

ICELAND. PROGRESS REPORT ON CETACEAN RESEARCH, APRIL 2003 TO APRIL 2004 WITH STATISTICAL DATA FOR THE CALENDAR YEAR 2003.

COMPILED BY

VÍKINGSSON, G.A., D. ÓLAFSDÓTTIR AND H. GUNNLAUGSSON

MARINE RESEARCH INSTITUTE, SKÚLAGATA 4, 101-REYKJAVÍK, ICELAND

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
Blue whale	<i>Balaenoptera musculus</i>	Icelandic and adjacent waters	2.2.1
Fin whale	<i>Balaenoptera physalus</i>	Icelandic and adjacent waters	2.2.1
Sei whale	<i>Balaenoptera borealis</i>	Icelandic and adjacent waters	2.2.1
Minke whale	<i>Balaenoptera acutorostrata</i>	Icelandic and adjacent waters	2.2.1, 4.1, 4.3, 5, 6.1
Humpback whale	<i>Megaptera novaeangliae</i>	Icelandic and adjacent waters	2.2.1, 4.2, 6.2
Sperm whale	<i>Physeter macrocephalus</i>	Icelandic and adjacent waters	2.2.1, 4.3
Northern Bottlenose	<i>Hyperoodon ampullatus</i>	Icelandic and adjacent waters	2.2.1, 4.3
Long-finned pilot whale	<i>Globicephala melas</i>	Icelandic and adjacent waters	2.2.1
Killer whale	<i>Orcinus orca</i>	Icelandic and adjacent waters	2.2.1
Unid. beaked dolphins	<i>Lagenorhynchus sp</i>	Icelandic and adjacent waters	2.2.1
Harbour porpoise	<i>Phocoena phocoena</i>	Icelandic waters	2.2.1

2. Sightings data

2.1 Field work

2.1.1 SYSTEMATIC

Two cetacean sightings surveys were carried out as a part of a programme for increased whale research introduced in the Scientific Committee of the IWC in 2003 (SC/55/O2-revised).

A shipboard sighting survey was conducted by one research vessel in a joint cetacean, redfish and plankton survey in the area southwest of Iceland in the period 4 to 30 June 2003. Generally 4 observers operated on a single platform. 13 cetacean species were identified during a total effort of 1,121 nautical miles (SC/56/O5). Sighting rates were similar to the 2001 survey in July, generally higher for toothed whales but lower for baleen whales (SC/56/PFI2) except for humpback whales which showed a somewhat wider distribution.

An aerial sighting survey was conducted by one aircraft in nearshore Icelandic waters in the period 21-29. April 2004 as a part of series designed to investigate seasonal distribution of minke whale around Iceland. The design implemented in the NASS-2001 survey (Pike and Víkingsson 2002) was adopted using the cue-counting procedure and minke whale as a the target species. However, since roughly half the flying time used in the 2001 survey was available, survey effort was substantially decreased in most blocks (SC/56/O9).

Results of sighting surveys in Icelandic waters in June 2003 and April 2004

Period	June 2003	April 2004
Type of survey	Shipboard	Aerial
Area	SW-Iceland	Icelandic-Coastal
Effort (Nm)	1121	2155
Number of species	11	9
Number of sightings	295	121
Number of animals	1249	435

One experimental aerial sighting survey was carried out in the Faxaflói area south west off Iceland in September 2003 in cooperation with the Greenland Nature Institute. The primary goal was to get a comparison between the sightings identified by observers and aerial photographs taken from another aircraft flying at slightly higher altitude (Witting and Pike 2004a,b; Witting 2004).

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

Gunnlaugsson et.al. in SC/56/O5 compare sighting rates from all systematic vessel cetacean sighting effort around Iceland from 0-grop fish surveys starting in 1983 to a red fish survey in 2003, including the NASS Icelandic and Faroese components. Pike et al. in SC/56/PFI2 present an estimate of fin whales from the red fish survey and make comparisons to earlier estimates. A blue whale estimate considered by the NAMMCO WG on abundance estimates is submitted to the annual meeting of IWC's scientific committee in 2004 (SC/56/O6).

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

Catalogues of individuals based on natural marking data are held at the Marine Research Institute for blue, humpback, killer whales. Photographs are obtained in special cruises as well as from opportunistic platforms. No cruises were conducted in 2003 specifically to collect photo-id data.

3.1.2 TELEMETRY DATA

One minke whale was instrumented with a satellite tag in october 2003. No signals were received.

3.2 Analyses/development of techniques

4. Tissue/biological samples collected

4.1 Biopsy samples(April 2003-March 2004)

4.2 Samples from directed catches or bycatches (April 2003-March 2004)

Extensive sampling was conducted from 36 minke whales caught by special permit in 2003. Details of the sampling are given in SC/56/O10

4.3 Samples from bycatches (April 2003 – March 2004)

Species	Area	Calendar year/ season no. collected	Archived (Y/N)	Tissue types*	Contact institute
Humpback (foetus)	NE-Iceland	2003/Nov/1	Y	whole	MRI
Humpback	E-Iceland	2003/Jun/1	Y	go, li, ki, sk, blo, bl, mu, st	MRI
Humpback	SE-Iceland	2003/Apr/1	N		MRI
Humpback	N-Iceland	2003/May/1	N		MRI

* te=teeth, go=gonads, st=stomach, mu=muscle, bl=blubber, sk=skin, blo=blood, he=heart, li=liver, ki=kidney

4.4 Samples from stranded animals (April 2003-March 2004)

Species	Area	Calendar year/ season no. collected	Archived (Y/N)	Tissue types*	Contact institute
Minke		2003/Jul/one	Y	go, st, mu, bl, sk	MRI
Sperm		2004/Jan/two	Y	te	MRI
Sperm		2003/Jul/one	Y	te	MRI
N-bottlenosed		2004/Feb/one	Y	te, mu, bl, sk	MRI
N-bottlenosed		2004/Aug/two	Y	go, st, mu, bl,	MRI

* te=teeth, go=gonads, st=stomach, mu=muscle, bl=blubber, sk=skin, blo=blood, he=heart, li=liver, ki=kidney

4.5 Analyses/development of techniques

The status of analyses for the different subprojects of the minke whale research programme is given in SC/56/O10.

Blood samples from stranded animals have been screened for morbillivirus antibodies at Institute for Pathology, University of Iceland. Other samples were stored at the MRI.

5. Pollution studies

Various tissue samples for pollution studies have been routinely collected during dissections of stranded or bycaught 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 animals taken in 2003 (SC/56/O10). The pollution studies focus on analyses on contaminant levels (trace elements and organochlorines) in muscle, blubber and various internal organs with respect 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. Statistics for large cetaceans

5.1 Direct catches (commercial, aboriginal and scientific permits) for the calendar year 2003

Species	Type of catch	Area/stock	Males	Females	Total landed	struck and lost
Minke	Scientific	cic	23	13	36	1

5.2 Other none-natural mortality for the calendar year 2003

Species	Area	Males	Females	Total landed	Cause	Methodology
Humpback	Iceland			3	Bycatch	

6. Strandings

Information on stranded cetaceans in Iceland are compiled by MRI in cooperation with the Institute of Natural History.

7. Other studies and analyses

An assessment of the East Greenland-Iceland fin whale in a sub-stock model with mixing based on marking data (Gunnlaugsson 2003) was presented to a NAMMCO Scientific Committee Working Group on minke and fin whales in 2003 (Gunnlaugsson 2003) and submitted to the IWC Scientific Committee in a slightly revised form (SC/56/PFI1).

8. Literature cited

Gunnlaugsson, Th., 2003. Assessment of the East Greenland-Iceland fin whale in a sub-stock model with mixing based on marking data. NAMMCO/SC/11/MF/6, 14pp

Pike, D.G. and Víkingsson, G.A. 2002. The NASS-2001 Icelandic aerial survey: Introduction and evaluation. NAMMCO SC/10/AE/12, 13pp.

Witting, L. 2004. Aerial image estimation of minke whale surface time. IWC SC/MO4/AWMP1, 7pp.

Witting, L. and Pike, D. 2004a. Distance estimation experiment for aerial minke surveys. IWC SC/MO4/AWMP2, 10pp.

Witting, L. and Pike, D. 2004b. On the efficiency of aerial photography surveys for minke whales relative to cue counting surveys. IWC SC/MO4/AWMP3, 9pp.

9. Publications in 2003

9.1 Published or 'In Press' papers

Halldórsson, S.D. and Víkingsson, G.A. 2003. Analysis of seasonal changes in reproductive organs from Icelandic harbour porpoises (*Phocoena phocoena*). *Harbour popoise in the North Atlantic*. NAMMCO Sci. Publ. Vol. 5:121-142.

Kjeld, M., Víkingsson, G.A., Alfreðsson, Á., Ólafsson, Ö. & Árnason, A. 2003. Sex hormone concentrations in the blood of sei whales (*Balaenoptera borealis*) off Iceland. *J. Cetacean Res. Manage.* 5(3): 233-240.

Ólafsdóttir, D., Víkingsson, G.A., Halldórsson S.D. and Sigurjónsson, J. 2003. Growth and Reproduction in Harbour Porpoises (*Phocoena phocoena*) in Icelandic waters. *Harbour popoise in the North Atlantic*. NAMMCO Sci. Publ. Vol. 5:195-210

Víkingsson, G.A., Ólafsdóttir, D. and Sigurjónsson, J. 2003. Geographical and Seasonal Variation in the Diet of Harbour Porpoise (*Phocoena phocoena*) in Icelandic Coastal Waters. *Harbour popoise in the North Atlantic*. NAMMCO Sci. Publ. Vol. 5:243-270.

9.2 Unpublished literature in 2003

Borchers, D.L., Pike, D., Gunnlaugsson, Th. and Víkingsson, G.A. 2003. Analyses of the NASS 1987 and 2001 minke whale cue counting surveys taking account of distance estimation errors IWC/55/ NAM /3.

Gunnlaugsson, Th., 2003. Assessment of the East Greenland-Iceland fin whale in a subs-stock model with mixing based on marking data. NAMMCO/SC/11/MF/6, 14pp

Gunnlaugsson, Th., Pike, D.G, Víkingsson, G.A., Desportes, G. and Mikkelsen, B. 2003. An estimate of the abundance of minke whales (*Balaenoptera acutorostrata*) from the NASS-2001 shipboard survey. NAMMCO/SC/11/AE/6.

Heide-Jørgensen, M.P., Víkingsson, G.A and Øien, N.I. 2003. Dry periods for baleen whales in the North Atlantic observed by satellite telemetry. IWC/55/AWMP/1.

Pike, D.G. and Gunnlaugsson, Th. 2003. A note on the density of minke whales in Faxaflói Bay, from a NASS-2001 shipboard survey transit. NAMMCO/SC/11/AE/5.

Pike, D.G., Gunnlaugsson, Th. and Víkingsson, G.A. 2003. Abundance of fin whales southwest of Iceland in 2003, and comparisons with earlier surveys. NAMMCO/SC/11/MF/9

Pike, D., Gunnlaugsson, Th. and Víkingsson, G.A. 2003. A preliminary estimate of the abundance of minke whales (*Balaenoptera acutorostrata*) from the NASS-2001 Icelandic aerial survey. IWC/55/NAM/2.

Pike, D.G., Gunnlaugsson, Th., Víkingsson, G.A., Desportes, G. and Mikkelsen, B. 2003. Fin whale abundance in the North Atlantic, from Icelandic and Faroese NASS-2001 shipboard surveys: Slightly revised estimates. NAMMCO/SC/11/AE/8.

Pike, D.G., Gunnlaugsson, Th., Víkingsson, G.A., Desportes, G. and Mikkelsen, B. An estimate of the abundance of long finned pilot whales (*Globicephala melas*) from the NASS-2001 ship survey. NAMMCO/SC/11/AE/10.

Pike, D.G., Gunnlaugsson, Th., Víkingsson, G.A., Desportes, G. and Mikkelsen, B. Surface abundance of northern bottlenose whales (*Hyperoodon ampulatus*) from NASS-1995 and 2001 shipboard surveys. NAMMCO/SC/11/AE/11.

Pike, D.G., Víkingsson, G.A. and Gunnlaugsson, Th. Preliminary abundance estimates for blue whales (*Balaenoptera musculus*) in Icelandic and adjacent waters. NAMMCO/SC/11/AE/12.

Víkingsson, G.A. , Ólafsdóttir, D. and Hauksson, E. 2003. Iceland Progress report on marine mammal research in 2002. NAMMCO/Progr.Rep.-Iceland.

Víkingsson, G.A. and Heide-Jørgensen, M.P. 2003. A note on the movements of minke whales tracked by satellite in Icelandic waters in 2001 and 2002. NAMMCO/SC/11/MF/19.

Víkingsson, G.A. and Ólafsdóttir, D. 2003. Iceland. Progress report on cetaceans research, april 2002 to march 2003 with statistical data for the calendar year 2002. IWC/SC/55/Prog.rep.Iceland.

Víkingsson, G.A. and Ólafsdóttir, D. 2003. Research takes of minke whales in Icelandic waters during autumn 2003. NAMMCO/SC/11/For information.

Víkingsson, G.A., Halldórsson, S.D., Ólafsdóttir, D., Daníelsdóttir, A.K., Gunnlaugsson, Th. and Sigurjónsson, J. 2003. A proposal for initiating a pre-implementation assessment of North Atlantic fin whales. IWC/55/RMP8.

Víkingsson, G.A., Sigurjónsson, J. and Similä, T. 2003. Photoidentification of killer whales in Icelandic waters. Proceedings from the Fourth International Orca Symposium and Workshop, september 23-28 2002. CEBS-CNRS France: 182 (abstract).
