

# ANNALES



UDK 5

*Analí za istrske in mediteranske študije  
Annali di Studi istriani e mediterranei  
Annals for Istrian and Mediterranean Studies  
Series Historia Naturalis, 31, 2021, 1*



UDK 5

ISSN 1408-533X  
e-ISSN 2591-1783



# ANNALES

**Anali za istrske in mediteranske študije**  
**Annali di Studi istriani e mediterranei**  
**Annals for Istrian and Mediterranean Studies**

**Series Historia Naturalis, 31, 2021, 1**

KOPER 2021

**UREDNIŠKI ODBOR/  
COMITATO DI REDAZIONE/  
BOARD OF EDITORS:**

Alessandro Acquavita (IT), Nicola Bettoso (IT), Christian Capapé (FR), Darko Darovec, Dušan Devetak, Jakov Dulčić (HR), Serena Fonda Umani (IT), Andrej Gogala, Daniel Golani (IL), Danijel Ivajnšič, Mitja Kaligarič, Marcelo Kovačič (HR), Andrej Kranjc, Lovrenc Lipej, Vesna Mačić (ME), Alenka Malej, Patricija Mozetič, Martina Orlando-Bonaca, Michael Stachowitzsch (AT), Tom Turk, Al Vrezec

**Glavni urednik/Redattore capo/  
Editor in chief:**

Darko Darovec

**Odgovorni urednik naravoslovja/  
Redattore responsabile per le scienze  
naturali/Natural Science Editor:**

Lovrenc Lipej

**Urednica/Redattrice/Editor:**

Martina Orlando-Bonaca

**Lektor/Supervisione/Language editor:**

Polona Šergon (sl.), Petra Berlot Kužner (angl.)

**Prevajalci/Traduttori/Translators:**

Martina Orlando-Bonaca (sl./it.)

**Oblikovalec/Progetto grafico/  
Graphic design:**

Dušan Podgornik, Lovrenc Lipej

**Tisk/Stampa/Print:**

Založništvo PADRE d.o.o.

**Izdajatelja/Editori/Published by:**Zgodovinsko društvo za južno Primorsko - Koper / Società storica del Litorale - Capodistria<sup>®</sup>Inštitut IRRIS za raziskave, razvoj in strategije družbe, kulture in okolja / Institute IRRIS for Research, Development and Strategies of Society, Culture and Environment / Istituto IRRIS di ricerca, sviluppo e strategie della società, cultura e ambiente<sup>®</sup>**Sedež uredništva/Sede della redazione/  
Address of Editorial Board:**

Nacionalni inštitut za biologijo, Morska biološka postaja Piran / Istituto nazionale di biologia, Stazione di biologia marina di Pirano / National Institute of Biology, Marine Biology Station Piran SI-6330 Piran / Pirano, Fornače/Fornace 41, tel.: +386 5 671 2900, fax +386 5 671 2901;  
**e-mail:** annales@mbss.org, **internet:** [www.zdjp.si](http://www.zdjp.si)

Redakcija te številke je bila zaključena 30. 06. 2021.

**Sofinancirajo/Supporto finanziario/  
Financially supported by:**

Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS), Luka Koper in Mestna občina Koper

Annales - Series Historia Naturalis izhaja dvakrat letno.

**Naklada/Tiratura/Circulation:** 300 izvodov/copie/copies

Revija Annales, Series Historia Naturalis je vključena v naslednje podatkovne baze / La rivista Annales, series Historia Naturalis è inserita nei seguenti data base / Articles appearing in this journal are abstracted and indexed in: BIOSIS-Zoological Record (UK); Aquatic Sciences and Fisheries Abstracts (ASFA); Elsevier B.V.: SCOPUS (NL); Directory of Open Access Journals (DOAJ).

To delo je objavljeno pod licenco / Quest'opera è distribuita con Licenza / This work is licensed under a Creative Commons BY-NC 4.0.



Navodila avtorjem in vse znanstvene revije in članki so brezplačno dostopni na spletni strani <https://zdjp.si/en/p/annalesshn/>  
 The submission guidelines and all scientific journals and articles are available free of charge on the website <https://zdjp.si/en/p/annalesshn/>  
 Le norme redazionali e tutti le riviste scientifiche e gli articoli sono disponibili gratuitamente sul sito <https://zdjp.si/en/p/annalesshn/>



## VSEBINA / INDICE GENERALE / CONTENTS 2021(1)

BIOINVAZIJA  
BIOINVASIONE  
BIOINVASION

**Luca CASTRIOTA & Manuela FALAUTANO**  
Reviewing the Invasion History of the Blue Crab *Callinectes sapidus* (Portunidae) in Sicily (Central Mediterranean): an Underestimated Alien Species ...  
*Revizija zgodovine invazije modre rakovice Callinectes sapidus (Portunidae) na Siciliji (osrednje Sredozemsko morje): podcenjena tujerodna vrsta*

**Alan DEIDUN, Bruno ZAVA, Maria CORSINI-FOKA, Johann GALDIES, Antonio DI NATALE & Bruce B. COLLETTE**  
First Record of the Flat Needlefish, *Ablennes hians* (Belonidae) in Central Mediterranean Waters (Western Ionian Sea) .....  
*Prvi zapis o pojavljanju ploščate morske igle, Ablennes hians (Belonidae) v vodah osrednjega Sredozemskega morja (zahodno Jonsko morje)*

**Mohamed Mourad BEN AMOR, Khadija OUNIFI-BEN AMOR, Marouène BDIOUI & Christian CAPAPÉ**  
Occurrence of Reticulated Leatherjacket *Stephanolepis diaspros* (Monacanthidae) in the Central Mediterranean Sea, and New Record from the Tunisian coast .....  
*Pojavljanje afriškega kostoroga, Stephanolepis diaspros (Monacanthidae), v osrednjem Sredozemskem morju in prvi podatek za tunizijsko obalo*

**Sara AL MABRUK, Ioannis GIOVOS & Francesco TIRALONGO**  
New Record of *Epinephelus areolatus* in the Mediterranean Sea: First Record from Syria .....  
*Novi zapis o pojavljanju rdečepikaste kirne (Epinephelus areolatus) v Sredozemskem morju: prvi podatki za Sirijo*

SREDOZEMSKI MORSKI PSI  
SQUALI MEDITERRANEI  
MEDITERRANEAN SHARKS

**Primo MICARELLI, Francesca Romana REINERO & Emilio SPERONE**  
Notes on a Rare Case of Bluntnose Sixgill Shark *Hexanchus griseus* Stranded on the Coast of Tuscany in the Central Tyrrhenian Sea .....  
*Zapis o redkem primeru morskega psa šesterškrigarja Hexanchus griseus, ki je nasedel na toskanski obali v osrednjem Tirenskem morju*

**Alen SOLDO**  
The Occurrence of the Common Angel Shark *Squatina squatina* in the Adriatic Sea .....  
*Pojavljanje navadnega sklata (Squatina squatina) v Jadranskem morju*

**Hakan KABASAKAL, Deniz AYAS & Deniz ERGÜDEN**  
Intentional Stranding of a Blue Shark, *Prionace glauca* (Carcharhiniformes: Carcharhinidae), in Pursuit of Prey .....  
*Namerno nasedanje sinjega morskega psa, Prionace glauca (Carcharhiniformes: Carcharhinidae), med zasledovanjem plena*

**Patrick L. JAMBURA, Julia TÜRTSCHER, Alessandro DE MADDALENA, Ioannis GIOVOS, Jürgen KRIWET, Jamila RIZGALLA & Sara A. A. AL MABRUK**  
Using Citizen Science to Detect Rare and Endangered Species: New Records of the Great White Shark *Carcharodon carcharias* Off the Libyan Coast .....  
*Uporaba ljubiteljske znanosti za pridobivanje podatkov o redki in ogroženi vrsti: novi podatki o pojavljanju belega morskega volka Carcharodon carcharias ob Libijski obali*

IHTIOLOGIJA  
ITTILOGIA  
ICHTHYOLOGY

**Sihem RAFRAFI-NOUIRA, Christian REYNAUD & Christian CAPAPÉ**

A New Record of *Clinitrachus argentatus* (Osteichthyes: Clinidae) from the Tunisian Coast (Central Mediterranean Sea) ..... 63  
*Novi zapis o pojavljanju srebrnice Clinitrachus argentatus* (Osteichthyes: Clinidae) iz tunizijske obale (osrednje Sredozemsko morje)

**Mauro CAVALLARO, Giovanni AMMENDOLIA, Ignazio RAO, Alberto VILLARI & Pietro BATTAGLIA**

Variazioni pluriennali del fenomeno dello spiaggiamento di specie ittiche nello stretto di Messina, con particolare attenzione alle specie mesopelagiche ..... 69  
*Večletne spremembe v nasedanju ribjih vrst v Mesinski ožini s posebnim ozirom na mezopelaške vrste*

**Sihem RAFRAFI-NOUIRA, Christian REYNAUD & Christian CAPAPÉ**

Skeletal and Pughead Deformities in the Saddle Bream *Oblada melanura* (Osteichthyes: Sparidae) from the Tunisian Coast (Central Mediterranean Sea) ... 85  
*Deformacije skeleta in glave pri čnoredki, Oblada melanura* (Osteichthyes: Sparidae) iz tunizijske obale (osrednje Sredozemsko morje)

**Murat BILECENOGLU & Seydi Ali DOYUK**

Uncommon Thermophilic Fishes from the Marmara and Black Seas ..... 95  
*Nenavadne toploljubne ribe iz Marmarskega in Črnega morja*

**Christian CAPAPÉ, Adib SAAD, Ahmad SOLAIMAN, Issa BARAKAT & Waad SABOUR**

First Substantiated Record of Armless Snake Eel *Dalophis imberbis* (Osteichthyes: Ophichthidae) from the Syrian Coast (Eastern Mediterranean Sea) ... 101  
*Prvi dokumentiran primer pojavljanja kačaste jegulje, Dalophis imberbis* (Osteichthyes: Ophichthidae), vzdolž sirske obale (vzhodno Sredozemsko morje)

**Khaled RAHMANI, Fatiha KOUDACHE, Amaria Latefa BOUZIANI & Alae Eddine BELMAHI**

Length-Weight Relationships and Metric Characters of the Atlantic Horse Mackerel, *Trachurus trachurus* (Perciformes: Carangidae), Caught in Béni-Saf Bay, Western Mediterranean (Algeria) ..... 107  
*Odnos med dolžino in maso in metrični znaki navadnega šnjura, Trachurus trachurus* (Perciformes: Carangidae), ujetega v zalivu Béni-Saf, zahodno Sredozemsko morje (Alžirija)

**Tülin ÇOKER & Okan AKYOL**

On the Occurrence of *Pomadasys incisus* (Haemulidae) in the Turkish Aegean Sea (Eastern Mediterranean Sea) ..... 123  
*O pojavljanju vrste Pomadasys incisus* (Haemulidae) v turškem Egejskem morju (vzhodno Sredozemsko morje)

**Sihem RAFRAFI-NOUIRA, Mohamed Mourad BEN AMOR, Khadija OUNIFI-BEN AMOR, Marouène BDIOUI & Christian CAPAPÉ**

First Substantiated Record of Opah, *Lampris guttatus* (Osteichthyes: Lamprididae), from the Tunisian Coast (Central Mediterranean Sea) ..... 129  
*Prvi dokumentiran zapis o pojavljanju svetlice, Lampris guttatus* (Osteichthyes: Lamprididae), iz tunizijske obale (osrednje Sredozemsko morje)

**FLORA**

**FLORA**

**FLORA**

**Claudio BATELLI & Marcello CATRA**

First Report of *Cystoseira aurantia* (Sargassaceae, Fucophyceae) from the Lagoon of Strunjan (Gulf of Trieste, Northern Adriatic) ..... 139  
*Prvo poročilo o vrsti Cystoseira aurantia* (Sargassaceae, Fucophyceae) v strunjanski laguni (Tržaški zaliv, severni Jadran)

**Amelio PEZZETTA**

Le Orchidaceae di Pinguente (Buzet) ..... 147  
*Kukavičevke Buzeta*

**FAVNA**

**FAVNA**

**FAVNA**

**Ahmet ÖKTENER & Ivan SAZIMA**

*Caligus minimus* (Copepoda: Caligidae) Parasitic on the Gills of a Remora *Echeneis naucrates* Attached to a Seabass *Dicentrarchus labrax* in Köyceğiz-Dalyan Lagoon Lake, Aegean Sea, Turkey ..... 159  
*Caligus minimus* (Copepoda: Caligidae), zajedavec na škrgha prilepa (*Echeneis naucrates*), pritrjenega na brancina (*Dicentrarchus labrax*) v laguni Köyceğiz-Dalyan v Egejskem morju, Turčija

Kazalo k slikam na ovtiku ..... 165

*Index to images on the cover* ..... 165

received: 2021-02-02

DOI 10.19233/ASHN.2021.15

## ON THE OCCURRENCE OF *POMADASYS INCISUS* (HAEMULIDAE) IN THE TURKISH AEGEAN SEA (EASTERN MEDITERRANEAN SEA)

*Tülin ÇOKER*

Muğla Sıtkı Koçman University Faculty of Fisheries, 48000 Muğla, Turkey

*Okan AKYOL*

Ege University Faculty of Fisheries, 35440 Urla, İzmir, Turkey

e-mail: okan.akyol@ege.edu.tr

### ABSTRACT

*This paper aims to complement and update the data regarding the distribution of rare Pomadasys incisus, specifically by revealing the extension of its distribution in the eastern Mediterranean Sea. On 1 November 2020, a single specimen of P. incisus was captured by an angler on a sandy/rocky bottom at a depth of 3 m in Akyaka, Gökova Bay, in the south-eastern Aegean Sea. This thermophilic fish is still very rare in the eastern Mediterranean Sea (about 142 specimens reported to date). However, it is obvious that populations of P. incisus are gradually expanding towards the northern latitudes of the eastern as well as western Mediterranean basin.*

**Key words:** Bastard grunt, additional record, measurements, Gökova Bay

## PRESENZA DI *POMADASYS INCISUS* (HAEMULIDAE) NEL MAR EGEO TURCO (MEDITERRANEO ORIENTALE)

### SINTESI

*L'articolo mira a completare e aggiornare i dati relativi alla distribuzione del pesce arabo, Pomadasys incisus, riportando l'estensione della distribuzione di questa specie nel Mediterraneo orientale. Il 1° novembre 2020, un singolo esemplare di P. incisus è stato catturato da un pescatore su un fondo sabbioso/roccioso ad una profondità di 3 m, ad Akyaka, nella baia di Gökova, nel Mar Egeo sud-orientale. Questo pesce termofilo è ancora molto raro nel Mediterraneo orientale (circa 142 esemplari segnalati finora). Tuttavia, è ovvio che le popolazioni di P. incisus si stiano gradualmente espandendo verso le latitudini settentrionali del bacino orientale e occidentale del Mediterraneo.*

**Parole chiave:** pesce arabo, ritrovamento aggiuntivo, misurazioni, Baia di Gökova

## INTRODUCTION

The bastard grunt, *Pomadasys incisus* (Bowdich, 1825), lives in coastal waters on sandy/muddy bottoms and/or close to rocky habitats as well as in sea meadows at depths of up to 50 m (Golani *et al.*, 2006). Reproduction occurs from July to October (Fehri-Bedoui & Gharbi, 2008).

*Pomadasys incisus* is distributed in the eastern Atlantic coast from Madeira and Morocco, and mainly in the southern Mediterranean, but has also been reported from Seté, France, and from Italy (Ben-Tuvia & McKay, 1986; Golani *et al.*, 2006; Froese & Pauly, 2020). The species entered the Mediterranean Sea through the Strait of Gibraltar. The prevailing currents, sea warming, and the availability of suitable soft substrate in relatively shallow waters allowed this species to first establish itself in the NW Mediterranean basin (Francour *et al.*, 1994; Bodilis *et al.*, 2013). While *P. incisus* gradually increased its abundance in Malaga, the Catalan coast, Spain, and the Gulf of Lion, France (Serena & Silvestri, 1996; Bodilis *et al.*, 2013; Villegas-Hernandez *et al.*, 2018), it remains rather rare in the north-eastern Mediterranean Sea (Kapiris *et al.*, 2008).

This paper presents a new report of the presence of *P. incisus* in an area of the Aegean Sea in order to supplement the information about its distribution in the eastern Mediterranean Sea.

## MATERIAL AND METHODS

On 1 November 2020, a single specimen of *Pomadasys incisus* (Fig. 1) was captured by an angler on a sandy/rocky bottom at a depth of 3 m in Akyaka, Gökova Bay ( $37^{\circ}03.01\text{ N}$  -  $28^{\circ}19.11\text{ E}$ , Fig. 2) in the south-eastern Aegean Sea. The bait was bogue (*Boops boops*) flesh. The specimen was fixed in a 6% formaldehyde solution and deposited in the fish collection of Muğla University, Faculty of Fisheries (MUSUM/PIS/108).

## RESULTS AND DISCUSSION

The specimen was measured to the nearest millimetre. The morphometric measurements as percentages of total length (TL%) and the meristic counts recorded in the *P. incisus* caught in Gökova Bay, Aegean Sea, are shown in Tab. 1. All the established measurements, counts, proportions, and colour

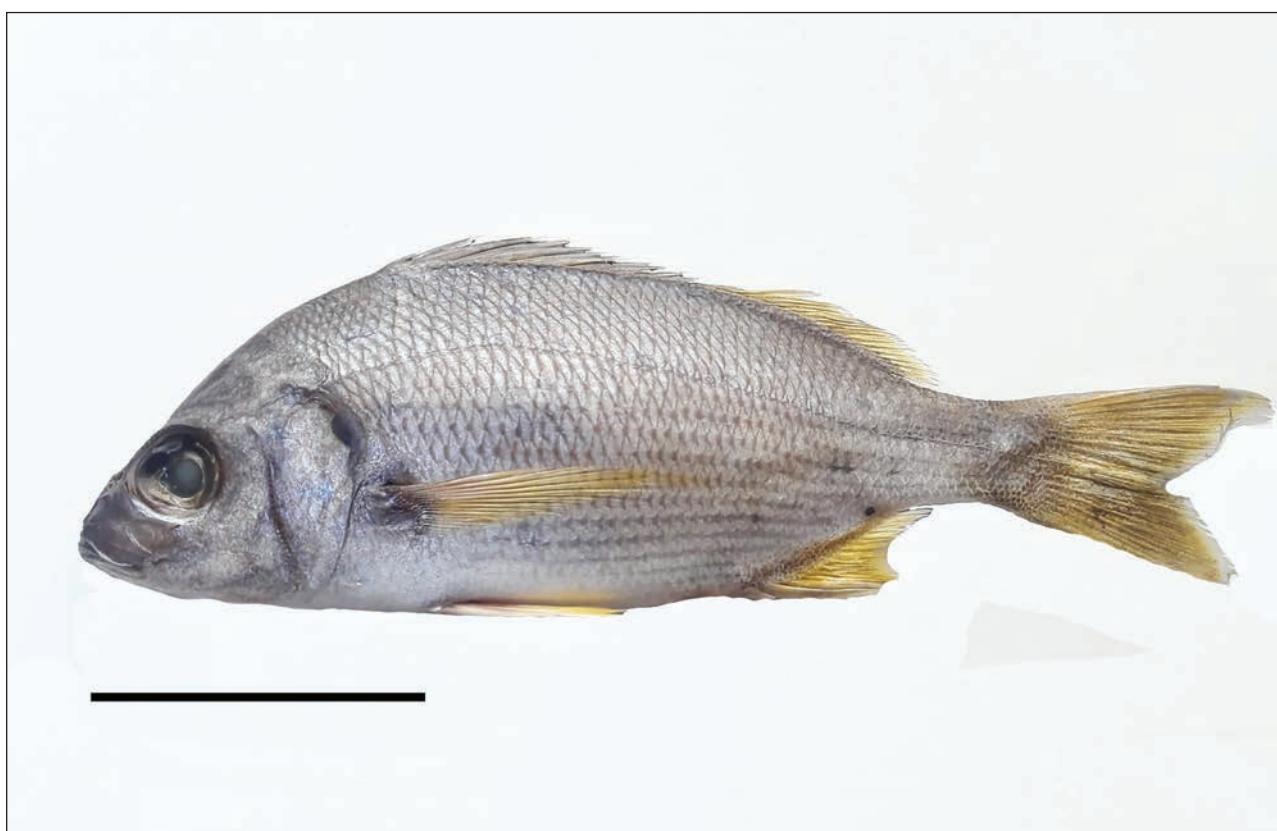


Fig. 1: *Pomadasys incisus* caught in Gökova Bay, SE Aegean Sea (photo: T. Çoker).

Sl. 1: Prvmerk vrste *Pomadasys incisus*, ujet v zalivu Gökova, JV Egejsko morje (Foto: T. Çoker).



**Fig. 2: Capture location of *Pomadasys incisus* in the Aegean Sea.**  
**Sl. 2: Lokaliteta, kjer je bila ujeta vrsta *Pomadasys incisus* v Egejskem morju.**

patterns are in accordance with the descriptions of Ben-Tuvia & McKay (1986), Golani et al. (2006), and Froese & Pauly (2020).

*Pomadasys incisus* is a native species of the eastern Atlantic and Mediterranean Seas. This species entered the Mediterranean Sea through the Gibraltar Strait in the early 19th century. The first report of *P. incisus* from the Italian seas dates to the early 1990s (Bilecenoglu et al., 2013). The earliest report of the presence of *P. incisus* in the Ionian Sea was given by Kaspiris only in 1970, even though the first records for the Mediterranean waters were confirmed for the Algerian coast by Guichenot as early as 1850 and for Séte, France, by Corus in 1893 (Serena & Silvestri, 1996). After that, *P. incisus* was reported off the Tuscan coast in 1992 (Serena & Silvestri, 1996), and in June 2001, a specimen was caught by gillnet outside Anzio harbour in the central Tyrrhenian Sea (Psomadakis et al., 2006). Lastly, two specimens were recorded off the coast of Avola in Sicily, in the Ionian Sea, in August 2013 (Bilecenoglu et al., 2013). On the other hand, this species seems abundant in the Gulf of Tunis (Chakroun-Marzouk & Ktari, 1995; Fehri-Bedoui & Gharbi, 2008), and between Malaga, Spain, as pointed out by Serena & Silvestri (1996), the Catalan coast (Villegas-Hernandez et al., 2018), and the Gulf of Lion, France (Bodilis et al., 2013). Recently, on 15 August 2015, a specimen of *P. incisus* was captured off the Pelješac Peninsula in the southern Adriatic Sea (Karachle et al., 2016). This was the first record for the Adriatic Sea. It clearly proves that this thermophilic species has been moving northwards, as it has so far reached the Balearic, Tyrrhenian, Ligurian and Adriatic Seas.

**Tab. 1: Morphometric measurements as percentages of total length (TL%) and meristic counts recorded in the *Pomadasys incisus* captured in Gökova Bay, Aegean Sea.**

**Tab. 1: Morfometrične meritve, izražene kot delež celotne dolžine (TL %), in meristična štetja na primerku vrste *Pomadasys incisus*, ujetega v zalivu Gökova, Egejsko morje.**

Measurements	Size (mm)	Proportion (TL %)
Total length (TL)	169	
Fork length (FL)	151	89.3
Standard length (SL)	143	84.6
Maximum body depth	51	30.2
Pectoral fin length	48	28.4
Pre-dorsal fin length	49	29.0
Pre-anal fin length	92	54.4
Pre-pectoral length	50	29.6
Head length	42	24.9
Eye diameter	13	7.7
Preorbital length	12	7.1
<b>Meristic counts</b>		
Dorsal fin rays	XII+16	
Anal fin rays	III+12	
Pectoral fin rays	17	
Ventral fin rays	I+5	
Weight (g)	71.8	

**Tab. 2: Sporadic records of Pomadasys incisus in the eastern Mediterranean Sea.****Tab. 2: Sporadični zapisi o pojavljanju vrste Pomadasys incisus v vzhodnem Sredozemskem morju.**

Area	Date	n	TL (mm)	Depth (m)	References
İskenderun Bay, NE Mediterranean	Dec.1994-Nov.1996	3	162-178	15-20	Başusta & Erdem (2000)
Turkey, NE Mediterranean	2001-2003	23	119-190	5-100	Sangun et al. (2007)
Gulf of Antalya, NE Mediterranean	May2005-Apr.2006	23	126-182	10	Beğburn & Kebapçioğlu (2013)
Argolikos Gulf, Aegean Sea	May-Aug.2008	39	?	10-15	Kapiris et al. (2008)
SE Aegean Sea	Dec.2009-Nov.2010	51	121-163	30-325	Bilge et al. (2014)
Morfou Bay, Cyprus	30 Sep.2019	1	?	2	Doumpas et al. (2020)
Limni Beach, Cyprus	20 May 2020	1	130	?	Doumpas et al. (2020)
Gökova Bay, Aegean Sea	01 Nov.2020	1	169	3	This study

In the eastern Mediterranean Sea, *P. incisus* has been reported sporadically, as shown in Table 2. In some previous fish checklists for the Levant Basin *P. incisus* was mentioned by name only, i.e., in reports from Israel (Ben-Tuvia, 1971), the eastern Levant (Golani, 1996), Mersin Bay, the NE Levant, (Gücü & Bingel, 1994), Syria (Saad, 2005), Egypt (Akel & Karachle, 2017), and the Lebanon coast (Bariche & Fricke, 2020).

As it appears, this thermophilic fish is still very rare in the eastern Mediterranean Sea (about 142 specimens have been reported to date). However, it is obvious that populations of *P. incisus* are gradually establishing themselves and expanding into the northern latitudes of the eastern and western Mediterranean Sea (Francour et al., 1994; Serena & Silvestri, 1996; Bodilis et al., 2013; Villegas-Hernandez et al., 2018). According to fishermen in Gökova Bay (SE Aegean Sea), the populations of this fish species have become larger in the recent years. Francour et al., (1994) stated that captures of thermophilic species, including *P. incises*, have been increasing in

the northern Mediterranean due to global warming. As evidence of the warming of the marine environment, Azzurro (2008) provided a list of thermophilic subtropical fish species that have expanded their distribution range in the Mediterranean, which also includes *P. incisus*.

On the other hand, since *P. incisus* has been acknowledged as an example of latitudinal extension or demographic increase of thermophilic fish in response to the current climate change (Psodomakis et al., 2012), *P. incisus* could be taken as an indicator of changing sea conditions due to global warming. To confirm that, however, further research is necessary which will study the overlap between exotic/thermophilic and endemic fish fauna and their competition, e.g., between salemas and siganids, red mullets and goatfishes.

#### ACKNOWLEDGEMENTS

The authors thank angler Mr. Yusuf Geçim for his bringing the fish our attention.

## O POJAVLJANJU VRSTE *POMADASYS INCISUS* (HAEMULIDAE) V TURŠKEM EGEJSKEM MORJU (VZHODNO SREDOZEMSKO MORJE)

*Tülin ÇOKER*

Muğla Sıtkı Koçman University Faculty of Fisheries, 48000 Muğla, Turkey

*Okan AKYOL*

Ege University Faculty of Fisheries, 35440 Urla, İzmir, Turkey

e-mail: okan.akyol@ege.edu.tr

### *POVZETEK*

Avtorja poročata o novih in dopolnjenih podatkih o razširjenosti redke vrste Pomadasys incisus, s posebnim ozirom na širjenje njenega areala v vzhodnem Sredozemskem morju. Prvega novembra 2020 je bil na trnek ujet primerek te vrste, na globini 3 m na skalnato-peščenem dnu, na lokaliteti Akyaka v zalivu Gökova v jugovzhodnem Egejskem morju. Ta toploljubna vrsta je še vedno zelo redka v vzhodnem Sredozemskem morju (do sedaj so poročali o 142 primerkih). Kakorkoli že, očitno je, da se vrsta P. incisus postopno širi proti severnim geografskim širinam tako vzhodnega kot tudi zahodnega Sredozemskega bazena.

**Ključne besede:** vrsta prašičevke, novi zapis o pojavljanju, meritve, zaliv Gökova

## REFERENCES

- Azzurro, E. (2008):** The advance of thermophilic fishes in the Mediterranean Sea: overview and methodological questions. In: Climate warming and related changes in Mediterranean marine biota. 27-31 May, Helgoland. CIESM Workshop Monographs, 35, 39-45.
- Akel Kh., S.H. & P.K. Karachle (2017):** The marine ichthyofauna of Egypt. Egypt. J. Aquat. Biol. & Fish., 21, 81-116.
- Bariche, M. & R. Fricke. (2020):** The marine ichthyofauna of Lebanon: an annotated checklist, history, biogeography, and conservation status. Zootaxa, 4775(1), 1-157.
- Başusta, N. & Ü. Erdem. (2000):** A study on the pelagic and demersal fishes of İskenderun Bay. Turk J. Zool., 24(Suppl.), 1-19. (in Turkish).
- Bağburs, C.R. & T. Kebapçioğlu. (2013):** Length-weight relationships for alien fish species caught by demersal trammel nets in the Gulf of Antalya (NE Mediterranean Sea, Turkey). Menba Journal of Fisheries Faculty, 2, 41-43.
- Ben-Tuvia, A. (1971):** Revised list of the Mediterranean Fishes of Israel. Isr. J. Zool., 20(1), 1-39.
- Ben-Tuvia, A. & R. McKay (1986):** Haemulidae. In: Whitehead, P.J.P., M.-L. Bauchot, J.-C. Hureau, J. Nielsen, E. Tortonese (eds.): Fishes of the North-eastern Atlantic and the Mediterranean, Vol. 2. Unesco, Paris, pp. 858-864.
- Bilecenoglu, M., J. Alfaya, E. Azzurro, R. Baldacconi, Y. Boyaci, V. Circosta, L. Compagno, F. Coppola, A. Deidun, H. Durgham, F. Durukan, D. Ergüden, F. Fernandez-Alvarez, P. Gianguzza, G. Giglio, M. Gökoğlu, M. Gürlek, S. İkhtiyar, H. Kabasakal, P. Karachle, S. Katsanevakis, D. Koutsogiannopoulos, E. Lanfranco, P. Micarelli, Y. Özvarol, L. Pena-Rivas, D. Poursanidis, J. Saliba, E. Sperone, D. Tibullo, F. Tiralongo, S. Tripepi, C. Turan, P. Vella, M. Yokeş & B. Zava (2013):** New Mediterranean Marine biodiversity records (December, 2013). Mediterr. Mar. Sci., 14(2), 463-480.
- Bilge G., S. Yapıçı, H. Filiz & H. Cerim. (2014):** Weight-length relations for 103 fish species from the southern Aegean Sea, Turkey. Acta Ichthyol. Piscat., 44(3), 263-269.
- Bodilis, P., F. Crocetta, J. Langeneck & P. Francour. (2013):** The spread of an Atlantic fish species, *Pomadasys incisus* (Bowdich, 1825) (Osteichthyes: Haemulidae), within the Mediterranean Sea with new additional records from the French Mediterranean coast. Ital. J. Zool., 80(2), 273-278.
- Chakroun-Marzouk, N. & M.-H. Ktari (1995):** Données préliminaires sur la reproduction de *Pomadasys incisus* (Bowdich, 1825, Pisces, Haemulidae) du Golfe de Tunis. Rapp. Comm. int. Mer Médit., 34, p. 239.
- Doumpas, N., V. Tanduo, F. Crocetta, I. Giovos, J. Langeneck, F. Tiralongo & P. Kleitou (2020):** The bastard grunt *Pomadasys incisus* (Bowdich, 1825) (Teleostei: Haemulidae) in Cyprus (eastern Mediterranean Sea) – a late arrival or just a neglected species? Biodivers Data J., 8, e58646.
- Fehri-Bedoui, R. & H. Gharbi. (2008):** Sex-ratio, reproduction and feeding habits of *Pomadasys incisus* (Haemulidae) in the Gulf of Tunis (Tunisia). Acta Adriat., 49(1), 5-19.
- Francour, P., C.F. Boudouresque, J.G. Harmelin, M.L. Harmelin-Vivien & J.P. Quignard (1994):** Are the Mediterranean waters becoming warmer? Information from biological indicators. Mar. Pollut. Bull., 28, 523-526.
- Froese, R. & D. Pauly (eds.) (2020):** FishBase. [version 12/2020] <http://www.fishbase.org>
- Golani, D. (1996):** The marine ichthyofauna of the Eastern Levant-History, inventory and characterization. Isr. J. Zool., 42, 15-55.
- Golani, D., B. Öztürk & N. Başusta (2006):** Fishes of the eastern Mediterranean. Turkish Marine Research Foundation (Publication No. 24), Istanbul, 260 pp.
- Güçü, A.C. & F. Bingel (1994):** Trawlable species assemblages on the continental shelf of the north eastern Levant Sea (Mediterranean) with an emphasis on Lessepsian migration. Acta Adriat., 35, 83-100.
- Kapiris, K., E. Kallias & A. Conides (2008):** Preliminary biological data on *Pomadasys incisus* (Osteichthyes: Haemulidae) in the Aegean Sea, Greece. Mediterr. Mar. Sci., 9(2), 53-62.
- Karachle, P., A. Angelidis, G. Apostolopoulos, D. Ayas, M. Ballesteros, C. Bonnici, M. Brodersen, L. Castriona, N. Chalari, J. Cottalorda, F. Crocetta, A. Deidun, Z. Đodo, A. Dogrammatzi, J. Dulcic, F. Fiorentino, O. Gönülal, J. Harmelin, G. Insacco, D. Izquierdo-Gómez, A. Izquierdo-Muñoz, A. Joksimovic, S. Kavadas, M. Malaquias, E. Madrenas, D. Massi, P. Micarelli, D. Minchin, U. Önal, P. Ovalis, D. Poursanidis, A. Siapatis, E. Sperone, A. Spinelli, C. Stamouli, F. Tiralongo, S. Tunçer, D. Yaglioglu, B. Zava & A. Zenetos (2016):** New Mediterranean Biodiversity Records (March 2016). Meditarr. Mar. Sci., 17(1), 230-252.
- Psomadakis, P.N., U. Scacco & M. Vacchi. (2006):** Recent findings of some uncommon fishes from the Central Tyrrhenian Sea. Cybium, 30(4), 297-304.
- Psomadakis, P.N., S. Giustino & M. Vacchi. (2012):** Mediterranean fish biodiversity: an updated inventory with focus on the Ligurian and Tyrrhenian seas. Zootaxa, 3263, 1-46.
- Saad, A. (2005):** Check-list of bony fish collected from the coast of Syria. Turkish J. Fish. Aquat. Sci., 5, 99-106.
- Sangun, L., E. Akamca & M. Akar (2007):** Length-weight relationships for 39 fish species from the North-eastern Mediterranean coast of Turkey. Tr. J. Fish. Aquat. Sci., 7, 37-40.
- Serena, F. & R. Silvestri (1996):** First record of *Pomadasys incisus* (Haemulidae) in the northern Tyrrhenian Sea. Cybium, 20(4), 409-411.
- Villegas-Hernandez, H., J. Lloret, M. Munoz, G.R. Poot-Lopez, S. Guillen-Hernandez & C. Gonzales-Salas (2018):** Age-specific environmental differences on the otolith shape of the bastard grunt (*Pomadasys incisus*) in the North-western Mediterranean. Environ. Biol. Fish., 101, 775-789.