

Agenda Item 7.1

Further implementation of the Agreement  
(2010-2012)

Recovery Plan for Baltic Harbour Porpoises  
(Jastarnia Plan)

Document 7-01

**Recovery Plan for Baltic Harbour  
Porpoises – Jastarnia Plan (Revision)**

**Action Requested**

- Consider the draft Recovery Plan
- Note the AC recommendation for adoption
- Adopt the Recovery Plan

Submitted by

Advisory Committee



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



# **ASCOBANS**

## **Recovery Plan for Baltic Harbour Porpoises Jastarnia Plan (Revision)**

*as revised at AC16  
(April 2009)*



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## Executive Summary

### 1. Background

The harbour porpoise (*Phocoena phocoena*) is widely distributed in shelf waters of the temperate North Atlantic and North Pacific Oceans and in some semi-enclosed seas (e.g. the Black, Baltic Seas and the inland sea of Japan). Although still numerically abundant as a species, at least in comparison to many other cetaceans, the harbour porpoise has experienced major declines in portions of its range, including and perhaps most notably the Baltic Sea. Whatever other factors may be involved, however, it is very likely that incidental mortality in fishing gear has played a major role in reducing porpoises to a small fraction of their historical abundance in the region, and is now contributing to preventing their recovery.

ASCOBANS has adopted an interim goal of restoring the population of harbour porpoises in the Baltic Sea to at least 80% of its carrying capacity. Scientific analyses for the southern-western Baltic proper (southern tip of Öland to Gulf of Gdańsk) indicate that recovery towards the interim goal of 80% of carrying capacity could only be achieved if the bycatch were reduced to two or fewer porpoises per year.

The need for a Baltic harbour porpoise recovery plan has been recognised for a considerable time not only by ASCOBANS, but also by other relevant international bodies.

The original ASCOBANS Recovery Plan for Baltic Harbour Porpoises (“Jastarnia Plan”) was the result of a collaborative effort organised under the auspices of ASCOBANS. It was the culmination of a series of scientific initiatives and meetings over several years, starting in 1997. Since 2005, annual meetings of the so-called Jastarnia Group have been held. This expert working group, composed of representatives from the environment and fisheries sectors of the countries surrounding the Baltic Sea, discusses progress made and further implementation priorities for the Jastarnia Plan and makes recommendations to the ASCOBANS Advisory Committee. The present revised version of the Jastarnia Plan was produced by the Jastarnia Group.

### 2. Recovery Recommendations

Recovery Recommendations contained in the plan focus on five priority areas of activity: bycatch reduction, research and monitoring, marine protected areas, public awareness and cooperation between ASCOBANS and other relevant regional and international bodies.

#### a. Bycatch Reduction

Bycatch reduction is the highest priority for Baltic harbour porpoise recovery, and measures to achieve such reduction should begin immediately. Reduction strategies should incorporate multiple approaches as a way of dealing with the uncertainty of outcome associated with any individual measure. Close stakeholder involvement is key to success. Specifically, the following actions are recommended to achieve the aim of bycatch reduction.

- Recommendation 1: Reduce fishing effort in certain fisheries
- Recommendation 2: Involve stakeholders in the work of reducing bycatch of harbour porpoises.
- Recommendation 3: Replace fishing methods known to be associated with high porpoise bycatch (i.e. set nets) and introduce alternative gear that is considered less harmful.
- Recommendation 4: Implement a pinger programme on a short-term basis.

## **b. Research and Monitoring**

Given the uncertainty surrounding the problem of harbour porpoise conservation in the Baltic Sea there is an urgent need for more research and monitoring. However, there is no need to wait for this further research before implementing a bycatch reduction strategy.

High priorities for research and monitoring include:

- Recommendation 5: Analyse stock affinities of harbour porpoises in the “transition zone” between two or more populations of the south-western Baltic;
- Recommendation 6: Develop and apply new techniques (e.g. acoustic monitoring) for assessing trends in abundance;
- Recommendation 7: Develop interactive pingers or pingers using frequencies not audible to seals;
- Recommendation 8: Investigate possible detrimental effects of various types of sound and disturbance (including pinger signals, noise from vessels, wind parks or constructions and seabed exploration, e.g. for oil and gas) on harbour porpoises;
- Recommendation 9: Monitor bycatch in all fisheries known to be harmful to harbour porpoises to be able to estimate bycatch levels;
- Recommendation 10: Further develop sustainable alternative fishing gear with no bycatch of harbour porpoises;
- Recommendation 11: Compile data on fishing effort;
- Recommendation 12: Examine habitat preference of harbour porpoises;
- Recommendation 13: Investigate the prevalence of derelict (“ghost”) gear and the feasibility of its removal.

## **c. Marine Protected Areas**

Marine protected areas in the Baltic have known shortcomings with regard to the protection of the Baltic harbour porpoise but they may nevertheless be beneficial in a number of ways, in particular if they are expanded and their connectivity is improved.

- Recommendation 14: Expand the existing network of protected areas and improve its connectivity, while ensuring the development and implementation of appropriate management plans within protected areas to improve the status of harbour porpoises and/or their critical resources (e.g. prey stocks), without allowing such limited measures to serve as substitutes for the other broader-scale conservation initiatives recommended elsewhere in this recovery plan.

#### **d. Public Awareness**

Public awareness is an essential part in supporting a recovery plan. Awareness-raising is also an area where ASCOBANS has an autonomous role to play. An awareness raising campaign should be based on a regional approach to Baltic harbour porpoise conservation. This involves making efforts to enlist the help of the general public and people doing jobs related to the sea in obtaining reports of porpoise observations throughout the Baltic, establishing direct communication links with Baltic fishermen and seeking their assistance, establishing national focal points, Parties are also requested to provide assistance to maintain an interactive Baltic harbour porpoise website for the storage of GIS-based porpoise observation data.

- Recommendation 15: Develop a comprehensive public awareness campaign based on the elements outlined above.

#### **e. ASCOBANS Cooperation with Other Bodies**

Although ASCOBANS is the only international body with an explicit mandate to improve the conservation status of harbour porpoises in the Baltic Sea, several other regional and international bodies (in particular HELCOM, the European Union, ICES) also have important roles to play, particularly with regard to improving the quality of the Baltic marine environment and regulating Baltic fisheries.

- Recommendation 16: Strive for close consultation and cooperation between ASCOBANS and other relevant regional and international bodies.

# ASCOBANS RECOVERY PLAN FOR HARBOUR PORPOISES IN THE BALTIC SEA (JASTARNIA PLAN)

## 1. Introduction

The harbour porpoise (*Phocoena phocoena*) is widely distributed in shelf waters of the temperate North Atlantic and North Pacific Oceans and in some semi-enclosed seas (e.g. the Black, Baltic Seas and the inland sea of Japan). Although still numerically abundant as a species, at least in comparison to many other cetaceans (whales, dolphins and porpoises), the harbour porpoise has experienced major declines in portions of its range, including and perhaps most notably the Baltic Sea. The causes of population decline in the Baltic may include the commercial catching of porpoises historically (Kinze 1995), the periodic catastrophic mortality resulting from severe winter ice conditions (Johansen 1929 and Bondesen 1977, both as cited in Teilmann and Lowry 1996; Hanstrom 1960, as cited in Berggren 1994; Lindroth 1962) and habitat degradation of various kinds (e.g. pollution, noise, decrease in prey abundance or quality; cf. Teilmann and Lowry 1996). Whatever other factors may be involved, however, it is very likely that incidental mortality in fishing gear has played a major role in reducing porpoises to a small fraction of their historical abundance in the region, and is now contributing to preventing their recovery. Catches of harbour porpoises in salmon drift nets and bottom-set gillnets (for cod and other demersal species) are known to have occurred in many parts of the Baltic (e.g. Lindroth 1962, Skóra et al. 1988, Christensen 1991, Berggren 1994, Kock and Benke 1996). In Polish fisheries bycatch of harbour porpoises in driftnets which are anchored on one side has been reported since 1990, (Skóra and Kuklik, 2003). These nets have, however, been considered set nets under EU legislation since 2007. Therefore all these types of fishing gear are a focus of concern when considering how to facilitate recovery of harbour porpoises.

**ASCOBANS has adopted an interim goal of restoring the population of harbour porpoises in the Baltic Sea to at least 80% of its carrying capacity.** Berggren et al. (2002) incorporated this interim objective into a Potential Biological Removal (PBR) model to estimate an annual “mortality limit” of only one or two harbour porpoises in the surveyed portion of the Baltic Sea (cf. Fig. 1). In other words, their analysis indicated that recovery towards the interim goal of 80% of carrying capacity could only be achieved if the bycatch in this part of the Baltic were reduced to two or fewer porpoises per year (compared with the estimated current minimum bycatch of seven, Berggren et al. 2002).

The need for a Baltic harbour porpoise recovery plan has been recognised for a considerable time not only by ASCOBANS, but also by other international bodies such as the Baltic Marine Environment Protection Commission (Helsinki Commission, or HELCOM). and the Scientific Committee of the International Whaling Commission (IWC).

In the latest edition of the Red List produced by IUCN (The International Union for the Conservation of Nature), the harbour porpoise is listed as a “critically endangered” subpopulation (IUCN 2008). The harbour porpoise is also listed in Annex II and IV of EU Council Directive No. 92/43/EEC (the “Habitats Directive”). In the latest report evaluating the implementation of the Directive, the overall conservation status of harbour porpoise in the Baltic Sea was assessed as unfavourable (bad).

This recovery plan is the result of a collaborative effort organised under the auspices of ASCOBANS. It is the culmination of a series of scientific initiatives and meetings over several years, starting in 1997. At the second Meeting of the Parties (MOP 2, Bonn, Germany, 1997) the ASCOBANS Parties adopted a Resolution on Incidental Take of Small Cetaceans that invited parties and Range States to “develop (by 2000) a recovery plan for porpoises in the Baltic Sea, one element of which should be to identify human activities which are potential threats to the recovery of this species in the Baltic”.

This invitation was reiterated in 2000 (MOP 3, Bristol, United Kingdom) and the ASCOBANS

Triennium Work Plan for 2001-2003 included the requirement to organise and conduct a workshop to prepare such a plan. Preparatory work included, most notably, the deliberations of the ASCOBANS Baltic Discussion Group (ABDG), whose report (2001) was considered at the 8<sup>th</sup> Meeting of the Advisory Committee (Nymindegab, Denmark, April 2001). The Nymindegab meeting also provided the terms of reference for the recovery plan workshop, which was held in Jastarnia, Poland, from 9 – 11 January 2002. While the ABDG was a smaller group consisting exclusively of scientists, Jastarnia workshop was attended by 40 individuals from ten countries, representing fishermen, environmental groups, government ministries, international conventions, and public and private institutions in six of the Baltic Range States. The workshop was funded by the Danish government and ASCOBANS. It was hosted by ASCOBANS in cooperation with the Foundation for the Development of the University of Gdańsk (FRUG) and Hel Marine Station. The Swedish Environmental Protection Agency and Swedish Board of Fisheries, with funding from the Nordic Council of Ministers, had organised a preparatory meeting for representatives of environment and fisheries agencies and fishermen's organisations in Denmark, Finland and Sweden, together with invited experts. This meeting took place in Kolmården, Sweden, in October 2001. The final Recovery Plan, now known as the Jastarnia Plan, was welcomed by the ASCOBANS Parties at their 4<sup>th</sup> Meeting in 2003.

Since 2005, annual meetings of the so-called Jastarnia Group have been held. This expert working group, composed of representatives from the environment and fisheries sectors of the countries surrounding the Baltic Sea, discusses progress made and further implementation priorities for the Jastarnia Plan and makes recommendations to the ASCOBANS Advisory Committee. The present revised version of the Jastarnia Plan was produced by the Jastarnia Group.



Fig. 1. Map showing the Skagerrak, Kattegat, Great Belt and Little Belt Seas, the Kiel and Mecklenburg Bights and the Baltic Sea. The dotted line in the Baltic Sea shows the border of the aerial survey conducted in 1995.

## **2. Background Information on the Species**

As is true of other small populations that inhabit large areas and occur in low densities, scientific assessment of harbour porpoises in the Baltic is extremely challenging. Estimates of abundance and bycatch tend to be imprecise because their precision is dictated primarily by the number of sightings or bycatch observed, in combination with the amount of effort in relation to the size of the area or the fishing fleet. Similarly, the number of tissue samples available dictates the power of genetic analyses of population structure. Uncertainty in the data is an inherent feature of work with small populations and necessitates decision-making in management to be precautionary (Taylor and Gerrodette 1993).

### **2.1. Population Status**

The International Union for Conservation of Nature (IUCN), which in 1996 listed harbour porpoises in the Baltic as a geographical population that is “vulnerable” (IUCN 1996), has listed it as a “critically endangered” subpopulation in the latest edition of its Red List (IUCN 2008).

Pursuant to the Habitats Directive, Member States of the European Union (EU) must report on the implementation of the Directive to the European Commission every six years. The reports must contain, among other things, the results of the monitoring of animal and plant species belonging to Annexes II, IV and V of the Directive. The harbour porpoise belongs to Annex II and IV. The latest report prepared in 2007 covers the period 2001-2006. In this report the overall conservation status of the harbour porpoise in the Baltic Sea was stated to be unfavourable (bad).

<http://biodiversity.eionet.europa.eu/article17/speciessummary/?group=TWfTbWFscw%3D%3D&species=UGhvY29lbmEgcGhvY29lbmE%3D&region=MBA>]<http://biodiversity.eionet.europa.eu/article17/speciessummary/?group=TWfTbWFscw%3D%3D&species=UGhvY29lbmEgcGhvY29lbmE%3D&region=MBAL>)

### **2.2. Population Structure**

It is clear from morphometric, genetic and other analyses that the aggregate North Atlantic harbour porpoise population occurs as a series of relatively discrete subpopulations or stocks (e.g. Andersen et al. 2001) at least one of which occurs in the Baltic (e.g. Tiedemann et al. 1996; Wang and Berggren 1997, Börjesson and Berggren 1997). However, relatively few porpoise specimens from the Baltic proper (i.e. east of the Darss and Limhamn underwater ridges; see IWC 2000b) have been collected and studied, and although the animals found there are different from those found in the Skagerrak-Kattegat Seas (Tiedemann et al., 1996; Börjesson and Berggren 1997; Wang and Berggren 1997; Berggren et al., 1999; Huguenberger, 1999), the stock relations of porpoises in the Danish straits, Kiel and Mecklenburg Bights, and the Baltic proper remain uncertain (Palme et al., 2008).

### **2.3. Abundance**

Knowledge of porpoise abundance in the Baltic Proper is deficient and limited to the south-western part of the Baltic. The following abundances have been estimated based on visual aerial surveys: Kiel Bight: 207, (CI 132-331) in 1991 and 87, (CI 46-166) in 1992 (Heide-Jørgensen et al. 1993). Sightings surveys have been limited to Kiel and Mecklenburg Bights in 1995: 980 (CI 360-2880) and in 1996 1830 (CI 960-3840) (Siebert et al. 2006); the waters around Rügen in 1995; 601 (CI 233-2684) (Siebert et al. 2006). In 1995 the ICES subdivisions III24 and III25 – excluding a 22 km wide corridor off the Polish coast were surveyed giving an estimate of 599 porpoises (CI 200-3300) aerial surveys of portions of the southern and western Baltic in 1995 (Hiby and Lovell 1996). and finally 93 porpoises (CI 10-460) in 2002 in most of ICES area III24 and III25 (Berggren et al. 2004),. and a vessel survey (visual and acoustic) of Polish coastal waters in 2001 (P. Berggren, pers. comm.). Although a large

decline in abundance from historic levels is generally acknowledged (e.g. Donovan and Bjørge 1995; IWC 1996, 2000), there is no reliable quantitative estimate of historic abundance.

During the summer seasons of 2001 and 2002 boat-based acoustic and visual transect surveys for harbour porpoises were conducted mostly in German and Polish waters but also including some Swedish and Danish waters during the summer season in order to investigate their distribution and relative abundance of the species (Gillespie *et al.*, 2005). The pattern of acoustic detections in this study indicates a gradient in the density of porpoises falling from the west to the east. The low porpoise detection rate of the entire Baltic Sea block agrees in a broad sense with the low density found in the 1995 aerial survey, with a general detection rate two orders of magnitude lower in the Baltic Sea than in other waters surveyed (Gillespie *et al.*, 2005).

#### 2.4. Distribution

A Static Acoustic Monitoring (SAM) survey took place from August 2002 to December 2005, when the German part of the Baltic Sea (Belt Sea and Pommeranian Bight) was surveyed by means of Porpoise detectors (T-PODs) by Verfuß *et al.* (2007). The analysis of the data of this survey also shows a significant decrease from west to east in the percentage of days with porpoise detections. At most of the measuring positions in the German Baltic Sea, harbour porpoises were detected year-round, with the data displaying a seasonal variation with fewer days of porpoise detections in winter than in summer. However, only infrequent detections were recorded north and east of the island of Rügen, thus confirming a very low density of the harbour porpoise sub-population in the Baltic proper (Verfuß *et al.*, 2007).

In another SAM study, deploying Porpoise Click Loggers (PCL:s) in coastal waters in Southern Sweden between June 2006 and September 2007, only 21 “porpoise positive days” were obtained in 2345 PCL days (Amundin *et al.* 2008) All but one of these detections occurred in the late summer/fall, and all in the western half of the study area (from Falsterbo Reef to South of Öland). Although the methodology was somewhat different from that of the German T-POD study, the overall detection frequencies were similar to that in the German waters along the same longitude.

From 1997-2007, 63 harbour porpoises were tagged with satellite transmitters in Danish and adjacent waters and followed for up to a year. The only major area that was not covered by the tagged animals was the Southern North Sea. In the Baltic Proper, three porpoises which were tagged in the Danish Belts moved to the southern tip of Öland and back on a two week trip during spring. Sixteen high-density areas were identified in Danish waters based on satellite tracking and surveys (Teilmann *et al.* 2008). Three of these (Flensburg Fjord, Fehmarn Belt and Kadet Trench) are located in the western Baltic.

- 1) Eleven (of the 63 tagged) porpoises visited the Flensburg Fjord, the inner part of which had a particularly high density from June to November while the porpoises move to the outer part during the rest of the year. Flensburg Fjord was also important for adult females.
- 2) Tagged animals were present in the Fehmarn Belt in all months of the year except in August and in October. Peak densities were observed in April, June and December. In total, 13 tagged porpoises visited this area, but only 5 of them stayed in the area for more than two days and these only remained for 7 days on average. This suggests that the area is mainly used as an important corridor to the eastern part of the area.
- 3) The Kadet Trench is a deep basin in a relatively shallow area east of the Darss/Gedser underwater ridge. The Kadet Trench is therefore potentially important with regard to the vulnerable Baltic Sea population and the only high density area determined in the Baltic proper (defined as ICES area IIIId). The 7 porpoises visiting the area were mostly present from September to December and in March.

## **2.5. Threats**

The situation that appears to have arisen in the Baltic is one that can easily lead to circular reasoning. With an extremely low density of porpoises, the animals are rarely seen or caught by fishermen. In the light of their own experience, then, fishermen view themselves as undeserving scapegoats, and they are reluctant to accept the claims by scientists and conservationists that bycatch is a serious threat to the porpoise population. However, if bycatch has been, as many assume, a major contributory factor in the decline of porpoises, there is little prospect of recovery unless the probability of bycatch for individual porpoises is substantially reduced. Therefore, without bycatch mitigation, porpoises will remain scarce (making it difficult to obtain better abundance estimates), the bycatch will remain small (making it difficult to quantify removals), and fishermen will remain incredulous towards the idea that fishery bycatch is a problem for porpoise conservation.

Despite the generally imprecise nature of available data, there is sufficient evidence to conclude that porpoises are now much less common in the Baltic than they were in the past, and that much of the decline occurred from the middle to late 20th century (e.g. Skóra et al. 1988; Berggren and Arrhenius 1995). There is also sufficient evidence to conclude that bycatch in fishing gear has played an important role not only in reducing the abundance of porpoises, but also in preventing their recovery in the Baltic (e.g. Skóra et al. 1988, Berggren 1994, Kock and Benke 1996, Teilmann and Lowry 1996, Berggren et al. 2002). The ASCOBANS Baltic Discussion Group concluded, and the Jastarnia workshop concurred, that: (1) the available evidence (abundance estimates, bycatch levels, stock identity) clearly points to a population that is in serious danger; and (2) as a matter of urgency, every effort should be made to reduce the porpoise bycatch towards zero as quickly as possible. Of the factors potentially contributing to the decline in porpoise abundance in the Baltic, which could include climatic variability, contaminants, and changed ecological conditions, bycatch is probably the only one for which the effect of remedial action would be immediate and unambiguous.

## **2.6. Legal Status of the Baltic Harbour Porpoise**

In addition to the various provisions within the ASCOBANS Agreement text and its Conservation and Management Plan, the Baltic harbour porpoise is covered by protection and management measures of a number of other competent organisations within the Baltic Sea area.

Under European Community law, specific attention is paid to the conservation needs of the Baltic harbour porpoise under Council Directive No 92/43/EEC (the "Habitats Directive"). In particular, Member States are required to establish a system of strict protection under national law for "all species" of cetaceans. Furthermore, the harbour porpoise is listed in Annex II of the Directive and is therefore one of the species for which Member States are to establish Special Areas of Conservation to ultimately contribute towards the creation of a coherent ecological network of protected areas throughout the Community (Natura 2000). Within the framework of the Emerald Network of protected areas, which was established in 1998 and is a de-facto extension of NATURA 2000 to non-EU Parties of the Council of Europe's 1979 Bern Convention, such obligations also apply to non-EU Member States that are, however, Contracting Parties or Observer States to that convention.

Moreover, the Baltic Marine Environmental Protection Commission (HELCOM), has also established a series of protection measures and conservation targets vis-a-vis the Baltic harbour porpoise. In November 2007, the Baltic Sea Action Plan was formally adopted by HELCOM, establishing a co-ordinated programme to restore the good ecological status of the Baltic Sea region by 2021. The Action Plan calls for further development cooperation with ASCOBANS, including through the elaboration of a coordinated reporting system and database on Baltic harbour porpoise sightings, bycatches and strandings. In addition to this, the Baltic Sea Protected Areas (BSAP) programme encourages the Contracting Parties to establish a system of coastal and marine protected areas, which could include measures to

protect the Baltic harbour porpoise. A specific Recommendation, HELCOM Recommendation 17/2 on the protection of the harbour porpoise in the Baltic Sea area was adopted in 1996, recommending that Contracting Parties give “highest priority” to avoiding bycatches of these animals, as well as analysing the status of stocks, considering the establishment of protected areas under the BSAP programme and reporting on a triennial basis on progress made in these respects.

### **3. Development of the Recovery Plan**

As noted above, the conclusion arrived at in the lead-up phase and by the Jastarnia workshop was that bycatch was the primary threat to harbour porpoises and hence that bycatch reduction was the highest priority for the recovery of the species. The objectives and recovery recommendations of the Recovery Plan consequently focus primarily on this aim, without losing sight of the need to address other issues.

#### **3.1. Objectives of the Recovery Plan**

ASCOBANS has the interim goal of restoring the population of harbour porpoises in the Baltic Sea to at least 80% of the carrying-capacity. In order to work towards achieving this interim goal and, ultimately, a favourable conservation status for Baltic harbour porpoises, Baltic Range States should, as a matter of urgency, seek to reach the following objectives:

- (1) implement management measures of a precautionary nature to reduce the number of bycaught porpoises in the Baltic towards zero;
- (2) improve knowledge in key subject areas as quickly as possible; and
- (3) develop more refined (quantitative) recovery targets as new information becomes available on population status, bycatch and other threats.

In the short to medium term, further issues should also be addressed as a matter of priority, namely the creation and proper management of marine protected areas for harbour porpoises, public awareness raising and cooperation with other relevant organisations.

### **4. Recovery Recommendations**

The following recommendations constitute the ASCOBANS Recovery Plan for Harbour Porpoises in the Baltic Sea (for a tabular overview of recovery recommendations and related action cf. Appendix 6 below):

#### **4.1. Bycatch Reduction**

Both the ASCOBANS Baltic Discussion Group and the Jastarnia workshop concluded that bycatch reduction was the highest priority for Baltic harbour porpoise recovery, and that measures to achieve such reduction should begin immediately. Experience elsewhere has been that bycatch reduction strategies should not rely on a single approach to mitigation, but rather incorporate multiple approaches as a way of dealing with the uncertainty of outcome associated with any individual measure (Read 2000). A key point about all of the following recommendations related to bycatch reduction is that **stakeholders need to be closely involved in the process**. As a priority, fishermen and their representatives should be included routinely in discussions and decision-making that have implications for their livelihoods. Another important proviso is that the entire Baltic Sea is not a homogeneous system, and therefore the same bycatch reduction measures are unlikely to be appropriate on the same time schedule in all areas. Ignorance about porpoise distribution, movements,

relative abundance and habitat use throughout the Baltic, however, is a major obstacle to devising an area- or time-specific approach to bycatch reduction.

It is important to emphasise that although there is no unanimity on the issue of how bycatch should be reduced, there is consensus that porpoises are likely to disappear from the Baltic unless a major effort of some kind is made quickly to achieve bycatch reduction. At one extreme are those who believe that the only effective and environmentally benign way to reduce porpoise bycatch to the PBR level or below is through major reductions in “high-risk” fishing effort, while others believe that, despite their side-effects and associated uncertainties, acoustic deterrents should be used on a short-term basis as part of a bycatch reduction strategy. These viewpoints are both reflected in this Recovery Plan to the extent possible.

#### **4.1.1. Recommendation 1: Reduce fishing effort in certain fisheries**

The most effective way to reduce bycatch is to reduce or eliminate fishing effort that involves gear known to cause high porpoise bycatch rates (Read 2000). Therefore, it is recommended that **measures should be taken by the Baltic Range States to reduce the fishing effort of fishing gear known to be harmful to porpoises such as set nets in the Baltic.** Driftnets, defined by the relevant EC legislation as any gillnet held on the sea surface or at a certain distance below it by floating devices, drifting with the current, either independently or with the boat to which it may be attached<sup>1</sup>, have been prohibited in the Baltic since 1 January 2008. It is stressed that fishing effort includes both the amount of net deployed and the amount of time that the nets are in the water (soak time). It is also important to emphasise that reductions in catch quotas and/or fishing capacity are not the same as reductions in fishing effort, and therefore it cannot be assumed that reduced fish catch quotas or reduced fleet sizes will necessarily reduce porpoise bycatch. Reductions in fishing effort prompted by concerns about fish stock depletion or other ecosystem considerations should be encouraged, especially if such reductions are applied to fisheries known to kill porpoises (e.g. set nets) and occur in areas known, or thought to be, inhabited by porpoises. It is certainly preferable that effort reductions be targeted at high-risk gear types in areas frequented by porpoises. Although some uncertainty remains in regard both to high-risk gear and porpoise distribution, documented bycatch localities and dates provide a useful starting point for specifying high-risk areas.

#### **4.1.2. Recommendation 2: Involve stakeholders in the work of reducing bycatch of harbour porpoises**

**Stakeholders such as fishermen, governments and environmental organisations need to work together when trying to reduce bycatch.** Fishermen should be involved not only in the implementation but throughout the whole process. A working group including fishermen, governments and environmental organisations should be established to develop guidelines and methods to reduce and monitor bycatch in relevant fisheries. A way to create a positive collaboration with fishermen is to support the environmental certification of fisheries by helping the fishermen to reduce their bycatch, through pingers or alternative fishing gear, or to monitor the bycatch in their fisheries.

#### **4.1.3. Recommendation 3: Replace fishing methods known to be associated with high porpoise bycatch (i.e. set nets) and introduce alternative gear that is considered less harmful**

A changeover to gear that is less harmful to porpoises is one way of maintaining a viable fishery while achieving bycatch reduction. It is therefore recommended that **trials using fish traps, fish pots, and longlines be initiated immediately, with the long-term goal of**

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<sup>1</sup> Regulation No. 809/2007

**replacing gillnets in the cod fishery, particularly in areas where porpoises are known or expected to occur frequently.** The development and introduction of alternative gear in the Baltic cod fishery should be undertaken as a high priority. Work to develop such gear should be coordinated among the Range States and competent fishery authorities should be involved in order to ensure that there is consistency between measures envisaged in the framework of this recover plan and any measures that are being considered or taken by those authorities. Implementation should begin immediately when cost-effectiveness as well as the ecological sustainability of such fishing have been demonstrated. An important consideration in defining cost-effectiveness is that catch levels may be reduced compared to common fishing methods, but counterbalanced by improved quality (and thus market value), particularly when fish are taken in traps or pots rather than set nets.

#### **4.1.4. Recommendation 4: Implement a pinger programme on a short-term basis**

Pingers (acoustic alarms or deterrents) have been shown to be effective in reducing porpoise bycatch in set net fisheries outside the Baltic and, as noted by Read (2000)<sup>12</sup>, no further trials are necessary before they are used in at least bottom-set gillnet fisheries within the ASCOBANS area. Despite the suitability of pingers as a short-term interim solution the relevant recommendation in the 2002 Jastarnia Plan was not implemented by Parties, leading to a loss of several years of effective bycatch mitigation.

Recognising that there may be a lag of several years before the necessary reductions in fishing effort and changeover to lower-risk gear (above) are fully implemented, it is recommended that **pinger use should now immediately be made mandatory in probable high-risk areas and fisheries associated with bycatch of harbour porpoises on a short-term basis (no more than 3 years) irrespective of vessel size.** In areas where pinger use leads to increased seal-fisheries conflict or seal bycatch, pingers not audible to seals should be used. It should be noted, however, that these pingers are not yet available on the market and therefore immediate research is necessary to develop functional pingers. A key element of any pinger implementation will be educating fishermen on their proper use.

In reaching this recommendation, a number of positive and negative issues had to be considered, summarised below:

- 1) One of the drawbacks of relying upon pingers is that their use does not ensure zero bycatch. However, since it is clear that the Baltic Range States will not accept immediate closure of the set net fisheries, or be able to achieve an immediate changeover to alternative gear, any reduction in bycatch that can be accomplished during the next few years through the rapid implementation of pingers will be better than no reduction;
- 2) A second problem is that the cost of an independent on-board observer scheme of sufficient scale (given the large number of small boats in the Baltic that are unable to carry observers) to monitor the programme's effectiveness (generally considered a required component of pinger programmes; IWC 2000, Read 2000) may be exorbitant, particularly given that it would likely be competing for funds with programmes to develop alternative gear, etc. (see point 5 below). The absence of such an observer scheme would mean that effectiveness could not be formally evaluated. Although it may be possible for enforcement vessels (e.g., Coast Guard) to use click detectors to monitor compliance with pinger-use regulations, or to check pingers in the harbours, the problem of evaluating effectiveness can only be addressed through a costly, large-scale on-board observer programme or the implementation of onboard video surveillance systems or other technical means of monitoring bycatch;
- 3) A third concern is that widespread pinger use may displace porpoises from important habitat (IWC 2000)<sup>15</sup>. This issue cannot be rigorously addressed on present evidence and therefore must be viewed in much the same way as the non-zero bycatch (Point 1, above). In other words, the unknown risk of displacement must be weighed against the known risk of entanglement in nets without pingers. Experimental studies outside the Baltic have shown that porpoises quickly return to an area from which they have been

displaced after pingers are removed or rendered inactive (Lockyer et al. 2001; Teilmann et al 2007);

- 4) The use of pingers can increase the seal and fisheries conflict, which includes an increase in damaged catch and fishing gear but also an increase of entangled and thereby bycaught seals. In many countries along the Baltic Sea coast, seals are causing great economic losses in the small-scale coastal fisheries and the conflict is at present spreading from north to south with the increasing seal population. This bycatch is equally unacceptable. This problem may be solved by using interactive pingers, since their infrequent pinging will not make them useful as “dinner bells” for the seals;
- 5) Finally, full implementation of a mandatory pinger programme would represent a major investment of resources, possibly precluding investments in long-term solutions to the bycatch problem (above), important research (below), and public awareness initiatives (below). It is therefore essential that management authorities and the fishing industry be encouraged to engage in multiple approaches to the bycatch-reduction problem simultaneously and to move ahead with the longer-term strategies outlined elsewhere in this recovery plan.

Taking into account the above considerations, the following process is recommended:

- It is essential that any implementation of a pinger programme be accompanied by measures to verify that pingers are being used properly at sea;
- The importance of independent on-board observation at an appropriate sampling level to obtain reliable data on cetacean bycatch is well documented. In view of the associated difficulties with high fishing effort and low bycatch rates a high coverage of the fishing effort needs to be monitored to obtain reliable bycatch estimates. Therefore alternative ways to monitor bycatch should be considered. Despite the associated difficulties with high fishing effort and low bycatch rates, bycatch monitoring needs to be made an integral part of any pinger implementation programme;
- The concern that pingers might exclude porpoises from large areas of critical habitat should be addressed in view of the urgency of implementation and the limited time span of the pinger programme. Hence, for the Baltic situation an analysis similar to that conducted previously for the North Sea (Larsen and Hansen, 2000) should be conducted within the first year of active pinger use, and considered sufficient to estimate the potential extent of habitat exclusion for the Baltic;
- Implementation of a pinger programme should be short-term and therefore should be reconsidered after a maximum duration of 3 years, with the expectation that pinger use will be replaced by longer-term mitigation measures at that time;
- The rapid development of medium and long-term approaches to mitigation (e.g. reduced fishing effort in high-risk areas, conversion to fishing gear and practices that are much less likely to result in porpoise bycatch) is crucial and should not be compromised. This work should be initiated immediately and in parallel with the identification of high-risk areas and targeted pinger implementation efforts.

#### **4.2. Research and Monitoring**

As discussed earlier in this document, the problem of harbour porpoise conservation in the Baltic Sea is marked by scientific uncertainty, and this situation is likely to prevail far into the future. While recognising the need for more research and monitoring, the ASCOBANS Baltic Discussion Group and the Jastarnia workshop strongly emphasised that there was no need to wait for further research before implementing a bycatch reduction strategy – therefore, none of the recommendations in this section of the recovery plan should be viewed as a higher priority than the bycatch reduction initiatives outlined above.

There is considerable uncertainty to what degree contaminants (e.g. organochlorines, organotins, and heavy metals), ecological perturbations (e.g. ice winters, trophic shifts

affecting porpoise prey consumption; see MacKenzie et al. 2002), and other factors have contributed to the decline of the harbour porpoise in the Baltic, and its failure to recover. However, it is of eminent importance to elucidate the impact of these factors in order to determine whether harbour porpoises are able to repopulate the region previously occupied by them in the Baltic. Further research is needed not only to provide information on bycatch mitigation and on monitoring of possible recovery but also to guide decisions concerning such things as waste management, pesticide use, marine construction, industrial (e.g. extractive) use of the seabed, and the impact of fisheries in a broader sense in order to convince fishermen, decision-makers, and the general public of the need for a recovery strategy.

Based on the research and monitoring needs identified by the Jastarnia workshop (2002) and the subsequent meetings of the Jastarnia Group, the following priority actions are recommended:

#### **4.2.1. Recommendation 5: Analyse stock affinities of harbour porpoises in the “transition zone” of the south-western Baltic**

Two populations living in the Baltic have been identified: the Baltic proper and the Western Baltic stock. However the genetic evidence that these are two distinct populations is under discussion and a more thorough investigation of the pattern of genetic sub-structuring of the harbour porpoises of this region is urgently needed (Palme et al. 2008). Various types of evidence already available need to be considered in an integrated analysis, taking account of new acoustic, tracking, and genetic data. There should also be a strong initiative to obtain and analyse additional tissue samples from the Baltic proper (e.g. historical samples in museums and new samples from stranded or bycaught animals). Effort and protocols for data collection from stranded or incidentally caught individuals should be improved. This involves making concerted efforts to locate such animals and to perform comprehensive necropsies on them.

#### **4.2.2. Recommendation 6: Develop and apply new techniques (e.g. acoustic monitoring) for assessing trends in abundance**

Given the apparently low-density occurrence of porpoises in the central Baltic, standard line transect sampling methods are unlikely to provide adequate statistical power to detect trends. New approaches have to be developed, such as passive/static acoustic monitoring methods, which may provide better estimates of harbour porpoise abundance and also detect possible trends in abundance.

#### **4.2.3. Recommendation 7: Develop interactive pingers or pingers using frequencies not audible to seals**

Interactive pingers or pingers not audible to seals could be used to decrease the level of acoustic pollution caused by pingers or for use in areas where there is a seal-fisheries conflict. In addition to causing increased levels of acoustic pollution, acoustic alarms might thus be detrimental to harbour porpoise conservation via habitat exclusion or their efficiency might be impaired by habituation. Addressing the problem mentioned above, interactive pingers, deterrent devices that only emit sound when triggered by the sonar clicks of an oncoming porpoise, should be considered (Amundin *et al.*, 2002; Poulsen, 2004). However, their efficiency and any habituation or habitat exclusion effects must be investigated further. An analysis similar to that reported for the North Sea in 2000 by Hansen and Larsen should be initiated for the Baltic.

Pingers increase the level of acoustic pollution, and by acting as “dinner bells” they increase the seal-fisheries conflict which is a serious problem in the Baltic. Interactive pingers were previously considered a possible solution to these problems. This kind of pinger, however, is only at a prototype stage. Also, its efficiency in reducing bycatch must be verified. Therefore

a more realistic alternative to reduce the seal-fisheries conflict in the Baltic is to use pingers emitting deterrent sounds not audible to seals. Promising tests with such pingers have been carried out by Kastelein *et al.* (2008).

#### **4.2.4. Recommendation 8: Investigate possible detrimental effects of various types of sound and disturbance (including pinger signals, noise from vessels, wind parks or constructions and seabed exploration for oil and gas) on harbour porpoises**

Such investigations may be better conducted in areas other than the Baltic, where the harbour porpoise is more abundant and it might be easier to develop and apply a proper experimental design.

#### **4.2.5. Recommendation 9: Monitor bycatch in fisheries known to be harmful to harbour porpoises to be able to estimate bycatch levels**

Estimations of bycatch levels in certain areas and fisheries are urgently needed and monitoring bycatch through observer schemes should be conducted in probable high risk areas and in fisheries associated with bycatch, including recreational and small-scale fisheries. However, bearing in mind that observer schemes are very expensive and possible only on larger fishing vessels, alternative methods, based on onboard video surveillance systems should be regarded as an option.

#### **4.2.6. Recommendation 10: Further develop sustainable alternative fishing gear with no bycatch of harbour porpoises**

Alternative gear types such as long lines or pots are known to have insignificant bycatch of harbour porpoises and could therefore be regarded as a possible alternative to gillnets in the Baltic. Even though long lines and pots are basically simple devices, their setup and rigging can vary greatly. The catch rates in these fisheries depend strongly on bait species, hook shape and size, lines, trap shapes, fishing time, fishing depth, bottom type fishing practice and a wide range of biotic and abiotic factors. All these factors will affect fishing success and whether fishing can be commercially profitable.

Even though both long line and pot fishery have been shown to be cost effective in other areas, the fishing procedures cannot be directly implemented in the Baltic due to the differences between these areas. Therefore, trials optimizing and developing the pot and line fishery for Baltic conditions need to be undertaken before these gear types can be approved as a realistic alternative to gillnets.

#### **4.2.7. Recommendation 11: Compile Data on Fishing Effort**

While any reduction in fishing effort of set nets within the areas utilised by porpoises would be expected to provide some benefit in terms of reduced bycatch, it is preferable that effort reductions (and other forms of bycatch mitigation) be implemented in probable “high risk” areas. **Identification of such areas depends at least partly on the amount of effort placed in a given area** and the bycatch of harbour porpoises in this area. An initial assessment should be made immediately to determine sources of relevant data and identify individuals or the national focal points in the Range States whose cooperation is needed and who can deliver the relevant data. When relevant fishing effort data has been collected a working group should be established to evaluate the available data and thereafter compile data on fishing effort.

#### **4.2.8. Recommendation 12: Examine habitat preference of harbour porpoises.**

Little is currently known of the habitat preferences of harbour porpoises. Presumably, it is linked to distribution of prey, however the spatial links between porpoises and their prey have not been analysed due to lack of data. It is proposed to make a spatial model on preferred habitats in waters adjacent to the Baltic Sea. By linking physical and biological variables to the presence of satellite tracked porpoises and/or survey data in e.g. the Belt Sea and the western Baltic and consequently extending this model into the Baltic Sea it will be possible to predict where the suitable habitats for porpoises in the Baltic proper would be. The presence of porpoises in these areas could be verified by static acoustic monitoring throughout the year. Furthermore the areas could be compared with fishing effort in the Baltic and thereby identify high risk areas.

#### **4.2.9. Recommendation 13: Investigate the prevalence of derelict (“ghost”) gear and the feasibility of its removal**

“Ghost nets” form a component of effective fishing effort in the Baltic. Therefore clearance of “ghost nets” would represent a reduction in fishing effort (and hence potential harbour porpoise bycatch) without affecting fishing yield, and should be seriously considered.

### **4.3. Marine Protected Areas**

Available data on porpoise distribution and habitat use within the Baltic are currently inadequate for identifying specific areas that should be designated for special protection. Furthermore, results of satellite tagging of harbour porpoises (see Read and Westgate 1997; Larsen et al. 2000; Teilmann et al. 2008) suggest that animals (in particular juveniles and males) are highly mobile, with important implications for protected area scale and design. Existing and proposed protected areas in the Baltic, established under the Habitats Directive of the European Union or as part of the HELCOM Baltic Sea Protected Area network, are generally considered either too small or inappropriately designed to provide significant benefits to harbour porpoises. Moreover, especially in low-density areas, MPAs do not have the potential for significant conservation benefits.

Despite these shortcomings, **authorities should be encouraged to expand the network and improve its connectivity, while ensuring the development and implementation of appropriate management plans within protected areas to improve the status of harbour porpoises and/or their critical resources (e.g. prey stocks).** However, such limited measures should not be allowed to serve as substitutes for the other broader-scale conservation initiatives recommended elsewhere in this recovery plan.

Besides the management of marine resources in protected areas, they can also be effective tools for awareness raising among the public. **Management plans for MPAs should therefore include information and education work to engage the wider public in protection of harbour porpoises.**

#### **4.3.1. Recommendation 14: Expand the network of protected areas in the Baltic Sea and improve its connectivity and ensure the development of appropriate harbour porpoise management plans for these areas.**

#### 4.4. Public Awareness

Public awareness is an essential part in supporting a recovery plan. People need to be aware that harbour porpoises are an integral part of the fauna of their local waters and are worth saving. Whereas other elements of the plan depend largely on the decision-making processes of national or international governmental agencies and international and supra-national regulatory bodies, public awareness is an area in which ASCOBANS has an autonomous role to play. Parties to ASCOBANS have ongoing responsibilities and commitments to disseminate reliable information about Baltic harbour porpoises, to support the favourable conservation status of the species and to actively promote its protection and recovery.

Baltic fishermen are among those people most likely to interact most directly and most frequently with harbour porpoises. Baltic fishermen need to be viewed as a key target group. At the same time, it is also important to approach members of the general public. They are consumers of fishery products and the ultimate arbiters of public policy. Public awareness work has to be objective, attendant to and respectful towards cultural and linguistic differences, and candid about scientific uncertainty.

##### 4.4.1. Recommendation 15: Develop a comprehensive public awareness campaign, based on the elements outlined below:<sup>2</sup>

- 1) While acknowledging national programmes in raising public awareness, ASCOBANS should **develop and promote a regional approach to Baltic harbour porpoise conservation**.
- 2) Explicit efforts should be made to **enlist the help of the general public and people related to the sea in obtaining reports of porpoise observations** throughout the Baltic. This can be expected to improve understanding of porpoise distribution and relative abundance, while at the same time enhancing public support for recovery efforts. However, it is important that opportunistic reports by untrained observers be interpreted cautiously, and that the need for documentary evidence (e.g. photographs, tissue samples in the case of strandings) be stressed when soliciting such reports.
- 3) The ASCOBANS Secretariat should **establish direct communications links with Baltic fishermen and seek their assistance** in determining how to reach fishing communities more effectively, e.g. via newsletters, tabloids, displays at fishing exhibitions, etc.
- 4) The Baltic Range States should **establish national focal points**, with responsibility for coordinating public awareness efforts. These focal points would be responsible for establishing and maintaining working relationships with fishing communities and other target groups.
- 5) Parties are requested to provide assistance to maintain an **interactive Baltic harbour porpoise website** for the storage of GIS-based porpoise observation data. This web page should incorporate other existing possibilities to report sightings of harbour porpoises. The page should be designed for use throughout the Baltic region.<sup>3</sup> This website may provide further opportunities for collaboration with relevant bodies such as HELCOM.

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<sup>2</sup> Compare also Appendix 3 of AC 9 Doc 7 (S)

<sup>3</sup> Existing examples are [www.balticseaporpoise.org](http://www.balticseaporpoise.org); [www.gsm-ev.de](http://www.gsm-ev.de); [www.habitatmare.de](http://www.habitatmare.de)

#### **4.5. ASCOBANS Cooperation with Other Bodies**

Although ASCOBANS is the only international body with an explicit mandate to improve the conservation status of harbour porpoises in the Baltic Sea, several other regional and international bodies also have important roles to play, particularly with regard to improving the quality of the Baltic marine environment and regulating Baltic fisheries **There is a need for close consultation and cooperation between ASCOBANS and these other bodies.**

The most relevant other body is HELCOM, which deals with environmental protection of the marine area of the Baltic Sea. HELCOM has a strong interest in porpoise recovery. In 1996 HELCOM adopted the Recommendation on protection of harbour porpoises in the Baltic Sea (Recommendation 17/2). The recommendation specifically promotes bycatch reduction, relevant research and consideration of porpoise habitat requirements in the design and management of marine protected areas. HELCOM Baltic Sea Action Plan adopted by a Ministerial Meeting in Kraków, Poland in November 2007 aims to ensure viable populations of the species e.g. by developing cooperation with ASCOBANS on a coordinated reporting system and database on Baltic harbour porpoise sightings, bycatches and strandings and developing and implementing effective monitoring and reporting systems for bycaught mammals. The Action Plan urges competent fisheries authorities in co-operation with the Baltic RAC and HELCOM to urgently adopt measures to minimise bycatch of non-target species by 2012 and to evaluate the effectiveness of existing technical measures by 2008 to minimise bycatch of harbour porpoises and to introduce adequate new technologies and measures. Within HELCOM the HELCOM SEAL expert group and the HABITAT group are the relevant bodies dealing with harbour porpoises.

The European Union adopts its fishery legislation within the framework of the Common Fisheries Policy. The Baltic Sea Regional Advisory Committee (RAC) provides advice on the management of Baltic Sea fisheries<sup>4</sup>. It is expected that a review of the Common Fisheries Policy will deal with issues related to interactions between fisheries and ecosystems. The European Commission has, in recent years, indicated to Member States its intention to deal with the problem of cetacean bycatch. Individual states in the region may also adopt national regulatory measures that only apply to their national fishing fleets.

The EU Council Directive 92/43/EEC (Habitats & Species Directive) lists the harbour porpoise in Annexes II and IV, the former identifying species whose conservation requires the designation of special conservation areas (subject to certain conditions being met), and the latter identifying species in need of strict protection. Article 12.4 of this directive requires EU Member States to “establish a system to monitor the incidental capture and killing of ... species listed in Annex IV...” and in light of the information obtained, to “take further research and conservation measures as required to ensure that incidental capture and killing does not have a significant negative effect on the species concerned.”

The International Council for the Exploration of the Sea (ICES) provides scientific advice relevant to the management of fish stocks and other species, including marine mammals.

The Scientific Committee of the International Whaling Commission (IWC) has provided an important forum for assessing the status of small cetaceans, including harbour porpoises.

##### **4.5.1. Recommendation 16: Strive for close consultation and cooperation between ASCOBANS and other relevant regional and international bodies.**

In this context, the revised Jastarnia Plan should be sent to the EU Commission, HELCOM and other relevant bodies with an appropriate cover letter informing them of the revision of the Plan and outlining what is expected of them.

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<sup>4</sup> The creation of Regional Advisory Councils (RACs) was one of the pillars of the reform of the Common Fisheries Policy (2002), as a response to calls from stakeholders in the fisheries sector who wanted to be more involved in the way fisheries are managed in the EU. The Baltic Sea RAC was set up in March 2006.

## 5. Implementation and Re-evaluation of the Recovery Plan

This revised recovery plan is adopted without prejudice to the exclusive competence of the European Community for the conservation, management and exploitation of living aquatic resources. Upon adoption, the revised Plan will supersede the original Jastarnia Plan of 2002. It is important that the revised plan and the recommendations outlined within it be implemented without delay, and that ASCOBANS undertake a formal re-evaluation and revision of the plan at least every five years. **The next review should occur three years after the adoption of the revised plan.** It is also suggested that Baltic Range States (ASCOBANS members and non-members alike) be asked to supply ASCOBANS with updated information, on an annual basis, concerning progress in implementation.

The actual implementation of this plan falls within the remit of the Parties. The Jastarnia Group should continue its work and act as a Steering Group for the Jastarnia Process, evaluating progress in the implementation of the Plan, establishing further implementation priorities and making appropriate recommendations, and carrying out the periodic reviews of the Plan. The full terms of Reference of the Jastarnia Group are included in Appendix 5.

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**Appendix 1: Map of the Baltic Sea Area**



**Appendix 2a: Outline Example for Fishing Effort Data to be collected by each ASCOBANS Party**

Description of fishing gear	Gillnet meshsize	ICES Fishing Area 24, ICES rectangle 3958						ICES Fishing Area 24, ICES rectangle 3959						ICES Fishing Area 24, ICES rectangle 3960						→ etc.
		Net km.hour/ number of fishing vessels						Net km.hour						Net km.hour → etc for relevant ICES rectangles						
		Jan	Feb	Mar	Apr	May	→ etc.	Jan	Feb	Mar	Apr	May	→ etc.	Jan	Feb	Mar	Apr	May	→etc.	
(Salmon) driftnets/ gillnets > 10m boats																				
(Salmon) driftnets/gillnets < 10m boats																				
(Cod) Bottom-set gillnets > 10m boats/ 8m boats																				
(Cod) Bottom-set gillnets < 10m boats/ 8m boats																				
(Flatfish)Bottom-set gillnets																				
Etc. →																				

**Appendix 2b: Outline Example for Fishing Effort Data**

Year (provide separately for most recent 3 available)	ICES Fishing Area 24 Net km.hour						ICES Fishing Area 25 Net km.hour						ICES Fishing Area 26 Net km.hour						→etc.
	Jan	Feb	Mar	Apr	May	→ etc.	Jan	Feb	Mar	Apr	May	→ etc.	Jan	Feb	Mar	Apr	May	→ etc.	
(Salmon) driftnets > 10m boats																			
Denmark																			
Estonia																			
Finland																			
Germany																			
Latvia																			
Lithuania																			
Poland																			
Russian Federation																			
Sweden																			
(Salmon) driftnets < 10m boats																			
Denmark																			
Estonia																			
Finland																			
Germany																			
Latvia																			
Lithuania																			
Poland																			

Russian Federation																			
Sweden																			
(Cod) Bottom-set Gillnets > 10m boats																			
Denmark																			
Estonia																			
Finland																			
Germany																			
Latvia																			
Lithuania																			
Poland																			
Russian Federation																			
Sweden																			
etc.																			

## **Appendix 3: Draft Terms of Reference for the Steering Group for the ASCOBANS Recovery Plan for Baltic Harbour Porpoises (“Jastarnia Group”)**

### **1. Introduction**

The need for a Baltic harbour porpoise recovery plan was recognised for a considerable time not only by ASCOBANS, but also by other international bodies. In 2002, a recovery plan was elaborated under the auspices of ASCOBANS in a collaborative effort involving scientists, managers and stakeholders. This recovery plan is the culmination of a series of scientific initiatives and meetings. The Recovery Plan, now known as the Jastarnia Plan, was welcomed by the 4<sup>th</sup> Meeting of the parties to ASCOBANS in Esbjerg, Denmark, in 2003. It calls for periodic reviews of the plan. The present revised plan is the result of the first such review.

Since 2005, annual meetings of the so-called Jastarnia Group have been held. This expert working group, composed of representatives from the environment and fisheries sectors of the countries surrounding the Baltic Sea, discusses progress made and further implementation priorities for the Jastarnia Plan and makes recommendations to the ASCOBANS Advisory Committee.

In the process of reviewing the Jastarnia Plan, it was agreed that the Jastarnia Group should continue its work and act as a Steering Group for the Jastarnia Process, in accordance with the Terms of Reference below.

### **2. Terms of Reference**

The Jastarnia Group is a working group of the ASCOBANS Advisory Committee within the meaning of Article 5.4 of the ASCOBANS Agreement. It is the Steering Group for the ASCOBANS Recovery Plan for Baltic Harbour Porpoises.

#### **a) Tasks**

The Jastarnia Group has the following tasks:

- Evaluate progress in the implementation of the Plan,
- Establish further implementation priorities;
- Promote the implementation of the Recovery Plan;
- Carry out the periodic reviews of the Plan.

#### **b) Composition**

The Group consists of representatives of all states bordering the Baltic Sea (“Baltic Sea States”), irrespective of their status as ASCOBANS Parties or Non-Party Range States, as well as Baltic Sea environmental non-governmental organisations and Baltic Sea fisheries organisations (hereinafter referred to as “Jastarnia Group Members”). Each Baltic Sea State shall be entitled to appoint two Jastarnia Group Members, one of whom shall represent the environmental sector, the other the fisheries sector and such Advisers as the Party may deem necessary. Baltic Sea environmental non-governmental organisations and Baltic Sea fisheries organisations shall be entitled to appoint one Jastarnia Group Member and such Advisers as they may deem necessary. The Jastarnia Group may, as appropriate, invite representatives of any other body or any individual qualified in cetacean conservation and management to participate in a meeting in the capacity of “Invited Experts”.

**c) Meetings**

The Jastarnia Group meets at least once annually.

**d) Rules of Procedure**

Pursuant to Rule 19 of the Rules of Procedure of the ASCOBANS Advisory Committee, those Rules shall apply *mutatis mutandis* to the proceedings of the Jastarnia Group insofar as they are applicable.

## Appendix 4: Recommendation Summary Sheets

### RECOMMENDATION 1: Reduce fishing effort in certain fisheries

Cf. p. 16 above

#### OVERALL OBJECTIVE

Bycatch mitigation

#### SPECIFIC OBJECTIVES

Reduction or elimination of fishing effort involving gear known to cause high porpoise bycatch rates

#### RATIONALE

Reduction or elimination of fishing effort involving gear causing high porpoise bycatch rates is the most effective way to reduce bycatch. Relevant EC legislation does not cover all vessel types, types of fisheries and gear types concerned.

#### ACTION REQUIRED

- Provision of incentives to fishermen to reduce fishing effort
- Possibly: national legislation
- Possibly: EU legislation

#### ACTORS

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* legislators, competent ministries, fisheries authorities, fishermen, EU

#### TIMELINE

Implementation to begin immediately

#### EVALUATION OF IMPLEMENTATION

- Jastarnia Group
- Advisory Committee

#### PRIORITY

High

## **RECOMMENDATION 2: Involve stakeholders in the work of reducing bycatch of harbour porpoises**

Cf. p. 17 above

### **OVERALL OBJECTIVE**

Bycatch mitigation

### **SPECIFIC OBJECTIVES**

- Enhancement of cooperation between various stakeholders (governments, fishermen, environmental organisations)
- Increased involvement of fishermen throughout the process of bycatch mitigation (from planning to implementation)

### **RATIONALE**

Only the involvement of all stakeholders ensures that solutions found are practicable, equitable and meet with the acceptance from fishermen. Acceptance by fishermen is needed to ensure consistent and efficient implementation of mitigation measures.

### **ACTION REQUIRED**

- Establishment of a working group consisting of government representatives, environmental organisations and fishermen to develop guidelines and methods for reducing and monitoring bycatch in the relevant fisheries
- Facilitation of environmental certification of fisheries

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States, ASCOBANS Secretariat

*Stakeholders:* competent ministries, fisheries authorities, environmental organisations, fishermen

### **TIMELINE**

Implementation to begin immediately

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

### **RECOMMENDATION 3: Replace fishing methods known to be associated with high porpoise bycatch (i.e. set nets) and introduce alternative gear that is considered less harmful**

Cf. p. 17 above

#### **OVERALL OBJECTIVE**

Bycatch mitigation

#### **SPECIFIC OBJECTIVES**

Changeover to gear that is less harmful to porpoises

#### **RATIONALE**

The changeover to less harmful gear enables bycatch reduction while maintaining viable fisheries

#### **ACTION REQUIRED**

- Work to demonstrate cost effectiveness and environmental sustainability of alternative gear
- Development of alternative gear
- Involvement of competent fisheries authorities to ensure consistency of action
- Introduction of gear in Baltic cod fishery

#### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* competent ministries, fisheries authorities, fishermen, scientists

#### **TIMELINE**

Implementation to begin immediately once cost effectiveness and ecological sustainability have been demonstrated

#### **RECOMMENDATION EVALUATION**

- Jastarnia Group
- Advisory Committee

#### **PRIORITY**

High

## **RECOMMENDATION 4: Implement a pinger programme on a short-term basis**

Cf. p. 18 above

### **OVERALL OBJECTIVE**

Bycatch mitigation

### **SPECIFIC OBJECTIVES**

Mandatory pinger use in probable high-risk areas and fisheries associated with bycatch of harbour porpoises on a short-term basis (no more than 3 years) irrespective of vessel size

### **RATIONALE**

The rapid introduction of pingers, which have been effective in reducing porpoise bycatch in set net fisheries outside the Baltic and whose use is already mandatory under EU legislation for bottom-set gillnets, entangling nets or drift nets deployed by vessels > 12m in length can lead to a reduction in bycatch in the next few years whereas there will likely be a lag of some years in implementing reductions in fishing effort and a changeover to lower-risk gear. In light of the problems associated with pingers, it is, however, essential that they be used on a short-term basis and that management authorities and fishing industry simultaneously engage in multiple approaches to bycatch reduction and move ahead with longer-term strategies.

### **ACTION REQUIRED**

- Introduction of mandatory use of pingers on set-netting vessels of all sizes in high-risk areas
- Instruction of fishermen in proper use of pingers
- Implementation of accompanying measures to verify that pingers are used properly at sea;
- Implementation of independent observer schemes
- Simultaneous rapid development of medium and long-term approaches to mitigation
- Re-evaluation of pinger use after three years

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* legislators, competent ministries, fisheries authorities, scientists, fishermen

### **TIMELINE**

Duration: 3 years. Implementation to begin immediately

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

## **RECOMMENDATION 5: Analyse stock affinities of harbour porpoises in the “transition zone” of the south-western Baltic**

Cf. p. 20 above

### **OVERALL OBJECTIVE**

Reduction of scientific uncertainty surrounding harbour porpoise conservation in the Baltic

### **SPECIFIC OBJECTIVES**

Clarification, by means of genetic evidence, of stock relations between porpoises in the Danish straits, Kiel and Mecklenburg Bights on the one hand, and the Baltic proper on the other

### **RATIONALE**

A clear definition of population(s) is essential to determining their conservation status and developing necessary management measures

### **ACTION REQUIRED**

- Integrated analysis of available genetic and morphological evidence, taking account of new acoustic, tracking, and genetic data
- Broad initiative to obtain and analyse additional tissue samples from the Baltic proper
- Enhancement of efforts to locate stranded and bycaught animals and to obtain samples from these individuals

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States, ASCOBANS Secretariat

*Stakeholders:* scientists

### **TIMELINE**

Ongoing, to be continued

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

## **RECOMMENDATION 6: Develop and apply new techniques (e.g. acoustic monitoring) for assessing trends in abundance**

Cf. p. 20 above

### **OVERALL OBJECTIVE**

Reduction of scientific uncertainty surrounding harbour porpoise conservation in the Baltic

### **SPECIFIC OBJECTIVES**

Development of new approaches for assessing trends in abundance such as passive/static acoustic monitoring methods in order to obtain better estimates of and detect possible trends in harbour porpoise abundance

### **RATIONALE**

Due to low density of harbour porpoises in the Central Baltic, standard line transect sampling methods are unlikely to provide adequate statistical power to detect trends. This information is, however, relevant to developing appropriate management measures.

### **ACTION REQUIRED**

None specified

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* scientists

### **TIMELINE**

Ongoing, to be continued

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

Medium

## **RECOMMENDATION 7: Develop interactive pingers or pingers using frequencies not audible to seals**

Cf. p. 21 above

### **OVERALL OBJECTIVE**

Reduction of acoustic pollution caused by pingers, avoidance of possible habitat exclusion and habituation with respect to porpoises and facilitation of pinger use in areas where there is a seal-fisheries conflict.

### **SPECIFIC OBJECTIVES**

Development and marketing of functional interactive pingers

### **RATIONALE**

“Traditional” pingers, which continuously emit signals, contribute to marine acoustic pollution. Moreover, they may displace porpoises from important habitat and have a “dinner bell effect” on seals. These shortcomings can be alleviated or avoided by using interactive pingers.

### **ACTION REQUIRED**

Further investigation of efficiency and habituation or habitat exclusion effects of interactive pingers

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* scientists, pinger industry

### **TIMELINE**

Ongoing, to be continued

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

**RECOMMENDATION 8: Investigate possible detrimental effects of various types of sound and disturbance (including pinger signals, noise from vessels, wind parks, gravel extraction or constructions and seabed exploration for oil and gas) on harbour porpoises**

Cf. p. 21 above

**OVERALL OBJECTIVE**

Mitigating acoustic pollution

**SPECIFIC OBJECTIVES**

Obtaining high quality data on the acoustic capabilities of harbour porpoises and the effects of various types of anthropogenic sounds on this species

**RATIONALE**

Information on the potential and actual effects of underwater noise on harbour porpoises is still insufficient, but important to developing appropriate mitigation measures

**ACTION REQUIRED**

None specified for the Baltic Sea region

**ACTORS**

*Responsible for coordination:* ASCOBANS Parties, ASCOBANS Secretariat

*Stakeholders:* scientists, relevant industries

**TIMELINE**

Ongoing, to be continued

**EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

**PRIORITY**

Medium

## **RECOMMENDATION 9: Monitor bycatch of fisheries known to be harmful to harbour porpoises to be able to estimate bycatch levels**

Cf. p. 21 above

### **OVERALL OBJECTIVE**

Bycatch mitigation

### **SPECIFIC OBJECTIVES**

Obtaining reliable estimates of bycatch levels in key areas and fisheries

### **RATIONALE**

This information is essential to developing and implementing effective mitigation measures and to assessing the effectiveness of mitigation measures already being undertaken

### **ACTION REQUIRED**

None specified

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* competent ministries, fisheries authorities, international fishery bodies, fishermen, scientists

### **TIMELINE**

Implementation (insofar as not ongoing) to begin immediately

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

## **RECOMMENDATION 10: Further develop sustainable alternative fishing gear with no bycatch of harbour porpoises**

Cf. p. 21 above

### **OVERALL OBJECTIVE**

Bycatch mitigation

### **SPECIFIC OBJECTIVES**

Development of long lines and pots optimised for Baltic conditions

### **RATIONALE**

Long lines and pots can serve as possible alternatives to gillnets in the Baltic. Their setup and rigging can vary greatly and a number of factors determine the commercial viability of their use. Prior to their successful use in the Baltic, these gear types must therefore be adapted to the specific conditions in the region.

### **ACTION REQUIRED**

Trials to optimise the pot and line fishery for Baltic conditions and subsequent development of appropriate gear

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* competent ministries, fisheries authorities, fishermen, fishing gear industry

### **TIMELINE**

Implementation to begin immediately insofar as not ongoing

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

## **RECOMMENDATION 11: Compile data on fishing effort**

Cf. p. 22 above

### **OVERALL OBJECTIVE**

Bycatch mitigation

### **SPECIFIC OBJECTIVES**

Identification of high-risk areas for harbour porpoise bycatch in order to target effort reduction to such areas

### **RATIONALE**

Effort reductions are likely to provide the greatest benefit in terms of bycatch reduction if they are implemented in high risk areas

### **ACTION REQUIRED**

- Initial assessment to determine sources of relevant data and identify individuals or national focal points whose cooperation is needed and who can deliver the relevant data
- Establishment of a working group to evaluate available data and thereafter compile data on fishing effort

### **ACTORS**

*Responsible for coordination:* ASCOBANS Secretariat, Jastarnia Group

*Stakeholders:* Jastarnia Group, scientists, fisheries authorities

### **TIMELINE**

Implementation to begin immediately

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

Medium

## **RECOMMENDATION 12: Examine habitat preference of harbour porpoises**

Cf. p. 22 above

### **OVERALL OBJECTIVE**

Reduction of scientific uncertainty surrounding harbour porpoise conservation in the Baltic

### **SPECIFIC OBJECTIVES**

Prediction of suitable habitats for harbour porpoises in the Baltic proper and verification of findings by acoustic monitoring

### **RATIONALE**

Knowledge about habitat preference of harbour porpoises is currently scarce due to lack of data. Among other things, this knowledge is highly relevant as it could contribute to identifying high risk areas.

### **ACTION REQUIRED**

- Development of a spatial model of preferred habitats in waters adjacent to the Baltic Sea and extend this model into the Baltic Sea
- Verification of the presence of porpoises in areas concerned by year-round static acoustic monitoring
- Comparing of findings with fishing effort data for the Baltic to identify high risk areas

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States, ASCOBANS Secretariat

*Stakeholders:* Scientists

### **TIMELINE**

Implementation to begin as soon as possible

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

Medium

## **RECOMMENDATION 13: Examine prevalence of derelict (“ghost”) gear and the feasibility of its removal**

Cf. p. 22 above

### **OVERALL OBJECTIVE**

Bycatch mitigation

### **SPECIFIC OBJECTIVES**

Reduction of fishing effort and hence of potential harbour porpoise bycatch by clearance of “ghost nets”

### **RATIONALE**

“Ghost nets” contribute to effective fishing effort in the Baltic. Their clearance would constitute a reduction in fishing effort that would not affect fishing yield

### **ACTION REQUIRED**

None specified

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States

*Stakeholders:* fisheries authorities, fishermen, possibly NGOs

### **TIMELINE**

Implementation to begin immediately insofar as not ongoing

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

**RECOMMENDATION 14: Expand the network of protected areas in the Baltic Sea and improve its connectivity and ensure the development of appropriate harbour porpoise management plans for these areas**

Cf. p. 23 above

**OVERALL OBJECTIVE**

Habitat conservation

**SPECIFIC OBJECTIVES**

Establishment of a network of protected areas that will provide benefits for harbour porpoises

**RATIONALE**

Existing and proposed protected areas are generally considered either too small or inappropriately designed to provide significant benefits to harbour porpoises. These shortcomings could be alleviated by creating an expanded network of connected protected areas endowed with management plans to improve the status of harbour porpoises and/or their critical resources.

**ACTION REQUIRED**

Identification and designation of suitable, additional protected areas

**ACTORS**

*Responsible for coordination:* Baltic Parties/Range States, Secretariat

*Stakeholders:* Baltic Parties/Range States, EU, HELCOM, Bern Convention

**TIMELINE**

Ongoing and to be continued

**EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

**PRIORITY**

Medium

## **RECOMMENDATION 15: Develop a comprehensive public awareness campaign**

Cf. p. 23 above

### **OVERALL OBJECTIVE**

### **SPECIFIC OBJECTIVES**

Enhance awareness among the general public and persons with jobs related to the sea, in particular fishermen, of the threats faced by Baltic harbour porpoises, the need to take action to conserve the species and the options for action.

### **RATIONALE**

Public awareness plays an essential part in supporting any recovery plan

### **ACTION REQUIRED**

- Further development and promotion of a regional approach to Baltic harbour porpoise conservation
- Enlisting of the support of the general public and people related to the sea in obtaining reports of porpoise observations
- Establishment of direct communication links with Baltic fishermen and seeking their assistance in determining how to reach fishing communities more effectively
- Establishment of national focal points for public awareness activities within the Baltic Parties/Range States
- Provision of assistance to maintain an interactive Baltic harbour porpoise website

### **ACTORS**

*Responsible for coordination:* Baltic Parties/Range States, ASCOBANS Secretariat

*Stakeholders:* National ministries, nature conservation and fisheries authorities, ASCOBANS Secretariat, NGOs, Fisheries organisations, scientific institutions, media

### **TIMELINE**

Ongoing and to be continued

### **EVALUATION OF IMPLEMENTATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High

## **RECOMMENDATION 16: Strive for close consultation and cooperation between ASCOBANS and other relevant regional and international bodies**

Cf. p. 25 above

### **OVERALL OBJECTIVE**

Leveraging of synergies between competent international organisations, avoidance of duplication of effort

### **SPECIFIC OBJECTIVES**

Regular consultations between ASCOBANS Secretariat and Secretariats of other relevant organisations, mutual representation at meetings, continuous exchange of information

### **RATIONALE**

Cooperation between ASCOBANS and other relevant regional and international players can contribute to achieving synergies, avoiding duplication of effort and promote more efficient and results-oriented use of available resources.

### **ACTION REQUIRED**

- Sending of revised Recovery Plan and explanatory note to relevant bodies
- Cf. specific objectives above

### **ACTORS**

*Responsible for coordination:* ASCOBANS Secretariat

*Stakeholders:* ASCOBANS Secretariat and other Agreement bodies, EU Commission, Secretariats and other bodies of relevant organisations

### **TIMELINE**

Ongoing, to be continued

### **EVALUATION OF RECOMMENDATION**

- Jastarnia Group
- Advisory Committee

### **PRIORITY**

High