

IS THE BLUEFIN TUNA SLOWLY RETURNING TO THE BLACK SEA? RECENT EVIDENCES

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SUMMARY

The disappearance of the bluefin tuna from the Black Sea at the early beginning of the '80s was one of the major distribution problems of this species in the last decades. No official reports are available about any evidence of the new presence of the bluefin tuna in the Black Sea. This paper provides all the available evidences about the recent presence of the bluefin tuna in several parts of the Black Sea and the Marmara Sea in the last decade, which is a very positive fact and shows the coming back of the species in one of the historical distribution areas. This work includes also the most updated information about the Turkish traps in the Marmara Sea and in the Straits.

RÉSUMÉ

La disparition du thon rouge de la mer Noire au début des années 1980 a été l'un des principaux problèmes de distribution de cette espèce au cours des dernières décennies. Aucun rapport officiel n'est disponible concernant des preuves de la réapparition du thon rouge dans la mer Noire. Le présent document fournit toutes les preuves disponibles sur la présence récente du thon rouge dans plusieurs régions de la mer Noire et de la mer de Marmara au cours de la dernière décennie, ce qui est un fait très positif et atteste du retour de l'espèce dans l'une des zones de distribution historique. Ce travail comprend également les informations les plus récentes sur les madragues turques dans la mer de Marmara et dans les détroits.

RESUMEN

La desaparición del atún rojo del mar Negro a principios de los 80 fue uno de los principales problemas de distribución de esta especie en la última década. No se dispone de informes oficiales acerca de pruebas de la presencia de nuevo de atún rojo en el mar Negro. Este documento presenta todas las evidencias disponibles acerca de la reciente presencia de atún rojo en varias partes del mar Negro y el mar de Mármara en la última década, que es un hecho muy positivo y muestra la vuelta de la especie a una de las zonas históricas de distribución. Este trabajo incluye también la información más actualizada acerca de las almadrabas turcas en el mar de Mármara y en los Estrechos.

KEYWORDS

Bluefin tuna, Black Sea, Marmara Sea, Mediterranean Se, Distribution area

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1. Introduction

The Bluefin tuna is expanding its distribution area in the last decade, coming back to areas where it disappeared since many decades. Specifically, it showed-up again in the Arctic Sea and in Greenland, in Norway, in Sweden and Denmark, but also in the South Atlantic Ocean. The reasons for this larger distribution could be many: some are certainly unknown, while surely the progressive recovery of the Atlantic Bluefin tuna stocks after the enforcement of the ICCAT Bluefin tuna recovery plans for both stocks is one of the main reasons.

The situation of the more eastern part of the eastern Atlantic Bluefin tuna stock was always under discussion, because the disappearance of this species from the Black Sea at the early beginning of the '80s was a sort of ecological drama for that Sea, one of the many in recent decades. The data about this disappearance are not so many, particularly because of the very poor fishery statistics in the area, where the Bluefin tuna catches were merged together between those which occurred in the eastern Mediterranean Sea and those in the Black Sea, particularly for those countries having national fisheries in both seas (Di Natale, 2015).

Only recently it was possible to have a first estimation for the Bulgarian catches (Di Natale, 2018), the only one country where it was possible to recover some estimates, which were incorporated in the ICCAT BFT catch data base, after being reviewed by the SCRS Sub-committee of Statistics.

This paper would like to provide the most recent updates of the situation of the more eastern part of the eastern bluefin tuna stock after the review paper presented by Di Natale (2015), both for what concerns the latest results of the work carried out by the GBYP and for the limited return of the bluefin tuna in the Black Sea; a reference bibliography is available on the same paper.

2. Some additional information about the historical traps in the Turkish area

In addition to the data reported by Orenic *et al.* (2014) and to the distribution of ancient traps in the Turkish area showed by Di Natale (2010, 2015), recently it was possible to recover also the original maps from Belloc (1961).

Belloc (1961), reporting a personal communication from Prof. Ermin, shows the location of 22 traps (18 in the Bosphorus, 2 in the Marmara Sea and 2 in the Dardanelles), a number which is lower than the 26 tuna traps reported by Parona (1889) and Pavesi (1909) but including all Turkish waters, while the map found by Orenic *et al.* (2015) shows 7 traps in the Marmara Sea in a document dated 1913. Furthermore, Belloc listed an additional trap (Cesme), not showed on the map, which was in the Aegean Sea, in front of the isle of Chio. Belloc included in his report all types of traps, but looking at the details, just 8 traps were clearly fishing bluefin tuna (Filburnu, Kefelikov, Beykoy, Zalistra, Iepseki, Kilye and Cesme), while for other 10 traps (Elmas, Blaglaralti, Suyu, Pazarbasi, Bulkul Sorak, Cayir, Umuryeri, Camkaya, Anarsa, Nara or Naghara) the list of target species it is unknown.

This unclear situation about the real target species fished by each trap leaves undefined the details of the total trap catches reported by Deveciyan (1915, 1926) and Ninni (1922, 1923), which were included in the comprehensive ICCAT Bluefin tuna catch table as "Istanbul port" (Pagà García *et al.*, 2017), because the quantities were landed and traded in the Istanbul fish market without any possibility to discriminate them by single trap. Therefore, the ICCAT table will continue to use this undefined location, without any possibility to have any catch series by trap until detailed data will be available.

Karakulak (2000) and Karakulak and Oray (2009), reported just 8 traps (Filburnu, Çankaya, Beykoz, Bülbülsokak, Anaşya, Küçükçekmece, Salistra and Karamanoğlu), all in the Marmara Sea, and the Turkish official trap catches reported to ICCAT includes data up to 1984. According to the same authors, the trap fishery in the Marmara Sea ended in 1986 but data for the last two years are not available, while there is the strong suspect that the Turkish catches that were reported to ICCAT exclusively as "trap" include also bluefin tuna catches from other gears, being other gears active in the same years.

3. The lack of evidence of any BFT substructure in the eastern stock

The review paper by Di Natale (2015) presented the state of the scientific knowledge in 2014, while ICCAT GBYP carried out several additional studies in the following years. As a matter of fact, in 2014 there was still the idea to explore the possibility of detecting a subpopulation of an eastern Mediterranean bluefin tuna, taking into account the first genetic analyses and the tagging data. The first were showing some limited differences between the fish sampled in the eastern Mediterranean Sea and those sampled in other Mediterranean areas (Arrizabagala, 2013; Di Natale *et al.*, 2014), while the latter were not showing any fish tagged in the eastern Mediterranean moving towards other areas.

In the following years, many additional genetic and micro-chemical analyses were carried out by GBYP. During these studies and the additional quality controls, it was discovered that several larvae which were collected in the Levantine Sea and that were initially identified as bluefin tuna larvae, were not belonging to this species and therefore the first results (which included these samples) are not taken into consideration anymore. The genetic analyses have been carried out on a considerable amount of samples of different ages, collected in the Levantine Sea, including also samples collected in an ancient deposit found in Istanbul (which covered a period between the V century and the XIII century). They revealed that the genetic structure of those samples was the same of the other Mediterranean and eastern Atlantic samples. Therefore, the full eastern Atlantic samples were defined as a concrete population of bluefin tuna, showing an important mixing between the various areas of origin in terms of genetic components (Di Natale *et al.*, 2017; Puncher *et al.*, 2016, 2018).

Additionally, the micro-chemical analyses carried out within the GBYP framework showed the lack of differentiation within the eastern stock, while it was possible to discriminate, with an acceptable level of confidence, the natal area of origin (Di Natale *et al.*, 2017).

These detailed results were also corroborated by the additional tagging data (Di Natale *et al.*, 2016; Tensek *et al.*, 2018), which revealed large-scale movements of tuna tagged in the eastern Mediterranean, which moved north to the North Sea or to other areas within the Mediterranean Sea and, vice versa, tuna tagged in the Atlantic or in other Mediterranean areas which moved to the eastern Mediterranean Sea. Furthermore, thanks to the GBYP data recovery activities, it was possible to recover some old data of electronic tags deployed by other projects, which showed movements from the eastern Mediterranean to other parts of the Mediterranean Sea, even if the retention time was limited.

All these evidences together confirm the lack of any subpopulation structure in the eastern Mediterranean, putting aside all the hypotheses that were developed in previous years and in ancient times.

At the same time, we still lack a sufficient knowledge for better understanding the dynamic of the bluefin tuna inside the Mediterranean Sea, including the Levantine Sea, because it is very clear that an undefined percentage of bluefin tuna remains overwinter (and maybe for more than one year) within the Mediterranean Sea, but always spawning in summer time together with the individuals which are migrating from the Atlantic Ocean.

4. The slow return of the Bluefin tuna in the Black Sea

After 1971, the Bluefin tuna disappeared from the Black Sea, even if the only available evidence so far is provided by the Bulgarian catches (Di Natale, in press), because the Turkish Bluefin tuna catch statistics are not split by area. Fontaneau (2009), in a comprehensive paper, reported that the bluefin tuna, which was present also in the Azov Sea, became very rare in the Black Sea in the early '70s, while the last one was caught in 1975.

According to Karakulak and Oray (2009) it is absolutely unclear if the Turkish trap catches declared to ICCAT are concerning traps located only in the Marmara Sea (**Figure 1**), even if Karakulak (2000) presented a paper on the Turkish trap fishery. These catches have been officially reported as Mediterranean catches to ICCAT and it is impossible to have more precise data or to disentangle the catches for the different areas. The same authors report that no bluefin tuna catches were made in the Turkish Black Sea area since 1986, but no statistical data or any detailed information is available for the Black Sea from Turkey. Artüz (1999) reported that the Bluefin tuna interrupted its migrations from the Marmara Sea to the Black Sea in 1985, but he still reports the wrong information about the Bluefin tuna spawning and larvae in the Black Sea. Mustafa Kiliç³ who is the “*rais*” of the three last tuna traps (“*dalian*”) in the Marmara Sea, the ones located in Büyükdada, reported that no bluefin tunas or swordfish were caught in the traps in the Marmara Sea after 1978.

Therefore, it is still unclear if the disappearance of the bluefin tuna reported from Karakulak and Oray (2009) was related to the Marmara Sea or to the Black Sea, due to the unfavourable environmental conditions in the full Black Sea well known since the '70s, as reported by Di Natale (2015), who provided an extensive review of the several papers on this subject.

Even if the official statistics are not showing any bluefin tuna catch in the Black Sea, the GBYP decided to continue monitoring the scientific papers and the daily newspapers in all the countries around the Black Sea, because any single catch of bluefin tuna could more easily appears on local newspaper (in the original language), certainly interested in showing with proud any unusual catch. As a matter of fact, this monitoring activity documented that bluefin tuna is slowly coming back to at least the western and southern-western part of the Black Sea, which is a very good news. Several bluefin tunas which have been fished in the Marmara Sea and in the Straits in recent years were also noticed.

³ <http://dostbeykoz.com/beykoz-da-dalyan-kuracak->

Surely, in 1986, according to a short information available on the web⁴, a single bluefin tuna of 170 cm, 100 kg, was reported by a fishermen as caught in the Marmara Sea and the same report has the title “There is still a bluefin tuna in the Marmara”, clearly showing that the presence of this species was not common anymore. The fish was sold on the fish market in Istanbul.

A Turkish newspaper⁵ on 12 November 2002, reported that three individuals of bluefin tuna, each one having a weight of 150 kg, were fished in the Bandırma District of Balıkesir. The fisherman reported that this was the first time after 20 years of absence that the bluefin tuna was coming back to the area.

Anyway, surely the bluefin tuna disappeared from the Black Sea from the ‘80s to 2007, but apparently it returned to the area at the early beginning of 2007 (15 January) when a first fish of 50 kg was reported by a Turkish newspaper⁶ as caught in the Black Sea (apparently in the area of Hopa, in the SE part of the sea) and then sold on the local market of Kars at 8 TL/Kg (**Figure 2**).

In the same month, one week before (9 January 2007), a Turkish newspaper⁷ reported that a bluefin tuna of about 2 m and 120 kg was fished in the Marmara Sea and sold on the local market in Tekirdağ. The fisherman who caught the tuna declared that the bluefin tuna was missing from the area since 26 years. This second declaration fits quite well with the one made by the other fisherman in 2002, confirming that the Bluefin tuna almost entirely disappeared even from the Marmara Sea from 1981 or 1982, except for the incidental individual mentioned in 1986.

A few months later, in November 2007, few YOY individuals were fished in the Marmara Sea and they were marketed in the Galata Bridge Fish market in Istanbul; in the same year, in October, a sport fisherman from Sile, in the Black Sea, close to the Dardanelles, fished a bluefin tuna of about 60 kg (Di Natale, 2010). These first evidences of the reappearance of the bluefin tuna in the Black Sea in 2007, even if very limited and localised, were considered as a positive indication, possibly the hope that this species might be slowly back in one of the most historically documented distribution area.

On September 3, 2008, the information about two bluefin tunas (83 kg each) that were harpooned by a diver in the Marmara Sea, close to a cave, shows up on a Turkish web forum⁸. The same forum reports about another tuna, quite bigger (200 m and 300 kg) that was fished on 15/09/2008 in the same area.

On October 26, 2008, a Turkish newspaper⁹ reported another Bluefin tuna of 57 kg that was fished 15 nm inside the Black Sea, in an undefined site close to the Bosphorus, while the vessel was fishing for mackerels. The fish was sold on the market of Adapazari at 15 TL/kg (**Figure 3**).

Several YOY of bluefin tuna were reported in late fall 2009, and they were sold in the fish market of Kumkapi, in Istanbul; they were possibly fished in the Marmara Sea (M.J. Cornax, pers. com., 4 March 2013).

On April 22, 2009, a Turkish newspaper¹⁰ reported a bluefin tuna of 2.40 m and 135 kg, which was fished close to the shore in Eregli, in the SW part of the Black Sea. It was sold on the local fish market at 20 TL/kg.

On September 23, 2009, a Turkish newspaper¹¹ reported a bluefin tuna of 80 kg which was fished in Samsun, in the central southern part of the Black Sea. It was sold on the local market at 15 TL/Kg.

On March 30, 2010, a Turkish newspaper¹² reported a bluefin tuna of 55 kg that was fished in the near Black Sea (possibly just off the Bosphorus), which was sold on the Emir Balik Market in Istanbul at 15-20 TL/kg (**Figure 4**).

On February 2, 2011, a Turkish newspaper¹³ reported a bluefin tuna of 40 kg that was caught by a net belonging to a fisherman from Bartın, an internal town in the SE part of the Black Sea. The fish was sold on the local market at 15 TL/Kg (**Figure 5**).

⁴ <https://www.balikavi.net/konu/marmarada-hala-orkinos-var-100kg.39699/>

⁵ <http://www.mynet.com/haber/guncel/marmarada-dev-orkinos-yakalandi-12223-1>

⁶ <http://www.pazar53.com/dev-orkinos-baligi-400-ytl-1162h.htm>

⁷ <http://www.hurriyet.com.tr/marmarada-dev-orkinos-baligi-yakalandi-5747047>

⁸ <http://www.zipkinci.com/zipkinci-kahvesi/23910-marmara-orkinos-yellowfin-tuna.html>

⁹ <https://www.haberler.com/balickilarin-agina-57-kiloluk-orkinos-takildi-haberi/>

¹⁰ <http://www.denizhaber.com/guncel/135-kiloluk-dev-orkinos-sasirtti-h16788.html>

¹¹ <http://www.haberturk.com/yasam/haber/174509-saskin-orkinos>

¹² <http://www.dengegazetesi.com.tr/dev-orkinos-sasirtiyor-39196h.htm>

¹³ <http://www.ihha.com.tr/haber-saskin-orkinos-karadenizde-aglara-takildi-158285/>

On April 4, 2011, a Turkish newspaper¹⁴ reported a bluefin tuna of 52 kg which was fished in Samsun, in the central southern part of the Black Sea, as a by-catch in a mackerel fishery; the fish was sold on a local market at 15 TL/Kg (**Figure 6**).

On April 11, 2011, four different Turkish newspapers¹⁵ reported the unusual fishery of about 200 bluefin tuna in the area of Sinop, a peninsula in the SW part of the Black Sea, along the Turkish coast.

According to these newspapers, the fish ranged from 35 to 120 kg each, while the price on the local markets ranged from 15 to 25 TL/kg, depending on the dressing.

On 29 November 2011, a Turkish newspaper¹⁶ reported that two bluefin tuna of 150 kg each were fished in the Gemlik Gulf, in the Marmara Sea, following a school of anchovies. The article reports that the presence of bluefin tuna in the area, which was common several years ago, was the first one after many years. The tunas were marketed in Bursa's Mudanya District at 12 TL/kg.

On March 18, 2012, a Turkish newspaper¹⁷ reported a giant bluefin tuna of 2.85 m and 410 kg which was fished in the Strait of Dardanelles and then was sold to a local luxury hotel in Istanbul.

On 4 March 2013, a Turkish newspaper¹⁸ reported that a fisherman caught a bluefin tuna of 10 kg in the middle part of the northern Marmara Sea, in the district of Terkindan, selling it at 20TL/kg.

On September 1 2013, a Turkish newspaper¹⁹ reported that two bluefin tunas, one of 180 kg and the second one of 165 kg, were fished in the Marmara Sea and then were sold in the fish markets in Bursa and Mudanya, at 15/20 TL/Kg. According to the news the tunas were following a school of anchovies, feeding on them.

On 8 September 2013, a Turkish newspaper²⁰ reported that one bluefin tuna of 150 kg, about 1.5 m FL, was caught close to Zonguldak, in the SW part of the Black Sea. Several inhabitants of the town took photos of the fish, which was sold on the local market of Kastamonu at 20 TL/kg. The fisherman who caught the tuna reported that it was feeding on small pelagics and that he was aware of the fact that the bluefin tuna enter into the Black Sea after spawning.

On 14 September 2013 a Turkish newspaper²¹ reported a bluefin tuna of 175 kg which was fished in the Marmara Sea and then sold in the fish market in Gönen district of Balıkesir.

On November 23, 2013, a Turkish newspaper²² reported that many tunas entered into the Marmara Sea and about 200 fish (about 50 tons in total) were illegally fished by a purse-seiner. The fish were tracked and they were sold on the markets of the Maltepe District; according to the same newspaper, a total of 1,846 TL fine was applied by the Turkish authorities.

On 13 October 2014, another Turkish newspaper²³ reported that a giant bluefin tuna was fished in Bursa, in the Marmara Sea. The fish was 2.5 m FL and had a weight of 360 kg; it was sold on the fish market in Bandırma.

On October 30, 2014, another Turkish newspaper²⁴ reported a bluefin tuna of 1.6 m and 87 kg was fished in the Marmara Sea and sold on a local market.

On January 1, 2015, another Turkish newspaper²⁵ reported a bluefin tuna of 50 kg fished in the Marmara Sea and sold in a restaurant in Sorgun (Yozgat).

¹⁴ <http://www.denizhaber.com.tr/karadenizde-dev-orkinos-baligi-yakalandi-haber-34354.htm>

¹⁵ <http://www.rizedeyiz.com/Haber/Karadenizde-Orkinos-Bollugu-6866.html>
<https://www.timeturk.com/tr/2011/04/11/karadeniz-de-orkinos-baligi-bollugu-yasaniyor.html>
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<http://www.denizhaber.com.tr/karadenizde-orkinos-bollugu-yasaniyor-haber-34606.htm>

¹⁶ <https://www.haberler.com/marmara-da-2-orkinos-yakalandi-3157627-haber/>

¹⁷ <https://www.bursa.bel.tr/dev-orkinos-gorenleri-sasirtti/haber/9709/>

¹⁸ <https://www.haberler.com/marmara-denizi-nde-10-kiloluk-orkinos-yakaladi-4388986-haber/>

¹⁹ <https://www.bursa.bel.tr/devasa-orkinoslar-gorenleri-sasirtiyor/haber/14237/>

²⁰ <http://beyazgazete.com/haber/2013/9/8/karadeniz-de-150-kilogramlik-orkinos-1938882.html>

²¹ <http://www.haber7.com/hayvanlar-alemi/haber/1073745-175-kiloluk-dev-orkinos-yakaladilar>

²² <http://www.denizhaber.com.tr/marmara-denizinde-orkinos-katliami-haber-52392.htm>

²³ <http://www.milliyet.com.tr/marmara-da-2-5-kiloluk-orkinos-gundem-1953810/>

²⁴ <http://www.denizhaber.com.tr/87-kiloluk-dev-orkinos-baligi-yakalandi-haber-58460.htm>

²⁵ <http://www.iha.com.tr/haber-50-kiloluk-orkinos-baligi-gorenleri-sasirtiyor-425563/>

On January 4, 2015, a Turkish newspaper reported²⁶ a bluefin tuna of 50 kg which was fished just at the entrance of the Black Sea, off the Bosphorus. The fish was sold at Hisar fish market at 20 TL/Kg.

On February 15, 2015, a Turkish newspaper²⁷ reported a bluefin tuna of 70 kg that was incidentally fished in Mudanya, in the Marmara Sea.

On September 19, 2015, another Turkish newspaper²⁸ reported that a fisherman from Düzce fished in the Black Sea (unknown locality, possibly off the coast Akçakoca) a single bluefin tuna having a weight of 50 kg, sold at 35 TL/kg on the local market (**Figure 7**).

On November 10, 2015, another Turkish newspaper²⁹ reported a giant bluefin tuna of 220 kg that was fished close to the isle of Balıkesir in the Marmara Sea; this fish was sold on a local fish market for 20 TL/kg.

On May 19, 2016, a Turkish newspaper³⁰ reported a bluefin tuna of 200 kg that was fished in an unknown place in the Black Sea, which was sold on a local fish market at 15 TL/kg.

On October 16, 2016, a giant bluefin tuna of about 2 m and 220 kg was fished in Samsun, in the central-southern part of the Black Sea. It was sold on the fish market in Çorum³¹ (**Figure 8**).

On October 18, 2016, another Turkish newspaper³² reported the fishery of a bluefin tuna in Samsun, in the central part of the southern Black Sea coast. This fish was more than 1 m FL and had a weight of 61 kg. It was sold on the fish market in Rize (**Figure 9**).

On November 3, 2016, a Turkish newspaper reported³³ a bluefin tuna of 3 m and 200 kg which was fished in the Çanakkale in the Strait of Dardanelles and later sold in the fish market of Karabük at 20 TL/Kg.

On November 4, 2016, another Turkish newspaper³⁴ reported a giant bluefin tuna which was fished in Sivas, in the Marmara Sea; this fish was 2.48 m FL and 305 kg. The previous week the same fisherman reported another bluefin tuna of 250 kg which has been fished by him.

On December 8, 2016, a Turkish newspaper³⁵ reported a giant bluefin tuna of 2 m and 250 kg that was fished in the Strait of Dardanelles and then sold on the fish market of Kars. The same article reports about another bluefin tuna of 45 kg that was fished in the Black Sea just one week before (probably along the SE coast, maybe in Hopa).

In an unknown date, possibly in 2017, a Turkish newspaper³⁶ reported that a bluefin tuna of 200 m and 150 kg was washed ashore in Cinarçik, in the Marmara Sea. According to the news, it seems that the fish died for the effects of polluted sewage waters, but anyway the carcass was examined by the Veterinary Services.

On June 10, 2017, a Russian video³⁷ shows the presence of a single bluefin tuna along the Russian coast of the Black Sea, in an unknown site. This is the first confirmation about the presence of bluefin tuna in the northern Black Sea in recent years.

On October 6, 2017, a Turkish newspaper³⁸ reported a bluefin tuna of 1.5 m and 79 kg, which was fished in the Marmara Sea, which was sold on a local market at 30 TL/kg.

On October 31, 2017, a Turkish newspaper³⁹ reported a giant bluefin tuna of 2.55 m and 391 kg which was fished in Rize, in the SE part of the Black Sea and then sold on the market in Ankara, at 25 TL/Kg (**Figure 10**).

²⁶ http://www.yenigolcuk.com/haber-karadenizden_dev_orkinos_geldi_-14835.html

²⁷ <http://www.iha.com.tr/haber-70-kiloluk-orkinos-aglara-takildi-438974/>

²⁸ <http://www.hurriyet.com.tr/karadeniz-de-50-kilo-agirliginda-orkinos-yakalandi-37170252>

²⁹ <https://www.haber3.com/guncel/marmarada-220-kiloluk-orkinos-yakalandi-haberi-3605902>

³⁰ <http://www.bafra55.net/dev-orkinos-gorenleri-sasirtti-25450h.htm>

³¹ <https://www.youtube.com/watch?v=CvMJbzqvm5c>

³² <http://www.karadenizgazete.com.tr/bolgesel/rize-de-61-kilogramlik-orkinos/135562> and <http://www.caytvhaber.com/haber/rize/rizede-61kilogramlik-orkinos-ilgi-odagi-oldu/26380.html>

³³ <http://www.bigazete.com.tr/2016/11/200-kiloluk-orkinos-kilosu-20-liradan-satista-sunuldu-h24469.html>

³⁴ <http://www.marmarahayat41.com/marmara-denizinde-305-kiloluk-orkinos-yakalandi/>

³⁵ <http://www.milligazete.com.tr/haber/926468/karsta-250-kiloluk-orkinosa-ilgi-odagi-oldu>

³⁶ <http://gercekbandirma.com/orkinos-marmaraya-girince-zehirlendi-ve-oldu>

³⁷ <https://www.youtube.com/watch?v=9fojtTtoaQ> <https://podvoh.tv/video/shok-ogromnyj-tunec-v-chernom-more/>

³⁸ <http://www.corluhaber.com.tr/ergene-de-dev-orkinos-ilgi-gordu/3711/>

³⁹ <https://www.haber61.net/bolgesel/karadeniz-de-yakalanan-dev-orkinos-rekor-kirdi-h306540.html>

All these reports included also pictures of the bluefin tunas that were fished and several articles on various newspapers discussed about the unusual reappearance of this species in the Black Sea after so many years.

Table 1 shows all the recent Bluefin tuna catches in the Strait of Dardanelles, in the Marmara Sea, in the Bosporus and in the Black Sea.

5. Discussion

Besides the lack of any official report for the recent bluefin tuna catches in the Black Sea (no catches were reported in recent papers on the Black Sea and no catches were reported to ICCAT or GFCM), GBYP was able to recover the available evidence about the progressive return of the bluefin tuna in the Straits of Dardanelles, in the Marmara Sea, in the Bosporus and in the Black Sea. The distribution map of the recent Bluefin tuna catches in the Straits and in the Marmara Sea is shown on **Figure 11**, while the distribution map of the recent catches in the Black Sea is shown on **Figure 12**.

It is almost sure that these catches are not representing the total of the catches in these areas (it is logical that some catches were not reported by the newspaper or the social media), but certainly they demonstrate that the bluefin tuna is progressively coming back to the Black Sea, one of its historical distribution areas, and this is another good news for this species.

It is strongly recommended that a major attention should be devoted by all local scientists for better documenting the bluefin tuna catches in the area, duly reporting them to ICCAT and the SCRS.

6. Note

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Table 1. Detailed list of all recent catches of bluefin tuna in the Marmara Sea, in the Bosforus, in the Strait of Dardanelles and in the Black Sea.

	Area	Location	Date	no. BFT	individual length (cm)	individual weight (kg)
1	Marmara Sea	unknown	1986	1	170	100
2	Marmara Sea	Bandırma District of Balıkesir	17/11/2002	3		150
3	Marmara Sea	Tekirdağ	09/01/2007	1	200	120
4	Marmara Sea	unknown	November 2007	8		0,6
5	Marmara Sea	unknown	03/09/2008	2		83
6	Marmara Sea	unknown	15/09/2008	1	200	300
7	Marmara Sea	unknown	November 2009	several		0,8
8	Marmara Sea	Gemlik Gulf	29/11/2011	2		150
9	Strait of Dardanelles	unknown	18/03/2012	1	285	410
10	Marmara Sea	District of Terkindan	04/03/2013	1		10
11	Marmara Sea	unknown	01/09/2013	1		180
12	Marmara Sea	unknown	01/09/2013	1		165
13	Marmara Sea	unknown	14/09/2013	1		175
14	Marmara Sea	unknown	23/11/2013	200		25
15	Marmara Sea	Bursa	13/10/2014	1	250	360
16	Marmara Sea	unknown	30/10/2014	1	160	87
17	Marmara Sea	unknown	01/01/2015	1		50
18	Marmara Sea	Mudanya	15/02/2015	1		70
19	Marmara Sea	Balıkesir	10/11/2015	1		220
20	Strait of Dardanelles	Çanakkale	05/12/2015	2	200	200
21	Strait of Dardanelles	Çanakkale	03/11/2016	1	300	200
22	Marmara Sea	Sivas	04/11/2016	1	248	305
23	Strait of Dardanelles	unknown	08/12/2016	1	200	250
24	Marmara Sea	Cinarcik	n.d	1	200	150
25	Marmara Sea	unknown	06/10/2017	1	150	79
1	Black Sea	Hopa?	15/01/2007	1		50
2	Black Sea	Sile	October 2007	1		60
3	Black Sea	15 nm off Bosporus	26/10/2008	1		57
4	Black Sea	Eregli	22/04/2009	1	240	135
5	Black Sea	Samsun	23/09/2009	1		80
6	Black Sea	off Bosporus	30/03/2010	1		55
7	Black Sea	coast off Bartın	02/02/2011	1		40
8	Black Sea	Samsun	01/04/2011	1		52
9	Black Sea	Sinop	11/04/2011	200		35 to 120
10	Black Sea	Zonguldak	08/09/2013	1	150	150
11	Black Sea	off the Bosporus	04/01/2015	1		50
12	Black Sea	unknown (possibly Akçakoca)	19/09/2015	1		50
13	Black Sea	unknown	19/05/2016	1		200
14	Black Sea	Samsun	18/10/2016	1	200	220
15	Black Sea	Samsun	18/10/2016	1	100	61
16	Black Sea	Hopa?	28/11/2016	1		45
17	Black Sea	unknown (Russia)	10/06/2017	1		
18	Black Sea	Rize	31/10/2017	1	255	391

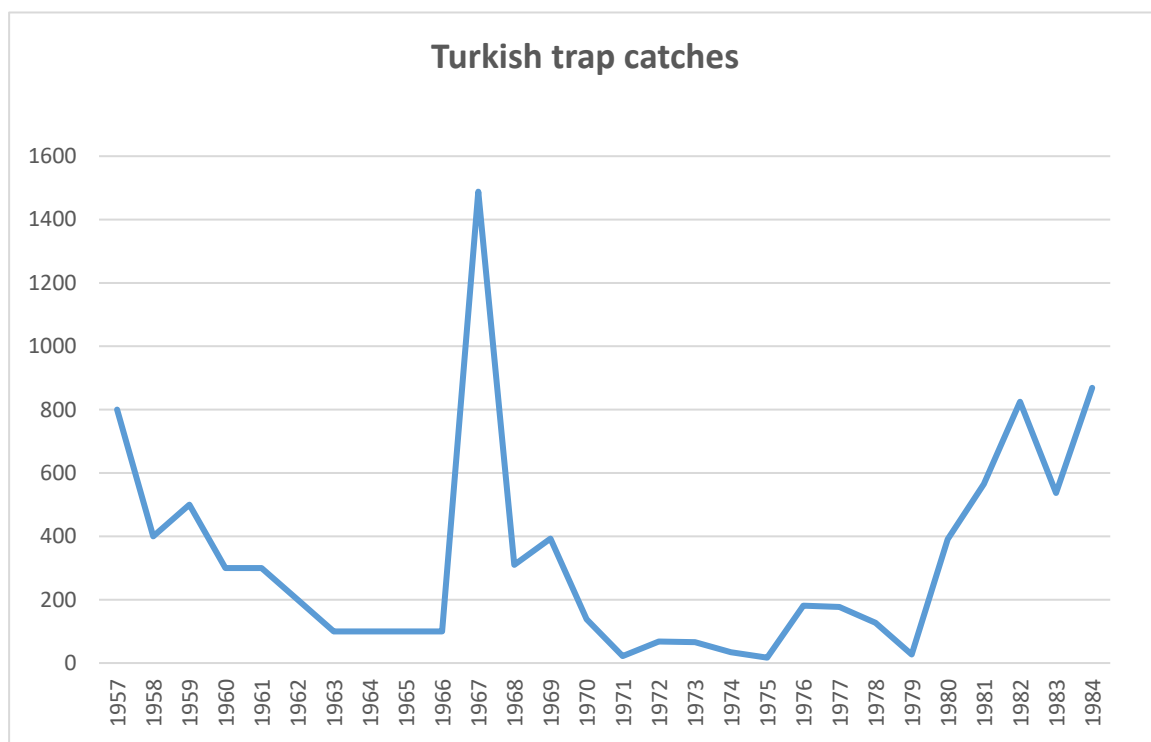


Figure 1. Total Turkish tuna trap catches, as reported to ICCAT bluefin tuna data base. These catches were reported as “Mediterranean Sea”, but it is suspected that they include almost exclusively catches from the Marmara Sea.



Figure 2. A bluefin tuna of 50 kg fished in the SE part of the Black Sea on 15/01/2007 and marketed in Kars, possibly the first documented bluefin tuna that returned in this area after more than 25 years.



Figure 3. A bluefin tuna of 57 kg fished on October 26, 2008, in the Black Sea, 15 nm off the Bosphorus.



Figure 4. A bluefin tuna of 55 kg fished in the Black Sea on 30/03/2010 and marketed in Istanbul.



Figure 5. A bluefin tuna of 40 kg fished on February 2, 2011, in the SE Black Sea off the coast of Bartın.



Figure 6. A bluefin tuna of 52 kg fished on April 1, 2011, in Samsun, in the Black Sea.



Figure 7. A bluefin tuna of 50 kg fished in Düzce (Black Sea) on 19 September 2015.



Figure 8. A bluefin tuna of 5 about 2 m and 220 fished in Samsun (Black Sea) on 16 October 2016.



Figure 9. A bluefin tuna of 1 m and 61 kg fished in Samsun in the Black Sea on 18/10/2016.



Figure 10. A bluefin tuna of 2.55 m and 391 kg fished in Rize (Black Sea) on 31 October 2017.

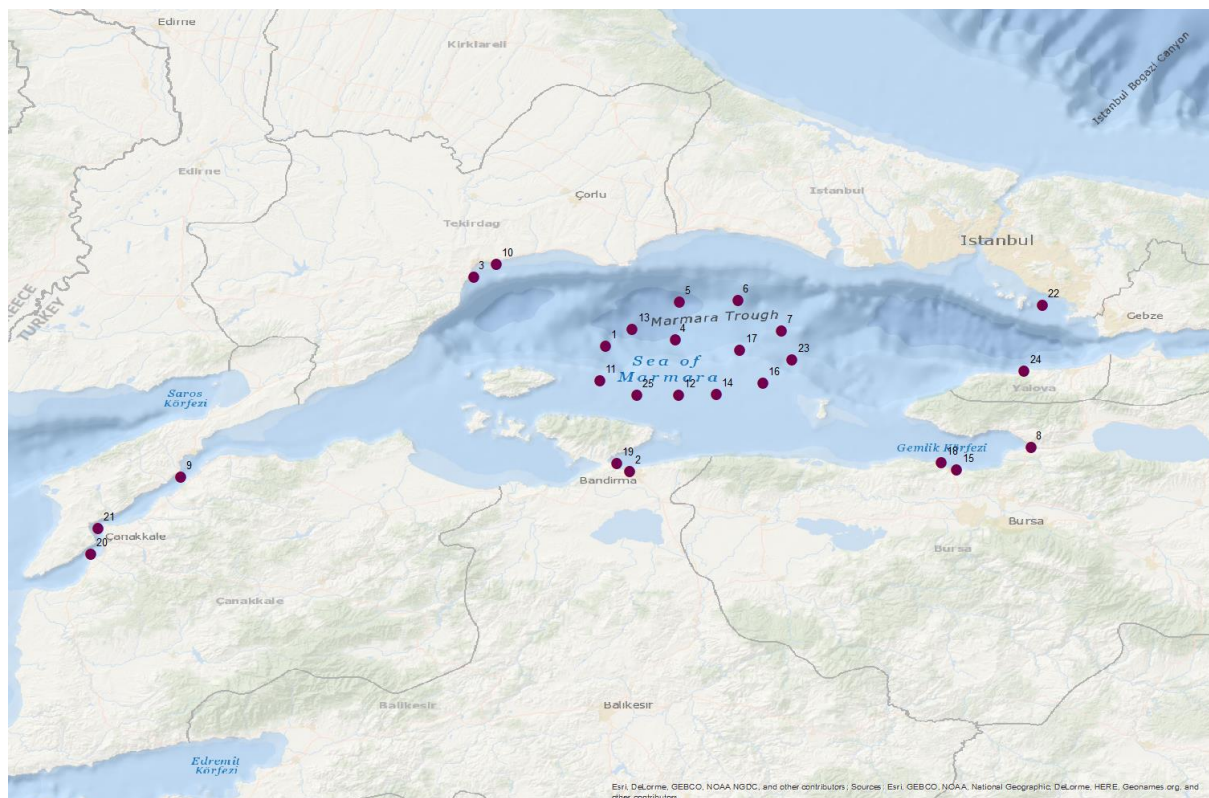


Figure 11. Distribution of recent bluefin tuna catches in the Strait of Dardanelles, in the Marmara Sea and in the Bosphorus. The catches without any precise location are grouped in the central part of the area.

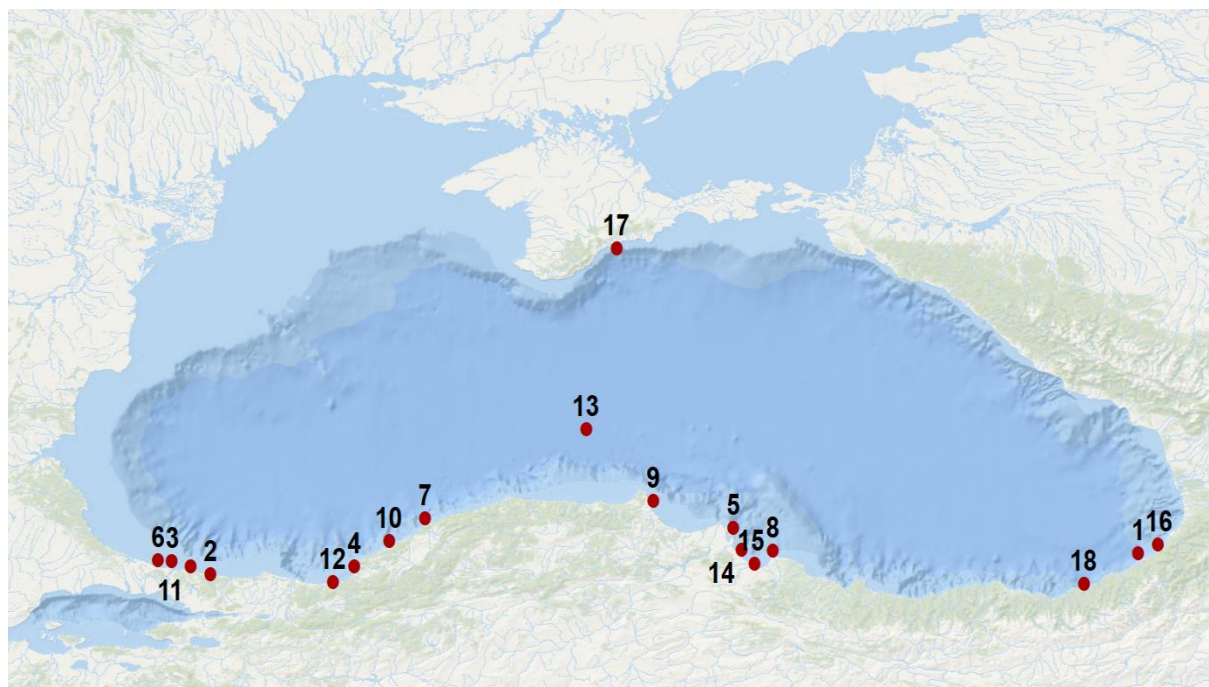


Figure 12. Distribution of recent bluefin tuna catches in the Black Sea. The catch without any precise location is shown in the central part of the area.