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REPORT OF THE MANAGEMENT COMMITTEE

Tromsø, Norway, 3 March 2005

1. - 3. OPENING PROCEDURES

The Chair of the Management Committee, Halvard P. Johansen, welcomed delegations and observers to the meeting. See Section 5.1 for the list of Participants to the meeting. The agenda, as contained in Appendix 1, was adopted. Documents available to the meeting are listed in Appendix 2. The Secretariat was appointed as rapporteur for the meeting.

4. NATIONAL PROGRESS REPORTS

National Progress Reports for the year 2003 were available from the Faroe Islands, Greenland, Iceland and Norway (see Section 4 of this volume). In addition a Progress Report was provided by Canada to the NAMMCO Scientific Committee and brought to the Management Committee as an information item. The Management Committee expressed its appreciation to Canada for providing the report.

The Committee was pleased to receive a verbal presentation from Russia. This detailed ongoing research on harp seals in the Barents and White seas involving aerial remote sensing surveys in the White Sea for pups in March and ground searches using calibrated squares on ice during the hunting season. In addition biological sampling on 500 adult females and 500 pups was carried out. In 2004 there had been no harp seals taken, but catches in 2005 will follow ICES recommendations. All results will be presented to the ICES Working Group in St Johns during fall 2005. Ship and aerial surveys for cetaceans including dolphins and killer whales in the Barents Sea have been ongoing for 3 years. Additionally annual ecosystem surveys have been carried out in the north Barents and Norwegian seas relating marine mammals and fish, facilitated by good research relations with Norwegian colleagues.

5. STATUS OF PAST PROPOSALS FOR CONSERVATION AND MANAGEMENT

The Committee considered document NAMMCO/14/MC/3 (Appendix 3, p. 147) which was a record of past proposals for conservation and management put forward by the Management Committee. The Chair asked the Committee to comment on any regulatory or other measures that had been taken in response to these proposals.

5.1 Atlantic walrus

Greenland announced that they plan introducing quotas for walrus, possibly in 2005. Greenland is awaiting the findings of the Scientific Committee in their assessment of walrus.

5.2 Ringed seal

There was nothing to report under this item.

5.3 Harp seal

5.3.1 Northwest Atlantic

The observer from Canada informed the Committee that 2005 was the last year of the 3-year management plan for harp seals, and that quotas in the new plan for the period starting in 2006 will be based on the results of a survey conducted in 2004. Greenland once again noted that this was a stock shared between Canada and Greenland and that the stock should be managed jointly. To this end Greenland will seek to organise a bilateral in 2005.

5.3.2 White/Barents Sea

Norway reported on a joint venture project between Russian and Norwegian commercial interests to conduct sealing in the White Sea using small vessels, as is done in Canada. The project will be carried out in 2005 or 2006.

5.3.3 Greenland Sea

There was nothing to report under this item.

5.4 Hooded seal

Norway informed the Committee that a hooded seal survey covering all stocks will be carried out jointly with Canada and Greenland in 2005.

5.5 Grey seal

In 2004 the Management Committee recommended that both Iceland and Norway should define clear management objectives for grey seals.

Iceland reported that the management objective for grey seals would be to maintain the stock size close to the current level, and that protective measures would be taken should further declines continue. A precondition to this objective will be careful monitoring of the stock size.

Norway reported that a management plan for grey seals is presently under development. Recent catches have been lower than the quota levels in most areas.

5.6 Northern bottlenose whales

There was nothing to report under this item.

5.7 Long-finned pilot whales

There was nothing to report under this item.

5.8 Minke whales – Central North Atlantic

There was nothing to report under this item.

5.9 Beluga - West Greenland

Greenland informed the Committee that a quota of 320 had been introduced in West Greenland and Qaanaaq year-round from 1st July 2004. After implementation the catch was lower than the quota level, mainly due to poor weather conditions.

5.10 Narwhal - West Greenland

Greenland informed the Committee that quotas of 200 in West Greenland and 100 in Qaanaaq had been introduced in 2004. After implementation the catch was lower than the quota level.

For both narwhal and beluga (see 5.9) the Management Committee, while commending Greenland for taking action on this difficult management issue, noted the concern of the Scientific Committee that the established quotas were above the levels recommended. The Management Committee looked forward to receiving more information next year and noted that the effects of the new quota implementation should be followed closely.

5.11 Fin whales - East Greenland - Iceland stock area

There was nothing to report under this item.

5.12 Incorporation of users' knowledge in the deliberations of the Scientific Committee

See agenda item 11, p. 141.

6. STATUS OF PAST REQUESTS TO THE SCIENTIFIC COMMITTEE

The Chair drew the attention of the Committee to the updated summary of requests by the NAMMCO Council to the Scientific Committee, and responses by the Scientific Committee (Appendix 4). In addition the Chairman of the Scientific Committee updated the Management Committee on the status of outstanding requests from the 2004 meeting of the Scientific Committee:

White-beaked, white-sided and bottlenose dolphins

There was still insufficient information to move forward on this request for an assessment. This may become feasible once feeding, genetic and life history studies have been completed in Iceland, the Faroes and Norway, and when new abundance estimates become available from the SCANS II, NASS and other sightings surveys. Such an assessment could probably be conducted by 2008 at the earliest.

Humpback whales

In 2004, the Scientific Committee was requested to assess the sustainable yield levels for humpback whales, particularly those feeding in West Greenlandic waters. The Scientific Committee found that there was insufficient information available from West Greenland to proceed with an assessment at this time. The existing abundance estimate is more than 10 years old and a new estimate may become available from recent surveys off West Greenland. Even so, the uncertainty in the new estimate is likely to be high. Due to the effects of environmental and demographic stochasticity in populations of only a few hundred individuals, the models that the Scientific Committee usually apply to assess sustainability would require modification to be applied to humpback whales in West Greenland.

Greenland noted that there was a growing problem with entanglement of humpback

and that some by-catch had occurred over the past few years. Greenlandic hunters and fishers have noted an increase in the population of humpback whales off West Greenland. Greenland therefore considered that the requested assessment should be carried out as soon as is feasible.

Killer whales

In 2004 the Management Committee requested the Scientific Committee to review the knowledge on the abundance, stock structure, migration and feeding ecology of killer whales in the North Atlantic, with an emphasis on West Greenland. The Scientific Committee found that there was not enough information to support a meaningful assessment at this time, particularly for the West Greenland area, and developed research recommendations to improve the knowledge base on killer whales for all areas.

The Chairman of the Management Committee requested the Secretariat to continue to update the status of past requests to the Scientific Committee, as this was very useful.

7. NEW PROPOSALS FOR CONSERVATION AND MANAGEMENT, REQUESTS FOR ADVICE FROM THE SCIENTIFIC COMMITTEE AND RECOMMENDATIONS FOR SCIENTIFIC RESEARCH

7.1 Economic aspects of marine mammal - fisheries interactions

7.1.1 Recommendations for scientific research

The Management Committee endorsed the recommendations for scientific research by the Scientific Committee, contained in Section 3.1 of this volume, and the plan to continue the work in 2006 if sufficient new information becomes available. The Management Committee noted the conclusion of the Scientific Committee that progress in the assessment of multi-species interactions will not be made unless significant additional resources are dedicated to it. Norway informed the Committee that consideration was now being given to furthering the multi-species modelling work for the Barents Sea. Iceland noted that the Icelandic Research Programme is addressing one of the major knowledge gaps in this area, the diet of minke whales around Iceland. The programme has been delayed but it is expected to be completed in 2006. Once these data become available the Icelandic modelling work can proceed.

The Management Committee emphasised the importance of this work and urged members to proceed with the research required to complete it.

7.2 Harp and hooded seals

7.2.1 New requests for advice

Harp seals

The Management Committee noted the conclusion of the Scientific Committee that the likely effect of the harvest levels outlined in the Canadian Management plan was a slight drop in total abundance in the short term (3-5 years), and an accelerating decline if these harvest levels are maintained over a longer period (*ca.* 10 years), and that the availability of seals to Greenlandic hunters would likely decrease as the total population decreased. The Management Committee therefore recommended that the

Scientific Committee evaluate how a projected decrease in the total population of Northwest Atlantic harp seals might affect the proportion of animals summering in Greenland.

The Management Committee recalled its request to the Scientific Committee from 2004, that advice on catch quotas should be provided in the light of potential ecosystem management requirements. For the Greenland Sea and Barents/White Sea stocks of harp seals, advice should be provided on catch quotas that would result in varying degrees of stock reduction over a defined period of time. The Management Committee therefore requested the Scientific Committee to specify harvest levels for these 2 stocks that would result in a population reduction of 20% over a period of 20 years. It was recognised that the terms of reference of the ICES/NAFO Working Group would have to be revised if the advice is to be provided through that group.

In 2004 the Scientific Committee requested that the Council consider the feasibility of NAMMCO assuming a more formal involvement with ICES and NAFO in the Working Group on Harp and Hooded Seals. The Observer from ICES suggested that a more formalised relationship could be realized either by revising the terms of reference of the Working Group such that NAMMCO is a formal partner, or by establishing a Memorandum of Understanding between NAMMCO and ICES. These options are discussed by the Council under Item 8 (p.37).

7.3 Grey seals

There were no new requests or proposals under this item.

7.4 Walrus

The Scientific Committee Working Group on Walrus met in January 2005 to deal with the request for advice posed by the Council in 2004. The Scientific Committee will report on this item at their next meeting in 2005.

7.5 Harbour porpoise

7.5.1 Recommendations for scientific research

The Management Committee endorsed the recommendations of the Scientific Committee pertaining to harbour porpoises around Iceland, that in order to estimate the sustainability of the ongoing by-catch, better estimates of the present by-catch levels are required as well as an estimate of absolute abundance for the area. Aerial surveys will be carried out over the next two years as part of the Icelandic Research Programme, and it was recommended that the feasibility of modifying these surveys to generate valid estimates of absolute abundance for this species be investigated.

7.6 Beluga - West Greenland

It was considered that the collaboration with the JCNB at the scientific level has been productive and the plan of the Scientific Committee to hold a joint meeting with the JCNB Scientific Working Group in 2005 was endorsed.

7.6.1 Recommendations for scientific research

Noting the importance of the West Greenland index survey series to the continued

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assessment of both West Greenland narwhal and beluga, the Management Committee supported the recommendation of the Scientific Committee that this survey series be continued.

7.7 Narwhal - West Greenland

7.7.1 *New requests for advice*

The Management Committee requested that the Scientific Committee carry out an assessment of East Greenland narwhal, and provide an estimate of sustainable yield for the stock. The management objective in this case is to maintain the stock at a stable level. If the assessment cannot be completed with available information, the Scientific Committee should provide a list of research that would be required to complete the assessment.

7.7.2 *Recommendations for scientific research*

Noting the importance of the West Greenland index survey series to the continued assessment of both West Greenland narwhal and beluga, the Management Committee supported the recommendation of the Scientific Committee that this survey series be continued.

7.8 Fin whales

7.8.1 *Recommendations for scientific research*

The Management Committee supported the recommendations of the Scientific Committee for research on fin whales contained in Section 3.1, and emphasized that the assessment of fin whale stocks could not be continued until these tasks were carried out.

As in 2004 it was noted that questions of stock identity and relationships to other stocks are of highest priority. The IWC Scientific Committee is carrying out a pre-implementation assessment of fin whales, beginning in 2005 with the development of stock hypotheses. Noting that the IWC Scientific Committee had suggested that the pre-implementation assessment could benefit from co-ordination between the 2 committees, the Management Committee supported the recommendation of the Scientific Committee to investigate the option of holding a joint intercessional workshop to address the issue of stock structure, if it is not fully resolved at the IWC Scientific Committee meeting in May 2005. It was emphasised however that any such co-ordination should not compromise the independence of the NAMMCO Scientific Committee's continuing assessment of North Atlantic fin whales.

7.9 Minke whales

There were no new requests or proposals under this item.

7.10 White-beaked, white-sided and bottlenose dolphins

There were no new requests or proposals under this item.

7.11 Humpback whales

7.11.1 *New requests for advice*

In 2004 the Management Committee requested the Scientific Committee to assess the

sustainable yield levels for humpback whales, particularly those feeding in West Greenlandic waters. Mainly because of a lack of current information on abundance, the Scientific Committee was unable to complete the Assessment for West Greenland. The Scientific Committee noted that they would be able to estimate sustainable yield levels for humpback whales in the Northeast Atlantic.

The Scientific Committee is requested to continue its assessment of humpback whale stocks in the North Atlantic. For West Greenland, the Scientific Committee should assess the long-term effects of annual removals of 0, 2, 5, 10 and 20 whales. For the Northeast Atlantic the Scientific Committee should provide estimates of sustainable yield for the stocks. In all cases the management objective would be to maintain the stocks at a stable level. The Scientific Committee should identify information gaps that must be filled in order to complete the assessments.

7.11.2 Recommendations for scientific research

For West Greenland the most urgent requirement is for a new estimate of abundance. In this regard it was noted that a survey was completed in 2004, and that a new estimate should be available sometime in 2005.

7.12 Killer whales

7.12.1 Recommendations for scientific research

The Management Committee noted the conclusion of the Scientific Committee that there was not enough information to carry out the assessment that was requested in 2004 at this time, particularly for the West Greenland area, and requested the Scientific Committee to review new information on killer whales annually with the aim of completing the assessment once sufficient information becomes available for a particular area. The Management Committee supported the recommendations for scientific research contained in Section 3.1.

7.13 North Atlantic Sightings Surveys

7.13.1 Recommendations for scientific research

The Management Committee accepted the recommendation of the Scientific Committee that, for various reasons, 2007 would be the optimal year to carry out the next NASS, rather than 2006 as originally planned. The Management Committee also noted the efforts of the Scientific Committee to expand the NASS to include involvement from countries in the Western and Eastern Atlantic, and recommended that this effort be continued.

Harbour seal

7.14.1 New requests for advice

Harbour seal abundance has fluctuated in the Northeast Atlantic in recent years due to local outbreaks of viral distemper. Usually these outbreaks have been followed by rapid recoveries, and harbour seal abundance may have increased in many areas. In some areas, harbour seals are harvested and/or taken incidentally by fisheries and aquaculture operations (*e.g.* Greenland, Norway and Iceland). They also have significant direct and indirect interactions with fisheries in many areas. For these reasons, the Scientific Committee is requested to:

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- Review and assess the status of harbour seals throughout the North Atlantic;
- Review and evaluate the applied survey methods;
- Assess stock delineation using available data on genetics, spatial and temporal distribution and other sources;
- Review available information about harbour seal ecology;
- Identify interactions with fisheries and aquaculture.

It was anticipated that this request could be addressed by the Scientific Committee in 2006.

8. REPORT OF THE WORKING GROUP ON BY-CATCH

The Working Group held a meeting on 28 February 2005, and the Report from the meeting is contained in Section 2.2.

New regulatory measures in the European Union

The Working Group was informed of new regulatory measures which had taken effect in the European Union (EU) in July 2004. The measures include a phase-out of the use of drift nets in the Baltic Sea, mandatory use of acoustic deterrent devices (pingers) in EU fisheries deploying gillnets and entangling nets, and the use of on-board observers for certain "high risk" fisheries. The requirement for pingers will apply only to vessels greater than 12 m in length.

Progress in monitoring marine mammal by-catches by NAMMCO Member Countries

The Working Group reviewed the progress of member countries in establishing systems to effectively monitor by-catch. There have been no changes in the past year in the by-catch monitoring systems in the Faroe Islands, Greenland and Iceland. In Norway the reporting of marine mammal by-catch in fishery logbooks has been mandatory since 2003 on vessels larger than 21 m. However there is no system in place to collect and analyse the data from the logbooks, so the effectiveness of the programme is not known. In 2004 fisheries observers on larger offshore fishing vessels were instructed to also report by-catches of marine mammals. An evaluation of the effectiveness of this system is in progress. In 2004 the Institute of Marine Research began a pilot project in which a limited number of coastal gillnetters were contracted to provide detailed records of their fishing effort, target species catches, and by-catches of marine mammals. The effectiveness of this procedure has been evaluated and the programme will be expanded in 2005.

Evaluation of the Icelandic by-catch monitoring programme

In 2004 the Management Committee requested the Scientific Committee to carry out an evaluation of the data collection and estimation procedures used in the Icelandic by-catch monitoring programme. The evaluation focused on the methods used and the reliability of the by-catch estimates rather than on the significance of the estimates themselves. The Scientific Committee carried out the evaluation at their 12th meeting as reported in Section 3.1.

The recommendations of the Scientific Committee were supported by the Working Group. The importance of including a level of precision in by-catch estimates was especially emphasised. In this regard it will be necessary to establish target levels of precision that are required for management, as this will facilitate the process of designing an effective by-catch monitoring programme. It was also noted that any self reporting is dependent on the willingness of fishermen to participate.

It was concluded that the system used in Iceland of monitoring marine mammal by-catch through fishery logbooks could be a useful model for other countries to use as a starting point. To be effective, the system would have to be modified such that the presence or absence of by-catch is recorded for every gear cast. It was recognised that this would require changes in logbook format which might be problematic for practical reasons in some cases. It was also recognised that such a system was likely to result in negatively biased estimates in most cases due to non-reporting and potentially to deliberate misreporting. Therefore, in high risk fisheries or for species of special conservation concern for which very precise and unbiased estimates are required, a logbook system might have to be augmented by an observer programme with a targeted level of estimation precision.

Evaluation of the potential risk of marine mammal by-catch in the fishery within the NAMMCO area

In 2004 the Management Committee recommended that member countries should prepare working documents outlining the existing knowledge about marine mammal by-catch in their jurisdiction, for the consideration of the Working Group.

In the Faroe Islands, there are a wide variety of fishing gears used and a high degree of overlap between fisheries and the distributions of many species of whales and seals. In contrast to most other areas however there is no inshore, shallow water gillnet fishery in the Faroes. Although no formal by-catch reporting system exists, incidental reports of marine mammal by-catch are very infrequent. The Working Group agreed that the lack of an inshore gillnet fishery was certainly the reason why by-catch appeared to be an infrequent phenomenon in the Faroes. However it was noted that by-catch of harbour porpoises and dolphins is high in some pelagic trawl fisheries in other areas. Given the lack of a formal reporting system and the fact that many of these fisheries are prosecuted by foreign fleets from which even incidental reports of by-catch could not be expected, the Working Group could not rule out the possibility that by-catch in pelagic trawl and possibly other fisheries was significant in the Faroes.

In Greenland the offshore fisheries are monitored by observers with an approximate coverage of 50%, and reporting of marine mammal by catch is mandatory. There are no reports of marine mammal by-catch from these fisheries. A wide variety of inshore fisheries are also prosecuted, however by-catch reporting is not mandatory for these fisheries and it is assumed that if by-catch occurs it is reported through the general harvest monitoring programme. In such cases it would not be distinguishable as by-catch. The Working Group required more information on the size and spatial distribution of Greenlandic fisheries, and their overlap with marine mammal distributions, in order to evaluate the potential for by-catch in Greenland. This applies

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particularly to fisheries in nearshore waters.

In Iceland, there are a wide variety of fishing gears used and a high degree of overlap between fisheries and the distributions of many species of whales and seals. The largest overlap in fishing effort and mammal distribution occurs on the coastal shelf leading to the highest potentials for by-catch in these fisheries. The highest risk for by-catch is probably in the coastal and near shore gillnet fishery. Some interactions may also occur in the capelin and herring fisheries.

The Working Group agreed that the inshore gillnet fisheries for lumpfish, cod and flatfish were the most likely to result in by-catch in Icelandic waters. Thus it was recommended that by-catch monitoring be focussed on these fisheries in the near term.

Norway did not provide information to be evaluated by the Working Group.

Reporting of by-catch to NAMMCO

This year, for the first time, all countries used the new National Progress Report format to report by-catch. The Faroe Islands and Greenland reported some by-catch but did not provide details about the fishery in which these animals were caught. Norway provided a brief description of ongoing programmes to monitor by-catch, but did not provide any estimates from these programmes. Reporting from Iceland followed fully the National Progress Report format.

The Working Group provided recommendations to improve the monitoring of by-catch in NAMMCO member countries (see Section 2.2). The Management Committee noted that the Working Group was not able to complete its assessment of the potential for marine mammal by-catch in NAMMCO member countries because Norway did not provide the requested information and the information from Greenland was incomplete. Both Norway and Greenland agreed to provide the requested information for the next meeting of the Working Group. The Committee therefore agreed to postpone a full consideration of the recommendations put forward by the Working Group until the next annual meeting.

Given that the Working Group on By-catch was established in 1997 with a very broad mandate, the Management Committee considered it timely to focus the work of the Working Group with renewed terms of reference:

The Working Group on By-catch will focus on improving the systems for collecting data on by-catch in NAMMCO member countries. Specifically the Working Group will:

- Compile information on existing by-catch data collection systems in NAMMCO member countries and other jurisdictions;
- Monitor the activities of other International Government Organizations in this field;
- Evaluate the effectiveness of by-catch data collection programmes in NAMMCO member countries, and make recommendations for their improvement;

- Monitor the quality of by-catch reporting by NAMMCO member countries to NAMMCO.

9. REPORT OF THE SUB-COMMITTEE ON INSPECTION AND OBSERVATION

The Chair of the Sub-committee on Inspection and Observation, Egil Ole Øen, presented the report from the meeting held 14 January 2004 (see Section 2.3, p. 199). Following a recommendation from the Sub-Committee, the Management Committee at its last meeting in 2004 asked the Secretariat to review and recommend improvements to the implementation of the Scheme. The review was presented to the Sub-Committee at its meeting in January. The review considered only the implementation process and not the actual text of the Provisions and the Guidelines.

The Scheme came into force in 1998 and hence has been operative for seven seasons. NAMMCO has had observers in Greenland, the Faroe Islands and Norway. Until 2001 observations were land based, but have since then also been conducted out at sea. The last year's observation activities have focused on one region and/or one activity. No violations of national or hunting related regulations have occurred during the period the observation scheme has been in operation. The review outlined the major characteristics of the hunts that have an impact on the implementation of the observation scheme in Greenland, the Faroe Islands and Norway.

The Sub-Committee emphasised the following general comments and areas where there was potential for improvement of the Scheme:

- Hunting activities are more easily accessible in Norway and the Faroe Islands as compared to Greenland, due to the latter's opportunistic character, less organised and scattered hunting areas.
- The success of the Scheme is not measured by a high number of actual hunting observations during a period, although this is desirable, but the fact that an observer is present and able to conduct his or her job without interference of any sort
- The member countries were urged to follow the prescribed procedures governing nomination and appointment of observers, and to nominate more than one observer candidate.
- As a rule the observer should not come from the country in which he/she is conducting observations. With respect to communication and language this poses a special challenge with respect to observations in Greenland as the majority of the hunters in Greenland do not speak English and may not have a good understanding of a Nordic language. The implication of this is that the observer should be accompanied by an interpreter or the national "jagtbetjent".
- To have updated information on hunting statistics, time frames, quotas, the most optimum areas of observation, names of contact persons *etc.* available to the Secretariat is very important for the smooth running of the Scheme. By focusing on one region at a time the Secretariat has gained valuable information on how the different hunts are being organised in the different countries. It was recommended

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that this practice should be continued.

- With the exception of the courses held in Norway for inspectors in connection with sealing and, up until now, whaling, there exist no organised training courses for observers. It is the Secretariat's responsibility to ensure that every observer has all the relevant documentation regarding regulations and laws governing marine mammal hunting in the respective countries and the Provisions of the Joint NAMMCO Control Scheme. As part of the preparation the Secretariat has made a practice of arranging a meeting at the outset of the observation period between the observer and relevant persons in the country in question to discuss the national laws and regulations and laws and other connected matters. It was recommended that this practice be continued.
- The budget of NOK 200 000 will never allow for more than partial coverage. In order to observe all marine mammal hunting activities throughout the whole season the budget would have to be much higher.

In conclusion the Sub-Committee agreed that the implementation of the Inspection and Observation Scheme seems to be functioning well, given the human and financial resources at hand. The importance of having observer candidates skilled in languages and with an understanding of the situation, to which she or he will be exposed, *i.e.* long periods of waiting in unfamiliar surroundings, was emphasised.

Dr Øen also provided a short report on the status of the automated monitoring "Blue Box" programme for Norwegian minke whaling. The "Blue Box" is a tamper-proof automated computing system designed to independently monitor and log the activities associated with data on certain events on board provided by different sensors, including an independent GPS, shock transducers, strain transducers and heel sensors located in different places on a vessel that independently or in sum indicate that a whale has been shot and taken on board. The system is designed for continuous operation and logging of data for a minimum of 4 months. Prototypes have been tested for 3 seasons. Based on the data and results from the 2004 season, the system has been upgraded, and for the 2005 season the plan is to install a "Blue Box" on all whaling vessels. National inspectors will still be present on some boats in 2005 to monitor its function and from 2006 it is anticipated that the system will be fully operational, and national inspectors will only make random inspections on board vessels.

Implementation of the "Blue Box" system will ease some of the unnecessary and unintended restrictions of the current monitoring system. It will allow the hunt to return to the traditional opportunistic "good weather" pattern, without the restrictions inherent in having to have an inspector always on call. It takes no space, it does not sleep, eat, and does not socialise with anyone. The system, when fully implemented, will probably save an estimated 6 million NOK every year.

The Management Committee commended the Sub-committee for their thorough evaluation of the Observation Scheme, and noted that it continues to function as the only operating scheme of its kind for marine mammals. In light of the recommendations of the Sub-committee, member countries were encouraged to submit proposals for amendments to the Scheme to the Management Committee.

The Management Committee thanked the outgoing chair Dr Øen for his able chairmanship both in this Sub-committee and its predecessor, and noted that Greenland would take over the chairmanship.

10. IMPLEMENTATION OF THE JOINT NAMMCO CONTROL SCHEME

10.1 NAMMCO International Observation Scheme 2004

The Chair referred to the Report of the NAMMCO International Observation Scheme under the Joint Control Scheme for the Hunting of Marine Mammals, prepared by the Secretariat. Charlotte Winsnes, presented the report to the Management Committee. For the 2004 season, observations were focused on whaling and sealing activities in Greenland. Effective observation days were 60 not including days of travel to and from Greenland. The observers were stationed in 3 different regions, one in South-West Greenland mainly in Qaqortoq and Narsaq, one in Nuuk and one in Sisimiut. The last one also travelled to Illulisat and Maniitsoq. All observers carried out both land based and on board observations of whaling and sealing activities. However, due to weather conditions, technical difficulties and other reasons, observations were predominantly land based.

All the observers found that they could carry out their observations in accordance with the provisions of the Scheme. No violations were reported, and reports have been submitted to the Secretariat.

Ms Winsnes noted that it has proven beneficial to focus on one region per year. In Greenland the observer's opportunities to observe the actual hunting activities are limited due to the hunt's opportunistic character.

10.2 NAMMCO International Observation Scheme 2005

The Management Committee agreed that observations in 2005 would focus on sealing activities in Norway and Iceland.

10.3 Other matters

In response to a query from Greenland, Norway indicated that hunters and inspectors from other jurisdictions would be welcome to participate in training courses offered in Norway.

11. USER KNOWLEDGE IN MANAGEMENT DECISION-MAKING

11.1 Report of the Working Group on User Knowledge in Management

The Working Group was established in 2003 as a follow up of the NAMMCO Conference on User Knowledge in Management Decision-Making held in January 2003. The Working Group has not held any meetings since the last meeting of the Management Committee in March 2004, but will resume its work in 2005, after the publication of the proceedings from the Conference.

12. ENHANCING ECOSYSTEM BASED MANAGEMENT

The Management Committee recalled that an *ad hoc* Working Group on enhancing ecosystem based management had been established in 2003 with the following terms of reference, to:

1. Identify the challenges faced in adapting marine management systems to ecosystem-based approaches,
2. Investigate the progress that has been done in other *fora* in implementing ecosystem-based management
3. Recommend what kind of principles and measures can be applied to the situation faced by NAMMCO members and neighbouring countries.

The *ad hoc* WG met in Copenhagen in December 2003 and reported to the Management Committee at its last meeting (NAMMCO/13/MC/9).

The MC noted that it had not been possible for the *ad hoc* Working Group to meet and continue its work during 2004 as was decided at the last meeting of the Management Committee. The *ad hoc* Working Group had been tasked at that meeting to develop a case study focussing on harp seals in the North Atlantic from an ecosystem perspective.

In discussing how best to proceed in developing a clearer focus within NAMMCO on ecosystem based management, the MC agreed that before deciding on the further development of a particular case study, it would be beneficial to examine more closely the broader context in which ecosystem based approaches to management of marine resources, including marine mammals, are being applied across the North Atlantic. Such an examination was carried out at the first meeting of the *ad hoc* Working Group, but it was felt that a continuation of these discussions in a larger forum with a broader range of participants would help to better examine the basis for a common understanding of this approach in the NAMMCO context. In addition it was felt that there was a need to identify more clearly in a dedicated forum the gaps in scientific knowledge on the interactions between marine mammals and fisheries resources, and the implications of these gaps for the application of ecosystembased management. The Management Committee underlined that management of marine mammals should be seen in the light of the management of marine resources in general.

The Management Committee decided that the *ad hoc* Working group should meet again prior to the next annual meeting of NAMMCO. In order to be able to address in more detail the Terms of Reference developed for the WG in 2003, the aim of the next meeting would be to:

- review the development of multi-species models for marine resource management which include marine mammals, the extent to which these can be applied in management today, and the gaps and work required to further develop these models for management purposes. This review will have as its basis the work carried out to date through the NAMMCO scientific committee and any other relevant information provided by participating countries;

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- examine the management objectives and experiences in relation to the application of ecosystem based management across the North Atlantic where marine mammal utilisation occurs;
- report back to the Management Committee at its next meeting, with recommendations for how best to advance NAMMCO's focus on ecosystem based management.

The Management Committee noted the importance of ensuring the participation of relevant marine scientists, managers and policy makers, and users of the resources in the next meeting of the *ad hoc* Working Group. The Management Committee also welcomed and encouraged the continued active participation of Canada and the Russian Federation in these discussions, as well as the participation of other interested Observer Governments and relevant intergovernmental organisations.

13. ANY OTHER BUSINESS

Ms Mona Gilstad gave a presentation on the project "SEAL – our common resource". The project was initiated in 2004 and is funded mainly by the European Union. The project goals are:

- to promote ecologically safe maintenance of the existing seal stocks for the benefit of the coastal population of the Kvarken Mittskandia area;
- to promote cooperation between Nordic countries, businesses, organisations and authorities responsible for seal-related issues;
- to create a framework for the usage of a valuable renewable resource;
- to educate seal hunters, restaurant chefs, craftsmen and others to use seal as a resource.

Included in the project are the production of information materials and the holding of training courses on hunting methods, seal product utilisation and cooking. Also there is an effort to promote the development and marketing of seal products. It is expected that the project will continue through 2006. More information is available at www.nordicseal.org.

14. ADOPTION OF REPORT

The final report of the meeting was approved by correspondence on 1 April 2005.

AGENDA

1. Chairman's opening remarks
2. Adoption of agenda
3. Appointment of rapporteur
4. National Progress Reports
5. Status of past proposals for conservation and management
 - 5.1 Atlantic walrus
 - 5.2 Ringed seal
 - 5.3 Harp seal
 - 5.3.1 Northwest Atlantic
 - 5.3.2 White/Barents Sea
 - 5.3.3 Greenland Sea
 - 5.4 Hooded seal
 - 5.4.1 Northwest Atlantic
 - 5.4.2 Greenland Sea
 - 5.5 Grey seal
 - 5.6 Northern bottlenose whales
 - 5.7 Long-finned pilot whales
 - 5.8 Minke whales – Central North Atlantic
 - 5.9 Beluga - West Greenland
 - 5.10 Narwhal - West Greenland
 - 5.11 Fin whales - East Greenland - Iceland stock area
 - 5.12 Incorporation of users' knowledge in the deliberations of the Scientific Committee
6. Status of past requests to the Scientific Committee
7. New proposals for conservation and management, requests for advice from the Scientific Committee and recommendations for scientific research
 - 7.1 Economic aspects of marine mammal - fisheries interactions
 - 7.1.1 Proposals for conservation and management
 - 7.1.2 New requests for advice
 - 7.1.3 Recommendations for scientific research
 - 7.2 Harp and hooded seals
 - 7.2.1 Proposals for conservation and management
 - 7.2.2 New requests for advice
 - 7.2.3 Recommendations for scientific research
 - 7.3 Grey seals
 - 7.3.1 Proposals for conservation and management
 - 7.3.2 New requests for advice
 - 7.3.3 Recommendations for scientific research
 - 7.4 Walrus
 - 7.4.1 Proposals for conservation and management
 - 7.4.2 New requests for advice
 - 7.4.3 Recommendations for scientific research
 - 7.5 Harbour porpoise
 - 7.5.1 Proposals for conservation and management

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- 7.5.2 New requests for advice
- 7.5.3 Recommendations for scientific research
- 7.6 Beluga - West Greenland
 - 7.6.1 Proposals for conservation and management
 - 7.6.2 New requests for advice
 - 7.6.3 Recommendations for scientific research
- 7.7 Narwhal - West Greenland
 - 7.7.1 Proposals for conservation and management
 - 7.7.2 New requests for advice
 - 7.7.3 Recommendations for scientific research
- 7.8 Fin whales
 - 7.8.1 Proposals for conservation and management
 - 7.8.2 New requests for advice
 - 7.8.3 Recommendations for scientific research
- 7.9 Minke whales
 - 7.9.1 Proposals for conservation and management
 - 7.9.2 New requests for advice
 - 7.9.3 Recommendations for scientific research
- 7.10 White-beaked, white-sided and bottlenose dolphins
 - 7.10.1 Proposals for conservation and management
 - 7.10.2 New requests for advice
 - 7.10.3 Recommendations for scientific research
- 7.11 Humpback whales
 - 7.11.1 Proposals for conservation and management
 - 7.11.2 New requests for advice
 - 7.11.3 Recommendations for scientific research
- 7.12 Killer whales
 - 7.12.1 Proposals for conservation and management
 - 7.12.2 New requests for advice
 - 7.12.3 Recommendations for scientific research
- 7.13 North Atlantic Sightings Surveys
 - 7.13.1 Proposals for conservation and management
 - 7.13.2 New requests for advice
 - 7.13.3 Recommendations for scientific research
- 7.14 Others
- 8. Report of the Working Group on By-catch
- 9. Report of the Sub-Committee on Inspection and Observation
- 10. Implementation of the Joint NAMMCO Control Scheme
 - 10.1 NAMMCO International Observation Scheme 2004
 - 10.2 NAMMCO International Observation Scheme 2005
 - 10.3 Other matters
- 11. User Knowledge in Management Decision-Making
 - 11.1 Report of the Working Group on User Knowledge in Management
- 12. Report of the *ad hoc* Working Group on Enhancing Ecosystem Based Management
- 13. Any other business
- 14. Adoption of report

LIST OF DOCUMENTS

NAMMCO/14/MC/1	List of documents
NAMMCO/14/MC/2	Agenda
NAMMCO/14/MC/3	Status of past proposals for conservation and management
NAMMCO/14/MC/4	Status of past requests by NAMMCO Council to the Scientific Committee, and responses by the Scientific Committee
NAMMCO/14/MC/5	Report of the Management Working Group on By-catch
NAMMCO/14/MC/6	Report of the Sub-Committee on Inspection and Observation
NAMMCO/14/MC/7	Report of the NAMMCO International Observation Scheme 2004
 <i><u>National Progress Reports</u></i>	
NAMMCO/14/MC/NPR-F	Faroe Islands - Progress Report on Marine Mammals in 2003
NAMMCO/14/MC/NPR-G	Greenland - Progress Report on Marine Mammals in 2003
NAMMCO/14/MC/NPR-I	Iceland - Progress Report on Marine Mammals in 2003
NAMMCO/14/MC/NPR-N	Norway - Progress Report on Marine Mammals in 2003
 <i><u>Council documents</u></i>	
NAMMCO/14/5	Report of the Scientific Committee, 27 – 29 October 2004

LIST OF PAST PROPOSALS FOR CONSERVATION AND MANAGEMENT

(Up to and including NAMMCO/14 - 2005)

PINNIPEDS

1. Atlantic walrus

Proposal for conservation and management:

The Management Committee examined the advice of the Scientific Committee on Atlantic Walrus and noted the apparent decline which the Scientific Committee identified in respect to "functional" stocks of walrus of Central West Greenland and Baffin Bay.

While recognising the overall priority of further work to clarify and confirm the delineation and abundance of walrus stocks in the North Atlantic area, the Management Committee recommends that Greenland take appropriate steps to arrest the decline of walrus along its west coast.

Taking into account the views of the Scientific Committee that the Baffin Bay walrus stock is jointly shared with Canada and that the West Greenland stock might be shared, the Management Committee encourages Canada to consider working co-operatively with Greenland to assist in the achievement of these objectives (*NAMMCO Annual Report 1995: 49*).

Management measures/response by member countries:

- Greenland provided the Management Committee with information on further measures recently implemented through legislation by the Greenland authorities for the conservation of the West Greenland stock. These regulations include: the restriction of walrus hunting to people with valid professional hunting licences only; a year-round ban on walrus hunting south of 66° N; limitations on the means of transport used in connection with walrus hunting to dog sleds and vessels of 19.99 GRT/31.99 GT or less; and the sale of walrus products limited to direct sales at open markets or for personal use only. Municipal authorities now also have the possibility of implementing further restrictions if circumstances require. (*NAMMCO/8*)
- Greenland noted that in addition to the regulatory measures that were taken in 1999, it had been decided to introduce quotas on walrus. A new regulatory proposal has been drafted and public hearings will be held in the near future. The final regulatory proposal will take these hearings into account. (*NAMMCO/11*)
- Greenland informed the Committee that the regulatory initiative to introduce quotas and other hunting regulations for this species had been delayed, and comprehensive public hearings have been conducted. The draft regulations have now been submitted to the Council of Hunters. It is expected that a final decision on the initiative will be taken later in 2003 (*NAMMCO/12*).
- Greenland informed the Committee that a regulatory initiative that will restrict walrus hunting to those holding valid hunting licences, and allow for the introduction of quotas and other hunting regulations for this species was now in progress, and that public hearings were being conducted. The regulation will go to

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the Greenlandic government for approval this year (NAMMCO/13).

- Greenland announced that they plan introducing quotas for walrus, possibly in 2005. Greenland is awaiting the findings of the Scientific Committee in their assessment of walrus (NAMMCO/14)

2. Ringed seals

2.1 Proposal for conservation and management

The Management Committee noted the conclusions of the Scientific Committee on the assessment of ringed seals in the North Atlantic, which had been carried out through the Scientific Committee Working Group on Ringed Seals. In particular, the Management Committee noted that three geographical areas had been identified for assessing the status of ringed seals, and that abundance estimates were only available for Area 1 (defined by Baffin Bay, Davis Strait, eastern Hudson Strait, Labrador Sea, Lancaster, Jones and Smith sounds (NAMMCO/6).

Management measures/response by member countries:

None.

2.2 Proposal for conservation and management

While recognising the necessity for further monitoring of ringed seal removals in Area 1, the Management Committee endorsed the Scientific Committee's conclusions that present removals of ringed seals in Area 1 can be considered sustainable (NAMMCO/6).

Management measures/response by member countries:

The Greenland government is presently undertaking a regulatory initiative which will deal with hunting of all seals in Greenland, rather than just harbour seals as at present (NAMMCO/11).

3. Harp seals in the Northwest Atlantic

3.1 Proposal for conservation and management

The Management Committee requests that the Scientific Committee annually discusses the scientific information available on harp and hooded seals and advice on catch quotas for these species given by the ICES/NAFO Working Group on Harp and Hooded Seals. The advice by the Scientific Committee on catch quotas should not only be given as advice on replacement yields, but also levels of harvest that would be helpful in light of ecosystem management requirements.

For the Barents/White Sea and Greenland Sea stocks, in addition to the advice on replacement yields, advice should be provided on the levels of harvest that would result in varying degrees of stock reduction over a 10 year period (NAMMCO/13).

Management measures/response by member countries:

None

3.1 Northwest Atlantic

3.1.1 Proposal for conservation and management

The Management Committee noted that a new abundance estimate for Northwest Atlantic harp seals of 4.8 million was available, based on a pup production estimate for 1994 of 702,900. The Management Committee also noted the conclusion that the Northwest Atlantic population of harp seals has been growing at a rate of 5% per year since 1990, and that the 1996 population was estimated to be 5.1 million, with a Calculated replacement yield of 287,000.

The Management Committee concluded that catch levels of harp seals in Greenland and Canada from 1990 to 1995 were well below the calculated replacement yields in this period (NAMMCO /6).

Noting that Canada has instituted a multi-year management plan with a 3-year allowable catch of harp seals totalling 975,000 (not including the catch by Greenland), the Management Committee requested the Scientific Committee to provide advice on the likely impact on stock size, age composition, and catches in West Greenland and Canada under the conditions of this plan (NAMMCO/13).

Management measures/response by member countries:

None.

3.1.2 Proposal for conservation and management

The Management Committee noted that combined estimated catches of harp seals in Canada and Greenland are in the order of 300,000 and that these catches are near or at, the established replacement yields (NAMMCO/8).

Management measures/response by member countries:

Canada brought to the attention of the Committee the recently completed Report of the Eminent Panel on Seal Management, which contains a full review of research and management of seals in Canada, with a primary focus on Northwest Atlantic harp and hooded seals. The Report is available at the following web site: <http://www.dfo-mpo.gc.ca/seal-phoque/reports/index.htm>. Canada also noted that an abundance survey of the Northwest Atlantic harp seals had been completed in 1999, and that published results were now available. (NAMMCO/11)

Greenland commented that sustainable catches may be obtained at other catch levels than those that provide replacement yields. (NAMMCO/11)

The Observer for Canada presented information on a multi-year management plan for the Atlantic seal hunt, which was announced in February 2003. For harp seals total allowable catch is set at 975,000 over a 3-year period. If the full quota were taken and Greenlandic harvests were as forecast, the total take should result in a slight population reduction over the period, while still maintaining the population well above the conservation reference points adopted. (NAMMCO/12)

Greenland informed the Management Committee that bilateral discussions with Canada on the Canadian Management Plan had taken place over the past year (NAMMCO/13)

3.2 White/Barents Sea

Proposal for conservation and management

The Management Committee noted the stock status and catch options presented by the Scientific Committee, and concluded that the catch level in 1998 was well below the

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calculated replacement yield. Catches at the same level in the future may result in population increase. From a resource management point of view, future quota levels approaching the replacement yield are advised. (NAMMCO/9)

Management measures/response by member countries:

Norway informed the Committee that measures were being considered to improve the efficiency of the seal harvest in this area. The possibility of introducing smaller vessels into the seal hunt is being pursued. The long-term goal will be to reduce the need for subsidising the hunt and increase the take of seals from this stock (NAMMCO/13).

3.3 Greenland Sea

Proposal for conservation and management

The Management Committee noted the stock status and catch options presented by the Scientific Committee, and concluded that the catch level in 1998 was well below the calculated replacement yield. Catches at the same level in the future may result in population increase. From a resource management point of view, future quota levels approaching the replacement yield are advised. (NAMMCO/6)

Management measures/response by member countries:

Norway informed the Committee that, similar to the situation for the White/Barents Sea stock, efforts are being made to improve the efficiency of harvesting. Recent harvests have been a small fraction of available quotas. Again the long-term goal will be to reduce the need for subsidising the hunt and increase the take of seals from this stock (NAMMCO/13).

4. Hooded seals

4.1 Northwest Atlantic

4.1.1 Proposal for conservation and management

Noting the Scientific Committee's review of available analyses of hooded seal pup production, which recognised that calculations are dependent on the particular rate of pup mortality used, as well as the harvest regimes, the Management Committee concluded that present catches of hooded seals in the Northwest Atlantic (1990-1995) were below the estimated replacement yields of 22,900 calculated for a harvest of pups only, and 11,800 calculated for a harvest of 1-year and older animals only. (NAMMCO/6)

Management measures/response by member countries:

None.

4.1.2 Proposal for conservation and management

The Management Committee noted that the total catch of hooded seals in the Northwest Atlantic in 1996 slightly exceeded the replacement yield while in 1997 the total number of seals taken was much lower. (NAMMCO/8)

Management measures/response by member countries:

Greenland noted that this stock was shared with Canada and that the two countries

hold regular bilateral discussions on management of this stock, including an exchange of information on harvest statistics, utilisation and stock assessment. (NAMMCO/11)

4.2 Greenland Sea

Proposal for conservation and management

The Management Committee noted the stock status and catch options presented by the Scientific Committee, and concluded that the catch level in 1998 was well below the calculated replacement yield. Catches at the same level in the future may result in population increase. From a resource management point of view, future quota levels approaching the replacement yield are advised. (NAMMCO/9)

Management measures/response by member countries:

While supporting the past conclusion of the Management Committee that catch levels for this stock are below replacement yield, Norway noted that the abundance estimate for this stock is dated and that it hoped that new information should soon be available from surveys planned for 2002. (NAMMCO/11)

Norway informed the Committee that quotas in this area have been reduced on the advice of the ICES/NAFO Working Group on Harp and Hooded Seals, mainly because there is no recent abundance estimate for the stock. Consequently it is expected that the quota may be fully utilised this year (NAMMCO/13).

5. Grey Seal

Proposal for conservation and management

The Management Committee noted the concern expressed by the Scientific Committee with regard to the observed decline in the grey seal stock around Iceland, where harvesting has been above sustainable levels for more than 10 years, with the apparent objective of reducing the size of the stock. The Management Committee agreed to recommend that Iceland should define clear management objectives for this stock.

The Management Committee noted the conclusion of the Scientific Committee that the new quota levels implemented for Norwegian grey seals would, if filled, almost certainly lead to a rapid reduction in population in the area. The Management Committee agreed to recommend that Norway should define clear management objectives for this stock.

For the Faroe Islands, the Management Committee supported the recommendation of the Scientific Committee to obtain better information on the level of catch (NAMMCO/13).

Management measures/response by member countries:

Iceland reported that the management objective for grey seals would be to maintain the stock size close to the current level, and that protective measures would be taken should further declines continue. A precondition to this objective will be careful monitoring of the stock size (NAMMCO/14)

Norway reported that a management plan for grey seals is presently under development (NAMMCO/14)

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6. Northern bottlenose whales

Proposal for conservation and management

The Management Committee discussed the advice of the Scientific Committee on the status of the northern bottlenose whale and noted that this was the first conclusive analysis on which management of the northern bottlenose whale could be based.

The Management Committee accepted that the population trajectories indicated that the traditional coastal drive hunt in the Faroe Islands did not have any noticeable effect on the stock and that removals of fewer than 300 whales a year were not likely to lead to a decline in the stock. (NAMMCO/5)

Management measures/response by member countries:

None.

7. Long-finned pilot whales

Proposal for conservation and management

The Management Committee noted the findings and conclusions of the Scientific Committee, through its review of the ICES Study Group Report and the analysis of data from NASS-95 with respect to the status of long-finned pilot whales in the North Atlantic, which also confirmed that the best available abundance estimate of pilot whales in the Central and Northeast Atlantic is 778,000. With respect to stock identity it was noted that there is more than one stock throughout the entire North Atlantic, while the two extreme hypotheses of i) a single stock across the entire North Atlantic stock, and ii) a discrete, localised stock restricted to Faroese waters, had been ruled out.

The Management Committee further noted the conclusions of the Scientific Committee that the effects of the drive hunt of pilot whales in the Faroe Islands have had a negligible effect on the population, and that an annual catch of 2,000 individuals in the eastern Atlantic corresponds to an exploitation rate of 0.26%.

Based on the comprehensive advice which had now been provided by the Scientific Committee to requests forwarded from the Council, the Management Committee concluded that the drive hunt of pilot whales in the Faroe Islands is sustainable. (NAMMCO/7)

Management measures/response by member countries:

In 1997 the Management Committee concluded that the Faroese drive hunt of pilot whales is sustainable. There have been no changes in annual take, new abundance estimates or other information that warrant any change in this conclusion. (NAMMCO/11)

8. Minke Whales - Central North Atlantic

8.1 Proposal for conservation and management

The Management Committee accepted that for the Central Stock Area the minke whales are close to their carrying capacity and that removals and catches of 292 animals per year (corresponding to a mean of the catches between 1980-1984) are

sustainable. The Management Committee noted the conservative nature of the advice from the Scientific Committee. (NAMMCO/8)

Management measures/response by member countries:

None.

8.2 Proposal for conservation and management

The Management Committee took note of the conclusions of the Scientific Committee with regard to the Central Atlantic Stock, which, under all scenarios considered, a catch of 200 minke whales per year would maintain the mature component of the population above 80% of its pre-exploitation level over that period. Similarly, a catch of 400 per year would maintain the population above 70% of this level. This constitutes precautionary advice, as these results hold even for the most pessimistic combination of the lowest MSYR and current abundance, and the highest extent of past catches considered plausible. The advice applies to either the CIC Small Area (coastal Iceland), or to the Central Stock as a whole (NAMMCO/13).

Management measures/response by member countries:

None.

9. Beluga - West Greenland

9.1 Proposal for conservation and management

Maniitsoq – Disko The Management Committee noted that a series of surveys conducted since 1981 indicate a decline of more than 60% in abundance in the area Maniitsoq to Disko. It further noted that with the present harvest levels (estimated at 400/yr) the aggregation of belugas in this area is likely declining due to overexploitation.

Avanersuaq – Upernavik The present harvest in the area Avanersuaq - Upernavik is estimated to be more than 100/yr. The Management Committee noted that since this beluga occurrence must be considered part of those wintering in the area from Maniitsoq to Disko, it is considered to be declining due to overexploitation.

Finally the Management Committee noted the conclusion by the Scientific Committee that with the observed decline a reduction in harvesting in both areas seems necessary to halt or reverse the trend. (NAMMCO/9)

Management measures/response by member countries:

Greenland stated that this issue again will be thoroughly discussed with the hunters, and that the Greenland Government does share the concerns expressed. (NAMMCO/10)

Greenland informed the Committee that in November 2000 the government made a decision to introduce harvest quotas for beluga and narwhal. Public hearings on a draft regulatory proposal were held in spring 2001. The results of these hearings are being taken into account in the drafting of a revised regulatory proposal, and a final set of regulations is expected to be introduced sometime in 2002. (NAMMCO/11)

Greenland informed the Committee that the regulatory initiative to introduce quotas and other hunting regulations for this species had been delayed, and comprehensive public hearings have been conducted. The draft regulations have now been submitted

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to the Council of Hunters. It is expected that a final decision on the initiative will be taken later in 2003. (NAMMCO/12)

9.2 Proposal for conservation and management

It was accepted that the Canada/Greenland Joint Commission on Conservation and Management of Narwhal and Beluga (JCNB) would provide management advice for this stock, which is shared by Canada and Greenland. The Management Committee therefore recommended that closer links be developed between NAMMCO and the JCNB on this and other issues of mutual concern. Greenland stated that this issue again will be thoroughly discussed with the hunters, and that the Greenland Government does share the concerns expressed. (NAMMCO/10)

Management measures/response by member countries:

None

9.3 Proposal for conservation and management

In 2000 the Management Committee accepted that the Canada/Greenland Joint Commission on Conservation and Management of Narwhal and Beluga (JCNB) would provide management advice for this stock, which is shared by Canada and Greenland. The Management Committee noted with pleasure that a joint meeting of the NAMMCO Scientific Working Group on the Population Status of North Atlantic Narwhal and Beluga and the JCNB Scientific Working Group had been held in May 2001, and recommended that this cooperation at the scientific level should continue. The Management Committee also reiterated its recommendation that closer links be developed between NAMMCO and the JCNB on this and other issues of mutual concern. (NAMMCO/11)

Management measures/response by member countries:

Greenland informed the Committee that a regulatory framework allowing the government to set quotas and other limitations on hunting has now been passed. The new regulations provide protection for calves and females with calves and limit the size of vessels that are involved in beluga and narwhal hunting as well as hunting methods. The Municipalities will have the power to limit or prohibit the use of nets for narwhal/beluga harvesting. It is expected that quotas will be introduced for beluga and narwhal by July 2004. The municipalities will be involved in the allocation of the quotas (NAMMCO/13).

Greenland informed the Committee that a quota of 320 had been introduced in West Greenland and Qaanaaq year-round from 1st July 2004. (NAMMCO/14)

10. Narwhal - West Greenland

10.1 Proposal for conservation and management

Avanersuaq The Management Committee noted that the present exploitation level in Avanersuaq of 150/yr seems to be sustainable, assuming that the same whales are not harvested in other areas

Melville Bay – Upernavik The Management Committee noted that the Scientific Committee could give no status for the Melville Bay – Upernavik summering stock.

Uummannaq The Management Committee noted that the substantial catches (several hundreds) in some years do cause concern for the status of this aggregation. The Management Committee further noted that the abundance of narwhal in this area should be estimated.

Disko Bay The Management Committee noted that present catches in this area are probably sustainable.

Catch Statistics The Management Committee noted that for both narwhal and beluga it is mandatory for future management that more reliable catch statistics (including loss rates) are collected from Canada and Greenland. (NAMMCO/9)

Management measures/response by member countries:

As for beluga, harvest quotas will be introduced for West Greenland narwhal in the near future. (NAMMCO/11)

Greenland informed the Committee that the regulatory initiative to introduce quotas and other hunting regulations for this species had been delayed, and comprehensive public hearings have been conducted. The draft regulations have now been submitted to the Council of Hunters. It is expected that a final decision on the initiative will be taken later in 2003. (NAMMCO/12)

10.2 Proposal for conservation and management

The Management Committee accepted that the JCNB would provide management advice for this stock, which is shared by Canada and Greenland. The Management Committee therefore recommended that closer links be developed with the JCNB on this and other issues of mutual concern. (NAMMCO/10)

Management measures/response by member countries:

Greenland informed the Committee that the new regulations mentioned under 5.8 for beluga will also apply to narwhal, and that quotas will be introduced in July 2004 (NAMMCO 13)

10.3 Proposal for conservation and management

The Management Committee noted the conclusions of the Scientific Committee, that the West Greenland Narwhal have been depleted, and that a substantial reduction in harvest levels will be required to reverse the declining trend. These are preliminary conclusions, and more research and assessment work will be required. Nevertheless the Management Committee expressed its grave concern over the status of the West Greenland Narwhal, and noted that the JCNB, which provides management advice for this stock, would be considering this information in the near future. The Management Committee also noted that it will be important for NAMMCO to monitor the situation closely and update the assessment as soon as more information is available. (NAMMCO 13)

Management measures/response by member countries:

Greenland informed the Committee that quotas of 200 in West Greenland and 100 in Qaanaaq had been introduced in 2004 (NAMMCO/14)

11. North Atlantic fin whales

11.1 Proposal for conservation and management

The Management Committee accepted that for fin whales in the East Greenland – Iceland (EGI) stock area, removals of 200 animals per year would be unlikely to bring the population down below 70% of its pre-exploitation level in the next 10 years, even under the least optimistic scenarios. However, catches at this level should be spread throughout the EGI stock area, roughly in proportion to the abundance of fin whales observed in the NASS surveys. Furthermore, the Management Committee stressed that the utilisation of this stock should be followed by regular monitoring of the trend in the stock size.

The Management Committee also noted the conservative nature of the advice from the Scientific Committee on which the conclusion of the Management Committee was based. (NAMMCO/9)

East Greenland-Iceland Stock

The Management Committee noted the conclusion of the Scientific Committee that projections under constant catch levels suggest that the inshore substock will maintain its present abundance (which is above MSY level) under an annual catch of about 150 whales. It is important to note that this result is based upon the assumption that catches are confined to the “inshore” substock, *i.e.* to the grounds from which fin whales have been taken traditionally. If catches were spread more widely, so that the “offshore” substock was also harvested, the level of overall sustainable annual catch possible would be higher than 150 whales. (NAMMCO 13)

Faroe Islands

The Management Committee noted that the conclusion of the Scientific Committee had not changed from the previous assessment, that the uncertainties about stock identity are so great as to preclude carrying out a reliable assessment of the status of fin whales in Faroese waters, and thus the Scientific Committee was not in a position to provide advice on the effects of various catches. It may also be necessary to obtain clearer guidance on the management objectives for harvesting from what is likely to be a recovering stock before specific advice can be given. (NAMMCO/13)

Management measures/response by member countries:

None

12. Incorporation of the users’ knowledge in the deliberations of the Scientific Committee

12.1 Proposal for conservation and management

The Management Committee endorsed the proposals and viewpoints contained in section 6 in the Scientific Committee report, and suggested that the “Draft Minke Whale Stock Status Report” (NAMMCO/9/7) could usefully serve as a pilot project for cooperation with the hunters. (NAMMCO/9)

Management measures/response by member countries:

Status Reports under development.

12.2 Proposal for conservation and management

The Management Committee had previously asked the Secretariat to proceed with a proposal by the Scientific Committee to use stock status reports as a starting point for discussions with resource users to incorporate their knowledge in advice to Council, and to use the stock status report on minke whales as a pilot project. However, in 2000 the Management Committee recommended that a proposal for a conference on incorporating user knowledge and scientific knowledge into management advice should proceed, and asked the Conference Advisory Group to plan this conference to evaluate whether and how the previous proposal for incorporating user knowledge into the Scientific Committee's deliberations could be incorporated into the Conference. (NAMMCO/11)

Management measures/response by member countries:

Greenland informed the Committee that a person had been hired at the Greenland Institute of Natural Resources to deal with these issues, and that this employee is also on the Advisory Board of the Conference. (NAMMCO/11)

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NAMMCO. 2005. Report of the fourteenth meeting of the Council. In: NAMMCO, *Annual Report 2004*. NAMMCO, Tromsø, in press.

SUMMARY OF REQUESTS BY NAMMCO COUNCIL TO THE SCIENTIFIC COMMITTEE, AND RESPONSES BY THE SCIENTIFIC COMMITTEE

The following provides a summary of all requests by NAMMCO Council to the Scientific Committee (including NAMMCO/14 - 2005), and notes the response of the Scientific Committee (SC) to these requests. Requests forwarded from NAC (North Atlantic Committee for Cooperation on Research on Marine Mammals) to ICES (International Council for the Exploration of the Sea) prior to NAMMCO's establishment, and which were carried over to NAMMCO in 1992, are included. Unless otherwise stated the status of the request and response is ongoing.

1. ROLE OF MARINE MAMMALS IN THE ECOSYSTEM

Marine mammal - fish interaction:

Code/Meeting: 1.1/ NAMMCO/1-

Request:

To provide an overview of the current state of knowledge of the dependence of marine mammals on the fish and shrimp stocks and the interrelations between these compartments

Response of the Scientific Committee:

See 1.2, 1.4, 1.7, 1.9, 1.10.

Code/Meeting: 1.2/NAMMCO/1

Request:

In the multi-species context ... to address specific questions related to the Davis Strait ecosystem such as:

- the apparent increase in harp seal stocks;
- its influence on the economically important shrimp and cod stocks;
- the impact of the fisheries on marine mammals, particularly harp seals;
- the southward shift of minke whale distribution in recent years, and
- observed changes in oceanographical conditions after the 1970s;
- and to the East Greenland-Iceland-Jan Mayen area interactions between capelin stocks, fishery and marine mammals

Response of the Scientific Committee:

- Questions related to harp and hooded seals were forwarded to the ICES/NAFO Joint Working Group on Harp and Hooded Seals (SC/2)
- Specific questions related to the Davis Strait ecosystem were not addressed.
- See also 1.4, 1.7, 1.9, and 1.10.

Code/Meeting: 1.3/NAMMCO/2

Request:

To assess the impact of marine mammals on the marine ecosystem, with special emphasis on the availability of economically important fish species

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Response of the Scientific Committee:

See 1.2, 1.4, 1.7, 1.9, 1.10

Code/Meeting: 1.4/ NAMMCO/6

Request:

The Scientific Committee was requested to focus its attention on the food consumption of three predators in the North Atlantic: the minke whale, the harp seal and the hooded seal, with a particular emphasis on the study of the potential implications for commercially important fish stocks.

Response of the Scientific Committee:

The Scientific Committee established a Working Group on the Role of Minke Whales, Harp Seals and Hooded Seals in the North Atlantic. The Scientific Committee used the report of this Working Group to provide advice to Council, and to recommend further research. (SC/5) Many of the papers presented will be published in Volume 2 of NAMMCO Scientific Publications. (SC/7)

Code/Meeting: 1.5/NAMMCO/7

Request:

The Council encourages scientific work that leads to a better understanding of interactions between marine mammals and commercially exploited marine resources, and requested the Scientific Committee to periodically review and update available knowledge in this field.

Response of the Scientific Committee:

See 1.9, 1.10

Multi-species approaches to management:

Code/Meeting: 1.6/NAMMCO/1

Request:

To consider whether multi-species models for management purposes can be established for the North Atlantic ecosystems and whether such models could include the marine mammals compartment. If such models and the required data are not available then identify the knowledge lacking for such an enterprise to be beneficial to proper scientific management and suggest scientific projects which would be required for obtaining this knowledge.

Response of the Scientific Committee:

See 1.4, 1.7, 1.9, 1.10

Code/Meeting: 1.7/NAMMCO/5

Request:

In relation to the importance of the further development of multi-species approaches to the management of marine resources, the Scientific Committee was requested to monitor stock levels and trends in stocks of all marine mammals in the North Atlantic.

Response of the Scientific Committee:

It was clarified that the purpose of this request was to ensure that data on marine mammals was available for input into multi-species models for management. The

Committee agreed that updated information on abundance and indications of trends in abundance of stocks of marine mammals in the North Atlantic should be clearly described in a new document for the internal reference of the Council, to replace the List of Priority Species. This document would be entitled Status of Marine Mammals in the North Atlantic and should include those cetacean and pinniped species already contained in the List of Priority Species, as well as other common cetacean species in the NAMMCO area for which distribution and abundance data is also available (fin, sei, humpback, blue, and sperm whales). (SC/5)

Sealworm infestation:

Code/Meeting: 1.8/NAMMCO/6 – Status: COMPLETED

Request:

Aware that the population dynamics of the sealworm (*Pseudoterranova decipiens*) may be influenced by sea temperature, bathymetry, invertebrate and fish fauna, the Scientific Committee was requested to review the current state of knowledge with respect to sealworm infestation and to consider the need for comparative studies in the western, central and eastern North Atlantic coastal areas, taking into account the priority topics recommended by the Scientific Committee and its *ad hoc* Working Group on grey seals.

Response of the Scientific Committee:

The Scientific Committee established a Working Group on Sealworm Infection to address this question. The Scientific Committee used their report as the basis for providing advice to Council, and developing recommendations for further research. (SC/5) Many of the papers considered by the Working Group are published in *NAMMCO Scientific Publications Vol. 3 Sealworms in the North Atlantic: Ecology and population dynamics* (SC/7)

Economic aspects of marine mammal-fisheries interactions:

Code/Meeting: 1.9/NAMMCO/7

Request:

The Council requested that special attention be paid to studies related to competition and the economic aspects of marine mammal-fisheries interactions

Response of the Scientific Committee:

The Scientific Committee established a Working Group on Economic Aspects of Marine Mammal-Fisheries Interactions. The Scientific Committee concluded that inclusion of economic considerations is a valuable addition to multi-species models of interactions between marine mammals and fisheries. The work presented at the Working Group was considered the first step towards more complete analyses of these interactions and it was recommended, in light of the economic impacts, that more complete models should be developed and presented. The Scientific Committee showed a continued interest in the development of the models and it was decided to maintain the Working Group and seek further guidance from the Council on matters of particular interest. (SC/6)

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Code/Meeting: 1.10/NAMMCO/8

Request:

The Scientific Committee is requested to investigate the following economic aspects of marine mammal – fisheries interactions:

- to identify the most important sources of uncertainty and gaps in knowledge with respect to the economic evaluation of harvesting marine mammals in the different areas;
- to advise on research required to fill such gaps both in terms of refinement of ecological and economical models and collection of basic biological and economical data required as input parameters for the models;
- to discuss specific cases where the state of knowledge may allow quantification of the economic aspects of marine mammal – fisheries interactions:
 - a) what could be the economic consequences of a total stop in harp seal exploitation versus different levels of continued sustainable harvest?
 - b) what could be the economic consequences of different levels of sustainable harvest vs. no exploitation of minke whales?

Response of the Scientific Committee:

The Working Group on the Economic Aspects of Marine Mammal - Fisheries Interactions was reactivated to meet this request. It was agreed to separate the request into two sections. At the first Working Group meeting the first two items in the request were addressed. The Working Group used available information to derive estimates of consumption of cod, herring, capelin and shrimp by harp seals, minke whales and *Lagenorhynchus* spp. and bottlenose dolphins in some areas. Multi-species models presently in use or under development in Norway and Iceland offer a means of assessing the impact of marine mammal predation on fish stocks. The Scientific Committee therefore recommended that the next logical step in addressing the request should be for NAMMCO to lead or assist in the development of a multi-species-economic model for a candidate area. However, the Scientific Committee reiterated that the estimation and model uncertainties are such that definitive quantification of the economic aspects of marine mammal-fisheries interactions in candidate areas cannot be expected in the near term. (SC/8)

Code/Meeting: 1.11/NAMMCO/10

Request:

Noting the requests for advice from the Council at its 8th meeting in Oslo 1998 (see Annual Report 1998 page 23), the Management Committee recommended that the Scientific Committee continue the assessment of the economic aspects of fishery - marine mammal interactions in the two areas (Barents Sea and Iceland) and with the two species (minke whales and harp seals) that have been identified as feasible for this assessment.

Response of the Scientific Committee:

The Scientific Committee convened a workshop under the theme "Marine Mammals: From feeding behaviour or stomach contents to annual consumption - what are the main uncertainties ", to further investigate the methodological and analytical problems in estimating consumption by marine mammals. (SC/9)

Code/Meeting: 1.12/NAMMCO/11

Request:

The Management Committee noted the conclusion of the Scientific Committee that the estimation and model uncertainties are such that the economic aspects of marine mammal-fishery interactions in candidate areas cannot be quantified without further work. The Management Committee therefore recommended that the Scientific Committee should hold a workshop on ecosystem models aiming for a better understanding of the ecological role of minke whales and harp and hooded seals in the North Atlantic, as proposed in the Scientific Committee report.

Response of the Scientific Committee:

The Scientific Committee convened a workshop, under the theme "Modelling Marine Mammal – Fisheries Interactions in the North Atlantic", to investigate how presently available ecosystem models can be adapted for quantifying marine mammal - fishery interactions. (SC/10)

Code/Meeting: 1.13/NAMMCO/12

Request:

The Management Committee agreed that the Scientific Committee should monitor progress made in multi-species modelling and in the collection of input data and decide when enough progress has been made to warrant further efforts in this area. Future meetings should focus on assessing modelling results from the Scenario Barents Sea model and possibly the GADGET-based template models for other areas, if they are developed. The Scientific Committee should also consider the feasibility of connecting the multi-species models with simple economic models at that time.

Response of the Scientific Committee:

The Scientific Committee convened a Working Group to review the progress that has been made in the last two years, in 2 specific areas: 1) quantifying the diet and consumption of marine mammals, and 2) the application of multi-species models that include marine mammals to candidate areas of the North Atlantic (SC/12).

2. ENVIRONMENTAL ISSUES

Code/Meeting: 2.1/NAMMCO/1

Request:

To describe the possible pathways of radioactive material from blowouts and leakage in existing nuclear power plants, leakage from dumped material and possible accidents in planned recycling plants in the northern part of Scotland into the food web of the North Atlantic and hence into the top predators like marine mammals.

Response of the Scientific Committee:

Forwarded to ICES.

Code/Meeting: 2.2/NAMMCO/1

Request:

To review the contaminant burdens (especially organochlorines) in marine mammals in the North Atlantic and evaluate the possible sources of these contaminants.

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Response of the Scientific Committee:

No response from the Scientific Committee. In 1995, NAMMCO hosted the International Conference on Marine Mammals and the Marine Environment. The Conference covered the following themes: Marine mammals and the marine environment - impacts and management approaches; Contaminants in marine mammals – sources, levels and effects; Coastal communities and marine pollution – social, economic and health considerations; Addressing the questions – problems and future needs. The proceedings were published as a special issue of *The Science of the Total Environment* (186: 1,2).

3. MANAGEMENT PROCEDURES

Code/Meeting: 3.1/NAMMCO/2

Request:

To review the basis for, and develop assessments necessary to provide the scientific foundation for conservation and management of the stocks relevant for management under NAMMCO.

Response of the Scientific Committee:

A Working Group on Management Procedures was established to consider this matter. (SC/2). The Scientific Committee noted that there were many different management needs requiring different management procedures. It was agreed that there was need for more guidance on management objectives before any concrete work can be started on developing appropriate management procedures, and in turn this was likely to be case- (species and/or area) specific. Related to this it was also noted that NAMMCO may prefer to assume an advisory and evaluative role in developing its management. (SC/2)

Code/Meeting: 3.2/NAMMCO/4

Request:

Further development of RMP-like procedures.

Response of the Scientific Committee:

The Scientific Committee decided to develop management procedures on a case-by-case basis: “a more pragmatic approach on an area and species/case-specific basis would be desirable for the development of specific management procedures. It was therefore decided to suggest that requests for advice from the Council be accompanied by specific objectives defined for the case in question”. (SC/3)

4. STOCKS/SPECIES

Monitoring marine mammal stock levels and trends in stocks /North Atlantic Sightings Surveys (NASS):

Code/Meeting: 4.1.1/NAMMCO/3

Request:

To plan joint cetacean sighting surveys in the North Atlantic by co-ordinating national research programmes.

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Response of the Scientific Committee:

The Scientific Committee agreed to establish a Working Group to plan the sighting survey for the summer of 1995. (SC/2)

The Scientific Committee was pleased to note the good progress that had been made in planning this important joint research, in which the Faroes (1 vessel), Iceland (3 vessels and 1 aircraft) and Norway (11 vessels) had decided to participate. It was noted that Greenland had decided not to conduct surveys as part of these joint efforts. (SC/3)

The Scientific Committee agreed to recommend that a special fund of NOK 800,000 be established from the NAMMCO budget for use in financing various aspects of NASS-95, where required. (SC/3)

Code/Meeting: 4.1.2/NAMMCO/5

Request:

The 1995 North Atlantic Sightings Survey (NASS-95) would provide updated abundance estimates for a number of whale species in the North Atlantic, and the Scientific Committee was requested to review results in the light of recent assessments of North Atlantic whale stocks.

Response of the Scientific Committee:

The Scientific Committee agreed to establish a Working Group on Abundance Estimates. The task of the Working Group on Abundance Estimates would be to review analyses and where relevant also analyse data from NASS-95 to ensure its compatibility, both between NASS-95 survey areas, as well as with data from other sightings surveys, in order to provide a basis for calculating abundance estimates for the relevant cetacean stocks in the North Atlantic. (SC/4)

Code/Meeting: 4.1.3/NAMMCO/6

Request:

The Management Committee noted the successful completion of the North Atlantic Sightings Survey in 1995, and commended the process initiated by the Scientific Committee to conclude the analysis of NASS-95 data. It was expected that the results on abundance will be dealt with by the newly established Scientific Committee Working Group on Abundance Estimates and will be presented at the next annual meeting. It was noted that the Working Group would at least to some extent address last year's request from the Council regarding monitoring of stock levels and trends in stocks. However, it was also noted that one outstanding matter from last year is the request to the Scientific Committee to review results of NASS-95 in the light of recent assessments of North Atlantic whale stocks.

The Council agreed to the suggestion from the Management Committee that this be drawn to the attention of the Scientific Committee to secure a follow-up to last year's request.

Response of the Scientific Committee:

To address this request, a Working Group on Abundance Estimates had been established with the task of reviewing the analyses, and where relevant, also to analyse data from NASS-95 to provide a basis for calculating abundance estimates for the relevant cetacean stocks in the North Atlantic. The Working Group had focused on

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describing synoptic distributions of the cetacean species encountered during NASS-95, and abundance estimates for minke, fin, sei and pilot whales, which were the target species of the survey. The Scientific Committee concluded that the updated abundance estimates for the target species as reviewed by the Working Group on Abundance Estimates represented the best available estimates for the stocks concerned, and used them as a basis to provide advice to Council. The Scientific Committee also recommended that the results of NASS-95 be compiled to a future volume of *NAMMCO Scientific Publications*. (SC/5)

Code/Meeting: 4.1.4/NAMMCO/7

Request:

The Scientific Committee was requested to continue its work to monitor stock levels and trends in all stocks of marine mammals in the North Atlantic in accordance with previous recommendations (see *NAMMCO Annual Report 1996*:131-132). In this context the Scientific Committee was encouraged to prioritise calculation of the abundance of species covered by NASS-95, in particular those species presently harvested and species considered to be important with respect to interactions with fisheries.

Response of the Scientific Committee:

See 4.1.3.

Code/Meeting: 4.1.5/NAMMCO/9

Request:

NASS-95: The Management Committee noted particularly that abundance estimates from NASS-95 have not been completed for some species. The Management Committee therefore recommended that the Scientific Committee complete abundance estimates for all species, as part of its efforts to monitor the abundance of all species in the North Atlantic.

Response of the Scientific Committee:

The Scientific Committee noted that abundance estimates for the main target species of NASS-95 (minke whale, fin whale, sei whale, pilot whale) had been completed and accepted by them, however most had not yet been published in the primary scientific literature. The Scientific Committee agreed that further analyses of the abundance of non-target species from the NASS-95 survey should be conducted if they are warranted. However, as the survey was not optimised for these species, it was recognised that the design and conduct of the survey would make this possible to a varying degree, depending on both the species and area in question. In some cases, a general description of the spatial distribution of sightings may be the only analysis warranted. The Scientific Committee agreed to pursue these analyses in the coming year. (SC/8)

The Scientific Committee considered new information on the NASS-95 Icelandic aerial and shipboard surveys for minke whales, and a new abundance estimate for humpback whales from the NASS-95 Icelandic shipboard survey. (SC/9)

Code/Meeting: 4.1.6/NAMMCO/9

Request:

The Management Committee recommended that the Scientific Committee continue its efforts to coordinate future sighting surveys and analyses of the results from such surveys in the North Atlantic. Priority species should be minke whales and fin whales, and the Management Committee recommended that that the survey design be optimised for these species. The survey should also be optimised to cover those areas where abundance estimates are most urgently required.

Response of the Scientific Committee:

The Working Group on Abundance Estimates met in November 2000 to plan for NASS-2001. The survey was conducted in June/July 2001. (SC/9)

Code/Meeting: 4.1.7/NAMMCO/11

Request:

The Management Committee recommended that remaining abundance estimates from the NASS-95 and new estimates from the NASS-2001 surveys should be developed as soon as feasible, with the target species of the surveys being of highest priority. The Management Committee emphasised that this work should be published in a timely manner.

Response of the Scientific Committee:

The Working Group on Abundance Estimates met in March 2002 and developed preliminary abundance estimates for fin whales, minke whales, humpback whales, sperm whales and dolphins. In addition a full evaluation of the 2001 survey was conducted, and recommendations for future surveys were made. (SC/10).

The Working Group on Abundance Estimates met in February 2003 and considered abundance estimates for minke, fin, humpback, blue, pilot and northern bottlenose whales (SC/11)

Code/Meeting: 4.1.8/NAMMCO/13

Request:

The Management Committee welcomed the new abundance estimates for particularly minke and humpback whales in the Central North Atlantic. The NASS have been highly successful in providing important information on the distribution and abundance of cetaceans over a broad area of the North Atlantic. This information becomes more valuable every time a survey is completed, as it provides an indication of trends in abundance over meaningful time periods. The Management Committee therefore requested that the Scientific Committee coordinate the efforts of member countries in planning and conducting a large-scale sightings survey in 2006. In order to ensure as broad a coverage as possible, this should include co-ordination with planned surveys by non-member countries, and inviting other jurisdictions, particularly in the Western Atlantic, to participate in the surveys.

Response of the Scientific Committee:

The next NASS will take place in 2007, and planning will begin in 2006 (SC/12).

Central North Atlantic minke whales:

Code/Meeting: 4.2.1/NAMMCO /7

Request:

Report of the Management Committee

In the light of the new survey abundance results the Scientific Committee is requested to undertake an assessment of the status of the Central North Atlantic minke whale stock, including to evaluate the long-term effects of past and present removal levels on the stock.

Response of the Scientific Committee:

The Scientific Committee agreed to assign the task of assessing the status of the stock to the Working Group on Management Procedures. The Council had requested the Scientific Committee to provide its advice on this matter prior to the next meeting of the Council, however it was the general view of the Committee that it was unlikely that this work could be completed within this time frame. (SC/5)

The Scientific Committee used the report of the Working Group on Management Procedures as the basis for providing advice and research recommendations to Council. The Committee agreed that catches of 292 per year (the mean of the catch between 1980-84) are sustainable for the Central stock, and that catches of 185 whales per year are sustainable for the coastal Iceland(SC/6)

Code/Meeting: 4.2.2/NAMMCO/8

Request:

In order to ascertain the stock structure of minke whales in the North Atlantic, the Scientific Committee is requested to investigate the possibility of supplementing present sampling with existing older material from NAMMCO countries and other countries in joint genetic analyses. If possible, such analyses should be undertaken.

Response of the Scientific Committee:

It was noted that such exchanges of samples are ongoing between Norway and Greenland. Samples collected in the past from Iceland and Norway have already been analysed concurrently, and there are no recent samples from Iceland. The Scientific Committee concluded that available samples are being utilised effectively. (SC/7)

Code/Meeting: 4.2.3/NAMMCO/11

Request:

The Management Committee recommended that the Scientific Committee should complete an assessment of Central Atlantic minke whales once new abundance estimates from NASS-2001 become available.

Response of the Scientific Committee:

The Scientific Committee completed the assessment and provided advice on sustainable catches to the Council (SC/11).

Northern bottlenose whales:

Code/Meeting: 4.3.1/NAMMCO/2

Request:

To undertake an assessment of the status of the northern bottlenose whale (*Hyperoodon ampullatus*) stock in the North Atlantic.

Response of the Scientific Committee:

A Working Group on Northern Bottlenose and Killer Whales was established, and provided a preliminary assessment which was used as the basis of advice and

recommendations for further research given by the Scientific Committee. (SC/2)

Code/Meeting: 4.3.2/NAMMCO/4

Request:

To undertake the necessary modelling of the species as suggested under ... items 9.2. and 10.2.2 of ...[the Report of the Third Meeting of the Scientific Committee, 1993]. (SC/3)

Response of the Scientific Committee:

A joint session was held of the Working Group on Northern Bottlenose Whales and the Working Group on Management Procedures in order to consider the request from the Council to undertake the necessary modelling of the population using catch series and abundance estimates. Their report was used as the basis for advice and research recommendations conveyed by the Scientific Committee. (SC/3)

Killer whales:

Code/Meeting: 4.4.1/NAMMCO/2

Request:

To advise on stock identity for management purposes; to assess abundance in each stock area; to assess effects of recent environmental changes, changes in the food supply and interactions with other marine living resources in each stock area.

Response of the Scientific Committee:

A Working Group on Northern Bottlenose and Killer Whales was established by the Scientific Committee, and provided a preliminary assessment. This provided the basis for advice and research recommendations given by the Scientific Committee. (SC/2)
The Chair noted that it had not yet been possible to complete a full assessment of the killer whale as requested by the Council. Few new data were available, other than recent sightings data from NASS-95 which had not been analysed. (SC/5)

Code/Meeting: 4.4.2/NAMMCO/13

Request:

The Management Committee requested the Scientific Committee to review the knowledge on the abundance, stock structure, migration and feeding ecology of killer whales in the North Atlantic, and to provide advice on research needs to improve this knowledge. Priority should be given to killer whales in the West Greenland – Eastern Canada area.

Response of the Scientific Committee:

The Scientific Committee concluded that there was not enough information to carry out the assessment at this time, particularly for the West Greenland area. The Scientific Committee will review new information on killer whales annually with the aim of completing the assessment once sufficient information becomes available for a particular area (SC/12).

Long-finned pilot whales:

Code/Meeting: 4.5.1/NAMMCO/1

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Request:

To provide an assessment of the state of the pilot whale stock in the north eastern Atlantic, based on the information sampled from the Faroese drive fishery and the NASS sighting surveys.

Response of the Scientific Committee:

The Scientific Committee decided to base its advice on the report of the ICES Study Group on Long-Finned Pilot whales. They concluded that an evaluation of status could not be provided without further work.(SC/2)

Code/Meeting: 4.5.2/NAMMCO/2

Request:

To analyse the effects of the pilot whale drive hunt in the Faroe Islands on North Atlantic pilot whales (*Globicephala melas*), especially whether the numbers taken are consistent with sustainable utilisation.

Response of the Scientific Committee:

This matter was addressed by the Scientific Committee, based on the findings of the ICES Study Group and the review of the results of NASS-95. The Scientific Committee agreed to endorse the list of future research requirements listed by the ICES Study Group in its report, and provided advice on the sustainability of the Faroese catch. (SC/5)

Narwhal and beluga:

Code/Meeting: 4.6.1/NAMMCO/7

Request:

The Scientific Committee was requested to examine the population status of narwhal and beluga (white whales) throughout the North Atlantic.

Response of the Scientific Committee:

The Scientific Committee established a Working Group on the Population Status of Narwhal and Beluga in the North Atlantic, which met in March 1999. The Scientific Committee used the report of the Working Group to evaluate the stock status of the various narwhal and beluga aggregations, and provided recommendations to Council. (SC/7)

Code/Meeting: 4.6.2/NAMMCO/8

Request:

The Management Committee requested advice from the Scientific Committee on the level of sustainable utilisation of West Greenland beluga in different areas and under different management objectives. For narwhal, the Management Committee requested that the Scientific Committee identify the information which is lacking in order to answer the same question proposed with respect to beluga.

Response of the Scientific Committee:

The Scientific Committee reactivated the Working Group on the Population Status of Narwhal and Beluga and used its report as the basis of its recommendations to the Council. The Scientific Committee concluded that the stock is substantially depleted and that present harvests are several times the sustainable yield, and, if continued, will

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likely lead to stock extinction within 20 years. The Committee assessed a range of harvest options with the overall objective of arresting the decline of West Greenland Beluga, and provided prioritised research recommendations. (SC/8)

The Scientific Committee noted that developing recommendations on the sustainable harvest of narwhal in Greenland will require significant additional research and cannot be done at present. To this end, the Scientific Committee provided research recommendations to answer questions about catch statistics, stock identity and abundance. (SC/8)

Code/Meeting: 4.6.3/NAMMCO/10

Request:

The Management Committee recommended that the Scientific Committee continue its assessment of West Greenland beluga with reference to the short-term research goals identified. It is anticipated that a joint meeting of the Scientific Working Group of the JCNB and the NAMMCO Scientific Working Group on the Population Status of Narwhal and Beluga in the North Atlantic can be held in spring 2001.

Response of the Scientific Committee:

The Scientific Committee Working Group on the Population Status of Narwhal and Beluga in the North Atlantic met jointly with the Scientific Working Group of the Joint Commission on the Conservation and Management of Narwhal and Beluga (JCNB) to deal with these requests. The Scientific Committee used their report to provide catch options for West Greenland Beluga and research recommendations for West Greenland beluga and narwhal. (SC/9)

Code/Meeting: 4.6.4/NAMMCO/10

Request:

The Management Committee recommended that the Scientific Committee complete an assessment of narwhal in West Greenland when the necessary data are available. Specifically, the Scientific Committee is requested to evaluate the extent of movements of narwhal between Canada and Greenland.

Response of the Scientific Committee:

See 4.6.1. The Scientific Committee used evidence from genetic and contaminant analysis, satellite tagging and hunter knowledge to evaluate the extent of movement between Greenland and Canada. (SC/9)

Code/Meeting: 4.6.5/NAMMCO/11

Request:

The Management Committee recommended that the Scientific Committee should concentrate its assessment efforts on the West Greenland narwhal in the near term.

Response of the Scientific Committee:

The Scientific Committee concluded that West Greenland narwhal were depleted and recommended catch levels for the Inglefield Bredning, Uummannaq, Disko Bay and Melville Bay areas (SC/12)

Code/Meeting: 4.6.6/NAMMCO/12

Request:

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The Management Committee noted that a new survey of West Greenland beluga will be conducted in 2004. The Scientific Committee was therefore requested to update the assessment of West Greenland Beluga in light of the new survey results and any other new information. The main management objective is to halt the decline of this stock.

Response of the Scientific Committee:

Survey not successful in 2004. Response pending.

Code/Meeting: 4.6.7/NAMMCO/13

Request:

The Committee noted that a new survey will be carried out in the over-wintering area of the West Greenland beluga in March 2004. If the survey is successful, it will provide an abundance estimate with which to update the assessment of this stock. The Management Committee therefore endorsed the plan of the Scientific Committee to update this assessment in 2005, jointly with the Scientific Working Group of the JCNB.

Response of the Scientific Committee:

The survey was not successful in 2004, and may be attempted again in 2005.

Code/Meeting: 4.6.8/NAMMCO/14

Request:

The Management Committee requested that the Scientific Committee carry out an assessment of East Greenland narwhal, and provide an estimate of sustainable yield for the stock. The management objective in this case is to maintain the stock at a stable level. If the assessment cannot be completed with available information, the Scientific Committee should provide a list of research that would be required to complete the assessment.

Response of the Scientific Committee:

Pending.

Harbour porpoises:

Code/Meeting: 4.7.1/NAMMCO/7

Request:

The Council noted that the harbour porpoise is common to all NAMMCO member countries, and that the extent of current research activities and expertise in member countries and elsewhere across the North Atlantic would provide an excellent basis for undertaking a comprehensive assessment of the species throughout its range. The Council therefore requested the Scientific Committee to perform such an assessment, which might include distribution and abundance, stock identity, biological parameters, ecological interaction, pollutants, removals and sustainability of removals.

Response of the Scientific Committee:

The Scientific Committee decided that the matter could best be dealt with by convening an international workshop/symposium on harbour porpoises, which would involve experts working on this species throughout its North Atlantic range. The agenda would include the following themes: distribution, abundance and stock

identity; biological parameters; ecological interactions; pollutants; removals and sustainability of removals. (SC/6)

The Scientific Committee utilised the report of the Symposium to develop its own assessment advice to the Council. Recent abundance estimates are available for only a few places in the North Atlantic. Directed harvesting occurs in some areas, but most removals are through by-catch. In some areas, present removals are not sustainable. The Scientific Committee developed research recommendations to address some of the information needs for management of this species. (SC/8)

Atlantic walrus:

Code/Meeting: 4.8.1/NAMMCO/2

Request:

To advise on stock identity for management purposes; to assess abundance in each stock area; to assess long-term effects on stocks by present removals in each stock area; to assess effects of recent environmental changes (i.e. disturbance, pollution) and changes in the food supply.

Response of the Scientific Committee:

The assessment was postponed pending report of Walrus International Technical and Scientific Committee (WITS). (SC/2) It was decided in late 1994 to request Erik Born of the Greenland Fisheries Research Institute in Copenhagen to coordinate the compilation of a status report on the Atlantic walrus in time for the present Scientific Committee meeting. The result of this collaboration was the report, E.W. Born, I. Gjertz and R.R. Reeves, "Population assessment of Atlantic walrus (*Odobenus rosmarus rosmarus*)" This report was used by the Scientific Committee as the basis of its management and research recommendations to Council. (SC/3)

Code/Meeting: 4.8.2/NAMMCO/13

Request:

The Management Committee noted that the Scientific Committee had last provided an assessment of walrus in 1994. Noting that considerable new information has become available since then, the Management Committee therefore requested the Scientific Committee to provide an updated assessment of walrus, to include stock delineation, abundance, harvest, stock status and priorities for research.

Response of the Scientific Committee:

Pending.

Harp and hooded seals:

Code/Meeting: 4.9.1/NAMMCO/2

Request:

- to assess the stock size, distribution and pup production of harp seals in the Barents Sea and White Sea, and of harp and hooded seals in the Greenland Sea and the Northwest Atlantic;
- to assess sustainable yields at present stock sizes and in the long term under varying options of age composition in the catch;

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- to provide advice on catch options in the White Sea/Barents Sea/Greenland Sea and NAFO areas;
- to assess effects of recent environmental changes or changes in the food supply and possible interaction with other living marine resources in the areas.

Response of the Scientific Committee:

- These requests forwarded to Joint ICES/NAFO Working Group on Harp and Hooded Seals. A partial assessment was completed, but more work was required. (SC/2)
- The Scientific Committee considered the report of the Joint ICES/NAFO Working Group on Harp and Hooded Seals which had met in Dartmouth, Canada, 5-9 June 1995. The Scientific Committee endorsed the recommendations in the report and identified further research needs. However the required assessments had not yet been completed. (SC/4).
- The Scientific Committee considered the report of the Joint ICES/NAFO Working Group on Harp and Hooded Seals which had met in Copenhagen in 1997. The Scientific Committee used this report as the basis for its advice to Council, while noting that catch options had not been completed for Greenland Sea harp and hooded seals, and White Sea and Barents Sea harp seals. (SC/6)
- The Joint ICES/NAFO Working Group on Harp and Hooded Seals met in 1998 to complete the assessments for Greenland Sea harp and hooded seals, and White Sea and Barents Sea harp seals. The Scientific Committee used their report as the basis of its advice to Council, and noted that the required assessments had now been completed. Assessment of the effects of recent environmental changes or changes in the food supply and possible interaction with other living marine resources in the areas is ongoing. (SC/7)

Code/Meeting: 4.9.2/NAMMCO/8

Request:

The Scientific Committee is requested to coordinate joint feeding studies of harp and hooded seals in the Nordic Seas (Iceland, Greenland and Norwegian Seas) and off West Greenland.

Response of the Scientific Committee:

The Scientific Committee noted that preparations to coordinate such studies between member countries were already under way, outside of the NAMMCO Scientific Committee. The Scientific Committee therefore emphasised its support for such joint studies and urged member countries to participate. (SC/7)

Code/Meeting: 4.9.3/NAMMCO/11

Request:

The Management Committee recommended that the Scientific Committee regularly update the stock status of North Atlantic harp and hooded seal stock as new information becomes available.

Response of the Scientific Committee:

Ongoing as new information becomes available.

Code/Meeting: 4.9.4/NAMMCO/12

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Request:

The Management Committee noted that new information recently had become available on the abundance of harp seals in the Greenland Sea and the Northwest Atlantic. In addition, new information is available on movements and stock delineation of harp seals in the Greenland, Barents and White seas. The Management Committee therefore reiterated its previous request to the Scientific Committee to regularly update the stock status of North Atlantic harp and hooded seals as new information becomes available. The Management Committee noted the likely impact of increasing abundance of these species on fish stocks. For harp seals in the Northwest Atlantic, the immediate management objective is to maintain the stocks at their present levels of abundance.

Response of the Scientific Committee:

Ongoing as new information becomes available.

Code/Meeting: 4.9.5/NAMMCO/13

Request:

The Management Committee requests that the Scientific Committee annually discusses the scientific information available on harp and hooded seals and advice on catch quotas for these species given by the ICES/NAFO Working Group on Harp and Hooded Seals. The advice by the Scientific Committee on catch quotas should not only be given as advice on replacement yields, but also levels of harvest that would be helpful in the light of ecosystem management requirements.

For the Barents/White Sea and Greenland Sea stocks, in addition to the advice on replacement yields, advice should be provided on the levels of harvest that would result in varying degrees of stock reduction over a 10 year period.

Noting that Canada has instituted a multi-year management plan with a 3-year allowable catch of harp seals totalling 975,000 (not including the catch by Greenland), the Management Committee requested the Scientific Committee to provide advice on the likely impact on stock size, age composition, and catches in West Greenland and Canada under the conditions of this plan.

Response of the Scientific Committee:

With regard to the Canadian Management Plan, the Scientific Committee concluded that the likely effect of the harvest levels outlined in Plan was a slight drop in total abundance in the short term (3-5 years), and an accelerating decline if these harvest levels are maintained over a longer period (*ca.* 10 years), and that the availability of seals to Greenlandic hunters would likely decrease as the total population decreased. (SC/12)

Code/Meeting: 4.9.6/NAMMCO/14

Request:

The Management Committee recommended that the Scientific Committee evaluate how a projected decrease in the total population of Northwest Atlantic harp seals might affect the proportion of animals summering in Greenland.

Response of the Scientific Committee:

Pending.

Code/Meeting: 4.9.7/NAMMCO/14

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Request:

The Management Committee requested the Scientific Committee to specify harvest levels for these 2 stocks that would result in a population reduction of 20% over a period of 20 years.

Response of the Scientific Committee:

Pending.

Ringed seals:

Code/Meeting: 4.10.1/NAMMCO/5

Request:

To advise on stock identity of ringed seals (*Phoca hispida*) for management purposes and to assess abundance in each stock area, long-term effects on stocks by present removals in each stock area, effects of recent environmental changes (i.e. disturbance, pollution) and changes in the food supply, and interactions with other marine living resources.

Response of the Scientific Committee:

The Scientific Committee established a Working Group on Ringed Seals. The Scientific Committee considered the report of the Working Group and provided advice to Council. They also provided recommendations for future research. (SC/5) Papers considered by the Working Group as well as other papers were published in the first volume of NAMMCO Scientific Publications, *Ringed Seals in the North Atlantic*.

Code/Meeting: 4.10.2/NAMMCO/7

Request:

The Scientific Committee was requested to advise on what scientific studies need to be completed to evaluate the effects of changed levels of removals of ringed seals in West and East Greenland.

Response of the Scientific Committee:

It was noted that the exploitation level of ringed seals in Greenland has shown considerable variability over decades in this century. The Scientific Committee chose to focus on scenarios where exploitation is raised by more than twice the level reported in recent years. The Scientific Committee then identified the main gaps in knowledge, and recommended research required to address them. (SC/6)

Grey seals:

Code/Meeting: 4.11.1/NAMMCO/5

Request:

To review and assess abundance and stock levels of grey seals (*Halichoerus grypus*) in the North Atlantic, with an emphasis on their role in the marine ecosystem in general, and their significance as a source of nematodal infestations in fish in particular.

Response of the Scientific Committee:

The Scientific Committee established a Working Group on Grey Seals. The Scientific Committee considered the report of the Working Group and provided advice to

Council, including recommendations for further research. (SC/4)

Code/Meeting: 4.11.2/NAMMCO/11

Request:

The Management Committee noted that there has been a decline in the numbers of grey seals around Iceland, possibly due to harvesting at rates that are not sustainable. The Scientific Committee had previously provided advice in response to a request to review and assess abundance and stock levels of grey seals in the North Atlantic, with an emphasis on their role in the marine ecosystem in general, and their significance as a source of nematodal infestations in fish in particular (NAMMCO 1995). Given the apparent stock decline in Iceland, an apparent increase in Southwest Norway and in the United Kingdom, and the fact that this species interact with fisheries in three NAMMCO member countries, the Management Committee recommended that the Scientific Committee provide a new assessment of grey seal stocks throughout the North Atlantic.

Response of the Scientific Committee:

The Working Group on Grey Seals met in April 2003 and considered the status of grey seal stocks in Canada, the USA, Iceland, the Faroes, Norway, Great Britain and the Baltic (SC/11)

Dolphin species (*Tursiops* and *Lagenorhynchus spp.*):

Code/Meeting: 4.12.1/NAMMCO/7

Request:

The Council recommended that NAMMCO member countries study the ecological interaction between dolphin species (e.g., *Lagenorhynchus spp.*) and fisheries, with the view to future assessments of such interactions.

Response of the Scientific Committee:

Not addressed due to insufficient information.

Code/Meeting: 4.12.2/NAMMCO/8

Request:

Noting that ecological interactions between dolphin species of the *Lagenorhynchus* genus and fisheries have caused concern in NAMMCO countries, the Scientific Committee is requested to perform an assessment of distribution, stock identity, abundance and ecological interactions of white-beaked and white-sided dolphins in the North Atlantic area.

Response of the Scientific Committee:

The Scientific Committee noted that the IWC Scientific Committee had dealt with these species in 1996. Generally, it was considered that there is insufficient information on stock structure, abundance and feeding ecology to carry out a meaningful assessment of these species at this time. Some new information on abundance may become available from the NASS-95 survey, but these data have not yet been analysed. The Scientific Committee agreed to begin compiling available information on these species in member countries, with the objective of identifying knowledge gaps and creating a basis for assessment in the longer term. (SC/7)

Report of the Management Committee

Code/Meeting: 4.12.3/NAMMCO/9

Request:

At its 8th Meeting in 1998, the Council agreed to the recommendation of the Management Committee to request the Scientific Committee to perform an assessment of distribution, stock identity, abundance and ecological interactions of white-beaked and white-sided dolphins in the North Atlantic area. The Management Committee noted the conclusion of the Scientific Committee that there is insufficient information on stock structure, abundance and feeding ecology to carry out a meaningful assessment of these species at this time. The Management Committee further noted that, in addition to the focus of the Management Committee's former request for advice on these species in relation to their ecological interactions with fisheries, these dolphin species are harvested in significant numbers in the Faroe Islands. The Management Committee therefore agreed to recommend that the Scientific Committee be requested to facilitate the requested assessment of these species, with an emphasis on the following:

to analyse results from NASS 95 and other sightings surveys as a basis for establishing abundance estimates for the stocks; to coordinate the efforts of member countries to conduct research to fill the noted information gaps, taking advantage in particular of the sampling opportunities provided by the Faroese catch, as well as dedicated samples in other areas.

Response of the Scientific Committee:

The Scientific Committee noted that the NASS surveys were optimised for species other than dolphins, and that in some cases, it was not possible to identify dolphins to species. In these cases, mapping of sightings may be the only analysis warranted. Further analyses may be feasible from the Faroese and Icelandic survey areas, and the Scientific Committee made preparations to begin these analyses.

These species are harvested sporadically in drive hunts in the Faroe Islands, and there is some by-catch in Iceland. They are rarely taken in Norway or Greenland. Scientific papers on feeding ecology and life history in Icelandic waters are expected to be published soon. The Scientific Committee recommended that a sampling programme be initiated in the Faroe Islands for white-sided, white-beaked and bottlenose dolphins, primarily to collect information on feeding ecology, life history and stock delineation. They also recommended that sampling should continue in Iceland and Norway on an opportunistic basis.

Code/Meeting: 4.12.4/NAMMCO/9

Request:

The Management Committee noted that bottlenosed dolphins, like white-sided and white-beaked dolphins, are also harvested in the coastal drive fishery in the Faroe Islands. The Management Committee agreed to recommend that, in connection with the updated request for advice from the Scientific Committee on white-sided and white-beaked dolphins, that bottlenosed dolphins also be included in this assessment

Response of the Scientific Committee:

See 4.12.3

Code/Meeting: 4.12.5/NAMMCO/10

Request:

The Management Committee noted that the requested assessments for these species could not at present be completed because of a lack of information on stock identity, distribution, abundance and biology. The Management Committee therefore recommended that the Scientific Committee monitors developments in this area and continues its assessments, as new data become available.

Response of the Scientific Committee:

To be completed as new information becomes available.

Code/Meeting: 4.12.6/NAMMCO/13

Request:

The Management Committee has asked the Scientific Committee to carry out assessments of these species, but to date insufficient information has been available on stock delineation, distribution, abundance and biological parameters to initiate the work. The Committee was pleased to note that considerable progress has been made in the Faroes in describing the ecology and life history of white sided dolphins and that information on white beaked dolphins should be available from Iceland and Norway in about two years' time. Abundance estimates are lacking in all areas except Icelandic coastal waters, and no information on stock delineation or pod structure is yet available. The SCANS survey planned for 2005/6 and coastal surveys planned for Norway (see 9.3) should provide information on distribution and abundance in some areas. The Committee endorsed the plan of the Scientific Committee to proceed with the assessments once the above-mentioned studies have been completed, probably by 2007.

Response of the Scientific Committee:

Pending.

Fin whale:

Code/Meeting: 4.13.1/NAMMCO/8

Request:

The Scientific Committee is requested to undertake an assessment of the status of fin whales in the North Atlantic based on all available data. (This request was later elaborated as follows: "Acknowledging the large amount of work involved in such a comprehensive assessment of all possible fin whale stocks in the North Atlantic, the Council requests the Scientific Committee, when conducting such comprehensive assessment, particularly to:

- assess the stock structure of fin whales in the whole North Atlantic.
- assess the long-term effects of annual removal of 50, 100 and 200 fin whales in the stock area traditionally assumed to have a main concentration off East Greenland and Iceland (EGI stock area),
- identify MSY exploitation levels for that stock area.

Response of the Scientific Committee:

The Scientific Committee established a Working Group on Fin Whales to deal with this request. The Working Group met in April 1999. Their report dealt with the stock structure of fin whales throughout the North Atlantic, and with assessment of the EGI

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stock. The Scientific Committee used the report of the Working Group to formulate advice and research recommendations to NAMMCO Council. Detailed assessment of other fin whale stocks was not carried out, but will be if further requests from Council are forthcoming.

Code/Meeting: 4.13.2/NAMMCO/9

Request:

The Management Committee noted that the Scientific Committee has completed its assessment of the stock structure of fin whales in North Atlantic, and that more research on stock structure is required before firm conclusions can be drawn. The Management Committee therefore recommended that member countries initiate the research required to elucidate the stock structure of fin whales.

The Management Committee recommended that the Scientific Committee continue its assessment of fin whale stocks in the North Atlantic, focussing in the near term on the status of fin whales in Faroese territorial waters. The Scientific Committee should focus particularly on the following issues:

- Assess the long-term effects of annual removals of 5, 10 and 20 fin whales in Faroese waters;
- Information gaps that may need to be filled in order to complete a full assessment in this area.

Response of the Scientific Committee:

The Scientific Committee reactivated the Working Group on North Atlantic Fin Whales and used their report as the basis for their advice to the Council. The results of the assessments indicated that fin whales in the area have likely been substantially depleted by past harvests, but there was great uncertainty in the results. The Scientific Committee noted that in attempting to respond to the Council's request for advice on the long-term effect of various catch levels in the Faroese area, it had immediately become apparent that there is insufficient information on stock identity to carry out a reliable assessment of the status of fin whales in Faroese waters, and thus provide reliable advice on the effects of various catches. The Scientific Committee therefore recommended a research programme primarily geared to understanding the stock relationships of fin whales around the Faroes.

Code/Meeting: 4.13.3/NAMMCO/10

Request:

The Management Committee noted that the requested assessment had not been fully completed and awaited in particular the provision of more information on stock delineation. The Management Committee therefore recommended that the Scientific Committee continue its assessment, as new data become available.

Response of the Scientific Committee:

To be addressed as new information becomes available.

Code/Meeting: 4.13.4/NAMMCO/11

Request:

The Management Committee clarified its previous request for advice on fin whales, asking that the Scientific Committee continue with its assessments of fin whale stocks

in the areas of interest to NAMMCO countries with existing and new information on abundance and stock delineation as it becomes available.

Response of the Scientific Committee:

The Scientific Committee completed assessments of EGI and Faroese fin whales. Future effort will be concentrated on Northeast Atlantic fin whales. (SC/11).

Code/Meeting: 4.13.5/NAMMCO/13

Request:

The Management Committee noted that it had previously asked that the Scientific Committee continue with its assessments of fin whale stocks in the areas of interest to NAMMCO countries with existing and new information on abundance and stock delineation as it becomes available, and endorsed the plan of the Scientific Committee to complete an assessment for the Northeast Atlantic stocks and update assessments for other areas, probably in 2005.

Response of the Scientific Committee:

Pending.

Humpback whale:

Code/Meeting: 4.14.1/NAMMCO/11

Request:

The Management Committee noted the conclusions of the Scientific Committee that there was evidence of a rapidly increasing abundance of humpback whales around Iceland, and recommended that the Scientific Committee complete abundance estimates for this species as a high priority. The Scientific Committee should also consider the results of the "Years of the North Atlantic Humpback" (YoNAH) project as it pertains to member countries in providing advice for this species.

Response of the Scientific Committee:

The Scientific Committee concluded that the discrepancy between the NASS and YoNAH estimates suggests that the North Atlantic population of humpback whales is likely considerably larger than estimated in the YoNAH study (SC/11).

Code/Meeting: 4.14.2/NAMMCO/13

Request:

The Management Committee noted the conclusion of the Scientific Committee that there is evidence from the NASS of a rapidly increasing abundance of humpback whales in the Central North Atlantic. The Scientific Committee was requested to assess the sustainable yield levels for humpback whales, particularly those feeding in West Greenlandic waters. The management objective in this case would be to maintain the stock at a stable level.

Response of the Scientific Committee:

Mainly because of a lack of current information on abundance, the Scientific Committee was unable to complete the Assessment for West Greenland. The Scientific Committee noted that they would be able to estimate sustainable yield levels for humpback whales in the Northeast Atlantic. (SC/12)

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Code/Meeting: 4.14.3/NAMMCO/14

Request:

The Scientific Committee is requested to continue its assessment of humpback whale stocks in the North Atlantic. For West Greenland, the Scientific Committee should assess the long-term effects of annual removals of 0, 2, 5, 10 and 20 whales. For the Northeast Atlantic the Scientific Committee should provide estimates of sustainable yield for the stocks. In all cases the management objective would be to maintain the stocks at a stable level. The Scientific Committee should identify information gaps that must be filled in order to complete the assessments.

Response of the Scientific Committee:

Pending.

Harbour seal:

Code/Meeting: 4.15.1/NAMMCO/14

Request:

Harbour seal abundance has fluctuated in the Northeast Atlantic in recent years due to local outbreaks of viral distemper. Usually these outbreaks have been followed by rapid recoveries, and harbour seal abundance may have increased in many areas. In some areas, harbour seals are harvested and/or taken incidentally by fisheries and aquaculture operations (*e.g.* Greenland, Norway and Iceland). They also have significant direct and indirect interactions with fisheries in many areas. For these reasons, the Scientific Committee is requested to:

- Review and assess the status of harbour seals throughout the North Atlantic;
- Review and evaluate the applied survey methods;
- Assess stock delineation using available data on genetics, spatial and temporal distribution and other sources;
- review available information about harbour seal ecology;
- Identify interactions with fisheries and aquaculture.

Response of the Scientific Committee:

Pending.

5. OTHER

Code/Meeting: 5.1/NAMMCO/8

Request:

Greenland noted the need for greater input from hunters and users in the work of the Scientific Committee. While noting the need for scientists to be able to conduct their work on their own scientific terms in the context of their Committee meetings, it was suggested that scientists and users of marine mammal resources which are the subject of examination by the Scientific Committee could, for example, meet prior to meetings of the Scientific Committee in order to exchange information relevant to the work planned by the Scientific Committee. With these ideas in mind, Greenland recommended that concrete steps should be taken to provide for a more active dialogue between scientists and resource users. This recommendation was endorsed by Council.

Response of the Scientific Committee:

The Scientific Committee agreed to consider a proposal put forward by the Secretariat, to use the "Status of Marine Mammals in the North Atlantic" stock status reports as a means of incorporating the knowledge of marine mammal users. This proposal will be presented to NAMMCO Council for approval. (SC/7)

The Scientific Committee Working Group on the Population Status of Narwhal and Beluga in the North Atlantic met jointly with the Scientific Working Group of the Joint Commission on the Conservation and Management of Narwhal and Beluga (JCNB) in May 2001. Prior to the main meeting, the Joint Working Group met with hunters from Greenland and Canada, and Canadian hunters participated throughout the meeting. (SC/9)

Code/Meeting: 5.2/NAMMCO/9

Request:

With respect to the language used in the Report of the Scientific Committee, Greenland suggested that it must be kept precise and simple. The Management Committee agreed to convey this as a suggestion to the Scientific Committee.

Response of the Scientific Committee:

No response.

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