Biodiversity of the Georgian Black Sea costal zone

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The Black Sea borders Georgia from the East, and 315 km of the coastal line on Georgia's territory. Georgia's territorial waters comprise 6,785 km^2

The results of biomonitoring shows a positive trends taking place within the Black Sea ecosystem.

In 2006-2009 the phytoplankton of Georgia coastal waters is much more diverse compared to 1980s.

Six main groups of plants are presented:

- Diatoms (Bacillariophyta)
- Dino-flagellatts (Dinophyta)
- Green (Chlorophyta)
- Blue-green (Cyanophyta)
- Yellow-green algae (Xantophyta) and
- Cromista (Chromophyta).

It should be noted though that in some areas (rivers Tchorokhi, Batumi, Supsa) that local eutrophication is observed during the warm months of the year especially the aquatorial waters of the river Supsa where quite high numbers of Blue-green and yellow-green algae has been observed. An additional indicator of the local eutrophication is the dominance of the fagothrophic species of dinoflagelattes, Noctilucas cientillans (so called “Sea Sparkle”) in the estuaries of the rivers Tchorokhi and Supsa.

- The total amount of phytoplankton in the Georgian coastal waters Suffers from seasonal variations and on spring and summer the average amount is 1400 -2300 mln cell/m^3

  and in autumn and winter it variants from 1000to 2000 mln cell/m^3

NUMBER OF SPECIES OF PHYTOPLANKTON IN GEORGIAN COASTAL WATERS (2006-2009)(T.Gvarishvili)

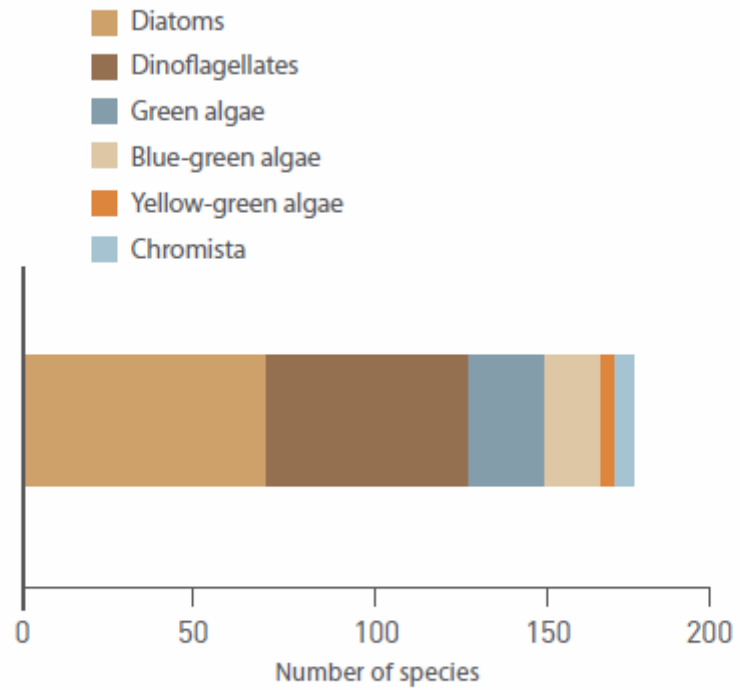


Figure . Number of species of phyto-plankton in Georgian coastal waters (2006-2009)

The Zooplankton composition also showed improvements in Georgian coastal waters during 2006 to 2009. Forty zooplankton species form eight taxonomic groups have observed. The biomass of Zooplankton is mostly made up of larvae of polychaetas, nematodes, mollusca, fish and other species. The predominant species are crustaceans and rotifers

NUMBER OF SPECIES OF ZOOPLANKTON IN GEORGIAN COASTAL WATERS (2006-2009)(M.Khalvashi)

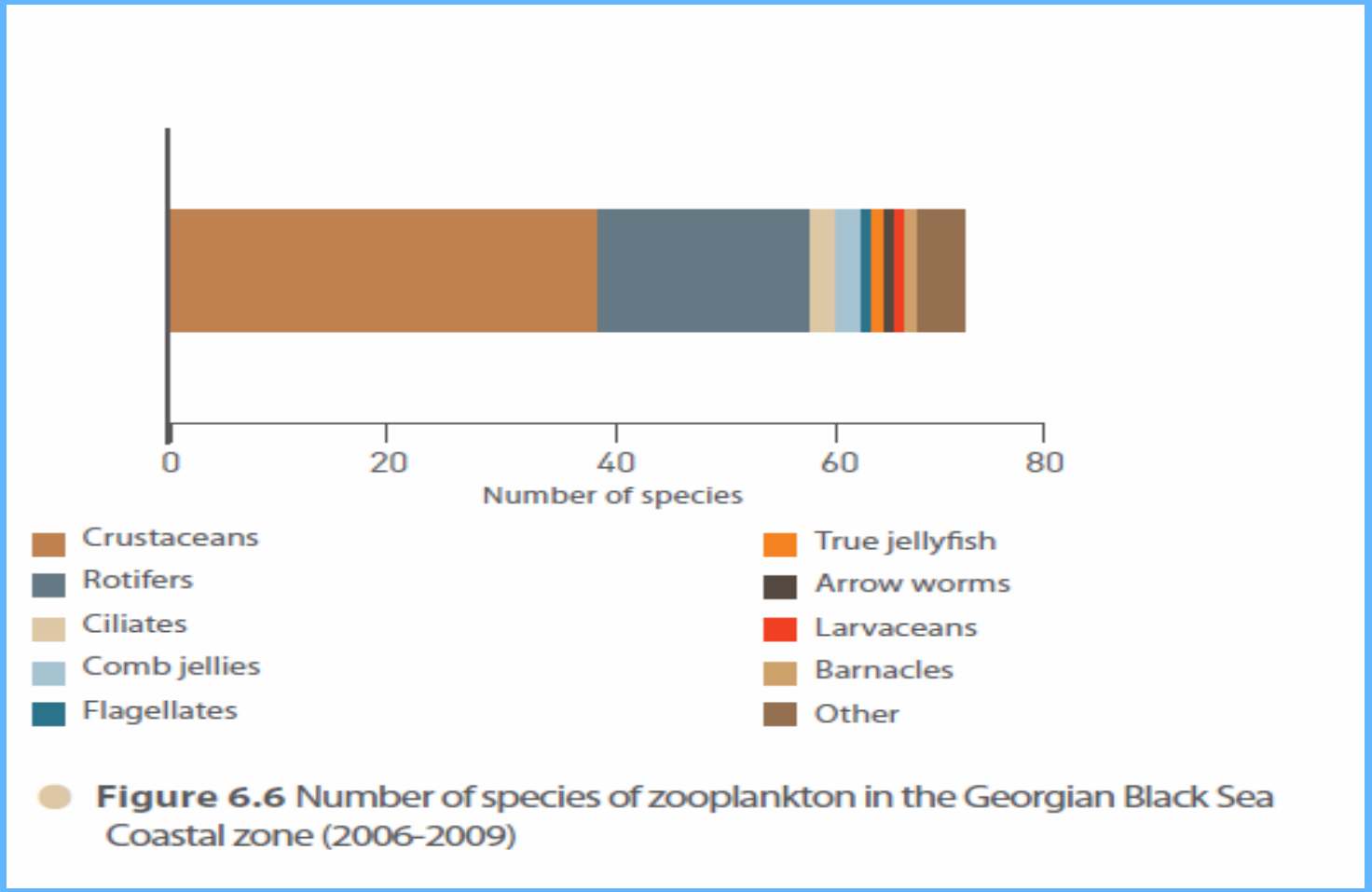


Figure 6.6 Number of species of zooplankton in the Georgian Black Sea Coastal zone (2006-2009)

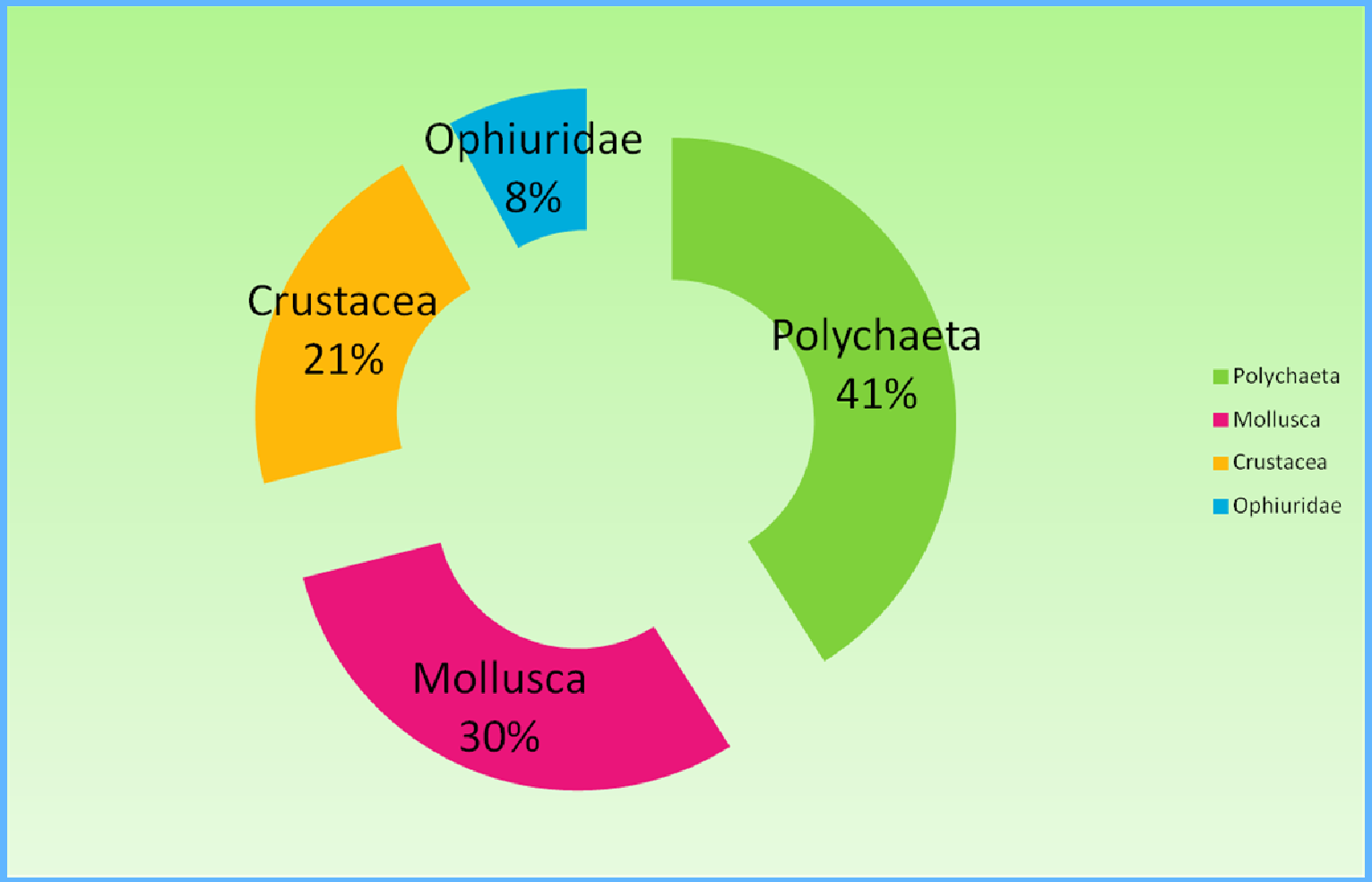
The systematic structure of the macro-zoo-benthos species composition of this section in 2010 was mainly represented by royal multi-cell 6 types (***Coelenterata, Polychaeta, Mollusca, Crustacea, Bryozoa, Ophiuroidea***) and 73 species.

According to the species number dominant is the ***Polychaeta*** class – 30 species which constitutes 41% of the whole number of zoo-benthos.

The second place according to the species diversity take ***Mollusca*** with 22 species (30%), out of them 14% fall on ***Gastropoda*** and 16% on ***Bivalvia***. ***Artropoda*** type of ***Crustacea*** with 15 species constitutes 21% of the fauna.

Dominant is Decapoda in total constituting 10%, and the rest 11% is distributed between ***Amphipoda, Cumacea, Anispoda, Isopoda and Cirripedia***. 6 species of zoo-benthos united in ***Coelenterata, Bryozoa and Ophiurodea*** constitutes 8% of the whole bottom fauna.

Numbers of species macro-zoo-benthos in Georgia coastal waters (2006-2009)(E.Mikashavidze)



During the last decades the fauna of Georgian coastal waters was significantly affected by introduction of alien species into the natural ecosystem. For the period of 1980s the Black Sea was strong influenced by presence of comb jellyfish Mnemiopsis leidyi, introduced from the Atlantic Ocean within ships ballast waters.

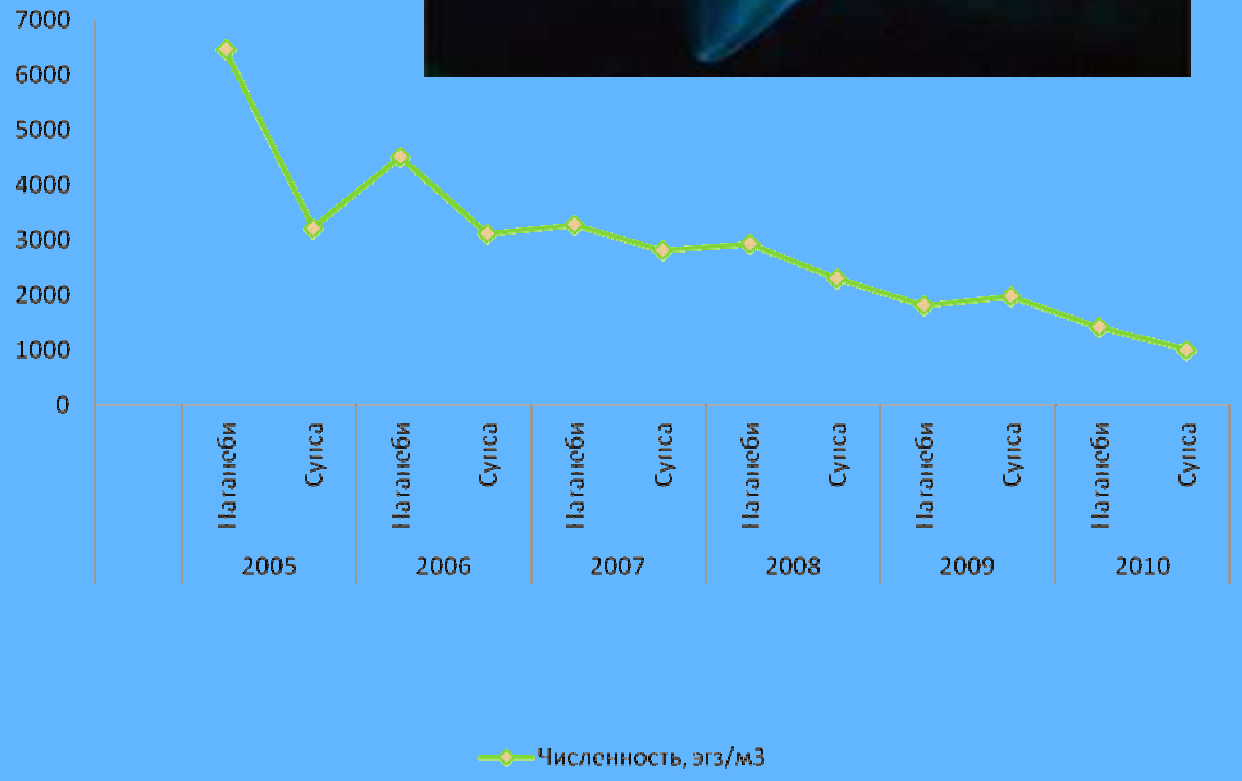
Mnemiopsis leidyi in Georgian water Black sea

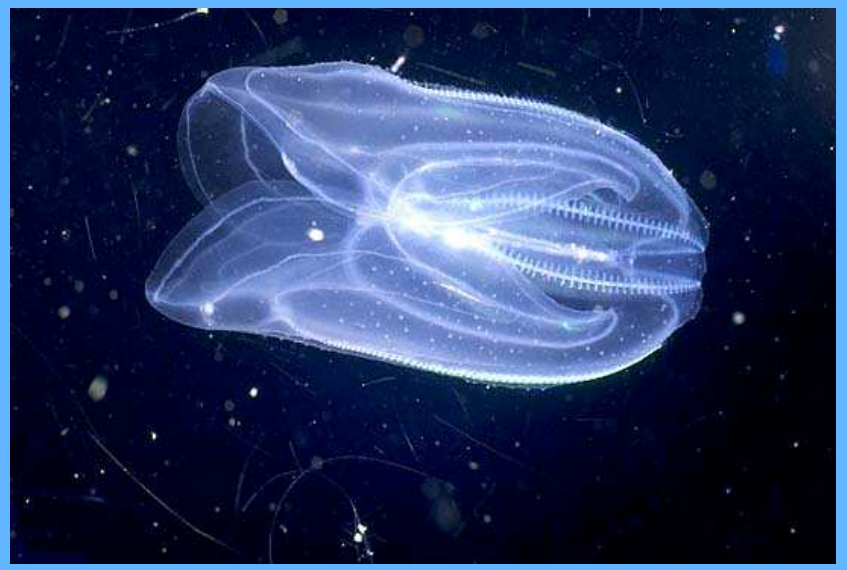
Station

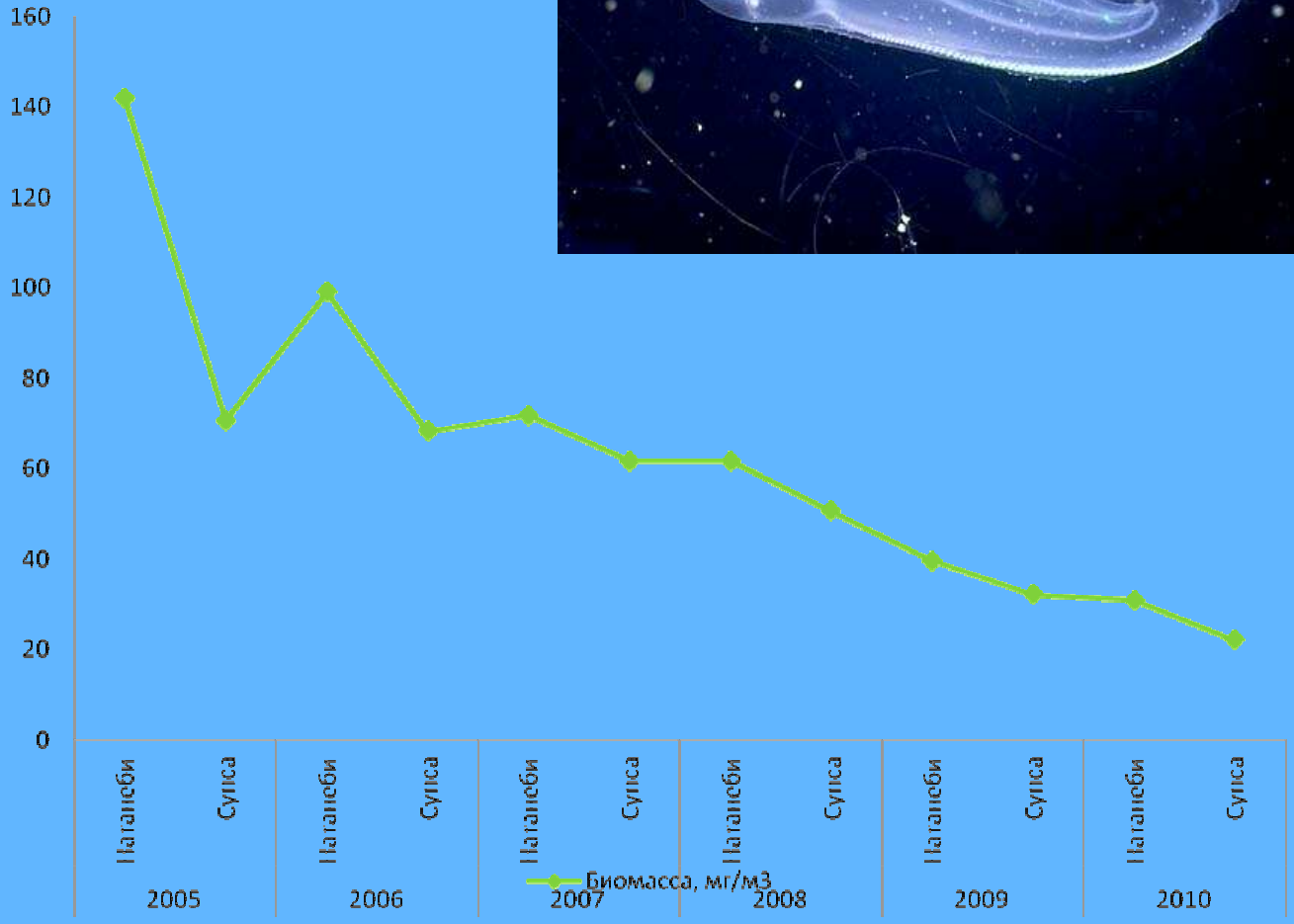
- Natanebi
- Supsa

Abundance and biomass of Mnemiopsis in the Georgian Black Sea coast (2005-2010)(M.Khalvashi)

Years	Station	Abundence egz/m^3	Biomass, Mg/m^3
2005	Natanebi	6450	141,9
	Supsa	3210	70,6
2006	Natanebi	4500	99
	Supsa	3100	68,2
2007	Natanebi	3260	71,7
	Supsa	2800	61,6
2008	Natanebi	2910	61,6
	Supsa	2300	50,6
2009	Natanebi	1800	39,6
	Supsa	1960	32,12
2010	Natanebi	1400	30,8
	Supsa	1000	22


7000
6000
5000
4000
3000
2000
1000
0
Нагиеби
Супса
2005
2006
2007
2008
2009
2010
Численность, экз/м3




160
140
120
100
80
60
40
20
0
Пачаеби
Супса
2005
2006
2007
2008
2009
2010
Биомасса, мг/м3

- Another species the Beroa ovata was introduces around the end of the 20 th century, again from the ballast waters. The presence of the Beroa ovata which itself eats comb jellies has reduced their numbers, which in turn has led to the growth of plankton biomass.

In 2010 in the coastal zone of Georgian Black Sea there were identified 64 species of fish. According to the ecological groups 11 are pelagic, 28 are bottom and 25 are bottom-pelagic. According to the species and numeric abundance is particularly distinguished Poti-Anaklia area in those sections where the shelf is wide and the food base is rich. The mentioned area represents the main fattening place for the Black Sea ichthyofauna biodiversity as well as commercial (anchovy, shad, whiting, sprat, gobies, and red mullet) and valuable fish (salmon, sturgeons, mullets, sole (flounder, flatfish), and mudminnow) species. (R.Diasamidze)

As a result of ichthyofauna monitoring the ecological state of the fish spread in Georgian coastal zone was assessed, the species composition, their taxonomic identification and conservation status was specified.

15 species (sturgeon, Black Sea salmon, European conger, ***Pomatoschistus caucasius***, Tub gurnard and others) are endangered and are included in the Red List of Georgia (2008) while the state of sturgeon which is a matter of concern is represented not only in the Red List of Georgia (2006) but also in the Red Lists and Red Books of all Black Sea countries; this requires the significant strengthening of the protection, conservation, rehabilitation and management of this species. For the conservation and maintenance of endangered species, particularly with regard to Atlantic sturgeon and Black Sea salmon it is necessary that the Black Sea, European and Atlantic Ocean countries unite their efforts.

Besides licensed fisheries there is noticed the poaching. Unluckily the poaching takes a serious place in fisheries which is mostly directed to the catching of valuable fish. Mammals are frequently found in gears.It' s obviously that over catching strongly impacts on ecosystem provoking its disorganization, the habitat's degradation, the dissemination of beasts consumed invertebrates and the explosion of separate trophic chain.

The Black Sea is an international water body surrounded by six countries. Protection of the marine environment and maintaining the ecological balance can be reached only by joint efforts of all these six countries.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