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REPORT ON THE CONSERVATION STATUS OF CETACEANS AND RELEVANT ACTIVITIES IN BLACK SEA

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Presented by Arda Tonay, Regional Representative for Black Sea

Issue: Report on the conservation status of cetaceans and relevant activities in Black Sea

1. Action requested

The Scientific Committee is invited to:

a) **note** the information provided in this Report

2. Background

Pursuant to the Rules of the Scientific Committee, each Regional Representative will be invited to present a report on the conservation status of cetaceans and relevant activities in the region under his/her competence.

Taking into account «Recommendation 12.1- Guidelines for Regional Representatives regarding the preparation of their regional reports» adopted by the 12th Meeting of the ACCOBAMS Scientific Committee, the 2nd Regional report - to be presented at the second Meeting of the Scientific Committee after the MOP - shall constitute an update to the 1st Regional Report, and provide guidance to National Focal Points on their future national reports.

REPORT ON THE CONSERVATION STATUS OF CETACEANS AND RELEVANT ACTIVITIES IN THE BLACK SEA

Date of the last modification of the report *: 7.11.2021
Year of Start *: 2019
Year of End *: 2021

Introduction: *The aim of this report is to give a global vision of what occurred in the Region, regarding cetacean conservation, since the previous report, and what is important to address for the next period/in a near future. So the regional representative will synthetize the main studies (species, topics) led in the region, concerning research, monitoring and conservation, also the main "hot" topics or threats that need to be addressed and what is awaited from the Scientific Committee (and ACCOBAMS) for the next triennium as recommendations.*

Countries of Black Sea region:

Bulgaria
Georgia
Romania
Turkey
Ukraine

Overview of activities in the Region since the previous report:

The information available for the period since the last report for the Black Sea Region, in October 2019. The activities have undertaken for continuous data acquisition in link with comprehensive cetacean population estimate and distribution, habitat use and connectivity, stranding networks and events for the three species inhabiting the Black Sea (*Delphinus delphis* ssp*. ponticus, Tursiops truncatus* ssp. *ponticus* and *Phocoena phocoena* ssp. *relicta*).

Cetacean abundance and distribution

CeNoBS "Support MSFD implementation in the Black Sea through establishing a regional monitoring system of cetaceans (D1) and noise monitoring (D11) for achieving GES" project, the most comprehensive study was the first basin-wide aerial survey for cetacean distribution / abundance finished and the report has been published with the Russian block in ASI/CeNoBS Report. Please see ACCOBAMS-SC14/2021/Inf05.

Anemone "Assessing the vulnerability of the Black Sea marine ecosystem to human pressures" project finished in 2020. During the project, a joint scientific vessel survey was conduct in the territorial water and EEZ of Romania, Bulgaria and Turkey in September 2019. During the 7 days of cetacean survey 54 cetacean sightings (114 individuals) of all the three species inhabiting the Black Sea were recorded. Three sectors were defined and in the third sector (BG-RO Sector) only one common dolphin sighting was recorded. Within the other two sectors (RO and BG-TR) all the three species were registered with a similar density; 0,012 individuals/km^2 , for RO sector and 0,013 for BG-TK sector. Under the Anemone project, "Case studies on cetacean stranding and sighting surveys" were conducted in Romania and Turkey, resulting in five coastal surveys in their territorial waters with yachts and reports of cetacean strandings (74 cases in RO, 50 cases in TR).

An international project "BlackCeTrends" has been launched in 2020, in which six institutions from all around the Black Sea (except Russia), together with a British acoustic device manufacturer, Chelonia Ltd., with the objective of assessing

the trends in the occurrence of Black Sea cetaceans, especially harbour porpoises, using a passive acoustic monitoring device, F-POD. All partners have deployed the F-PODS in their coastal waters and started collecting data.

The coastal surveys (within the 12 NM area) or field survey from on shore points were performed in Bulgaria (in May and October 2019, May and July 2020, May and July 2021 by Green Balkans NGO) Georgia, Romania, Turkey and Ukraine. In addition, in the Marmara Sea, Turkey, two seasonal cetacean vessel surveys (May and September) were conducted in 2021.

Publication: CeNoBS detailed report on cetacean populations distribution and abundance in the Black Sea, including proposal for threshold values has been published (Paiu et al. 2021a). Moreover, Anemone Project report on Citizen Science - a tool to assess cetacean population status has been published (Paiu et al. 2021b). Besides, Romania, Russia, Bulgaria and Turkey published six papers on the abundance of cetaceans in their coastal water, these are:

Chernetsky, A. D., Krasnova, V. V., Boltunov, A. N., Panova, E. M., Agafonov, A. V., Belikov, R. A., & Belikova, E. A. (2021). Occurrence and distribution of cetaceans in the northeastern part of the Black Sea. Oceanology, 61(4), 488-498.

Paiu, R. M., Olariu, B., Paiu, A. I., Cândea, M. E. M., Gheorghe, A. M., & Murariu, D. (2019). Cetaceans in the coastal waters of southern Romania: initial assessment of abundance, distribution, and seasonal trends. Journal of the Black Sea/Mediterranean Environment, 25(3).

Paiu, R.M., Panigada, S., Cañadas, A., Gol`din, P., Popov, D., David, L., Amaha Öztürk, A., Panayotova, M., Mirea-Cândea, M. (2021a) Deliverable 2.2.2. Detailed Report on cetacean populations distribution and abundance in the Black Sea, including proposal for threshold values. CeNoBS project – contract No 110661/2018/794677/SUB/ENV.C2. Constanta, p97, ISBN 978-606-9711-12-5.

Paiu, M., Tonay, A.M., Timofte, C., Gheorghe, A-M, Cândea, M.M. Paiu, A., Ozturk, A.A., Özsandıkçı, U., Gülenç, Z., Dede, A. (2021b). ANEMONE Deliverable 4.3. “Citizen Science - a tool to assess cetacean population status” p45. ISBN 978-606-528-562-0

Paiu, R-M., Paiu, A., Timofte, C., Mrea-Cândea, M., Murariu, D. (2021c) New data on cetacean abundance and distribution for the three species present in the romanian territorial waters. 28th edition of The International Conference “The Museum and Scientific Research”, September 16-18, 2021, Craiova, Issue XXXVII. (37) – in press

Panayotova, M. D., Bekova, R. I., & Prodanov, B. K. (2020). Assessment of marine Cetacean populations in Bulgarian Black Sea in 2017 according to indicators of the EU Marine Strategy Framework Directive. Ecologia Balkanica Special Edition 3: 73-83 .

Popov, D. V., Meshkova, G. D., Hristova, P. D., Miteva, A. N., Ilieva, T. A., & Dimitrov, H. A. (2020). Pilot line-transect surveys of Cetaceans in a Bulgarian Marine Protected Area: BG0001007 Strandzha Site of Community Importance. Acta zoologica bulgarica, Suppl. 15, 243, 248.

Uluduz, N., Yanchukov, A., & Sözen, M. (2020). Seasonal dynamics of occurrence and group size of three species of cetaceans (Delphinidae and Phocoenidae) on the southwestern coast of the Black Sea. Scientia Marina, 84(4), 431-439.

Bycatch

Bycatch monitoring pilot studies were finished in the CeNoBS project. The annual harbour porpoise bycatch was estimated between 11,826 and 16,200 individuals in turbot nets. See the ACCOBAMS-SC14/2021/Doc20 for more details of the bycatch study.

In the period 2019-2021 in Bulgaria onboard monitoring was organized to assess bycatch rate of cetaceans in bottom set gillnets for turbot and pingers were tested as mitigation measure. PALs spaced at 140 m have shown 77.6% reduction of bycatch during trials in 2020 and 2021. See details ACCOBAMS-SC14/2021/Doc20.

Under the new project named "Conceta Project" PAL pingers were also tested in Turkey. The project started in April 2021 and will end June 2022.

Publication: There are eight publications on bycatch, depredation and mitigation during the reporting period.; one is another scientific publication for the attitude of the fishermen (in "dalyan" pound net fishery) on cetacean and assessment of damages based on questionnaire method (Zaharieva et al. 2020); two are on-board observation in turbot fishery in Bulgaria (Popov et al. 2020; Zahaireva et al.2021); one of them the published bycatch report of CeNoBS (Gol'din et al. 2021); one of them on a pinger experiment (Özsandıkçı & Gönener 2020). The other two are about testing the damage inflicted by the dolphins to the bottom gillnets for whiting, red mullet etc. by pingers (Gönener & Özsandıkçı 2019; Namlıtürk & Balık 2021). The last one is about modified nets with acrylic glass spheres were tested in the central part of the Turkish Black Sea in 2019 (Kratzer et al. 2021).

Gönener, S., & Özsandıkçı, U. (2019). Investigation and economic performance of acoustic deterrent devices used in bottom gillnets (pingers) for bottlenose dolphin (*Tursiops truncatus*). Atatürk Univ., J. of the Agricultural Faculty, 50(1), 84-91.

Gol'din, P., Vishnyakova, K., Popov, D., Paiu, R.M., Tonay, A.M., Düzgüneş, E., Timofte, C., Meshkova, G., Panayotova, M., Amaha Öztürk, A. CeNoBS Project, (2021). Detailed Report of the pilot(s) on bycatch monitoring, including recommendations to further develop D1C1 criterion. Odesa, Ukraine, P52, ISBN: 978-606-9711-09-5.

Popov, D. V., Meshkova, G. D., Hristova, P. D., Gradev, G. Z., Rusev, D. Z., Panayotova, M. D., & Dimitrov, H. A. (2020). Pingers as Cetacean bycatch mitigation measure in Bulgarian turbot fishery. Acta Zoologica Bulgarica, 235-242.

Kratzer, I. M. F., Brooks, M. E., Bilgin, S., Özdemir, S., Kindt-Larsen, L., Larsen, F., & Stepputtis, D. (2021). Using acoustically visible gillnets to reduce bycatch of a small cetacean: First pilot trials in a commercial fishery. Fisheries Research, 243, 106088.

Namlıtürk, E., & Balık, İ. (2021). Interaction between dolphins and coastal fisheries and using acoustic deterrent in reducing of interaction. Ege Journal of Fisheries and Aquatic Sciences, 38(1), 43-52.

Özsandikçi, U., & Gönener, S. (2020). Effectiveness of pingers on the harbour porpoise *Phocoena phocoena relicta* Abel, 1905 (Cetacea: Phocoenidae) in Turkey as revealed by shore-based observations. Acta Zoologica Bulgarica, 72(1), 155-159.

Zaharieva, Z., Yordanov, N., Racheva, V., & Delov, V. (2019). The effect of pingers on cetaceans bycatch and target catch in the turbot gillnets in Bulgarian Black Sea. ZooNotes, 150, 1-4.

Zaharieva, Z., Racheva, V., Parvanov, D., & Delov, V. (2020). The conflict between fisheries and Cetaceans in Bulgaria's Black Sea territorial waters. Aquatic Mammals, 46(1): 99-110.

Zaharieva, Z. A., Racheva, V. V., & Simeonovska-Nikolova, D. (2021) Cetacean bycatch in turbot gillnets by Bulgarian fisheries in the Black Sea. Acta Zool. Bulg., in press

Stock identification and population structure

A new photo ID project on delphinids (common dolphins and bottlenose dolphins) started in the western Turkish Black Sea (Zonguldak) by Zonguldak Bulent Ecevit University in 2021.

Within the period 2020-2021 a project “Ecology and behavior of cetaceans - an indicator of the state of the marine environment and a prerequisite for sustainable development” under Programme "Maritime and fisheries", is implemented by Sofia University, Bulgaria.

A cetacean tissue databank has been developed in Ukraine. The cetacean stranding data were collected by Bulgaria, Georgia, Romania (Paiu et al. 2019, 2020), Turkey and Ukraine.

Publication: 2020 and 2021, on Black Sea harbour porpoise and common dolphins. According harbour porpoise genetic study, contrary to previously opinion (while morphological heterogeneity suggested population differentiation) genetic homogeneity have been proved in the Black Sea harbour porpoises (including Azov Sea) (Chehida et al. 2020). Again, contrary to what is known; genetic differentiation was not observed between Mediterranean and the Black Sea common dolphin samples based mtDNA (Tonay et al. 2021).

Chehida, Y. B., Thumloup, J., Vishnyakova, K., Gol’din, P., & Fontaine, M. C. (2020). Genetic homogeneity in the face of morphological heterogeneity in the harbor porpoise from the Black Sea and adjacent waters (Phocoena phocoena relicta). Heredity, 124(3), 469-484.

Paiu, R-M., Mrea-Cândea, M., Timofte, C., Paiu, A., Gheorghe, A-M. Raport Programul Monitorizarea şi Conservarea Cetaceelor din Marea Neagră, ONG Mare Nostrum, Constanţa, 2019.

Paiu, R-M., Mrea-Cândea, M., Timofte, C., Paiu, A., Gheorghe, A-M. Raport Programul Monitorizarea şi Conservarea Cetaceelor din Marea Neagră, ONG Mare Nostrum, Constanţa, 2020.

Tonay, A. M., Uzun, B., Dede, A., Amaha Öztürk, A., Danyer, E., Aytemiz Danyer, I., ... & Bilgin, R. (2020). Population genetic structure of the short-beaked common dolphin from the Black Sea and the Turkish Straits System. Mitochondrial DNA Part A, 31(6), 257-264.

Marine pollution

A study on microplastics in stomachs of Black Sea cetaceans is under way in Bulgaria by IO-BAS.

Publication: Higher metal levels in the stranded harbour porpoises bones in the northern region compared with those from Southern region of Bulgaria (Evtimova et al. 2019). A review paper on cetacean and marine litter issue has been published in a book chapter (Tonay et al. 2020).

Evtimova, V., Parvanov, D, Grozdanov, A., Tserkova, F., Zlatkov, B., Vergilov, V., ... & Delov, V. (2019). Heavy metals in bones from harbour porpoises *Phocoena phocoena* from the Western Black Sea Coast. ZooNotes, 136, 1-4.

Tonay, A.M., Gül, B., Dede, A., Öztürk A.A. 2020. Cetaceans and marine litter in the Black Sea. In: (Aytan, Ü., Pogojeva, M., Simeonova, A. Eds.) Marine litter in the Black Sea. Turkish Marine Research Foundation (TUDAV) Publication No: 56, Istanbul, Turkey. 236-246pp.

Noise and acoustic

Regional training workshop and pilot activities on noise monitoring were implemented in Bulgaria, Romania, Turkey and Ukraine under the project CeNoBS.

Publication: A paper on first description of whistles of Black Sea was published. Whistle parameters correspond to reported for *D. delphis* recorded in the Mediterranean Sea and Central–Eastern North Atlantic Ocean (Panova et al. 2020). Acoustic identification of bottlenose dolphin individuals based on a "signature whistle" catalog in addition to visual identification was made in Crimea (Logominove & Agafonov 2019).

Logominova, I. V., & Agafonov, A. V. (2019). Spatiotemporal dynamics of the local population of Black Sea bottlenose dolphins (*Tursiops truncatus ponticus* Barabash, 1940): Visual and acoustic description methods. Oceanology, 59(1), 99-106.

Panova, E., Agafonov, A., & Logominova, I. (2020). First description of whistles of Black Sea short-beaked common dolphins, *Delphinus delphis ponticus*. Bioacoustics, 1-18.

Conservation

The 11 new IMMAs (Important Marine Mammal Area) are part of 14 new IMMAs for the marine mammals of the Black Sea, Turkish Straits System, and Caspian Sea, which were elaborated at the IMMA online regional workshop organized in February 2021 by the IUCN SSC-WCPA Marine Mammal Protected Areas Task Force. The workshop resulted in the identification of 23 new candidate Important Marine Mammal Areas (cIMMAs). Following independent review, 14 IMMAs, one candidate IMMA (cIMMA) and 11 areas of interest (AoI) were approved.

New steps in developing National Conservation Action Plans are undertaken in countries such as Bulgaria. Ukraine adopted the National Action Plan in 2020. Romanian Ministry of Environment, Waters and Forests issued the Romanian List of threatened marine animals within the MSFD framework, where the three species are included as endangered. Ukraine updated the species list for the Red Data Book where the three species are listed.

The assessment of the status of the three Black Sea subspecies in the IUCN Red List has been updated and now in the review process.

The Turkish Ministry of Environment, Urbanization and Climate Change declared in the official gazette the TSS as a Special Environment Protected Area (SEPA) in November 2021.

Publication: The presence of purse seine vessels during the intense fishery in autumn in the Istanbul Strait leads bottlenose and common dolphins to change their behaviour and are related with a decrease of energy intake in porpoises (Meza et al. 2020). According another study Istanbul Strait serves as a critical habitat for the regional bottlenose dolphin populations and they are likely to be a part of a resident local population with a home range extending the length of the Strait (Akkaya et al. 2019).

Baş, A. A., Öztürk, B., & Öztürk, A. A. (2019). Encounter rate, residency pattern and site fidelity of bottlenose dolphins (*Tursiops truncatus*) within the Istanbul Strait, Turkey. Journal of the Marine Biological Association of the United Kingdom, 99(4), 1009-1016.

Meza, C. O., Akkaya, A., Affinito, F., Öztürk, B., & Öztürk, A. A. (2020). Behavioural changes and potential consequences of cetacean exposure to purse seine vessels in the Istanbul Strait, Turkey. Journal of the Marine Biological Association of the United Kingdom, 100(5), 847-856.

Disease

A piebald bottlenose dolphin has been reported in offshore waters of the north-western Black Sea (Andreychev 2020). In addition, an anomalously white harbour porpoise has been sighted from Romanian waters after 27 years (Paiu & Murariu 2020).

Paiu, R-M., Murariu, D. 2020. First record of an entirely white harbour porpoise (*Phocoena phocoena relicta*, Abel 1905) in Romanian Black Sea waters after 27 years. 27th edition of The International Conference "The Museum and Scientific Research", September 17, 2020, Craiova, Issue XXXVII. (37) – in press

Savenko, O. (2020). The first record of a piebald common bottlenose dolphin (*Tursiops truncatus*) in offshore waters of the north-western Black Sea. Theriologia Ukrainica, 19, 103-107.

Major issue(s) or main threats or "hot" topics that have emerged during the said period for the Region:

- The result of CeNoBS bycatch assessment showed that the bycatch of the harbour porpoise in the Black Sea exceeds the threshold for the sustainability of the population and poses a significant threat for this subspecies. The main tasks for the future activities are updating fleet and effort assessments, enhancing the bycatch reporting and observation coverage, mortality analysis, validation of data, elaborating background for time-space closure measures, and, most importantly, developing techniques for bycatch mitigation, with consideration of local specific features.

- The continuous oil and gas related activities (seismic, drilling) in the region have been observed with no concrete legislation at a national level in order to assure the monitoring and conservation of cetaceans. It is critically important for the relevant companies to hire MMO to conduct PAM during seismic surveys.

Recommendations / suggestions for Improvement of the conservation:

Considering the results of the CeNoBS project, including the aerial survey and the pilot bycatch study which again highlighted the significant link between the bycatch in turbot fishery and the high seasonal mortality of harbour porpoises, threatening the viability of the subspecies, it is of an urgent matter to refine estimates of porpoise abundance and bycatch level, as well as to develop measures to reduce bycatch. In addition, from ACCOBAMS Parties to create an Emergency Task Team with the full participation of the GFCM and DG Mare to identify and implement the best fishery management measures was requested. See the ACCOBAMS-SC14/2021/Doc20.

Encouraging more researches in the offshore area is needed to fill the knowledge gaps on distribution and migration routes of cetaceans. A monitoring program for determining trends is also recommended.

There is a need for research and monitoring of noise as well as the development of mitigation actions, guidelines and legislative tools relevant to the conservation of cetaceans, in regard with anthropogenic noise created by human activities, such as seismic surveys, drilling, etc.

International support for establishing MPAs, including transboundary areas, is desirable especially when the IMMAs have been identified. More researches are encouraged especially in the AoIs.

Capacity building for necropsy and pathology are needed in the whole Black Sea.

A basin-wide survey like the one carried out under ASI and CeNoBS should be repeated every 5 years (in connection with the MSFD cycles) to 10 years or so, depending on the budget and expertise. Between these large-scale surveys, smaller local surveys should be carried out regularly, for which funding by regional/international donors is crucial.