

**Japan. Progress report on small cetacean research
April 2008 to March 2009, with statistical data for the calendar year 2008**

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This report summarizes small cetacean fisheries in 2008 as well as researches conducted during the period from April 2008 to March 2009 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 “Japan. Progress report on cetacean research, April 2008 to March 2009, with statistical data for the calendar year 2008” (submitted to 61th 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>Phocoenoides dalli</i>	Off Pacific coast, Okhotsk Sea, Sea of Japan	2.1.1, 4.2, 5.1, 5.2.1, 9.1
Harbor porpoise	<i>Phocoena phocoena</i>	Coastal waters of Japan	5.2.1, 5.2.3
Finless porpoise	<i>Neophocaena phocaenoides</i>	Coastal waters of Japan	2.1.1, 2.1.2, 4.2, 4.3, 4.4, 5.2.1, 5.2.3, 9.1, 9.2
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	Off Pacific coast	2.1.1, 2.1.2, 4.2, 4.3, 5.1, 5.2.1, 5.2.3,
Striped dolphin	<i>Stenella coeruleoalba</i>	Western North Pacific	2.1.1, 2.1.2, 4.1, 4.2, 4.4, 5.1, 5.2.1, 5.2.3, 9.2
Pantropical spotted dolphin	<i>Stenella attenuata</i>	Off Pacific coast	2.1.1, 2.1.2, 4.1, 5.1
Bottlenose dolphin	<i>Tursiops truncatus</i>	Off Pacific coast, East China Sea	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.2.1, 5.2.3, 9.2
Indo-Pacific bottlenose dolphin	<i>Tursiops aduncus</i>	Off Pacific coast and East China Sea	5.2.1, 5.2.3
Risso's dolphin	<i>Grampus griseus</i>	Western North Pacific	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.2.1, 5.2.3
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Western North Pacific and East China Sea	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.2.1
False killer whale	<i>Pseudorca crassidens</i>	Off Pacific coast and East China Sea	2.1.1, 2.1.2, 4.2, 5.1
Killer whale	<i>Orcinus orca</i>	Coastal waters of Japan and Antarctic	2.1.1, 4.1, 9.1
Baird's beaked whale	<i>Berardius bairdii</i>	Off Pacific coast, Sea of Japan and Okhotsk Sea	2.1.1, 3.1.3, 3.2, 4.2, 4.4, 5.1, 5.2.1, 9.1, 9.2
Additional species sighted during dolphin fisheries or small-type whaling operations	-	Off Pacific coast, Sea of Japan and Okhotsk Sea	2.1.2

Additional species sighted during the sighting cruise	-	Western North Pacific, Sea of Japan	2.1.1
Additional species stranded	-	Around Japan	5.2.1

2. Sighting data (this section partly overlaps with descriptions of sighting data in SC/61/Japan /Progprep.)

2.1 Field work

2.1.1 SYSTEMATIC

The NRIFSF and FAJ conducted a total of six dedicated shipboard sighting and other related surveys using research vessels in the North Pacific. All of the vessels are equipped with a top barrel. During these cruises, all sighting information including small cetaceans was recorded.

Table 1. Sightings of small cetaceans obtained through dedicated shipboard surveys during the period from April 2008 to March 2009.

Target species	Date	Area	No. of sightings	Contact institute
<i>dalli</i> -type Dall's porpoise	25/04/08-03/06/08	Western North Pacific	24	NRIFSF
	14/06/08-12/08/08	Western North Pacific, Sea of Japan	13	NRIFSF
<i>truei</i> -type Dall's porpoise	5/04/08-03/06/08	Western North Pacific	12	NRIFSF
	14/06/08-12/08/08	Western North Pacific, Sea of Japan	6	NRIFSF
Finless porpoise	25/04/08-03/06/08	Western North Pacific	1	NRIFSF
Pacific white-sided dolphin	25/04/08-03/06/08	Western North Pacific	2	NRIFSF
	14/06/08-12/08/08	Western North Pacific, Sea of Japan	20	NRIFSF
Striped dolphin	14/06/08-12/08/08	Western North Pacific, Sea of Japan	2	NRIFSF
	14/08/08-18/09/08	Western North Pacific	3	NRIFSF
Pantropical spotted dolphin	14/08/08-18/09/08	Western North Pacific	1	NRIFSF
Bottlenose dolphin	14/06/08-12/08/08	Western North Pacific, Sea of Japan	1	NRIFSF
	14/08/08-18/09/08	Western North Pacific	2	NRIFSF
Risso's dolphin	14/06/08-12/08/08	Western North Pacific, Sea of Japan	25	NRIFSF
	11/08/08-22/08/08	Western North Pacific	6	NRIFSF
	14/08/08-18/09/08	Western North Pacific	27	NRIFSF
Short-finned pilot whale	14/06/08-12/08/08	Western North Pacific, Sea of Japan	3	NRIFSF
	14/08/08-18/09/08	Western North Pacific	1	NRIFSF
False killer whale	14/08/08-18/09/08	Western North Pacific	1	NRIFSF
Killer whale	25/04/08-03/06/08	Western North Pacific	4	NRIFSF
	14/08/08-18/09/08	Western North Pacific, Sea of Japan	2	NRIFSF
Baird's beaked	14/06/08-12/08/08	Western North	37	NRIFSF

whale		Pacific, Sea of Japan		
	30/06/08-10/08/08	Western North Pacific	128	NRIFSF
	11/08/08-22/08/08	Western North Pacific	12	NRIFSF

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 2008, using a total of 24 whale watching boats belong to the WATB. The boats (5 -10t) were without top barrels and excluded from the above table, but the boats were employed as sighting survey vessels in local coastal waters. The survey lasted six days both in July and August, and T. Kishiro (NRIFSF), eight research assistants and 24 fishermen members of WATB acted as the researchers on board. Besides Bryde's whales, a total of six schools (300 animals) of long beaked common dolphins, five schools (48 animals) of Risso's dolphins, and one school (30 animals) of bottlenose dolphins were sighted.

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, spotted and pacific white-sided 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 April 2008 to March 2009.

3.1.2 ARTIFICIAL MARKING DATA

No artificial marking was conducted during the period from April 2008 to March 2009.

3.1.3 TELEMETRY DATA

Minamikawa (NRIFSF) and Kawashima (FRA) tried to deploy, with an air gun, the data-loggers (depth and temperature) combined with ARGOS PTT on free-swimming Baird's beaked whales in the Pacific in July and August 2008. Successful deployment was made on one whale. The tag was released from the whale automatically and was recovered. Consequently, the data of which period was about 32 hours were obtained.

Under the contract with Nagasaki Prefecture Government (hereafter NPG), Iwasaki and Minamikawa tagged ARGOS PTTs on two Pacific white-sided dolphins, released them from Iki Island, Nagasaki and tracked them for 34 days. Those dolphins were taken by Katsumoto Fishery Cooperative Union based on the scientific permit issued by FAJ to NPG.

3.2 Analyses/development of techniques

Minamikawa further improved the tagging system of a data-logger using air gun for beaked whales. It was used to obtain diving behavior data of Baird's beaked whales.

Minamikawa carried out an analysis of dive duration and surface interval using the time-series depth data which had been collected.

4. Tissue/biological samples collected

4.1 Biopsy samples

Table 2. Biopsy samples of small cetaceans collected during the period from April 2008 to March 2009.

Species	Area/stock	Season - no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact institute
Striped dolphin	N. Pacific	3	Y	0	3	NRIFSF
Pantropical spotted d.	N. Pacific	1	Y	0	1	NRIFSF
Killer whale	Antarctic	1	Y	0	1	NRIFSF

4.2 Samples from direct catches or bycatch

Table 3. Samples of small cetaceans from direct catches or bycatch collected during the period from April 2008 to March 2009.

Species	Area	Tissue type(s)	No. collected	Archived (Y/N)	Contact Institute
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<i>dalli</i> -type Dall's porpoise	N.Pacific	Sk and Mu	28	Y	NRIFSF
Striped dolphin	N.Pacific	To, Ma, O, U, Te, Sk and Mu	518	Y	NRIFSF
Bottlenose dolphin	N.Pacific	To, Ma, O, U, Te, Sk and Mu	123	Y	NRIFSF
	E.China Sea	To, Sk and Mu	1	Y	NRIFSF
Risso's dolphin	N.Pacific	To, Ma, O, U, Te, E, V, Sk, Mu and L	258	Y	NRIFSF
southern form short-finned pilot whale	N.Pacific	To, Ma, O, U, Te, E, V, Sk, Mu and L	52	Y	NRIFSF
	E. China Sea	To, Sk and Mu	59	Y	NRIFSF
False killer whale	E.China Sea	To, Sk and Mu	5	Y	NRIFSF
Pacific white-sided dolphin	N.Pacific	To, Ma, O, U, Sk and Mu	18	Y	NRIFSF
	E.China Sea	To, Ma, O, U, Sk, Mu and St	2	Y	NRIFSF
Baird's beaked whale	N.Pacific	To, Ma, O, U, Te, E, V, Sk, Mu and L	51	Y	NRIFSF
	Okhotsk Sea	To, Ma, O, U, Te, E, V, Sk, Mu and L	3	Y	NRIFSF
	Sea of Japan	To, Ma, O, U, Te, E, V, Sk, Mu, L and St	10	Y	NRIFSF
Finless porpoise	E. China Sea	Sk	2	Y	NRIFSF

E: epididymis, L: liver, Ma: mammary gland, Mu: muscle, O: ovaries, Sk: skin, St: stomach content, Te: testis, To: tooth, U: uterine horn, V: vertebral epiphysis.

The national quota of Baird's beaked whales was sixty-six animals. Fishing season was from 25 May to 30 June for land station in Hakodate on the Sea of Japan coast, 20 June to 31 August for land stations in Ayukawa and Wadoura on the Pacific coast, and 20 August to 5 September for land station in Abashiri on the Okhotsk coast. A total of sixty-four whales (ten off Hakodate, three off Abashiri, 51 off the Pacific coast) were taken by five catcher boats (*Seiwa-maru*, *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 were taken by the following five biologists: Kishiro, Y. Morita (FAJ), M. Iioka (FAJ), T. Hara (FAJ) and S. Tabata (FAJ). The national quota of northern form short-finned pilot whales for small-type whaling was 36 whales. Fishing season was set for two boats (*Kohei-maru* #75 and *Taisho-maru* #28) from the station in Ayukawa in the same periods of the operations for Baird's beaked whales (20 June to 31 August), but no whales were taken. The national quota of southern form short-finned pilot whales for small-type whaling was 36 whales with a fishing season from 1 May to 15 August and 1 to 30 September. A total of 20 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 were taken by T. Sumiya(FAJ), Hara, Morita, and M. Kishiro (FAJ). The FAJ also set a national catch quota of twenty False killer whales for small-type whaling in Taiji from 1 May to 15 August and 1 to 30 September, but no whales were taken. In Taiji during May-August 2008, the researchers also collected samples from hand harpoon catches when they had the opportunity, including 64 bottlenose, 60 Risso's, and 16 striped dolphins.

Kishiro, Morita and T. Mori (Tokai University) recorded and sampled prey species of stomach contents of ten Baird's beaked whales taken by small-type whaling in Hakodate from May to June 2008.

Iwasaki and his colleagues, T. Hara (FRA) and Y. Tomizawa (FRA), collected samples for life history and genetic studies from catches of drive and hand harpoon fisheries in Taiji during operations through 1-25 December 2008 and 7 January to 28 February 2009. They examined a total of 801 animals composed of 494 striped, 198 Risso's and 59 bottlenose dolphins, 32 southern form short-finned pilot whales and 18 Pacific white-sided dolphins.

Under contract with FRA and supervised by NRIFSF, sample collection for life history and genetic studies of dolphin fisheries was performed in Iwate prefecture. T.Goto of Iwate Fisheries Technology Center (hereafter IFTC) and his colleagues, Y. Hara (IFTC), T. Sato (IFTC) recorded color type, sex and body length of 512 *truei*-type and 28 *dalli*-type Dall's porpoises landed at the Kamaishi Fish Market and collected DNA samples from 28 *dalli*-types during November 2008 through March 2009.

In March 2009, Okinawa Prefectural Government sent to NRIFSF samples for age determination and genetic studies from 59 southern form short-finned pilot and four false killer whales and one bottlenose dolphins which were taken by hand harpoon fishery in Okinawa during February to October 2008. Okinawa Prefectural government collected those samples as a

part of supervision of the fishery.

4.3 Samples from stranded animals

Skin samples of 15 finless porpoises (12 in Nagasaki and three in Ibaraki,) and two Pacific white-sided dolphins (Kanagawa) were sent to NRIFSF.

4.4 Analyses/development of techniques

In order to examine the biological parameters of Baird's beaked whales in the coastal waters off Japan, Kishihiro and Iioka (Tokyo University of Marine Science and Technology, hereafter TUMST) started to examine the body length at physical maturity of Baird's beaked whales taken by small-type whaling in the Sea of Japan, Okhotsk Sea, and off the Pacific coast of Japan in 1999 to 2008, based on the ossification pattern of the vertebral epiphyses.

NRIFSF continued to give research on feeding habits of smaller odontocetes in charge to School of Marine Science and Technology in Tokai University, and continued cooperative research with Ohizumi in the university. Mori observed and collected prey species in stomach contents of ten Baird's beaked whales caught by small type whaling off Hakodate in June 2008. Mori analyzed collected stomach contents with data before 2006 to clarify feeding habits of Baird's beaked whale in the Sea of Japan.

Yoshida furthered the mtDNA sequence analysis to reveal stock structure of striped dolphins around Japan, using tissue samples of 47 animals taken by the drive fishery in 1980. Yoshida is also conducting stock structure analysis of short finned-pilot whales around Japan with Ito (TUMST), by adding tissue samples of 122 individuals taken by the hand harpoon fishery in 2007-2008.

Yoshida and Ogawa (TUMST) carried out preliminary analyses for abundance estimation of finless porpoises in Japanese coastal waters, from aerial sighting data.

Iwasaki determined ages of 123 dolphins including 30 southern form short-finned pilot whales, 31 Risso's, 32 bottlenose and 30 striped dolphins, which were taken in Taiji during 2007/08 fishing season. He also aged 100 southern form short-finned pilot whales and two bottlenose dolphins taken in Okinawa during 2006 and 2007 fishing seasons and two Pacific white-sided dolphins taken in January 2009 for research purpose in Iki Island, Nagasaki (East China Sea).

5. Statistics for small cetaceans

5.1 For the calendar year 2008

Table 4. Direct catch of small cetacean in 2008.

Species	Type of fishery	Prefecture ¹⁾	Total landed ²⁾
<i>dalli</i> -type Dall's porpoise	Hand harpoon	Hokkaido ³⁾	467
		Iwate ³⁾	1,947
		Miyagi	180
<i>truei</i> -type Dall's porpoise	Hand harpoon	Hokkaido	66
		Iwate	4,566
Striped dolphin	Hand harpoon	Wakayama	65
	Driving	Wakayama	533(5)
Pantropical spotted d.	Driving	Wakayama	329(6)
Bottlenose dolphin	Hand harpoon	Wakayama	93
	Driving	Wakayama	297(57)
	Hand harpoon	Okinawa	1
Risso's dolphin	Hand harpoon	Wakayama	122
	Driving	Wakayama	216(8)
southern form short-finned p.w.	Small-type whaling	Wakayama	20
	Hand harpoon	Okinawa	62
	Driving	Wakayama	99(1)
False killer whale	Hand harpoon	Okinawa	5
Pacific white-sided d.	Driving	Wakayama	21(16)
Baird's beaked whale	Small-type whaling	Hokkaido	13
		Miyagi	25
		Chiba	26

1) Catches by small-type whaling and drive fishery 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). In parenthesis are numbers of live captured animals which are included into total catch.

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.

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 IWC 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. In 2006, FAJ modified above management season from 1 September to August 31 only for fisheries in Wakayama Prefecture because September was added as fishing season for drive fishery. 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 2008, 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 in this section by prefecture and type of fisheries. The data have been collected by the Far Seas Division of the FAJ based on reports from the prefectural governments.

Catch quota for dolphin fisheries for the 2008/2009 season was revised from the last season, that is, 8,396 *dalli*-type Dall's porpoise, 7,916 *truei*-type Dall's porpoises, 532 Risso's dolphins, 960 bottlenose dolphins, 835 spotted dolphins, 670 striped dolphins, 339 southern form short-finned pilot and 100 false killer whales and 360 Pacific white-sided dolphins (quota of Pacific white-sided dolphins was established in 2007/2008 season but not revised this time).

Corresponding operational months by prefecture in 2008 were as follows: Japanese hand harpoon fishery for porpoises was permitted for nine months (1 February to 31 October) in Okinawa prefecture; eight months (1 January to 31 August) 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 eight months in Wakayama (1 January to 30 April and 1 September to 31 December) and for seven months in Shizuoka (1 January to 31 March and 1 September to 31 December).

5.2 Non-natural mortality for the calendar year 2008

5.2.1 STRANDINGS OF SMALL CETACEANS

Table 5. Strandings of small cetaceans in 2008.

Species and stocks	No. strandings	No. postmortems	Contact person(s)/ Institute(s)
Dall's porpoise(<i>dalli</i> -type)	14	13	FAJ
Dall's p.(unknown-type)	1	1	FAJ
Harbor porpoise	4	4	FAJ
Finless porpoise	157	157	FAJ
Short-beaked common d.	2	2	FAJ
Long-beaked common d.	3	3	FAJ
Pacific white-sided d.	22	19	FAJ
Striped dolphin	3	3	FAJ
Bottlenose dolphin	9	8	FAJ
Indo-Pacific bottlenose d.	2	2	FAJ
Risso's dolphin	16	12	FAJ
Rough-toothed dolphin	1	1	FAJ
northern form short-finned p.w.	1	1	FAJ
southern form short-finned p.w.	ca.50	24	FAJ
Unknown form short-finned p.w.	1	1	FAJ
Baird's beaked w.	3	3	FAJ
Cuvier's beaked w.	3	3	FAJ
Stejneger's beaked w.	10	10	FAJ
Gingko-toothed beaked w.	2	2	FAJ
Blainville's beaked w.	1	1	FAJ
Pygmy sperm whale	3	3	FAJ
Dwarf sperm whale	9	9	FAJ
Unidentified cetaceans	19	18	FAJ

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). Two Risso's dolphins were rescued and sent to aquaria. One *dalli*-type Dall's porpoise, three Pacific white-sided dolphins, one bottlenose dolphin, two Riss's dolphins, approximately 26 southern form short-finned pilot whales and one unidentified cetacean were stranded or had strayed into harbors but were safely driven back to sea.

5.2.2 OBSERVED OR REPORTED SHIP STRIKES

No records of ship strike incidence were obtained during the calendar year 2008.

5.2.3 FISHERY BYCATCH

Table 6. Fishery bycatch of small cetaceans in 2008.

Species	No. of animals	Location ¹⁾	Fate	Target fish species	Cause ²⁾
Harbor porpoise	6	Hokkaido	K	NA	FPN
Harbor porpoise	5	Hokkaido	K	NA	GNS
Finless porpoise	3	Aichi	D	NA	GNS
Finless porpoise	1	Aichi	D	NA	MIS
Finless porpoise	7	Yamaguchi	D	NA	GNS
Finless porpoise	1	Yamaguchi	D	NA	FPN
Finless porpoise	2	Fukuoka	K	NA	GNS
Finless porpoise	1	Saga	D	NA	GNS
Finless porpoise	3	Nagasaki	K	NA	FPN
Finless porpoise	2	Kumamoto	K	NA	FPN
Short-beaked common d.	1	Kumamoto	K	NA	GNS
Long-beaked common d.	1	Oita	K(alive)	NA	FPN
Pacific white-sided d.	1	Aomori	K(alive)	NA	FPN
Pacific white-sided d.	2	Ishikawa	K(alive)	NA	FPN
Pacific white-sided d.	1	Shizuoka	K(alive)	NA	FPN
Pacific white-sided d.	1	Kyoto	K(alive)	NA	FPN
Indo-Pacific bottlenose d.	1	Chiba	R	NA	FPN
Risso's dolphin	1	Kochi	K(consumed)	NA	FPN
Rough-toothed d.	3	Okinawa	K(alive)	NA	FPN
Rough-toothed d.	3	Okinawa	R	NA	FPN
Pygmy sperm whale	1	Miyagi	K(consumed)	NA	FPN
Dwarf sperm whale	1	Kumamoto	K	NA	GNS

1) Recorded at the place of fishing gears.

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

Target fish species : NA=not available

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

FAO FISHING GEAR CATEGORIES:		FALLING GEAR	
SURROUNDING NETS		Cast nets	FCN
With purse lines	PS	Falling gear (not specified)	FG
One-boat operated purse seines	PS1	GILLNETS AND ENTANGLING GEAR	
Two-boat operated purse seines	PS2	Set gillnets (anchored)	GNS
Without purse lines (lampara)	LA	Driftnets	GND
SEINE NETS		Encircling gillnets	GNC
Beach seines	SB	Fixed gillnets (on stakes)	GNF
Boat seines	SV	Trammel nets	GTR
Danish seines	SDN	Combined gillnet-trammel nets	GTN
Scottish seines	SSC	Gillnets and entangling gillnets (not specified)	GEN
Pair seines	SPR	Gillnets (not specified)	GN
Seine nets (not specified)	SX	TRAPS	
TRAWLS		Stationary uncovered pounds nets	FPN
Bottom trawls	TBB	Pots	FPO
Beam trawl	OTB	Fyke nets	FYK
Otter trawls (side or stern)	PTB	Stow nets	FSN
Pair trawls	TBN	Barriers, fences, weirs, etc	FWR
Nephrops trawls	TBS	Aerial traps	FAR

Shrimp trawls (not specified)	TM	Traps (not specified)	FIX
Midwater trawls			
Otter trawls (side or stern)	OTM	HOOKS AND LINES	
Pair trawls	PTM	Handlines and pole-lines (hand operated)	LHP
Shrimp trawls	TMS	Handlines and pole-lines (mechanised)	LHM
Midwater trawls (not specified)	TM	Set longlines	LLS
Otter twin trawls	OTT	Drifting longlines	LLD
Otter trawls (not specified)	OT	Longlines (not specified)	LL
Pair trawls (not specified)	PT	Trolling lines	LTL
Other trawls (not specified)	TX	Hooks and lines (not specified)	LX
DREDGES		GRAPPLING AND WOUNDING	
Boat dredges	DRB	Harpoons	HAR
Hand dredges	DRH	HARVESTING MACHINES	
LIFT NETS		Pumps	HMP
Portable lift nets	LPN	Mechanised dredges	HMD
Boat-operated lift nets	LNB	Harvesting machines (not specified)	HMX
Shore operated stationary lift nets	LNS	MISCELLANEOUS GEAR	MIS
Lift nets (not specified)	LN	RECREATIONAL FISHING GEAR	RG
		GEAR NOT KNOWN OR NOT SPECIFIED	NK
		SHARK CONTROL NETS	NSC
		DERELICT FISHING GEAR	

5.3 Earlier years' statistics

There are no changes in earlier years' statistics.

6. 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, (4-5 Toyomi-cho, Chuo-ku, Tokyo 104-0055, Japan) and Dr. T. Yamada (National Science Museum, Hyakunin-cho, Shinjuku-ku, Tokyo 169-0073, Japan) voluntarily collected relevant information on the strandings.

7. Other studies and analyses

No other studies or analyses on small cetaceans were conducted during the period from April 2008 to March 2009.

8. Literature cited

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