TOWARDS DEVELOPMENT OF CONSERVATION OBJECTIVES FOR ASCOBANS

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INTRODUCTION

The ASCOBANS Agreement has been established by Nations concerned for the conservation status of small cetaceans in the Baltic and North Seas. The general aim of the Agreement is to 'achieve and maintain a favourable conservation status for small cetaceans in the Agreement area'. To achieve such a broad aim it is essential that this aim is translated into clear, well-defined conservation objectives from which to develop a programme to try to meet these objectives and to be able to monitor progress towards this.

The importance of defining conservation objectives if ASCOBANS is to be effective cannot be over-emphasised. It is essential that such objectives are rapidly agreed because without them it is extremely difficult, if not impossible, to develop a logical and achievable Workplan and research priorities for the next triennium, both in terms of priorities and in reviewing success or otherwise. This discussion document provides an approach to this by suggesting several options for conservation objectives and elaborating on the consequences of adopting them.

POSSIBLE OBJECTIVES

In order to structure the objectives and be able to assign a certain priority to them it is proposed to define a main conservation objective and derive sub-objectives from this.

After defining the objectives and sub-objectives, the next stage is of course to develop a list of actions to be taken that will lead to the objectives being met. It must be recognised that there are a number of species and populations in the ASCOBANS area. These may be exposed to different threats or levels of threats and be at different relative and absolute levels of abundance. In addition, our knowledge and understanding of these factors also varies considerably by species and area. It is therefore important that any Workplan is developed on a species and population or area basis.

The present general 'aim' of ASCOBANS already leads us into difficulties of definition. For example, how does one determine 'favourable conservation status'? It might be taken to mean that all species in all areas are simply 'not in immediate danger of extinction' or it might be taken to mean that all species in all areas are at levels similar to those before man influenced their environment. It might mean refer to an individual species as a whole or it might refer to each sub-unit throughout the full distribution range. Any more precise conservation objectives therefore must take into account what is meant by 'favourable status' and what is the biological unit to be conserved?

1. Alternative main objectives

A main objective of ASCOBANS could be formulated as follows:

1. *Restore and/or maintain biological or management stocks of small cetaceans to a carrying capacity with the lowest anthropogenic influence possible.*

This clearly requires further specification. The first is, at what level of the stock/population is restoration and/or maintenance considered satisfactory. Several options can be proposed, given the criterion of lowest anthropogenic influence possible.

For example,

1.1 Enable stocks/populations to recover to the carrying capacity of their ecosystem under pristine conditions.

In practise this would mean the elimination of not only all human activities directly interfering with small cetaceans, but also those that influence them indirectly, via their habitat (e.g. changes in prey availability; pollution; global environmental changes; and physical habitat degradation. Even if it was possible to eliminate all human activities in the ASCOBANS area, there are many regional/global influences that dominate the functioning of the ecosystem. Furthermore, it is highly unlikely that the system will return to its pristine conditions on any reasonable time frame, if at all.

An extreme approach in the opposite direction would be to accept that that human influences have occurred, are occurring and will increase in the future, both in intensity as well as in diversity. Under such circumstances the minimum criterion that would be at all compatible with ASCOBANS' general aim would be:

1.2 Ensure that stocks/populations do not become extinct.

However, such an option would be difficult to defend for any serious conservation body.

However, within the range of the last two options, there are a number of conceivable alternatives, including:

1.3 Maintain a cetacean population at a level assumed to lie between 50-70% of carrying capacity.

When developing their Revised Management Procedure, the IWC adopted an approach that would lead to stocks being restored to and maintained at a target level of some 72% of carrying capacity. The rationale behind this is that the population is kept at or near to the level giving the greatest yield. However, ASCOBANS' is not a resource management body and thus the concept of net productivity is not especially relevant here. In the USA, as a result of their national legislation, an approach (termed the PBR or Potential Biological Removals approach) had been developed which has as its aim the recovery of populations to at least 60% of their carrying capacity after 100 years.

Given that ASCOBANS accepts a precautionary approach, a suitable objective could be to

1.4 Ensure that stocks/populations are restored to and/or maintained at, at least 80% of carrying capacity.

As noted above, any objective must try to specify the biological unit to be conserved. The question of stock identity is a persistent problem in cetacean studies (e.g. Donovan, 1991). While ideally one would like to manage true biological stocks, in practice one may need to define 'management' stocks, which can be thought of as units that may be 'successfully' managed. In practice, it is important that any proposed management action examines the consequences of mistaken assumptions of stock identity.

2. Sub-objectives and Action

A number of factors affect the conservation status of small cetaceans and hence the likelihood of achieving the primary objective. These can be grouped as: (1) chemical pollution, (2) bycatch and (3) other environmental factors (e.g. disturbance, noise, oil pollution, food depletion).

1. Pollution.

The IWC Scientific Committee had agreed that there are sufficient data on the adverse effects of pollutants on the health of other marine mammal and terrestrial species to warrant concern for cetaceans. However, it noted that a considerable amount of fundamental research is needed before it will be possible to adequately address the question of the effects of chemical pollutants on all cetaceans. From the ASCOBANS perspective, it can be assumed that the present levels of contamination in sediment, water and biota in the Agreement Area, have an influence on the performance of the individual cetaceans in that area, although it is not yet clear whether this is of significance to the individual or to the stock/population, either directly or indirectly.

From a precautionary point of view it is defendable to define a sub-objective as:

P1 To strive for a significant reduction of pollutant discharge in the Agreement Area

This can be furthered by

(a) participation in organisations such as OSPARCOM/HELCOM and actively encouraging member states to further the objectives of these organisations, leading to reduction of pollutants in the environment and the mitigation of environmental problems caused.

At the scientific level an appropriate sub-objective would be :

P.2 To determine the significance of chemical pollutants on small cetaceans at the individual and population level

This can be furthered by

(a) endorsing strongly the Research Proposal (Aguilar *et al.* 1997) initiated by IWC on the establishment of cause-effect relationships between cetacean health and chemical pollutants;

(b) actively seeking ways to facilitate the execution of that research by
- directly providing funds,
- encouraging external funding,
- becoming active in the implementation of particularly the harbour porpoise part of the programme, for example by supplying samples from bycaught animals.

Co-operation with the IWC and others on this Research Proposal should be accorded high priority. The proposal may ultimately enable determination of a predictive model linking tissue pollutant levels with effects at the population level, information that is essential for ASCOBANS. Firstly, because it will enable the acquirement of instruments to monitor the performance of stocks with respect to pollution (hence addressing the primary objective), and secondly it will enable development of a pro-active policy towards future effects of pollutants on hitherto unknown or unaffected small cetaceans.

2. Bycatch.

Bycatches have been identified as one of the most serious threats to cetaceans today. A number of possible sub-objectives can be identified. It should be recognised that there is a potential conflict here between for example, the interests of the fishing industry and a pure animal welfare perspective. One factor here that becomes important is the question of time and objectives. If we look at the primary objective (1) it states 'Restore'...to a carrying capacity....' What it does not refer to is the timescale for any such restoration. If one wishes a depleted population to reach that level as quickly as possible then clearly the bycatch level should be immediately set to zero. The only way that this may be possible is to ban a fishery. If however, one is prepared to allow a longer time to restoration then it may be considered acceptable to allow some bycatch, provided that the population is moving towards the agreed 'target' level.

Because populations will be at different stages of depletion, it may be possible to establish different sub-objectives depending on the depletion level and our level of knowledge of the bycatch and relative abundance levels.

Irrespective of how the sub-objective is achieved, agreement can probably be reached on a general sub-objective to:

B.1 minimise bycatch numbers

This might be further specified depending on circumstances e.g. as follows:

B.1.1 Reduce bycatch to zero immediately

This would be necessary if the available information suggested that the stock was believed to be in danger of extinction.

In the absence of clear data on stock identity and migration, and irrespective of the chosen conservation objective, a minimal sub-objective to strive for should be at least to:

B.1.2 Ensure that bycatch rates do not exceed 2% of the estimated abundance.

This is crudely based on the expected maximum rates of increase of at least harbour porpoises (*ca 4%)*, halved to be conservative. This can not be a long-term sub-objective since it does not take into account, *inter alia,* the relative depletion of the population at the time the abundance estimate and the bycatch estimates are obtained, uncertainty about stock identity and uncertainty in the estimates of bycatch and abundance. It could be seen as a short-term measure to try to ensure that at the population is probably not decreasing under the existing bycatch levels.

A LONGER-TERM APPROACH

It is not appropriate to discuss the management options for bycatch in detail here. This is done more fully in Donovan (1996Ms) and Bravington *et al.* (1997a). However some general principles must be stressed.

Although managing bycatch is not the same as managing a resource, a wise policy will have certain things in common with modern resource management (e.g. the IWC's RMP). In particular,

(a) it must take into account uncertainty in all the necessary data (e.g. bycatch estimates; abundance estimates; stock identity; population dynamics; carrying capacity; 'catastrophes');
(b) it must be able to monitor whether the specified management objectives are being met;
(c) it must encourage the collection of necessary data.

The use of simulation models in addressing these problems is extremely important. This approach was pioneered in the development of the RMP and is now being used in conservation fora. Examples of this relevant to ASCOBANS include the US PBR approach (e.g.Wade, 1996) and an approach being developed by Bravington *et al.* 1997a specifically for the North Sea harbour porpoise.

At the scientific level the following sub-objective can be defined:

B.2 Develop approaches that take into account uncertainty in biological knowledge and allow the agreed management objectives to be met with a specified level of certainty

This can be furthered by:

(a) further the development of the Bravington *et al.* simulation model which is an approach to assess the status of stocks/populations by providing resources and inviting experts on both modelling and relevant biological information needed, working in other bodies such as the IWC-Scientific Committee;
(b) recognising the important link between management objectives and data needs, look at the existing ASCOBANS area and identify priority research needs.

ACTION

In the short term the two sub-objectives *B.1.1* and *B.1.2* plus the research objective *B2* could form the basis for action in the ASCOBANS area. Based on the report of Bravington *et al.* (1997a) and recognising that the management stocks they identify will need to be further evaluated and the implications of alternative boundaries investigated, the following summary may be applicable:

(1) THE CENTRAL AND SOUTHERN NORTH SEA

The annual bycatch of 4,450 animals in this area by just one fishery-type (bottom-set nets) has been estimated to be at least 2.5% and is therefore considered unacceptable under *B.1.2* above. In this context the following action at least is necessary:

- the annual bycatch has to be reduced by at least 1000 animals.

(2) THE NORTHERN NORTH SEA

Only few data on bycatch are available for this area and stock identity is not yet clear. Given the existence of substantial set-net fisheries inside this ASCOBANS area (and north and west thereof) the following action at least is necessary:

- monitor set-net fisheries in the northern North Sea and adjacent waters.

(3) SKAGERRAK/KATTEGAT/BELT SEAS

There are no estimates of total bycatch for this region, however, estimates indicate that bycatch in the whole region is potentially unacceptable. The following action at least is necessary:

- obtain reliable estimates total bycatch using reliable estimate effort in the various fisheries.

(4) BALTIC
The species here is assumed to be in a continuous long term decline. Estimates of abundance are complicated because of the very low density levels and estimates of total bycatch are largely lacking. In such circumstances it is important to examine research options in the light of management objectives. This has been done in the contract study of Clarke *et al. (1997)*, presented to the meeting. The following action at least is necessary:

- follow up the conclusions and recommendations of the contract study.

(5) CHANNEL AREA
Few animals are found in this area, it is therefore difficult to obtain estimates of total abundance. Furthermore, no information on bycatch is available or likely to become so. Information on past or present status is lacking and little is known of the relationship of animals found here and in the adjacent Celtic Shelf. The following action would be of interest:

- identify the stock/population structure in the Channel and in the areas west of this ASCOBANS area.

3. Other environmental factors.
Information on the significance of this type of potential threat to small cetaceans is scarce. Only in some specific cases e.g. disturbance in calving areas for harbour porpoises, might specific measures be recommended. Given the seriousness of threats of bycatch and to a lesser extent pollution, it is considered that mitigating those threats should be assigned higher priority. A general scientific sub-objective might be to:

2. *Identify specific cases where imminent threats might occur and, if required, design tailored conservation measures to remedy or prevent the impact.*

IMPLEMENTATION OBSTACLES

The implementation of conservation measures require legislative international and national actions. With respect to pollution, it is clear that this can not be achieved alone by the nations party to ASCOBANS. Participation in international fora addressing pollution problems as well as enabling research to identify indicators to monitor impact of pollution on cetaceans is a logic and achievable goal.

Implementation of objectives to minimise bycatch is more complicated. Minimising bycatch can be achieved through changes in fishing practices and/or modified gear, switching to other types of fisheries less liable to cause bycatch and reducing fishing efforts. It is evident that these measures incorporate socio-economic consequences. Practice in other areas and fisheries has shown that the implementation of these measures is strongly obstructed if the legislative actions are not accompanied by a continuous and constructive dialogue between fishing communities, scientists and authorities to find solutions. Such a dialogue should be aimed at recognising that there is a problem, and that solutions thereof have to come from expertise in the fishing as well as scientific community. Seeking for this combined effort is considered of importance. Sub-objective to promote development in this field could be to

IO.1 Promote ongoing activities investigating changes in fishing gear and/or gear modifications and implementation thereof,

IO.2 Promote the integration of measures reducing bycatch into fisheries policies on international (EU, ASCOBANS Agreement Area and Range States), national and local level.

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