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WINTER DISTRIBUTION OF CETACEAN IN BULGARIAN BLACK SEA

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HD 19

INTRODUCTION

Data on cetacean abundance and distribution in Bulgarian waters of the Black Sea is scarce. Review of published papers in the period from second part of 20th century until now has shown these are below 10. Considering the fact that all three Black Sea cetaceans have been listed in the IUCN Red List, all collected data is useful for defining distribution patterns and subsequent identification of critical habitat.

MATERIAL AND METHODS

During the winter months of 2015/16 from November to March several vessel surveys have been made in Bulgarian Black Sea waters aiming to collect data on cetacean distribution. In December-March, four surveys aboard RV Akademik of Institute of Oceanology, Bulgarian Academy of Science were made using it as platform of opportunity during hydro chemistry and plankton sampling in 12-mile zone and part of EEZ. The sampling stations were fixed and identical in all 4 months making the route of the survey almost identical in all 4 months. Effort during these four surveys was 2198 km covered in 190 hours and 19 minutes. In November and February two training surveys for volunteers were made in Southern sector of Bulgarian territorial waters using a motor sailing yacht with total effort of 270.7 km covered in 38 hours 42 minutes. Observations were carried out by trained volunteers throughout daylight (RV Akademik bridge, h=6 m and yacht board, h=2.5 m) and distances and angle of sightings were measured using reticle binocular (Pentax Marine 7x50). Sightings and environmental data were recorded in field forms. Geographic coordinates of sightings and tracks of surveys were recorded by GPS (Garmin GPSMap 64s).

RESULTS

Table 1: Sightings and Encounter Rate during surveys aboard RV Akademik

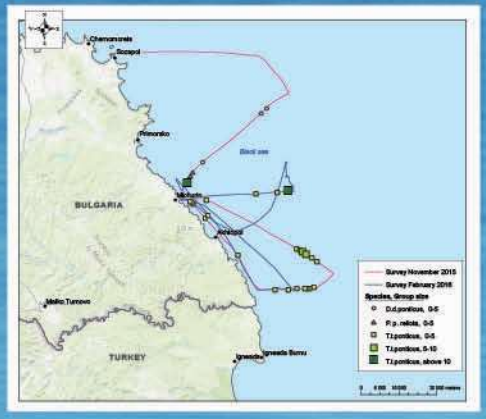
Month	Effort	Sightings			eR - sightings per km		
		Dd	Pp	Tt	Dd	Pp	Tt
December 2015	533,4	4	2	3	0,007499063	0,003749531	0,005624297
January 2016	592,3	5	1	0	0,008441668	0,001688334	0
February 2016	703,2	16	1	1	0,022753129	0,001422071	0,001422071
March 2016	369	12	0	9	0,032520325	0	0,024390244
TOTAL	**2197,9**	**37**	**4**	**13**	**0,016834251**	**0,001819919**	**0,005914737**

Table 2: Sightings and Encounter Rate during surveys in Southern Bulgarian territorial waters aboard motor sailing yacht

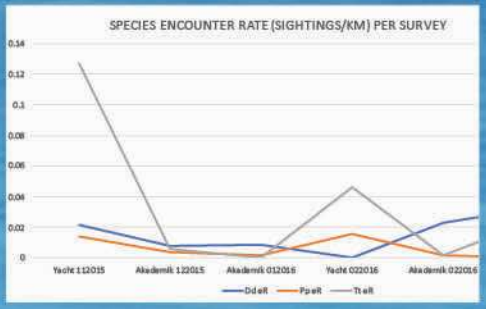
Month	Effort	Sightings			eR - sightings per km		
		Dd	Pp	Tt	Dd	Pp	Tt
November 2015	141,5	3	2	18	0,021201413	0,014134276	0,127208481
February 2016	129,2	0	2	6	0	0,015479876	0,046439628
TOTAL	**270,7**	**3**	**4**	**24**	**0,011082379**	**0,014776505**	**0,088659032**

Map of surveys aboard RV Akademik and sighting

Map of surveys in Southern Bulgarian territorial waters aboard motor sailing yacht



Species encounter rate per survey



CONCLUSIONS

Distribution of cetaceans during winter months of 2015/2016 season has shown typical pattern for the 3 species: Black Sea Bottlenose dolphin and Black Sea Harbour porpoises were encountered mostly in coastal waters while Black Sea Common dolphin in offshore waters.

Comparing encounter rates for different cetacean species during two types of surveys – aboard large RV and aboard motor sailing yacht – has shown much higher values for the yacht surveys except for Black Sea Common dolphin.

Concentrations of Black Sea Bottlenose dolphins have been observed in the Southern Bulgarian territorial waters in November 2015 (eR=0.13 sightings per km) and in February (approx. 20 feeding among fishing vessels)

Largest encountered groups of Black Sea Common dolphins were 10-15 ind.

ACKNOWLEDGEMENTS

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