Agenda Item 4.2

Priorities in the Implementation of the Triennium Work Plan (2010-2012)
Review of New Information on Bycatch

Document 4-06

Report of the Bycatch Working Group

Action Requested

- Take note
- Comment

Submitted by

Bycatch Working Group

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

Report to ASCOBANS AC19 from intersessional bycatch working group

Compiled by Russell Leaper, International Fund for Animal Welfare, r.c.leaper@abdn.ac.uk
8th March 2012

The group was given the following tasks at AC18

1. *To report on, and assist in, projects related to bycatch in which fishermen, gear technologists and cetacean scientists cooperate.*

   Information about co-operative projects in Portugal is given under item 5.

2. *To assess the best approaches to address the bycatch problem within fisheries fora.*

   The group did not address the issue of best approaches within fisheries fora.

3. *To identify relevant fisheries fora meetings where an ASCOBANS representation would be useful, and promote input as appropriate.*

   No specific fisheries fora were identified but the ICES Working Group on Bycatch of Protected Species covered much of the material relevant to this report with respect to the requirements of EC Regulation 812/2004, coordination of bycatch monitoring and bycatch mitigation trials. OSPAR also discussed bycatch reference levels and targets in relation to the EU Marine Strategy Framework Directive and Good Environment Status. There is still scope for more direct discussion between scientists working on bycatch and fisheries organisations that could be further explored.

4. *To develop active ASCOBANS involvement at relevant RAC and other meetings, and report back from such meetings.*

   The coordinator for the ASCOBANS Conservation Plan for harbour porpoise in the North Sea attended the RAC meeting and has reported on this.

5. *To report on national initiatives concerning bycatch mitigation, alternative gear experiments, improvement of bycatch monitoring, etc.*

5.1 Bycatch monitoring and mitigation trials in Portugal

The SAFESEA project, conducted by the Portuguese Wildlife Society and University of Minho ran from June 2008 to June 2011. The aims were (i) evaluating cetacean populations in the Portuguese coast, (ii) estimating cetacean incidental captures in different fishing gears in collaboration with fishermen and (iii) the pilot or trial implementation of nets/devices to reduce interactions between cetaceans and fishing gears (Marçalo et al., 2011). This project was followed by the 5 year Life+ MarPro project.

Bycatch mitigation in Portugal is focussed on the use of pingers (two models: the commercial Fumunda F10 (10kHz) and the F70 70kHz). These devices are being trialled in the polyvalent fisheries (mainly in trammel nets), in purse-seine fisheries and in beach-purse-seine fisheries. These trials will be expanded to include further vessels in 2011 and 2013 with 500 F10 and 500 F70 pingers available. Fishermen are voluntarily using pingers and participating in the

trials. Acoustic enhanced Barium gillnets and trammel nets are also being tested together with pingers. Initial trials suggest that both the F10 and F70 appear to work well in terms of reducing common dolphin bycatch (Vingada et al., 2011).

5.2 Conservation plan for Harbour Porpoise in The Netherlands

A conservation plan for harbour porpoise in the Netherlands was produced in 2011(Camphuysen and Siemensma, 2011).

6. *To report results of scientific studies on bycatch.*

6.1 Harbour porpoise bycatch estimates for Norway

Bjorge et al. (2011) report estimates of bycatch in Norwegian waters between 2006 and 2008 based on detailed data on effort, catch and bycatch provided by selected contracted fishers. Models used to extrapolate to the whole fleet predicted a total harbour porpoise bycatch of around 21,000 for the three year period. The models predicted annual bycatches of 6,900 harbour porpoises in the anglerfish and cod fisheries. The authors noted that the true bycatch is likely to be greater than this when other small-scale gillnet fisheries are considered, including fisheries for lumpsucker, leisure fisheries, and fisheries for mackerel in the North Sea. They note the need for reducing the incidental take for both conservation and animal welfare reasons.

This Norwegian study appears to have been successful in monitoring bycatch in commercial vessels of less than 15m length without the need to take independent observers on board. Contracted fishermen were paid for providing detailed data on effort and catch of all species including marine mammals and birds.

This study was discussed by the IWC Scientific Committee in 2011 which noted that the approach was a useful alternative for estimating bycatch when vessels are too small to carry observers. The Committee recommended that this monitoring effort continue and that efforts be made to use contracted vessels in combination with placement of observers on the larger of the small vessels in order to further improve the data and reduce the CV of the estimates. The Committee also noted with concern that there are no abundance estimates for the complex Norwegian coastal and fjord waters, and recommended that at least the areas with the highest estimated bycatch be monitored to provide abundance estimates (IWC, 2011).

7. *To summarize the results of initiatives at, or meetings of other fora such as OSPAR, EC, ICES and HELCOM.*

7.1 Bycatch reference indicators and targets within the MSFD

Under the MSFD, EU member states will be considering indicators for Good Environment Status with respect to bycatch. This is likely to be a reference level below which bycatch is considered to be safe in terms of meeting specified conservation objectives. There has been considerable research since the IWC/ASCOBANS working group suggested annual bycatch mortality should be below 1.7% of the best population estimate in order to achieve an interim conservation objective of maintaining the population at 80% of carrying capacity for harbour porpoise (IWC, 2000). In particular, a component of the SCANSII project was to develop methods to determine appropriate limits to bycatch of small cetaceans in the European Atlantic and North Sea (Winship et al, 2006). The IWC/ASCOBANS working group had recommended a management procedure approach using simulation studies to develop algorithms for setting limits to achieve management objectives. Such simulations have been

used extensively in the development of Potential Biological Removal (PBR) and the IWC's Revised Management Procedure (RMP). These procedures explicitly account for uncertainty (Cooke et al., 2012).

An upper annual mortality limit of 1.7% of the best population estimate has been agreed in the past by Ministers under the North Sea conference process. More recently the European Commission has agreed that if more than 1.7% of the best estimate of population abundance was likely to be currently impacted by fisheries then bycatch mitigation measures should be considered (ICES, 2011c).

Winship et al (2006) considered two procedures, one based on PBR which used a single, current estimate of absolute population size as input and one based on the RMP that used a time-series of estimates of absolute population size and estimates of absolute bycatch as input. Both procedures were tuned to three different potential conservation objectives

(i) Median population at 80% of carrying capacity after 200 years
(ii) A 95% probability that the population would be at or above 80% of carrying capacity after 200 years
(iii) Worst case scenario with biased input data and a 95% probability that the population would be at or above 80% of carrying capacity after 200 years

Based on analysis of data on harbour porpoise in the North Sea, Winship et al. (2006) suggested that despite being more complex, the advantages conferred by the RMP based procedure were sufficient for it to be considered as the best option. They also recommended that management objectives should be precisely specified and that the judgement of which tuning to use could be based on an assessment of the available information.

As an example of implementing some of these ideas, Williams et al (2008) attempted to tune the PBR procedure to maintain a harbour porpoise population at 80% of K with 95% confidence. Based on a set of survey estimates for areas off the west coast of Canada (with CVs ranging from 0.31 to 0.62) this tuning gave bycatch limits of 0.52% to 0.62% of the population estimates.

HELCOM has developed common principles for core indicators and their quantitative targets which include that 'A target level should be based on best available scientific knowledge' (HELCOM, 2012). The use of best available science is a common theme and it seems difficult to justify a simple percentage of population level for a bycatch reference indicator and the 1% or 1.7% of best population estimate currently used (e.g. OSPAR, 2011), may be too high in many situations. If individual member states are developing indicators for their waters then consideration needs to be given to how these relate to biological populations. There has been considerable work during the development of the RMP on the use of Small Areas. This work could help inform national approaches to setting indicators that would still achieve overall conservation objectives for biological populations. Hence there seems to be a strong case to recommend the RMP type approach proposed by Winship et al. (2006) for setting reference levels for bycatch indicators within the MSFD.

Other approaches are being considered within ICES, taking into account the difficulties in obtaining fisheries effort data which may not allow a full implementation of the approach suggested by Winship et al. (2006).

There is still a need to specify conservation objectives such that procedures can be tuned to meet these objectives.

7.2 Implementation and reporting under EU Council Regulation 812/2004
Northridge (2011) reviewed European member states' obligations with respect to the monitoring and mitigation of cetacean bycatch and summarised information from member states on the extent to which required mitigation measures are being implemented and enforced. This review was largely based on ICES (2011a) which examined reports from 15 member states indicate extrapolated estimates of bycatch for 2009 of about 879 striped dolphins, about 1500 common dolphins, about 1100 harbour porpoises and at least ten bottlenose dolphins in a variety of fisheries. These estimates were still very patchy, and several member states had not fulfilled their monitoring obligations. Bycatch monitoring was judged to be less than optimally directed in many cases. Implementation of bycatch mitigation measures were also found to be patchy, with few countries able to provide unequivocal confirmation that the obligations under regulation 812/2004 for pinger deployment were being met.

8. *To prepare an overview of problem areas (geographical and fishery type) and the status of knowledge of the problem, monitoring and mitigation in place to identify gaps.*

7.3 ICES Advice
ICES (2011b) identified areas and fisheries where bycatch is of particular concern and suggested where mitigation is needed. Table 1.5.1.4.1 of the advice from ICES in May 2011 updated this information and classified species and areas of concern into three categories; recommend immediate mitigation measures, enhanced short- and medium-term observation to decide appropriate action and no action required at present beyond background observation. Immediate mitigation measures were recommended for the harbour porpoise in the Baltic, Kattegat/Belt Seas, and around the Iberian Peninsula (ICES, 2011c).

7.4 IWC Scientific Committee
At its annual meeting in 2011 the IWC Scientific Committee noted that ASCOBANS is striving to address serious harbour porpoise bycatch problems in the Baltic, Kattegat/Belt and North Sea areas through its two conservation plans and its bycatch Working Group. The Committee encouraged further action on these issues including developing practical liaisons with stakeholders, particularly fishermen , noting especially the critically endangered status of the porpoise population in the Baltic proper, and recommended greater exchange of information and collaborations among researchers all over the Baltic. The Committee also re-endorsed the Jastarnia plan and encouraged all the relevant nations to give their full support to the implementation of the Jastarnia plan.

References
Bjørge, A., Godøy, H. and Skern-Mauritzen, M. 2011. Estimated bycatch of harbour porpoise *Phocoena phocoena* in two coastal gillnet fisheries in Norway. Paper SC/63/SM18 presented to IWC Scientific Committee, Tromso, Norway, May 2011. http://www.iwcoffice.org/_documents/sci_com/SC63docs/sc63docs.htm

Camphuysen C.J. & M.L. Siemensma (2011). Conservation plan for the Harbour Porpoise Phocoena phocoena in TheNetherlands: towards a favourable conservation status. NIOZ Report 2011-07, Royal Netherlands Institute for Sea Research,Texel.

http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2011/11/23/bruinvisbeschermingsplan-conservation-plan-for-the-harbour-porpoise-phocoena-phocoena-in-the-netherlands-towards-a-favourable-conservation-status.html

Cooke, J.G., Leaper, R., Wade, P., Lavigne, D., and Taylor, B. 2012. Management rules for marine mammal populations: a response to Lonergan. Marine Policy 36:389-392

Fernandez-Contreras, M. M., Cardona, L., Lockyer, C.H., and Aguilar, A. 2010. Incidental bycatch of short-beaked common dolphins (*Delphinus delphis*) by pair trawlers off northwestern Spain. ICES Journal of Marine Science, 67: 1732–1738

HELCOM, 2012. Development of a set of core indicators: Interim report of the HELCOM CORESET project. PART A. Description of the selection process. Balt. Sea Environ. Proc. No. XXX A

ICES. 2011a. Report of the Working Group on Bycatch of Protected Species (WGBYC 2011), 1–4 February 2011, Copenhagen, Denmark. ICES CM 2011/ACOM:26. 75 pp.

ICES. 2011b. Report of the Workshop to Evaluate Aspects of EC Regulation 812/2004 (WKREV812). ICES Advisory Committee.

ICES 2011c. New information regarding the impact of fisheries on other components of the ecosystem, including small cetaceans and other marine mammals, seabirds, and habitats. Advice May 2011.
http://www.ices.dk/committe/acom/comwork/report/2011/Special%20Requests/EC%20New%20information%20regarding%20impact%20of%20fisheries.pdf

International Whaling Commission. 2000. Report of the IWC-ASCOBANS Working Groupon harbour porpoises. *J. Cet. Res. Manage. (Suppl.)* 2:297-305.

International Whaling Commission. 2011. Report of the Scientific Committee. IWC/63/Rep1 p.52

Kindt-Larsen, L. and Dalskov, J. 2010. Pilot study of marine mammal bycatch by use of an Electronic Monitoring System.DTU Aqua 6pp. National Institute of Aquatic Resources, Technical University of Denmark, Charlottenlund

Marçalo, A., Ferreira, M., Monteiro, S., Oliveira, I., Santos, J., Araújo, H., Goetz, S., Read, F., Eira, C.,Vaqueiro, J., Nicolau, L., Miodonski, J., Henriques, A., Landeck, P., Gomes, P. & Vingada, J. 2010. Cetacean interactions with fisheries in mainland Portugal: Overview and preliminary results. SafeSeareport to ICES-ICES-SGBYWG /WKRE V812. 28 pp.

Northridge, S. 2011. An overview of the state of bycatch monitoring and mitigation measures being implemented in European fisheries. Paper SC/63/SM21 presented to IWC Scientific Committee, Tromso, Norway, May 2011.
http://www.iwcoffice.org/_documents/sci_com/SC63docs/sc63docs.htm

OSPAR, 2011. Report of the OSPAR/MSFD workshop on approaches to determining GES for biodiversity. Appendix B. Marine Mammals and Reptiles.

http://www.ospar.org/documents/dbase/publications/p00553_GES4BIO_workshop%20report_final.pdf

Proelss, A., Krivickaite, M, Gilles, A., Herr, H. and Siebert, U. 2010. Protection of Cetaceans in European waters – A case study on bottom-set gillnet fisheries within Marine Protected areas. *Int. J. of Marine and Coastal Law* 26: 5-45.

Tilander, D. and Lunneryd, S.G. 2010. Pilot Studies of Electronic Monitoring (EM) system for fisheries control of smaller vessels. Paper presented to the Third meeting of ICES Study Group for Bycatch of Protected Species, Copenhagen, February 1–4, 2010.

Vingada, J., Marçalo, A., Ferreira, M., Eira, C. 2011. Portugal. Annual report on the implementation of Council Regulation (EC) No 812/2004 - 2010.

Williams, R., Hall, A. and Winship, A.J. 2008. Potential limits to anthropogenic mortality of small cetaceans in coastal waters of British Columbia. *Canadian Journal of Fisheries and Aquatic Sciences* 65: 1867-1878.

Winship, A., Berggren, P., Hammond, P. 2006. Management framework to assess the impact of bycatch and recommend safe bycatch limits for harbour porpoise and other small cetaceans. Appendix D1.1 of Small Cetaceans in the European Atlantic and North Sea (SCANS-II), Final Report. http://biology.st-and.ac.uk/scans2/documents/final/SCANS-II_final_report.pdf

Group Members:

Russell Leaper (Chair), Alison Wood (WDCS), Barry Baker (CMS Appointed Councillor for Bycatch), Stefan Bräger, Christian Pusch (Germany), Eunice Pinn (UK), James Turner (Fumunda), Jan Haelters (Belgium), Jari Raitaniemi (Finland), Justyna Szumlicz (Poland), Karl-Hermann Kock (Germany), Laetitia Nunny, Luke Warwick (UK), Marije Siemensma (EUCC), Monika Römerscheidt (Germany), Peter Evans (Sea Watch), Petra Deimer-Schütte (Germany), Stefanie Werner (Germany), Sven Koschinksi, Yanis Souami (France)