

SC/46/SH16

The 1994/95 Research Plan of
Japanese Whale Research Programme Under Special Permit
in
the Antarctic

The Government of Japan

May, 1994

INTRODUCTION

Japan has been conducting research on minke whales under the "Program for the Research on the Southern Hemisphere minke whale and for the Preliminary Research on the Marine Ecosystem in the Antarctic" since the 1987/88 season in compliance with Article VIII of the International Convention for the Regulation of Whaling, 1946 (SC/39/04).

After the feasibility researches conducted in a part of Area IV in 1987/88 and in a part of Area V in 1988/89, Japan commenced the full-scale research activity from 1989/90 season (SC/41/SHM13). Japan has conducted researches in Area IV three times in 1990/91, 1992/93 and 1993/94, and in Area V two times in 1990/91 and 1992/93.

Every year the Government of Japan (GOJ) submits a research plan for the following Antarctic season to the Scientific Committee of the IWC. The present research plan for 1994/95 is the sixth of the long-term program made in 1987 and amended in 1989. At the 45th Annual Meeting of the IWC, GOJ submitted the research plan in Area IV in 1993/94 as a document SC/45/SHBa10. Although constructive and positive comments were made by some members of the Scientific Committee (IWC/45/4), the Plenary of the IWC passed a resolution calling for the reconsideration of the program (IWC/45/47). The IWC passed also other two kinds of resolutions on "Research Related to Consideration of Large Baleen Whales in the Southern Oceans" (IWC/45/38) and "Research on the Environment and Whale Stocks" (IWC/45/41). The GOJ reconsidered the research plan respected comments made by the Scientific Committee and these three resolutions, and improved it as reported in the IWC Circular Communication (Circular RG/VJH/19991).

The research in Area IV in 1993/94 was conducted by the improved plan, and it was successful as reported by Nishiwaki et al. (this meeting, SC/46/SH15). Then, the research in Area V in 1994/95 season will be conducted based on the improved plan as in Area IV in last season.

OBJECTIVES

There are no substantial changes from the initial research project. The objectives of the Japanese research are as follows:

1. Estimation of the biological parameters required for the stock management of the Southern Hemisphere minke whale

The primary objective of the program is to estimate the age-specific natural mortality rate from samples obtained through a stochastic samplings carried out in combination with systematic sighting surveys. The program is also designed to identify stocks and to estimate the abundance and its changes, including the monitoring of the recruitment and reproductive parameters and their changes, based on the same samples.

2. Elucidation of the role of whales in the Antarctic marine ecosystem.

The program also includes this objective. One of the important component of this objective is the collection and quantitative analysis of data on the prey-predator relationships centering on the minke whale.

Recognizing the increasing concerns of the IWC on the research for the environment and ecosystem in the Antarctic Ocean, the necessary of study on the impacts on the whale stocks by the global environmental changes such as possible effect of climate changes caused by ozone layer depletion and of the pollutant such as heavy metals and organochlorine compounds should be addressed.

NUMBER, SEX, SIZE AND STOCKS OF ANIMALS TO BE TAKEN AS SAMPLES

Three hundred (300) ordinary form of the Antarctic minke whales with allowance of $\pm 10\%$ will be sampled randomly. Any dwarf form minke whales will not be sampled.

Samples are to be collected without predetermination of sex and size of the animals. Research and sampling are to be made in Area V.

**OPPORTUNITIES FOR PARTICIPATION IN THE RESEARCH
BY SCIENTISTS OF OTHER NATIONS**

There is no change from the previous plan.

Opportunities for participation in the research by foreign scientists are available as described in the research proposal presented to the IWC in the previous years. The followings are the particulars for participation by foreign scientists:

Opportunities for participation by Foreign Scientists:

Opportunities for participation in the research under this program will be given to any scientist to the extent allowed by accommodation and other logistic conditions, provided that such participation does not cause inconveniences in the implementation of the program. The selection of the participants are to be determined by the Whale Research Coordinating Committee, Japan, which will consider the various conditions such as accommodation and others for a final determination.

Conditions for Participation

1. Costs

Costs for participation, such as travel expenses to and from the port of embarking and disembarking from the research vessel, meals on board the research vessel, and any special instruments required by the participant, are to be borne by the participant.

2. Indemnification and insurance for casualty or personal injury on board the research vessels

The Institute of Cetacean Research and the crew of the research vessels or research team will not be able to take responsibility for any casual injury that be inflicted on the foreign participants resulting from their negligence or maneuver.

3. Cancellation of the participation

Any participants who are found to have intentionally sabotaged in the course of implementation of the researches and thereby impaired the execution of such a research shall be canceled of their participation in this program.

POSSIBLE EFFECT ON CONSERVATION OF THE STOCK

The last IWC/IDCR minke whale sightings cruise in Area V was

conducted in 1991/92, and the Scientific Committee at its 42nd Annual Meeting agreed in the course of the comprehensive assessment of the Southern Hemisphere minke whales that the population size of the minke whales in Area V was 294,610 (IWC, 1991: p.59). At the same meeting, the stock of Area V was classified as IMS, and a conservative catch limit of 1,746 for this stock, according to the NMP was calculated by the Scientific Committee (IWC, 1991 : p.62). As the research in Area V has been conducted in every other year, the proposed sample size of 300 to be taken in Area V for 1994/95 would be synonymous to the catch of 150 per year on the basis of the average take over the two years. It is clear that the take of this sample size would not affect the conservation of the stock in any way.

OUTLINE OF THE 1994/95 SURVEY

Number of vessels:

- One factory ship (research base),
- Three sighting-sampling vessels, one of which is dedicated solely to sighting.

Survey period:

From November 1994 to April 1995.

Survey area:

Area V of south of 30°S, including all region of the Ross Sea.

Stratification of the research areas:

The entire research area: The entire research area will be divided into East and West sectors at 165°E. For the East sector, the area will be further divided into Middle and South sub-areas at 69°S. For the West sector, the waters between ice edge and 45 miles off the ice edge will be designated as South sub-area, having Middle sub-area designated from 45 miles off ice-edge to the 60°S. Thus, four strata (West-Middle, East-Middle, West-South and East-South) are formed as the units of research.

Special Monitoring Zone (SMZ): A part of the research area of approximately 20° in longitudinal range is defined as "Special Monitoring Zone (SMZ)". The Middle and South strata will be treated in the same way as in the case of the entire research area.

Northern Zone: The Northern Zone corresponds to the area between 30°S-60°S. On their way to and from the SMZ, three sighting/sampling vessels including one dedicated sighting vessel will conduct whale sighting surveys in this zone.

Number of surveys:

The entire survey of Area V - once
SMZ - one each before and after the entire research.
Northern zone - two surveys on the way to and from SMZ.

Minimum proceeding distance:

A minimum daily proceeding distance will be established in order to increase research activities.

Sighting survey method:

As in the case of the previous research, similar method to that adopted by the IDCR cruise will be used in the Japanese research. Limited closing mode will be applied for minke whales be made only for sightings of the animal within the range of 3 n.miles from the trackline.

Research time will be from 30 minutes after sunrise and 30 minutes before sunset or from 06:00 to 20:00 hours. Research will be suspended at an average wind velocity of 26 knots or more in the southern sub-areas; this rule will be also applied to the research in the Ross Sea (East-South). In the middle sub-areas research will be suspended at an average wind velocity of 21 knots or more. No research will be conducted when the visibility is 1.5 miles or less. One vessel, out of the three sighting/sampling vessels, will be used only for sighting in all research areas.

For the dedicated sighting vessel, the same limited closing mode as applied to minke whale will be employed in the cases of blue, humpback and right whales. The dedicated sighting vessel engages in the sighting survey in advance of the sampling operation each day in order to eliminate the effect of the sampling activity on sighting. In this new survey mode the same vessel will be engage for sighting survey in each sub-area instead of the daily rotating system of the previous survey in this area.

Sampling method:

Samples will be collected by two sampling vessels in all

research areas. In order to attach greater importance to the representativeness of the samples, only one whale will be caught from a school.

Selection of the target whale will follow the previous pattern by which one whale is selected randomly according to the random digits table.

Samples/data to be collected:

1. Sighting data on minke whales as well as those on other whale species including blue whales.
2. Biological samples/data: stock identity, age, growth, reproduction, maturation, migration/segregation, feeding and nutrition, physiology, distribution of hormones, parasites and others.
3. Weather, oceanography, and environment: environmental factors such as weather, sea ice, water temperature, marine debris and environmental pollutants in the sea and air.
4. Biopsy sampling for blue, humpback and right whales mainly for genetic studies.
5. Photo-identification for blue, humpback and right whales.
6. Satellite telemetry for minke whales (feasibility studies): Shooting test for attachment of the satellite telemetry transmitter to the whale body.
7. Behaviour of blue whales: recording the diving time and other behaviour of blue whales in the feeding ground.
8. Behaviour of beaked whales: recording the diving time and other behaviour of beaked whales, especially the Southern bottlenose whale.

Introduction of a new study item, Experiment on effect of sampling activity:

To assess possible effects of the sampling activity to stock abundance estimates by sighting, observation study of the reaction of the minke whales swimming near and around the sampling activities is added in the program. Recording of the behaviour of minke whales other than that being targeted for capture in high

density area during the sampling activity is planned.

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