

SALMONID BY-CATCH DURING EXPLORATORY SQUID FISHING OFF

BRITISH COLUMBIA, SUMMER 1983

by

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SALMONID BY-CATCH DURING EXPLORATORY SQUID FISHING OFF  
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A joint Canadian-Japanese test fishery for oceanic squid took place between July 15 and August 31, 1983. Fishing occurred chiefly within 200 nautical miles off the British Columbia coast. The target species was the flying squid Ommastrephes bartramii. Forty gillnet sets averaging 34.4 km were completed between 47°07'N to 53°15'N, 130°40'W to 137°04'W (Table 1). In 37 of the sets a total of 1,329 salmonids were taken.

The vessel used was the 50-m, 500-gross tonne, longliner Tomi Maru No. 88 from Kushiro City, Hokkaido, Japan, with a crew of 27. Green nylon monofilament drift gillnets in 48-m long by 8.5-m deep panels were deployed in discrete 6-km groups between 1800 hr and 2100 hr and hauled between 0400 hr and 1600 hr the next day. Mesh sizes were either 188 cm or 121 mm. After deploying the net groups the vessel would stand off to jig overnight while drifting. Hauling would start at the end of the last net group. Fishing occurred between 14°C and 16°C surface temperature.

Table 1 lists the physical and catch data together with salmonid (pieces) by-catches according to each set. Pink salmon were the most abundant, sockeye were only caught early on in the survey and relatively close to shore, and steelhead trout were the most ubiquitous salmonid (in 33 sets), although usually present in low numbers. Table 2 contains a summary of the total gillnet catch. Flying squid, pomfret and shark comprised 98.15% of the total catch while salmonids accounted for 0.59%.

Table 1. Tomi Maru No. 88: Date, position and catch of squid and salmonids only of each set.

Set no.	Day*	Set start		Haul start		T (°C)		Length of gillnet (km)	Flying squid (kg)	Salmonids (pieces)						
		Lat. N.	Long. W.	Lat. N.	Long. W.	Set start	Haul start			Pink	Sock.	Chum	Coho	Steel	Dolly	Total
								head	V.							
001	19	50°31.0'	130°39.0'	50°24.1'	130°53.2'	14.8	14.6	12.5	3560	148	254	9	5	10	2	428
002	22-23	50°32.6'	134°30.7'	50°12.5'	134°03.1'	14.1	13.9	43.2	4505	323	49	38	21	1	0	432
003	23	49°35.1'	133°35.3'	49°40.6'	134°04.4'	14.3	14.3	30.0	19776	55	6	0	8	40	0	109
004	24	49°24.8'	133°57.8'	49°19.2'	133°26.7'	14.4	14.3	36.0	13088	6	1	0	9	1	0	17
005	25-26	49°32.0'	132°49.5'	49°30.0'	133°15.3'	14.8	14.5	42.0	17107	1	0	1	0	11	0	13
006	26	49°09.9'	133°16.3'	49°11.3'	132°50.0'	14.4	14.4	29.0	7490	9	0	1	0	11	0	21
007	27	49°17.2'	132°49.3'	49°04.1'	132°23.8'	14.7	14.6	35.0	7290	13	0	1	0	20	0	34
008	28	48°36.8'	132°49.1'	48°34.0'	133°18.6'	14.8	14.4	41.7	7203	2	0	0	0	8	0	10
009	29	49°22.9'	133°53.2'	49°28.5'	133°22.2'	15.2	14.4	36.0	6170	2	0	0	0	10	0	12
010	30	49°22.3'	132°38.2'	49°22.6'	131°58.3'	14.7	14.6	41.0	9070	6	0	0	0	11	0	17
011	31	49°28.8'	132°05.1'	49°29.0'	131°32.0'	14.8	14.8	32.6	4792	10	6	0	0	9	0	25
012	1	48°36.4'	131°30.7'	48°38.5'	130°56.8'	15.2	14.8	40.5	7146	2	0	0	0	14	0	16
013	2	48°06.8'	130°57.3'	48°07.0'	130°35.0'	15.3	15.4	24.0	3387	2	1	0	0	0	0	3
014	3	47°33.4'	131°12.5'	47°33.2'	130°37.0'	15.3	16.0	42.0	11107	0	0	1	0	6	0	7
015	4	47°47.0'	131°28.0'	47°57.0'	130°54.0'	15.2	14.9	42.0	12342	0	0	0	0	0	0	0
016	5	47°18.0'	131°43.8'	47°20.5'	131°09.4'	15.1	15.4	41.5	12255	0	0	0	0	1	0	1
017	6	47°07.0'	131°51.0'	47°13.6'	131°38.7'	15.4	15.9	35.5	22905	1	0	0	1	1	0	3
018	7	47°13.0'	131°30.0'	47°20.2'	131°05.5'	16.2	16.0	35.5	16015	0	0	0	0	0	0	0
019	8	47°36.6'	131°03.1'	47°48.0'	131°29.0'	16.1	15.6	35.5	6572	0	0	0	0	2	0	2
020	9	47°53.0'	131°47.9'	48°01.5'	132°23.4'	15.5	15.3	41.5	15700	1	0	0	0	1	0	2
021	10	48°10.1'	132°55.9'	47°57.6'	132°25.3'	15.5	15.3	41.5	11566	1	0	0	0	0	0	1

Table 1 (cont'd)

Set no.	Day*	Set start		Haul start		T (°C)		Length of gillnet (km)	Flying squid (kg)	Salmonids (pieces)						
		Lat. N.	Long. W.	Lat. N.	Long. W.	Set start	Haul start			Pink	Sock.	Chum	Coho	Steel	Dolly	Total
								head	V.							
022	11	48°01.0'	132°25.5'	47°42.0'	132°01.0'	15.5	15.6	41.5	6112	2	1	0	0	3	0	6
023	12	48°03.4'	132°24.4'	48°04.0'	132°59.0'	15.8	15.5	41.5	4850	0	0	0	0	2	0	2
024	13	48°19.9'	133°04.8'	48°13.6'	133°26.0'	15.4	15.4	28.8	1607	0	0	0	0	3	0	3
025	14	48°55.5'	134°32.5'	48°55.0'	134°50.0'	15.5	15.6	23.0	2438	0	0	0	0	0	0	0
026	15	48°44.1'	135°15.3'	48°40.0'	134°41.0'	15.2	15.2	38.6	4477	0	0	0	0	2	0	2
027	16	49°01.5'	133°15.6'	48°56.0'	132°56.0'	15.6	15.5	21.1	1406	0	0	0	0	5	0	5
028	18	53°07.0'	136°58.7'	52°57.0'	136°31.0'	15.0	15.3	33.1	10677	40	0	0	0	5	0	45
029	19	53°14.8'	136°24.8'	53°10.0'	136°06.0'	14.8	15.2	22.1	659	2	0	0	1	2	0	5
030	20	52°47.9'	136°38.9'	52°43.1'	136°07.7'	14.8	15.1	31.7	18140	10	0	0	0	2	0	12
031	21/22	52°48.0'	136°33.0'	52°46.6'	135°59.6'	14.9	14.9	38.6	18512	25	0	0	0	0	0	25
032	22	52°30.6'	137°04.1'	52°28.0'	136°40.0'	14.9	14.8	27.6	2840	2	0	0	0	1	0	3
033	23	51°55.0'	136°43.0'	51°53.0'	136°25.0'	14.9	14.7	22.1	516	2	0	0	0	1	0	3
034	24	51°59.5'	135°49.6'	51°58.5'	135°14.4'	15.0	15.1	38.6	3242	3	0	0	0	1	0	4
035	25	52°56.2'	135°16.5'	52°50.0'	134°42.5'	14.9	15.3	38.6	9185	14	0	0	0	4	0	18
036	26	53°05.8'	134°54.5'	53°02.7'	134°20.3'	15.0	15.3	38.6	12195	12	1	0	2	0	0	15
037	27	53°22.5'	134°34.4'	53°20.0'	134°03.7'	15.2	15.2	38.6	5309	11	0	0	0	1	0	12
038	29	52°50.8'	134°00.5'	52°54.5'	134°38.6'	14.9	15.0	38.6	3214	2	0	0	0	2	0	4
039	30	51°32.1'	133°30.7'	51°25.7'	133°56.6'	15.0	15.2	27.6	3157	1	0	4	0	4	0	9
040	31	50°40.0'	131°50.5'	50°35.1'	132°04.4'	16.3	15.8	27.6	1979	0	0	0	0	3	0	3

\*Date according to G.M.T.

Table 2. Summary of Tomi Maru No. 88 gillnet catch of 590.2 tonnes, July-August, 1983.

Species	Catch	
	Percent	Pieces
Flying squid ( <u>Ommastrephes bartramii</u> )	55.72	
Pomfret ( <u>Brama japonica</u> )	31.93	
Salmon shark ( <u>Lamna ditropis</u> )	5.56	
Blue shark ( <u>Prionace glauca</u> )	4.94	
Pink salmon ( <u>O. gorbuscha</u> )	0.26	708
Sockeye salmon ( <u>O. nerka</u> )	0.17	319
Steelhead trout ( <u>Salmo gairdneri</u> )	0.12	198
Chum salmon ( <u>O. keta</u> )	0.02	55
Coho salmon ( <u>O. kisutch</u> )	0.02	47
Dolly Varden ( <u>Salvelinus malma</u> )	<0.01	2
All salmonids	0.59	1329
Albacore tuna ( <u>Thunnus alalunga</u> )	9.05	793
Pacific bonito ( <u>Sarda chiliensis</u> )	0.02	28
Jack mackerel ( <u>Trachurus symmetricus</u> )	0.18	
Chub mackerel ( <u>Scomber japonicus</u> )	<0.01	
Others	0.10	