

INTERNATIONAL
WHALING STATISTICS

LXVIII

EDITED BY
THE COMMITTEE FOR WHALING STATISTICS



OSLO 1971

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P R E F A C E

The present publication, International Whaling Statistics No. LXVIII, embraces the results of the Antarctic whaling during the season 1970-71.

The statistical data in this publication are based on the reports sent in to the Bureau of International Whaling Statistics, Sandefjord.

Oslo, December 1971.

Birger Bergersen.

Einar Vangstein.

INTRODUCTION

At the 22nd meeting of the International Whaling Commission in London in 1970 it was decided that the pelagic catch limit for the 1970-71 Antarctic season should be 2,700 blue-whale units.

The national quota allocation for the season 1970-71 was:

Japan	1,493	blue-whale units
U.S.S.R.	976	—,—
Norway.....	231	—,—
<hr/>		
Total	2,700	blue-whale units

The most important regulations governing the pelagic whaling in the Antarctic season 1970-71 were:

1. The open season for the taking of fin- and sei-whales was from December 12th to April 7th, both days inclusive.
2. The open season for taking of sperm-whales was 8 months.
3. It was forbidden to take fin-whales under 57 feet, sei-whales under 40 feet and sperm-whales under 38 feet. Further it was forbidden to kill blue-whales, humpback whales, right-whales, grey-whales and female whales accompanied by a calf.
4. The number of baleen whales taken during the open season in waters south of 40° South Latitude by whale catchers attached to factory ships under jurisdiction of the Contracting Governments should not exceed 2,700 blue-whale units. (As one blue-whale unit is reckoned 2 fin-whales or 6 sei-whales.)

The survey below shows the whaling period for baleen whales in the season 1970–71, specified for each expedition:

Expeditions	Whaling period	Catching days
Japanese:		
Kyokuyo Maru No. 3	December 12th–February 28th	79
Nisshin Maru No. 3	December 12th–March 5th	84
Tonan Maru No. 2	December 12th–March 8th	87
U.S.S.R.:		
Sovietskaya Rossia	December 16th–December 22nd, January 2nd–April 7th	103
Juri Dolgorukij	December 14th–April 3rd	111
Sovietskaya Ukraina	December 12th–March 29th	108
	Average	<u>95</u>

The whaling period and the number of catching days permitted for the pelagic baleen whaling operations since the season 1961–62 have been from December 12th to April 7th, i.e. about 117 days.

In these seasons some of the expeditions closed their baleen whaling operations at an earlier date. The average catching periods were therefore as follows:

Seasons	Average catching period	Seasons	Average catching period
1961–62	115 days	1966–67	97 days
1962–63	110 „	1967–68	101 „
1963–64	111 „	1968–69	99 „
1964–65	104 „	1969–70	97 „
1965–66	103 „	1970–71	95 „

In the pelagic whaling during the Antarctic season 1970–71 6 floating factories with a total of 86 catching boats were in operation.

Table a gives the number of floating factories and catchers engaged in pelagic whaling since the season 1961–62. The table also shows the average gross tonnage of the floating factories and the average tonnage and engine power of the catchers.

Table a.—Number and gross tonnage of floating factories and catchers engaged in pelagic whaling in the Antarctic

Seasons	Floating factories			Catchers			
	Number	Gross tonnage	Average gross tonnage per fl. factory	Number	Gross tonnage	Average per catcher of	
						Gross tonnage	I.H.P.
1961-62....	21	406,402	19,352	231	170,870	657	2,723
1962-63....	17	354,581	20,858	201	141,327	703	2,957
1963-64....	16	339,132	21,196	190	134,751	709	3,011
1964-65....	15	312,302	20,820	172	123,005	715	3,041
1965-66....	10	217,112	21,711	128	95,122	743	3,226
1966-67....	9	197,793	21,977	120	90,788	757	3,270
1967-68....	8	178,625	22,328	97	74,630	769	3,377
1968-69....	6	143,078	23,846	84	65,755	783	3,448
1969-70 ¹⁾ ..	6	140,350	23,392	84	67,650	805	3,406
1970-71....	6	146,945	24,490	86	70,878	824	3,362

¹⁾ Excl. "Peder Huse".

During the Antarctic season 1970-71 the pelagic expeditions caught in all 12,098 whales, of which 11 were lost. Thus the number of whales actually processed was 12,087.

The pelagically caught baleen whales (excl. small whales) converted into blue-whale units amounted to 2,470.5. The survey below shows the total catch in blue-whale units and the agreed global quota from the season 1961-62:

Seasons	Catch in blue-whale units	Agreed global quota Blue-whale units
1961-62	15,252.6	¹⁾ —
1962-63	11,306.1	15,000
1963-64	8,429.0	10,000
1964-65	6,986.1	8,000
1965-66	4,090.9	4,500
1966-67	3,511.8	3,500
1967-68	2,803.7	3,200
1968-69	2,472.6	3,200
1969-70	2,477.2	2,700
1970-71	2,470.5	2,700

¹⁾ No global quota.

In the season 1970-71 the pelagic expeditions in the Antarctic processed 2,468.7 blue-whale units yielding 273,709 barrels of whale-oil, and 3,049 sperm-whales yielding 116,714 barrels of sperm-oil.

The pelagic catch in blue-whale units in the last four seasons apportioned between the individual countries was as follows:

Countries	Catch in blue-whale units			
	Season 1967-68	Season 1968-69	Season 1969-70	Season 1970-71
Japan	1,493.0	1,493.0	1,492.9	1,493.0
U.S.S.R.	1,018.7	979.6	978.6	977.5
Norway	292.0	—	5.7	—
Total	2,803.7	2,472.6	2,477.2	2,470.5

The total whaling results in the Antarctic from 1961-62 are given in table b, below. In table c, below, the pelagic results during the same period have been recorded separately.

Table b.—Total whaling in the Antarctic.

Years.	Species of whales caught.						Total of whales.	Oil production.	Expeditions.			Number of whales per boat.
	Blue.	Fin.	Hump-back.	Sei.	Sperm.	Others.			Shore stations.	Floating factories.	Catchers.	
1961-62	1,118	27,099	309	5,196	4,829	¹⁾ 1	38,552	2,051,776	1	21	269	143
1962-63	947	18,668	270	5,503	4,771	—	30,159	1,495,779	—	17	201	150
1963-64	112	14,422	2	8,695	6,711	—	29,942	1,340,758	2	16	194	154
1964-65	20	7,811	—	20,380	4,352	—	32,563	1,063,416	2	15	177	184
1965-66	1	2,536	1	17,587	4,555	—	24,680	644,263	1	10	128	193
1966-67	4	2,893	—	12,368	4,960	—	20,225	600,666	—	9	120	169
1967-68	—	2,155	—	10,357	2,568	—	15,080	426,497	—	8	97	155
1968-69	—	3,020	—	5,776	2,682	—	11,478	385,822	—	6	84	137
1969-70	—	3,002	—	5,857	3,090	—	11,949	393,291	—	6	85	141
1970-71	—	2,890	—	6,153	3,055	—	12,098	390,423	—	6	86	141

¹⁾ Right-whale.

Table c.—Pelagic whaling in the Antarctic.

Years.	Species of whales caught.						Total of whales.	Oil production.	Expeditions.			Number of whales per boat.
	Blue.	Fin.	Hump-back.	Sei.	Sperm.	Others.			Shore stations.	Floating factories.	Catchers.	
1961-62	1,118	26,438	309	4,749	4,743	¹⁾ 1	37,358	2,001,961	—	21	261	143
1962-63	947	18,668	270	5,503	4,771	—	30,159	1,495,779	—	17	201	150
1963-64	112	13,870	2	8,286	6,651	—	28,921	1,299,476	—	16	190	152
1964-65	20	7,308	—	19,874	4,211	—	31,413	1,017,611	—	15	172	183
1965-66	1	2,318	1	17,583	4,538	—	24,441	634,299	—	10	128	191
1966-67	4	2,893	—	12,368	4,960	—	20,225	600,666	—	9	120	169
1967-68	—	2,155	—	10,357	2,568	—	15,080	426,497	—	8	97	155
1968-69	—	3,020	—	5,776	2,682	—	11,478	385,822	—	6	84	137
1969-70	—	3,002	—	5,857	3,090	—	11,949	393,291	—	6	85	141
1970-71	—	2,890	—	6,153	3,055	—	12,098	390,423	—	6	86	141

¹⁾ Right-whale.

Of sperm-whales a total of 3,055 animals was in 1970-71 caught in the Antarctic (South of 40° S.). In addition the pelagic expeditions captured 3,182 sperm-whales in waters north of 40° South Latitude and produced 93,033 barrels of sperm-oil.

The survey *below* shows the total catch of sperm-whales on voyage to the Antarctic, in the Antarctic (i.e. south of 40° South Lat.) and on voyage from the Antarctic, specified for each country during the last 3 seasons:

Seasons Countries		Number of sperm-whales caught in the pelagic whaling			Total
		On voyage to the Antarctic N. of 40° S.	In the Antarctic S. of 40° S.	On voyage from the Antarctic N. of 40° S.	
1970-71	Japan	1,142	192	—	1,334
	U.S.S.R.	1,345	2,863	695	4,903
	Total	2,487	3,055	695	6,237
1969-70	Japan	346	18	—	364
	U.S.S.R.	1,389	3,066	554	5,009
	Norway	—	6	11	17
	Total	1,735	3,090	565	5,390
1968-69	U.S.S.R.	1,098	2,682	127	3,907

Table d illustrates the relation between the various species of whales killed in pelagic whaling in the Antarctic from 1961-62. During the three last seasons the fin-whale catch represented about 25 per cent of the total catch compared to about 71 per cent in the 1961-62 season. On the other hand the sei-whale catch, during the 3 last seasons, represented about 50 per cent of the total catch, compared to about 12 per cent in the 1961-62 season.

Table e gives i.a. the average daily production of whale-oil per floating factory as well as per catcher. The average daily production of whale-oil per floating factory during the three last seasons was between 460-473 barrels. During the ten seasons 1949/50-1958/59 the corresponding figures varied between 1,266 and 1,690 barrels of whale-oil.

The survey on top page 12 shows the catch between each 10 degrees latitude in the Antarctic for the seasons 1958-59 and 1967/68-1970/71. Between 40°-50° South Lat. the catch in 1970-71 resulted in 1,944 blue-whale units, and this represents about 79 per cent of the total catch, as compared to about 48 per cent in the season 1968-69 and 67 per cent in the season 1969-70.

Catch in blue-whale units	Season 1958/59		Season 1967/68		Season 1968/69		Season 1969/70		Season 1970/71	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
40°—50° S. Lat.	—	—	1,115	40	1,186	48	1,667	67	1,944	79
50°—60° „ „	5,299	35	1,065	38	867	35	545	22	374	15
60°—70° „ „	9,194	60	621	22	417	17	263	11	150	6
70°—80° „ „	741	5	—	—	—	—	—	—	—	—
Total	15,234	100	2,801	100	2,470	100	2,475	100	2,468	100

The distribution of the various species of whales caught in the season 1970-71 was as follows:

Catch between each 10 degrees latitude in the Antarctic.

40°—50° S. Lat.	Fin- whales		Sei- whales		Sperm- whales		Total of whales	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
40°—50° S. Lat.	2,006	69.5	5,644	91.8	2,509	82.2	10,159	84.1
50°—60° „ „	685	23.8	186	3.0	295	9.7	1,166	9.6
60°—70° „ „	194	6.7	321	5.2	246	8.1	761	6.3
70°—80° „ „	—	—	—	—	—	—	—	—
Total	2,885	100.0	6,151	100.0	3,050	100.0	12,086	100.0

Table d.—Whales caught in the pelagic whaling. Percentage figures.

Seasons	Blue.	Fin.	Hump- back.	Sei.	Sperm.	Total.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1961-62.....	3.0	70.8	0.8	12.7	12.7	100
1962-63.....	3.1	61.9	0.9	18.3	15.8	100
1963-64.....	0.4	48.0	—	28.6	23.0	100
1964-65.....	—	23.3	—	63.3	13.4	100
1965-66.....	—	9.5	—	71.9	18.6	100
1966-67.....	—	14.3	—	61.2	24.5	100
1967-68.....	—	14.3	—	68.7	17.0	100
1968-69.....	—	26.3	—	50.3	23.4	100
1969-70.....	—	25.1	—	49.0	25.9	100
1970-71.....	—	23.9	—	50.9	25.2	100

Table e.—Average production per floating factory and catcher in the pelagic whaling in Antarctic

Seasons.	Total production of whale oil.	Total number of fl. fact.	Average production per fl. fact.	Catching days.		Total production per day for the whole fleet.	Average production per floating factory's day-work.
				Total.	Aver- age.		
				Barrels.	Barrels.		
1961-62	1,797,178	21	85,580	2,415	115	15,628	744
1962-63	1,293,491	17	76,088	1,878	110	11,759	689
1963-64 ¹⁾	1,016,670	15	67,778	1,663	111	9,159	611
1964-65	844,457	15	56,297	1,554	104	8,120	543
1965-66	448,020	10	44,802	1,034	103	4,350	433
1966-67	383,888	9	42,654	874	97	3,958	439
1967-68	321,953	8	40,244	806	101	3,188	399
1968-69	272,058	6	45,343	591	99	2,748	460
1969-70	268,264	6	44,711	579	97	2,766	463
1970-71	273,709	6	45,618	572	95	2,881	479

II. Catchers:							
Seasons.	Total production of whale oil.	Total number of catchers.	Average production per catcher.	Catching days.		Average oil production per catcher's day-work.	Average number of whales caught ¹⁾ per catcher's day-work
				Total.	Average per catcher.		
	Barrels.		Barrels.			Barrels.	
1961-62....	1,797,178	261	6,886	29,952	115	60	1.09
1962-63....	1,293,491	201	6,435	22,504	112	57	1.13
1963-64 ¹⁾ ..	1,016,670	180	5,646	19,876	110	51	1.10
1964-65....	844,457	172	4,910	17,475	102	48	1.56
1965-66....	448,020	128	3,500	13,122	103	34	1.52
1966-67....	383,888	120	3,199	11,760	98	33	1.30
1967-68....	321,953	97	3,319	9,785	101	33	1.28
1968-69....	272,058	84	3,239	8,327	99	33	1.05
1969-70....	268,264	85	3,156	8,275	97	32	1.07
1970-71....	273,709	86	3,183	8,253	96	33	1,10

¹⁾ Excl. one expedition, which mostly caught sperm-whales. ²⁾ Not including sperm-whales.

In tables f and g the monthly catch of the various species of whales is recorded in absolute and percentage figures.

Table f.—Antarctic, pelagic whaling. Catch by months in absolute figures.

Species of whales, and seasons.		Nov.	Dec.	Jan.	Feb.	March.	April.	Total.	The Whaling Statistics' total figures.
<i>Total animals.</i>	1961-62..	1,356	5,431	10,135	9,458	9,857	985	37,222	37,357
	1962-63..	1,307	4,988	7,805	8,499	6,223	1,267	30,089	30,159
	1963-64..	1,158	4,534	8,874	7,840	5,331	1,125	28,862	28,921
	1964-65..	365	4,192	10,035	10,096	5,856	822	31,366	31,413
	1965-66..	178	4,328	7,443	6,513	4,711	1,231	24,404	24,441
	1966-67..	368	4,207	5,462	5,795	3,225	1,142	20,199	20,225
	1967-68..	10	2,326	4,641	4,189	2,892	1,012	15,070	15,080
	1968-69..	—	2,706	3,665	2,666	1,353	1,072	11,462	11,478
	1969-70..	—	2,857	3,709	2,936	1,662	772	11,936	11,949
1970-71..	149	3,174	3,338	2,719	1,816	893	12,089	12,098	
<i>Blue-whales.</i>	1961-62..	—	—	1	690	319	106	1,116	1,118
	1962-63..	—	—	—	227	490	227	944	947
	1963-64..	—	—	—	29	49	34	112	112
	1964-65..	—	—	—	11	8	1	20	20
	1965-66..	—	—	—	—	1	—	1	1
	1966-67..	—	1	2	1	—	—	4	4
	1967-68..	—	—	—	—	—	—	—	—
	1968-69..	—	—	—	—	—	—	—	—
	1969-70..	—	—	—	—	—	—	—	—
1970-71..	—	—	—	—	—	—	—	—	
<i>Fin-whales.</i>	1961-62..	—	4,100	8,408	7,002	6,647	207	26,364	26,438
	1962-63..	—	3,477	6,099	5,639	3,228	193	18,636	18,668
	1963-64..	—	2,732	4,338	4,164	2,482	137	13,853	13,870
	1964-65..	—	2,452	2,353	1,328	1,083	90	7,306	7,308
	1965-66..	—	327	624	403	878	82	2,314	2,318
	1966-67..	—	380	690	1,329	484	2	2,885	2,893
	1967-68..	—	260	676	648	567	1	2,152	2,155
	1968-69..	—	123	1,550	838	503	—	3,014	3,020
	1969-70..	—	58	832	1,442	668	—	3,000	3,002
1970-71..	—	141	840	1,412	489	6	2,888	2,890	

Species of whales. Seasons.	Nov.	Dec.	Jan.	Feb.	March.	April.	Total.	The Whaling Statistics total figures.	
<i>Fin-whales</i>	1961-62	-	75.5	83.0	74.0	67.4	21.0	70.8	70.8
	1962-63	-	69.7	78.1	66.3	51.9	15.2	62.0	61.9
	1963-64	-	60.3	48.9	53.1	46.6	12.2	48.0	48.0
	1964-65	-	58.5	23.5	13.2	18.5	10.9	23.3	23.3
	1965-66	-	7.5	8.4	6.2	18.6	6.7	9.5	9.5
	1966-67	-	9.0	12.6	22.9	15.0	0.2	14.3	14.3
	1967-68	-	11.2	14.6	15.5	19.6	0.1	14.3	14.3
	1968-69	-	4.5	42.3	31.4	37.2	-	26.2	26.3
	1969-70	-	2.0	22.4	49.1	40.2	-	25.1	25.1
1970-71	-	4.4	25.1	51.9	26.9	0.6	23.9	23.9	
<i>Hump-backs</i>	1961-62	-	-	3.0	-	-	0.2	0.8	0.8
	1962-63	-	-	3.5	-	-	-	0.9	0.9
	1963-64	-	-	-	-	-	0.2	-	-
	1964-65-66	-	-	-	-	-	-	-	-
	1966-67	-	-	-	-	-	-	-	-
	1967-68	-	-	-	-	-	-	-	-
	1968-69	-	-	-	-	-	-	-	-
	1969-70	-	-	-	-	-	-	-	-
1970-71	-	-	-	-	-	-	-	-	
<i>Sei-whales</i>	1961-62	-	3.6	5.9	14.1	22.8	34.7	12.7	12.7
	1962-63	-	7.9	8.4	23.0	33.9	28.8	18.2	18.3
	1963-64	-	12.2	36.1	31.3	35.0	16.2	28.6	28.6
	1964-65	-	23.9	70.9	76.2	66.1	19.6	63.3	63.3
	1965-66	-	74.0	76.6	85.7	62.0	12.4	71.9	71.9
	1966-67	-	75.3	66.2	63.4	58.3	2.1	61.2	61.2
	1967-68	-	77.9	72.2	72.9	73.1	1.9	68.7	68.7
	1968-69	-	87.2	34.9	55.7	48.0	-	50.4	50.3
	1969-70	-	85.2	55.4	27.0	34.3	-	49.0	49.0
1970-71	-	87.0	58.7	32.2	28.6	4.3	50.9	50.9	
<i>Sperm-whales</i>	1961-62	100.0	20.9	8.1	4.6	6.6	33.3	12.7	12.7
	1962-63	100.0	22.4	10.0	8.0	6.3	38.1	15.8	15.8
	1963-64	100.0	27.5	15.0	15.3	17.5	68.4	23.0	23.0
	1964-65	100.0	17.6	5.6	10.6	15.3	69.4	13.4	13.4
	1965-66	100.0	18.5	15.0	8.1	19.3	80.9	18.6	18.6
	1966-67	100.0	15.7	21.2	13.7	26.7	97.7	24.5	24.5
	1967-68	100.0	10.9	13.2	11.6	7.3	98.0	17.0	17.0
	1968-69	-	8.3	22.8	12.9	14.8	100.0	23.4	23.4
	1969-70	-	12.8	22.2	23.9	25.5	100.0	25.9	25.9
1970-71	100.0	8.6	16.2	15.9	44.5	95.1	25.2	25.2	

For the purpose of obtaining more detailed information on the pelagic activities in the Antarctic the area round the South Pole Cap has been divided into the following 6 areas:—

Area	I	between	120° West	and	60° West
„	II	„	60°	„	0°
„	III	„	0°	„	70° East
„	IV	„	70° East	„	130°
„	V	„	130°	„	170° West
„	VI	„	170° West	„	120°

From the following survey will be seen the whaling results in blue-whale units in the individual areas during the last 10 seasons:

Seasons	Area I		Area II		Area III		Area IV		Area V		Area VI		Total blue-whale units
	Blue-whale units	Per cent	Blue-whale units	Per cent	Blue-whale units	Per cent	Blue-whale units	Per cent	Blue-whale units	Per cent	Blue-whale units	Per cent	
1961-62..	1,809	11.9	3,729	24.5	6,488	42.6	1,792	11.8	693	4.5	718	4.7	15,229
1962-63..	853	7.5	3,109	27.5	5,491	48.6	1,010	8.9	586	5.2	257	2.3	11,306
1963-64..	22	0.3	4,368	51.7	2,808	33.2	367	4.4	882	10.4	-	-	8,447
1964-65..	40	0.6	4,918	69.8	687	9.7	658	9.3	749	10.6	-	-	7,052
1965-66..	14	0.4	2,439	59.7	963	23.6	106	2.6	361	8.8	202	4.9	4,085
1966-67..	23	0.6	299	8.5	1,922	54.8	659	18.8	272	7.8	332	9.5	3,507
1967-68..	-	-	119	4.2	782	27.9	753	26.9	554	19.8	593	21.2	2,801
1968-69..	77	3.1	47	1.9	571	23.2	986	39.9	565	22.9	223	9.0	2,469
1969-70..	-	-	232	9.4	1,108	44.8	853	34.4	240	9.7	42	1.7	2,475
1970-71..	-	-	260	10.5	1,032	41.8	990	40.1	105	4.3	81	3.3	2,468

The catch in Areas III and IV (between 0° and 130° East) amounted to about 82 per cent of the total catch in 1970-71 compared to about 18 per cent in the remaining four Areas.

The total number of fin-whales, sei-whales and sperm-whales killed in the different areas during the last season were as shown on page 17.

Areas	Fin-whales caught		Sei-whales caught		Sperm-whales caught	
	Number	Per cent	Number	Per cent	Number	Per cent
Total	2,885	100.0	6,151	100.0	3,050	100.0
Of which in:						
Area I	-	-	-	-	-	-
„ II	307	10.6	638	10.4	585	19.2
„ III	1,708	59.3	1,065	17.3	607	19.9
„ IV	656	22.7	3,969	64.5	377	12.3
„ V	115	4.0	285	4.6	1,423	46.7
„ VI	99	3.4	194	3.2	58	1.9

Table h.—Average size of whales killed in the Antarctic, by whaling grounds and species of whales

Whaling grounds and species of whales.	1961 -62	1962 -63	1963 -64	1964 -65	1965 -66	1966 -67	1967 -68	1968 -69	1969 -70	1970 -71
Pelagic whaling.	Engl. feet.	Engl. feet.	Engl. feet.	Engl. feet.	Engl. feet.	Engl. feet.	Engl. feet.	Engl. feet.	Engl. feet.	Engl. feet.
<i>Blue-whales.</i>										
Males	73.8	72.9	69.7	66.2	—	59.8	—	—	—	—
Females	76.7	73.3	71.2	71.2	86.0	—	—	—	—	—
Total animals	75.3	73.1	70.4	69.7	86.0	59.8	—	—	—	—
<i>Fin-whales.</i>										
Males	64.4	64.1	64.7	63.6	64.0	64.7	65.1	65.2	64.7	64.2
Females	68.2	67.8	68.6	67.1	67.2	67.8	68.4	68.0	67.9	67.1
Total animals	66.5	66.2	66.8	65.5	65.8	66.3	66.9	66.6	66.4	65.7
<i>Humpbacks.</i>										
Males	40.4	39.9	—	—	43.0	—	—	—	—	—
Females	41.9	42.7	40.0	—	—	—	—	—	—	—
Total animals	41.4	41.6	40.0	—	43.0	—	—	—	—	—
<i>Sei-whales.</i>										
Males	48.7	48.4	48.5	48.3	47.5	47.0	47.3	47.2	47.2	46.6
Females	51.3	50.9	50.8	50.5	48.9	48.9	49.2	48.9	48.7	48.3
Total animals	50.3	49.8	49.6	49.3	48.0	47.9	48.2	48.0	47.9	47.4
<i>Sperm-whales.</i>										
Males	46.3	46.5	45.7	45.8	46.3	¹⁾ 46.4	45.3	45.9	45.2	43.9
Females	41.0	38.6	38.6	38.2	37.8	¹⁾ 36.4	36.8	35.6	37.0	36.2
Total animals	46.3	46.4	45.3	45.6	45.3	¹⁾ 46.4	45.1	45.5	44.9	43.4
South Georgia.										
<i>Blue-whales, total</i>	—	—	—	—	—	—	—	—	—	—
<i>Fin-whales, total</i>	62.9	—	66.9	66.9	64.1	—	—	—	—	—
<i>Sei-whales, total</i>	48.6	—	49.8	49.8	53.0	—	—	—	—	—
<i>Sperm-whales, total</i>	46.7	—	48.7	48.4	46.4	—	—	—	—	—

¹⁾ Excl. 51 sperm-whales caught for scientific purposes. The average size of those whales was: Males 25.00 feet. Females 31.00 feet. Total animals 29.47 feet.

The average size of whales caught in the different areas was:

Area	Fin-whales			Sei-whales			Sperm-whales		
	Males Engl. feet	Females Engl. feet	Total Engl. feet	Males Engl. feet	Females Engl. feet	Total Engl. feet	Males Engl. feet	Females Engl. feet	Total Engl. feet
.. II ...	64.8	67.1	65.9	47.1	49.5	48.3	44.6	35.2	44.2
.. III ...	64.4	67.4	66.0	45.8	47.9	46.8	41.9	36.0	41.9
.. IV ...	63.1	66.1	64.6	46.6	48.0	47.3	45.8	34.0	45.7
.. V ...	63.8	66.4	65.1	46.8	48.9	47.9	43.7	36.3	42.8
.. VI ...	64.8	63.5	66.7	48.2	49.8	49.1	48.7	—	48.7

Table i gives a survey of the pelagic whaling results of the individual participating countries as from 1961–62 regarding the number of whales killed, oil production and number of catchers employed.

Table i.—Antarctic, pelagic whaling results for the various countries

Seasons	All countries			Norway			United Kingdom		
	Number of whales killed	Oil production	Catchers employed	Number of whales killed	Oil production	Catchers employed	Number of whales killed	Oil production	Catchers employed
1961-62	37,358	Barrels ¹ 2,001,961	261	9,304	Barrels 568,768	71	3,130	Barrels 162,552	22
1962-63	30,159	1,495,779	201	4,582	224,199	32	1,552	79,222	9
1963-64	28,921	1,299,476	190	5,631	247,432	33	-	-	-
1964-65	31,413	1,017,611	172	7,470	226,357	36	-	-	-
1965-66	24,441	634,299	128	4,751	126,696	21	-	-	-
1966-67	20,225	600,666	120	3,685	104,683	21	-	-	-
1967-68	15,080	426,497	97	1,106	34,240	5	-	-	-
1968-69	11,478	385,822	84	-	-	-	-	-	-
1969-70	11,949	393,291	85	32	452	1	-	-	-
1970-71	12,098	380,423	86	-	-	-	-	-	-

Seasons	Japan			Netherlands			U.S.S.R.		
	Number of whales killed	Oil production	Catchers employed	Number of whales killed	Oil production	Catchers employed	Number of whales killed	Oil production	Catchers employed
1961-62	14,351	Barrels 735,895	86	1,628	Barrels 90,305	15	8,945	Barrels 444,441	67
1962-63	13,617	716,838	79	1,301	79,515	11	9,107	396,005	70
1963-64	12,398	625,394	78	1,182	63,382	11	9,710	363,268	68
1964-65	15,465	504,023	71	-	-	-	8,478	287,231	65
1965-66	12,484	246,644	52	-	-	-	7,206	260,959	55
1966-67	9,429	192,477	44	-	-	-	7,111	303,506	55
1967-68	7,836	173,336	43	-	-	-	6,138	218,921	49
1968-69	5,316	161,931	38	-	-	-	6,162	223,891	46
1969-70	5,334	160,681	38	-	-	-	6,583	232,158	46
1970-71	5,936	172,946	40	-	-	-	6,162	217,477	46

¹⁾ Barrel = 170 kg. (Barrel = abt. 1/6 long ton. 1 long ton = 1,016 kg.)

The next survey shows the catch of blue-whale units by catcher day. Since 1965-66 season the catch has amounted to 0.30 blue-whale units by catcher day compared to about 0.90 in the seasons 1950/51-1958/59.

Seasons	Average result of blue-whale units per catcher day.						
	Area I	Area II	Area III	Area IV	Area V	Area VI	All areas
1960-61 ...	0.47	0.59	0.74	0.85	0.61	0.64	0.68
1961-62 ...	0.53	0.45	0.57	0.57	0.39	0.38	0.51
1962-63 ...	0.36	0.51	0.59	0.36	0.46	0.42	0.50
1963-64 ...	0.23	0.52	0.42	0.19	0.27	-	0.41
1964-65 ...	0.54	0.47	0.38	0.29	0.25	-	0.40
1965-66 ...	0.32	0.38	0.39	0.17	0.14	0.21	0.31
1966-67 ...	0.56	0.28	0.37	0.29	0.15	0.25	0.30
1967-68 ...	-	0.20	0.29	0.30	0.24	0.32	0.29
1968-69 ...	0.27	0.16	0.23	0.43	0.29	0.23	0.30
1969-70 ...	-	0.24	0.32	0.36	0.20	0.16	0.30
1970-71 ...	-	0.20	0.35	0.35	0.15	0.28	0.30

The average output of oil per blue-whale unit from and including the season 1961-62 has been recorded in table j. For the pelagic expeditions the average output was 110.9 barrels in 1970-71 against 108.4 and 110.2 barrels during the two preceding seasons.

Table j.—Average production of oil per blue-whale unit.¹⁾

Years.	South Georgia.	Pelagic whaling.	Years.	South Georgia.	Pelagic whaling.
	Barrels ²⁾	Barrels ²⁾		Barrels	Barrels
1961-62	112.9	118.1	1966-67	—	109.5
1962-63	—	114.6	1967-68	—	114.9
1963-64	112.1	122.0	1968-69	—	110.2
1964-65	117.9	121.0	1969-70	—	108.4
1965-66	84.1	109.7	1970-71	—	110.9

¹⁾ Other whales are reduced to blue-whale units on the following basis: — 1 blue-whale = 2 fin-whales = 2½ humpbacks = 6 sei-whales. ²⁾ Barrel = 170 kg. (Barrel = abt. 1/6 long ton. 1 long ton = 1,016 kg.)

In table k, below, detailed information is given on the production of by-products in the Antarctic. From and including the season 1965-66 the figures are distributed in respect to the individual countries.

Table k.- Production of by-products in the Antarctic.

By-products Seasons Countries	Whale meat-meal, bone-meal, grax meal, guano	Whale liver or liver flakes	Liver- oil	Liver meal	Whale meat, blubber, ventral grooves	Whale solubles	Other by- products ¹
	long tons	L. tons	L. tons	L. tons	L. tons	L. tons	I tons
1961-62 Total	47,696	2,336	102	-	178,670	-	37,985
1962-63 Total	35,503	1,690	87	-	163,688	-	28,692
1963-64 Total	31,655	2,692	97	-	173,736	-	27,673
1964-65 Total	33,678	3,212	²⁾ 12	-	171,662	-	26,665
<i>1965-66.</i>							
Norway	2,559	315	-	-	13,547	-	1,242
Japan	3,561	406	-	-	107,130	-	17,102
U.S.S.R.	12,638	1,603	³⁾ -	-	15,822	-	108
Total	18,758	2,324	-	-	136,499	-	18,452
<i>1966-67.</i>							
Norway	1,329	293	-	-	21,417	-	449
Japan	1,277	299	-	-	90,968	193	14,616
U.S.S.R.	14,122	1,543	⁴⁾ -	-	16,643	-	59
Total	16,728	2,135	-	-	129,028	193	15,124
<i>1967-68.</i>							
Norway	-	-	-	-	7,630	-	-
Japan	2,020	-	-	-	79,526	2,444	10,711
U.S.S.R.	11,962	985	⁵⁾ -	-	16,826	-	128
Total	13,982	985	-	-	103,982	2,444	10,839
<i>1968-69.</i>							
Japan	1,741	-	-	-	62,089	1,378	12,182
U.S.S.R.	11,535	1,372	⁶⁾ -	-	19,419	-	152
Total	13,276	1,372	-	-	81,508	1,378	12,334
<i>1969-70.</i>							
Japan	1,052	50	-	-	63,547	1,968	13,711
Norway	-	4	-	-	309	-	-
U.S.S.R.	12,693	1,572	⁷⁾ -	-	21,656	-	141
Total	13,745	1,626	-	-	85,512	1,968	13,852
<i>1970-71.</i>							
Japan	1,624	-	-	-	68,801	3,245	12,715
U.S.S.R.	11,977	1,722	⁸⁾ -	-	22,495	-	427
Total	13,601	1,722	-	-	91,296	3,245	13,142

¹⁾ Products such as: Teeth, baleen, ambergris, pancreas, processed bone, bone fertilizer, protein, hypophyses, internal organs, blubber for leather, gelatin material, tail flukes, whale meat-extract etc. ²⁾ In addition 1,168,000 Mill. units of Vitamin A (Liver oil) were produced. ³⁾ In addition 865,000 Mill. units of Vitamin A (Liver oil) were produced. ⁴⁾ In addition 1,118,000 Mill. units of Vitamin A (Liver oil) were produced. ⁵⁾ In addition 885,000 Mill. units of Vitamin A (Liver oil) were produced. ⁶⁾ In addition 928,000 Mill. units of Vitamin A (Liver oil) were produced. ⁷⁾ In addition 1,129,000 Mill. units of Vitamin A were produced. ⁸⁾ In addition 986,000 Mill. units of Vitamin A were produced.

TABLES

Antarctic season 1970/71.

Table No. 1.—Whaling results for the various countries in the Antarctic in the season 1970/71.

Pelagic whaling.

Countries. Geographical areas.	Species of whales caught.						Oil production.	Expeditions.		
	Blue.	Fin.	Hump- back.	Sei.	Sperm.	Total of whales.		Shore sta- tions.	Floa- ting fac- tories.	Catch- ers.
Japan:— Antarctic pelagic	—	1 607	—	4 137	192	5 936	172 946	—	3	40
U.S.S.R.:— Antarctic pelagic	—	1 283	—	2 016	2 863	6,162	217,477	—	3	46
Total	—	2,890	—	6,153	3 055	12 098	390 423	—	6	86

Table No. 2.—Average size of whales caught in the Antarctic in the season 1970/71.

Pelagic whaling.

Geographical areas. Number of whales measured.	Company.	Average size.		
		Males.	Females.	Total animals.
Fin-whales.				
<i>Antarctic, pelagic whaling</i>	No. 1	64.5	68.0	66.4
Males 1,385 } Total 2,885	„ 2	64.8	67.1	65.9
Females 1,500 }	„ 3	64.2	67.2	65.8
	„ 4	64.2	67.1	65.8
	„ 5	63.9	66.4	65.2
	„ 6	63.6	66.7	65.1
Average		64.2	67.1	65.7
Sei-whales.				
<i>Antarctic pelagic whaling</i>	No. 1	47.1	49.5	48.3
Males 3 170 } Total 6 151	„ 2	47.1	49.0	48.1
Females 2,981 }	„ 3	46.7	48.3	47.5
	„ 4	46.8	48.1	47.4
	„ 5	45.8	48.1	46.9
	„ 6	46.1	47.5	46.8
Average		46.6	48.3	47.4

Table No. 2 (continued).

Geographical areas. Number of whales measured.	Company.	Average size.		
		Males.	Females.	Total animals.
Sperm-whales.				
<i>Antarctic, pelagic whaling</i>	No. 1	41.7	34.7	41.7
Males 2,859 } Total 3,050	.. 2	47.5	—	47.5
Females 191 }	.. 3	44.6	35.2	44.3
	.. 4	44.5	36.0	43.7
	.. 5	43.4	38.7	42.8
Average		43.9	36.2	43.4

Table No. 3.—Whales caught in the Antarctic in the season 1970/71, by species, sex and size.

Pelagic whaling.

Fin-whales.

Engl. feet.	Number of		Total animals.	Engl. feet.	Number of		Total animals.
	males.	females.			males.	females.	
41	1	—	1	73	6	85	91
53	1	2	3	74	3	66	69
54	1	2	3	75	1	45	46
55	7	1	8	76	2	34	36
57	70	70	140	77	—	18	18
58	62	43	105	78	—	6	6
59	63	52	115	79	—	5	5
60	72	57	129	80	—	1	1
61	74	61	135	81	—	1	1
62	89	75	164				
63	125	66	191	Sum	1 385	1 500	2 885
64	122	61	183				
65	125	61	186				
66	166	78	244				
67	139	103	242				
68	99	96	195				
69	71	109	180				
70	50	101	151				
71	22	91	113				
72	14	110	124				

Average size:	{	Males	64.2 feet
		Females	67.1
		Total animals	65.7
Per cent:	{	Males	48.0
		Females	52.0

Table No. 3 (continued).

Sei-whales.

Engl. feet.	Number of		Total animals.	Engl. feet.	Number of		Total animals.
	males.	females.			males.	females.	
36	1	—	1	52	46	348	394
37	3	3	6	53	10	152	162
38	4	2	6	54	2	84	86
39	3	1	4	55	—	40	40
40	101	91	192	56	—	9	9
41	122	97	219	57	—	3	3
42	112	94	206	58	—	1	1
43	172	122	294				
44	214	138	352				
45	259	162	421	Sum	3,170	2,981	6,151
46	339	170	509				
47	488	232	720	Average size: {	Males	46.6 feet	
48	478	249	727		Females	48.3 "	
49	419	317	736		Total animals	47.4 "	
50	263	339	602	Per cent: {	Males	51.5	
51	134	327	461		Females	48.5	

Sperm-whales.

Engl. feet.	Number of		Total animals.	Engl. feet.	Number of		Total animals.
	males.	females.			males.	females.	
29	—	3	3	47	164	—	164
30	1	4	5	48	164	—	164
31	2	4	6	49	174	—	174
32	2	8	10	50	109	—	109
33	2	16	18	51	102	—	102
34	4	15	19	53	56	—	56
35	5	14	19	53	43	—	43
36	6	19	25	54	9	—	9
37	14	25	39	56	1	—	1
38	202	51	253	58	1	—	1
39	246	28	274				
40	262	4	266	Sum	2,859	191	3,050
41	309	—	309				
42	204	—	204	Average size: {	Males	43.9 feet	
43	204	—	204		Females	36.2 "	
44	187	—	187		Total animals	43.4 "	
45	185	—	185	Per cent: {	Males	93.7	
46	201	—	201		Females	6.3	

Table No. 4.—Average production of whale oil per blue-whale unit in the Antarctic in the season 1970/71.

Other whales are reduced to blue-whale equivalents on the following basis:—
1 blue-whale = 2 fin-whales = 6 sei-whales.

Geographical areas.	Expedition.	Blue-whale units. ¹⁾	Oil production.	
			Total.	Average per blue-whale unit.
<i>Antarctic pelagic whaling</i>	No. 1	615.0	70 182	114.1
	2	439.0	49 323	112.4
	3	333.5	37 328	111.9
	4	260.2	29 088	111.7
	5	382.0	41 059	107.5
	6	439.0	46 729	106.4
Total		2 468.7	273 709	110.9

¹⁾ This refers to whales worked up.

²⁾ Barrel = 170 kg. (Barrel = abt. $\frac{1}{6}$ long ton, 1 long ton = 1,016 kg.)

Table No. 5.—Size of pregnant whale females caught in the Antarctic in the season 1970/71.

Antarctic, pelagic whaling.

Fin-whale females.

Length of mothers.	Number of pregnant animals.	Length of mothers.	Number of pregnant animals.	
Engl. feet.		Engl. feet.		
60	1	71	43	
61	3	72	65	
62	8	73	39	
63	18	74	33	
64	22	75	20	
65	26	76	20	
66	42	77	8	
67	61	78	5	
68	66	79	2	
69	56			
70	61	Total	599	

Number of foetuses measured 596
of which twin pairs 6
Length not stated 9

Sei-whale females.

Length of mothers.	Number of pregnant animals.	Length of mothers.	Number of pregnant animals.	
Engl. feet.		Engl. feet.		
41	1	51	213	
42	1	52	217	
43	2	53	103	
44	5	54	54	
45	19	55	21	
46	45	56	6	
47	99	57	3	
48	104			
49	202	Total	1,280	
50	185			

Number of foetuses measured 1,278
of which twin pairs 11
Length not stated 13

Sperm-whale females.

Length of mothers.	Number of pregnant animals.	Length of mothers.	Number of pregnant animals.	
Engl. feet.		Engl. feet.		Number of foetues measured.....
31	2	37	8	48
32	3	38	10	Length not stated.....
33	5	39	13	3
34	7	40	1	
35	5			
36	7	Total	61	

Table No. 6.—Whale foetuses measured in the Antarctic in the season 1970/71, by species and groups of size, in each month.

Antarctic, pelagic whaling.

Fin-whale foetuses.

Groups of size. Engl. feet.	Dec.	Jan.	Febr.	March	April	Total
0'—0' 11"	1	6	2	—	—	9
1'—1' 11"	1	8	5	1	—	15
2'—2' 11"	7	9	16	1	—	33
3'—3' 11"	8	27	24	4	—	63
4'—4' 11"	2	18	28	8	—	56
5'—5' 11"	2	13	27	6	—	48
6'—6' 11"	5	22	31	10	—	68
7'—7' 11"	2	22	24	4	—	52
8'—8' 11"	—	23	32	8	—	67
9'—9' 11"	—	9	25	6	1	37
10'—10' 11"	—	3	28	8	—	39
11'—11' 11"	—	6	24	10	—	40
12'—12' 11"	—	1	18	11	1	31
13'—13' 11"	—	1	5	4	—	10
14'—14' 11"	—	—	5	6	—	11
15'—15' 11"	—	—	2	6	—	8
16'—16' 11"	—	—	—	4	—	4
17'—17' 11"	—	—	—	3	—	3
18'—18' 11"	—	—	1	1	—	2
Total fin-whale foetuses..	28	168	297	101	2	596
Average size of foetuses..	5' 3"	5' 11"	7' 8"	10' 0"	11' 0"	7' 5"

Sei-whale foetuses.

Groups of size. Engl. feet.	Dec.	Jan.	Febr.	March.	April	Total.
0'— 0' 11"	3	2	—	—	—	5
1'— 1' 11"	19	5	—	—	—	24
2'— 2' 11"	41	16	2	—	—	59
3'— 3' 11"	103	31	5	—	1	140
4'— 4' 11"	128	78	12	3	—	221
5'— 5' 11"	159	75	16	5	1	256
6'— 6' 11"	75	83	29	6	1	194
7'— 7' 11"	20	50	25	12	1	108
8'— 8' 11"	1	28	48	18	—	95
9'— 9' 11"	1	13	34	14	1	63
10'—10' 11"	—	3	22	24	1	50
11'—11' 11"	1	—	10	20	1	32
12'—12' 11"	—	—	5	16	3	24
13'—13' 11"	—	—	—	6	—	6
14'—14' 11"	—	—	—	1	—	1
Total sei-whale foetuses..	551	384	208	125	10	1 278
Average size of foetuses..	4' 9"	5' 10"	8' 1"	9' 10"	9' 2"	6' 2"

Sperm-whale foetuses.

Groups of size. Engl. feet.	Nov.	Dec.	Jan.	Febr.	March	April	May	Total
0'— 0' 11"	2	—	—	—	1	—	1	4
1'— 1' 11"	—	—	—	—	5	2	1	8
2'— 2' 11"	—	—	—	—	3	6	1	10
3'— 3' 11"	—	—	—	—	1	3	1	5
4'— 4' 11"	—	—	—	—	4	1	—	5
5'— 5' 11"	—	—	—	—	1	2	1	4
6'— 6' 11"	—	—	—	—	—	—	—	—
7'— 7' 11"	—	—	—	—	—	—	—	—
8'— 8' 11"	1	—	—	—	—	—	—	1
9'— 9' 11"	2	—	—	—	—	—	—	2
10'—10' 11"	1	—	—	—	1	—	—	2
11'—11' 11"	1	—	—	—	—	1	—	2
12'—12' 11"	—	—	—	—	4	2	—	6
13'—13' 11"	—	—	—	—	4	—	2	6
14'—14' 11"	—	—	—	—	2	—	—	2
15'—15' 11"	—	—	—	—	—	1	—	1
Total sperm-whale foetuses	7	—	—	—	26	18	7	58
Average size of foetuses	7' 3"	—	—	—	7' 2"	5' 4"	5' 9"	6' 5"

Table No. 6 (continued).

Table No. 7.—Whale foetuses measured in the Antarctic in the season 1970/71, by species and sex, in each month.**Antarctic, pelagic whaling.**

Kind of foetuses. Months.	Number of		Sex not stated.	Total foetuses.	Number of males per 100 females
	males.	females.			
Fin-whale foetuses.					
December	11	16	1	28	68.7
January	85	81	5	171	104.9
February	142	155	5	302	91.6
March	48	53	1	102	90.5
April	2	—	—	2	—
Total	288	305	12	605	94.4
Sei-whale foetuses.					
December	274	277	9	560	98.9
January	186	198	4	388	93.9
February	104	104	—	208	100.0
March	67	58	—	125	115.5
April	5	5	—	10	100.0
Total	636	642	13	1 291	99.1
Sperm-whale foetuses.					
November	5	2	3	10	250.0
December	—	—	—	—	—
January	—	—	—	—	—
February	—	—	—	—	—
March	15	11	—	26	136.4
April	10	8	—	18	125.0
May	3	4	—	7	75.0
Total	33	25	3	61	132.0

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