



BLACK SEA NON-INDIGENEOUS SPECIES

Black Sea Commission Publication
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FUNGI

№	FUNGI SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STAT E
		BG	GE	RO	RU	TR	UA			
1	<i>Carbosphaerella leptosphaerioides</i> I. Schmidt, 1969						1991. Odessa Bay	Andrienko et Kopytina, 1998	AO, PO	C
2	<i>Cirrenalia basiminuta</i> Kaghū–Kumar et Zainal. 1988						2001. Odessa port area	Aleksandrov et. al., 2007; TDA, 2007	SE, IO	E
3	<i>Corollospora lacera</i> (Linder) Kohlm., 1962; = <i>Peritrichospora lacera</i> Linder						1992. Odessa Bay	Andrienko et Kopytina, 1998	AO, PO	Q
4	<i>Cumulospora varia</i> Chatmata et Somrithipol, 2004 = <i>Moromyces varius</i> (Chatmala et Somrith.) Abdel–Wahab, K.L. Pang, Nagahama, Abdel–Aziz et E.B.G. Jones com., 2010						2001. Odessa Bay, Port of Illyichevsk	Aleksandrov et. al., 2007; TDA, 2007	AO, IO, SE	E
5	<i>Cumulospora varia</i> Chatmata et Somrithipol, 2004						2004. Sukhoy liman	Aleksandrov et. al., 2007; TDA, 2007	IO	Q
6	<i>Gloniella clavatispora</i> T. D. Steinke, K. D. Hyde, 1997						2002. Tiligulsky Liman, Port of Yuzhny	Aleksandrov et. al., 2007; TDA, 2007	IO, Af	C
7	<i>Haligena elaterophora</i> Kohlm., 1961						1991. Odessa Bay, Zmeinyi island area	Andrienko et Kopytina, 1998	AO	C
8	<i>Halosarpheia phragmicola</i> O. K. Poon et K. D. Hyde, 1998						2006. Zmeinyi island area	Kopytina, 2008	IO	C
9	<i>Lulworthia uniseptata</i> Nakagiri, 1984 = <i>Lulwoana uniseptata</i> (Nakagiri) Kohlm., Volkm.–Kohlm., J. Campb., Spatafora et Gräfenhan						2006. Zmeinyi island area, Sukhoy liman	Kopytina, 2008	IO	Q
10	<i>Lulworthia uniseptata</i> Nakagiri, 1984						2001. Sukhoy liman	Aleksandrov et. al., 2007; TDA, 2007	SE	Q

PHYTOPLANKTON

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
1.	<i>Alexandrium minutum</i> Halim	2008. CoShA			2000. Caucasian coast	2002–2003. Samsung area		Robino et al, 2010; Vershinin, 2008; Baytut, 2004	MS	E
2.	<i>Alexandrium monilatum</i> (Howell) (F.J.R. Taylor 1979); <i>Gessnerium mochimaense</i> Halim, 1967	1991. Varna coast					2001. Odessa port area	Moncheva et al., 2001; Zaitsev et Ozturk, 2001; TDA, 2007	AO	E
3.	<i>Alexandrium ostenfeldii</i> (Paulsen) Balech et Tangen				2004. Novorossiyy sky Bay			Vershinin, 2008; Yasakova, 2010	NE	Q
4.	<i>Alexandrium pseudogonyaulax</i> (Biecheler) Horiguchi ex Yuki et Fukuyo, 1992						2002. Odessa port area	Aleksandrov et. al., 2007; TDA, 2007	SE	Q
5.	<i>Alexandrium tamarense</i> (Lebour) Balech, 1995 = <i>Alexandrium excavatum</i> (Braarud) Balech et Tangen, 1985; <i>Gonyaulax exavata</i> (Braarud) Balech, 1971; <i>Protogonyaulax tamarensis</i> (Lebour) Taylor, 1979	2008. CoShA		2004. CoA	2004. Novorossiyy sky Bay	2007–2008. Samsung area	2001. Odessa port area	Robino et al., 2010; L. Boicenco (NIMRD data base); Zh. Selifonova (pers. comm.); Baytut, 2010; Aleksandrov et. al., 2007; TDA, 2007:	Co	E
6.	<i>Apedinella spinifera</i> (Thronsdén) Thronsdén, 1971 = <i>Pseudopedinella spinifera</i> Thronsdén, 1969; <i>Apedinella radians</i> (Lohmann) Campbell 1973	1987. CoA		1991. CoA			1999. Odessa Bay	Moncheva et al., 2001; Aleksandrov et. al., 2007; TDA, 2007	MS, AO, PO	Q

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
7.	<i>Asterionellopsis glacialis</i> (Castracane) Round 1990 = <i>Asterionella japonica</i> Cleve 1878			1968. CoA	1998. Novorossiysky Bay		1967. Sevastopol Bay	Aleksandrov et. al., 2007; TDA, 2007; Yasakova, 2010	AO	E
8.	<i>Attheya decora</i> T. West, 1860						2000. Odessa Bay	Terenko, 2006	NA, NE	E
9.	<i>Azadinium spinosum</i> Elbrächter et Tillmann, 2009	2005. Sozopol Bay						Mavrodieva, 2012	NE	C
10.	<i>Bacteriastrum hyalinum</i> Lauder, 1864	1907. ShA		1907. ShA			1907. NWBS	Aleksandrov et. al., 2007; TDA, 2007	AO	C
11.	<i>Chaetoceros aequatorialis</i> Cleve, 1873	2011. CoShA			2004. Gelenjik area			Mikaelyan et al., 2008 ; Slabakova N. (unpublished)	AO, PO	Q
12.	<i>Chaetoceros diversus</i> var. <i>papilionis</i> Senicheva, 2002 = <i>Chaetoceros diversus</i> Cleve 1873		2000. Batumi coast				1999. Sevastopol Bay	C. Gvarishvili (pers. comm.); Aleksandrov et. al., 2007; TDA, 2007	PO	Q
13.	<i>Chaetoceros tortissimus</i> Gran, 1900				2000. Caucasian coast	1995–1996. Sinop area	2001. Sevastopol Bay	Vershinin, 2008; Turkoglu, 1998; Aleksandrov et. al., 2007; TDA, 2007	NE	E
14.	<i>Chaetoceros trondsenii</i> Marino, Montresor et Zingone				2005. Golubaya Bay			Silkin et al., 2011	AO, PO	C

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
15.	<i>Cochlodinium polykrikoides</i> Margelef, 1961 = <i>Cochlodinium heterolobatum</i> Silva, 1967	2008. CoShA			2000. Caucasian coast		2001. Odessa Bay	Robino et al., 2010; Aleksandrov et. al., 2007; Vershinin, 2008; TDA, 2007	NA,IO	E
16.	<i>Detonula pumila</i> (Castracane) Gran 1900	1999. CoA	2002. CoA					Prodanov et al., 2001; TDA, 2007; Komakhidze , Gvarishvily et al., 2004	Co	Q
17.	<i>Dinophysis islandica</i> Paulsen, 1949						2001. CoA	Terenko, 2011	NE	Q
18.	<i>Dinophysis nasuta</i> (Stein) Parke et Dixon 1968 = <i>Phalacroma nasutum</i> Stein 1883						2008. CoA	Terenko , 2011	NE	Q
19.	<i>Dinophysis odiosa</i> (Pav.)Tai et Scogsberg, 1934 = <i>Phalacroma odiosum</i> Pav., 1930				2008. Novorossiyy sky Bay		2001. Sevastopol Bay	Yasakova, 2010; Senicheva, 2002	MS, AO	Q
20.	<i>Dinophysis recurva</i> Kofoid et Skogsberg, 1928						2001. CoA	Terenko , 2011	NE, Au	Q
21.	<i>Dinophysis schilleri</i> Sournia, 1973						2001. CoA	Nesterova et al., 2006; Terenko , 2011	PO	Q
22.	<i>Diplopsalopsis orbicularis</i> (Paulsen) Meunier, 1910			Danube Delta area	2004. Caucasian coast			Cărăuș I. 2003; Vershinin, 2008	MS	Q
23.	<i>Distephanus speculum</i> f. <i>octonarius</i> (Ehrenberg) S. Locker et E. Martini	1979. ShA	1985. CoA	1979. ShA			1979. NWBS	Senichkina, 1983; Gvarishvili. 1998; TDA, 2007	AO	Q

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE	
		BG	GE	RO	RU	TR	UA				
24.	<i>Gymnodinium aureolum</i> (Hulburt) Hansen, 2000 = <i>Gyrodinium aureolum</i> Hulburt, 1957	2008. CoA		2007. CoA				2001. Odessa Bay	Robino et al., 2010; L. Boicenco (NIMRD data base); Aleksandrov et. al., 2007; TDA, 2007	NA	Q
25.	<i>Gymnodinium fuscum</i> (Ehrenberg) F.Stein 1878	1980s. ShA							Vershinin, 2008	NA, NE, Au	C
26.	<i>Gymnodinium nanum</i> Schiller, 1928	2008. CoA, ShA							Moncheva, 2009.	Au	C
27.	<i>Gymnodinium pulchrum</i> Schiller, 1928	1999. CoA							Moncheva, 1999	Au	C
28.	<i>Gymnodinium radiatum</i> Kofoid et Swezy, 1921		2000. Batumi coast					1998. Odessa Bay	C. Gvarishvili (pers. comm.); Aleksandrov et. al., 2007; TDA, 2007	PO	Q
29.	<i>Gymnodinium stellatum</i> Hulburt, 1957		2008. ShA		2008. Between Kerch and Sochi				Gvarishvili et al., 2010; Yasakova, 2010	NE	Q
30.	<i>Gymnodinium uberrimum</i> (Allmann) Kofoid et Swezy, 1921 = <i>Gymnodinium bogoriense</i> Klebs, 1912; <i>Gymnodinium irregulare</i> Christen, 1959; <i>Gymnodinium limitatum</i> Skuja, 1956; <i>Gymnodinium limneticum</i> Woloszyńska, 1935; <i>Gymnodinium mirabile</i> Penard, 1891; <i>Gymnodinium mirabile</i> var. <i>rufescens</i> Penard, 1891; <i>Gymnodinium obesum</i> Schiller, 1933; <i>Gymnodinium poculiferum</i> Skuja, 1956; <i>Gymnodinium rotundatum</i> Klebs, 1912; <i>Gymnodinium rufescent</i> Lemmermann, 1910	1991. Varna Bay					1998	1999. Odessa Bay	Moncheva et al., 1995; Zaitsev et Ozturk, 2001; Ozturk, 1998; Aleksandrov et. al., 2007; TDA, 2007	EW	E
31.	<i>Gyrodinium cochlea</i> Lebour, 1925	2008. CoShA							Moncheva, 2009.	NE	Q

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
32.	<i>Gyrodinium flagellare</i> Schiller, 1928	2008. CoShA			?			Moncheva, 2009, Yasakova, 2010	NE, AO, PO, Au	Q
33.	<i>Gyrodinium impudicum</i> Fraga et Bravo, 1995 = <i>Gymnodinium catenatum</i> Graham in Carrada et al., 1991; <i>Gyrodinium</i> sp., in Fraga et al. 1995	2008. CoShA					2001. Odessa port area	Robino et al., 2010; Aleksandrov et. al., 2007; TDA, 2007	MS, AO, PO	Q
34.	<i>Gyrodinium instriatum</i> Freudental et Lee, 1963= <i>Gymnodinium instriatum</i> (Freudenthal et Lee) Coats, 2002						2003. Odessa Bay	Aleksandrov et. al., 2007	AO, PO	C
35.	<i>Gyrodinium varians</i> (Wulff, 1916) Schiller, 1933	2008. CoShA						Moncheva, 2009	NE	C
36.	<i>Hillea fusiformis</i> (Schiller) Schiller, 1925 = <i>Chlamydomonas fusiformis</i> Schiller, 1913		2000. CoA	1991. ShA	2001		1948. Sevastopol Bay	Gvarishvili, 1998; Aleksandrov et. al., 2007; Vershinin, 2008; TDA, 2007	MS	E
37.	<i>Lessardia elongata</i> Saldarriaga et F.J.R.Taylor, 2003	2008. CoShA		2004. CoShA				Moncheva et al., 2010; Eker-Develi , Velikova, 2009	AO, NE, PO	Q
38.	<i>Lioloma pacificum</i> (Cupp) Hasle, 1996	2008. CoShA	2007. CoA	2001. ShA	2005. Novorossiysk Bay		1999. Odessa Bay	S. Moncheva in CBD report, 2009; Gvarishvili et al., 2010; Yasakova, 2010; Zaitsev et al., 2004; Aleksandrov et. al., 2007; TDA, 2007	MS, AO	E

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
39.	<i>Octactis octonaria</i> (Ehrenb.) Hovasse, 1946	1948. ShA		1948. ShA			1948. ShA	Aleksandrov et. al., 2007; TDA, 2007	MS	E
40.	<i>Oxyphysis oxytoxoides</i> (Kofoid, 1926)	1987. ShA				2007–2008. Samsung area		Petrova–Karadjova, Moncheva, 1998; Baytut, 2010; TDA, 2007	NA	E
41.	<i>Oxytoxum gladiolus</i> Stein, 1883						1989. CoA	Senichkina et al., 2001	NA	C
42.	<i>Oxytoxum variabile</i> Schill				2008.			Yasakova, 2010	MS, NA, NE	Q
43.	<i>Peridiniopsis polonicum</i> (Woloszynska) Bourrelly, 1968 = <i>Glenodinium gymnodinium</i> Pénard, 1891	2008. CoShA		Danube Delta area				Moncheva, 2009; Cărauş, 2003	NE, SE	C
44.	<i>Peridinium quinquecorne</i> Abé, 1927	2000. CoShA		2008. CoA	2005 Gelendjik coast			Moncheva (SESAME data base); Vershinin et al., 2005; Boicenco (NIMRD data base)	MS, NA, NE	Q

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
45.	<i>Phaeocystis pouchettii</i> (Hariot) (Lagerheim, 1893)	1989–1990. CoA		. CoA	2006. Port Novorosiys k		1990	Petrova– Karadjova, 1990; Moncheva et al., 1995; L. Boicenco (NIMRD data base); Yasakova, 2010; Zaitsev et Ozturk, 2001; TDA, 2007	NA, NE, PO, Antarctic	E
46.	<i>Poropila dubia</i> Schiller, 1925	1948. ShA		1948. ShA			1948. ShA	Senichkina, 1983; Aleksandrov et. al., 2007; TDA, 2007	MS	E
47.	<i>Pronoctiluca pelagica</i> Fabre–Domergue, 1889 = <i>Pelagorhynchus marina</i> Pavillard, 1917; <i>Protodinifera marinum</i> Kofoid et Swezy, 1921;						1983. Sevastopol Bay	Aleksandrov et. al., 2007; TDA, 2007	MS, AO	Q
48.	<i>Prorocentrum dentatum</i> Stein, 1883		2001. CoA				1998. Odessa Bay	Krakhmalniy , 2005; Gvarishvili et al., 2010; Ozturk., 1998	MS, AO, NA, PO, IO	Q
49.	<i>Prorocentrum minimum</i> (Pavillard) Schiller, 1933 = <i>P. cordatum</i> (Ostf.) Dodge, 1975; <i>Exuviaella cordata</i> Ostenfeld, 1901	1948. ShA	1999	1948. ShA	1948. Caucasian coast		1948. NWBS	Morozova– Vodianitska ya, 1948; Aleksandrov et. al., 2007; TDA, 2007	Co	E

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
50.	<i>Protoperidinium minutum</i> (Kofoid) Loeblich III, 1970		1999. CoA		2001. Caucasian coast			C. Gvarishvili (pers. comm.); Vershinin, 2008	MS	Q
51.	<i>Protoperidinium parthenopes</i> Zingone et Montresor, 1988				2001. Caucasian coast			Vershinin, 2008	MS	Q
52.	<i>Pseudo-nitzschia calliantha</i> Lundholm, Moestrup et Hasle, 2003					2007–2008. Samsun area	2006. Sevastopol Bay	Bargu et al., 2002; Baytut, 2010; Ryabushko et al., 2008	Co	Q
53.	<i>Pseudonitzschia inflatula</i> (Hasle) Hastle, 1993 = <i>Nitzschia inflatula</i> Hasle, 1974						1990s. Sevastopol Bay	Senicheva, 2002	MS, AO	C
54.	<i>Pseudonitzschia pungens</i> Hasle, 1993				2000. Caucasian coast			Vershinin, 2008	MS	E
55.	<i>Pseudosolenia calcar-avis</i> (Schultze) Sundström, 1986	1926. ShA	1993. Batumi coast	1926. ShA	1926. ShA	1996. Southern Black Sea	1926. ShA	C. Gvarishvili (pers. comm.); Zaitsev et Ozturk, 2001; Eker- Develi et Kideys, 2003; Aleksandrov et. al., 2007; TDA, 2007	AO, PO, IO	E
56.	<i>Pterosperma cristatum</i> Schiller, 1925			1970. ShA			1948. Sevastopol Bay	Aleksandrov et. al., 2007; TDA, 2007	MS, PO	E

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		BG	GE	RO	RU	TR	UA			
57.	<i>Pterosperma joergenseni</i> Schiller, 1925	1948. ShA		1948. ShA			1948. ShA	Morozova– Vodianitska ya, 1948; Aleksandrov et. al., 2007; TDA, 2007	MS	E
58.	<i>Pyramimonas longicauda</i> Van Meel 1984 = <i>P. ostendensis</i> Van Meel, 1969						2001. Odessa port area	Aleksandrov et. al., 2007; TDA, 2007	PO	Q
59.	<i>Rhizosolenia setigera</i> Brightwell, 1858	1987. CoA	1989. Batumi coast	1987. ShA				C. Gvarishvili (pers. comm.); Velikova et al., 1999; TDA, 2007	MS	Q
60.	<i>Scrippsiella operosa</i> (Deflandre) Montresor, 2003	2008. CoShA						Robino et al., 2010	NE	Q
61.	<i>Scrippsiella trochoidea</i> (Stein) Balech ex Loeblich III, 1965; <i>Glenodinium acuminatum</i> Jorgensen, 1899; <i>Peridinium faeroense</i> Paulsen, 1905; <i>Scrippsiella faeroense</i> Dickensheets et Cox, 1971	1989. CoA	1985. CoA	1982. ShA	2001. Caucasian coast	1990s. ShA	1960s. NWBS	Cinar et al., 2005; Gvarishvili et al., 1998; Eker et al., 1999; Vershinin et Velikova, 2008; TDA, 2007; Ivanov, 1964	AO	Q
62.	<i>Syracolithus dalmaticus</i> (Kamptner, 1927) Loeblich et Tappan, 1963						1990s. Sevastopol Bay	Bryantseva, 2000 ; Polikarpov et al., 2003	MS, NA, IO, PO	Q

№	PHYTOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
63.	<i>Thalassiosira nordenskioldii</i> Cleve, 1873	1986. ShA		1986 ShA			1986. Crimean CoA	Zaitsev et Ozturk, 2001; Aleksandrov et. al., 2007; TDA, 2007	NE	Q
64.	<i>Warnowia schuettii</i> (Kofoid et Swezy, 1921) Schiller, 1933				(?). Gelendjik		2001. Odessa Bay	Terenko., 2005; Vershinin et al., 2005	NE	Q

MACROPHYTES

№	MACROPHYTES SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
1.	<i>Achnanthes pseudogroenlandica</i> Hendey, 1964	1984. ShA		1984			1984. ShA	Guslyakov, Nevrova, 1987; Aleksandrov et. al., 2007	AO, NE	E
2.	<i>Fogedia finmarchica</i> (Cleve et Grunow) Witkowski, Metzeltin et Lange–Bertalot ex Witkowski et al. 1997	1970. ShA		1970			1996. ShA	Bodeanu, 1987–1988; Nevrova, Revkov, 2003; Aleksandrov et. al., 2007; TDA, 2007	NE, PO	Q
3.	<i>Nitzschia sigmaidea</i> (Nitzsch) W. Smith, 1853						1986 Karadag area	Roschin et al., 1992; Aleksandrov et. al., 2007; TDA, 2007	NE, EW	C

№	MACROPHYTES SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
4.	<i>Toxonidea insignis</i> Donkin, 1858						1902. Sevastopol Bay	Mereschkow sky, 1902; Nevrova, Petrov, 2007; Aleksandrov et. al., 2007; TDA, 2007	NE	C
5.	<i>Undatella quadrata</i> (Brebisson) Paddock et Sims, 1980						1985. Karadag area	Roschin et al., 1992; Aleksandrov et. al., 2007; TDA, 2007	NE	Q

VASCULAR PLANTS

№	VASCULAR PLANTS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
1.	<i>Acrochaetium crassipes</i> (Børgesen) Børgesen, 1915					2000s. CoA		Milchakova et al., 2006	MS, AO, IO, PO	Q
2.	<i>Acrochaetium kylinii</i> G. Hamel, 1927 = <i>Rhodochorton endophyticum</i> Kylin					2000s. CoA		Milchakova et al., 2006	NE	Q
3.	<i>Acrochaetium leptonema</i> (Rosenvinge) Børgesen, 1915	2000s. CoA				2000s. CoA		Black Sea, 1998; Milchakova et al., 2006	AO	E
4.	<i>Acrochaetium mahumetanum</i> G. Hamel, 1927			1938. CoA		2000s. CoA		Celan, 1989; Milchakova et al., 2006	MS	Q
5.	<i>Acrochaetium mediterraneum</i> (Levring) Boudouresque, 1970					2000s. CoA		Milchakova et al., 2006 ; Aysel et al., 2008	MS	Q
6.	<i>Acrochaetium moniliforme</i> (Rosenvinge) Børgesen, 1915					2000s. CoA		Milchakova et al., 2006	MS	Q

№	VASCULAR PLANTS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
7.	<i>Acrochaetium rosulatum</i> (Rosenvinge) Papenfuss, 1945	1990s. CoA				2000s. CoA		Black Sea..., 1998; Milchakova et al., 2006	NA, NE	E
8.	<i>Acrochaetium subpinnatum</i> Bornet ex G.Hamel, 1927					2000s. CoA		Milchakova et al., 2006	MS	Q
9.	<i>Ahnfeltiopsis furcellata</i> (C. Agardh) P.C. Silva et DeCew, 1992					1990s. CoA		Milchakova, 2007	AO, IO	Q
10.	<i>Amphiroa rigida</i> J.V. Lamouroux, 1816					1990s. CoA		Milchakova, 2007	AO	Q
11.	<i>Asparagopsis armata</i> Harvey, 1855					1973. CoA		Çinar , 2005; TDA, 2007	AO	E
12.	<i>Bonnemaisonia asparagoides</i> (Woodward) C. Agardth, 1822					1990s. CoA		Milchakova, 2007	AO	Q
13.	<i>Chondrophyucus papillosus</i> (C. Agardh) Garbary et Harper, 1998 = <i>Palisada perforata</i> (Bory de Saint-Vincent) K.W. Nam, 2007					1973. CoA		Çinar et al., 2005; TDA, 2007	RS	E
14.	<i>Chrysomenia ventricosa</i> (J.V. Lamouroux) J. Agardh, 1842					1990s. Sinop area		Aysel et al., 2004	AO	Q
15.	<i>Cladophora flexuosa</i> (O.F. Muller) Kutzing, 1843					1990s. CoA		Milchakova, 2002	IO, AO	Q
16.	<i>Cladophora hutchinsiae</i> (Dillwyn) Kutzing, 1845	1938. Balchik coast				CoA	?	Celan, 1938; Bavaru et al., 1991	MS, NA, NE	E
17.	<i>Codium fragile fragile</i> (Suringar) Hariot, 1889					1998. Giresun coast		Aysel et al., 2005	AO, PO	Q
18.	<i>Colaconema codicola</i> (Borgesen) H. Stegenga, J.J. Bolton et R.J. Anderson, 1997					1994. CoA		Milchakova, 2007; Çinar , 2005; TDA, 2007	AO	Q
19.	<i>Cymodocea nodosa</i> (Ucria) Ascherson, 1870					2000s. CoA		Milchakova, 2007	IO, PO	Q
20.	<i>Cystoseira corniculata</i> (Turner) Zanardini, 1841					Samsun coast		Aysel, Erdugan, 1995; Aysel et al., 2008	IO, PO	Q

№	VASCULAR PLANTS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE	
		BG	GE	RO	RU	TR	UA				
21.	<i>Desmarestia viridis</i> (Müll). (Lamouroux, 1813)	CoA		2004. Vama Veche				1992. Odessa Bay	Marine O. (pers. communicati on); Aleksandrov et. al., 2007; TDA, 2007; Milchakova, 2007	AO, NA	E
22.	<i>Enteromorpha kylinii</i> Bliding = <i>E. lingulata</i>					CoA		?	Bavaru et al., 1991	IO, AO	Q
23.	<i>Erythrocladia irregularis</i> Rosenvinge, 1909	1990s. CoA							Black Sea..., 1998	AO, IO, PO, NE	C
24.	<i>Gelidiella nigrescens</i> (J. Feldmann) J. Feldmann et G. Hamel, 1934					2000s. CoA			Milchakova et al., 2006	MS	Q
25.	<i>Gelidiella pannosa</i> (J. Feldmann) J. Feldmann et G. Hamel, 1934					2000s. CoA			Milchakova et al., 2006	MS, AO, IO, PO	Q
26.	<i>Gelidiella ramellosa</i> (Kützing) J. Feldmann et G. Hamel, 1934					2000s. CoA			Milchakova et al., 2006	MS, AO, IO, PO, Au	Q
27.	<i>Gelidiocolax christiana</i> e J. Feldman et G. Feldman					2000s. CoA			Milchakova et al., 2006	MS, NE	Q
28.	<i>Gelidium corneum</i> (Hudson) J.V. Lamouroux, 1813					2000s. CoA			Milchakova et al., 2006	MS, AO, IO, PO	Q
29.	<i>Gelidium pulchellum</i> (Turner) Kützing, 1868					2000s. CoA			Milchakova et al., 2006	MS, AO, PO	Q
30.	<i>Gelidium pusillum</i> (Stackhouse) Le Jolis, 1863					1990s. CoA			Black Sea..., 1997; Aysel et al., 2008	AO	E
31.	<i>Gelidium spathulatum</i> (Kützing) Bornet, 1892					2000s. CoA			Milchakova et al., 2006	MS, NE	Q
32.	<i>Gracilaria armata</i> (C. Agardh) Greville, 1830					2000s. CoA			Milchakova et al., 2006	MS	Q
33.	<i>Halothrix lumbricalis</i> (Kützing) (Reinke, 1888)					1998. CoA			Çinar , 2005; TDA, 2007	AO	Q
34.	<i>Hildenbrandia canariensis</i> Børgese	2000s. CoA							Black Sea..., 1998	?	Q

№	VASCULAR PLANTS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
35.	<i>Jania longifurca</i> Zanardini, 1841					2000s. CoA		Milchakova et al., 2006	MS, AO, NE, IO	Q
36.	<i>Laurencia intermedia</i> (Yamada, 1931)					1986. CoA		Çinar , 2005; TDA, 2007	IO	E
37.	<i>Liagora viscida</i> (Forsskål) C. Agardh, 1822					2000s. CoA		Milchakova et al., 2006	MS, AO, NE, IO	Q
38.	<i>Lithophyllum orbiculatum</i> (Foslie) Foslie, 1900 = <i>Pseudolithothamnion orbiculatum</i> (Foslie) Lemoine					2000s. CoA		Milchakova et al., 2006	MS, NA, NE	Q
39.	<i>Peyssonnelia rosa-marina</i> Boudouresque et Denizot (1973)					2000s. CoA		Milchakova et al., 2006	MS, NE	Q
40.	<i>Pilayella littoralis</i> (Linnaeus), (Kjellman, 1872)					1998. CoA		Çinar , 2005; TDA, 2007	AO	Q
41.	<i>Polysiphonia fucoides</i> (Hudson) Greville, 1824 (syn. <i>Polysiphonia violacea</i> (Roth) Sprengel, 1827)	1936. Balchik coast				1973. CoA		Celan, 1936; Çinar , 2005; TDA, 2007	AO	E
42.	<i>Polysiphonia paniculata</i> (Montagne, 1842)					1972. CoA		Çinar , 2005; TDA, 2007	AO	E
43.	<i>Porphyra minor</i> Zanardini, 1847					2000s. CoA		Milchakova et al., 2006	MS, NA, NE	Q
44.	<i>Porphyra umbilicalis</i> Kützing, 1843					2000s. CoA		Milchakova et al., 2006	MS, NA, NE	Q
45.	<i>Pterocladia melanoidea</i> (Schousboe ex Bornet) Santelices et Hommersand, 1997 – var. <i>melanoidea</i> = <i>Gelidium melanoideum</i> Schousboe ex Bornet var. <i>melanoideum</i>					1990s. CoA		Milchakova, 2007	AO	Q
46.	<i>Punctaria tenuissima</i> (C.Agardh) Greville, 1830					1993. CoA		Aysel et al., 1996	AO	Q
47.	<i>Sargassum hornschurchii</i> C.Agardh, 1820					1990s. CoA		Milchakova, 2002	MS	Q
48.	<i>Stylonema cornu-cervi</i> (Reinsch) Hauck, 1875 = <i>Goniotrichum cornu-cervi</i> (Reinsch) Hauck					2000s. CoA		Milchakova et al., 2006	MS, AO, NE	Q

№	VASCULAR PLANTS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
49.	<i>Ulva lactuca</i> Linnaeus, 1753 = <i>Ulva fasciata</i> (Delile, 1813)			1948. CoA		1988. CoA		Celan, 1989; Çinar , 2005; TDA, 2007; Apaydin et al., 2010	MS, AO, IO, PO	E
50.	<i>Vaucheria dichotoma f. marina</i> Hauck, 1884	2012. CoA, Rezovo, Paraskeva Bay		1957. CoA				Dencheva (unpublished data); Celan, 1962.	Co	C

ZOOPLANKTON

№	ZOOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
1.	<i>Acartia tonsa</i> (Dana, 1849)	2000. Varna Bay	2002. Batumi coast	?	?	1996. Sinop area, Bosphorus	1976. Karadag, Sevastopol Bay	Kamburska, 2004; M. Khalvasi (pers. comm.); Aleksandrov et. al., 2007; TDA, 2007; Besiktepe et al., 1997	AO, PO, IO	E
2.	<i>Amphorellopsis acuta</i> (Schmidt, 1901)				2010		2011. Sevastopol Bay	Selifonova, 2011; Gavrilova, 2005	MS, AO, NA, IO, SE	C

№	ZOOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
3.	<i>Beroe ovata</i> Bruguère, 1789 = <i>Beroe punctata</i> McCady, 1859; <i>B. clarkii</i> Mayer, 1900; <i>B. shakespearei</i> Behnam, 1907 (misidentified as as <i>Beroe cucumis</i>)	1997. Cape Kaliakra	1996. Batumi Coast	1996. CoA	1997. Northeaster n CoA, Blue Bay	1996. CoA	1997. Odessa Bay	Konsulov, Kamburska, 1998; Gomoiu, Skolka, 1998; Seravin et al., 2002; Zaitsev et Ozturk, 2001; M. Khalvashi (pers. comm.); Kıdeys et Romanova, 2001; Aleksandrov et. al., 2007; TDA, 2007	MS, AO	E
4.	<i>Bolinopsis vitrea</i> (L. Agassiz, 1860)	2010. Cape Kaliakra				2007. Bosporus area		Ozturk et al., 2011	MS, AO	Q
5.	<i>Chrysaora hysoscella</i> (Linnaeus, 1766)					2009. Bosporus area		Öztürk et Topaloğlu, 2009	MS, AO, NE	C
6.	<i>Clausocalanus arcuicornis</i> (Dana, 1849)			1978. CoA			2001. Sevastopol Bay	Porumb, 1980; Aleksandrov et. al., 2007	AO, PO, IO (equatorial)	C
7.	<i>Euryte longicauda</i> Philippi, 1843	2000. Cape Kaliakra						Kamburska, 2004	MS	C
8.	<i>Eutintinnus apertus</i> Kofoid et Campbell, 1929						2002. Sevastopol Bay	Aleksandrov et. al., 2007	PO	E

№	ZOOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
9.	<i>Eutintinnus lusus-undae</i> Entz, 1885	2001. CoA		2001. CoA	2001. Novorossi y Bay	2001. CoA	2001. Sevastopol Bay. Odessa Bay	Gavrilova, 2005, 2010; Aleksandrov et. al., 2007; TDA, 2007	MS, AO, PO, IO	E
10.	<i>Eutintinnus tubulosus</i> Kofoid et Campbell, 1939				2001. Novorossi y Bay		2004. Sevastopol Bay	Gavrilova, 2005	AO, SE, PO (equatorial)	E
11.	<i>Mnemiopsis leidyi</i> (Agassiz, 1865) (misidentified: <i>Leucothea multicornis</i> , <i>Mnemiopsis mccradyi</i>)	1986. 20 miles east from Cape Emine	1997. Batumi Coast	1987. ShA	1982. Gelendzhik CoA	1991	1986. Sudak Bay	Konsulov, 1989; Gomoiu, Skolka, 1996; Pereladov, 1988; Zaitsev et al., 1988; Aleksandrov et. al., 2007; TDA, 2007	AO, NA	E
12.	<i>Oithona davisae</i> (Ferrari et Orsi, 1984) (misidentified as <i>Oithona brevicornis</i> Giesbrecht, 1891, <i>Oithona plumifera</i> Baird, 1843, <i>Oithona setigera</i> Dana, 1852	2009. Varna Bay	2007. Batumi Coast	2010. CoA	2003. Novorossi y Bay		2001. Sevastopol Bay	Temnykh et Nishida, 2012; Mihneva, Stefanova, 2011; Timofte, Tabarcea, 2012; M. Khalvasi (pers. comm.); Selifonova, 2009; Aleksandrov et. al., 2007; TDA, 2007	AO, PO, IO	E

№	ZOOPLANKTON SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
13.	<i>Oncaea minuta</i> Giesbrecht, 1892	2000. Varna Bay					1997. Zmeinyi island area	Kamburska 2004; Aleksandrov et. al., 2007; TDA, 2007;	PO, IO	Q
14.	<i>Paraphyllina ransoni</i> Russell, 1956					2011. Bosporus area		Ozturk, Michneva, Shiganova, 2011; Shiganova et al.,2011		Q
15.	<i>Protocystis swerei</i> O. Murray						1950s. NWBS	Pusanow, 1967	AO	C
16.	<i>Salpingella decurlata</i> Jörgensen, 1924			2012. CoA –northen part			2002. Open area near Sevastopol	Tabarcea – unpublish data; Gavrilova, 2010; TDA, 2007	PO	Q
17.	<i>Solmundella bitentaculata</i> (Quoy et Gaimard, 1833)					2010. Bosporus area		Isinbillir et al., 2010	NA, AO, NE	C
18.	<i>Tintinnopsis directa</i> Hada, 1934				2001. Novorossi sky Bay		2001. Sevastopol Bay	Gavrilova, 2005, 2010	MS	E
19.	<i>Tintinnopsis nudicauda</i> Paulmer, 1995						2000s. Sevastopol Bay	Gavrilova, 2010	MS	E
20.	<i>Tintinnopsis tocaninensis</i> Kofoid et Campbell, 1929				2010. Novorossi sky Bay			Selifonova, 2011	MS, AO, NA, PO	C

ZOOBENTHOS

№	ZOOBENTHOS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
1.	<i>Amphibalanus amphitrite</i> Darwin, 1854 = <i>Balanus amphitrite</i> (Darwin, 1854)			1844. ShA			1905. Odessa port area	Aleksandrov et. al., 2007; TDA, 2007	MS, AO	Q
2.	<i>Amphibalanus eburneus</i> (Gould, 1841) = <i>Balanus eburneus</i> Gould, 1841					1968	1892. Sevastopol Bay	Pinar, 1974; Aleksandrov et. al., 2007; TDA, 2007	AO, NA	E
3.	<i>Amphibalanus improvisus</i> (Darwin, 1854) = <i>Balanus improvisus</i> (Darwin, 1854)	1844. ShA	1978–1982. Chorokhi–Gudauta area	1844. ShA	?	2005. Bosphorus area	1844. ShA	Mikashavidze et al., 1998; Gomoiu et Skolka, 1996; M. Sezgin (pers. comm.); Aleksandrov et. al., 2007; TDA, 2007	MS, AO, NA	E
4.	<i>Anadara kagoshimensis</i> (Tokunaga, 1906)(misidentified as <i>Anadara inaequalvis</i> (Bruguière, 1789); <i>Cunearca cornea</i> (Reeve, 1844))	1982. Varna Bay, Bourgaz Bay	1978. CoA	1984. North Mamaia	1980s. Kerch Strait area	1980s. Bosphorus area	1987; 1989. Kerch Strait area	Gogmachadze et Mikashavidze, 2005; Gomoiu, Skolka, 1996; M. Sezgin (pers. comm.); Aleksandrov et. al., 2007; TDA, 2007	PO, SE, IO	E
5.	<i>Ancistrosyllis tentaculata</i> Treadwell, 1941 = <i>Sigambra tentaculata</i> (Treadwell, 1941)		1978. CoA				1964. Crimean CoA	Mikashavidze, 1981; Kiseleva, 2004	AO	Q
6.	<i>Asterias rubens</i> Linnaeus, 1758					2003. Bosphorus area		Karhan et al., 2007	AO	E

№	ZOOBENTHOS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
7.	<i>Callinectes sapidus</i> (Rathbun, 1896)	1967. ShA	1975	1998.South ern Littoral	1970s. Kerch Strait area		1970s. Kerch Strait area	Makarov, 2004; TDA, 2007	NA	E
8.	<i>Corambe obscura</i> (Verrill, 1870) = <i>Doridella obscura</i> (Verrill, 1870)	1986. Varna Bay		1990			1989. Laspi Gulf	Gomoiu et Skolka, 1997; Zaitsev et Ozturk, 2001; TDA, 2007	NA	E
9.	<i>Crassostrea gigas</i> (Thunberg, 1793)			2003 Southern Littoral			1900s. Sevastopol Bay	Aleksandrov et. al., 2007; TDA, 2007	SE	E
10.	<i>Crassostrea virginica</i> (Gmelin 1791)			1973 Southern Littoral				Csernok E. NIMRD internal reports; TDA, 2007	NA, NE	Q
11.	<i>Diadumene lineata</i> Verrill, 1871 = <i>Haliplanella luciae</i> (Verrill, 1898)	1960s. CoA		1960s. CoA			1960s. CoA	Bacescu et al., 1971; Kovtun et al., 2012; TDA, 2007	PO	E
12.	<i>Dipolydora quadrilobata</i> Jacobi, 1883	1990s. ShA		2000s. In front of Danube Delta				Todorova et Panayotova, 2006; Begun et al., 2010; TDA, 2007	MS, AO, PO	Q
13.	<i>Ercolania viridis</i> (A. Costa, 1866) = <i>E. funerea</i> (A. Costa, 1867)						2001. Odessa port area	Aleksandrov et. al., 2007; TDA, 2007	NA,AO	Q
14.	<i>Eriocheir sinensis</i> (Milne-Edwards, 1853)			1934. Musura Bay			1998. Port Yuzhny area	Zaitsev et Ozturk, 2001; TDA, 2007	SE	E

№	ZOOBENTHOS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
15.	<i>Ficopomatus enigmaticus</i> (Fauvel, 1923) = <i>Mercierella enigmatica</i> Fauvel, 1923	1935. Mandrensk o Lake, Ropotamo river mouth	1929. Paleostomi Lake	1954. CoA	1961. Kerch Strait area	2004. Sinop area	1961. Kerch Strait area	Annenkova, 1929; Dumitrescu, 1962; Pitis et Lacatusu, 1971; Micu et Micu, 2004; Yardim et al., 2008; Aleksandrov et. al., 2007; TDA, 2007	SE	E
16.	<i>Garveia franciscana</i> Torrey, 1902 = <i>Bougainvillia megas</i> Kinne, 1956	1933. Varna Bay			1950s. Kerch Strait area		1950s. Kerch Strait area	Simkina, 1963; Zaitsev et Ozturk, 2001; Aleksandrov et al., 2007	AO	E
17.	<i>Hemigrapsus sanguineus</i> (de Haan, 1835)			2008. Constanta cost				Micu, Niță et Todorova, 2010	PO, SE	E
18.	<i>Hydroides dianthus</i> (Verill, 1873)						2009. Sevastopol Bay	Boltacheva et al. 2011	AO	Q
19.	<i>Marsupenaeus japonicus</i> (Spence Bate 1888)						1960–1970s	Zaitsev et Öztürk (2001)	SE	C
20.	<i>Molgula manhattensis</i> (De Kay 1843)			1971. Raselm Lagoon				Bacescu et al., 1971; TDA, 2007	NA, NE	Q
21.	<i>Musculista senhousia</i> (Benson in Cantor, 1842)			2002. Raselm Lagoon				Micu, 2004 a,b; TDA, 2007	PO	Q

№	ZOOBENTHOS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
22.	<i>Mya arenaria</i> (Linné, 1758)	1973. Burgas Bay, Marinka river inflow		1968. Raselm Lagoon		2005. Bosporus area	1966. Odessa Bay	Gomoiu et Porumb, 1969; M. Sezgin (pers. comm.); Aleksandrov et. al., 2007; TDA, 2007	NA	E
23.	<i>Mytilus edulis</i> Linnaeus, 1758					1990	2001. Odessa port area	Aleksandrov et. al., 2007; TDA, 2007	AO	Q
24.	<i>Mytilus trossulus</i> Gould, 1850						2001. Odessa port area	Aleksandrov et. al., 2007; TDA, 2007	PO	E
25.	<i>Neptunea arthritica</i> (Bernardi, 1857) (misidentified: <i>Purpura pacifica</i>)	2000. ShA					2000. Kamyshova ya Bay	Aleksandrov et. al., 2007; TDA, 2007	PO, IO	Q
26.	<i>Palaemon macrodactylus</i> Rathbun, 1902	2009. Varna Lake		2008. CoA				Raykov, Lepage, Pérez– Domínguez, 2010; Micu et Nita, 2009	PO, SE	E
27.	<i>Pandalus kessleri</i> Czerniavsky, 1878 = <i>P. latirostris</i>					1959. Kyzyltash limans	1959. Khadzhibey sky liman	Zaitsev et Öztürk, 2001; TDA, 2007	SE	C
28.	<i>Penaeus semisulcatus</i> De Haan, 1844				2005. Sochi area			Chvorov et al., 2006	PO, IO	Q
29.	<i>Polydora cornuta</i> Bosc, 1802. (misidentified: <i>Polydora limicola</i>)	1962. ShA		2005. NWBS	2009. Tuapse area		1962. Sukhoy liman	Surugiu 2005; Aleksandrov et. al., 2007; TDA, 2007; Selifonova, 2011	Co	E
30.	<i>Polydora websteri</i> Hartman in Loosanoff et Engle, 1943			1990s. CoA				TDA, 2007	PO	Q

№	ZOOBENTHOS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
31.	<i>Prionospio pulchra</i> Imajima, 1990					2000		Dagli et Çinar, 2011	PO	E
32.	<i>Pteria hirundo</i> (Linne, 1758)			2002. CoA				TDA, 2007	MS	Q
33.	<i>Rapana venosa</i> (Valenciennes, 1846) = <i>Rapana thomasi</i> Crosse, 1861	1956. Varna Bay	1947. Gudauta Coast	1963. CoA	1946. Novorossiysky Bay	1960	1954. Yalta, Sevastopol	Gomoiu, Skolka, 1996; Aleksandrov et. al., 2007; TDA, 2007	SE	E
34.	<i>Rhitropanopeus harrisi ridentate</i> (Maitland, 1874)	1934		1950. Razelm–Sinoe lagoon			1937. Dnieper–Bug liman	Gomoiu, Skolka, 1996; Aleksandrov et. al., 2007; TDA, 2007	NA, NE	E
35.	<i>Ruditapes philippinarium</i> (Adams et Reev, 1850)			1985. CoA	1985. Caucasian coast			TDA, 2007	IO, PO, SE	C
36.	<i>Saduria entomon</i> (Linnaeus, 1758)						2009. NWBS	Kvach, 2009	NE	Q
37.	<i>Sirpus zariqieyi</i> Gordon, 1953					1982. Rize coast		Zaitsev et Öztürk, 2001	AO	Q
38.	<i>Sorites orbiculus</i> Ehrenberg, 1839					2010		Meriç et al., 2010	AO, IO, PO	Q
39.	<i>Sphaeroma walkeri</i> Stebbing, 1905			2004. CoA				Skolka et Gomoiu, 2004	PO, IO	Q
40.	<i>Streblospio gynobranchiata</i> Rice et Levin, 1998			Mangalia CoA	2001. Novorossiysky Bay			Teaca et Begun, 2013; Murina et. al., 2008; Radashevsky, Selifonova, 2012	NA	Q
41.	<i>Styela clava</i> (Herdmann, 1881)			2004. Port of Constanca				Micu et Micu, 2004	NA	Q

№	ZOOBENTHOS SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE	
		BG	GE	RO	RU	TR	UA				
42.	<i>Teredo navalis</i> (Linne, 1758)	750–500 B.C. ShA		750–500 B.C. ShA			2007	750–500 B.C. . NWBS	Zaitsev et Öztürk, 2001; Aleksandrov et. al., 2007; TDA, 2007	NA, NE	E
43.	<i>Trinchesia perca</i> (Er. Marcus, 1958)							2007. Chernaya River Estuary	Martynov et al. 2007	NA	Q
44.	<i>Tiaropsis multicirrata</i> (M.Sars, 1835)							1990–s. Sevastopol Bay	Aleksandrov et. al., 2007; TDA, 2007	NA, NE	Q
45.	<i>Tubificoides benedii</i> (Udekem, 1855)							1916. Odessa Bay	Shurova, 2006	NA	E
46.	<i>Uratella gracilis</i> Leidy, 1851; = <i>U. dniestriensis</i> Zambriborsch, 1958			1950. Danube Delta				1950. Dniester and Dnieper– Bug liman	Gomoiu, Skolka, 1996; Aleksandrov et. al., 2007; TDA, 2007	NA	E

PARASITES

№	PARASITES SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE	
		BG	GE	RO	RU	TR	UA				
1.	<i>Gyrodactylus mugili</i> (Zhukov, 1970)							1995	Aleksandrov et. al., 2007	SE	E
2.	<i>Gyrodactylus zhukovi</i> Ling, 1962							1995	Aleksandrov et. al., 2007	SE	E
3.	<i>Ligophorus kaohsianghsieni</i> (Gussev, 1962)	?	?	?	?	?		1994	Aleksandrov et. al., 2007	SE	E
4.	<i>L. llewellyni</i> Dmitrieva et al., 2007							2007	Dmitrieva et al., 2007	SE	E
5.	<i>L. pilengas</i> Sarabeev et Balbuena, 2007							1996	Sarabeev et Balbuena, 2007	SE	E
6.	<i>Pseudobacciger harengulae</i> (Yamaguti, 1938)							?	Gaevskaya, 2003	?	C

FISHES

№	FISHES SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
1.	<i>Chelon labrosus</i> (Risso, 1810)						1977. Crimea CoA	Salekhova et al., 1987; Boltachev et Yurakhno, 2002; Aleksandrov et. al., 2007; TDA, 2007	AO, NE	Q
2.	<i>Epinephelus caninus</i> (Valenciennes, 1834)						2013. Cape Ayya	Boltachev et Karpova, 2013	MS, AO	C
3.	<i>Gammogobius steinitzi</i> Bath, 1971						2012. Tarchankut cape	Kovtun, 2012	?	C
4.	<i>Gobius cruentatus</i> Gmelin, 1789					2006. CoA	2002. SW Crimea coast	Engin et al., 2007; Boltachev et al., 2009; Boltachev et al., 2010	MS, AO, NE	E
5.	<i>Gobius xanthocephalus</i> Heymer et Zander, 1992 (misidentified: <i>Cabotia schmidtii</i> de Buen, 1930, <i>Gobius auratus</i> Kolombatovic, 1891)		2000s. Coast of Abkhazia				1967. Crimea CoA	Boltachev et al., 2009; Boltachev et Karpova, 2012	MS, AO, NE	E
6.	<i>Heniochus acuminatus</i> (Linnaeus, 1758)						2003. Balaklava Bay	Boltachev et Astachov, 2004; TDA, 2007	IO, PO	C
7.	<i>Lateolabrax japonicus</i> Cuvier, 1828, 1828						1960–1970s. NWBS	Aleksandrov et. al., 2007; TDA, 2007	PO, SE	C

№	FISHES SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE	
		BG	GE	RO	RU	TR	UA				
8.	<i>Lithognatus mormyrus</i> (Linne, 1758)	Varna Bay		1980. ShA				2013. Cape Ayya	Vasil'eva, 2007; Stanciu et Ilie, 1980; TDA, 2007; Boltachev et Karpova, 2013	MS, AO, NE, IO	C
9.	<i>Liza haematocheila</i> Temmnick et Schlegel, 1845 = <i>Mugil so-iuy</i> (Basilewski, 1855)	1970s. ShA	1975. ShA	1975. ShA	1970s. ShA	1992. ShA		1968, NWBS limans	Aleksandrov et al., 2007; TDA, 2007	SE	E
10.	<i>Micromesistius poutassou</i> (Risso, 1827)							1999. Cape Ayya	Boltachev et al., 1999	MS, AO	C
11.	<i>Millerigobius macrocephalus</i> (Kolombatovic, 1891)							2009. Sevastopol Bay	Boltachev, Karpova, Machkevsky, 2010; Boltachev et al., 2010	MS	E
12.	<i>Molva</i> sp.,							2006. Feodosia Galf	Boltachev et al., 2010	AO, MS	C
13.	<i>Parablennius incognitus</i> (Bath, 1968)		2001. Coast of Abkhazia				2000s. Sinop area	2002. Kazach'ya Bay	Boltachev et al., 2009; Boltachev et Karpova, 2012	MS, AO, NE	E
14.	<i>Pomatoschistus bathi</i> Miller, 1982		2000s. Coast of Abkhazia					2000s. Kazach'ya Bay	Boltachev et Karpova, 2010; Boltachev et al., 2010	MS	E
15.	<i>Prionace glauca</i> (Linnaeus, 1758)			1940s. Danube delta area					Cărăușu, 1952	AO, IO, PO	C

№	FISHES SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
16.	<i>Sardinella aurita</i> (Valenciennes, 1847)	1980s. Burgas coast	1937. Batumi coast	1980s. Constanta area	1980s. Gelendzhik area	1997. CoA	1981. Karadag	Maiorova, 1951; Salekhova et al., 1987; Svetovidov, 1964; Boltachev et al., 2000; Boltachev et Karpova, 2012	AO, PO	Q
17.	<i>Sarpa salpa</i> (Linnaeus, 1758)	1949. ShA	1938. Batumi Bay	1949. CoA		1998. Bosporus area	1999. Balaklava Bay	Maiorova, Marti, 1938; Svetovidov, 1964; Bat et al., 2005; Boltachev et Yurakhno, 2002	MS, AO, NE	E
18.	<i>Serranus hepatus</i> (Linnaeus, 1758)					2012. Bosporus area		Dalgıç et al. 2013	MS, AO	C
19.	<i>Sparus aurata</i> (Linnaeus, 1758)	1940s. ShA	1937. Sukhumi Bay	1940s. CoA		1942. Bosporus area	1987. SW Crimean coastal water	Marti, 1938; Svetovidov, 1964; Boltachev et Yurakhno, 2002; Boltachev et Karpova, 2012	MS, AO, NE	E
20.	<i>Sphyraena pinguis</i> Gunther, 1874 (misidentified: <i>Sphyraena obtusata</i> Cuvier, 1829)						1999. Balaklava Bay	Boltachev et Yurakhno, 2002; Boltachev, 2009	IO, PO, MS (lessepsian migrants)	C

№	FISHES SPECIES	FIRST RECORDS (Year. Place)						REFEREN CES	NATIVE RANGE	STA TE
		BG	GE	RO	RU	TR	UA			
21.	<i>Sphyrna zygaena</i> Linnaeus 1758			1950s. Danube Delta area				Zaitsev, 2011	AO, IO, PO	C
22.	<i>Syngnathus acus</i> Linnaeus, 1758					2000s. CoA	2006. Sevastopol Bay	Boltachev et al., 2009, Boltachev et al., 2010; Vasil'eva, 2007	MS, AO, NE	Q
23.	<i>Tridentiger trigonocephalus</i> Gill, 1859						2006. Sevastopol Bay	Boltachev et al., 2007, Boltachev et Karpova, 2012	PO	E

Note

ShA – shelf area, CoA – coastal area

C – casual, E – established, Q – questionable

NA - North America, NE - North Europe, AO - Atlantic Ocean, MS - Mediterranean Sea, PO - Pacific Ocean, IO - Indian Ocean, EW - European water bodies, Co – Cosmopolitan, SE - South-Eastern Asia, Au – Australia, Af - African water bodies, CS - Caspian Sea, BS - Black Sea, MS - Mediterranean Sea

NWBS – North-western Black Sea, CoA – coastal area of a national sector, ShA – shelf area of a national sector, CoShA – coastal and shelf area of a national sector

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