

CRUISE REPORT OF THE KOREAN CETACEAN SIGHTING SURVEY IN THE EAST SEA, MAY-JUNE, 2010

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ABSTRACT

The sighting survey was conducted to get the information on distribution and abundance of minke whales and other cetacean animals in Korean waters using the research vessel, Tamgu 3 (360G/T) from 2 May to 10 June in 2010. The survey area covered over the East Sea but several transect lines were cut by the EEZ between Korea and Japan. During the survey period, the research vessel cruised 2,310.3 n.m. and 22 minke whales in 21 primary sightings were observed. Long-beaked common dolphins, Pacific white-sided dolphins, common bottlenose dolphins, false killer whales and Dall's porpoises were also sighted during the survey.

INTRODUCTION

The increased encounters with minke whales and other species of cetacean animals in Korean waters can be confirmed by sighting surveys as well as by-catches in these days. These encounters are followed by cautious expectations that there will be increments in the abundance of cetacean animals in Korean waters. But the surveyed coverage in Korean waters is still very low and the IO passing mode for $g(0)$ estimation has never been tried. Therefore this sighting survey was designed to elaborate the information on distribution and abundance for North Pacific minke whales.

SURVEY AND METHODS

The survey blocks and transect lines were designed as shown in Fig. 1. The research area was same as the previous surveys. The research vessel, Tamgu 3, cruised along the predetermined transect lines with semi-IO passing mode using the two channeled walkie-talkies in order to estimate $g(0)$. The speed of the vessel was ranged from 10 to 12 knots in accordance with sea status and weather conditions. Only the good weather condition with two or longer nautical miles visibility and three or smaller Beaufort scale allowed the survey to be conducted.

Two observers conducted sightings in the top barrel mounted on the research vessel at the height of 11.5m from the sea level in 2-hour-interval rotations. Two researchers verified the observers' sightings,

recorded the other information and also conducted sightings during the survey from the top bridge. The survey was started from the southernmost point of the offshore block, A5 northwardly and then conducted southwardly in the inshore blocks from A1 to A4 in order to reduce double counting as shown in Fig. 2.

CRUISE SUMMARY AND SIGHTING RESULTS

Narrative

2 May: The vessel left Busan and arrived southernmost point of the survey block A5 but reentered Busan due to the rain and strong wind.

5 May: No sooner had the vessel resumed the survey than the vessel entered Ulsan to avoid strong wind.

7-9 May: The vessel left Ulsan and finished half of the survey block A5 and entered Pohang because of rain and strong winds.

10-15 May: Rain and strong winds prevailed in the survey blocks A2, A3 and A5.

16-17 May: The survey was resumed in the middle of the survey block A5.

18-19 May: Strong winds prevailed in the survey block A1, A2 and A5 and made the vessel locked in Donghae.

20-21 May: The vessel left Donghae and finish the survey block A5.

22-27: The vessel entered Sokcho due to the rain and strong winds prevailed in the survey block A1.

28 May: The vessel left Sokcho and started inshore blocks from A1.

29 May: The vessel entered Donghae because of the heavy fog.

30 May-1 June: The vessel left Donghae, finished the survey block A1 and started A2.

2-6 June: Strong winds locked the vessel in Pohang.

7-9 June: The vessel left Pohang and finished the survey blocks A2, A3 and A4.

10 June: The vessel entered Busan, the home port.

Sighting results

During the survey period, 6 species of cetacean animals were sighted in the research area (Table 1). On 21 primary sightings, 22 minke whales were observed that crowded in the middle of the offshore block A5, where they rarely have been sighted in the previous surveys (Fig. 3). On the other hand, we could not found minke whales in the middle of the survey block A2, where more than half of animals have been sighted in the previous surveys.

Long-beaked common dolphins, common bottlenose dolphins and false killer whales were observed in the southern part of the survey block A5 and Dall's porpoises were found in the northern part (Fig. 4). There were some schools of Pacific white-sided dolphins in the survey block A1 and A2.

In this sighting survey, more animals were sighted in the offshore block A5 than A2 and A3 where the most of the sightings were made in the previous surveys. The U.S.-Korea navy joint exercise in this area was doubted to shift the distribution of cetacean animals in the survey area.

Results of semi-IO passing mode survey

The semi-IO passing mode using the two channeled walkie-talkies was applied to estimate a $g(0)$. Because the research vessel has no conventional IO platform, the observers were supposed to report their observation to the walkie-talkies which had been set in different channel between top barrel and top bridge. However the observers were ex-whalers, felt competition for sighting animals and consequently, shouted their observations. Therefore the semi-IO passing mode trial has failed.

Table 1. Number of primary sightings by species with daily sighting effort in the East Sea, May-June, 2010 (numbers in parentheses indicate number of individuals)

Date	Sighting effort (n.m.)	Common minke whale	Long-beaked common dolphin	Pacific white-sided dolphin	Common bottlenose dolphin	False killer whale	Dall's porpoise
5 May	17.2						
7 May	67.5						
8 May	267.0	1 (1)	3 (1,210)		2 (25)	1 (10)	
9 May	94.5	1 (1)			1 (5)		
16 May	182.0	10 (10)					
17 May	137.6						
20 May	158.0						1 (6)
21 May	238.0						2 (4)
28 May	79.0	1 (1)					
30 May	210.0			1 (20)			
31 May	158.0						
1 June	71.7			2 (1,030)			
7 June	133.0	2 (2)					
8 June	235.0	5 (5)					
9 June	261.8	1 (2)					
Total	2,310.3	21 (22)	3 (1,210)	2 (1,050)	3 (30)	1 (10)	3 (10)

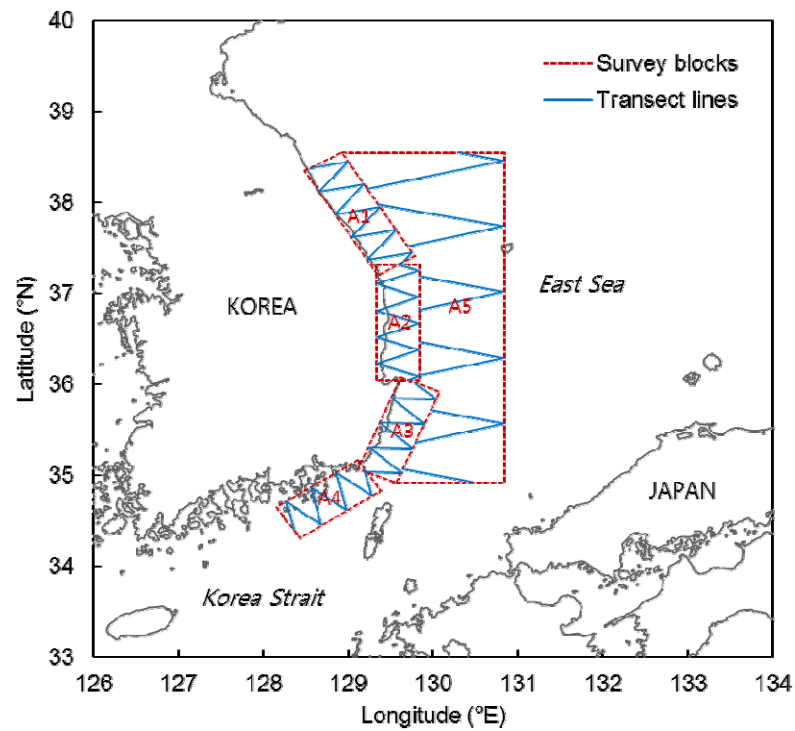


Fig. 1. Survey blocks and predetermined transect lines of Korean cetacean sighting survey in the East Sea, May-June, 2010.

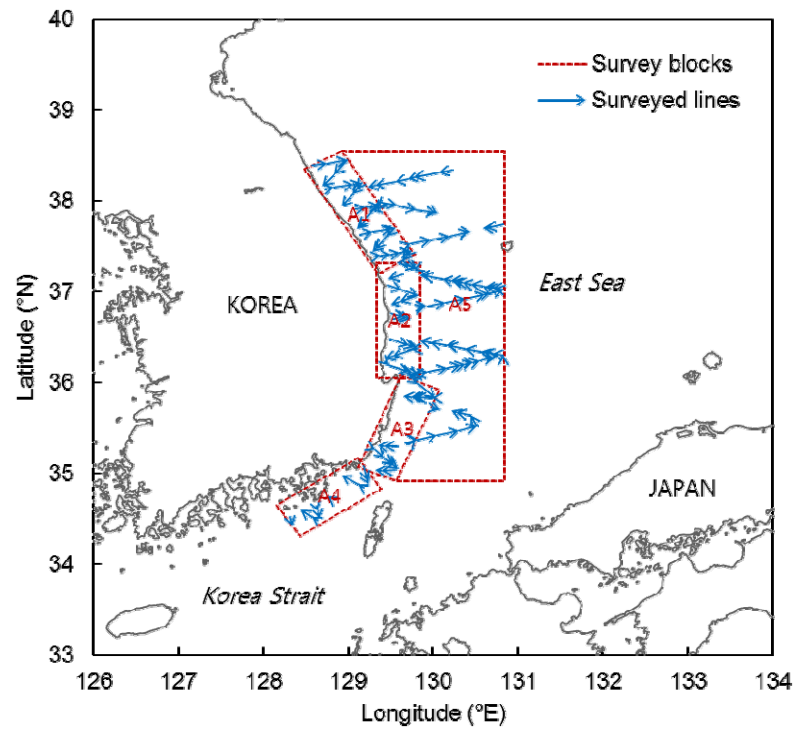


Fig. 2. Surveyed lines with direction of the cruise of Korean cetacean sighting survey in the East Sea, May-June, 2010.

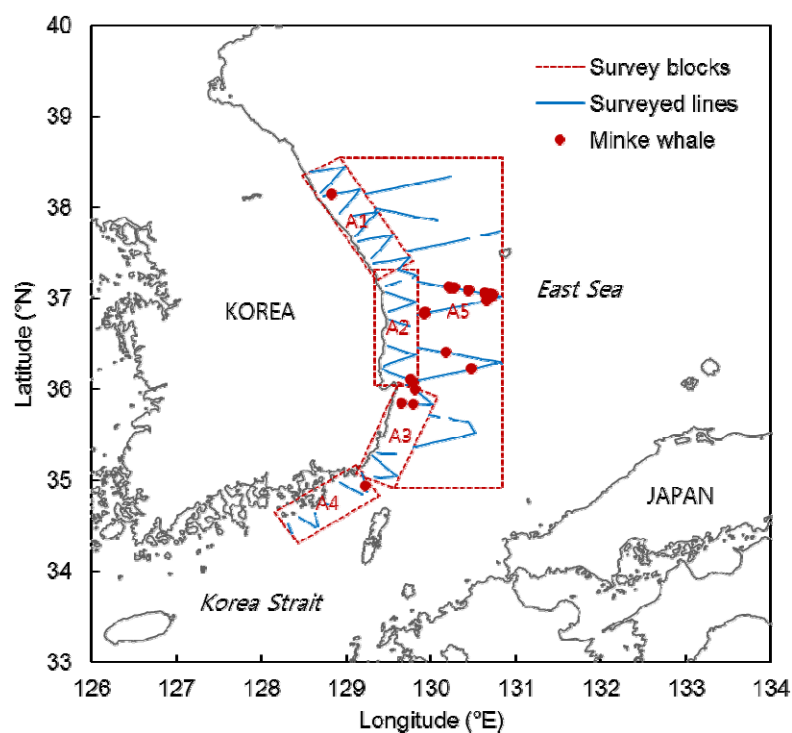


Fig. 3. Sighting positions of minke whales of Korean cetacean sighting survey in the East Sea, May-June, 2010.

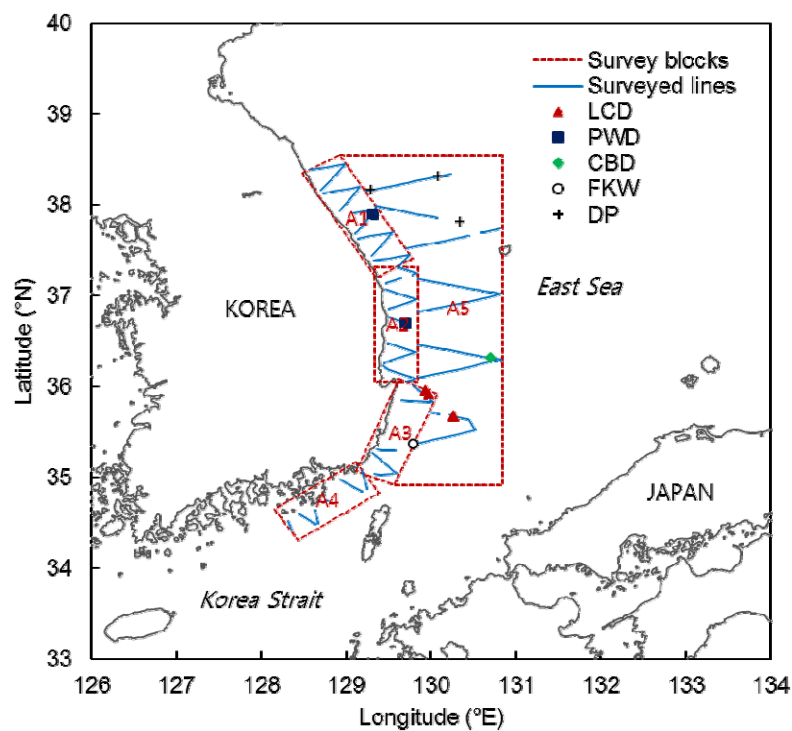


Fig. 4. Sighting positions of small cetaceans of Korean cetacean sighting survey in the East Sea, May-June, 2010 (LCD: long-beaked common dolphins; PWD: Pacific white-sided dolphins; CBD: common bottlenose dolphins; FKW: false killer whales; DP: Dall's porpoises).