ISSN: 0001-5113 AADRAY	ACTA ADRIAT., 56(2): 305 - 308, 2015	SHORT COMMUNICATION

New record of the blue jack mackerel, *Trachurus picturatus* T. E. Bowdich, 1825 (Osteichthyes: Carangidae) from the Northern Adriatic Sea

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The observation of a new species in a new area represents the first opportunity to follow and study the dynamics of colonization and understand how a new species arrives, what are its movements and its potential impact. The discovery of a large number of species outside their usual area of distribution is probably the most important reason for the increase in perceived biodiversity of the Adriatic ichthyofauna. A total of 4 specimens of T. picturatus *were caught in the period May-June 2011 in the surroundings of an offshore gas platform in the Northern Adriatic Sea. Scientific literature depicts this species as rare in the Adriatic Sea, indicating and suggesting the Pomo Pit (Central Adriatic Sea) as the Northern latitudinal limit of its distribution. On this basis, this paper reports the first record of* T. picturatus *in the Northern Adriatic basin, suggesting an expansion of its spatial distribution.*

Key words*: Trachurus picturatus*, Carangidae, new record, northern Adriatic, expansion

INTRODUCTION

Members of the genus Trachurus (Perciformes, Carangidae) are common and widely distributed in the Mediterranean Sea (SMITH-VANIZ, 1986). In the Adriatic Sea this genus is represented by three species: the Atlantic horse mackerel, *T. trachurus* (L.), the Mediterranean horse mackerel, *T. mediterraneus* (Steind.) and the blue jack mackerel, *T. picturatus* (BOWD.; JARDAS, 1996; LIPEJ & DULČIĆ, 2010).

The oceanic horse mackerel, *Trachurus picturatus* (Bowdich, 1825) (Pisces: Carangidae) is a small benthopelagic fish species. It is a pelagic/demersal species living in large schools, at depths ranging from the surface to 370 m of depth. Its geographical range extends from the Mediterranean to the eastern central North Atlantic in neritic zones and island shelves, banks and seamounts (SMITH-VANIZ, 1986; FROESE & PAULY, 2013).

The recent checklist of flora and fauna of the Italian Seas (RELINI & LANTERNI, 2010) reported the presence of *T. picturatus* in all biogeographical areas proposed by BIANCHI (2004), with the exception of the Northern Adriatic sector. Scientific literature depicts this species as rare in the Adriatic Sea, indicating and suggesting the Pomo Pit (Central Adriatic Sea) as the Northern latitudinal limit of its distribution.

The aim of this paper is to present the first record of *T. picturatus* (BOWDICH, 1825) in the

Northern Adriatic basin, suggesting an expansion of its spatial distribution.

MATERIAL AND METHODS

Fish assemblage around a gas platform (Lat. 44.322 N; Long. 13.407 E) was regularly monitored on a monthly basis since 2011. The site is an offshore 4-leg platform located off shore in the Northern Adriatic Sea (Fig. 1) on a sandy-mud seabed at a depth of 60 m. Samplings of fish were collected using a bottom trammel net particularly designed for scientific sampling (inner panel: 6 m high, stretched mesh size 72 mm and 0.18 mm transparent monofilament; outer panel: 3 m high; stretched mesh size 400 mm and 0.30 mm transparent monofilament). The trammel nets were lowered into the water at dusk and hauled in at dawn for an average fishing time of 12 hours. All specimens in catches were identified at the lowest taxonomic level and individually weighed to the lowest gram. Specimens of *T. picturatus* (Fig. 2) were analysed in laboratory for morphometric data and macroscopic status of gonads. The Medits (2007) code of sexual maturity for fish was used to classify the stage of gonads maturity.

The specimens were fixed in 4% formaldehyde solution and deposited in the available fish collection of the Institute of Marine Sciences (ISMAR), National Council of Researches (CNR) of Ancona (Italy).

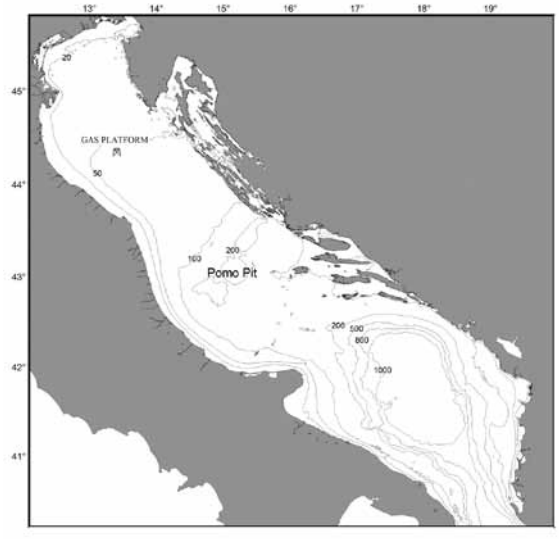

Fig. 1. Adriatic Sea: location of gas platform

Fig. 2. Specimens caught in Jun 2011 (B, C, D)

Fig. 3. Gonads dissected from exemplar B (female, on the right) and C (male, on the left) caught in June 2011

RESULTS AND DISCUSSION

Morphometric data of *T. picturatus* were presented in Table 1. Macroscopic analysis of gonads of specimens based on Medits (2007) code of sexual maturity for fish showed that the first specimen caught (May 2011) was classified as stage 3 – a mature/spawner male (specimen A, Fig. 3).

The three individuals of this species collected in June (Fig. 2) included two mature females (specimens B and D in Table 1) and one mature male (specimen C in Table 1). Scientific literature depicts *T. picturatus* as rare in the Adriatic Sea indicating the Pomo Pit as the Northern latitudinal limit of its distribution (ARNERI, 1984; JARDAS, 1996; MILIŠIĆ, 2007;).

The observation of a new species in a new area represents the first opportunity to follow and study the dynamics of colonization and understand how a new species arrives, what are its movements and the impact that it may have (AZZURRO, 2010).

JARDAS (1996) enumerated 407 fish species in the checklist of Adriatic fishes, while LIPEJ

Table 1. Morphometric measures of fish caught in may (A) and in june 2011 (B, C, D; morphometric measures in millimeter, weight in gram; TL, Total Length; SL, Standard Length; FL, Fork Length; LLL, Length of Lateral Line; PrAL, Preanal Length; PrDL, Predorsal Length; PrPL, Prepelvic Length; PFL, Pectoral Fin Length; DFL1, First Dorsal Fin Length; DFL2, Second Dorsal Fin Length; HL, Head Length; ML, Maxilla Length; BD, Body Depth; ED, Eye Diameter; PrOL, Preorbital Length; CPD, Caudal Peduncle Depth

Specimen	TL	SL	FL	LLL	PrAL	PrDL	PrPL	PFL	DFL1	DFL2	HL	ML	BD	ED	PrOL	CPD	Weight	Sex
A	330	284	296	243	148	96	90	72	41	113	74	15	62	22	24	11	223	M
B	355	304	319	115	168	102	88	71	51	108	77	18	62	18	28	10	454	F
C	345	294	310	114	164	99	87	70	51	106	74	16	59	16	26	9	455	M
D	301	254	271	103	140	86	79	61	30	91	65	13	53	15	23	7	239	F

and DULČIĆ in 2010 counted 440 species. The geographical expansion of native warm water biota has been called by some Authors "meridionalization" (BIANCHI & MORRI, 1993; 1994; RIERA *et al*., 1995), since the main participants to this phenomenon are "meridional" species, typical of the Southern sectors of the Mediterranean.

The presence of the four specimens in the surroundings of an offshore gas platform might point out behaviour similar to *T. trachurus* and *T. mediterraneus* as described by BOMBACE *et al.* (1994), who defined these species as partially-attracted by natural and artificial hard substrates. In particular, they are partially reef-dependent species that may be temporarily attracted to hard substrates, but they may also be observed in open-sea areas without substrates.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the crews of the R/V "Tecnopesca II" for their professional skill in conducting the fishing surveys. We are also very grateful to staff of CNR-ISMAR of Ancona for their collaboration during fish sampling, and Dr. Carlo FROGLIA of CNR-ISMAR of Ancona for providing and translating Croatian bibliography. This research was supported by ENI S.p.a., Exploitation and Production Division, Geographical Unit Italy, Marina di Ravenna, Italy.

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Received: 3 March 2014
Accepted: 2 March 2015

Novi nalaz šaruna golemog, *Trachurus picturatus* T. E. Bowdich, 1825 (Osteichthyes: Carangidae) u sjevernom Jadranu

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SAŽETAK

Promatranje nove vrste u novom prostoru predstavlja prvu priliku praćenja i proučavanja dinamike kolonizacije, te razumijevanje kako nova vrsta pristiže u prostor, kako se u njemu kreće i njen potencijalni utjecaj na prostor. Otkriće velikog broja vrsta izvan njihovog uobičajenog područja raspodjele je vjerojatno najvažniji razlog za povećanje percipirane bioraznolikosti Jadranske ihtiofaune. Ukupno 4 primjerka šaruna golemog, *T. picturatus,* su ulovljeni u razdoblju od svibnja do lipnja 2011. u okolici platformi plina u sjevernom Jadranu. Znanstvena literatura opisuje ove vrste kao rijetke u Jadranu, što potvrđuje Jabučku kotlinu (srednjeg Jadrana) kao sjevernu granicu njegove raspodjele. Na temelju toga, u ovom radu se iznosi prvi nalaz šaruna golemog, *T. picturatus,* u sjevernom jadranskom slivu, što ukazuje na širenje njegove prostorne raspodjele.

Ključne riječi*:* šarun golemi, *Trachurus picturatus*, Carangidae, novi nalaz, sjeverni Jadran, raspodjela