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A new maximum length for the grey triggerfish, *Balistes capriscus* Gmelin, 1789 (Pisces: Balistidae) from the Adriatic Sea

Jakov DULČIĆ and Alen SOLDÓ

Institute of Oceanography and Fisheries, P.O.Box 500, 21000 Split, Croatia
E-mail: dulcic@izor.hr

*One specimen of the grey triggerfish, *Balistes capriscus* Gmelin, 1789, was caught in the vicinity of the Prigradica, island Korčula in the eastern Adriatic, along the Croatian coast). Its total length was 525.0 mm, the maximum observed length for the Adriatic Sea.*

Key words: maximum length, *Balistes capriscus*, Adriatic Sea

INTRODUCTION

Maximum length and age are important theoretical parameters in fisheries science. Directly or indirectly, these measurements enter in most models used in stock assessments. Therefore, updating information about the maximum size of a species that might be commercially or recreationally exploited in the future is important.

The grey triggerfish, *Balistes capriscus* Gmelin, 1789, occurs on reefs and in open waters in tropical and subtropical seas, chiefly over rocky bottoms at 10-100 m. It is common in the Mediterranean Sea and on both sides of the Atlantic from the North Sea to Angola and from Nova Scotia to Argentina (TORTONESE, 1986) but rare in the Black Sea. The species occurs in the Adriatic Sea, especially in its southern part (JARDAS, 1983, 1996; PALLAORO, 1988. In warm years, it may also be found in the northern Adriatic (PALLAORO, 1988; DULČIĆ & LIPEJ, 1997). The grey triggerfish has recently become more abundant in the Adriatic, due to climatic and

hydrographic changes (DULČIĆ *et al.*, 1999). Hence, the grey triggerfish has potential to become an important fishery resource in the Adriatic.

Data on the biology and ecology of the grey triggerfish in the Adriatic Sea are scarce. DULČIĆ *et al.* (1997) published data on the occurrence of grey triggerfish fingerlings in Croatian waters in the eastern Adriatic.

In this communication, we present new data on the maximum recorded length and body measurements for grey triggerfish from the Adriatic Sea.

MATERIAL AND METHODS

One grey triggerfish specimen was caught in the vicinity of Prigradica, Korčula Island on the Croatian coast in the eastern Adriatic (Fig. 1) by bottom trawl at depth of approx. 50 m on January 7, 2005.

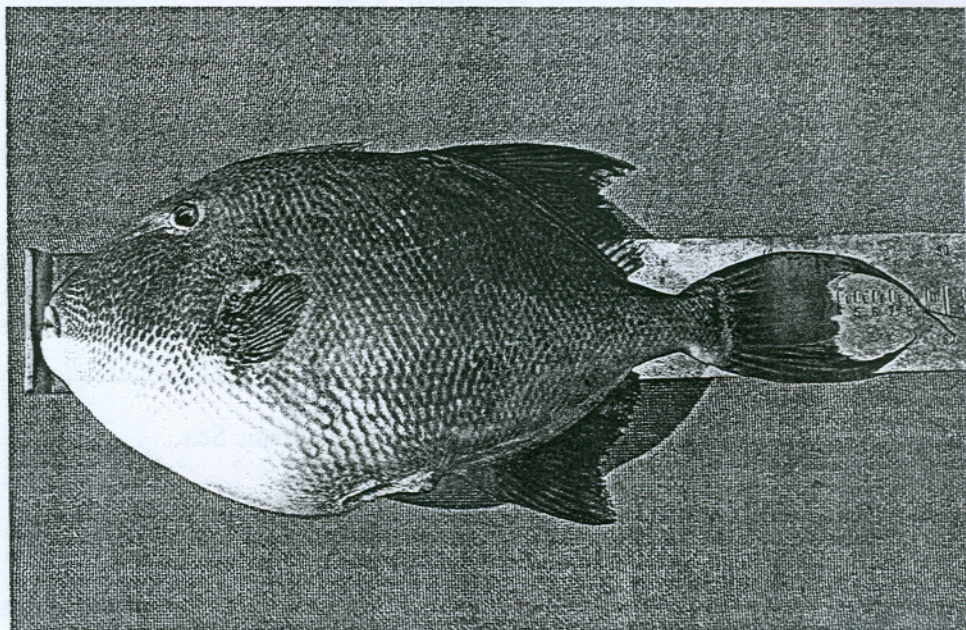


Fig.1. The grey triggerfish (total length = 525.0 mm)

The specimen was measured to the nearest millimeter and weighed to the nearest gram. Meristic characters considered were dorsal, anal, and pectoral fin rays and number of scales in the longitudinal line according to RANDALL *et al.* (1987). The specimen is deposited in the Ichthyological Collection of the Institute of Oceanography and Fisheries in Split.

RESULTS AND DISCUSSION

The morphometric and meristic characters of the specimen closely correspond with those reported by BINI (1968) and DULČIĆ *et al.* (1997; Table 1). The total length was 525.0 mm (Fig. 2).

Table 1. Morphometric (mm) and meristic data of the grey triggerfish specimen caught near Korčula Island in the eastern Adriatic

Total length	525.0	Body depth (max)	189.5
Fork length	451.0	Body depth (min)	41.2
Standard length	400.0	Head length	103.9
Predorsal length	115.8	Ocular diameter	15.9
Preanal length	211.4	Preorbital length	90.4
Preventral length	151.6	Postorbital length	11.0
First dorsal fin, length	87.6	First dorsal fin rays (D1)	III
Second dorsal fin, length	133.0	Second dorsal fin rays (D2)	27
Anal fin, length	110.5	Anal fin rays (A)	25
Pectoral fin, length	51.9	Pectoral fin rays (P)	14
		Scales	54

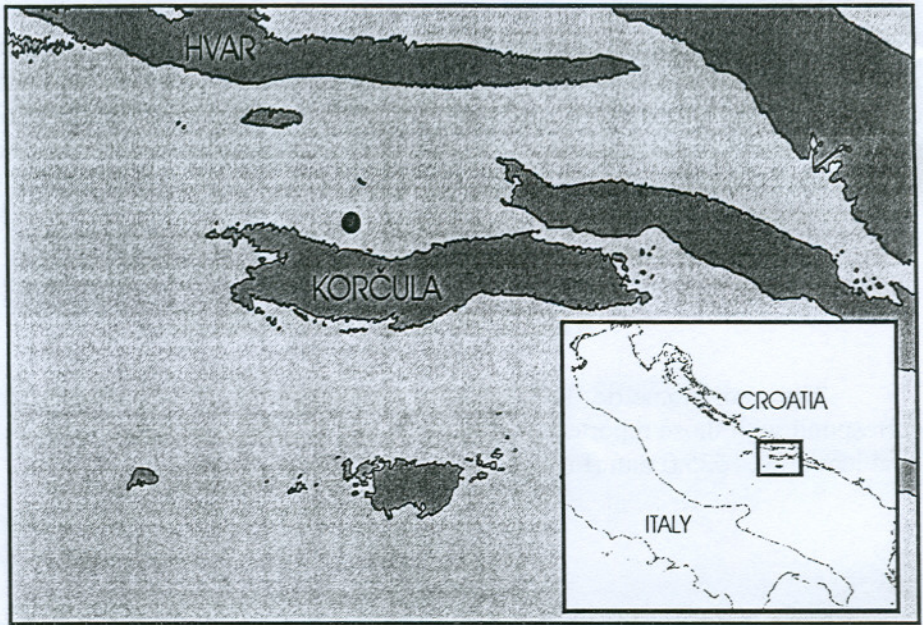


Fig.2. Area where the grey triggerfish specimen was caught (Korčula Island, eastern Adriatic)

Previously, the maximum reported total length in this distribution area was 600.0 mm (HARMELIN-VIVIEN & QUÉRO, 1990). ŠOLJAN (1975) & MILIŠIĆ (1994) suggest $TL=40.0$ cm, while JARDAS (1996) suggests $TL=45.0$ cm as the possible maximum total length for *B. capricus* in the Adriatic Sea. According to this data, we are able to state that observed total length from this study is a new maximal length for the grey triggerfish in the Adriatic Sea. Observed fork length in this study is $FL=451$ mm, while BERNARDES (2002) reported maximum observed fork length $FL=410$ mm for the southeastern Brazilian coast (Sao Paulo). JOHNSON & SALOMAN (1984) observed maximum fork length $FL=561$ mm for the Gulf of Mexico. Standard length $SL=400$ mm from this study is identical to those reported for the whole distribution area of this species (TORTONESE, 1986). This specimen proves that this species can grow above the maximum lengths considered previously.

The weight of the specimen from this study is 2057 g. Maximal published weight, for the whole distribution area, was 6150 g (IGFA, 2001), while for the Adriatic Sea was 1000 g (MILIŠIĆ, 1994).

REFERENCES

- BERNARDES, R.A. 2002. Age, growth and longevity of the grey triggerfish, *Balistes capriscus* (Tetraodontiformes: Balistidae), from the Southeastern Brazilian Coast. *Sci. Mar.*, 66: 167-173.
- BINI, G. 1968. Atlante dei pesci delle coste Italiane (The Catalogue of the fishes from the Italian coasts). Mondo Sommerso Editrice. Milano, 154 pp.
- DULČIĆ, J. & L. LIPEJ 1997. New records of marine fishes from Slovenian coastal waters. *Falco*, 12: 43-47.
- DULČIĆ, J., F. KRŠINIĆ, M. KRALJEVIĆ & A. PALLAORO. 1997. Occurrence of fingerlings of grey triggerfish, *Balistes carolinensis* GMELIN, 1789 (Pisces: Balistidae) in the eastern Adriatic. *Annals for Istrian and Mediterranean Studies*, 11: 271-276.
- DULČIĆ, J., B. GRBEC and L. LIPEJ. 1999. Information on the Adriatic ichthyofauna-effect of water warming? *Acta Adriat.*, 40: 33-43.
- HARMELIN-VIVIEN, M.L. & J.C. QUERO. 1990. Balistidae. In: Quero, J.C., J.C. Hureau, C. Karrer, A. Post and L. Saldanha (Editors). Check-list of the fishes of the eastern tropical Atlantic (CLOFETA). JNICT, Lisbon, SEI, Paris, UNESCO, Paris, pp. 1055-1060.
- IGFA, 2001. Database of IGFA angling records until 2001. IGFA, Fort Lauderdale, USA.
- JARDAS, I. 1983. An analytical account of the Adriatic ichthyofauna. *Ichthyologia*, 15: 15-35.
- JARDAS, I. 1996. Adriatic ichthyofauna. Školska knjiga. Zagreb, 533 p.
- JOHNSON, A. G. & C.H. SALOMAN. 1984. Age, growth, and mortality of gray triggerfish, *Balistes capriscus*, from the northeastern Gulf of Mexico. *Fish. Bull.*, 82: 485-491.
- MILIŠIĆ, N. 1994. All Adriatic fishes. (in Croatian) NIVA. Split, 463 pp.
- PALLAORO, A. 1988. On the possibility of the occurrence of some rare fish species according to Adriatic ingression in 1986/87 in the middle Adriatic. (in Croatian) *Morsko ribarstvo*, 3: 82-87.
- RANDALL, J.E., K. MATSUURA & A. ZAMA. 1978. A revision of the triggerfish genus *Xanthichthys*, with description of a new species. *Bull. Mar. Sci.*, 28: 688-706.
- ŠOLJAN, 1975. Fishies in the Adriatic Sea. (in Italian) Officine grafiche. Verona, 522 pp.
- TORTONESE, E. 1986. Balistidae. In: Whitehead, P.J.P., M.-L. Bauchot, J.-C. Hureau, J. Nielsen and E. Tortonese (Editors). *Fishes of the North-eastern Atlantic and the Mediterranean*. UNESCO, Paris, pp. 1335-1338.

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Nova maksimalna duljina kostoroga, *Balistes capriscus* Gmelin, 1789 (Pisces: Balistidae) ulovljenog u jadranskom moru

Jakov DULČIĆ i Alen SOLDO

Institut za oceanografiju i ribarstvo, P.P. 500, 21000 Split, Croatia
E-mail: dulcic@izor.hr

SAŽETAK

U blizini Prigradice, otok Korčula u istočnom dijelu Jadrana, na hrvatskoj obali ulovljen je jedan primjerak kostoroga, *Balistes capriscus* Gmelin, 1789. Ukupna duljina kostoroga iznosila je 525.0 mm, što je maksimalna zabilježena duljina u Jadranskom moru.

Ključne riječi: maksimalna duljina, *Balistes capriscus*, Jadransko more

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Tel.: 385 + 21 – 408-000

Fax: 385 + 21 – 358-650

e-mail: vkragic@izor.hr

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