

# INSTITUTE OF CETACEAN RESEARCH (ICR)

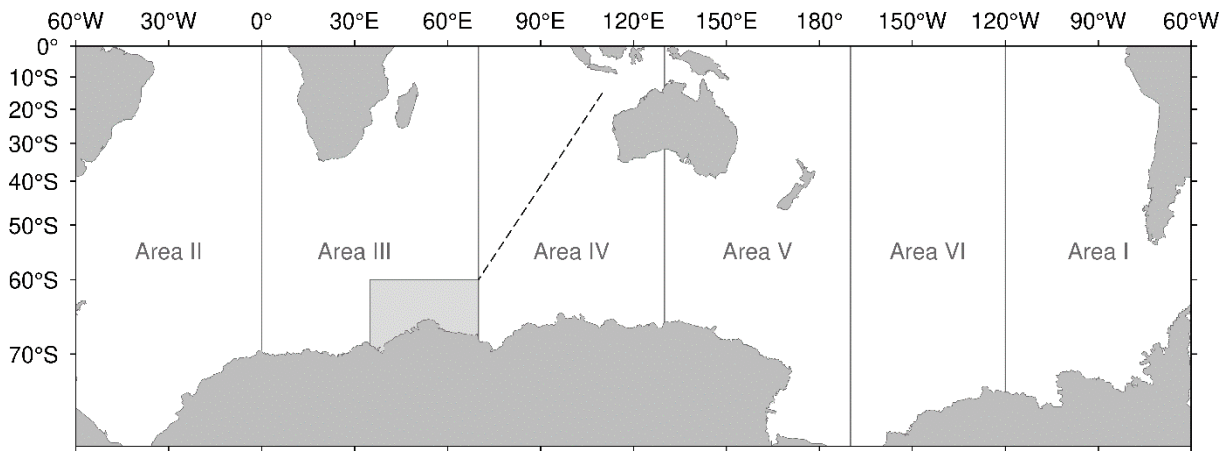
## DATA/SAMPLE OF LARGE WHALES COLLECTED IN THE PERIOD 2018/2019

### ABSTRACT

This document summarizes the data and samples of large cetacean collected by the ICR in 2018 and austral summer season 2018/19. Sighting data for abundance estimates of large whales were collected in the western North Pacific, Bering Sea and the Antarctic during systematic sighting surveys. During the sighting surveys, photo-id, biopsy and satellite tracking experiments of large whales were conducted. A large number of biological items were also collected during the surveys of whaling under special permit in the western North Pacific (NEWREP-NP) and the Antarctic (NEWREP-A). Data and samples collected are being analysed under the objectives of the respective research programs.

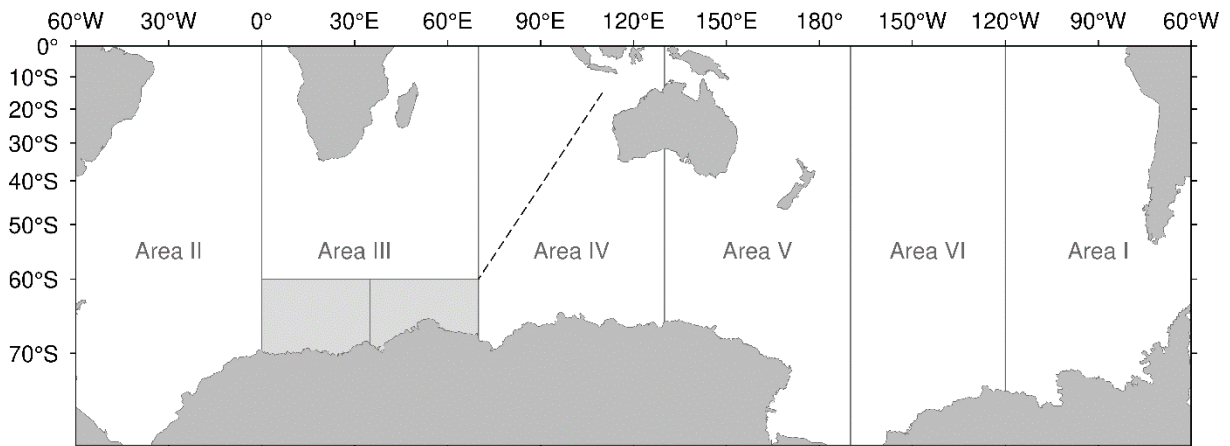
### 1. SIGHTING DATA (including primary and secondary sightings)

#### NEWREP-A Dedicated sighting vessel (Yushin-Maru No.2) (2018/19) in Antarctic Area IIIE including transit



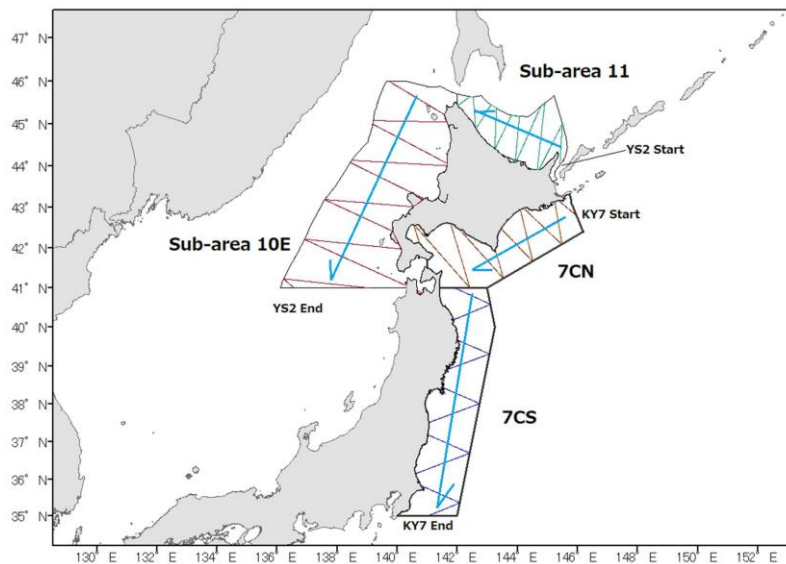
Target species	Date (research period)	Area	No. schools/No. individuals	Contact person
Blue whale	25 Nov/18 – 3 Mar/19	Area IIIE + Transit	21/33	T. Mogoe (ICR) mogoe@cetacean.jp
Fin whale		Area IIIE + Transit	224/517	
Antarctic minke whale		Area IIIE	152/264	
Humpback whale		Area IIIE + Transit	608/975	
Sperm whale		Area IIIE + Transit	80/80	

#### NEWREP-A Sighting and sampling vessels (Yushin-Maru and Yushin-Maru No.3) (2018/19) in Antarctic Area III including transit



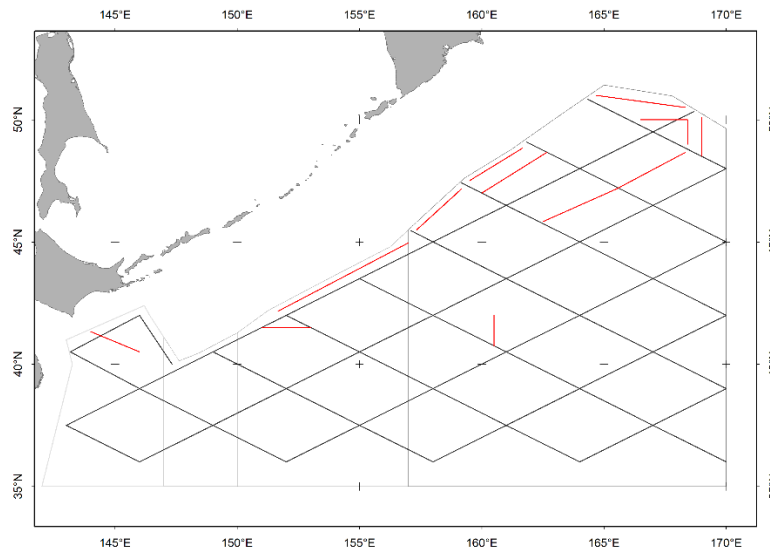
Target species	Date (research period)	Area	No. schools / No. individuals	Contact person
Blue whale	25 Nov/18 – 12 Mar/19	Area III + Transit	14/17	T. Bando (ICR) bando@cetacean.jp
Fin whale		Area III	72/152	
Antarctic minke whale		Area III	362/602	
Humpback whale		Area III + Transit	402/622	
Sei whale		Transit	6/9	
Southern right whale		Transit	5/8	
Sperm whale		Area III + Transit	34/58	

NEWREP-NP Dedicated sighting vessels (*Yushin-Maru No.2* and *Kaiyo-Maru No.7*) (2018) in western North Pacific, southern Okhotsk Sea and Sea of Japan including transit



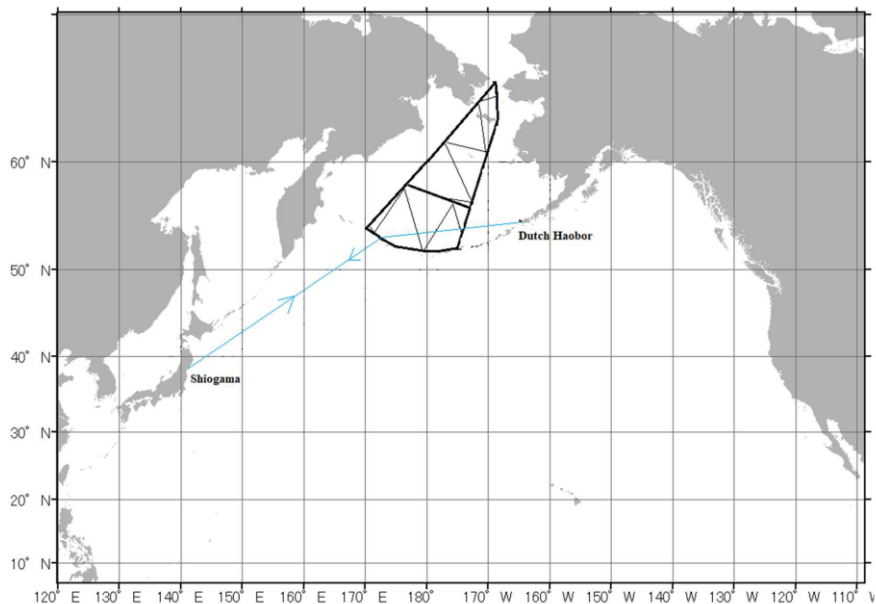
Target species	Date (research period)	Area	No. schools/No. individuals	Contact person
Fin whale	10 May/18 –27 June/18	Western North Pacific	2/3	K. Matsuoka (ICR) matsuoka@cetacean.jp
Sei whale		Southern Okhotsk Sea + Transit	57/105	
		Sea of Japan	1/1	
Bryde's whale		Western North Pacific	3/3	
Common minke whale		Western North Pacific	8/10	
		Western North Pacific + Transit	9/9	
		Southern Okhotsk Sea + Transit	17/18	
Humpback whale	Sea of Japan	19/20		
Sperm whale	Western North Pacific	25/31		
	Southern Okhotsk Sea	1/1		
		Western North Pacific	7/13	

NEWREP-NP Sighting and sampling vessels (*Yushin-Maru* and *Yushin-Maru No.3*) (2018) in western North Pacific



Target species	Date (research period)	Area	No. schools/No. individuals	Contact person
Blue whale	18 May/18 – 15 Aug/18	Western North Pacific	8/11	K. Konishi (ICR) konishi@cetacean.jp
Fin whale			44/47	
Sei whale			289/413	
Bryde's whale			37/43	
Common minke whale			48/50	
Humpback whale			34/38	
Sperm whale			168/303	

IWC-POWER Dedicated sighting vessel (*Yushin-Maru No.2*) (2018) in Bering Sea including transit



Target species	Date (research period)	Area	No. schools/No. individuals	Contact person
Gray whale	3 Jul/18 – 23 Sep/18	Bering Sea + Transit	27/88	K. Matsuoka (ICR) matsuoka@cetacean.jp
North Pacific right whale		Bering Sea + Transit	3/3	
Blue whale		Transit	8/12	
Fin whale		Bering Sea + Transit	135/199	
Sei whale		Transit	5/7	
Common minke whale		Bering Sea + Transit	17/17	
Humpback whale		Bering Sea + Transit	86/122	
Sperm whale		Bering Sea + Transit	35/36	

## 2. PHOTO ID DATA

### NEWREP-A Dedicated sighting vessels (Yushin-Maru No.2 and Kaiyo-Maru No.7) (2018/19) in Antarctic Area III including transit

Target species	Feature	Area	No. photo- id'd	Contact person
Blue whale	Lateral marking	Area III + Transit	24	T. Mogoe (ICR) mogoe@cetacean.jp
Humpback whale	Fluke, Lateral marking	Area III	22	

### NEWREP-A Sighting and sampling vessels (Yushin-Maru and Yushin-Maru No.3) (2018/19) in Antarctic Area III including transit

Target species	Feature	Area	No. photo- id'd	Contact person
Southern right whale	Head	Transit	8	T. Bando (ICR) bando@cetacean.jp
Humpback whale	Fluke, Lateral marking	Area III	36	

### NEWREP-NP Dedicated sighting vessels (Yushin-Maru No.2 and Kaiyo-Maru No.7) (2018) in western North Pacific, southern Okhotsk Sea and Sea of Japan including transit

Target species	Feature	Area	No. photo-id'd	Contact person
Humpback whale	Fluke, Dorsal fin	Western North Pacific	10	K. Matsuoka (ICR) matsuoka@cetacean.jp

### NEWREP-NP Sampling and sighting vessels (Yushin-Maru and Yushin-Maru No.3) (2018) in western North Pacific

Target species	Feature	Area	No. photo-id'd	Contact person
Blue whale	Dorsal fin, head, lateral marking, others	Western North Pacific	3	K. Konishi (ICR) konishi@cetacean.jp

### IWC-POWER Dedicated sighting vessel (Yushin-Maru No.2) (2018) in Bering Sea including transit

Target species	Feature	Area	No. photo-id'd	Contact person
Gray whale	Lateral marking	Bering Sea	41	K. Matsuoka (ICR) matsuoka@cetacean.jp
N.P. right whale	Head, Fluke	Bering Sea	3	
Blue whale	Dorsal fin, Lateral marking	Transit	8	
Fin whale	Fluke, Dorsal fin	Bering Sea + Transit	69	
Humpback whale	Fluke, Dorsal fin	Bering Sea	39	
Sperm whale	Dorsal fin	Bering Sea + Transit	4	

## 3. TELEMETRY/ARTIFICIAL MARKING DATA

### Satellite tracking

### NEWREP-NP Sampling and sighting vessels (Yushin-Maru and Yushin-Maru No.3) (2018) in western North Pacific

Target species	Area	No. attached	No. of available position data	Contact person
Sei whale	Western North Pacific	8	8	K. Konishi (ICR) konishi@cetacean.jp
Common minke whale		1	1	

NEWREP-A Sighting and sampling vessel (Yushin-Marū) (2018/19) in Antarctic Area III including transit

Target species	Area	Tag type	No. Successfully Deployed	Contact person
Antarctic minke whale	Area III	Satellite	1	T. Bando (ICR) bando@cetacean.jp

**4. TISSUE/BIOLOGICAL SAMPLES COLLECTED**

**Biopsy samples**

NEWREP-A Dedicated sighting vessel (Yushin-Marū No.2) (2018/19) in Antarctic Area IIIE including transit

Target species	Area	No. collected	Contact person
Blue whale	Area IIIE + Transit	9	T. Mogoe (ICR) mogoe@cetacean.jp
Fin whale	Area IIIE	2	
Humpback whale	Area IIIE	11	

NEWREP-A Sighting and sampling vessels (Yushin-Marū and Yushin-Marū No.3) (2018/19) in Antarctic Area III including transit

Target species	Area	No. collected	Contact person
Humpback whale	Area III + Transit	29	T. Bando (ICR) bando@cetacean.jp
Southern right whale	Transit	8	
Fin whale	Area III	2	
Antarctic minke whale	Area III	1	

NEWREP-NP Dedicated sighting vessels (Yushin-Marū No.2 and Kaiyo-Marū No.7) (2018) in western North Pacific, southern Okhotsk Sea and Sea of Japan including transit

Target species	Area	No. collected	Contact person
Fin whale	Western North Pacific	1	K. Matsuoka (ICR) matsuoka@cetacean.jp
	Southern Okhotsk Sea	1	
Sei whale	Western North Pacific	2	
Humpback whale	Western North Pacific	1	
Common minke whale	Sea of Japan	3	

NEWREP-NP Sighting and sampling vessels (Yushin-Marū and Yushin-Marū No.3) (2018) in western North Pacific

Target species	Area	No. collected	Contact person
Blue whale	Western North Pacific	1	K. Konishi (ICR) konishi@cetacean.jp
Sei whale		7	
Common minke whale		1	

IWC-POWER Dedicated sighting vessel (Yushin-Marū No.2) (2018) in Bering Sea including transit

Target species	Area	No. collected	Contact person
Gray whale	Bering Sea	7	K. Matsuoka (ICR) matsuoka@cetacean.jp
N.P. right whale	Bering Sea + Transit	3	
Blue whale	Transit	6	
Fin whale	Bering Sea + Transit	24	
Humpback whale	Bering Sea	29	

**Biological samples from scientific permits**

**NEWREP-NP Offshore component (2018)**

Species	Area	Samples and data	No. collected	Contact person
Sei whale	Western North Pacific	Body length and sex	134	K. Konishi (ICR) konishi@cetacean.jp
		External body proportion	134	
		Photographic record and external character	134	
		Diatom film record	134	
		Standard measurements of blubber thickness (five points)	133	
		Detailed measurements of blubber thickness (eleven points)	1	
		Body weight	134	
		Body weight by parts	1	
		Blubber tissues for DNA study	134	
		Blubber, muscle, liver and kidney tissues for organochlorines analysis	134	
		Tissue for nutritional component analysis	6	
		Lung tissue for atmospheric analysis	10	
		Tissues for various analysis	134	
		Mammary gland; lactation status and measurement	71	
		Collection of ovary	71	
		Photographic record of foetus	35	
		Foetal sex (identified by visual observation)	35	
		Foetal length and weight	35	
		Foetal blubber tissues for DNA study	35	
		Testis; weight and histological sample	63	
		Collection of plasma sample	120	
		Stomach content and conventional record	134	
		Weight of stomach content in each compartment	134	
		Stomach contents for feeding study	79	
		Record of external parasites	134	
		Record of internal parasites	134	
		Earplug for age determination	134	
		Lens for age determination	134	
		Vertebral epiphyses sample	134	
		Skull measurements (length and breadth)	128	
		Observation of marine debris in stomach	134	
		Marine debris in stomach	10	
		Muscle and liver tissues for stable isotope	134	
Baleen plate for stable isotope	27			
Blubber and muscle tissues for lipid content	134			
Common minke whale		Body length and sex	43	
		External body proportion	43	
		Photographic record and external character	43	
		Diatom film record	43	
		Standard measurements of blubber thickness (five points)	42	
		Detailed measurements of blubber thickness (eleven points)	1	
		Body weight	43	
		Body weight by parts	1	
		Blubber tissues for DNA study	43	
		Blubber, muscle, liver and kidney tissues for organochlorines analysis	43	
		Tissue for nutritional component analysis	6	
		Lung tissue for atmospheric analysis	10	
		Tissues for various analysis	43	
		Mammary gland; lactation status and measurement	9	
		Collection of ovary	9	
		Photographic record of foetus	6	
		Foetal sex (identified by visual observation)	6	
		Foetal length and weight	6	
		Foetal blubber tissues for DNA study	6	
		Testis; weight and histological sample	34	
		Collection of plasma sample	40	
		Stomach content and conventional record	43	
		Weight of stomach content in each compartment	43	
		Stomach contents for feeding study	42	
		Record of external parasites	43	

		Record of internal parasites	43	
		Earplug for age determination	43	
		Lens for age determination	43	
		Vertebral epiphyses sample	43	
		Skull measurements (length and breadth)	43	
		Observation of marine debris in stomach	43	
		Muscle and liver tissues for stable isotope	43	
		Baleen plate for stable isotope	43	
		Blubber and muscle tissues for lipid content	43	

**NEWREP-NP Coastal component (Abashiri in summer) (2018)**

Species	Area	Samples and Data	No. collected	Contact person
Common minke whale	Southern Okhotsk Sea	Body length and sex	47	H. Yoshida (NRISF) hideka@affrc.go.jp
		External body proportion	47	
		Photographic record and external character	47	
		Diatom film record	47	
		Body scar record	47	
		Measurements of blubber thickness (five points)	47	
		Whole body weight	46	
		Skin tissues for DNA study	47	
		Muscle, liver, kidney, spleen, blubber, heart and ventral groove for various analysis	47	
		Urine for various analysis	13	
		Muscle, liver, kidney and blubber for heavy metal analysis	47	
		Muscle, liver, kidney and blubber for organochlorine analysis	47	
		Collection of blood plasma	39	
		Mammary gland; lactation status, measurement and histological sample	31	
		Uterine horn; measurements and endometrium sample	31	
		Collection of ovary	31	
		Testis weight and histological sample	16	
		Stomach contents and convenient record	47	
		Volume and weight of stomach content in each compartment	47	
		Observation of marine debris in stomach	47	
		Collection of stomach contents for feeding study	47	
		Record of external parasites	47	
		Earplug for age determination	47	
		Eye lens for age determination	47	
		Baleen plate measurements (length and breadth)	47	
		Photographic record of baleen plate series	47	
Length of baleen series	47			
Vertebral epiphyses sample	39			
Number of ribs	47			
Skull measurement (length and breadth)	46			
Measurements of flipper pigment	21			

**NEWREP-NP Coastal component (Ayukawa in spring) (2018)**

Species	Area	Samples and Data	No. collected	Contact person
Common minke whale	Western North Pacific	Body length and sex	18	T. Isoda (ICR) isoda@cetacean.jp
		External body proportion	18	
		Photographic record and external character	18	
		Diatom film record	18	
		Body scar record	18	
		Measurements of blubber thickness (five points)	18	
		Whole body weight	18	
		Body weight by parts	0	
		Skin tissues for DNA study	18	
		Muscle, liver, kidney, spleen, blubber, heart and ventral groove for various analysis	18	
		Urine for various analysis	0	
		Muscle, liver, kidney and blubber for heavy metal analysis	18	
		Muscle, liver, kidney and blubber for organochlorine analysis	18	
		Collection of blood plasma	13	
		Mammary gland; lactation status, measurement and histological	10	

		sample	
		Uterine horn; measurements and endometrium sample	10
		Collection of ovary	10
		Testis weight and histological sample	8
		Stomach contents and convenient record	18
		Volume and weight of stomach content in each compartment	18
		Observation of marine debris in stomach	18
		Collection of stomach contents for feeding study	17
		Record of external parasites	18
		Earplug for age determination	17
		Eye lens for age determination	18
		Largest baleen plate for stable isotopes	18
		Baleen plate measurements (length and breadth)	18
		Photographic record of baleen plate series	18
		Length of baleen series	18
		Vertebral epiphyses sample	5
		Number of ribs	18
		Skull measurement (length and breadth)	18
		Skull measurement (detail)	12
		Measurements of flipper pigment	18

NEWREP-NP Coastal component (Hachinohe in spring) (2018)

Species	Area	Samples and Data	No. collected	Contact person
Common minke whale	Western North Pacific	Body length and sex	33	T. Isoda (ICR) isoda@cetacean.jp
		External body proportion	33	
		Photographic record and external character	33	
		Diatom film record	33	
		Body scar record	33	
		Measurements of blubber thickness (five points)	33	
		Whole body weight	33	
		Body weight by parts	0	
		Skin tissues for DNA study	33	
		Muscle, liver, kidney, spleen, blubber, heart and ventral groove for various analysis	33	
		Urine for various analysis	5	
		Muscle, liver, kidney and blubber for heavy metal analysis	33	
		Muscle, liver, kidney and blubber for organochlorine analysis	33	
		Collection of blood plasma	22	
		Mammary gland; lactation status, measurement and histological sample	14	
		Uterine horn; measurements and endometrium sample	14	
		Collection of ovary	14	
		Testis weight and histological sample	19	
		Stomach contents and convenient record	33	
		Volume and weight of stomach content in each compartment	33	
		Observation of marine debris in stomach	33	
		Collection of stomach contents for feeding study	30	
		Record of external parasites	33	
		Earplug for age determination	33	
		Eye lens for age determination	33	
		Largest baleen plate for stable isotopes	33	
		Baleen plate measurements (length and breadth)	33	
Photographic record of baleen plate series	33			
Length of baleen series	33			
Vertebral epiphyses sample	17			
Number of ribs	33			
Skull measurement (length and breadth)	33			
Skull measurement (detail)	11			
Measurements of flipper pigment	26			

NEWREP-NP Coastal component (Kushiro in autumn) (2018)

species	Area	Samples and Data	No. collected	Contact person
Common minke whale	Western North Pacific	Body length and sex	29	T. Isoda (ICR) isoda@cetacean.jp
		External body proportion	29	

		Photographic record and external character	29	
		Diatom film record	29	
		Body scar record	29	
		Measurements of blubber thickness (five points)	29	
		Whole body weight	29	
		Body weight by parts	0	
		Skin tissues for DNA analysis	29	
		Muscle, liver, kidney, spleen, blubber, hart and ventral groove for various analysis	29	
		Urine for various analysis	5	
		Muscle, liver, kidney and blubber for heavy metal analysis	29	
		Muscle, liver, kidney and blubber for organochlorine analysis	29	
		Collection of blood plasma	24	
		Mammary gland; lactation status, measurement and histological sample	7	
		Uterine horn; measurement and endometrium sample	7	
		Collection of ovary	7	
		Testis weight and histological sample	22	
		Stomach content and conventional record	29	
		Volume and weight of stomach content in each compartment	29	
		Observation of marine debris in stomach	29	
		Collection of stomach contents for feeding study	27	
		Record of external Parasites	29	
		Earplug for age determination	29	
		Eye lens for age determination	29	
		Largest baleen plate for stable isotopes	29	
		Baleen plate measurements (length and breadth)	29	
		Photographic record of baleen plate series	29	
		Length of baleen series	29	
		Vertebral epiphyses sample	16	
		Number of ribs	29	
		Skull measurement (length and breadth)	29	
		Skull measurement (detail)	13	
		Measurements of flipper pigment	6	

NEWREP-A (2018/19)

Species	Area	Samples and data	No. collected	Contact person
Antarctic minke whale	Area III	Body length and sex	333	T. Bando (ICR) bando@cetacean.jp
		External body proportion	333	
		Photographic record of external character	333	
		Diatom film record	333	
		Measurements of blubber thickness	333	
		Body weight	333	
		Body weight by parts	5	
		Blubber tissues for DNA study	333	
		Tissues for chemical analysis	333	
		Tissues for physiological study	333	
		Mammary gland; lactation status and measurement	147	
		Collection of ovary	147	
		Foetal number, sex, length and weight	77*	
		Collection of plasma sample	242	
		Measurement of testis weight	186	
		Collection of testis tissue	186	
		Stomach content, freshness and weight	333	
		Stomach contents for feeding study	48	
		Record of internal and external parasites	333	
		Earplug for age determination	333	
Ocular lens for age determination	333			
Baleen plate for age determination	64			
Vertebral epiphyses sample	269			
Skull measurements (length and breadth)	325			

\*Including seven foetuses of sex unidentified.