

## SHORT COMMUNICATION

### First record of blue crab *Callinectes sapidus* (Rathbun 1896) (Crustacea, Brachyura, Portunidae) from the Turkish Black Sea coast

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#### Abstract

Two male specimens of blue crab *Callinectes sapidus* were captured by commercial gillnet fishery on 25 September and 2 November 2013 at a depth of 14.5 and 18 m from Düzce and Zonguldak on the Black Sea coast of Turkey, respectively. This is first documentation of *C. sapidus* from the Turkish coastal waters of the Black Sea.

**Keywords:** Blue crab, *Callinectes sapidus*, Black Sea, Turkish coastal waters

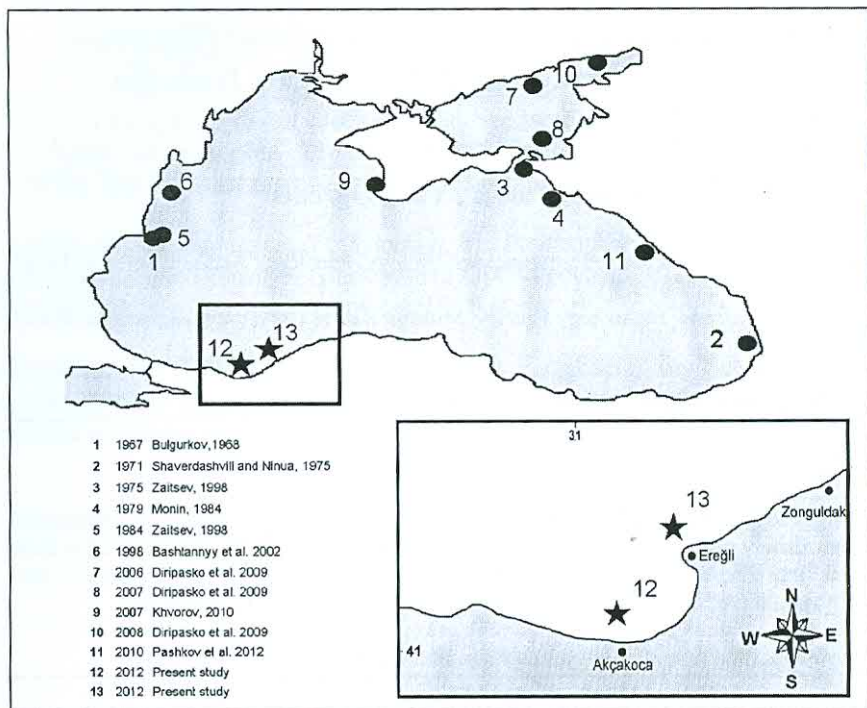
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#### Introduction

The natural distribution of blue crab *Callinectes sapidus* Rathbun, 1896 covers the Atlantic coast of America from Nova Scotia (Canada) to northern Argentina (Nehring 2012). The first record of the blue crab in Europe was given on the Atlantic coast of France (Bouvier 1901). *C. sapidus* was for the first time reported in the Mediterranean Sea as *Neptunus pelagicus* in Venice, Italy (Soika 1951). Thereafter, it was recorded as *C. sapidus* by Holthuis and Gottlieb (1955) in Israel coast, and in the North Aegean Sea by Holthuis (1961), and in the other parts of the Mediterranean Sea (Banoub 1963; George and Athanassiou 1965). *C. sapidus* was for the first time reported from the Marmara Sea by Zaitsev and Öztürk (2001). First record of *C. sapidus* in the Black Sea was made in the Bulgarian waters (Bulgurkov 1968). With the present records, there would be 13 records of *C. sapidus* from the Black and Azov Sea basin as shown in Figure 1.

First documentation of *C. sapidus* from the Turkish coastal waters of the Black Sea is given in this study. Two male specimens of blue crab *C. sapidus* (Figure 2) were captured by commercial fishery (gillnet) on 25 September 2013 at a

depth of 14.5 m in the coast of Duzce (Akçakoca; 41°05'506"N; 31°09'253"E) and on 2 November 2013 at a depth of 18 m in the coast of Zonguldak (Ereğli; 41°17'193"N; 31°23'147"E) of the southwestern Black Sea of Turkey (Figure 1).

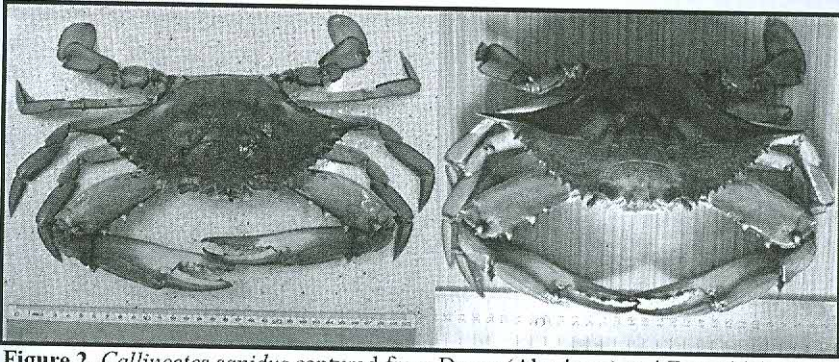


**Figure 1.** Map showing the capture sites of *Callinectes sapidus* in the Azov –Black Sea. Black dots indicate past records and black stars indicate present records.

The taxonomic identification of *C. sapidus* was made according to Williams (1974). The specimen was preserved in 4% formalin and photographed and deposited in the Fish Collection of Marine Biology Laboratory, Department of Biology, Faculty of Art and Science, Duzce University (catalogue number: DUFC/2013-001).

*C. sapidus* is reported here for the first time from the Turkish coastal waters of the Black Sea. This occurrence may indicate settlement of blue crab in the Black Sea. Zaitsev and Mamaev (1997) indicated that *C. sapidus* is under process of settlement in the Black Sea. This settlement process is probably accelerated or facilitated by global climate change and/or ship traffic between seas since *C. sapidus* was transferred from the Atlantic coasts of America to the European shores and Mediterranean Sea by ballast waters of ships (Nehring 2011).

Occurrence of *C. sapidus* in the Black Sea may also be an important indicator of the process of the Mediterraneanization of the Black Sea (Turan *et al.* 2009).



**Figure 2.** *Callinectes sapidus* captured from Duzce (Akcakoca) and Zonguldak (Eregli) on the Black Sea coast of Turkey.

While two specimens do not necessarily indicate the existence of an established population in the Black Sea, however, the past and present records indicate an eastward migration of *C. sapidus* in the Black-Sea. The lack of records of juvenile specimens of *C. sapidus* may imply that it is not spawning in the Black Sea, and this species only migrate from the Marmara Sea via the Istanbul Strait (Bosphorus). The abundance and expansion of *C. sapidus* should be monitored to be able to follow its impacts on native fauna in the Black Sea.

## **Türkiye'nin Karadeniz kıyılarında mavi yengeç *Callinectes sapidus* (Rathbun 1896) (Crustacea, Brachyura, Portunidae)'un ilk kaydı**

### **Özet**

İki erkek mavi yengeç *Callinectes sapidus* Türkiye'nin Güneybatı Karadeniz sahili olan Düzce ve Zonguldak'tan 25 Eylül ve 2 Kasım 2013 tarihlerinde ticari uzatma ağı ile sırasıyla 14,5 ve 18 m derinliklerde yakalanmıştır. Bu bildirim *C. sapidus*'un Karadeniz'in Türk kıyı sularından ilk kayıdır.

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## References

- Banoub, M.W. (1963) Survey of the blue crab *Callinectes sapidus* (Rath.) in Lake Edku in 1960. *Hydrobiology Department, Alexandria Institute of Hydrobiology, Notes and Memoirs* 69: 1-18.
- Bashtanny, R., Webster, L., Raaymakers, S. (2002) First Black Sea Conference on Ballast Water Control and Management, Odessa, Ukraine, October 10–12, 2001, London: IMO, no. 3, 112 pp.
- Bouvier, E.L. (1901) Sur un *Callinectes sapidus* M. Rathbun trouvé à Rochefort. *Bull. Mus. Hist. Nat. Paris* 7: 16-17.
- Bulgurkov, K.I. (1968) *Callinectes sapidus* Rathbun in the Black Sea. *Izvest. Niors.* 9: 97-99.
- Diripasko, O.A., Izergin, L.V., Koshkalda, A.I. (2009) First finds of the blue crab *Callinectes sapidus* (Portunidae, Decapoda) in the Sea of Azov. *Vestnik Zoologii* 43 (6): 529-532.
- George, C.J., Athanassiou, V. (1965) The occurrence of the American blue crab, *Callinectes sapidus* Rathbun, in the coastal waters of Lebanon. *Doriana* 4(160): 1-3.
- Holthuis, L.B. (1961) Report on a collection of Crustacea Decapoda and Stomatopoda from Turkey and the Balkans. *Zoologische Verhandelingen, Leiden* 47: 1-67.
- Holthuis, L.B., Gottlieb, E. (1955) The occurrence of the american blue crab, *Callinectes sapidus* Rathbun, in Israel waters. *Bull. Res. Council. Israel* 5B: 154-156.
- Khvorov, S.A. (2010) Decapods (Decapoda), in *Vselentsy v bioraznoobrazii i produktivnosti Azovskogo i Chernogo morei (Invaders in Biodiversity and Productivity of the Sea of Azov and Black Sea)*, (eds., G. G. Matishev, A. R. Boltachev) Rostov-na-Donu: publishing. YUNC RAN, 69-76. (in Russian).
- Nehring, S. (2011) Invasion history and success of the American blue crab *Callinectes sapidus* in European and adjacent waters. In: *In the Wrong Place - Alien Marine Crustaceans: Distribution, Biology and Impacts*, (eds., B.S. Galil, P.F. Clark, J.T. Carlton), *Invading Nature, Springer Series in Invasion Ecology* 6, Springer, pp. 607–624.
- Nehring, S. (2012) *Callinectes sapidus*. In: *NOBANIS – Invasive Alien Species Fact Sheet*. Online Database of the European Network on Invasive Alien

- Species, NOBAMIS. <http://www.nobanis.org> (accessed 29 September 2013).
- Pashkov, A.N., Reshetnikov, S.I., Bondarev, K.B. (2012) The capture of the blue crab (*Callinectes sapidus*, decapoda, crustacea) in the Russian sector of the Black Sea. *Russ. J. Biol. Invasions* 3(1): 22-28.
- Shaverdashvili, R.S., Ninua, N.Sh. (1975) New find of crab *Callinectes sapidus* Rathbun, 1896 in the Black Sea. *Nauch. Dokl. Vyssh. Shkol.* 9: 19-20.
- Soika, G.A. (1951) Il *Neptunus pelagicus* (L.) nell' alto Adriatico. *Natura, Milano* 42: 18-20.
- Turan, C., Boero, F., Boltachev, A., Düzgüneş, E., Ilyin, Y.P., Kıdeys, A., Micu, D., Milliman, J.D., Minicheva, G., Moschella, P., Oğuz, T., Öztürk, B., Portner, H.O., Shiganova, T., Shivarov, A., Yakushev, E., Briand, F. (2009) Climate Forcing and its Impacts on the Black Sea Marine Biota. *Executive summary of CIESM Workshop Monograph, Monaco*, pp. 39-152.
- Williams, A.B. (1974) The swimming crabs of the genus *Callinectes* (Decapoda: Portunidae). *Fish B-Noaa*. 72 (3): 685-798.
- Zaitsev, Yu. (1998) *Samoe sinee v mire (Most Blue in the World)*, New York: Izd. OON, 142 pp.
- Zaitsev, Yu., Mamaev, V. (1997) *Marine Biological Diversity in the Black Sea A Study of Change and Decline*. Black Sea Environmental Series, volume 3. United Nations Publications, New York, 208 pp.
- Zaitsev, Yu., Ozturk, B. (2001) *Exotic Species in the Aegean, Marmara, Black, Azov and Caspian Seas*. Turkish Marine Research Foundation, Istanbul, Turkey, 267 pp.

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