

Agenda Item 4

Annual Reports 2008

Document 48 rev.2

**Reports received from Sweden**  
**a) Action Plan for Harbour Porpoise**  
**b) Annual National Report**  
**c) Stranding Questionnaire**  
**d) Fisheries Statistics**

**Action Requested**

- Briefly present highlights from reports (max. 5 minutes)
- Take note of the information submitted
- Comment

Submitted by

Sweden



**NOTE:**  
**IN THE INTERESTS OF ECONOMY, DELEGATES ARE KINDLY REMINDED TO BRING THEIR OWN COPIES OF DOCUMENTS TO THE MEETING**



# ACTION PLAN FOR HARBOUR PORPOISE

## Summary

This is an action plan for the conservation of harbour porpoises (*Phocoena phocoena*) in Swedish waters. The species is globally listed as vulnerable (VU) and the population in the Baltic Sea as critically endangered (CR). In the action plan, the species' ecology, status and threats to survival are reviewed, and several actions are proposed to conserve the species. The plan has an implementation period extending from 2005 to 2013. After that the plan should be re-evaluated. The plan is of an advisory nature and is not legally binding.

The harbour porpoise is distributed in cold temperate and subarctic coastal waters of the North Pacific, North Atlantic and the Black Sea. Porpoises occur year around in all waters around Sweden; the Skagerrak Sea, the Kattegat Sea, the Sound and the Baltic Sea. Based on the current knowledge on the population structure and the precautionary principle, the following management units of harbour porpoises are recommended for the waters around Sweden; (1) the eastern North Sea and the Skagerrak Sea, (2) the Kattegat Sea, the Belt Seas and the Sound, and (3) the Baltic Sea. However, the population structure is unclear and the recommendations of management units may be revised.

According to a survey of small cetaceans in northern European waters in 2005, the number of harbour porpoises in the Skagerrak Sea, the Kattegat Sea, the Belt Sea, the Sound and the westernmost part of the Baltic Sea is 23,227 animals (CV=0.36). In the Baltic Sea the number of porpoises is estimated to be between less than one hundred and a few thousand, but the uncertainty is large.

In the Baltic region, the number of harbour porpoises was drastically reduced by directed hunt in combination with severe ice conditions between the 1830's and 1950's, especially in the Baltic Sea. During the second half of the 20<sup>th</sup> century the bycatches in the fisheries increased, and by the 1990's this was considered to be the most serious threat to the global survival of the species. By the middle of the 20<sup>th</sup> century the levels of organic contaminants as PCB and DDT increased in the marine environment. While the levels of PCB and DDT have decreased during the last decades, the levels of other contaminants are increasing. Disturbance by boat traffic and other human activities have been intensified since the second half of the 20<sup>th</sup> century. Further, eutrophication and unsustainable fisheries have caused large scale changes in the marine environment and affected the presence and quality of the prey species of the harbour porpoise.

In the action plan, limits to anthropogenic mortality of harbour porpoises are proposed to be calculated in agreement with national and international conservation objectives. Regional working groups consisting of representatives of authorities, professional fishermen, environmental NGO's and scientists should be established. The objective of these working groups should be to develop regional plans for concrete actions to reduce the number of bycatches of harbour porpoises to sustainable levels. Advantage can be taken of modifying fishing gear and practices in accordance with existing criteria for environmental certification of fisheries. Further actions proposed in the plan are systematic collections of "ghost nets", development of fish traps as alternatives to gillnets, arrangement of educations for professional and recreational fishermen, development of a camera system for data collection on bycatches, and a survey of bycatches in recreational fisheries. The population structure of harbour

porpoises in the Baltic region, the effects of environmental contaminants on the health status of harbour porpoises, and the levels of anthropogenic underwater noise should be investigated. The occurrence and distribution range of harbour porpoises, as well as habitat requirements, are proposed to be investigated by the use of harbour porpoise click detectors. The increased knowledge about the species' occurrence and habitat requirements can be used for identification of suitable protected areas for the species. Several of the proposed actions are expected to improve the conservation status for species of seals, seabirds and fish in addition to harbour porpoises.

The long term objective of the action plan is that in year 2018, the environmental conditions shall allow the stocks of harbour porpoise in Swedish waters to recover to at least 80 % of their carrying capacity.

The calculated cost for the proposed actions is approximately 3.9 million EUR for the Swedish Environmental Protection Agency and the Swedish Board of Fisheries during 2008-2013.

**A. General information**

Sweden Name of party	080101- 081231 Period covered
Christina Rappe Name of report compiler	Date of report 31-3 2009
Any changes in co-ordinating authority, appointed member of advisory committee	

**B. NEW measures/action towards meeting the resolutions of the 2<sup>nd</sup> Meeting of Parties**

**1. Direct interaction of small cetaceans with fisheries**

<p>Investigations of methods to reduce by-catch</p> <p>Research for alternative fishing gear is carried out in Sweden. Norwegian cod traps have been tried in the Baltic Sea. Results have been promising and show that the traps do catch cod and that they, in certain areas, can be an alternative to gill nets. During 2008 modifications have been made on the traps to increase catch efficiency. Ten fishermen have tested fishing with cod traps in the south Baltic. The results from the tests showed that there is a possibility to catch large amounts of cods in the traps. However, further trials are needed and the project is continuing in 2009.</p> <p>The pike perch fisheries in the Baltic sea have been suffered from seal damages for many years. In 2008 pike perch/white fish traps were being introduced as an alternative to gill nets with the purpose of reducing seal damage. A certain percent of the cost for the trap is funded by the government when fishermen are investing in the fishing gear. The traps used are so called push-up traps. They have been a success in Sweden in the salmon and white fish fisheries. In the salmon fisheries the traps mostly replace older traps but in the white fish and pike perch fisheries the traps replace nets and therefore reduce net effort.</p> <p>Implementation of pingers: Currently at least 9 fishermen have purchased pingers and use them in the waters covered by the EU regulation 812. The fishermen on the west coast of Sweden believe the pingers are effective in reducing by-catch of harbour porpoises. However, there is an increase in numbers of by-caught harbour seals.</p>
<p>Estimates of by-catch in set net and pelagic trawl fisheries</p> <p>During 2007 there has been an ongoing observer program in the pelagic trawl and set net fisheries as asked for in the 812 regulation. Three observers worked full time. Starting September 2006, the observers boarded pelagic trawlers exceeding 15 meters in length in order to monitor bycatch of harbour porpoises. The North Sea, Skagerrak/Kattegatt, Southern, Eastern and Northern Baltic Sea were covered. A total of 1342 trawl hours were observed until the end of December 2007</p>

which corresponds to 4,61% of the fishing efforts(with mandatory monitoring) of the Swedish pelagic trawlers. No bycatch of harbour porpoise was observed in any of the sea areas during the programme. In 2007, 3 219 227 net meter hours were observed and this corresponds to 9,2 % of the fishing effort concerned in the 812 regulation. No by-catch of harbour porpoises was observed.

An interview survey was conducted in 2001. Swedish fishermen were interviewed regarding by catches of seals, harbour porpoises and birds gave the following estimates:

Estimations from the survey conducted in 2001.

Species	Estimated number of by-caught animals	Area (ICES area or more detailed)	Notes (type of fishery, effort, seasonal variations, etc.)
Phocena phocena	About 25 per year	III a, in the Swedish part of Skagerrak.	Bottom trawls
Phocena phocena	About 89 per year	IIIa, Swedish Kattegat Sea	Gillnets and trammel nets and pelagic trawls

### **Study of by-catches of birds and marine mammals in the recreational fisheries**

The bycatch rate of recreational fisheries in Sweden is largely unknown. Bycatch rates have therefore been estimated mainly from various fishing trials and studies within the commercial sector.

The Swedish Board of Fisheries has investigated bycatch of birds and mammals in the recreational fisheries in Sweden by gathering material from different available sources. The investigation was funded by SEPA. The study is largely putting existing information from previous studies together, most of which are not directly concerned with the question of bird and mammal bycatch in the recreational fishing sector.

The study has concentrated on the net and trap fisheries, where there is particular cause for concern about bycatch. Although the available data is insufficient by normal standards, all estimates of bycatch frequencies gave similar results, in the order of 0.001 to 0.01 birds per km of net per day. Total loss in the recreational sector, due to bycatch, for the country as a whole works out to be less than 10,000 birds and 600 seals per year. These amounts are not considered to constitute a threat to any individual species. Comparing fishing effort in the commercial and recreational sectors show that in most areas the recreational sector is responsible for bycatch of the same magnitude as the professional fishermen. Future bycatch studies should encompass all sectors of the net and trap fisheries, and the bycatch debate should encompass all stakeholders in our marine environment, not just the licensed fishermen

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

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 what the Swedish Board of Fisheries has done, with trials involving two gillnetters in the central Baltic Sea during the summer of 2008. The trials were cofunded by SEPA.

The system was tested for 4 months, including 71 days of fishing operations, and proved to be reliable, with only a few days of data lost due to technical problems. 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.

## 2. Reduction of disturbance to small cetaceans

Sweden participates in an international project (MINUS) of mapping the distribution of underwater noise in coastal water with the aim of :

- Identifying areas where special attention to marine mammals should

## 3. Protected areas for small cetaceans

No area has been identified as a protective area for harbour porpoise in the Baltic. In the Skagerrak two Natura 2000 sites has been identified to harbour porpoises.

The sites are:

Vrångöskärgården and Koster-Väderöfjorden

Measures taken to identify, implement and manage protected areas

## 4. Further research on small cetaceans

***The Baltic:*** Post mortem investigations are carried out on all small cetaceans by-caught or found stranded in the Baltic. The animals are sent to the Swedish Museum of Natural History, Stockholm, where the investigations are conducted. Often the specimen are too rotten to be sent to the museum for investigations. During 2008 the museum received 5 harbour porpoises (or parts of) from the Baltic. The museum also received a report of a dead porpoise in the Baltic.

***The west coast:*** The museum received samples (or whole animals) from 21 porpoises found dead in 2008 from the Swedish west coast (via Gothenburg Natural Museum). Most of these porpoises were found dead (stranded), often with signs of prior being caught in fishing gear. In most cases only a piece of tissue from the dorsal fin is sampled from harbour porpoises by-caught or stranded on the Swedish west coast.

In some cases whole specimen from the Swedish west coast are sampled so a full necropsy can be conducted. During the fall of 2008 a reseach cooperation with the Swedish veterinary Institute in Uppsala has been initiated. From now on all whole small cetaceans that are sent to the Swedish Museum of Natural History undergo a detailed necropsy by a veterinarian.

For further details see report to ASCOBANS on Post Mortem Research Schemes.

Implementation of schemes to use and gain information from stranded cetaceans

### **Investigating the presence of harbour porpoises in the vicinity of gill nets**

The aim of the study was to investigate if gill nets might attract harbour porpoises. The presence of harbour porpoises close to gill nets were investigated by using Porpise click loggers (PCL). PCL:s were placed close to gill nets in a control area where no fishing was carried out. The results show that porpoises were equally present in both areas, there were no difference in the presence in the two areas.

Research on abundance, population structure etc.

The SEPA is funding research of he effects of environmental contaminants on the health status of harbour porpoises during 2009-11. The investigations are to be carried out by the Swedish Museum of Natural History.

Research on the effects of pollutants on cetacean health

### **5. Public awareness and education**

In 2008 the Action program for harbour porpoise was revised by SEPA in cooperation with the National Board of Fisheries.. In the present plan (2008-1013) , limits to anthropogenic mortality of harbour porpoises are proposed to be calculated in agreement with national and international conservation objectives and regional working groups with the objective to reduce the number of bycatch of harbour porpoises to sustainable levels will be established. Further actions proposed in the plan are for example systematic collections of “ghost nets”, development of fish traps as alternatives to gillnets, development of a camera system for data collection on bycatches and a survey of bycatches in recreational fisheries. The effects of environmental contaminants on the health status of harbour porpoises, and the levels of anthropogenic underwater noise will also be investigated. The long term objective of the action plan is that in year 2018, the environmental conditions shall allow the stocks of harbour porpoise in Swedish waters to recover to at least 80 % of their carrying capacity.

The International Day of the Porpoises was celebrated at “Havets Hus” (an aquarium in Lysekil, on the Swedish West Coast).

The Swedish Museum of Natural History in Stockholm has a web site where sightings of live porpoises are collected. The web page has been active since 2003 and an increasing number of sightings has been noted.

A poster and an information brochure, produced by the SEPA and the Swedish Museum of Natural History in Stockholm, are continually being distributed to the general public, shipping and boating associations, fishermen, the coastguard etc. One objective with these information efforts is to achieve more reports on porpoise observations, particularly in the Baltic sea.

Measures taken in the fields of public awareness and education to implement or promote the Agreement

# Questionnaire

Dnr 121-3245 -09 Nh

## on post mortem research schemes within the ASCOBANS Agreement area

Name and address of reporting institution	Department of Contaminant Research Swedish Museum of Natural History Box 50007 SE-104 05 Stockholm, Sweden
Name of respondent	Anna Roos
What data are recorded routinely?	Date, location, finder, length, weight and sex of specimen, cause of death, type of gear if bycaught, what samples are taken. We also measure blubber thickness on several locations, and circumference at the same places. We perform complete necropsy if we receive the specimen whole, to study general health status.
Description of methods and units of measurement used	Skagerrak - Kattegat area: most often only dorsal fin and some teeth which are sent to the Swedish Museum of Natural History (SMNH), usually via the Museum of Natural History in Gothenburg. The Baltic: the whole carcass is sent to the SMNH and a complete necropsy is performed. Since 2006 a limited number of whole fresh carcasses from Skagerrak – Kattegat are sent to SMNH for a full necropsy and sampling.
List of tissue samples usually taken	If a carcass is sent whole to SMNH a detailed necropsy takes place. Blubber, skin, muscle, liver, kidney, lung, spleen, blood, teeth and brain (for specimen from the Baltic the whole skeleton) are sampled and stored in the Environmental Specimen Bank (ESB).
How are the samples preserved?	Samples are packed in aluminium foil and plastic and kept in the ESB at -28°C, at the SMNH. Skull and skeleton are cleaned and kept dry. Sometimes samples are taken to formalin.
How are carcasses disposed of?	It is combusted in an incinerator. Transportation and disposal are handled according to EU regulations and are disposed at Vattenfall Heat in Uppsala.
Are data recorded in a computer database? Please describe	Yes, data are incorporated in the ESB database. All data about the animal are recorded and can be retrieved at will, most of it via internet from our web page.
How many data sets (by species) do you have?	Approximately 20, with additional subsets.
Which computer software is used?	ESB-Base, a program specially designed for our purposes.
Do you foresee any problems (e.g. regarding intellectual property rights etc.) related to a central database?	No.
What advantages would you expect from a central database?	Easier for international co-operation.

Additional Information (e.g. website addresses)	
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# Fisheries statistics from Sweden

S Königson

## 1. Bottom set gillnets

Type of fishery	Bottom set gillnet
Target species	Varied species
Reporting period	2008
Fishing season	Year round depending on species
Type of statistics	Catch per area and gear type from loggbook
Fishing areas	ICES III a,b,c,d
Number of vessels	577

Total effort                      unit m of net\*hours

DIVISION	Total
3AN	51 393 145
3AS	104 921 900
3B	246 273 220
3C	727 600
3DN	16 160 758
3DS	1 370 933 380
Total	1 790 410 003

Catch unit kg

SPECIES	3AN	3AS	3B	3C	3DN	3DS	Total
Birds					11		11
Eel			0			6925	6925
Blue Ling						0	0
Brill	1343,2	3892	875			515,2	6625,4
Catfish	0	0	0				0
Rockfishes	6842,3	2363	30				9235,3
Bullheads sculp						69	69
Herrings						0	0
Cod	18880	19319	500745,8	1925	15118,7	2971821	3527809
Conger Eel	8						8
Edible crab	8809,5	18487	570				27866,5
Dab	88	2541	2938			3217	8784
Spurdog / spiny dogfish	24612,5	11					24623,5
Eel			11		564	4870	5445
Bream					584,7	488	1072,7
Burbot					550,5	260,5	811
Grayling					0,5		0,5
Ide, Orfe					124,9	7	131,9
Flounder	536	9869	46840	24	80,5	98709,2	157068,7
Perch	143		76		55215,5	16354,5	71789
Pike					11512,7	18603,5	30116,2
Zander (Pikeperch)					19504,3	6595	26099,3
Roach					162		162
Ruffe					5		5
Silver bream					190		190
Vendace (Cisco)					22400		22400
Codlike fishes	5						5
Tope	149						149
Garfish	29	150	260			257	696
European Eel			0			381	381
Grey Gurnard	23,5	514	10			0,4	547,9
Haddock	42	3225	355			0	3622
Halibut	106						106
Herring	73781,2	5588	327003,5		923509,1	32924,3	1362806
Hake	1421	63				2	1486
Stone King Crab	8						8
Lampreys						0	0
European lobster	0		0				0
Lemon Sole	65,8	1500	211				1776,8
Ling	295	111	0			0	406
Lumpfish	4878	24865,5	108280			830,2	138853,7
Mackerel	58030,1	3874	10			12,5	61926,6
Monkfish	503	2					505
Four spined sculpin					700		700
Thick-lipped Mullet		3	353			30	386
Blue Mussels	0						0
Bonefish	489,5	279,5	1252	300	3896	72354	78571
Norway lobster	101,5	128					229,5
Plaice	15427	47840	43961,3	10		21612,5	128850,8

Saithe	4751	188	15			10	4964
Pollack	7676,7	5500	321				13497,7
Red-Fish	1						1
Salmon	42	170	133	30	632	912,3	1919,3
Skates, rays	33						33
Smelt					27,8		27,8
Sole	379,7	23472	1594			0,5	25446,2
Sprat	8715				47		8762
Fishing gear with seal damaged fish					2	2150	2152
Fishing gear with seal damaged fish		4150	126740		685803	553515	1370208
Seal		4	0		35	471	510
Rainbow Trout					16	37	53
Trout	7	260	438	33	6831,7	1584,3	9154
Turbot	197,5	7033,5	1283,5	27	13	36203,8	44758,3
Unknown Catches	0	0	5			0	5
Tusk	114						114
Greater Weever	3	126					129
Whitefish, Houting, Powan	1044	238			75686,7	17997	94965,7
Whiting	452,9	820	1202	36		3933	6443,9
Witch	1027,5	422					1449,5

Discard 26.9 ton of fish. No harbour porpoise recorded in logbook.

## **2. Driftnet**

No driftnet fisheries carried out.

### 3 Trawling

Type of fishery	bottom otter trawl and pelagic trawls
Target species	sprat, herring, sandeel, cod ...
Reporting period	2008
Fishing season	Year round
Type of statistics	catch per area and type of gear from logbook
Fishing area	III a,b,c,d and IV a,b
Number of vessels	314

Total effort                      unit trawling hours

DIVISION	Totalt
3AN	108 320
3AS	36 166
3B	155
3C	3
3DN	8 173
3DS	59 618
4A	5 669
4B	4 369
Totalt	222 473

CATCH	unit kg								Total
	3AN	3AS	3B	3C	3DN	3DS	4A	4B	
Argentines		44							44
Blue-fin tuna		0				0			0
Blue Ling		0	0						0
Brill	8788,5	13939,1	4				109	0	22840,6
Catfish	0	0	0				0	0	0
Rockfishes	8569,8	2586	14				0	6515	36980,8
Herrings							0		0
Cod	273821,2	117884,9	6458	280	780	7326774	131673	182989	8040660
Conger Eel		0					0		0
Edible crab	1126	2460					0		3586
Cuttlefish	84	0						0	84
Dab	2662	1125	97				296	0	4180
Spurdog / spiny dogfish	25113	24162	0				0	10	49699
Eel	7	4					0		11
Bream	0								0
Flatfishes	249	116						46	230
Flounder	1107	4601	112	30			44464	35	50349
Perch	0						0		0
Zander (Pikeperch)		0							0
Rudd							0		0
Ruffe						25			25
Vendace (Cisco)						583593			583593
Tope								0	0
Garfish							0		0
European Eel	0								0
Greenland Halibut	0	0							0
Greater Silversmelt	0								0
Grey Gurnard	357,5	3614,5					0	0	2800
Haddock	214352	27122,5	60				18	18846	55185
Halibut	3020	43						777	1064
Herring	12723244	4278657							
Hake	89916	6767,5	3			4293259	57813923	1570298	4165000
Horse Mackerel	6557	3098					0	64703	16335
Stone King Crab	25,5							9000	5000
King prawn	1421							18	
European lobster	0	5,5						0	
Lemon Sole	10323	1742,4	4				0	519	2862
Ling	18384	388,5					0	12136	2085
Lumpfish	190	15					0	0	0
Mackerel	2068	566					2191	845000	
Megrim									0
Goatfishes		1							
Monkfish	46377,5	526					0	63292	8627
Four spined sculpin							500		
Thick-lipped Mullet		14							
Red Mullet		6							
Bone fish	36985	15331,3				3733	1338	46809	14044
Norway lobster	675389,7	545492,7	223				0	24230	1869
Norway Pout	5							10000	
Octopuses	24								
Plaice	167932	89105,5	646	5			92479	608	17324

Poor cod	250								250	
Saithe	614017	2093			0	384972	632116		1633198	
Pollack	16761,5	1344			0	14848	28633		61586,5	
Porbeagle	100					0			100	
Northern pink shrimp	2179723	70625			0	128558			2378906	
Rose Fish (Beaked Redfish)	0								0	
Red-Fish	63					67			130	
Red-fish (Norway Haddock)	0					0	0		0	
King prawn	0	0				0			0	
Round-nose Grenadier	19								19	
Salmon		15				1778			1793	
Sandeels	110000					0	12405000		12515000	
Scallop		4							4	
Skates, rays	5973	0					400	0	6373	
Sticklebacks						30700			30700	
Sole	2429,5	7472,8	13				0	0	9915,3	
Sprat	209000	847800			2410000	1,15E+08		0	1,19E+08	
Octopus	3561	754,5						42	4357,5	
Fishing gear with seal damage					7				7	
Seal					1				1	
Twaite Shad	20					70			90	
Trout						40			40	
Sand Eel	0							0	0	
Tub Gurnard	0								0	
Turbot	1296	2252	0			8689,5	0	82	12319,5	
Unknown Catches	164	40	0			0	0	0	204	
Tusk	929	0					414	0	1343	
Greater Weever	19	514891,5				20		550	515480,5	
Blue Whiting	0						0		0	
Whelk	0								0	
Whitefish, Houting, Powan	0				1518,5	35			1553,5	
Whiting	17791,5	32798,5	151			61457	1418	435	114051	
Witch	226414,5	1027				0	16881	2168	246490,5	
	17706674	6620491	7785		315	7292917	1,81E+08	3352073	17564150	2,33E+08

Discard of fish 495 ton