

JAPANESE PROGRESS REPORT ON SMALL CETACEAN RESEARCH
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This report summarizes small cetacean fisheries in 2004 as well as researches conducted during the period from May 2004 to April 2005 by the National Research Institute of Far Seas Fisheries (hereafter NRIFSF) of the Fisheries Research Agency of Japan (hereafter FRA) and the Fisheries Agency of the Ministry of Agriculture, Forestry and Fisheries, the Government of Japan (hereafter FAJ) with the cooperation of other related organizations. This report covers information on small cetaceans which is not included in the Japanese Progress Report on Cetacean Research May 2004 to April 2005 (submitted to 57th IWC/SC meeting).

Species and stocks studied

The following species and stocks of small cetaceans were studied by NRIFSF and FAJ:

Common name	Scientific name	Area/stock(s)	Items referred to
Dall's porpoise	<i>Phocaenoides dalli</i>	Off Pacific coast, Okhotsk Sea, Sea of Japan	2.1.1, 4.2, 4.4, 6.1, 7
Finless porpoise	<i>Neophocoena phocaenoides</i>	Coastal waters of Japan	2.1.1, 4.2, 6.1, 7
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	Off Pacific coast	2.1.1, 4.3, 6.1, 7
Striped dolphin	<i>Stenella coeruleoalba</i>	Off Pacific coast, Western North Pacific	2.1.1, 3.1.2, 4.1, 4.2, 4.3, 6.1, 7
Spotted dolphin	<i>Stenella attenuata</i>	Off Pacific coast	2.2.1, 4.2, 4.4, 6.1, 7
Bottlenose dolphin	<i>Tursiops truncatus</i>	Kagoshima Bay, off Pacific coast, East China Sea	2.1.1, 3.1.3, 4.2, 4.4, 6.1, 7
Risso's dolphin	<i>Grampus griseus</i>	Western North Pacific	2.1.1, 4.2, 4.4, 6.1, 7
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Off Pacific coast, western North Pacific, East China Sea	2.1.1, 4.2, 4.4, 6.1, 7
False killer whale	<i>Pseudorca crassidens</i>	Off Pacific coast	4.2, 6.1
Baird's beaked whale	<i>Berardius bairdii</i>	Off Pacific coast, Sea of	2.1.1,

		Japan, Okhotsk Sea	3.1.3,3.2,4.2, 4.4, 6.1, 7
Additional species taken or sighted during dolphin fisheries or small-type whaling operations	-	Off Pacific coast, Sea of Japan, Okhotsk Sea	2.1.1, 4.3
Additional species sighted during the sighting cruise	-	North Pacific, Okhotsk Sea, Southern Hemisphere	2.1.1,6,1
Additional species stranded	-	Around Japan	7

2.Sighting data (this section partly overlaps with descriptions of sighting data in SC/57/Japan /Progprep.)

2.1 Field work

2.1.1 SYSTEMATIC

Regardless of the target species of sighting cruises, all sightings of small cetaceans have been recorded. NRIFSF and FAJ launched a total of eleven dedicated sighting cruises and other related surveys using research vessels and three sighting surveys by airplane from May 2004 to April 2005 in the North Pacific and the Southern Hemisphere, in cooperation with other scientific organizations, including the Institute of Cetacean Research (ICR). All vessels were equipped with a top barrel. Names of the vessels, scientists on board, and period of each cruise are given in Table 1.

Table 1. Name of vessels, scientists on board for sighting and other researches in the North Pacific and the Southern Hemisphere from May 2004 to April 2005.

Name of vessel	Main objective	Period and region	Scientists on board*
[North Pacific]			
<i>Kurosaki</i>	Sighting surveys for common minke whales	April 12 – May 11, Sendai Bay	Ebisui,T., Yonezaki,S., Okumura, Tom., Okumura, Tos. and Tanaka, Y. (all of them are TS/FRA)
<i>Shonan-maru No.2 (Japan-Korea joint survey)</i>	Sighting surveys for mainly common minke whales	May 12 – June 30, Sea of Japan	Saito,T. and Noji, S. (both are TS/FRA)
<i>Shonan-maru</i>	Sighting surveys for large cetaceans	July 24-Sep 21, Sub-area 13	Miyashita, T. (NRIFSF) and Hiruda, H. (TS/FRA)
<i>Shonan-maru No.2</i>	Sighting surveys for large cetaceans	July 24-Sep 21, Sub-area 9	Saito, T. and Honda, M.(both are TS/FRA)
<i>Shunyo-maru</i>	Acoustic and sighting surveys for sperm whales	Aug. 13-Aug. 26, Off the Pacific coast of Japan	Shimada, H. (NRIFSF), Itou, H. (TS/FRA), Nishimaki, M. (TS/FRA), Okumura, T. (TS/FRA), Fujiwara, G.

			(TS/FRA)
<i>Kurosaki</i>	Experimental cruise for cetacean satellite tracking	Sep. 22 – Oct. 12, Off the Pacific coast of Japan	Noji, S. , Tomiyama, K., Tanaka, Y.and Hashimoto, K. (all of them are TS/FRA)
<i>Kurosaki</i>	Diving time for Baird's beaked and sperm whales	July 12 – August 10, Off the coast of Chiba prefecture	Minamikawa, S. (NRIFSF), Kawashima, M (TS/FRA). Izumi, S. (TS/FRA), Hashimoto, K. (TS/FRA), Tanaka, Y.(TS/FRA)
<i>Kurosaki</i>	Cetacean sightings, markings and biopsies	Oct. 20 – Dec. 2, 2004 Off the Pacific coast of Japan	Noji, S. , Tomiyama, K., Tanaka, Y.and Hashimoto, K. (all of them are TS/FRA)
<i>Kanou-maru</i>	Cetacean sightings	Feb. 1-25, 2005 Around Iki and Tsushima Islands	Ebisui, T., Nishimaki, M., Okumura, Tomohiro, Endo, K. and Kai, S.(all of them are TS/FRA)
[Southern Hemisphere]			
<i>Shonan-maru (IWC/SOWER)</i>	Sighting SOWER/Antarctic	Jan.4-Mar.9, 2005, Area III in the Antarctic	Ensor, P. (New Zealand), Sekiguchi, K.(Japan), Olson, P. (USA), Morse, L.(USA)
<i>Shonan-maru No.2 (IWC/SOWER)</i>	Sighting SOWER/Antarctic	Jan.4-Mar.9, 2005, Area III in the Antarctic	Findlay, K. (South Africa), Yoshimura, I. (Japan), Friedrichsen, G. (USA), Waerrebeek, K.V.(Belgium)

The IWC/SOWER (Southern Ocean Whale and Ecosystem Research) Antarctic sighting cruise was conducted from 4 January to 9 March 2005. The Government of Japan provided two research vessels (*Shonan-maru* and *Shonan-maru No.2*) and crew for this program, as has been the case for the last twenty-seven years. H. Kato (NRIFSF) acted as the organizer of the cruise and as a member of the steering group of the program. Planned research area was in Area III (0°-70°E) and for forty-seven days. The details of the cruise and results will be separately reported at the 57th IWC/SC meeting.

Table 2. Small cetaceans sighted during Japanese dedicated sighting surveys (*Shonan-maru* and *Shonan-maru No.2*) in the Southern Hemisphere in the 2004/2005 austral summer season (including SOWER/Blue whale cruise, SOWER/Antarctic cruises and those before and after them). The number is given by 10° squares based on the noon position of vessels.

10° square	Distance (n.miles)	No. of sightings		
		Pacific-white sided dolphin	Southern right whale	Striped dolphin

		dolphin			
A	8	32	-	-	-
	16	50	2	-	-
B	7	974	-	-	-
	8	809	-	-	-
	9	391	-	-	-
	10	183	-	-	-
	11	476	-	-	-
	12	386	-	-	-
	13	249	-	-	-
D	8	276	-	-	-
	16	99	-	-	-
	17	169	-	-	-
E	8	122	-	-	-
	17	270	-	120	-
	18	278	-	-	435
Total		4,764	2	120	435

Of the nine cruises in the North Pacific, six were mainly for sighting surveys with skin biopsies conducted at an opportunistic basis.

Total distances covered by the searches during the sighting cruises were 4,764 and 6,730 nautical miles for the Southern Hemisphere and the North Pacific, respectively. In addition, systematic sighting data were also obtained during the biopsy and marking surveys. During these sighting surveys in the North Pacific, several species of small cetaceans were found (Table 3 for the summer season and Table 4 for the winter season).

With cooperation among the NRIFSF, Kochi prefecture government (KPG) and the Whale Watching Association in Tosa Bay (WATB), the sighting surveys on Bryde's whales were conducted in the coastal waters off Kochi in July and August 2004, using a total of 33 whale watching boats belong to the WATB. The boats (5 -10t) were without top barrels and excluded from Table 1, but the boats were employed as sighting survey vessels in local coastal waters. The survey lasted six days in July and five days in August, and T. Kishiro (NRIFS), ten research assistants and 33 fishermen members of WATB acted as the researchers on board. A total of four schools (350 animals) of common dolphins and two schools (85 animals) of Risso's dolphins were sighted.

A sighting survey for Bryde's whales was also conducted in the coastal waters off Kasasa, Southwest end of Kyushu, in August 2004, under the cooperation among the NRIFSF, Kagoshima prefecture government (KAPG), and Nomaie Fishery Cooperative Union (NFCU). A total of 18 whale watching boats (belong to the NFCU) was used as the research vessels. The surveys lasted six days. Kishiro and 14 research assistants (Kasasa Ebisu Maritime Museum and Kagoshima University) acted as the researchers on board. A total of 19 schools (1,025 animals) of spinner dolphins, four (240 animals) of spotted dolphins, one (50) of bottlenose dolphins, one (70) of rough-toothed dolphins and one (10 animals) of Risso's dolphins were sighted.

Table 3. Small cetaceans sighted during Japanese dedicated sighting surveys (*Shonan-maru*, *Shonan-maru No.2* and *Kurosaki*) operated in the North Pacific during 2004 summer season (April to September 2004). The number is given by 10° squares based on the noon position of the vessels.

10° square	Distance (n.miles)	No. of sightings										
		<i>dalli</i> -type Dall's porpoise	<i>truei</i> -type Dall's porpoise	Pacific white-sided d.	Right whale d.	Bottle-nose d.	Striped d.	Spotted d.	Rough-toothed d.	Fraser's d.	N.form short-finned p.w.	Baird's beaked w.
M 20	740	14	4	2,397	-	-	-	-	-	-	14	-
21	2,136	24	156	-	-	13	923	20	5	300	672	300
22	28	-	-	-	-	-	120	-	-	-	-	-
23	68	-	-	-	-	-	-	-	-	-	-	-
N 20	717	107	-	1,000	-	-	-	-	-	-	20	-
21	585	151	-	238	-	-	-	-	-	-	-	-
22	223	6	-	7	-	-	-	-	-	-	8	-
23	1,131	178	-	1,903	700	-	-	-	-	-	-	-
24	1,067	166	-	10	-	-	-	-	-	-	-	-
D 23	35	-	-	-	-	-	-	-	-	-	-	-
Total	6,730	646	160	5,555	700	13	1,043	20	5	300	714	300

Table 4. Small cetaceans sighted during Japanese dedicated sighting surveys (*Kurosaki*, *Kanou-maru* and transit cruises of the SOWER by *Shonan-maru* and *Shonan-maru No.2*) in the North Pacific in 2004/2005 autumn-winter season (October 2004-March 2005).

10° square	Distance (n.miles)	No. of sightings									
		<i>Dalli</i> -type Dall's porpoise	<i>truei</i> -type Dall's porpoise	Pacific white-sided d.	Common d.	Bottle-nose d.	Striped d.	Spotted d.	Spinner d.	Bird's beaked w.	
E 10	426	-	-	-	-	-	407	-	-	-	
11	269	-	-	-	-	32	-	-	-	-	
F 11	114	-	-	-	-	-	-	-	-	-	
12	517	-	-	-	-	-	-	-	-	-	
13	491	-	-	-	-	-	-	-	3	-	
14	517	-	-	-	-	-	110	-	-	-	
15	266	-	-	-	-	-	-	-	-	-	

G	15	266	-	-	-	-	-	-	-	-	-
	16	478	-	-	-	-	-	-	-	-	-
	17	550	-	-	-	-	-	-	-	-	-
	18	468	-	-	-	-	120	105	70	-	-
K	19	126	-	-	-	-	-	-	-	-	-
	20	515	-	-	-	-	30	-	-	-	-
			-	-	-	-	-	-	-	-	-
L	20	254	-	-	-	-	-	-	-	-	-
	21	335	-	-	-	-	-	-	-	-	-
M	19	457	-	-	506	-	-	-	-	-	-
	20	239	-	-	4	-	70	-	-	-	-
	21	1,294	2	156	-	40	5	6,492	-	-	10
	22	95	-	-	-	-	-	-	-	-	-
Total		7,677	2	156	510	40	37	7,229	105	73	10

Aerial sighting surveys for finless porpoises were conducted to obtain information on their abundance and distribution in Sendai Bay-Tokyo Bay, in Hibiki Nada and Genkai Nada, in Ariake Sound and Tachibana Bay, and in Omura Bay. Yoshida and Minamikawa conducted the surveys under collaboration of two aquaria (Ibaraki Prefectural Oarai aquarium, Shimonoseki Marine Science Museum). K. Hattori (JANUS) joined the survey in Sendai Bay-Tokyo Bay. In Sendai Bay-Tokyo Bay, the surveys were carried out on 24 and 29 October 2004. Thirty-nine schools (158 animals) of finless porpoises and an unidentified large toothed whale were detected during the flight of 506.1 nautical miles. In Hibiki Nada and Genkai Nada, a total of 315.3 nautical miles was searched on 11 October 2004 and two schools (two animals) of porpoises were sighted. In Ariake Sound and Tachibana Bay, 222.2 nautical miles was searched on 7 October 2004 and 23 schools (34 animals) of porpoises were detected. A survey was carried out in Omura Bay on 7 October 2004, which was resulted in sightings of 18 porpoise schools (24 animals) under the 63.3 nautical miles flight.

In waters surrounding the Lesser Antilles, a sighting survey was conducted during the period of 17 April-14 May, under the FAO Project (GCP/RLA/140/JPN). The NRIFSF and ICR carried out the survey, using the research vessel *Shonan-Maru*. All the eight Caribbean fisheries officers and assistances (one from each of St. Lucia, St. Kitts & Nevis, Antigua & Barbuda, Barbados, Trinidad & Tobago, St. Vincent & the Grenadines, Dominica, and Grenada) were on board. Yoshida joined as senior scientist. The survey covered 1,274.9 nautical miles of the primary searching distance and resulted in sightings of 76 schools (1,063 animals) including three sightings of Gervais' beaked whales (eight animals), three of short-finned pilot whales (32), four of melon-headed whales (132), one of a Risso's dolphin, six of bottlenose dolphins (42), three of short-snouted spinner dolphins (43), 11 of pantropical spotted dolphins (535), two of Atlantic spotted dolphins (70), one of Fraser's dolphins (30), one of striped dolphins (90). Unfortunately, it is thought that bad weather conditions had reduced the detectability of cetaceans, especially of dolphins.

In order to accumulate information on distribution of cetaceans inhabiting coastal waters of the western part of the North Africa, a sighting survey was conducted by Boussoura National Research Center of Fisheries Science, Republic of Guinea, using the research vessel "GENERAL LANSANA CONTE" (198t). The NRIFSF, ICR, Kyodo Senpaku Kaisya, Ltd. (KSK), and Overseas Fishery Cooperation Foundation supported the survey. All the 11 African researchers were on board (three from Guinea and one from each of Mauritania, Mali, Senegal, Guinea Bissau, Cote d'Ivoire, Benin, Gabon, and Namibia) and searched cetaceans from the upper deck and search mast of the vessel. Yoshida and M. Mori (KSK) also join to the survey. In the offshore waters, sea condition was not suitable for the sighting survey. Thus, the survey was

conducted mainly in the coastal waters. A total of 418.1 nautical miles was searched in the period 22-31 January 2005. Researchers obtained sightings of 19 cetacean schools (569 animals), including, six bottlenose dolphin schools (32 animals), three common dolphin schools (390 animals), and three Atlantic spotted dolphin schools (569 animals).

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

Opportunistic sighting data have been collected during small-type whaling and dolphin fishery operations. They mainly consist of sightings of target species within the fishing grounds (e.g. southern form short-finned pilot and false killer whales, Risso's, bottlenose, striped and spotted dolphins off Taiji).

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

No small cetacean natural marking data were collected during the period from May 2004 to April 2005.

3.1.2 ARTIFICIAL MARKING DATA

S. Noji (FRA) and K. Tomiyama (FRA) succeeded in "dart-tag" marking of 138 striped dolphins in total during the research cruise on *Kurosaki* (Table 5). No marks were retrieved during the period from May 2004 to April 2005.

Table 5. Artificial marking data released by NRIFSF, May 2004 - April 2005.

Species	Area	No. marked
Striped dolphin	N.Pacific	138

3.1.3 TELEMETRY DATA

Iwasaki conducted satellite tracking of bottlenose dolphins. One was released on 12 November 2004 from Futo, Ito city, Shizuoka, and was tracked for ten days. The dolphin moved around the Izu islands. Additional five dolphins were released from Taiji on 8 February 2005, and were tracked for 21 days at the longest. They moved westbound and stayed in Tosa bay.

Minamikawa (NRIFSF) and Kawashima (FRA) deployed, with an air gun, improved version of a tag containing a data-logger (depth and temperature) and Argos PTT on a free-swimming Baird's beaked whale at 35° 15.02'N, 141° 04.27'E on 23 July. The tag was released from the whale at 41° 17.48'N, 144° 11.64'E on 4 August and recovery of the tag succeeded. Although the diving record was not obtained due to the equipment failure, it could be tracked for 12 days using Argos tracking system.

3.2 Analyses/development of techniques

Minamikawa and Iwasaki manufactured an improved version of the tagging system of a data-logger using air gun for beaked whales. The tag was made lighter and smaller, and had built-in automatic releaser. It was used to obtain diving behavior data of Baird's beaked whales.

4. Tissue/biological samples collected

4.1 Biopsy samples

Skin biopsy was attempted during the cruises mentioned in 2.1.1. All of the biopsy samples collected during the cruises is listed in Table 6.

Table 6. Biopsy samples collected during Japanese research cruises, May 2004 - April 2005.

Species	Area	No.	Archived	No.	Total	Contact
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		Collected	(Y/N)	Analyzed	holdings	Institute
Striped dolphin	N. Pacific	6	Y	0	6	NRIFSF

4.2 Samples from direct catches or bycatch

The national quota of Baird's beaked whales was sixty-two animals. Fishing season was from 25 May to 30 June for one land station in Hakodate on the Sea of Japan coast, 1 July to 31 August for two land stations in Ayukawa and Wadaura on the Pacific coast, and 1 to 10 September for the Abashiri station on the Okhotsk coast. A total of sixty-two whales (eight off Hakodate, two off Abashiri, twenty-six off Ayukawa and Wadaura) were taken by four catcher boats (*Kohei-maru* #75, *Taisho-maru* #28, *Katsu-maru* #7 and *Sumitomo-maru* #31). Kishiro organized the field data collection from the fishery operations, and all the catches were examined and samples taken by the following five biologists: Kishiro, R. Okamoto (FAJ), T. Hara (FAJ), N. Yoshino (FAJ) and S. Tabata (FAJ). The national quota of northern form short-finned pilot whales for small-type whaling was fifty-eight whales with a fishing season from 6 November to 20 December for two boats (*Kohei-maru* #75 and *Taisho-maru* #28). A total of thirteen whales were taken by the two vessels from the station in Ayukawa. All the catches were examined and samples taken by Kishiro, H. Sato (FAJ) and Y. Morita (FAJ). The national quota of southern form short-finned pilot whales for small-type whaling was sixty whales with a fishing season from 1 May to 30 September. A total of twenty-nine whales were taken by three catcher boats (*Katsu-maru* #7, *Sumitomo-maru* #31, and *Seiwa-maru*) operating from one land station (Taiji). All of the catches were examined and samples taken by Hara and Sato. The FAJ also set a national catch quota of twenty Risso's dolphins for small-type whaling in Taiji from 1 May to 30 September. A total of seven animals were taken by *Katsu-maru* #7, *Sumitomo-maru* #31 and *Seiwa-maru*, and examined by Hara and Sato. In Taiji during May-August 2004, the researchers also collected samples from hand harpoon catches when they had the opportunity, including thirty bottlenose, one spotted, five Risso's and three striped dolphins.

Kishiro, Wakabayashi (FRA) and R. Okamoto (FAJ) collected stomach contents of eight Baird's beaked whales taken by small-type whaling in Hakodate from May to June 2004. Y. Morita (FRA) recorded prey species and weight of stomach content of 12 northern form short-finned pilot whales taken by small-type whaling in Ayukawa from November to December 2004. Okamoto collected stomach contents of 37 *truei*-type and two *dalli*-type Dall's porpoises that were taken off Iwate prefecture from January to February 2005.

Iwasaki and his colleagues, Y. Tomizawa (FRA), S. Kanazawa (FRA), S. Saino (FRA), T. Hara (FRA) and Y. Morita (FRA), collected samples for life history and genetic studies from catches of drive and hand harpoon fisheries in Taiji during operations through 1 October to 20 December 2004 and 7 January to 10 February 2005. They examined a total of 1,240 animals composed of 592 bottlenose, 403 striped and 245 Risso's dolphins.

Iwasaki and R. Okamoto (FRA) collected samples (five bottlenose dolphins) for life history, genetic and food preference studies from catches of drive fishery in Shizuoka. Through the operation, Iwasaki successfully introduced the Faroese humane killing method for cetaceans.

Under contract with FRA and supervised by NRIFSF, sample collection for life history and genetic studies of dolphin fisheries was performed in Iwate and Okinawa prefectures. T. Horikoshi of Iwate Fisheries Technology Center (hereafter IFTC) and his colleagues collected samples from 39 *truei*-type and two *dalli*-type Dall's porpoises (taken off Iwate during 31 January- 9 February 2005). During April through March, S. Shirakizawa (IFTC), J. Sato (IFTC) and Horikoshi recorded color type, sex and body length of 1,231 *dalli*-type and 1,177 *truei*-type Dall's porpoises landed at the Kamaishi Fish Market and collected DNA samples from 66 *dalli*-types. H. Miyahara and N. Higashi of Okinawa Churaumi Aquarium collected samples for life history and genetic studies from 11 southern form short-finned pilot and one bottlenose dolphin which were taken by hand harpoon fishery in Okinawa. Details of biological materials collected by the above activities are given in Table 7.

Table 7. Samples collected from operations of small-type whaling and dolphin fisheries and from by-caught cetaceans by other fisheries, May 2004-April 2005.

Species	Area	Type of fishery	No. collected	Archived (Y/N)	Tissue type(s)	Contact Institute
Dall's porpoise	<i>dalli</i> -type N. Pacific	Hand harpoon	68	Y	tooth(To), skin(Sk), liver(L), muscle(M), ovary(O), uterine horn(U) and testis(Te)	NRIFSF

	<i>truei-</i> type	N.Pacific	Hand harpoon	39	Y	To, Sk, L, M, O, U, Te and stomach content(St)	NRIFSF
Finless porpoise		N.Pacific	Gill net (by catch)	1	Y	whole body	NRIFSF
Striped dolphin		N.Pacific	Hand harpoon	6	Y	To, Sk, M, O, U and Te	NRIFSF
			Driving	400	Y	To, S, M, O, U and Te	NRIFSF
Spotted dolphin		N.Pacific	Hand harpoon	1	Y	To, S, M, O, U, Te and St	NRIFSF
Bottlenose dolphin		N.Pacific	Hand harpoon	30	Y	To, Sk, M, O, U, Te and St	NRIFSF
			Driving	597	Y	To, Sk, M, O, U and Te	NRIFSF
		E. China Sea	Hand harpoon (crossbow)	1	Y	To, Sk and M	NRIFSF
Risso's dolphin		N.Pacific	Small-type whaling	7	Y	To, Sk, L, M, O, U, Te, epididymis (E), vertebral epiphysis (V) and St	NRIFSF
			Hand harpoon	5	Y	To, Sk, L, M, O, U and Te	NRIFSF
			Driving	245	Y	To, Sk, L, M, O, U and Te	NRIFSF
Short-finned pilot whale	northern form	N.Pacific	Small-type whaling	13	Y	To, Sk L, M, O, U, Te, E, V and St	NRIFSF
	southern form	N.Pacific	Small-type whaling	29	Y	To, Sk, L, M, O, U, Te, E, V and St	NRIFSF
		E. China Sea	Hand harpoon (crossbow)	11	Y	To, Sk and M	NRIFSF
Baird's beaked Whale		N.Pacific	Small-type whaling	52	Y	To, Sk, L, M, O, U, Te, E, V and St	NRIFSF
		Okhotsk Sea	Small-type whaling	2	Y	To, Sk, L, M, O, U, Te, E, V and St	NRIFSF
		Sea of Japan	Small-type whaling	8	Y	To, Sk, L, M, O, U, Te, E, V and St	NRIFSF

4.3 Samples from stranded animals

Skin samples of one stranded striped dolphin (July 2004, Shizuoka), one Pacific white-sided dolphin (January 2005, Shizuoka) and one *Stenella* sp. (January 2005, Kagawa) were sent to NRIFSF.

4.4 Analyses/development of techniques

In order to clarify the stock structure of Baird's beaked whales in the Sea of Japan, Kishiro, Ohizumi and Yoshida continued to analyze reproductive organs, external body proportion, stomach contents and genetic composition of Baird's beaked whales taken by small-type whaling in Hakodate in 2003.

Kishiro examined the teeth and testis samples of Risso's dolphin taken by small-type whaling and drive fisheries, and estimated the age of 226 animals and examined reproductive status of 207 males.

Yoshida advanced the mtDNA sequence analysis in order to obtain more information on Baird's beaked whale stock structure, using tissues of 23 whales taken in 2002-04 by the small-type whaling. Yoshida also conducted further stock structure analysis of short-finned pilot whales, from mtDNA sequences derived from 32 animals caught at Nago in 2002 and 2003.

NRI FSF started to give research on feeding habits of smaller odontocetes in charge to School of Marine Science and Technology in Tokai University, and started cooperative research with Ohizumi in the university. Ohizumi and Wakabayashi (Tokai Univ.) with Kishiro cooperatively started stomach contents analysis of eight Baird's beaked whales taken by coastal whaling off Hakodate in 2004. Ohizumi and Nakatsuka (Tokai Univ.) with Kishiro cooperatively started stomach contents analysis of 24 bottlenose dolphins taken by hand-harpoon fishery in May and June of 1999, 2000, 2002 in Taiji. Ohizumi, Matsui (Tokai Univ.), Higashi (Okinawa Churaumi Aquarium), Arai (Okinawa Churaumi Aquarium) and Iwasaki started cooperative stomach content analysis of 19 short-finned pilot whales and eight false killer whales that were taken by harpoon fishery in Okinawa from 2001 to 2003 and have been kept in Okinawa Churaumi Aquarium. Okamoto (Tokai Univ.), Ohizumi and Iwasaki cooperatively started stomach content analysis of 52 Dall's porpoises taken by hand harpoon fishery off Sanriku in February 2004. Ohizumi started data analysis on stomach contents recorded from 12 northern form short-finned pilot whales taken by coastal whaling off Ayukawa from November to December 2004.

5. Pollution studies

No pollution studies were conducted during the period between May 2004 and April 2005.

6. Statistics for small cetaceans

6.1 For the calendar year 2004

Target species, fishing season, quota, catcher boats and actual catches of small-type whaling are the same as shown in 4.2.

For dolphin fisheries, as explained in the progress report presented to 52nd IWC/SC, FAJ introduced in 1996 a new management season starting on 1 August and closing on 31 July for Dall's porpoise fisheries, and from 1 October to 30 September of the next year for other species. As has been the case in previous years, the statistics, following the modified guideline for IWC national progress report, cover catches from 1 January to 31 December 2004, while FAJ manages dolphin fisheries by their own yearly season aforementioned. Thus, in some cases, the calendar yearly catch may exceed the seasonal (yearly) catch in appearance, but the actual seasonal catch is well below the allocated catch quota. Direct small cetacean catches are given in Table 8 by prefecture and type of fisheries. By species is shown in Table 9, together with incidental catches and strandings. The data have been collected by the Far Seas Division of the FAJ based on reports from the prefectural governments.

Catch quota for the 2004/2005 season remains the same as the last season: 9,000 *dalli*-type Dall's porpoise, 8,700 *truei*-type Dall's porpoises, 1,300 Risso's dolphins (including twenty for small-type whaling), 1,100 bottlenose dolphins, 950 spotted dolphins, 725 striped dolphins, 450 southern form short-finned pilot whales (including fifty for small-type whaling) and fifty false killer whales.

Corresponding operational months by prefecture in 2004 (January to September in 2004 and October to December of the 2004/2005 season) was as follows: Japanese hand harpoon fishery for porpoises was permitted for nine months (1 February to 31 October) in Okinawa prefecture; seven months (1 January to 9 March, 1 May to 31 August, 20 to 31 December) in Wakayama; six months (1 January to 30 April and 1 November to 31 December) in Aomori, Miyagi, Iwate and Chiba; and 4.5 months (1 May to 15 June and 1 August to 31 October) in Hokkaido. Drive fishery was permitted for seven months in Wakayama (1 January to 30 April and 1 October to 31 December) and Shizuoka (1 January to 31 March and 1 September to 31 December).

Table 8. Catch of small cetaceans by Japanese fisheries by type of fishery and prefecture, January-December 2004. Unless otherwise stated species and figures are those reported (provisional figures).

Species	Prefecture ¹⁾	Type of fishery	Direct catch ²⁾	Incidental catch	Live capture	
Dall's porpoise <i>dalli</i> -type	Hokkaido	Hand harpoon	647	0	0	
	Iwate ³⁾	Hand harpoon	3,796	0	0	
	Miyagi	Hand harpoon	171	0	0	
	Total		4,614	0	0	
	<i>truei</i> -type	Hokkaido	Hand harpoon	66	0	0
		Iwate	Hand harpoon	9,109	0	0
Total			9,175	0	0	
Harbor porpoise	Hokkaido	Trap net	0	1	0	
Finless porpoise	Miyagi	Other coastal fishery	0	1	0	
	Ibaraki	Other coastal fishery	0	1	0	
	Aichi	Other coastal fishery	0	1	0	
	Yamaguchi	Trap net	0	0	1	
	Nagasaki	Other coastal fishery	0	2	0	
	Kumamoto	Other coastal fishery	0	1	0	
	Total		0	6	1	
Common dolphin	Kumamoto	Other coastal fishery	0	1	0	
Pacific white-sided dolphin	Hokkaido	Trap net	0	0	2	
	Ishikawa	Trap net	0	0	8	
	Kyoto	Trap net	0	0	2	
	Total		0	0	12	
Striped dolphin	Wakayama	Hand harpoon	83	0	0	
	Wakayama	Driving	554	0	0	
	Total		637	0	0	
Spotted dolphin	Wakayama	Hand harpoon	2	0	0	
Bottlenose dolphin	Aomori	Trap net	0	1	0	
	Shizuoka	Driving	9	0	15	
	Kyoto	Trap net	0	0	1	
	Hyogo	Trap net	0	0	1	
	Wakayama	Hand harpoon	43	0	0	
	Wakayama	Driving	475	0	95	
	Kochi	Trap net	0	0	3	
	Okinawa	Hand harpoon	10	0	0	

	Total		537	1	115
Risso's dolphin	Chiba	Trap net	0	1	0
	Wakayama	Small-type whaling	7	0	0
	Wakayama	Hand harpoon	60	0	0
	Wakayama	Driving	437	0	7
	Total		504	1	7
Short-finned pilot whale					
northern form	Miyagi	Small-type whaling	13	0	0
southern form	Wakayama	Small-type whaling	29	0	0
	Wakayama	Driving	62	0	0
	Okinawa	Hand harpoon	72	0	0
	Total		163	0	0
False killer whale	Okinawa	Hand harpoon	3	0	0
	Okinawa	Trap net	0	0	4
	Total		3	0	4
Baird's beaked whale	Hokkaido	Small-type whaling	10	0	0
	Hokkaido	Trap net	0	2	0
	Miyagi	Small-type whaling	26	0	0
	Chiba	Small-type whaling	26	0	0
	Total		62	2	0
Pygmy sperm whale	Hokkaido	Trap net	0	1	0

1) Catches by small-type whaling, drive fishery and trap nets were recorded at the place of landing of products. Catches by hand harpoon fishery were recorded at the place of registration of vessels.

2) Statistics of small-type whaling are based on reports of biologists and gunners. Those of other fisheries are based on reports of prefectural governments to the Fisheries Agency. They are a compilation of landing slips (hand harpoon fisheries in Iwate and Hokkaido) or reports from individual fishermen or fishery cooperative unions (other prefectures).

3) Small portions of catches by hand harpoon fishery off Hokkaido were reported as meat by fishermen and thus have been converted into the number of *dalli*-type Dall's porpoises at 50kg/porpoise (c.f. Ishikawa et al. 1990) by respective prefectural governments.

4) Apart from the above, the following small cetaceans were incidentally taken but later released alive: ten Harbor porpoises in Iwate (trap net) and 37 bottlenose dolphins in Kochi (trap net).

Table 9. List of small cetacean catches by Japanese fisheries and strandings in 2004, by species and type of fishery. For further details see Tables 8 and 10. D= direct takes, I= incidental takes. (provisional figures).

Species	Small-type whaling [D]	Hand harpoon [D]	Driving [D]	Live capture [D, I]	Trap net [I]	Other coastal fisheries [I]	Strandings [I]	Total
Dall's porpoise	0	4,614	0	0	0	0	1	4,615
<i>dalli</i> -type	0	9,175	0	0	0	0	0	9,175
<i>truei</i> -type								
Harbor porpoise	0	0	0	0	1	0	1	2
Finless porpoise	0	0	0	1	0	6	81	88
Common dolphin	0	0	0	0	0	1	1	2
Pacific white-sided dolphin	0	0	0	12	0	0	2	14
Striped dolphin	0	83	554	0	0	0	4	641
Spotted dolphin	0	2	0	0	0	0	18	20
Bottlenose dolphin	0	53	484	115	1	0	3	656
Risso's dolphin	7	60	437	7	1	0	4	516
Fraser's dolphin	0	0	0	0	0	0	1	1
Pygmy killer whale	0	0	0	0	0	0	1	1
Melon-headed whale	0	0	0	0	0	0	1	1
Short-finned pilot whale								
Northern form	13	0	0	0	0	0	0	13
Southern form	29	72	62	0	0	0	4	167

False killer whale	0	3	0	4	0	0	1	8
Baird's beaked whale	62	0	0	0	2	0	4	68
Cuvier's beaked whale	0	0	0	0	0	0	2	2
Stejneger's beaked whale	0	0	0	0	0	0	6	6
Pygmy sperm whale	0	0	0	0	1	0	3	4
Dwarf sperm whale	0	0	0	0	0	0	6	6
Unidentified dolphin	0	0	0	0	0	0	10	10
Total	111	14,062	1,537	139	6	7	154	16,016

6.2 Earlier years' statistics

There are no changes in earlier years' statistics.

7. Strandings

Information of stranded cetaceans has been officially collected by the Far Seas Division of the FAJ (1-2-1, Kasumigaseki, Tokyo 100-8907, Japan). The data are shown in Table 10. In addition, the Institute of Cetacean Research, (Tokyo Suisan Building, 4-18 Toyomi, Chuo-ku, Tokyo 104-0055, Japan) and T. Yamada (National Science Museum, Hyakunin-cho, Shinjuku-ku, Tokyo 164, Japan) voluntarily collected relevant information on the strandings.

Table 10. Strandings of small cetaceans in Japan, January-December 2004. Species and figures were submitted by prefectural governments to the Fisheries Agency, based on reports from individual fishermen, fishery cooperative unions, and the general public (provisional figures).

Species and stocks	Prefecture ¹⁾	No. of animals	Species and stocks	Prefecture ¹⁾	No. of animals
Dall's porpoise (<i>dalli</i> -type)	Niigata	1	Fraser's dolphin	Okinawa	1
			Pygmy killer whale	Okinawa	1
Finless porpoise	Miyagi	1	Melon-headed whale	Tokushima	1
	Ibaraki	4	Southern form short-finned pilot whale	Chiba	2 ²⁾
	Chiba	6		Kanagawa	1
	Aichi	23		Wakayama	1
	Mie	13		Total	4
	Yamaguchi	16	False killer whale	Okinawa	1
	Ehime	1	Baird's beaked whale	Hokkaido	3
	Fukuoka	7		Niigata	1
	Nagasaki	1		Total	4
	Kumamoto	4	Cuvier's beaked whale	Hokkaido	1

	Oita	4		Tokyo	1
	Okinawa	1		Total	2
	Total	81	Stejneger's beaked whale	Hokkaido	1
Harbor porpoise	Toyama	1		Aomori	1
Common dolphin	Aichi	1		Niigata	1
Pacific white-sided dolphin	Kanagawa	1		Ishikawa	1
	Niigata	1		Fukui	1
	Total	2		Shimane	1
Striped dolphin	Kanagawa	1		Total	6
	Shizuoka	2	Pygmy sperm whale	Chiba	2
	Tokushima	1		Okinawa	1
	Total	4		Total	3
Spotted dolphin	Okinawa	18	Dwarf sperm whale	Chiba	1
Bottlenose dolphin	Akita	1		Wakayama	1
	Aichi	1		Kagoshima	1
	Tottori	1		Okinawa	3
	Total	3		Total	6
Risso's dolphin	Yamagata	1	Unidentified dolphin	Hokkaido	5
	Kanagawa	1		Iwate	1
	Toyama	1		Niigata	1
	Kagoshima	1		Kagoshima	3
	Total	4		Total	10

- 1) Recorded at the prefecture where strandings occurred.
- 2) One of the two was rescued and sent to an aquarium.
- 3) Apart from the above, the following cetaceans were stranded or had strayed into harbors but were safely driven back to sea: one striped dolphin in Nagasaki, one Risso's dolphin in Kagoshima and two spotted and one unidentified dolphins in Okinawa.

8. Other studies and analyses

No other studies or analyses on small cetaceans were conducted during the period from May 2004 to April 2005.

9. Publications on small cetaceans

- Iwasaki, T. 2004. Geographical movement of the bottlenose dolphins harvested in the coastal waters off the Kii Peninsula Abstract for 75th annual meeting of the Zoological Society of Japan p148 (in Japanese)
- Iwasaki, T. 2005 Dolphin fishery in Shizuoka. 50th meeting of Research Center for Fisheries Resources Management (Institute of Cetacean Research)
- Iwasaki, T. and Minamikawa, S. 2004 Antenna length of ARGOS transmitter. *Enyo* No.115 p7-9 (in Japanese)
- Iwasaki, T., Shirouzu, H., Higashi, H. and Yamashita, S. 2004. Effect of a satellite tag attachment on blood characteristics in the bottlenose dolphin (*Tursiops truncatus*) - continued research. Abstract for 10th annual conference of the Japanese Society of Zoo and Wildlife Medicine p109 (in Japanese)
- Iwasaki, T. and Yoshida, H. 2005 Significance to examine catch of the dolphin fishery in Okinawa. Abstract for the presentation of the research results on d

- olphin fishery in Okinawa Prefecture. March 10, 2005, Nago, Okinawa, Japan. p7 (in Japanese)
- Kato, H. 2004. Future of whales and men. Dr. Kato's guide to cetology. The MAINICHI student daily newspaper. The MAINICHI, Tokyo p.6. 2004. (in Japanese)
- Kato, H. 2004. Marine mammals. pp.90-92. In: *A handbook on fisheries science*. Seibutsu-Kenkyuusya. Tokyo 654pp. (in Japanese)
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- Kato, H. 2004. A close connection between whales and the Kuroshio warm current. Abstract. The first Symposium of graduate school of Kuroshio Marine Science, Kochi university. p.13, Kochi, September, 2004. (in Japanese)
- Kato, H. 2004. Case study: Stock management and population biology of cetacean. pp180-187. In: Matsuda, H et al. (eds). *Sustainable use of fisheries resources and CITES criteria on classification of the Appendix*. 249pp. GGT. Tokyo, September 2004. (in Japanese)
- Kato, H. 2004. "Kujira damari", fantastic Aggregate place of Large Whales in Tosa. *Farming Japan*. 38(6) p.17-21.
- Kato, H. 2004. Life history and behavior of whales. pp.9-22. In: Japanese society of zoology (edi.). *Marine wildlife –animals-*. Tokyo, November 2004. 22pp. (in Japanese)
- Kato, H. 2004. Cetaceans in the Northern Four islands. Abstract. p3. Symposium "Let's talk wildlife of the Northern Four islands". Marine Wildlife Centre of Japan. p.3 Sapporo, December 2004 (in Japanese)
- Kato, H. 2004. Cetaceans in the Tosa bay. Abstract. P.1-2. Special seminar by the graduate school of Kuroshio Science, Kochi University. Kochi, December 2004 (in Japanese)
- Kawanaka, M., Morishima, Y., Sugiyama, H., Arakawa, K. and Kishiro, T. 2005. Life history and taxonomy of type X larval spiruroid nematode (1). Abstract for the 74th annual meeting of the Japanese Society of Parasitology, Yonego, April 2005
- Kishiro, T. 2004. Baird's beaked whale, *Berardius bairdii*, Sea of Japan, Sea of Okhotsk and Pacific Ocean. Pp.78-79. In Muto F (eds.) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. 111p.
- Minamikawa, S., Iwasaki, T. and Kishiro, T. 2004. Diving behavior of a Baird's beaked whale (*Berardius bairdii*). Abstracts of XXVII Symposium on Polar Biology p.71 Tokyo, December, 2004
- Miyashita, T. 2004. Cetacean sighting survey - present and future. *Mammalian Science* 44 (1) p.97-101 (in Japanese)
- Miyashita, T. and Kato, H. 2004. Distribution of cetaceans in the western North Pacific inferred from systematic sighting survey. PICES XIII(W6-1973) p.262 Honolulu December, 2004.
- Ohizumi, H. and Kato, H. 2004. Food of toothed whales in the northern North Pacific; geographic and temporal variation. PICES XIII (W6-2125) p.261 Honolulu, October, 2004
- Okamura, H. 2005. Ecosystem models: present and future. *Gekkan Kaiyo* 37(3) p.205-211 (in Japanese)
- Sugiyama, H., Morishima, Y., Arakawa, K., Kawanaka, M. and Kishiro, T. 2005. Life history and taxonomy of type X larval spiruroid nematode (2). Abstract for the 74th annual meeting of the Japanese Society of Parasitology, Yonego, April 2005
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