Chairman's Report of the Fifty-Second Annual Meeting

1. DATE AND PLACE

The 52nd Annual Meeting of the International Whaling Commission was held in the Adelaide Convention Centre, Adelaide, Australia, 3-6 July 2000. The Chairman of the Commission, Mr Michael Canny (Ireland) and the Vice-Chairman, Prof. Bo Fernholm (Sweden) presided over the proceedings. Commissioners and delegates from 34 of the Commission's 40 Contracting Governments attended, along with observers from 4 non-member governments, 6 Inter-Governmental Organisations (IGOs) and 88 Non-Governmental Organisations (NGOs).

2. ADDRESS OF WELCOME

Senator Robert Hill, leader of the Senate and Minister for the Environment and Heritage gave an address of welcome on behalf of the Government of Australia.

Senator Hill believed that the Commission's first meeting of the new millennium had the potential to be significant in determining its future direction. He suggested that the passing of the old century was a time for reflection, the dawning of the new century a time for recommitment and noted the particular responsibility of those charged with managing and protecting the marine environment. Senator Hill reflected on the changes in attitudes towards marine resource management since the previous IWC meeting in Australia 20 years ago, citing IWC's decision to establish a global moratorium on commercial whaling as an example. He also spoke of the growing recognition of the need for global action and cooperation to conserve the oceans and their biological diversity which are facing serious and worsening threats from pollution, over-exploitation, conflicting uses of resources, and damage to or destruction of habitat. He noted that Australia is conscious of its responsibilities in contributing to conservation efforts and described a number of steps being taken, such as the establishment of Marine Protected Areas like the Great Barrier Reef Marine Park.

Senator Hill spoke of the severe depletion in whale numbers caused by unsustainable hunting in the last century and recognised the part played by Australia in this. He noted that the moratorium has had some positive benefits in the recovery of whale numbers, but commented on the uncertainty as to whether the moratorium came in time to save certain species. He noted the arguments of those who believe that numbers of certain species have recovered sufficiently to allow the resumption of commercial whaling, but cautioned that the second chance we have been given to conserve whale populations should not be lost. He added that through increased interest in whale conservation, Australia now generates more revenue each year from protecting whales than it ever did through hunting them, an experience shared by others.

Senator Hill considered that among the important issues the Commission had to consider during its 52nd meeting was the proposal from Australia and New Zealand and supported by the Pacific Island States, for the creation of a South Pacific Sanctuary. He was certain that the proposal would quite appropriately be subject to robust debate.

Finally, Senator Hill noted that the International Convention for the Regulation of Whaling provides a framework for the regime of regulation to evolve in line with changing international community values and suggested that the marine environment should be managed in line with these changing values. He wished the meeting well and the delegates an enjoyable stay in Australia.

3. OPENING STATEMENTS

The Opening Statements submitted by Contracting Governments and Observers were included in the meeting documentation, according to the Commission's normal procedure. The Republic of Guinea, which had adhered to the International Convention for the Regulation of Whaling on 21 June 2000, spoke of its pleasure and honour in attending the meeting of one of the oldest international organisations involved in marine management. It expected to contribute to the debate on the management of marine resources, including cetaceans, based on the principles of sustainable management for future generations, and with respect to ecosystems.

4. ADOPTION OF AGENDA

The Chairman outlined the order of business he intended to follow, and proposed adoption of the revised agenda, including items added by Japan after the 60-day notification period due to delays resulting from the Golden Week Holiday (i.e. a proposed amendment to the Rules of Procedure regarding secret ballots, and proposed Schedule amendments relating to Agenda Items 5.1, 7.4.2 and 12.2). Japan appreciated the Chairman's suggestion and indicated that at this meeting it would not pursue its proposal for secret ballots, although these had been adopted by other similar organisations. It would submit its proposal on this matter again next year. The agenda was adopted.

Japan requested the Commission to withdraw the credentials of Greenpeace as observers to the Meeting. It believed that this would be consistent with previous actions of the Commission. It noted that last year the Commission had withdrawn the credentials of an NGO following a demonstration at the IWC headquarters in the UK. Previously, the Commission had also withdrawn the observer credentials of another NGO for its illegal actions against whaling vessels. Japan claimed that the Greenpeace campaign against its research programme in the Antarctic earlier this year involved illegal and violent actions that caused a collision with a Japanese research vessel and risked the lives of scientists and crew. It argued that the campaign of violence against a programme of scientific research carried out under the Convention should be strongly condemned by the Commission.

The USA noted that there were conflicting accounts of the incident, which was still under review, and that CITES had taken no action in response to a similar request. New Zealand and the Netherlands believed this was a legitimate, robust but peaceful protest and opposed the suggestion. Sweden, UK, Germany, France, Italy, Monaco, Austria, Spain, Finland, Australia, Mexico and Denmark held similar views.

Norway supported Japan, recalling the harassment of one of its vessels in the North Sea, resulting in an arrest and subsequent sentence by the courts. Antigua and Barbuda

voiced its concern over such actions as well as attempted economic terrorism by NGOs and supported Japan, a position shared by St Lucia and St Kitts and Nevis.

The Chairman concluded that there was no consensus or clear majority for the Japanese proposal, but its views were noted.

In response to a request from Japan, the Chairman appointed a Credentials Committee comprising Australia, Japan and the Secretary.

5. SOCIO-ECONOMIC IMPLICATIONS AND SMALL-TYPE WHALING

5.1 Japanese proposal for Schedule amendment

Japan stated that for the 12th year it is requesting an interim relief allocation of 50 minke whales for its four small-type whaling communities. Japan added that it has thoroughly documented the socio-economic, cultural, religious and dietary aspects of the minke whaling, which has made this whaling an integral part of the community life in Abishiri, Ayukawa, Wadaura and Taiji. It again referred to the 1993 IWC Resolution that recognised the socio-economic needs of these communities, and to UNCED Agenda 21 and the 1995 Kyoto Declaration, which reinforce the principle of sustainable use of natural resources. It also drew attention to the work being carried out on the major impact that the consumption of fish by cetaceans is having on commercial fisheries. It considered that in this context, the moratorium, which Japan had never considered to be reasonable, was even more unreasonable since it appeared to be risking local ecosystem balance. Japan therefore proposed a Schedule amendment to add a new paragraph 10 (f):

> Notwithstanding the other provisions of paragraph 10 and those of paragraph 12, the taking of 50 minke whales from the Okhotsk Sea-West Pacific stock of the North Pacific is permitted in the 2000 season in order to alleviate the hardship in the four community-based whaling communities.

This was accompanied by a proposed Resolution that would have the effect of agreeing that the take of minke whales provided by paragraph 10 (f) of the Schedule be allocated to the Communities of Abishiri, Ayukawa, Wadaura and Taiji.

The People's Republic of China supported Japan's proposals since it believes: (1) that the minke whale stock could support a take of 50; and (2) that the request for these four communities should be considered as aboriginal subsistence whaling. It urged countries that had previously opposed Japan on this issue to reconsider their positions and to understand the true situation in the Northwest Pacific Ocean.

Norway, while stating that it is not generally in favour of creating an increased number of whaling categories, also supported Japan's proposal since failure to implement the Revised Management Procedure (RMP) has led to the situation where people who would have otherwise been able to conduct legitimate commercial whaling are prevented from doing so.

The Netherlands referred to extensive previous discussions on this issue and did not believe it was profitable to repeat them. It reiterated its view that this issue should be resolved within the framework of the discussions about the Revised Management Scheme (RMS) and the moratorium on commercial whaling; as long as the moratorium exists, it could not support Japan's proposed Schedule amendment. In addition, it could not support a Resolution so similar to one adopted in the past as this would imply that the Commission is not working expeditiously. The USA reiterated its view that the community-based operations in Japan are commercial and thus could not support the proposed Schedule amendment. New Zealand, Australia, UK, Ireland and Germany had similar views. As an ex-whaling nation, Brazil commented that the prohibition of whaling has not caused notable negative socio-economic effects to its small coastal communities. It reiterated its opinion that non-lethal use of cetaceans (e.g. whalewatching) has great socio-economic advantages over hunting. South Africa, while not supporting the Schedule amendment, recognised that continuation of the moratorium and slow progress with the RMS is causing hardship to people and expressed sympathy with the Resolution proposed by Japan. The Republic of Korea believed that the issue could only be solved by the adoption of the RMS as soon as possible.

In contrast, Denmark thought it was clear that this small-type whaling could not be equated with large-scale commercial whaling. It had visited two of the communities and recognised that such coastal whaling could satisfy certain socio-cultural needs that are not fully understood in other parts of the world. It would therefore support the proposal. The proposal was also supported by Antigua and Barbuda, St Lucia, Dominica, St Kitts and Nevis and St Vincent and The Grenadines.

On being put to the vote, the Schedule amendment received 12 votes in favour, 18 against, with 2 abstentions and so failed as it did not attract the three-quarters majority required. The Resolution (2000-1 shown in Appendix 1) received 16 votes in favour, 13 against with 3 abstentions and so was adopted by a simple majority.

6. WHALEWATCHING

6.1 Report of the Scientific Committee

The Chair of the Scientific Committee reported on the following four priority topics dealt with this year, i.e. reviews of:

(1) the findings of a Workshop held to expedite the collection, exchange and synthesis of information necessary to assess long-term effects of whalewatching on cetaceans;
(2) the updated report on National guidelines;
(3) new information on dolphin feeding programmes;
(4) information on swim-with programmes that involve whales and dolphins.

6.1.1 Long-term effects of whalewatching on cetaceans

In reviewing the results of the Workshop held just before the full Committee meeting, the Committee stressed the importance of focusing on biologically significant effects of whalewatching on cetaceans. There are a number of parameters that can be observed and measured in a standard way during whalewatching. Such measurements can be used in appropriate models to develop 'critical response thresholds' in an attempt to identify potential impacts with biological significance for the individual. It may be possible to extrapolate some individual effects to the population level.

In addition, population abundance, trends and distribution should be monitored independently of whalewatching efforts to assess long-term impacts. Information on survival and productivity rates are needed to interpret observed population trends. Extensive photo-identification efforts can and do contribute to estimating such parameters. Given adequate consideration of bias, data from whalewatching

platforms can potentially contribute to the assessment of a number of population parameters. The interpretation of any observed changes in the context of whalewatching requires controls and these should be part of any such study whenever possible.

The Committee characterised the types of data that can be collected into three levels:

Level 1 – data that any whalewatching operation could be encouraged to collect;
Level 2 – data that all whalewatching operations with the required capacity/facilities/resources could be encouraged to collect (in addition to data to be collected at Level 1); and
Level 3 – data that all whalewatching operations, when paired with directed scientific research, led by an experienced scientist, could be encouraged to collect (in addition to data to be collected at Levels 1 and 2).

It was agreed that all levels of information should be collected with the oversight of an experienced researcher wherever possible.

The Scientific Committee established an intersessional e-mail correspondence group to further consider:

(1) the report of the Workshop; and
(2) important research needs with respect to estimating parameters that may yield information on biologically significant impacts of whalewatching.

The latter should concentrate on how to record, measure and evaluate such parameters.

6.1.2 Update of National Whalewatching Guidelines

Following previous requests, an update of national whalewatching guidelines covering over 27 countries and territories was presented. Information was received on regulations and compliance in a number of countries including Australia, UK and Europe, Mexico, Canada and Argentina.

In the light of the review, the Scientific Committee made three general recommendations:

(1) the Committee's *Principles for Whalewatching* (as currently specified on the IWC website) should be taken into account when regulations are being formulated;
(2) collection of information on National Guidelines and Regulations should be continued and that this compendium should be made available on the internet, possibly on the IWC website, for wider distribution;
(3) research on the compliance with and effectiveness of guidelines and regulations should be conducted.

6.1.3 New information on dolphin feeding programmes

In response to a previous request, the Scientific Committee had received some new information on dolphin feeding programmes. It was informed that management regulations for the feeding programme at Monkey Mia, Australia, had been implemented due to concerns expressed by local researchers. In addition, some habitual interaction (involving illegal feeding) between humans and wild bottlenose dolphins near Panama City Beach, Florida, USA was considered. There have been several instances of aggressive behaviour (including serious bites) by animals towards people who did not feed them or were slow to feed them.

The Scientific Committee stressed that dolphin feeding programmes do not follow the IWC's suggested Principles for Whalewatching, specifically that '…cetaceans [are allowed] to control the nature and duration of the interactions'. It noted that the practice can be detrimental to both dolphins and humans. Although feeding programmes are legal in some areas, the Committee expressed serious concern about the continued feeding of wild cetaceans and recommended that such programmes be prohibited.

6.1.4 Whale and dolphin 'swim-with' programmes

The Scientific Committee received a report on commercial swim programmes (established in 1996) with dwarf minke whales on the Northern Great Barrier Reef, and a literature review of behavioural indicators of stress in sociable odontocetes subject to human interactions. It also noted a number of potential problems with such programmes, including the transfer of pathogens.

After reviewing information on three kinds of swim-with programmes: boat-based where swimmers are attached by ropes to the boat; boat-based where swimmers are dropped in the water; and, shore-based where individuals swim out to the animals, the Committee noted that:

(1) the impact of swim-with programmes in the wild will vary among species, populations and locations and, therefore, that the impacts of such programmes should be assessed on a case by case basis;
(2) the available evidence indicated that swim-with programmes in the wild could be considered as being highly invasive.

The Committee recommended that swim-with programmes in the wild be further evaluated for effects on cetaceans.

6.1.5 Work Plan

The Scientific Committee agreed to the following work plan, listed below, in order of priority:

(1) review of the report of the intersessional correspondence group;
(2) review of information on noise production from vessels and aircraft involved in whalewatching and its potential effects on cetaceans;
(3) review of research on effectiveness of and compliance with national whalewatching guidelines and regulations.

Other work would be to review new information on dolphin feeding programmes, national guidelines and regulations for whalewatching and new information on swim-with programmes.

6.2 Commission discussions

The USA expressed its support for the continuing work of the Scientific Committee. It believed that when properly conducted, whalewatching contributes to the understanding of whale populations and ultimately to their conservation. Italy drew the Commission's attention to (1) a Workshop on Whalewatching held in Italy and organised jointly by the International Fund for Animal Welfare and ICCRAM, the Government Institute for Marine Conservation, in February 2000, and (2) a document which described that Workshop and its main outcome.

New Zealand spoke on the economic benefits of whalewatching in the island group of Vava'u in the northern part of the Kingdom of Tonga. It described how over-exploitation had brought the humpback whale stock close to extinction, resulting in the collapse of the whaling industry. Despite a lull in catching of almost 40 years, it is only recently that whales have been showing signs of recovery. New Zealand reported that in less than ten years, whalewatching has become the single most important tourist attraction and a questionnaire to visitors to Tonga indicated

that it is unlikely that a whalewatching industry could co-exist with a lethal use of whales. Kaikura in New Zealand has a flourishing whalewatching industry based on sperm whales.

The UK commented that in its view there can be no question of returning to commercial whaling save for the limited whaling needed for aboriginal subsistence purposes. The UK recalled that a number of papers presented last year had demonstrated the increasing value of whalewatching to small island developing states, and referred to a successful workshop on Caribbean whalewatching held in the Turks and Caicos Islands earlier in 2000. It stated that it would play its part in taking forward both the work of the Scientific Committee and the Commission on whalewatching as it believed it offers a wide range of benefits both economically and for conservation biodiversity.

South Africa, the Netherlands, Switzerland, Antigua and Barbuda, Brazil and Sweden also supported the work of the Scientific Committee. Brazil commented that whalewatching is now as or more important economically than trade in whale products and supported the Commission's involvement. Switzerland expressed concern over possible disturbance to wild cetaceans caused by whalewatching and welcomed the continuing updating of legislation. Antigua and Barbuda contrasted the use of whales in different countries and sounded a cautionary note regarding the realignment of economic benefits. It commented that in the Caribbean, traditional users are being displaced by foreigners such that whalewatching is the occupation of the rich.

Japan spoke of its belief that the IWC should focus on the management and conservation of whale stocks for sustainable utilisation. It accepted that the Scientific Committee evaluates the effect of whalewatching on whale stocks, but commented that whalewatching could not provide quality data on those stocks, for which independent dedicated surveys are needed. It noted the dangers in feeding and swim-with programmes.

Norway expressed concern that the majority of IWC members appeared to reject the principle of sustainable utilisation. It recalled that both whaling and whalewatching occur in its waters and added that it believes whalewatching to be outside the scope of the Convention. Sweden commented that non-consumptive utilisation is likely to be more sustainable than consumptive utilisation of whale resources, and believes the IWC does have competence.

6.3 Action arising

The Commission noted the comments made and endorsed the Scientific Committee work plan.

7. SANCTUARIES

7.1 Southern Ocean Sanctuary

7.1.1 Report of the Scientific Committee

The Chair of the Scientific Committee reported that research in the Southern Ocean Sanctuary was discussed under various sub-committee agenda items, and in particular by the Environment Sub-Committee. The outcome of these discussions can be seen in Section 14 of this report.

7.1.2 Proposed Schedule Amendment

Japan indicated its strong view that the Southern Ocean Sanctuary should be abolished for scientific and legal reasons. However, it recognised that, if put to a vote, such a proposal would not gain the required three-quarters majority. It therefore proposed an amendment to the Schedule to make it consistent with Article V of the Convention requiring the Commission's regulations to be based on scientific findings. Japan's proposal was to:

(1) delete the 3rd sentence of Paragraph 7(b); and
(2) add a new sub-paragraph (c) as follows:

> 7(c). The prohibition in sub-paragraph (b) above shall be applied on the advice of the Scientific Committee in accordance with Article V(2) of the Convention.

Norway, the Republic of Korea, St Lucia, Grenada, St Vincent and The Grenadines, Dominica and St Kitts and Nevis supported the proposal.

The USA commented that the third sentence in Paragraph 7(b) of the Schedule is similar to the corresponding sentence in Paragraph 7(a) on the Indian Ocean Sanctuary. It believed that this language does not imply that the sanctuaries are unscientific or contrary to scientific advice, but rather that the prohibition on commercial whaling in these areas was considered appropriate by the majority of the members of the Commission, no matter how depleted or abundant the stocks were. The USA further noted that Japan's proposal would attempt to give the Scientific Committee the power to over-ride the Commission's decision to prohibit whaling in the Southern Ocean Sanctuary, which they could not support. Denmark, the Netherlands, Australia, New Zealand, the UK, Germany, Finland, Monaco, Italy, Sweden, Austria, France, Spain, Oman, India, Switzerland, Ireland and Chile had similar views and could not support the proposal.

Japan withdrew the proposed Schedule amendment in view of the majority against it, but reserved its right to bring it back next year and to call for a vote.

7.1.3 Proposed review of the sanctuary

Japan proposed a Resolution on the review of the Southern Ocean Sanctuary on behalf of the co-sponsors Antigua and Barbuda, the People's Republic of China, Dominica, Grenada, Norway, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines. The Resolution proposed that the Scientific Committee prepare criteria that it could use, by 2004, to review the necessity of the prohibition on commercial whaling in the Southern Ocean Sanctuary. The Russian Federation indicated that they also wished to co-sponsor the Resolution.

The USA commented that it is for the Commission, not the Scientific Committee, to decide to create or to review a sanctuary and that it could not support the proposal. The UK, France, New Zealand, the Netherlands, Italy, and Germany could also not support the proposal. The UK drew attention to the Scientific Committee's request for advice from the Commission on reviews of future sanctuary proposals. The UK considered this to be a reasonable request, but added that any review should be comprehensive and take into account a range of issues. The UK felt that the proposed Resolution was too narrow and that if adopted would result in only a partial review of sanctuaries. Australia shared the concerns of the UK, the USA and others and suggested that the proposed text might be revised to provide more precise guidance to the Scientific Committee. Consultation amongst a number of countries failed to result in a revised Resolution.

On being put to the vote, there were 12 countries in favour and 20 against the draft Resolution which was thus not adopted.

7.2 South Atlantic Sanctuary

Brazil again indicated that they wished to postpone discussion on the establishment of a South Atlantic Sanctuary, but stressed that such a postponement did not

indicate a lack of interest by the Brazilian authorities, but rather the need to seek, together with its neighbours, a proposition that could be acceptable for all.

7.3 South Pacific Sanctuary

7.3.1 Report of the Scientific Committee

Last year, Australia and New Zealand's proposal to create a sanctuary for great whales in the South Pacific was referred to the Scientific Committee for consideration. The Chair of the Scientific Committee therefore reported on the Committee's discussions, noting that it had not addressed legal, political or economic issues.

The Committee reviewed information on the great whales in the South Pacific region. Eleven species are known to occur within the proposed sanctuary area, most of which had been commercially harvested in the past. Although blue, fin, right and humpback whales are probably the most severely depleted, there is little firm evidence on the status of most species relative to their initial abundance.

The Committee reviewed its discussions on sanctuaries over the last 20 years and agreed that the general points made previously relating to the desirability or otherwise of a sanctuary also applied to this latest proposal. It was unable to reach a consensus view on the proposal and referred the arguments for and against sanctuary proposals for consideration by the Commission.

General arguments in favour of sanctuary proposals are that they:

(1) provide a focus for regional cooperation at the government, inter-government and non-government level;
(2) provide a focus for the development of national and international non-lethal research programmes;
(3) provide a non-lethal research framework that will enable the Commission to make appropriate decisions to ensure the effective conservation of whale stocks in the region;
(4) provide an area to study whales undisturbed by any whaling activities;
(5) provide an 'insurance' against unforeseen problems with the RMP;
(6) protect all whales within a large habitat - an IWC sanctuary protects whales from commercial whaling and this is seen as a necessary first step in a more comprehensive management regime.

General arguments against sanctuary proposals are that:

(1) sanctuary proposals only address direct catches. Current (Schedule) and likely future (RMP) management strategies of the IWC would only allow exploitation of abundant whale stocks and then at conservative and sustainable levels;
(2) sanctuaries provide no extra protection for the most vulnerable depleted stocks from actual threats that they face such as habitat destruction, pollution, shipping, fisheries interactions, etc. and do not distinguish between areas of critical habitat and those of little importance. Such stocks are already protected under existing IWC management measures;
(3) sanctuary provisions may prevent utilisation of stocks for which a sustainable catch would be allowed under the RMP/RMS;
(4) whether or not an area is designated as a Sanctuary is irrelevant to whether or not research is carried out in the area;
(5) the need to provide information relevant for management and utilisation of one species may stimulate research that is also of value in monitoring depleted species.

In conclusion, the Committee noted that whilst it had received guidance from the Commission on factors of interest to the Commission in reviews of scientific permits, this was not the case for sanctuary proposals. A Technical Committee working group met in 1982 to consider requirements for the listing of sanctuaries but its report (IWC/34/14) was not adopted by the Commission. The Committee agreed that advice from the Commission with respect to reviews of sanctuary proposals would be useful in the future.

7.3.2 Commission discussion on the proposal to amend the Schedule to establish a South Pacific Sanctuary

Australia, on behalf of the other co-sponsors introduced a proposal to amend the Schedule to establish a South Pacific Sanctuary. The proponents believed that the South Pacific Sanctuary is needed to:

(1) protect whale stocks that have been severely depleted by whaling in the 19th and 20th Centuries and allow their recovery;
(2) complement and improve the effectiveness of the Southern Ocean Sanctuary in protecting migratory whale species;
(3) foster and allow for long-term ecosystem based research on whale stocks that are not being harvested; and
(4) manage whale stocks in accordance with the goal of long-term conservation of biodiversity and the precautionary principle.

They also drew attention to the following broader benefits of a South Pacific Sanctuary i.e. that it would:

(1) effectively conserve whales and ecosystems;
(2) foster research and increase knowledge about whales;
(3) provide economic benefits through whalewatching; and
(4) increase public awareness and understanding.

Australia drew attention to the text of the proposed Schedule amendment in that it would add a new paragraph 7 (c) as follows:

> In accordance with Article V (1)(c) of the Convention, commercial whaling, whether by pelagic operations or from land stations, is prohibited in a region designated as the South Pacific Sanctuary.
>
> This Sanctuary comprises the waters of the Southern Hemisphere enclosed within the following line: starting from the southern coast of Australia at 130°E; thence due south to 40°S; thence due east to 120°W; thence due north to the equator; thence due west to 141°E; thence generally south along the Papua New Guinea – Indonesian maritime boundary to the northern coast of Papua New Guinea at 141°E; thence generally east, south thence west along the coast of Papua new Guinea to the southern coast of Papua New Guinea at 141°E; thence due south to the northern coast of Australia at 141 °E; thence generally east, south thence west along the coast of Australia to the starting point.
>
> This prohibition applies irrespective of the conservation status of baleen or toothed whale stocks in this Sanctuary as may from time to time be determined by the Commission. However, this prohibition shall be reviewed ten years after its initial adoption, and at succeeding ten year intervals and could be revised at such times by the Commission.

Australia referred to the scientific justification for the sanctuary it had provided in paper IWC/52/20, and added that by agreeing to establish the Southern Ocean Sanctuary in 1994, the Commission had accepted that there was strong scientific justification for establishing sanctuaries and that the Convention provided the legal capacity to do so.

Australia referred to strong regional support for the South Pacific Sanctuary, for example from the South Pacific Forum (the principal political body in the region) and the South Pacific Regional Environment Programme - SPREP (the principal environmental body in the region). Finally, it stressed the economic benefits that could flow to the South Pacific region from the development of the whalewatching industry should the sanctuary be established.

New Zealand added its support to the points made by Australia. It noted the cultural importance of the great whales to the indigenous people of New Zealand and to the economic benefits that can be achieved through whalewatching as seen in Kaikoura in New Zealand's South Island. It also believed that the Scientific Committee's discussion suggested that not enough was known about whale populations in the region and thus that a sanctuary represented an appropriate precautionary approach. In conclusion, New Zealand informed the meeting that if the proposal was not successful, the government would continue to argue forcefully for it.

A number of countries spoke in favour of the proposal. Brazil indicated that they would like to co-sponsor the proposal. The Netherlands noted the part Dutch whaling had played in over-exploitation and recognised that it must share the blame for the current situation in which many whale populations are depleted. It believed that the establishment of the South Pacific Sanctuary was a logical step that would protect the whales in their breeding grounds and along their migration route. The USA, reported that in deciding to co-sponsor the proposal and as a member of SPREP, they took account of other regional states' views and noted their overwhelming support. It further commented that the proposal is not inconsistent with completion of the Revised Management Scheme. All three countries requested that representatives from relevant regional organisations, in particular SPREP, be allowed to address the meeting.

Monaco, France, Sweden, UK, Germany, Italy, Spain, Mexico, Finland, Chile, Austria, India and Switzerland all supported the proposed sanctuary and made comments similar to previous speakers. The UK stressed the need for a precautionary approach in view of the limited understanding of many aspects of whale biology and of the impact of environmental change on whales. Italy noted the agreement signed in 1999 with France and Morocco to establish a cetacean sanctuary in the Mediterranean and that it firmly believes in sanctuaries as a major tool in the conservation of cetacean populations. And like the USA, Spain expressed the need to achieve progress on the RMS. Chile supported the proposal on the understanding that it did not include its Exclusive Economic Zone – a position consistent with that it had taken over the Southern Ocean Sanctuary.

By contrast, St Lucia, Denmark, the People's Republic of China, Norway, Japan, Antigua and Barbuda, the Republic of Korea, St Vincent and the Grenadines, Dominica and St Kitts and Nevis all indicated they could not accept the proposal. They referred to the lack of scientific advice in favour of the proposal. Many also commented that it is unnecessary in view of the current moratorium. The People's Republic of China commented that whalewatching is not the only way to achieve sustainable utilisation and expressed concern about the competition between whales and fisheries in view of its strong fisheries interest in the South Pacific.

St Lucia believed that the proposal contravened Article V, paragraph 2(a) of the Convention since it took no account of the explicitly linked concepts of utilisation and conservation. Norway associated itself with the view of St Lucia, and commented that the precautionary approach is taken care of within the RMP – a view shared by Antigua and Barbuda. Norway added that if the observer from SPREP was allowed to speak, other relevant regional Intergovernmental Organisations such as OLDEPESCA and NAMMCO should be given the same opportunity, a view shared by Japan.

Denmark, referring to its previous support for the Indian Ocean and Southern Ocean sanctuaries, stated that it was not against sanctuaries in principle. However, it expressed concern that the establishment of further sanctuaries may result in whaling operations being performed outside the IWC with the subsequent loss of worldwide cooperation in the preservation and management of large whales.

Japan noted that the proposed sanctuary: (1) disregards the interests of consumers of whale products and the whaling industry; (2) is contrary to the concept of ecosystem management and the sustainable use of marine living resources; and (3) that it disregards the compromise attempted by the Irish proposal (see Item 18).

Ireland commented that while it would normally support a sanctuary proposal, in this case it felt that further consultation was needed to secure a consensus. Without consensus, and particularly without the agreement of whaling nations, it believed that the sanctuary would not achieve its aim of the maximum long-term conservation of whales, and would not address the major global threats to whales such as research whaling and international trade, even within the sanctuary area. Ireland would therefore abstain.

Regarding the request for observers from intergovernmental organisations to be allowed to speak, the Chairman ruled (Rules of Debate A.2) that, although observers were not usually called on, he would allow interventions from SPREP and OLDEPESCA in the spirit of openness. He believed that these organisations were relevant to the debate since their members included countries that would be affected by the proposed sanctuary, including IWC member countries. He proposed not to call upon NAMMCO since it operates in a different geographical region. A number of countries commented that NAMMCO should also be allowed to speak since it is directly involved with marine mammal management, but the Chairman's ruling was not challenged.

The representative of SPREP, who was accompanied by the Secretary for Fisheries for Tonga and a representative from the Papua New Guinea Office of the Environment, informed the meeting that SPREP has been part of UNEP's Regional Seas Programme since 1982 and that it includes among its members five IWC countries (Australia, France, New Zealand, the Solomon Islands and the USA). He explained that the purposes of SPREP are to promote cooperation in the South Pacific region, to provide assistance in protecting and improving its environment and to ensure sustainable development. In addition, the 1998 Annual Pacific Islands Forum, comprising 16 heads of governments in the region, gave support to the development of the South Pacific Sanctuary. The SPREP representative believed that it was logical for SPREP to seek to speak on the South Pacific Sanctuary proposal given the paucity of membership by the South Pacific islands in the IWC and emphasised the need to engage this region effectively in the discussions. He regretted the request to speak had caused so much concern to a few Commission members.

The representative of OLDEPESCA informed the meeting that his organisation was the largest intergovernmental fisheries organisation in Latin America. OLDEPESCA failed to see the scientific merits of the proposed sanctuary, and believed that from a management perspective, the

addition of a sanctuary to a moratorium would be redundant. It was OLDEPESCA's view that men and whales are competing for the sometimes compromised or poorly managed fish stocks, and that fisheries and whales need to be scientifically and coherently managed as a unit. OLDEPESCA believed that it would be inappropriate for such a politically sensitive issue as the proposed sanctuary to be decided by the Commission without consultation with the international community at large.

As there was clearly no consensus of the proposed South Pacific Sanctuary, the Chairman called for a vote. Before proceeding with the vote, Japan requested confirmation that all countries present had voting rights, and questioned whether the financial contribution for one IWC member – outstanding at the beginning of the meeting - had now been received. The Chairman reported that he understood that the money had been transferred outside banking hours, that if this were confirmed that country's vote would stand, but if not it would be nullified. On holding the vote there were 18 votes in favour of the proposed sanctuary, 11 votes against and four abstentions. (Italy later explained that while it had inadvertently missed the vote, it strongly supported the proposed sanctuary.) The proposal did not receive the required three-quarters majority and so was unsuccessful. Australia therefore withdrew its proposed Resolution on the objectives for the South Pacific Sanctuary.

8. WHALE KILLING METHODS AND ASSOCIATED WELFARE ISSUES

8.1 Report of the Working Group on Whale Killing Methods and Associated Welfare Issues

Prof. Frederic Briand (Monaco) chaired the Working Group on Whale Killing Methods and Associated Welfare Issues. The Working Group met on 30th June and was attended by delegates from 21 Contracting Governments. In the Commission, Prof. Briand summarised the Working Group's discussions as provided below.

At the start of the Working Group meeting, Japan had requested the withdrawal of two documents submitted by the UK concerning small cetaceans. The UK declined to do so, adding that it would also like to present a video film referred to in one of the documents relating to a bottlenose dolphin drive hunt that took place in October 1999 in Futo Port. In support of Japan, Norway stated that the document was of insufficient scientific standard. The USA supported the UK, believing that the document discussed matters of clear concern.

The Chairman ruled that the document could be tabled, but not discussed in the Working Group. This would reflect the fact that while the IWC has no competence in regulating killing methods of small cetaceans, it has a role to play as a forum for receiving and exchanging relevant information on such matters. He also ruled that the video film could only be shown outside the meeting room. New Zealand stated its belief that the IWC was competent on the regulation of killing of small cetaceans.

Japan insisted that the documents were outside of the mandate of the Working Group as they dealt with small cetaceans, that they were neither technical nor scientific, and that the video should not be shown in the building. The Chairman's ruling was upheld and Japan left the meeting, stating that the Chairman's decision was against the past practice of the Working Group.

The Working Group adopted a proposal from New Zealand for text to use as its Terms of Reference:

> 'The Working Group is established to review information and documentation available with a view to advise the Commission on whale killing methods and associated welfare issues'.

8.1.1 Information on improving the humaneness of aboriginal subsistence whaling

Documents were provided in reference to IWC Resolution 1997-1 on improving the humaneness of aboriginal subsistence whaling.

Denmark presented information on the Greenland Action Plan on whale hunting methods. These contained information on recent overhaul programmes and training courses for the maintenance of harpoon cannons, and on earlier seminars and courses designed to improve hunting methods and gears so as to reduce time to death.

The USA presented a report on the 1999 Makah Tribe gray whale subsistence hunt, which resulted in one whale being struck and landed. The necropsy of the whale conducted by the US National Marine Fisheries Service concluded that the four shots fired were likely to have caused instantaneous loss of consciousness with death following after 8 minutes[1].

The USA also provided information on the latest progress of the Weapons Improvement Program on bowhead hunting efficiency and methods in the Alaskan Arctic. A new darting gun barrel has been developed to ensure the penetration of the bomb inside the whale and so achieve instantaneous death. Preliminary data indicate that this new darting gun barrel will also make the hunt safer for the whalers.

8.1.2 Data on whales killed

To meet the request of IWC Resolution 1999-1 encouraging countries to report on numbers of whales killed by various methods, number and proportion killed instantaneously, etc., Denmark gave detailed information regarding the 1999 Greenland hunt of minke whales with statistics on most parameters. Information on time to death was missing however, due to the lack of veterinarians available.

The Russian Federation presented a brief report on the gray and bowhead whale hunt carried out in 1999 by the indigenous people of the Chukotkan Autonomous Region. All whaling is carried out under national inspection. Sweden asked how time to death related to the different weapons used, and expressed concern about the large number of shots needed to kill the whales. Norway commented that the hunt is conducted from very small boats and the gray whales are aggressive, making it dangerous for the hunters to approach too closely to the whales. The rifles and ammunition being used for the hunt appeared to be inadequate based on a Norwegian expert's observations of the hunt and his post-mortem examination of two whale skulls; larger rifles and full-jacketed, round-nosed ammunition would be more effective. The Russian Federation indicated that it would provide the required information next year. It hopes to improve aboriginal whaling in Russia with a greater number of darting guns, new boats with better motors, more fuel and modern equipment.

[1] Editor's note: After the meeting, the USA noted that the Report of the Working Group on Whale Killing Methods and Associated Welfare Issues, which was the source of this text, could have been clearer in its summary of IWC/52/WKM&AWI 6, a report submitted by the United States on the 1999 Makah subsistence hunt. That document reported that a necropsy indicated the first shot that struck the whale likely 'caused momentary unconsciousness' while the second shot that struck the whale 'likely caused instantaneous loss of consciousness and death due to massive brain trauma'. The document also reported the total time from the initial harpoon strike to the final rifle shot as eight minutes.

Norway reported on its 1999 traditional minke whale hunt and provided the required data on whales killed. Two types of penthrite grenades had been used: the 'old' (current) type and a new penthrite grenade developed in Norway over the last three years. The results showed a significant increase in the ratio of instantaneous death from 58%, using the 'old' grenade, to 72% using the new penthrite grenade, and reduced the survival times for animals not killed instantaneously. Sweden expressed its satisfaction with the report.

The USA summarised statistical data on 1999 hunts on gray and bowhead whales. In reference to the Makah hunt, Sweden asked how it was possible to target only migrating whales. USA responded that both area and seasonal restrictions apply to the hunt. In addition scientists fly over the area for migrating whales and advise the tribe on the basis of their observations.

The Working Group Chairman noted that, in view of the absence of Japan, a document on whale killing methods used in JARPA would not be discussed, but simply tabled. Norway expressed its regret that the Japanese document could not be discussed and made a statement regretting that the Working Group could not accommodate the concerns expressed by Japan.

8.1.3 Other matters

The UK presented a document on small cetacean killing methods. It believed that through this Working Group, the IWC could provide help and advice to coastal states on small cetaceans. This led to an exchange of views by several delegations as to the competence or otherwise of the IWC to discuss and manage small cetaceans. No consensus was reached.

8.2 Commission discussions

The USA and Denmark referred to difficulties inherent in gathering information from aboriginal substance hunts for small cetaceans.

Japan commented that it has taken many years to develop its new explosive grenade and that this technology is now appreciated and widely used. It reported that the time to death in the Antarctic has been shorted to 2 minutes. It contrasted this with the much longer time to death in aboriginal subsistence hunts as a result of the older technology used by them. It also commented that not surprisingly, time to death for hunted wild animals are generally 5-10 times longer than times to death in slaughter houses, where the animals are captive and immobile. It noted that times to death in Japanese whaling are shorter than those for wild deer in European and American hunts. Finally, Japan reiterated its view that small cetaceans are outside the scope of the Convention and that it did not think it appropriate that the video of the porpoise drive be shown or the accompanying document tabled since they were emotive and not scientific.

The UK emphasised the great importance it attached to issues related to whale killing and animal welfare and commented that it still had concerns about the Norwegian data on whales not killed instantly. It thought it important that issues of welfare are considered for all cetaceans and hoped that the differences on competence could be put aside to address the cruelty involved in small cetacean hunts around the world. It proposed that a database on small cetacean hunts be established to include information on methods, national legislation, times to death and struck and lost rates. The UK reported that it was also investigating the possibility of establishing a Workshop on Small Cetacean Killing Methods. These two activities would not necessarily be within the IWC.

The Netherlands supported the UK intervention and the proposal for a database on small cetacean hunts. It encouraged the monitoring of hunting information by the Working Group, regretted that a situation arose in this year's Working Group that made it impossible to consider all the information available, and believed that the same criteria should apply in aboriginal subsistence hunts. The Netherlands added that it had been shocked by the video of the Japanese dolphin drive.

Norway also regretted that the Working Group had been unable to accommodate Japan's concerns. It spoke of the progress achieved over the past ten years in improving times to death and the need for cooperation. It pointed out that many of the 30% of minke whales hit by harpoons but recorded as not killed instantly in its hunt are most likely either already dead and only show some movements after death or are unconscious, so this is a minimum figure.

8.3 Action arising

The Commission noted the Report and adopted the proposed Terms of Reference for the Working Group (i.e. 'The Working Group is established to review information and documentation available with a view to advise the Commission on whale killing methods and associated welfare issues').

9. INFRACTIONS, 1999 SEASON

9.1 Report of Infractions Sub-Committee

The Chair of the Infractions Sub-Committee, Mr Henrik Fischer (Denmark) summarised their discussions for the Commission. Delegates from 26 Contracting Governments attended the Sub-Committee meeting. As in previous years, despite differences of opinion as to whether the item concerning stockpiles of whale products and trade questions is within the scope of the Convention, it was agreed than an exchange of views was useful.

9.1.1 Infractions reports from Contracting Governments

Infractions reports for 1999 were received from Denmark, St Vincent and The Grenadines, the USA and the Russian Federation.

Most of the discussion concerned the taking of humpback whales in St Vincent and The Grenadines. The UK asked whether last year's take of a humpback whale by St Vincent and the Grenadines was being reported as an infraction. St Vincent and the Grenadines confirmed that it did not believe the take constituted an infraction and had not reported it as such; the male taken was under 8m but there was no milk in its stomach. The Netherlands recalled the agreement of the Scientific Committee last year that there is a high probability that any humpback whale less than 8m in the breeding area during the winter season is a calf, and that therefore this take should be recorded as an infraction.

The Chairman noted that the Sub-Committee was in the same position as last year with differing views on whether or not the take by St Vincent and The Grenadines should be recorded as an infraction. He indicated that he did not wish to have a repetition of last year's debate and reminded the Sub-Committee that the Schedule had been amended last year so that it is now specifically forbidden to take calves in this hunt.

Australia, the USA, Monaco and Austria, noted for the record that in their view last year's take constituted an infraction. Austria further noted that it expected that at next year's meeting, the 2000 season's take by St Vincent and The Grenadines would be reported as an infraction. Furthermore, Austria, supported by the UK, also noted that St Vincent and the Grenadines had reportedly taken a Bryde's whale this year and that if this was true it expected this to be reported as an infraction next year. The Sub-Committee Chairman reminded the Sub-Committee that discussions of infractions for the 2000 season should take place next year.

Norway and Japan did not share the view that last year's take by St Vincent and The Grenadines was an infraction for the legal reasons given in last year's meeting of the Infractions Sub-Committee.

The Sub-Committee Chairman took note of the different points of view on this subject and referred them to the Plenary.

In response to a question from the UK, the Russian Federation confirmed that there had been no infractions recorded during the 1999 aboriginal subsistence hunt.

New Zealand, Monaco and the UK thanked Denmark for the helpful paper submitted on quota monitoring of minke and fin whale hunting in Greenland. New Zealand asked whether a whale, initially thought to be a fin whale but subsequently shown by DNA analysis to have been a sei whale, had been counted against the 1998 quota and whether it should be recorded as an unintentional infraction. It believed this incident showed the importance of DNA-based identification techniques, a view shared by Monaco. Denmark responded that the sei whale had been counted against the fin and/or minke whale quota for 1998 since the hunters had been unaware that they had caught a sei whale (which is very rare in Greenland waters). It did not believe that this constituted an infraction as it was clearly unintentional.

The UK believed that the take of the sei whale should be recorded as an infraction, albeit an unintentional one. Austria and Japan supported the UK's position. In response to a question, the Sub-Committee Chairman noted that such accidental takes are recorded as infractions but that normally no penalties are imposed by national governments. The Secretariat undertook to examine the archives and provide the Sub-Committee with examples of precedents for this at next year's meeting.

9.1.2 Reports from Contracting Governments on availability, sources and trade in whale products

No reports relating to Resolutions 1994-7, 1995-6, 1996-3,1997-2 and 1998-8 had been received by the Secretariat.

9.1.3 Surveillance of whaling operations

The infractions reports submitted by the USA and St Vincent and The Grenadines stated that 100% of their catches were under direct national inspection. Denmark reported that the IWC catch limits for minke and fin whales were not violated for Greenland. In the Sub-Committee, Australia queried the statement from St Vincent and the Grenadines and asked how it correlated to the paper submitted to the Aboriginal Subsistence Sub-Committee by St Vincent and The Grenadines that stated that there were no national regulations for this hunt. The representative of St Vincent and The Grenadines responded that he and others were fully engaged, as required, on a full-time basis during the whaling season taking readings and samples where possible, and that he personally had inspected this whale. The Sub-Committee Chairman noted the opinion of St Vincent and the Grenadines that this hunt is under direct national inspection.

9.1.4 Checklists of information required or requested under Section VI of the Schedule

The available information supplied in the Checklists is summarised below.

DENMARK

Information on date, position, species, length, sex and whether a foetus is present is collected for between 85-100% of the catch, depending on the item. Information on killing methods, struck and lost animals and whether a female is lactating is also recorded for some animals.

USA

Information on date, species, position, length, sex, killing method and numbers struck and lost is collected for 80-100% of the catch depending on the item. Other biological information is recorded for about 60% of animals.

ST VINCENT AND THE GRENADINES

Information on date, time, position, species, length, sex and whether lactating is collected.

RUSSIAN FEDERATION

Information on date, species, position, length, sex and hunting methods. is collected.

NORWAY

Did not submit a Checklist, but submitted the required information to the Secretariat as noted in the Scientific Committee report (IWC/52/4).

9.1.5 Submission of national laws and regulations

A summary of national legislation supplied to the Commission was prepared by the Secretariat.

9.1.6 Other matters

New Zealand raised the matter of the gray whale that was washed up on the coast of Hokkaido in 1996. It had obtained a DNA profile from a gray whale and asked Japan if it was willing to release material it held from the whale found in 1996 for comparison. Japan restated its position regarding competence for domestic markets and trade matters but nevertheless said it was willing to exchange scientific information outside the context of this meeting. Japan further stated that in matters relevant to this Sub-Committee with respect to Japanese authorities' investigations regarding this gray whale, reports had been provided by Japan in timely fashion to several previous Sub-Committee meetings.

New Zealand thanked Japan for its offer but pointed out that in its opinion this was not a trade matter but a possible infraction and one that could highlight the benefits of DNA identification techniques.

9.2 Commission discussions and action arising

In the Commission, New Zealand reminded the meeting that under Paragraph 31 of the Schedule, Contracting Governments are required to provide copies of all their official laws and regulations concerning whaling to the Commission, and commented on whether failure to do so should be considered an infraction. It pointed out that neither the Convention or the Schedule provides guidance in this area. It therefore proposed that the Infractions

Sub-Committee be asked to determine the extent to which a failure to provide information about laws or procedures, or a failure to enact them after giving an undertaking to do so, might be considered an infraction. The Commission agreed to include this issue on the agenda of next year's meeting of the Infractions Sub-Committee.

Japan referred to the harsh criticism made during the Sub-Committee meeting against St Vincent and The Grenadines relating to whether the taking of a cow accompanied by a calf constitutes an infraction. It considered that the decision made last year that prohibited this was probably a wrong decision, and drew attention to the Scientific Committee report in which it was predicted that the taking of a cow and a calf would have less impact on the stock than the taking of two cows. Japan therefore believed that with respect to aboriginal subsistence whaling, the taking of a cow and a calf should not constitute an infraction. This position was supported by Norway.

In response, the UK wished to put on record its view that the taking of the cow and calf last year was an infraction, and that if a rule is made it should be observed and any breach considered an infraction. It added that there might be scope to consider the appropriateness of the rule, but that this should be done under another agenda item. The Netherlands made similar comments.

The USA associated itself with the UK. The USA also noted the discussion regarding the DNA profile of the gray whale washed up on the coast of Hokkaido in 1996. The USA disagreed with Japan's view that this is a trade matter - rather that this is an attempt to determine whether or not an infraction has occurred, an important point given the endangered nature of this gray whale stock. It was pleased at Japan's willingness to exchange information. New Zealand supported the USA comments. In response, Japan indicated that they are willing to cooperate with respect to the market information and that if New Zealand returned the information/material they had taken out of Japan, they would be happy to analyse it.

The Commission noted the report of the Infractions Sub-Committee.

10. ABORIGINAL SUBSISTENCE WHALING

The Aboriginal Subsistence Whaling Sub-Committee met under the Chairmanship of Mr Stein Owe (Norway) who summarised their report to the Commission. Delegates from 25 Contracting Governments attended the meeting. Sub-Committee discussions addressed three main areas, i.e. progress in developing an Aboriginal Whaling Management Procedure (aboriginal subsistence whaling scheme), review of aboriginal subsistence whaling catch limits, and catches by non-member nations and other business. Highlights from the report of the Sub-Committee and discussions and decisions within the Commission are provided below.

10.1 Aboriginal subsistence whaling scheme

10.1.1 Report of Aboriginal Subsistence Whaling Sub-Committee

During the Sub-Committee meeting, the Chair of the Scientific Committee's Standing Working Group on the Development of an Aboriginal Whaling Management Procedure (hereafter called the Standing Working Group) reported that good progress had been made during the last year in implementing the work plan adopted in 1999 and that the Standing Working Group is investigating a number of potential *Strike Limit Algorithms* (*SLA*s) for the Bering-Chukchi-Beaufort Seas stock of bowhead whales. Discussions have begun on how to evaluate competing *SLA*s and choose one for presentation to the Commission. For the eastern North Pacific stock of gray whales no *SLA* was suggested for this year's meeting, but it may be possible to modify the *SLA* being adopted for the bowhead whales for the gray whale. With respect to bowhead whales, the Standing Working Group considered that following a faster timetable, they should be able to recommend an *SLA* at the 2002 Meeting. This will, however, involve considerable work and an intersessional workshop will be essential.

With respect to the Greenland fisheries for minke and fin whales, the Standing Working Group Chair reiterated that with the current data it will be very difficult, if not impossible, to develop an *SLA* that will address all of the Commission's objectives. Attention was drawn to the Greenlandic Research Programme developed by the Committee. Results from this will feed into the work of several teams of developers in an iterative manner. However, the Standing Working Group Chair noted that for the Greenland fisheries, it is likely to be 2006-2007 before the Group may be able to develop a suitable *SLA*.

One issue that required further discussion was the treatment of unused strikes or carryovers. An example was provided of how this might be accomplished and in particular the Chair of the Standing Working Group sought advice as to whether this was a generally appropriate way to handle the issue and, if so, specific advice on what the length of the block should be and what percentage value is suitable to allow for interannual variation in catches. A small working group chaired by Chairman of the Standing Working Group met separately to discuss this issue. Participants at this meeting were the UK, the Netherlands, Denmark, the USA and the Russian Federation. The latter delegations contained members familiar with aboriginal subsistence whaling operations. The small working group agreed that blocks of five years with an interannual variation of fifty percent were satisfactory in terms of allowing for the likely variability in hunting conditions. It therefore agreed that these values are appropriate for use in trials. It was recognised that this does not commit the Commission to these values in any final aboriginal whaling management procedure.

10.1.2 Commission discussions and decisions

The Commission accepted the report from the Sub-Committee without comment and endorsed the views of the small working group with respect to block quotas and interannual catch variation.

10.2 Review of aboriginal subsistence whaling catch limits

10.2.1 Report of Aboriginal Subsistence Whaling Sub-Committee

The Chair of the Scientific Committee reported that the Scientific Committee had no reason to change the management advice given previously for any of the aboriginal subsistence whaling catch limits.

10.2.1.1 BERING-CHUKCHI-BEAUFORT SEAS STOCK OF BOWHEAD WHALES

The Scientific Committee had noted that the catch limit for this stock is to be reviewed in 2002 and had recommended that a full census be undertaken in 2001. In 1999, 48 whales had been struck, with 43 landed. These figures included one whale struck and landed by the Russian Federation. The figures for the monitored USA hunt (47 whales struck with 42 landed) give an efficiency factor of 0.89, the highest

recorded. The Sub-Committee noted these figures and its Chair congratulated the USA on improvements in efficiency in its hunt.

10.2.1.2 NORTH PACIFIC EASTERN STOCK OF GRAY WHALES

In 1999, 124 whales were struck, with 122 landed. These figures included one whale taken by the Makah (USA) with the rest being taken by the Russian Federation. The Scientific Committee had noted recent information on increases in the number of stranded animals but was unable to say whether this might be related to the population nearing its carrying capacity, an El Niño effect on food sources, or some other cause. The USA is conducting research on this issue and the Scientific Committee will carry out a new assessment of the stock in 2002, a year earlier than previously planned.

In a statement by the Russian Federation, the importance of whales for hunting and of their use as a traditional food was stressed. It also stated its desire to reduce time to death in whaling operations and expressed its appreciation to the USA, Japan and Norway for the help and support they had provided. It reported that since last year, more whales are being found that smell badly and are unfit for human consumption. It asked that ten such whales from the 1999 hunt be given a special status and excluded from the catch limit. Its primary interest in raising the matter was to draw the attention of the Sub-Committee to this issue and provide notice that if the full number of whales allowed are taken in the remaining years of the five year quota, this may be problematic in terms of the total allocated catch (620 whales) in the final year of the period (2002). The Russian Federation also considered that the Scientific Committee should conduct research on these whales. In the longer term it would also like the formula for calculating catch limits changed so that it provides for adjustment in cases where whales caught are not suitable for human consumption.

The Sub-Committee recommended that the Commission request the Scientific Committee to study the problem of contaminated gray whales.

10.2.1.3 GREENLAND FISHERY FOR MINKE AND FIN WHALES

A total of 165 minke whales were landed in West Greenland with five struck and lost. Fourteen minke whales were landed in East Greenland. Seven fin whales were landed in West Greenland, with two struck and lost. As in past years, the Scientific Committee was not able to give management advice on either fin or minke whales off Greenland. It strongly recommended the establishment of the research programme described in its report so that in future years it may be in a position to provide adequate management advice.

10.2.1.4 NORTH ATLANTIC HUMPBACK WHALES

The Scientific Committee reiterated its view that there is a high probability that any humpback whale of less than 8m in length present in the breeding area during the winter season is a calf. It had received catch information concerning two whales, a large female and a male calf, and reiterated its view that a catch of up to three whales taken annually would be unlikely to harm this stock. St Vincent and the Grenadines and St Lucia had both conducted surveys in their waters in addition to a larger multinational survey of the Eastern Caribbean. The Scientific Committee hoped that the survey results and the Comprehensive Assessment planned for 2001 will provide better data than have been available in the past. Further research that would provide data on the fine-scale distribution by sex in the area of the subsistence hunt would be relevant to considerations of the effects of regulations on the hunt.

Within the Sub-Committee, the USA noted that although St Vincent and The Grenadines had been involved in research, it had refused the necessary permit for a research programme endorsed by the Scientific Committee to survey in its waters. The USA considered that in refusing this permit, St Vincent and The Grenadines did not fully comply with its undertaking to cooperate in research given in 1999 when its catch limit was renewed. St Vincent and The Grenadines responded that it is a sovereign state and as such reserved the right to issue or refuse permits and that it has no obligation to automatically sanction any research proposal. It noted that in the research programme referred to by the USA, only two places had been allocated on the research vessel for local scientists. It added that it would support any programme where its national scientists can benefit through training and analysis of data obtained. It had therefore chosen to participate in a programme operated under a trust fund managed by FAO in Rome that included training programmes.

In response to a question from Australia concerning the commitment made in 1999 to ensure proper regulation of the hunt, St Vincent and The Grenadines said that the development of legislation should not be rushed and more time was needed to produce a package of regulations under its Fisheries Act. A number of delegations expressed concern that regulations were not yet in place and that this may have a bearing on their agreement to renewal of the humpback quota in 2002. The same delegations also expressed concern that a humpback calf had been taken again this year in contravention of the Schedule. St Vincent and the Grenadines requested that any discussion of this year's catch cease immediately since it had not submitted its report. It drew attention to the note in the Scientific Committee report stating that taking up to three whales is likely to have no impact on the stock. It noted that it had given a solemn commitment that it will try to implement the Schedule provisions within its capacity and resources and objected strongly to countries querying its commitment. Norway and Japan drew attention to evidence presented to the Scientific Committee that harvests of cow-calf pairs would have less impact than the harvest of cows only (for the same number of takes). Both countries considered that last year's introduction into the Schedule of a sentence forbidding the take of any humpback whale accompanied by a calf was premature.

10.2.2 Commission discussions

The discussion on the need for proper regulation and strict enforcement of the aboriginal hunt and for St Vincent and The Grenadines to honour earlier commitments was repeated in the Commission discussions, with the UK, the Netherlands and the USA speaking strongly on these issues, supported by Switzerland, Germany and Sweden. The UK considered that references made within the Sub-Committee to the Scientific Committee's examination of the effects on stocks of killing calves and the possibility that the taking of calves is better for whale conservation than the taking of adults (for which the UK remains to be convinced) did not affect the obligation for St Vincent and The Grenadines to observe the provisions of the Schedule and should not be used as a reason for ignoring it. The Netherlands and the USA also expressed concern that in addition to the taking of another humpback cow and calf, a Bryde's whale had also been killed by St Vincent and The Grenadines in 2000.

St Vincent and The Grenadines responded that it had dealt satisfactorily with all these points within the Sub-Committee and did not wish to comment on them further. Norway and several other delegations also saw no point in repeating the Sub-Committee discussions. St Vincent and The Grenadines believed that the Commission was losing focus on its real objectives and was wasting time on small matters. It re-emphasised that it was working on developing regulations and would not be coerced by the timetables of others. It repeated that discussion of the catch of a Bryde's whale was inappropriate at this time. Antigua and Barbuda, Japan, St Lucia, Norway and St Kitts and Nevis supported these comments. Japan repeated its view that the regulations meant for modern commercial whaling should not be applicable to aboriginal subsistence whaling and that effort should be spent on amending the Schedule. Japan also added that as part of the Comprehensive Assessment of North Atlantic humpback whales, information on the number of strandings and bycatches should be provided along with information on body length, sex and reproductive condition throughout the North Atlantic. Antigua and Barbuda asked for delegates from developed countries to have some patience with St Vincent and The Grenadines. It noted that other Caribbean countries will be working with St Vincent and The Grenadines during the intersessional period to develop the type of regulations that (1) can regulate that fishery and (2) will be generally acceptable within the framework of the capability of St Vincent to enforce them.

St Vincent and The Grenadines thanked delegations for their support. It repeated that it had been given a commitment to do its best in developing regulations and stressed the need to see regulations in the context of the local situation. In this regard, St Vincent and The Grenadines reported that from a survey of all marine consumption patterns on the island, it was estimated that 61% of islanders consume cetacean meat. Eleven percent of these consumers did so for health-associated reasons, 16% because of tradition and 71.4% because of the taste. Less than 0.6% of these eat marine mammals on a daily basis, while 75% of the consumers do so on a monthly basis.

10.2.3 Action arising

The Commission adopted the report of the Sub-Committee regarding its review of aboriginal subsistence whaling catch limits.

10.3 Catches by non-member nations

10.3.1 Report of Aboriginal Subsistence Whaling Sub-Committee

The Scientific Committee had received information on aerial surveys carried out on the summer range of the Hudson Bay/Foxe Basin bowhead stock that indicated that there may be several hundred whales in the stock – the estimate provided being a minimum of 345. However, the Committee believed that more survey work and analysis was required before a reliable estimate could be provided.

The Scientific Committee considered a review of information on distribution, movements, population size, general biology, recruitment, mortality and behaviour of bowhead whales in the northwestern Atlantic. This suggested that the Baffin Bay/Davis Strait and Hudson Bay/Foxe Basin stocks both number in the low hundreds with isolated age- and sex-structured groups showing strong fidelity to particular habitats. The Hudson Bay population's probable larger size may be due to its nursery ground in Foxe Basin never having been commercially exploited. Killer whales may be a significant source of mortality on the small (*ca* 100 animals) population in the Baffin Bay/Davis Strait region, particularly on calves and juveniles in the Autumn migration.

Some concern was expressed in the Scientific Committee regarding any subsistence harvest on these stocks, even if extremely small. A Canadian scientist stated that the average annual Total Allowable Removals recommended by Canada for these stocks represents 0.2% of the estimated Hudson Bay-Foxe Basin stock and 0.02% of the estimated Baffin Bay-Davis Strait stock (one whale in thirteen years).

Although the Scientific Committee welcomed information from Canada on surveys carried out in the Hudson Bay/Foxe Basin region it agreed that more information about the Baffin Bay/Davis Strait stock is urgently needed.

During the Sub-Committee meeting, the observer from Canada confirmed that the Canadian Fisheries Minister had agreed with the Nunavut Wildlife Management Board to issue one permit during 2000-2001 to take one bowhead whale or two strikes from the Hudson Bay/Foxe Basin stock if an application is made for such a permit. No such application had been received to date.

10.3.2 Commission discussions and action arising

RESOLUTION ON BOWHEAD WHALES IN THE EASTERN CANADIAN ARCTIC

On behalf of the co-sponsors, Mexico, the Netherlands, Spain, Sweden and the USA, Austria introduced a Resolution on whaling of highly endangered bowhead whales in the Eastern Canadian Arctic. Austria referred to the Scientific Committee's report that the Hudson Bay-Foxe Basin whale stock is in the low hundreds, but that Canada has agreed to grant one licence on request to take one bowhead from this endangered stock. The purpose of the Resolution was to urge the Canadian Government not to issue this licence and for Canada to rejoin the IWC. Austria acknowledged that there might be an argument that the Hudson Bay stock is 'endangered' rather than 'highly endangered', but reminded the meeting that small stocks are vulnerable to even low levels of take. It also acknowledged that there might be criticism of the Resolution as it is addressed to a non-member state, but since this had been done in previous years, it should be again be possible. The co-sponsors hoped that the Resolution could be adopted by consensus.

Denmark responded that they thought it improper to address a Resolution to a non-member state, and called the co-sponsors attention to Article VI of the Convention that states clearly that Resolutions shall be directed to any or all Contracting Governments. It was the opinion of Denmark that under such circumstances, the co-sponsors should address Canada through normal diplomatic channels. Norway supported these views.

On being invited to respond to the Resolution, the observer from Canada reminded Commissioners that the aboriginal people in Canada had a right to harvest offshore resources subject only to conservation concerns. He recalled previous Resolutions that addressed the continued hunt in Canadian waters, but noted that this latest Resolution was different in that it included the phrase 'highly endangered' – an emotive phrase - and he questioned its use with this particular stock. The Scientific Committee had not reached consensus on stock numbers. He noted that Canadian scientists have concluded that there is a minimum of about 345 whales in the stock and recalled that this stock was not harvested heavily in the past and that it is likely that the original population may not have exceeded around 600

whales. As a result he believed that the phrase 'highly endangered' would give the wrong impression, and he reported that modelling work had indicated that the proposed take of one whale should cause no danger to the stock.

In responding to a question from the Chairman, the observer from Canada stated that although his preference would be to have no Resolution, removal of the word 'highly' would improve the situation. However, consultations among interested parties during a break failed to reach an agreement. Austria reminded delegates that last year the term 'highly endangered' was used in relation to this stock in Resolution 1999-7.

On proceeding to a vote, there were 17 notes in favour, 8 against and 6 abstentions. Resolution 2000-2 was therefore adopted (see Appendix 1).

Following the vote a number of delegations explained the way they had voted. New Zealand had considerable sympathy with many of the sentiments of the Resolution, but preferred that it be dealt with on a bilateral basis at this stage. It had therefore abstained. Japan had voted in accordance with previous years (i.e. against), but would not have blocked the Resolution had there been a consensus view. St Vincent did not support the proposal since it believed the response of the Canadian observer provided sufficient guidance and since it was not comfortable with the reference to UNCLOS as it believed that not all co-sponsors had signed that Convention. Australia was disappointed that the Resolution text had not attracted consensus and had voted yes with some reservation. Antigua and Barbuda, like New Zealand believed that a bilateral approach would be more appropriate and had abstained.

Japan requested that it be noted for the record that it believes that Canada is not being consistent in its attitude towards sustainable use of resources, referring to the Canadian position on the Hawksbill Turtle.

10.4 Other business

10.4.1 Report of Aboriginal Subsistence Whaling Sub-Committee

Under 'other business', Denmark, in reference to IWC Resolution 1998-11 on concern about human health effects from the consumption of cetaceans, presented a paper titled 'Traditional Food - Environment and Health Concerns'. The paper looked at the importance of food in maintaining both good health and cultural identity. It noted the importance of wild living resources, such as marine mammals, for indigenous people in the Arctic and the need to give dietary advice to Arctic people so that they can make informed choices. It also recognised: (1) the problem of contaminants in the environment and their possible effects on humans including via food; and (2) that global contamination has reached a level where it poses a threat to the environment. The paper concluded that both wildlife and man are threatened by the same contaminants and to the same degree and proposed that the solution is to address the problem of contaminants at the source thus benefiting both nature and man and thereby making possible continuing wild harvest which is important to the traditions and culture of indigenous people.

10.4.2 Commission discussions

In the Commission, Mr Simon Olsen, a Minister from the Greenland Home Rule Government, addressed the delegates. He referred to Greenland's long tradition of harvesting bowhead and humpback whales and other marine mammals as a means of survival in the harsh Arctic environment, and stressed that whaling continues to contribute tremendously to its culture and nutrition. Greenland's opinion is that the focus should be on the positive health effects from eating whale meat, maktak and blubber rather than the uncertain side effects from pollution.

The Minister noted that the difference in Greenland's whaling today is that the decisions and limitations on harvesting are made by the IWC. Greenlanders respect this position. However, he recalled that the West Greenland quota is equivalent to 558 metric tonnes of whale meat from minke whales and fin whales - 112 metric tonnes less than the documented need endorsed by the Commission in 1990. Minister Olsen reported that the population of Greenland is growing and with it the need for whale meat. He expected that the Commission would fulfil the previously agreed needs for whale meat in the future. He added that in his view, the increasing number of whales and seals observed in Greenland's waters is causing serious concern in relation to fish stocks - the most economically important resource in Greenland. Greenland supports both balanced and sustainable use of all living resources managed through international or regional bodies and the Minister expressed support for the socio-economic needs of small type whaling communities in Japan for fifty minke whales.

11. COMPREHENSIVE ASSESSMENT OF WHALE STOCKS

11.1 Revised Management Procedure (RMP)

11.1.1 Report of the Scientific Committee

11.1.1.1 *CLA* PROGRAM REVISION AND TUNING

In 1999, the Scientific Committee agreed that the new program (CATCHLIMIT) implementing the RMP's *Catch Limit Algorithm (CLA)* should be fully evaluated. At this year's meeting, the Scientific Committee reviewed comparisons of the accuracy of the new program with the program that has been used by the Secretariat in simulation studies of the behaviour of the RMP. The Committee agreed that the CATCHLIMIT program performed better, in that it obtained more accurate answers more rapidly and recommended that it be used in future by the Secretariat.

11.1.1.2 ABUNDANCE ESTIMATION

An intersessional Working Group was established in 1998 to review proposed methods that estimate abundance from multi-year data and to evaluate abundance estimators that might be used to produce estimates used in the RMP when heterogeneities occur and assumptions are violated. No new methods to estimate abundance from multi-year data were presented to the intersessional Working Group to review, and the Scientific Committee agreed that the most appropriate analytical method to be used in the future depends on the desired performance, information collected and ease of implementation.

The Scientific Committee agreed that the outstanding technical and RMP implementation issues had been resolved and recommended that annotations to the RMP should now be drafted to reflect this. An intersessional Working Group was established to continue work on matters relating to abundance estimation under the RMP, and there will be a report on progress at next year's meeting.

11.1.1.3 NORTH PACIFIC MINKE WHALE TRIALS

FINAL IMPLEMENTATION TRIALS

Last year, the Scientific Committee recommended that the Secretariat conduct a set of *Implementation Simulation Trials* for North Pacific minke whales. The Committee noted

that not all the trials had been run intersessionally because it was evident from discussions during the JARPN review that re-specification of the trials was highly likely.

The procedure used to condition the trials in the past would not necessarily constitute an adequate basis for a re-assessment of the 'J' stock when this is conducted because of uncertainties surrounding the Korean CPUE (catch per unit effort) data and the limited coverage of the survey data. The Committee agreed that a future reassessment of this stock would need to be based on a comprehensive review of the available information and that future trial results should distinguish between commercial and incidental catches when listing catches for the 'J' and 'O' stocks.

INCIDENTAL CATCHES

The Scientific Committee welcomed new information about incidental catches off Korea in 1999. It noted that almost half of the animals had been sampled and encouraged continued sampling of bycatch and strandings. It was observed that the stranded animals were in too poor a condition for the cause of death to be determined, so some of these animals may have died as a result of a fishery interaction. The Scientific Committee agreed to update the specifications for the trials to include the information on the size of the Korean bycatch (56 animals), including its seasonality and sex-structure. It also agreed not to modify the approach agreed last year to include incidental catches off Korea in the trials, and to use 56 as the incidental catch for 1999.

The Scientific Committee noted that the reported bycatch off Japan for 1999 was 19 and agreed to update the information on bycatch used in the appropriate trials to reflect this new information. It also agreed to continue to use a range of annual incidental take of minke whales by Japan of 25-75 in future *Implementation Simulation Trials*, even though use of these options for trial purposes did not constitute agreement by all Committee members that the entire range was plausible or indeed that this was the entire plausible range.

MIXING AND STOCK STRUCTURE

The Scientific Committee agreed to consider three stock-structure hypotheses in the Pacific based on the results presented in the JARPN review and new information received:

(a) no 'W' stock;
(b) 'O' stock in sub-areas 7 and 8, 'W' stock in sub-area 9; and
(c) 'O' stock in sub-areas 7, 8 and 9,'W' stock in sub-area 9.

The Scientific Committee also agreed that for trial purposes, sub-areas 7 and 8 would be combined, but that 'J' stock animals will be assumed to be found in sub-area 7 only. The population structure for the 'O' stock in these sub-areas would be assumed to be the same, and sub-areas 7 and 8 would be combined into a single *Small Area* when applying the RMP in the context of *Implementation Simulation Trials.*

RE-SPECIFICATION OF FINAL TRIALS

The Scientific Committee agreed revised specifications for the North Pacific minke whales *Implementation Simulation Trials* and recommended that the Secretariat conduct the trials during the intersessional period and report the results to next year's meeting.

SIGHTINGS SURVEYS

The Scientific Committee received a report on a joint Japanese and Russian sightings survey conducted in 1999 in the Okhotsk Sea. It agreed that the conduct of the survey was appropriate for use in the RMP and noted with appreciation that the survey was carried out jointly with the Russian Federation.

The Scientific Committee was pleased to receive a research plan for a further joint Japanese and Russian sightings survey in the Okhotsk Sea from July to September 2000. It recommended that the Commission request the relevant authorities of the Russian Federation to grant permission in a timely fashion for Japanese vessels to survey in its EEZ, including both the southern and the northern portions of the entire Sea of Okhotsk and associated gulfs and bays because of the apparent higher density in the immediate near shore areas.

Reports were also received of a joint Korea-Japan minke whale pilot sighting survey conducted in 1999, another survey carried out in May 2000 in the eastern waters of Korea, plans for a similar survey in the same area in September 2000 and plans for two further surveys in the western waters of Korea (in the Yellow Sea) in April and September 2001 for which there would be Committee oversight. The Scientific Committee also suggested that the collection of biopsy samples would provide additional valuable information for the *Implementation Simulation Trials*.

11.1.1.3 NORTH PACIFIC BRYDE'S WHALES TRIALS

The Scientific Committee reported that the RMP *Implementation Simulation Trials* were given low priority last year and that no progress had been made. It is quite likely that no substantial progress will be made in the coming year either, since high priority is again being given to completing the North Pacific minke whale trials.

A detailed analysis to address a question raised last year about the validity of species identification of Bryde's and sei whales in commercial catches in Japanese pelagic whaling in 1973 and 1974 was presented to the Scientific Committee. The analyses of individual allozyme and operational information implied that the species identification was correct. The Scientific Committee welcomed this thorough analysis, and agreed that it resolved the uncertainties raised last year.

The Scientific Committee reviewed the report of a sightings survey performed in August-September 1999, as part of a multi-year survey schedule and agreed that the resulting abundance estimates could be used in the RMP. The Committee welcomed the information on successful biopsy sampling from the survey and agreed that for future surveys, it would be useful to include information on sighting angles and distances and on the experiments conducted in the cruise reports.

The Scientific Committee also received a description of the next sightings survey in this series that will be conducted using one vessel instead of two, extending the planned completion time of the series from four years to five. The survey will be conducted in August and September 2000 in the band from 137°30'-145°E, again from 10°-43°N. The Committee noted that the design of the northern portion of the survey was not ideal, and recommended that this portion be restructured to work on and off shore to the extent possible. Scientific Committee oversight of the survey was requested. Finally, the Scientific Committee recommended that the Commission request the relevant authorities of the Federated States of Micronesia, the Commonwealth of the

Northern Mariana Islands and the USA to grant permission in a timely fashion for Japanese vessels to survey in their respective EEZ waters.

11.1.1.4 NORTH ATLANTIC MINKE WHALES

In the Commission, the Chair of the Scientific Committee drew Commissioners attention to ongoing work on North Atlantic minke whales – an item not on the agenda of IWC/52. The Committee had received reports on the 1999 Norwegian sightings survey for minke whales, the fourth in a six-year programme to cover the north-eastern Atlantic to obtain abundance estimates to be used for calculating catch limits by the RMP at the end of the survey period. The Committee agreed that the surveys should continue to be conducted in a manner suitable for use in the RMP and recommended that the Commission request the relevant authorities of the Russian Federation to grant permission in a timely fashion for Norwegian research vessels to survey in its EEZ waters. The Chair particularly drew attention to the proposal that an RMP implementation review for North Atlantic minke whales be conducted in 2002, when a new estimate of abundance from Norway's series of annual surveys and analyses of samples collected over the last five years would be available. The Scientific Committee believed that the review was important since Norway is harvesting whales using the RMP under objection and would therefore be due for an implementation review if the RMS were in effect.

11.1.2 Commission discussions

NORTH PACIFIC MINKE WHALES

In the Commission, Japan commented that the comprehensive evaluation of this stock had already been completed, and that once the parameter setting for the RMP and *Implementation Simulation Trials* are completed, it would be possible to start sustainable use of this stock. Japan attributed the delay in completion of parameter setting and implementation of the RMP by the Scientific Committee to the attitudes of some anti-whaling scientists, e.g. the putative hypothesis that a number of independent minke whale groups exist in the North Pacific (a hypothesis that Japanese research begun in 1994 in the northwestern Pacific has virtually ruled out) and claims of high incidental catches, based on DNA analysis of whale meat sold on the Japanese market – a technique considered by Japan to be not reliable. It added however, that it intended to further strengthen and enhance its scientific activities with the aim of an early implementation of the RMP in future.

New Zealand regretted the characterisation of Scientific Committee members by Japan as being pro- or anti-whaling. It expressed the hope that the Commission would be guided by the quality of the scientific data presented by those scientists rather than the perceived anti- or pro-whaling stance of the country in which they happen to live. New Zealand added that the Scientific Committee had accepted the possible stock-structure hypotheses considered in its report as plausible. It noted that the use of molecular genetics is a fundamental tool in developing and implementing the Revised Management Scheme (RMS), whether through non-lethal research in the field or through tissue samples from animals killed in whaling operations or from bycatches.

In response to New Zealand's reference to bycatches, the Chair of the Scientific Committee confirmed the importance of developing ways to estimate bycatch levels to meet the Commission's goal of ensuring that the total catches over time assumed by the RMP are not exceeded. She added that a Working Group will meet at next year's Scientific Committee meeting to address the estimation of incidental catch and other human-induced mortality of baleen whales, particularly for stocks of current interest in the development of *Implementation Simulation Trials*. This will include the most appropriate methods to ensure that any market sampling and analyses are carried out in such a way that unbiased bycatch estimates are obtained, with reasonable estimates of their precision.

In response to a question, the Chair of the Scientific Committee commended Japan and the Republic of Korea for supplying information on bycatches in their progress reports to the Scientific Committee and reminded all delegations of their responsibility under Resolution 1997-4 to report all whales taken incidentally in all fishing operations.

The Republic of Korea welcomed the new abundance estimate for minke whales in the East Sea/Yellow Sea/East China Sea stock (using Korean CPUE data) and added that future surveys should determine the true abundance in the area and contribute to assessment and management. The Republic of Korea again drew the Commission's attention to the use of the name 'Sea of Japan' and indicated that it would like simultaneous use of the name with 'East Sea'. It reported that, as advised at many international meetings, it had tried to negotiate bilaterally with Japan, but with no success. Japan responded that the IWC is not a suitable place for discussing geographic names. The Chairman indicated that the Commission would note the views expressed.

NORTH PACIFIC BRYDE'S WHALES

Japan expressed regret that no progress has been made since last year, and strongly urged that progress should be made in future.

NORTH ATLANTIC MINKE WHALES

Norway confirmed that it puts great emphasis on extending its sightings surveys as an essential part of the whole scheme of collecting information necessary for its management of the Northeast Atlantic minke whale.

11.1.3 Action arising

The Commission accepted the recommendations and work plan of the Scientific Committee.

11.2 Whale stocks

11.2.1 Report of the Scientific Committee

11.2.1.1 SOUTHERN HEMISPHERE MINKE WHALES

IN-DEPTH ASSESSMENT OF SOUTHERN HEMISPHERE MINKE WHALES IN 2001

The Committee agreed that the following topics should be covered in an in-depth assessment and that planning should begin, noting that it will take more than one year to complete.

(1) Consider the most appropriate estimation methods and the resulting estimates of abundance for the areas surveyed on individual surveys, based on standard line transect methods.
(2) Consider alternative estimation methods and the resulting estimates of abundance.
(3) Integrate IWC/IDCR-SOWER, JARPA, JSV and other data to provide time series of abundance estimates at a circumpolar level, and in smaller areas of interest.
(4) Estimate trend over the period covered by the IWC/IDCR-SOWER surveys, building on (1) to (3) above.
(5) Integrate the results from (1) to (4) above, together with biological information, in population dynamics models

to provide an assessment of Southern Hemisphere minke whales.

The changes to DESS (IWC Database and Estimation Software System) requested last year have been made and will enable item (1) above to be completed. The changes included updating definitions of species codes. The Committee also recommended that JARPA data be analysed to determine the proportion of dwarf minke whales, both in the minke whale catch data and in sightings covered by JARPA. The Committee also agreed, pending the review, on a way to deal with the first five IWC/IDCR surveys which used a different design from subsequent surveys and on an option for including RMP *Small Area* abundance estimation.

The Scientific Committee identified a number of factors that must be taken into account when analysing the data from the IWC SOWER and IDCR cruises, including consistency in use of 'undetermined' species codes, accounting for changes in ice-edge when comparing surveys, the possibility of consistent differences between the detection function shapes in closing and IO (independent observer) mode and general issues of trends in estimated detection functions.

With respect to *inter alia* estimating relative or absolute minke whale abundance from JARPA surveys, the Committee reviewed some simulation work and recommended that spatial modelling methods that are able to estimate the degree of clustering reliably without strong assumptions about its nature or degree should be investigated. These have the prospect of providing objective estimates of the degree of clustering on real surveys, of being able to accommodate clustering which varies in degree within a single survey and of providing unbiased GAM-based estimators.

The Scientific Committee welcomed reports of sightings surveys on the former whaling grounds off northeastern Brazil. The Committee recommended that the surveys be expanded to include the entire breeding ground and that consideration be given to estimation of $g(0)$. There are plans to expand the surveys to include photo-identification and biopsy work in the future, and the Committee looked forward to seeing results of this further work in due course.

Results relating to minke whales from the 1999/2000 JARPA survey in Area IV and the eastern part of Area III were also presented. Minke whales were the most frequently sighted species. No dwarf-form minke whales were sighted. It was reported that the sighting rate on this survey was higher than that on any previous JARPA survey in Area IV.

An analysis of mtDNA in the ordinary form minke whales from Antarctic Areas V and VIW, using samples from the 1988/89-1998/99 JARPA surveys found some preliminary evidence of genetic differentiation of group VW, from both the 'western stock' and from the rest of the groups examined in Areas V and VIW. This requires further investigation.

Information on 78 whale tags recovered on the factory ship *Sovietskaya Ukraina* from 1972 until 1986 was presented. In the case of minke whales, all but one of the Discovery marks had previously been reported to the IWC Secretariat, but none of the Soviet tags had.

FINALISING PLANS FOR THE IN-DEPTH ASSESSMENT

The Scientific Committee agreed that high priority be given to the validation and incorporation of existing IWC/SOWER survey data into DESS, including the 2000/01 survey data. The Committee recognised the value of previous analyses and noted that it was important to have as long a series of estimates as possible to address the issue of trend most effectively.

While the estimates of Southern Hemisphere minke population sizes accepted in the Comprehensive Assessment[2], (totalling 760,000, obtained using IWC/IDCR data from 1982/83 to 1989/90) were the best available at the time for the years surveyed, they are no longer appropriate estimates of current minke whale abundance. Some initial crude extrapolations of the incomplete third circumpolar set of surveys led to a point estimate that was appreciably lower than the total of the previously agreed point estimates by Area from the Comprehensive Assessment[2]. However, there are a number of factors that make interpretation difficult, including:

(a) differences in survey area coverage;
(b) changes in position and configuration of the ice-edge; and
(c) changes in the proportion of sightings classified as 'like-minke'.

In addition, without calculation of confidence limits for the crude point estimate, it was not possible to conclude whether the appreciable difference noted above was statistically significant. Although there are plans to address these difficulties, the Committee is currently unable to provide reliable estimates of current minke whale abundance.

The Scientific Committee agreed that there was an urgent need to address trend-related issues, and to provide up-to-date estimates of minke whale abundance. To this end, the Committee agreed that it is very important to complete the third circumpolar set of surveys, and recommended participation in the 2000/01 Antarctic minke whale survey.

While the value of the analyses of IWC/IDCR-SOWER data conducted to date was recognised, an integrated approach to the future analysis of IWC/IDCR-SOWER data was proposed.

The Committee considered it important that results that will facilitate the review of Southern Hemisphere minke whale abundance be presented at its next meeting and recommended that the tasks listed below be assigned high priority.

(a) Enter existing sightings datasets (IWC/CCAMLR and IWC/SOWER datasets) into DESS, update DESS to allow use of a fuller complement of the analysis options available in the programme Distance.
(b) Complete a conventional line transect analysis of all surveys in IWC/IDCR-SOWER series using consistent methodology.
(c) Complete some methodological development and associated analyses necessary to estimate trend, and address the issue of inter-survey comparability of abundance estimates.
(d) Hold an intersessional workshop to facilitate work on items (b) and (c) above, and to develop a research plan for the completion of this work over the next few years.

The Committee agreed that it was important to make substantial progress on items (a) to (c) by its next meeting, and a subgroup was established to develop plans for the intersessional workshop.

[2] IWC, 1991, p.117 table 1, with a minor correction in IWC, 1993, p.114, table 1

11.2.1.2 SOUTHERN HEMISPHERE HUMPBACK WHALES

REPORT OF THE INTERSESSIONAL WORKING GROUP

The Scientific Committee reviewed intersessional work to prepare for a preliminary assessment of Southern Hemisphere humpback whales. This included an examination of the results of modelling work that used information and assumptions with respect to stock identity, current abundance, rates of increase for putative stocks and data on historic catch sizes and locations.

The Scientific Committee agreed that this represented a useful first step at a preliminary assessment of Southern Hemisphere humpback whales. In particular, it had focused attention on what information and additional work was necessary for a fuller assessment (see below).

UPDATE OF ANTARCTIC CATALOGUE

The Committee welcomed the information presented on the progress of the IWC Antarctic Humpback Whale Catalogue and recommended continued funding for this work.

ESTIMATES OF ABUNDANCE AND RATE OF INCREASE

The Committee reviewed estimates of population size and increase rates for humpback whales in Area IV, using data collected on JARPA surveys (between 1989/90 and 1999/2000) and made suggestions for further intersessional work. Similarly, the Committee reviewed DESS-based abundance estimates of nine cetacean species (including humpback whales) from IDCR-SOWER cruises. A total of 83 sightings of 178 humpback whales were made on the 1999/2000 SOWER circumpolar survey. Biopsies were obtained from 37 animals. The Committee expressed its gratitude to the Japanese government for providing the two vessels used in the research.

STOCK STRUCTURE

The Committee reviewed a number of studies relating to stock structure (e.g. using genetic analysis, photo-id comparisons, artificial 'Discovery' marks, catch data). The preliminary results are generally compatible with the breeding/feeding stocks scenario considered by the Committee and they agreed to a number of additional stock scenarios that should be considered in any future modelling exercises.

DATA AND ANALYSES NEEDED TO REFINE THE ASSESSMENT

The Committee recommended that further modelling and assessment work be undertaken that took into account its discussions at this meeting concerning the following factors:

(1) revised stock structure;
(2) alternate population dynamics models and fitting procedures;
(3) new or different catch data;
(4) revised and/or new abundance estimates;
(5) revised and/or new ROI estimates.

11.2.1.3 WESTERN NORTH ATLANTIC RIGHT WHALES

REVIEW OF STATUS AND TRENDS

A workshop was held at Woods Hole, USA in October 1999 in view of the Scientific Committee's serious concerns over the status of the stock, and last year's strong recommendation that the Comprehensive Assessment of this stock should remain of high priority. The workshop reviewed the available data, available population models, status and trends. The latter included discussion of factors affecting trends and a comparison with other populations, particularly those in the Southern Hemisphere that, in contrast with those in the North Atlantic, are showing higher reproductive rates and population increase.

The Scientific Committee also received the report of a Workshop on the Causes of Reproductive Failure in North Atlantic Right Whales and New Avenues of Research, held at Falmouth Massachusetts in April 2000 under the auspices of the US National Marine Fisheries Service. The Workshop had been prompted by evidence that reproductive dysfunction may be a contributory factor in the population's failure to recover. Its goal was to identify factors potentially affecting reproduction and to develop an appropriate and feasible research strategy to investigate them.

LONG-TERM EFFECTS OF TAG IMPLANTATION

The Committee reviewed the report of a Workshop on the Effects of Tagging on North Atlantic Right Whales. Some of the 55 individuals tagged between 1988 and 1997 had developed swelling at the implantation site. However, the report was inconclusive as no information had been provided to definitively evaluate the effects of tagging on right whales. The Scientific Committee recognised that time scale information on the effects of tagging would be useful, notably the timing and type of tissue response at the site of implantation; it recommended that such an analysis be conducted.

In discussion of a request for a more precautionary approach to tagging this highly endangered species, the Committee recommended that a further analysis of the risks of using implantable tags with this species be undertaken, paying particular attention to possible differences in reproductive success in tagged *versus* non-tagged females. It recommended that implantable tags proposed for use on the North Atlantic right whale be first tested on harvested bowhead whales. Appropriate tests could include assessing the depth and nature of the wound, the extent to which epidermal material is carried into the wound and the holding strength of attachment devices.

RECOMMENDATIONS FOR FURTHER ACTION

The Scientific Committee endorsed all the recommendations from the Workshop on Status and Trends and from the Workshop on Causes of Reproductive Failure. In discussing the recommendations from the Workshop on Status and Trends, the Committee noted that the Workshop had agreed that at least two aspects should be separated out when future research strategy is decided:

(1) research permitting documentation and scientific insights into population dynamics and ecology of a whale population that has been reduced both to very low absolute numbers as well as to a small fraction of its original population size; and
(2) research permitting implementation of appropriate management actions and evaluation of their performance.

The Scientific Committee confirmed that whilst both are important, and recommendations for both have been developed, the highest priority must be accorded to category (2). Despite the improvements that can and should be made in terms of refining the modelling of this population, it is clear that none of those refinements will lead to a change in the conclusion that:

> by any management criteria applied by the IWC in terms of either commercial whaling or aboriginal subsistence whaling, there should be no direct anthropogenic removals from this stock.

The evidence that this population (possibly the only potentially viable population of this species) is in serious danger is compelling, and the need for further research under category (1) above should not be seen as a reason for delaying immediate and highest priority action under (2). In short, the population:

(a) is at very low absolute abundance and thus highly vulnerable to stochastic variation in population dynamic processes;
(b) is, unlike a number of Southern Hemisphere populations, not recovering despite protection from whaling since the 1930s;
(c) appears to be decreasing at present as a result of:
    (i) a decreased rate of survival in the 1990s *versus* the 1980s;
    (ii) an increase in effective calving interval in the 1990s; and
(d) is subject to known direct anthropogenic removals (ship strikes and entanglements in fishing gear) that have been increasing in recent years.

In addition, there is some evidence (e.g. from skin lesions) that the overall health of the population has decreased since the 1980s.

Research recommendations arising from the Status and Trends Workshop

The Scientific Committee recommended that highest priority be assigned to research into means of reducing mortality from entanglements and vessel collisions. It further recommended that an international multidisciplinary workshop be held to review progress and to identify priorities for further work and the most promising approaches to management action to reduce mortality. The Scientific Committee felt that it is essential that every effort be made to ensure that requisite data are available. At a minimum this must include good temporal and geographical information on vessel traffic, fishing gear effort and distribution for the entire east coast of North America. The Committee recommended that the Commission urge the relevant governments to ensure that such data are recorded, collated and made available. In this context, the Committee recommended that a Geographic Information System (GIS) project be conducted to overlay effort data on to information on right whale distribution together with that of fishing gear, shipping activity and other threats.

Notwithstanding that research into reduction of mortality should be given highest priority, the Scientific Committee considered the proposed Genetics Workshop to be especially important. It also recognised that reduced calving success may reflect the impact of a variety of human activities that alter coastal habitats. It recommended that research on these and other habitat quality issues be intensified and that the proposed multidisciplinary workshop evaluate the impact and mitigation of habitat stressors.

Management recommendations arising from the Status and Trends Workshop

The Scientific Committee reiterated that it is a matter of absolute urgency that every effort be made to reduce anthropogenic mortality in the population to zero, and recommended that the Secretary write to the International Maritime Organisation (IMO) to underscore the severity of the current status of North Atlantic right whales, and to request their assistance with implementing measures within the international maritime community for the conservation of this critically endangered population. The Committee further recommended that the data on number of ships entering the area and the speeds at which they are travelling be investigated, and that whale distribution be overlaid with traffic distribution and shipping lanes to assess the need and feasibility of further regulatory actions related to ship routing and reduction of ship speed.

In addition to the above, the Committee recommended that, for the immediate future, and given the important management implications of the estimate of survival rate, annual updates of survival rate estimates be presented to, and considered by, the Committee. That would have the further benefit of taking advantage of data now available from a major offshore area poorly sampled during the early 1990s. It also recommended that it would be useful to include other right whale populations in a comparative analysis of genetic diversity and reproductive rates.

And finally, the Committee drew the Commission's attention to concerns expressed at the Woods Hole workshop over transfer of biological samples under CITES regulations. Transfer of samples is still very difficult in certain cases, and can constitute a major impediment to research on critically endangered species such as northern right whales. It reiterated its earlier recommendation that the Commission should strongly urge member nations to facilitate the transfer of such samples, and that the IWC Secretariat approach the CITES Secretariat to consider ways of expediting permits for *bona fide* institutions conducting conservation-related research on endangered species.

Recommendations arising from the Workshop on the causes of reproductive failure

The Committee agreed that if every effort is going to be made to improve the status of the North Atlantic right whale, it is important that the reasons for the reproductive dysfunction be established as soon as possible and strongly recommended that a programme of research identified at the workshop be supported to the fullest extent possible. The Committee agreed that none of the five possible factors the workshop considered could be discounted as a possible cause of the reproductive dysfunction observed in the North Atlantic right whale. In fact, it is likely that no one factor is entirely responsible, and two or more factors could be interacting, possibly over different time scales. It is therefore important that the proposed research programme considers all possible factors and is interactive and multidisciplinary in nature. For such a programme to be successful, there needs to be strong central coordination. The Committee therefore endorsed the recommendation that a steering committee be established to develop protocols, review results and progress, and recommend revisions to the research programme recommended in the workshop report.

The Committee also recommended:

(i) the development of a comprehensive database (coordinated through the North Atlantic Right Whale Catalogue) linked for all whales across all research programmes, which would allow for multivariate analyses using data from photo-identification studies, health assessment, genetics, pathology, contaminant and biomarker studies, biotoxins, and blubber thickness/composition;
(ii) full support for continuation of the photo-identification programme, as the catalogue and database must be integral components of the proposed research programme, and continuity of the time series of sighting

data will be essential for determining whether reproductive performance continues to decline or improves.

The Committee agreed that the Secretary should be asked to write to the US National Marine Fisheries Service (NMFS) and the Canadian Department of Fisheries and Oceans, informing them of the Committee's serious concerns over the status of this stock, and seeking their support for implementation of the various actions recommended.

At their meeting in 2001, the Scientific Committee will review progress on the recommendations outlined above and on the outcome of the Genetics Workshop.

11.2.1.4 SOUTHERN HEMISPHERE BLUE WHALES

DIFFERENTIATION OF SUBSPECIES

The Scientific Committee reiterated the importance of resolving the issue of the proportion of pygmy blue whales south of 60°S in relation to interpretation and possible correction of abundance estimates for 'true' blue whales in this region. It noted that it was still not possible to genetically distinguish 'true' blue (*Balaenoptera musculus intermedia*) and pygmy blue whales (*Balaenoptera musculus brevicauda*), but that work was ongoing. The Committee renewed its request that additional material, especially from known 'true' blue whales, should continue to be sought for genetic analysis to assist in the resolution of this issue.

With respect to acoustic work, the Scientific Committee agreed that, ideally, dedicated cruises should be undertaken to areas of known concentration of 'true' blue whales although opportunities should also be taken to take advantage of 'piggy backing' on other operations. While more rapid progress with the acoustic work is desirable, that would depend on more frequent contacts with blue whales. As the population is still small and scattered around the Antarctic, the probability of encounters is low – only one blue whale was recorded on the 1999/2000 IWC/SOWER cruise. The current survey design, which allocated a sizeable proportion (25%) of the IWC/SOWER cruise to blue whale research, and which allowed this to be flexible in nature to take advantage of blue whale encounters, was probably the best that could be achieved at present, until areas of consistent blue whale abundance are discovered. The Committee reviewed proposals for analysis of existing recordings from SOWER and IWC research cruises and agreed that this work should be undertaken.

The Committee reviewed information on future areas for blue whale studies. These included coastal waters of southern Chile and the Chilean fjord system, an area off Namibia where 'true' blue whales were once caught during the winter (breeding) season and an area now being studied off southeastern Australia where blue whales (subspecies uncertain) have been seen in summer and autumn. The Committee agreed that when considering possible blue whale wintering areas in the southwestern Pacific, it may be useful to identify areas of warm water euphausiid concentrations.

Two studies had attempted to determine from historic catch data the proportion of pygmy blue whales likely to be present in waters south of 60°S. Both agreed that a small number of pygmy blue whales were found in those waters, but in low numbers compared to 'true' blue whales. It was concluded that if pygmy blue whales were present they were unlikely to constitute more than 5% of the catch. The Committee also recommended satellite tagging of biopsied pygmy blue whales of known length prior to their migration to provide information on their possible occurrence south of 60°S.

ABUNDANCE ESTIMATES

The Scientific Committee reviewed blue whale abundance estimates from the three IWC/IDCR/SOWER circumpolar cruises and agreed that an abundance estimate, not designated by subspecies, south of 60°S over the last two decades of the 20th Century was in the range of 400 (CV = 0.4) to 1,100 (CV = 0.4). The estimate will be an underestimate because the areas south of 60°S were incompletely surveyed.

The Committee also agreed that inferences about trends and their statistical significance could not currently be made using the above estimates for a number of reasons:

(1) different geographical coverage between the ice-edge and 60°S during the three circumpolar surveys;
(2) classification over time of 'blue whale', 'like blue whale', 'unidentified large whale blue' and the other identified whale species codes;
(3) differential amounts of closing and passing modes over the years;
(4) other sources of variance not accounted for in the estimated sampling variances; and
(5) the possible effect on the estimation of trends of increasing estimates of effective search half width and change in school size over time.

FURTHER WORK

At its next meeting in 2001, the Scientific Committee plans to (a) review progress in subspecies differentiation, including acoustic analysis, and (b) prepare for stock assessment of Southern Hemisphere blue whales, including pygmy blues.

11.2.1.5 OTHER SMALL STOCKS

BOWHEAD WHALES

The Scientific Committee's deliberations on the Baffin Bay/Davis Strait and Hudson Bay/Foxe Basin stocks of bowhead whales are discussed under Item 10.3.1 of this report.

Norwegian whalers had seen several bowheads on the west coast of Spitzbergen (at *ca* 80°N) in late May-early June 2000. Some had also been seen there two years ago. In recent years there have been sightings in pack-ice east of Spitzbergen, among and south of the Franz Josef Islands and along the west coast of Novaya Zemlya in the eastern Barents Sea. Additional sightings have been reported by Russian aerial surveys in other Arctic regions. The population identity of all these whales is currently unknown.

Work on the Okhotsk Sea bowhead population will continue in summer 2000. A recent publication gives details of North Pacific pelagic Soviet whaling, including 133 animals taken in 1968 in the Shantar area of the Okhotsk Sea, where the present field work is located.

WESTERN NORTH PACIFIC GRAY WHALES

In the fourth field season of joint Russian-American research on the gray whale summer feeding ground off north-eastern Sakhalin Island, 88 individuals had been photo-identified and 42 animals biopsied. Genetic analysis so far showed no fixed or diagnostic mtDNA differences between that population and eastern gray whales, although there were statistically significant differences between the two

populations in terms of haplotype frequencies. Last year for the first time apparently thin whales had been seen (as elsewhere in the North Pacific), although there were no data on food limitation off Sakhalin Island. Field work will continue in summer 2000; it is anticipated that few new individuals will be identified, indicating that the total population size is perhaps about a hundred whales.

The Scientific Committee received a report of a molecular analysis of a gray whale sample from a market in Japan which showed that it had a mtDNA haplotype identical to a haplotype from the eastern North Pacific population. The high number of haplotypes shared between the western and eastern gray whale populations was noted. There was a view that the whale concerned was a western animal and that the market sample's identity could be resolved by genotype comparison with tissue from the gray whale killed off Hokkaido in 1996.

OTHER STOCKS

A number of papers were presented to the Scientific Committee that gave details on other small stocks. These included: North Atlantic blue whales; minke whale movements in relation to ice conditions off the Chukotka Peninsula; right whales in the southeastern Bering Sea; North Pacific humpbacks; southern right whales; and abundance estimates of fin, sei and sperm whales south of 60°S.

11.2.2 Commission discussions and action arising

SOUTHERN HEMISPHERE MINKE WHALES

Japan stated that research on the abundance of Southern Hemisphere minke whales is the issue in which they have the strongest interest. It noted that in addition to its scientific permit research to elucidate the stock structure and biological parameters, it has provided vessels, equipment and human resources equivalent to US$1,500,000 per year since 1978/79 under the IDCR and/or SOWER circumpolar sighting surveys. It has provided all data to the Scientific Committee. It believes that the IWC is the appropriate international organisation for large cetacean management and would like to continue to contribute in this way providing that IWC carries out its activities in accordance with the Convention. It added that although previous abundance assessments of Southern Hemisphere minke whales have already demonstrated that this stock is healthy and robust, it believed that the Scientific Committee's proposed review is generally appropriate and was willing to provide a research vessel to provide data for this review. However, it strongly requested that the review be carried out in a thorough and cautious manner.

Australia also considered the Southern Hemisphere minke whale abundance estimate to be very important, recalling that this is the stock harvested by Japan in the Southern Ocean Sanctuary under Special Permit. It was very concerned to hear that the stock size may now be appreciably lower than estimated in 1990, particularly in view of evidence presented in the Scientific Committee that there is more than one minke whale species present. Australia therefore agreed strongly with the Committee's recommendation to investigate trends and provide a revised abundance estimate for this region. The USA, New Zealand, the UK, France and a number of other delegations expressed similar views. New Zealand stressed the need for future abundance assessments to be done on a per stock, rather than on a per species basis. Sweden and Switzerland supported the need for better data. Italy and Germany stressed the need for a precautionary approach to management of minke whales in the Southern Hemisphere.

In responding to the possibility that there are two types of minke whale in the Antarctic, Japan believed that the 1990 minke whale assessment of 760,000 did not include dwarf minke whales as this species was distributed in a different area to the ordinary minke whale. It also commented that perhaps the Southern Hemisphere minke whale population had overshot its carrying capacity, and referred to data from a 1979 paper of Dr Oshumi that at the beginning of the 1900s, the population numbered about 85,000. Japan noted the remarkable increase in numbers since then and wondered whether the uncertainty with the 1990 estimate of 760,000 was really a problem.

St Lucia expressed concern in the way the information from the Scientific Committee was being treated in the Commission. It considered that some governments treated the Committee's guidance selectively in that they would accept guidance when it could be used to support an anti-whaling approach, but would call for more advice when provided with information that could support whaling. St Lucia considered that the Commission should be more consistent. Dominica supported this view.

In response to a question from Monaco on what the revised stock size estimate might now be, the Committee Chair reported that the Committee had only considered a crude preliminary point estimate and had identified a number of potential problems with that. She added that better information could be provided once the third circumpolar survey and further data analyses identified in the report had been completed. Norway supported the Scientific Committee Chair's response and emphasised that there was no reason for any immediate action or concern related to the current scientific take by Japan even if there is a decline in numbers and even if there are sub-stocks and sub-divisions of minke whales in the area. The People's Republic of China stated that until a revised estimate was available, its position would be taken on the basis of the 1990 estimate.

SOUTHERN HEMISPHERE HUMPBACK WHALES

Japan commented that it was happy with the progress made on the Comprehensive Assessment of this stock. It referred to analysis of the JARPA survey data for Areas IV and V since 1987/88 that suggest a stock size in Area IV of 12,000 and high rates of increase of 13.4%. Japan has also provided earplugs so that the ages of whales taken can be evaluated. Japan wishes to contribute further to the Comprehensive Assessment through continuing JARPA surveys and the provision of vessels for the SOWER circumpolar cruises.

The Chair of the Scientific Committee thanked Japan for these contributions. She noted that the earplug calibration study would help determine the age of sexual maturity, and thereby assist in determining whether or not the high estimated rates of increase are plausible.

WESTERN NORTH ATLANTIC RIGHT WHALES

The UK thanked the Scientific Committee for its work on Western North Atlantic right whales and added that it is clear that there is a serious and worrying situation with respect to this stock and that every effort needs to be made to reduce anthropogenic mortality in the population to zero. It acknowledged the far-reaching and sound recommendations from the Scientific Committee and expressed the hope that they could be endorsed.

Discussion of a Resolution relevant to this population is considered under Item 17.4 of this report.

SOUTHERN HEMISPHERE BLUE WHALES

Japan thanked the Chair of the Scientific Committee for her detailed report. Japan was one of the major sponsors of the original proposal for the blue whale research programme and it planned to continue its support. However, it also called on those nations who had been involved in whaling of blue whales in the past to support this survey via financial and other concrete contributions.

OTHER SMALL STOCKS

The USA expressed concern about the status of the small populations of bowhead whales in eastern Canadian waters. While the USA appreciated the work of Canadian scientists on the status and abundance of this stock, it was pleased that the Scientific Committee did not accept the estimate of 345 proposed in a Canadian document. The USA indicated that they looked forward to future results from further studies.

The Resolution on these stocks was dealt with under Item 10.3 of this report.

Regarding the report of the presence of gray whale meat on the Japanese market, Japan commented that this was not confirmed by its own survey. Japan acknowledged that the condition of the western North Pacific gray whale stock is declining due to deteriorations in the stock's environment, and added that it is making efforts to protect this stock by applying rigorous enforcement measures.

There were no comments on other small stocks.

SCIENTIFIC COMMITTEE RECOMMENDATIONS

The Commission noted the report of the Scientific Committee and accepted its recommendations.

12. REVISED MANAGEMENT SCHEME

12.1 Report of the Working Group on the Revised Management Scheme (RMS)

The Chair of the RMS Working Group, Mr Fer von der Assen (the Netherlands) summarised its report. Delegates from 26 Contracting Governments attended the Working Group meeting. Its terms of reference were to complete work on: (1) an effective inspection and observation scheme; (2) arrangements to ensure that total catches over time are within limits set under the Revised Management Procedure; and (3) incorporation into the Schedule of the specification of the RMP and all other elements of the RMS.

The Working Group Chairman reported that although all outstanding issues had not been resolved, progress was made on both the substance of the discussions and on the question of how to take the work forward.

12.1.1 Inspection and observation scheme, including DNA identification and tracking

Rather than report to the Commission in detail on the Working Group's discussions, the Chairman focused on the major areas where agreement had not been reached. First of all disagreement remained over who should be responsible for the registration of vessels and landing sites or land stations involved in whaling operations, i.e. the IWC or national authorities. Japan and Norway held the view that registration with IWC would give rise to security problems and thus could not accept this approach. Norway also thought that there should be only two points of control, i.e., on vessels and at land stations but not at landing sites as this would duplicate effort. A similar problem remained concerning whether each whaling vessel should be equipped with a system allowing it to be continuously tracked by satellite while at sea.

The Chairman reported that there had been a wide-ranging discussion on the question of competence and whether DNA tracking and market sampling should form part of the inspection and observation scheme as proposed in his draft on which discussions were based. Several countries supported this proposal but others considered that control of markets and trade in whale products was outside the competence of the IWC and under the sole jurisdiction of national authorities.

Regarding the International Observer Scheme, disagreement remained over whether an international observer should be present on all vessels and all landing sites. Norway felt that this would be impracticable in small-type whaling operations and that an international observer should only be present if there is room for both an observer and a national inspector. The matter of the frequency of reporting by the observers on whaling vessels was also left unresolved. Several countries supported the view that there should be daily reporting of any whales hunted, struck and killed, while other countries considered this unnecessary. An important area of remaining disagreement was the question of who should bear the costs of an inspection and observer scheme. While there was general agreement that the costs of the national inspection schemes should be borne by the whaling countries concerned, there were different views on who should bear the costs of an international observer scheme. The Chairman's draft document, which was supported by a number of countries, was based on the view that either the whaling industry or the national governments of the countries where whaling takes place should bear the full cost of the observer scheme. Other countries, however, felt that this scheme benefited the Commission as a whole and therefore the Commission should meet these costs.

There were also different views regarding the proposal in the Chairman's draft that a Review Committee be established to review and report on the compliance of all whaling operations with agreed conservation measures. Some countries supported the establishment of such a Committee, since it would deal not only with infractions but review the working of an inspection and observation scheme as a whole and thereby enhance the transparency of the system. Other countries believed that a Review Committee was unnecessary and that the Infractions Sub-Committee should deal with these matters instead.

Finally, on the issue of DNA identification and tracking, the Working Group considered the findings of this year's Scientific Committee meeting in response to the Resolution adopted last year by the Commission (i.e. 1999-8). In respect of the development of genetic methods for species, stocks and individual identification, the Scientific Committee recommended that a diagnostic register should be developed under which all of the registered individuals are defined as permitted and any others are defined as non-permitted. Following the discussion of this item, New Zealand presented a new draft text for paragraph 19 of the draft inspection and observer scheme under the title 'Verification of Catch Data by genetic Monitoring'. This text built on the Chairman's draft, reflected the discussion in the Scientific Committee and the Working Group and set out the underlying principles and justification for market sampling. Although there was wide support for this approach, the discussion on the issue of conducting genetic surveys in

domestic markets remained one of the more fundamental differences of opinion that the Commission will have to resolve.

12.1.2 Total catches over time

The RMS Working Group reviewed the proposed text developed by the Scientific Committee following last year's request by the Commission, and agreed that it needed to be made more specific regarding the meaning of human induced mortalities other than commercial catches. The following text was agreed:

> Catch limits calculated under the Revised Management Procedure shall be adjusted downwards to account for human-induced mortalities caused by aboriginal subsistence whaling, scientific whaling, whaling outside IWC, bycatches and ship strikes.
>
> Each such adjustment shall be based on an estimate provided by the Scientific Committee of the size of adjustment required to ensure that total removals over time from each population and area do not exceed the limits set by the Revised Management Procedure. Total removals include commercial catches and other human-induced mortalities caused by aboriginal subsistence whaling, scientific whaling, whaling outside IWC, bycatches and ship strikes to the extent that these are known or can be reasonably estimated.

12.1.3 Other matters

The Working Group Chairman explained that the UK had submitted a paper that contained a list of data related to welfare aspects, that they and others believed should be collected under the RMS. Japan and Norway were opposed to such a proposal, but the UK undertook to provide suitable language for discussion at a future date.

12.1.4 Recommendations from the Working Group

The Working Group proposed that:

(1) the Commission endorse the text on total catches over time proposed by the Scientific Committee and amended by the Working Group;
(2) a new draft of Chapter V be considered at an intersessional meeting or a meeting of the RMS Working Group immediately preceding next year's Annual Meeting;
(3) there be a transcription of agreed elements of the RMS into language suitable for incorporation into the Schedule;
(4) there be a further consideration of data collection and other parts of the Schedule to determine if they require revision.

12.2 Commission discussions

12.2.1 Comments on the outcome of the Working Group meeting

Many delegations congratulated the Chairman of the Working Group on the outcome of the meeting and on the progress made. However, despite this progress, a number of delegations voiced concern over the approach being promoted by some countries. Norway highlighted what it believed to be a fundamental problem of the IWC, i.e. that whaling is regarded as an abnormal if not criminal activity, and that the principles for the utilisation of natural resources do not seem to apply to the sustainable use of whale resources. Norway believed that there is an attempt to prevent the resumption of whaling operations through excessive requirements for the supervision and control of whaling operations. Norway reiterated its view that the monitoring of production processes and domestic and international marketing and trade are outside the scope of IWC. This view was supported by other countries including Japan, the People's Republic of China and Korea.

Japan referred to the letter from the Secretary-General of CITES to the Chairman of the Commission, in which he expressed the hope that the IWC would finalise the RMS as quickly as possible and added that Japan would spare no effort to come to agreement on the RMS through discussions in the Commission. Japan identified three points that it considered to be essential for a supervision and inspection scheme: (1) that it must comply with the purposes of the Convention; (2) that it must reflect actual whaling operations and be practical; and (3) that inspection and control methods commonly used in other fishery organisations should be taken into consideration. Japan saw no need to establish a Review Committee since the Infractions Sub-Committee could perform this function. Antigua and Barbuda stressed the critical importance of the inspection and observation scheme, and commented that the idea to engage an independent group to assist the organisation in developing an acceptable scheme should not be treated lightly and that it should be judged on its merit.

The USA disagreed with the comments that the requirements being discussed with the RMS Working Group were excessive. The USA reported that international inspectors on all vessels, satellite tracking, daily if not real time reporting of catches are common features of many contemporary domestic and international management regimes, and that it is essential for the IWC to also adopt a contemporary supervision and control scheme.

The UK agreed with the USA comments. In addition, it referred to its reservation on the Working Group's amendment to text from the Scientific Committee on total catches over time, and sought clarification from the Scientific Committee Chair on whether the RMP took account of pollution-induced mortalities. The Scientific Committee Chair confirmed that the RMP would take account of any mortality that could be clearly attributed to humans, but that subtler effects such as mortality caused by high tissue concentrations of pollutants would not be directly included. However, the Chair added that where there was evidence of considerable impact of either direct human-induced mortality or a more subtle sort of indirect human-induced mortality, an implementation review would be carried out during which the need for further trials or changes in the management procedure would be considered. The UK thanked the Scientific Committee Chair, and then sought clarification from Japan and Norway as to whether they continued to oppose the basic principle in Resolution 1998-2, that catch limits for commercial purposes should be calculated by deducting all human-induced mortalities that are known or can reasonably be estimated other than commercial catches from the total allowable removal, or whether the two countries now agreed with the wording agreed within the RMS Working Group. If the latter was the case, then the UK could agree to lift its reservation on that text. Norway responded that it would go along with the wording in the spirit of cooperation. However, in the absence of what the UK considered a satisfactory response from Japan, it retained its reservation on the text agreed in the Working Group on catches over time.

Japan reiterated its views expressed in the Working Group that the collection of information on welfare aspects falls outside the objectives of the RMS and the competence of the IWC.

12.2.2 Proposed Schedule amendment

Japan introduced a draft text to amend the Schedule to finalise and incorporate the RMS. It reported that it believed that the draft text took account of the RMS Working Group

discussions and that the text, if agreed, could allow limited whaling from next year. Japan urged that the Schedule amendment be adopted by consensus.

the Netherlands, referring to a number of previous Resolutions on the RMS, commented that the Japanese proposed text omitted certain elements and safeguards previously agreed, including: (1) that the Commission would only accept catch limits other than zero when all the provisions of the RMS have been complied with; and (2) the arrangements for addressing total catches over time. The Netherlands considered that the authors of the Japanese text had been selective in choosing which aspects of the, as yet, incomplete observer and inspection scheme to include, and that the proposal did not help to expedite finalisation of the RMS. New Zealand strongly endorsed these comments, criticised the delay in submission of Japanese documents on this issue to the RMS Working Group and to the Commission (i.e. the night before scheduled debate) that left insufficient time to give them full consideration, and suggested that Commission members who favoured retention of the moratorium in the past should refuse to agree the Schedule amendment. The USA, noting that its own suggestions regarding the supervision and control text had been ignored could also not support Japan's proposal.

In response to an enquiry from the People's Republic of China, the Secretary reminded the meeting that Schedule amendments should be notified to Contracting Governments 60 days in advance of the meeting and that Resolutions should be submitted to the Secretariat for distribution by 6 o'clock on the night before they are to be discussed.

Denmark regretted that Japan's documents had arrived rather late, but congratulated them in their efforts to table documents in English. It agreed to the proposed Schedule amendment's overall thrust (i.e. to complete the RMS as soon as possible) but felt that it was rather premature and preferred to support the alternative Resolution proposed by Sweden and others (see Section 12.2.3).

Spain associated itself with Denmark's remarks. Switzerland associated itself with the Netherlands and Denmark. Oman stated that if the intention of the Schedule amendment was to resume commercial whaling next year, it reserved its right not to accept it since it had received no governmental instructions to do so unless the Scientific Committee supported the proposal.

Norway welcomed the proposed Schedule amendment, particularly the part outlining the provisions on supervision on control. Norway indicated that these provisions were along lines it could accept for the sake of compromise and making progress, but they still considered the provisions to be excessive. Norway added that the repeal of the moratorium has to be part of the process in finalising the RMS since it would make no sense to work for years developing very strict rules without anything changing as a result. Finally Norway clarified that it has always reserved its position regarding the specific tuning level of 0.72 agreed in an earlier Resolution since from the work of the Scientific Committee it is known that other tuning levels are just as appropriate.

As there was not a three-quarters majority support for the proposed Schedule amendment, the Chair proposed that with Japan's permission discussion move on to the proposed Resolution. Japan indicated their regret that consensus was not achieved and requested that it be allowed to submit the document again at an appropriate time. Finally, Japan clarified for the record that it had notified its intention to submit a draft Schedule amendment 60 days in advance, but that this had coincided with Japan's Golden Week holidays.

12.2.3 Action arising

The Commission accepted the Working Group recommendations.

RESOLUTION ON THE RMS

On behalf of the other co-sponsors (South Africa, Chile, Denmark, Finland, Ireland, Mexico, Oman, Spain and Switzerland), Sweden introduced a Resolution on the RMS that incorporated the Working Group recommendations for further work and proposed a timetable for doing them, i.e. for the Secretary to circulate a draft text of a Schedule amendment to Commissioners by the end of November 2000, for the RMS Working Group to meet before the end of February 2001 and for the Secretary to circulate the report of this intersessional meeting in good time before the 2001 Annual Meeting. Sweden indicated that the Resolution represented a serious attempt to move the IWC forward and achieve concrete results. It recognised that both whaling and anti-whaling countries would find points in the Resolution that might be difficult, but urged that it be adopted by consensus. It also drew attention to another document from the same co-sponsors that proposed draft text for the incorporation of the RMS and the RMP into the Schedule and which could assist the Secretary in preparing the Schedule amendment. Sweden's view is that the IWC should be the international organisation for conservation and management of whales operating on a precautionary principle and the principle of sustainable use. It expressed concern that major whaling operations take place outside IWC control; an essential step in regaining control was for the IWC to have agreed rules for which the RMS would form the central part.

South Africa, expressed great pleasure in being one of the co-sponsors of the proposed Resolution, and commented that the case for the IWC to be seen to be making progress towards adoption of the RMS is overwhelming. It referred to the concern expressed at the CITES meeting in Nairobi April 2000 and in the CITES Secretariat's letter to the IWC Chairman in this regard. South Africa urged all other delegations to lend their full support to the Resolution. The other co-sponsors and the People's Republic of China supported the comments of Sweden and South Africa.

Brazil commented that it was willing and able to join a consensus on the proposal. However, it stated for the record that whilst fully participating in the negotiations towards achieving a workable RMS, it has repeatedly stated its view that any resumption of commercial whaling must not threaten the rights of developing countries that have opted for a non-lethal sustainable use policy for the management of whale resources.

While several other countries welcomed the draft Resolution, some reservations were expressed. A number of countries, including the Netherlands, Germany, the USA, the UK, and Monaco considered that an intersessional meeting was not necessary and that the RMS Working Group should meet in association with the 2001 Annual Meeting. Their reasoning included difficulties in obtaining funding for intersessional meetings and that the draft Resolution suggested that the RMS Working Group should 'finalise' the draft text for Chapter V - something only the Commission can do. Some countries (including USA, Italy, the UK, Monaco, New Zealand, France, Brazil) did not want the RMS to be limited to elements identified in Resolution 1992

and subsequent Resolutions on the RMS (i.e. other elements such as DNA tracking and welfare issues should be considered). Other countries (Antigua and Barbuda, Norway, Japan, St Lucia, Dominica) were concerned that the draft Resolution does not commit the Commission to a Schedule amendment and that it does not prejudge the positions of Contracting Governments regarding the status of paragraphs 10(d) and 10(e) of the Schedule. Norway considered the reference in the Resolution to the proposed text for the Schedule amendment was unnecessary.

Japan offered to host the intersessional meeting of the RMS Working Group.

Finally, following revisions to take into account some of the comments expressed above, Resolution 2000-3 was passed by consensus, although the strong reservations of a number of countries regarding the last two operative paragraphs were noted. The Resolution is given in Appendix 1.

Australia asked that their established policy on participation in discussions on the RMS be noted for the record.

13. SCIENTIFIC PERMITS

13.1 North Pacific minke whales (JARPN)

13.1.1 Introduction by Japan

Before hearing the report from the Scientific Committee, Japan requested that it be allowed to state briefly its position on this research and to present an overview of the JARPN II proposal.

Japan believed that its programme is important for the management of whales but also important in that it will address issues such as pollution and consumption of marine resources by cetaceans. It commented that the question of cetacean-fishery interactions has become a major issue throughout the world. Given some estimates that cetaceans may consume 3-6 times the amount of marine resources harvested for human consumption, it is an important issue in the context of food security. Japan noted declining catches in some of its own fisheries and that its research had shown that minke whales are eating commercially important fish species. It considered that this issue must be addressed from a scientific perspective without delay. Japan stressed that its whale research programmes: (1) are providing valuable information and addressing important resource management issues; (2) are legal under Article VIII of the Convention; and (3) pose no risks to the whale populations.

Dr Kawahara, Director for the Far Seas Laboratory, stated that the overall objective of JARPN II is to try to contribute to the conservation of the marine resources (including whale stocks) to enable sustainable use in the 200 mile EEZ of Japanese waters, especially in the western North Pacific. JARPN II has three objectives: (1) to study feeding ecology (highest priority), including prey consumption by cetaceans and prey preference; (2) to elucidate stock structure of minke, Bryde's and sperm whales; and (3) to monitor the impact of pollutants such as POPs and heavy metals on cetaceans and the marine ecosystem. Dr Kawahara gave further details on how the objectives were to be achieved (see Section 13.1.2.2).

13.1.2 Report of the Scientific Committee

The Chair of the Scientific Committee began by summarising the outcome of the February 2000 Scientific Committee workshop to review methods, results, and success in meeting its objectives of the JARPN research programme between 1994 and 1999. She then reported on the outcome of the Scientific Committee's review of the proposals in JARPN II.

13.1.2.1 OUTCOME OF THE JARPN REVIEW MEETING

The main objectives of JARPN were to determine: (1) whether or not the hypothesised 'W' minke whale stock exists and if so to estimate mixing rates between the 'O' and 'W' stocks; and (2) the feeding ecology of minke whales in the North Pacific. In 1999, the sub-objective to estimate the mixing rate between the 'J' and 'O' stocks was added.

Regarding the existence of the 'W' stock, revised DNA analyses carried out during the workshop gave a significant effect between sub-areas 7 and 8 on the one hand, and sub-area 9 on the other when commercial data were excluded, and a small but not significant effect when commercial data were included. The workshop agreed that this should be examined further. It also agreed that the possible existence of a group of minke whales to the east of Japan that differed from the 'O' stock could not be ruled out, but that the data nevertheless provided a basis to restrict the number of 'W' stock hypotheses that need to be considered in the RMP trials. The workshop also reviewed results from a number of other data types with respect to stock structure. In summary, the workshop noted that some of the difficulties experienced in discussing stock structure arose from lack of clarity in the Committee as to what constitutes a stock.

Regarding mixing rates between the 'O' and 'W' stocks, the workshop agreed that it would be premature to draw conclusions on the extent of the possible presence of 'W' stock animals west of sub-area 9, prior to completion of further analyses. It also agreed that if there was a 'W' stock, there had also to be a non-negligible level of dispersal between this and the 'O' stock. Regarding mixing rates between the 'J' and 'O' stock, the workshop reviewed estimates of the proportion of 'J' stock animals in sub-area 11 by month and sex, based on data from JARPN surveys and past Korean and Japanese coastal operations. The workshop recommended that the sensitivity of these results to the omission of samples for the west of sub-area 9 in 1995 be checked as it may contain some 'W' stock animals.

The workshop noted that the discussions and decisions on mixing rates were relevant to *Implementation Simulation Trials*. However, a key aspect in the trials, not covered by those discussions, is the variety of assumptions about the proportion of animals in sub-area 12 (the Okhotsk Sea) that may originate from the hypothesised 'W' stock since there are no data available from JARPN for this sub-area. The workshop therefore recommended that further genetic samples from sub-areas 12 and 9, and possibly from 8, be obtained to help discriminate among alternative 'W' stock hypotheses.

Since the focus of the JARPN review meeting was on the stock structure work, the results from work on feeding ecology were considered only briefly. The workshop noted that the consumption calculations were performed only for August and September. It was also noted that with the sampling design used in JARPN so far it was not possible to (1) obtain a quantitative measure of temporal and geographical changes in minke whale diets, or (2) to perform extrapolations to calculate the annual consumption of the entire population found in the research areas. The workshop agreed that if surveys are to be performed in future, the sampling design should permit such calculations. However, it was noted that the feeding ecology investigations under JARPN were only a feasibility study and that the primary objective of JARPN had been to obtain data necessary to

address questions related to stock identity implying a sampling design less than optimal for the ecological studies. The latter were conducted using well-established and appropriate methods, and the workshop considered the study to be successful within those limitations.

In future studies, in addition to improving the sampling design to enable a more quantitative estimation of temporal and geographical variation in diet, the workshop also agreed that it is necessary to obtain an improved understanding of the distribution and abundance of relevant prey species to better understand the dynamics of minke whale food choice and consumption. It therefore recommended that acoustic and trawl surveys, designed to address such questions, should be conducted concurrently with future whale surveys, if possible.

The workshop noted that under Resolution 1999-2 on special permits for scientific research, the Scientific Committee had been asked to advise the Commission on whether the information sought in research programmes under Special Permit was: (a) required for management; and (b) could be obtained by non-lethal means. The workshop did not have a long discussion on this item as the Chair of the Scientific Committee had advised that full discussions should be held in the Committee rather than in the workshop. In fact only item (a) was addressed, the outcome being that information obtained during JARPN had been and will continue to be used to refine *Implementation Simulation Trials* for North Pacific minke whales and was consequently relevant to their management.

Two further recommendations were made by the workshop: (1) that research be undertaken to find the breeding grounds, recognising that the most definitive stock structure data will come from such grounds; and (2) that the age-composition data collected during JARPN be analysed further to provide information for use in conditioning *Implementation Simulation Trials*.

The Chair of the Scientific Committee reported that the Committee had endorsed the workshop recommendations and that some of the matters dealt with at the workshop had been further considered during the Committee meeting and used in re-specifying trials. Regarding the question on non-lethal research from Resolution 1999-2, the Scientific Committee referred to all its previous discussions on the subject and noted that there was no consensus.

13.1.2.2 REVIEW OF JARPN II PROPOSAL

The Chair of the Scientific Committee explained that the major discussion on components of the JARPN II proposal related to the stock identity of minke and Bryde's whales took place in the Sub-Committee on the RMP, while that related to pollutants took place in the Standing Working Group on Environmental concerns. Given the extent of the proposal and the overall workload of the Committee, the Chair explained that she had encouraged participants to submit working papers with questions and comments on the proposal. These working papers are included as an Annex to the Scientific Committee's report.

The Chair drew the Commission's attention to the fact that there had been insufficient time to fully discuss each of the questions or comments made to the proposers of the proposal or to the responses they received. The authors of the questions to the proposers, while appreciative of the effort made to answer their points, indicated that the replies received did not fully satisfy all their concerns even though considerable time was spent addressing some of the questions raised. The proposers indicated at the end of the discussion that they had tried to respond to the questions in detail and that they were willing to respond to further comments and questions after the Scientific Committee meeting. A short summary of the proposal, its objectives and its methodology is given below together with the comments and discussion of the Scientific Committee. In reviewing the JARPN II proposal, the Scientific Committee took account of the Commission's guidelines on reviewing scientific permits.

THE PROPOSAL

The overall goal of the research is to contribute to the conservation and sustainable use of marine living resources including whales in the western North Pacific, especially within Japan's EEZ. For the overall goal, it is important to gather the information on resources and to merge it as a whole ecosystem. In this research special attention will be paid to the ecosystem surrounding cetaceans, and the data and materials related to cetaceans, prey species and oceanographic conditions will be collected. The sub-projects are: feeding ecology (including prey consumption and preferences of cetaceans and ecosystem modelling); stock structure; environmental effects on cetaceans and the marine ecosystem.

Numbers of animals and their management stocks are specified in the proposal. A total of 100 minke whales (effectively 'O' Stock and putative 'W' Stock), 50 Bryde's whales (Western North Pacific Stock) and 10 sperm whales (Western Division) will be sampled in each year. Random sampling will be carried out and thus the sex and length of the catch cannot be specified.

Comments and discussion

Some questions were raised about the more detailed objectives of the sub-projects. In particular the proponents clarified that the overall hypothesis to be tested is:

> Top predators influence the dynamics of prey species which are the target of commercial fisheries and competition exists between top predators and fisheries.

However, they stressed that this is intended to be a feasibility study and that more detailed hypotheses corresponding to each component will be developed later. Some members thought that the proposal was too poorly developed and narrow to distinguish among the effects of such factors as fishing, predation and climate change such as the recent 'regime shift'. Others stressed that the main purpose of a feasibility study is to improve methodology, and that from such a perspective, the proposal is reasonably balanced between detailed hypotheses and established methodology on one side and more open ideas on the other.

OBJECTIVES

The proposal states that the primary objective of the programme is broader than the IWC's remit. It considered this to be a critically important research need. However it identifies some aspects of the programme that address research needs identified by the Committee, some of which are directly relevant to management. These include:

(1) elucidation of minke whale structure on whether the hypothesised 'W' stock exists, and mixing rates for 'J' and 'O' stocks;
(2) elucidation of the stock structure of Bryde's whales;
(both (1) and (2) are important in the development of *Implementation Simulation Trials* for those species)
(3) elucidation of the stock structure of sperm whales - this is relevant to the future Comprehensive Assessment of that species;

(4) information relevant to some aspects of the possible effects of environmental changes on whales (and their prey);
(5) studies on pollution;
(6) information relevant to the Committee's consideration of marine mammal - fishery interactions;
(7) elucidation of the role of cetaceans in the ecosystem. Section V of the proposal details the consideration of sample size.

Comments and discussion

There were some concerns expressed that the estimation of sample sizes was inadequate in certain cases, notably with respect to all aspects of the sperm whale component and aspects of the pollution and stock structure components. In response, the proposers stated that this was intended to be a feasibility study, particularly in the case of the sperm whale component. Sample sizes for some aspects of the programme would be modified in the light of the results obtained.

Some members expressed concern that most of the objectives of the programme did not address questions of high priority for the rational management of the stocks concerned and would not contribute significantly to research needs identified by the Committee - the Bryde's whale samples do not relate to *Implementation Simulation Trials*. They particularly doubted the value of the sperm whale component that they believed would not provide any useful results for any of the three sub-objectives. In response the proposers stated that for all three objectives the study could obtain useful information to formulate a full-scale study especially of feeding ecology as the sperm whale plays an important role in the ecosystem.

Some other members strongly believed that the proposal does not directly address any of the five guidelines above. They recognised that the primary objective of the proposal that pertained to top predators was scientific in nature, but believed that none of the objectives or sub-objectives were necessary for the management of any of the large whale species being killed.

Other members drew attention to the ambitious nature of the programme and drew parallels with the feeding ecology programme carried out by Norway, which also began with a feasibility study and has now made a valuable contribution towards multispecies modelling and management. They also noted the need to determine the impact of cetaceans on fish stocks as a matter of some urgency. Thus in addition to the information on North Pacific minke whale stock structure relevant to *Implementation Simulation Trials*, they believed that it represented an attempt to address a critically important research need.

METHODOLOGY

Random sampling is to be employed for stock structure. The feeding ecology project will follow the protocols established in the Norwegian research programme regarding number, weight and size of prey. There will be concurrent prey surveys conducted in the area using echo integrators, mid-water trawls, driftnets and jigs. Prey consumption will be measured indirectly (based on standard metabolism) and directly (temporal changes in stomach contents per day). Prey preference studies will mirror those used in the Norwegian surveys.

The stock structure sub-project will employ a number of genetic and non-genetic techniques (as did JARPN). Final choice of sampling area will depend on whether permission is obtained to enter the Russian EEZ. Pollutant studies will be carried out by examining samples from each whale caught, from stomach contents and trawls and from lower trophic levels, air and seawater. A variety of chemicals will be measured, largely organochlorines and heavy metals. The health condition of the animals will be examined by external and internal examination and chemical tests/measures of sex hormones, enzyme induction, immune system etc.

Oceanographic observations will be made using XCTD, CTD, EPCS and echo sounders. This and satellite information will be used in the feeding ecology and environmental studies.

The proposal also considers the question of the use of non-lethal methods. For the feeding ecology project, the existing commercial data are not appropriate because only some qualitative and rough quantitative records are available.

Comments and discussion

There was considerable discussion of methodological issues. These can be roughly grouped under two headings: (1) is the methodology described likely to meet the programme's objectives; and (2) can the research be carried out using non-lethal methods? After the initial presentation of the proposal, some concerns were expressed that insufficient methodological detail was given to allow proper evaluation of parts of the proposal. Further details were provided in some of the Annexes (see below).

Several members discussed the value of simultaneous prey sampling. As one example of the methodological problems, some members stressed that the methodology does not exist to sample quantitatively the range of cephalopod species consumed by sperm whales. Given this, they asserted that there was no scientific rationale for the inclusion of sperm whales in JARPN II. In response, the proposers noted that deep-sea squid may be caught using driftnets at night or mid-water trawls for quantitative analysis. There was no time for further discussion of this and no agreement was reached.

Some members commented that with the sample size and methods proposed, it was unlikely that several of the objectives of the programme would be met. In particular they believed that the sperm whale component would provide little information and that at least should be dropped from the proposal. Concern was also expressed that the ecosystem modelling approach was poorly developed. They also noted that the likely precision of any fisheries information (both past data and future) was poor and that this would be a key component of any modelling exercise. Given their concerns they believed that the research programme was premature and that it be reconsidered by Japan following the FAO and IWC workshops on related matters. Until that time at least, they believed that the study should not proceed.

The proposers stated that Japan was willing to review the results of the meetings of FAO and others and incorporate useful information into JARPN II in order to improve the programme. However, Japan could not agree with the view that these meetings are a prerequisite for initiating the research.

Other members stated that this was a feasibility study and that one of the aims was to investigate the methodology. They referred to the success of the earlier Norwegian programme. They felt that the sperm whale component was important in the context of trophic levels. Although there are not decades of abundance data for fish (the TAC management approach was only adopted in 1997) as is the case in Norway, there are substantial relative abundance data. Several Japanese Fisheries Agency research cruises would also be cooperating and providing abundance data for

several fish species. Model development is at an early stage, but they believed that the combination of ECOSIM and MULTSPEC had the potential to address fundamentally important questions and the approach would be developed on a step-by-step basis. All aspects of the programme would improve as data became available.

With respect to the use of non-lethal means, some members believed that insufficient use had been made of presently existing samples and data, noting, for example the suitability of frozen samples for genetic analysis. They also noted that techniques now existed to address many questions related to feeding, stock structure and pollution through biopsy samples and such techniques were rapidly evolving. Other members noted that detailed information on these items can not be obtained from biopsy samples. They also commented on the difficulties in obtaining biopsy samples and thus the need for lethal sampling. There was no time for further discussion of this item, and, as in previous discussions within the Committee on this, no consensus was reached.

EFFECT OF CATCHES ON THE STOCK

The effect of catches on the stock was assessed using the standard HITTER method and a variety of stock structure hypotheses based on the results of the JARPN surveys and assuming a catch of 100 minke whales. From the results of HITTER calculation, the proponents concluded that the effect on the minke whale stock is negligible.

The 50 Bryde's whales will be sampled from the western North Pacific Stock. It is unlikely that Bryde's whales from other stocks will be taken. Two stock scenarios were used: whole area and sub-area 1 according to the recent *Implementation Simulation Trials*. From the results of the HITTER calculation, the proponents concluded that effect on the Bryde's whale stock is negligible.

Sperm whales will be sampled from the Western Division. While no calculation was made for the sperm whales, the sample size is so small that the proponents believed it was clearly below the critical level to affect the stock.

Comment and discussion

Some members commented that the values chosen for the HITTER method for the minke whale case were insufficient to adequately address the effect of the catches on the stock. They also questioned the criterion used to define 'negligible.' Other members believed that the approach taken used the best data available and the conclusion was valid. The Committee noted that the calculations were based on the assumption that catches continue for only two years.

RESEARCH COOPERATION

The proposal stated that participation of foreign scientists, especially those from neighbouring countries, is welcome, insofar as their qualifications meet the requirements set by the Government of Japan. These requirements are the same as those for JARPN.

Comments and discussion

As it had for JARPN, the Committee agreed that this guideline had been met.

13.1.3 Commission discussions

In the Commission, discussions focused on the JARPN II proposal. Italy commented that JARPN II had no relationship to the IWC Pollution 2000+ that has been developed over a number of years, and noted that this remark was also made in the Scientific Committee. Italy further mentioned that three of its scientists (experts in pollution and biopsy work) had developed a working paper that was not discussed, but tabled alongside a response from the Government of Japan, and it questioned why non-lethal approaches were not properly discussed. The Commission has repeatedly advocated such approaches, and once again, Japan has refused to acknowledge their usefulness.

The Netherlands commented, as they had on previous occasions, that in its view, the granting of Special Permits for research involving the killing of cetaceans should be limited to exceptional circumstances where the research addresses critically important research needs for the management of whaling, and where alternative sources of data are not available and non-lethal research methods cannot be used. It regretted that in spite of various IWC Resolutions affirming that the current lethal research programmes of Japan do not address critically important research needs, Japan continues to grant permits under these programmes and to allow the meat and other products of the catch to be traded commercially. The Netherlands added that it is particularly concerned about the proposed extension of the North Pacific research programme by an annual catch of 50 Bryde's whales and 10 sperm whales. This would be the first time that these species were hunted since the moratorium took effect in 1986, and will be widely regarded by the outside world as a new threat to these depleted species. The Netherlands added that it also has misgivings about the scientific merits of the proposed JARPN II. Firstly it considers it highly unlikely that the objectives will be achieved with the programme size and methodology proposed – particularly for the Bryde's whale and sperm whale components. Secondly, The Netherlands considers that the pollution component will not allow adequate monitoring of pollution trends for temporal or spatial variation, and so will not contribute to the overall objective of ecosystem monitoring.

Monaco associated itself with Italy and with the Netherlands. In addition, Monaco, referring to papers tabled but not discussed by the Scientific Committee, commented that it has serious doubts about the internal procedures of the Committee as far as allowing flow of information during its meetings and asked its Chair to comment on the basis for the decisions she must have made.

The Chair responded that there was no censoring of papers, and certainly no censoring of discussions on the lethal *versus* the non-lethal issue, which has been discussed many times by the Committee.

New Zealand associated itself with the comments of Italy, the Netherlands and Monaco and remarked on the use by Japan of comments taken out of context to provide a misleading impression of the view of the Scientific Committee. In stressing its concerns about the JARPN II proposal, New Zealand focused on three aspects. Firstly, that the primary objective of JARPN II is more concerned with feeding ecology than with management issues of vital importance in the Comprehensive Assessment. Secondly, historical samples from previous commercial whaling operations are not being used in JARPN II allegedly because fresh samples are used (although historical frozen samples have been used successfully by a Swedish scientist). And thirdly, non-lethal sampling of Bryde's and minke whales may provide the best information on stock structure. New Zealand therefore strongly urged Japan to take account of all comments made by the Scientific Committee and the opposition expressed by Commissioners and the public

around the world, to reconsider the JARPN II proposal and to withdraw all elements of lethal research from the programme.

Norway recalled that similar comments had been made in 1988 when Norway presented similar plans for a feasibility study of the feeding ecology of minke whales in the Barents Sea and the North Atlantic, and then three years later submitted plans for a full-scale 3 year research programme. On both occasions Norway was criticised (the plans were immature, there was a lack of methodology, etc.), but 13 years later, the criticisms have been proved wrong. The research is not yet finished, but Norway reported that in collaboration with Iceland, valuable contributions are being made to multi-species modelling and management of fish stocks and marine mammals in the North Atlantic, and are of great interest to fishery scientists. Norway thought it important that another country with extensive research facilities such as Japan enter this important field, and it looked forward to close cooperation with Japan. It felt sure that Norway and Japan would supply the world with critically important research needs for the future management of marine living resources.

The People's Republic of China, speaking as a coastal country in the area of the North Pacific Ocean, referred again to its concern regarding competition between cetaceans and fisheries, and supported the Japanese proposal. St Lucia referred to the right under the Convention for Japan to perform this research, noted the concern of FAO regarding declining fish catches and St Lucia's concern with food security, and also supported Japan's proposals.

In response to the criticisms it received, Japan commented that it had provided information on why the use of non-lethal methods alone would not meet the programme's objectives, and referred to poor success rates for biopsy sampling of Bryde's whales in the North Pacific. Higher success rates would be expected with humpback whales since they tend to move more slowly. Referring to the analysis of historical samples, Japan noted that it had supplied Sweden with the samples, appreciated that it could be analysed, but added that in the new proposal, sampling would be done within the EEZ of Japan for which historical samples are not available. Regarding comments that responses to questions raised about the JARPN II proposal were inadequate and that insufficient time had been spent on the issue, Japan noted that the Scientific Committee had spent nine hours discussing the proposal. Finally, Japan as an archipelago island country, referred to its dependence on fish and cetaceans, its concerns for food security and that it wanted to be able to continue to benefit from the ocean.

13.1.4 Action arising

The Commission noted the report of the Scientific Committee.

RESOLUTION ON WHALING UNDER SPECIAL PERMIT IN THE NORTH PACIFIC OCEAN

The UK introduced a Resolution on behalf of the other co-sponsors (Australia, Austria, Brazil, Germany, Italy, Monaco, the Netherlands, New Zealand and the USA), strongly urging Japan to refrain from issuing Special Permits for whaling in the North Pacific Ocean under JARPN II. It associated itself with others who had expressed serious concerns about the proposal. It considered that the impact of whales on fisheries was negligible compared to the numerous human-induced problems including increased fishing effort and overfishing, improved technology, poor enforcement, pollution, global warming, etc. The UK had political as well as scientific concerns over the proposal, and with other countries had raised these with the Japanese government. It noted that most members of the IWC are opposed to whaling under Special Permit, and considered that only in exceptional circumstances can scientific research justify the killing of whales; studying cetacean-prey interactions is not such an exception. The UK believed that including Bryde's and sperm whales represented a major extension of pelagic factory ship whaling. It believed that if commercial factory ship whaling ever resumed, management would not be able to withstand commercial pressures to maintain returns on investment. The UK was concerned that the proposal represented not just a feasibility study for a research programme, but also a feasibility study for the resumption of full-scale pelagic whaling. It hoped these particular concerns were unfounded and that Japan would decide not to proceed with JARPN II.

The USA expressed its grave concerns about the JARPN II proposal and the future direction this implied. It took major exception to the proposed expansion of lethal scientific whaling to Bryde's and sperm whales, and continues to have serious concerns about the minke whale component that it believes is not providing useful information to the Scientific Committee. The USA noted that the distribution of whale products on the market in Japan maintains consumer demand.

Australia strongly endorsed the comments of the UK and USA and spoke about recent developments in international law that raise the possibility that Japan might not be acting within its legal rights when issuing scientific permits. These reservations are based on the proposition that the rights set out in Article VIII are not unfettered and that they are qualified by the well-recognised international legal doctrine known as abusive rights. Australia reported that this doctrine has been adopted by the 1982 Convention on Law of the Sea, quoted a number of cases where it had been referred to by international courts and mentioned a recent decision (involving this concept) by WTO's appellate body on the shrimp-turtle case. Monaco and Sweden also expressed concern about the Japanese proposal and expansion to other species.

Norway did not support the Resolution and considered it inappropriate under the Convention.

Japan considered that countries against the proposal may not understand it sufficiently to refute its scientific premise; it believed that this type of research is needed to manage stocks sustainably. It also recalled that Article VIII states that whales taken under special permits shall be processed. It noted that many countries were promoting non-lethal research and invited them to develop and implement such programmes themselves. It further believed that the moratorium and the Southern Ocean Sanctuary were without scientific basis and thus are in contravention of the Convention and that the targets of any criticism should be those countries that are putting such proposals in place. If any countries wanted to take up matters legally, then they should do so. Japan has considerable experience in dealing with legal issues.

Antigua and Barbuda congratulated Japan on its detailed explanation of its research plans. As a coastal state, Antigua and Barbuda considered itself a vanguard with regard to the Law of the Sea Convention, and that it is committed to upholding the provisions of that Convention in which the undertaking of marine research is one of the most important pillars. Antigua and Barbuda spoke about the way in which it believes the Scientific Committee to be restricted (e.g. in

the type of discussions it can have, in the type of judgements it can make), and that it is time for it to be allowed to inform the Commission properly about the use and value of scientific research proposals. It urged members not to take its grievances outside the organisation but rather to solve the problems internally through collaboration and in the spirit of compromise.

On proceeding to a vote, there were 19 votes in favour of the Resolution, 12 against, with two abstentions. The Resolution was therefore adopted (Resolution 2000-5, Appendix 1). South Africa noted that it prefers to be guided by the Scientific Committee and sincerely regretted that on this occasion, the Scientific Committee had not provided clear guidance. Oman was of the same opinion.

The Chair of the Scientific Committee indicated that she was disturbed by the way the Scientific Committee's deliberations were misrepresented in the discussions on JARPN II by some delegations. The Scientific Committee neither endorsed nor rejected Japan's research proposal. Its role is to provide constructive criticism and report all views to the Commission.

13.2 Southern Hemisphere minke whales

13.2.1 Report of the Scientific Committee

The Scientific Committee has, for some years, had a general problem with giving quantitative advice on the effect on stocks of scientific permit catches. Discussion this year had focused on two approaches, one based on RMP-like simulations, the other on simulations using the HITTER-FITTER or BALEEN II program. When considering the effect of scientific permit catches on stocks, the Committee agreed that as a general principle it would examine the effects of proposed catches assuming they were ongoing, as well as for a shorter period, even if the proposal was initially presented as a feasibility study.

The Scientific Committee had reviewed results from the JARPA research programme. The programme is ongoing, and in addition to information obtained from catches, sightings data, biopsy data from humpback, blue and right whales and photo-identification data are collected. The Committee also reviewed the JARPA survey plan for the 2000/2001 season and noted that the objectives, survey items and methods are the same as for previous years. The survey will focus on the issue of stock distribution in Area V and the western half of Area VI. Progress on JARPA tasks and other studies using JARPA samples were presented in a number of papers. The sample size is 300 animals in Area V and 100 animals in Area VI.

This is an ongoing research permit and a major review was carried out in 1997. The Scientific Committee drew attention to its previous considerations. There was some discussion this year over the suitability of the sample size including the effect of multi-year sampling and the need to sample outside the original Areas proposed. The Committee reached no consensus on whether the information could be obtained by non-lethal means.

The Committee agreed to carry out some simple intersessional work to begin to address quantitatively the effect of the permit catches on the stock. The Chair emphasised that this would be a small study, but that it may provide more quantitative advice for the Commission. She added that it was thought important to do this work in view of concern about possible declines suggested by the third circumpolar survey.

13.2.2 Commission discussions and action arising

The Commission noted the report of the Scientific Committee.

Japan expressed appreciation to the Scientific Committee for its hard work. Japan reported that despite a fire on board one of the vessels during the last survey, new information had still been obtained. It had submitted numerous papers to the Scientific Committee regarding minke whale stock structure (one of the main objectives of the work). It had also provided information on an increasing trend in humpback whales and of the possible relationship between whale and krill distribution. Japan sought support for the implementation of its research.

RESOLUTION ON WHALING UNDER SPECIAL PERMIT IN THE SOUTHERN OCEAN SANCTUARY

New Zealand introduced a Resolution on behalf of 12 other co-sponsors that requested the Government of Japan to refrain from issuing any Special Permits for the 2000/2001season for the take of minke whales in the Southern Ocean Sanctuary. It referred to IWC discussions in 1964, when the Infractions Sub-Committee as well as the Scientific Committee directed attention towards Article VIII of the Convention. Returning to the situation today, New Zealand recalled that each year, by a substantial majority, the Commission calls for an end to Japan's continued whaling under Special Permit in the JARPA programme. It noted that some of this whaling takes place in Antarctic areas claimed by New Zealand and Australia, a fact that both countries condemn, but above all that the whaling occurs in the Southern Ocean Sanctuary, in which 440 minke whales are killed each year – a total of 5,000 animals being taken for research that the Scientific Committee has found not required for management purposes. New Zealand stressed its view that there are adequate non-lethal techniques that could be used and referred to strong ethical research codes in both New Zealand and Japan that would have problems with such a programme of research. Finally, New Zealand reminded the meeting that there is now no accepted abundance estimate for Southern Hemisphere minke whales and that it is thus not possible to estimate the impact of the removals from this stock

Australia fully endorsed New Zealand's remarks. It stressed that legal issues it raised under the JARPN II discussions are pertinent also to this discussion (see Section 13.1.4). Australia referred to claims by some IWC members that at the recent CITES Conference of Parties, world opinion was supportive of a resumption of commercial whaling. For the record, Australia noted that at the CITES meeting, five votes were taken on proposals to reduce the level of protection for whale species. Two received more than 50 votes, with one of them achieving a majority (53 in favour, 52 against), but a lower majority than an equivalent proposal had achieved at the previous Conference of Parties – hardly convincing evidence that world opinion was in favour of a resumption in whaling. Australia added that none of Japan's proposals obtained 50 votes or a majority, and that in relation to the Southern Hemisphere minke whale proposal, the vote was 46 in favour and 61 opposing, clearly indicating that world opinion does not support whaling in the Southern Ocean Sanctuary.

Sweden, the Netherlands, the USA, France and the UK associated themselves with the views expressed by New Zealand and Australia. Sweden, France and Germany wished to co-sponsor the proposal. Brazil considered that Japan's scientific permit whaling weakens further the

possibility for dialogue within the Commission and damages the credibility of the IWC. South Africa stated that it firmly believes in the integrity of the Southern Ocean Sanctuary.

St Vincent and The Grenadines did not support the proposed Resolution and commented on two factual errors. Firstly, regarding Southern Hemisphere minke whale abundance estimates, it recalled that the Scientific Committee had concluded on this issue, i.e. that 'without calculation of confidence limits for the crude point estimate, it was not possible to conclude whether the appreciable difference noted was statistically significant'. Secondly, it noted that there is only one species of minke whale of importance to the JARPA programme, and therefore the third paragraph of the Resolution noting that two species should be listed in the Schedule is irrelevant. Norway also opposed the Resolution.

In response to a number of comments, Japan indicated that it does not accept New Zealand's claim for territorial waters within the Antarctic and that a take of 440 minke whales is negligible.

On being put to a vote, there were 20 votes in favour of the Resolution, 10 against and three abstentions. The Resolution was therefore adopted and is given as Resolution 2000-4 in Appendix 1.

14. ENVIRONMENTAL CONCERNS

14.1 POLLUTION 2000+ and SOWER 2000 Programmes

14.1.1 Report of the Scientific Committee

POLLUTION 2000+

The POLLUTION 2000+ programme had been strongly endorsed by the Committee, the Commission, ASCOBANS and the ICES Working Group on Marine Mammal Habitats. The programme had been further refined since last year to include matters relating to the practical implementation of the project, i.e.: establishing detailed sampling protocols, quality assurance and quality control standards; choice of sampling areas and laboratories; refining the variables to be measured; and organisational matters such as determination of Steering Group members, tasks and fund raising. However, progress had been hampered because of funding difficulties. Of the £350,000 required to fund the programme, only £65,000 had been allocated from IWC and despite contributions from the Netherlands (who funded the salary of the project co-ordinator) and the USA (who contributed to field work for the bottlenose dolphin project) there was still a shortfall. Other funding sources were explored but none was forthcoming. The Netherlands stated that it will continue to fund the project co-ordinator for next year and this major contribution is greatly appreciated. The Chair reported that the Scientific Committee strongly endorsed continuation of Phase 1 of the programme, and encouraged other IWC member nations to contribute. Funding requirements were dealt with under Agenda Item 19.

SOWER 2000

The Chair of the Scientific Committee reported on the successful outcome of the first collaborative work with CCAMLR between December 1999 and February 2000 in the Antarctic Peninsular region using three national vessels provided by the USA, the UK and Japan. Overall cruise methodology was primarily directed at obtaining estimates of krill biomass but oceanographic sampling was also included. A total of 883 cetacean sightings was recorded including humpback (193 sightings), minke (111), fin (61) and southern bottlenose whales (53); hourglass dolphins were the most frequently sighted small cetaceans (29 sightings). A passive acoustic component was also implemented. Satellite and CTD data revealed frontal zones near the South Shetland Islands and in the region of 57-58°S, with cold water representing the Antarctic Circumpolar Current most apparent west of the Antarctic Peninsula and South Shetland Islands at a depth of 200m.

These data have great potential. Initial analyses will include comparisons of krill and whale biomass, and the role of the Antarctic Circumpolar Current in determining the distribution and abundance of whales and their prey. Full analysis will require IWC collaboration at CCAMLR workshops - the first such workshops will probably not occur before August 2001. The integration of data from multidisciplinary programmes is a time consuming and complex undertaking, and the Committee stressed that it will only succeed if close cooperation and participation between appropriate scientists from both organisations can continue through to the final analysis and write-up stages.

The Scientific Committee had agreed that the collaborative work had been extremely successful and had congratulated those involved. The combination of cetacean, krill and oceanographic and other research will contribute directly to the objectives of the IWC and CCAMLR. In such a collaborative process, the IWC will gain significant information at relatively little cost. The Committee strongly endorsed continuing collaboration on future CCAMLR projects.

With respect to future work, studies are planned with Southern Ocean GLOBEC. It will be not be possible to include the planned fine-scale cetacean work since the two Japanese sighting vessels are no longer available. However, there remains the opportunity for a year-round oceanographic and krill sampling survey from which cetacean sighting and feeding ecology work can be conducted to provide temporal and spatial information on baleen whales at the meso-scale – which is also of importance. The Scientific Committee agreed that it would be valuable to obtain cetacean observer berths on sections (October to February) of the year-round study in the 2001/2 season and for the German GLOBEC survey in March-May 2001.

The Scientific Committee Chair noted that the budget request for the work described is discussed under Item 19. She stressed that for the programme to succeed, contributions are needed from other IWC member countries to fund, for example, teams of cetacean observers.

14.1.2 Commission discussions

The Commission endorsed the Scientific Committee's recommendations regarding the POLLUTION 2000+ and SOWER 2000 programmes.

The Netherlands and the USA congratulated the Scientific Committee for its work on POLLUTION 2000+ and SOWER 2000, and believed these programmes to be very successful. The Netherlands considered that one example of progress is the publication of the first Special Issue of the *Journal of Cetacean Research and Management* on Chemical Pollutants and Cetaceans. The USA noted in particular the collaboration with CCAMLR and considers this to contribute significantly to research in the Southern Ocean Sanctuary.

Japan expressed some worries over both programmes. It was concerned that large cetaceans – the focus of the Convention - are not directly included in the POLLUTION 2000+ programme. It also believed that the SOWER 2000

programme, which grew out of the IDCR (International Decade for Cetacean Research), had deviated from its original primary purpose (i.e. stock assessment), and that the environmental element has expanded to too large a scale. For this reason Japan could not make its vessels available for the Southern Ocean GLOBEC cruise.

14.2 Arctic matters

14.2.1 Report of the Scientific Committee

The interest of the Scientific Committee and the Commission in large scale research programmes in the Arctic, reflects:

(1) that the predicted impacts of global climate change are greater in the Arctic (and Antarctic) relative to lower latitudes;
(2) that most aboriginal subsistence harvesting of whales takes place in the Arctic, where access to cetaceans is critical to the subsistence lifestyle of subsistence hunters; and
(3) the migratory behaviour of large whales in the Arctic means that international cooperation is essential to carrying out successful research and management programmes on Arctic whales.

There is considerable potential for the IWC to conduct or be involved in synergistic research with existing national and International Arctic research programmes (e.g. US NSF/SBI and SEARCH programmes, AMAP of the Arctic Council). Some cetacean species have already been highlighted as target species for trophic interaction studies (e.g. bowhead, minke, white and gray whales) in these programmes. A number of IWC member nations are already involved in many existing Arctic research programmes that are not focused on whale research.

Given the limits of funding by the IWC, the Chair reported that the Scientific Committee had agreed not to proceed with the full development of a new Arctic initiative as recommended last year. Instead, the Committee strongly encouraged the expansion of existing national and international collaborative research programmes and the provision of advice to the Committee of opportunities to participate.

14.2.2 Commission discussions

The Commission noted the report of the Scientific Committee.

14.3 Habitat related issues

14.3.1 Report of the Scientific Committee

Four issues were addressed by the Scientific Committee: (1) the State of the Cetacean Environment Report; (2) habitat degradation; (3) competition between cetaceans and fisheries; and (4) linking environmental measures and cetacean demographics.

Following intersessional work, a working group had compiled the first annual State of the Cetacean Environment Report (SOCER). The purpose of the SOCER is to provide the Commission with a 'user-friendly' update on regional concerns regarding the status of habitats critical to cetacean life history (e.g. breeding and calving, migratory, and feeding habitats). This will now be compiled annually.

The Chair reported that the Committee had endorsed proposals for a scoping meeting to develop terms of reference and background material for a Workshop on Habitat Degradation. It had not included this as a priority item in its budget, but agreed that it should take place if funding became available.

The Scientific Committee also recommended that a Conference on Competition between Cetaceans and Fisheries take place. This will need considerable preparation and will not be able to take place before March 2002 at the earliest. This timing will allow the participation in an FAO Conference on Fisheries in the Ecosystem scheduled for September 2001. The Committee agreed that evaluation of the relationships between fisheries and marine mammal populations should be based on quantitative models. The primary question to be addressed is: 'How are changes in abundance of cetaceans likely to be linked (in the short term and the long term) to changes in fishery catches?'. An intersessional working group has been established to: (1) identify suitable marine regions where modelling efforts would be focused; (2) evaluate the extent to which the necessary data are available for modelling; (3) identify, and as possible, contract interested parties to undertake analyses related to the terms of reference; and (4) initiate logistical arrangements.

The Scientific Committee also considered a number of papers addressing the links between environmental measures and cetacean demographics. One proposed the use of population models to fit specific population data to obtain estimates of recruitment and then correlate the residuals from such an analysis with environmental covariates. There was a suggestion that photo-identification studies could also be used to address the issue, and it was agreed that this topic should be addressed at next year's meeting. The Scientific Committee received the report of an environmental impact assessment for the San Ignacio Salt Works in Mexico, thanked the Mexican delegates for ensuring that the report was submitted and agreed that it met the intent of the Commission's early request for information on this matter.

14.3.2 Commission discussions

The Netherlands considered the work on SOCER to be of high importance and would continue to support it. Italy hoped to host the scoping meeting for the habitat degradation workshop. Mexico thanked IWC for the important role it had played in recommending experts to review the environmental impact assessment of the San Ignacio Salt Works.

14.4 Health effects

14.4.1 Report of the Scientific Committee

Resolution 1999-4 passed at last year's meeting requested the Scientific Committee to receive, review and collate data on contaminant burdens in cetaceans and forward these as appropriate to WHO and competent authorities and to report on this matter to the Commission. The Resolution also encouraged Contracting Governments, other countries and relevant organisations to continue to forward relevant data concerning contaminants in cetaceans to the Scientific Committee.

A number of papers were submitted to the Scientific Committee, all of which dealt with potential or negative health effects from consuming cetaceans. The Committee indicated that papers on positive health effects of cetacean products were also welcome. Late in the meeting, a letter was received from the Food Safety Programme of WHO identifying a new manual that provides information on presentation of data to be submitted to WHO. It was agreed to establish an intersessional working group to review information contained in the report and to report back to the Committee.

14.4.2 Commission discussions

Monaco welcomed the interest of the IWC in health effects and noted that PCBs, dioxins, mercury and cadmium accumulate in cetaceans in greater concentrations than in fish. It referred to recent toxicological studies that have revealed unacceptable dioxin and mercury levels in many cetacean products found on the market and thus that consuming whale products may be dangerous to human health. It welcomed the response from WHO and encouraged the free-flow of information between WHO, IWC and national agencies and consumer groups on this sensitive issue. It looked forward to getting reassurance at next year's meeting that whale meat consumers are being properly informed about what they are buying and the potential risks involved.

The USA were also pleased with the exchange of correspondence between IWC and WHO and hoped that it would continue. It was interested in both the possible impact of contaminants on human health via consumption of whale products and the possible impact of contaminants on whales.

Norway stressed that the levels of contaminants of both organochlorines and heavy metals in whale products vary greatly among species, within species between geographical areas and among the different tissues in an individual whale. From research currently being conducted on contaminant concentrations in marine mammals and fish, Norway informed the meeting that levels found so far in the Norwegian minke whale hunt are very low. Norway will continue to monitor contaminant levels and report them to the Scientific Committee.

Japan did not consider this topic to be a priority matter for the Scientific Committee. It believed that such work should be entrusted to organisations like WHO that have the appropriate expertise. Japan spoke about the large amount of information it has collected on contaminants through its research activities such as JARPA and JARPN, which have shown very low levels of contamination and hardly any in minke whales. Japan also noted the benefits gained among people eating whale products, such as the lower incidence of heart or cardiovascular disease and asthma, and longevity.

Denmark again referred to the document titled 'Traditional Food – Environment and Health Concerns' that had been introduced during discussions on aboriginal subsistence whaling (see Item 10). A representative of the Greenland Home Rule Government stressed the importance of marine mammals as a food resource and stated that Greenland's traditional food could not be replaced by imported and westernised food. Greenland recognised the need to monitor contaminants in Arctic wildlife but stressed that potential risks from contaminants should be weighed against the known benefits of its traditional food. As users of marine mammals over the past four thousand years, Greenland would not tolerate or accept further pollution of the marine environment. The Greenland Home Rule Government did not consider IWC the appropriate body to be deal with this issue and hoped that IWC would seek advice not only from WHO but also from the Arctic Monitoring Assessment Programme (AMAP).

Professor Hansen, University of Aarhus, who had prepared the document for the Greenland Home Rule Government, summarised the paper's findings which included information on: (1) effects of contaminants in whales and humans; (2) guidelines on acceptable exposure limits from a public health view point; (3) contaminant levels in whales; (4) temporal trends; and (5) the Arctic dilemma (i.e. the nutrition of the diet *versus* contaminant levels).

The USA, UK and Japan thanked Denmark for the informative paper. Recalling last year's Resolution 1999-4, the USA encouraged Commission members to submit this type of information for discussion

14.5 Reports from Contracting Governments

The USA tabled a document titled 'The facts about whales and fish stocks', that had been compiled by scientists from the National Oceanographic and Atmospheric Administration (NOAA). Norway considered that the document contained misleading statements and asked if the USA endorsed the paper. The USA confirmed that it did endorse the paper. France thanked the USA for the document, which it considered important, particularly as it was also translated into French.

The UK stressed the importance of studying the effects of environmental threats on cetaceans. The UK mentioned that it had demonstrated its commitment to the SOWER 2000 programme through a contribution of £20,000 and urged other states to contribute also. It highlighted the value of the Southern Ocean Whale Sanctuary in providing a relatively undisturbed area in which to carry out studies of this kind, adding that the UK would continue to support the creation of further sanctuaries to facilitate further non-lethal research. The UK listed a number of activities in which it is engaged, including support to the Scientific Committee on habitat degradation issues, investigations on possible effects of contaminants on cetacean health through research on stranded animals, and involvement with ASCOBANS. It believed that IWC had a vital coordinating role to play in the environmental work and strongly urged the Chairman, the IWC and member states to ensure that this issue remains a central issue and that core funding is made available to support it.

14.6 Action arising

The Commission endorsed the Scientific Committee's work plan.

RESOLUTION ON POPS AND HEAVY METALS

This Resolution was introduced by Denmark on behalf of the other co-sponsors Finland and Sweden. The Resolution recalled two protocols – one on POPs (persistent organic pollutants), the other on heavy metals – signed under the Convention on Long Range Transboundary Air Pollution, in Denmark in June 1998 by the European Union and 35 countries. The resolution encouraged Contracting Governments who have not yet either signed or ratified the protocols to consider doing so in the near future.

Japan commented that it would not take part in the decision-making on the Resolution since it was not one of the 35 countries involved in the protocols. Norway appreciated the concern shown by the Resolution sponsors on the need for international action on POPs, but was not convinced that IWC was the right forum for handling this issue. As there was no opposition, the Resolution (2000-6, Appendix 1) was adopted by consensus but the comments of Japan and Norway were noted.

RESOLUTION ON ENVIRONMENTAL CHANGE AND CETACEANS

This resolution was introduced by Italy on behalf of the other co-sponsors (Australia, Austria, Brazil, Monaco, the Netherlands, New Zealand, the UK and the USA). Its main aim was to urgently request Contracting Governments and other interested parties to continue financial and other support for research activities investigating the effects of environmental change on cetaceans. Switzerland and Oman

indicated that they wished to co-sponsor the Resolution. Norway, although interested in the contents of the Resolution, considered that the research should take place outside IWC. It believed that the wording of the Resolution was too binding on financial support, but indicated that it could be part of a consensus but would not vote on it. Japan associated itself with Norway. The Resolution (2000-7, Appendix 1) was adopted by consensus, noting the comments of Norway and Japan.

15. SCIENTIFIC RESEARCH

The Chair of the Scientific Committee reported that there was nothing to present under this item. She noted that results from research activities had been reported under other items and the Budgetary Sub-Committee had dealt with the financial implications of the future work proposed.

16. COOPERATION WITH OTHER ORGANISATIONS

The Scientific Committee and the Commission received the reports of Observers to the meetings of other Inter-Governmental Organisations, namely CITES, ASCOBANS, CCAMLR, FAO, SO-GLOBEC, ICES, IATTC, NAMMCO and a report on the activities of PICES. The Commission noted the Scientific Committee's comments.

16.1 CITES

In the Commission, Japan reported that at the 11th Conference of the Parties to CITES, it and Norway had proposed the downlisting of minke whales in the Antarctic, North Atlantic and North Pacific, and gray whales in the eastern North Pacific, to Appendix II from Appendix I (the latter prohibits commercial utilisation). It noted that more countries supported these proposals than are members of IWC. It added that the Chairman of the IWC, Michael Canny, had stated at the meeting that the IWC is close to completion of the RMS, and Japan believed it important that the Commission makes real progress on this issue in the two year grace period before the next CITES meeting in 2002, or it will lose its credibility.

Brazil thought that the synergy between the two organisations maintained the competence of the IWC for the conservation of whales and any attempt to reopen trade would be premature and detrimental to this relationship.

Norway agreed with Japan and contrary to Brazil thought the synergy was negative, since in its opinion CITES hides behind the IWC on the question of downlisting.

New Zealand rejected any claim that it is the anti-whaling countries that are delaying the completion of the RMS.

16.2 CMS

Last year the Commission received a suggestion from the Secretary of the Convention on Migratory Species (CMS) that there should be a more formal association between the two organisations through their secretariats via Memorandum of Understanding (MoU). The Commission requested the Advisory Committee to investigate this intersessionally. In November 1999, the Advisory Committee reviewed and proposed a number of amendments to the original text that were accepted by CMS. The Commission was now being asked for a decision on formal adoption of the Memorandum of Understanding.

The Memorandum was duly adopted (see Appendix 2), with the reservations of three countries being noted. Japan thought it inappropriate to cooperate with CMS because some Agreements concluded under CMS, such as ASCOBANS and the forthcoming ACCOBAMS, only protect small cetaceans and thus deny the use of cetaceans as resources, which contradicts the position of the ICRW. Japan further cautioned the Commission from diverting resources to activities of these organisations through the POLLUTION 2000+ programme. Norway, whose researchers have good cooperation with ASCOBANS, commented that they are not members of ASCOBANS since it is primarily an organisation focusing on protection rather than management. They therefore associated themselves with the comments of Japan, as did the People's Republic of China.

17. ADOPTION OF REPORT OF THE SCIENTIFIC COMMITTEE

The Commission considered reports from the Scientific Committee that had not been addressed under other agenda items (i.e. on small cetaceans, nomenclature, stock definition, and communication and publications) and the Committee's proposed future work programme.

17.1 Report from the Scientific Committee on Small Cetaceans

17.1.1 Review of the status of freshwater cetaceans

The Chair of the Scientific Committee reported that this year, the Committee had considered in detail the status of freshwater dolphins and porpoises (the boto, the Indus susu and the Ganges susu) and marine populations of the tucuxi, Irawaddy dolphin and finless porpoise. Freshwater cetaceans are among the world's most threatened mammal species.

BOTO

Classified as 'vulnerable' by IUCN the boto occurs throughout much of the Amazon and Orinoco watersheds and in the Beni river system in Bolivia. Reliable information on population trends is lacking, although overall, population densities appear to be relatively high throughout much of its range. The Committee recommended that research should be directed towards detecting trends in abundance or any diminution of range, and identifying causes of any declines. It also recommended that information should be collected to allow evaluation of the relative levels of mortality, both indirect and direct, associated with different fishing methods.

INDUS SUSU

Classified as 'endangered' by IUCN the Indus susu is endemic to the Indus river drainage system. Hunting is now banned, but poaching still occurs. The greatest threat to its survival is the continuing human-related decline in water supply. This species has a low absolute abundance and a reduced and geographically fragmented range. The Committee commended the Sindh Wildlife Department for their initiative to return Indus dolphins to the Indus River from irrigation canals and recommended that future operations be conducted with development and application of a protocol that has been reviewed by specialists with prior experience with the capture and safe release of cetaceans. The Committee also recommended that research be conducted to elucidate the possible effects of barrages and canal gates on dolphin movements, paying particular attention to the design of these structures.

GANGES SUSU

Classified as 'endangered' by IUCN the Ganges susu occurs throughout most of the Ganges and many of its tributaries. Deliberate killing of this species is believed to have declined in most areas, but it still occurs and entanglement in fishing gear is a problem. The population is reduced compared to historic levels, but is still large enough to be viable long term if adequate conservation measures are taken soon. The Committee recommended: (1) that the distribution, abundance and population discreteness of Ganges susus be assessed in areas where adequate surveys have not been conducted hitherto; and (2) that an evaluation of population discreteness be conducted of Ganges susus among river systems.

TUCUXI

There are many unresolved aspects of the taxonomy of the tucuxi. Both marine and freshwater forms occur, and there is evidence that there may be two species. The tucuxi is widespread throughout much of Brazil, extending upstream into Peru, Ecuador, Colombia and parts of the Orinoco in Venezula. There are no estimates of abundance for any population, although the species appears to be relatively abundant throughout its range. The species is classified as 'data deficient' by IUCN. Little information exists regarding the marine form of this species and in many areas, such as the Orinoco, it is not clear which form exists. The Committee recommended that research be directed towards detecting trends in abundance and that information be collected to allow evaluation of the relative levels of incidental mortality of the tucuxi associated with different fishing methods.

IRRAWADDY DOLPHIN

This species occurs in the tropical and subtropical Indo-Pacific, from the Bay of Bengal to northeastern Australia. It is a coastal species, but also occurs in several major river systems of southeast Asia. No statistically rigorous abundance estimates are available and information on relative abundance is restricted to small geographical areas. Live captures have occurred recently in the Mahakam River and coastal regions of Indo-Malaysia for the oceanarium trade. There have been reports of direct killing in these areas. Entanglement in fishing gear has been reported and fishing with explosives may adversely affect this species in some areas. Its status is largely unknown and it is classified as 'data deficient' by IUCN. Densities appear to be low in most areas and several populations are believed to be seriously depleted and threatened with extirpation, particularly in freshwater areas of their distribution. The Committee recommended that further investigations be carried out to better elucidate stock structure over the geographical range of the species and to examine potential differences between freshwater and marine habitats. Given the paucity of data on distribution and abundance, the Committee also recommended that comprehensive surveys be conducted to assess the abundance and distribution of Irrawaddy dolphins.

FINLESS PORPOISE

This is a tropical to warm-temperate species, occurring mostly in nearshore and riverine waters. Its range extends from the Persian Gulf around the rim of the Indian Ocean to the eastern islands of the Indo-Malay archipelago and central Japan. There are a number of local populations in Japan and an isolated freshwater population occurs in the Yangtze river. The Committee agreed that a taxonomic re-examination of the genus is needed. Estimates of abundance have been made only for specific areas in China and Japan. No large-scale hunts of this species have been recorded. A few tens of finless porpoises have been live-captured for public display and research in Japan, China and Thailand, although such takes do not occur currently in Japan. The species is available in local markets in Korea – probably from bycatch in coastal Korean waters. Incidental mortality is likely to be substantial throughout the species' range. In Japan, porpoises are taken incidentally in various fisheries, but the reported takes are low. The finless porpoise is listed as 'data deficient' by IUCN, although the Yangtze river population is classified as 'Endangered'. The species as a whole is in no immediate danger of extinction, but several populations (possibly representing separate taxa) are apparently declining. The Committee recommended that: (1) the magnitude and effects of such bycatches be investigated as a matter of priority; and (2) that further research be conducted to determine the causes of the population decline of this species in the Inland Sea of Japan.

BAIJI

The baiji was of most concern to the Scientific Committee. It is restricted to the Yangtze river mainstem from Yichang to the river mouth, a distance of some 1600km. Baiji were once common down to the river mouth, but are now rare below Nanjing. The remaining baiji are found in the middle reaches. No precise estimates of current or past abundance are available. The population size was estimated to be 300 in 1986, less than 200 in 1990 and currently probably less than 100. Only 13 animals were seen in a survey of the entire range in November 1997 and even fewer in 1998 and 1999, although these surveys were less comprehensive. The 'best guess' of the current population size is a few tens of animals. No directed takes have been recorded in recent years but other human activities account for the deaths of more than 95% of all collected specimens. Entanglement in fishing gear (especially the rolling hook fishery) is responsible for a substantial number of deaths. The Yangtze river runs through one of the densest areas of human occupation in the World and the river is used intensively for transport, as a food resource and as a waste dump.

The baiji is classified as 'critically endangered' by IUCN and is the most endangered of all cetacean species. Rapid and widespread development has degraded the Yangtze environment to such an extent that local scientists have judged that the river can no longer sustain the species. Since 1993, the primary strategy for preventing extinction of the baiji has been to capture and translocate as many dolphins as possible into the Shi Shou Baiji Semi-natural Reserve, with the intention of establishing a self-contained breeding population. This *ex-situ* approach was taken in light of the rapid decline in abundance of the species and deterioration of the Yangtze environment. The Committee was unable to reach consensus on whether or not to recommend the continuation of efforts to live-capture and place baiji in a semi-natural reserve. To date, only one baiji has been relocated to the reserve; in 1995, the emaciated carcass of this specimen was found entangled in a net used to separate the reserve from the main river. Based on this fact and other information submitted to the Committee, it was agreed that a suitable semi-natural habitat is not available at present. Recognising that domestic authorisation for continued baiji captures is likely, the Committee recommended a number of requirements that should be met prior to any further removals of baiji from the wild.

Given the critically endangered status of the baiji, the Committee requested the Secretary of the IWC to ask the

Government of China to report progress on the conservation of this species to the Scientific Committee on an annual basis.

SCIENTIFIC COMMITTEE RECOMMENDATIONS

The Committee made a number of general recommendations on freshwater cetaceans.

(1) That the impacts of water development schemes on freshwater cetaceans be investigated thoroughly, and that future plans for any water development projects and water usage in the range of these species take into account their habitat requirements and the demographic implications of population fragmentation.
(2) That any future protected areas or time/area fishery restrictions intended to conserve freshwater cetacean populations be of appropriate size and location, that potential threats be eliminated or greatly reduced in such areas and that such measures are enforced adequately.
(3) That the relative magnitude of threats from increasing fishing effort and bycatch be assessed and that, where necessary, appropriate mitigation measures be developed.
(4) That the effects of environmental contaminants, such as mercury, pesticides, antifoulants and oil, be evaluated, particularly on species that inhabit highly polluted areas.
(5) That scientists with appropriate theoretical and/or analytical skills should be directly involved in river cetacean studies so that surveys result in statistically robust estimates or indices of abundance.

17.1.2 Bycatch mitigation measures

The Chair of the Scientific Committee reported that a workshop to consider mitigation measures other than those involving active acoustic approaches was held immediately before the Scientific Committee meeting. Relatively little material was available for review, particularly in comparison to the large amount of research that has been conducted on acoustic alarms.

SPATIAL AND TEMPORAL RESTRICTIONS

The Committee reviewed examples of spatial and temporal restrictions on fishing effort designed to reduce the bycatch of dolphins and porpoises, i.e. closed or protected areas. Flexibility must be incorporated into the determination of boundaries of protected areas so that they can be adjusted if it transpires that an adequate part of the range of the species in question is not covered and/or to take into account interannual variation in distribution. The utility of time/area restrictions as a strategy for bycatch mitigation depends on the behaviour and distribution of the species of concern. Closures may be effective if instituted in times and areas where the bycatch rates of small cetaceans are predictably high. The effectiveness of any closure scheme will also depend on the spatial and temporal relationships between fish catch rate and the bycatch rate of cetaceans. In the case of Banks Peninsula, New Zealand, it was possible to maintain a viable fishery by relocating fishing effort outside the boundaries of the Sanctuary. In contrast, in New England it has been necessary to allow fishing (with pingers) in areas of seasonally high porpoise density to maintain the economic viability of the fishery.

MODIFICATIONS OF FISHING GEAR AND PRACTICES

The Committee agreed that it was desirable to pursue acoustically reflective gillnet material as a potential practical, long-term alternative to pingers and time-area restrictions, but stressed that: (1) the acoustic reflectivity of the new material should be evaluated in relation to the acoustic abilities and behaviour of the cetacean species of concern; and (2) that these experiments should take into account previous, and largely negative, experiences in modifying the acoustic properties of gillnet material in attempts to reduce bycatches of Dall's porpoises. Experiences from the USA in modifying fishing gear and practices to reduce the bycatch of harbour porpoises were also reviewed. This analysis used Generalised Additive Models to explore relationships between bycatch in a given haul and various features of that haul (net characteristics and fishing practices). There were correlations between bycatch rate and gear modifications, such as tie downs, mesh size, twine size and float line material. On the basis of results so far, mesh size and twine size appear to show the most promise in this regard.

ALTERNATIVE FISHING GEAR

The Committee recognised that alternative fishing gear may also have undesirable effects, such as entanglement of large whales and seals. It recommended further development of alternative gear and that any new fishing methods should be tested for other ecological effects before they are implemented on a commercial basis.

ACOUSTIC ALARMS, OR PINGERS

An evaluation of the effectiveness of acoustic alarms, or pingers in the New England sink gillnet fishery showed that pingers have reduced porpoise bycatch, although their deployment under regular fishing conditions has not reduced it to the very low levels experienced in experiments. In its deliberations last year, the Committee expressed concern that the widespread use of pingers might ensonify large portions of the marine environment, perhaps displacing small cetaceans from important habitat. However, a study using landings data from the Danish North Sea bottom set gillnet fisheries showed that in most areas, less than 1% of the total area would have been ensonified. The Committee felt that these results were encouraging and recommended that empirical studies of porpoise distribution be conducted in areas where pingers are used.

GENERAL RECOMMENDATIONS

The Committee again noted the paucity of information on the magnitude of cetacean bycatches in most of the world's fisheries. It reiterated its previous recommendation that information on the bycatch of cetaceans in fisheries and mariculture operations be collected, and again expressed concern that pingers are unlikely to be a workable solution to bycatch problems in developing countries. In these cases, solutions must be inexpensive, technologically simple and require a minimum of prior information. The Committee recommended that particular effort be devoted to developing strategies for reducing bycatches of small cetaceans in the developing world. The Committee also recommended that if time-area restrictions are to be used as a bycatch mitigation measure, the following conditions should be met: extensive information should be available on the spatial and temporal distribution of small cetaceans, rates of bycatch and fishing effort; proper enforcement must occur; and a monitoring scheme must be developed and continue even after management goals appear to have been achieved. Finally, the Committee recommended further research to identify alternative fishing gear and methods, other than acoustic approaches, that could serve as long-term solutions to the bycatch of small cetaceans.

17.1.3 Action arising from the 1999 meeting

PROGRESS OF THE IWC/ASCOBANS JOINT HARBOUR PORPOISE WORKING GROUP

The joint IWC/ASCOBANS working group met in St Andrews, Scotland in March 1999 and outlined a simulation modelling approach that would allow ASCOBANS to develop algorithms to meet their conservation objectives for harbour porpoises. The modelling work was initiated in January 2000 and will be reviewed by the Committee in 2001.

PROGRESS OF THE VAQUITA RECOVERY PROGRAMME IN MEXICO

Mexico reported that last year, the International Committee for the Recovery of the Vaquita (CIRVA), had recommended that the bycatch of vaquitas be reduced to zero as soon as possible. As it is not possible to implement such protection immediately, gillnet fishing will be removed in three stages. A conceptual framework has been developed that includes economic and social incentives to the fishermen, to gain their support for such measures. A proposal to expand the southern boundary of the Biosphere Reserve was submitted to the appropriate governmental authorities and acoustic surveys of the species have begun. Permit revisions are being considered for alternate gear types and an educational public awareness programme has been developed. The Scientific Committee commended the government of Mexico for its continuing efforts to conserve the vaquita and looked forward to receiving an update on further progress at its next meeting.

WHITE WHALE STOCKS OF PARTICULAR CONCERN

Aerial survey data estimated that there were 357 white whales in Cook Inlet. There was no subsistence harvest from this stock in 1999. The USA National Marine Fisheries Service continues to work with representation from Native subsistence hunting groups to establish a co-management agreement to manage harvests. Last year, the Committee expressed concern regarding a number of stocks of white whales that were depleted, likely depleted or known to be of small size; three occur in waters of the Russian Federation in the Okhotsk Sea. A directed harvest of white whales in the Okhotsk Sea was started in 1999, of which about 36 were killed for commercial purposes and additional animals were live-captured. The Committee reiterated its concern regarding these removals and recommended that further assessment be undertaken of these stocks, paying particular attention to status and stock structure.

17.1.4 Other issues

Of various additional information presented on small cetaceans, the need for more information on Baird's beaked whales in Japan was of particular concern to the Committee. The Committee last considered Baird's beaked whales in 1990 when it noted that there was 'insufficient data to judge whether annual catches of approximately 60 whales are sustainable'. The most recent abundance estimate for the Sea of Japan is 1,260 and that for the Pacific coast is 5,029. The Committee was informed that Japan has been carrying out research in this region and has its own national management plan. Given the Committee's view in 1990, member governments were invited to provide information that will enable the Committee to determine whether sufficient new data exist to review the status of this species at a future meeting. Japan informed the Committee that it did not seek its advice on this species which is being appropriately managed and for which it did not see a need for collaboration. Japan reiterated its view that the management of small cetaceans is outside the Commission's competence.

As in previous years, the Committee noted that the table of recent catches of small cetaceans is incomplete. It therefore reiterated its previous recommendation that member nations should submit full and complete information on direct and incidental takes in their progress reports. The Committee agreed that the IWC should publish information that assists in interpretation of the catch and bycatch statistics of small cetaceans included in national progress reports, in addition to the annual statistics themselves, on a stock-by-stock basis.

17.1.5 Future work

In light of Commission Resolution 1999-9, the status of Dall's porpoise will be a priority topic for the next Scientific Committee meeting but progress on the IWC/ASCOBANS harbour porpoise working group, the Vaquita Recovery Programme, plans for improving survey methodology for freshwater cetaceans, the results of the Norwegian feasibility survey in complex coastal waters and conservation of the Baiji will also be reviewed. Topics for 2002+ will include: (1) systematics and population structure of *Tursiops* (because of the large amount of new research results; (2) status of ziphiids in the Southern Ocean (because of a lack of previous assessment); and (3) status of small cetaceans in the Caribbean Sea (because of a lack of previous assessment and continuing catches and bycatches).

In the Scientific Committee meeting, Japan informed the Committee that Resolution 1999-9 had been opposed by Japan and it was not the position of the Government of Japan to collaborate with the IWC on this matter.

17.2 Report from the Scientific Committee on other issues

The Chair of the Scientific Committee reported briefly on the outcome of discussions on: (1) nomenclature; (2) stock definition; and (3) communications, publications and other business.

17.2.1 Nomenclature

The Scientific Committee provided a revised list of cetacean names taking into account recent taxonomic work. In particular it drew attention to the retention of the generic name *Eubalaena* for right whales and the recognition of the three species *E. glacialis*, the North Atlantic right whale, *E. australis*, the southern right whale and *E. japonica*, the North Pacific right whale. It agreed to retain one species of Bryde's whale, *Balaenoptera edeni*, at present pending further work but recognising that more than one species is involved. The Committee agreed that the Schedule definition of 'minke whale' should be amended to take account of the recognition that there are two species of minke whale, the common minke whale, *B. acutorostrata*, and the Antarctic minke whale, *B. bonaerensis*, as well as the addition of the North Pacific right whale. As this will require 60 days' notice prior to next year's meeting, these amendments should be included in the Commission's agenda for IWC 53.

17.2.2 Stock definition

The Working Group on stock definition is trying to develop one or more operational definitions of stock which are better suited to the types of data currently available to evaluate stock structure and which relate to the management context in which they are to be used. The work is important for the

RMP and AWMP as well as more general conservation issues. This year case studies of bowheads and gray whales were considered. Further work is required to develop modelling approaches and statistical methods relevant to the IWC's management procedures and which provide an objective framework within which to combine genetic and other information.

The Chair did not report on discussions on DNA identification and tracking since they were reported to, and taken into consideration by, the RMS Working Group.

17.2.3 Communication, publications and other business

To improve and ease communications among the Scientific Committee, it was agreed that: (1) long documents would be sent in pdf-format in future; (2) future e-mail communications will include the size of the file in the subject line; and (3) the possibility of a Scientific Committee web page will be explored.

During the first year of the new *Journal for Cetacean Research and Management*, 30 papers covering all the major subjects of interest to the Committee had been published, involving some 81 authors from 20 countries. In addition to the three issues of the Journal, the supplement containing the Scientific Committee report and the first special issue *Chemical Pollutants and Cetaceans* had also been published. Committee members were urged to consider submitting their papers to the Journal as their preferred option and to request their libraries to subscribe to the Journal.

Under 'other business', the Chair reported that the Committee had considered a working paper that addressed ways to stimulate discussion on its working methods, workload, the system of convenors and transparency. This issue will be on the agenda of next year's meeting. The attendance of two members of the original 'Committee of Three', K.R. Allen, and S.J. Holt, was greeted with pleasure, and the Scientific Committee rose in honour of the Secretary to the IWC, Ray Gambell, who was retiring after 24 years.

17.3 Proposed future work plan

The Chair of the Scientific Committee described the work plan that had been drawn up by the Convenors, with the agreement of the Committee, after the close of the meeting. The work plan took account of: (1) priority items endorsed by the Commission last year (i.e. RMP, AWMP, Aboriginal Whaling, Comprehensive Assessment, Environmental Concerns, Small Cetaceans and Whalewatching); (2) general discussions in the plenary session on this item and in particular the need to reduce and streamline the Committee's work load; and (3) budget discussions of the full Committee. It was agreed to divide the work among nine sub-committees as proposed below. The Chair noted that this structure would provide the basis for a draft agenda for the 2001 meeting and a framework for determining invited participants. She also noted that priorities may need to be revised in light of the Commission's discussions.

17.3.1 Revised Management Procedure

As last year, this sub-committee would concentrate on two areas.

17.3.1.1 GENERAL ISSUES

(1) Incorporation of the programme CATCHLIMIT into the suite of Secretariat programmes that implement the RMP and its trials, re-tuning the RMP, using it and comparing trial results.
(2) Estimation of incidental catch and other human-induced mortality of baleen whales. (This will be undertaken by a Working Group to be established at the opening session of the sub-committee.)
(3) Abundance estimation, especially annotations to the RMP regarding multi-year surveys.
(4) Implications of choice of component of population to which *MSYL* and density dependence apply in RMP trials.

17.3.1.2 PREPARATIONS FOR IMPLEMENTATION

The priority item would be:

(1) North Pacific minke whales (review results of *Implementation Simulation Trials* and results from surveys).

Also discussed would be:

(2) western North Pacific Bryde's whales (review of progress on trials and results of sighting survey);
(3) North Atlantic minke whales (planning for an Implementation Review in 2002).

17.3.2 Aboriginal Whaling Management Procedure

This Standing Working Group would continue its development process and will have had an intersessional workshop in Seattle. It would also review results and progress on the Greenlandic Research Programme. Major topics would be:

(1) select *SLA*(s) for Bering-Chukchi-Beaufort Seas bowhead whales and style of presentation to the Commission;
(2) consider *SLA*(s) for Eastern North Pacific gray whales;
(3) consider progress on development of potential *SLA*s for Greenland fisheries;
(4) review and revise trials as necessary;
(5) review results from Greenlandic Research Programme and revise programme if necessary;
(6) consider discussion document and develop proposal for scientific aspects of an Aboriginal Whaling Scheme.

It would also carry out:

(7) the annual review of catch data and management advice for minke and fin whales off Greenland.

17.3.3 Comprehensive Assessment of North Atlantic humpback whales

The major work of this sub-committee would be to:

(1) review results of the YoNAH (Years of the North Atlantic Humpback) programme with respect to stock structure, movements and abundance;

17.3.3 Comprehensive Assessment of North Atlantic humpback whales

The major work of this sub-committee would be to:

(1) review results of the YoNAH (Years of the North Atlantic Humpback) programme with respect to stock structure, movements and abundance;
(2) review progress towards obtaining a complete catch series and its use in determining the status of North Atlantic humpback whales;
(3) if appropriate carry out an assessment or if not, determine the necessary work to be able to complete one.

It would also carry out:

(4) the annual review of catch data and management advice for humpback whales off St Vincent and The Grenadines.

17.3.4 Bowhead, right and gray whales
The nature of the Committee's agenda makes it appropriate to establish this new species-based sub-committee to:
(1) consider the annual review of catch data and management advice for Bering-Chukchi-Beaufort Seas bowhead whales;
(2) review information on other small stocks of bowhead whales;
(3) review progress on recommendations relating to the western North Atlantic right whales, including the results of the proposed Genetics Workshop;
(4) review research progress on Southern Hemisphere right whales in the light of *inter alia* the report of the Cape Town Workshop;
(5) consider the annual review of catch data and management advice for eastern North Pacific gray whales;
(6) consider information on western North Pacific gray whales.

17.3.5 In-depth assessments
The major work of this sub-committee this year would be:

(1) consideration of issues relating to the abundance estimation of Southern Hemisphere minke whales (and, where relevant other species such as blue and humpback whales). There will be a two-day 'early start' to the work of this sub-committee that will continue to run through the normal sub-committee period. It will also include review of data from the 2000/01 SOWER circumpolar cruise and plans for future cruises.
It would also devote limited time to:
(2) planning for an assessment of Southern Hemisphere blue whales (including reviewing progress on the issue of subspecies differentiation);
(3) review progress on identified work towards an assessment of Southern Hemisphere humpback whales;
(4) consideration of the possibility of a future assessment of Southern Hemisphere fin whales.

17.3.6 Stock definition
As last year, given the overlapping personnel, it is envisaged that a Working Group would be established at the first session to address the Commission's Resolution 1999-8 on DNA testing. The other major items would include:

(1) case studies (North Atlantic minke whales, humpback whales worldwide);
(2) recoveries of cetacean (sub)stocks after severe depletion;
(3) review of utility of non-genetic information for stock definition and consideration of framework to incorporate genetic and non-genetic information;
(4) consideration of 'archetypes' of stock structure, harvest regime and management objectives;
(5) consideration of statistical issues pertaining to stock definition;
(6) development of ways to define stocks for harvested or potentially harvested cetaceans.

17.3.7 Environmental concerns
The major items to be considered are:

(1) review of additional information on the impact of contaminants on the health and status of cetacean populations and in particular progress on POLLUTION 2000+;
(2) progress with SOWER 2000 including results from the 1999/2000 CCAMLR survey and plans for collaboration with SO-GLOBEC.

It would also cover:

(3) linking environmental measures and cetacean demography;
(4) research relevant to Arctic issues;
(5) progress on Workshops/Conferences (habitat degradation and marine mammal-fisheries interactions);
(6) review and update State of Cetacean Environment Report (SOCER).

17.3.8 Small cetaceans
(1) Dall's porpoise (in response to Resolution 1999-9).
(2) Progress on previous recommendations.
(3) Takes of small cetaceans in 2000.

17.3.9 Whalewatching
(1) Review report of the intersessional correspondence group.
(2) Review information on noise from whalewatching vessels and aircraft and potential effects on cetaceans.
(3) Review research on effectiveness of and compliance with whalewatching guidelines and regulations.
(4) Review new information on previously discussed topics (including dolphin feeding programmes; national guidelines and regulations for whalewatching; whale and dolphin 'swim with' programmes).

17.4 Commission discussions
A number of delegations expressed their appreciation of the work of the Scientific Committee and congratulated the new Committee Chair on her clear and comprehensive presentation. Sweden again raised the question of having the meeting of the Scientific Committee separated in time from that of the Commission so that the Commission could make optimal use of all the detailed and complicated advice from the Scientific Committee. Switzerland agreed.

17.4.1 Small cetaceans
With respect to the Scientific Committee's work on small cetaceans, the UK expressed its concern over the problem of bycatches. It was pleased to note that several workshops on mitigation and reduction of bycatches have taken place, and reported that the it would continue to work actively towards assessing and reducing cetacean bycatch, particularly through its membership of the ASCOBANS agreement. It had proposed a comprehensive Resolution on Bycatch at the 1999 Conference of Parties of the CMS that had been adopted by consensus. It considered that progress was being made in addressing bycatch and endorsed the Scientific Committee's recommendations in this area. It further noted the Scientific Committee's plans to review Baird's beaked whales and hoped that governments with relevant data would provide them to the Committee. The Netherlands also indicated the importance it attaches to solving problems related to the bycatch of small cetaceans, and mentioned research it is doing to prevent bycatch by increasing the detection of fishing nets. Sweden also thought work on bycatch mitigation is important and expected to continue to participate in such work.

Regarding the baiji, the People's Republic of China welcomed most of the Scientific Committee's recommendations and reported that conservation efforts are being made. However, regarding the Committee's request

that the IWC Secretary ask the Government of the People's Republic of China to report progress on the conservation of this species to the Committee on an annual basis, the People's Republic of China noted that it considers that the IWC has no legal jurisdiction to manage small cetaceans. It would however do its best to provide information on the baiji, on a voluntary basis. Japan reiterated its view that small cetaceans are outside the competence of the IWC. It believed that the Scientific Committee did not have a valid reason to address Baird's beaked whale as a priority species and warned that if such an approach continues, it may not continue to provide information on small cetaceans as it has in the past. The reservations of St Vincent and the Grenadines, St Kitts and Nevis, Antigua and Barbuda, Grenada, Dominica and St Lucia regarding IWC's competence to deal with small cetaceans were noted.

17.4.2 Future work plan

The UK, Australia and New Zealand expressed some concern about how the Scientific Committee planned to assess the effects of scientific permit catches on stocks of Southern Hemisphere minke whales. All three countries urged the Scientific Committee to take account of all plausible scenarios and models available to them when doing this work. New Zealand recalled the recommendation that the BALEEN II model should be used, but questioned whether this was the best way to proceed given that other models, including the RMP, are now available. Australia and New Zealand referred to the fact that there is now no abundance estimate for this stock, and New Zealand considered that the Scientific Committee should first revise abundance estimates for Southern Hemisphere minke whales before assessing effects of scientific permit catches. The USA and The Netherlands associated themselves with the remarks of the UK, Australia and New Zealand. Switzerland agreed on the importance of revising abundance estimates.

Japan welcomed the Scientific Committee's plans to review the abundance estimate for Southern Hemisphere minke whales, and expressed the view that scientific permit catches would be shown to have no effect on the stock, regardless of which model is used. Japan also reminded the Commission of its opposition to Resolution 1999-9 on Dall's porpoise, and that if this item is retained as a priority area under small cetaceans, then the Scientific Committee should be prepared for the situation where no data are provided by Japan.

17.5 Action arising

The Commission adopted the report of the Scientific Committee including the work plan proposed.

RESOLUTION ON WESTERN NORTH ATLANTIC RIGHT WHALES

Recalling the grave concern expressed by the Scientific Committee over the critically endangered status of western North Atlantic right whales (see Section 11.2.1.3), The Netherlands introduced a Resolution calling for further action to reduce ship strikes and entanglement in fishing gear. The Resolution was co-sponsored by Antigua and Barbuda, Australia, Austria, Finland, France, Germany, Ireland, Italy, Mexico, Monaco, New Zealand, Oman, South Africa, Sweden, Switzerland and the UK.

The Netherlands stated that although the Resolution recognises and commends the efforts of the two principle range states, the USA and Canada, for investing in research and implementing management actions to reduce human-induced mortality, it suggests that the Commission should monitor and encourage the implementation of further management actions by the USA, Canada and other countries using shipping lanes traversing northern right whale habitat. The Netherlands further indicated that the Resolution endorses the Scientific Committee's recommendations on this issue and that it requests the Secretariat to transmit the Resolution text to the IMO for distribution at its Maritime Safety Committee and Marine Environment Protection Committee. The Resolution sponsors considered that securing a future for the western North Atlantic right whale is one of the highest conservation priorities facing the Commission today and hoped that the Resolution could be adopted by consensus.

Spain indicated that it wished to co-sponsor the Resolution. Brazil noted that Brazilian scientists are represented in the North Atlantic right whale consortium. In that capacity it has followed closely the efforts of the USA government and its scientists to prevent the extinction of the North Atlantic right whale. It commended these efforts and looked forward to the continued review of this matter. Norway indicated that it would support the Resolution but expressed concern regarding some of the research methods that have been used to tag and monitor the animals, methods which might have adverse effects on their health and which might also have contributed to the decline in reproductive success. Norway recognised the efforts of scientists to try to elucidate the reasons for the problems with this endangered stock, but considered that investigations should be undertaken as to whether the skin disease observed has been induced by tissue sampling and whether alternative tagging techniques could be used.

The Resolution (2000-8) was adopted by consensus (see Appendix 1). Denmark noted its reservation if the Resolution was relevant to fisheries management in Greenland/Faeroe Islands.

RESOLUTION ON VERIFICATION OF CATCH DATA BY GENETIC MONITORING

France introduced a Resolution on behalf of a number of countries (Austria, Brazil, Italy, Monaco, the Netherlands, New Zealand, the UK and the USA) concerned with the development of a supervision and control scheme that would include a mechanism to verify that whale products are derived from whales taken under the RMP. The proposed Resolution directed the Scientific Committee to commence development of the design of a system for genetic identification of products derived from documented bycatch, frozen stockpiles and directed hunts conducted under the auspices of the ICRW, with the purpose of verification of catch records, estimating levels of undocumented catch, and stock and species identification. The Resolution further directed the Scientific Committee to develop, in consultation with experts in the design of food surveillance systems, specifications including the scope, frequency and mode of analysis, for a genetic monitoring system able to detect undocumented products at all levels of the distribution chain.

France stressed that such a system was not intended to impose any requirement on sovereign governments in respect of domestic trade or to control international trade, but rather to verify that the catches are derived from quotas calculated using the RMP and authorised by the IWC. France considered that completion of the RMS and implementation of the RMP depended on the demonstrated ability of the IWC to verify whale catch records and assess levels of other human-induced mortality including bycatch. It referred to Resolution 1999-8, charging the Scientific Committee with providing advice on the development of such a system, and

expressed disappointment that discussions on design of future market tracking systems were not allowed during this year's Committee meeting. As a result, France explained that the request by the Commission for advice had been only partly addressed, hence the Resolution now proposed by a number of countries which it hoped could be adopted by consensus. New Zealand described an additional operative paragraph that had been added to the Resolution that described how the genetic monitoring system should be developed and over what timescale. This paragraph directed the Scientific Committee to establish a Working Group to develop the system, and proposed that the Working Group would first meet immediately prior to the 2001 Scientific Committee meeting to identify the necessary expertise and to outline the components and identify the data needs of the system. The Working Group would report annually to the Commission through the Scientific Committee, and obtain further direction from the Commission as the RMS Working Group develops the objectives of the genetic monitoring system.

Switzerland questioned whether the Resolution gave the Scientific Committee the direction it had requested, and whether the Scientific Committee had the appropriate expertise. It also wanted to know what the timetable would be to complete the work. In response, the Scientific Committee Chair indicated that the work as described in the Resolution would be a rather slow process (i.e. an iterative, multi-year process). She added that since an entirely new set of experts would be needed for this work, the time taken to bring appropriate people together would impact on the Committee's other work. There would therefore be a need to re-prioritise some of the current work programme if the Commission wanted rapid progress to be made on a genetic monitoring system.

Norway did not support the Resolution. It stated, as it had on a number of occasions, that it does not consider the monitoring of whale products to be a responsibility of the IWC and that in any case, it would be an excessive requirement within the RMS. Norway viewed the proposal as a diversion from issues that are important in preparation for the resumption of commercial whaling operations. Japan was of a similar view and also opposed the Resolution. It noted Scientific Committee Chair's comment that if the work proposed in the Resolution was taken up, other activities would be delayed. Denmark, supported by Norway, believed that adoption of the Resolution could complicate and delay completion of the RMS. It considered that individual countries may find it useful to create national DNA registers to control trade, but opposed the establishment of an international control system.

Ireland indicated that they would support and endorse the work provided for in the Resolution, but had serious concerns regarding the timescale it would require and shared the concerns of the Scientific Committee Chair. On being put to a vote, the Resolution was not adopted. There were 11 votes in favour and 13 against.

RESOLUTION ON THE CONSERVATION OF FRESHWATER CETACEANS

On behalf of the other co-sponsors Australia, Austria, Finland, Germany, Italy, the Netherlands, New Zealand, Sweden, the UK and the USA, Switzerland introduced a Resolution calling for increased efforts to conserve freshwater cetaceans which the Scientific Committee referred to as being '*among the world's most threatened mammal species'*. Switzerland indicated that the Resolution is a logical consequence of the Scientific Committee's recommendations and that it hoped the Resolution could be adopted by consensus.

The delegation of China had no objection to the Resolution, but believed that the IWC has no jurisdiction to manage freshwater cetaceans. However, taking into account the current status of freshwater cetaceans, it believed that Contracting Governments should cooperate to enhance conservation capacity in developing countries. Denmark also indicated that it could go along with a consensus but noted its general reservations related to the management of small cetaceans. Norway and Japan took a similar view.

Spain was ready to support the Resolution and noted its willingness to share information on small cetaceans, but stated, as it had at previous meetings, that it reserves its position on the legal question. Mexico expressed the same position.

Resolution 2000-9 was therefore adopted by consensus (see Appendix 1).

18. THE FUTURE OF THE IWC

The Chairman, Michael Canny (Ireland), reported that since the last meeting in Grenada, he had continued informal discussions to see whether there is support for a compromise, or at least support for a process to develop a compromise. Although he had not been able to reach a consensus, he reported that he had received support to continue to work on this issue. He noted that the extension of scientific whaling to additional species this year demonstrated that the Commission needs an approach to addressing such questions other than passing Resolutions exhorting one country to accede to the views of other countries and suggested that serious efforts needed to be made to understand different points of view and to seek compromise and consensus. He also noted that the views expressed by the CITES Secretariat, while not necessarily a view of the Conference of Parties, is a clear signal that the RMS should be finalised. He asked for delegations to consider how they saw the IWC in five years, how this might be achieved and where compromises could be made. Finally he added that he would continue to work on this issue as the Irish Commissioner.

South Africa and Antigua and Barbuda associated strongly with the views expressed by the Chairman. Antigua and Barbuda added that a new system of contributions would enable more countries to participate in the IWC - a matter of importance - that the IWC has a significant role to play and that a spirit of compromise is needed. Oman reiterated its support for the Irish proposal and Denmark commented that they had always supported and appreciated the Chairman's initiative since it is very important to reach a compromise.

St Lucia stated that the Chairman had done everything possible to bring the parties together. It was concerned about the perception of the IWC from the outside, and referring to the letter from the CITES Secretariat stated that the only reason that whales have not been downlisted is because of the agreement the IWC has with CITES not to do anything to undermine the IWC. St Lucia believed that the organisation's inconsistencies are holding up progress and that the RMS should be concluded next year. Norway fully supported these views, adding that it has repeatedly commented that the IWC is not adhering to the Convention and that it has become a protectionist organisation with no will to lift the moratorium. However, Norway was ready to continue to work within the IWC in the spirit of the Convention, providing any compromises are compatible with international law. Japan expressed gratitude and

appreciation to the Chairman for his efforts to find a solution to the deadlock of the IWC and associated itself with the comments of St Lucia and Norway. Japan emphasised that in future, the IWC should work on issues based on the Convention as well as those on scientific grounds. St Vincent and the Grenadines associated itself with the views expressed by St Lucia.

In addressing the Chairman's question about the vision for the IWC, Germany welcomed the importance given to environmental concerns, considered that the IWC should be effective in the conservation of whale stocks and while the Irish proposal contains important elements, it does not see a basis for the resumption of commercial whaling as indicated in the Irish proposal. However, Germany indicated that it would participate actively in a review of the moratorium but that it would insist on effective regulations on supervision and control. It looked forward to the results of the Comprehensive Assessment and to further advice from the Scientific Committee on the status of whale stocks.

The Netherlands welcomed the Irish proposal as a basis for negotiations and indicated that it would continue to support the IWC as the appropriate organisation for the conservation and management of cetaceans at a global level. It would therefore continue to play a constructive role in completion of the RMS, but would continue to oppose practices, whether for commercial or other purposes, that are not in conformance with the decisions and criteria adopted by the Commission in previous years. Regarding the IWC's future, the Netherlands felt that more attention should be given to environmental concerns, small cetaceans, humane killing and whalewatching as a sustainable use of cetaceans. Sweden, Switzerland and Finland associated themselves with the views expressed by the Chairman and by the Netherlands.

The UK admired the courage of the Irish proposal that has been a catalyst for discussion within the IWC. The UK believes its position to be clear and consistent in that it is opposed to whaling except for aboriginal subsistence whaling, and that it regrets that Japan and Norway continue whaling while the moratorium remains in place. Since most of the focus of attention during the current meeting had been on Japan, the UK wanted to record that it continues to be deeply disturbed by Norwegian whaling and by the number of whales taken. Regarding the Irish proposal, while the UK is prepared to discuss all ideas for improving whale conservation and supports strongly some elements of the proposal, it has significant reservations about others, particularly those relating to coastal whaling. The UK added that despite calls for compromise, a willingness to compromise had not been demonstrated by the whaling countries. Regarding the letter from CITES, the UK emphasised that it expressed the views of the CITES Secretariat and not of the organisation. Regarding the future, the UK hoped that the IWC has a future but that it is not clear what this will be. In any case, it will require a greater willingness to compromise than has been apparent in the last few years. St Vincent and the Grenadines voiced its disagreement with the interpretation given to the CITES letter by the UK.

Australia associated itself with the UK's comments, particularly in relation to Norwegian whaling and the CITES issue. It commented that it had admired the Chairman's persistence in seeking consensus, and noted that despite a lack of consensus on some intractable issues, the Commission is getting on with a great deal of valuable and vital work. The USA associated itself with the views of the UK and Australia.

The Republic of Korea welcomed the Irish proposal and encouraged the Chairman to continue his work. With regard to the future, it believed that the IWC should pursue the sustainable use of cetacean resources under an RMS when adopted.

In responding to the UK, Norway indicated that its whaling is conducted in conformity with the relevant provisions of the Convention and that the number of whales taken by Norwegian whalers are in accordance with the methods developed by the IWC. Norway also considered that it has shown a willingness to compromise. It had shown patience by remaining a member of the organisation even when in 1990 the IWC demonstrated its unwillingness or inability to fulfil the 1982 decision that by 1990 at the latest a Comprehensive Assessment should have been completed and new catch limits set to replace the temporary moratorium. Norway added that it had remained in the Commission and continued to work constructively even when the RMP was agreed but not implemented and believes it has been working hard to achieve the kind of compromise that would satisfy members but would not violate international law. Japan associated with these statements. Japan added that its scientific permit whaling is totally in conformance with Article VIII of the Convention.

The Netherlands stated for the record that the interpretation of Article 10(e) of the Schedule given by Norway and Japan is in its view incorrect. The Commission has never given an undertaking to set quota under the moratorium other than zero. All the Commission did was to commit itself to a Comprehensive Assessment and a consideration of a modification for the provision.

19. FINANCIAL STATEMENTS, BUDGET ESTIMATES AND CONTRIBUTIONS

Agenda Items 19-21 covering financial and administrative matters were considered first by the Finance and Administration (F&A) Committee under the Chairmanship of Mr Jim McLay (New Zealand).

19.1 Financial statements and budget estimates

The F&A Committee had received the report of the Budgetary Sub-Committee that had been established on a trial basis as agreed at IWC/51. The Sub-Committee had worked intersessionally and had met during IWC/52 under the Chairmanship of Mr Ito (Japan) to review the provisional financial statement for 1999/2000 and proposed budgets. Within the F&A Committee some concern was expressed that, while the Budgetary Sub-Committee should remain small for reasons of efficiency, this should not make its proceedings and related information inaccessible to any Commission members.

19.1.1 Review of provisional financial statement, 1999/2000

The F&A Committee noted that a combination of unbudgeted income and savings against expenditures produced a projected deficit for the year of £158,000 rather than the £220,000 provided for. It noted the Sub-Committee's view that the content and presentation of the finance documents was appropriate and that it had agreed by consensus that;

(1) information relating to Member Governments which owed only small amounts representing bank charges should be omitted from the Table of outstanding financial contributions;

(2) the Finance and Administration Committee should give consideration to the question of how to deal with those countries that had contributions outstanding for a number of years.

The F&A Committee accepted the Sub-Committee's report and recommended that the Commission approve the Provisional Financial Statement subject to audit.

19.1.2 Consideration of estimated basic budgets, 2000/2001 and 2001/2002

The Budgetary Sub-Committee drew the F&A Committee's attention to five items in the forward budgets: projected income; proposed expenditures; notice of some uncertainties in expenditures; anticipated recoveries from the Severance Pay Fund; and movements in the level of reserves. The F&A Committee noted that:

(1) the estimated income for 2000/2001 and 2001/2002 remain nearly the same as for 1999-2000, although the 2001-2002 budget projects an increase in contributions of 2.5% (the consequence of balancing expenditure to hold reserves close to the target level);
(2) estimated expenditures for 2000/2001 are at similar levels to 1999-2000, but for 2001-2002 the funds allocated for research revert to the 'normal' level (i.e. that which existed prior to last year's environmental research allocation);
(3) some uncertainties in expenditure remain as a result of installing a new Secretary and the residual effects of covering maternity leave of certain staff members;
(4) there is a recovery of £49,400 from the Severance Pay Fund in 2000-2001 representing the surplus over the maximum liability; and
(5) reserves are estimated at £912,161 in 2000-2001 and £744,500 in 2001-2002. The F&A Committee recommended that the Commission approve the budget.

In his report to the meeting, the F&A Committee Chairman drew attention to the fact that a number of decisions just made by the Commissioners and the Resolution to hold an intersessional meeting on the RMS had cost implications that had not been included in the budget. He recommended that these cost implications be dealt with by the Advisory Committee and reported to the Commission next year through the F&A Committee.

The Commissioners' decisions included the re-grading of three senior staff positions so that the posts of Executive Officer and Scientific Editor would be established at the P4 on the UN salary scale and that of Computing Manager at the P3 level. (This re-grading was a consequence of a request made by the Commission in Grenada.) In addition, the rate of the Commission's contributions to the staff retirement benefits scheme would be brought into line with the UN system at 15.8%. The salary and retirement benefits scheme changes would take effect from 1 September 2000.

The F&A Committee recommended that, in future, staff matters should be considered first by the Advisory Committee then by the Commissioners. If both agreed, the resultant action would be referred through the Budgetary Sub-Committee to the Finance and Administration Committee.

19.1.3 Scientific programme

The Scientific Committee had developed a preferred budget of £432,000 and a 'reduced budget' of £225,000 but the latter figure was still £40,000 more than originally projected by the Secretariat. The Scientific Committee considered that its 'reduced budget' was the absolute minimum necessary to meet research needs.

The F&A Committee considered three options: (1) approve the Scientific Committee's 'reduced budget' resulting in increased expenditure which would have to be funded from reserves; (2) reduce the 'reduced budget' by a further £40,000, and require the Scientific Committee to reprioritise its projects; (3) to do the same thing but to reprioritise within the Finance and Administration Committee.

After extensive discussion the Committee recommended option 1.

19.1.4 Action arising

The Commission approved the Provisional Financial Statement, subject to audit. It also approved the budget for 2000-2001 (Appendix 3), including the research budget (Appendix 4) and the increase in the NGO observer fee from £500 to £510 for 2001. It noted the forecast for 2001-2002.

19.2 Contributions

19.2.1 Report from the F&A Committee

The F&A Committee also received the Report of the Contributions Sub-Committee chaired by Mr Daven Joseph (Antigua and Barbuda) that met in the course of preliminary meetings to this Annual Meeting. The Sub-Committee was established following last year's Annual Meeting, where there was wide support for looking at the options and issues raised by the proposal from Antigua and Barbuda for a reassessment of membership contributions.

During Sub-Committee discussions, differing views were expressed on its terms of reference. Although the differences had not been resolved a discussion took place over the whole range of issues raised. A Task Force consisting of Dominica, Antigua and Barbuda, USA, Monaco, Australia and South Africa was charged by the F&A Committee with developing a revised set of principles to guide the IWC in developing an alternative contributions formula. Antigua and Barbuda indicated that it wanted significant progress to be made by the Task Force prior to the plenary meeting, stating that it reserved the right to revert to its original proposal if sufficient progress was not made.

The Task Force discussed a number of options. Because of the time constraints no specific parameters were established but the following were considered to be potentially constructive elements; the use of a wealth factor; a premium contribution from land-locked states; reclassification of the aboriginal subsistence whaling contribution into perhaps three separate categories; a cap on the highest amount that any one member should pay; a share system for the number of delegates per delegations; and a share system for scientific whaling.

19.2.2 Commission discussions and action arising

The Commission agreed that the Task Force should continue to discuss these issues with a view to determining a number of parameters and specific recommendations for presentation to the 53rd Annual Meeting.

The USA complemented the Chairman of the Task Force, especially on his openness to develop alternatives, and indicated its willingness to continue working within that forum.

France concurred. Its view was that there should not be excessive financial obstacles to participation and enlargement and that the wealth of nations, participation,

IWC activities and new resources such as whalewatching should be taken into consideration. It considers that to find a solution agreeable to all, it is necessary to be imaginative, progressive and pragmatic. It noted that several members would have to pay more and that France would be prepared to do so provided that the procedure is not too stringent. France also noted that as the IWC expands a solution should be found to the use of the French language.

Antigua and Barbuda recorded its thanks for the sympathy shown by members regarding its proposal for a more equitable means of calculating the financial contributions of member states. It hoped for much progress during the intersessional period but reiterated that it reserved its right to bring back its original proposal if that did not happen.

20. ADMINISTRATIVE MATTERS

20.1 Guidelines for opening statements from observers

The F&A Committee recommended that the Commission endorse the Secretary's language for dealing with Opening Statements from Observers as follows:

> Opening Statements may be submitted by Observer organisations which will be included in the official documentation of the Annual or other Meeting concerned. They shall be presented in the format and the quantities determined by the Secretariat for meeting documentation.
>
> The content of the Opening Statements shall be relevant to matters under consideration by the Commission, and shall be in the form of views and comments made to the Commission in general rather than directed to any individual or group of Contracting Governments.

on the understanding that: (1) there is no intention that the Secretariat should conduct advance or ex-antereviews of such statements, and (2) these new requirements do not preclude remarks about individual countries in Opening Statements provided the statement is still addressed to the Commission as a whole.

The Commission endorsed this recommendation together with the associated understandings.

20.2 Communications

The F&A Committee viewed communication by electronic means, preferably e-mail, as very desirable but recognised that there are still situations where this is not feasible. It recommended that the Secretariat should communicate with Contracting Governments by the best electronic means available (e-mail or fax) when that is possible, but should also provide hard copies to those governments requesting them. Member governments should be encouraged to submit materials to the Secretariat in a manner that can be re-transmitted electronically.

The Commission accepted these recommendations.

20.3 Annual Meeting arrangements

20.3.1 Need for Annual Meetings

The Commission noted that the F&A Committee had accepted the view of its Chairman that there appeared to be broad support for the continuation of Annual Meetings.

20.3.2 Press

The Chairman of the F&A Committee noted that there was widespread support for the presence of the media at IWC meetings but pointed out that a consequence will be increased expenditure since larger venues will be required. This could preclude some countries from being hosts in the future. He noted that some concern had been expressed at the direct cost of providing copies of materials to the media that resulted in a suggestion that the charge to the media should be more in line with that made to NGOs. Nonetheless, the F&A Committee considered that the experiment to allow the press in should be continued. Obviously, the decision would continue to be subject to review.

The Commission agreed.

20.3.3 Verbatim record

The Administrative Review in 1998 recommended that consideration be given to discontinuing the Verbatim Record of Annual Meetings. The discussion in 1999 was inconclusive and was deferred for review this year. In the F&A Committee, Australia supported the discontinuation of the verbatim record. However, the Committee accepted the suggestion of its Chairman that it would be appropriate to maintain it for this year at least in view of the appointment of a new Secretary. The Commission concurred and agreed to review the question again at the Annual Meeting in 2001.

20.3.4 Technical Committee

The F&A Committee met prior to what would normally have been the Technical Committee and thus was not in a position to comment on the experiment of not having a Technical Committee Meeting at this meeting.

In the Commission, the UK pointed out that the absence of a Technical Committee meant that some issues did not have the benefit of any preliminary discussion and came straight to Plenary. It considered that to overcome this drawback would not necessarily require a meeting of a Technical Committee as presently constituted but possibly special working groups to deal with important issues which would benefit from preliminary discussion.

The Commission agreed to refer the matter to the Advisory Committee for consideration before the next Annual Meeting.

20.3.5 Amendment to the Rules of Procedure

Japan had proposed an amendment to Rule of Procedure E.3.d concerning the use of secret ballots. It elected to raise the matter in Plenary rather than in the F&A Committee, commenting that the secret ballot has been adopted by a number of international organisations and international fora. Japan suggested that its use in all voting would improve the functioning of the Commission. It did not pursue the matter this year but stated its intention of raising the proposal again at the next Annual Meeting.

21. DATE AND PLACE OF ANNUAL MEETINGS

21.1 53rd Annual Meeting, 2001

As no Contracting Government had offered to host the 53rd Annual Meeting in 2001, the Secretariat reported that it has arranged for it to take place at the Novotel, West London from 23-26/27 July. The associated meetings of the Scientific Committee and Working Groups will take place at the same venue in the period 2-22 July.

21.2 54th Annual Meeting, 2002

As there were offers from two Contracting Governments (Japan and New Zealand) to host the Annual Meeting in 2002, a secret ballot was held to decide on the meeting location. There were 19 votes in favour of Japan, 10 in favour of New Zealand and 3 abstentions. IWC/54 will therefore be held in Shimonoseki, Japan. Japan thanked the

delegates for their support and indicated that they would work with the Secretariat with respect to timing of the meeting.

22. ADOPTION OF REPORT OF FINANCE AND ADMINISTRATION COMMITTEE AND OTHER ADMINISTRATIVE MATTERS

Referring to Appendix 5 of the Report of the F&A Committee (i.e. the Report of the Contributions Sub-committee) Norway indicated that it is a major contributor to the IWC, that it takes a very active interest in discussions on developing a set of revised principles to guide the development of an alternative contributions formula, and that it wished to be included in the list of countries in the Contributions Task Force. The Commission agreed to this request.

Brazil drew attention to a proposal it had made to the F&A Committee. It had proposed that the Advisory Committee, the Chair of the Scientific Committee and the Secretary, assisted by any interested parties, consult on ways to increase scientific participation of developing countries in the work of the Scientific Committee and report to the Commission at the next Annual Meeting. The proposal received broad support from the F&A Committee, but some delegations had noted that there could be financial implications and the need to ensure that all participants are appropriately qualified.

The Commission noted the Brazilian proposal and adopted the report of the F&A Committee.

23. ADVISORY COMMITTEE

The Chairman explained that since Japan had served on the Advisory Committee for two years it would now have to stand down. He called for nominations. St Lucia was nominated unopposed and therefore joins the Advisory Committee.

24. ANNUAL REPORT

The Secretary presented the draft Annual Report for 1999-2000, covering the period since the 51st Annual Meeting in Grenada.

The USA commented that they had reservations regarding the catches of gray whales recorded in Table 1 at the end of the Annual Report, and felt that the recording of strikes in that format is not appropriate. The Russian Federation agreed.

The Annual Report was adopted, noting the above comments.

25. ELECTION OF CHAIRMAN

Since the current Chairman, Michael Canny had held the post for three years, he now had to stand down. South Africa nominated Professor Bo Fernholm, Sweden as the new Chairman and this was seconded by Oman. As there were no other nominations, Professor Fernholm was duly elected. He thanked Commissioners for the trust they were putting in him, and promised to strive to do his best. He thanked the outgoing Chairman for his years of chairmanship, for his openness, kindness and personal touch and for the Irish proposal that has been helpful in provoking discussions. Michael Canny responded that he had enjoyed his time as Chairman and thanked everyone for their cooperation.

26. ELECTION OF VICE-CHAIRMAN

With the appointment of Bo Fernholm as Chairman, a new Vice-Chairman had to be appointed. Daven Joseph (Antigua and Barbuda) was nominated by St Lucia and seconded by St Kitts and Nevis. Henrik Fischer (Denmark) was nominated by Finland and seconded by Switzerland. In a secret ballot, Henrik Fischer received 19 votes, Daven Joseph 12 votes, with 1 abstention. Henrik Fischer was duly appointed as Vice-Chairman.

27. APPOINTMENT OF NEW SECRETARY TO THE COMMISSION

The Chairman reported that the post of Secretary was advertised as agreed last year, and that the Advisory Committee interviewed a number of candidates and made a recommendation. Its recommendation was endorsed by Commissioners in a postal vote. The Chairman introduced Dr Nicky Grandy as the new Secretary to the Commission. Dr Grandy commented that she was honoured to be appointed to such an important job and that she looked forward to working with the Commission and with the Secretariat.

28. ANY OTHER BUSINESS

The only item under any other business was the retirement of Dr Ray Gambell OBE after 24 years as Secretary to the IWC. Fer von der Assen, Commissioner for the Netherlands, spoke on behalf of the other Commissioners, in recognising Ray's huge contribution to the organisation. He commented that Ray had the scientific expertise needed in a science-based organisation, recognised his administrative and financial ability to run both an efficient Secretariat and month-long Annual Meetings under very different circumstances and praised his ability to enunciate clearly the rules and procedures of the Commission. And regarding personal characteristics, he drew attention to Ray's sensitivity to the needs of all participants, and his ability to walk the tight rope between the often opposing factions within the Commission. He wished Ray all the best in his retirement.

The Chairman added his own personal thanks to Ray and on behalf of the Commission presented Ray with a Huggins South-Sea Whale Fishery print from the 1820s.

Dr Gambell thanked the Commission, spoke of the changes he had experienced during his 37-year involvement with the IWC, and the pleasure he has gained in working with the many Commissioners, delegates and NGOs over the years. He paid a special tribute to his colleagues in the Secretariat and thanked them for their support and friendship and wished Nicky Grandy well in her new endeavour.

As a special tribute to Dr Gambell, full texts of these speeches are provided in Appendix 6.

Finally, after thanking the Government of Australia for hosting the meeting and providing tremendous support, the Chairman closed the meeting.

29. AMENDMENTS TO THE SCHEDULE

The amendments to the Schedule adopted at the meeting are listed in Appendix 5.

Appendix 1

RESOLUTIONS ADOPTED DURING THE 52ND ANNUAL MEETING

IWC Resolution 2000-1: Resolution On Community-Based Whaling In Japan

RECALLING that the International Whaling Commission has recognised (IWC/45/51) the socio-economic and cultural needs of the four community-based whaling communities in Japan and the ongoing distress to these communities which has resulted from the whaling moratorium, and resolved to work expeditiously to alleviate the distress to these communities which has resulted from the cessation of minke whaling,

NOTING the widespread recognition in various UN covenants, conventions, and other documents, of the importance for communities to continue customary resource use practices on a sustainable basis,

NOW THEREFORE the Commission:

REAFFIRMS the Commission's commitment to work expeditiously to alleviate the distress caused by the cessation of minke whaling to the communities of Abashiri, Ayukawa, Wadaura and Taiji.

IWC Resolution 2000-2: Resolution on whaling of highly endangered bowhead whales in the eastern Canadian Arctic

WHEREAS the 52nd meeting of the Scientific Committee concluded that the Davis Strait and the Hudson Bay-Foxe Basin bowhead whale stocks are two distinct and separate populations, both of which number in the low hundreds;

CONSIDERING that the Government of Canada withdrew from the IWC in 1982 but continues to allow the taking of bowhead whales in the Eastern Canadian Arctic;

CONCERNED that the Government of Canada has agreed to grant one license if requested from the Nunavut Wildlife Management Board to take one bowhead whale from the Hudson Bay-Foxe Basin stock in 2000-2001;

WHEREAS the IWC is concerned about whaling not conducted under the International Convention for the Regulation of Whaling (1946);

NOTING that the Government of Canada has been notified of IWC Resolutions 1996-9, 1998-13 and 1999-7, each of which calls for refraining from issuing permits to hunt either highly endangered bowhead whale stocks in the Eastern Canadian Arctic;

FURTHER NOTING that Canada is signatory to the United Nations Convention on the Law of the Sea (1982) which under Article 65 (Marine Mammals) requires that States cooperate through the appropriate international organisations for the conservation, management and study of cetaceans;

NOW THEREFORE the Commission:

REAFFIRMS its opposition to whaling conducted on highly endangered stocks of whales;

EXPRESSES particular concern that whaling activities in the Eastern Canadian Arctic are ongoing outside the control of the IWC;

URGES the Government of Canada to refrain from issuing a license for the taking of one bowhead whale from the Hudson Bay-Foxe Basin population;

INVITES the Government of Canada to rejoin the IWC and, in the meantime, not to issue further whaling permits;

REQUESTS that the Secretariat transmit the text of this Resolution to the Government of Canada.

IWC Resolution 2000-3: Resolution on the Revised Management Scheme

WHEREAS the concept of the Revised Management Scheme and its main elements were identified by the Commission in a Resolution adopted by the Commission in 1992 (*Rep. int. Whal. Commn* 43:40);

WHEREAS the structure of the RMS was specified in Commission Resolution 1994-5 (*Rep. int. Whal. Commn* 45:43-44);

WHEREAS the Commission identified in Resolution 1996-6 the three remaining elements of the RMS still to be completed, namely:

(i) an effective observation and inspection scheme;
(ii) arrangements to ensure that total catches over time are within the limits set under the Revised Management Scheme;
(iii) incorporation into the Schedule the specification of the Revised Management Procedure and all other elements of the Revised Management Scheme.

WHEREAS the Working Group on the RMS has prepared a draft text (IWC/52/14 Appendix 4), which is not yet finalised, for a revision of Chapter V of the Schedule (Supervision and Control);

WHEREAS the Scientific Committee has provided, and the Working Group on the RMS has amended, a recommendation for arrangements on total catches over time;

WHEREAS the process of development of the RMS has already taken several years;

NOW THEREFORE the Commission:

CONSIDERS that it is important for the future of the Commission that the process of completion of the RMS proceed expeditiously;

REAFFIRMS that the Revised Management Scheme shall be structured as agreed in Resolution 1994-5, and shall include, but not be limited to, the elements identified in the 1992 and subsequent Resolutions of the Commission on the RMS;

INSTRUCTS the Secretary, in consultation with the Chairman, and taking such independent legal advice as is necessary, to prepare a draft for a Schedule amendment that would incorporate the structure and elements of the RMS, including the RMP, into the Schedule;

FURTHER INSTRUCTS the Secretary to circulate the draft text to Commissioners and Contracting Governments for consideration and comment before the 30 November 2000;

AGREES to re-convene the Working Group on the RMS before the end of February 2001 for the purposes of:

(i) making further progress on the draft text in IWC/52/14 Appendix 4 for a revision of Chapter V of the Schedule;
(ii) developing a text, based on the draft to be prepared by the Secretary, for the incorporation of the structure and elements of the RMS, including the RMP, into the Schedule;

FURTHER INSTRUCTS the Secretary to circulate the report from the above meeting and the resulting suggested Schedule texts to Commissioners and Contracting Governments for consideration and comment at least 60 days before the 53rd Annual Meeting;

NOTES that this Resolution cannot and does not commit the Commission to amend the Schedule now or at any future time;

CONFIRMS that this Resolution does not prejudge the positions of Contracting Governments with respect to the status of Paragraphs 10(d) and 10(e) of the Schedule.

IWC Resolution 2000-4: Resolution on whaling under Special Permit in the Southern Ocean Sanctuary

NOTING that since the 51st meeting in May 1999, the Government of Japan has issued Special Permits, under the provisions of Article VIII of the Convention, for lethal scientific research on minke whales in the Southern Ocean Sanctuary.

NOTING also that the Scientific Committee this year considered all estimates of Southern Hemisphere minke whale population sizes which have been made available since 1990, and concluded that these estimates were 'appreciably lower' than the estimate of 760,000 accepted by the Scientific Committee in 1990.

NOTING further that the Scientific Committee this year recommends that 'minke whale' should be listed as two species in Section 1 of the Schedule to the Convention.

RECOGNISING that the Commission has agreed on the urgent need for the Scientific Committee to proceed with the planned review of the estimates of population sizes of minke whales, including development of agreed estimates, prior to seeking advice from the Commission on how to assess the impacts of JARPA on these stocks

NOW THEREFORE the Commission:

REQUESTS that the Government of Japan refrains from issuing any Special Permits for the 2000/2001 season for the take of minke whales in the Southern Ocean Sanctuary.

IWC Resolution 2000-5: Resolution on whaling under Special Permit in the North Pacific Ocean

WHEREAS Paragraph 1 of Article VIII of the International Convention for the Regulation of Whaling (Convention) provides that, notwithstanding anything contained in the Convention, any Contracting Government may grant to any of its nationals a Special Permit (Special Permit) authorising that national to kill, take and treat whales for the purposes of scientific research, subject to such other conditions as the Government thinks fit;

RECALLING previous IWC Resolutions on whaling under Special Permit adopted by the Commission (1996-7, 1997-5, 1998-4, and 1999-3) and in particular Resolution 1995-9, in which the Commission recommended that scientific research involving the killing of cetaceans should only be permitted in exceptional circumstances where the questions address critically important issues which cannot be answered by the analysis of existing data and/or use of non-lethal research techniques;

RECALLING also that in 1997 the Commission affirmed that the JARPN programme did not address critically important research needs for the management of whaling in the North Pacific Ocean;

WHEREAS Paragraph 30 of the Schedule to the Convention provides that all proposed Special Permits be reviewed by the Scientific Committee, and that IWC Resolution 1999-2 specifically requested the Scientific Committee to provide advice on this to the Commission;

NOTING the Government of Japan's proposal to instigate in 2000 the JARPN II programme, under which takes of minke whales, and, for the first time, takes of sperm and Bryde's whales, would be authorised;

FURTHER NOTING the many major concerns expressed and not allayed during the 52nd meeting of the Scientific Committee, including (among others) concerns that the proposal did not address questions of high priority relevant to management, did not make full use of existing data and revealed many methodological problems;

NOTING, in particular, that the Scientific Committee did not endorse the JARPN II proposal;

NOW THEREFORE the Commission:

AFFIRMS that gathering information on interactions between whales and prey species is not a critically important issue which justifies the killing of whales for research purposes;

PROPOSES that information on stock structure, which may be relevant to management, be obtained using non-lethal means;

STRONGLY URGES the Government of Japan to refrain from issuing Special Permits for whaling under JARPN II.

IWC Resolution 2000-6: Resolution on persistent organic pollutants and heavy metals

RECALLING the two protocols on International Actions on Persistent Organic Pollutants (POPs) and Heavy Metals under the Convention on Long Range Transboundary Air Pollution which were signed in Aarhus, Denmark on 24 June 1998 by the European Union and 35 countries;

NOTING that the International Whaling Commission with its specific responsibility in management and conservation of whale stocks may have a mutual interest in supporting the process of ratification of the protocols;

NOTING that most IWC countries have signed the protocols but that only a few member states have ratified the protocols;

WHEREAS the Commission several times has expressed concerns about the negative effects of degradation of the environment;

WHEREAS organic contaminants and heavy metals are seriously polluting the environment and its living resources including whales, and may have a significant negative health effect on consumers of marine mammal products;

NOW THEREFORE the Commission:

ENCOURAGES Contracting Governments, who have signed the protocols but not yet ratified these, to do so as soon as possible;

FURTHER ENCOURAGES Contracting Governments who have not yet signed the protocols, to consider doing so.

IWC Resolution 2000-7: Resolution on environmental change and cetaceans

NOTING that the study of the effects of environmental changes on cetaceans is an integral part of their conservation and management;

RECALLING that, at the 49th Annual Meeting, the Commission requested the Scientific Committee to develop appropriate research in the priority areas identified by the Standing Working Group on Environmental Concerns (SWGEC), namely climate/environmental change, ozone depletion and UV-B radiation, chemical pollution, impact of noise, physical and biological habitat degradation, effects of fisheries, Arctic issues, disease and mortality events;

RECALLING that, at the 51st Annual Meeting, the Commission endorsed the SOWER 2000 and POLLUTION 2000+ research programmes, and provided core funding for these projects;

NOTING that the first research collaboration of IWC and CCAMLR under the SOWER 2000 programme, which took

place during the 1999/2000 Antarctic season, was highly successful;

NOTING that the Scientific Committee has endorsed the further development of an IWC workshop on physical and biological habitat degradation;

NOTING that the Scientific Committee has endorsed the development of a symposium on competition between cetaceans and fisheries;

APPRECIATING the financial and in-kind contributions from several countries to these projects;

NOTING however that the funding available to the Scientific Committee for these environmental initiatives is currently insufficient to allow them to be fully implemented or developed;

NOW THEREFORE the Commission:

REITERATES its strong support for the research programmes SOWER 2000 and POLLUTION 2000+ and other investigations on the impact of environmental change on cetaceans;

CONGRATULATES the Scientific Committee for its success in conducting the first IWC-CCAMLR research collaboration in the Southern Ocean;

ENDORSES the further development of an IWC workshop on habitat degradation and a symposium on cetaceans and fisheries interactions;

WELCOMES the production by the Scientific Committee of the first State of the Cetacean Environment Report and requests the annual submission of this report to the Commission; and

URGENTLY REQUESTS contracting governments and other interested parties to continue financial and other support for these research priorities.

IWC Resolution 2000-8: Resolution on western North Atlantic right whales

RECALLING that the Commission passed a Resolution on Small Populations of Highly Endangered Whales at its 51st meeting, noting with concern the status of all stocks of northern right whale, including those in the North Atlantic;

ALARMED that the western North Atlantic right whale numbers only around 300 throughout the North Atlantic, and, despite having been protected from whaling since the 1930's, appears to be decreasing and is projected to become extinct if trends continue;

CONCERNED that the two major causes of human-induced mortality for this species are ship strikes and entanglement in fishing nets and gear;

WELCOMING the recommendations from IWC Northern Right Whale Workshops in 1998, 1999 and 2000, and the consequent actions taken to date by the United States and Canada of investing in relevant research and taking measures to reduce human-induced mortality;

COMMENDING the United States for submitting, and the International Maritime Organisation (IMO) for adopting, a Mandatory Ship Reporting System (MSR) for ships entering two areas off the eastern United States where right whales and high ship traffic both occur, to reduce the threat of ship strikes;

FURTHER COMMENDING the Canadian government for the real time radio advisories to shipping as to the location of whales in the Bay of Fundy;

NOTING the management recommendations of the 2000 Scientific Committee which stress the urgency of making every effort to eliminate anthropogenic mortality in the population, and further state that 'There is no need to wait for further research before implementing any currently available management actions that can reduce anthropogenic mortalities.'

NOW THEREFORE the Commission:

CALLS UPON the United States and Canada to continue to pursue actively, practicable actions to reduce as far as possible ship strikes on right whales, in particular by using the information from the Mandatory Ship Reporting System to assess further mitigation steps, including adjustment of traffic;

URGES range states to consider appropriate fishery measures to reduce right whale mortality and injury, including fixed gear modifications and restrictions on usage;

ENCOURAGES the United States and Canada, as well as other countries whose ships transit through northern right whale habitat, to continue and expand educational programmes to help mariners actively avoid collisions with right whales;

ENDORSES the research and management recommendations of the Scientific Committee at IWC 52 and the recommendations endorsed by the Scientific Committee from the Workshop on Status and Trends and from the Workshop on Causes of Reproductive Failure;

REQUESTS that the Secretariat transmit the text of this Resolution to the IMO for distribution at its Maritime Safety Committee and Marine Environment Protection Committee;

FURTHER REQUESTS range states for this species to report back to IWC 53, and annually thereafter, on progress made on the management recommendations.

IWC Resolution 2000-9: Resolution on the conservation of freshwater cetaceans

NOTING that freshwater dolphins and porpoises are among the world's most threatened mammal species;

NOTING further that river cetaceans in Asia are particularly threatened, and the Yangtze river dolphin (baiji) is Critically Endangered;

NOTING that habitat degradation and alteration is the primary threat to the survival of freshwater cetaceans;

CONCERNED that many populations of freshwater cetaceans have been fragmented by water developments such as dams and barrages, and that these projects have many other adverse ecological effects;

CONCERNED that bycatches of freshwater dolphins and porpoises in gillnets and other fishing gear have caused population declines, and that fishing effort is increasing rapidly in many areas where freshwater cetaceans occur;

WELCOMING the establishment of committees in Asia which facilitate regular exchange of information and planning of conservation strategies for Asian river cetaceans;

RECOGNISING the value of protected areas in conserving populations of freshwater cetaceans, but noting that many offer little protection due to insufficient size, inadequacy of regulatory measures and failures in enforcement;

NOTING with appreciation the recommendations resulting from this year's review of freshwater cetaceans in the Small Cetacean sub-committee of the Scientific Committee;

NOW THEREFORE the Commission:

ENCOURAGES all governments to continue and expand efforts to monitor the status of freshwater cetaceans and implement strategies for their conservation;

ENCOURAGES thorough evaluation of the impact of development projects on freshwater cetacean populations, and the implementation of measures to ensure that ongoing and future projects do not threaten these populations;

RECOMMENDS that efforts are made to assess the relative magnitude of incidental catches of freshwater cetaceans among different areas and fishing techniques, and that appropriate mitigation strategies be developed to reduce bycatch to levels known to be sustainable;

RECOMMENDS that future protected areas be of appropriate size and location to encompass the range of seasonal movements and life history stages of the cetacean populations they are intended to protect, and that threats to freshwater cetaceans be eliminated or greatly reduced in these areas;

ENCOURAGES support for existing fora in Asia and the fostering of new opportunities for dialogue in other regions to facilitate the exchange of information on freshwater cetaceans;

CALLS UPON all Contracting Governments to submit information on all known direct and incidental takes of freshwater cetaceans and measures taken to conserve these cetaceans in their annual progress reports to the Scientific Committee.

Appendix 2

MEMORANDUM OF UNDERSTANDING BETWEEN THE SECRETARIAT OF THE INTERNATIONAL WHALING COMMISSION (IWC SECRETARIAT) AND THE SECRETARIAT OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS (CMS) (UNEP/CMS SECRETARIAT)

Preamble

The United Nations Environment Programme/Convention on the Conservation of Migratory Species of Wild Animals (UNEP/CMS) Secretariat and the International Whaling Commission (IWC) Secretariat:

Recalling the Preamble to the International Convention for the Regulation of Whaling (ICRW), which includes *inter alia* the following paragraphs:

> *Recognising* the interest of the nations of the world in safeguarding for future generations the great natural resources represented by the whale stocks;
> *Having* decided to conclude a convention to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry;

Recalling the Preamble to CMS, which includes *inter alia* the following paragraphs:

> *Conscious* of the ever-growing value of wild animals from environmental, ecological, genetic, scientific, aesthetic, recreational, cultural, educational, social and economic points of view;
> *Convinced* that the conservation and effective management of migratory species of wild animals require the concerted action of all states within the national jurisdictional boundaries of which such species spend any part of their life cycle;
> *Aware* that each generation of man holds the resources of the earth for future generations and has an obligation to ensure that this legacy is conserved and, where utilised, is used wisely;

Noting further that the listing in and, where applicable, de-listing from the CMS Appendices of migratory species require reliable evidence, including the best scientific evidence available;

Recalling CMS Article IX (4b) which states that the functions of the Secretariat shall be to maintain liaison with and promote liaison between the Parties, the standing bodies set up under AGREEMENTS and other international organisations concerned with migratory species;

Recalling Article IV of the ICRW which states that the Commission may either in collaboration with or through independent agencies of the Contracting Governments or other public or private agencies, establishments, or organisations, or independently encourage, recommend, or if necessary, organise studies and investigations relating to whales and whaling, collect and analyse statistical information concerning the current condition and trend of the whale stocks and the effects of whaling activities thereon, study, appraise, and disseminate information concerning methods of maintaining and increasing the population of whale stocks;

Emphasising their wish to achieve synergies in the conservation and management, including research and monitoring of cetaceans;

have agreed as follows:

Article I - Objective

The purpose of this Memorandum is to establish a framework of information and consultation between UNEP/CMS and the IWC in the field of conserving migratory species and the world's natural heritage, with a view to identifying synergies and ensuring effective cooperation in joint activities by the relevant international bodies established under both conventions and national institutions of their Contracting Parties.

Article II - Institutional Aspects of Cooperation

Aspects of institutional linkages include:

- mutual participation as observers of the representatives of the UNEP/CMS Secretariat and IWC in meetings of respective, relevant bodies established under both conventions;
- joint notification of national focal points of the cooperative activity between the two organisations, seeking in general to promote the consultation and cooperation among focal points, in particular in those member states where the focal points for the two organisations are different.

Article III - Information - Access and Dissemination

The Secretariats will institute procedures for regular exchange of information in their respective fields. In the case of the UNEP/CMS Secretariat this extends to the Secretariats of the Agreements concluded under its auspices if the decision-making bodies of those Agreements agree.

The Secretariats will develop a system for the exchange of relevant data and endeavour to cooperate on the preparation of documents where applicable.

Article IV - Coordination of Activities

The UNEP/CMS and IWC Secretariats will to the extent possible, coordinate their programme of activities to ensure that their implementation is complementary and mutually supportive.

Article V - Reporting on the Effectiveness of this Memorandum

The UNEP/CMS and IWC Secretariats will institute measures for consultations on the implementation of this Memorandum of Understanding and will report accordingly to their respective governing as well as advisory bodies and seek further guidance on new areas of cooperation.

Article VI - Review, Amendment and Termination

This Memorandum of Understanding may be reviewed to assess its effectiveness and may be amended at any time by mutual agreement of the Parties.

This Memorandum of Understanding may be terminated by either Party giving notice in writing to the other not less than six months in advance of the effective date of termination.

Done at Bristol on the 25th day of July 2000, in two original copies in the English language

The Memorandum of Understanding was signed for the IWC Secretariat by Dr Ray Gambell OBE, Secretary and for the UNEP/CMS Secretariat by Arnulf Müller-Helmbrecht, Executive Secretary.

[Appendix 3 on next page]

Appendix 3

BUDGET 2000-2001 AND *FORECAST FOR 2001-2002*

Income and Expenditure Account

	Budget 2000-2001		*Forecast 2001-2002*	
Income	£	£	£	£
Contracting Government Contributions:				
Realisations required		939,221		*962,702*
(Assessed £996,192)				
Recovery of arrears		21,800		*21,800*
Interest on late contributions		0		*0*
Voluntary contributions		0		*0*
UK tax recoverable		50,000		*51,200*
Staff Assessments		109,000		*111,000*
Annual Meeting attendance fees		53,000		*54,300*
Sales (IWC and Sponsored Publications)		28,500		*29,500*
Bank Interest		90,000		*76,500*
Sundry income		0		*0*
		1,291,521		***1,307,002***
Expenditure				
Secretariat	-816,300		*-835,500*	
Annual Meeting	-276,000		*-291,000*	
Other Meetings	-9,000		*-9,300*	
IWC and Sponsored Publications costs	-70,000		*-54,000*	
Other printing and copying	-3,000		*-3,100*	
Research:				
Regular budget	-307,700		*-274,500*	
Environment Research	-56,200		*0*	
Small Cetaceans	-6,200		*-6,300*	
Extraordinary expenditure:				
Recruitment of Secretary	-20,000		*0*	
Provisions:				
Severance Pay	49,465		*-11,102*	
		-1,514,935		***-1,484,802***
Excess or deficit (-) of income/expenditure		-223,414		*-177,800*
Net Transfers from or to (-):				
Sponsored Publications Fund		19,000		*4,000*
Small Cetaceans Fund		5,400		*6,150*
Research Fund		129,837		*0*
SURPLUS/DEFICIT (-) FOR THE YEAR		**-69,177**		***-167,650***

Appendix 4

APPROVED RESEARCH BUDGET 2000-2001(NOTE 1)

Income and Expenditure Account

		Budget 2000-2001		*Forecast 2001-2002*		Note
Income		£	£	£	£	
Allocation			210,913		*250,771*	2
Voluntary contributions			0		*0*	
UK tax recoverable			11,200		*11,480*	
Bank Interest			*11,950*		*12,249*	
Sundry income			*0*		*0*	
			234,063		***274,500***	
Expenditure						
Continuing Projects and Contracts:						
Invited Participants		-26,700		*-27,500*		
Research Contracts:						
No. 9		-10,500		*0*		
No.14		-30,000		*-30,750*		
No.16		-3,500		*0*		
No. 17		-1,000		*0*		
No. 18		-1,000		*0*		
AWMP Fund for Developers		-5,000		*-5,250*		
Greenland Research Feasibility Study		-1,500		*0*		
Analysis, SH IDCR/SOWER and JSV data		-2,000		*0*		
	Sub-total	*-81,200*		*-63,500*		
New Work commencing 2000-2001:				*-209,500*		
AWMP	Intersessional Workshop	-12,000				
AWMP	Developer's Fund	-3,000				
AS	Greenland Research programme (2000)	-18,000				
AS	Greenland Research programme (2001)	-46,000				
AS	Comp. Ass't N. Atlantic Humpbacks	-27,000				
E	POLLUTION 2000+	-51,000				
SOWER 2000		-20,000				
E	IWC-CCAMLR data verification	-3,000				
IA	SOWER Circumpolar cruise	-20,000				
IA	Photo-ID Catalogue for SH Humpbacks	-5,000				
Pre-session minke whale review SH		-20,000				
	Sub-total	*-225,000*				
Sundry expenditure		-1,500			*-1,500*	
	Sub-total	*-307,700*			*-274,500*	
Special allocation - Environment research:						
Unexpended funds brought forward from 1999-2000		-56,200			*0*	
			-363,900		***-274,500***	
Net transfer from or to (-) I and E Account			-129,837		*0*	
Opening Balance brought forward			134,837		*5,000*	
PROJECTED CLOSING BALANCE			**5,000**		***5,000***	

1. The Research Fund exists to receive voluntary contributions and any such monies as the Commission may allocate for research and scientific investigation and is charged with expenditure of this nature.

2. **Allocation** comprises

Expenditure		-363,900	*-274,500*
Less:	Balance brought forward	134,837	*5,000*
Less:	Other income	23,150	*23,729*
Plus:	Closing Balance required	-5,000	*-5,000*
		-210,913	*-250,771*

Appendix 5

AMENDMENTS TO THE SCHEDULE ADOPTED AT THE 52ND ANNUAL MEETING OF THE COMMISSION

(Changes in **bold** type):

Paragraphs 11 and 12, and Tables 1, 2 and 3:	Substitute the dates **2000**/**2001** pelagic season, **2001** coastal season, **2001** season, or **2001** as appropriate.

Appendix 6

THE RETIREMENT OF DR RAY GAMBELL OBE, SECRETARY TO THE INTERNATIONAL WHALING COMMISSION 1976-2000

As a special tribute to Dr Ray Gambell OBE, Secretary to the International Whaling Commission from 1st May 1976 to 31st August 2000, the speeches made at the 52nd Annual Meeting of the IWC in honour of his retirement are included verbatim below together with his response.

Mr Fer von der Assen (the Netherlands)
'Well any other business of course very often is not the most interesting item, it usually contains issues that have sort of dropped off the table when the agenda was put together but at this time I think it is different, I think it is a very important agenda item and I think I will stand up for the occasion.

Mr Chairman when I was asked this morning in the Commissioners Meeting to express the sentiments of all my fellow Commissioners on the event of Dr Gambell's approaching retirement I was temporarily overwhelmed. Indeed, it seemed a heavier burden even than Chairing the RMS Working Group although it will be over much sooner. I have been besieged all day with suggestions from other delegations of items I could include in this intervention and I have the benefit of cribbing from a text delivered last evening on behalf of our former Chairman, the witty Peter Bridgewater, so I am somewhat more relaxed.

Of course, I could not accept all the suggestions that I received such as the one recognising Ray as a Chief Architect indeed the Construction Foreman of the splendid new Conference Centre at last year's venue in Grenada. But Peter Bridgewater called Dr Gambell the very model of a modern Commission Secretary and I am sure we can all agree with that. He has the scientific expertise one would want in a science-based organisation. He has the administrative and financial skills to run both a very efficient staff and four or more weeks of logistically challenging meetings each year in sites ranging from luxurious resorts to gritty industrial parks. He has the ability to enunciate clearly the rules of the Commission, the amendments and the Resolutions we vote on and the voting procedures.

Your retirement approaches Ray but this afternoon we are still paying you. We need to take advantage of your vast experience and expertise to get answers once and for all to some of the Commission's perennial questions. The first one is what is a whale? The second, what does humane mean? Third, who is an aboriginal? Fourth, how many minke whales are there? Fifth, what is the competence of the IWC? Sixth, why is it so cold in here? Seventh, why is it so hot in here? I will remind you Ray of the Chairman's ruling earlier this week that there is no need to respond to rhetorical questions.

Finally and on a slightly more serious note I want to mention Ray's personal characteristics that have enhanced the operation of this Commission for so many years. He is patient, he is unfailingly courteous, he is sensitive to the needs of all participants no matter where they come from or their points of view. He also manages almost all the time to walk the tight rope between the often opposing factions within this body. Ray's warmth and friendliness has obviously rubbed off on his staff, they make all participants feel as welcome at far flung venues as they would visiting the Red House in Cambridge. Ray's wry sense of humour, his twinkly smile and his traditional boutonnière, today a flashy orchid, is it still there Ray? Yes. No it must have dropped off. There it is. They have all brightened our meetings for twenty-four years. We will all miss him and we wish him the very best in his retirement. Thank you Ray and fare thee well.'

The Chairman, Mr Michael Canny (Ireland)
'I just wanted to say a few words as well. I may not get the floor next year. For me I just wanted to say that Ray has been an institution within an institution. He has been the anchor in the IWC for almost a quarter of a century in a situation where all of us generally last only a few years. He has been an efficient and loyal servant to the Commission. As you can see the meetings run like clockwork, occasionally we run a little late but that's usually the Chair or the Commissioners talking too much but it is all due to his organisation and advice, it certainly isn't due to the front man in the Chair who if he has any sense just listens and does what Ray says. This may sound like Ray is just an efficient machine and the Netherlands have already referred to his humanity. He is a great human being, he has been good humoured and helpful at all times and I think in his dealings with the Secretariat he reminds me of a mother hen the way he looks after them and indeed any delegate who has a problem gets the same treatment. It is a tribute to him that he is liked by all sections of our little IWC community and it is a particular acknowledgement that the Secretariat behind his back have been receiving contributions for six months from literally all over the world and with these contributions we have acquired a little gift for Ray. It has been my personal privilege to work closely with him as Chairman for the last three years. As I say, I depended greatly on his advice during that time and developed an even greater respect and liking for him than as a mere delegate and now it is great privilege for me to present to him on your behalf a gift which will remind him of all his friends and colleagues at IWC and if somebody can do the unveiling.

It is a Huggins South-Sea Whale Fishery print from the 1820s. Huggins was official marine painter to King William IV and the subject is the sperm whale which I believe is Ray's speciality. So on your behalf I want to present this to Ray.'

Dr Ray Gambell, Secretary to the IWC

'Mr Chairman I have never made a speech in the IWC. This is my first and my last time. I have to say at the outset that the hideous complicity of my Secretariat overwhelms me because I knew nothing about this at all so thank you for your great secrecy. But after thirty-seven years working in this organisation I hope that you would allow me a little time to reminisce and to reflect on the changes that have occurred during those years. The world around us has changed in many ways including such things as communications if you will turn off that mobile phone, technology and the values which we put on the natural resources of the planet, planet earth, including the whales. When I started my career in whale research and many of you probably don't know that I am a whale biologist really, or at least I would like to think I was, when I started in 1963 the reported world catch in that year was over 63,000 whales and in fact probably many more because there was underreporting. In the Antarctic there was 16 floating factory expeditions from Japan, Norway, the Netherlands, UK and USSR with 190 catcher boats and the rest of the world there were 37 land stations and 7 floating factories operating. The nations involved in that catching operation included Australia, Brazil, Canada, Chile, Iceland, Japan, New Zealand, Norway, Peru, Portugal, Spain, South Africa, UK and the USA and it is good to see nearly all of you here now still although some of you may now have a different position on whaling.

The first IWC Commission meeting I attended was as a UK scientist and it was actually a special meeting held in 1965 because of the crisis surrounding the attempts to reach an agreement on suitably low quotas in the Antarctic whaling season and that was followed very soon afterwards by the seventeenth Annual Meeting in London and that ended on 2 July, thirty-five years ago nearly to the day. There were sixty-four delegates from fifteen governments and four NGOs at that meeting. It is a very different Commission today not least that there are nearly 200 delegates, we have a membership of forty one governments, ninety five observer organisations assembled here and, of course, there were the media. Perhaps you've heard of the definition of a conference, as a gathering whose members singly can do nothing but who together decide that nothing can be done. Well I am glad that as I leave here I know that cannot be said of the IWC this year, at least I don't think it can after this year's meeting and that is a great encouragement after …. I won't go into the politics.

When the Commission decided in the mid-1970s to set up a permanent Secretariat it advertised the post of Secretary and, of course, there was considerable interest in who would get the job. There was also, I have to say, a great deal of interest in who should not get it and I have a copy of an advertisement from the US press that appeared at that time which says 'write to Dr Robert White, Chairman of the US delegation to the International Whaling Commission and ask him to stand firm on the ten year moratorium and to vote against the possible appointment of Dr Ray Gambell, the infamous British Commissioner' so I hope that I have established better relationships with the NGO community in my time here rather than how it started.

I have had the great privilege of working with eight Chairmen over the years. When I was first appointed the Chairman was an Australian, Arthur Bollen, and he was followed by Thordur Asgeirsson of Iceland and what a great pleasure that was for me to find him as the Icelandic observer at this my final meeting. He was followed by Eduardo Iglesias of Argentina, Ian Stewart of New Zealand who sent a nice message, Sture Irberger from Sweden, Luis Fleishcer of Mexico and Peter Bridgewater of Australia who has also sent a message during this meeting before we came to our current and soon to be past Chairman Michael from Ireland. There have been very many Commissioners, many delegates, many NGOs but I will remember them with particular pleasure as colleagues and as real friends.

By some curious circularity of fate the first IWC Annual Meeting that I organised, because the 1976 had already been set up by the UK Ministry of Agriculture in London, that first meeting organised in 1977 was here in Australia in Canberra. We have been to many other of your countries since then and it has been a rare opportunity and a privilege to live and work with and get to know some of the local people in each place as we have arranged and run the ever expanding activities which come under the umbrella of an IWC Annual Meeting.

In closing I must pay a special tribute to all the other members of the Secretariat, particularly I would mention Martin Harvey, Daphne Ransom who is holding the fort back in Cambridge and Greg Donovan who have been involved for nearly as many years as I have and together with a surprisingly small number of other people who have worked in the secretariat we/they have tried to ensure that everything that the Scientific Committee and the Commission has wanted has happened both at the meetings and intersessionally and I suspect we have organised some things that you'd rather we hadn't done too but I do want to thank them all most sincerely for the support and the friendship that they have given me.

I started by saying that the world has changed a lot and the IWC has certainly changed a lot since I first became involved in it and now you are going to at least have one much prettier face to look at the Chairman's table in future meetings. The world has changed but for many people the whale is still a powerful symbol of our natural environment and our hopes for a well managed future, a resource which must be sustained however it is to be utilised, a source of wonder and of pleasure, a pleasure in creation for which we have the responsibility of care so I wish you all and your new Secretary Nicky well in this endeavour. Thank you.'