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Rødbanken, Tromsø

MEETING OF THE COUNCIL

NAMMCO/30/NPR/ JP-2021-22	JAPAN PROGRESS REPORT ON LARGE CETACEANS – APRIL 2021 - MARCH 2022
Submitted by	Japan
Action requested	For information
Background/content	

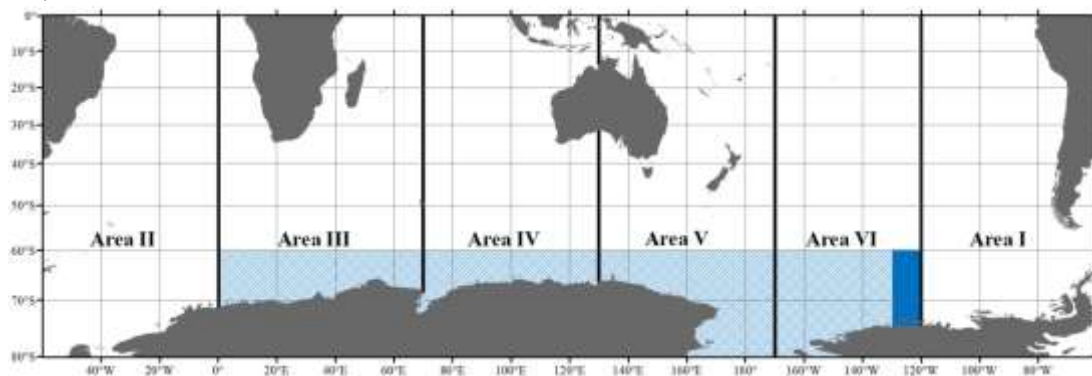
Japan's Scientific Progress Report on Large Cetaceans in the fiscal year 2021 (April 2021 to March 2022), with statistical data for the calendar year 2021

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This document summarizes the data and samples of large cetaceans, which were collected by the Institute of Cetacean Research (ICR), Fisheries Resources Institute (FRI) and Fisheries Agency of Japan (FAJ) in the fiscal year 2021 (April 2021 to March 2022), and statistical data for the calendar year 2021. Sighting data for abundance estimates of large cetaceans were collected in the western North Pacific, Okhotsk Sea and the Antarctic during systematic sighting surveys. During the surveys, photo-id, biopsy and satellite tracking experiments on large cetaceans were also conducted. A large number of biological data and samples were collected during the surveys for whales taken under the commercial whaling. Species and figures of bycatch and stranding of large cetaceans are based on the reports of prefecture governments to the FAJ, which compile information from individual fishermen, fishermen cooperatives and general public. Data and samples collected are being analyzed for contributing to the management of large cetaceans in the North Pacific.

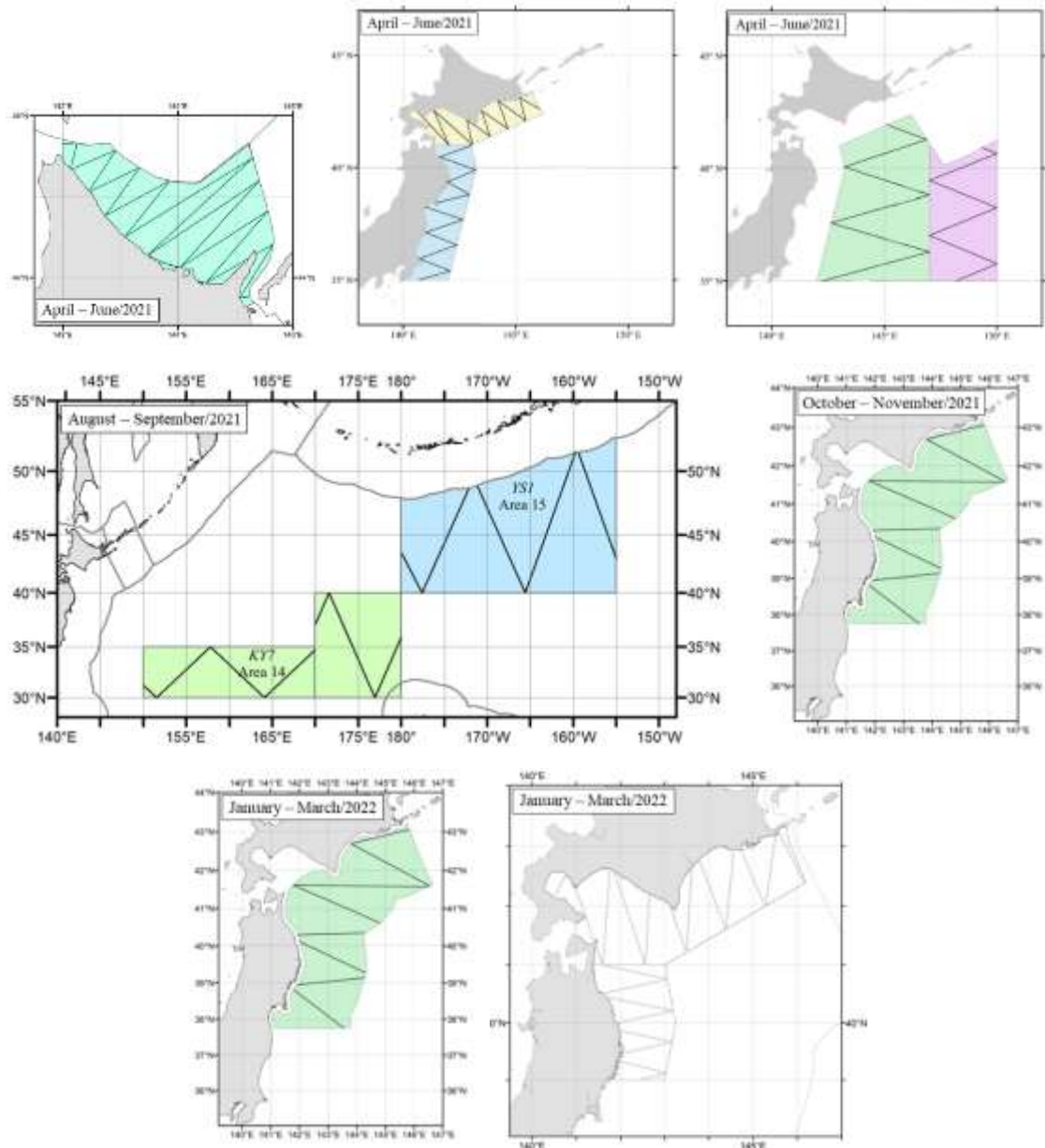
1. SIGHTING DATA

Dedicated sighting survey under the program Japanese Abundance and Stock structure Surveys in the Antarctic (JASS-A) in the Southern Ocean in the austral summer season 2021/22 (vessel: *Yushin-Maru No.2*).



Species	Date (research period)	Local area	No. of schools/No. of individuals	Contact person
Blue whale	13 Dec/21 – 9 Mar/22	Area VIE + Transit	6/7	T. Tamura (ICR) tamura@cetacean.jp
Fin whale		Area VIE + Transit	58/92	
Sei whale		Transit	1/1	
Bryde's whale		Transit	1/1	
Antarctic minke whale		Area VIE + Transit	106/169	
Humpback whale		Area VIE + Transit	35/53	
Sperm whale		Area VIE + Transit	14/15	
Southern bottlenose whale		Area VIE	1/1	

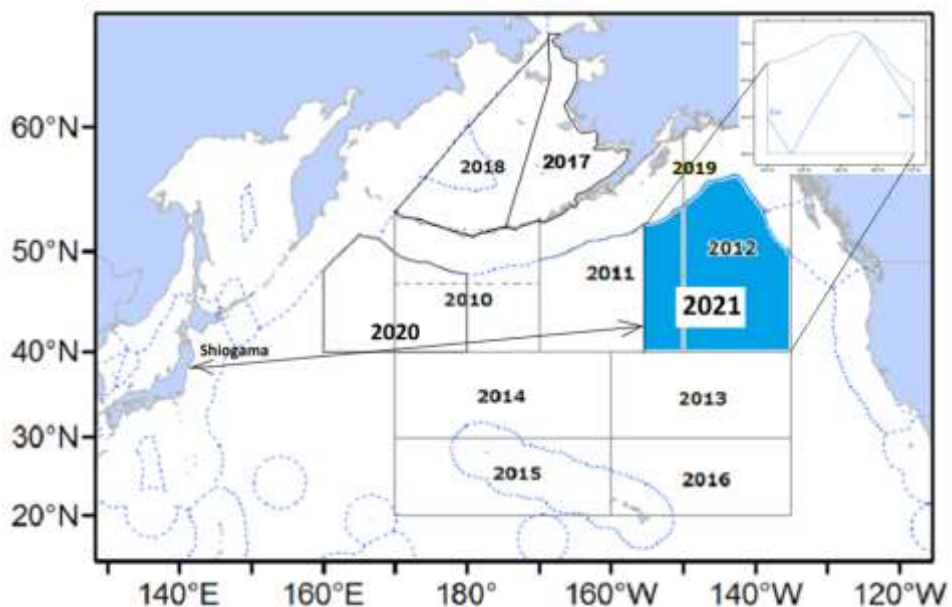
Dedicated sighting surveys under national program in the North Pacific in 2021 and 2022 (vessels: *Yushin-Mar*, *Yushin-Mar* No.2 and *Kaiyo-Mar* No.7).



Species	Date (research period)	Local area	No. of schools/No. of individuals	Contact person
Blue whale	5 Aug – 29 Sep/21	Central North Pacific	17/20	T. Tamura (ICR) tamura@cetacean.jp
Fin whale	7 Apr – 30 Jun/21	Western North Pacific	29/37	
	5 Aug – 29 Sep/21	Central North Pacific + Transit	78/124	
	18 Oct – 24 Nov/21	Western North Pacific	2/2	
	22 Jan – 21 Mar/22	Western North Pacific	19/31	
Sei whale	7 Apr – 30 Jun/21	Western North Pacific	20/24	
	5 Aug – 29 Sep/21	Central North Pacific + Transit	102/156	
	18 Oct – 24 Nov/21	Western North Pacific	7/7	
Bryde's whale	7 Apr – 30 Jun/21	Western North Pacific	150/186	
	5 Aug – 29 Sep/21	Central North Pacific + Transit	57/72	
	18 Oct – 24 Nov/21	Western North Pacific	14/15	
	7 Apr – 30 Jun/21	Western North Pacific	15/16	

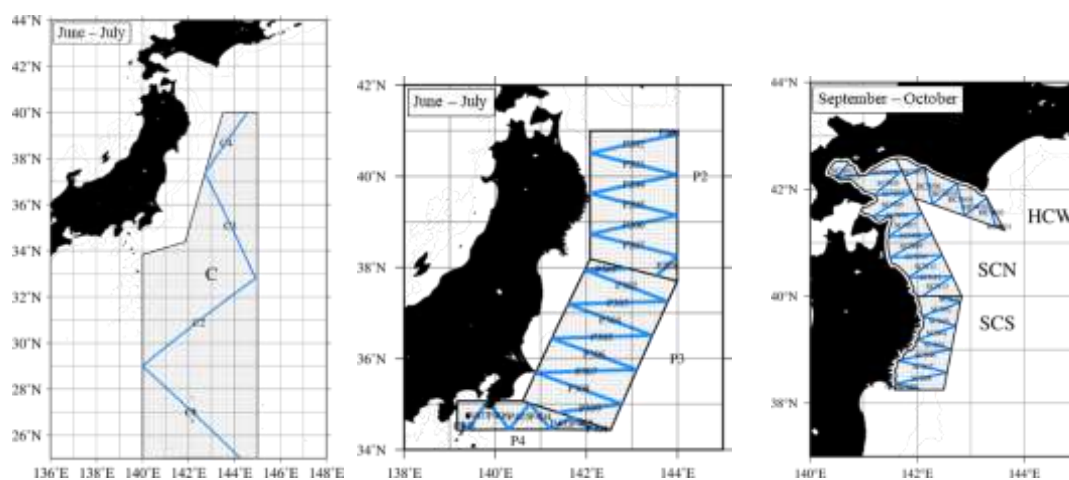
Common minke whale	5 Aug – 29 Sep/21	Central North Pacific	1/1
	22 Jan – 21 Mar/22	Western North Pacific	2/2
Humpback whale	7 Apr – 30 Jun/21	Western North Pacific	48/59
	5 Aug – 29 Sep/21	Central North Pacific	13/16
	18 Oct – 24 Nov/21	Western North Pacific	17/22
	22 Jan – 21 Mar/22	Western North Pacific	5/6
N. P. right whale	22 Jan – 21 Mar/22	Western North Pacific	1/1
Sperm whale	7 Apr – 30 Jun/21	Western North Pacific	112/244
	5 Aug – 29 Sep/21	Central North Pacific + Transit	94/193
	18 Oct – 24 Nov/21	Western North Pacific	6/19
	22 Jan – 21 Mar/22	Western North Pacific	50/216

Dedicated sighting survey under the program International Whaling Commission-Pacific Ocean Whale and Ecosystem Research (IWC-POWER) in the North Pacific in 2021 (vessel: *Yushin-Maru No.2*).



Species	Date (research period)	Local area	No. of schools/No. of individuals	Contact person
Blue whale	2 Aug – 28 Sep/21	Eastern North Pacific	6/7	T. Tamura (ICR) tamura@cetacean.jp
Fin whale		Eastern North Pacific + Transit	79/115	
Sei whale		Eastern North Pacific + Transit	25/40	
Bryde's whale		Eastern North Pacific	20/22	
Sperm whale		Eastern North Pacific + Transit	19/22	

Dedicated sighting survey on small cetacean in the North Pacific in 2021 (vessel: *Kaiyo-Maru No.7*).



Species	Date (research period)	Local area	No. of schools/ No. of individuals	Contact person
Blue whale	22 Sep – 12 Oct/21	Western North Pacific	1/1	H. Yoshida (FRI) yoshida_hideyoshi81@fra.go.jp
Bryde's whale	1 Jun – 21 Jul/21		17/30	
	22 Sep – 12 Oct/21		31/34	
Sperm whale	1 Jun – 21 Jul/21		53/175	

2. MARKING DATA

2.1. Natural marking data

JASS-A survey-Antarctic in 2021/22

Species	Feature	Local area	No. of individuals photo identified	Contact person
Blue whale	Head, dorsal, lateral marking	Area VIE + Transit	7	T. Tamura (ICR) tamura@cetacean.jp
Humpback whale	Fluke, dorsal fin		9	

National dedicated sighting surveys-North Pacific in 2021 and 2022

Species	Feature	Local area	No. of individuals photo identified	Contact person
Blue whale	Head, dorsal, lateral marking	Central North Pacific	12	T. Tamura (ICR) tamura@cetacean.jp
Humpback whale	Fluke, dorsal fin	Central North Pacific	5	
	Fluke, dorsal fin	Western North Pacific	13	
N. P. right whale	Head	Western North Pacific	1	
Sperm whale	Lateral marking	Central North Pacific	1	

IWC-POWER survey-North Pacific in 2021

Species	Feature	Local area	No. of individuals photo identified	Contact person
Blue whale	Head, dorsal, lateral marking	Eastern North Pacific	7	T. Tamura (ICR) tamura@cetacean.jp
Fin whale	Lateral marking		31	

2.2. Telemetry data*JASS-A survey-Antarctic in 2021/22*

Species	Tag type	Local area	No. of individuals tagged	Contact person
Fin whale	Satellite	Area VIE	9	T. Tamura (ICR) tamura@cetacean.jp
Antarctic minke whale	Satellite		15	

National dedicated sighting surveys-North Pacific in 2021 and 2022

Species	Tag type	Local area	No. of individuals tagged	Contact person
Fin whale	Satellite	Central North Pacific	8	T. Tamura (ICR) tamura@cetacean.jp
	Satellite	Western North Pacific	8	
Sei whale	Satellite	Central North Pacific	11	
	Satellite	Western North Pacific	13	

IWC-POWER survey-North Pacific in 2021

Species	Tag type	Local area	No. of individuals tagged	Contact person
Fin whale	Satellite	Eastern North Pacific	2	T. Tamura (ICR) tamura@cetacean.jp
Sei whale	Satellite		3	

Abashiri coastal tagging and biopsy surveys-Okhotsk Sea in 2021

Species	Tag type	Local area	No. of individuals tagged	Contact person
Fin whale	Satellite	Off Abashiri	4	T. Tamura (ICR) tamura@cetacean.jp

3. BIOPSY SAMPLES*JASS-A survey-Antarctic in 2021/22*

Species	Local area	No. of individuals photo identified	Contact person
Blue whale	Area VIE	2	T. Tamura (ICR) tamura@cetacean.jp
Fin whale	Area VIE + Transit	12	
Bryde's whale	Transit	1	
Antarctic minke whale	Area VIE + Transit	15	
Humpback whale	Area VIE + Transit	11	

National dedicated sighting surveys-North Pacific in 2021 and 2022

Species	Local area	No. of individuals photo identified	Contact person
Blue whale	Central North Pacific	1	T. Tamura (ICR) tamura@cetacean.jp
Fin whale	Central North Pacific	5	
	Western North Pacific	7	
Sei whale	Central North Pacific	15	
	Western North Pacific	13	
Humpback whale	Central North Pacific	3	
	Western North Pacific	5	
N.P. right whale	Western North Pacific	1	

IWC-POWER survey-North Pacific in 2021

Species	Local area	No. of individuals photo identified	Contact person
Blue whale	Eastern North Pacific	3	T. Tamura (ICR) tamura@cetacean.jp
Fin whale		9	
Sei whale		4	
Bryde's whale		2	

Abashiri coastal tagging and biopsy surveys-Okhotsk Sea in 2021

Species	Local area	No. of individuals photo identified	Contact person
Fin whale	Off Abashiri	14	T. Tamura (ICR) tamura@cetacean.jp

4. DIRECT CATCHES OF CETACEANS**4.1. Biological samples from commercial whaling***Offshore component (2021)*

Species	Area	Samples and data	No. of individuals	Contact person/institute
Sei whale	Western North Pacific	Body length and sex	25	FAJ
		Photographic record and external character	25	T. Tamura (ICR) tamura@cetacean.jp
		Record of external parasites	25	
		Measurements of blubber thickness (two points)	25	
		Body weight	25	
		Skin tissues for DNA analysis	25	
		Muscle, liver and blubber for various analysis	25	
		Collection of blood plasma	25	
		Mammary gland; lactation status, measurement and histological sample	20	
		Collection of ovary	20	
		Foetal sex (identified by visual observation)	6	
		Photographic record of foetus	6	
		Foetal length and weight	6	
		Foetal skin tissues for DNA analysis	6	
		Eye lens of foetus for age determination	3	
		Testis; weight and histological sample	5	
		Stomach contents and convenient record	25	
		Observation of marine debris in stomach	25	
		Earplug for age determination	25	
		Eye lens for age determination	25	
Bryde's whale		Body length and sex	187	
		Photographic record and external character	187	
		Record of external parasites	187	
		Measurements of blubber thickness (two points)	187	
		Body weight	187	
		Skin tissues for DNA analysis	187	
		Muscle, liver and blubber for various analysis	187	
		Collection of blood plasma	182	
		Mammary gland; lactation status, measurement and histological sample	118	
		Collection of ovary	118	
Foetal sex (identified by visual observation)	32			
Photographic record of foetus	32			

		Foetal length and weight	32	
		Foetal skin tissues for DNA analysis	32	
		Eye lens of foetus for age determination	0	
		Testis; weight and histological sample	69	
		Stomach contents and convenient record	187	
		Observation of marine debris in stomach	187	
		Earplug for age determination	187	
		Eye lens for age determination	187	

Coastal component (2021)

Species	Area	Samples and data	No. of individuals	Contact person/institute
Common minke whale	Western North Pacific	Body length and sex	91	FAJ
		External body proportion	91	H. Yoshida (FRI) yoshida_hideyoshi81@fra.go.jp
		Photographic record and external character	91	
		Body scar record	91	T. Tamura (ICR) tamura@cetacean.jp
		Measurements of blubber thickness (two points)	91	
		Skin tissues for DNA analysis	91	
		Muscle, liver and blubber for various analysis	91	
		Mammary gland; lactation status and measurement	41	
		Uterine horn; measurements and endometrium sample	38	
		Collection of ovary	40	
		Foetal sex (identified by visual observation)	15	
		Photographic record of foetus	15	
		Foetal length and weight	15	
		Foetal skin tissues for DNA analysis	15	
		Eye lens of foetus for age determination	12	
		Testis; weight and histological sample	49	
		Stomach contents and convenient record	91	
		Earplug for age determination	91	
		Eye lens for age determination	91	
Baleen plate for age determination (body length ≤ 6 m)	22			

5. FISHERIES BYCATCHES OF CETACEANS

Species	No. of animals	Location ¹⁾	Fate ²⁾	Gear ³⁾	Target fish species ⁴⁾	Source or contact
Common minke whale	8	Hokkaido	K	FPN	NA	FAJ
	5	Aomori	K	FRN		
	1		D			
	1		D	MIS		
	9		Iwate	K		
	4	Miyagi	K	FPN		
	2	Chiba	K	FPN		
	4	Niigata	K	FPN		
	9	Toyama	K	FPN		
	7	Ishikawa	K	FPN		
	3	Mie	K	FRN		

	1		D			
	3	Kyoto	K	FPN		
	1	Wakayama	K	FPN		
	3	Shimane	K	FPN		
	3	Yamaguchi	K	FPN		
	7	Kochi	K	FPN		
	1	Fukuoka	K	FPN		
	1	Saga	K	FPN		
	6	Nagasaki	K	FPN		
	3	Miyazaki	K	FPN		
	1	Kagoshima	K	FPN		
Sei whale	1	Iwate	K	FPN		
Fin whale	1	Yamagata	K	FPN		
	1	Mie	K	FPN		
	1	Wakayama	D	FPN		
Humpback whale	1	Shizuoka	D	FPN		
	2	Wakayama	R	FRN		
	1		D			

1) Recorded at the place of fishing gears.

2) Fate of whale: D = discarded dead or seriously injured, K = kept for sale or specimen, R = released alive

3) Described using "FAO FISHING DESCRIPTION AND CODES", that is, stationary uncovered pound nets (FPN), set gillnets (GNS) and miscellaneous gear (MIS).

4) Target fish species: NA = not available

6. STRANDING OF CETACEANS

Species	No. strandings	Prefecture	Source or contact
Common minke whale	4	Hokkaido	FAJ
	2	Aomori	
	1	Wakayama	
	1	Kagoshima	
Sei whale	1	Nagasaki	
Bryde's whale	1	Hokkaido	
	1	Aichi	
	1	Wakayama	
	1	Okayama	
Fin whale	1	Ibaraki	
Humpback whale	1	Kanagawa	
	2	Shizuoka	
	1	Nagasaki	
Sperm whale	3	Hokkaido	
	3	Chiba	
Unidentified balaenopterid whale	1	Osaka	
Unidentified baleen whale	2	Hokkaido	
Unidentified large whale	1	Wakayama	

7. PUBLICATIONS (2021–2022)

Bando, T. 2021. Improved estimates of some life-history parameters of the pelagic subspecies of Bryde's whale in the western North Pacific. *Cetacean Population Studies* 3: 239–245.

Diallo, S.T., Sane, A., Nelson, T., Katsumata, T. and Hakamada, T. 2021. Cetaceans off Gabon based on a 2011 sighting survey, with a preliminary density estimate of the humpback whale *Megaptera*

- novaeangliae*. *Cetacean Population Studies* 3: 258–264.
- Ishikawa, H., Otsuki, M., Tamura, T., Konishi, K., Bando, T., Ishizuka, M., Ikenaka, Y., Nakayama, S.M.M., and Mitani, Y. 2022. Foraging ecology of mature male Antarctic minke whales (*Balaenoptera bonaerensis*) revealed by stable isotope analysis of baleen plates. *Polar Science* 31: 100785.
- Isoda, T., Matsuoka, K., Tamura, T. and Pastene, L.A. 2021. Spatial and temporal distribution of floating marine macro debris in the Indo-Pacific region of the Antarctic. *Cetacean Population Studies* 3: 198–211.
- Isoda, T., Tamura, T. and Pastene, L.A. 2021. Ingestion of marine debris and evidence of entanglements involving Antarctic minke whales (*Balaenoptera bonaerensis*) sampled in the Indo-Pacific sector of the Antarctic. *Cetacean Population Studies* 3: 286–294.
- Kato, H., Fujise, Y., Nakamura, G., Hakamada, T., Pastene, L.A. and Best, P.B. 2021. Dwarf minke whales: morphology, growth and life history based on samples collected from the higher latitudes in the Southern Hemisphere. *Cetacean Population Studies* 3: 93–128.
- Katsumata, T., Hirose, A., Nakajo, K., Shibata, C., Murata, H., Yamakoshi, T., Nakamura, G. and Kato, H. 2021. Evidence of winter migration of humpback whales to the Hachijo island, Izu Archipelago off the southern coast of Tokyo, Japan. *Cetacean Population Studies* 3: 164–174.
- Kim, Y., Nishimura, F., Bando, T., Fujise, Y., Nakamura, G., Murase, H. and Kato, H. 2021. Fetal development in tail flukes of the Antarctic minke whale. *Cetacean Population Studies* 3: 231–238.
- Konishi, K. and Tamura, T. 2021. Preliminary use of near-infrared spectroscopy to estimate the biochemical components of the muscles of the Antarctic minke whale *Balaenoptera bonaerensis*. *Cetacean Population Studies* 3: 281–285.
- Maeda, H. and Kato, H. 2021. Seasonal changes in the earplug germinal layers of North Pacific common minke whales. *Cetacean Population Studies* 3: 246–251.
- Matsuoka, K., Hakamada, T. and Miyashita, T. 2021. A note on recent surveys for right whales *Eubalaena japonica* in the western North Pacific. *Cetacean Population Studies* 3: 252–257.
- Nakamura, G., Zenitani, R., Bando, T., Fujise, Y., Yamamoto, R., Nishimura, F., Hirose, A., Kim, Y. and Kato, H. 2021. Skeletal measurements on some large cetacean species done by scientists of TUMSAT and ICR. *Cetacean Population Studies* 3: 215–230.
- Ohashi, Y., Goto, M., Taguchi, M., Pastene, L.A. and Kitakado, T. 2021. Evaluation of a paternity method based on microsatellite DNA genotypes for estimating the abundance of Antarctic minke whales (*Balaenoptera bonaerensis*) in the Indo-Pacific region of the Antarctic. *Cetacean Population Studies* 3: 139–151.
- Pastene, L.A., Goto, M., Taguchi, M. and Matsuoka, K. 2021. Genetic matches of southern right whales in the Indian sector of the Antarctic: a contribution towards understanding their movement and site-fidelity. *Cetacean Population Studies* 3: 129–138.
- Taguchi, M., Goto, M., Milmann, L., Siciliano, S., Tiedemann, R. and Pastene, L.A. 2021. New insights into the genetic structure of sei whales (*Balaenoptera borealis*) at the inter-oceanic scale. *Cetacean Population Studies* 3: 152–163.
- Takahashi, M., Nakamura, G. and Kato, H. 2021. Growth-related changes in the cranium of killer whales in the western North Pacific. *Cetacean Population Studies* 3: 175–188.