

Some remarkable fish findings from the southern North Sea coast

Einige bemerkenswerte Fischfunde von der südlichen Nordseeküste

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Zusammenfassung: Im Herbst und Winter 2021/22 wurden an der ostfriesischen Nordseeküste mit dem Schlanken Driftfisch *Cubiceps gracilis*, dem Roten Thun (Atlantischer Blauflossenthun) *Thunnus thynnus* und dem Mondfisch *Mola mola* drei Arten nachgewiesen, die ihre aktuellen Verbreitungsgebiete in zum Teil deutlich südlicheren Meeresregionen haben. Bei *C. gracilis* handelt es sich um den Erstnachweis für die Nordsee, bei *T. thynnus* und *M. mola* um erste Nachweise für die ostfriesische Küste.

Schlüsselwörter: *Cubiceps gracilis*, *Thunnus thynnus*, *Mola mola*, Wattenmeer, Erstnachweis, Klimawandel

Summary: In the autumn and winter of 2021/22, three uncommon species were recorded at the East Frisian North Sea coast: the driftfish *Cubiceps gracilis*, the Atlantic bluefin tuna *Thunnus thynnus* and the ocean sunfish *Mola mola*. These species have, in parts, considerably more southerly distribution areas. This is the first record of *C. gracilis* for the North Sea, *T. thynnus* and *M. mola* are the first records for the East Frisian coast.

Key words: *Cubiceps gracilis*, *Thunnus thynnus*, *Mola mola*, Wadden Sea, first record, climate change

1. Introduction

Climate-induced warming of the oceans and associated changes in abundance, distribution, and phenology of marine fish species are well documented (e.g. SIMPSON et al. 2011; MONTERO-SERRA et al. 2015; AKIMOVA et al. 2016; POLOCZANSKA et al. 2016). This can also be observed for the North Sea (DULVY et al. 2008), where cold-water species show declining trends in population density (e.g. cod NÚÑEZ-RIBONI et al. 2019, wolf fish BLUEMEL et al. 2021), whereas warm-water species are expanding their ranges (BEARE et al. 2004). In this context, the following recent findings from the southern North Sea coast are noteworthy.

2. Observations and discussion

2.1. *Cubiceps gracilis* (Lowe, 1843) – Driftfish (Ger. Schlanker Driftfisch) – Nomeidae

During commercial fishing in the Wadden Sea of Lower Saxony between the islands of Langeoog and Spiekeroog (in the north of the gat Otzumer Balje, approx. 53.79 N, 7.64 E, depth about 10 m), a specimen of *C. gracilis* was caught on 29th of September 2021 by the fishermen Bernd Ostermoor and Heinz Steffens and documented by a photo (Fig. 1A). The fish was released after being photographed. To our best knowledge, this catch is the first documented record for the North Sea. The main distribution area of this subtropical-tropical oceanic pelagic species is in the northern Central Atlantic Ocean and the southern parts of the North-eastern Atlantic Ocean, including the Mediterranean Sea. HAEDRICH (1986) defines a line roughly between the British Isles and Normandy as the northeastern distribution limit, a limit that appears almost identical to the data shown in the distribution maps of FishBase (FROESE & PAULY 2021) and GBIF (GBIF Secretariat 2021). *C. gracilis* is mainly feeding on salps (GORELOVA et



Fig. 1: Recent fish findings from the southern North Sea coast. **A** *Cubiceps gracilis* caught between Langeoog and Spiekeroog, 29/09/21. Photo: BERND OSTERMOOR. **B** *Thunnus thynnus* stranding, Harlingersiel, 11/12/21. Photo: JOKE POULIART. **C** *Mola mola* stranding, Juist, 05/01/22. Photo: O. SCHRÖDER (Lizenz CC BY-SA-3.0).
Abb. 1: Aktuelle Fischnachweise von der südlichen Nordseeküste. **A** *Cubiceps gracilis* gefangen zwischen Langeoog und Spiekeroog, 29/09/21. Foto: BERND OSTERMOOR. **B** *Thunnus thynnus* Totfund, Harlingersiel, 11/12/21. Foto: JOKE POULIART. **C** *Mola mola* Totfund, Juist, 05/01/22. Foto: O. SCHRÖDER (Lizenz CC BY-SA-3.0).

al. 1994), juveniles on chaetognaths (BATTAGLIA et al. 2014). The species is neither mentioned by MUUS & NIELSEN (1999: North Sea, Baltic Sea, Atlantic Ocean) nor by CAMPHUYSEN & HENDERSON (2017: North Sea) or HEESEN et al. (2015: Celtic Sea, North Sea, Baltic Sea).

2.2. *Thunnus thynnus* (Linnaeus, 1758) – Atlantic bluefin tuna (Ger. Roter Thun, Atlantischer Blauflossenthun) – Scombridae

A dead specimen of *T. thynnus* was found in the salt marshes close to the beach of Harlesiel (approx. 53.7087 N, 7.8027 E), East Frisia, on the 11th of December 2021 by JOKE POULIART (Fig. 1B). The specimen had a total length (TL) of 129 cm (113 cm straight fork length SFL) (Fig. 2) and thus might have had an age of 4-5 years (NEILSON & CAMPANA 2008). The head and tail were taken to the ichthyology lab of the City University of Applied Sciences Bremen for further preparations. In the eastern Atlantic, *T. thynnus* occurs “from the Lofoten Islands off Norway South to the Canary Islands and the Mediterranean Sea” (COLLETTE & NAUEN 1983). Historically it frequently migrated to northern European waters (Norwegian Sea, North Sea, Skagerrak, Kattegat, and Øresund) supporting important commercial fishery and game fishing. The species disappeared from the region in the early 1960s (TIEWS 1978) and, following MAC-

KENZIE & MYERS (2007), the species is now still extremely rare. In recent years, however, there has been a noticeable increase in occurrences in the northern part of the North-eastern Atlantic. NØTTESTAD et al. (2020) reported a comeback of the species into Norwegian coastal waters from 2012 onwards, HORTON et al. (2021) described a significant increase in detections in territorial waters of the United Kingdom and Ireland since 2016. There are also recent records for Denmark from southern Skagerrak (e.g. EAA-EUROPE 2019). In the Red List of marine fishes of Germany, the species is classified as “non-established”, as it has “never been recorded in the past 100-150 years, only once or several times, but with great irregularity” (THIEL et al. 2013). It is striking that the specimen described here from the East Frisian Wadden Sea is markedly smaller (younger) than comparable records from Norway (NØTTESTAD et al. 2020: 184-297 cm SFL, mainly August-September), UK waters (HORTON et al. 2021: 180-220 cm CFL curved fork length, October-December) or Denmark (DTU 2020: 221-265 cm SFL, August-September). Moreover, the date of locating the Atlantic bluefin tuna towards the end of the year (December) is remarkable. Most of the cited north-eastern observations came into notice in autumn (mainly August-September). Up to now, only FERTER et al. (2019) reported one tagged specimen entering the German Exclusive Economic Zone (EEZ) about 200 km

west of Sylt (about 55.0 N, 5.8 E) in the late summer of 2018, and one dead specimen was reported from the northern beach of Sylt from the 30th of November 2015 by SCHACHT (2015). Further confirmed records (after 1962) from German waters are missing so far. Further west in the Netherlands, however, there are some reports of stranded specimens from recent decades (BRUNKEN & WOLTMANN 2022, GBIF.ORG 2022).

2.3. *Mola mola* (Linnaeus, 1758) – Ocean sunfish (Ger. Mondfisch) – Molidae

Identical reports in the press and the online portal BeachExplorer (SCHRÖDER & STEINWEGGER 2022) reported the stranding of an Ocean sunfish on the beach of Juist (53.68541 N, 7.04994 E) on the 5th of January 2022 (Fig. 1C). It has been a specimen of about 80 x 100 cm. Ocean sunfish strandings are repeatedly reported from the North Sea and the Baltic Sea, although always as special reports. For the Baltic Sea, MORITZ et al. (2017) summarised the state of knowledge, with several records reported.

CAMPHUYSEN & HENDERSON (2017) reported 110 findings from the southern North Sea referring to a period from 1890 up to now (mostly juvenile fish, strandings in winter). However, HEESEN et al. (2015) only stated “few records from the middle of the North Sea”, and apparently no findings have been documented from the East Frisian Wadden Sea coast so far.

3. Discussion

The current records of new (*Cubiceps gracilis*) species, or those that have only very rarely been documented so far (*Thunnus thynnus*, *Mola mola*), fit into a series of observations of a northward shift of the range of marine fishes in the North Sea (e.g. BEARE et al. 2005, BRUNKEN & SONNTAG 2021). All three findings seem to be the first records for the German southern North Sea coast, at least for the East Frisian coastline. In the case of *T. thynnus*, a recovery of the natural distribution area may be assumed, especially since the species was present on a frequent but irregular basis in historical times (BENNEMA 2018).



Fig. 2: Measurement of *Thunnus thynnus* on 15/01/22 showing 129 cm total length (TL) and 113 cm straight fork length (SFL). Photo: IRIS WOLTMANN.

Abb. 2: Maße von *Thunnus thynnus* vom 15/01/22 mit 129 cm Totallänge (TL) und 113 cm gerader Gabellänge (SFL). Foto: IRIS WOLTMANN.

Even if these are only individual observations and do not allow any conclusions to be drawn about possible trends, they may represent indications of a continuing change in our marine fish fauna. In any case, further observations should be well documented. The findings described here have therefore been incorporated into the “GfI-Fish Atlas” (BRUNKEN & VATTERROTT 2022) of the German Ichthyological Society (GfI) for further readings.

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