Report
of the
NAMMCO SCIENTIFIC COMMITTEE WORKING GROUP ON ASSESSMENT

Greenland Representation
Copenhagen, Denmark, 25-27 January 2017

1. OPENING REMARKS

Chair Walløe welcomed the participants (Appendix 2) to the meeting, especially the external experts for providing their time and expertise. Walløe then reviewed the requests from Council related to the agenda items, and the goals of the meeting. Walløe also noted that he was unable to attend the meeting on the second day (26 January) however Butterworth had agreed to chair in his absence.

The WG noted that request 1.7.12 is broad, and will not be covered in detail at this meeting. This meeting will focus on humpback whales in Greenland and fin and minke whales off Iceland.

2. ADOPTION OF THE AGENDA

The agenda was adopted without changes (Appendix 1).

3. APPOINTMENT OF RAPPORTEUR

Prewitt was the main rapporteur, with help from other participants as needed.

4. REVIEW OF AVAILABLE DOCUMENTS AND REPORTS

The WG reviewed the documents that were available to the meeting (Appendix 3).

5. CENTRAL NORTH ATLANTIC COMMON MINKE WHALE STOCK

5.1 Introduction

The most recent advice provided by the SC on sustainable catch levels in Icelandic coastal waters (the CIC sub-area – see Fig. 1) was in 2015 when the SC concluded that an annual catch limit of 224 common minke whales in the CIC sub-area was safe and precautionary (NAMMCO 2016). This was interim advice, valid for a maximum of 3 years (2016 – 2018), because of the lengthy time (six years) since the last abundance estimate for the CIC sub-area and as a long-term advice was not considered feasible until the IWC RMP *Implementation Review* of North Atlantic common minke whales had been completed.

At NAMMCO-24 the following request was made to the SC concerning minke whales:
The SC is requested to complete assessments of common minke whales in the North Atlantic and include estimation of sustainable catch levels in the Central North Atlantic.

Unfortunately the IWC RMP *Implementation Review* could not be completed in 2016 as had been scheduled, and the 2015 aerial survey in CIC was unsuccessful because unusually poor weather conditions meant that only a very small part of the area could be covered. However, a new abundance estimate from the shipboard part of the 2015 survey has been adopted by the SC (NAMMCO 2016) and results from an aerial survey conducted in 2016 will be finalized in early 2017.

At this time therefore, the NAMMCO-24 request has therefore been addressed below as follows.

a) The IWC SC has near finalized its current *Implementation Review* of the RMP for application to North Atlantic minke whales. The baseline operating models from that exercise as at present have been used as assessments to inform estimation of sustainable catch levels.

b) To relate that estimation of sustainable levels to a simulation tested approach, the RMP's CLA with a tuning level of 0.6 (as applied in Norway to recommend catch levels for its minke whale catch) has been applied to available abundance estimates and historical catch information for the CIC sub-area.

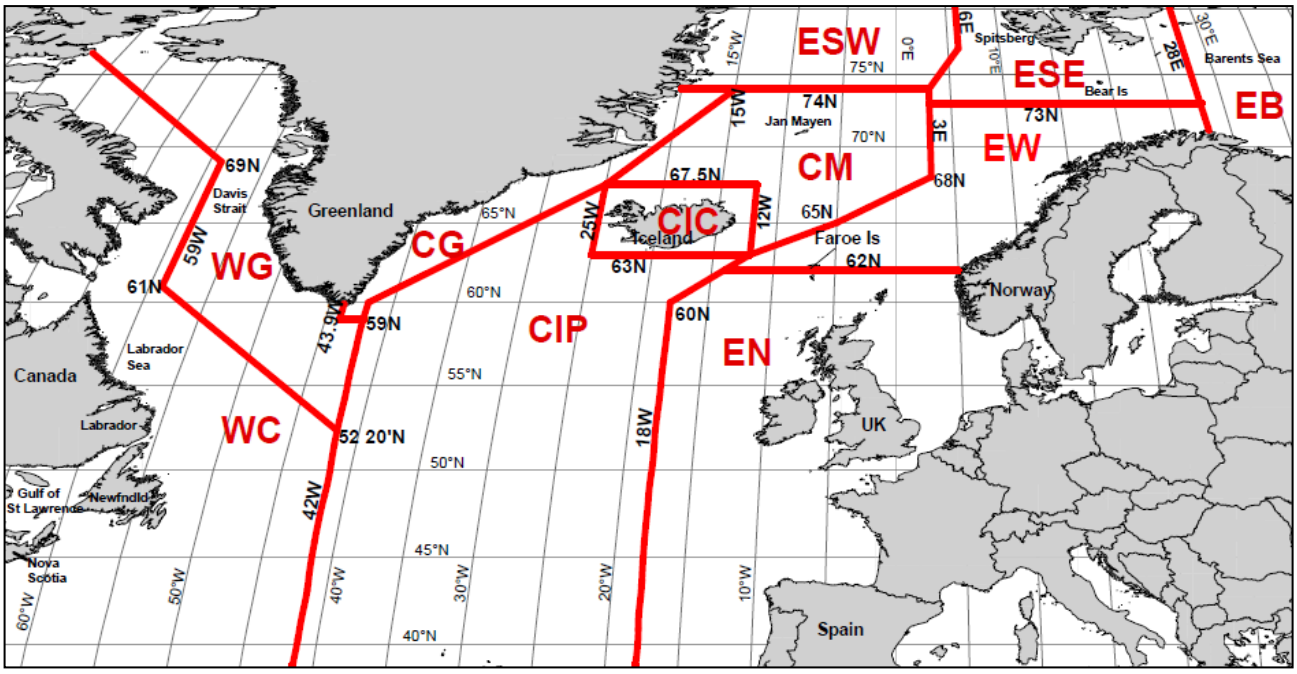

Fig. 1. Map of the North Atlantic showing the sub-areas defined for the North Atlantic common minke whales

5.2 Analyses

5.2.1 Assessments based on IWC Implementation Review

There are four baseline operating models for the North Atlantic minke whales RMP *Implementation Review*. These cover two MSY rates (1% on the 1+ and 4% on the mature component of the population) and two stock structure hypotheses (one for five and one for four breeding stocks/sub-stocks). The key difference between the two stock structure hypotheses is whether the WC and WG feeding areas are primarily composed of minke whales from one or from two breeding stocks.

Given that the main focus here is on the Central North Atlantic, results are shown only for the C breeding stock, from which the most of the minke whales found in the Central North Atlantic feeding grounds (sub-areas CG, CIC, CIP and CM) originate. Results given here focus on the 1% $MSYR_{1+}$ scenarios which constitute "lower bounds", with those for the higher value of MSYR reflecting less depletion and higher sustainable yields.

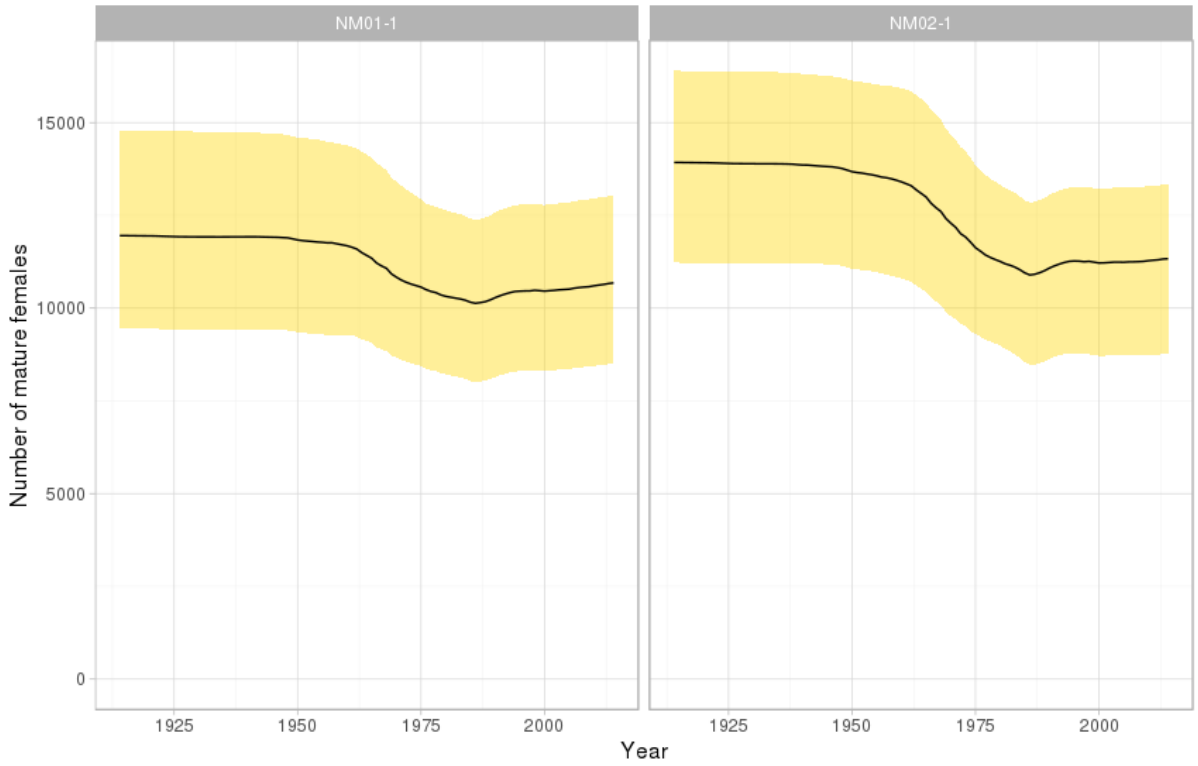

Fig. 2. *North Atlantic common minke whales: conditioning results for the Central Atlantic stock where the panels are split according to two stock structure hypotheses used in IWC implementations simulation trials. The solid black line illustrates the median trajectories and shaded region the 90% interval*

Figure 2 shows the corresponding historical trajectories for the mature female component of the C stock, both median and upper and lower 5%-ile estimates, for each of the two stock structure hypotheses. In both cases the current depletion (relative to the pre-exploitation abundance) is about 80%, i.e. at present this stock is well above its MSY abundance level.

Because of the complexity of these models, it is not possible to calculate MSY analytically. In this case therefore, indications of sustainable catch levels were obtained by projecting forward under various constant catch levels to ascertain whether or not the mature female component of the resource equilibrated above the likely MSY level. To do this, only the constant catch levels in the CIC area were varied. In other areas catches were projected at their recent average levels and with historical averages used for the proportion that is female. There were two exceptions to this: the recently zero CM catch was increased to 50 in expectation of a likely Norwegian commercial operation commencing soon in that sub-area, and the interim SLA was used to set catches in the WG sub-area as a constant catch there at the recent average level had a non-trivial probability of extirpating the stock populating that sub-area in the five stock/sub-stock scenario case.

Figure 3 extends the historical mature female trajectories 300 years into the future under constant annual catches of 200, 300 and 400 minke whales to provide insight into sustainable levels of catch.

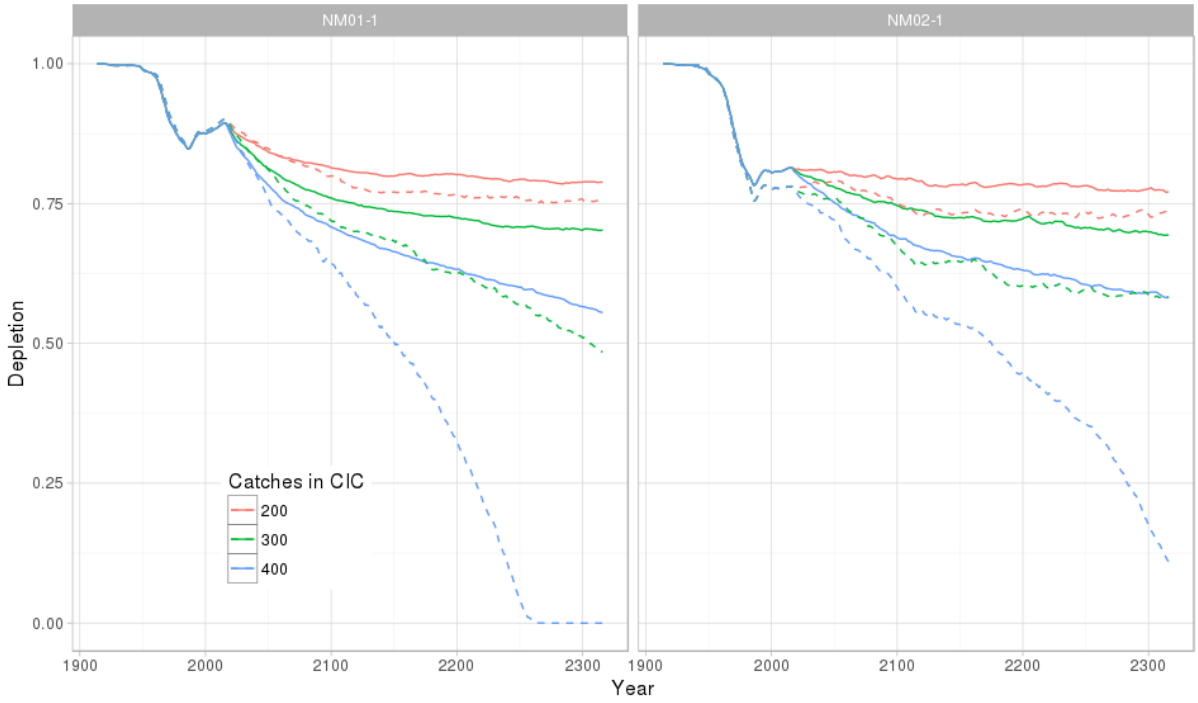

***Fig. 3**. North Atlantic common minke whales, predicted depletion trajectories for the Central Atlantic stock to 2315 by catch options (200, 300 and 400 in the CIC area) where the panels are split according to two stock structure hypotheses used in IWC implementations simulation trials. The solid lines illustrates the median trajectories and dashed the lower 5% percentile.*

5.2.2 Application of the CLA to the CIC

To calculate the catch limit for minke whales the RMP's CLA with a tuning level of 0.6 (as described in Huseby and Aldrin 2006) was applied. This effectively treats the whales in the CIC sub-area as an isolated stock, and as such has been simulation tested and considered to provide safe and precautionary management by the IWC SC.

Input data

The historical catch series input to the CLA are illustrated in Fig. 4. Minke whale takes reached a peak during the late 1960's and then generally remained slightly less than 200 whales until the whaling moratorium in 1986. Since 2010 the catch limit has been in the range 200-229 minke whales, while the takes have been considerably less, ranging between 24 and 81 annually since 2008. Abundance estimates for the CIC sub-area are shown in Fig. 5. Recent estimates of minke whale abundance in CIC have been difficult to obtain due to unsuitable weather during the scheduled aerial observation period. However Pike et al. (2016) provided a shipboard estimate of abundance in 2015 which is used here.

5.3 Results

The projections of the mature female component of the C stock under different levels of constant catch in the CIC sub-area that are shown in Figure 3 indicate that catches of 400 annually are not sustainable as the corresponding median mature female trajectory continues downwards to below the likely MSY level (a depletion of about 0.6) even after 300 years. In contrast, a catch of 300 annually is sustainable in terms of the median trajectory, with the lower 5%-ile dropping below the likely MSY level only shortly before the end of that projection period.

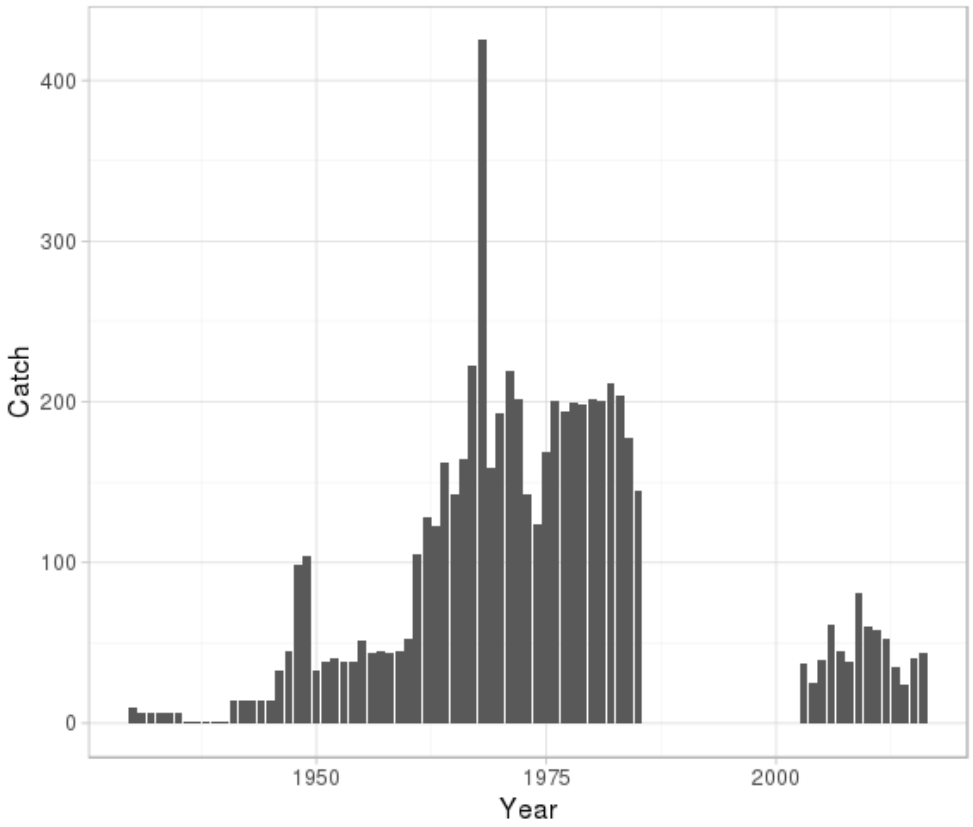

Fig. 4. *Historical catch series from the CIC sub-area*

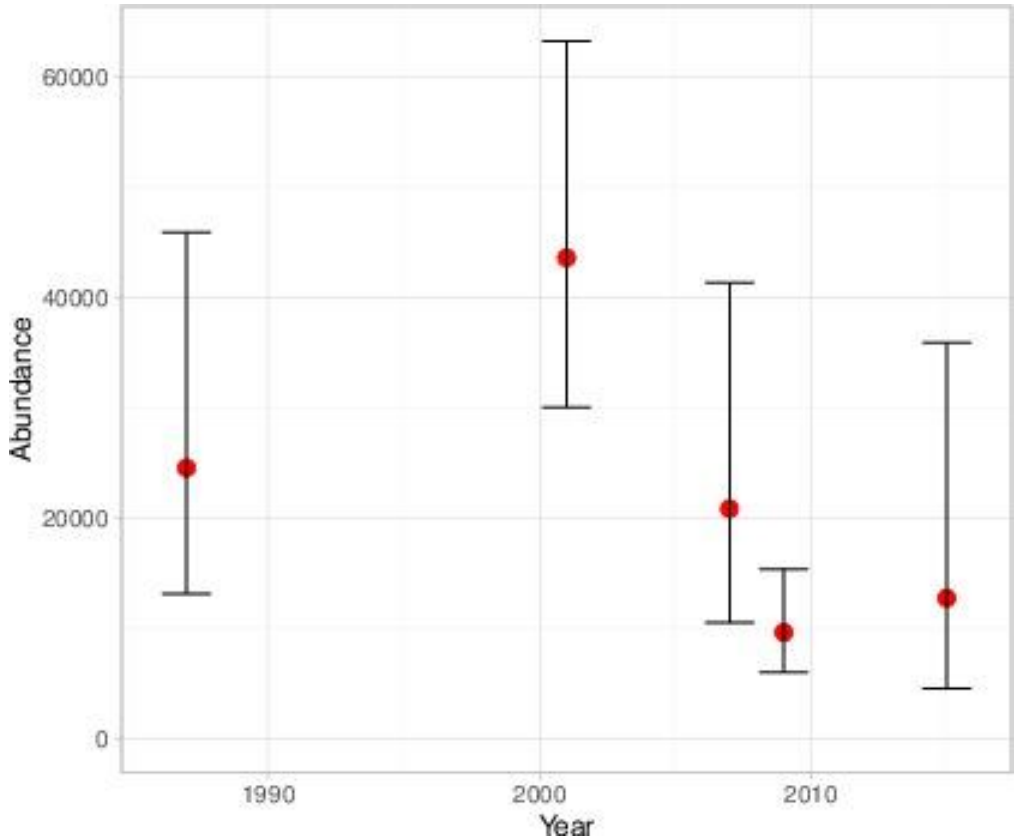

Fig. 5. *Adopted abundance estimates (with 95% confidence intervals) in the CIC sub-area for minke whales. An estimate from the 1995 survey was not adopted and therefore not included in the analysis (NAMMCO 2002).*

Noting further that these projections also include annual catches of 50 from the CM sub-area and 12 from the CG sub-area, it is reasonable to conclude that an annual catch of about 360 minke whales is a lower bound for the sustainable catch for the Central North Atlantic. This number is described as a "lower bound" because is corresponds to the "lower bound" MSYR value of 1% in terms of the 1+ population, so that annual sustainable catches would be higher than 360 for the higher value of MSYR that likely applies in practice (see Section 5.4, Future Research).

The application of the CLA to the CIC sub-area yields a sustainable catch limit for minke whales of 217 and 139 for tuning levels of 0.60 and 0.72 respectively. These values are compatible with the 360 above as they pertain only to the CIC sub-area within the whole Central North Atlantic region, and also precautionary because the CLA also reflects MSYR values that are perhaps unrealistically low (see Section 5.4).

5.4 Future research

The WG noted that the generic lower bound for the MSY rate (MSYR) for the 1^+ population of 1% as used by the IWC SC for the RMP is likely too low for common minke whales. The WG recommended research to determine a more appropriate lower bound for MSYR for common minke whales, including the collection of data on:

- Ageing (e.g., aspartic acid racemization, ear plugs - although the WG acknowledge there are practical problems with collecting ear plugs from commercial operations)
- Reproductive rate (e.g., age-specific pregnancy rates, age at sexual maturity)

Iceland informed the WG that the abundance estimate from the 2016 coastal aerial survey had wide confidence intervals due to low realized effort because of poor weather conditions. At the Abundance Estimates WG in October 2016, the idea of conducting a "mosaic" type survey over time around Iceland was introduced; however there was a concern that this approach may result in an estimate with a variance that is rather high because of large changes in the whale distribution from year to year. The Assessment WG recommended that Iceland examine past data to see if there is information on changes in distribution over time, as it may be problematic for the reason stated above. The WG recommends two potential options for the coastal Iceland aerial survey:

- Increased effort in an individual year
- Combining results from multiple surveys

Once the IWC RMP *Implementation Review* for North Atlantic common minke whales has been completed (anticipated in May 2017), the results from this should be used as a basis to provide long-term catch limit advice for minke whales in the Central North Atlantic.

6. FIN WHALE

6.1 Introduction

The most recent advice provided by the SC on sustainable catch levels in Icelandic coastal waters (the EG+WI sub-areas – see Fig. 6) was in 2015 when the SC concluded that an annual catch limit of 146 fin whales in the WI sub-area was safe and precautionary (NAMMCO 2016). This was an interim advice, valid for a maximum of 2 years (2016 – 2017), because of the lengthy time (8 years) since the last abundance estimate for the sub-areas surrounding Iceland and as long-term advice was not considered feasible until the IWC RMP *Implementation Review* of North Atlantic fin whales had been completed.

At NAMMCO-24 the following request was made to the SC concerning fin whales:

The SC is requested to complete an assessment of fin whales in the North Atlantic and also to include an estimation of sustainable catch levels in the Central North Atlantic. A long-term advice based on the new NASS2015 abundance estimate and the available results from the RMP Implementation Reviews (with 0.60 tuning level) is needed in 2016.

The assessment of fin whales was completed in 2016 during the RMP *Implementation Review* for the North Atlantic fin whales, the result of which was adopted at the 2016 IWC SC meeting (IWC/SC/66b). In addition to the assessment of the stock, management simulations were conducted based on a CLA with a 0.72 tuning level, the results of which are shown in Annex D of IWC/66/Rep01(2016).

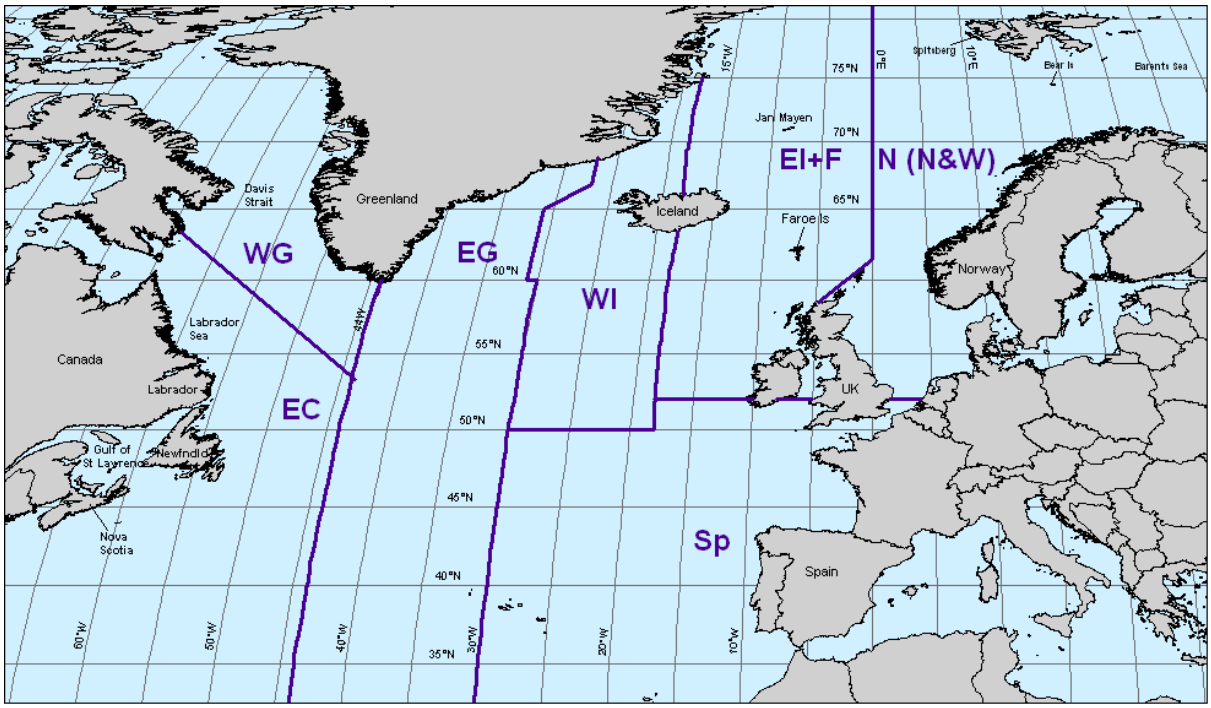

Fig. 6. *Delineation of feeding areas (*Small Areas*) for North Atlantic fin whales.*

6.2 Analyses

6.2.1 Simulation testing of adjusted RMP

In SC/22/AS/07 the full management projections conducted by the IWC SC were rerun based on a 0.60 tuning level for the CLA and compared with equivalent single stock trials with tuning levels of 0.60and 0.48. The procedure of assigning acceptability follows the procedure used by the IWC, where the performance is acceptable when depletion is above similar values from the equivalent single stock trial based on a tuning level of 0.60 for high plausibility trials. Similarly trials assigned medium plausibility were classified as borderline when above 0.48 and unacceptable otherwise. See Annex D of IWC/66/Rep01(2016) for further details.

The seven management variants considered were as follows (see Fig. 6).

1. Sub-area WI is a *Small Area*.
2. Sub-area (WI+EG) is a *Small Area*; all of the Catch is taken in sub-area WI.
3. Sub-area (WI+EG+EI/F) is a *Small Area*; all of the catch is taken in sub-area WI.
4. Sub-area WI is a *Small Area*; catch limits are set based on survey estimates for sub-area WI north of 60°N (both historical and future surveys).
5. Sub-areas WI and EG are taken to be *Small Areas* and sub-area WI+EG is taken to be a *Combination Area*; the catch limits set for the EG *Small Area* are not taken.

6. Sub-areas WI, EI/F and EG are taken to be *Small Areas* and sub-area WI+EI/F+EG is taken to be a *Combination Area*; the catch limits set for the EG and EI/F *Small Areas* are not taken.
7. Sub-areas WI+EG and EI/F are taken to be *Small Areas* and sub-area WI+EI/F+EG is taken to be a *Combination Area*; the catch limits set for the WI+EG *Small Area* are taken in sub-area WI; the catch limit for sub-area EI/F is taken there.

The results from these trials were consistent with what was previously reported in Annex D of IWC/66/Rep01(2016). Management variants 1, 4, 5 and 6 all had acceptable conservation performance on all management trials, albeit the catch related performance was substantially worse than that for variants 2, 3 and 7. The conservation performance of variants 2 and 3 was in general not considered acceptable given the large number of trials whose performance did not meet acceptability thresholds. Although Variant 7 had unacceptable performance of two medium plausibility trials, the levels of unacceptability were deemed marginal so that performance overall was considered "acceptable".

6.2.2 Application of RMP with 0.60 tuning

Elvarsson presented SC/24/AS/05 which is based on the RMP with a tuning level of 0.60, and provides catch limits for NA fin whales off Iceland and East Greenland. The advice below follows from this analysis, but is effectively the same approach as was used for 2015 NAMMCO fin whale assessment with the survey and catch data updated appropriately. These calculations were based on the recent 2015 estimates of abundance. The new 2015 estimates were as agreed at the last AEWG meeting (SC/23/15). This includes the aerial survey estimate from coastal East Greenland uncorrected for diving whales and the Icelandic and Faroese shipboard survey estimates. The areas farther north and south have been surveyed by Norway and SCANS-III/OBSERVE, respectively, but no estimates have been reported yet, so these areas receive zero abundance in this analysis.

6.3 Recommendations

Based on the output from the RMP with a tuning level of 0.60 reported in SC/22/AS/05, the WG recommended that a catch limit of 161 fin whales in the WI area and 48 in EI/F area (based on application of the RMP to the EG+WI+EI/F region) is safe and precautionary, and that this advice should be considered valid for a maximum of 8 years (2018 to 2025).

Comparable catch limits are 99 and 29 for WI and EI/F respectively when the RMP is applied with a tuning level of 0.72. Further the WG recommended that, when abundance estimates from new surveys become available, these catch limits should be updated in accordance with this variant of the RMP until the IWC's next *Implementation Review* (scheduled to begin around 2022) is completed.

6.4 Future research

There is ongoing work on close-kin relationships from samples of whales caught off Iceland and Greenland to continue to better clarify stock structure. It would be informative to collect samples from a wider geographical area, if possible. Biopsies could be an option for collecting samples from areas where fin whales are not being caught. The WG also recommends gathering information on the annual cycle of fin whales including overall movements and indications of possible breeding areas. Satellite tagging would be helpful, but the WG recognizes that this would require tags that stay attached for multiple months, which has rarely been achieved in the past.

The WG also encourages the continued collection of biological samples for age, reproduction, etc. from whales caught off Iceland.

The WG recommends that future work include using existing information to estimate MSY rates with confidence intervals. Use of a range of population models, including ones that drop the assumption of starting at pre-exploitation equilibrium, may assist in this regard.

7. HUMPBACK WHALE

7.1 Introduction

The Large Whale Assessment WG meeting on 5-7 October 2015 provided advice on sustainable yields of West Greenland humpback whales. Based on the work of that WG, the SC endorsed the advice of ten strikes per year based on the IWC SC's humpback SLA, and noted that a higher number may also be sustainable (because the SLA calculations were based on a maximum of the ten annual strikes that had been requested by Greenland to the IWC). Greenland nevertheless also wished to receive advice related to the level of use which would be sustainable. Arising from this NAMMCO/24 includes the following request made to the SC:

> *to provide advice on future catch levels of humpback whales in West Greenland at different probability levels for a non-declining population evaluated over a 5-year period, similar to the procedure for the advice generated for beluga, narwhal and walrus. The advice should include the latest abundance estimate* ***(R-3.2.4 Amendment NAMMCO/24).***

Following a discussion in the Large Whale Assessment WG and the SC, the NAMMCO Council agreed that scientific advice on sustainable catches of large whales should be given based on simulation tested and approved management procedures (NAMMCO 2009, 2011). This WG (on Assessment) recommends that the SLAs that are developed in the IWC be used for Greenland. These SLAs are developed as case specific applications that match the whale stocks and their hunts in Greenland, providing a reasonable balance between exploitation and conservation. Use of these SLAs in NAMMCO will also benefit from the scientific work that is carried out in the IWC SC, allowing for an easy application with a minimum of extra work in NAMMCO.

7.2 Analyses

7.2.1 Stock Structure

A component of the **R-3.2.4** request on West Greenland humpback whales relate to stock structure where "*the Scientific Committee is requested to investigate the relationship between the humpback whales summering in West Greenland and other areas and incorporate this knowledge into their estimate of sustainable yields of West Greenland humpback whales."*

North Atlantic humpback whales, however, have been found to spend the summer in more or less closed geographical aggregations with only a limited exchange of individuals between them. So far there is insufficient information to quantify a potential exchange of individuals, and this is reflected in assessments and trials that have modelled the different aggregations, including West Greenland, as independent units (IWC 2014 SC/65b/Rep04, Witting, 2011).

7.2.2 Abundance

Heide-Jørgensen and Laidre (2015) presented an updated availability correction factor for humpback whales off West Greenland, and used this to generate a revised estimate of abundance from the aerial survey in 2007. Thirty-one Satellite Linked Time Depth Recorders (SLTDRs - three different models) were deployed on humpback whales off West Greenland in May and July 2009-10. The SLTDRs recorded the proportion of a 6 hour period that the whales spent at or above 2m depth (defined here as time at the surface); 2m is considered to be the maximum depth at which humpback whales are reliably detected from the air on visual aerial surveys off West Greenland. Eighteen transmitters provided data on the surfacing time and the

drift of the pressure transducer. Transmitters on six whales met the data filtering criteria and had low drift in depth data, from which the average proportion of time at the surface was estimated as 0.335 (CV = 0.10). Whales are available to be seen by observers for a period of time (i.e. availability is not an instantaneous process), so surface time needs to be adjusted to provide an unbiased correction factor for availability bias (see Laake et al. 1997).

For the 2007 survey, the time in view of detected humpback whales was an average of 3.21 seconds. Using the method of Laake et al. (1997), the data on surface time and time in view were used to estimate an availability correction of 0.368 (CV = 0.10), an increase over the estimated surface time of 10%. Using this new availability correction factor, the 2007 abundance estimate of 3,272 (CV= 0.50) was recalculated as 2,704 (CV = 0.34). The previous estimate had used an availability correction factor based on surface time defined as 0-4m, based on data from four humpback whales instrumented on Fyllas Bank, West Greenland in June 2006. The WG agreed the application of the new availability correction factor and the revised estimate of abundance for 2007.

For the 2015 aerial survey (SC/23/15), the at-surface abundance estimates for humpback whales were corrected for perception bias with point independence mark-recapture distance sampling (MRDS) models, in which it is assumed that only detections on the trackline were independent between the two teams of observers on the aircraft. Separate detection functions were fitted for the mark-recapture data and the distance sampling data. Conditional detection functions for the mark-recapture data were developed where heterogeneity was modelled with covariates (perpendicular distance to sightings, Beaufort, group size and observer); the best model selected based on AIC included perpendicular distance and observer. The estimated perception probability on the trackline, *p(0)*, was 0.99 resulting in very small adjustments to abundance from the strip census analysis.

The fully corrected abundance estimate, adopted by the AEWG (SC/23/15), was 1,321 humpback whales (CV=0.44, 95% CI: 578-3,022) off West Greenland. Group size was estimated per stratum and then combined to generate an overall expected group size of 1.53 (CV=0.16). At the IWC AWMP meeting in December 2016, an MRDS analysis with an estimated global (pooled) group size of 1.35 (CV=0.09) was developed. This gave a fully corrected abundance estimate of 1,008 (CV=0.38, 95% CI: 493-2,062) off West Greenland. The WG agreed that the estimate of 1,008 (CV=0.38) based on global group size was the best estimate because very small sample sizes in some strata led to higher variance in the estimate with strata-based group size.

7.2.3 SLAs within NAMMCO

The West Greenland humpback whale SLA developed in the IWC Scientific Committee has been simulated tested and found to provide safe and precautionary advice. The basis for these tests include that strike limits not exceed future values specified by the vector [20,25,30-50], where the first number applies from 2013 to 2018, the second number from 2019 to 2024, and the last two numbers define a linear increase over the remaining 88 years of the 100 year simulation period. There is no guarantee that strike limits greater than this are sustainable.

The output from this SLA with input of the abundance estimates above of 2,704 (cv: 0.34) humpback whales in 2007 and 1,008 (cv: 0.38) in 2015 for the block period that runs from 2019 to 2024 is 25 strikes per year. This calculation can be performed now as the SLA does not use the catch history, and the result is thus independent of the strikes in 2017 and 2018.

7.2.4 Comparison with RMP

The IWC's CLA has not been tested directly on the trials for West Greenland humpback whales. However the CLA was developed as a general procedure with adequate conservation performance when applied to a closed population. As the West Greenland humpback trials deal with a summer aggregation that is modelled as a closed population, adequate conservation performance is guaranteed if the CLA is applied for West Greenland humpback whales.

Given future annual strikes of ten humpback whales for 2017 and 2018, and the 2007 and 2015 abundance estimates, the CLA calculates total annual allowable takes starting in 2019 of respectively 13, 14 and 20 whales for CLA tuning levels 0.72, 0.66 and 0.60.

These results are, however, not directly comparable with the SLA. The humpback SLA was tested including some background by-catch, while by-catch has to be included in the total allowable removals under the CLA. The actual strike limits of the latter would thus be reduced by a few whales (the by-catch/entanglement numbers for humpback whales in West Greenland were one in 2014, nine in 2015 and three in 2016).

It is of interest to note that given the 2007 and 2015 abundance estimates, a potential advice for the block period from 2025 to 2031 (disregarding potential phase-out) would remain basically the same for the CLA. However, the 25 for the SLA would increase to 30 because of the increase in the strike limit envelopes (applying the SLA for 2025 to 2031 with the 2007 and 2015 abundance estimates generates advice of 30 strikes per year).

7.2.5 Bayesian assessment

It is of interest to compare SLA based advice with a sustainable catch estimate from a Bayesian assessment. The trials used for the SLA for West Greenland humpback whales are based on a model of density regulated growth for a closed population that is assumed to summer in the waters off West Greenland. A density regulated assessment model for a closed population was developed by Witting (2011), and the model is updated in SC/24/AS/03 with the abundance estimate for 2015 included.

This method is similar to that used to provide assessment based advice that is traditionally applied for narwhal, beluga and walrus within NAMMCO, and it estimates that a 70% chance of an increase over the block period from 2019 to 2024 is obtained for a total annual removal of 14 whales (the 70% chance of an increase resembles the NAMMCO recommendation for beluga, narwhal and walrus). If catches up to 90% of the MSYR are allowed for cases where the population is above the MSYL, it is estimated that annual strikes to around 47 whales would ensure a 70% chance of fulfilling the management objective. However this assessment approach is unable to estimate an upper bound of the carrying capacity, and there is therefore some uncertainty associated with this last strike limit estimate.

7.3 Recommendations

Based on the simulation tested humpback SLA, the WG recommended that annual strikes of no more than 25 humpback whales off West Greenland are sustainable for 2019 to 2024 and allow for an increase if the population is depleted. This result is shown to be robust by the fact that two additional approaches (the IWC CLA and an assessment method) produce similar results. Both results are in fact slightly less, but that might be expected because the CLA reduces catch limits heavily is populations are depleted even if they are recovering, and the assessment method may struggle to secure a high recovery level because many of its results correspond to a population already well above MSYL.

7.4 Future Research

Regarding **R-3.2.4**, (*investigate the relationship between the humpback whales summering in West Greenland and other areas and incorporate this knowledge into their estimate of sustainable yields of West Greenland humpback whales*), and also to clarify our knowledge North Atlantic stock structure, the WG recommended that information be collected on possible movements of individuals between summering areas (e.g. satellite tagging, biopsies, photo-ID etc.).

8. FUTURE WORK

8.1 Minke whales

Once the IWC RMP *Implementation Review* for North Atlantic common minke whales has been completed (anticipated in May 2017), the results from this should be used as a basis to provide long-term catch limit advice for minke whales in the Central North Atlantic.

8.2 General

Regarding **R-1.7.12** (*sustainable yield…for all large baleen whales in West Greenland waters*), this request will be addressed after the adoption of the finalized SLAs for fin and common minke whales in the IWC SC, expected to be completed in 2018. The bowhead whale SLA has been finalized and could be used as a basis for advice, similar to what has been done in this meeting for the humpback whale.

The WG noted that little research has been conducted for many years on sei, sperm and blue whales in the North Atlantic. It could be valuable from a conservation perspective to undertake an assessment of blue whales in the North Atlantic.

9. OTHER BUSINESS

The WG thanked Cherry Allison from the IWC Secretariat for her valuable assistance during this meeting and the Greenland Representation for providing excellent facilities. The WG also thanked Walløe and Butterworth for a well-run and successful meeting.

10. ADOPTION OF THE REPORT

The content of the report was adopted by the WG at the close of the meeting on 27 January 2017, and in final editorial form by correspondence on 1 February 2017.

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AGENDA

NAMMCO SCIENTIFIC COMMITTEE WORKING GROUP ON ASSESSMENT

Greenland Representation
Copenhagen, Denmark, 25-27 January 2017

Chair
Lars Walløe

1. OPENING REMARKS
2. ADOPTION OF THE AGENDA
3. APPOINTMENT OF RAPPORTEUR
4. REVIEW OF AVAILABLE DOCUMENTS AND REPORTS
5. CENTRAL NORTH ATLANTIC COMMON MINKE WHALE STOCK
- **5.1 Stock structure**
- **5.2 Biological parameters**
- **5.3 Catch data**
- **5.4 Abundance estimates**
- **5.5 Assessments**
- **5.6 Recommendation for future research**

6. FIN WHALE
- **6.1 Stock structure**
- **6.2 Biological parameters**
- **6.3 Catch data**
- **6.4 Abundance estimates**
- **6.5 Assessments**
- **6.6 Recommendation for future research**

7. HUMPBACK WHALE
- **7.1 Stock structure**
- **7.2 Biological parameters**
- **7.3 Catch data**
- **7.4 Abundance estimates**
- **7.5 Assessments**
- **7.6 Recommendation for future research**

8. NEXT NAMMCO SC WG ON ASSESSMENT - PREPARATION
9. OTHER BUSINESS
10. ADOPTION OF THE REPORT

NAMMCO Scientific Committee
Working Group on
Assessment

25-27 January 2017, Copenhagen, Denmark

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Greenland Representation
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List of Documents

Document #	Title	Agenda Item
SC/24/AS/01	Draft Agenda	2
SC/24/AS/02	Participants List	many
SC/24/AS/03	Witting. Sustainability calculations for West Greenland hump-back whales	7
SC/24/AS/04	The AWMP / RMP Implementation simulation trials for the North Atlantic minke whales	5
SC/24/AS/05	Elvarsson. Catch limits for fin whales in the Icelandic EEZ	6
SC/24/AS/06	Elvarsson. Catch limits for the common minke whale in the Icelandic EEZ	5
SC/24/AS/07	Elvarsson. Management simulation trials for North Atlantic fin whales	6
SC/24/AS/08	Trial 01 Conditioning Plots	5
SC/24/AS/09	Trial 02 Conditioning Plots	5
SC/24/AS/10	Implementation simulation trial specifications for North Atlantic fin whales	6
SC/24/AS/11	Minke whale- adopted abundance estimates- AWMP	5
For Information Documents		
SC/24/AS/O01	Heide-Jørgensen et al. 2015. Surfacing time, availability bias and abundance of humpback whales in West Greenland	7
SC/24/AS/O02	IWC/66/Rep01(2016) Annex D Appendices	many