

Japan. Progress report on small cetacean research, April 2011 to March 2012, with statistical data for the calendar year 2011

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This report summarizes small cetacean fisheries in 2011 as well as researches conducted during the period from April 2011 to March 2012 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 2011 to March 2012, with statistical data for the calendar year 2011” (submitted to 64rd IWC/SC meeting). FAJ considers management of small cetaceans is outside the framework of the International Convention for the Regulation of Whaling. Hiroto Murase joined the NRIFSF on 1 December 2011. Toshihide Iwasaki left the NRIFSF on 31 March 2012.

1. SPECIES AND STOCKS STUDIED

Common name	Scientific name	Area/stock(s)	Items referred to
Dall's porpoise	<i>Phocoenoides dalli</i>	Off Pacific coast, and Okhotsk Sea	2.1.1, 5.1, 5.2.2, 5.3, 8.1
Harbor porpoise	<i>Phocoena phocoena</i>	Coastal waters of Japan	5.2.2, 5.3
Finless porpoise	<i>Neophocaena phocaenoides</i>	Coastal waters of Japan	4.3, 5.2.2, 5.3, 8.1
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	Off Pacific coast	2.1.1, 2.1.2, 3.1.3, 4.1, 4.2, 4.4, 5.1, 5.2.2, 5.3, 8.2
Striped dolphin	<i>Stenella coeruleoalba</i>	Western North Pacific	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.3
Pantropical spotted dolphin	<i>Stenella attenuata</i>	Off Pacific coast	2.1.1, 2.1.2, 3.1.3, 4.1, 4.2, 5.1
Bottlenose dolphin	<i>Tursiops truncatus</i>	Off Pacific coast, Okhotsk Sea and East China Sea	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.3
Indo-Pacific bottlenose dolphin	<i>Tursiops aduncus</i>	Western North Pacific	5.3
Risso's dolphin	<i>Grampus griseus</i>	Western North Pacific	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.2.2, 5.3
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Western North Pacific, Okhotsk Sea and East China Sea	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 8.1, 8.2
False killer whale	<i>Pseudorca crassidens</i>	Off Pacific coast and East China Sea	2.1.2, 4.2, 5.1, 8.1
Killer whale	<i>Orcinus orca</i>	Coastal waters of Japan and Okhotsk Sea	2.1.1, 3.1.1, 5.3, 8.1
Baird's beaked whale	<i>Berardius bairdii</i>	Off Pacific coast, Sea of Japan and Okhotsk Sea	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.3, 8.1
Additional species	-	Around Japan	2.1.1, 3.1.3, 5.2.2, 5.3

2. SIGHTINGS DATA

2.1 Field work

2.1.1 Systematic

The NRIFSF and FAJ conducted a total of five dedicated shipboard sighting surveys using research vessels in the North Pacific. All of the vessels are equipped with a top barrel. During these cruises, the following provisional numbers of sightings of small cetaceans were observed. The sightings of large cetaceans were listed in SC/64/Japan /Progress report submitted to the 64th IWC/SC meeting.

Table 1. Sightings of small cetaceans by dedicated shipboard surveys during the period from April 2011 to March 2012.

Species	Date	Area	No. of sightings	Contact institute
<i>dalli</i> -type Dall's porpoise	14/05/11-26/06/11	Okhotsk Sea	24	NRIFSF
	25/04/11-08/06/11	Western North Pacific	9	NRIFSF
	11/07/11-9/08/11	Okhotsk Sea, western North Pacific	78	NRIFSF
<i>truei</i> -type Dall's porpoise	14/05/11-26/06/11	Okhotsk Sea	4	NRIFSF
	25/04/11-08/06/11	Western North Pacific	93	NRIFSF
	11/07/11-9/08/11	Okhotsk Sea, western North Pacific	1	NRIFSF
Pacific white-sided dolphin	14/05/11-26/06/11	Okhotsk Sea	1	NRIFSF
	25/04/11-08/06/11	Western North Pacific	16	NRIFSF
	11/07/11-9/08/11	Okhotsk Sea, western North Pacific	52	NRIFSF
	28/01/12-26/02/12	Sea of Japan	13	NRIFSF
Killer whale	14/05/11-26/06/11	Okhotsk Sea	3	NRIFSF
	25/04/11-08/06/11	Western North Pacific	1	NRIFSF
Baird's beaked whale	14/05/11-26/06/11	Okhotsk Sea	4	NRIFSF
	11/07/11-9/08/11	Okhotsk Sea, western North Pacific	1	NRIFSF
Northern form short-finned pilot whale	25/04/11-08/06/11	Western North Pacific	6	NRIFSF
	11/07/11-9/08/11	Okhotsk Sea, western North Pacific	1	NRIFSF
Southern form short-finned pilot whale	11/08/11-19/09/11	Western North Pacific	1	NRIFSF
Risso's dolphin	25/04/11-08/06/11	Western North Pacific	20	NRIFSF
	11/08/11-19/09/11	Western North Pacific	12	NRIFSF
Bottlenose dolphin	25/04/11-08/06/11	Western North Pacific	2	NRIFSF
	11/08/11-19/09/11	Western North Pacific	1	NRIFSF
	28/01/12-26/02/12	Sea of Japan	9	NRIFSF
Striped dolphin	25/04/11-08/06/11	Western North Pacific	8	NRIFSF
	11/08/11-19/09/11	Western North Pacific	1	NRIFSF
Panropical spotted dolphin	25/04/11-08/06/11	Western North Pacific	1	NRIFSF
	11/08/11-19/09/11	Western North Pacific	1	NRIFSF
	28/01/12-26/02/12	Sea of Japan	1	NRIFSF

Short-beaked common dolphin	25/04/11-08/06/11	Western North Pacific	6	NRIFSF
Northern right whale dolphin	25/04/11-08/06/11	Western North Pacific	4	NRIFSF
Fraser's dolphin	11/08/11-19/09/11	Western North Pacific	1	NRIFSF
Melon-headed whale	11/08/11-19/09/11	Western North Pacific	1	NRIFSF
Pygmy killer whale	11/08/11-19/09/11	Western North Pacific	2	NRIFSF
Dwarf sperm whale	11/08/11-19/09/11	Western North Pacific	1	NRIFSF

No. of sightings indicates number of schools sighted. All sightings were made by the following five shipboard surveys.

- 1) Sighting and satellite tagging survey for common minke whales in the western North Pacific, using the research vessel *Shunyo-maru*. Research period was from 25 April to 8 June 2011.
- 2) Sighting and biopsy sampling survey for common minke whales in the Okhotsk Sea, using the research vessel *Kaiyo-maru No.8*. Research period was from 14 May to 26 June 2011.
- 3) PAT tagging and biopsy sampling survey for Pacific white-sided dolphins in the western North Pacific and the Okhotsk Sea, using the research vessel *Kaiyo-maru No.8*. Research period was from 11 July to 9 August 2011.
- 4) PAT tagging and biopsy sampling survey for rough-toothed dolphins and melon-headed whales in the western North Pacific, using the research vessel *Kaiyo-maru No.8*. Research period was from 11 August to 19 September 2011.
- 5) PAT tagging and biopsy sampling survey for Pacific white-sided dolphins in the Sea of Japan, using the research vessel *Kaiyo-maru No.8*. Research period was from 28 January to 26 February 2012.

In cooperation with Kochi Prefecture Government and the Whale Watching Association in Tosa Bay (WATB), the NRIFSF conducted a sighting survey on Bryde's whales in the coastal waters off Kochi in July 2011, using a total of 12 whale watching boats belong to the WATB. The boats (5 -10t) were without top barrels and excluded from the above table, but employed as sighting survey vessels in local coastal waters. The survey lasted 6 days in July, and T. Kishiro (NRIFSF), five research assistants and 12 fishermen members of WATB acted as the researchers on board. Besides Bryde's whale sightings, a total of six schools (847 animals) of long beaked common 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. Baird's beaked whales, southern form short-finned pilot and false killer whales, Risso's, bottlenose, striped, spotted and pacific white-sided dolphins).

2.2 Analyses/development of techniques

Y. Kanaji (NRIFSF) forwarded the multivariate analysis using long-term sighting data to clarify distributional patterns of small odontocetes.

3. MARKING DATA

3.1 Field work

3.1.1 Natural marking data

A total of three killer whales were photographed for the photo-identification during the dedicated shipboard sighting surveys (biopsy sampling survey for common minke whales in the Okhotsk Sea, and satellite tagging survey for common minke whale in the western North Pacific).

Table 2. Natural marking data of small cetaceans collected during the period from April 2011 to March 2012.

Species	Feature	Area/stock	No. photo-id'd	Catalogue (Y/N)	Catalogue total	Contact institute
Killer whale	Dorsal fin and saddle mark	Okhotsk Sea	2	N	0	NRIFSF
		Western North Pacific	1	N	0	NRIFSF

3.1.2 Artificial marking data

Artificial marking was not applied.

3.1.3 Telemetry data

S. Minamikawa (NRIFSF) deployed pop-up archival transmitting (PAT) tags (MK10-PAT, Wildlife Computers) on a total of six free-swimming Pacific white-sided dolphins in the Sea of Okhotsk and the Pacific during June 2011 and the Sea of Japan during February 2012. The lengths of tagging period were from 6 to 12 days. Three tags were retrieved in the Pacific and fine-scaled time-series data of depth, temperature and light level were obtained. PAT tags were also deployed on a spotted dolphin in the East China Sea and a melon-headed whale and a Fraser's dolphin in the Pacific, in September 2011. Although the tag from a Fraser's dolphin was retrieved, the tag had dropped off immediately after deployment. Tagging period of a spotted dolphin and a melon-headed whale were 18 days and 1 day, respectively.

Table 3. PAT data of small cetaceans collected during the period from April 2011 to March 2012.

Species	Tag type	No. deployed	No. popped up	No. retrieved	Contact institute
Pacific white-sided dolphin	MK10-PAT	6	6	3	NRIFSF
Pantropical spotted dolphin	MK10-PAT	1	1	0	NRIFSF
Melon-headed whale	MK10-PAT	1	1	0	NRIFSF
Fraser's dolphin	MK10-PAT	1	1	1	NRIFSF

3.2 Analyses/development of techniques

No new attempts were conducted.

4. TISSUE/BIOLOGICAL SAMPLES COLLECTED

4.1 Biopsy samples

During the three dedicated shipboard sighting surveys (PAT tagging and biopsy sampling survey for Pacific white-sided dolphins in the western North Pacific and the Okhotsk Sea, PAT tagging and biopsy sampling survey for Pacific white-sided dolphins in the Sea of Japan, PAT tagging and biopsy sampling survey for rough-toothed dolphins and melon-headed whales in the western North Pacific), all the 51 biopsy samples were collected from Pacific white-sided, pantropical spotted, and bottlenose dolphins.

Table 4. Biopsy samples of small cetaceans collected during the period from April 2011 to March 2012.

Species	Area/stock	no. collected	Archived (Y/N)	No. analyzed	Total holdings	Contact institute
Pacific white-sided dolphin	Okhotsk Sea	17	Y	8	17	NRIFSF
	Western North Pacific	25	Y	10	25	NRIFSF
	Sea of Japan	3	Y	0	3	NRIFSF
Pantropical spotted dolphin	Western North Pacific	5	Y	4	5	NRIFSF
Bottlenose dolphin	Western North Pacific	1	Y	1	1	NRIFSF

4.2 Samples from directed catches or bycatches

Samples of small cetaceans from direct catches collected during the period from April 2011 to March 2012 are shown in Table 5.

The national quota of Baird's beaked whales was sixty-six animals for small-type whaling. Fishing season was from 25 May to 18 June for land station in Hakodate on the Sea of Japan coast, 20 June to 9 August for land station in Wadoura on the Pacific coast, and 20 August to 1 September for land station in Abashiri on the Okhotsk coast. The great earthquake disaster occurred in March 2011 in Sanriku region prevented to conduct the fisheries in Ayukawa on the Pacific coast in summer season, and small-type whaling for Baird's beaked whales was conducted at land station on Kushiro, Pacific coast off Hokkaido, instead of Ayukawa, during the period from 1 July to 30 August. Whaling operation at Ayukawa was resumed in November, and those for Baird's beaked whales were conducted from 11 November to 15 December. A total of 61 whales (ten off Hakodate, four off Abashiri, 47 off the Pacific coast) were taken by five catcher boats (*Seiwa-maru*, *Kohei-maru* #8, *Taisho-maru* #28, *Katsu-maru* #7 and *Sumitomo-maru* #51). Kishiro organized the field data collection from the small-type whaling operations, and all the catches were examined and biological samples were taken by four researchers.

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* #8 and *Taisho-maru* #28) in the same periods of the operations for Baird's beaked whales, 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 22 June to 30 September. One catcher boat (*Seiwa-maru*) operated on land station in Taiji, but no whales were taken. The FAJ also set a national catch quota of twenty false killer whales for small-type whaling in Taiji in the same periods of the operations for southern form short-finned pilot whales, but no whales were taken. In Taiji during June-August 2011, two researchers collected samples from the hand harpoon catches when they had the opportunity, including 73 Risso's, one bottlenose, three striped, and two spotted dolphins.

Four researchers collected samples for life history and genetic studies from catches of drive and hand harpoon fisheries in Taiji during operations through 1-25 December 2011, and 8 January to 29 February 2012. Iwasaki organized the field data collection from those fisheries. They examined a total of 631 animals composed of 345 striped, 39 bottlenose, 146 Risso's, 97 Pantropical spotted, and four Pacific white-sided dolphins.

Under contract with FRA and supervised by NRIFSF, sample collection for life history and genetic studies of Dall's porpoises taken by hand harpoon fisheries in Iwate prefecture was planned to be conducted by the Iwate Fisheries Technology Center, but those fisheries could not be conducted due to the serious earthquake disaster mentioned above.

Under contract with FRA and supervised by NRIFSF, The Tokai University collected stomach contents of ten Baird's beaked whales taken by small-type whaling off Wadoura, and five Risso's, one bottlenose, and one striped dolphins taken by hand harpoon fisheries off Taiji, for feeding habit studies.

Okinawa Prefectural Government collected samples and sent to NRIFSF for age determination and genetic studies from 53 southern form short-finned pilot whales, three false killer whales, and three bottlenose

dolphin which were taken by hand harpoon fishery (crossbow fishery) in Okinawa during December 2010 to August 2011. Okinawa Prefectural government collected those samples as a part of supervision of the fishery.

Except for finless porpoise, sample collection of small cetaceans from bycatches by the NRIFSFS was not conducted during the period from April 2011 to March 2012. Samples of finless porpoises were referred in Item 4.3.

Table 5. Samples of small cetaceans from direct catches collected during the period from April 2011 to March 2012.

Species	Area	Tissue type(s)	No. collected	Archived (Y/N)	Contact Institute
Baird's beaked whale	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	47	Y	NRIFSFS
	Okhotsk Sea	To, Ma, O, U, Te, E, V, Sk	4	Y	NRIFSFS
	Sea of Japan	To, Ma, O, U, Te, E, V, Sk	10	Y	NRIFSFS
Southern form short-finned pilot whale	E. China Sea	To, Sk, and Mu	53	Y	NRIFSFS
False killer whale	E. China Sea	To, Sk, and Mu	3	Y	NRIFSFS
Risso's dolphin	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	193	Y	NRIFSFS
Bottlenose dolphin	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	25	Y	NRIFSFS
	E. China Sea	To, Sk, and Mu	3	Y	NRIFSFS
Striped dolphin	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	348	Y	NRIFSFS
Pantropical spotted dolphin	Western North Pacific	To, Ma, O, U, Te, and Sk	99	Y	NRIFSFS
Pacific white-sided dolphin	Western North Pacific	To, Ma, O, U, and Sk	2	Y	NRIFSFS

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

4.3 Samples from stranded animals

Finless porpoise skin samples of 45 animals stranded or incidental taken in coastal waters of western Kyushu and of an individual stranded at Yokohama City were sent to NRIFSFS from Nagasaki University and Yokohama Hakkeijima Seaparadise, respectively.

4.4 Analyses/development of techniques

Kishiro and K. Ishida (Tokyo University of Marine Science and Technology, hereafter TUMST) determined ages of 16 Baird's beaked whales taken by small-type whaling in the Pacific coast, and started to develop the techniques applying the frozen microtome method for age determination using teeth of Baird's beaked whales.

Iwasaki determined ages of 75 southern form short-finned pilot whales taken in Taiji or Okinawa.

O. Hoson (NRIFSFS) and Iwasaki examined histological samples of testis, mammary gland, and uterine horn of 89 southern form short-finned pilot whales, 519 Risso's, 983 striped, and 277 bottlenose dolphins taken by drive fishery in Taiji for determination of the sexual maturity.

H. Yoshida (NRIFSFS) carried forward the mtDNA sequence analysis in order to accumulate information on southern form short-finned pilot whale stock structure around Japan, using tissue samples of 63 animals taken by hand harpoon fisheries. Yoshida also conducted stock structure study of Pacific white-sided dolphins, using mtDNA sequences obtained from 30 biopsy samples. Furthermore, mtDNA of 5 bottlenose and 4 pantropical spotted dolphins were sequenced.

H. Ohizumi (Tokai University) started to develop a simple method for monitoring of stomach contents of Baird's beaked whale caught in Wada coastal whaling station. Stomach contents of a total of 10 Baird's beaked whale were examined at the field survey in July and August 2011, and the contents were collected for further analysis. Ohizumi also started to survey of feeding habits of smaller toothed whales caught in Taiji by coastal whaling and hand harpoon fishery. Stomach contents of 23 Risso's dolphin, 11 striped dolphin, 8 bottlenose dolphin, and 2 spotted dolphin were examined in May and August to September 2011, and collected for further analysis. Numbers of collecting those samples were also referred in Item 4.2.

5. STATISTICS FOR SMALL CETACEANS

5.1 For the calendar year 2011

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

For dolphin fisheries, management season has been started on 1 August and closed on 31 July for Dall's porpoise fisheries, and from 1 October to 30 September for other species, since 1996. The management season for fisheries in Wakayama Prefecture has been started on 1 September to 31 August, since 2006, because September was added as fishing season for drive fishery in Taiji in 2006. As has been the case in previous years, the statistics, following the guideline for IWC national progress report, cover catches from 1 January to 31 December 2011, 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 6 in this section by prefecture and type of fisheries. The data have been collected by the International Division of the FAJ based on reports from the prefectural governments.

Catch quota for dolphin fisheries for the 2011/2012 season was revised from the last season, that is, 7,460 *dalli*-type Dall's porpoise, 7,160 *truei*-type Dall's porpoises, 505 Risso's dolphins, 788 bottlenose dolphins, 697 spotted dolphins, 625 striped dolphins, 245 southern form short-finned pilot and 100 false killer whales and 360 Pacific white-sided dolphins (quota of false killer whales and Pacific white-sided dolphins remained constant since 2007/2008 season).

Corresponding operational months by prefecture in 2011 were as follows: hand harpoon fishery for porpoises and dolphins was permitted for nine months (1 January to 31 August and 1-31 December) 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. Among them, hand harpoon fisheries in Aomori, Miyagi, Iwate, and Hokkaido could not be operated after the great earthquake disaster occurred in March 2011. Drive fishery was permitted for nine months in Wakayama (1 January to 31 May and 1 September to 31 December) and for seven months in Shizuoka (1 January to 31 March and 1 September to 31 December).

Table 6. Direct catch of small cetacean in 2011.

Species	Type of fishery	Prefecture ¹⁾	Total landed ²⁾
Baird's beaked whale	Small-type whaling	Hokkaido	30
		Miyagi	5
		Chiba	26
<i>dalli</i> -type Dall's porpoise	Hand harpoon	Iwate ³⁾	89
<i>truei</i> -type Dall's porpoise	Hand harpoon	Iwate	1,855
		Miyagi	8
Striped dolphin	Hand harpoon	Wakayama	96
	Driving		406(8)
Pantropical spotted dolphin	Hand harpoon	Wakayama	2
	Driving		106(2)

Bottlenose dolphin	Hand harpoon	Wakayama	40
	Driving		76(25)
	Hand harpoon	Okinawa	3
Risso's dolphin	Hand harpoon	Wakayama	104
	Driving		273(17)
Southern form short-finned pilot whale	Driving	Wakayama	74(6)
	Hand harpoon	Okinawa	46
False killer whale	Driving	Wakayama	17(10)
	Hand harpoon	Okinawa	3
Pacific white-sided dolphin	Driving	Wakayama	24(21)

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 parentheses 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.

5.2 Non-natural mortality for the calendar year 2011

5.2.1 Observed or reported ship strikes

We have no data collecting system for ship strike incidence of small cetaceans.

5.2.2 Fishery bycatch

Provisional figures for incidental mortality of small cetaceans (bycatch) by Japanese fisheries, by Prefecture in January-December 2011, are shown in Table 7. Species and figures are based on the reports of prefecture governments to the FAJ, which are reports from individual fishermen or fishery cooperative unions.

Table 7. Fishery bycatch of small cetaceans in 2011.

Species	No. of animals	Location ¹⁾	Fate ²⁾	Gear ³⁾	Target fish species ⁴⁾	Source or contact
<i>dalli</i> -type Dall's porpoise	8	Hokkaido	K	FPN	NA	FAJ
	1		K	GNS		
	1		D	MIS		
Harbour porpoise	3	Hokkaido	R	FPN		
	2		K			
	1		D			
	1		K	GNS		
Finless porpoise	1	Mie	D	MIS		
	1	Yamaguchi	Unknown ⁵⁾	FPN		
	1		D	GNS		
	2			MIS		
	3	Fukuoka	K	GNS		
	3	Nagasaki	D	FPN		
	4		D	GNS		

Pacific white-sided dolphin	1	Hokkaido	K(alive)	MIS	NA	FAJ
	1		K or D			
	2	Ishikawa	K(alive)	FPN		
	2	Kyoto				
Risso's dolphin	1	Oita	K	FPN		
Short-beaked common dolphin	3	Kochi	R	MIS		
Long-beaked common dolphin	1	Kagoshima	D	GNS		

1) Recorded at the place of fishing gears.

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

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

4) Target fish species: NA = not available

5) K(alive) or K(specimen) or D

5.3 Strandings of small cetaceans

Provisional figures for strandings of small cetaceans in Japan, for the period January-December 2011, are shown in Table 8. Species and figures are based on reports of prefecture governments to the FAJ, which are reports from individual fishermen, fishery cooperative associations or the general public. No. of post mortems in Table 8 indicated the number of dead animals when they stranded.

Table 8. Strandings of small cetaceans in 2011.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)
<i>dalli</i> -type Dall's porpoise	3	3	FAJ
Harbor porpoise	10	10	
Finless porpoise	181	178*	
Pacific white-sided dolphin	18	18	
Striped dolphin	4	4	
Bottlenose dolphin	2	2	
Indo-Pacific bottlenose dolphin	6	6	
Risso's dolphin	8	8	
Rough-toothed dolphin	3	3	
Short-beaked common dolphin	4	4	
Long-beaked common dolphin	2	2	
Northern right whale dolphin	1	1	
Killer whale	1	1	
Pygmy killer whale	4	4	
Melon-headed whale	57	32	
Baird's beaked whale	2	2	
Cuvier's beaked whale	3	3	
Stejneger's beaked whale	5	5	
Hubb's beaked whale	1	1	

Pygmy sperm whale	8	7	FAJ
Dwarf sperm whale	5	5	
Unidentified cetaceans	23	23	

* Additional one individual is unknown, but possibly post mortems.

In addition, the Institute of Cetacean Research (4-5 Toyomi, Chuo-ku, Tokyo 104-0055, Japan), and the National Science Museum (4-1-1, Amakubo, tsukuba, Ibaragi 305-0005, Japan) voluntarily collected relevant information on strandings.

5.4 Earlier years' statistics

There are no changes in earlier years' statistics.

6. OTHER STUDIES AND ANALYSES

No other studies or analyses on small cetaceans were conducted during the period from April 2011 to March 2012.

7. 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.p53-78. In: Report on dolphin research around Japan (1989 fiscal year). 78pp. Institute of Cetacean Research

8. PUBLICATION ON SMALL CETACEANS

8.1 Published or In Press' papers only

Iwasaki, T. 2012. Fisheries and research on small cetaceans (review). In Hashimoto, Y. (ed) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. http://kokushi.job.affrc.go.jp/H23/H23_45.pdf. 4pp. (in Japanese)

Iwasaki T. 2012. Dall's porpoise. In Hashimoto, Y. (ed) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. http://kokushi.job.affrc.go.jp/H23/H23_46.pdf. 5pp. (in Japanese)

Kanaji, Y., Okamura, H. and Miyashita, T. 2011. Long-term abundance trends of the northern form of the short-finned pilot whale (*Globicephala macrorhynchus*) along the Pacific coast of Japan. *Marine Mammal Science* 27:477-492.

Kanaji, Y. and Miyashita, T. 2012. Killer whale. In Hashimoto, Y. (ed) The Current status of International fishery stocks. Fisheries Agency and Fisheries Research Agency. http://kokushi.job.affrc.go.jp/H23/H23_54.pdf. 2pp. (in Japanese)

Kishiro, T. 2012. Baird's beaked whale, *Berardius bairdii*, Sea of Japan, Sea of Okhotsk and Pacific Ocean. In Hashimoto, Y. (ed) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. http://kokushi.job.affrc.go.jp/H23/H23_47.pdf. 5pp. (in Japanese)

Minamikawa, S., Watanabe, H. and Iwasaki, T. 2011. Diving behavior of a false killer whale, *Pseudorca crassidens*, in the Kuroshio–Oyashio transition region and the Kuroshio front region of the western North Pacific. *Marine Mammal Science*. (In Press)

Yoshida, H. 2012. Finless porpoise In Hashimoto, Y. (ed.) The Current status of international fishery stocks. Fisheries Agency and Fisheries Research Agency. http://kokushi.job.affrc.go.jp/H23/H23_53.pdf. 5pp. (in Japanese)

8.2 Unpublished literature

- Ishida, K. 2012. Age determination of cetaceans. Comparison of the aging methods between the teeth of toothed whales and ear plug of baleen whales. Graduation thesis, Tokyo University of Marine Science and Technology 50pp (supervised by Kishiro, T., in Japanese)
- Iwasaki, T., Minamikawa, S. and Nagatani, H. 2011. Winter home range of Pacific white-sided dolphins visiting Iki-Tsushima waters. Abstract for the annual meeting of the Japanese Mammalogical Society 2011 p165. (in Japanese)
- Iwasaki, T. and Kai, Y. 2011. Brief report on improvement of slaughtering method in dolphin drive fisheries in Taiji, Japan during the years between 2000 and 2010. Paper presented to NAMMCO Expert Group Meeting to assess the hunting methods for small cetaceans, Copenhagen, Denmark, 15-17, November 2011. 5pp.
- Kanaji, Y., Okazaki, M. and Miyashita, T. 2011. Habitat utilization in summer by small cetaceans in the North Pacific. Abstracts for the Joint FRA-CLIoTOP Workshop on “Advancing Comparative Ecological Studies of Early Life History and Recruitment Strategy of Bluefin Tunas and the Related Species, and Effect of Environmental Changes on the Oceanic Top Predators. p15–16.
- Kanaji, Y. and Okazaki, M. 2011. Estimation of spatial distribution of the short-finned pilot whale using oceanographic variables. Abstracts for 2011 Annual Meeting of Mammalogical Society of Japan. p166. (in Japanese)
- Kanaji, Y. and Okazaki, M. 2011. Estimation of spatial distribution of small odontocetes using presence-only models. Abstracts for 2011 Annual Meeting of the Japanese Society of Fisheries Oceanography. p54. (in Japanese)
- Kanaji, Y., Okazaki, M., Minamikawa, S., Kishiro, T. and Miyashita, T. 2011. The distributional patterns of 16 small odontocetes inferred from interspecies habitat differences in the North Pacific. Abstracts for the 19th SMM Biennial Conference. p151.
- Minamikawa, S. and Iwasaki, T. 2011 Vertical and geographical movements of Pacific white-sided dolphins in Japanese coastal waters. 1st International Conference on Fish Telemetry, Book of Abstracts. p106.
- Yoshida, H. 2012. Studies on cetaceans from stranded animals in Japan. Meeting on cetacean research in Southwest Asian waters: Cetacean sighting program, SEAFDEC, March 2012, Thailand.
- Yoshida, H. 2012. Cetacean sighting methods for large and small scale sighting surveys. Meeting on cetacean research in Southwest Asian waters: Cetacean sighting program, SEAFDEC, March 2012, Thailand.

