when a single individual was captured off the Pelješac Peninsula (Croatia) in the southern Adriatic (Karachle *et al.*, 2016). The second known record was recently reported from the western side of the Adriatic Sea, when on 5 July 2025 a specimen was caught by a recreational fisher using rod and line in coastal waters at a depth of 25 m off Ancona harbour (Toma *et al.*, 2025). No additional records have been reported in the Adriatic basin until the present study, suggesting either a very low detection probability or a sporadic occurrence pattern in this region.

The present finding is consistent with previously proposed dispersal pathways of *P. incisus* within the Mediterranean Sea (Bodilis *et al.*, 2013). After entering through the Strait of Gibraltar, the species is thought to expand via two main routes: (1) an eastward pathway along the North African coastline, from Algeria to Tunisia and further into the Levantine basin, and (2) a northward pathway along the northern Mediterranean coasts, initially following Spain and France and subsequently extending toward other northern regions.

However, the occurrence of *P. incisus* in the Adriatic Sea raises questions regarding the exact dispersal route taken. Given the semi-enclosed nature of the Adriatic basin and its connection to the Mediterranean through the relatively narrow Strait of Otranto, individuals may have entered from the Ionian Sea, potentially originating from populations established along the North African coast (e.g., Gulf of Tunis). Alternatively, a west-to-east dispersal route via the Tyrrhenian Sea cannot be excluded.

It is also important to consider the environmental constraints of the Adriatic Sea, which is generally recognized as one of the coldest sub-basins of the Mediterranean. Such conditions may have historically



Fig. 2: The left (A) and right (B) sides of the caught *Pomadasys incisus*.
Sl. 2: Leva (A) in desna stran (B) ujetega primerka vrste *Pomadasys incisus*.

limited the establishment and persistence of thermophilic species such as *P. incisus*. Nevertheless, recent oceanographic trends indicate a significant increase in sea temperature and salinity in the Adriatic over the past decade (Terzić *et al.*, 2025). These changes are likely facilitating the northward expansion of warm-affinity species, as increasingly documented across the Mediterranean basin.

In this context, the present record may reflect an ongoing shift in species distribution driven by climate-related changes. The sporadic but recurrent appearance of *P. incisus* in the Adriatic could represent early stages of colonization, although further records are needed to determine whether a stable population will establish.

Finally, such occurrences highlight the importance of reporting single records, as they can serve as early

indicators of ecological change. The detection of non-indigenous or range-expanding thermophilic species may provide valuable insights into shifting environmental conditions and habitat suitability, often preceding detectable trends in long-term oceanographic datasets.

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PRVI ZAPIS O POJAVLJANJU NEPRAVE PRAŠIČEVKE *POMADASYS INCISUS* (BOWDICH, 1825) V ALBANSKIH VODAH (JADRANSKO MORJE)

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POVZETEK

Neprava prašičevka, *Pomadasys incisus* (Bowdich, 1825), atlantska vrsta, ki je v Sredozemsko morje vstopila skozi Gibraltarsko ožino, kaže prekinjeno razširjenost znotraj bazena in ostaja redka v Jadranskem morju. Avtorji poročamo o prvi najdbi vrste *P. incisus* v albanskih vodah in šele o tretjem potrjenem pojavljanju v Jadranskem morju. Primerek te vrste je bil ulovljen 9. oktobra 2025 v Vlorovskem zalivu na globini 48 m v bližini marikulturnih objektov. Primerek smo določili na podlagi diagnostičnih morfoloških značilnosti ter je meril 21 cm v celotno dolžino in tehtal 125 g. Ta zapis o pojavljanju zapolnjuje pomembno vrzel v sredozemski razširjenosti te vrste, čeprav natančen način njenega vstopa v Jadransko morje ostaja nejasen. Redkost najdb kaže na omejeno ustalitev; vendar pa bi nedavni trendi segrevanja Jadranskega morja lahko olajšali nadaljnjo razširjanje.

Ključne besede: *Pomadasys incisus*, neprava prašičevka, albanska obala, Jadransko morje, Sredozemsko morje

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