

**Japan. Progress report on small cetacean research
April 2007 to March 2008, with statistical data for the calendar year 2007**

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This report summarizes small cetacean fisheries in 2007 as well as researches conducted during the period from April 2007 to March 2008 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 2007 to March 2008, with statistical data for the calendar year 2007” (submitted to 60th 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	4.2, 6.1, 6.2.1, 9., 10.1, 10.2
Harbor porpoise	<i>Phocoena phocoena</i>	Coastal waters of Japan	6.2.1, 6.2.3
Finless porpoise	<i>Neophocoena phocaenoides</i>	Coastal waters of Japan	2.1.1, 4.2, 4.3, 6.2.1, 6.2.3, 10.1
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	Off Pacific coast	4.2, 4.3, 6.2.1, 6.2.3, 10.1, 10.2
Striped dolphin	<i>Stenella coeruleoalba</i>	Western North Pacific	4.1, 4.2, 4.4, 6.1, 6.2.1, 10.1, 10.2
Pantropical spotted dolphin	<i>Stenella attenuata</i>	Off Pacific coast	4.1, 4.2, 6.1, 6.2.1, 10.1, 10.2
Bottlenose dolphin	<i>Tursiops truncatus</i>	Off Pacific coast, East China Sea	2.1.1, 4.1, 4.2, 5., 6.1, 6.2.1, 6.2.3, 10.1, 10.2
Risso's dolphin	<i>Grampus griseus</i>	Western North Pacific	2.1.1, 4.2, 5., 6.1, 6.2.1, 6.2.3, 10.1, 10.2
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Western North Pacific, East China Sea	2.1.1, 4.2, 4.4, 5., 6.1, 6.2.1, 10.1, 10.2
False killer whale	<i>Pseudorca crassidens</i>	Off Pacific coast	4.2, 6.1, 10.1, 10.2
Killer whale	<i>Orcinus orca</i>	Coastal waters of Japan, Antarctic	4.1, 10.1, 10.2
Baird's beaked whale	<i>Berardius bairdii</i>	Off Pacific coast, Sea of Japan, Okhotsk Sea	2.1.1, 3.1.3, 3.2, 4.2, 4.4, 6.1, 6.2.1, 10.1, 10.2
Additional species taken or sighted during dolphin fisheries or small-type whaling operations	-	Off Pacific coast, Sea of Japan, Okhotsk Sea	2.1.2, 6.2.3

Additional species sighted during the sighting cruise	-	Western North Pacific, Okhotsk Sea, Sea of Japan	2.1.1
Additional species stranded	-	Around Japan	6.2.1

2. Sighting data (this section partly overlaps with descriptions of sighting data in SC/59/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 and one sighting surveys using airplane 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 2007 to March 2008.

Target species	Date	Area	No. of sightings	Contact person/institute and references
Baird's beaked whale	14/06/07-25/07/07	Sea of Japan	91	S.Minamikawa (NRIFSF)
northern form short-finned pilot whale	15/09/07-14/10/07	Western North Pacific	16	T.Miyashita
southern form short-finned pilot whale	24/07/07-13/9/07	Western North Pacific	8	H.Shimada.
Bottlenose dolphin	24/07/07-13/9/07	Western North Pacific	5	H.Shimada
	28/07/07-09/9/07	Western North Pacific	1	H. Shimada
	30/07/07-13/9/07	Western North Pacific	3	H. Shimada

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 2007, using a total of 30 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 five days both in July and August, and T. Kishiro (NRIFSF), ten research assistants and 30 fishermen members of WATB acted as the researchers on board. Besides Bryde's whales, a total of 14 schools (1,132 animals) of long beaked common dolphins, three schools (60 animals) of Risso's dolphins, and two schools (80 animals) of bottlenose dolphins were sighted.

Aerial sighting surveys for finless porpoises using a small airplane (CESSNA 172P) were conducted to obtain information on their abundance and distribution in coastal waters of western Kyushu. Yoshida conducted the surveys with Tokyo University of Marine Science and Technology and Nagasaki prefectural office. In a period of 8-9 November 2007, surveys were carried out and the 50 schools (99 animals) of finless porpoises with 2 schools (around 180 animals) of Indo-Pacific bottlenose dolphins were sighted, during the flight of 366.5 n.miles (excluded from the above table)

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 April 2007 to March 2008.

3.1.2 ARTIFICIAL MARKING DATA

No artificial marking was conducted during the period from April 2007 to March 2008.

3.1.3 TELEMETRY DATA

Minamikawa (NRIFSF) and Kawashima (FRA) deployed, with an air gun, the data-loggers (depth and temperature) combined with ARGOS PTT on ten free-swimming Baird's beaked whales in the Sea of Japan in June and July 2006. All the deployed tags were released from the whale automatically and 6 tags were recovered. Consequently, the data of which periods were 15 hours to 38 hours were obtained from four whales.

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.

4. Tissue/biological samples collected

4.1 Biopsy samples

Table 2. Biopsy samples of small cetaceans collected during the period from April 2007 to March 2008.

Species	Area/stock	Season - no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact institute
Striped dolphin	N. Pacific	2	Y	0	2	NRIFSF
Pantropical spotted d.	N. Pacific	2	Y	0	2	NRIFSF
Bottlenose dolphin	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 2007 to March 2008.

Species	Sp	Area	Tissue type(s)	No. collected	Archived (Y/N)	Contact Institute
Dall's porpoise	<i>dallii</i> -type	N.Pacific	Skin(Sk) and muscle(Mu)	7	Y	NRIFSF
Striped dolphin		N.Pacific	tooth(To), mammary gland (Ma), ovary(O), uterine horn(U), testis(Te), Sk, and Mu	463	Y	NRIFSF
Pantropical spotted dolphin		N.Pacific	To, Ma, O, U, Te, Sk and Mu	13	Y	NRIFSF
Bottlenose dolphin		N.Pacific	To, Ma, O, U, Te, Sk and Mu	276	Y	NRIFSF
		E.China Sea	To, Sk and Mu	2	Y	NRIFSF
Risso's dolphin		N.Pacific	To, Ma, O, U, Te, epididymis(E), vertebral epiphysis (V), Sk, Mu, and liver(L)	299	Y	NRIFSF
Short-finned pilot whale	southern form	N.Pacific	To, Ma, O, U, Te, E, V, Sk, Mu and L	92	Y	NRIFSF
		E. China Sea	To, Sk and Mu	64	Y	NRIFSF
False killer whale		E.China Sea	To, Sk and Mu	3	Y	NRIFSF
Pacific white-sided dolphin		N.Pacific	To, Ma, O, U, Sk and Mu	17	Y	NRIFSF
Baird's beaked whale		N.Pacific	To, Ma, O, U, Te, E, V, Sk, Mu and L	53	Y	NRIFSF
		Okhotsk Sea	To, Ma, O, U, Te, E, V, Sk, Mu and L	4	Y	NRIFSF

Finless porpoise	Sea of Japan	To, Ma, O, U, Te, E, V, Sk, Mu and L	10	Y	NRIFSF
	E. China Sea	Sk	5	Y	NRIFSF

The national quota of Baird's beaked whales was sixty-seven animals (quota of one animal off the Pacific coast was carried over from last year). 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 station 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-seven whales (ten off Hakodate, four off Abashiri, 53 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 taken by the following five biologists: Kishiro, Y. Morita (FAJ), Y. Toyoda (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 16 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, Morita, and M. Kawashima (FAJ). The FAJ also set a national catch quota of twenty Risso's dolphins for small-type whaling in Taiji from 1 May to 15 August and 1 to 30 September. A total of twenty animals were taken by *Seiwa-maru*, and examined by Hara, Morita, and Kawashima. In Taiji during May-August 2007, the researchers also collected samples from hand harpoon catches when they had the opportunity, including 49 bottlenose, 77 Risso's, 13 spotted, and 13 striped dolphins.

Kishiro and Morita recorded prey species of stomach contents of ten Baird's beaked whales taken by small-type whaling in Hakodate from May to June 2007.

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 2007 and 7 January to 28 February 2008. They examined a total of 842 animals composed of 450 striped, 193 bottlenose, 166 Risso's and 17 Pacific white-sided dolphins and 16 southern form short-finned pilot whales. Iwasaki and Y. Tomizawa (FRA) tried to collect stomach contents and related biological data and samples of *dalli*-type Dall's porpoises in October 2007 off the Pacific coast of Hiroo, Hokkaido, but they had no chance.

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. Ohtomo of Iwate Fisheries Technology Center (hereafter IFTC) and his colleagues, Y. Hara (IFTC), T. Sato (IFTC) recorded color type, sex and body length of 515 *truei*-type and 460 *dalli*-type Dall's porpoises landed at the Kamaishi Fish Market and collected DNA samples from seven *dalli*-types during April 2007 through March 2008.

In March 2008, Okinawa Prefectural Government sent to NRIFSF samples for age determination and genetic studies from 64 southern form short-finned pilot and three false killer whales and two bottlenose dolphins which were taken by hand harpoon fishery in Okinawa during February to October 2007. Okinawa Prefectural government collected those samples as a part of supervision of the fishery. Skin samples of five finless porpoise from by-caught on December 2007 and February-March 2008 in Nagasaki was sent to NRIFSF.

4.3 Samples from stranded animals

Skin samples of 15 finless porpoises (four in Nagasaki, two in Kumamoto, seven in Ibaraki, and one in each of Fukuoka and Miyagi) and a Pacific white-sided dolphin (March 2008, Kanagawa) 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 and Toyoda continued to analyze age and reproductive organs of Baird's beaked whales taken by small-type whaling in Hakodate in 2007.

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. Ohizumi analyzed the record by Morita about prey species in stomach contents of ten Baird's beaked whales caught by small type whaling off Hakodate from May to June 2007. Ohizumi compared the record and the results of stomach content analysis of Baird's beaked whale off Hakodate before 2006.

Yoshida furthered the mtDNA sequence analysis to reveal stock structure of short-finned pilot whales around Japan, by adding tissue samples of 31 individuals taken in 2006 by the hand harpoon fishery. Yoshida also carried out forward stock structure analysis of striped dolphins, using mtDNA sequences from 15 biopsy samples collected in 1993 and 31 animals taken by the hand harpoon fishery in 1995.

Okamura and his colleagues investigated the performance of management procedures including PBR using the simulation model with a Bayesian conditioning procedure. Kanaji, Okamura and Miyashita conducted preliminary analyses for abundance estimation of northern form short-finned pilot whales using sighting data between 2006 and 2007.

5. Statistics for small cetaceans

5.1 For the calendar year 2007

Table 4. Direct catch of small cetacean in 2007.

Species	Type of fishery	Prefecture ¹⁾	Total landed ²⁾
<i>dalli</i> -type Dall's porpoise	Hand harpoon	Hokkaido	841
	Hand harpoon	Iwate ³⁾	2,975
	Hand harpoon	Miyagi	254
<i>truei</i> -type Dall's porpoise	Hand harpoon	Hokkaido	44
	Hand harpoon	Iwate	7,243
Striped dolphin	Hand harpoon	Wakayama	86
	Driving	Wakayama	384
Pantropical spotted d.	Hand harpoon	Wakayama	16
Bottlenose dolphin	Hand harpoon	Wakayama	97
	Driving	Wakayama	300(77)
	Hand harpoon	Okinawa	4
Risso's dolphin	Small-type whaling	Wakayama	20
	Hand harpoon	Wakayama	185
	Driving	Wakayama	312(8)
southern form short-finned p.w.	Small-type whaling	Wakayama	16
	Hand harpoon	Okinawa	79
	Driving	Wakayama	243(5)
False killer whale	Hand harpoon	Okinawa	4
Baird's beaked whale	Small-type whaling	Hokkaido	14
	Small-type whaling	Miyagi	27
	Small-type whaling	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. 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 2007, 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 2007/2008 season was revised from the last season, that is, 8,708 *dalli*-type Dall's porpoise, 8,168 *truei*-type Dall's porpoises, 541 Risso's dolphins, 1,018 bottlenose dolphins, 879 spotted dolphins, 685 striped dolphins, 369 southern form short-finned pilot whales and 100 false killer whales. Corresponding operational months by prefecture in 2007 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 2007

5.2.1 STRANDINGS OF SMALL CETACEANS

Table 5. Strandings of small cetaceans in 2007.

Species and stocks	No. strandings	No. postmortems	Contact person(s)/ Institute(s)	Contact email address(es)
Dall's porpoise(<i>dalli</i> -type)	5	5	FAJ	-
Harbor porpoise	6	6	FAJ	-
Finless porpoise	117	117	FAJ	-
Short-beaked common d.	2	2	FAJ	-
Pacific white-sided d.	9	9	FAJ	-
Pantropical spotted d.	2	1	FAJ	-
Striped dolphin	5	5	FAJ	-
Bottlenose dolphin	5	5	FAJ	-
Risso's dolphin	10	10	FAJ	-
Fraser's dolphin	1	1	FAJ	-
Rough-toothed dolphin	2	2	FAJ	-
Melon-headed whale	2	2	FAJ	-
Southern form short-finned p.w.	1	1	FAJ	-
Baird's beaked w.	4	4	FAJ	-
Stejneger's beaked w.	5	5	FAJ	-
Pygmy sperm whale	3	3	FAJ	-
Dwarf sperm whale	5	4	FAJ	-
Unidentified cetaceans	18	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). One dwarf sperm whale and one pantropical spotted dolphin were rescued and sent to aquaria. Apart from the above table, the following cetaceans were stranded or had strayed into harbors but were safely driven back to sea: two Melon-headed and two dwarf sperm whales.

5.2.2 OBSERVED OR REPORTED SHIP STRIKES

No records of ship strike incidence were obtained during the calendar year 2007.

5.2.3 FISHERY BYCATCH

Table 6. Fishery bycatch of small cetaceans in 2007.

Species	No. of animals ²⁾	Location ¹⁾	Fate	Target fish species	Cause ³⁾
Harbor porpoise	2	Hokkaido	K	NA	FPN
Harbor porpoise	4	Hokkaido	K	NA	GNS
Harbor porpoise	1	Chiba	K	NA	FPN
Finless porpoise	1	Miyagi	K	NA	GNS
Finless porpoise	2	Aichi	D	NA	GNS
Finless porpoise	1	Aichi	K	NA	GNS
Finless porpoise	2	Yamaguchi	K	NA	GNS
Finless porpoise	4	Fukuoka	K(alive)	NA	GNS
Finless porpoise	1	Nagasaki	K	NA	FPN
Finless porpoise	1	Nagasaki	K	NA	GNS
Finless porpoise	1	Oita	K	NA	FPN
Finless porpoise	1	Oita	K	NA	GNS
Pacific white-sided d.	18	Iwate	R	NA	FPN
Pacific white-sided d.	17	Ishikawa	K(alive)	NA	FPN
Pacific white-sided d.	3	Kyoto	K(alive)	NA	FPN
Bottlenose dolphin	3	Ishikawa	K(alive)	NA	FPN
Indo-Pacific bottlenose dolphin	1	Chiba	K(alive)	NA	FPN
Risso's dolphin	1	Niigata	K(consumed)	NA	FPN
Risso's dolphin	1	Shizuoka	K(alive)	NA	FPN

1) Recorded at the place of fishing gears.

2) In parenthesis are the number live captured animals which are included into total bycatch.

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

Gear: FPN=Stationary uncovered pounds nets, GNS= Set gillnets

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

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, (Tokyo Suisan Building, 4-18 Toyomi, 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 May 2006 to March 2007.

8. Literature cited

Ishikawa, H., Fujise, Y., Saino, S. and Zenitani, R. 1990. III. Report on onboard biological research on the dolphin hand harpoon boats in the Okhotsk Sea and waters off the Pacific coast of northern Honshu Island.53-78. In: Report on dolphin research around Japan (1989 fiscal year). Institute of Cetacean Research

9. Publications on small cetaceans

9.1 Published or In Press'papers only

Iwasaki, T. 2008. Fisheries and research on small cetaceans (review) p353-7. In Iwadoh T. (eds.) The Current

- status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. 533pp. http://kokushi.job.affrc.go.jp/H19/H19/H19_45.pdf (in Japanese)
- Iwasaki T. 2008. Dall's porpoise p358-64. In Iwadoh T. (eds.) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. 533pp. http://kokushi.job.affrc.go.jp/H19/H19/H19_46.pdf (in Japanese)
- Kishiro, T. 2007. Geographical variations in the external body proportions of Baird's beaked whale (*Berardius bairdii*) off Japan. *J. CETACEAN RES. MANAGE.* 9(2):89-93.
- Kishiro, T. 2008. Baird's beaked whale, *Berardius bairdii*, Sea of Japan, Sea of Okhotsk and Pacific Ocean. P365-70. In Iwadoh T. (eds.) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. 533pp. http://kokushi.job.affrc.go.jp/H19/H19/H19_47.pdf. (in Japanese)
- Kohyama, K., and Yonezaki, S. 2007. Examination of blood coagulation time in captive cetaceans and pinnipeds. *Honyurui Kagaku [Mammalian Science]*47(2): 221-225 (in Japanese with English abstract)
- Minamikawa, S., Iwasaki, T. and Kishiro, T. 2007. Diving behavior of a Baird's beaked whale, *Berardius bairdii*, in the slope water region of the western North Pacific: first dive records using a data logger. *Fish. Oceanogr.* 16 (6): 573-577
- Miyashita, T. 2008. Killer whale p404-6 In Iwadoh T. (eds.) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. 533pp. http://kokushi.job.affrc.go.jp/H19/H19/H19_54.pdf (in Japanese)
- Suzuki, M., Endo, N., Nakano, Y., Kato, H., Kishiro, T. and Asahina, K. 2008. Localization of aquaporin-2, renal morphology and urine composition in the bottlenose dolphin and the Baird's beaked whale. *J. Comp. Physiol B.* 178:149-156.
- Yoshida, H. 2008. Finless porpoise p398-403. In Iwadoh T. (eds.) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. 533pp. http://kokushi.job.affrc.go.jp/H19/H19/H19_53.pdf (in Japanese)

9.2 Unpublished literature

- Iwasaki, T. 2007. Review of biology of small cetaceans around Japan and their interactions with fisheries. Abstract for *Beryx* Workshop in Kochi, Sep. 2007 (in Japanese, available from the author).
- Iwasaki, T. 2007. Distribution and geographical movement of small cetaceans around Japan. Resume of the Symposium on Ecology of Whales and Dolphins. Nagasaki, Japan, Oct. 2007. (available from the author, in Japanese)
- Iwasaki, T. 2007. Review on feeding ecology of small cetaceans. p84. Abstract for the Annual Meeting of the Japanese Society of Fisheries Oceanography.
- Iwasaki, T. 2007. Biology and catch history of killer whales around Japan. p3 Abstract for symposium on "Current status of killer whales around Japan and toward the reproduction. (in Japanese, available from the author)
- Iwasaki, T. 2008. Present status and management of the Japanese small cetacean fisheries p355. Abstracts for the Spring Meeting of the Japanese Society of Fisheries Science 2008. (in Japanese)
- Kanaji, Y., Okamura, H., and Miyashita, T. 2008. Population size and distribution of northern form short-finned pilot whales in the offshore waters off Sanriku and southern Hokkaido. p6. Abstract for the Autumn Meeting of the Japanese Society of Fisheries Science. Tokyo. March 2008. (in Japanese)
- Kishiro, T. 2008. Biological parameters on the small toothed whales in the coastal waters off Japan - mainly for Risso's dolphin - . Abstract for the symposium of the spring meeting of Japanese Society of Fisheries Science, Shizuoka, Japan, March 2008. (in Japanese)
- Kita, Y. F. , Watanabe, M., Tanaka, A., Ohizumi, H. , Shiina, T., Inoko, H., Iwasaki, T. and Tanaka, S. 2007. p273. Analysis on social structure of offshore bottlenose dolphin (*Tursiops truncatus*) by population genetic method. Abstract for the 30th Annual Meeting of the Molecular Biology Society of Japan and 80th Annual Meeting of the Japanese Biochemical Society.
- Minamikawa, S. Shimada, H., Miyashita, T. and Moronuki, H. 2007 Abundance estimate of six target species of small cetacean fisheries using the data of sighting survey during 1998 to 2001. p151. Abstracts for the Autumn Meeting of the Japanese Society of Fisheries Science Hokkaido University Hakodate, September, 2007 (in Japanese)
- Minamikawa, S. 2007 "Exploration of diving behavior in cetaceans- investigation using micro data loggers" p4. Abstracts for 5th satellite symposium of Tokai university "Cetaceans—explore the invisible mystery" Tokai university, Tokyo, November, 2007 (in Japanese)
- Miyashita, T. 2007. Current status and management of whales in the North Pacific. Resume of the Symposium on Ecology of Whales and Dolphins. Nagasaki, Japan, Oct. 2007. (available from the author, in Japanese)
- Miyashita, T. 2007. Current status of killer whales around Japan. p3. Abstract for symposium on "Current status of killer whales around Japan and toward the reproduction. (in Japanese, available from the author)
- Miyashita, T. Iwasaki, T. and Moronuki, H. 2007. Abundance estimate of the Pacific white-sided dolphins around Japan using sighting data during the years 1992-96. p56. Abstracts for the meeting of the mammalogical society of Japan 2007. (poster, in Japanese)
- Miyashita, T. Iwasaki, T. and Moronuki, H. 2007. Abundance estimates of Dall's porpoises in the western North Pacific. p164. Abstracts for the Autumn Meeting of the Japanese Society of Fisheries Science 2007. (poster, in Japanese)
- Ohizumi, H. 2008. Feeding habits of smaller toothed whales. p352. Abstracts for the Spring Meeting of the Japanese Society of Fisheries Science. (in Japanese)

- Okamura, H. 2007. Investigation of small cetacean management procedures. p14-19 Abstracts for the symposium on the simulation-based fishery management, University of Tokyo. (in Japanese, available from the author)
- Okamura, H., Iwasaki, T., and Miyahsita, T. 2007. Performance evaluation of potential small cetacean management procedures using the simulation. p152. Abstracts for the Autumn Meeting of the Japanese Society of Fisheries Science 2007. (Poster, in Japanese).
- Suzuki, M. and Iwasaki, T. 2008. Distribution of Aquaporin 2 in main stomach of the bottlenose dolphin, *Tursiops truncatus*. p193. Abstract for the Spring Meeting of the Japanese Society of Fisheries Science.
- Yoshida, H. 2007. Finless porpoise, the most familiar cetacean species around Nagasaki. Resume of the Symposium on Ecology of Whales and Dolphins. Nagasaki, Japan, Oct. 2007. (available from the author, in Japanese)
- Yoshida, H. 2008. Stock structure of finless porpoises in coastal waters of Japan. Annual symposium of Cetaceans, Pinnipeds and Sirenians study group, Japan, Mie, Japan, March 2008. (in Japanese, available from the author)