Annex P

Report of the Working Group to Review Sanctuaries and Sanctuary Proposals

Members: Kell (Chair), Amaha Ozturk, Baba, Behel, Berggren, Birtles, Bjørge, Brownell, Butterworth, Childerhouse, Cooke, DeMaster, Diake, Donovan, Fortuna, Fujise, Fukui, Funahashi, Gales, Gidding, Goodman, Groch, Hatanaka, Hester, Ilyashenko, Iñiguez, Jeglinski, Kell, Kim, Kock, Last, Lawrence, Leaper, Lee, Lens, Lyrholm, Manzanilla, Martin, Matsuda, Matsuoka, Minton, Morishita, Nagatomo, Nakatsuka, Nishiwaki, Ohsumi, Oosthuizen, Ozturk, Palazzo, Pantoja, Parsons, Rambally, Reeves, Rennie, Rojas-Bracho, Rose, Sadler, Senn, Sohn, Stachowitsch, Thiele, Tomita, Urban, Urquiola, Walløe, Walters, Weinrich, Weiskel, Williams, Yamakage.

1. OPENING REMARKS

The Chair welcomed the participants to the meeting and noted that unfortunately Alexandre Zerbini, the Convenor, could not attend.

The Commission is expecting a thorough review of the Southern Ocean Sanctuary (SOS) in 2004. In addition, the Scientific Committee (SC) has previously discussed two additional sanctuary proposals: the South Pacific Whale Sanctuary (SPWS) and the South Atlantic Ocean Sanctuary (SAOS), and it has been requested to provide comments on these.

An intersessional Steering Group was appointed to develop a process by which the SC would complete sanctuary reviews and develop evaluation criteria (IWC, 2002b, p.67). The SOS review process and evaluation criteria should be based on previous reviews and those used to review the Indian Ocean Sanctuary (IOS) in 2002 (IWC, 2003b). Last year, the SC had listed the following tasks to be addressed by the Steering Group (IWC, 2003b, p.414):

(1) Further develop generic criteria for reviewing Sanctuaries (e.g. based on the criteria used in the IOS review), given feedback and clarification from the Commission.
(2) Initiate the Review of the Southern Ocean Sanctuary based on instructions from the Commission, by beginning to collate the information required to follow the Instructions.
(3) Discuss a mechanism for reviewing IWC Sanctuaries in combination, where biologically relevant.
(4) Discuss a mechanism for introducing Marine Protected Areas (MPA) scientific concepts, such as critical habitat, into the IWC Sanctuaries and Sanctuary Proposals. In addition, consideration should be given to cooperating with appropriate international organisations to consider ways to evaluate non-whaling threats to cetaceans included within appropriate sanctuary/MPA boundaries. This might best be achieved by creating linkages to international organisations that have the expertise to address non-whaling threats to cetaceans in the area covered by the sanctuary.
(5) Discuss a mechanism, such as a standard form to proposals, through which the Commission could assist Member Countries in developing Sanctuary Proposals, if the Commission would welcome such a mechanism. This mechanism would in particular include identifying the objectives of the sanctuary and establishing a scientific monitoring programme that allows evaluation of these objectives.

Given the need for the timely review of the SOS Sanctuary, the Steering Group had focused on topics (1), (2) and (4) and these were the main topics to be addressed by the Working Group.

The sanctuary review process is based upon the Instructions from the Commission, as approved at the 53rd Annual Meeting (IWC, 2002a, p.65), and the further guidance provided at the 54th Annual Meeting (IWC, 2003a). In particular:

> RECOGNISING that if there is no consensus on specific issues within sanctuaries, the Precautionary Approach should limit the negative impacts of environmental uncertainty (e.g. effects of climate change over sea-ice dynamics and feeding habitat accessibility and unforeseen problems in the RMP to the other regions where it was applied). In such cases, currently established sanctuaries complement the provisions of paragraph 10(e) of the Schedule as an integral management strategy.

Resolution 2002-1 specified that the SC should include the following principles (IWC, 2003a):

(1) Temporary overlap of management measures, for example Para 10(e) of the Schedule and a sanctuary, cannot be used to invalidate any long-term scientific and conservation value of a given Sanctuary.
(2) The application of the Precautionary Approach shall be determined in accordance to Principle 15 of the 1992 Rio Declaration.

2. ELECTION OF CHAIR AND APPOINTMENT OF RAPPORTEURS

Kell was elected Chair in the absence of the Convenor, whilst Last and Manzanilla acted as rapporteurs.

3. ADOPTION OF AGENDA

The adopted Agenda is given as Appendix 1.

4. REVIEW OF DOCUMENTS

Documents relevant to the Working Group were SC/55/SCP1, SC/55/O4, SC/55/O11, SC/55/O20, SC/55/O23 SC/55/SH17, IWC/55/5 and IWC/55/6Rev.

5. GENERIC EVALUATION CRITERIA FOR REVIEWING SANCTUARIES

5.1 Existing criteria

Last year, the Working Group reviewed the Indian Ocean Sanctuary using a set of generic evaluation criteria developed by the intersessional Steering Group and the Instructions from the Commission (IWC, 2003b, pp. 418-419).

The Working Group noted that these criteria are useful in determining the effectiveness of sanctuaries once objectives have been established; the agreed objectives of the SOS were given by the Commission in Resolution 1998-3 (IWC, 1999):

(1) The recovery of whale stocks, including the undertaking of appropriate research upon and monitoring of depleted populations;
(2) The continuation of the Comprehensive Assessment of the effects of setting zero catch limits on whale stocks; and
(3) The undertaking of research on the effects of environmental change on whale stocks.

Some members commented that there are inconsistencies between Commission principle (1) (i.e. temporary overlap of management measures, for example Para 10(e) of the Schedule and a sanctuary, cannot be used to invalidate any long-term scientific and conservation value of a given Sanctuary) and the task assigned by the SC to consider ways to evaluate non-whaling threats to cetaceans included within sanctuary/MPA boundaries. However, it was pointed out that among many non-whaling threats that are relevant to the IWC discussions is the impact of bycatch in the calculation of catch limits.

5.2 The Precautionary Approach in relation to sanctuaries

Commission principle (2) stated that the application of the Precautionary Approach should be determined in accordance with Principle 15 of the Rio Declaration (IWC, 2003a, p.89).

The Declaration wording (United Nations, 1992) is as follows:

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.

The Working Group recognised that the Precautionary Approach concept has been in existence for some time and that many organisations have formulated their own interpretation. There is ongoing debate in the marine arena regarding interpretation of the Rio wording, including discussions in FAO and CITES. The CITES Working Group on listing criteria have proposed a definition recognising that action should be taken in the best interests of the species concerned, and that any measures adopted should be realistic in terms of anticipated risk. The FAO Code of Conduct for Responsible Fisheries considers the need to pre-specify action if a detrimental situation arises. It was noted that both the RMP and AWMP incorporate a feedback approach and that this mechanism is comparable with the spirit of the Code of Conduct wording.

One view warned against a literal interpretation of the Rio wording and the danger that 'worse case' scenarios can always be imagined and defended since scientific uncertainty is always a possibility. In the opinion of that member of the group, this interpretation leads to the inference that any consumptive utilisation would be prevented due to the risk of uncertainty and that it ignores the concept of sustainable utilisation. In response, it was acknowledged that in a purely fisheries context this interpretation is commonly used, and that Sanctuaries are management measures which emphasize conservation by taking into account sustainable use in other areas, while applying the Precautionary Approach in the form of protected areas. It was also stressed that endorsement of a conservation-based definition of the Precautionary Approach would avoid 'trial and error' management in circumstances where this might negatively affect species/areas at risk.

During discussion it was iterated that the essence of the Commission wording concerning the Precautionary Approach implies that the lack of scientific certainty should not be a determining factor in the evaluation of the effectiveness and existence of a Sanctuary.

It was questioned whether in initiating discussions on the Precautionary Approach, the Commission did not consider that the RMP included enough precautionary measures to ensure sustainability? In response, it was acknowledged that the RMP is a scientific tool based on current science and incorporates precautionary management measures for the sustainable utilisation of whales in perpetuity. The RMP would be implemented via the RMS and it was argued that a sanctuary could be a prudent complement to the RMS until experience proved the RMP to be satisfactory. It was also argued that, although the RMP has taken precautionary measures into account for the possible risks involved, there are other unknown potential risks that are not taken into account in these measures.

It was also suggested that because the Precautionary Approach is currently used in international law, the input of qualified lawyers might assist in the interpretation of precaution. Judging from the evolution of this concept in environmental law, the general concept of a sanctuary could be seen as a precautionary conservation measure.

It was **agreed** that the SC was not the body to attempt a generic definition of the Precautionary Approach but that as instructed by the Commission, it would use the Rio Declaration to work with the Precautionary Approach on a case-by-case basis.

5.3 Appropriateness of simulation trials for evaluation of sanctuaries

In 1993, the SC considered using simulation trials in the evaluation of certain aspects of the Southern Ocean Sanctuary proposal. However, some considered that there was a limit to the items that could realistically be tested by simulation. Some trials had been conducted to evaluate some aspects of the effect of the sanctuary (Butterworth and De Oliveira, 1994; Butterworth and Punt, 1994). It was also recognised that further trials could be conducted to investigate other aspects of the effect of the sanctuary, and that upon request from the Commission, further trials could be developed for this purpose (IWC, 1994, p.58).

The Working Group considered that the choice of any simulation trials should first be agreed by the SC. The Committee recognised that in the context of the Southern Ocean Sanctuary, there was potential for certain trials to be performed. It was also recognised that evaluation by simulation takes time and that this would be an important consideration if trials were suggested to facilitate the review of the SOS in 2004.

It was further noted that simulation trials can only be conducted if there are clear objectives that can be evaluated. In many cases, sanctuaries have broad objectives that render

the specification of trials problematic. An argument was offered to the effect that simulation trials might take into account certain types of risks, but that the instruction from the Commission arose from the concern for unforeseen risks which may not be modelled today but may turn out to be a concern in the future. The Working Group **agreed** that, although simulation trials might be useful to evaluate some aspects of the Sanctuaries, other aspects cannot be evaluated through this methodology.

It was also noted that the sub-committee had agreed in 1993 that the SOS was not intended to act as a control area in a designed experiment.

The Working Group then considered the aspects of sanctuaries that could be evaluated using simulation trials. It did this by reference to evaluation criteria and objectives adapted from the IOS and the SOS.

Objectives (from the SOS, Resolution 1998-3)

(1) The recovery of whale stocks, including the undertaking of appropriate research upon and monitoring of depleted populations.
(2) The continuation of the Comprehensive Assessment of the effects of setting zero catch limits on whale stocks; and
(3) The undertaking of research on the effects of environmental change on whale stocks.

Evaluation Criteria (adapted from the IOS, and IWC, 2003c)

(1) Evaluate whether whales are effectively protected from whaling within the Sanctuary.
(2) Evaluate whether the boundaries of the Sanctuary were appropriately established.
(3) Evaluate if the Sanctuary has provided 'sufficient' information to reliably assess stocks of large whales.
(4) Evaluate if the Sanctuary permits direct comparison of species/stocks within the Sanctuary with: (i) exploited; and (ii) unexploited stocks outside the Sanctuary.
(5) Identify what kind of investigations can be carried out in the Sanctuary, which are more difficult to undertake in areas where whaling continued.

Objectives (1), (2) and (3) address the provision of better estimates of population parameters (e.g. r and K). Objective (1) could be argued to refer to the study of density-dependence and (3) the detection of variability in population parameters, both trends and random variation. An example of the latter is given in SC/55/SH17. In addition, the current status of the stock relative to K will determine the type of trials to perform.

Evaluation criteria of relevance are (5) and possibly (2) and (3). Criteria (1) and (4) cannot be directly addressed by simulation.

Examples of appropriate simulation trials were given in Butterworth and Punt (1994) and Butterworth and De Oliveira (1994). Butterworth and Punt (1994) contrasted an initial 50-year sanctuary followed by 50 years of catches under the RMP with the RMP for 100 years. This was to determine which option would provide the better realised catches and which would provide the better estimate of *MSY* rate. Butterworth and De Oliveira (1994) modelled deteriorating habitat, reflected by a decreasing trend in the carrying-capacity and the ability to detect this as well as the estimate of the natural growth rate.

To date, only a limited range of options have been evaluated and it was thought that simulations should include appropriate variation in population parameters, trends and random variation as discussed in SC/55/O23 and including density-dependence.

Simulations should also be conducted for stocks at different levels relative to carrying-capacity and discussions of SC/55/RMP10 in the RMP sub-committee had highlighted the need for further consideration of carrying-capacity and *MSYR*. The conclusion of SC/55/RMP10 is that the Committee's previous perceptions of the likely range of *MSYR* values may need to be revised. A possible alternative interpretation of the data presented in the paper is that *MSYR* for exploited populations is lower than would be predicted based on model fits to population estimates from recovering populations. Such an interpretation indicates the importance of further investigations of the models themselves, particularly given the lack of fit indicated in some recent assessments. The Committee has considered population trajectories for Southern Hemisphere right whales and humpback whales off both eastern and western Australia. Predictions based on population models have concluded that under a continued zero harvest, these stocks are likely to reach pristine levels in some 10-15 years for the eastern Australian stock of humpback whales, 15-20 years for the more depleted western stock and 25-30 years for southern right whales. Continued zero harvest provided by a combination of the existing Indian and Southern Ocean Sanctuaries and proposed South Atlantic and South Pacific Sanctuaries would allow monitoring of these populations through the predicted point of inflexion in the population trajectory. Such data would also provide an opportunity to evaluate the performance of the population models used. Specification of trials to be conducted could include evaluating the power to examine model fits to population data in the presence or absence of a sanctuary. Trials might also help to determine the most appropriate duration of a sanctuary.

Discussions followed on the ability to estimate population parameters, focusing on the perturbation history and current status of stocks. It was noted that ideally time series of data from a range of population levels relative to the carrying-capacity should be available. By allowing currently depleted stocks to recover to their carrying capacity better estimates of population parameters could be obtained and the ability to validate population models would be improved, especially in view of the fact that historic data on population abundance are generally poor. Furthermore, better estimation performance might be achieved by different treatment of different areas, such as a sanctuary in one and harvesting in the other. It was also noted that although simulation could be used to evaluate our ability to estimate population parameters, much work on this topic had already been conducted and may not be needed.

5.4 Multi-species considerations in relation to sanctuaries

An example of multi-species interactions was given for the Southern Ocean which considered the interaction between minke and blue whales feeding on krill (SC/55/SH17); this paper suggests that minke whales increased during the mid 20th century, likely in response to increased krill abundance following the depletion of the large baleen whales. Recent studies show recoveries of some of these large baleen whale species in response to protection, and also a possible recent decrease in minke whales as the larger whales recover.

The report of the Workshop on modelling cetacean-fisheries interactions (SC/55/Rep1) concluded that despite recent advances, most multi-species models are still at development stages. It therefore agreed that no single

approach could be recommended at this stage to provide reliable information of value related to cetacean dynamics in an ecosystem context. In addition, it was pointed out that although there are species interactions, some of which are currently unknown, the effect on currently protected species of protecting all whales stocks may be difficult to simulate since it is necessary to model the species interactions and in particular their changes. During the 1993 SC meeting it was noted that there are difficulties in the estimation of krill abundance and that influencing factors such as climate change should be considered (IWC, 1994, pp.58-59). At that time, when species interactions were considered it was noted that:

(1) the information on interactions between different whale species is very limited;
(2) even if interactions such as, for example, competition for krill are strong, the likely level of catch limits for minke whales under the RMS will be such that possible differences in the recovery of seriously depleted species (e.g. the blue whale) under the two management regimes will be relatively small;
(3) it is unclear whether these small differences will be positive or negative for the depleted species.

The Working Group **agreed** that we are not currently in a position to model multi-species interactions reliably and that any simulations would have to be performed on a single species basis.

6. PREPARATIONS FOR REVIEW OF THE SOUTHERN OCEAN SANCTUARY

6.1 Relevant information and its preparation

The Chair of the Sanctuary Working Group is collating the relevant material for both the next revision and the revision criteria. A list of references will be collated including the relevant research activities both by the IWC and other independent cetacean research projects in the Southern Ocean. The list will also include papers dealing with Marine Protected Areas and Sanctuaries of use to the group. Members of the SC wishing to contribute to the list should forward references to Alex Zerbini (*azerbini@u.washington.edu*).

The intersessional Steering Group also discussed considering other information that might be relevant to the SOS review. This includes a list of research programmes that present a cetacean research component and their overall objectives, as well as data collected under the IWC-SO GLOBEC and CCAMLR collaboration.

6.2 Mechanism to review the SOS

6.2.1 Panel of external experts

In order to advance deliberation on the mechanism to review the SOS, the intersessional Steering Group had discussed options for including an external review using non-IWC affiliated scientists with acknowledged international expertise on developing, managing and/or conducting research in sanctuaries or MPAs. Their task would be to produce independent reports, which would not be restricted to but focused on two major points:

(1) to provide advice on how to introduce MPA scientific concepts to IWC Sanctuaries and Sanctuary proposals and on establishing monitoring programmes;
(2) to evaluate the SOS effectiveness given its objectives and the criteria developed by the SC and approved by the Commission.

The involvement of external non-IWC scientists was discussed. It was suggested that these scientists should be invited to attend the SC meeting and be involved in the sanctuary discussions instead of working independently. The Group noted that the mechanism to choose these scientists and agreement on their specific disciplines are important considerations. The choice of experts will be decided by the intersessional Steering Group.

6.2.1.1 INTRODUCTION OF MPA CONCEPT

In 2002 the Committee noted that the review process for sanctuaries and sanctuary proposals would benefit from the introduction of Marine Protected Area (MPA) scientific concepts. SC/55/SCP1 reviewed scientific aspects of Marine Protected Areas (MPAs), including common themes, objectives and techniques for evaluation. The concept of a MPA is generally considered to be broader than that of a strictly no-take area and may include regulation of multiple uses and habitat protection measures. Setting clearly specified objectives was found to be a crucial step in allowing the success of management measures to be evaluated. Single MPAs may frequently be insufficient to meet multiple needs within a region. It may be beneficial to establish networks of MPAs forming an array of sites with overall objectives for the network in addition to objectives for each individual area given that the majority of existing MPAs cover relatively small areas in terms of the distribution of most whale species. Evaluating effectiveness in terms of whale conservation is most likely to be best achieved by considering protected areas as a network. One common trend in designating areas for particular species is that the more mobile a species, the larger the area needs to be, and the more the emphasis is shifted to management measures to reduce direct mortality of that species rather than measures to protect the whole ecosystem. IWC sanctuaries are consistent with this approach in that they extend over large areas in order to protect highly mobile species from one source of direct mortality. The advantages of considering IWC sanctuaries in the context of a network of MPAs include the ability to specify objectives for the network and sanctuaries could provide a framework for evaluating the success of localised measures in combination.

SC/55/O4 provided examples of MPAs in the region of the proposed South Pacific whale sanctuary. Recently these MPAs have almost exclusively been established to achieve species and/or biodiversity conservation and are being developed with well-defined goals, objectives and management plans. The intergovernmental body responsible for conservation and environmental issues in the region, the South Pacific Regional Environment Programme (SPREP), has identified under its Species Conservation Programme that cetaceans are one of the priority species groups for the region. SPREP has also identified that important management tools for marine conservation are the creation of MPAs and Sanctuaries. SPREP has set a conservation target of 20 million km^2 to be declared national whale sanctuary by 2007. There is significant regional support for this initiative, over half the countries in the area of the proposed SPWS have already, or are soon to, declare whale sanctuary or whale protection legislation within their EEZs. There is recognition within the region that the ultimate effectiveness of national initiatives (such as EEZ sanctuaries and MPAs) for the management and conservation of highly migratory species, such as great whales, is limited and that regional and international initiatives are also necessary. A network of MPAs, under an overall framework of a regional

sanctuary e.g. an IWC SPWS, may provide an effective management tool for great whales in the South Pacific.

The Working Group welcomed the information in the papers as a useful introduction to some MPA concepts.

6.2.1.2 EVALUATION OF EFFECTIVENESS RELATIVE TO OBJECTIVES AND EVALUATION CRITERIA

The Working Group reiterated that specific and detailed objectives should be determined before the establishment of any sanctuary or MPA. The objectives should be scientifically quantifiable to allow for more effective evaluation, however, it acknowledged that not all sanctuary objectives can be scientifically evaluated.

6.2.2 Review by intersessional workshop

During the intersessional period, the Steering Group had discussed the possibility of holding an intersessional workshop sometime before the 2004 Scientific Committee meeting. The intention of the workshop would be to incorporate feedback from the external scientists and further discuss the review of the SOS. However, during discussion in the Working Group there was little support for the workshop proposal for operational reasons. In particular, Palazzo expressed concern that SC members from developing countries would not have the means to attend such a meeting and would therefore be excluded from participating in these essential discussions. This view was supported by several others.

The Working Group Chair suggested that a two-day pre-meeting scheduled directly before the SC meeting would allow more time to conduct the review and reduce financial implications for developing country participants. The Working Group **agreed** with this proposal and recommended that the external scientists attend this meeting to discuss the SOS review and a range of topics pertaining to MPAs and cetaceans. These scientists are likely to be available for a limited time only and therefore focusing their attendance at a pre-meeting rather than as participants at the main SC meeting would be less costly and more beneficial.

The Working Group recognised that scheduling a meeting prior to the next SC meeting would preclude the timely recognition, agreement and initiation of any potential simulation trials to aid the review. It was further noted that this cannot realistically be done by an e-mail correspondence group, therefore the Group agreed that if any simulation trials were to be conducted for the 2004 review an intersessional meeting to address specific trial issues would be needed. If the two-day pre-meeting went ahead, it could still specify trials to be conducted to facilitate the Committee's evaluation of sanctuary proposals in the longer term.

7. REVIEW OF PROPOSALS

7.1 South Atlantic

Due to a severe lack of time, the Working Group was unable to fully discuss an evaluation of the South Atlantic Sanctuary Proposal based on the Instructions from the Commission and the review criteria. There were however, differing views provided by two evaluations of the Sanctuary Proposal (Appendices 2 and 3).

7.2 South Pacific

The South Pacific Sanctuary proposal had not changed since it was submitted last year. Therefore, the Working Group drew attention to previous discussions of the proposal in the Scientific Committee (IWC, 2001, p.65; IWC, 2002b, p.67).

8. OTHER

Palazzo expressed his dissatisfaction that at this year's meeting, the Working Group had been given an extremely limited amount of time to conduct its work. The Brazilian delegation considered that the importance that the Commission has given to Sanctuary issues has not been fully recognised by the Scientific Committee and that the limited time scheduled for the Working Group had precluded a satisfactory discussion of the full agenda. These concerns were endorsed by the Working Group.

The Working Group **agreed** to register its concern that although the Commission was increasing the workload of the Scientific Committee, it was also reducing its budget and time available to complete its tasks.

9. ADOPTION OF REPORT

The report was adopted by correspondence at 14:00 on 4 June 2003.

REFERENCES

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Appendix 1

AGENDA

1. Opening remarks
2. Election of Chair and appointment of rapporteurs
3. Adoption of agenda
4. Review of documents
5. Generic evaluation criteria for reviewing sanctuaries
   - 5.1 Existing criteria
   - 5.2 The Precautionary Approach in relation to sanctuaries
   - 5.3 Appropriateness of simulation trials for evaluation of sanctuaries
   - 5.4 Multi-species considerations in relation to sanctuaries
6. Preparations for review of Southern Ocean Sanctuary
   - 6.1 Relevant information and its preparation
   - 6.2 Mechanism to Review the SOS
     - 6.2.1 Panel of external experts
     - 6.2.2 Review by intersessional workshop
7. Review of proposals
   - 7.1 South Atlantic
   - 7.2 South Pacific
8. Other
9. Adoption of report

Appendix 2

THE SOUTH ATLANTIC WHALE SANCTUARY (SAWS) AND SANCTUARY REVIEW CRITERIA

F. Borsani, S. Childerhouse, J. Cooke, P. Deimer, C. Fortuna, M. Fossi, K. Groch, M. Iñiguez, G. Lauriano, S. Manzanilla, J. Palazzo, J. Pantoja, E.C.M. Parsons, L. Rojas-Bracho, M. Simmonds and E. Urquiola

The Commission has instructed the Scientific Committee to review existing and proposed Sanctuaries in relation to certain sets of criteria. While some of these criteria are rather broad, a perspective on proposals and their appropriateness can be drawn from existing knowledge.

Regarding the Instructions from the Commission agreed at its 53rd and 54th Annual Meetings, the following topics must be considered in evaluating the SAWS and other proposals:

(a) Feasibility of meeting the scientific aspects of the stated objectives. Apart from ensuring the protection of whales from lethal takes in order to foster scientific study by non-lethal means, the proposal states that the intention of establishing a SAWS is to enhance current scientific initiatives through international cooperation, and to promote the development of new research initiatives in poorly studied species and areas (e.g. respectively Bryde's whales and the Brazil Banks). The proposal also stresses the need to develop further scientific advice to manage non-lethal uses of whales. These objectives can certainly be met in the proposed SAWS, using non-lethal techniques, and pooling existing and potential resources for scientific cooperation.

(b) Assessment of (1) whether the sanctuary distinguishes between species and stocks that are depleted and apparently slow to recover, those that are increasing rapidly, and those that are abundant and not threatened; (2) present and potential threats to whale stocks and their habitats in the area of the proposed Sanctuary; and (3) how the proposed Sanctuary addresses these. All previously exploited whale species in the South Atlantic basin, according to recent IWC data are either proven or thought to be seriously depleted by whaling; the only possible exceptions (minke whales) are currently under review as their numbers in the Southern Hemisphere are possibly much lower than previously estimated. Therefore the SAWS is adequately justified in not distinguishing among whale species to be protected. Regarding habitat protection and non-whaling threats, the proposal adequately directs potential management of these issues through coordinated action of Range State authorities, in particular those involved in Marine Protected Areas management, and relevant regional and international fora. The relationship of the proposed Sanctuary with other measures for whale protection is clear in the sense that it would provide a broad framework for integrating national and regional policies for research and management.

(c) Anticipated effects of the proposed Sanctuary in relation to improving protection of whales in breeding areas, feeding grounds and/or migratory routes; improving the conservation of such areas; and complementing existing or potential protection measures and/or frameworks. The proposed SAWS, which covers known breeding grounds for whale species in the South Atlantic Ocean basin, its migratory areas to/from higher latitude feeding grounds, and potential year-round residency areas for Bryde's whales and probably sperm whales, specifically intends to provide for proper coordination regarding localised habitat protection initiatives such as nationally established MPAs. It also provides for strengthening coordination between the IWC, national authorities and other relevant international agreements to ensure its effectiveness.

(d) Ecological appropriateness of proposed boundaries. The use of the Equator as its northern latitudinal border is based both on the attempt to cover most, if not all, of the known distribution of migratory large whales in their South Atlantic breeding grounds, and also makes sense from an oceanographic perspective. Its eastern and southern oceanic borders meet existing IWC

sanctuaries, creating a logical continuum. Its western oceanic limit is consistent with what is known of population divisions in the region, including recent investigations on whales from the Western Antarctic Peninsula, which apparently belong to the Pacific region and frequent western parts of the Strait of Magellan. Therefore, the proposed boundaries of the SAWS are ecologically appropriate.

(e) Critical versus 'non-critical' whale habitat in the SAWS. Given the degree of uncertainty regarding migratory corridors and actual distribution of species with more pelagic habits, the SAWS proposal is coherent in not making such a distinction. Moreover, historical whaling records clearly indicate that vast areas of international waters in the South Atlantic did harbour large whale concentrations in the past and should be protected from further exploitation both for conservation and scientific reasons, as they offer unique cooperative research opportunities.

(f) SAWS impact on research and IWC objectives. The establishment of the proposed Sanctuary is unequivocally in line with the Commission's conservation and scientific objectives, as repeatedly stated in Commission decisions regarding Precautionary Approaches to prevent further depletion of whale stocks. The proposed Sanctuary has great potential for promoting synergies and helping to advance research efforts from scientists and groups in the region already working on conservation and management issues.

(g) Consistency with the Precautionary Approach. The SAWS as proposed is entirely consistent with the Precautionary Approach as stated in the Rio Declaration and subsequent international environmental agreements, thus fulfilling the most recent Commission directive to the Scientific Committee in its Resolution 2002-1.

The South Atlantic Whale Sanctuary, therefore, fully meets scientific criteria and Commission objectives in order to merit its establishment as proposed.

Appendix 3

AN EVALUATION OF THE PROPOSED SOUTH ATLANTIC WHALE SANCTUARY BASED ON THE INSTRUCTIONS PROVIDED BY THE COMMISSION IN 2001

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This document has been prepared to express our contrary views to those contained in Appendix 2.

At its meeting in 2001, the Commission provided Instructions to the Scientific Committee for its review of sanctuaries (IWC, 2002). This document provides an evaluation of the proposed South Atlantic Sanctuary in relation to those instructions.

(1) Assess how well the scientific aspects of the objectives of the proposed Sanctuary might be met.

The proposed sanctuary is not required to meet its stated objective of fostering scientific study by non-lethal means. Fostering such study can clearly be achieved without establishment of a sanctuary in this area.

(2) Provide advice on the status and trends of whale stocks in the Sanctuary.

The proposed sanctuary will not improve the ability to provide such advice.

(3) Assess whether the Sanctuary distinguishes between species and stocks that are depleted and apparently slow to recover, those that are increasing rapidly, and those that are abundant and not threatened.

The proposed sanctuary does not distinguish between species and stocks. The prohibition on commercial whaling applies to all species and stocks irrespective of the status of stocks. This is one of the major arguments against the Sanctuary in that it provides protection for stocks even when scientific advice demonstrates that such protection is not required for conservation reasons.

(4) Assess the present and potential threats to whale stocks and their habitats in the area of the proposed Sanctuary and how the Sanctuary addresses these.

There is no present threat to whale stocks from whaling because of the commercial whaling moratorium. Commercial whaling is not a potential threat because any resumption of whaling would occur under the risk-averse RMP.

There is insufficient information to assess the threats to whale stock and their habitats from factors other than whaling. Establishment of the sanctuary is unlikely to improve this situation beyond what could be achieved without it.

(5) Consider the relationship of the proposed Sanctuary with other existing measures to protect whales from anthropogenic and environmental factors.

The proposed sanctuary would not improve protection of whales from anthropogenic and environmental factors beyond that provided by existing measures or measures that could be achieved without the proposed sanctuary.

(6) Assess the anticipated effects of the proposed sanctuary in terms of: (a) improving protection of whales in the breeding areas, feeding grounds and/or migratory routes; (b) improving the conservation of breeding sites, migratory routes and/or feeding grounds; and (c) complementing existing or potential protection including the Commission's management regime and regional and international agreements concerning biodiversity and conservation of nature.

(a) The proposed sanctuary would not improve the protection of whales in the breeding areas, feeding grounds and/or migratory routes beyond existing measures.
(b) The proposed sanctuary would not improve conservation of breeding sites, migratory routes and/or feeding grounds for whales beyond that provided by existing measures or measures that could be achieved without the proposed sanctuary.
(c) The proposed sanctuary does not complement the Commission's current management regime (the moratorium) or its proposed future regime (the RMS). It is duplicative of the current regime and unnecessary under the proposed future regime of the IWC.

(7) Provide advice on whether the boundaries of the proposed sanctuary are ecologically appropriate.
The sanctuary itself is inappropriate since it is not required for conservation reasons. Advice concerning the appropriateness or inappropriateness of the boundaries is therefore irrelevant.

(8) Provide advice on whether the proposed sanctuary addresses the issue of critical habitat and non-critical whale habitat.
The proposed sanctuary does not address any habitat issues. It simply proposes a blanket prohibition on commercial whaling in the area. The issue of critical habitat is however addressed by the RMP which does not provide quotas in breeding areas.

(9) Evaluate whether the proposed sanctuary may contribute to or impede the conduct of scientific research useful for meeting the IWC objectives and facilitate coordination and integrated research and monitoring programmes.
Although the proponents claim that the proposed sanctuary will contribute to the conduct of scientific research useful for meeting the IWC objectives, experience related to the Indian Ocean Sanctuary indicates that this is not certain. It is highly unlikely that the establishment of the proposed sanctuary will contribute to the conduct of large scale sighting surveys useful for meeting the IWC objective of the sustainable use of large whales in the area.

(10) Provide advice on whether the Sanctuary is consistent with the Precautionary Approach.
No widely accepted or pragmatic interpretation of the definition of the precautionary approach (including that of the Rio Declaration – see Resolution 2002-1) provides for the implementation of measures for the total protection of whales irrespective of their conservation status. By contrast, although the RMP is unnecessarily precautionary and wasteful of resources, its implementation would be consistent with the precautionary approach.

In summary, the proposed South Atlantic Whale Sanctuary lacks a sound scientific basis, and fares poorly when assessed by the Commission's instructions. Further, given the risk-averse nature of the RMP it cannot be considered as a necessary conservation tool or effective management strategy.

REFERENCE

International Whaling Commission. 2002. Chair's Report of the 53rd Annual Meeting. Annex E. Instructions from the Commission to Scientific Committee for Reviews of Sanctuaries. *Ann. Rep. Int. Whaling Comm.* 2001:65.