

REPORT OF THE SCIENTIFIC COMMITTEE

1. The Committee met at 10.00 am on 19 June 1972 and following days in the Ministry of Agriculture, Fisheries and Food, London, under the Chairmanship of D G Chapman. The Agenda adopted is shown in Annex A.

2. There were present

Australia	J L Bannister
Canada	K R Allen E D Mitchell
Iceland	I Hallgrimsson
Japan	Y Fukuda S Ohsumi H Omura K Yonezawa
Norway	Å Jonsgård
South Africa	P B Best
USSR	M V Ivashin V M Nikolaev
UK	S G Brown R Gambell Mrs C Lockyer N A Mackintosh
USA	W Aron D G Chapman P Douglas E Gould R F Smith D W Rice L M Talbot
Observer	L K Boerema (FAO)

RESEARCH AND INFORMATION

3. Progress reports and numerous other papers were available to the Committee. These are listed in Annex B with their identifying numbers.
4. Annex C shows a list of special permits issued during the year. Results of such special permit research are included in progress reports and in documents listed in Annex B.
5. Brown provided a summary table (Annex D) showing the number of whales marked by species and by area as well as the recapture of marked animals, during the past year.
6. Jonsgård^o provided members with the statistical material prepared at the Bureau of International Whaling Statistics under the direction of E Vangstein. This included reports on the recent Antarctic season as well as the preprint of the annual publication of the Bureau giving data on 1971 catches in general.
7. The Committee expresses its appreciation of the cooperation of whaling operators who have reported sightings of prohibited species. It particularly acknowledges the efforts of the Japanese scouting boats and of the Japanese scientists for analysing the data from their scouting boats both in the Antarctic and the North Pacific.
8. Brown reported that he had received and reviewed data on SCAR sighting for 1970/71 and for one expedition in 1971/72. The Committee recommended last year that this programme be terminated and this has been done.
9. The Committee accepted the report of the special Sperm Whale Assessment Group which met at Parksville, B.C. Canada May 3-10, 1972. This is Annex E.

STATUS OF STOCKS

SOUTHERN HEMISPHERE BALEEN WHALES

FIN WHALES

10. The Committee reviewed papers by Allen (SC/24/3) by Ohsumi (SC/24/19) and had an updating of previous estimates by Chapman. In addition they reviewed papers by R Jones (SC/24/22), J E Paloheimo (SC/24/23) and M D Mountford (SC/24/24) that were made available to them by the Environmental Defense Fund of the United States. The Committee agreed that the best estimates of present (1972/73) population and sustainable yield are 82,000 and 3200 respectively. If catches are held below the present sustainable yield, the surplus would help rebuild the stock toward the level of maximum sustainable yield.

11. The independent papers referred to above show lower population estimates but essentially the same estimate of sustainable yield. It was pointed out that these studies were made prior to the availability of the 1971/72 data and recent age composition data which are the basis of some changes from last year in the Committee members' own analyses. Best emphasized the overall decline in sightings of fin whales south of 40°S since 1965/66 (Ohsumi, SC/24/19), and the lack of any evidence of an increase in CPUE for the Antarctic as a whole (Chapman SC/24/6) and for the stock off Durban (Best SC/24/4) for the last four seasons, which contrasted with calculations of an increasing exploitable stock by Allen (SC/24/3) and Ohsumi (SC/24/19).

SEI WHALES

12. The Committee had before it extensions of previous estimates by Ohsumi. It also reviewed the paper of R Jones (SC/24/22) and observed that it fails to take into account the difficulties of CPUE of sei whales or the portion of the stock N. of 40°S. The sighting data were discussed at some length and the difficulties of age determination of sei whales were reviewed.

13. Attention was also called to the decline in sightings and CPUE of sei whales off Durban and the more modest decline in CPUE in the Antarctic. It is apparent that more biological data and additional analyses of sei whale stocks are most desirable. At the present time the Committee retains the estimate of the stock size as 81,000 and of the sustainable yield as 5000.

BLUE, HUMPBACK AND RIGHT WHALES

14. Sighting data on these species confirm the estimates of recent years; these are given in SC/24/4 and SC/24/11. The numbers of these species are estimated to be 13,000 blue whales, including pigmy blue whales, 3000 humpback whales and 4000 right whales. These are exclusive of stocks in Area I.

MINKE WHALES

15. The Committee had a paper on the studies of Ohsumi of the 1971/72 Japanese catching operation (SC/24/12) and a review by Best in SC/24/4. These both suggest that the provisional estimate of minke whale stocks of 150,000-200,000 made in 1971 was too low. The estimate of the maximum sustainable yield was set at 5000 and this also may be a low estimate but the situation is unclear because of our scanty biological information on this species.

NORTH PACIFIC BALEEN WHALES

FIN, SEI AND BRYDE'S WHALES

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

	Fin	Sei	Bryde's
1970	1012	4504	139
1971	802	2993	919

17. The Committee reviewed the analyses of S. Wada (SC/24/14). This paper indicates the present available yield of fin whales is 900-1000 but is expected to decrease in the next year since parent stocks have been declining. The present stock level is about 10,000-13,000 below the level giving maximum sustainable yield. If catches are held below the present available yield, the surplus would help rebuild the stock towards the level of maximum sustainable yield.

18. In regard to sei whales this analysis indicates the present available yield is about 3200. The present population is estimated to be very close to the level of maximum sustainable yield.

19. The Committee calls attention to the increase of the catch of Bryde's whales in 1971. No new information is available on this stock; it is desirable to have additional analyses as soon as sufficient data are available.

BLUE, HUMPBACK, RIGHT AND GRAY WHALES

20. In addition to the data on sightings of protected species from Japanese expeditions and on gray whales off the coast of California, the Committee had before it a new analysis of blue whales stocks in the North Pacific (SC/24/13) by Ohsumi and Wada. The numbers of these species are estimated to be 1400-1900 blue whales, 1200-1600 humpback whales, 100-200 right whales and 9000-11,000 gray whales. The Committee notes the action of the Mexican Government to declare Scammon's Lagoon a whale refuge with vessels banned during the calving season. It suggests that the Commission express its appreciation of this action of the Mexican Government through the Secretary.

NORTH ATLANTIC BALLEN WHALES

21. Detailed reports SC/24/1, SC/24/9, SC/24/10 were available on the stocks of fin and sei whales taken at Canadian land stations. These stocks appear to be separate from other North Atlantic stocks.

In the northwest Atlantic, Canadian catches and national quotas have been:

	1967	1968	1969	1970	1971	1972
Catch Fin	748	700	510	576	418	-
Quota Fin	800	700	600	600	470	360
Catch Sei	57	100	149	93	235	-

Initial stock size of sei whales available to the Nova Scotia land station is estimated to have been 1,570 whales (SC/24/9).

Though the Committee approves the steps taken to date by the Canadian Government, the reviews indicate the need for further reduction in fin whale quotas and a tentative quota of sei whales. While the latter stock is apparently still above the level giving maximum sustainable yield, we note the warning the Committee has given in the past in the North Pacific of sei whales "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 a level below that giving maximum sustainable yields".

22. The Committee discussed the relationship of Icelandic catches to other stocks and believes these catches are from stocks largely separate from those in the Northwest Atlantic and the Northeast Atlantic. Operations are under strict control of the Icelandic government. The long history of almost constant effort and fairly stable catches of fin, sei and sperm whales was noted. The Committee asks the Commission to request information from Denmark on West Greenland catches as it is possible that these catches are taken from the same stocks as those exploited by Iceland.

23. The Committee was informed that catches of large whales off North Norway have been nearly all fin whales. The total last season was 37, equal to the

average over the past decade. No catching activity took place off West Norway last year. The catches of these animals and of small whales are controlled by the Norwegian government.

24. The Committee recommends further analyses of the status of minke and other whale stocks in the North Atlantic and requests North Atlantic nations engaged in whaling to undertake such analyses.

25. The Committee reviewed the available data on blue and humpback whales, including an analysis of sightings off Iceland (Brown, SC/24/25) and in the northwest Atlantic (Mitchell SC/24/8) and recommends that the ban on taking of these species in the North Atlantic should be extended indefinitely subject to annual review of the state of the stocks by the Committee.

ARCTIC WHALES

26. The Committee reviewed the scanty material on bowhead (Greenland right) whales in the Arctic. This included a paper by A W Mansfield (SC/24/17). It was agreed that the Committee ask the Commission to request Denmark, USA and USSR to obtain information on the aboriginal kill of bowhead, gray and other whales and report this to the Bureau, if it is not now being done. The Committee also asks the Commission to urge the United States to take steps to reduce the waste due to lost whales of all species in its aboriginal fishery.

SPERM WHALES

27. The Committee reports that catches in the past two seasons have been as follows

SOUTHERN HEMISPHERE

PELAGIC	N of 40°S	S of 40°S	Total
1970/71	3146	2745	5891
1971/72	3969* (3098♂, 841♀)	3366+ (3195♂, 160♀)	7335

* excludes 30 of unknown sex

+ 11 whales unaccounted for in breakdown by sex

COASTAL

	AUSTRALIA			SOUTH AFRICA			SOUTH AMERICA	COMBINED
	♂	♀	Total	♂	♀	Total	Total	TOTAL
1970	776	23	799	983	841	1824	1512	4135
1971	823	41	864	984	1083	2067	1567	4498

NORTH PACIFIC

	♂	♀	Total
1970	11,236	3,579	14,815
1971	8,295	2,595	10,890

28. The Committee had before it the report of the Sperm Whale Assessment Meeting held at Parksville, British Columbia, Canada May 3-10 and subsequently revised in London. Because of data problems this meeting was not able to make all the calculations desirable and therefore the specific figures in that report must be regarded as tentative. Calculations by Allen (SC/24/2) based on the parameter values revised at Parksville indicate that the combined MSY level for catches of both sexes is about 55 percent rather than 70 percent of the original mature female stock. The latter value has however been used in calculating stock surpluses in the present report since it gives more conservative figures. The Committee calls attention to Table 5 of this report which gives the best estimates of the state of the stocks in the Southern Hemisphere by divisions.

29. Since the stock assessments suggest that rational management of sperm whale stocks calls for increased catches of females, it is recommended that the size limits be reconsidered as well as the ban on sperm whale catches by pelagic fleets between 40°N and 40°S, in the Southern Hemisphere and the North Pacific.

Most informed scientists believe that catching operations can work with a separate quota for each sex. If the Commission feels that other methods of achieving proper balance between the sexes are necessary, the Committee

refers to SC/24/5 and SC/24/15 where some alternative possibilities are discussed.

SOUTHERN HEMISPHERE

30. The implication of Table 5 of the Parksville Report is that any increase in the catch of male sperm whales could have a very harmful effect in several divisions. However in almost all divisions there is a substantial excess of females above the MSY stock level. Ideally regulation should be by stock units but until these are defined, the Committee suggests that catches by divisions might be as follows:

		Male	Female
W Atlantic	60°W - 30°W	600	600
E Atlantic	30°W - 20°E	800	1200
W Indian	20°E - 60°E	900	1200
C Indian	60°E - 90°E	1900	1300
E Indian	90°E - 130°E	1100	1100
E Australia	130°E - 160°E	100	400
N Zealand	160°E - 170°W	500	600
C Pacific	170°W - 100°W	2800	1400
E Pacific	100°W - 60°W	1200	400
		<hr/>	<hr/>
		9900	8200

These quotas would reduce by 10 percent any estimated surplus for either sex above the MSY stock level and correspondingly would reduce by 10 percent any deficit below this level.

31. If the Commission does not wish to impose quotas by divisions, the Committee would recommend that the male catch in the southern hemisphere should not be allowed to exceed 8,000 and that a safe total catch for females would be 5,000.

NORTH PACIFIC OCEAN

32. The Committee believes that the catch of male sperm whales should be held to not more than 6,000 but the female catch could be permitted to increase modestly. A safe catch limit for females would be 4,000.

NORTH ATLANTIC OCEAN

33. Sperm whale catches in the North Atlantic are small; the larger fraction have been from land stations which are under the jurisdiction of countries not members of the Commission. It is suggested that the Commission urge these countries to provide full information on their operations and seek information from countries not now providing it. The Committee recommends that records of 19th Century Whaling be analysed to attempt to reconstruct the original sperm whale stock status in the North Atlantic.

SMALL CETACEANS

34. The Committee was given information on the catches and catch regulations of small cetaceans by Japan, Norway, Iceland and Canada by scientists from these countries. Information on such operations from other countries was unavailable.

35. The Committee discussed and expressed concern over the large incidental kill of porpoises and dolphins in the US tuna fishery, reported to be about 250,000 per year. Aron reported on the actions proposed by the USA in respect to this problem.

36. It was recommended that members prepare a summary of the status and catches of their small cetacean operations for inclusion in future progress reports. This would supplement the tables in the International Whaling Statistics on small whales.

37. It was also recommended that a subcommittee on small cetaceans be set up to improve data collections on all world catches of these animals and to review species and stock identification and other problems. This subcommittee under the Chairmanship of Mitchell should include some scientists not now associated

with the Committee.

PROPOSED MORATORIUM

38. The Committee agreed that a blanket moratorium cannot be justified scientifically. A blanket moratorium is in the same category as a blue whale unit quota, in that they are both attempts to regulate several stocks as one group whereas prudent management requires regulation of the stocks individually. The Committee noted that the absence of commercial catching operations would make it impossible to obtain certain kinds of information which are essential for continuing assessment of whale stocks. There is in fact a need for a substantial increase in all kinds of research activity related to whales. Therefore the Committee recommends that, instead of a moratorium, support should be sought for a decade of intensified research on cetaceans, particularly as regards problems relevant to their conservation. Such a programme should proceed in parallel with further development by the Commission of the policy of bringing catch restrictions into line with the best available knowledge of the state of the stocks.

39. The Committee referred to a sub-committee the question of research needs for stock assessment. This sub-committee produced a report which was reviewed, revised and adopted by the whole Committee. This is included as Annex F.

40. The Committee expressed its thanks to the National Institute of Oceanography of the United Kingdom and Brown for efforts in distributing marking data. It recommends continuation of the coordination of the whale marking programme by N.I.O. If as is requested elsewhere the marking programme is increased, the Commission should consider the possibility of an increase of its support of the international marking scheme. If this is not possible, support at the previous level should continue.

41. The Committee accepted a report from the sub-committee on central storage and processing of catch, effort and length statistics. This report is included as Annex G.

42. In view of the many problems still existing on the age readings of baleen whales, particularly for North Atlantic fin whales and sei and minke whales in general it is recommended that a meeting be held during the next 12 months to check on the comparability of readings and attempt to resolve other problems. Gambell has agreed to act as a convenor.

SUMMARY AND RECOMMENDATIONS TO THE COMMISSION

A. ANTARCTIC BALEEN WHALES

1. The estimated sustainable yield of fin whales in the Antarctic in 1972/73 is 3200 and of sei whales about 5000. The present stock level of fin whales is about 35-40 percent of the MSY level and of the sei whales is about at the MSY level in total. Concern was expressed about the trends in density estimates for these stocks.
2. The Committee notes with pleasure that the Commission plans to establish separate quotas by species in the Antarctic for 1972/73, an action recommended by the Committee for several years. This is the most rational way of managing stocks from a biological point of view.
3. The Committee sees no reason for closing the Sanctuary. In this connection the Committee recommends that the Commission delete paragraph 5 of the Schedule since it is more appropriate to regulate stocks by means of catch quotas.
4. In regard to the opening date, the Committee wishes to reiterate its recommendation of the last seven 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.
5. The Committee recommends no change in the ban on killing blue, humpback and right whales in the waters south of the Equator.
6. The Committee believes that its preliminary estimate (made in 1971) of minke whales in the Antarctic which was 150,000 - 200,000 may be too low. The maximum sustainable yield estimate was given as 5000 and this also may be a low estimate. Further studies are needed.

B. SPEERM WHALES

7. The Committee notes that ideally regulation should be by stock units and suggests tentative catch limits by division (approximately 30^o zones) in the

Southern Hemisphere. These are listed in Para 30.

8. Alternatively the Committee recommends that in the Southern Hemisphere the male catch should not exceed 8,000 and a safe catch limit for females is 5,000.

9. In the North Pacific it is recommended that the catch of male sperm whales be held to not more than 6000 but the female catch could be permitted to increase modestly. A safe catch limit for females would be 4000.

10. The Committee asks the Commission to request more complete information from all countries taking sperm whales in the North Atlantic, so that proper analysis can be made of North Atlantic sperm whale stocks.

11. For the Southern Hemisphere and the North Pacific Ocean, it is recommended that, if quotas are set on both sexes, the lower size limits be reconsidered as well as the ban on sperm whale catches by pelagic fleets between 40°N and 40°S. The Committee refers to documents SC/24/5 and SC/24/15 for a discussion of some ways to achieve a better balance of catches between the sexes.

C. NORTH PACIFIC BALEEN WHALES

12. The best estimate of the present available yield of fin whales in the North Pacific (excluding the East China Sea) is about 900-1000. The present stock level is 50-65 percent of the level giving the maximum sustainable yield.

13. The present sustainable yield of sei whales is about 3200. The population level is approximately that for maximum sustainable yield.

14. Studies of Bryde's whale stocks are needed.

15. The Committee recommends no change in the present ban on killing blue, gray, right and humpback whales in the North Pacific.

D. NORTH ATLANTIC BALEEN WHALES

16. The Committee recommends that quotas on fin whales in the Northwest Atlantic be reduced and that a quota be set for sei whales in this area.

17. The Committee recommends that analyses of minke and other whale stocks be prepared for the next meeting.

18. The Committee recommends that the ban on killing blue, right and humpback whales in the North Atlantic be extended indefinitely, subject to annual stock analyses by the Committee.

E. ARCTIC WHALES

19. The Committee recommends the Commission request that Denmark, USA and USSR obtain information on the aboriginal kill of bowhead, gray and other whales and report this to the Bureau, if it is not now being done. The Committee also asks the Commission to urge the United States to take steps to reduce the waste due to lost whales of all species in its aboriginal fishery.

F. SMALL CETACEANS

20. The Committee recommends that members from countries engaged in killing small cetaceans provide information on their controls on these operations and also include information on catch and incidental kills in future progress reports.

G. PROPOSED MORATORIUM

21. The Committee recommends establishment of a sub-committee on small cetaceans to improve data collections on all world catches of these animals, and to review species and stock identification and other problems.

22. The Committee agreed that a blanket moratorium on whaling cannot be justified scientifically. Prudent management requires regulation of the stocks individually. A moratorium would also probably bring about a reduction in the amount of research, whereas there is a prime need for a substantial increase in research activity. The Committee recommends therefore that, instead of a moratorium, support should be sought for a decade of intensified research on cetaceans, particularly as regards problems relevant to their conservation. Such a programme should proceed in parallel with further development by the Commission of the policy of bringing catch restrictions into line with the best available knowledge of the state of the stocks.

RECOMMENDATIONS

23. New studies on catch and effort data are needed to resolve the problems in using CPUE as a measure of abundance. These should be undertaken by national groups and others with expertise on this problem.
24. There is a need for an increase in all marking programmes. A major emphasis should be on sperm and minke whales worldwide; on southern sei whales both N and S of 40°S, on fin and sei whales in the North Pacific and North Atlantic. Research on new and improved marking procedures must be developed.
25. 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.
26. The Committee recommends that more effort should be devoted to whale sighting. There needs to be systematic sampling on a scale that will yield useful results and in addition studies on whale behaviour so that sighting data can be properly interpreted.
27. Additional research is needed on methods of defining stock units other than through mark recoveries.
28. The Committee recommends continuation of the arrangements with the Bureau of International Whaling Statistics whereby it acts as a central agency for the catch, effort and length distribution data, and recommends that the Commission budget £500 for this work, if needed.
29. The Committee asks the Commission to take steps to get more complete catch, effort, and biological data from all whaling operations not now reporting in detail to the Bureau of International Whaling Statistics, and on smaller cetacea. The Commission might wish to consider adding a staff member for this purpose.

ELECTION OF CHAIRMAN

30. At its final session on 30 June, 1972 the Committee re-elected Chapman as Chairman for the year 1972-73.

SCIENTIFIC COMMITTEE MEETING 19 - 23 JUNE 1972

AGENDA

1. RESEARCH AND INFORMATION

- 1.1 Progress reports, including reports relative to special permits.
- 1.2 Progress of whale marking and whale marks recoveries. Commission's contribution to whale marking.
- 1.3 Reports of previous season's catches.
- 1.4 Data analyses and reports of national groups.
- 1.5 Sighting programme; consideration of forms for sighting data and of the data reports from 1971/72 season. Analyses of sighting data.
- 1.6 Report of special Sperm Whale Assessment meeting at Parksville, B.C., Canada, May 3-10 1972.

2. STATUS OF STOCKS AND RECOMMENDATIONS TO COMMISSION

- 2.1 Southern Baleen whales.
Commission Agenda Items 13, 29c, 29e, 29f, 29l.
- 2.11 Fin whales.
- 2.12 Sei whales.
- 2.13 Blue, humpback and right whales.
- 2.14 Minke whales.
Commission Agenda Items 11, 29m.
- 2.15 Consideration of blue whale unit (Commission Agenda Item 17).
- 2.16 Whales in the southern hemisphere outside the Antarctic.
Commission Agenda Item 13.
- 2.2 Sperm whales.
Commission Agenda Items 9, 13, 29j, 29k, 29q.
- 2.3 North Pacific Baleen whales.
Commission Agenda Items 10, 29g, 29h.
- 2.31 Fin whales.
- 2.32 Sei and Bryde's whales.
- 2.33 Other species including blue, humpback and gray whales.
- 2.4 North Atlantic whaling.
Commission Agenda Items 15, 29b, 29d, 29n.
- 2.5 Arctic whale stocks.
Commission Agenda Items 14, 29p.
- 2.6 Stocks of smaller cetaceans
Commission Agenda Items 12, 29o.
- 2.7 Consideration of a global moratorium on whaling.
Commission Agenda Item 8.

3. DATA COLLECTION AND PLACES OF NEXT MEETINGS

- 3.1 Review of the arrangements for exchange of data and for collection by a central agency; continuation of stock assessment work. Consideration of sources of stock assessment advice. Commission Agenda Item 11.
- 3.2 Data arrangements for Antarctic stocks.
- 3.3 Data arrangements for North Pacific stocks.
- 3.4 Data arrangements for sperm whale stocks.
- 3.5 Need for special studies and/or meetings.