

# Plan for the cetacean sighting surveys in the North Pacific in 2010

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## ABSTRACT

Two systematic vessel sighting surveys for cetaceans are planned in the North Pacific in 2010 to examine the distribution of sei, Bryde's and minke whales and for abundance estimations. Both surveys are in the middle part of the Western-North Pacific. The first survey is in the area of 35°N-40°N and 157°E-170°W from 9 June to 18 July, and the second survey in the area of 32°N-37°N and 145°E-180° (dateline) from 20 July to 23 August. The research vessel *Yushin-maru No.3* will be used for each cruise. Distance and angle estimation training and experiments will be conducted for abundance estimation. Biopsy skin samples from large whales such as blue, fin, sei, Bryde's, minke, humpback, right and sperm whales will be opportunistically collected for assessing stock structure. Photo-identification of large cetaceans such as blue, right and humpback whales will be also conducted. The cruise report will be submitted to the 63rd IWC/SC meeting.

KEY WORD: SEI WHALES, BRYDE'S WHALE, SURVEY VESSEL, NORTH PACIFIC

## BACKGROUND

In the Western North Pacific, dedicated cetacean sighting surveys based on the survey procedures of "the International Whaling Commission / Southern Ocean Whale and Ecosystem Research (IWC/SOWER)" have been conducted since the 1995 season as a part of the Japanese Whale Research Program Under special Permit in the Western North Pacific (JARPN). Distribution patterns of large whales such as blue, fin, sei, Bryde's, minke, humpback, right and sperm whales had been analyzed and abundance estimates of minke, sei and Bryde's whales were also calculated and reported to the IWC/SC (IWC, 2001, 2009). The National Research Institute of Far Seas Fisheries (NRIFS) also has been conducting dedicated sighting survey for cetaceans in the North Pacific since the 1980s.

In 2010, the Government of Japan plans to continue the surveys in the North Pacific. The 2010 surveys will be focused on the collection of line transect data to estimate abundance and biopsy / photo-identification data, which would make a valuable contribution to the work of the Scientific Committee on the management and conservation of populations of large whales in the North Pacific (IWC, 2009). The Institute of Cetacean Research will conduct the following systematic sighting survey plan based on the IWC/SOWER survey procedures using two dedicated sighting survey vessels in the research area.

## **RESEARCH PLAN**

### **Research vessel**

*Yushin-Maru No.3* (YS3) will be engaged as a dedicated sighting survey vessel (SV). YS3 is equipped with a top barrel platform (TOP) and upper bridge. The ICR research data collecting system is set on the vessel. Specification of the YS3 is shown in Table 1.

### **Researcher**

Isamu Yoshimura who has considerable line transect whale sighting survey experience in the North Pacific, Antarctic and West Africa as well as experience conducting biopsy and photo-id experiments through the IWC/IDCR-SOWER and JARPN II surveys will be onboard.

### **Research schedule**

#### First survey:

9 June leave Shimonoseki Port, Yamaguchi Prefecture

18 July arrive at Sendai-Shiogama Port, Miyagi Pref. (refueling)

#### Second survey:

20 July leave Sendai-Shiogama Port, Miyagi Pref.

23 August arrive at Shimonoseki Port, Yamaguchi Pref.

### **Research area and track line design**

The research area for the first survey will be set from 35° N to 40° N, between 157° E and 170° W in a longitudinal span of 33° in the Western North Pacific. The research area for the second survey will be set from 32° N to 37° N, between 145° E and 180° in a longitudinal span of 35° in the Western North Pacific (Figures 1 and 2).

The survey blocks and pre-determined track lines are shown in Figures 1 and 2. The block boundaries are based on the latitudinal / longitudinal lines. Track lines are decided based on the origin longitude line which selected at random, and the number of the line (width in the longitude) is decided by the research schedule.

First survey: origin longitude 166°-44'E, width 10 degrees

Second survey: origin longitude 146°-23'E, width 11 degrees and 40 minutes

A total research distance in the first cruise and second surveys will be 3,723 n.miles and 3,913 n.miles, respectively.

### **Primary searching activity**

Closing and Passing modes surveys follow the protocol endorsed for the IWC/SOWER cruise (IWC, 2008). There are two primary observers in the top barrel (TOP) and the upper bridge (Captain and Helmsman), respectively. On the TOP, two observers conduct searching for cetaceans by using scaled binoculars (7x). On the upper bridge, two primary observers also search for cetaceans and record sighting information. The survey is to be conducted 12 hours per day from 7:00 a.m. to 7:00 p.m. basically when the weather conditions are suitable for observations: visibility better than 2.0 n.miles, and the wind speed less than 21 knots. The vessel speed is planned to be 11.5 knots with slight adjustment to avoid vibration of vessel.

## Experiments

Distance and angle measurement training is to be conducted at the first stage of the survey. The experiment to evaluate measurement error is to be conducted around the last stage of the survey following the protocol for the IWC/SOWER cruise (IWC, 2008). When large cetaceans such as blue, right and humpback whales are found, photographs are to be taken for photo-identification. Biopsy skin sampling of blue, fin, sei, Bryde's, humpback, right and sperm whales will be opportunistically collected for assessing stock structure.

## Data entry and analysis

The researcher will input data collected (weather, effort, sighting and data from experiments) to the computer on board during the survey. These data will be stored at the Institute of Cetacean Research (ICR) and submitted to the IWC secretariat based on the IWC/SC Guidelines (Hammond and Donovan, 2004). Scientists at the ICR also will analyze these data using the methods developed and modified by Hakamada *et al.*, (2006) and by Okamura *et al.* (2004).

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Table 1. Specification of the YS3.

	<i>Yushin-Mar</i> No.3
Call sign	7JCH
Length overall [m]	69.61
Molded breadth [m]	10.80
Molded draft [m]	5.3
Gross tonnage (GT)	742
Barrel height [m]	19.5
IO platform height [m]	13.5
Upper bridge height [m]	11.5
Bow height [m]	6.5
Engine power [PS / kW]	5280 / 3900
Max. sea speed [knots]	17.0
Max. trial speed [knots]	18.6

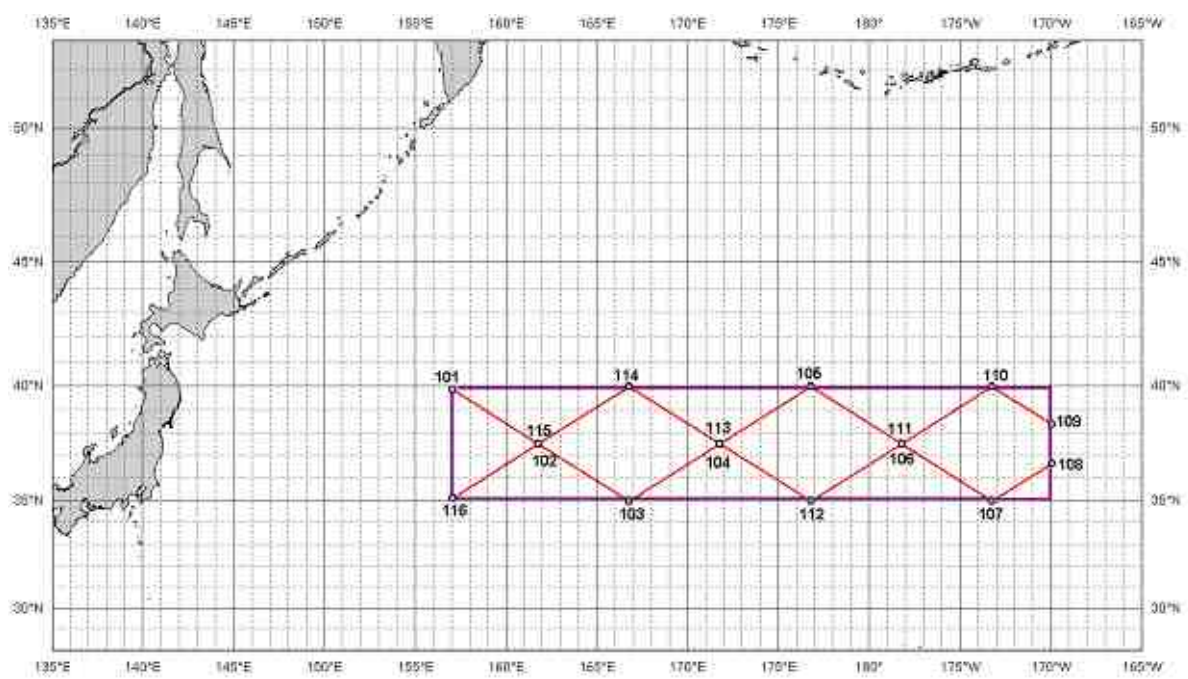


figure 1. Pre-determined track line for the first cruise (Red lines)

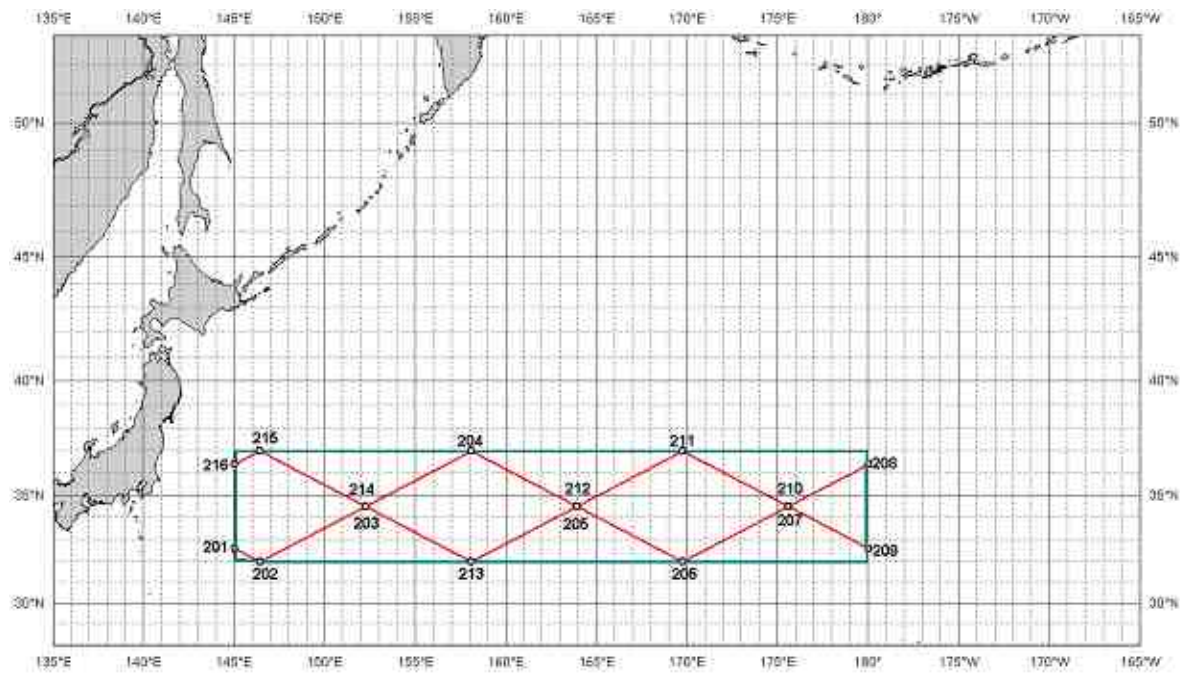


Figure 2. Pre-determined track line for the second cruise (Red lines).