

# Sweden. Progress report on cetacean research, April-May 2008, with statistical data for the *calendar year* 2008.

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This report summarises information obtained from:

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National Board of Fisheries	FIV	sara.konigson@fiskeriverket.se
Linköping University	LiU	Mats.Amundin@kolmarden.com

## 1. SPECIES AND STOCKS STUDIED

IWC common name	IWC recommended scientific name	Area/stock(s)	Items referred to
Harbour porpoise	<i>Phocoena phocoena</i>	Skagerrak, Kattegatt, Baltic Sea	2.1, 4.3, 7.3.2, 8, 9
Indo-Pacific bottlenose dolphin	<i>Tursiops aduncus</i>	Zanzibar, Tanzania	3.1.1, 4.1, 4.4
Indo-Pacific humpback dolphin	<i>Sousa chinensis</i>	Zanzibar, Tanzania	3.1.1, 4.1, 4.4
Humpback whale	<i>Megaptera novaeangliae</i>	Zanzibar, Tanzania	3.1.1, 4.1, 9

## 2. SIGHTINGS DATA

### 2.1 Field work

#### 2.1.2 Opportunistic, platforms of opportunity

Primary species	Area	Data type/method	Collected by	Platform	Location of archive (if applicable)	Contact person/institute and refs
Harbour porpoise	Swedish waters (Skagerrack, Kattegat and the Baltic)	sightings	The public, via a web-page	Boat, ferry or from land	NRM	<a href="http://www.nrm.se/tumlare">www.nrm.se/tumlare</a> Anna Roos, Swedish museum of Natural History, Box 50007, SE 104 05 Stockholm, Sweden

## 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
I.P. Bottlenose dolphin	Dorsal fin/body	Zanzibar		N	170	Per Berggren, SU
I.P. Humpback dolphin	Dorsal fin/body	Zanzibar		N	70	Per Berggren, SU
Humpback whale	Flukes/dorsal fin	Zanzibar	100+	N	100+	Per Berggren, SU

#### 4. TISSUE/BIOLOGICAL SAMPLES COLLECTED

##### 4.1 Biopsy samples (summary only)

Species	Area/stock	Calendar year/season - no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute
Humpback whale	Zanzibar	18	Y	0	25	Per Berggren, SU
I.P. Bottlenose dolphin	Zanzibar	0		*	47	Per Berggren, SU
I.P. Humpback dolphin	Zanzibar	0		*	6	Per Berggren, SU

##### 4.3 Samples from stranded animals

Species	Area/stock	Tissue type(s)*	No. collected	Archived (Y/N)	No. analysed	Contact person/institute
Harbour porpoise	Swedish Coast (Skagerrak, Kattegat and the Baltic)	Blubber, muscle, liver, kidney, spleen, lung, brain.	17	Y	0	Anna Roos, NRM
White beaked dolphin	Skagerrak	Blubber, muscle, liver, kidney, spleen, lung, brain.	1	Y	0	Anna Roos, NRM

##### 4.4 Analyses/development of techniques

Analyses of mtDNA and microsatellites of Indo-Pacific bottlenose dolphins and humpback dolphins are ongoing at SU.

#### 7. STATISTICS FOR SMALL CETACEANS

##### 7.3 Anthropogenic mortality of small cetaceans for the calendar year 2008

###### 7.3.2 Fishery bycatch of small cetaceans

Species	Sex	No.	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
Harbour porpoise	F	1	20080718	Kattegat		<i>Turbot</i>	120 mm		Anna Roos, NRM
Comments: Entangled in gear, cut off and sank.									

#### 8. STRANDINGS

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Harbour porpoise	24	24	Anna Roos	<a href="mailto:Anna.Roos@nrm.se">Anna.Roos@nrm.se</a>
Whitebeaked dolphin	1	1	“	“

## 9. OTHER STUDIES AND ANALYSES

### *Humpback whale studies*

SU conducted photo-id boat surveys, biopsy sampling and sound recordings of humpback whales off the south coast of Zanzibar, Tanzania, between July and September 2008.

### *Developing methods to reduce bycatch*

FiV works on developing alternative fishing gear to reduce bycatch. Norwegian cod traps have been tried in the Baltic Sea. Results have been promising and shown that the traps do catch cod and that they, in certain areas, can be an alternative to gill nets.

Furthermore, so-called push-up traps have been introduced as an alternative to gillnets in salmon and pike-perch/white fish fisheries.

### *Implementation of pingers (FiV)*

Currently at least 9 fishermen have purchased pingers and are using them in the waters concerned by the regulation 812. The fishermen on the west coast of Sweden believes the pingers are effective and do not by-catch harbour porpoises however they do get an increase of by-caught harbour seals.

### *Estimates of by-catch in set net and pelagic trawl fisheries (FiV)*

During 2007 1 194 hours of trawling after pelagic fishes were covered with observers under EC Regulation 812/2004. Sea areas that were covered were North Sea, Skagerrak/Kattegatt, Southern, Eastern and Northern Baltic Sea. The total fish effort was 22 295 hours which give a coverage of about 5.2 % in each area. Gill netters were covered during 3 219 227 net meter/hour which was 2.6 % of the total fishing effort of gillnetters larger than 15 m. No harbour porpoise were observed by caught. The observed data indicate a low by catch of the species.

During 2008, 282 hours of observation was carried out in the Skagerrak/Kattegatt, Southern, Eastern and Northern Baltic Sea. No porpoises were observed by caught. The total coverage of fishing effort has not yet been calculated.

### *Studying by-catches of birds and marine mammals in the recreational fisheries (FiV)*

The bycatch rates of recreational fisheries in Sweden are largely unknown. The Swedish Board of Fisheries has investigated the bycatches of birds and mammals in the recreational fisheries in Sweden by gathering material from different available sources. No new figures have been calculated for harbour porpoise bycatches, due to the lack of data, but concerns must also be given about bycatches in the recreational sector.

### *Pilot study of Electronic Monitoring (EM) system for fisheries control on smaller vessels (FiV)*

The cetacean by-catch programme set up in response to EU council regulation no. 812/2004 requires the monitoring of fisheries by-catches by independent observers. The purpose of this pilot study was to see if remote Electronic Monitoring (EM) using onboard cameras could meet the requirement more effectively than maintaining fisheries personnel onboard the fishing vessels. The regulations only require monitoring of vessels over 15m length, for both practical and economic reasons, but they encourage member states to carry out pilot studies on smaller vessels as well. This is exactly what the Swedish Board of Fisheries has now done, with trials involving two gillnetters in the central Baltic Sea during the summer of 2008.

The system was tested for 4 months, including 71 days of fishing operations, and proved to be reliable and cost effective. No bycatch of harbour porpoise was recorded. The same set-up lends itself to recording bycatches of seabirds and seals; to the documenting of seal-induced damage to catches; and even to monitoring by-catches of non-target fish species.

### *Investigating the presence of harbour porpoises in the vicinity of gill nets (FiV/LiU)*

The aim of the study was to investigate the presence of harbour porpoises close to gill nets by using Porpoise click loggers (PCL). PCL:s record the clicks of porpoises and were placed on gill nets and as controls in areas with no fishing gear present but where fishing commonly occur. The results showed that porpoises were equally present in both areas, thus, there were no difference in harbour porpoise presence around nets and areas without nets.

## 11. PUBLICATIONS

### 11.1 Published or 'In Press' papers only

Amundin, M., Wennerberg, D., Berglind, M., Hagberg, J., Königson, S., and Lunneryd, S.G. 2008 Undersökning av tumlarnärvaro i Skånes och Blekinges favatten med hjälp av passiva akustiska tumlardetektorer och i samarbete med lokala yrkesfiskare. *Fiskeriverket rapport* (in Swedish).

Berggren, P. and Wang, J.Y. 2008. The Baltic harbour porpoise and the precautionary principle in conservation. *Oryx* 42 (4): 489. | doi:10.1017/S0030605308423074

Carlström, J., Berggren, P. and Tregenza N. 2009 Spatial and temporal impact of pingers on porpoises. *Can. J. Fish. Aquat. Sci.* 66(1): 72–82 | doi:10.1139/F08-186

Carlström, J., Rappe, C. and Königson, S. 2008 Åtgärdsprogram för tumlare 2008-2013 (*Harbour porpoise action plan – in Swedish*). Naturvårdsverket rapport 5846.

Koschinski, S., Diederichs, A. and Amundin, M. 2008 Click train patterns of free-ranging harbour porpoises acquired using T-Pods may be useful as indicators of their behaviour. *J. Cetacean Res. Manage.* 10(2):147-155.

### 11.2 Unpublished literature

Wennerberg, D. 2008 Static acoustic monitoring of *Phocoena phocoena* in Swedish waters. Thesis Linköping Tekniska Högskola, LiTH-IFM-1804.

## Appendix 1. FOA fishing descriptions and codes

<b>FAO FISHING GEAR CATEGORIES:</b>		<b>FALLING GEAR</b>	
<b>SURROUNDING NETS</b>		Cast nets	FCN
With purse lines	PS	Falling gear (not specified)	FG
One-boat operated purse seines	PS1	<b>GILLNETS AND ENTANGLING GEAR</b>	
Two-boat operated purse seines	PS2	Set gillnets (anchored)	GNS
Without purse lines (lampara)	LA	Driftnets	GND
<b>SEINE NETS</b>		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	<b>TRAPS</b>	
<b>TRAWLS</b>		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		<b>HOOKS AND LINES</b>	
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	<b>GRAPPLING AND WOUNDING</b>	
<b>DREDGES</b>		Harpoons	HAR
Boat dredges	DRB	<b>HARVESTING MACHINES</b>	
Hand dredges	DRH	Pumps	HMP
<b>LIFT NETS</b>		Mechanised dredges	HMD
Portable lift nets	LPN	Harvesting machines (not specified)	HMX
Boat-operated lift nets	LNB	<b>MISCELLANEOUS GEAR</b>	MIS
Shore operated stationary lift nets	LNS	<b>RECREATIONAL FISHING GEAR</b>	RG
Lift nets (not specified)	LN	<b>GEAR NOT KNOWN OR NOT SPECIFIED</b>	NK
		<b>SHARK CONTROL NETS</b>	NSC
		<b>DERELICT FISHING GEAR</b>	