

An examination of the catch history of Western North Pacific Stock of Bryde's whale

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ABSTRACT

The data of whaling operations from 1965 to 1978 of a Japanese coastal whaling company were examined and compared with several kinds of information. The most catches mainly for the Pacific coast of northern Japan consisted of sperm and sei whales, followed by Bryde's and fin whales. The main species taken and the whaling grounds changed seasonally. The catches of Bryde's whales were reported in some particular years usually under the category of sei whales. While some reported catches of sei whales might be for Bryde's whales, the miss-reporting seems not to be serious to Implementation Simulation Trials. The total actual catches off the Ogasawara Islands might be 1.6 times the reported catches but the original records have been lost and not available. Based on several kinds of information, it seems that the formal USSR catch is reliable. In conclusion, the reported catches could be used as the baseline catch history. For sensitivity tests alternative catch histories could be assumed, for example, with the 1.6 times catches for Ogasawara Islands.

INTRODUCTION

For a variety of reasons (largely related to new genetic information and questions over the historic catch series) it was appropriate to consider that the Implementation for western North Pacific Bryde's whales was in the pre-implementation assessment stage (IWC, 2003). Given the considerable work already undertaken in developing Implementation Simulation Trials (IST) in previous years the Scientific Committee (SC) had agreed that it should be possible to move faster towards Implementation than envisaged in the process developed in 2002. On the questions over the historic catch series, uncertainties about Japan coastal catches were raised mainly based on the historical catch data provided by Mr. I. Kondo who was the director of whaling stations for the former Nihon Kinkai Hogeï Co. Ltd. (later the Nihon Hogeï Co. Ltd.). As the Kondo's data are private ones, the authors of this document requested them for verification based on Procedure A of Data Availability Procedure. The objective was to evaluate the reliability and accuracy of the Kondo's data to develop hypotheses for catch history to use in Implementation.

MATERIAL AND METHOD

The Kondo's data have already been sent to the Chairman of SC by Mr. I. Kondo and Dr. T. Kasuya at the date of 28 September 2004 to open to all scientists for further investigation and analyses. The data are archived with the secretariat and we got them as a CD. It

contained many photographs of the summary (monthly) charts of whaling operations from 1965 to 1978. Some of them were in bad condition to read. Three regional charts were made for whaling stations at Akkeshi and Ayukawa (Pacific coast of northern Japan), Wakkanai (the Sea of Japan and Okhotsk Sea) and Taiji (Pacific coast of central Japan), the latter being found only in 1976. The catch data in the Sea of Japan and Okhotsk Sea were not examined as Bryde's whales are not distributed in those waters. On the charts the lines indicating the direction and distance from the land marks near the whaling stations are drawn and the positions of catches of individual whales are plotted with the species and date (Fig. 1). The catches of the month and the cumulative catches are also written by species. We examined the data and compared with several kinds of catches for the Japanese coastal fishery and that based on the Ogasawara (Bonin) islands and for the USSR fleet.

RESULTS AND DISCUSSION

In 1999 it was agreed that initial trials would be based on the base-case catch series (Table 1) used for the 1996 Comprehensive Assessment. Table 2 shows the IWC quota and reported catches from 1969 when the quota was introduced by IWC. For coastal whaling, however, the domestic quota was set as sei plus Bryde's whales, and 10-15% of quota was transferable to those of fin whales. Single Bryde's quota was introduced from 1976.

In the Kondo's data mainly for the Pacific coast of northern Japan, most catches consisted of sperm and sei whales, followed by Bryde's and fin whales. The main species taken and the whaling grounds changed seasonally. From April to June the catches mainly consisted of sei whales, which whaling grounds located in the offshore areas at latitudes between 36 to 42 degrees N moving northwards with season. The catches of sperm whales increased from around July. The whaling grounds located in the offshore areas at the start, moved gradually toward the inshore area and concentrated in the narrow areas along the coast near Ayukawa in December.

In the Kondo's data, the catches of Bryde's whales were reported in some particular years such as 1969, 1971 and 1976 usually under the category of sei whales. The northern limits of the catches moved seasonally to the north, for example, 36.5 degrees N in June in 1971 and 38 degrees N in July in 1976. Judging from the positions, some reported catches of sei whales might be for Bryde's whales as Kondo and Kasuya (2002) pointed out. Relatively larger catches reported as sei whales in May-June in 1974 and 1975 (29 and 39 animals, respectively) might be Bryde's whales. No catches were reported in those years (Table 3). However the miss-reporting seems not to be serious to Implementation Simulation Trials.

Kondo (2001) reported the catches of Bryde's whales off the Ogasawara Islands in 1981-1987. They are shown in Table 4. Kasuya and Brownell (2001) noted the total actual catches off the Ogasawara Islands are 1.6 times the catches reported to the IWC. The original records have been lost and further details of the statistics are not available.

Kondo (2001) mentioned the take of three Bryde's whales on 16 June 1976 at 40 nautical miles south-east of the Shionomisaki Point near Taiji. From the biological information those whales seem not to belong to the ordinal Bryde's whales. Bryde's whales were usually

taken far from the coastal lines as shown in the summary charts, the most catches off the Pacific coast of central Japan can be regarded as the western North Pacific stock.

Japanese pelagic whaling to Bryde's whale started in 1971 and the International Observer System (IOS) was introduced in 1972. As under-reporting was seldom occurred under IOS, the possibility is only in 1971. There was no information on under-reporting to the Japanese pelagic whaling.

Uncertainty about the former USSR catches was discussed several times after 1996 (RIWC 47). Table 5 shows three kinds of catch statistics for the former USSR. No Bryde's whale catch was made in land-base operation in Kuril Islands (Ohsumi, 1998). No under-reporting could be made under IOS (Shigemune et al., 1999). Catches were less than the quota (Ohsumi, 1998). No new information is provided. Based on the above-mentioned information, it seems to that the formal USSR catch is reliable.

In conclusion, the reported catches could be used as the baseline catch history. For sensitivity tests alternative catch histories could be assumed, for example, with the 1.6 times catches for Ogasawara Islands.

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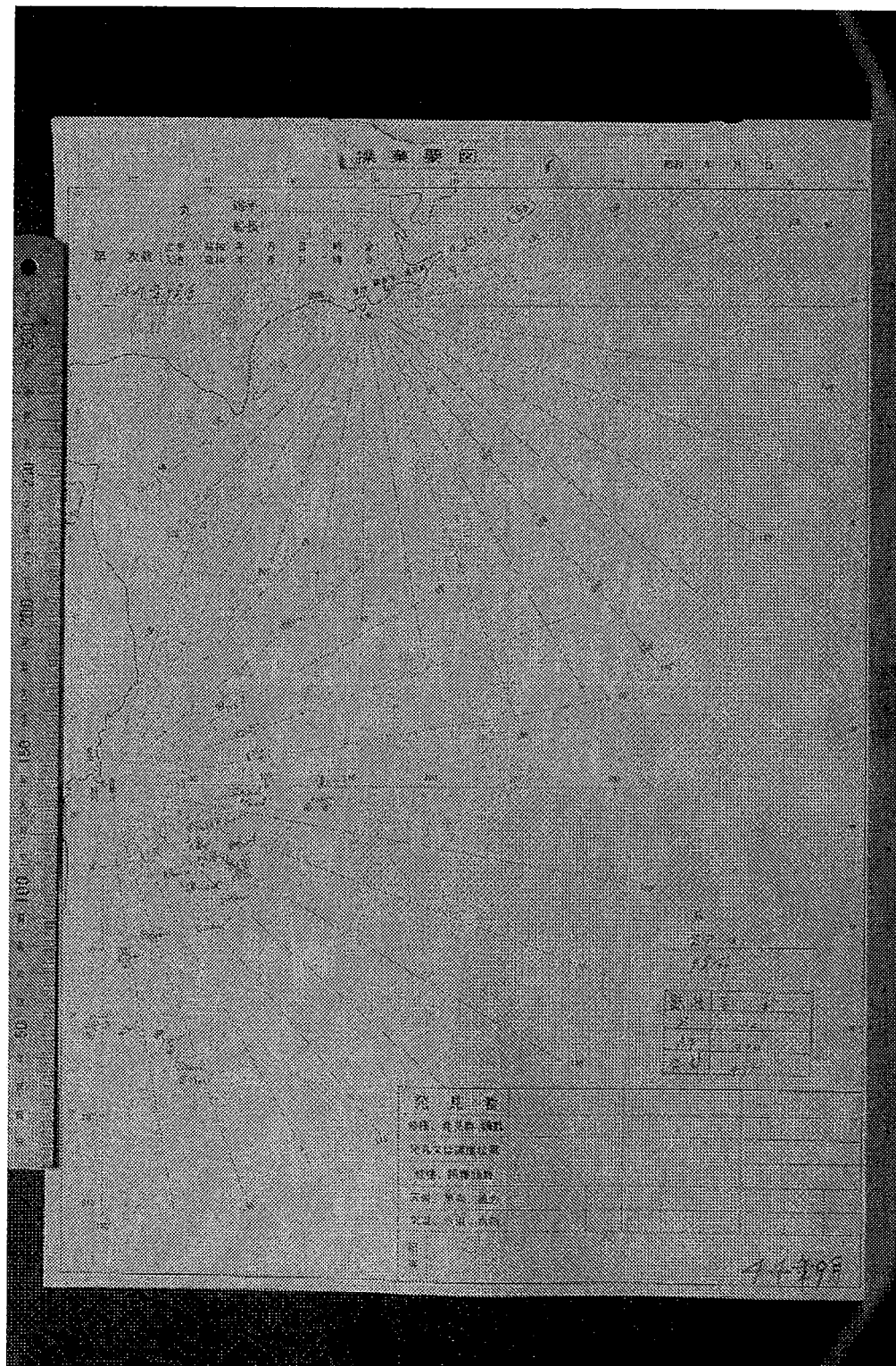


Fig.1. A photograph of one of the summary charts of whaling operations (September 1969 off Akkeshi and Ayukawa)

Table 1. Catch statistics of North Pacific Bryde's whales in post-war period.

Year	East China Sea Stock			Western North Pacific Stock					Total
	Korea	Japan	Total	Philippines	Taiwan	Japan coastal	Japan pelagic	USSR pelagic	
1946	-	40	40	-	-	112 *	29	-	141
1947	-	10	10	-	-	45 *	150	-	195
1948	-	3	3	-	-	92 *	105	-	197
1949	-	-	-	-	-	115 *	116	-	231
1950	-	-	-	-	-	27 *	243	-	270
1951	-	-	-	-	-	24 *	280	-	304
1952	-	-	-	-	-	75 *	411	-	486
1953	-	-	-	-	-	57 *	-	-	57
1954	-	-	-	-	-	70 *	-	-	70
1955	-	2	2	-	-	89	-	-	89
1956	-	3	3	-	-	24	-	-	24
1957	-	4	4	-	-	39	-	-	39
1958	-	47	47	-	-	254	-	-	254
1959	-	42	42	-	-	263	-	-	263
1960	-	2	2	-	-	404	-	-	404
1961	-	5	5	-	-	167	-	-	167
1962	-	-	-	-	-	504	-	-	504
1963	-	-	-	-	-	210	-	-	210
1964	-	6	6	-	-	68	-	-	68
1965	-	-	-	-	-	8	-	-	8
1966	-	8	8	-	-	55	-	-	55
1967	-	18	18	-	-	45	-	-	45
1968	-	-	-	-	-	171	-	-	171
1969	-	-	-	-	-	89	-	-	89
1970	-	-	-	-	-	73	-	66	139
1971	-	-	-	-	-	172	109	638	919
1972	-	41	41	-	-	84	5	71	160
1973	-	31	31	-	-	40	2	656	698
1974	-	40	40	-	-	147	522	654	1,323
1975	-	-	-	-	-	116	688	629	1,433
1976	-	-	-	-	119	83	578	679	1,459
1977	-	-	-	-	171	76	424	275	946
1978	-	-	-	-	118	62	200	216	596
1979	-	-	-	-	574	52	175	227	1,028
1980	-	-	-	-	486	307	-	-	793
1981	1	-	1	-	-	485	-	-	485
1982	-	-	-	-	-	482	-	-	482
1983	-	-	-	9	-	536	-	-	545
1984	-	-	-	47	-	481	-	-	528
1985	-	-	-	40	-	317	-	-	357
1986	-	-	-	-	-	317	-	-	317
1987	-	-	-	-	-	317	-	-	317
Total	1	302	303	96	1,468	7,154	4,037	4,111	16,866

* Estimated using ratio (26%) of Bryde's whales in the catch of 'sei' whales in Sanriku area.

Table 2. Quota and reported catches from 1969 when quota was introduced.

Year	IWC Quota				Japanese Catch				
	Sei+Bryde's		Bryde's		Sei		Bryde's		
	Coast.	Pelag.	Coast.	Pelag.	Coast.	Pelag.	Coast.	Ogas.	Pelag.
1969	557	3,474			555	3,591	89	-	-
1970	557	3,127			557	3,235	73	-	-
1971	474	2,658			448	2,529	172	-	109
1972 *	379	2,127			340	2,046	84	-	5
1973	305	1,712			114	1,712	40	-	2
1974	305	1,712			235	1,712	147	-	522
1975	203	1,142			146	1,142	116	-	688
1976			103	578			83	-	578
1977			76	424			76	-	424
1978			62	200			62	-	200
1979			52	175			52	-	175
1980			460				307	-	-
1981 **			510				167	317	-
1982			507				44	438	-
1983			536				27	508	-
1984			536				10	471	-
1985			357				13	304	-
1986 ***			317				2	315	-
1987 ***			317				11	306	-

* Introduction of IOS

** Start of Ogasawara-base coastal whaling and the quotas were within coastal ones

*** Japanese national quota and catch under objection

Table 3. Bryde's whale catches off Akkeshi, Ayukawa and Taiji, Pacific coast of northern and central Japan

Year	Reported	True
1965	2	0
1966	8	0
1967	4	0
1968	27	0
1969	13	24
1970	24	4
1971	8	24
1972	11	0
1973	5	0
1974	7	0
1975	8	0

From Appendix Table 6-3 of Kondo and Kasuya (2002)

Table 4. Bryde's whale catches off Bonin Island

Year	True* (Bonin)	Reported** (Bonin)	Reported*** (WNP stock)
1981	454	317	485
1982	665	438	482
1983	586	508	536
1984	747	471	481
1985	553	304	317
1986	620	315	317
1987	537	306	317
Total	4,162	2,659	2935

*: From Table 62 of Kondo (2001)

** : From Table 2 of Kishiro (1995)

***: From Table 1 of IWC (1996)

Table 5. USSR catch for Bryde's whales

Year	Formal	Brownell(SC/51/RMP25)	
	catch	Reported	Scientist's
	A	B	C
1970	66	66	66
1971	638	638	450
1972 *	71	71	67
1973	656	625	621
1974	654	654	652
1975	629	629	629
1976	679	679	679
1977	275	275	274
1978	216	216	216
1979	227	227	[227]
Total	4,111	4,069	3,885
Calculated total	4,111	4,080	3,881

*Introduction of International Observer Scheme

A: IWC formal statistics (three mother vesseles)

B: Reported catch of USSR (two mother vesseles)

C: Berzin's data (two mother vesseles)