

APPENDIX IV

REPORT OF THE SCIENTIFIC COMMITTEE

1. The Committee met at 9:30 a.m. on 14 June 1971 and following days in the International Conference Suite, Department of State Building, Washington, D.C. under the chairmanship of Dr D.G. Chapman.

2. There were present:

Australia	J.L. Bannister
Canada	K.R. Allen E.D. Mitchell
Japan	Y. Fukuda S. Ohsumi H. Omura K. Yonezawa
Norway	A. Jonsgaard
South Africa	P.B. Best
U.K.	S.G. Brown R. Gambell
U.S.A.	D.G. Chapman D.W. Rice
U.S.S.R.	M.V. Ivashin Y.B. Ryazantsev
Observers	L.K. Boerema (FAO) C. Holloway (IUCN)

RESEARCH AND INFORMATION

3. Progress reports and numerous other papers were available to the Committee. These are listed in Annex B with the numbers that were used to identify them.

4. The Committee received information from several members on the status of special permits issued during the past year and on the status of the reports on the results of research derived from the collection of such **whales**. The special permits generally relate to research items that are useful and important and reports on such research have been forthcoming with satisfactory promptness.

5. Mr Brown provided a summary table (Annex C) showing the number of whales marked by area and species in the past year.

6. The sighting programme for prohibited species was considered; each member indicated the way in which the reports from the programme are handled in his country. A new sighting form (Annex D) was developed and is recommended for future use. It was agreed that members of the Committee should take responsibility for the sighting data for their own country and could use the form developed by the Committee. They could, however, use

forms requiring additional detail if so desired. It was also agreed that members would take the responsibility for reporting the data (or appropriate summaries thereof) to the Committee as part of their annual Progress Report, together with whatever additional analysis they deemed appropriate. It was also agreed that the Secretary of the Commission should continue to transmit to and collect from whaling countries not represented on the Scientific Committee the standard form.

7. The Committee expressed its appreciation of the co-operation of whaling operators who have reported sightings of prohibited species and asks that the Secretary write asking for co-operation of other operators in this matter.

8. The Committee requests the Secretary of the Commission to send a letter of thanks to the participants of the sighting programme by S.C.A.R. and suggests that the programme now be terminated. It also expresses thanks to Mr. Brown for his careful analysis of the last three seasons' observations (SC/12).

STATUS OF STOCKS

SOUTHERN HEMISPHERE BALEEN WHALES

Fin Whales

9. The Committee discussed at length the papers (SC/1, SC/2, SC/8, SC/9) bearing on status and yields of the Antarctic fin whale stock, particularly those aspects having to do with the rate of recruitment and those that have raised doubts concerning the analysis of this stock. One of these has to do with the age at sexual maturity (cf. Table 1, p.6 of SC/2). The differences of the estimated age of sexual maturity could be real Area differences or could be due to differences of interpretation. It is therefore desirable to have an exchange of material for comparative purposes to ensure that standardization of readings is achieved.

10. Papers referred to in paragraph 9 and additional studies by the Committee provide estimates of recruitment by the method of Allen using actual data and by the models of Ohsumi using estimates of changes in the basic parameters. The changes of the stock under the various models and as estimated directly were also considered. Present stock size estimates fall between 70 and 82 thousand. However the Committee was unsuccessful in reaching a single estimate for the sustainable yield in 1971/72.

The different positions are summarized in the following two paragraphs.

11. Allen's estimates of sustainable yield using the actual estimated recruitments of recent years calculated in two ways are 1.2 thousand, and 2.2 thousand (average 1.7 thousand). Estimates of the recruitment vary both between methods and between years. In addition it must be recognized that recent recruitments have come from the larger parent stocks of the early 1960's. These considerations have been taken into account in the estimates of sustainable yield in this paragraph. Dr. Chapman calculated the sustainable yield using Japanese population estimates and Japanese recruitment rate estimates, with natural mortality rate held constant, and obtained an estimate of 2.7 thousand for the sustainable yield. The average of Allen's and Chapman's estimates is 2.2 thousand, which all members of the Committee, except Japan and USSR, believe is the best estimate of the 1971/72 sustainable yield. All members of the Committee, except Japan and USSR, also believe that there is no direct evidence that the Antarctic fin whale population has

increased in the past five years.

12. Japanese scientists are convinced that the estimates as calculated above are too low to be realistic. Their best estimate of sustainable yield is 3.9 to 4.6 thousand. They also calculated the annual values of available yield in recent years from Allen's population estimates and obtained 3.8 and 5.4 thousand (average 4.6 thousand) for 1970/71.

13. Japanese scientists consider that the population of Antarctic fin whales has been increasing since 1964/65 and hence recruitment has been increasing since 1969/70, and that it is certain that catches since 1964/65 have been below the available yield. Recruitment in the coming season, the bulk of which is to come from the parent stock of 1966/67, is expected to be no smaller than that of last year, confirming that the available yield in the coming season is well above 3,000.

14. The Soviet delegate believes that the method used by Allen provides too low estimates of the available yield to seem realistic for the Antarctic stock of fin whales of 70 - 82 thousand. He notes that the Japanese estimate is even somewhat smaller than their recalculation of the 1970/71 available yield from Allen's population estimates. A combined value between the two estimates appears to be more realistic and would reflect the potential of the present stock of the Antarctic fin whales.

Sei Whales

15. The Committee had before it some analyses of South African data and of sightings by Japanese expeditions (SC/23, SC/1) but few new analyses for other Areas. Concern was expressed because of the sharp decline in CPUE and sightings both off the east coast of South Africa and in Area III. It was agreed that more analyses of all sei whale stocks are needed, particularly using biological data. This is made more feasible by the new method of treating sei whale earplugs for age determination developed by Mrs. Lockyer (SC/11). It was agreed that it would be useful to exchange sei whale material to standardize age determination. Mr. Gambell will co-ordinate this study and that for fin whales referred to above.

16. Despite the declines in CPUE and in sightings in Area III, there is insufficient basis for a change in the estimate of sustainable yield. We therefore retain the estimate of 5000. The present total population level may be above the level which gives maximum sustainable yield, though the population also could be below this level in some Areas.

Blue, Humpback and Right Whales

17. Data on sightings of these species by Japanese expeditions were analysed by their scientists and reported in SC/1. The blue whale sighting index which includes pigmy blue whales shows a slight tendency to increase but the other two species show no such tendency.

Sperm Whales

18. The Committee had received during the year data summaries on sperm whales from the Bureau of International Whaling Statistics. During the past year FAO has received no new age length keys; members are urged to supply FAO with new age length keys as they are developed.

Southern Hemisphere

19. The Committee reports that catches in the Southern Hemisphere in the past season have been

<u>Pelagic</u>	N of 40 S		S of 40 S		Total	
1970/71	3146		2745		5891	
<u>Coastal</u>	Australia		South Africa		South America	Combined
	♂	♀ Total	♂	♀ Total	♂ ♀ Total	Total
1970	776	23 799	983	841 1824	1512	4135

This represents a slight increase over 1969 in both operations.

20. The Committee reviewed analyses by Ohsumi (SC/3), by Gambell (SC/10) and a general paper on sperm whale biology by Best (SC/13). In general the CPUE data (available for pelagic operations outside the Antarctic baleen season and for coastal operations) show no clear trends. For the stock off Durban, which is assumed to include those sperm whales in pelagic areas in the southern hemisphere from 20°E to 70°E, a model developed by Gambell plus an estimate derived from Japanese sightings were considered. The mean of the estimates of the size of this exploited stock is about 30,000 with a sustainable yield of 1200 from each sex. This compares with a recent level of annual catches of about 2,000 males and 900 females. Although there has been no decrease in CPUE and in sightings and also it is unclear whether there is a surplus of males, it seems wise to prevent any increase in the male catch.

North Pacific

21. In the North Pacific sperm whale catches have been

	♂	♀	Total
1969	11329	3605	14934
1970	11236	3579	14815

The Committee reviewed a population model by Ohsumi and Fukuda (SC/6) amplifying their results of last year. This confirms the conclusion reached last year that the accumulated surplus of males has now probably been removed and the male population stands at about the level giving the maximum sustainable yield of males. The female population level is still above the level giving the combined maximum sustainable yield. The maximum sustainable yields are estimated to be 4800-6700 (males) and 4900-5100 (females).

22. The Committee recommends that catches of males be kept within the sustainable yield noted above; it recognizes the difficulty of establishing appropriate regulations to do this and urges that steps be taken as rapidly as possible to review the possibilities of achieving the objectives by such means as size limits, regional restrictions, quotas or combinations thereof.

North Pacific Baleen Whales

Fin, Sei and Bryde's Whales

23. Catches of fin, sei and Bryde's whales in the North Pacific have been

	Fin whales	Sei whales	Bryde's whales
1969	1276	5158	89
1970	1012	4504	139

24. The Committee reviewed the updated analysis included in SC/5. This indicates that the present available yield of fin whales is about 1100 (range 1020-1150) and is expected to decrease over the next one or two years, since parent stocks have been declining. The present stock level is about 12-13 thousand below the level giving maximum sustainable yield. If catches are reduced below the present available yield, the surplus would help rebuild the stock towards the level of maximum sustainable yield.

25. In regard to sei whales this analysis indicates the present available yield to be 3130-3340. The present population levels are very close to the level giving maximum sustainable yield west of 180°, but probably above this level east of 180°. The Committee wishes to remind the Commission of its statement of last year that "Since the size of the surplus is uncertain and higher levels of catch reduce the surplus more rapidly, the Commission is urged to take steps to ensure that the sei whale stocks are not reduced to the level below that giving maximum sustainable yield. The danger of this can be reduced if the level of catch is reduced from the present level". The Committee believes that this makes necessary a further considerable decrease in the level of sei whale catch in 1972.

26. In regard to Bryde's whales in the western North Pacific, the recent average annual catch of 200 to 300 appears to have been taken from a population of about 5,000 to 18,000, probably above the level giving the maximum sustainable yield, which is now roughly estimated as 300 to 600 (21st Report, Annex J.).

Other Species

27. Japanese sighting data (SC/5) show that blue and humpback whale populations remain at low levels with perhaps a slight tendency for the blue whale stocks to increase. Right whale sightings remain extremely low. This year's estimate of the California gray whale stock (SC/21) is still at about 11,000 as it has been for the past three seasons.

North Atlantic Baleen Whales

28. The Committee reviewed the analyses of northwest Atlantic stocks (SC/14, SC/24) and received an oral report from Dr. Jonsgaard on stocks off Norway. A preliminary review of the northwest Atlantic fin whale stocks suggests that the present Nova Scotian stock is about half the unexploited stock level and the quota for this stock may need to be reduced. The stock fished by the Newfoundland stations may still be above the level giving maximum sustainable yield. There is need for further study of stock and recruitment levels in the northwest Atlantic. Dr. Jonsgaard stated that fin whale stocks off the southwest coast of Norway and off the Faroe Islands are considerably depleted and need further protection.

Minke and Other Small Whales

29. The Committee reviewed data on recent catches of minke whales in the Antarctic, off South Africa and in the North Atlantic and noted the recent expansion of Norwegian whaling in the latter area. The Committee urges members to obtain additional data on their countries' minke whale operations and provide further analysis to the Committee.

30. For the Antarctic minke whales the Committee had an analysis by Ohsumi (SC/4). The present population is estimated to be about 150-200,000. A preliminary estimate of the maximum sustainable yield of this stock is 5000. This figure is subject to revision as data become available if this

stock is exploited and of course it is understood that at this time the stock has a surplus available for catching.

Data Collection and Other Matters

31. The Committee expressed its thanks to the National Institute of Oceanography of the United Kingdom and to Mr. Brown for efforts in distributing marking data. The Committee received information on the increased cost of whale marks and it also expressed a very urgent need for increased marking of sperm whales in the southern hemisphere. It recommends continuation of the coordination of the whale marking programme by N.I.O. and urges the Commission to consider the possibility of an increase in its support of the international marking scheme. If this is not possible, support at the previous level should continue.

32. The Committee notes that FAO is willing to continue to provide age data as age length keys are supplied by members. Appreciation is expressed to Mr. Boerema for this and members are urged to supply him with the necessary keys or data.

33. The Committee accepted a report from the subcommittee on central storage and processing of catch, effort and length statistics on the provision of data summaries by the Bureau of International Whaling Statistics. This report is included as Annex E.

34. The Committee recommends that a special sperm whale stock assessment meeting be held well in advance of the next Commission meeting. If this recommendation is accepted it is suggested that Mr. Gambell be asked to convene the meeting.

SUMMARY AND RECOMMENDATIONS TO THE COMMISSION

A. Antarctic Baleen Whales

1. The Committee was again unsuccessful in reaching a single estimate for the sustainable yield of fin whales in the Antarctic in 1971/72. All Committee members except Japan and USSR believe that the best estimate for 1971/72 is 2200. Japanese scientists believe the best estimate for 1971/72 is 4250.

2. The estimated sustainable yield of sei whales in the Antarctic in 1971/72 is about 5,000. The present total population level may be above the level which gives maximum sustainable yield, though the population could be below this level in some Areas. Particular concern was expressed about Area III stocks.

3. The Committee noted with pleasure that baleen whale catches in the North Pacific have now for two seasons been regulated by means of separate quotas for individual species, and that it has evidently been practicable for the industry to operate under such an arrangement. It, therefore, strongly urges the Commission to replace the Blue Whale Unit by separate species quotas in the Antarctic. It emphasizes that this is the most effective way of holding the catch of each species at levels which will ensure that no further decline in the stocks occurs and that the fin whale stock can be built up to a more productive level.

4. The Committee sees no reason for closing the Sanctuary.

5. In regard to the opening date, the Committee wishes to reiterate its recommendation of the last six years that it would prefer to see no earlier

opening date than the one now in force and sees no reason for recommending any change in the closing date.

6. The Committee recommends no change in the ban on killing blue and humpback whales in the waters south of the Equator.

B. Sperm Whales

7. Further analysis and new population models are needed for sperm whale stocks and it is recommended that a special stock assessment meeting be held early in 1972.

8. An assessment is now available for the area between 20°E and 70°E in the southern hemisphere and the Committee considers it wise to prevent any increase in the male catch in this area.

9. The Committee notes that the estimated maximum sustainable yield of males in the North Pacific Ocean is 4800-6700 and that the male sperm whale stock has now reached a level at which there is little or no further surplus. The Committee recommends that catches of males be kept within this sustainable yield; it recognizes the difficulty of establishing appropriate regulations to do this and urges that steps be taken as rapidly as possible to review the possibilities of achieving the objectives by such means as size limits, regional restrictions, quotas or combinations thereof. The female population level is still estimated to be above the level of maximum sustainable yield; the maximum sustainable yield of females is estimated to be 4900-5100.

C. North Pacific Baleen Whales

10. The best estimate of the present sustainable yield of fin whales in the North Pacific (excluding the East China Sea) is about 1100. The present stock level is about 12-13 thousand below the level giving maximum sustainable yield. It is recommended that total catches of fin whales at land stations and in pelagic operations should be held below 1100.

11. The present sustainable yield of sei whales is about 3200. While the present population level may be above that which will give maximum sustainable yield, the Committee suggests that at the present level of catches any such surplus will soon be depleted. The Committee believes that this makes necessary a further considerable decrease in the level of sei whale catch in 1972.

12. The Committee recommends no change in the present ban on killing blue and humpback whales in the North Pacific.

D. North Atlantic Baleen Whales

13. The Committee recommends further study of these stocks so that appropriate regulations may be established.

14. The Committee recommends no change in the ban on killing blue and humpback whales in the North Atlantic.

E. Minke and Other Small Whales

15. Preliminary estimates of the population size and maximum sustainable yield of minke whales in the Antarctic are 150-200,000 and 5,000 respectively and the stock is essentially unexploited.

F. General

16. The Committee recommends continuation of the arrangements with the National Institute of Oceanography whereby it acts as a central agency for whale marking data and recommends that the Commission continues to give financial support to the international marking scheme at least at the previous level.

17. The Committee recommends continuation of the arrangements with the Bureau of International Whaling Statistics to act as a central agency for the catch, effort and length distribution data and recommends that the Commission budget £500 for this work.

18. The Committee requests that the Secretary send a letter of thanks to the participants of the sighting programme by S.C.A.R. and inform them that the programme should now be terminated.

19. The Committee recommends that the Commission request continued cooperation of the whaling companies in reporting sightings of prohibited species in all areas.