Annex P

Report of the Standing Working Group on Scientific Permit Proposals

Members: An, Baba, Bando, Berggren, Bjørge, Black-Layne, Brownell, Butterworth, Childerhouse, Cipriano, Clapham, Clark, C., Cooke, DeMaster, Engel, Fortuna, Friday, Frizell, Fujise, Funahashi, Gales, Goodman, Goto, Gunnlaugsson, Hakamada, Hatanaka, Hayashi, Iñíguez, Jean-Benoit, Kasuya, Kato, Kawahara, Kim, Kishiro, Kitakado, Last, Lawrence, Leaper, Lens, Lima, Lovell, Lyrholm, Mae, Matsuoka, Miyashita, Morishita, Murase, Nakatsuka, Nishiwaki, Northridge, Ohsumi, Øien, Okamura, Olafsdottir, Oosthuizen, Palazzo, Park, Parsons, Pastene, Perrin, Perry, Polacheck, Rambally, Read, Reijnders, Rennie, Robbins, Rogan, Rose, Sadler, Simmonds, J., Stachowitsch, Tanaka, Thiele, Tomita, Víkingsson, Wada, Walløe, Walters, Williams, Yamakage, Yoshida.

1. CONVENOR'S OPENING REMARKS

The Convenor welcomed the Working Group.

2. ELECTION OF CHAIR

Bjørge was elected Chair.

3. APPOINTMENT OF RAPPOTEURS

Gales, Northridge and Robbins acted as rapporteurs

4. ADOPTION OF AGENDA

The adopted agenda is given as Appendix 1.

5. REVIEW OF AVAILABLE DOCUMENTS

The Working Group identified the following documents as relevant: SC/56/O1-3, O10-20 and SC/56/SH11.

6. PROPOSALS TO FACILITATE THE REVIEW PROCESS

The Chair reminded the Standing Working Group that the Committee has in the past agreed that the current way of reviewing Special Permit Proposals is not necessarily effective. The existing guidelines, which have developed over a number of years, inevitably include some duplications and overlap within the broad headings used.

Three options were put forward with the aim of improving the existing mechanism, and specific text was provided to elaborate on these (see SC/56/SCP1). The three options were as follows:

(1) to continue the current procedure under the existing guidelines;
(2) to compress the existing duplicating guidelines to simpler questions; or
(3) to develop a new procedure focusing only on scientific matters (specifically the research methods, sample size and effects on stocks).

Discussion focused at first on the third of these options. Two specific issues gave rise to concern. First, if a new procedure was to be developed, focusing only on scientific matters, there was disagreement over whether any assessment of the effects of research takes on stocks should explicitly be linked to the use of the RMP *Implementation* process.

Some members felt that the Committee had spent considerable time and effort developing this process, and that an important precautionary principle is involved in ensuring that scientific takes are not deleterious to the stock. Other members felt that it is not always appropriate to use the RMP *Implementation* process for short-term research programmes, and that the objectives of the research programme should be primarily responsible for determining take levels. They also referred to the text of Article VIII of the Convention[1].

With reference to the issue of short-term research programmes, the standing working group recalled that the Committee had already agreed that any special permit takes 'should be assessed as though they were ongoing as well as short term, even if they were presented as a feasibility study' (IWC, 2001, pp.57-58). The standing working group agreed that any revised guidelines should incorporate this statement clearly in the opening paragraph, but that any such revised guidelines should then supplant and replace any previous or other existing decisions on how assessments should be conducted.

The second issue of concern was whether or not, in the absence of any current understanding of stock status, the Committee would be in a position to make an adequate assessment of the possible effects on the stock of proposed research takes. One view was that in such cases the Committee should make the relevant stock a priority stock and conduct the appropriate assessment as soon as possible. An alternate view was that Article VIII placed no such

[1] Notwithstanding anything contained in this Convention, any Contracting Government may grant to any of its nationals a special permit authorising that national to kill, take and treat whales for the purposes of scientific research subject to such restrictions as to number and subject to such other conditions as the Contracting Government thinks fit, and the killing, taking, and treating of whales in accordance with the provisions of this Article shall be exempt from the operation of this Convention. (Article VIII of the ICRW)

restrictions on research activities, and that the best currently available estimates of abundance were quite adequate for an assessment on the effects of the research on stocks.

The Chair concluded that the Standing Working Group would not come to any consensus on the specific details of a new procedure focusing only on scientific matters. One view was that given the intractable nature of these discussions, the Committee should limit itself to the existing guidelines (option 1 above). Another view was that the Committee should consider using independent reviewers, as had been done for the Southern Ocean Sanctuary Review, to try to develop a consensual approach to this issue.

Given the difficulties encountered in trying to reach consensus, the Standing Working Group agreed to refer the matter back to the Committee for further consideration.

7. REVIEW OF RESULTS FROM EXISTING PERMITS

7.1 Japan – Antarctic minke whales

7.1.1 Review of progress

SC/56/O12 described the most recent results of the JARPA program. Work was conducted in Area IV and the eastern part of Area III between 30 November 2003 and 3 March 2004. One sighting vessel (SV), three sighting and sampling vessels (SSV) and one research base ship were engaged in the research. Area IV strata were surveyed in the order of west-north, east-north, east-south, west-south and Prydz Bay. Area IIIE was surveyed prior to Area IV for the purpose of collecting the W stock samples, as those whales may migrate early in the feeding season. The SV covered 7,000 nautical miles and sighted 454 schools and 1,756 individual Antarctic minke whales. Three SSVs searched a total of 12,287 nautical miles and sighted 638 schools and 1,494 individual Antarctic minke whales. A total of 473 individuals were targeted for sampling, of which only 440 individuals were sampled. The most common reason for sampling failure was that the targeted whale escaped into the pack ice. Mature females were dominant in the east-south and the west-south stratas in Area IV, mature males were dominant in Area IIIE and in the west-south stratum in Area IV. In Prydz Bay, mature males and females predominated. The fraction of immature animals was relatively high in the east-north stratum of Area IV. Maximum body length was 10.05m for females and 9.39m for males, while the minimum length was 4.9m for both sexes. These results were not significantly different from previous JARPA cruises. The most characteristic result of the present survey was the large number of humpback whale sightings, which exceeded the number seen during any previous JARPA cruise. The authors concluded that the composition ratio and density index of humpback whales have been increasing, especially since 1995/1996, while those of Antarctic minke whales have varied over the same period. In past research cruises, humpback whales were most frequently observed off the ice edge while Antarctic minke whales were abundant near the ice edge. However, more recent observations suggested that the distribution of humpback whales had expanded not only offshore, but also near the ice edge. Humpback whales were observed to be either mixed with, or clearly separate from, Antarctic minke whales near the ice edge.

SC/56/O12 hypothesised that inter-species competition might be occurring between humpback and Antarctic minke whales. In discussion, some members questioned the inference of competition between species on the basis of the available data. They argued that spatial and temporal overlap alone was not sufficient to establish a competitive dynamic. They referred to the US Gulf of Maine, in which baleen whale species exhibit considerable overlap, and yet there is no evidence that one population was negatively impacting the other.

The JARPA investigators clarified that they did not have direct evidence of competition at present, but felt that species competition was an appropriate working hypothesis in this case. In response, it was noted that this was appropriate as long as other potential hypotheses were also explored.

SC/56/SH11 presented current abundance estimates of humpback and fin whales in the Antarctic Areas IIIE (35°E-70°E), IV (70°E-130°E), V (130°E-170°W) and VIW (170°W-145°W) in the waters south of 60°S. Estimates were based on sighting data obtained by JARPA between the 1989/90 and 2002/03 austral summer seasons and the DISTANCE analysis program. The following conditions and assumptions were applied to these analyses:

(1) distance and angle were corrected using the results of the distance and angle estimation experiments;
(2) truncation distance was 2.4 nautical miles;
(3) effective search half width was obtained by fitting a hazard rate model;
(4) the smearing parameter was obtained by the Buckland and Anganuzzi method II;
(5) $g(0)$ was assumed to be 1; and
(6) sighting data were pooled by each season for estimations of the effective search half-width (ws) and the mean school size (E(s)).

Abundance estimates of humpback whales in Areas IIIE, IV, V and VIW were 4,426 (CV=0.20), 32,519 (CV=0.11), 2,759 (CV=0.16) and 1,551 (CV=0.24), respectively. The total research area estimate was 41,255 (CV=0.10) in the 2001/02 and 2002/03 seasons. Because data in Areas IIIE and VIW were not obtained in the peak migration period, results in these areas were underestimated. Instantaneous increase rates of humpback whales were estimated as 18.1% (CV=0.21) and 12.2% (CV=0.21) in Areas IV and V, respectively. Expansion of humpback whale distribution was observed in Area IV between the first half (1989/1990-1996-1997) and the second half of the surveys (1997/97-2002/03). Abundance of fin whale in Areas IIIE, IV, V and VIW was 3,382 (CV=0.52), 7,642 (CV=0.26), 3,031 (CV=0.33) and 474 (CV=0.32), respectively. The total research area estimate was 14,529 (CV=0.20) in the 2001/02 and 2002/03 seasons. Instantaneous increase rates for fin whales were 29.8% (CV=0.10) and 12.9% (CV=0.25) in Areas IV and V, respectively. The preliminary estimate for this species south of 30°S between 35°E and 145°W based on JARPA data and Japanese Scouting Vessel (JSV) data and was 68,000 (CV=0.21). Humpback whales were concentrated between 90°E and 120°E in northern and southern strata, and were widely dispersed in other parts of Area IV.

Discussions of SC/56/SH11 first focused on the high rates of increase reported for both humpback whales and fin whales. Some members pointed out that the reported rates were implausible; others noted that observed rates of over 10% have been reported in other areas. The issue of plausible rates of biological increase has been a source of considerable discussion by the Scientific Committee in past years and the Working Group was referred to those discussions (e.g. Brandao *et al*., 2000; Clapham *et al*., 2001; IWC, 2003b) without further debate. However, both parties

agreed that there might be other factors contributing to the magnitude of the increase that was observed. Therefore, discussion shifted to explore what, if any, factors had the potential to confound rate of increase estimates in this case. Humpback whale distribution appears to have changed in the sampling areas, such that humpback whales are now more likely to be concentrated at the edge of the pack ice. Kato called attention to a situation, in which the observed rate of increase of sperm whales was thought to be a combination of biological increase and movement of new animals into the survey area.

The working group also touched upon whether such effects would produce a bias in the framework of the JARPA survey design. One member pointed to a doubling of abundance of humpback whales in two consecutive years (SC/56/SH11, fig. 7b), and a 12-fold increase in fin whale abundance over a similarly short time frame (SC/56/SH11, fig. 8a) as an indication of potential bias in the results. The investigators of JARPA disagreed that there was a fundamental problem with the survey design and suggested that members revisit the detailed JARPA proposal document (IWC, 1988); however they planned to continue to think about what other factors might be at work.

In response to a query, Hatanaka stated that Japan was considering placing a cetacean expert on board an Antarctic expedition team in order to continue to study the Antarctic minke whales that have moved into the pack ice.

SC/56/O20 (Item 2) provided a summary of research activities conducted by the Institute of Cetacean Research (ICR) under JARPA in the period May 2003-May 2004. The field activities conducted during the 2003/04 JARPA survey in Areas IV and IIIE included: sighting surveys, biological survey on 440 samples of Antarctic minke whales, oceanographic surveys and satellite tagging, biopsy and photo-id experiments conducted on other large baleen whale species. The report described the progress made in the research related to the four objectives of JARPA, but also several other studies not directly related to the main objectives of that program (Item 2.5). The latter research, which involved genetic, morphological and physiological studies, was conducted by ICR in collaboration with other research organizations within and outside Japan. Several publications and oral presentations at symposiums that were based on JARPA data are also listed in the report.

7.1.2 Planning for review of final JARPA results

At its 2003 meeting, the Scientific Committee appointed Brownell, Childerhouse, Fujise, Hatanaka, Pastene and Schweder as members of a small group to prepare for review of final JARPA results (IWC, 2004e, p.410). However, the Committee did not identify a convenor. Following inter-sessional consultations, Zeh was suggested as a convenor for this steering group. The SC Standing Working Group on Special Permits **agreed** to this proposal. It was noted that if the review is not completed prior to the 2005/2006 season, it is possible that the SC would have to review a new permit proposal before the current program is evaluated.

7.2 Japan – North Pacific common minke, sei, Bryde's and sperm whales

SC/56/O13 outlined the offshore component of the 2003 full-scale survey under JARPN II. The objectives of the full-scale research were: (1) feeding ecology and ecosystem studies, involving studies of prey consumption by cetaceans, prey preferences of cetaceans and ecosystem modelling; (2) to monitor environmental pollutants; and (3) to study on stock structure, particularly for minke whales.

Target species were the common minke whale, Bryde's whale, sei whale and sperm whale. The research area covered sub-areas 7, 8 and 9 in the western North Pacific. The survey consisted of the whale and prey surveys. A total of seven research vessels was used: two dedicated sighting vessels (SV), three sighting/sampling vessels (SSVs), one research base vessel and one trawl survey vessel equipped with scientific echo sounder (TSV). A total of 11,903 n.miles was surveyed over a period of 84 days. During that period, 125 common minke, 193 Bryde's, 236 sei and 935 sperm whales were sighted by the SSVs. A total of 100 common minke, 50 Bryde's, 50 sei and 10 sperm whales was sampled by the SSVs. The cooperative survey on ecosystem research was conducted in parts of sub-area 8 and 9 from 10 to 22 June and in a part of sub-area 7 from 26 June to 7 July (excluding 30 June). All whales sampled were examined on board the research base vessel. Major prey species of common minke whales were Japanese anchovy (*Engraulis japonicus*) and Pacific saury (*Cololabis saira*). Small-sized Japanese anchovy, including larva, was found in the stomachs of the Bryde's whales. The predominant prey species of the sei whales were copepods, krill, Pacific saury and Japanese anchovy. The dominant prey species in the stomach of the ten sperm whales were different kinds of squids, which inhabit the mid- and deep-waters.

SC/56/O14 outlined the coastal component of the full scale JARPN II survey conducted in 2003. The coastal survey was planned as the two-year feasibility survey. The first year survey was carried out in autumn 2002 in coastal waters off Kushiro, Japan, and the 2003 coastal survey was the second one. The 2003 coastal survey had three research components: (1) common minke whale sampling survey using four small-type catcher boats as sampling vessels; (2) prey species survey using one echo sounder-trawl survey vessel; (3) dedicated sighting survey using one research vessel. The whale sampling survey was conducted from 10 April to 2 May 2003, in the coastal waters off Sanriku, northeast Japan. One researcher was onboard each sampling vessel to record sighting and sampling information, weather conditions, and vessel movements. All animals sampled were landed on the JARPN II research station established in the Ayukawa port in Sanriku, for biological examination. The prey species survey and the dedicated sighting survey were conducted from 8 to 28 April. Four sampling vessels surveyed a total of 3,834 n.miles. In all, 184 schools (188 animals) of minke whales were sighted, of which 50 animals were sampled. In the research area, there were many fishing boats and gears, however, the sampling took place without any problems or accidents. At the research station, animals were examined by biological researchers, for studies not only on feeding ecology but also stock structure, life history, and pollution. Animals at various growth stages were obtained. Major prey species were Japanese sand lances and krill. The most dominant species, the sand lance, was not obtained by the other JARPN II surveys. There were no serious practical problems and the 2003 coastal survey was conducted successfully.

In response to a question, it was clarified that the sampling focused on the waters south of Ayukawa because of a known concentration of whales in this area, which is also important for fisheries. Given the importance of whale/fisheries interactions to the research, this area was sampled preferentially.

SC/56/O15 presented the preliminary results of prey consumption of three baleen whales and their interaction with fisheries in the western North Pacific. The stomach contents of common minke whale, Bryde's whale, sei whale

sampled in the offshore Pacific region from May to September as part of the 1996-2003 JARPN II, were analyzed. The main prey species of common minke whale consisted of one krill (*Euphausia pacifica*) and two fish (Japanese anchovy *Engraulis japonicus* and Pacific saury *Cololabis saira*). The main prey species of Bryde's whale consisted of one krill (*Euphausia pacifica*) and one fish (Japanese anchovy). There were seasonal, geographical and yearly changes of prey species in western North Pacific. The main prey species of sei whale consisted of two copepods (*Neocalanus cristatus*, *N. plumchrus*), one krill (*Euphausia pacifica*) and two fish (Japanese anchovy and Pacific saury). The body length of Japanese anchovy in the stomachs differed among whales. The total annual prey consumption of Pacific saury by three baleen whales was estimated as 230,000 tons in the western North Pacific. Minke whales feed on Pacific saury in August to September, which is the same as the Japanese Pacific saury fishing season. Therefore, the authors suggest that the consumption of Pacific saury by common minke whales should be taken into account for fishery management. In the case of Japanese anchovy, this study estimated that the three baleen whales in the western North Pacific consumed a total of 2,720,000 tons. This value is considerably larger than the biomass of Japanese anchovy (1,300,000 tons), which was estimated by Japanese governmental scientists. Based on these results, the authors suggest the possibility of direct competition between the whale and the fisheries for these resources in the western North Pacific.

SC/56/O16 reported on an analysis of the stomach contents of common minke whales, *Balaenoptera acutorostrata,* sampled off the Kushiro region, Japan. Sampling was performed between June and October during portions of the 1996 JARPN through to the 2002 JARPN II. The dominant prey species consisted of one species of krill *(Euphausia pacifica*), three species of fish (Japanese anchovy *Engraulis japonicus*, Pacific saury *Cololabis saira* and walleye pollock *Theragra chalcogramma*) and one species of squid (Japanese common squid *Todarodes pacificu*s). All of these prey species are also targeted by local fisheries. The annual prey consumption by common minke whales was estimated as follows: Japanese anchovy (10,000-15,000 tons), Pacific saury (3,500-5,000 tons), walleye pollock (6,000-10,000 tons) and Japanese common squid (1,600-2,500 tons). Based on these results, the authors considered it possible that there was direct competition between the common minke whale and fisheries for these resources in this region. In order to evaluate this further, the following additional information is required: accurate abundance estimates of prey species and common minke whales, as well as the residency period of common minke whale off the Kushiro region.

SC/56/O17 reported the results of analyses on interaction between common minke whales and coastal fisheries, especially sand lance fisheries, in the coastal waters off Sanriku, northeast Japan. The coastal survey of JARPN II was conducted from April to May 2003 and 50 common minke whales were sampled. The survey revealed that the whales mainly feed on Japanese sand lances and krill in the area. The sand lances and krill are also an important target species of coastal fisheries. Analyses to evaluate the interaction between common minke whales and coastal fisheries were carried out. Total prey consumption by whales from April to May was estimated as 5,500 tons: estimates for sand lances and krill were 3,900 tons and 1,600 tons, respectively. This total consumption of sand lances was evaluated as 63% of the current sand lance fisheries catch in the coastal waters off Sanriku. The fishing season for sand lances in the area is from February to May and common minke whales feed on the fishes in the same season. Sampling positions of minke whales that fed on sand lance overlapped with the sand lance fishing ground. Existence of interaction between common minke whales and sand lance fisheries was suggested. In the coastal waters off Sanriku, both catch quotas and the season of the sand lance fisheries are regulated by the local fisheries co-operative board. In order to evaluate the degree of interaction, the authors indicated that further information and surveys were needed.

In reference to papers SC/56/O13-17, one member commented that he would prefer to see more consideration for uncertainty in these analyses, and particularly caution in the temporal and spatial extrapolations of the estimates.

SC/56/O18 analysed the selection of five major prey species by minke whales, based on the JARPN II coastal survey off southeastern Hokkaido in September-October 2002. The research programme consisted of a sampling survey for minke whales, a dedicated sighting survey and a prey species survey. The Nisshin Maru fleet also made a whale sampling survey in the vicinity. Acoustic analysis showed anchovy concentrations in two areas on the continental shelf, while high densities of krill occurred along the edge of the continental shelf. Pollack was confined to the upper continental slope. Mid-water trawl tows at predetermined stations sampled saury and squid in areas of low water temperature and sporadically in the open sea, respectively. Large male minke whales dominated in the offshore Oyashio region. Saury had been consumed by half of them, and was the most abundant species in the diet, followed by anchovy, krill and squid. Small minke whales were commonly sampled together with large ones in the continental shelf region, where anchovy was the most frequently occurring prey species. By comparing biomass estimates of each prey species by region, it appears that large minke whales have a preference for squid and anchovy in large minke whales, while smaller minke whales preferred Pollack. The preference for krill was relatively high in small minke whales and relatively low in larger ones. The difference in the selectivity could be explained to some extent by the vertical distribution of the prey species relative to the diving ability of large and small minke whales.

SC/56/O24 presented outline, improvement and test runs of a MULTSPEC-type ecosystem model for the western North Pacific. The model was originally structured as a simple case of a four species system, but walleye pollack was recently added. The model is area- and age-structured. The calculation proceeds in each month in the following order: migration, reproduction, predation, catch, natural mortality excluding predation and growth. Inputs for biomass and catch were updated based on recent stock assessments. It was assumed that $g(0)$ was 0.7, which resulted in an estimate of 35,000 minke whales instead of 25,000 animals under the previous $g(0)=1.0$ assumption. The selectivity for krill was lowered to 0.05 based on the recent JARPN II results. These changes to the input values had large effects on the results of current test runs.

Several issues were raised during discussion. Friday asked if uncertainty had been incorporated into the model, what sensitivity analyses had been made for the input parameters, and how sensitive the model was to assumptions about the processes that were being modelled (such as the functional responses implicit in the multi-species model). In

response Kawahara replied that sensitivity tests, which were a major component of the modelling approach, are currently being conducted.

Gales questioned whether the more rapid passage time of krill through the digestive tract, as compared to fish, might be a source of bias in the analysis. Walløe replied that the Japanese methodology was the same as that of the Norwegians, and that only the fore-stomach was sampled. There was disagreement over whether passage of krill through the fore-stomach would be quicker than that of fish.

Funahashi reported that the Japan Fisheries Agency had published stock forecasts for Pacific Saury and asked whether these would be used as comparisons with the predictions of the modelling approach taken here. In response Kawahara said that the biomass of Pacific saury has been estimated by trawl survey three years ago, and these results will be included in future development of the models described in SC/56/O24.

With regard to the Ecosystem studies, some members noted that the model used comprises only four elements: three commercial fish species, krill, whales and a human fishery. These represent a very small fraction of the ecosystem components in this area, and the model also does not include any feedback mechanisms or second-order effects; thus the resulting analysis can only be viewed as a vast over-simplification of the functional relationships within a true ecosystem. Other members felt that it is unreasonable to criticise the development stage of ecosystem modelling as overly simplistic. They stated that JARPN II would include the development of a sophisticated ecosystem and referred to EcoPath and MULTSPEC. They noted progress made in EcoPath to identify key-stone predators among many species or species groups in the area. In MULTSPEC it was difficult to include many species and complicated food webs. However, it is possible to integrate the detailed dynamics of each species with direct interactions between them. They noted that the species in the model were important fisheries resources to Japan, which have a large biomass and occupy a large fraction in the higher level of the ecosystem in the area.

SC/56/O19 described the estimation of sei whale abundance as a result of the 2002 and 2003 JARPN II surveys. The JARPN II surveys had been in sub-areas 8 and 9 in August and September, and had resulted in an estimate of 4,100 animals. This figure had then been used to extrapolate to an abundance estimate of 68,000 animals for the area between 35° and 60°N and east of 180° using encounter rate date from the Japanese scouting vessel surveys between 1972 and 1988. The 68,000 figure compares with an abundance estimate of 28,400 for the period 1997-2001, during which time JARPN surveys estimated sei whale abundance at 4,905 in areas 7,8&9 during June and July, extrapolating to the 28,400 figure again by using the JSV data.

There was much discussion on the validity of these extrapolations. Some members of the Sub-committee noted that the Committee did not endorse population estimates based on extrapolations from surveys such as the JSV. Although some extrapolations have been made in the past, these have not previously been done for formal population assessments, but rather to illustrate potential scenarios. There was some concern as to why two surveys that came up with similar numbers of animals in sub-areas 8 and 9 could give rise to such different total abundance estimates. The reason appears to be that the two surveys (JARPN and JARPN II) were conducted in different months of the year (June and July vs August and September), and the JSV data suggest that a greater proportion of the population is present in sub-areas 8 and 9 during June and July compared with August and September. The lower number of animals reported in the JSV data for August and September in these areas means that the extrapolation factor is much greater for the JARPN II survey compared with JARPN. In other words, the density of animals outside the survey area is thought to be greater during August and September compared to June and July. Some members felt that this extrapolation was unjustified as it relied upon JSV data that were collected up to 30 years previously at a time when the population was severely depleted, as shown by CPUE, sightings data and age structure analysis. Distributional changes might well be expected since that time, especially for sei whales. It was suggested that the only valid comparison was between the two surveys, JARPN and JARPN II, restricted to the actual survey sub-areas in common, which were sub-areas 8 and 9. Wade asked if the estimates for sub-areas 8 and 9 alone for the two surveys could be made available to the Sub-committee. These were not given on the basis that the proposed analysis would not provide a meaningful comparison, given that the surveys had been done in different months.

In response to criticisms of the sei whale abundance estimate, Hatanaka replied that there were many signs that sei whale numbers had increased. Aside from the extrapolated abundance estimate of 68,000 animals, sightings rates of sei whales in JARPN II were also high, and nearly double those of minke whales in the area. The JARPN II survey had covered 5,500 nmiles and 103 animals had been sighted, whereas the JSV surveys had covered 40,000 n.miles and sighted only 43 sei whales. Whaling on sei whales had been prohibited nearly 30 years ago, and at that time the modelled abundance was thought to have been about 9,000 animals; an increase to 68,000 now was biologically appropriate. Other species such as bowheads and grey whales had also increased and were now close to their carrying capacity, so it was natural to find a similar picture with sei whales. He queried why anyone would suggest they had not increased.

In response, Wade stated that there had simply been no data provided to support the contention that the population had increased; he and others maintained that the extrapolation employed was not a valid means for assessing population numbers, and that the numbers produced in SC/56/O19 did not anyway show any significant difference in population size as the confidence intervals of the two estimates overlapped. He also noted that differences in encounter rates could easily be caused by differences in detection functions, and that making comparisons on the basis of encounter rates alone was not appropriate. He concluded by saying that sei whale numbers may very well have increased, but there were no data to support or deny this possibility.

SC/56/O20 presented an overview of research activities by the ICR between May 2003 and May 2004, including research activities conducted under JARPN II (Item 3). Field activities conducted under the 2003 JARPN II survey included an offshore and a coastal component. These involved sighting surveys and biological surveys on common minke (n=150), Bryde's (n=50), sei (n=50) and sperm whales (n=10). In addition, concurrent prey species surveys were conducted. Other field activities were oceanographic surveys and experiments related to biopsy and photo-id on other large baleen whale species. SC/56/O20 also described the progress made in research related to the three main objectives of JARPN II, with

particular emphasis on the research on feeding ecology and ecosystems. Item 3.5 of the report described several other studies not directly related to the main objectives of JARPN II. These studies, on genetics, morphology and physiology, were conducted by ICR in collaboration with other research organisations within and outside Japan. Several publications or oral presentations at symposiums based on JARPN II data were also provided in the report.

SC/56/O2 outlined some considerations of the feasibility components of the JARPN II research plan (SC/54/O2), which was presented and discussed at the Scientific Committee in 2002. The plan incorporated two survey components, 'offshore' and 'coastal'. Some research elements in the plan were defined as feasibility studies: the logistics of sampling in the coastal area in 2002 and 2003 using small type whaling catcher boats; sample size of minke whale in the coastal component; sample size of sei whale and sampling of sperm whales in the offshore component. Making use of samples and data collected in the 2002 and 2003 surveys, analyses related to the feasibility studies were conducted. Based on the results of those analyses it is concluded that: (a) no substantial problems occurred during the coastal surveys using small-type whaling catcher boats, therefore the coastal component of the JARPN II will continue using the same kind of vessels and methodology; (b) the sample size of minke whales in the coastal component will be increased from 50 to 120, with 60 animals to be sampled in each of the early and the late season; (c) the sample size of sei whales in the offshore component will be increased from 50 to 100 animals; (d) sampling of ten sperm whales will be continued. The main text of this paper presents the background and rationale for the changes proposed.

Discussion focused on the sampling strategy for minke whales. SSV track lines presented in SC/56/O13 did not appear to follow IWC guidelines, but the sub-committee was re-assured that SSV data were not used for abundance estimates, rather these were derived from dedicated sighting vessel surveys, the track line of which do follow IWC guidelines, as shown in fig. 1 of SC/56/O19. Nevertheless some members questioned the way in which the sampling strategy for taking minke whales for stomach contents analysis had been devised. Sampling appears to be done by taking every whale encountered up to the sampling limit of 120 animals. This means that sampling may be completed before the entire area is covered, thereby introducing a potential spatial bias into the sampling procedure. The non-systematic SSV track lines shown in SC/56/O13 also suggested that the sampled animals might not be representative of the whole area. Additionally, it was questioned whether this sampling strategy might not lead to some local areas of depletion.

In response it was asserted that the area being sampled was very large, and sampling was not limited to areas of whale concentration. It was stated that the sampling survey track lines did not need to have the same level of randomness as the sightings surveys. Furthermore, sampling is intended to cover 6 years, and will be extended gradually to cover the entire area. The sampling area covers a minke whale migration path and as such it is unlikely to lead to any local depletion and indeed there was no evidence of that.

7.3 Iceland – North Atlantic common minke whales

SC/56/O10 described progress since last year on the Icelandic research plans. There were few results to report yet, as sampling started late in the 2003 season. Last year, a two-year pilot project, as it is now referred to, had been planned involving non-lethal and lethal sampling, the latter to include 100 minke whales, 50 fin whales and 50 sei whales. A permit to begin work was issued by the Government of Iceland in August of 2003 for 38 minke whales, and in June of 2004 another permit had been issued for a further 25 minke whales. However, permits for the fin and sei whales have not yet been issued. The study was therefore still in its early stages. No decision had yet been taken on the fin and sei whales.

The MRI had hired three vessels with experienced crews in 2003, and takes of minke whales were distributed all around Iceland. It was noted in discussion that most of these were very close to shore. This was because, although the catcher boats had been sent further offshore, they had found no minke whales. According to a simultaneous aerial survey, the animals appeared to be concentrated close to shore in August and September of 2003. The 2003 sex ratio was 23:13 males to females.

In addition to the catcher boats, one shipboard and two aerial surveys were also conducted in accordance to the original programme. The shipboard survey was part of a joint redfish-plankton survey in June of 2003. Thirteen cetacean species had been sighted over 1,121 nautical miles. Sightings rates were similar to the 2001 June survey, except that there were more odontocetes and fewer baleen whales, although humpback whales showed a somewhat wider distribution. Aerial surveys were conducted in April and June of 2004. An experimental aerial sightings survey was also conducted off southwest Iceland in September 2003 in co-operation with the Greenland Institute of Natural Resources, to compare sightings made by observers with aerial photographs taken from a second plane.

Laboratory analysis of genetic information is underway, but research awaits further sampling. One minke whale was instrumented with a satellite tag in October 2003, but the tag did not transmit. Up to 10 further tags will be deployed on minke whales in 2004. Work is also ongoing on parasites and pathology, a full veterinary autopsy having been carried out on five minke whales.

It was reported that the Icelandic survey started late in the 2003 season, because the government had decided on a later starting date for practical reasons. However, the MRI viewed the proposed sample of 200 minke whales as being a single sample, spread over the summer months and nine sub-areas. There had never been any intent to address inter-annual variability, and the fact that samples would now be taken over three or even four years instead of two would not adversely affect the objectives. Indeed spreading the sampling over more years might provide a better overview of whale feeding ecology.

SC/56/O11 reported on a new technique to investigate food ingestion rate. Blood and urine samples were obtained from 16 of the 2003 Icelandic minke whales, whose weights were inferred from their length. Na^+, K^+, Cl^-, Mg^{++}, Ca^{++} creatinine, urea and uric acid urea and uric acid were measured in blood and urine as well as pH and osmolality. Utilising allometry of creatinine the average urine volume was predicted to be 214 litres per day. From this volume and the known water content of the ingested food, the average daily food ingestion was estimated to be about 280 litres. This is considerably greater volume than reported earlier by most workers. High sodium and magnesium levels suggest some seawater ingestion. This analysis was preliminary and will continue to be elaborated.

The sub-committee discussed this new method briefly. Some members thought that it represented a new means of analyzing feeding ecology of whales through lethal

sampling, and that as such it would be useful to implement in the JARPN II programme as well. Hatanaka agreed that this approach looked useful and said that the Japanese would follow suite. The collaborative work with the University of Hokkaido on molecular endocrinology to understand seawater adaptation of minke whales in the North Pacific would provide a useful collaborative basis for work with Icelandic colleagues to develop a comprehensive study of minke whale feeding ecology. Vikingsson welcomed this collaboration.

Other members noted that the method relied on allometry to extrapolate from smaller animals to larger ones, and that this had previously been shown to be problematic in the case of whales. Furthermore, saltwater ingestion may confound some of the results through Na+ contamination, as it is very difficult to deduce how much seawater had been ingested.

When asked about the extent to which the sub-committee's previous comments on the proposed research had been taken into account, Vikingsson replied that a few new projects, for example looking at genetic sampling of the last part of the rectum, had been implemented with a view to possible future analysis of faeces.

In conclusion, the sub-committee noted that the pilot project had not yet been implemented for fin and sei whales.

8. REVIEW OF NEW OR CONTINUING PROPOSALS

The working group considered three continuing proposals for scientific whaling. As in previous years, there was severe disagreement within the working group regarding advice that should be provided on a number of issues, including: the relevance of the proposed research to management, appropriate sample sizes and applicability of alternate (non-lethal) research methods (IWC, 1999, pp.45-6; IWC, 2000, pp.54-6, IWC; 2001, pp.57-8, 64-5; IWC, 2003a, p.65; IWC, 2004a, p.39). It was therefore **agreed** that the lack of a detailed review of scientific whaling proposals should not be interpreted by the Commission as a consensus viewpoint.

It was further **agreed** that the primary focus at this meeting would be to evaluate the sustainability of proposed and expected stock-specific removal levels associated with scientific whaling.

8.1 JARPA

The JARPA survey plan for the 2004/2005 season was outlined in SC/56/O3. This will be the 16th full-scale survey, and the objectives, survey items and methods will be the same as in previous years. The survey for the coming season will therefore cover Area IV and the western half of Area VI (VIW) to focus on the issue of distribution of the stocks. In response to suggestions, the study on stock structure under JARPA has been extended to include several biological markers, both genetic and non-genetic. These approaches are being used to examine all JARPA samples collected from 1987/88 to 2001/02. The proponents indicated a need for further sampling in Area VIW because previous results suggested additional stock structure in that sector. Additional sampling was also indicated to investigate yearly variation in that sector. Analyses of samples from 2002/03 using different approaches are still under way. It was therefore decided to conduct the additional survey in Area VIW. Again comprehensive results will be reported during the JARPA review meeting. The schedule for the 2004/2005 JARPA survey will be as follows:

(1) Research vessels will leave Japan at the beginning of November 2004 and return in the middle of April 2005.
(2) The sample size will be 300 animals in Area V and 100 animals in Area VI with a 10% allowance.
(3) The type and the number of vessels will be the same as the previous years: one research base vessel, three sighting and sampling vessels and one dedicated sighting vessel.
(4) Cooperative work with R/V *Kaiyo Maru* will be added.
(5) As in the past, foreign scientists will be welcome to participate.

In order to ensure comparability of data with the 2002/2003 survey, the survey period and the sample size will remain unchanged. The proposal, objectives, methodologies, effects on stocks and arrangements for participation by scientists from other nations as outlined in SC/56/O3 remain unchanged from the previous proposal.

Comments and discussion by the SC Working Group

The working group noted that the coming season is the last field season in an eighteen-year programme and that a comprehensive review of the entire programme is under preparation by the SC. The working group therefore referred to its discussion and comments provided in IWC (2004d, pp.351-352).

8.2 JARPN II

8.2.1 Overview of the proposal

SC/56/O1 presented a revised JARPN II research plan for the period starting in 2004, taking the feasibility components examined in SC/56/O2 into consideration. The objectives of the revised JARPN II are the same as in the original research plan. Furthermore, the research area, survey components ('offshore' and 'coastal'), number of research vessels, searching method, and sampling method were not changed. However, the offshore survey component will now be conducted for approximately three months in the period between May and September. The coastal survey component will be conducted twice in each year (i.e. an early and late survey). Sample size will also be modified for common minke whales and sei whales according to the results of consideration for feasibility components. A total of 220 common minke whales (100 from the offshore survey and 120 from the coastal survey), 50 Bryde's whales (offshore survey), 100 sei whales (offshore survey) and 10 sperm whales (offshore survey) will be sampled in sub-areas 7, 8, and 9. Regarding the coastal survey component, 60 common minke whales will be sampled in each of the early season and the late season. The HITTER method was used to evaluate possible effects on the common minke whale and sei whale stocks. The proponents concluded that the effect on the stocks would be negligible.

COMMENTS AND DISCUSSION BY THE SC WORKING GROUP

The working group noted that the objective, methodology, and arrangements for participation by scientists from other countries, as outlined in SC/56/O1, were unchanged from the proposal previously reviewed by the SC. The working group therefore referred to its comments and discussion provided in (IWC, 2004d, p.351). The working group further noted that the revised programme (SC/56/O1) proposed an additional take of 70 minke whales by the coastal survey and an additional take of 50 sei whales by the offshore survey. The total takes proposed by the revised research plan are therefore 220 minke whales (120 by the coastal survey and 100 by the offshore survey), and 50

Bryde's, 100 sei and 10 sperm by the offshore survey. The working group confined its discussion on the effects on stocks implied by the proposed increased sample size of minke and sei whales. For the effects on stocks of Bryde's and sperm whales, the working group referred to its comments and discussion provided in IWC (2003a, pp. 66-77).

EFFECTS ON STOCKS

The relevant guidelines are:

(1) A review of the most recent information on the stock or stocks concerned, including information on any exploitation, stock analysis and recommendations by the Scientific Committee to date (including, where appropriate, alternative analyses and conclusions and points of controversy);
(2) An evaluation of the specification in the permit proposal of 'possible effect on conservation of the stock'. As appropriate, the Scientific Committee may carry out its own analysis of the possible effects;
(3) The research can be conducted without adversely affecting the overall status and trends of the stock in question or the success of the comprehensive assessment of such stocks (IWC, 2003a, p.74).

WESTERN NORTH PACIFIC MINKE WHALES

O-STOCK

Some members raised concerns regarding the proposed increase in catches of O-stock common minke whales in JARPN II. They questioned the use of the HITTER methodology to examine the effect of the proposed catch in light of last year's *Implementation Simulation Trials* (*IST*) and the potential for mixing stocks. The scenarios described in SC/56/O1 corresponded to *IST* base cases A and B, both of which essentially use the abundance for the entire western North Pacific in catch calculations. However, the majority view in the sub-committee examining these trials was that further stock structure was likely present and that the *Implementation* should be robust to such structure. Most members recommended the implementation of Variant 5 to account for this stock structure uncertainty. Most of the baseline A trials allowed a median catch/year of 140-160 whales (commercial plus bycatch). There was one single set of trials that gave a total catch exceeding 200, which was a trial using g(0) of 0.5 (effectively doubling the abundance) and 'unbiased abundance estimates'. This trial was added during the meeting and was either discussed very little or not at all. In lengthy discussions of g(0) it was noted that no data have been gathered to estimate this parameter on Japanese cruises in the North Pacific and that detection probabilities are almost certainly specific to the species (behavioural differences), weather, ship and observers used. No mention of attempting to gather data to estimate g(0) was given in this year's cruise report. Therefore, these members concluded that the proposed increase would exceed the *IST* recommendations of the Committee even in the absence of stock structure. The baseline C trials accounting for stock structure Variant 5 gave a catch of approximately 40 for the coastal areas (Ow plus Oe). The same members argued that the current incidental catch would consume the allowed catch, rendering even the existing level of scientific whaling catches excessive. Thus, if baseline C does reflect reality, a scientific take of 120 whales per year from coastal waters would likely lead to the severe depletion of a possible coastal stock (in sub-Area 7W). Finally, it was noted that the MSYR values used in the HITTER analysis were not consistent with the range used in the *IST* trials (see IWC, 2004c, pp.118-139). Most notably, the present analysis did not include values as low as those previously used.

The proponents defended the use of HITTER methodology to evaluate potential impacts from the proposed increase. It was their view that *IST*s and the RMP were neither designed for, nor required to evaluate impacts from scientific permit catches. They felt that the proposal should therefore not be criticized on that basis. The 100-year take assumed by the RMP was not considered necessary for a research programme that would be reviewed every six years. Furthermore, a conservative, 30-year projection was employed in the HITTER calculations.

The proponents also disagreed that all existing stock structure hypotheses deserved equal consideration in this assessment, particularly given that the plausibility of baseline stock structures had not yet been examined. The Committee agreed last year (IWC, 2004a, p.10) that all hypotheses on stock structure, including those 'in dispute' would be ranked as 'high' in the context of the agreed selection process guidelines. However, on the basis of genetic and other biological evidence, it was the proponents' view that baseline A was the only plausible stock structure scenario (IWC, 2004b, p.75-184, Appendix 8a,e,f,h). Baseline C trials were considered to be particularly implausible by these members. This scenario involved three stocks east of Japan (Ow, Oe and W) and was based on the application of an unpublished technique to the mtDNA data obtained by JARPN and JARPN II, which had previously suggested some degree of mtDNA heterogeneity in the western part of sub-area 9 (between 157°E and 162°E). However, it was their view that an apparently significant difference between Ow and Oe was actually the result of an incorrect grouping of genetic data (Goto and Pastene, 2004). Genetic analysis showed no significant differences between the three stocks when they were divided along 147°E and 157°E lines. The proponents also held that Baseline C was also not supported by the analysis of CPUE data (Kawahara, 2003). Baseline scenario D assumed that 'W' stock minke whales occupy the whole of sub-area 9 but this hypothesis lacked the support of biological and genetic data. Therefore, these members felt that Variant 6 would be the most appropriate management option if the RMP were implemented. In the HITTER analysis, the issue of mixing was addressed by dividing targeting catches into J and O stocks, according to the estimated mixing rate from DNA analysis and treating each stock separately.

On the question of MSYR, the proponents felt that it was appropriate to adjust the values in light of more recent biological information. They noted that the Scientific Committee had previously agreed that an MSYR(mat) of 4% had a 'high' plausibility ranking (IWC, 2004b, p.83) and that the minimum value used in their analysis was consistent with that value. In summary they expressed the view that the results referred to were based on an assumed abundance estimate, implausible MSYR rate and implausible stock structure.

In subsequent discussion, some members questioned the assertion that scientific catches should be treated differently from commercial catches. They noted that it is the number, not the purpose, of the takes that determines whether a stock is impacted, and that excessive takes from any source (Scientific Permits, commercial whaling or bycatch) would potentially cause a decline. Thus they felt that a conservative approach such as the RMP for assessing impacts was appropriate. They also disagreed with the comparison that had been made by some members earlier in this discussion

to aboriginal whaling, stating that there are good criteria in place for defining need and scientific catches do not fit into that category. The working group was also reminded that the Scientific Committee had previously agreed that the effects of scientific permit catches on stocks would be examined assuming they were ongoing, as well as for a shorter period, even if the proposal was initially presented as a feasibility study (IWC, 2001, p.57)

J-STOCK

Some members noted the following additional concerns regarding the expanded coastal takes of North Pacific minke whales proposed in the revised research plan for JARPN II, and suggested that these catches posed a new risk to the depleted 'J' stock. This stock is already subject to high levels of unregulated fisheries bycatch along the coasts of both Japan and Korea. Reported bycatch has exceeded 150 minke whales a year in Korea and more than 120 a year in Japan, as documented in recent Progress Reports of these nations. The Scientific Committee has repeatedly expressed its concern about the impact of this bycatch and the potential for depletion or extinction of the J stock in many of the RMP *Implementation Simulation Trials* (*IST*s). The In Depth Assessment of Western North Pacific Minke whales, currently underway in the Scientific Committee, will address this problem as a priority.

The same members noted that the Revised Research Plan for JARPN II (SC/56/O1) considered the impact of this expanded coastal hunt on the O and J stocks using the HITTER methodology similar to that used in previous *IST*s, and concluded that both stocks would increase in almost all cases. This conclusion is contradictory to the outcomes of previous *IST*s undertaken by the RMP subcommittee over the last several years and contradictory to the concern expressed by the Scientific Committee about the implications of these results for the status of J stock (IWC, 2000, p.8). In almost all of the scenarios considered by the RMP subcommittee during the last few years, the J stock declines (in some cases to extinction) as a consequence of the high levels of takes as bycatch and a small proportion of takes during the scientific hunt (IWC, 2004b, pp.164-168). The conclusion of 'no effect' on the J stock reported in SC/56/O1 is attributable to a number of non-standard assumptions used in the limited number of scenarios used in the HITTER simulations. The most important difference with the previous RMP *IST*s is the abundance estimate of 15,137 applied to for the J stock for the year 2003 and a relatively high level of implied recovery (42-78% depletion). This abundance estimate, taken from an analysis of bycatch (Tanaka *et al*., 2002), and the implied probability of recovery are not consistent with those used in the preparation for implementation and cannot be considered reliable without further consideration in the revised In Depth Assessment.

Rather than rely on the non-standard assumptions of SC/56/O1, these members suggested that the Committee would do better to consider the outcomes of extensive ISTs undertaken in the RMP implementation preparation (IWC, 2004a). In almost all of these scenarios, the J stock was likely to decline under the current known or suspected levels of bycatch. Hunting in coastal waters of sub-area 7, where the mixing of stocks is uncertain (Goto *et al*., 2001; Pastene *et al*., 2001) is only likely to contribute to this decline. These members felt that an impact of this kind from scientific hunting on a stock currently under protection would be a serious failing in management and contrary to the spirit of the Convention.

The proponents noted that the concern about the effects of an increased catch on J-stock was based on the implied 30% depletion used in the bulk of the *IST*s. However, this was hypothetical given that no abundance estimate was available. Furthermore, they pointed to the rapid increase in bycatch in passive gear, which, to them, implied relatively large regional abundance and, potentially, an increase in the stock. The estimate produced by Tanaka *et al*. (2002) is the only one that is specific to this stock and so was considered valid for use in the HITTER calculation. They noted that the revised J-stock catch estimate was only 19 animals. Proponents felt that this was unlikely to have a substantial effect on the stock compared to the estimated combined bycatch of 163 J-stock animals in Korea and Japan.

Butterworth described a preliminary analysis of population trajectories under an effort-related model for bycatch. His analysis assumed that Korean bycatch was proportional to the pattern of set net effort since the 1960s and examined whether such information, together with commercial catches, suggested constraints on population dynamics. The approach was based on the idea that fishing effort and abundance were more likely to be controlling factors on bycatch in contrast to *IST* assumptions of constant levels over time. His analysis was undertaken as part of the North Pacific minke whale in-depth assessment for which more information would be available in the future. However, preliminary results were qualitatively different than what was found in the *IST* trials and he noted that they could potentially lead to more positive conclusions on the status of J-stock. In view of the preliminary nature of this work there was no detailed discussion of the methods or results.

On the subject of bycatch, some members reiterated that the Tanaka *et al*. (2002) abundance estimate used in the HITTER evaluation was based on bycatch, rather than survey data and that the Scientific Committee had previously agreed not to use it on those grounds.

SEI WHALES

Some members made the following critique of the proposal to increase the catch of sei whales in the North Pacific under JARPN II. From the 2002 and 2003 JARPN II dedicated sighting surveys, an estimate of abundance of 4,085 (CV=0.281) was calculated for sei whales in sub-areas 8 and 9 (SC/56/O19). This estimate was then extrapolated to the entire western North Pacific using pooled Japanese Scout Vessel (JSV) data from 1972-1988 (based on the ratio of JSV sightings inside sub-area 8 and 9 to the ratio outside 8 and 9). JSV data represent search effort associated with whaling, and are not randomly located. The actual estimate of 4,085 is extrapolated to a western North Pacific number of 68,000, and compared to a previous number of 28,400 (Government of Japan, 2002) calculated in a similar way. The estimate of 28,400 was based upon an un-reviewed estimate of 4,909 derived from JARPN 1997 and JARPN II 2001 surveys, with subsequent extrapolation using Japanese Scout Vessel (JSV) data. The SC has previously concluded that estimates of minke whale abundance from these types of surveys were not acceptable for use in Implementation Simulation Trials because their survey design (e.g. fig. 3 in Fujise *et al*., 2002) does not lead to estimates that are comparable to estimates from dedicated sighting surveys (IWC, 2003c). Neither has the Scientific Committee endorsed extrapolations from JSV data (which have, for example, been a serious point of contention for Southern Hemisphere minke whale estimates). Therefore, the members strongly disagreed that SC/56/O19 provided any

evidence that sei whales have increased in the western North Pacific, and did not consider the number of 68,000 to be a legitimate estimate of abundance for the western North Pacific. They noted that, if the previous estimate of 4,909 (CV=0.405) (for sub-areas 7, 8 and 9) from JARPN 1997 and JARPN II 2001 surveys had been made from dedicated sightings surveys, one would be able to compare the sub-area 8 and 9 fraction of that number to the 2003/03 estimate of 4,085. While these members did not consider that comparison valid for reasons described above, they noted that the sub-area 8 and 9 portion of 4,909 was unlikely to be significantly less than the 2002/03 estimate of 4,909 given its low precision (the sub-area 8 and 9 portion of the 4,909 estimate was not provided). Furthermore, although the members did not consider a comparison of the 28,400 and 68,000 numbers as a legitimate examination of trends in abundance of sei whales, they noted that those numbers are not significantly different given their reported CVs, a fact not noted by the authors of SC/56/O19. Finally, the members rejected the further suggestion in SC/56/O19 that encounter rates from dedicated sighting surveys can be compared to encounter rates from 1972-1988 JSV data. In conclusion, they felt that no reliable evidence for an increase in sei whale abundance had been provided in SC/56/O19.

Cooke noted that the Committee does not accept extrapolations of the kind used here as the basis for estimates for use in management. He further commented that the Committee had last assessed the status of the western North Pacific sei whale stock in 1974. He noted that under that assessment, the exploited stock was estimated to have declined from about 30,000 in 1967 to under 10,000 in 1974, evidenced by CPUE, sightings per unit effort and other data. The HITTER stocks assessments presented in SC/56/O19 using the extrapolated abundance of 68,000 whales are not consistent with this assessment. Although some recovery since 1974 can be expected to have occurred, no comprehensive trend analysis of the available abundance data has been conducted to ascertain the extent of this recovery. The geographical pattern of the recovery can potentially severely affect the outcome of the extrapolation, which used JSV data from 1977 to 1978. Until a full re-assessment of the stock has been conducted no further increase in takes can be justified.

In response to Cooke's intervention, Ohsumi pointed out that evidence indicating the increase of distribution density of sei whales in the survey area was presented in the JARPN II research plan presented by the Government of Japan (2002).

The proponents considered it reasonable to expect an increase in sei whale abundance, given that 30 years have elapsed since the prohibition of commercial hunting. They pointed to other populations that have experienced substantial recovery after protection for comparable periods. However, they also clarified that the evidence for an increase in sei whale abundance was based on more evidence than the difference between the 28,400 and 68,000 abundance estimates in question. During the JSV sighting surveys conducted between 1972-1988, only two sei whales were sighted over a searching distance of 8,003 nautical miles. By contrast in JARPN II, 103 animals were sighted in the same area, and over a searching distance of only 5,587 nautical miles. Although the surveys differed methodologically, they considered there to be a clearly increased sighting rate in spite of those differences. The proponents also pointed to the fact that nearly twice as many sei whales as minke whales were sighted during sighting/sampling activities in JARPN II in 2003. These observations suggested to them that sei whales, like minke whales, are abundant in the western North Pacific.

In discussion of the methods used to assess the effects on stocks, some felt that *IST* based removal levels for the western North Pacific minke whale particularly those based on baseline C were inappropriate to assess the impact of scientific captures. Others felt that the *IST* was appropriate for evaluating the impact of research catches.

There were also two views expressed by the working group with regard to the proposed increase in sei whale takes. Some felt that an increase was justified, citing the recent 68,000 abundance estimate as an indication of population increase over time. Others felt that there was no clear support for increase and that the 68,000 estimate was not appropriate for setting quotas for scientific takes because it was extrapolated from JSV data.

8.3 Iceland

Summary of the proposal

The proposal remains the same as last year, except that the schedule for taking minke whales has been revised. The revised spatial and temporal distribution for sampling of minke whales is given in SC/56/O10, specifying a take of 25, 39 and 100 minke whales in 2004, 2005 and 2006, respectively.

COMMENTS AND DISCUSSION OF THE SC WORKING GROUP

The working group noted that no decision has been taken on the implementation of the programme with regard to fin and sei whales, and that the implemented and proposed number of minke whales taken per year is reduced compared to the original proposal. The revised proposal of a take of 200 minke whales will therefore be completed by the 2006 field season. The objective, methodology, and arrangement for participation by scientists from other countries remain unchanged from the original proposal. The revised plan for sampling minke whales reduces the numbers of whales sampled per year in 2004 and 2005. Last year, the SC agreed that a take of 100 common minke whales per year would be unlikely to affect the conservation status of the stock in question. The proposed revision of the proposal will not change this conclusion. Some members have similar concerns with regard to the basis of the Icelandic proposal as expressed last year, while other members felt these concerns had no foundation. The working group therefore referred to its comments and discussion provided in IWC (2004d, pp.352-363).

9. ADOPTION OF THE REPORT

The report was adopted on Tuesday 6 July at 18:23.

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Appendix 1

AGENDA

1. Convenor's opening remarks
2. Election of Chair
3. Appointment of Rapporteurs
4. Adoption of Agenda
5. Documents available
6. Proposals to facilitate the review process
7. Review results from existing permits
   - 7.1 Japan – Antarctic minke whales
     - 7.1.1 Review of progress
     - 7.1.2 Planning for review of final JARPA results
   - 7.2 Japan – North Pacific common minke, sei, Bryde's and sperm whales
   - 7.3 Iceland – North Atlantic common minke whales
8. Review of new or continuing proposals
   - 8.1 JARPA
   - 8.2 JARPN II
   - 8.3 Iceland
9. Adoption of the report