

RESEARCH PLAN OF THE ONGOING SIGHTING AND BIOPSY SAMPLING SURVEY FOR COMMON MINKE WHALES IN THE OKHOTSK SEA IN 2011

Toshiya Kishiro, Hideyoshi Yoshida, Shingo Minamikawa, and Tomio Miyashita

National Research Institute of Far Seas Fisheries,

2-12-4 Fukuura, Kanazawa-ku, Yokohama, Kanagawa 236-8648, Japan

Contact e-mail: kishiro@affrc.go.jp

ABSTRACT

Using a research vessel, *Kaiyo-maru No.8*, the sighting and biopsy skin sampling survey for common minke whales is conducting in the Okhotsk Sea including the Russian EEZ in 2011 spring season with the Russian permission. Main objective is to estimate the mixing rate of the J and O stocks of common minke whales in the Okhotsk Sea in spring season. Biopsy skin samples will be collected and genetic analyses for stock identification using the samples will be completed on board within the Russian waters (i.e. without bringing the samples out of the Russian waters) to avoid confliction with Russian domestic laws and regulations related to CITES. The period of survey is from 13 May to 26 June in 2011. Photo-identification of large cetaceans such as North Pacific right whales will be also conducted.

KEYWORDS: COMMON MINKE WHALE, NORTH PACIFIC, BIOPSY SAMPLING, SIGHTING SURVEY, ONBOARD GENETIC ANALYSIS, RESEARCH PLAN

BACKGROUND

The mixing rate of the J and O stocks of common minke whales in the Okhotsk Sea (especially in sub-area 12) is one of the most important information required in considering the abundance estimation by stocks in the North Pacific common minke whales (IWC, 2009).

In 2009, Japanese biopsy sampling survey for common minke whales was conducted in the Okhotsk Sea including the Russian EEZ, in summer season from 18 July to 31 August (Yoshida, et al., 2010a). During this cruise, valuable data and samples including five biopsy skin samples and data on the body surface scars by the cookie-cutter sharks were collected for examine the mixing rate of J and O stocks of common minke whales (Miyashita, et al., 2009), but unfortunately, all the biopsy samples taken could not be brought out from the Russian waters because of discrepancies in domestic legal status of common minke whale related to CITES as well as in domestic legal systems regarding international trade, between Russia and Japan (Yoshida, et al., 2010a).

In 2010, the survey was conducted again in the Okhotsk Sea including the Russian EEZ, in summer season from 13 July to 26 August (Kishiro, et al., 2010; Yoshida, et al., 2010b). During the survey, genetic analysis for stock identification from the eight samples obtained were carried out on board within the Russian waters, using the RFLP analysis of the mitochondrial DNA control region, and after the genetic analyses, biopsy samples, DNA extraction, and PCR products were left at the Russian waters (Yoshida, et al., 2010b). The sighting survey and the genetic analyses were successfully completed in this cruise.

To investigate the seasonal difference of the J-O mixing rate in the Okhotsk Sea, we got again the permission from the Russian Federation to enter these waters and the sighting and biopsy sampling survey is conducting in 2011 spring season. The ongoing survey is conducting with the following research plan.

RESEARCH PLAN

Research vessel

The research vessel is *Kaiyo-maru No.8* (404GT, 1,600HP). Vessel is equipped with a top barrel. Number of crew on vessel is 13. The vessel is chartered by the Fisheries Research Agency.

Scientists on board

Scientists: Shingo Minamikawa (Senior scientist, NRIFSF, first half of the survey)

Shigeru Noji (Senior scientist, NRIFSF, second half of the survey)

Aoi Nozawa (Scientist, NRIFSF, entire period)

Russian observer: K. Zharikov (VNIRO) is onboard (entire period).

Tomio Miyashita (NRIFSF) will be the responsible person for the oversight of this survey.

Schedule

13 May	leave Hakodate, Hokkaido, for the first half of the cruise
2 June	arrive Abashiri, Hokkaido, for refueling
4 June	leave Abashiri for the last half of the cruise
26 June	arrive Hakodate, Hokkaido

Research area and track line

Research area is set in the Okhotsk Sea including the Russian EEZ, though some part of the area is excluded following the Russian permission (e.g., the Russian territorial waters). The pre-determined track line is determined as shown in Figs. 1 and 2. A total research distance will be 1923.3 n.miles.

Sighting activity

The restricted closing mode survey is carried out, in which closing is made only for the targeted cetacean species including common minke whales and North Pacific right whales. Two observers on the top barrel of the vessel conduct searching by naked eyes. Species identification is conducted using binocular. At least one researcher on the upper-bridge also searches for cetaceans and record sighting information. The survey is to be conducted from 6:00 a.m. to 6:00 p.m. basically when the weather conditions are suitable for observations: visibility better than 1.5 n.miles and the wind speed less than 7.5m/s. The vessel speed is planed to be 11.5 knots with slight adjustment to avoid vibration of vessel.

Experiments

Vessel try skin sampling from all common minke whales sighted during the survey, using Larsen gun with the Russian permission. When large cetaceans such as gray or North Pacific right whales are found, the

photographs will be taken for the photo-identification.

Genetic analysis for stock identification using the collected skin samples will be completed on board within the Russian waters. The similar analyses such as the RFLP analysis of the mitochondrial DNA control region conducted in 2010 cruise (Yoshida et al. 2010b) will be tried. After the analysis, the skin samples will not be retained on board until the research vessel leave the Russian waters so that the samples will not be brought out of there, to avoid confliction with Russian domestic laws and regulations related to CITES.

REFERENCES

- International whaling commission, 2009. Report of the scientific committee. J. Cetacean Res. Manage. 11(SUPPL). 2009:1-74
- Kishiro, T., Yoshida, H., Miyashita, T., Uoya, T. and Furukawa, H. 2010. Sighting and biopsy sampling survey plan for common minke whales in the Okhotsk Sea in 2010. Document SC/63/NPM23 submitted to the 62th IWC Scientific Committee, 3pp.
- Miyashita, T., Goto, M., Yoshida, H. and Kanaji, Y. 2010. Estimation of mixing proportion of O/J common minke whales in sub-area 12 using cookiecutter shark scar as ecological marker. Document SC/62/NPM11 submitted to the 62th IWC Scientific Committee, 5pp.
- Yoshida, H., Kanaji, Y., Miyashita, T., Uoya, T. and Furukawa, H. 2010a. Cruise report of the common minke whale biopsy sampling survey in the Okhotsk Sea, summer 2009. Document SC/62/NPM22 submitted to the 62th IWC Scientific Committee, 9pp.
- Yoshida, H., Nozawa, A., Kanda, N., Kishiro, T. and Miyashita, T. 2010b. Results of onboard genetic analysis of common minke whale biopsy samples collected in the Okhotsk Sea, summer 2010. Document SC/D10/NPM9 submitted to the first intersessional workshop for North Pacific minke whale implementation review, Busan, Korea, December 2010. 12pp.

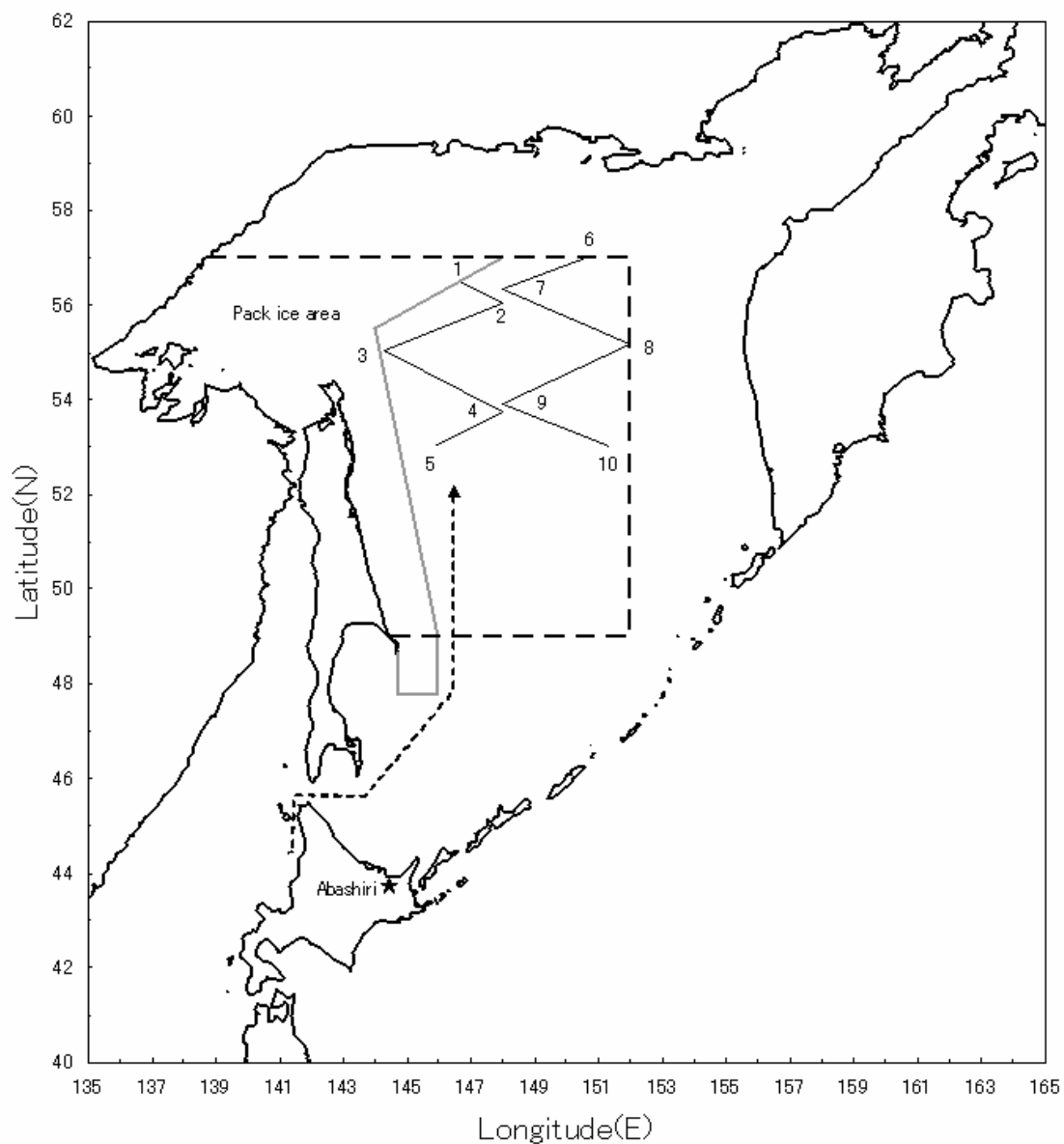


Fig. 1. Research area (dotted line) and pre-determined track line for *Kaiyo-maru No.8* in the first half of cruise in 2011. Gray line shows the assumed range of pack ice area, dotted arrows shows the track from the port to the research area.

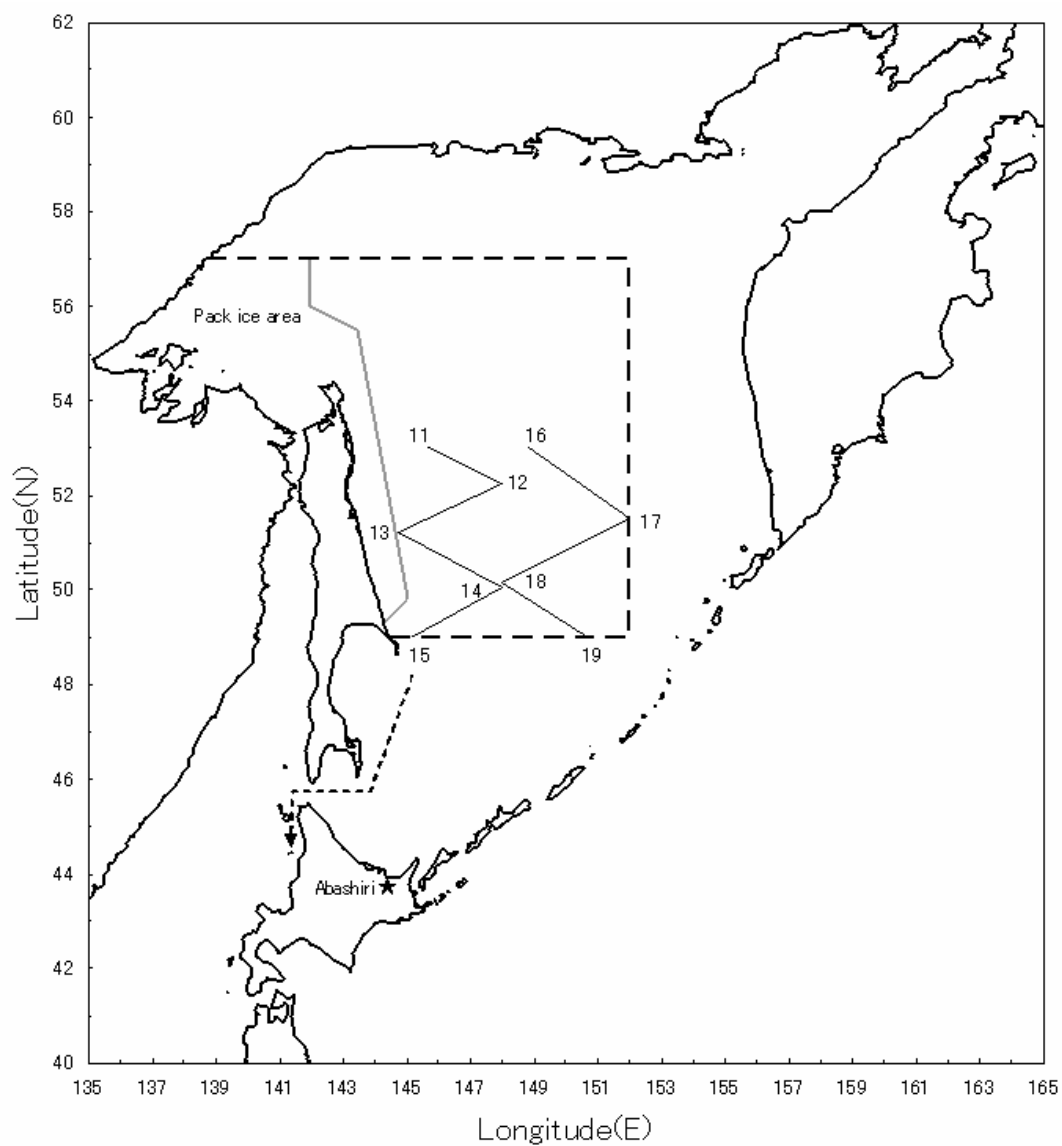


Fig. 2. Research area (dotted line) and pre-determined track line for *Kaiyo-maru No.8* in the second half of cruise in 2011. Gray line shows the assumed range of pack ice area, dotted arrows shows the track from the research area to the port.