Report of the Scientific Assessment Group

Contents

1	INTR	ODUCTORY ITEMS	2
	1.1	Election of Chair	2
	1.2	Terms of reference	2
	1.3	Adoption of agenda	2
	1.4	Documents available	2
	1.5	General comment on the nature of the advice to be given and the style of report	2
	1.5.1	General nature of advice	2
	1.5.2	Structure of report	3
	1.6	Availability of report	3
	1.7	Appointment of rapporteurs	3
2	REVI	EW OF SAG/JAPAN	3
	2.1	Western North Pacific common minke whales	3
	2.1.1	Comments on the information and analysis presented with respect to effect of catches during interim period	3
	2.1.2	Additional analyses if any carried out by group	4
	2.1.3	Summary and conclusion	4
	2.2	Western North Pacific Bryde's whales	5
	2.2.1	Information and analysis presented with respect to effect of catches during interim period	5
	2.2.2	Summary and conclusion	5
	2.3	Western North Pacific sei whales	6
	2.3.1	Information and analysis presented with respect to effect of catches during interim period	6
	2.3.2	Summary and conclusion	6
	2.4	Western North Pacific sperm whales	6
	2.4.1	Information and analysis presented with respect to effect of catches during interim period	6
	2.4.2	Summary and conclusion	6
	2.5	Antarctic minke whales	6
	2.5.1	Information and analysis presented with respect to effect of catches during the interim period	6
	2.5.2	Summary and conclusion	7
	2.6	Fin whales	7
	2.6.1	Information and analyses presented	7
	2.6.2	Summary and conclusions	7
3	REVI	EW OF SAG/ICELAND	7
	3.1	Central Atlantic common minke whales	7
	3.1.1	Information and analysis presented with respect to effect of catches during interim period	7
	3.1.2	Summary and conclusion	7
	3.2	Central Atlantic fin whales	8
	3.2.1	Information and analysis presented with respect to effect of catches during interim period	8
	3.2.2	Summary and conclusion	8
4	REVI	EW OF SAG/NORWAY	9
	4.1	Northeastern Atlantic common minke whales	. 9
	411	Information and analysis presented with respect to effect of catches during interim period	
	4.1.2	Summary and conclusion.) 9
5	SCIE	NTIFIC COMMITTEE WORKPLAN ON RMP-RELATED MATTERS	.9
6	ADOI	PTION OF REPORT.	10

1 INTRODUCTORY ITEMS

The meeting was held at the Moana Surfrider Hotel, Honolulu from 23-25 January 2010. The list of participants is given as Annex A.

1.1 Election of Chair

Donovan was elected Chair.

1.2 Terms of reference

The guidance from the Support Group on the work of the Scientific Assessment Group (hereafter 'the SAG') is given as Annex B. In summary, the Group's task is to review documents provided by member nations and provide a *concise* scientific review on whether it believes that any proposed catches are such that the **long-term** status of the populations concerned will not be negatively affected. This evaluation will recognise that there will be an RMP *Implementation* or *Implementation Review* during the interim period, as outlined in a draft schedule of relevant work of the Scientific Committee (modified as Table 5 of this report). The SAG may undertake its own analyses in addition to those presented in proposals. It is important to note that in providing advice, the SAG is not proposing catch limits but rather providing advice for the Support Group; that Group may also take non-scientific factors into account in considering future catch limits.

1.3 Adoption of agenda

The adopted Agenda is given as Annex C. In providing verbal information on its proposed catches, Japan informed the SAG that it would not be seeking a catch limit for humpback whales in the Southern Hemisphere. There is thus no discussion of humpback whales in this report.

1.4 Documents available

The primary documents for the meeting were those produced by the member nations: SAG/J10/Japan; SAG/J10/Iceland; and SAG/J10/Norway.

The SAG noted that for reasons explained by the respective delegations, not all of the information suggested in the Guidelines in Annex B was provided. In particular, this applied to providing information on proposed catch levels – in the case of Japan, this information was presented verbally to the SAG and is contained in Annex E^1 . Norway indicated that its intention was to continue to set catch limits using the RMP with a 0.60 tuning level. Iceland indicated that it had not finished its discussions but that any limits it proposed would be less than those indicated by the RMP with a 0.60 tuning level. The general question of tuning levels is discussed under Item 1.5.1.2 and Annex D.

1.5 General comment on the nature of the advice to be given and the style of report

1.5.1 General nature of advice

The SAG agreed that it was not appropriate, nor was there time, for this report to provide a fully documented scientific analysis for each stock as would be the case for a full Scientific Committee report; the primary objective was to provide the Support Group with concise advice on proposed short-term catches for the period before the full RMP would be implemented or the results of RMP runs where practical (see Item 1.5.1.2).

1.5.1.1 CASES FOR WHICH THERE IS NO RMP *IMPLEMENTATION*

For cases where there is no RMP *Implementation*, the SAG **agreed** that it would examine all the available information and provide an integrated, common-sense view on whether the proposed short-term catches are likely to negatively affect the long-term status of the stock, given that such short term catch limits will only be used until an RMP *Implementation* has been completed and implemented and that the full RMP *Implementation* will take into account any catches between now and the RMP *Implementation* in determining new catch limits. The SAG noted that if catch levels determined by the RMP are lower than any short-term catch levels agreed by the Commission, then the catch limits will be adjusted accordingly. It also noted that where the advice regarding the stock implications of the short-term catch levels is based on only an examination of the most recent abundance estimates and a consideration of stock structure, the possibility of the RMP giving lower limits may be high in some cases (for example, if the catch history suggests that the population was heavily reduced and may not have recovered sufficiently).

The SAG recognised that there are a number of different approaches to evaluating short-term catches; it did not try to develop a single method - indeed there is a wide range of catch levels that may meet the general criterion of not negatively affecting the long-term status of the stock, given that they will only be used until an RMP *Implementation* has been completed and the RMP implemented. In such cases, the SAG's conclusions are general and based on its cumulative overview of the available information.

In providing this general advice, the SAG **stresses** that the future efforts of the full Scientific Committee should focus on completing RMP-related work as soon as possible rather than re-examining any advice on short-term catches.

¹ The SAG was informed that this would be provided directly to the Support Group by Japan.

1.5.1.2 WHERE RMP IMPLEMENTATIONS OR IMPLEMENTATION REVIEWS HAVE OCCURRED

Where recent RMP *Implementations* and/or *Implementation Reviews* have been completed, the SAG **agreed** that advice on RMP limits should be provided. Of the three tuning levels (0.60, 0.66 and 0.72) presented to the Commission, it adopted the 0.72 tuning level by Resolution in 1991. Some scientists and member nations have stated their belief that 0.60 is preferable. The SAG reiterates that the choice of tuning level is not a matter for the Scientific Committee to decide and certainly not the SAG; rather it is one of policy². A short summary of the general issue of tuning levels and the state of discussions in the Scientific Committee is provided in Annex D for the information of the Support Group. The SAG noted that some countries presented their proposals in the context of the 0.60 tuning. It therefore agreed that to provide full information to the Support Group it would present RMP results for both tuning levels in its report using Secretariat software and data.

The Group emphasized that the acceptability of RMP variants can be tuning-dependent. The Scientific Committee will need revised instructions from the Commission on the tuning level – or the acceptable range of tuning levels - if tuning levels other than 0.72 are to be used for future *RMP Implementations*.

1.5.2 Structure of report

For each species/area considered, the report will follow the following approach:

- A short section commenting on the information and analyses presented by the proponent country
- The results of any additional analyses requested by the SAG should it do so
- A short summary and conclusion section (which may include comments on the timetable of work).

1.6 Availability of report

The SAG noted that the decision on whether its report (and the proposal documents) should be made public would be taken by the Support Group. The report is thus confidential until a decision on its availability is made by the Support Group.

1.7 Appointment of rapporteurs

Donovan acted as rapporteurs, assisted by Punt, Gales and Cooke.

2 REVIEW OF SAG/JAPAN

Japan informed the SAG of its proposed levels of catches for each stock and these were used to inform the SAG's conclusions (Annex E). In presenting its supporting information for stock for which an RMP *Implementation* had not been conducted for short-term catches, Japan had looked at lower 5th percentiles of current abundance estimates and noted that its proposed catches were generally less than 2% of these.



Fig. 1. Sub-areas for western North Pacific common minke whales

2.1 Western North Pacific common minke whales

2.1.1 Information and analysis presented with respect to effect of catches during interim period

The intended catches (Annex E) are of common minke whales of 'O' stock in (a) sub-areas 7, 8 and 9 (see Fig.1) between 10n.miles from the Japanese Pacific coast and $170^{\circ}E$ and (b) in sub-area 11 outside 10n.miles from the coast. The season is

 $^{^{2}}$ The choice of tuning level represents a policy trade-off between the competing objectives of minimising depletion risk and maximising catches (see Annex D).

from April to October. Catches will be taken in what are termed 'coastal' and 'offshore' operations. Although both 'coastal' and 'offshore' whalers can catch within the whole area, catches by the 'coastal' whalers (i.e. those with the smallest vessels) will generally occur closer to the coast than those in the offshore operations. It was noted that the Japanese proposal would result in more whales than at present being caught closer to Japan although the total catch would be the same as in JARPN II. HITTER-FITTER simulations were conducted to evaluate the impact of the catches of J-stock by JARPN II following a recommendation by the JARPN II review. These simulations showed that the catches by JARPN II will not affect the status of the J-stock.

SAG/Japan provided a review of the information available in accordance with the suggested guidelines in Annex B. As is well known, the Scientific Committee has spent considerable time over the years examining western North Pacific common minke whales. The primary issues relate to stock structure (and thus appropriate abundance estimates), bycatches in fishing gear and the fact that catches are taken on migration. Considerable work has been undertaken since the *Implementation* in 2003 on the issue of stock structure and the question of the status of J-stock, much of which was considered at the JARPN II review. The JARPN II review also requested additional analyses on stock structure, some of which have been undertaken by Japan and reviewed by the Scientific Committee and will contribute to the final stock structure hypotheses.

2.1.2 Additional analyses if any carried out by group

In response to a request from the SAG, Pastene presented additional information on the estimated proportions and absolute numbers of J-stock animals that might be expected to be taken as part of the catch on the Pacific side of Japan, in the light of the planned catches and the introduction of the 10 n.mile exclusion area (see 2.1.1). The expected total number of J-stock animals caught may be some 27 animals when the 10n.mile buffer zone is introduced (in the region between 10-20 n.miles from the coast this may represent around 17% of the catch by coastal whalers in that region)³. By comparison, the average annual number of J-stock animals bycaught in fishing gear off Japan over the last six years is 106 whilst the average number of bycaught J-stock animals by Korea over the last six years is 86; it may be considerably more than that in the latter case.

2.1.3 Summary and conclusion

After reviewing the available information, the SAG noted that the primary area of uncertainty related to the question of stock structure (and hence appropriate abundance estimates). For example, by far the largest abundance estimates relate to sub-area 12, i.e. north of the proposed catching area, but there is only limited information on the proportions of J- and O-stock animals in those sub-areas. The implications of the proposed catches for both O- and J-stocks clearly differ depending on the assumptions about those proportions. Whilst the limited evidence suggests that the bulk of these animals might be O-stock, it is certainly not conclusive.

With respect to the effect of the proposed catches on J-stock (the status of which is of some concern to the Committee), the SAG noted that the analysis presented under Item 2.1.2 showed that while under the proposed catching regime, annual accidental direct catches estimated to be 27 J-stock animals might occur, the greatest threat to J-stock comes from bycatches in fishing gear. Nevertheless, the proposed increase in catch by the coastal whalers is such that the total catch of J-stock animals in whaling operations may be similar to the catches of J-stock under JARPN II. It may thus not contribute to the improved status of J-stock.

The SAG noted that the work on stock structure undertaken since the 2003 *Implementation* suggested that the existence of a small, very coastal, sub-stock of common minke whales on the Pacific coast of Japan was less likely than had been thought previously, but concurred with the view of the JARPN II review workshop that until additional analyses had been completed and reviewed by the Scientific Committee, this hypothesis could not be ruled out. Given the uncertainty about this and other aspects of stock structure (and the implications of this for status of both O- and J-stocks) the SAG **strongly reaffirms** the need expressed at the 2009 Annual Meeting for completion of the *pre-Implementation Assessment* and *Implementation* as soon as possible.

The implications of the present uncertainty are such that while under a number of scenarios the proposed short-term catches do not appear problematic, some perhaps less likely scenarios (such as a very small, narrow coastal O-stock) and/or most of the animals in sub-area 12 not being O-stock animals would give cause for concern.

In summary, the SAG notes that the present uncertainty precludes it giving unequivocal advice on the proposed catches. As a minimum, it **agrees** that:

- (a) the Implementation process be completed as soon as possible, ideally in 2012 but certainly by 2013;
- (b) catches of the O-stock in the short-term should not exceed present levels;
- (c) high priority should be accorded to research to determine the proportions of O- and J-stock in sub-area 12.

³ This number is based upon an assumption of the same distribution of catch as in JARPN II. The catch distribution under the new proposal may be different.

The SAG noted that the incidence of J-stock in the catch decreases with distance offshore. While recognising the logistical difficulties, the SAG notes that if it is possible for catch effort to be moved further offshore then this is likely to reduce the likelihood of catches of J-stock animals. It also agrees that priority should be given to the analysis of genetic samples from the caught animals to obtain real data on the proportion of J-stock animals under any new catching regime.

2.2 Western North Pacific Bryde's whales

2.2.1 Information and analysis presented with respect to effect of catches during interim period

The intended catches (Annex E) are of Bryde's whales in (a) sub-area 1 (see Fig.2) from the Japanese Pacific coast out to 170° E (i.e. all of 1W but not all of 1E). The season is from April to October. The JARPN II review agreed that the present level of catch would not affect the status of the stock.

The Scientific Committee completed its *Implementation Review* of western North Pacific Bryde's whales in 2007. Given this, the SAG agreed that there is no need to provide short-term advice but rather it should present the RMP results. These are given in Table 1 below.



Fig. 2. Western North Pacific Bryde's whales: sub-areas

2.2.2 Summary and conclusion

The *Implementation Simulation Trials* for the western North Pacific Bryde's whales were conducted using a tuning level of 0.72. However, in accord with the discussion under Item 1.5.1.2, Table 1 includes the results for both the 0.60 and 0.72 tuning levels. The SAG draws attention to the fact that the most recent (and only) agreed abundance estimate (about 20,500) is for 2000; the RMP includes a provision for the phase-out of catches when a recent⁴ abundance estimate is not available. To provide information on the effect this has on catches of Bryde's whales, Table 1 provides information on catch levels for the 2000 abundance estimate if the phase-out rule had not been invoked.

Table 1

Results for western North Pacific Bryde's whales for the variant that provides: (a) conservation performance that achieves the objectives of the Commission; and (b) the best yield for sub-areas 1W and 1E (see Fig. 1). Information is given for: 0.60 and 0.72 tunings and for catch levels with and without invocation of the phase-out rule (see text).

0.0	6 tuning	0.72 tuning			
No phase-out	With phase-out	No phase-out	With phase-out		
72	43	12	7		

 $^{^4}$ There must be an abundance estimate at least eight years before the catch limit pertains. If not the catch is reduced by 20% each year (to zero after five years) unless a new agreed abundance estimate is obtained. The rule was introduced as the long-term performance of the *CLA* was tested assuming relatively frequent surveys. It does not, of course, mean that if there is no abundance estimate after eight years that the population would have become heavily depleted.

2.3 Western North Pacific sei whales

2.3.1 Information and analysis presented with respect to effect of catches during interim period

The intended catches (see Annex E) are of sei whales in a longitudinal sector from the Japanese Pacific coast out to 170°E (see Fig. 2). The catches will be evenly spread through the area. The season is from April to October.

SAG/Japan summarised the available information on stock structure and abundance. This had also been discussed at the JARPN II review workshop. Although not conclusive, genetic studies suggest that there may only be a single population throughout the North Pacific. Analyses recommended by the JARPN II review meeting are underway.

A line transect abundance estimate from JARPN II surveys (i.e. the same as the proposed catching area) was around 7,650 (CV0.255); this estimates was reviewed during the JARPN II review, the report of which was endorsed by the Scientific Committee.

2.3.2 Summary and conclusion

The SAG noted that the Scientific Committee was intending to begin an in-depth assessment of North Pacific sei whales in 2010 (the last assessment was in 1974 which concluded that the stock was depleted). The fact that the catches are intended to occur throughout the North Pacific out to 170°E lessens concerns about possible stock structure. In summary, the SAG notes that the present uncertainty precludes it giving unequivocal advice on the proposed catches but as a minimum, it **agrees** that at least there should be no increase in the present level of catches (i.e. 100 animals) until the RMP *Implementation* is completed which may be in 2015 according to the timetable given under Item 5.

2.4 Western North Pacific sperm whales

2.4.1 Information and analysis presented with respect to effect of catches during interim period

The intended catches (see Annex E) are of sperm whales in a longitudinal sector from the Japanese Pacific coast out to 170°E (i.e. the same area as for Bryde's whales - see Fig. 2). The season is from April to October. At the JARPN II review it had been agreed that the present very low level of catches would not harm the stock(s), despite uncertainty in both stock structure and abundance. The RMP is not applicable to sperm whales (it was developed for baleen whales).

2.4.2 Summary and conclusion

The Group concurs with the view of the JARPN II review that current catch levels would not harm the stock(s).

2.5 Antarctic minke whales

2.5.1 Information and analysis presented with respect to effect of catches during the interim period

The intended annual catches of Antarctic minke whales (see Annex E) will be taken alternately in the Indian Ocean sector (between $35^{\circ}E$ and $170^{\circ}E$) in one year and in the Pacific Ocean sector (between $130^{\circ}E$ and $145^{\circ}W$) in the other (see Fig. 3). Note that there is an area that can be covered in both years (between $130^{\circ}E$ and $170^{\circ}E$). The catching strategy will be the same as for the JARPA II programme and thus catches will be spread throughout the catching areas. The season will last from December to March.



Fig. 3 Southern Ocean showing longitudes mentioned in the text.

There has been considerable discussion of Antarctic minke whales within the Scientific Committee, most recently at the JARPA II review workshop in 2007 and in discussions to finalise the abundance estimates (hoped to be completed at the 2010 annual meeting); the estimates for the most recent (CPIII) circumpolar series of estimates from the SOWER data range from around 461,000 for one method to 688,000 for another although both show an appreciable decline since CPII (the Scientific Committee is in the process of examining whether this reflects a real decline in abundance, changes in survey

methods, changes in the number of animals available to be sighted due to presence within the ice or some combination of these). The Committee had agreed that the available genetic data indicated at least two stocks within the JARPA research area (35° E to 145° W) with an unquantified level of overlap in the 150° - 165° E region.

An RMP *Implementation* took place in 1992 (i.e. before the present Guidelines for *Implementations* and *Implementation Reviews* were developed) that used *Small Areas* of 10° latitudinal bands; although it had been suggested that work should be undertaken to see of the *Small Areas* could safely be made larger, no further work was undertaken due to the establishment of the Southern Ocean Sanctuary.

2.5.2 Summary and conclusion

Given (a) the size of proposed levels (which are appreciably lower than the present levels) relative to the lower of the two estimated abundance estimates and (b) the fact that the catches will be spread evenly, the SAG **agrees** that the short-term catches proposed are not likely to adversely affect the long-term status of the stocks. It notes that although there has been no RMP work on Antarctic minke whales for over 18 years, the fact that work was undertaken may mean that it will be possible to move straight to an *Implementation Review* rather than follow the model of North Pacific common minke whales and having a *pre-Implementation assessment* before moving to an *Implementation Review*. This might bring the expected date for RMP advice to be available to about 2016 – see Item 5.

2.6 Fin whales

2.6.1 Information and analyses presented

The intended annual catches of fin whales (see Annex E) will be taken alternately in the Indian Ocean sector (between $35^{\circ}E$ and $130^{\circ}E$) in one year and in the Pacific Ocean sector (between $130^{\circ}E$ and $145^{\circ}W$) in the other. The catching strategy will be the same as for the JARPA II programme and thus catches will be spread throughout the catching areas. The season will last from December to March.

Information on fin whales is poor; the last assessment was in 1976 and concluded that the stocks were depleted. Little new work has been undertaken since then. There have been abundance estimates based on JARPA data of around 6,500 for the Indian Ocean sector and 5,200 for the western South Pacific but these have not been discussed by the Scientific Committee yet; the surveyed areas (south of 60°S) did not cover the full austral summer range of fin whales. The SOWER cruises in 2005/06 encountered 31 groups of fin whales (274 animals). One of these groups consisted of about 100 animals.

2.6.2 *Summary and conclusions*

The information on fin whales in the Southern Hemisphere is the poorest of the stocks considered by the SAG. It does not appear that sufficient information will become available in the interim period (up to 2020) for an RMP *Implementation* to occur and thus for long-term management advice to be provided by the Scientific Committee under the RMP. That being said, the information provided by Japan on the proposed level of catches and the fact that the catches will be spread over a wide area every two years renders it unlikely that the catches will affect the long-term status of the stock(s). However, in the absence of better information the SAG is unable to provide more substantive advice.

3 REVIEW OF DOCUMENT FROM ICELAND

3.1 Central Atlantic common minke whales

3.1.1 Information and analysis presented with respect to effect of catches during interim period

The Scientific Committee completed the RMP *Implementation* in 1993 and has undertaken three *Implementation Reviews* since then (the last in 2009). The results of the RMP for Central Atlantic common minke whales using the options recommended by the Committee are given in Table 2.

3.1.2 Summary and conclusion

In accord with the discussion under Item 1.5.1.2, Table 2 includes the results for both the 0.60 and 0.72 tuning levels. The SAG draws attention to the fact that the RMP includes provisions to adjust the limits in the case of uneven sex ratios in the catch.

Table 2

Results of the RMP for catches of common minke whales for the CIC Small Area for the 0.72 and 0.60 tuning levels.

	CIC
0.60 tuning	236
0.72 tuning	150



Fig. 4. Small Areas in the North Atlantic for common minke whales

3.2 Central Atlantic fin whales

3.2.1 Information and analysis presented with respect to effect of catches during interim period

The Scientific Committee completed the RMP *Implementation* in 2009. Variant 6 provided conservation performance that achieves the objectives set by the Commission and gives the highest yield. Variant 2 is acceptable with research (i.e. it can be safely used for ten years provided that an acceptable research programme to address the validity or otherwise of one of the stock hypotheses considered (IV), is put in place – depending on the outcome of that research future catch limits should they be set would be based on either V2 or a more conservative option if the hypothesis is not ruled out).

3.2.2 Summary and conclusion

In accord with the discussion under Item 1.5.1.2, Table 3 includes the results for both the 0.60 and 0.72 tuning levels.

Table 3⁵

Results of the RMP for catches of fin whales in the WI sub-area for the 0.72 and 0.60 tuning levels

Variant	Description	TL 0.60	TL 0.72	Comment
V2	Sub-area (WI+EG) is a <i>Small Area</i> . All of the catch is taken in the WI sub-area.	155	87	With research
V6	WI, EG and EI/F are Small Areas; WI+EG+EI/F is a <i>Combination area</i> . Only the catch limit set for the WI area is taken	90	46	Without research

 $^{^{5}}$ Numbers added after the conclusion of the meeting when computer runs completed.



Fig. 5. Map of the North Atlantic showing the fin whale Small Areas.

4 REVIEW OF DOCUMENT FROM SAG/NORWAY

4.1 Northeastern Atlantic common minke whales

4.1.1 Information and analysis presented with respect to effect of catches during interim period

The Scientific Committee completed the RMP *Implementation* in 1993 and has undertaken three *Implementation Reviews* since then (the last in 2009). The results of the RMP for Northeastern Atlantic common minke whales and for the Jan Mayen *Small Area* in the Central region are given in Table 4. The catch limits for Jan Mayen *Small Area* are based on application of the RMP to the Central *Medium Area* (i.e. part of the same analysis as used to determine catch limits for the Icelandic CIC *Small Area*). The results are included here in Table 4 because catches from Jan Mayen have been by Norwegian vessels.

Walløe noted that the information for the northeastern stock was of exceptional quality. He explained that for logistical reasons, primarily financial, it was unlikely that the catch limits for the Jan Mayen area would be taken up. He also referred to the extensive work undertaken by Norwegian scientists with respect to the use of the 0.60 tuning level (see discussion under Item 1.5.1). Norway has an objection to the commercial whaling 'moratorium' and has set national catch limits using the RMP with a tuning level of 0.60.

4.1.2 Summary and conclusion

In accord with the discussion under Item 1.5.1, Table 4 includes the results for both the 0.60 and 0.72 tuning levels. The SAG draws attention to the fact that the RMP includes provisions to adjust the limits in the case of uneven sex ratios in the catch⁶ and has a carryover provision⁷.

Table 4

Results of the RMP for catches of common minke whales by Norway by *Small Area* for the 0.72 and 0.60 tuning levels. Note that the catch limits for the Eastern *Medium Area* before applying catch-cascading and the adjustment for an unbiased sex-ratio are 1,021 (0.6 tuning) and 483 (0.72 tuning).

Small Area	ES	EB	EN	EW	Total E	СМ
0.60 tuning	120	195	140	322	777	121
0.72 tuning	57	92	66	152	367	77

5 SCIENTIFIC COMMITTEE WORKPLAN ON RMP-RELATED MATTERS

In the light of the discussions above, the SAG suggests the following workplan for the interim period.

In developing this workplan the SAG noted that:

(a) the resources/expertise of the Scientific Committee/Secretariat makes it very difficult for the Committee to undertake more than one and certainly not more than two *Implementations* at a time - it can be possible to undertake a *pre-Implementation assessment* during the 2-year *Implementation process*;

(b) in association with the above, work on the AWMP must also occur within the interim period; this involves much of the same expertise/personnel;

⁶ This provision reduces the catch limits to account for imbalanced (higher proportion of females) sex ratio in the catch.

⁷ This provision allows for a carryover of unused catches from one year to the next within a five-year block but not between blocks.

(c) science is complex and the dates are dependent on reaching agreement on certain issues such as when a *pre-Implementation Assessment* is completed – thus there may be some flexibility in the actual dates (some of which is indicated by question marks). *Implementation Reviews* are scheduled every 5 years as part of the RMP. These can be relatively simple (updating catch and abundance estimates) or more complex e.g. if new stock structure hypotheses are proposed that require new simulation trials. The timetable has assumed that these can be completed within one year.

The workplan is shown as Table 5.

6 ADOPTION OF REPORT

The report was adopted at 16:00 on 25 January 2010. It was agreed that the numbers for North Atlantic fin whales should be added when the computer runs are completed. The participants thanked the Chair for leading them through a complex set of issues. The Chair thanked the participants for the spirit of co-operation shown by all, and the focus on scientific issues when the political sensitivities are high. He also thanked the interpreters for carrying out perhaps the most difficult job of all with a smile.

Table 5

Potential Scientific Committee workplan (for details see Item 5 and text under each stock).

IR= Implementation Review (often possible to complete in one year). PIA = pre-Implementation Assessment (may take more than one year). RMP = completed Implementation (takes two years once the PIA is completed). IDA= in-depth assessment, usually takes two years or more and feeds into a pre-Implementation assessment. As explained in the text, the plan below is ambitious and it may not be possible to achieve all of the work by the years indicated. Square brackets are used to express possible but perhaps less likely dates.

Western North Pacific Bryde's whales											
			IR					IR			
NA common minke whales - eastern and central medium areas											
				IR						IR	
NA fin whales - central medium area											
				IR					IR		
Western No	Western North Pacific common minke whales										
[PIA]	PIA	[RMP]	RMP					IR			
Western North Pacific sei whales											
	IDA		PIA		RMP					IR	
Antarctic minke											
					PIA/IR	[RMP]	RMP				
2010	2011	2012	2013	2014	2015	2016	2017	2018	2010	2020	

Annex A List of Participants

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Annex B

Guidance from the Support Group

A group of scientists nominated by the Support Group⁸ will participate in a closed meeting on 24-26th January in Hawaii in order to provide scientific advice to the Support Group on any proposed interim whale catch levels for discussion by the Support Group. Note that the scientific group will not be asked to comment upon proposed catches for indigenous whaling; these will be based upon existing and approved AWMP processes.

The following principles will guide the scientific review.

The IWC has been agreed that long-term management will be based on the IWC's management procedures/algorithms such as the RMP or AWMP. As long-term management advice will not be available for all whale populations for which catches are proposed at the time of the assessment, it will be necessary to assess short-term catch levels with other mechanisms until such time as the long-term advice is available. It has been agreed that any such short-term assessment will reflect policy decisions such that the numbers will be less than catch limits based on the best available science. Taking into account the likely limitations of available data for some populations, the assessment will be precautionary and will determine if the interim catches are set at levels that will not negatively affect the long-term status of the stock, given that such short term catch limits will only be used until an RMP *Implementation* or *Implementation Review* has been completed and implemented. As part of the arrangement, there will be overall strategy that allows for completion of an RMP *Implementation* or *Implementation Review* as soon as possible, and in any case before the completion of the interim period. Any RMP *Implementation Review* will take into account the actual catches taken during the interim period. If catch levels determined by the RMP processes are lower than the agreed catch levels, then the catch limits will be adjusted accordingly.

Member Governments proposing interim catch levels must provide appropriate (see below) documentation to the Secretariat for circulation to the scientific group by Monday 18th January 2010. The proposal documents will remain entirely confidential until and if the Support Group determines otherwise.

It is thus the task of the scientific group to review any proposals by Members States and provide a *concise* scientific review on whether it believes that any proposed catches are such that the **long-term** status of the populations concerned will not be negatively affected. This evaluation will recognise that there will be an RMP *Implementation* or *Implementation Review* during the interim period, as outlined in the schedule of relevant work of the Scientific Committee (see Item 5 of this report). The group may undertake its own analyses in addition to those presented in proposals.

Guidelines for the contents of the proposal to be submitted to the scientific review

- (1) The species and number of whales to be taken in each year of the arrangement by stock(s) and geographical area(s) and the time period (e.g. months) that the whaling will occur.
- (2) Any other limitations that may be imposed on the whaling operation(s).
- (3) Scientific justification that the proposed catches fall within the principles for 'interim measures' outlined above. This will include:
 - reference to any work on the affected stock or stocks undertaken by the Scientific Committee in the context of the RMP or an in-depth assessment;
 - a summary of knowledge of the population size and stock structure of the whale population from which the whales are proposed to be taken, including consideration of uncertainty;
 - scientific justification for the conclusion that the catches will not negatively affect the long-term status of the stock, including consideration of all anthropogenic mortality (e.g. bycatch, ship strikes), not only that from the whaling proposed in the interim arrangement;
 - specification of any research work that will be undertaken to facilitate the conduct of an *Implementation* or *Implementation Review*, including the timeframe for such work.

⁸ The scientific group will be kept as small as possible. Proposed representation is from: Australia, Germany, Iceland, Japan, Mexico, Norway and USA and the Secretariat plus one other scientist external to the Support Group. The group may select an independent scientist and get him/her to sign an agreement of confidentiality

Annex C

Agenda

1 INTRODUCTORY ITEMS

- 1.1 Election of Chair
- 1.2 Terms of reference
- 1.3 Adoption of agenda
- 1.4 Documents available
- 1.5 General comment on the nature of the advice to be given and the style of report
 - 1.5.1 General nature of advice
 - 1.5.2 Structure of report
- 1.6 Availability of report
- 1.7 Appointment of rapporteurs
- REVIEW OF SAG/JAPAN

2

2.2

- 2.1 Western North Pacific common minke whales
 - 2.1.1 Comments on the information and analysis presented with respect to effect of catches during interim period
 - 2.1.2 Additional analyses if any carried out by group
 - 2.1.3 Summary and conclusion
 - Western North Pacific Bryde's whales
 - 2.2.1 Information and analysis presented with respect to effect of catches during interim period2.2.2 Summary and conclusion
- 2.3 Western North Pacific sei whales
 - 2.3.1 Information and analysis presented with respect to effect of catches during interim period
 - 2.3.2 Summary and conclusion
- 2.4 Western North Pacific sperm whales
 - 2.4.1 Information and analysis presented with respect to effect of catches during interim period
 - 2.4.2 Summary and conclusion
- 2.5 Antarctic minke whales
 - 2.5.1 Information and analysis presented with respect to effect of catches during the interim period
 - 2.5.2 Summary and conclusion
- 2.6 Fin whales
 - 2.6.1 Information and analyses presented
 - 2.6.2 Summary and conclusions
- 3 REVIEW OF SAG/ICELAND
 - 3.1 Central Atlantic common minke whales
 - 3.1.1 Information and analysis presented with respect to effect of catches during interim period
 - 3.1.2 Summary and conclusion
 - 3.2 Central Atlantic fin whales
 - 3.2.1 Information and analysis presented with respect to effect of catches during interim period
 - 3.2.2 Summary and conclusion
- 4 REVIEW OF SAG/NORWAY
 - 4.1 Northeastern Atlantic common minke whales
 - 4.1.1 Information and analysis presented with respect to effect of catches during interim period4.1.2 Summary and conclusion
- 5 SCIENTIFIC COMMITTEE WORKPLAN ON RMP-RELATED MATTERS
- 6 ADOPTION OF REPORT

Annex D A Note on RMP Tuning levels

The information to the SAG from Norway indicated that catch limits would continue to be based on the RMP with a tuning level of 0.60, different from the value of 0.72 decided by the Commission in 1991. Iceland and Japan also referred to this tuning level. The lower the tuning, the higher the catch level allowed. The choice of tuning level represents a policy trade-off between the competing objectives of minimising depletion risk on the one hand, and maximising catches for the industry on the other.

When the Scientific Committee recommended the RMP to the Commission in 1991, it presented three alternative tunings (0.60, 0.66 and 0.72), and left the policy choice amongst them to the Commission. The Commission selected the value of 0.72, as being the most precautionary.

The *Implementation Simulation Trials* for North Atlantic common minke whales and Antarctic minke whales (each completed in 1993), for North Pacific Bryde's whales (completed in 2007) and for North Atlantic fin whales (completed in 2009), used the 0.72 tuning. The Committee has not considered itself authorised to use different tunings.

However, the *Implementation Simulation Trials* for North Atlantic common minke whales were repeated by Norwegian scientists for all three tunings (0.60, 0.66, and 0.72). They judged performance to be acceptable in all cases (Fenstad, 1994; SC/46/NA1).

In 2004, Norway had notified the Scientific Committee and the Commission that it would propose changes to the CLA (*Catch Limit Algorithm*) of RMP, stating their view that all tunings in the range 0.72 to 0.60 resulted in unnecessarily low production levels, and that other types of tuning could give higher productivity without compromising the realised protection level or other statistics related to protection. Preliminary simulation results for the three "old" and two "new" tuning levels were presented to the Scientific Committee meeting in 2006⁹. The discussion in the Scientific Committee focused on the two new tuning levels and whether they had sufficient risk-adverse behaviour compared to the three old tuning levels. After these discussions, the Scientific Committee defined a set of required trials that must be run to demonstrate whether a candidate procedure is an improvement compared to the current version of the CLA. Results from all the specified simulation trials were presented as SC/59/RMP4 to the Scientific Committee in 2007 both for the three old tuning levels and for the two new, and both for the required 100 years perspective and for a 300 years horizon. The Scientific Committee decided that these results and corresponding plots were as required for consideration of a proposed revision of the CLA. The discussion in the Scientific Committee of the new proposals has not been finalised.

⁹ The 'old' tuning levels refer to the original three levels presented by the Scientific Committee in 1991. The two 'new' tuning levels, developed by Norwegian scientists, were obtained by tuning on a different parameter in the *CLA* than that used for the 1991 tunings.