

# Protocol to facilitate research collaboration and data access related to NEWREP-A

## INTRODUCTION

The Government of Japan decided to develop the New Scientific Whale Research Program in the Antarctic Ocean (NEWREP-A) following guidelines offered in the ICJ Judgment for granting special permit whaling under Article VIII, paragraph 1. The research plan for NEWREP-A was submitted to the IWC in November 2014, and reviewed by a panel of international experts in February 2015 (NEWREP-A review workshop), and by the whole IWC SC in May 2015.

The two main objectives of NEWREP-A are the following:

- I. Improvement in the precision of biological and ecological information for the application of the Revised Management Procedure (RMP) to the Antarctic minke whales; and
- II. Investigation of the structure and dynamics of the Antarctic marine ecosystem through building ecosystem models

The main objective I is composed of the following objectives:

- I (i): Abundance estimates for Antarctic minke whales taking into account of  $g(0)$  and additional variance.
- I (ii): Improvement of precision of biological and ecological parameters.
- I (iii): Refinement of stock structure hypotheses of Antarctic minke whales in Areas III-VI for the implementation of the RMP.
- I (iv): Specification of RMP *Implementation Simulation Trials (ISTs)* for the Antarctic minke whales.

The main objective II is composed of the following objectives:

- II (i): Ecological research (krill abundance estimation and oceanographic observation)
- II (ii): Abundance estimates of some cetacean species as input data for ecosystem modelling.
- II (iii): Estimation of prey consumption by the Antarctic minke whale and its nutritional condition.
- II (iv): Ecosystem modelling (spatial interaction among baleen whales and consideration of predators-prey system and allometric reasoning).

See details of the NEWREP-A research plan in (<http://www.icrwhale.org/pdf/151127newrep-a.pdf>).

The first multidiscipline NEWREP-A survey was carried out during the 2015/16 austral summer season a part of east of Areas IV (115°-130°E) and V (130°E-170°W) in Antarctic. Several kinds of data and samples were obtained by the different survey components: biological survey of Antarctic minke whale (*Balaenoptera bonaerensis*); dedicated sighting survey; and krill and oceanographic surveys.

A list of data and samples collected during the NEWREP-A 2015/16 is shown in [Appendix 1](#).

Data and samples collected during the NEWREP-A surveys are available to the national (Japan) and international scientific community through the simple protocol indicated below. Topics can be related to the main research objectives of NEWREP-A as well related to other specific objectives.

Similar samples and data collected for more than 25 years during the JARPA and JARPAII are also available for the scientific community. Details of the data and samples collected by JARPA and JARPAII are available in the following link (JARPA <http://www.icrwhale.org/pdf/JARPAdata.pdf>; JARPAII <http://www.icrwhale.org/pdf/JARPAIIdata.pdf>).

## PROTOCOL

Scientists interested in the data and samples collected by NEWREP-A and/or JARPA/JARPAII programs should follow the following steps:

1. Explain the research objectives and data required using the research proposal format in [Appendix 2](#)
2. Send your research proposal by e-mail to the relevant ICR scientist that is closer to your area of expertise:

Sighting, environmental, whale photo-id data:

Dr. Koji Matsuoka ([matsuoka@cetacean.jp](mailto:matsuoka@cetacean.jp))

Biological data from Antarctic minke whale:

Mr. Takeharu Bando ([bando@cetacean.jp](mailto:bando@cetacean.jp))

Feeding ecology and energetic data from Antarctic minke whale:

Dr. Tsutomu Tamura ([tamura@cetacean.jp](mailto:tamura@cetacean.jp))

Pollutants data from whale and environment:

Dr. Genta Yasunaga ([yasunaga@cetacean.jp](mailto:yasunaga@cetacean.jp))

Genetic data:

Dr. Mutsuo Goto ([goto@cetacean.jp](mailto:goto@cetacean.jp))

Other data:

Dr. Tsutomu Tamura ([tamura@cetacean.jp](mailto:tamura@cetacean.jp))

3. Responses will be sent to you within a 2-week period

Note that CITES export/import permits are required when whale samples are to be transported between countries.

## Appendix 1

List of data collected by the NEWREP-A 2015/16.

Items	Data
Whale abundance estimate*	
Weather data***	115 days
Effort data***	115 days
Sighting record of whales***	1,472 schools
Angle and distance experiments***	320 times
Ice edge line ***	115°E–170°W
Environmental data	
Temperature and salinity profile (CTD)**	37 stations
Echo sound (krill distribution/abundance)**	31 days
Marine debris (sea surface)	0 observation
Antarctic minke whale*	
Catching date and location***	333 individuals
Photographic record of external character	333 individuals
Record of internal and external parasites	333 individuals
Sex and body length***	333 individuals
Body proportion for stock structure*	333 individuals
Skull measurements (length and breadth) for stock structure*	310 individuals
Satellite tracking for stock structure and feeding ecology*	3 individuals
Body weight for feeding ecology**	333 individuals
Organ weight including fat weight for feeding ecology**	5 individuals
Diatom film record for feeding ecology**	333 individuals
Blubber thickness for feeding ecology**	333 individuals
Stomach content: freshness and weight for feeding ecology**	333 individuals
Diving behaviour for feeding ecology**	–
Testis weight for reproductive study***	103 individuals
Mammary gland: lactation status and measurement for reproductive study	230 individuals
Foetal number, sex, length and weight for reproductive study	158 individuals
Marine debris (stomach)	0 individuals
Gross pathological observation and sampling	333 individuals
Other large whales	
Photo-ID	82 individuals

\* Data or samples to be used for Main Objective I; \*\* data or samples to be used for Main Objective II (Other items will be used for other research purposes); \*\*\* data or samples to be used for Main Objectives I and II.

List of sample collected by the NEWREP-A 2015/16.

Items	Sample
Antarctic minke whale*	
Prey species in stomach for feeding ecology**	47 individuals
Faeces and contents from the large intestine for feeding ecology**	0 individuals
Testis for reproductive study***	103 individuals
Ovary for corpora counting and reproductive study***	230 individuals
Mammary gland and endometrium for reproductive study	230 individuals

Earplug for age determination***	333 individuals
Ocular lens for age determination***	333 individuals
Baleen plates for age determination and stable isotope study***	26 individuals
Tissue samples for genetic study***	333 individuals
Tissue and organ samples for chemical study***	333 individuals
Tissue and plasma samples for physiological study***	333 individuals
Vertebral epiphyses for physical maturity	307 individuals
Skin sample (biopsy)	10 individuals
Other large whales Skin sample (biopsy)	40 individuals

\* Data or samples to be used for Main Objective I; \*\* data or samples to be used for Main Objective II (Other items will be used for other research purposes); \*\*\* data or samples to be used for Main Objective I and II.

Number of total sighted whales in the NEWREP-A 2015/16 (school / individual).

Species	Transit to RA		Research area				Transit from RA		Sub total				Total					
	Primary		Secondary		Primary		Secondary		Primary		Secondary		Total					
	y		y		y		y		y		y							
	Sch.	Ind.	Sch.	Ind.	Sch.	Ind.	Sch.	Ind.	Sch.	Ind.	Sch.	Ind.	Sch.	Ind.				
Blue whale	0	0	0	0	14	25	6	9	0	0	2	2	14	25	8	11	22	36
Fin whale	2	2	0	0	14	37	10	25	0	0	0	0	16	39	10	25	26	64
Sei whale	1	2	0	0	0	0	0	0	4	4	0	0	5	6	0	0	5	6
Antarctic minke whale	1	1	0	0	476	1,339	80	219	0	0	3	4	477	1,343	83	223	560	1,563
Like Antarctic minke whale	0	0	0	0	7	7	0	0	0	0	0	0	7	7	0	0	7	7
Humpback whale	0	0	0	0	525	1,128	136	302	0	0	7	22	525	1,128	143	324	668	1,452
Southern right whale	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	2	2
Baleen whale	0	0	2	2	18	24	2	2	0	0	0	0	18	24	4	4	22	28
Sperm whale	4	4	0	0	19	19	2	2	0	0	2	2	23	23	4	4	27	27
Southern bottlenose whale	0	0	0	0	2	4	0	0	0	0	0	0	2	4	0	0	2	4
Arnoux's beaked whale	0	0	0	0	2	20	1	7	0	0	0	0	2	20	1	7	3	27
Unid. beaked whale	1	2	1	3	15	17	2	2	4	5	0	0	20	24	3	5	23	29
Killer whale	0	0	0	0	26	241	3	18	0	0	0	0	26	241	3	18	29	259

Number of photo-identified whales and number of biopsies in the NEWREP-A 2015/16.

Species	No. of individuals photographed	No. of biopsy individuals collected
Blue whale	24	8
Fin whale	0	7
Humpback whale	36	15
Southern right whale	1	1
Killer whale	21	9
Total	82	40

Appendix 2

RESEARCH PROPOSAL TO THE INSTITUTE OF CETACEAN RESEARCH

<b>Title of the research</b>	
<b>Principal Investigator</b>	
<b>Institution and Address of Principal Investigator</b>	
<b>Co-Investigators</b>	
<b>Institutions and Addresses of Co-Investigators</b>	
<b>Objective of the research and rationale</b>	
<b>Data requested</b>	
<b>Methods</b>	
<b>Research plan and schedule</b>	
<b>Output of the research (oral presentations, publications)</b>	
<b>Other remarks</b>	