

Annex J

Report of the Working Group on Estimation of Bycatch and Other Human-Induced Mortality

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1. CONVENOR'S OPENING REMARKS AND TERMS OF REFERENCE

Perrin welcomed the participants. The Terms of Reference for the Working Group continue to relate to issues of estimating human-induced mortality of great whales other than directed take so that such mortality can be subtracted from any catch limits that might be calculated using the RMP.

2. ELECTION OF CHAIR

Perrin was elected Chair.

3. ADOPTION OF AGENDA

The adopted Agenda is given as Appendix 1.

4. APPOINTMENT OF RAPORTEURS

Leaper, Mattila and Weinrich agreed to act as rapporteurs.

5. AVAILABLE DOCUMENTS

The following distributed documents were relevant to the Working Group: SC/62/BC2, BC4-8; SC/62/NPM4, NPM26; SC/62/SH6, SH20; Report of the Workshop on Welfare Issues Associated with the Entanglement of Large Whales; Bernaldo de Quirós *et al.* (2010); and the national Progress Reports.

6. COLLABORATION WITH FAO ON COLLATION OF RELEVANT FISHERIES DATA

There has been an ongoing effort by the Secretariat and the Sea Mammal Research Unit (University of St Andrews, UK) to consolidate data on entanglements submitted in annual Progress Reports into a single database. The Secretariat has been working on the most recent years' data, while SMRU has been working on data from 1980. No report was available from SMRU but data for the period 2004-09 have now been entered by the Secretariat.

7. PROGRESS ON JOINING THE FISHERIES RESOURCE MANAGEMENT SYSTEM (FIRMS)

The IWC is currently an observer to the FIRMS partnership (Fisheries Resources Management System), a collaborative partnership organised by the FAO which enables fishery management bodies to share information. Part of the FIRMS partnership work involves the elaboration of an inventory of

fisheries, including gear characteristics and some indicators of fishing effort. Full partnership awaits the compilations of the entanglement data held by the IWC and the development of a coherent database. Details of data structure and data access are required as part of the FIRMS partnership agreement. It had not been possible to develop the IWC database fully during the intersessional period and hence full partnership with FIRMS had not been pursued.

8. PROGRESS ON INCLUDING INFORMATION IN NATIONAL PROGRESS REPORTS

Entanglements and ship strikes reported in the national Progress Reports are summarised in Appendix 2.

Last year the Committee had considered a proposal to develop a mechanism for online submission of the information on bycatch and entanglements currently submitted in national Progress Reports. No new information was available on progress in this direction.

9. ESTIMATES OF BYCATCH MORTALITY OF LARGE WHALES

9.1 Report of intersessional Workshop

The Report of the intersessional Workshop on Welfare Issues Associated with the Entanglement of Large Whales contained information that was of potential use to the Working Group. The Workshop brought together veterinarians and scientists working on the scope and impact of large whale entanglements, as well as the directors of disentanglement response programmes from most countries which currently have established programmes (e.g. Australia, Canada, South Africa and the USA). The Workshop reviewed current knowledge about and responses to these events, in order to advise member countries about potential actions, decisions and outcomes and their biological and welfare implications.

The Workshop began with an overview of recent information about the scope (e.g. species, gear type, hot spots, and impacts) of large whale entanglement. Much of the overview was a review of information previously brought to the Working Group; however, it was supplemented with new information from parts of Canada (Newfoundland, Labrador), South Africa, Mexico and the USA. Based on review and synthesis of this accumulated information, the Workshop made several conclusions of interest to the Working Group, as follows.

- All species of large whales are at risk of entanglement to varying degree, but minke, humpback, right (both North Atlantic and southern) and gray whales are the most frequently reported.
- All types of stationary or drifting gear (i.e. not actively towed) pose potential risk to entangle, but pound, set and fyke-type nets, along with gillnets and various pot-type gear, are most frequently implicated.
- Entanglements can occur wherever this type of gear and large whales overlap in distribution, and this is not

limited to feeding grounds but also includes breeding grounds as well as migratory pathways.

- Given the cryptic nature of large whale entanglements in combination with the paucity of experienced observers and lack of formal reporting networks, entangled whales are severely underreported globally.
- Regional shifts in fisheries and gear types can produce major differences in the character of entanglements and reporting frequency (e.g. coastal versus offshore gear placement).

Based on these conclusions, the Workshop made the following relevant recommendations:

- that coastal nations establish adequate programmes for monitoring entanglement of whales; and
- that member countries improve reporting to the IWC through national Progress Reports.

The Workshop discussed several ways that countries might improve their monitoring and the accuracy of their reports. These included interviews of fishers and other mariners likely to observe entangled whales (e.g. whale watch operators), scar-based studies of local whale populations, more thorough examination of stranded animals and the establishment of entanglement response programmes. With regard to the latter, the Workshop discussed the need to safely improve the data collected during disentanglement operations, including the gathering of key health data, and stressed the importance of identifying the individual entangled whales for improved assessment of survivorship.

In discussion, the Working Group **agreed** with these conclusions and recommendations, and, understanding that improvements in data collection and reporting would be very helpful to its work, **recommended** that all member countries which have coastal fishing operations that overlap with whale distribution be encouraged to more accurately report the occurrence and nature of the incidence of large whale entanglement and establish entanglement response programmes where applicable. In addition, it was **recommended** that existing and new programmes communicate with each other to standardise and maximise the usefulness of the data collected during their response to these events, and that they ensure that the appropriate data are made available to their respective national Progress Report. In addition, given that much of our current information on all anthropogenic causes of mortality comes from examinations of stranded animals, the Working Group also **recommended** that the Commission encourage members to facilitate thorough necropsies whenever possible on all large whales irrespective of population status, since this will be required to better estimate entanglement mortality rates including for species that may be subject to whaling.

There was discussion of the definitions of terms in the Workshop report, in particular the definition of 'entanglement'. Concern was expressed that a definition that is too specific might discourage useful information from being reported to authorities. In response it was noted that this definition was agreed upon by the many experts at the Workshop, and that it was the experience of those who have established national entanglement response programs that the most important step in improving reporting was the establishment of the actual network itself, as once the presence of a network is broadly known, most responders appear to err on the side of reporting all possible entanglements.

Finally, in response to a question about the number of countries that have organised entanglement response networks, it was noted that currently Australia, Canada,

South Africa, New Zealand, the United Kingdom and the United States have relatively well-established networks. In addition, all of the directors of the networks that were in attendance at the intersessional Workshop had indicated their impression of the value of meeting to share information and standardise data collection. They expressed an interest in continuing to meet periodically in the future and noted that these meetings might also invite representatives from governments wishing to establish formal, safe entanglement response capabilities.

9.2 Mortality in longline fisheries

A preliminary global review of operational interactions between odontocetes and the long-line fishing industry described bycatch events of humpback and Bryde's whales in addition to depredation by sperm whales (SC/62/BC6). Some long-line fisheries are at risk of becoming economically unviable due to the incidence of catch depredation. Identifying and developing mitigation strategies to reduce depredation may also reduce entanglement risk for odontocetes. Acoustic mitigation tools have proven difficult to develop and to assess. In contrast, recent innovations in physical depredation mitigation devices have yielded promising results, although they have received less attention to date. The enthusiasm of fishers to be involved in developing mitigation tools should not be underestimated, and studies to test such devices can potentially provide additional data on bycatch rates.

9.3 Entanglement mortality in Oman

SC/62/SH20 described entanglement mortality for a resident sub-population of humpback whales in the western Arabian Sea (Breeding Stock X), which is geographically, demographically and genetically isolated and remains severely depleted. Analysis of scarring on the caudal peduncle region of photographically identified humpback whales in Oman in 2003 indicated that between 30-40% of all whales examined were likely to have been involved in entanglements with fishing gear (Minton *et al.*, in press). Fishing effort off the coast of Oman and in other parts of the Arabian Sea is increasing rapidly, and drifting and set gillnets as well as fish traps are already widely used. During surveys in 2010, densities of fishing vessels were recorded and these were up to an order of magnitude higher than during previous surveys between 2000 and 2006. While sighting rates during 2010 were very low, beach surveys revealed 10 stranded baleen whales, of which 3 showed evidence of entanglement.

Although there were no monitoring of bycatch or reporting schemes at the time of the study, the Government of Oman subsequently established a national stranding committee. The Working Group welcomed this as a contribution to better reporting and **recommended** that the Commission encourage all member states which do not have stranding reporting networks to establish these. It was noted that the previous scar study had not been repeated because no humpback whales were observed during recent surveys. Studies of raw wounds were encouraged should whales be encountered. These could lead to a locally derived survivorship estimate similar to studies in the Gulf of Maine. The importance of measures of fishing effort was also noted; density of fishing vessels is a useful statistic based on data collected during whale surveys. Indications of fishing effort can also be gained from the number of licences for fishing vessels in Oman, which doubled between 2006 and 2008.

9.4 Bycatches in Korea and Japan

SC/62/NPM26 presented information from surveys of products from minke whales on the market in the Republic of Korea. Individual identification of products by DNA profiling provided direct information on the minimum number of whales entering into commercial trade. A total of 177 samples of common minke whales were purchased in markets of Busan, Ulsan and Pohang during 7 market surveys from February 2004 to February 2005. In an attempt to improve on methods of previous estimates (Baker *et al.*, 2007), these market surveys were conducted at regular intervals and from a standardised number of outlets. Following quality control review of information from mtDNA control region sequences, sex identification and genotyping of up to 6 microsatellite loci, 169 of the products provided sufficient information for individual identification. Matching of DNA profiles resolved 90 individuals, 69 of which were sampled in only one of the 7 surveys. This 'minimum census' exceeds the reported bycatch of 61 minke whales from official records in 2004 and the average of 85 per year reported for the three-year period, 2003-05. As the sampling was far from exhaustive, the true take of common minke whales by Korea is likely to be substantially larger than documented by the current reporting. Capture-recapture estimates based on these replicate samples could provide an improved estimate of the true takes over time and inform population dynamic models of the 'J' stock.

The small number of replicate samples from the same individuals suggested that whales pass through the market quite rapidly. This is consistent with the estimated 'half-life' for products from individual whales on the Korea market of 1.8 months from previous surveys (Baker *et al.*, 2007). The rapid throughput is likely to be a result of most meat on the Korean market being sold fresh rather than being frozen and stored for longer periods. The reported bycatch for Korea in 2009 was 54 minke whales and it was noted that the previous market survey results suggest that this is likely to be an underestimate.

The Working Group also welcomed publication of a recent paper describing incidental entrapments of minke whales in waters of the Republic of Korea (Song *et al.*, 2010). This paper provided a considerable body of information on the nature of the fishing gear and bycatch which had been previously requested by the Scientific Committee.

SC/62/NMP4 presented a method to estimate the number of past incidental catch of minke whales off the coast of Japan. The method applies a GLM with Poisson error distribution to the BPUE data to estimate the number of incidental catches off the coast of Japan for the period from 1955 to 2000 (believed to be under-reported). BPUE was defined by the number of the incidental catches per number of 'large-size' and 'salmon' set nets. BPUE data from 1994 to 2006 were used. A new regulation allowing the selling of meat of bycaught whales came into force in 2001, so reported bycatches after 2001 are considered reliable. Under this assumption a BPUE trend and correction factor for the incidental catches until 2000 were estimated (standardised for the period 2001-06 using the GLM). The correction factor was used to estimate bycatch levels in the period 1955-2000.

Concerns were raised about the assumptions regarding trends and the multiplicative factor used to adjust reported bycatch figures for the period 1979-2000. It was noted that there was considerably more variability in the early reported figures with CVs for the 1980s and 1990s being three to six times higher than since 2001. Based on this it was suggested

that a multiplicative adjustment was not appropriate and that the reports of zero bycatch for some years, which also resulted in zero estimates, were implausible. Concerns over the consistency of reported bycatch for the period 1979-2000 might also invalidate the trend analysis.

The Committee will require an agreed dataset for a time series of bycatch data around Japan for the *Implementation Simulation Trials* for North Pacific common minke whales. It was **suggested** that additional estimates should be presented to the first intersessional Workshop, once a timetable for *Implementation* had been decided. It was also **recommended** that the time series of minke whale bycatches from the Republic of Korea should also be considered at the same meeting. Attention also needs to be given to other types of fisheries around Japan, particularly since around Korea, gillnets and fish pots account for a substantial proportion of the bycatch. It was also noted that some of the large family-owned trap nets off the coast of Japan have been in place for a long time. It is possible that records of whale bycatch have been kept, even if these were not reported to the authorities at the time. Such records could provide a useful set of data.

10. REVIEW METHODS TO ESTIMATE MORTALITY FROM SHIP STRIKES

10.1 New data on ship strikes

A compilation of records of collisions between large vessels and southern right whales in Uruguayan waters using different sources of information including personal observations was presented in SC/62/BC2. In the coastal area of Uruguay, the southern right whale is one of the most common cetacean species during austral winter and spring (June to November). Between 2003 and 2007, seven southern right whales were recorded with large wounds due to collisions. Cuts were located in the supra-occipital, cranial, caudal and dorsal areas of the whales' bodies. Five of the seven records were *post mortem* and two whales were seen alive with large propeller scars. One of the live whales was an adult female (with a calf) that showed five parallel slashes that were estimated to be 2.5 to 3m long. Given the dimensions, location and other characteristics of the wounds on the seven animals, the authors concluded that they corresponded to propeller cuts produced by large vessels. The moderate decomposition of the five carcasses indicated recent death and a high probability that this had occurred in Uruguayan jurisdictional waters. The dates of the records were consistent with the seasonal presence of right whales in shallow Uruguayan waters during the calving season.

The Working Group welcomed this information which constituted the type of review of ship strike incidents requested for inclusion in the database. The value of these data in allowing relative comparisons of southern right whale collision rates along the southwest Atlantic coasts was also noted. Some data are available on shipping densities, and collision rates appear lower farther south along the Argentinean coast in areas of lower shipping traffic compared to Uruguay.

Ritter presented a detailed observation of a near-miss event from a 123m cruise ship involving a humpback whale off Antarctica. He noted a lack of data on near-miss events in the scientific literature. Observations were made from the bridge of a cruise ship during a regular cruise along the Antarctic Peninsula. In February 2009, the vessel sighted two humpback whales logging on the surface approximately 500m in front of the ship. The ship travelled

at a speed of less than 10kn in a straight direction, thereby closing in on the whales without purposefully approaching them. The animals only appeared to react at a distance of about 10m from the vessel, when they showed a startle reaction and turned away vigorously from the vessel. This case together with the occurrence of similar observations leads to the suspicion that near misses may be a frequent phenomenon. Also, the avoidance manoeuvres of the whales were remarkable, because the response was only at the last second. This underlines the fact that large whales might not respond 'automatically' to the approach of a large vessel. Hence, slow vessel speed only, as well as placing dedicated observers aboard, might not be enough to generally avoid collisions.

In discussion, it was noted that this single observation should not be over-interpreted, although Ritter noted another two close encounters with travelling minke whales during the same cruise. Without knowing the noise field of the ship and propagation conditions, the noise level received by the whales cannot be determined. It was also noted that even when whales can hear an approaching vessel, they may not respond because they have become used to the passage of ships. They may simply ignore ships, since in their prior experience the noise has not presented an immediate threat. Whale response to approaching vessels is a key unknown in models of collision risk, and some understanding can be gained from studies of near-miss events. Some data have been collected from high speed ferries on encounter rates and near-miss events. In Hawaii, a high speed ferry operator was legally required to report near-miss events, which may provide an additional dataset. It was also noted that for consistency in future reports, a more precise definition of a 'near miss' would be helpful.

10.2 Progress in modelling risk

While there is evidence of ship strikes of fin whales in the Mediterranean Sea, the degree to which this may pose a population-level threat is unknown. Baseline information on abundance and trends of fin whales in the Mediterranean Sea is poor and as a result a proposal for a basin-wide survey has been developed in the context of ACCOBAMS and endorsed by the IWC Scientific Committee.

Panigada described surveys of fin whales off the Italian coastline to provide data on temporal and spatial distribution and abundance. These data are intended to improve evaluation of the conservation implications of anthropogenic mortality including ship strikes.

Preliminary conclusions drawn from the first year's survey were that a simple comparison with data from past shipboard surveys suggests an appreciable decrease in presence and density of fin whales in the Pelagos Sanctuary area in the summer. Comparison of the winter and the summer aerial surveys showed considerable variation, with higher numbers using the Sanctuary area during the summer months, when human activities (and potential impact on cetaceans) reach maximum levels. Fin whales were not sighted during the winter survey, although previous acoustic data indicated some presence. He noted that the information provided by these surveys may be particularly useful in assessing whether ship strikes are affecting the Mediterranean fin whale population; at present there are no indications of negative trends for this species, but systematic monitoring programmes, such as the one presented here, represent a framework to provide robust data to assess this. The project plans to increase the survey scope beyond the Pelagos Sanctuary to explore the possibility of fin whales

using other adjacent waters. Additional knowledge of population structure and movements will help inform the risk of collision in current fin whale habitats.

The abundance estimates discussed were not corrected for $g(0)$ but Panigada believed that perception bias was close to 1 and noted that corrections for availability bias will be investigated using available telemetry and behavioural data collected in the past. Associated vessel data are being collected through Automatic Identification System (AIS) data in the survey area (AIS is required on all vessels of greater than 300 gross registered tonnage (g.r.t.) and will be required on fishing vessels over 15m by 2014) as well as visual sightings of all vessels observed during the survey.

The Working Group **encouraged** the continuation of this effort as an important part of both modelling the risk of ship strikes to fin whales in the Mediterranean and understanding the potential impacts of ship strikes on fin whale populations in one of the locations where risk of ship strikes appears unusually high and are known to be numerous.

11. PROGRESS IN DEVELOPING A GLOBAL DATABASE OF SHIP STRIKES

The IWC has been developing a global database of incidents involving collisions between vessels and whales since 2007. The specification and developments have been reported annually to the Scientific Committee. The need for and value of such a database has also been recognised by the International Maritime Organization (IMO) and ACCOBAMS, amongst others. The IMO has issued a circular recommending that any information gathered on ship strikes should be provided to the IWC. In addition, a leaflet has been developed by the Belgian Ministry of Environment, including details on reporting collisions, and will be distributed as widely as possible throughout the shipping industry. The leaflet is available in Arabic, Chinese, English, French, Russian and Spanish on the IWC website.

A list of tasks related to the database had been identified at last year's meeting, and most of these were near completion or had been completed. The database does not have a dedicated co-ordinator, and progress has relied on informal arrangements among the Secretariat, members of the data review group and an external contractor. Nevertheless, the tasks relating to improving the data entry system and tools for the data review group had made good progress. Although the current approach may continue to be acceptable at present, it should be reviewed annually in the light of the work required. The Working Group noted that many other successful databases relied on having a dedicated co-ordinator and **recommended** that this be considered for the IWC ship strike database.

With increased awareness of the existence of the database it is anticipated that the rate of data entry and requests for data will increase. This may require increased attention to the validation process, particularly for reports entered by the public. In Hawaii reports of possible collisions increased by an order of magnitude following publicity of the issue and issues related to data included law enforcement as well as scientific considerations. Reports from people on shore were often unreliable and careful validation was needed to determine whether the information provided was accurate.

There may also be a need to distinguish situations in which a whale swims into a vessel from those in which the vessel runs into a whale. Although vessel speed is recorded in the database it was suggested that zero vessel speed may not be adequate to identify all cases of contact due to whale movement.

The Working Group **recommended** an additional category in the database for situations in which stationary vessels were impacted by a whale.

The Working Group discussed the proposed programme of work on the ship strike database and **endorsed** the actions suggested in Appendix 3. It was noted that providing information in the publicly available data on cases that were not classified as 'definite' ship strikes could be informative. These data could be important for estimates of total mortality, for example in the case of a number of strandings where some proportion were known to be from ship strikes but the cause of mortality was unknown for others. Currently, reports of strandings or floating carcasses would only be entered in the database if there was at least some evidence that these were a ship strike. However if the evidence was weak, these would be classified as a 'possible' ship strike. It was suggested that it would be useful to investigate the proportion of carcasses which showed no external signs of ship strike injuries that subsequently were identified as ship strikes following a full necropsy.

The Working Group **agreed** at this stage to limit publicly available data to confirmed definite incidents but to review this again at future meetings. The need exists for very clear descriptions and caveats regarding the level of certainty of all data that are made available from the database.

The IWC and ACCOBAMS will hold a joint Workshop on reducing risk of collisions between vessels and cetaceans in Monaco from 21-24 September 2010. The geographical focus of the Workshop will be on the Mediterranean Sea and the Canary Islands, but many of the agenda items are relevant to global considerations including data gathering and estimation of numbers of collisions. Risk modelling will be on the agenda of the Workshop and this will be reported on at next year's meeting.

12. MORTALITY FROM ACOUSTIC SOURCES

There was no new information submitted on this topic. However, it was noted that Bernaldo de Quirós *et al.* (2010) reported development of an improved method for processing and analysis of gas embolisms found in stranded cetaceans. Such embolisms have been hypothesised to be related to acoustic sources.

13. MORTALITY FROM DEBRIS

SC/62/BC5 described a model-based approach to identify areas where whales are most likely to encounter floating marine debris including 'ghost' fishing gear in the coastal waters of British Columbia, Canada. The methods were applied previously to model spatial variability in ship strike risk to fin, humpback and killer whales. Areas with the highest density of marine debris were often quite distant from the largest urban areas, which suggests that these regions may serve as a sink for marine debris. Overlap between debris and whales was presented on a 2km grid based on a spatial model of whale density from sightings surveys at 1km resolution. Areas with highest overlap between debris and whales were also often distant from human settlements, and therefore spatial biases in reporting rates of debris related mortalities are likely. In order to quantify the magnitude of mortality of whales due to entanglement in marine debris, additional resources would have to be allocated to monitor remote areas.

The database used to assess debris had coarse categories of debris. The importance of debris, especially 'ghost' fishing gear, was discussed. It was noted that in some cases,

ghost gear may take up to 30% of the total catch of target species; in these cases up to 30% of entanglements may be attributable to ghost gear. While some cases of entanglements in ghost gear have been reported, the relative mortality related to active versus abandoned gear remains unknown. Identification of deaths due to ingestion of marine debris usually requires a full necropsy. As also noted with reference to entanglements, the Working Group **recommended** that necropsies be undertaken on all large whales irrespective of population status, since this will contribute to estimates of mortality rates including for species that may be subject to whaling.

14. OTHER ISSUES

14.1 Actions arising from intersessional requests from the Commission

The Committee was requested to review Annex {DNA} of IWC/62/7rev. This contains a section on market sampling schemes. Although the objective of these schemes is to act as a deterrent to illegal activity and to detect such activity, they may also potentially provide information of value for estimating bycatch. The Working Group has discussed a number of studies in previous years that have used market surveys to make inference about levels of bycatch. A Workshop in 2005 included the objectives of reviewing available methods that have been used to provide estimates of large cetacean bycatches via market samples and to identify information about the markets that would be required for a market sampling approach (IWC, 2006). Following the Workshop, a study to describe the structure of the Japanese market for whale meat in order to assist in the development of a sampling design was commissioned (Williams, 2006). Simulation studies were also conducted to investigate the implications of different assumptions about various aspects of market structure on estimates of the numbers of whales entering the market (e.g. Leaper and Cooke, 2007). The Group has also previously agreed that availability of data from DNA registers would improve estimates of total take from market surveys, including the potential for tracking known individuals through the market to understand more about market pathways. The estimates of bycatch from market surveys to date have been derived from surveys conducted by independent groups. Under the proposals in Annex {DNA} these surveys would have to be done by the national authorities.

There was some discussion as to whether the proposals in Annex {DNA} would allow unreported local bycatch entering the market to be distinguished from international trade that might include whales that had originated from takes from a different stock. It was noted that the implications of the requirement for an officially-attested documentation of chain of custody from time of collection to results of matching (Annex {DNA} 2.1(6)) would preclude matching of samples from market surveys that were not conducted by the national authorities.

14.2 Other potential sources of human-induced mortality

While there have been no reported cases of cetacean mortality caused by collision with marine renewable energy developments, SC/62/E7 and SC/62/E8 noted the potential for such mortality. Carter *et al.* (2008) examined this issue in proceedings of the ASCOBANS/ECS Workshop: Offshore Wind Farms and Marine Mammals, April 2007.

15. WORK PLAN AND BUDGET REQUESTS

The Working Group agreed to carry over a number of items from this year's Agenda and to give attention to the topics intersessionally:

- (1) collaboration with FAO on collation of relevant fisheries data and joining FIRMS;
- (2) progress in including information in national Progress Reports;
- (3) continued development of the international database of ship strike incidents;
- (4) estimating risk and rates of bycatch and entanglement;
- (5) review of methods to estimate mortality from ship strikes;
- (6) review of methods for assessing mortality from acoustic sources and marine debris; and
- (7) consideration of methods and data sources for establishing time series of bycatch.

No new items were proposed for the Agenda, but other topics may emerge intersessionally. Work on the ship strike database will involve a budget request of £5,000 for further refinement and maintenance of the database.

16. ADOPTION OF THE REPORT

The report of the Working Group was adopted at 10:42 on 5 June 2010.

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Appendix 1

AGENDA

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Appendix 2

**ANTHROPOGENIC MORTALITY (OTHER THAN DIRECTED TAKE) OF LARGE WHALES FOR THE
CALENDAR YEAR 2009 AS REPORTED IN THE NATIONAL PROGRESS REPORTS**

Table 1
Anthropogenic mortality of large whales reported in Progress Reports.

	Australia	Belgium	Brazil	Chile	Denmark	France	Italy	Japan	Korea	Mexico	New Zealand	Norway	Spain	UK	USA	Total*
Minke whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Entanglement	-	-	-	1	1	-	-	119	54	1(1)	-	1	-	-	2	179(1)
Blue whale																
Ship strike	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5
Entanglement	1[1]	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Humpback whale																
Ship strike	3	-	1	-	-	-	-	-	-	-	-	-	-	-	10	14
Entanglement	29(27)	-	-	-	-	1	-	4	-	7(5)	-	-	-	-	9(6)	50(24)
Sperm whale																
Ship strike	-	-	-	-	-	-	3	-	-	-	-	-	2	-	-	5
Entanglement	-	-	-	-	-	1	-	-	-	-	-	-	1	-	1(1)	3(1)
Fin whale																
Ship strike	1	1	-	-	-	1	2	-	-	-	-	-	1	-	2	8
Entanglement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
Sei whale																
Ship strike	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	2
Entanglement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bryde's whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entanglement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern right whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entanglement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Southern right whale																
Ship strike	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2
Entanglement	1(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1(1)
Bowhead whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entanglement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gray whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Entanglement	-	-	-	-	-	-	-	-	-	-	1(1)	-	-	-	-	1(1)
Pygmy right whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entanglement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Killer whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entanglement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1(1)	1(1)
Short-finned pilot whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entanglement	3(3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3(3)
Unknown whale																
Ship strike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entanglement	2(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2(2)

*Numbers in brackets indicate the subset of whales reported to have become free or released alive; the square brackets represent fate unknown. These types of incidents are not reported in all Progress Reports. Ship strikes include incidents that may not have been fatal. Progress Reports of Croatia, Germany, Ireland, Italy, Netherlands, Norway and Portugal reported no large whale deaths, while Brazil and Sweden did not report on incidental anthropogenic mortality.

Appendix 3

PROPOSAL FOR FURTHER DEVELOPMENT AND MAINTENANCE OF THE IWC SHIP STRIKE DATABASE INCLUDING POLICY ON DATA ACCESS AND USE

Leaper, Donovan, Panigada, Ritter and Weinrich

Suggested policy on data availability, access and use

The fully validated data in the database are currently from published sources and so up until now data access rules have not been an issue. As new unpublished data are entered, then those providing data may have concerns about allowing full public access to these data. Such concerns may include:

- (i) data being publicly available may infringe on the first right to publish;
- (ii) data that identifies a vessel or company may create bad publicity; and
- (iii) the inevitable uncertainty related to certain records may be misinterpreted.

Publicly available data

It is expected that requests for data will increase as the existence of the database becomes better known. There is a need for a system which allows users to download basic data from the website such that most requests for data do not need to be dealt with on an individual basis. This requires these basic data to be fully publicly accessible, at least in summary form. At a minimum, users will wish to establish whether a record they are aware of is already in the database. One of the most common requests to date has been a list of records for a particular area, and in many cases this has been a result of people working on collision data wanting to check whether the IWC database contained incidents that they were unaware of. We suggest the following fields should be available within the downloadable summary data:

Field in bold type. Additional notes in standard type.

Date

Where exact date is not available this is given as a text field, e.g. 'before August 2001'.

Location

This is made up of two fields, a categorical field giving the large area e.g. 'Mediterranean' (i.e. it will be part of a standard list of 'large' geographical areas). There may also be included a descriptive field which contains more detail on location if available. Actual Latitude and Longitude would not be given.

Species

This contains categorical fields for scientific name (or categories if uncertain e.g. 'unidentified large baleen whale') and local or common name.

Confidence in species ID

This is a categorical field indicating the confidence in the species identification.

Type of incident

This is divided into four categories of reports; observed collision incident, carcass found on bow, carcass observed floating, stranded carcass.

Outcome of collision

A categorical field, from no observed injury to death.

Vessel type

A categorical field with broad types of vessel and size class if report was of an observed collision incident.

Reported to local stranding network?

Categorical 'Yes/No/Not known' for stranded animals. If a stranding network had been known to be involved, then the investigations conducted including whether a full necropsy had been carried out would be listed.

Entered from a published source?

If so, the reference would be given.

The database has categories for the level of confidence that the incident was a direct collision between a vessel and a live whale. We propose that only the 'Confirmed/Definite' category is included in the publicly available data (this currently applies to about 70% of the records).

Suggested policy for full access to data

It is hoped that the level of data made available publicly would be sufficient for most users, but contributors would not feel that this infringed upon their ability to publish data that they had submitted. The IWC Antarctic humpback whale catalogue has a similar policy of providing basic data (e.g. an image of each whale) publicly but restricting access to the full data set. It is anticipated that this level of data would be adequate to filter a large proportion of data requests. Requests for full data access in order to conduct analyses such as relating risk to vessel type or speed, mortality assessments, and mitigation measures would need to be dealt with on an individual basis.

For work done in the context of the Scientific Committee, the Committee has the Data Availability Agreement which could be used to guide applications for access to data. Procedure A would be appropriate for any collision reports that were from stocks subject to whaling under the RMP or AWMP. Requests for data outside of the activities of the Committee may be more problematic. One option would be that the Data Review Group would consider such requests.

Proposed intersessional tasks

- (1) Re-establish the Data Review Group (last year's group was Leaper, Cañadas, Donovan, Double, Ferguson, Mattila, Panigada, Ritter, Rowles, Tandy and Weinrich).
- (2) Review all data entries including standardisation of codes from earlier data entries. Enter data from national Progress Reports and papers presented to IWC/62. The intended output would be a fully reviewed database that would be available prior to the IWC/ACCOBAMS Workshop 21-24 September 2010.
- (3) Develop a database handbook describing and listing all the fields and field codes. This would form a PDF file that could be downloadable from the website to assist with data entry and also provide information on all the fields in the database for those who could not use the schema directly.
- (4) Develop written definitions for determining whether an incident was classified as a definite, probable or possible strike. These definitions can draw on nationally developed criteria. Some historical data may have been categorised according to different criteria, and so where clear criteria have been applied this will be recorded in the database.

Committee members with data to be entered into the database and requiring funding to do this are encouraged to submit proposals to the Secretariat.

Budget

4 weeks work on data validation/creating handbook: £3,000.
Intersessional work on data entry including new incidents reported intersessionally: £2,000.