PROPOSAL FOR THE INCLUSION OF SPECIES ON THE APPENDICES OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS

A. PROPOSAL: Inclusion of *Tursiops truncatus ponticus*, population of the Black Sea, on Appendix I

B. PROPONENT: Government of Monaco

C. SUPPORTING STATEMENT

1. Taxon

1.1	**Classis**	Mammalia
1.2	**Ordo**	Cetacea
1.3	**Familia**	Delphinidae
1.4	**Species**	*Tursiops truncatus ponticus,* Barabasch, 1940
1.5	**Common name(s)**	English: Bottlenose dolphin, common bottlenose dolphin Spanish: Delfín mular French: Grand dauphin

2. Biological data

Two main researchers described Black Sea cetacean morphology (body and skull size) and compared their results with published data from other oceans (Barabash-Nikiforov 1940 and 1960, Kleinenberg 1956). Although those studies used a large number of specimens, they led to opposite conclusions concerning the morphological uniqueness of Black Sea bottlenose dolphins. Barabash-Nikiforov (1940) went so far as to suggest that the Black Sea bottlenose dolphins constitute a separate subspecies: *Tursiops truncatus ponticus*. More recently, a worldwide study on bottlenose dolphin genetic patterns, which included some Black Sea samples, suggested the isolation of the Black Sea population from Mediterranean populations (Natoli *et al.* 2003). For CITES (2000, 2002) due to the low sample size from the Black Sea, the study could not conclude that Black Sea bottlenose dolphins are genetically unique. However, in 2003, the IWC Scientific Committee's Sub-Committee on Small Cetaceans reviewed the status of Black Sea bottlenose dolphins and concluded on the base of new genetic data that this population should be managed for conservation as a distinct entity (IWC 2004). Later on, it was shown that the Black Sea population is distinctly differentiated genetically from other bottlenose dolphin populations in the eastern and western Mediterranean and the northeastern Atlantic (Natoli *et al*. 2005; Viaud-Martinez *et al*., 2008), and this evidence supports recognition of a valid subspecies, *Tursiops truncatus ponticus* Barabasch, 1940 (Reeves and Notarbartolo di Sciara 2006).

The subspecies *Tursiops truncatus ponticus* is endemic to the Black Sea and isolated from other populations of bottlenose dolphins in the Mediterranean and other waters (*e.g.,* Tomilin, 1957; Rice, 1998; Natoli *et al*. 2005; Viaud-Martinez *et al*., 2008).

2.1 Distribution

The bottlenose dolphin (*Tursiops truncatus*) is distributed worldwide in temperate and tropical waters (Wells and Scott, 1999).

The range of Black Sea bottlenose dolphins includes the Black Sea proper; Kerch Strait along with the adjoining part of the Azov Sea; and, obviously, the Turkish Straits System including the Bosphorus and Dardanelles Straits, and the Sea of Marmara. The genetic data suggest that the TSS constitutes an ecological barrier between the Black Sea dolphins and those in the Mediterranean, although limited gene flow between the two seas is probable (Natoli *et al*. 2005; Viaud-Martinez *et al*., 2008).

2.2 Population

During most of the 20th century, the bottlenose dolphin was considered the least abundant of the three cetacean species in the Black Sea (Kleinenberg 1956; Geptner *et al.* 1976; Yaskin and Yukhov 1997). However, the total population size in the Black Sea remains unknown. Region-wide estimates of absolute abundance, based on strip transect surveys carried out in the USSR (1967-1974) and Turkey (1987), have been discredited by the IWC Scientific Committee due to irremediable methodological and interpretive problems (Smith 1982; Buckland *et al.* 1992). Rough indirect estimates of abundance from more recent (1997-2005) line transect surveys in different but quite small parts of the Black Sea suggest present population size of several 1000s (Reeves and Notarbartolo di Sciara 2006).

It is thought that overall abundance of dolphins in the Black Sea has declined greatly due to severe over-exploitation up into the 1980s by riparian nations. A very large purse-seine fishery conducted by the USSR, Bulgaria and Romania collapsed in the 1960s due to over harvesting, and large takes by rifle continued by Turkey until a ban in 1983 and possibly subsequent years (Zemsky, 1996; Çelikkale et al., 1988; Buckland *et al*., 1992; Yel *et al*., 1996). The proportions of the three endemic small cetaceans (bottlenose dolphin, harbour porpoise (*Phocoena phocoena relicta*) and long-beaked common dolphin (*Delphinus delphis ponticus*) in these catches and their relative degrees of depletion is not known with confidence. Besides, no estimates exist of sustainable levels of take. Thus any take for purposes of exhibit or export are potentially detrimental to the status of the population.

Because no reliable population trend data are available, harvest figures are used as a population trend indicator. Harvest of small cetaceans of three species in the purse-seine fishery were in the tens of thousands annually and exceeded 100.000 in some years, followed by collapse of the fishery in the 1960s (Zemsky, 1996) although catches continued in Turkey (Yel *et al*., 1996). In the 20th century in the former Russian empire and then in the USSR the number of Black Sea cetaceans killed and processed undoubtedly exceeded 1.5 million animals of all three species, while other Black Sea states together probably killed about four or five million (Birkun *et al.,* 1992; Birkun and Krivokhizhin, 1996 and Birkun, 2002a).

It is suspected that during the period following the ban against cetacean fishery in the Black Sea region (1983-2008), the population had a tendency to increase; however, it is also suspected that recovery was compromised by a mortality event in 1990 and is continuing to be compromised by persistent and probably increasing anthropogenic influences (Reeves and Notarbartolo di Sciara 2006; see “Threat data” below).

2.3 Habitat

A coastal habitat seems to be preferred in the Black Sea, with occasional movements into offshore waters (Reyes, 1991; Yaskin and Yukhov 1997). In the northern Black Sea bottlenose dolphins form scattered communities of some tens to approximately 150 animals in different places around Crimea, including the Kerch Strait and coastal waters off the western and southern extremities of the peninsula (Zatevakhin and Bel'kovich 1996; Birkun 2006). Accumulations also are known to form off the Russian Caucasus and close to the Turkish coast. Bottlenose dolphins typically aggregate during cold season (late autumn, winter and spring) in a relatively small area off southern Crimea between Cape Sarych and Cape Khersones (Birkun 2006). There are a few records of bottlenose dolphins entering Black Sea rivers, e.g. the Danube in Romania (Police 1930, *fide* Tomilin 1957) and the Dnieper in Ukraine (Birkun 2006).

Limits to the species' range appear to be temperature related, either directly or indirectly through distribution of prey. Bottlenose dolphins are primarily piscivorous in the Black Sea, taking both benthic and pelagic fishes, large and small. A total of 16 fish species have been reported as prey off the Crimean and Caucasian coasts (Kleinenberg 1956; Tomilin 1957; Krivokhizhin *et al.* 2000) including four species of mullet (*Lisa aurata, L. saliens, Mugil cephalus* and *M. so-iuy*).

2.4 Migrations

Herd migrations (sometimes of several hundred animals) are known along the south coast of the Crimea in autumn (Birkun, 2006), but migratory routes should be studied much more thoroughly, including, in particular, the Turkish straits system - the single path for probable genetic exchange between Black Sea and Mediterranean Sea populations. The Kerch Strait and the Bosphorus, and contiguous waters are the most critical places for cetacean movements and sedentary habitation because of strong local anthropogenic pressure caused by various "beneficial" activities. Studies of human activities within the Turkish straight system suggest that historically low levels of movement between the Black Sea and the Mediterranean Sea may have further decreased in the past 100 years, although we cannot estimate these parameters with data.

Coalescent estimates of migration between the Black Sea and the Mediterranean Sea were between 1 and 10 individuals per generation, representing low movement of individuals between the two seas (Natoli *et al*. 2005; Viaud-Martinez *et al*., 2008). Overall, bottlenose dolphins historically moved little between the Mediterranean Sea and the Black Sea, which has led to genetic differentiation of the Black Sea subspecies.

It has been hypothesized that Black Sea bottlenose dolphins entered the Black Sea during the latest reconnection between the Black Sea and the Mediterranean 7.000-10.000 years ago (Kleinenberg 1956). Migration of bottlenose dolphins between the Mediterranean Sea and the Black Sea might seem to be restricted because of limited individual movement. Because of increasing activities such as boat traffic during the past century within the Turkish straits system (Ozturk and Ozturk 1996, 1997, 2002) it is reasonable to believe that bottlenose dolphin migration between the Black Sea and Mediterranean Sea may have decreased below historical levels.

3. Threat data

Acute conservation problems are known or suspected in the Mediterranean and Black Seas, where past hunting, incidental catches, and environmental degradation have caused population declines (IWC 2004; Reeves and Notarbartolo di Sciara 2006).

In particular the bottlenose dolphin is one of three species of cetaceans living in the Azov-Black Sea basin. Until the 1980's Black Sea cetaceans were mainly threatened by dolphin fisheries. Since then, anthropogenic impacts from pollution, diminishing food resources, live catches, diseases and physical injuries have continued to oppress Black Sea cetaceans (Birkun *et al*. 1992).

3.1 Direct threat

Direct kills: In the past, the Black Sea population was subject to extensive commercial killing. Bottlenose dolphins were taken by all Black Sea countries for manufacturing oils, paint, glue, varnish, foodstuffs, medicine, soap, cosmetics, leather, "fish" meal and bone fertilizer (Kleinenberg 1956; Tomilin 1957; Buckland *et al*. 1992). The total number of animals killed is unknown; however, it is generally acknowledged that all Black Sea cetacean populations, including bottlenose dolphins, were greatly reduced by the dolphin fishery (IWC 1992, 2004). It has been roughly estimated that between the early 1930s and mid 1950s bottlenose dolphins constituted 0.5% of the aggregate numbers of Black Sea cetaceans killed and processed in the USSR (Kleinenberg 1956) including present-day Russia, Ukraine and Georgia. The statistics of the fishery were commonly expressed as total weight or total numbers of animals in the catch without species differentiation. Using the value of 0.5%, Zemsky (1996) estimated that a total of only 4,279 bottlenose dolphins were taken in the USSR (1946-1966) and Bulgaria (1958-1966), with yearly variation from 30 (in 1966) to 656 (in 1959). These figures are very likely underestimated to a great extent for the following reasons: (a) in spring 1946, more than 3,000 bottlenose dolphins were caught during a single day in one location close to the southern Crimea (Kleinenberg 1956); (b) in 1961, the Bulgarian cetacean fishery concentrated almost exclusively on bottlenose dolphins and about 13,000 of them were taken (Nikolov 1963 *fide* Sal'nikov 1967); (c) in April 1966, a single dolphin-processing factory in Novorossiysk, Russia, processed 53 bottlenose dolphins (Danilevsky and Tyutyunnikov 1968).

Thus, taking into consideration the unknown but presumably significant size of the Turkish and Romanian catches, it can be inferred that the number of bottlenose dolphins killed before the mid 1960s was sometimes very high. From 1976 to 1981, bottlenose dolphins were believed to account for 2-3% of the total catch in the Turkish cetacean fishery, which took an estimated 34,000-44,000 small cetacean annually (IWC 1983; Klinowska 1991). This would imply 680-1,320 bottlenose dolphins per year, or 4,080-7,920 for the six years all told. No reliable information is available on illegal commercial killing of Black Sea bottlenose dolphins since the ban on cetacean fisheries in 1983. Isolated cases of deliberate killing and harassment (with pyrotechnic devices and firearms) have been reported in coastal fisheries; for instance at least two bottlenose dolphins were reportedly shot in Balaklava, Ukraine (Reeves and Notarbartolo di Sciara 2006).

Live capture for trade and maintenance in captivity: Since the mid 1960s, many hundreds of Black Sea bottlenose dolphins (more than 1,000 not including those that died during capture operations) have been live-captured in the former USSR, Russia, Ukraine and

Romania for military, commercial and scientific purposes (Entrup and Cartlidge, 1998; Birkun 2002a,b). The capture operations sometimes caused accidental (but usually unreported) deaths. In more recent years (before 2002), 10-20 animals have been taken annually in May–June from a small area in the Kerch Strait, Russia. At present, live capture of bottlenose dolphins is prohibited in all Black Sea countries except for Turkey where permits for the live capture of 30 animals in the Black, Marmara, Aegean and Mediterranean Seas were issued and realized at least in part (23 captures were reported) during 2006 and 2007 (Marine Connection 2007; WDCS 2008; Williamson 2008).

During the 1980s–early 2000s the number of facilities for dolphin shows, "dolphin assisted therapy" and "swim with dolphins" programmes greatly increased in Black Sea countries. The export of bottlenose dolphins from Russia and Ukraine for permanent and seasonal shows also expanded, e.g. to Argentina, Bahrain, Belarus, Chile, Cyprus, Egypt, Hungary, Iran, Israel, Kuwait, Lithuania, Romania, Saudi Arabia, Syria, Turkey, United Arab Emirates, Vietnam, and former Yugoslavia countries. A few captive animals were exported from Georgia to Yugoslavia and then re-exported to Malta where they died within a few years. According to CITES statistics, at least 92 individuals were removed from the Black Sea region during 1990-1999 (Reeves *et al*. 2003) and Russia reportedly has exported at least 66 for travelling shows since 1997 (Fisher and Reeves 2005).

While the purpose of captive breeding has often been used to justify the export of Black Sea bottlenose dolphins for public display, breeding success with the subspecies has been attained in only one oceanarium outside the Black Sea, in Israel (Entrup and Cartlidge, 1998, Birkun, 2002a).

Incidental catch: At present, incidental mortality in fishing gear is probably one of the main threats to *T. t. ponticus*, although these animals have never been the predominant species in national cetacean bycatch statistics. They constituted no more than 3% of the totals in the reports from Black Sea countries during the 1990s (Birkun 2002a,b). At least 200-300 bottlenose dolphins were estimated as being taken incidentally in Turkish fisheries each year (Öztürk 1999). They are known to be susceptible to capture in a variety of fishing nets, including bottom-set gillnets for turbot (*Psetta maeotica*), spiny dogfish (*Squalus acanthias*), sturgeon (*Acipenser* spp.) and sole (*Solea* spp.), purse seines for mullet (*Mugil* spp. and *Lisa* spp.) and anchovy (*Engraulis encrasicolus ponticus*), trammel nets and trap nets. However, only bottom-set gillnets are thought to take significant numbers, especially during the turbot fishing season between April and June every year (BLASDOL, 1999).

3.2 Habitat destruction

The Black Sea is arguably the most degraded sea in the world. The primary conservation problem affecting the surviving *Tursiops truncatus ponticus* is habitat loss and a decline in habitat quality. The ecosystem of the Black Sea is highly changed and disturbed. This is primarily due to extensive pollution, coastal development, disturbance caused by extensive vessel traffic, over-fishing and the impacts of introduced invasive species, including the comb jelly, *Mnemiopsis leidyi* (Zaitsev and Mamaev 1997; Birkun, 2002a,b; Mee *et al*., 2005). The ecosystem is also affected by global change such as climate change and increased UV-radiation.

The Black Sea coastal zone is densely populated, containing a permanent population of approximately 16 million and another 4 million visitors during the summer tourist season

(UNEP, 1999). Almost 1/3 of the land area of continental Europe drains into the Black Sea (BSEP, 1996). The drainage area includes major parts of 17 countries, 13 capital cities and some 160 million people (BSEP, 1996). The second, third and fourth most important European rivers discharge into this sea, but its only connection to the world's oceans is the narrow Turkish straits into the Mediterranean, which are also highly degraded (BSEP, 1996). The enclosed nature of the Black Sea basin, and other aspects of the local geography, means that it is far more heavily influenced by riverside input that most other seas (GESAMP, 1997). It is subject to wide fluctuations in both salinity and temperature. It is also particularly vulnerable to destabilization because the waters are highly stratified, causing the larger part of bottom waters, saturated with H_2S, to be isolated from the ecosystem (GESAMP, 1997). This has limited the diversity of species, including predators.

It has been suggested that the vulnerable nature of the Black Sea and the profound impacts of human actions have caused the sea to undergo an "ecosystem flip" to a new ecological state in which certain marine planktonic predators predominate and fish stocks (including top predators) have become greatly reduced. Reduced stocks have contributed to declines in dolphin populations. Because of its enclosed nature, limited water exchange and slow circulation, the Black Sea is especially vulnerable to pollution. The input of nutrients from agriculture, industry and sewage has caused eutrophication and widespread algal blooms. Sewage pollution also introduces human pathogens, which have been associated with disease in dolphins. Industrial and agricultural chemicals are also present in high concentrations and may be responsible for reported immunosuppression and potentially low reproductive rates in the dolphins.

3.3 Indirect threat

Habitat degradation: In the Black Sea, bottlenose dolphins appear to accumulate higher concentrations of some important synthetic pollutants (DDTs, HCHs and HCB) in their blubber than common dolphins, but lower ones in comparison with harbour porpoises (Birkun *et al*. 1992). Black Sea bottlenose dolphins also accumulate in their tissues (blubber, muscle, liver and kidney were sampled) PCBs, heptachlor, heptachlor epoxide, aldrin, dieldrin, endrin, methoxychlor and mirex (BLASDOL 1999).

The concentrations of total mercury and methylmercury have been determined in tissues of bottlenose dolphins sampled in Crimea (BLASDOL 1999) and along the coast of north Caucasus (Glazov and Zhulidov 2001), while the content of cadmium, chromium, copper, lead, manganese, selenium and zinc was studied in latter individuals only. Mercury levels found in Black Sea bottlenose dolphins were one order of magnitude lower than in their Mediterranean relatives (BLASDOL 1999). It was concluded also that kidney tissue in Caucasian bottlenose dolphins is more contaminated by all mentioned elements in comparison with harbour porpoises from the same area (Glazov and Zhulidov 2001).

Lack of food resources: Coastal fisheries can affect Black Sea bottlenose dolphins indirectly by depleting their prey populations (Reeves and Notarbartolo di Sciara 2006). In particular, declining trends have been observed in the abundance of indigenous mullets (*M. cephalus* and *Lisa* spp.) (Zaitsev and Mamaev 1997). At the same time, the effects of a suspected decrease in cetacean forage resources (Bushuyev 2000) might be offset at least to some extent by the introduced far-east mullet, *M. so-iuy*, which has become abundant in the northern Black Sea since the 1990s (Zaitsev and Mamaev 1997).

Disease: The normal mortality rate is not known for Black Sea bottlenose dolphin populations but some natural pathogens can lead to lethal diseases in these animals (Birkun *et al.* 1992, Birkun, 2002a,b). According to annual compilations of cetacean stranding records in Crimea (Krivokhizhin and Birkun 1999), there was a prominent peak in *T. t. ponticus* strandings in 1990 (20 dead animals, representing 44% of all bottlenose dolphin strandings reported from 1989-1996). The primary cause and magnitude of that spike in bottlenose dolphin mortality remains unclear, although it can be inferred that many more than just 20 animals died. Severe purulent pneumonia was revealed in some cases. The multi-microbial pollution from untreated sewage in coastal waters poses a chronic risk of opportunistic bacterial infections to bottlenose dolphins, and there is evidence that they (as well as other Black Sea cetaceans) are exposed to morbillivirus infection (Birkun 2002a,b). Another ongoing problem (as a potential source of exotic infections and genetic "pollution") is the poorly managed intentional releases and spontaneous escapes of captive bottlenose dolphins and other marine mammals from dolphinaria or oceanaria (e.g. Veit *et al.* 1997; ACCOBAMS 2005).

3.4 Threat connected especially with migrations

There are no known threats different from the ones outlined above.

3.5 National and international utilization

Already covered in section 3.1 above.

4. Protection status and needs

Populations of *Tursiops truncatus* in the North and Baltic Seas, western Mediterranean and Black Sea are currently listed in Appendix II of CMS.

4.1 National protection status

On a national level, Black Sea cetaceans, including bottlenose dolphins, are protected by environmental laws, governmental decrees and national Red Data Books. The bottlenose dolphin is listed in the Red Data Books of Bulgaria, Georgia, Russia and Ukraine (which do not use the IUCN categories and criteria). In Russia and Ukraine, Red Book inscription means that a species should be monitored and managed by appropriate state/national programmes. Such a programme exists in Ukraine since 1999 (the Delfin-programme adopted by the Ministry of Environment). Action Plans for the conservation of Black Sea cetaceans were produced in Ukraine (2001) and Romania (2003) but so far they have no legal effect.

4.2 International protection status

Commercial hunting of Black Sea cetaceans including bottlenose dolphins was banned in 1966 in the former USSR, Bulgaria and Romania; and in 1983 in Turkey. The riparian states assumed international obligations to protect Black Sea cetaceans as contracting parties to the Convention on Biological Diversity (CBD), Convention on the Conservation of Migratory Species of Wild Animals (CMS), Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, Appendix II), and the Agreement on the Conservation of

Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS).

The Bern Convention's Recommendation No.86 (2001) and Resolution 1.12, adopted by the 1st Meeting of the Parties of ACCOBAMS (Monaco, 2002), are intended to strengthen prohibition measures for deliberate catch, keeping and trade of Black Sea bottlenose dolphins.

At the 12th Conference of the Parties to CITES (Santiago, 2002), a quota of zero for mercantile export of live bottlenose dolphins wild-captured in the Black Sea has been secured. This measure prohibits transboundary transport of captive Black Sea bottlenose dolphins for "primarily commercial purposes".

In 2003, the IWC Scientific Committee's Sub-Committee on Small Cetaceans reviewed the status of Black Sea bottlenose dolphins and concluded that this population should be managed for conservation as a distinct entity (IWC 2004).

The bottlenose dolphin is included in Annex II of the EC Directive No.92/43/EEC on the conservation of natural habitats of wild fauna and flora. In 1996 the Ministers of Environment of Black Sea countries adopted cetacean conservation and research measures in the framework of the Strategic Action Plan for the Rehabilitation and Protection of the Black Sea (paragraph 62).

So far, the species *T. truncatus* is listed as Data Deficient (DD) by IUCN, although the Black Sea population is highlighted as a concern in the IUCN 2002-2010 Conservation Action Plan for the World's Cetaceans (Reeves *et al*. 2003). The 3rd Meeting of the ACCOBAMS Scientific Committee (Cairo, 2005) encouraged the initiative proposed by the Cetacean Specialist Group of the IUCN Species Survival Commission (IUCN/SSC/CSG) concerning the development of the IUCN Red List of Mediterranean and Black Sea cetaceans, and the IUCN/ACCOBAMS Workshop on the Red List Assessment of Cetaceans in the ACCOBAMS Area (Monaco, 2006) assessed the conservation status of Black Sea population of the bottlenose dolphin as "Endangered" (EN) and confirmed its belonging to the Black Sea subspecies *T. t. ponticus* Barabasch, 1940 (Reeves and Notarbartolo di Sciara 2006). According to the IUCN Red List procedure, it may be expected that the new IUCN status will be established before the end of 2008. As interim measure, the results of the IUCN/ACCOBAMS Red List assessment were adopted by Resolution 3.19 of the 3rd Meeting of Parties to ACCOBAMS (Dubrovnik, Croatia, 2007).

The bottlenose dolphin is included as Data Deficient (DD) in the regional Black Sea Red Data Book (1999). However, in 2002 it was listed as Endangered (EN) in the Provisional List of Species of Black Sea Importance, an annex to the Black Sea Biodiversity and Landscape Conservation Protocol of the Bucharest Convention.

The ACCOBAMS Implementation Priorities for 2002-2006 (Notarbartolo di Sciara 2002) envisaged the development of a pilot conservation and management project in the area between Cape Sarych and Cape Khersones, southern Crimea (Ukraine), for the purpose to establish there a marine protected area specialized in conservation of bottlenose dolphins and harbour porpoises. The 4th Meeting of the ACCOBAMS Scientific Committee (Monaco, 2006) and the 3rd Meeting of Parties to ACCOBAMS (Dubrovnik, 2007) devoted special consideration to the ACCOBAMS Work Programme on Marine Protected Areas. In particular, it was reminded that the 1st Meeting of the Parties (Monaco, 2002) proposed for

the development a pilot protected area within inshore waters in the southern Crimea. In addition to this area it was recommended that the Parties give priority to assessing the value of creating marine protected areas for the conservation of Black Sea cetaceans in territorial waters of Georgia (from Cape Anaklia to Sarp), Russia and Ukraine (Kerch Strait), and Turkey (Bosphorus, Marmara Sea and Dardanelles).

The development of Black Sea regional activities on cetacean research, monitoring and conservation demands to be well-designed and coordinated. With that end in view, the Conservation Plan for Black Sea Cetaceans (Birkun *et al*. 2006) has been approved by Resolution 3.11 of the 3rd Meeting of Parties to ACCOBAMS (Dubrovnik, 2007). Four Black Sea states (Bulgaria, Georgia, Romania and Ukraine), being the contracting parties to ACCOBAMS, are already on the way to put into practice this Conservation Plan. Two other Black Sea countries (the Russian Federation and Turkey) have the opportunity to join to implementation of the plan in 2008 by force of signing the Strategic Action Programme on the Protection and Rehabilitation of the Black Sea. This new instrument of Black Sea regional importance, drafted by the Black Sea Commission, envisages the *ad hoc* management target on the adoption and implementation of the Conservation Plan for Black Sea Cetaceans by all six Black Sea countries.

4.3 Additional protection needs

It is recommend the inclusion of the subspecies *Tursiops truncatus ponticus*, population of Black Sea, in Appendix I of CMS.

5. Ranges states[1]

Listing of states where the occurrence of Black Sea bottlenose dolphins has been proved: BULGARIA, GEORGIA, ROMANIA, Russian Federation, Turkey and UKRAINE.

6. Comments from Range States

7. Additional remarks

8. References

ACCOBAMS. 2005. *Report of the 3rd Meeting of the Scientific Committee* (Cairo, 15-17 May 2005). ACCOBAMS, 28pp.

Barabash-Nikiforov, I. I. 1940. Cetacean fauna of the Black Sea - Its composition and origin. Voronezh University Publ., Voronezh, 86 p. (in Russian).

Barabash-Nikiforov, I.I. 1960. Dimension and coloration of *Tursiops truncatus* as a criteria of their subspecific differentiation. Nauchnye Doklady Vysshei Shkoly Biologicheskie Nauki.1:35-42 (in Russian).

[1] CMS Parties in capitals.

Birkun, A. A. Jr., S. V. Krivokhizhun, A. B. Shvatsky, N. A. Miloserdova, G. Yu. Radygin, V. V. Pavlov, V. N. Nikitina, Ye. B. Goldin, A. M. Artov, A. Yu. Suremkina, Ye. P. Zhivkova and V. S. Plebansky. 1992. Present status and future of Black Sea dolphins. Proceedings 6th Ann. Conf. European Cetacean Soc., San Remo, Italy, 20-22 Feb, 1992:47-53. E.C.S., Cambridge, U.K.

Birkun, A. Jr. 2002a. The current status of bottlenose dolphins (*Tursiops truncatus*) in the Black Sea. Report for the first meeting of the Parties to ACCOBAMS, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area.

Birkun, A. Jr. 2002b in Notarbartolo di Sciara (Ed.), Cetaceans of the Mediterranean and Black Seas: state of knowledge and conservation strategies. A report to the ACCOBAMS Secretariat, Monaco, February 2002; 219 p., 21 fig.,12 tabl.

Birkun A.A., Jr. 2006. Cetaceans. P.314-332 in: Y.P. Zaitsev *et al*. (Eds.), The North-Western Part of the Black Sea: Biology and Ecology. Naukova Dumka, Kiev, 701pp. (In Russian).

Birkun A., Jr., Cañadas A., Donovan G., Holcer D., Lauriano G., Notarbartolo di Sciara G., Panigada S., Radu G., van Klaveren M.-C. 2006. Conservation Plan for Black Sea Cetaceans. ACCOBAMS, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area. 50 pp.

Birkun, A.A., Jr., Krivokhizhin S.V. 1996. Present state and causes of the Black Sea cetacean populations suppression. Communications 1 and 2. Vestnik Zoologii, N3:36-42 and N4-5:53-59 (in Russian).

Blanco C, Solomon O, Raga JA 2001. Diet of the bottlenose dolphin (*Tursiops truncatus*) in the western Mediterranean Sea. J Mar Biol Ass UK 81: 1053 – 1058.

Blasdol. 1999. Estimation of human impact on small cetaceans of the Black Sea and elaboration of appropriate conservation measures: Final report for EC Inco-Copernicus (contract No. ERBIC15CT960104). C.R. Joiris (Coord.), Free University of Brussels, Belgium; BREMA Laboratory, Ukraine; Justus Liebig University of Giessen, Germany; Institute of Fisheries, Bulgaria; and Institute of Marine Ecology and Fisheries, Georgia. Brussels, 113 p.

Bloch D and Mikkelsen B. 2000. Preliminary estimates on seasonal abundance and food consumption of Marine Mammals in Faroese Waters. NAMMCO WG on Marine Mammal and fisheries interactions. Copenhagen 17-18 February 2000. SC/8/EC/7: 1-16

BSEP - Black Sea Environmental Programme. 1996. The Black Sea. A unique environment: http://www.dominet.com.tr/blacksea/unique.htm.

Buckland, S. T., Smith, T. D., Cattanach, K. L. 1992. Status of small cetacean populations in the Black Sea: Review of current information and suggestions for future research. Rep. Int. Whal. Comm. 42:513-516.

Bushuyev S.G. 2000. Depletion of forage reserve as a factor limiting population size of Black Sea dolphins. Pp. 437-452 *in*: *Ecological Safety of Coastal and Shelf Areas and a Composite Utilization of Shelf Resources*. Proc. Marine Hydrophysical Institute, Sevastopol. (in Russian).

Çelikkale, M. S., S. Ünsal, H.F. Durukanoglu, H. Karaçam and E. Düzgünes. 1988. Karadeniz'de Yasayan Yunus Stoklarinin Belirenmesi ve Biyolojik Özelliklerinin Tesbiti. Trabzon (Turkish, with English summary). 101pp.ECS (European Cetacean Society) 1993. Newsletter no. 18. p.7.

Danilevsky N.N., Tyutyunnikov V.P. 1968. Some data on the current state of dolphins stock in the Black Sea. *Rybnoye Khozyaystvo* N11: 25-27. (in Russian).

Entrup, N. and D. Cartlidge. 1998. The dolphin traders. An investigation into the world-wide trade and export of Black Sea bottlenose dolphins (*Tursiops truncatus*) from the Ukraine and Russia, 1990-1997. A report for the Whale and Dolphin Conservation Society, U.K.

Focardi S, Corsolini S, Aurigi S, Pecetti G, Sanchez Hernandez J C. 2000. Accumulation of butyltin compounds in dolphins stranded along the Mediterranean Coasts. Applied Organometallic Chemistry 14 (1): 48-56.

Frodello J P, Romeo M, Viale D. 2000. Distribution of mercury in the organs and tissues of five toothed-whale species of the Mediterranean. Environmental Pollution 108 (3): 447-452.

Geptner, V.G., Chapsky, K.K., Arsenyev, V.A., Sokolov, V.E., 1976. Mlekopitayushchiye Sovetskogo Soyuza. Tom 2. Chast' 3. Lastonogiye i zubatye kity. (Mammals of the Soviet Union. Vol.2. Part 3. Pinnipeds and Toothed Whales). Moscow: Vysshaya Shkola, 718 pp., (in Russian).

GESAMP- Group of Experts on the Scientific Aspects of Marine Environmental Protection. 1997. Opportunistic Settlers and the Problem of the ctenophore Mnemiopsis leidyi invasion in the Black Sea MO/FAO/UNESCO/WMO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection. GESAMP Reports and Studies No. 58. 84pp.

Glazov, D.M, Zhulidov, A.V. 2001. Heavy metals, methyl-mercury and selenium in organs and tissues of two species of Black Sea dolphins (*Tursiops truncatus*, *Phocoena phocoena*). Pp. 83-84 in: Abstr. 14th Bien. Conf. on Biology of Marine Mammals (Vancouver, Canada, 28 November - 3 December 2001).

IWC. 1983. Report of the Sub-Committee on Small Cetaceans. *Rep. int. Whal. Commn.* 33:152-170.

IWC. 1992. Report of the scientific committee. Report of the International Whaling Commission 42.

IWC. 2004. Annex L. Report of the Sub-committee on Small Cetaceans. *J. Cetacean Res. Manage.* 6(Suppl.):315-334.

Jefferson TA, Leatherwood S, Webber MA 1993. FAO Species identification guide. Marine mammals of the world. UNEP / FAO, Rome, 320 Kleinenberg, S. E. 1956. Mammals of the Black Sea and the Sea of Azov, results of joint biological-commercial dolphin whaling studies. URSS Academy of Science Press, Moscow, p 1-287. (Translated by the translation bureau (JA) Multilingual service division, department of the secretary of state of Canada in 1978 as Fisheries and marine services translation series 4319, 423p.

Klinowska, M., 1991. Dolphins, Porpoises and Whales of the World. The IUCN Red Data Book. Gland and Cambridge: IUCN, viii + 429 pp., (in English).

Krivokhizhin, S.V., Birkun, A.A., Jr. 1999. Strandings of cetaceans along the coasts of Crimean peninsula in 1989-1996. Pp. 59-62 in: P.G.H. Evans and E.C.M. Parsons (Eds.), European research on cetaceans – 12 (Proc. 12th Annual Conf. European Cetacean Society, Monaco, 20-24 Jan 1998). ECS, Valencia, 436 p.

Krivokhizhin S.V., Birkun A.A. Jr., Nessonova J.V. 2000. Prey species of Black Sea cetaceans. P. 229 *in*: P.G.H. Evans, R. Pitt-Aiken and E. Rogan (Eds.), *European research on cetaceans – 14* (Proc. 14th Annual Conf. European Cetacean Society, Cork, Ireland, 2-5 April 2000). ECS, Rome. 400 pp.

Marine Connection. 2007. Wild dolphin captured for dolphin therapy centre in Turkey. http://www.marineconnection.org/archives/captivity_2007.html.

Mee L.D., Friedrich J., Gomoiu M.T. 2005. Black Sea oceanography: Restoring the Black Sea in times of uncertainty. Oceanography, 18(2): 100-111.

Natoli A., Birkun A., Aguilar A., Lopez A., Hoelzel A.R. 2005. Habitat structure and the dispersal of male and female bottlenose dolphins (*Tursiops truncatus*). *Proc. R. Soc. B: Biological Sciences* 272:1217-1226.

Natoli A., Peddemors V., Hoelzel A.R. 2003. Population structure and speciation in the genus *Tursiops* based on microsatellite and mitochondrial DNA analyses. *J. Evol. Biol* 17: 363-375.

Notarbartolo di Sciara, G. 2002. International Implementation Priorities for 2002-2006. Pp. 51-62 in *Proc. 1st Session of the Meeting of the Parties to ACCOBAMS* (Monaco, 28 February – 2 March 2002), ACCOBAMS Permanent Secretariat, Monaco.

Öztürk B. (Comp.) 1999. *Black Sea Biological Diversity: Turkey*. United Nations Publ., New York. 144 pp.

Öztürk, B and A. A. Öztürk. 1996. On the biology of the Turkish straits system. Bulletin de l' Institut Oceanographique, Monaco, n° special 17 (1996). CIESM Science Series n° 2.

Öztürk, B and A. A. Öztürk. 1997. Preliminary study on dolphin occurrence in the Turkish straits system. Pp.79-82 in P.G.H. Evans, E.C.M. Parsons and S.L. Clark (eds.) European research on Cetaceans - 11. Proc. 11th annual conf. of the European Cetacean Society (Stralsund, Germany, 10-12 March 1997). - Kiel: ECS.

Öztürk, B and A. A. Öztürk. 2002. Status of the cetaceans in the Turkish Black Sea and the Turkish strait system (the Isatanbul strait, Marmara Sea and Canakkale strait). Sc/55/SM2, International whaling Commission report.

Reeves R., Notarbartolo di Sciara G. (compilers and editors). 2006. The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain. 137 pp.

Reeves, R.R., Smith, B.D., Crespo, E.A., Notarbartolo di Sciara, G. (compilers) 2003. Dolphins, Whales and Porpoises: 2002-2010 Conservation Action Plan for the World's Cetaceans. IUCN/SSC Cetacean Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK. 139 pp.

Reyes JC. 1991. The conservation of small cetaceans: a review. Report prepared for the Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals. UNEP / CMS Secretariat, Bonn.

Rice DW. 1998. Marine mammals of the world: systematics and distribution. Society for Marine Mammalogy, Special Publication Number 4 (Wartzok D, Ed.), 4, 231 pp. Lawrence, KS. USA.

Sal'nikov N.E. 1967. Cetaceans (Cetacea). Pp. 235-240 *in*: K.A. Vinogradov (Ed.), *Biology of the Northwest Part of the Black Sea*. Naukova Dumka, Kiev. 268 pp. (in Russian).

Smith T.D. 1982. Current understanding of the status of the porpoise populations in the Black Sea. *Mammals in the Seas*, *Vol. 4*, *FAO Fisheries Series* 5(4): 121-130.

Tomilin, A.G. 1957. Mammals of the USSR and adjacent countries. Vol. IV. Cetaceans. USSR Acad. Science. Publ. House, Moscow, 717p. (in Russian).

UNEP. 1999. http//www.grid.unep.ch/bsein/publish/populat.htm.

Veit F., Bojanowski E., Todt D., Zilber R., Supin A.Y., Mukhametov L.M. 1997. Back to the Black: Release of a male bottlenose dolphin into the Black Sea after six years in a semi-free enclosure on the Red Sea. Pp. 72-75 *in*: P.G.H. Evans, E.C.M. Parsons and S.L. Clark (Eds.), *European Research on Cetaceans – 11* (Proc. 11th Annual Conf. European Cetacean Society, Stralsund, Germany, 10-12 Mar 1997). ECS, Kiel. 314 pp.

Viaud-Martinez K.A., Brownell R.L., Jr., Komnenou A., Bohonak A.J. 2008. Genetic isolation and morphological divergence of Black Sea bottlenose dolphins. *Biological Conservation*, No.141:1600-1611.

WDCS. 2008. Aquarium in Turkey buys into dolphin slaughter. http://www.whales.org/news/turkey2-15-08.asp.

Wells RS, Scott MD. 1999. Bottlenose dolphin - *Tursiops truncatus* (Montagu, 1821) In: Handbook of Marine Mammals (Ridgway SH, Harrison SR Eds.) Vol. 6: The second book of dolphins and porpoises. pp. 137 – 182.

Wells RS, Scott MD. 2002. Bottlenose dolphins. In: Encyclopaedia of marine mammals (Perrin WF, Würsig B, Thewissen JGM, eds.) Academic Press, San Diego, 122-127

Wiemann et al. 2003 ? (this source is present in the text).

Williamson C. 2008. Dolphin captures in the Agreement area. FINS, the Newsletter of ACCOBAMS, 4(1):10.

Yaskin, V.A., Yukhov, V.L. 1997. The numbers and distribution of Black Sea bottlenose dolphins. P. 19-26 in: V.E. Sokolov and E.V. Romanenko (Eds.), The Black Sea bottlenose dolphin *Tursiops truncatus* ponticus: Morphology, physiology, acoustics, hydrodynamics. Nauka, Moscow, 672 p. (in Russian).

Yel, M., E. Özdamar, A. Amaha and N. Miyazaki. 1996. Some aspects of dolphin fishery on the Turkish coast of the Black Sea. Pages 31-39 in B. Özturk, ed. Proceedings of the First International Symposium on the Marine Mammals of the Black Sea, 27-30 June 1994, Istanbul, Turkey. UNEP.

Zaitsev Y., Mamaev V. 1997. *Marine Biological Diversity in the Black Sea: A Study of Change and Decline*. United Nations Publ., New York. 208 pp.

Zatevakhin I.I., Bel'kovich V.M. 1996. The structure of the society of bottlenose dolphins of the Tarkhankut peninsula. Pp.72 *in*: B. Öztürk (Ed.), *Proceedings of the First International Symposium on the Marine Mammals of the Black Sea* (Istanbul, Turkey, 27-30 Jun 1994). ACAR Matbaacilik A.Ş., Istanbul. 120 pp.

Zemsky V.A. 1996. History of the Russian fishery of dolphins in the Black Sea. Pp. 46-48 *in*: B. Öztürk (Ed.), *Proceedings of the First International Symposium on the Marine Mammals of the Black Sea* (Istanbul, Turkey, 27-30 Jun 1994). ACAR Matbaacilik A.Ş., Istanbul. 120 pp.