

Japan. Progress report on small cetacean research, April 2012 to March 2013, with statistical data for the *calendar year 2012*

COMPILED BY TOSHIYA KISHIRO

National Research Institute of Far Seas Fisheries,

2-12-4 Fukuura, Kanazawa-ku, Yokohama, Kanagawa 236-8648, Japan

This report summarizes small cetacean fisheries in 2012 as well as researches conducted during the period from April 2012 to March 2013 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 2012 to March 2013, with statistical data for the calendar year 2012” (submitted to the 65a IWC/SC meeting). FAJ considers management of small cetaceans is outside the framework of the International Convention for the Regulation of Whaling. Hikari Maeda joined the NRIFSF on 7 January 2013.

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, 4.2, 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	2.1.1, 5.2.2, 5.3, 8.1, 8.2
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	Off Pacific coast, Okhotsk Sea, and Sea of Japan	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	2.1.2, 4.2, 4.4, 5.1, 5.3
Pantropical spotted dolphin	<i>Stenella attenuata</i>	Off Pacific coast	2.1.1, 2.1.2, 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, 4.1, 4.2, 4.4, 5.1, 5.3
Risso's dolphin	<i>Grampus griseus</i>	Western North Pacific	2.1.1, 2.1.2, 4.2, 4.4, 5.1, 5.3
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Western North Pacific, Okhotsk Sea and East China Sea	2.1.1, 2.1.2, 4.1, 4.2, 4.4, 5.1, 5.3
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 Okhotsk Sea	2.1.1, 2.1.2, 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, 8.2
Additional species	-	Around Japan	2.1.1, 5.3

2. SIGHTINGS DATA

2.1 Field work

2.1.1 Systematic

The NRIFS and FAJ conducted a total of three 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/65a/Japan /Progress report submitted to the 65a IWC/SC meeting.

Table 1. Sightings of small cetaceans by dedicated shipboard surveys during the period from April 2012 to March 2013.

Species	Date	Area	No. of sightings	Contact institute
<i>dalli</i> -type Dall's porpoise	12/10/12-20/11/12	Sea of Japan, Okhotsk Sea	22	NRIFS
Pacific white-sided dolphin	12/10/12-20/11/12	Sea of Japan, Okhotsk Sea	29	NRIFS
Killer whale	02/06/12-10/07/12	East China Sea, Western North Pacific	1	NRIFS
Baird's beaked whale	12/10/12-20/11/12	Sea of Japan, Okhotsk Sea	4	NRIFS
Southern form short-finned pilot whale	02/06/12-10/07/12	East China Sea, Western North Pacific	11	NRIFS
False killer whale	02/06/12-10/07/12	East China Sea, Western North Pacific	3	NRIFS
Risso's dolphin	02/06/12-10/07/12	East China Sea, Western North Pacific	9	NRIFS
Bottlenose dolphin	02/06/12-10/07/12	East China Sea, Western North Pacific	9	NRIFS
	12/10/12-20/11/12	Sea of Japan, Okhotsk Sea	1	NRIFS
Pantropical spotted dolphin	02/06/12-10/07/12	East China Sea, Western North Pacific	10	NRIFS
Rough-toothed dolphin	02/06/12-10/07/12	East China Sea, Western North Pacific	1	NRIFS
Melon-headed whale	02/06/12-10/07/12	East China Sea, Western North Pacific	4	NRIFS
Pygmy killer whale	02/06/12-10/07/12	East China Sea, Western North Pacific	5	NRIFS
Longman's beaked whale	02/06/12-10/07/12	East China Sea, Western North Pacific	5	NRIFS

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

- 1) Biopsy sampling survey for southern form short-finned pilot whales in the East China Sea and western North Pacific, using the research vessel *Shonan-maru No.2*. Research period was from 2 June to 10 July 2012.
- 2) Sighting and tagging survey for common minke whales and Pacific white-sided dolphins in the Sea of Japan, using the research vessel *Kaiyo-maru No.8*. Research period was from 12 October to 20 November 2012.
- 3) Sighting and tagging survey for common minke whales and Pacific white-sided dolphins in the Sea of Japan, using the research vessel *Shonan-maru No.2*. Research period was from 12 October to 20 November 2012.

In cooperation with Kochi Prefecture Government and the Whale Watching Association in Tosa Bay (WATB), the NRIFS conducted a sighting survey on Bryde's whales in the coastal waters off Kochi in July 2012, 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 (89 animals) of Risso's dolphins, two schools (480 animals) of bottlenose dolphins, and three schools (808 animals) of long-beaked common 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 western Kyushu (Ariake Sound, Tachibana Bay, Omura Bay) on 8 and 9 August 2012. T. Miyashita (NRIFSF) and H. Yoshida (NRIFSF) searched the sea surface for porpoises, from the plane flying at 90 knots and 500 feet in altitude. They surveyed 412.0 nautical miles and encountered all the 102 schools (132 animals) of finless porpoises, with additional sightings of 2 schools (36 animals) of Indo-Pacific bottlenose dolphins in Tachibana Bay.

From 28 July to 15 August 2012, whale sighting and environmental survey was carried out in the western North Pacific (36°30'N to 45°30'N, 156°E to 159°E) using R/V *Shunyo Maru* (887 GT) with a top barrel to examine the relationship between cetacean distribution and environment. H. Watanabe (NRIFSF) engaged the survey in cooperation with six research assistants. A total of 812 nautical miles was searched, and besides large cetaceans sightings, a total of 22 schools (885 individuals) of common dolphin, 14 schools (838 individuals) of striped dolphin, 7 schools (37 individuals) of Dall's porpoise (Dalli type), 5 schools (155 individuals) of Pacific white-sided dolphin, 5 schools (39 individuals) of Risso's dolphin, and 3 schools (320 individuals) of northern form short-finned pilot whale was sighted. During the survey, a Conductivity–Temperature–Depth profiler cast was made down to 500 m at every 20 to 30 nautical miles searched, and the MODIS-Aqua and NORPAC net surveys (once or twice a day in the water depth of 0-150 m layer) was conducted to obtain the information on the oceanographic conditions.

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).

During the JARPEN II coastal component off Kushiro, northeast Japan conducted from September to October 2012, sightings of 6 schools (18 animals) of Baird's beaked whales and of 18 schools (128 animals) of killer whales were obtained by the small-type whaling vessels.

2.2 Analyses/development of techniques

Y. Kanaji (NRIFSF) forwarded analyses on spatial distribution of small odontocetes using long-term sighting data.

Watanabe examined the data obtained by the whale sighting and environmental surveys in 2011 and 2012, and found that the northward migration (during the season from June to early August) of Risso's, striped, common, and Pacific white-sided dolphins and Dalli type of Dall's porpoise was closely related with the northward movements of isotherms at the water depths in 30-40 or 30-50 m. Based on these results, he suggested that the possibility of the estimation for summer distribution of these species by using the distribution of isotherms at subsurface waters. He also detected that northward distribution of these species was almost correlated to that of iso-chlorophyll *a* line at sea surface and zooplankton abundance in epipelagic zone, and suggested that those movements might be related with ecosystems in lower trophic levels.

3. MARKING DATA

3.1 Field work

3.1.1 Natural marking data

Natural marking was not applied.

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 5 free-swimming Pacific white-sided dolphins in the Sea of Okhotsk during November 2012. Three tags popped up and one was retrieved on the beach in Hokkaido. The lengths of tagging period were from 3 to 11 days. Fine-scaled time-series data of depth, temperature and light level were obtained.

S. Minamikawa also attached ARGOS Platform Transmitting Tag (AM-S281A, Wildlife Computers) to the dorsal fin of a Pacific white-sided dolphin which had been driven in Taiji, Wakayama prefecture. The dolphin could be tracked for 48 days after release.

Table 2.1. PAT data of small cetaceans collected during the period from April 2012 to March 2013.

Species	Tag type	No. deployed	No. popped up	No. retrieved	Contact institute
Pacific white-sided dolphin	MK10-PAT	5	3	1	NRIFSF

Table 2.2. Telemetry data of small cetaceans collected during the period from April 2012 to March 2013.

Species	Tag type	No. deployed	Maximum time transmitting	Contact institute;
Pacific white-sided dolphin	Satellite (AM-S281A)	1	48 days	NRIFSF

3.2 Analyses/development of techniques

In order to comprehend the migration route of Pacific white-sided dolphins distributing around Japan, Minamikawa forwarded the analysis of the data which had been ever obtained from 20 dolphins.

4. TISSUE/BIOLOGICAL SAMPLES COLLECTED

4.1 Biopsy samples

During the two dedicated shipboard sighting surveys (Biopsy sampling survey for southern form short-finned pilot whales in the East China Sea and western North Pacific and Sighting and tagging survey for common minke whales and Pacific white-sided dolphins in the Sea of Japan), all the 32 biopsy samples were collected from southern form short-finned pilot whales and pantropical spotted, bottlenose, and Pacific white-sided dolphins.

Table 3. Biopsy samples of small cetaceans collected during the period from April 2012 to March 2013.

Species	Area/stock	no. collected	Archived (Y/N)	No. analyzed	Total holdings	Contact institute
Southern form short-finned pilot whale	East China Sea, Western North Pacific	3	Y	0	3	NRIFSF
Pantropical spotted dolphin	East China Sea, Western North Pacific	15	Y	0	15	NRIFSF
Bottlenose dolphin	East China Sea, Western North Pacific	7	Y	0	7	NRIFSF
Pacific white-sided dolphin	Okhotsk Sea	7	Y	0	7	NRIFSF

4.2 Samples from directed catches or bycatches

Samples of small cetaceans from direct catches collected during the period from April 2012 to March 2013 are shown in Table 4.

The national quota of Baird's beaked whales was seventy one animals (included five animals carried over from the last year quota) 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 26 August for land station in Wadoura on the Pacific coast, 20 June to 1 September for land station in Ayukawa on the Pacific coast, and 22 to 31 August for land station in Abashiri on the Okhotsk coast. A total of 71 whales (ten off Hakodate, four off Abashiri, 57 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 six 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 1 May to 31 August. Three catcher boats (*Seiwa-maru*, *Katsu-maru #7* and *Sumitomo-maru #51*) operated on land station in Taiji, and a total of 15 whales were taken. In addition, one animal was taken by *Sumitomo-maru #51* on land station in Wadoura in the same periods of the operations for Baird's beaked whales. Two researches collected samples from eight animals landed on Taiji, and one animal landed on Wadoura. The FAJ also set a national 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 1 to 22 May, one researcher collected samples from the hand harpoon catches when they had the opportunity, including 41 bottlenose, seven striped, and five spotted dolphins.

Four researchers collected samples for life history and genetic studies from catches of drive fisheries in Taiji during operations through 11 November to 24 December 2012, and 6 January to 28 February 2013. Kishiro organized the field data collection from those fisheries. They examined a total of 849 animals composed of 15 southern form short-finned pilot whales, 398 striped, 87 bottlenose, 246 Risso's, 92 Pantropical spotted, and 11 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 and landed on Yamada fish market was conducted by the Iwate Fisheries Technology Center. One researcher recorded color type, sex and body length of 237 *truei*-type and 18 *dalli*-type Dall's porpoises, and collected DNA samples from 18 *dalli*-types during January to March 2012.

Under contract with FRA and supervised by NRIFSF, the Tokai University collected stomach contents of 14 Baird's beaked whales taken by small-type whaling off Wadoura, and six southern form short-finned pilot whales, six Risso's, 15 bottlenose, and two striped, and five Pantropical spotted dolphins taken by hand harpoon fisheries and small-type whaling off Taiji, for feeding habit studies.

Okinawa Prefectural Government collected samples and sent to NRIFSF for age determination and genetic studies from 12 southern form short-finned pilot whales, and two bottlenose dolphins which were taken by hand harpoon fishery (crossbow fishery) in Okinawa during May to August 2012. Okinawa Prefectural government collected those samples as a part of supervision of the fishery.

Sample collection of small cetaceans from bycatches by the NRIFSF was not conducted during the period from April 2012 to March 2013.

Table 4. Samples of small cetaceans from direct catches collected during the period from April 2012 to March 2013.

Species	Area	Tissue type(s)	No. collected	Archived (Y/N)	Contact Institute
<i>dalli</i> -type Dall's porpoise	Western North Pacific	Sk and Mu	18	Y	NIIFSF
Baird's beaked whale	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	57	Y	NRIFSF
	Okhotsk Sea	To, Ma, O, U, Te, E, V, Sk	4	Y	NRIFSF
	Sea of Japan	To, Ma, O, U, Te, E, V, Sk	10	Y	NRIFSF

Southern form short-finned pilot whale	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	24	Y	NRIFSF
	E. China Sea	To, Sk, and Mu	12	Y	NRIFSF
Risso's dolphin	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	246	Y	NRIFSF
Bottlenose dolphin	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and (St)	128	Y	NRIFSF
	E. China Sea	To, Sk, and Mu	2	Y	NRIFSF
Striped dolphin	Western North Pacific	To, Ma, O, U, Te, E, V, Sk, and St	405	Y	NRIFSF
Pantropical spotted dolphin	Western North Pacific	To, Ma, O, U, Te, Sk, and St	97	Y	NRIFSF
Pacific white-sided dolphin	Western North Pacific	To, Ma, O, U, and Sk	11	Y	NRIFSF

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

Sample collection from stranded small cetaceans by the NRIFSF was not conducted during the period from April 2012 to March 2013.

4.4 Analyses/development of techniques

Kishiro and K. Ishida (Tokyo University of Marine Science and Technology, hereafter TUMST) examined teeth of 21 Baird's beaked whales taken by small-type whaling in the Pacific coast, and continued to develop the techniques applying the frozen microtome method for age determination of Baird's beaked whales.

Yoshida 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 from 19 animals. Yoshida also conducted stock structure study of Pacific white-sided dolphins, using mtDNA sequences obtained from 30 biopsy samples.

O. Hoson (NRIFSF) examined histological samples of testis of 254 southern form short-finned pilot whales, 556 Risso's, 857 striped, and 685 bottlenose dolphins taken by drive fishery in Taiji for determination of the sexual maturity. Hoson also counted corpus luteum and albicans in ovary of 65 southern form short-finned pilot whales, 171 Risso's, 373 striped, and 122 bottlenose dolphins taken by drive fishery in Taiji for determination of the sexual maturity and estimation of the reproductive rate.

H. Maeda (NRIFSF) prepared sections for age determination using teeth of 92 southern form short-finned pilot whales taken in Okinawa.

H. Ohizumi (Tokai University) continued 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 14 Baird's beaked whale were examined at the field survey in July and August 2012, and the contents were collected for further analysis. Ohizumi also continued to survey of feeding habits of smaller toothed whales caught in Taiji by coastal whaling and hand harpoon fishery. Stomach contents of 6 short-finned pilot whales, 6 Risso's dolphins, 2 striped dolphins, 15 bottlenose dolphins, and 5 spotted dolphin were examined in May 2012, 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 2012

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 2012, 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 5 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 2012/2013 season was revised from the last season, that is, 7,147 *dalli*-type Dall's porpoise, 6,908 *truei*-type Dall's porpoises, 496 Risso's dolphins, 730 bottlenose dolphins, 651 spotted dolphins, 610 striped dolphins, 214 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 2012 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. Although the hand harpoon fisheries in Aomori, Miyagi, Iwate, and Hokkaido were extensively damaged by the great earthquake disaster occurred in March 2011, the fisheries in Iwate could be gradually resumed since March 2012. 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 5. Direct catch of small cetacean in 2012.

Species	Type of fishery	Prefecture ¹⁾	Total landed ²⁾
Baird's beaked whale	Small-type whaling	Hokkaido	14
		Miyagi	31
		Chiba	26
<i>dalli</i> -type Dall's porpoise	Hand harpoon	Iwate ³⁾	29
<i>truei</i> -type Dall's porpoise			376
Striped dolphin	Hand harpoon	Wakayama	94
	Driving		508(2)
Pantropical spotted dolphin	Hand harpoon	Wakayama	12
	Driving		98
Bottlenose dolphin	Hand harpoon	Wakayama	73
	Driving		186(131)
	Hand harpoon	Okinawa	3
Risso's dolphin	Hand harpoon	Wakayama	52
	Driving		188(24)
Southern form short-finned pilot whale	Small-type whaling	Chiba	1
		Wakayama	15
	Driving	Wakayama	172(7)
	Hand harpoon	Okinawa	25
Pacific white-sided dolphin	Hand harpoon	Wakayama	2
	Driving		2(2)

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 2012

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 2012, are shown in Table 6. 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 6. Fishery bycatch of small cetaceans in 2012.

Species	No. of animals	Location ¹⁾	Fate ²⁾	Gear ³⁾	Target fish species ⁴⁾	Source or contact
<i>dalli</i> -type Dall's porpoise	12	Hokkaido	K	FPN	NA	FAJ
Harbour porpoise	3	Hokkaido	R	FPN		
	2		K			
	6		K	GNS		
Finless porpoise	4	Mie	K	GNS		
	1	Ibaraki	D	GNS		
	1	Yamaguchi	K(alive)	MIS		
	2	Fukuoka	K	FPN		
	1		Unknown ⁵⁾			
	1		K	GNS		
	1	Oita	K	FPN		
	2		K	GNS		
	3	Nagasaki	K	GNS		
Pacific white-sided Dolphin	3	Ishikawa	K(alive)	FPN	NA	FAJ

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 2012, are shown in Table 7. 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 7 indicated the number of dead animals when they stranded.

Table 7. Strandings of small cetaceans in 2012.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)
<i>dalli</i> -type Dall's porpoise	4	4	FAJ
Harbor porpoise	5	5	
Finless porpoise	203	203	
Pacific white-sided dolphin	14	14	
Striped dolphin	14	13	
Bottlenose dolphin	6	6	
Risso's dolphin	6	6	
Fraser's dolphin	1	1	
Northern form short-finned pilot whale	1	1	
Southern form short-finned pilot whale	2	2	
Killer whale	1	1	
Melon-headed whale	2	2	
Baird's beaked whale	4	4	
Cuvier's beaked whale	1	1	
Stejneger's beaked whale	7	7	
Gingko-toothed beaked whale	3	3	
Blainville's beaked whale	2	2	
Pygmy sperm whale	3	3	
Dwarf sperm whale	8	8	
Unidentified cetaceans	33	33	

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 2012 to March 2013.

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

- Kanaji, Y. and Miyashita, T. 2013. 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/H24/H24_54.pdf. 2pp. (in Japanese)
- Kishiro, T. 2013. 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/H24/H24_47.pdf. 5pp. (in Japanese)
- Kishiro, T. and Iwasaki, T. 2013. 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/H24/H24_45.pdf. 4pp. (in Japanese)
- Kishiro, T. and Minamikawa, S. 2013. Baird's beaked whale. Osakana Kawara Ban, Newsletter of Fisheries Research Agency, 51. <http://www.fra.affrc.go.jp/bulletin/letter/no51.pdf>. (In Japanese)
- Miyashita, T. and Iwasaki, T. 2013. 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/H24/H24_46.pdf. 5pp. (in Japanese)
- Yoshida, H. 2013. 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/H24/H24_53.pdf. 5pp. (in Japanese)

8.2 Unpublished literature

- Kanaji, Y. 2012. Predicting distribution of small odontocetes based on ecological niche factor analysis (ENFA). Abstract for the annual meeting of the Japanese Mammalogical Society 2012 p. 45. (in Japanese)
- Kanaji, Y. and Minamikawa, S. 2012. Estimates of Pacific white-sided dolphin distribution Can we estimate seasonal migration patterns using physical environmental data? Proceedings of the 8th Symposium by Japanese Society of Bio-Logging Science. p. 18. (in Japanese)
- Kishiro, T. 2012. Biology and management of Baird's beaked whales. Sectional meeting of the Wildlife Conservation Society, August 2012, Chiba, Japan (in Japanese)
- Kishiro, T. 2013. Cetacean biological field survey method in Japan. Bilateral meeting between Japan and Korea – Recent information on cetacean studies- March 2013, Busan. Korea.
- Yoshida, H. 2013. Methodology of cetacean stock assessment -abundance estimation of cetaceans from sighting survey data-. Meeting on 2013 cetacean sighting survey in COMHAFAT zone. March 2013, Ivory Coast.
- Yoshida, H. 2013. Results of cetacean sighting surveys in coastal waters of Africa, 2002-2008, and 2011 and research plan for 2013 cetacean sighting survey in COMHAFAT zone. March 2013, Ivory Coast.
- Yoshida, H. 2013. Recent finless porpoise study in Japan. Bilateral meeting between Japan and Korea -Recent information on cetacean studies-..March, 2013. Busan. Korea.

