

**ICELAND. PROGRESS REPORT ON CETACEAN RESEARCH, JUNE 2005 TO MAY 2006 WITH
STATISTICAL DATA FOR THE CALENDAR YEAR 2005.**

COMPILED BY

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This report summarises information obtained from: the Marine Research Institute (MRI), Reykjavík, Iceland and cooperating institutes.

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Fin whale	<i>Balaenoptera physalus</i>	Icelandic and adjacent waters	2.1.1, 3.2, 4.4, 6.3
Blue whale	<i>Balaenoptera musculus</i>	Icelandic and adjacent waters	3.1.1, 3.2
Humpback whale	<i>Megaptera novaeangliae</i>	Icelandic and adjacent waters	2.1.1, 3.1.1, 6.2.1
Common minke whale	<i>Balaenoptera acutorostrata</i>	Icelandic and adjacent waters	2.1.1, 3.1.3, 4.2, 4.3, 4.4, 5, 6.1, 6.2, 6.2.1, 3.2.3, 9
Sperm whale	<i>Physeter macrocephalus</i>	Icelandic and adjacent waters	2.1.1, 6.2.1
Northern bottlenose	<i>Hyperoodon ampullatus</i>	Icelandic and adjacent waters	2.1.1, 4.3, 6.2.1

2. Sightings data

2.1 Field work

2.1.1 SYSTEMATIC

A part of the programme for increased whale research introduced in the Scientific Committee of the IWC in 2003 (Marine Research Institute 2003) is a series of aerial cetacean sighting surveys primarily designed to investigate seasonal distribution of common minke whales in nearshore Icelandic waters. These surveys are conducted by one aircraft and the design implemented in the NASS-2001 survey (Pike and Víkingsson 2002) is adopted using the cue-counting procedure and common minke whale as a target species. In 2005 a survey was conducted in the period May 11th to 26th. with a total on-track effort of 2181nm in 45.3 hours but no coverage was achieved of the east and north-east coasts. Most of the sightings occurred of the south coast, but one group of 7 killer whales was sighted off Sneafellsnes, West Iceland, and one sperm whale north of the country. Results for minke whales are given in SC/58/O20 and sightings of other than the above species are shown in Fig. 1 with the total number of animals sighted given in the figure caption.

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

MRI and a whale watching company operating in SW Iceland co-operated in reporting and compiling sightings data during whale watching excursions.

2.2 Analyses/development of techniques

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

The MRI continues its long-term research projects based on photo-identification of cetaceans, notably blue, humpback and killer whales. No designated cruise for collection of natural marking data was conducted in 2005.

Photos of cetaceans taken during whale watching excursions in SW Iceland in 2004 were archived at MRI.

3.1.2 ARTIFICIAL MARKING DATA

3.1.3 TELEMETRY DATA

No minke whales were instrumented with satellite tags in 2005. Seven animals were tagged in 2004, as a part of the minke whale research programme. One of these animals migrated to waters off the coast of West Africa (Vikingsson and Heide-Jørgensen 2005; SC/58/O20). These experiments will be continued in the fall 2006.

3.2 Analyses/development of techniques

Analysis of 89 blue whales photo-identified off Iceland during 1996-2003 yielded no matches with a large catalogue (400 individuals) from the Gulf of St Lawrence, the Nova Scotia shelf and the Gulf of Maine. In 2005, a blue whale was photographed off Mauritania, West Africa and was identified to be the same as one previously photographed off Iceland on two occasions, in 1997 and 1999. This is the first match between Iceland and any other region for this species and represents the longest range re-identification of blue whales in the North Atlantic or 5200 km (Sears *et al.* 2005).

Various analyses were conducted in relation to the *pre-Implementation Assessment* of North Atlantic fin whales, including genetic and non-genetic indication on stock structure, abundance, catch history and biological parameters (SC/58/PFI3, SC/58/PFI5, SC/58/PFI6, SC/58/PFI7, SC/58/PFI8, SC/58/PFI9)

4. Tissue/biological samples collected

4.1 Biopsy samples (June 2005-May 2006)

No biopsy samples taken

4.2 Samples from directed catches or bycatches (2005)*

Species	Area	Calendar year/ season no. collected	Archived (Y/N)	Tissue types**	Contact institute
Minke	N-Iceland	1	Y	bl, mu, sk, ov	MRI

* large cetaceans

** mu=muscle, bl=blubber, sk=skin, ov=ovaries

In addition extensive sampling took place from 34 minke whales taken under scientific permit in July - August 2005. The detailed sample list is presented in SC/58/O20.

4.3 Samples from stranded animals (2005)*

Species	Area	Calendar year/ season no. collected	Archived (Y/N)	Tissue types**	Contact institute
Minke	W-Iceland	2005/Aug/1	Y	di, bl, mu	MRI
Northern bottlenose	W-Iceland	2005/Aug/1	Y	go, di	MRI
Northern bottlenose	NE-Iceland	2005/Jan/1	Y	sk, bl	MRI

* large cetaceans

** te=teeth, mu=muscle, bl=blubber, sk=skin, di=diet, go=gonads

4.4 Analyses/development of techniques

The analyses for the different subprojects of the minke whale research programme (Marine Research Institute

2003) are in progress (see SC/58/O20).

Samples of fin whales from Iceland 1981-1989 (n=1069), Spain 1985 (n=46), Norway (n=57), West Greenland (n=16) and East Canada (n=38) were statistically analysed for 9 microsatellite loci in order to study the temporal and micro- & macrogeographical structure of Northeast Atlantic fin whales (Dánielsdóttir *et al.* 2005a; 2006; see SC/58/PFI7). A sub-sample of the total fin whale samples (Iceland 1985, 1987 and 1989 (n=128); Spain 1985 (n=43); Norway (n=39); West Greenland (n=16) and East Canada (n=13) was analysed further. They were screened and statistically analysed for mtDNA sequences and 6 microsatellite loci (same as in Bérubé *et al.* 1998; see paper SC/58/PFI6) and also 16 microsatellite loci (Bérubé *et al.* 2002; see SC/58/PFI7 and SC/58/PFI9). Reanalysis of North Atlantic fin whale allozyme data is presented in SC/58/PFI8.

Data on life history parameters for fin whales caught in 1967 to 1989 has been revalidated and reanalysed in particular with respect to spatial and temporal segregation (SC/58/PFI3).

5. Pollution studies

Various tissue samples for pollution studies have been routinely collected during dissections of stranded or by-caught cetaceans in recent years. These are stored frozen at the MRI.

Ongoing study on pollutants in minke whale as a part of a research program under a special permit includes samples from 36, 25 and 34 animals taken in 2003 and 2004 respectively (SC/58/O20). The pollution studies focus on analyses on contaminant levels (trace elements and organochlorines) in muscle, blubber and various internal organs with reference to i) biological parameters, ii) trophic level, iii) body condition and health status, iv) geographical variation on a small and large scale and v) the applicability of biopsy sampling for estimation of pollutant burden. The status of the analyses is discussed in SC/58/O20.

6. Statistics for large cetaceans

6.1 Direct catches (commercial, aboriginal and scientific permits) for the calendar year 2005*

Species	Type of catch	Area/stock	Males	Females	Total landed	Struck and lost
Minke whale	Special permit	CIC	20	14	34	5

*Detailed list in SC/58/O20

6.2 None-natural mortality for the calendar year 2005

Species	Area	Males	Females	Total	Cause	Methodology
Minke	E-Iceland			1	entangled in fish farming pen	NR
Minke	N-Iceland		1	1	entangled in gillnet	NR

6.2.1 STRANDINGS OR DEAD WHALES ENCOUNTERED AT SEA

Whale species	Sex	Location Lat N- Lon W	Cause of death	Det.	Contact inst
Humpback	F	63°47'.3N-16°47'.2W	U	U	MRI
Sperm	U	66°15'N-16°25'W	U	U	MRI

Minke	M	64°29'N-22°14'W	U	U	MRI
Minke	M	64°00'N-22°33'W	U	U	MRI
Northern bottlenose	F	65°33'.4N-23°57'.5W	U	U	MRI
Northern bottlenose	U	65°38'N-21°27'W	U	U	MRI
Northern bottlenose	U	64°29'N-22°14'W	U	U	MRI
Northern bottlenose	U	66°07'N-16°49'W	U	U	MRI
Northern bottlenose	M	66°17'N-15°04'W	U	U	MRI

6.2.2 OBSERVED OR REPORTED SHIP STRIKES

No ship strikes were reported.

6.2.3 FISHERY BYCATCH

Whale species	Sex	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
A. minke	F	14/04/05	N-Iceland	K	Lump-sucker	Set gillnet (GNS)	A	MRI

Comments: A. Found dead entangled in gillnet. Animal brought to harbour for length and blubber thickness measurements, scientific sampling and local consumption

6.3 Earlier years' statistics

Revised catch series and cpue for fin whales taken from the early modern whaling land stations in Iceland 1883 to 1915 has been prepared from a hand-written manuscript found at the institute containing individual catch records and some summary data for just over half the catches. After this period whaling was banned in Iceland until 1935. The data was split as requested at last years meeting between the Northwest (Vestfjord peninsula) and East coast landing stations. The results and position plots were presented to the Joint NAMMCO/IWC SC workshop in Reykjavik in March 2006 (SC/M06/FW13). The workshop recommended changes to the cpue and a revised version is presented in SC/58/PFI 4.

7. Statistics for small cetaceans

8. Strandings

Information on stranded cetaceans in Iceland is compiled by the Marine Research Institute in cooperation with the Institute of Natural History.

9. Other studies and analysis

Samples of skin and muscle from 34 minke whales from Icelandic waters were collected for genetic analyses under the scientific permit in 2005 (see SC/58/O20). Iceland is constructing a database of the DNA profile of Icelandic and Norwegian minke whales according to the Norwegian DNA database (Olaisen 1997; Dupuy &

Olaisen 2002 IWC 1998; Daníelsdóttir *et al.* 2005b). The Icelandic databases will consist of every legally obtained minke whale in Iceland. The purpose is to establish a control system to detect illegal trades of the meat. The Icelandic DNA database will also been used to study population genetic structure of Icelandic minke whales as has been done for the Norwegian minke whales (Skaug & Oien 2004; Skaug *et al.* 2002; 2003; Martien *et al.* 2003; Andersen 2004). The DNA profile of each individual entered into the databases is composed of microsatellite DNA genotypes (allele sizes), sex chromosome genotypes (for sex determination) and mtDNA sequence data. The genetic analysis has been optimized at the Department of Population Genetics, Marine Research Institute, Iceland (DPG, MRI-IS). The genetic analysis for the Icelandic samples collected in 2003 – 2005 has been postponed until the year 2007.

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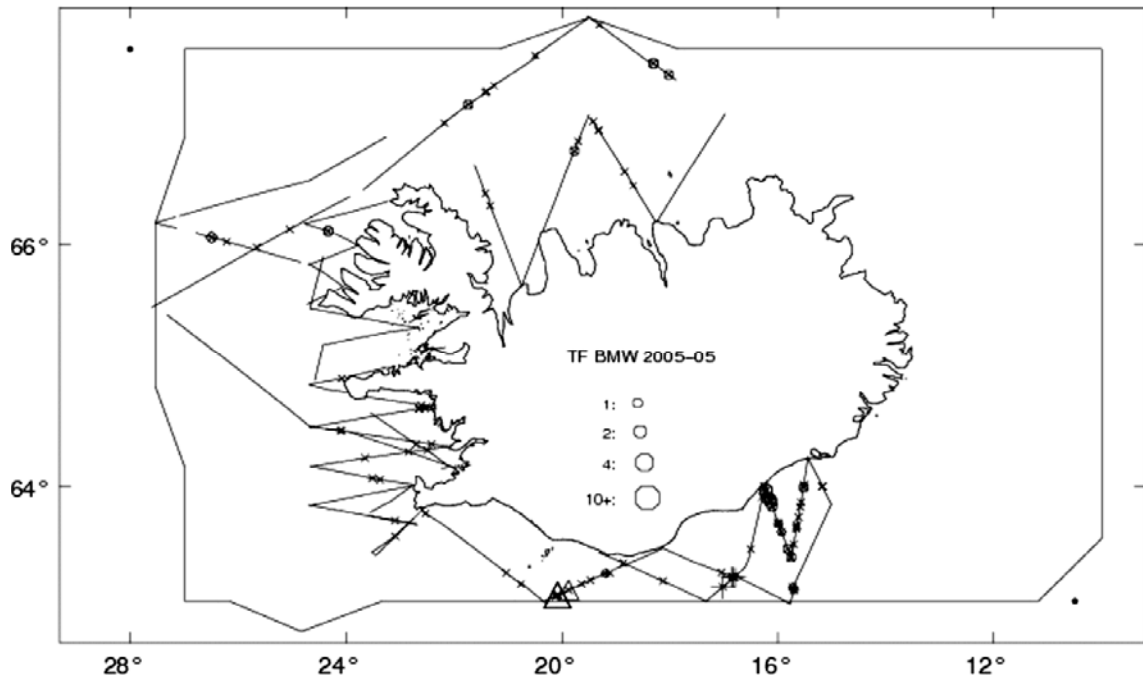


Fig. 1. Aerial survey 2005 May 11.-26. Effort and sightings/animals of 13/16 humpback (circles), 7/6 fin (diamonds), 4/11 northern bottlenose (+), 3/17 beaked whales (triangles) and 37/211 dolphins (x, same symbol size for all groups).