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International Whaling Commission



INTERNATIONAL
WHALING COMMISSION

6. RMP – IMPLEMENTATION-RELATED MATTERS

6.1 North Pacific common minke whales

Since 2010, the Committee has been following the process of an *Implementation Review* for western North Pacific common minke whales according to its ‘Requirements and Guidelines for *Implementations* under the RMP’ (IWC, 2012b). The scheduled period for an *Implementation* or *Implementation Review* is normally two years but, given the complexities of this particular *Implementation Review*, it has not been possible to keep to this schedule. This year’s Annual Meeting was thus the third of the *Implementation Review*, but its objectives were those of the ‘Second Annual Meeting’ as described in the Requirements and Guidelines for *Implementations*, which are to complete the *Implementation Review* by examining the results of the final *Implementation Simulation Trials* and agreeing recommendations for implementation of the RMP.

6.1.1 Review report of intersessional Workshop

The Committee reviewed the report of the intersessional Workshop held in La Jolla, California in March 2013 and chaired by Donovan (SC/65a/Rep04). The Workshop is referred to as the ‘2nd Intersessional Workshop’, although it is actually the third such Workshop because of the extended schedule of this *Implementation Review*.

The Workshop was primarily a technical Workshop, the objectives of which were to review the results of work agreed at the 2012 Annual Meeting of the Scientific Committee (IWC, 2013c) and to consider the results of the final trials using the agreed approach that forms part of the *Implementation* process (IWC, 2012h). The ultimate objectives were to develop recommendations for consideration by the Committee on: management areas; RMP variants (e.g. catch-cascading, catch-capping); suggestions for future research to narrow the range of plausible hypotheses or eliminate some hypotheses; and ‘less conservative’ variants(s) with their associated required research programmes and duration.

A detailed summary of the Workshop report is given in Annex D1, item 2. A map defining the sub-areas used for the *Implementation Review* is given as Fig. 1.

The Workshop made considerable progress but it had not been possible to consider final trial results because decisions necessary for finalising the trials were only able to be taken at the Workshop. However, some preliminary results for some trials were available and review of these led to refinement and reduction of the total number of management variants (see Item 6.1.3.1) to be considered at this Annual Meeting.

The Workshop had developed a work plan for the remainder of the intersessional period aimed at completing the final trials and providing results well in advance of this Annual Meeting. Considerable progress was made but because of the complexities of this *Implementation Review* it had not been possible to complete this work prior to the Annual Meeting. The Workshop had also identified a number of generic issues related to conducting trials which were referred to the RMP sub-committee (see Annex D, item 2.7).

The Committee **endorses** the conclusions and recommendations from the Workshop report (SC/65a/Rep04) and expressed its thanks to Donovan and all participants for their hard work and progress.

6.1.2 Progress since intersessional Workshop

6.1.2.1 UPDATE TO TRIAL SPECIFICATIONS

Changes to the trial specifications and the code implementing these specifications since the 2nd Intersessional Workshop are described in Annex D1, item 3.1. The Committee **endorses** these changes to the trial specifications; the final trial specifications are given in Annex D1, Appendix 2.

6.1.2.2 REVIEW OF FINAL CONDITIONING RESULTS

Regarding conditioning the *Implementation Simulation Trials*, the Committee had reviewed the fit diagnostics for the base-case trials and those for many of the sensitivity tests implemented in other trials at the 2012 Annual Meeting (IWC, 2013c). Work on conditioning trials continued during the intersessional period and the conditioning diagnostics for all trials conducted during this period had been reviewed by Punt. The Committee had agreed that the *ad hoc* Working Group established under the Working Group on the *Implementation Review* for Western North Pacific common minke whales to review trial results should check the conditioning of any trials that may be influential in the final decisions regarding the selection of RMP variants. The

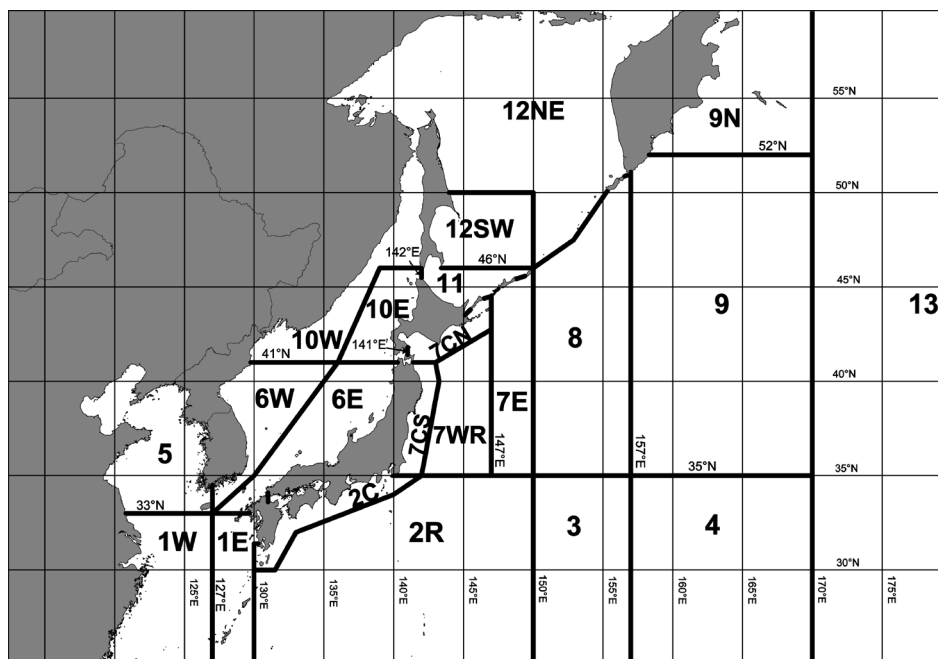


Fig.1. The 22 sub-areas used for the *Implementation Simulation Trials* for North Pacific minke whales.

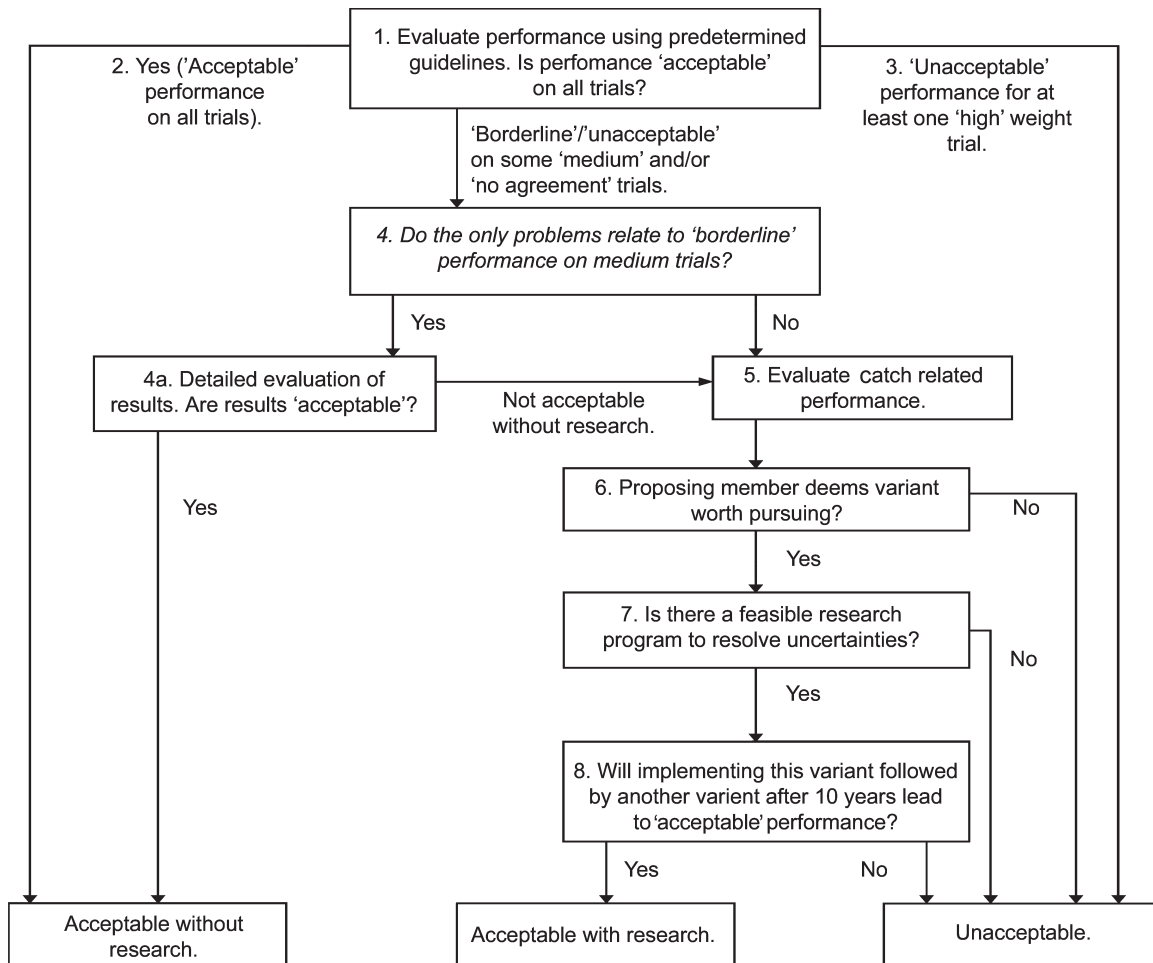


Fig.2. Flowchart summarising the procedure for review of *ISTs* (from IWC, 2005a, pp.91-92).

Committee confirms that conditioning had been successfully achieved for all influential trials (Annex D1, item 3.2).

6.1.3 Complete Implementation Review

According to the Requirements and Guidelines for *Implementations*, completing the *Implementation Review* involves reviewing the results of the final *Implementation Simulation Trials* and making recommendations on: Management Areas; RMP variants; and inputs to the *CLA* for use in actual applications of the RMP.

6.1.3.1 REVIEW RESULTS OF FINAL IMPLEMENTATION SIMULATION TRIALS

The procedure for reviewing results of the final trials is given in the Committee's Requirements and Guidelines for *Implementations* (IWC, 2012h). A very brief summary is given below.

Fig. 2 shows a flow chart of the decision process to be followed.

The procedure first involves consideration of specified diagnostics to evaluate conservation performance generated from trial results, and determining from them whether the performance of each trial is 'acceptable', 'borderline' or 'unacceptable' under each of the defined RMP variants (see Annex D1, item 4.1). The style in which these results should be presented is detailed in Annex D1, item 4.2. RMP variants are defined by the *Management Areas* to be used (*Small Areas*, etc.) and how many catches are to be taken from them (see Annex D1, item 5). This part of the procedure is a technical exercise that follows directly from the results and requires no judgement.

The second stage is to evaluate each RMP variant by considering the results of all trials together in order to decide whether each variant is 'acceptable without research', 'acceptable with research' or 'unacceptable' (see Annex D1, item 5). This part of the procedure does require judgement because consideration is needed of the overall balance of the trials and the characteristics of any specific trials for which performance is questionable. The process for evaluating each variant can be summarised as follows:

- (1) if the performance is close to 'acceptable' for a small number of 'borderline' trials then the Committee may agree that the variant is 'acceptable without research';
- (2) if the performance is close to 'unacceptable' or is 'unacceptable' for a number of trials based on a specific hypothesis, then the Committee may agree that this is a candidate for the 'acceptable with research'; and
- (3) if the performance is close to 'unacceptable' or is 'unacceptable' for a number of trials under several hypotheses, then the Committee may agree that the variant is 'unacceptable' and thus eliminated from further consideration.

Ten RMP variants to be evaluated had arisen from the 2nd Intersessional Workshop.

- (1) *Small Areas* equal sub-areas. For this option, the *Small Areas* for which catch limits are set are 5, 6W, 7CS, 7CN, 7WR, 7E, 8, 9*, and 11.
- (2) Sub-areas 5, 6W, 7+8, 9* and 11 are *Small Areas* and catches are taken from sub-areas 5, 6W, 7CN, 9 and 11.
- (3) Sub-areas 5, 6W, 7+8, 9* and 11 are *Small Areas* and catches are taken from sub-areas 5, 6W, 7CS, 9 and 11.

- (4) Sub-areas 5, 6W, 7CS, 7CN, 7WR+7E+8, 9* and 11 are *Small Areas* and catches are taken from sub-areas 5, 6W, 7CS, 7CN, 7WR, 9 and 11.
- (5) Sub-areas 5 and 6W are *Small Areas* and catches are taken from sub-areas 5 and 6W. Sub-areas 7+8+9*+11+12 form a combination area and catches are cascaded to the sub-areas within the combination area. The catch limits for sub-areas 12SW and 12NE are not taken.
- (6) Sub-areas 5, 6W, 7+8, 9* and 11 are *Small Areas* except that the catches from the 7+8 *Small Area* are taken from sub-areas 7CS and 7CN using the same method as for catch cascading to allocate the catch across the two sub-areas.
- (7) Sub-areas 5+6W+6E+10W+10E and 7+8+9*+11 are *Small Areas*; catches from the 5+6W+6E+10W+10E *Small Area* are taken from sub-areas 5 and 6W using the same method as for catch cascading to allocate the catch across those five sub-areas, and catches from the 7+8+9+11 *Small Area* are taken in sub-area 7CN.
- (8) Sub-areas 5, 6W and 7+8+9*+11+12 are *Small Areas* and catches from the 7+8+9*+11+12 *Small Area* are taken from sub-areas 8 and 9 using the same method as for catch cascading to allocate the catch across the two sub-areas.
- (9) Sub-areas 5, 6W and 7+8+9*+11+12 are *Small Areas* and catches from the 7+8+9*+11+12 *Small Area* are taken from sub-areas 7CS, 7CN, 7WR, 7E, 8 and 9 using the same method as for catch cascading to allocate the catch across these sub-areas.
- (10) Sub-areas 5, 6W and 7+8+9*+11+12 are *Small Areas* and catches from the 7+8+9*+11+12 *Small Area* are taken from sub-areas 7CS, 7CN, 7WR, 7E, 8, 9 and 11 using the same method as for catch cascading to allocate the catch across these sub-areas. Catches from sub-area 11 occur in May and June only.

After reviewing the initial results at the meeting, Japan requested that an 11th variant be evaluated.

- (11) Sub-areas 5, 6W and 7+8+9*+11+12 are *Small Areas* and catches from the 7+8+9*+11+12 *Small Area* are taken from sub-areas 7CS, 7CN, 7WR, 7E, 8 and 9 using the same method as for catch cascading to allocate the catch across these sub-areas, except the catches from sub-areas 7CS, 7CN, 7WR and 7E are reduced by 50% after first subtracting the bycatches in these sub-areas.

The Committee's Requirements and Guidelines for *Implementations* allow for additional variants to be proposed for evaluation during the 2nd Intersessional Workshop as part of the *Implementation* process. However, due to the complexities of this *Implementation Review*, the results of only a few trials had been available during the 2nd Intersessional Workshop rather than the complete set as envisioned in the Requirements and Guidelines. Recognising these exceptional circumstances, the Committee **decided** to evaluate this additional variant noting that it was in accord with the RMP in that catches from all *Small Areas* cannot exceed the RMP catch limit (except when the bycatch exceeds the RMP catch limit when the commercial catch is set to zero).

In doing so, the Committee **reiterates** that, under normal circumstances, proposal and evaluation of additional variants should not take place at the 2nd Annual Meeting.

Annex D1, table 2 lists the factors considered in the trials and the plausibility assigned to each. Some of the factors were assigned 'medium' plausibility because the Committee had not been able to reach agreement on whether they should

be 'low', 'medium' or 'high' (IWC, 2013c, p.11). A list of all the trials is given in Annex D1, table 1. In all there were 66 trials of which none were given 'high' weight. More details are given in Annex D1, item 5.

Annex D1, tables 3 and 4 summarise the application of the procedure for evaluating conservation performance. Results are shown in Annex D1, table 3 by stock-structure hypothesis and in Annex D1, table 4 by RMP variant. Annex D1, table 5 lists the average catches by sub-area for each RMP variant for the six base-case trials, reported for years 1-10 and for the entire 100-year projection period. The results in this table are illustrative only; the actual catches will depend on the application of the *CLA* to the abundance estimates and catches selected by the Committee (see Items 6.1.4.2 and 6.1.4.3).

The full set of trial results is available from the Secretariat upon request. Results for each variant are given in Annex D1, item 5 and are summarised below.

Variants 1, 2, 3, 4 and 6

These variants did not have 'unacceptable' performance for any trials, but had 'borderline' performance for one trial (B04) as shown in Annex D1, fig. 3. Given that the 'borderline' performance was close to 'acceptable', and that 'borderline' performance occurred only once out of 66 trials, these variants can be considered as candidates which are 'acceptable without research' (step 4a in Fig. 2).

Variant 5

Variant 5 had 'unacceptable' performance for trial B04 (Annex D1, fig. 3). It had 'borderline' performance for trials A04 (Annex D1, fig. 4), B03 (Annex D1, fig. 5), C03 (Annex D1, fig. 6), and C04 (Annex D1, fig. 7). Given that this variant fails for only one trial (B04) and is 'borderline' on four trials in which it is close to 'acceptable' for trial A04, this variant can be considered 'acceptable with research' because it fails only for stock structure hypothesis B (step 4a in Fig. 2).

Variant 7

Variant 7 performed 'unacceptably' on 22 out of 27 trials for stock-structure hypothesis C and 'borderline' on two (C14, C17). It also had 'borderline' performance for two trials based on stock-structure hypotheses A and B (A04, B04). This variant was close to 'acceptable' for these two trials (Annex D1, figs 3 and 4). This variant can thus be considered as a candidate for 'acceptable with research' because it was 'borderline' for only two out of 39 trials for hypotheses A and B, while its performance was 'unacceptable' for hypothesis C; that is, this variant fails for only one stock structure hypothesis (step 4a in Fig. 2).

Variant 8

Variant 8 was acceptable for all 'medium' weight trials. Therefore this variant can be considered to be 'acceptable without research' (steps 1 and 2 in Fig. 2).

Variant 9

Variant 9 performed 'unacceptably' on 20 out of 27 trials for stock-structure hypothesis C, and had 'borderline' performance for four trials (C11, C14, C17 and C30). It had 'borderline' performance on only two out of 39 trials based on stock-structure hypotheses A and B (A04, B04). This variant can thus be considered as a candidate for 'acceptable with research' because it fails only for stock structure hypothesis C (step 4a in Fig. 2).

Variant 10

Variant 10 performed ‘unacceptably’ on 23 out of 27 trials for stock-structure hypothesis C and had ‘borderline’ performance for two trials (C17 and C27). It also performed ‘unacceptably’ for one trial for stock structure hypothesis B (B04) and ‘borderline’ for 8 trials (B03, B05, B06, B09, B18, B20, B22, B28). ‘Borderline’ performance was also observed for three trials for stock structure hypothesis A (A03, A04, A28). This variant is therefore ‘unacceptable’.

Variant 11

Variant 11 performed ‘unacceptably’ on three out of 27 trials for stock-structure hypothesis C (C13, C20, C23) and had ‘borderline’ performance for 16 stock structure hypothesis C trials. The conservation performance of this variant is between that of variants 5 and 9, which were both considered to be candidates for variants with research. Therefore, this variant can be considered as a candidate for ‘acceptable with research’.

Variants with research

With respect to variants that are candidates for ‘acceptable with research’, it is the responsibility of relevant government(s) to inform the Committee whether it wishes additional trials to be run to determine the conservation performance of proposed ‘hybrid variants’. A ‘hybrid variant’ is one for which catches for the first 12 years are set using the candidate ‘acceptable with research’ variant followed by a 6-year phase down/phase out period and then catches set by an ‘acceptable without research’ variant. The conservation performance of the ‘hybrid variant’ must be ‘acceptable’ under the criteria described above.

If the ‘hybrid variant’ performs acceptably then, before it can be recommended, the Committee must agree a research programme that it believes has a realistic chance of determining whether the trial(s) for which this variant performed poorly should be accorded low weight. The Committee will review progress with the research programme annually and may recommend early reversion to the ‘acceptable’ variant if progress is not sufficient.

The Committee noted that any research proposal submitted would be reviewed at next years’ meeting.

6.1.4 Recommendations**6.1.4.1 RMP VARIANTS**

Under the management options recommended (see below), the *Management Area* designations for each RMP variant are as follows.

- (1) Variant 1: sub-areas 5, 6W, 7CS, 7CN, 7WR, 7E, 8, 9* and 11 are *Small Areas*.
- (2) Variant 2: sub-areas 5, 6W, 7+8, 9* and 11 are *Small Areas* (all of the catch from the 7+8 *Small Area* is taken from sub-area 7CN).
- (3) Variant 3: sub-areas 5, 6W, 7+8, 9* and 11 are *Small Areas* (all of the catch from the 7+8 *Small Area* is taken from sub-area 7CS).
- (4) Variant 4: sub-areas 5, 6W, 7CS, 7CN, 7WR+7E+8, 9* and 11 are *Small Areas* (all of the catch from the 7WR+7E+8 *Small Area* is taken from sub-area 7WR).
- (5) If Variant 5 proves to be acceptable with research: sub-areas 5 and 6W are *Small Areas* and catches are taken from sub-areas 5 and 6W. Sub-areas 7+8+9*+11+12 form a Combination Area (catch limits for sub-areas 12SW and 12NE are not taken).

- (6) Variant 6: sub-areas 5, 6W, 7+8, 9* and 11 are *Small Areas* (catches from the 7+8 *Small Area* are taken from sub-areas 7CS and 7CN using the same method as for catch cascading).
- (7) If Variant 7 proves to be acceptable with research: sub-areas 5+6W+6E+10W+10E and 7+8+9*+11 are *Small Areas*; (catches from the 5+6W+6E+10W+10E *Small Area* are taken from sub-areas 5 and 6W using the same method as for catch cascading; catches from the 7+8+9+11 *Small Area* are taken in sub-area 7CN).
- (8) Variant 8: sub-areas 5, 6W and 7+8+9*+11+12 are *Small Areas* (catches from the 7+8+9*+11+12 *Small Area* are taken from sub-areas 8 and 9 using the same method as for catch cascading).
- (9) If Variant 9 proves to be acceptable with research: sub-areas 5, 6W and 7+8+9*+11+12 are *Small Areas* (catches from the 7+8+9*+11+12 *Small Area* are taken from sub-areas 7CS, 7CN, 7WR, 7E, 8 and 9 using the same method as for catch cascading).
- (10) If Variant 11 proves to be acceptable with research: sub-areas 5, 6W, and 7+8+9*+11+12 are *Small Areas* (catches from the 7+8+9*+11+12 *Small Area* are taken from sub-areas 7CS, 7CN, 7WR, 7E, 8 and 9 using the same method as for catch cascading).

The Committee **agrees** that, according to the Committee’s Requirements and Guidelines for *Implementations* (IWC, 2012h):

- (1) variants 1, 2, 3, 4, 6 and 8 are ‘acceptable without research’;
- (2) variants 5, 7, 9 and 11 are candidates for ‘acceptable with research’; and
- (3) variant 10 is ‘unacceptable’.

Some members stated that with only two exceptions, all of the ‘unacceptable’ trials were under stock structure hypothesis C. Under the Committee’s current Requirements and Guidelines for *Implementations* under the RMP, when there is no agreement on plausibility of the hypotheses, the plausibility is automatically assigned as ‘medium’. In the case of stock structure hypothesis C, there was no agreement and therefore the plausibility became ‘medium’ as for the other stock structure hypotheses. However these members reiterated their view that the plausibility of stock structure hypothesis C is ‘low’ (IWC, 2011c, p.138). Whilst agreeing that the review of trials had appropriately followed the Committee’s current Requirements and Guidelines for *Implementations*, under these circumstances they could not accept the recommendations on management based on the conservation performance of the *Implementation Simulation Trials* using hypothesis C reviewed at this meeting. They pointed out that the problem of assigning plausibility has been an ongoing problem and suggested that it is necessary to review the method of determining plausibility.

6.1.4.2 ESTIMATES OF ABUNDANCE

The Committee did not have sufficient time to finalise the estimates of abundance for use in actual applications of the RMP. Annex D1, table 6 summarises the current status of abundance estimates for use in the trials and in actual applications of the RMP. Work to determine whether the abundance estimates that need further consideration can be accepted for use in actual applications of the RMP is included in the work plan. Final decisions regarding which abundance estimates can be used in actual applications of the RMP will be made at next year’s meeting, taking into account any revision to the Requirements and Guidelines for Conducting Surveys (see Item 5.5, Annex D, item 2.5).

6.1.4.3 HISTORICAL AND FUTURE REMOVALS

The Committee has previously agreed that the best estimates of the direct catches and the average predicted bycatch from the six baseline trials would be used in actual applications of the RMP (IWC, 2013c). The calculated average predicted bycatch from the six baseline trials are given in Annex D1, Appendix 2.

6.1.4.4 CONSIDERATION OF DATA/ANALYSES TO REDUCE HYPOTHESES IN FUTURE

The Committee did not have sufficient time to discuss this item fully. It **encourages** those Contracting Governments which are contemplating application of the RMP to review previous discussions on this matter in the Committee.

The Committee highlighted that the *Implementation Simulation Trials* structure provided a way to identify the value of information to resolve uncertainties. In particular, analyses could be undertaken to assess where data on mixing proportions and abundance would be most informative in terms of resolving the plausibility of various hypotheses. The Committee recognised that becoming familiar with how to use the *Implementation Simulation Trials* structure to evaluate the value of information could be complicated, and **encourages** members of the Committee to work with the Secretariat to develop the ability to condition and run trials.

6.1.5 Surveys and estimates of abundance

6.1.5.1 RESULTS FROM RECENT SURVEYS

SC/65a/NPM01 presented the results of satellite tracking of common minke whales in the Sea of Japan in autumn 2012. Little information on migration behaviour was obtained because of the short transmission duration (14 days). More details are given in Annex D1, item 8.1. The Committee welcomes this information and **recommends** that researchers conducting tagging studies on North Pacific minke whales work together with those conducting similar work in other areas, particularly in relation to tag technology and deployment.

SC/65a/NPM04 provided a cruise report on a sighting survey in the East Sea in spring 2012. More details are given in Annex D1, item 8.1.

6.1.5.2 PLANS FOR FUTURE SURVEYS

SC/65a/NPM02 presented the research plan for a sighting survey for common minke whales in the Sea of Okhotsk, including the Russian EEZ, in summer 2014. The primary objective of the survey is to obtain a new estimate of abundance for sub-areas 11 and 12. The secondary objective of the survey will be biopsy sampling and satellite tagging for common minke whales, if permission is obtained from the Government of the Russian Federation. This latter objective is important given the need to obtain information on the mixing rate of J- and O-stocks, and the distribution of J-stock in the Okhotsk Sea. Further details are given in Annex D1, item 8.2.

SC/65a/NPM05 reported that a sighting survey for common minke whale will be conducted in the Yellow Sea in spring 2014. This survey is part of a four-year programme to survey the waters of sub-areas 5 and 6W and increase survey coverage from 13% to 35%. Further details are given in Annex D1, item 8.2.

The Committee welcomes these plans and noted that there have been no surveys in sub-area 12 in recent years. It appointed Miyashita and An to provide oversight of these surveys on behalf of the Committee. The Committee **strongly recommends** that the Government of the Russian Federation give permission for the survey to take place in its EEZ in the Sea of Okhotsk throughout sub-area 12, given

the importance of abundance estimates for sub-area 12 to the understanding of the status of common minke whales in the western North Pacific.

6.1.5.3 UPDATED LIST OF ACCEPTED ABUNDANCE ESTIMATES

Annex D1, Appendices 3 and 4 summarise information on primary effort, primary sighting position, survey blocks, sub-areas and area definitions for surveys for western North Pacific minke whales. The Committee thanked Miyashita, Hakamada and An for providing this information, which had been requested by the 2nd Intersessional Workshop.

Annex D1, table 7 lists these estimates of abundance in a format consistent for collation with estimates from other species and areas.

6.1.6 Conclusions

The Committee re-established the Intersessional Steering Group (see Annex D1, item 11 for membership) to coordinate intersessional work and prepare for the 2014 Annual Meeting.

The Committee recognised that this *Implementation Review* had been the most complicated to date and thanked all those who had contributed over the last three years to its completion, especially Hammond and Donovan who chaired the Working Group and intersessional Workshops, respectively. In particular, the Committee expressed its appreciation for the large amount of work done by Allison and De Moor without which it would not have been possible to complete the *Implementation Review*. The Committee noted that the need to take three years to complete this complicated *Implementation Review* may have implications for conducting other *Implementations* and *Implementation Reviews*. The Committee **agrees** to review its Requirements and Guidelines for *Implementations* under the RMP in this context at next year's meeting.

6.2 North Atlantic fin whales

6.2.1 Implementation Review

The Committee reviewed the report of the pre-meeting to initiate the *Implementation Review* (see Annex D, Appendix 2) and **endorses** its conclusions, recommendations and work plan. It established an intersessional group (see Annex R) under Elvarsson to develop revised specifications for the trials. It **recommends** that a two-day Workshop is held back-to-back with an AWMP intersessional Workshop in early 2014 to reduce travel costs.

6.3 North Atlantic common minke whales

6.3.1 Review new information

The Committee received five papers which had either been presented to the Special Permit Review Workshop held in Iceland (SC/65a/Rep03), or were revised versions of papers presented then. Details are given in Annex D, item 3.2.1.

The Committee **welcomes** the information in SC/F13/SP17 and SC/F13/SP20rev. It should be useful for the upcoming *Implementation Review*, and, in particular, the work of the joint AWMP/RMP Working Group on stock structure.

The Committee recognised the value of the satellite tracking of minke whales, reported in SC/F13/SP18, for the development of *Implementation Simulation Trials*. It **reiterates** the recommendations of the Special Permit Review that such tagging should continue, as much information as possible should be collected from each tagged individual, and that the results from the various stock definition approaches should be integrated.