

Denmark.

Progress report on cetacean research, March 2009 to March 2010, with statistical data for the calendar year 2009.

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1. SPECIES AND STOCKS STUDIED

IWC common name	IWC recommended scientific	Area/stock(s)	Items referred to
Beluga whale	<i>Delphinapterus leucas</i>	Arctic	5
Blue whale	<i>Balaenoptera musculus</i>	West Greenland	3.1.3, 4.1
Blue whale	<i>Balaenoptera musculus</i>	Iceland	3.1.3
Bowhead whale	<i>Balaena mysticetus</i>	West Greenland	3.1.3, 4.1, 4.2, 6.2
Bowhead whale	<i>Balaena mysticetus</i>	Alaska	3.1.3
Fin whale	<i>Balaenoptera physalus</i>	West Greenland	6.2
Harbour porpoise	<i>Phocoena phocoena</i>	Denmark	3.1.3, 4.1, 4.2, 4.3, 4.4, 8
Humpback whale	<i>Megaptera novaeangliae</i>	West Greenland	3.1.1, 3.1.3, 4.1
Humpback whale	<i>Megaptera novaeangliae</i>	Iceland	3.1.3
Killer whale	<i>Orcinus orca</i>	Denmark	4.1, 4.3, 8
Minke whale	<i>Balaenoptera acutorostrata</i>	Denmark	4.1, 4.3, 8
Minke whale	<i>Balaenoptera acutorostrata</i>	West Greenland	4.2, 6.2, 6.3.1
Minke whale	<i>Balaenoptera acutorostrata</i>	East Greenland	6.2
Pilot whale	<i>Globicephala melas</i>	Faroe Islands	5
Sperm whale	<i>Physeter catodon</i>	Greenland	8
White-beaked dolphin	<i>Lagenorhynchus albirostris</i>	Denmark	4.1, 4.3, 8

2. SIGHTINGS DATA

2.1 Field work

2.1.1 Systematic

Target species	Date	Area	No. of sightings	Contact person / institute and references
Marine mammals	Unknown	West Greenland	Unkonwn	A Mosbech, amo@mu.dk

2.1.2 Opportunistic, platforms of opportunity

There have been several surveys for whales in west and south-east Greenland on board seismic survey ships. Contact A Mosbech, National Environmental Research Institute for details.

2.2 Analyses/development of techniques

3. MARKING DATA

3.1 Field work

3.1.1 Natural marking data

Species	Feature	Area/stock	No. photo-id'd	Catalogue (Y/N)	Catalogue total	Contact person/institute; refs
Humpback whale	Fluke	West Greenland	36 encounters, 15 individuals	Y	66 (2007-09)	M Simon, GINR

3.1.2. Artificial marking data

3.1.3 Telemetry data

Species	Tag type	No. successfully deployed	Maximum time transmitting	Contact person/institute; refs
Blue whale	Satellite transmitter	2	3 months	MP Heide-Jørgensen, GINR
Bowhead whale	Satellite transmitter	30	10 months	MP Heide-Jørgensen, GINR
Harbour porpoise	SPLASH from Wildlife Computers	7	>365 days	J Teilmann, NERI
Humpback whale	Satellite transmitter	21	3 months	MP Heide-Jørgensen, GINR

3.2 Analyses/development of techniques

4. TISSUE/BIOLOGICAL SAMPLES COLLECTED

4.1 Biopsy samples

Species	Area/stock	Calendar year/season - no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute
Blue whale	West Greenland	2009: 1	Y	All	1	MP Heide-Jørgensen, GINR
Bowhead whale	West Greenland	2009: 71	Y	All	392	MP Heide-Jørgensen, GINR
Harbour porpoise	Denmark	2009: 15	Y	All	46	L Fast Jensen, FoS
Harbour porpoise	Kattegat/Belt Seas (Denmark)	2009 March-October - 7	Y	0	300	J Teilmann, NERI
Humpback whale	Disko (West Greenland)	2009: 16	Y	All	29	MP Heide-Jørgensen, GINR
Humpback whale	Nuuk (West Greenland)	2009: 1	Y	0		M Simon, GINR
Killer whale	North Atlantic	2009	Y	1	3	L Fast Jensen, FoS
Minke whale	North Atlantic	2009	Y	1	6	L Fast Jensen, FoS
White-beaked dolphin	North Atlantic	2009	Y	5	40	L Fast Jensen, FoS

4.2 Samples from directed catches (commercial, aboriginal and scientific permits) or bycatches

Species	Area/stock	Calendar year/season - no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute
Harbour porpoise	West Greenland	2009 autumn	Y	0	57	M Peter Heide Jørgensen, GINR R Dietz, NERI

- Samples and measurements were obtained from 3 bowhead whales taken in West Greenland under the aboriginal subsistence harvest exception
- Hunters delivered tissue samples from 97 minke whales from West Greenland, 2 minke whales from East Greenland and 5 fin whales.

4.3 Samples from stranded animals

Tissue samples collected from 15 harbour porpoises, 5 white-beaked dolphins, 1 killer whale and 1 minke whale. (Fisheries and Maritime Museum, Esbjerg)

4.4 Analyses/development of techniques

The population structure of harbour porpoises (based on genetics) has been studied in the Baltic region and is now published (Wiemann et al. 2010).

5. POLLUTION STUDIES

Belugas were included in a review on of temporal development of Hg in the Arctic. The general pattern showed an increase of Hg after 1850 which means that the present Hg burden of Arctic top predators are above 92% man-made contribution (Dietz et al. 2009). Histopathological investigations of pilot whale from the Faroe Island were conducted en a manuscript submitted (Sonne et al. in press). Belugas and Pilot whale were also included in the AMAP Hg effect assessment currently being reviewed (Dietz et al in review). A total of 72 harbour porpoises from the North Sea from 1989 to 2005 have been investigated for PFCs and additional 15 animals from 1980 will be analysed in 2010. The time trends of 8 of the PFC substances will be published when the last data are available and the data have been treated statistically (Contact: R Dietz, NERI). Also skulls from 6 pilot whales

have been sampled and will be analysed for Hg and biomarkers in 2010. Additional work on killer whales narwhals and harbour porpoises will be carried out in 2010 (Contact: R Dietz, NERI).

6. STATISTICS FOR LARGE CETACEANS

6.1 Corrections to earlier years' statistics for large whales

6.2 Direct catches of large whales (commercial, aboriginal and scientific permits) for the calendar year 2009

Species	Type of catch	Area/stock	Males	Females	Total landed	Struck and lost
Bowhead whale	ASW	West Greenland	1	2	3	0
Fin whale	ASW	West Greenland	1	7	8	2
Minke whale	ASW	West Greenland	47	105	153*	11
Minke whale	ASW	East Greenland	3	1	4	0

* Including 1 reported catch of unknown gender

6.3 Anthropogenic mortality of large whales for the calendar year 2009

6.3.1 Observed or reported ship strikes of large whales (including non-fatal events)

- None

6.3.2 Fishery bycatch of large whales

- 1 minke whale (female with a length of 5.5 m) entangled in seal nets, drowned (Greenland)

7. STATISTICS FOR SMALL CETACEANS

- Statistics for small cetaceans from Greenland and the Faeroe Islands are available from NAMMCO

7.1 Corrections to earlier years' statistics for small cetaceans

7.2 Direct catches of small cetaceans for the calendar year 2009

7.3 Anthropogenic mortality of small cetaceans for the calendar year 2009

7.3.1 Observed or reported ship strikes of small cetaceans (including non fatal events)

7.3.2 Fishery bycatch of small cetaceans

8. STRANDINGS

Corrections from previous years: The number of stranded porpoises in Denmark in 2008 should be corrected to 223 animals.

Strandings in 2009:

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Harbour porpoise	137	15	L Fast Jensen/ FoS	lfj@fimus.dk
Killer whale	1	1	L Fast Jensen/FoS	lfj@fimus.dk
Minke whale	1	1	L Fast Jensen/ FoS	lfj@fimus.dk
Sperm whale	1 male	0	Ministry of Fisheries, Hunting and Agriculture	apnn@nanoq.gl
White-beaked dolphin	6	5	L Fast Jensen/ FoS	lfj@fimus.dk

9. OTHER STUDIES AND ANALYSES

- Sound recordings using sea ice-based hydrophone array to measure source levels of bowhead whale song (PI: O Tervo; M Simon from GINR)
- PhD project in progress: distribution, ecology and feeding behaviour of baleen whales in West Greenland (M Simon, Aarhus University and GINR)
- BaltSeaPlan. An international project funded by the EU Interreg programme conducted in 2009 and 2010. One workpackage, lead by NERI, includes studies of the effect of shipping and fast ferries on behaviour and distribution of harbour porpoises, studied by means of passive acoustic dataloggers (T-PODs). Data collection began in 2009, results are pending analysis in 2010.
- Sprogø Offshore Wind Farm. A monitoring project based on passive acoustic monitors (T-PODs) was conducted by NERI during construction of a small wind farm (7 turbines) in the Great Belt. Comparison with baseline data collected in 2008 indicated limited impact of construction activities. Monitoring during operation will continue in 2010.
- A revised set of guidelines for conduction of seismic surveys in Greenlandic waters was published in 2009 by NERI.
- NERI participated in producing the background report (published by the International Council of the Exploration of the Seas, ICES) on effects on Energy (e.g. noise) on marine mammals in European waters in relation to the Marine Strategy Directive.

10. LITERATURE CITED

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11. PUBLICATIONS

11.1 Published or 'in Press' papers only

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Appendix 1. FOA fishing descriptions and codes

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
Lift nets (not specified)	LN	GEAR NOT KNOWN OR NOT SPECIFIED	NK
		SHARK CONTROL NETS	NSC
		DERELICT FISHING GEAR	