



HOKKAIDO UNIVERSITY

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THE " OSHORO MARU " CRUISE 216 TO THE NORTHWEST PACIFIC OCEAN

IN JUNE-JULY 2010

1. Cruise Itinerary

Cruise 216

Departure from Hakodate	June	2,	2010
Start hydrographic research (OS10068)		3	
ROV diving trial		4	
Start mid-water trawl research (OSMT1001)		13	
Finish mid-water trawl research (OSMT1005)		16	
Arrival at Guam and change research staff		19	
Departure from Guam		23	
Start Gillnet research (OSG1005)		30	
Start salmon hook and line research (OSHL1004)	July	3	
Finish Gillnet research (OSG1009)		5	
Date change, repeat July 7 th		7	
Arrival at Dutch Harbor and change research staff		12	
Departure from Dutch Harbor		15	
Start salmon long line research (OSSL1001)		17	
Date change, skip July 21		20	
Finish salmon long line research (OSSL1006)		22	
Finish salmon hook and line research (OSHL1015)		26	
Finish hydrographic research (OS10175)		29	
Return to Hakodate		31	

Total coverage 9369.5miles 55days at sea and 5days in port

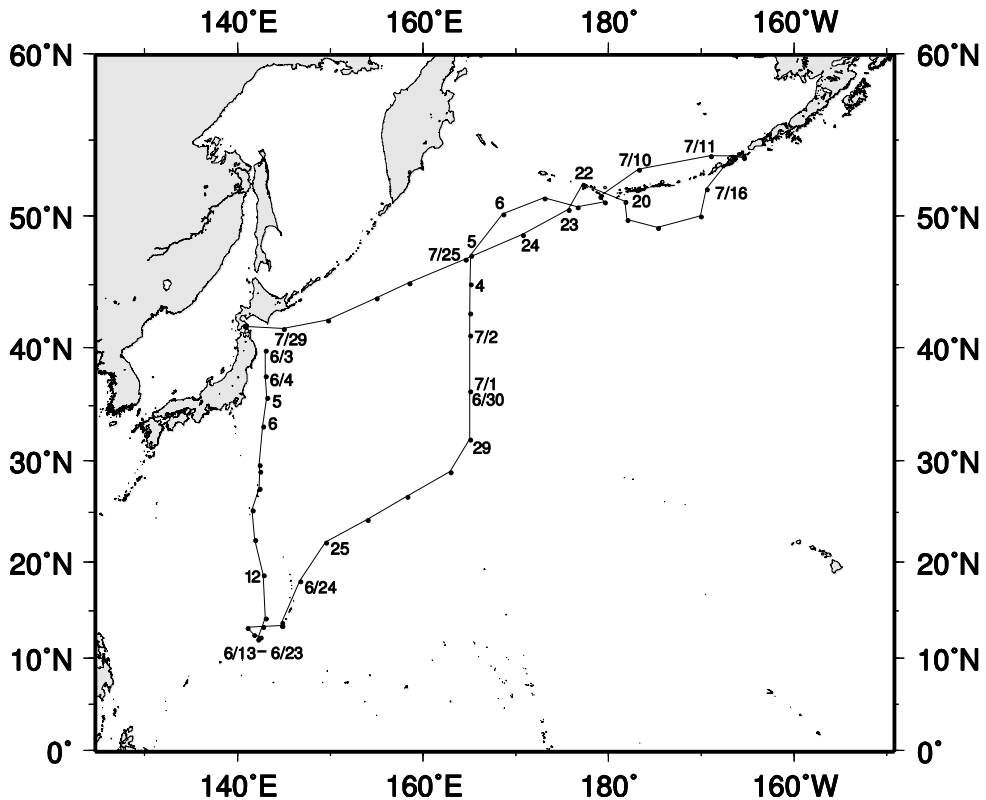


Figure 1. Track and Noon position

2. Vessel Personnel

Captain:		Associate Professor	Shogo Takagi
Crew:	Chief Officer	Instructor	Yoshihiko Kamei
	First Officer	Instructor	Keiichiro Sakaoka
	Second Officer	Technical official	Naoki Hoshi
	Third Officer	Technical official	Takuzo Abe
	Science Officer	Technical official	Keiri Imai
	Chief Engineer	Instructor	Jyunichi Kimura
	And 24 men		

Cruise 216

Research Staff:	Instructor	(Field Science Center for Northern Biosphere, Hokkaido University)	
	Hakodate - Guam		BOWER John Richard
	Associate Professor	(Marine Biosciences Laboratory of Comparative Physiology)	
	Hakodate - Guam		Shigeho Ijiri
	Research Fellow	(Graduate School of Information and Technology GCOE)	
	Hakodate - Guam		Toshiro Iwamori
	Instructor	(Laboratory of Marine Environmental Science)	
	Guam - Hakodate		Hiromichi Ueno
	Research Worker	(Plant Research Department, National Museum of nature and Science)	
	Guam -Hakodate		Kaoru Ohgane
	Instructor	(Laboratory of Marine Environmental Science)	
	Hakodate - Dutch Harbor		Hiroji Onishi
	Associate Professor	(Faculty of Fisheries Training Ship Oshoro-Marui)	
	Hakodate - Guam		Yoshiyuki Kajiware
	Study Chief Editor	(Plant Research Department, National Museum of nature and Science)	
	Hakodate - Guam		Akihiro Tsuji
	Instructor	(Graduate School of Science, University of Tokyo)	
	Hakodate - Guam		Yoshihiro Niwa
	Associate Professor	(Laboratory of Marine Environment and Resource Sensing)	
	Hakodate - Dutch Harbor		Toru Hirawake
	Associate Professor	(TEIKYO University of Science & Technology)	
	Hakodate - Guam		Kyoichi Mori
	Associate Professor	(Laboratory of Marine Biodiversity)	
	Hakodate - Hakodate		Atsushi Yamaguchi
	Instructor	(Field Science Center for Northern Biosphere, Hokkaido University)	
	Hakodate - Guam		Jun Yamamoto
	Researcher	(Atmosphere Ocean Research Institute University of Tokyo)	
	Hakodate - Guam		Shun Watanabe
	Professor	(Division of Bioengineering and Bioinformatics, Hokkaido University)	
	Hakodate - Guam		Hidemi Watanabe
Graduate Students	9 persons		
Under Graduate Students	12 persons		
Foreign Scientists:	(Pacific Aquaculture and Coastal Resources Center, University of Hawaii at Hiro)		
	Hakodate - Hakodate		Keiko Sekiguchi
	Total 37 persons		

3. Items and Objects of Research

Items

Hydrographic observation by CTD, X-CTD XCP, and VMP-5500 casts:	Fig. 2	Table 1, 2
Biological research for fishes caught by non-selective drift gillnets:	Fig. 3	Table 3 - 8
Salmon longline and hook-and-line research:	Fig. 4	Table 9 - 11
Biological research for fishes caught by mid-water trawl observations:	Fig. 5	Table 12, 13
Biological research for squid caught by jigging:		
Plankton samplings by NORPAC-net, MTD-net, Closing-net, Bongo-net, and VMPS-net:		Table 14
Sediment sampling and observation by ROV and Smith-McIntyre Grab:		
Water samplings by Niskin bottles and underwater tug plane:		Table 16

Objects

CTD, X-CTD, and ADCP observation are performed, Recovery and installation of sediment-traps are performed for the purpose of investigating correspondence with a climate change and relation of an east-and-west subarctic gyre.

Study on experimental biology of marine zooplankton in the northern North Pacific.

Sediment sampling and observation on the abyssal sea floor by a ROV and sediment samplers in the continental shelf break off Sanriku, around Ogasawara Islands and Guam.

Bio-optical measurement using underwater radiometer and absorption/scattrometer.

Investigation of eel.

Persistent Organic Pollutants (POPs) in Oceanic Squids.

Marine mammal shipboard sighting survey.

Radiolarian and a study of a Classification the Habits of the Symbiosis Alga.

In order to clarify the relation between micro-scale ($\sim 1\text{cm}$) and fine-scale($\sim 10\text{cm}$) current shear in the deep ocean , we carry out micro-scale measurements using TurboMAP D2 and fine-scale measurements using XCP simultaneously.

Recoveries of two sediment traps.

Study on geochemistry and metal distributions in the water along the 170E line, Bering Sea.

Vertical distribution of diatom assemblages using sea waters obtained with CTD observation

Geographical distribution of diatom and radiolarian assemblages using plankton tows obtained with Twin Norpac plankton net.

Research of growth, feeding ecology and trophic dynamics of Pacific salmon in the North Pacific.

4. Data on Temperature, Salinity and Computed Dynamic Depth Anomaly

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”. Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19). Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

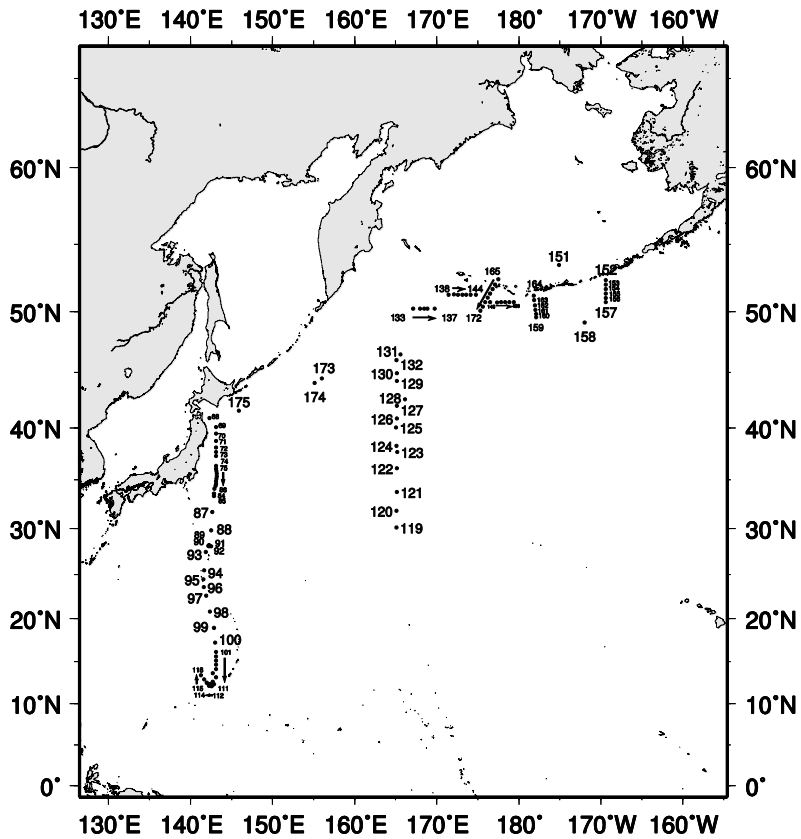


Figure 2. Oceanographic station

Table 1. List of Oceanographic Station

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS10068	40-49.5N	142-10.7E	6/2	1526	9	848	-	-	11.3	-	19Plus-4636
OS10069	40-00.7N	143-00.2E	6/3	0002	9	1300	3	13.8	9.4	b	9Plus-0769
OS10070	39-23.8N	143-00.2E	6/3	0500	9	1865	5	12.2	9.9	bc	19Plus-4636
OS10071	38-42.3N	143-00.4E	6/3	1135	9	1650	-	-	16.2	bc	19Plus-4636
OS10072	38-04.6N	142-59.7E	6/3	1901	9	1780	3	20	19.8	b	19Plus-4636
OS10073	37-38.1N	142-59.9E	6/4	0020	9	2580	3	16.1	17.6	bc	9Plus-0769
OS10074	37-13.7N	142-59.9E	6/4	0500	9	4550	3	15.7	18.1	bc	19Plus-4636
OS10075	36-17.7N	143-00.5E	6/4	1905	9	7200	4	11.8	20.1	c	19Plus-4636
OS10076	35-59.8N	143-00.0E	6/4	2239	9	0	-	-	-	c	XBT
OS10077	35-44.9N	143-01.0E	6/5	0015	9	6580	3	14.8	22.3	c	9Plus-0769
OS10078	35-29.9N	143-06.0E	6/5	0422	9	0	-	-	-	c	XBT
OS10079	35-14.8N	143-03.7E	6/5	0548	9	0	-	-	-	c	XBT
OS10080	35-00.0N	143-02.1E	6/5	0707	9	0	-	-	-	c	XBT
OS10081	34-44.9N	143-00.3E	6/5	0830	9	0	-	-	-	c	XBT
OS10082	34-30.0N	142-58.6E	6/5	0954	9	0	-	-	-	c	XBT
OS10083	34-16.4N	142-56.5E	6/5	1129	9	5280	-	-	21.5	c	9Plus-0769
OS10084	34-00.0N	142-47.5E	6/5	1958	9	0	-	-	-	c	XBT
OS10085	33-30.0N	142-44.8E	6/5	2237	9	0	-	-	-	c	XBT
OS10086	33-14.7N	142-43.5E	6/5	0014	9	5730	2	26.7	21	bc	9Plus-0769
OS10087	31-35.7N	142-33.5E	6/6	1134	9	6910	-	-	21	bc	19Plus-4636
OS10088	29-41.2N	142-22.9E	6/7	0014	9	6580	3	24.6	21.2	bc	9Plus-0769
OS10089	29-06.8N	142-09.2E	6/7	1134	9	1722	-	-	21.9	c	19Plus-4636
OS10090	28-00.3N	142-02.2E	6/7	1645	9	462	-	-	-	c	19Plus-4636
OS10091	27-58.9N	142-08.5E	6/7	1945	9	1080	-	-	-	c	19Plus-4636
OS10092	27-57.4N	142-22.9E	6/7	2351	9	1512	3	27	21.9	c	9Plus-0769
OS10093	27-20.2N	141-43.6E	6/8	0838	9	4045	-	-	23.6	bc	9Plus-0769
OS10094	25-19.7N	141-33.6E	6/10	0033	9	2830	2	28.5	23.8	c	9Plus-0769
OS10095	24-21.2N	141-25.6E	6/10	0841	9	576	-	-	24.3	bc	19Plus-4636
OS10096	24-00.1N	141-30.1E	6/10	1744	9	1347	-	-	27.6	bc	19Plus-4636
OS10097	22-30.0N	141-47.1E	6/11	0012	9	1350	2	34.4	28.9	bc	9Plus-0769
OS10098	20-43.3N	142-14.2E	6/11	1132	9	3620	-	-	29.2	bc	19Plus-4636
OS10099	18-48.8N	142-45.0E	6/12	0019	9	2920	2	36.4	29.7	bc	9Plus-0769
OS10100	17-06.8N	142-54.3E	6/12	1100	9	3156	-	-	30.98	c	XCTD1
OS10101	16-00.0N	142-59.9E	6/12	1712	10	2534	-	-	-	bc	XCTD1
OS10102	15-30.0N	143-00.0E	6/12	1942	10	2371	-	-	-	b	XCTD1
OS10103	15-00.0N	142-59.9E	6/12	2210	10	2314	-	-	-	b	XCTD1
OS10104	14-59.8N	142-59.9E	6/13	0042	10	2200	-	-	-	bc	XCTD1
OS10105	13-59.1N	142-59.8E	6/13	0311	10	4312	-	-	-	bc	XCTD1
OS10106	13-30.0N	142-35.1E	6/13	0541	10	3435	-	-	-	bc	XCTD1
OS10107	13-00.0N	142-59.8E	6/13	0812	10	3142	-	-	-	bc	XCTD1
OS10108	12-30.0N	142-35.1E	6/13	1046	10	3100	-	-	-	bc	XCTD1
OS10109	12-22.7N	141-49.7E	6/13	2054	10	3900	-	-	-	bc	XCTD1
OS10110	11-59.8N	142-09.4E	6/14	0022	10	4360	2	44.8	29.6	bc	9Plus-0769
OS10111	11-56.5N	142-25.9E	6/14	0744	10	2535	-	-	30.2	bc	19Plus-4636
OS10112	12-00.0N	142-29.8E	6/14	1034	10	3120	-	-	29.4	bc	19Plus-4636
OS10113	12-11.2N	142-11.0E	6/14	2239	10	2506	1	39	30	bc	19Plus-4636
OS10114	12-16.2N	142-30.1E	6/15	0230	10	3950	-	-	29.9	b	19Plus-4636
OS10115	12-09.9N	142-43.3E	6/15	0904	10	3960	-	-	29.8	bc	19Plus-4636
OS10116	12-17.8N	141-55.4E	6/15	2354	10	2038	2	26.2	29.6	c	19Plus-4636
OS10117	12-45.4N	141-32.2E	6/16	0325	10	2780	-	-	-	c	XCTD1
OS10118	13-14.9N	141-08.0E	6/16	0629	10	4440	1	40	30.4	bc	9Plus-0769
OS10119	30-00.0N	164-59.8E	6/28	2236	11	5860	-	-	25.6	c	19Plus-4636
OS10120	31-45.4N	164-59.7E	6/29	0918	11	5870	2	23.5	24.6	bc	9Plus-0769
OS10121	33-41.1N	165-00.3E	6/29	2001	11	6065	-	-	22.8	c	19Plus-4636
OS10122	36-01.5N	165-00.7E	6/30	1027	11	5536	3	23	22.2	bc	XCTD2
OS10123	37-39.4N	165-03.8E	6/30	2054	11	4346	-	-	21.1	d	9Plus-0769
OS10124	38-14.4N	164-58.9E	7/1	1036	11	5110	3	22.9	21.1	c	XCTD2
OS10125	39-58.1N	164-56.7E	7/1	0953	11	5455	-	-	17.2	d	9Plus-0769
OS10126	40-47.8N	165-01.9E	7/2	1047	11	5390	5	13.8	17.3	c	XCTD2
OS10127	41-57.4N	165-02.6E	7/2	1826	11	4260	-	-	16.8	bc	9Plus-0769
OS10128	42-32.6N	165-59.9E	7/2	2133	11	5010	4	18.7	10.4	f	XCTD2
OS10129	44-10.9N	165-01.4E	7/3	2107	11	5790	-	-	9.4	d	9Plus-0769
OS10130	44-50.7N	165-00.3E	7/4	2343	11	5950	4	16.7	9.2	f	XCTD2
OS10131	46-28.5N	165-27.9E	7/4	0917	11	5770	-	-	7.4	f	9Plus-0769
OS10132	45-59.2N	165-00.1E	7/4	2316	11	5860	4	16.8	7.6	c	XCTD2
OS10133	50-10.0N	167-00.1E	7/5	0418	11	4680	-	-	-	r	XCTD2
OS10134	50-10.4N	167-50.5E	7/5	0815	11	4680	-	-	281.5	r	XCTD2
OS10135	50-10.0N	168-20.0E	7/5	1037	11	3360	-	-	-	o	XCTD2
OS10136	50-10.1N	168-46.6E	7/6	1302	11	5210	-	-	-	o	XCTD2
OS10137	50-09.9N	169-39.8E	7/6	1652	11	3988	-	-	-	o	XCTD2
OS10138	51-14.7N	171-20.2E	7/7	0126	11	4715	-	-	-	d	XCTD2
OS10139	51-15.3N	171-59.8E	7/7	0348	11	4400	-	-	-	c	XCTD2
OS10140	51-15.0N	172-29.6E	7/7	0547	11	5115	4	15.2	7.2	o	9Plus-0769
OS10141	51-14.8N	173-00.0E	7/7	0958	11	5610	3	16.9	7.2	o	9Plus-0769
OS10142	51-14.7N	173-29.1E	7/7	1336	11	6170	3	17.7	7.5	o	9Plus-0769
OS10143	51-14.9N	173-59.8E	7/7	1740	11	6798	4	12.4	7.6	o	9Plus-0769
OS10144	51-14.9N	174-40.0E	7/7	2220	11	7140	-	-	7.8	o	9Plus-0769
OS10145	50-39.9N	176-24.9E	7/7	0857	-12	6350	4	14	7.1	o	9Plus-0769
OS10146	50-39.0N	177-15.0E	7/7	0217	-12	7205	-	-	-	f	XCTD2
OS10147	50-39.9N	177-44.8E	7/7	1618	-12	6375	4	12.2	8.4	o	9Plus-0769
OS10148	50-40.0N	178-15.0E	7/7	2021	-12	5870	-	-	8.1	o	9Plus-0769
OS10149	50-39.9N	178-44.6E	7/8	0016	-12	5400	-	-	7.6	f	9Plus-0769
OS10150	50-40.1N	179-15.2E	7/8	0446	-12	5635	-	-	-	f	XCTD
OS10151	53-27.6N	176-48.6W	7/10	1607	-12	3780	5	16	6.6	f	9Plus-0769
OS10152	52-20.5N	170-29.9W	7/16	1634	-11	570	-	-	-	f	9Plus-0769
OS10153	52-00.1N	170-30.3W	7/16	1920	-11	3361	4	12.2	8.3	o	19Plus-4636
OS10154	51-40.4N	170-30.7W	7/17	0009	-11	4639	4	13.1	8.3	o	19Plus-4636
OS10155	51-20.0N	170-30.0W	7/17	0445	-11	6237	-	-	8.1	f	19Plus-4636
OS10156	51-00.0N	170-29.9W	7/17	0953	-11	7050	-	-	8.2	f	9Plus-0769
OS10157	50-30.1N	170-30.9W	7/17	1420	-11	5470	3	19.1	8.1	o	9Plus-0769
OS10158	49-04.8N	173-55.5W	7/18	0844	-11	5235	-	-	8.1	f	9Plus-0769
OS10159	49-30.0N	179-59.8W	7/19	1615	-12	4955	3	17.7	8.2	f	9Plus-0769
OS10160	49-45.0N	179-59.9W	7/19	2147	-12	5172	3	17.2	8.2	o	9Plus-0769
OS10161	50-04.9N	179-55.0W	7/20	0445	-12	5969	4	12	8	o	9Plus-0769
OS10162	50-25.0N	179-50.0W	7/20	0949	-12	6600	-	-	7.9	f	9Plus-0769
OS10163	50-50.0N	179-45.8W	7/20	1753	-12	5470	4	14.5	8.4	m	9Plus-0769
OS10164	51-09.9N	179-42.4W	7/21	0132	-12	3690	5	10.9	7.1	f	9Plus-0769
OS10165	52-23.5N	177-23.1E	7/21	2042	-11	1938	3	17.9	7.8	f	9Plus-0769
OS10166	52-0.06N	177-00.3E	7/22	0210	-11	1200	-	-	-	o	XCTD2
OS10167	51-39.9N	176-41.8E	7/22	0503	11	2900	4	14	7.9	o	9Plus-0769
OS10168	51-20.0N	176-23.9E	7/22	1015	11	4570	-	-	8	o	9Plus-0769
OS10169	51-00.5N	176-05.8E	7/22	1542	11	7180	3	14.4	8.2	o	9Plus-0769
OS10170	50-39.9N	175-47.9E	7/22	2111	11	5400	3	13.8	7.9	o	9Plus-0769
OS10171	50-20.3N	175-30.1E	7/23	0147	11	4610	3	17.2	8.8	o	9Plus-0769
OS10172	49-29.9N	175-11.9E	7/23	0627	11	4610	4	14.1	8.7	c	9Plus-0769
OS10173	44-23.6N	155-52.5E	7/26	1228	10	5120	-	-	12.3	f	19Plus-4636
OS10174	44-00.0N	155-00.0E	7/26	2000	10	5308	4	9.4	15.4	f	9Plus-0769
OS10175	41-30.2N	145-46.7E	7/28	1530	9	6915	-	-	18.9	f	9Plus-0769

(*) : Fixed position by Global Positioning System

Table 2. Oceanographic data

Station OS10068				Station OS10069				Station OS10070				Station OS10071			
Longitude		Latitude		Longitude		Latitude		Longitude		Latitude		Longitude		Latitude	
142-10.7E		40-49.5N		143-00.2E		40-00.7N		143-00.2E		39-23.8N		143-00.4E		38-42.3N	
Depth(m)		848		Depth(m)		1200		Depth(m)		1865		Depth(m)		1650	
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	11.017	33.637	25.711	5	7.577	32.952	25.726	5	9.599	33.201	25.614	5	16.087	34.015	24.970
10	10.902	33.644	25.737	10	5.879	32.861	25.877	10	7.868	33.064	25.773	10	16.029	34.009	24.979
20	9.910	33.680	25.936	20	5.587	32.896	25.940	20	6.115	32.961	25.927	20	15.943	34.129	25.091
30	9.336	33.764	26.097	30	5.195	32.906	25.994	30	7.628	33.358	26.038	30	15.271	34.038	25.171
40	8.956	33.728	26.129	40	5.019	32.900	26.009	40	7.626	33.504	26.153	40	15.172	34.086	25.229
50	8.960	33.733	26.133	50	3.999	32.888	26.106	50	8.192	33.679	26.208	50	14.920	34.061	25.265
75	9.585	33.943	26.196	75	3.136	33.190	26.428	75	8.152	33.779	26.292	75	11.633	33.845	25.761
100	9.602	33.975	26.218	100	2.097	33.170	26.498	100	8.106	33.865	26.367	100	10.705	34.161	26.175
125	9.439	33.968	26.239	125	2.397	33.252	26.540	125	7.488	33.822	26.423	125	7.172	33.632	26.318
150	9.103	33.926	26.261	150	2.709	33.351	26.594	150	6.606	33.769	26.502	150	6.616	33.673	26.425
175	8.946	33.923	26.283	175	2.998	33.457	26.654	175	5.033	33.555	26.526	175	6.055	33.628	26.462
200	8.979	33.946	26.296	200	2.404	33.447	26.696	200	3.542	33.414	26.570	200	7.483	33.962	26.534
250	8.768	33.928	26.315	250	2.281	33.498	26.746	250	4.411	33.594	26.625	250	6.957	33.972	26.615
300	8.599	33.922	26.337	300	2.584	33.596	26.800	300	3.127	33.511	26.685	300	5.338	33.830	26.708
400	3.363	33.557	26.700	400	3.101	33.793	26.913	400	2.420	33.557	26.783	400	4.178	33.848	26.852
500	2.947	33.752	26.894	500	3.395	33.966	27.023	500	2.760	33.709	26.875	500	4.800	34.100	26.984
				600	3.411	34.100	27.128	600	3.250	33.941	27.017	600	4.248	34.165	27.096
				700	3.428	34.207	27.212	700	3.357	34.076	27.115	700	3.944	34.234	27.183
				800	3.127	34.271	27.292	800	3.347	34.198	27.212	800	3.594	34.270	27.246
				900	2.834	34.309	27.348	900	3.023	34.253	27.287	900	3.423	34.342	27.320
				1000	2.748	34.359	27.396	1000	3.015	34.325	27.345	1000	3.012	34.361	27.374
								1200	2.618	34.408	27.447				

Station OS10072				Station OS10073				Station OS10074				Station OS10075			
Longitude		Latitude		Longitude		Latitude		Longitude		Latitude		Longitude		Latitude	
142-59.7E		38-04.6N		142-59.9E		37-38.1N		142-59.9E		37-13.7N		143-00.5E		36-17.7N	
Depth(m)		1780		Depth(m)		2580		Depth(m)		4550		Depth(m)		7200	
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	18.830	34.676	24.817	5	17.495	34.172	24.761	5	17.949	34.187	24.662	5	20.143	34.577	24.401
10	18.811	34.674	24.820	10	17.200	34.146	24.812	10	17.396	34.183	24.793	10	20.202	34.582	24.389
20	18.424	34.646	24.896	20	14.693	34.126	25.365	20	16.152	34.139	25.051	20	18.845	34.529	24.700
30	17.582	34.542	25.023	30	12.474	34.051	25.762	30	14.273	34.485	25.732	30	18.207	34.548	24.875
40	16.353	34.594	25.354	40	9.582	33.679	25.990	40	13.232	34.427	25.902	40	17.244	34.563	25.120
50	16.091	34.616	25.431	50	8.351	33.603	26.124	50	12.164	34.335	26.041	50	16.307	34.552	25.333
75	14.398	34.519	25.731	75	8.582	33.866	26.296	75	9.776	34.029	26.231	75	14.797	34.540	25.661
100	13.110	34.442	25.939	100	6.654	33.684	26.429	100	7.766	33.823	26.384	100	13.499	34.491	25.897
125	11.583	34.298	26.122	125	7.475	33.950	26.525	125	5.709	33.550	26.443	125	12.577	34.425	26.031
150	10.254	34.161	26.253	150	6.450	33.627	26.606	150	7.162	33.839	26.560	150	10.842	34.185	26.170
175	9.031	34.073	26.387	175	2.901	33.456	26.661	175	7.646	34.127	26.640	175	9.025	33.932	26.278
200	7.998	33.991	26.481	200	2.545	33.483	26.713	200	6.540	34.026	26.714	200	6.686	33.641	26.390
250	7.045	33.970	26.601	250	3.000	33.659	26.815	250	6.383	34.121	26.809	250	8.120	34.070	26.526
300	6.442	33.999	26.705	300	3.100	33.746	26.875	300	4.798	33.972	26.883	300	7.753	34.171	26.659
400	4.334	33.880	26.861	400	3.296	33.944	27.015	400	5.405	34.240	27.025	400	3.626	33.742	26.822
500	4.725	34.102	26.994	500	3.475	34.073	27.101	500	3.490	34.114	27.132	500	3.602	33.931	26.976
600	4.154	34.136	27.083	600	3.932	34.257	27.202	600	3.846	34.272	27.223	600	3.600	34.046	27.067
700	4.350	34.297	27.190	700	3.380	34.277	27.273	700	3.634	34.332	27.291	700	3.391	34.110	27.139
800	3.734	34.298	27.255	800	3.333	34.359	27.342	800	3.323	34.375	27.356	800	3.412	34.221	27.225
900	3.440	34.341	27.318	900	3.032	34.393	27.398	900	3.050	34.384	27.389	900	3.170	34.287	27.300
1000	3.072	34.357	27.365	1000	2.845	34.433	27.447	1000	2.899	34.422	27.433	1000	3.073	34.354	27.362
1200	2.777	34.425	27.446	1200	2.510	34.494	27.524	1200	2.569	34.479	27.507	1200	2.749	34.426	27.449
1500	2.401	34.504	27.541	1500	2.400	34.514	27.550	1500	2.267	34.533	27.576	1500	2.408	34.507	27.544

Station OS10076				Station OS10077				Station OS10078				Station OS10079			
Longitude		Latitude		Longitude		Latitude		Longitude		Latitude		Longitude		Latitude	
143-00.0E		35-59.8N		143-01.0E		35-44.5N		143-06.0E		35-29.9N		143-03.7E		35-14.8N	
Depth(m)		0		Depth(m)		6580		Depth(m)		0		Depth(m)		0	
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	20.432	-	-	5	22.458	34.740	23.891	5	22.619	-	-	5	22.780	-	-
10	20.121	-	-	10	22.424	34.736	23.898	10	22.570	-	-	10	22.721	-	-
20	19.900	-	-	20	21.949	34.719	24.018	20	22.470	-	-	20	22.550	-	-
30	19.554	-	-	30	20.854	34.728	24.326	30	22.328	-	-	30	22.502	-	-
40	18.382	-	-	40	20.691	34.727	24.370	40	22.272	-	-	40	22.480	-	-
50	17.744	-	-	50	20.469	34.727	24.430	50	21.918	-	-	50	22.072	-	-
75	16.930	-	-	75	19.855	34.727	24.591	75	21.570	-	-	75	21.539	-	-
100	15.720	-	-	100	18.265	34.581	24.886	100	20.604	-	-	100	20.647	-	-
125	14.820	-	-	125	16.698	34.580	25.263	125	20.110	-	-	125	19.790	-	-
150	13.874	-	-	150	16.331	34.597	25.361	150	19.440	-	-	150	19.310	-	-
200	12.251	-	-	175	15.069	34.493	25.566	200	17.581	-	-	200	18.731	-	-
250	10.768	-	-	200	13.770	34.486	25.838	250	15.573	-	-	250	17.502	-	-
300	9.763	-	-	250	11.957	34.416	26.144	300	13.277	-	-	300	16.810	-	-
400	7.526	-	-	300	7.969	33.872	26.393	400	9.663	-	-	400	13.956	-	-
500	5.960	-	-	400	6.423	33.872	26.607	500	7.619	-	-	500	9.501	-	-
600	5.090	-	-	500	6.922	34.246	26.836	600	5.901	-	-	600	6.971	-	-
700	4.140	-	-	600	5.483	34.214	26.996	700	3.726	-	-	700	6.164	-	-
				700	4.531	34.233	27.120								
				800	3.899	34.262	27.210								
				900	3.527	34.320	27.293								
				1000	3.296	34.359	27.346								
				1200	2.909	34.430	27.438								
				1500	2.450	34.501	27.535								

Station OS10080				Station OS10082				Station OS10083			
Longitude		Latitude		Longitude		Latitude		Longitude		Latitude	
143-02.1E		35-00.0N		143-00.3E		34-44.5N		142-58.6E		34-30.0N	
Depth(m)		0		Depth(m)		0		Depth(m)		0	
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	21.681	-	-	5	22.591	-	-	5	21.881	-	-
10	21.640	-	-	10	22.611	-	-	10	21.859	-	-
20	21.290	-	-	20	22.332	-	-	20	21.643	-	-
30	20.962	-	-	30	21.839	-	-	30	21.450	-	-
40											

Table 2. Oceanographic data (continued)

Station Longitude Latitude Depth(m)				OS10084 142-47.5E 34-00.0N 0				Station Longitude Latitude Depth(m)				OS10085 142-44.8E 33-30.0N 0				Station Longitude Latitude Depth(m)				OS10086 142-43.5E 33-14.7N 5730				Station Longitude Latitude Depth(m)				OS10087 142-33.5E 31-35.7N 6910			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	20.379	-	-	5	21.559	-	-	5	20.759	34.662	24.302	5	21.006	34.713	24.274	5	20.660	34.660	24.327	5	19.886	34.708	24.337	5	20.988	34.712	24.278	5	21.006	34.713	24.274
10	20.302	-	-	10	21.531	-	-	10	20.660	34.660	24.302	10	21.233	34.618	24.140	10	20.757	34.651	24.398	10	20.988	34.712	24.278	10	20.757	34.708	24.337	10	20.988	34.712	24.278
20	19.900	-	-	20	20.972	-	-	20	20.370	34.651	24.398	20	20.278	34.648	24.420	20	20.577	34.651	24.398	20	20.757	34.708	24.337	20	20.577	34.708	24.337	20	20.757	34.708	24.337
30	19.722	-	-	30	20.162	-	-	30	20.278	34.648	24.420	30	20.278	34.648	24.420	30	20.680	34.648	24.420	30	20.680	34.735	24.378	30	20.680	34.735	24.378	30	20.680	34.735	24.378
40	19.678	-	-	40	19.900	-	-	40	19.886	34.650	24.524	40	19.886	34.650	24.524	40	20.192	34.648	24.524	40	20.192	34.716	24.495	40	20.192	34.716	24.495	40	20.192	34.716	24.495
50	19.442	-	-	50	19.592	-	-	50	19.357	34.688	24.691	50	19.357	34.688	24.691	50	19.500	34.702	24.695	50	19.500	34.702	24.695	50	19.500	34.702	24.695	50	19.500	34.702	24.695
75	19.099	-	-	75	19.350	-	-	75	19.008	34.705	24.793	75	19.008	34.705	24.793	75	18.944	34.715	24.845	75	18.944	34.715	24.845	75	18.944	34.715	24.845	75	18.944	34.715	24.845
100	18.760	-	-	100	18.920	-	-	100	18.745	34.697	24.854	100	18.745	34.697	24.854	100	18.691	34.701	24.871	100	18.691	34.701	24.871	100	18.691	34.701	24.871	100	18.691	34.701	24.871
125	18.650	-	-	125	18.700	-	-	125	18.620	34.691	24.881	125	18.620	34.691	24.881	125	18.565	34.696	24.899	125	18.565	34.696	24.899	125	18.565	34.696	24.899	125	18.565	34.696	24.899
150	18.464	-	-	150	18.582	-	-	150	18.531	34.693	24.905	150	18.531	34.693	24.905	150	18.485	34.698	24.921	150	18.485	34.698	24.921	150	18.485	34.698	24.921	150	18.485	34.698	24.921
200	18.309	-	-	200	18.401	-	-	175	18.443	34.689	24.924	175	18.443	34.689	24.924	175	18.247	34.677	24.963	175	18.247	34.677	24.963	175	18.247	34.677	24.963	175	18.247	34.677	24.963
250	17.899	-	-	250	18.012	-	-	200	18.391	34.692	24.939	200	18.391	34.692	24.939	200	18.121	34.677	24.995	200	18.121	34.677	24.995	200	18.121	34.677	24.995	200	18.121	34.677	24.995
300	17.440	-	-	300	17.633	-	-	250	18.081	34.698	25.021	250	18.081	34.698	25.021	250	17.897	34.672	25.046	250	17.897	34.672	25.046	250	17.897	34.672	25.046	250	17.897	34.672	25.046
400	15.776	-	-	400	15.901	-	-	300	17.586	34.710	25.151	300	17.586	34.710	25.151	300	17.576	34.704	25.149	300	17.576	34.704	25.149	300	17.576	34.704	25.149	300	17.576	34.704	25.149
500	13.691	-	-	500	13.548	-	-	400	16.087	34.644	25.454	400	16.087	34.644	25.454	400	15.550	34.611	25.550	400	15.550	34.611	25.550	400	15.550	34.611	25.550	400	15.550	34.611	25.550
600	10.489	-	-	600	10.119	-	-	500	13.681	34.494	25.862	500	13.681	34.494	25.862	500	12.970	34.448	25.971	500	12.970	34.448	25.971	500	12.970	34.448	25.971	500	12.970	34.448	25.971
700	6.023	-	-	700	7.031	-	-	600	10.499	34.294	26.315	600	10.499	34.294	26.315	600	10.213	34.269	26.344	600	10.213	34.269	26.344	600	10.213	34.269	26.344	600	10.213	34.269	26.344
								700	7.334	34.161	26.712	700	7.334	34.161	26.712	700	6.918	34.062	26.691	700	6.918	34.062	26.691	700	6.918	34.062	26.691	700	6.918	34.062	26.691
								800	5.692	34.163	26.929	800	5.692	34.163	26.929	800	5.569	34.084	26.882	800	5.569	34.084	26.882	800	5.569	34.084	26.882	800	5.569	34.084	26.882
								900	4.619	34.154	27.048	900	4.619	34.154	27.048	900	4.878	34.213	27.065	900	4.878	34.213	27.065	900	4.878	34.213	27.065	900	4.878	34.213	27.065
								1000	4.187	34.226	27.151	1000	4.187	34.226	27.151	1000	4.103	34.252	27.181	1000	4.103	34.252	27.181	1000	4.103	34.252	27.181	1000	4.103	34.252	27.181
								1200	3.455	34.343	27.318	1200	3.455	34.343	27.318	1200	3.289	34.366	27.352	1200	3.289	34.366	27.352	1200	3.289	34.366	27.352	1200	3.289	34.366	27.352
								1500	2.740	34.444	27.465	1500	2.740	34.444	27.465	1500	2.643	34.475	27.498	1500	2.643	34.475	27.498	1500	2.643	34.475	27.498	1500	2.643	34.475	27.498

Station Longitude Latitude Depth(m)				OS10088 142-22.9E 29-41.2N 6580				Station Longitude Latitude Depth(m)				OS10089 142-09.2E 28-06.8N 1722				Station Longitude Latitude Depth(m)				OS10090 142-02.2E 28-00.3N 462				Station Longitude Latitude Depth(m)				OS10091 142-08.5E 27-58.9N 1080			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	21.036	34.636	24.203	5	21.668	34.739	24.112	5	21.232	34.618	24.140	5	21.275	34.602	24.116	5	21.232	34.618	24.140	5	21.275	34.602	24.116	5	21.232	34.618	24.140	5	21.275	34.602	24.116
10	21.036	34.637	24.208	10	21.670	34.739	24.112	10	21.233	34.618	24.140	10	21.275	34.602	24.116	10	21.233	34.618	24.140	10	21.275	34.602	24.116	10	21.233	34.618	24.140	10	21.275	34.602	24.116
20	21.018	34.637	24.212	20	21.671	34.740	24.112	20	21.234	34.618	24.139	20	21.278	34.632	24.138	20	21.234	34.619	24.140	20	21.278	34.632	24.138	20	21.234	34.619	24.140	20	21.278	34.632	24.138
30	20.987	34.634	24.219	30	21.666	34.739	24.112	30	21.234	34.619	24.140	30	21.306	34.650	24.144	30	21.234	34.619	24.140	30	21.306	34.650	24.144	30	21.234	34.619	24.140	30	21.306	34.650	24.144
40	20.466	34.615	24.344	40	21.638	34.737	24.118	40	21.233	34.621	24.142	40	21.419	34.709	24.158	40	21.233	34.621	24.142	40	21.419	34.709	24.158	40	21.233	34.621	24.142	40	21.419	34.709	24.158
50	19.158	34.639	24.705	50	21.595	34.735	24.129	50	21.236	34.621	24.141	50	20.884	34.718	24.311	50	21.236	34.621	24.141	50	20.884	34.718	24.311	50	21.236	34.621	24.141	50	20.884	34.718	24.311
75	18.531	34.662	24.881	75	20.220	34.714	24.483	75	21.238	34.626	24.145	75	20.205	34.720	24.494	75	21.238	34.626	24.145	75	20.205	34.720	24.494	75	21.238	34.626	24.145	75	20.205	34.720	24.494
100	18.211	34.663	24.962	100	19.740	34.719	24.615	100	20.670	34.712	24.364	100	19.604	34.717	24.650	100	20.670	34.712	24.364	100	19.604	34.717	24.650	100	20.670	34.712	24.364	100	19.604	34.717	24.650
125	17.985	34.669	25.022	125	19.557	34.720	24.664	125	19.558	34.718	24.662	125	19.263	34.718	24.739	125	19.558	34.718	24.662	125	19.263	34.718	24.739	125	19.558	34.718	24.662	125	19.263	34.718	24.739
150	17.900	34.666	25.041	150	19.311	34.720	24.727	150	19.283	34.720	24.735	150	19.041	34.721	24.798	150	19.311	34.720	24.727	150	19.041	34.721	24.798	150	19.283	34.720	24.735	150	19.041	34.721	24.798
175	17.776	34.685	25.086	175	19.184	34.722	24.761	175	19.065	34.722	24.792	175	18.849	34.717	24.844	175	19.184	34.722	24.761	175	18.849	34.717	24.844	175	19.065	34.722	24.792	175	18.849	34.717	24.844
200	17.579	34.694	25.141	200	19.100	34.721	24.782	200	18.815	34.702	24.840	200	18.704	34.718	24.881	200	19.100	34.721	24.782	200	18.704	34.718	24.881	200	18.815	34.702	24.840	200	18.704	34.718	24.881
250	16.966	34.694	25.288	250	18.493	34.716	24.932	250	18.244	34.694	24.977	250	18.235	34.705	24.988	250	18.493	34.716	24.932	250	18.235	34.705	24.988	250	18.244	34.694	24.977	250	18.235	34.705	24.988
300	16.096	34.646	26.453	300	17.604	34.726																									

Table 2. Oceanographic data (continued)

Station OS10100				Station OS10101				Station OS10102				Station OS10103			
Longitude 142-54.3E		Latitude 17-06.8N		Longitude 142-59.9E		Latitude 16-00.0N		Longitude 143-00.0E		Latitude 15-30.0N		Longitude 142-59.9E		Latitude 15-00.0N	
Depth(m)		3156		Depth(m)		2534		Depth(m)		2371		Depth(m)		2314	
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	30.073	35.021	21.719	5	30.026	34.899	21.644	5	29.886	34.641	21.498	5	29.807	34.650	21.532
10	30.021	35.080	21.781	10	30.005	34.925	21.671	10	29.844	34.658	21.525	10	29.807	34.672	21.548
20	29.978	35.137	21.839	20	29.910	34.942	21.716	20	29.708	34.660	21.573	20	29.764	34.728	21.605
30	29.118	35.076	22.084	30	29.824	34.967	21.764	30	29.243	34.621	21.701	30	29.542	34.716	21.671
40	28.323	35.027	22.311	40	28.821	35.020	22.141	40	28.622	34.677	21.950	40	28.722	34.665	21.907
50	27.752	34.990	22.470	50	28.440	35.011	22.261	50	28.330	34.726	22.083	50	28.522	34.770	22.052
75	27.392	35.047	22.629	75	27.522	35.032	22.576	75	27.350	34.916	22.544	75	27.694	34.920	22.436
100	27.016	35.039	22.744	100	27.299	35.152	22.738	100	27.117	35.080	22.743	100	27.074	35.113	22.781
125	26.563	35.021	22.874	125	26.843	35.132	22.869	125	26.754	35.114	22.884	125	26.539	35.117	22.954
150	25.332	34.993	23.236	150	26.036	35.143	23.132	150	25.728	35.125	23.214	150	25.598	35.131	23.259
200	20.945	34.826	24.378	200	22.211	35.059	24.205	200	22.505	35.030	24.100	200	22.107	35.047	24.225
250	18.142	34.757	25.052	250	18.399	34.807	25.026	250	19.201	34.841	24.849	250	18.060	34.739	25.058
300	15.989	34.614	25.454	300	14.598	34.499	25.674	300	13.980	34.442	25.761	300	14.058	34.425	25.731
400	11.079	34.284	26.204	400	10.421	34.310	26.341	400	9.235	34.243	26.488	400	9.884	34.263	26.396
500	8.890	34.243	26.621	500	7.648	34.278	26.759	500	7.247	34.265	26.806	500	7.827	34.242	26.704
600	6.742	34.323	26.921	600	6.421	34.363	26.995	600	6.128	34.369	27.038	600	6.553	34.352	26.969
700	5.806	34.400	27.103	700	5.788	34.421	27.122	700	5.422	34.457	27.195	700	5.627	34.448	27.163
800	5.355	34.457	27.203	800	5.259	34.480	27.233	800	5.176	34.489	27.250	800	4.928	34.494	27.283
900	4.894	34.491	27.284	900	4.736	34.525	27.329	900	4.732	34.518	27.324	900	4.505	34.523	27.353
1000	4.475	34.517	27.351	1000	4.320	34.550	27.394	1000	4.186	34.560	27.417	1000	4.317	34.543	27.389

Station OS10104				Station OS10105				Station OS10106				Station OS10107			
Longitude 142-59.9E		Latitude 14-29.8N		Longitude 142-59.8E		Latitude 13-59.1N		Longitude 142-35.1E		Latitude 13-30.0N		Longitude 142-59.8E		Latitude 13-00.0N	
Depth(m)		2200		Depth(m)		4312		Depth(m)		3435		Depth(m)		3142	
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	29.889	34.617	21.479	5	29.950	34.676	21.503	5	30.062	34.671	21.461	5	30.089	34.601	21.399
10	29.836	34.639	21.514	10	29.866	34.695	21.546	10	30.030	34.680	21.479	10	30.094	34.636	21.424
20	29.636	34.654	21.593	20	29.812	34.710	21.575	20	29.705	34.669	21.581	20	30.041	34.651	21.453
30	29.574	34.662	21.620	30	29.541	34.694	21.655	30	29.039	34.638	21.782	30	29.452	34.638	21.643
40	29.490	34.661	21.647	40	28.963	34.649	21.815	40	28.749	34.630	21.872	40	28.913	34.621	21.811
50	29.135	34.635	21.747	50	28.698	34.653	21.906	50	28.536	34.644	21.953	50	28.624	34.628	21.912
75	27.887	34.756	22.250	75	27.793	34.801	22.315	75	27.989	34.747	22.210	75	27.792	34.741	22.270
100	27.703	34.896	22.415	100	27.406	35.039	22.619	100	27.307	34.951	22.585	100	27.435	34.890	22.497
125	27.174	35.103	22.742	125	27.030	35.113	22.795	125	26.924	35.074	22.800	125	27.060	35.073	22.756
150	26.579	35.126	22.949	150	25.515	35.150	23.299	150	26.012	35.129	23.129	150	26.206	35.104	23.049
200	23.171	35.129	23.984	200	21.507	35.001	24.357	200	21.736	34.985	24.282	200	20.787	34.894	24.472
250	17.442	34.674	25.159	250	16.563	34.632	25.336	250	16.481	34.604	25.333	250	16.630	34.626	25.315
300	13.137	34.377	25.883	300	12.933	34.376	25.923	300	13.065	34.370	25.892	300	13.589	34.436	25.837
400	9.348	34.229	26.459	400	9.166	34.305	26.548	400	9.131	34.296	26.546	400	9.245	34.307	26.536
500	7.185	34.303	26.844	500	7.695	34.382	26.847	500	7.428	34.364	26.858	500	6.972	34.371	26.927
600	6.008	34.391	27.071	600	6.414	34.429	27.048	600	6.140	34.431	27.085	600	6.056	34.444	27.106
700	5.482	34.441	27.175	700	5.476	34.474	27.202	700	5.573	34.468	27.186	700	5.383	34.511	27.243
800	4.960	34.504	27.287	800	4.924	34.515	27.300	800	5.111	34.490	27.258	800	4.891	34.533	27.318
900	4.644	34.534	27.346	900	4.608	34.526	27.344	900	4.475	34.525	27.358	900	4.459	34.548	27.378
1000	4.177	34.559	27.417	1000	4.240	34.538	27.394	1000	4.250	34.542	27.396	1000	4.237	34.555	27.407

Station OS10108				Station OS10109				Station OS10110				Station OS10111			
Longitude 142-35.1E		Latitude 12-30.0N		Longitude 141-49.7E		Latitude 12-22.7N		Longitude 142-09.4E		Latitude 11-59.8N		Longitude 142-25.9E		Latitude 11-56.5N	
Depth(m)		3100		Depth(m)		3900		Depth(m)		4360		Depth(m)		2474	
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	29.912	34.630	21.481	5	29.718	34.625	21.543	5	29.875	34.543	21.426	5	30.062	34.450	21.293
10	29.912	34.654	21.499	10	29.728	34.638	21.550	10	29.851	34.544	21.435	10	30.032	34.456	21.306
20	29.913	34.671	21.512	20	29.728	34.647	21.556	20	29.835	34.548	21.444	20	29.901	34.510	21.393
30	29.754	34.665	21.561	30	29.728	34.652	21.560	30	29.737	34.593	21.511	30	29.866	34.529	21.417
40	29.061	34.624	21.764	40	29.707	34.651	21.567	40	29.458	34.632	21.634	40	29.651	34.563	21.515
50	28.743	34.636	21.819	50	29.111	34.624	21.747	50	29.171	34.646	21.741	50	29.153	34.596	21.704
75	28.104	34.687	22.127	75	28.489	34.616	21.948	75	28.656	34.746	21.988	75	28.236	34.664	22.064
100	27.412	35.021	22.603	100	27.729	34.711	22.268	100	27.380	34.677	22.503	100	27.309	34.953	22.568
125	27.004	35.129	22.816	125	27.067	35.014	22.708	125	26.738	35.068	22.852	125	26.794	35.093	22.853
150	25.429	35.115	23.299	150	25.929	35.097	23.131	150	24.905	35.129	23.468	150	24.910	35.103	23.448
200	21.360	34.960	24.366	200	21.343	34.971	24.379	200	23.465	35.113	23.885	200	23.465	34.988	24.364
250	17.679	34.733	25.147	250	15.627	34.581	25.511	250	21.096	34.957	24.435	250	19.977	34.877	24.669
300	13.725	34.450	25.820	300	12.575	34.382	25.999	300	16.431	34.647	25.377	300	15.528	34.502	25.690
400	8.726	34.344	26.648	400	8.887	34.378	26.649	400	12.580	34.392	26.005	400	11.776	34.358	26.132
500	7.240	34.445	26.948	500	7.802	34.479	26.894	500	8.910	34.352	26.625	500	9.042	34.349	26.602
600	6.022	34.496	27.152	600	6.610	34.467	27.052	600	7.359	34.431	26.920	600	7.474	34.429	26.902
700	5.552	34.517	27.227	700	5.772	34.505	27.190	700	6.432	34.470	27.078	700	6.473	34.473	27.075
800	5.080	34.532	27.295	800	5.341	34.519	27.254	800	5.825	34.496	27.176	800	5.847	34.504	27.180
900	4.655	34.540	27.349	900	4.810	34.539	27.332	900	5.196	34.511	27.265	900	5.377	34.513	27.245
1000	4.187	34.556	27.413	1000	4.366	34.552	27.391	1000	4.819	34.522	27.317	1000	4.865	34.527	27.316
								1000	4.380	34.534	27.375	1000	4.472	34.539	27.369
								1200	3.741	34.558	27.461				
								1500	2.916	34.588	27.564				

Station OS10112				Station OS10113				Station OS10114				Station OS10115			
Longitude 142-29.8E															

Table 2. Oceanographic data (continued)

Station OS10116					Station OS10117					Station OS10118					Station OS10119				
Longitude 141°55.4E					Longitude 141°32.2E					Longitude 141°08.0E					Longitude 164°59.8E				
Latitude 12°17.8N					Latitude 12°45.4N					Latitude 13°14.9N					Latitude 30°00.0N				
Depth(m) 2038					Depth(m) 2780					Depth(m) 4440					Depth(m) 5860				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	29.861	34.704	21.552		5	29.895	34.623	21.482		5	30.184	34.709	21.445		5	25.455	34.477	22.807	
10	29.841	34.705	21.559		10	29.832	34.638	21.514		10	30.132	34.707	21.462		10	24.694	34.548	23.097	
20	29.844	34.704	21.558		20	29.821	34.653	21.529		20	29.965	34.701	21.514		20	22.047	34.571	23.861	
30	29.779	34.683	21.559		30	29.670	34.638	21.569		30	29.923	34.700	21.528		30	21.472	34.840	24.246	
40	29.601	34.615	21.740		40	29.120	34.607	21.731		40	29.896	34.696	21.534		40	21.201	34.939	24.395	
50	28.903	34.638	21.824		50	28.933	34.593	21.783		50	29.617	34.657	21.599		50	21.040	34.957	24.453	
75	28.272	34.658	22.041		75	28.250	34.611	22.023		75	28.143	34.818	22.211		75	19.945	34.863	24.669	
100	27.762	34.874	22.376		100	27.431	34.830	22.454		100	27.256	35.029	22.658		100	19.081	34.794	24.842	
125	27.052	35.129	22.799		125	26.914	35.026	22.767		125	26.462	35.121	22.980		125	18.342	34.714	24.965	
150	25.440	35.115	23.280		150	25.613	35.111	23.283		150	25.372	35.133	23.328		150	17.862	34.711	25.083	
175	22.882	35.066	24.068		200	21.474	34.991	24.359		175	23.992	35.137	23.748		175	17.519	34.703	25.161	
200	19.938	34.880	24.687		250	17.357	34.684	25.187		200	22.689	35.092	24.093		200	17.060	34.679	25.253	
250	16.131	34.617	25.413		300	13.704	34.430	25.809		250	17.798	34.711	25.100		250	16.265	34.631	25.402	
300	12.930	34.394	25.930		400	9.300	34.315	26.534		300	13.592	34.426	25.828		300	15.543	34.583	25.529	
400	9.061	34.356	26.691		500	7.491	34.402	26.879		400	9.368	34.316	26.523		400	13.562	34.464	25.863	
500	7.739	34.474	26.869		600	6.332	34.434	27.063		500	7.777	34.345	26.850		500	10.634	34.261	26.264	
600	6.750	34.492	27.053		700	5.280	34.478	27.229		600	6.323	34.395	27.053		600	7.644	34.051	26.579	
700	6.014	34.493	27.150		800	4.937	34.518	27.301		700	5.487	34.468	27.196		700	5.741	34.003	26.797	
800	5.460	34.510	27.232		900	4.432	34.546	27.379		800	5.022	34.499	27.275		800	4.798	34.083	26.971	
900	5.003	34.521	27.294		1000	4.173	34.556	27.415		900	4.620	34.521	27.339		900	4.205	34.194	27.124	
1000	4.425	34.539	27.374							1000	4.228	34.537	27.394		1000	3.805	34.278	27.232	
1200	3.681	34.560	27.469							1200	3.534	34.559	27.483		1200	3.110	34.382	27.389	
1500	2.927	34.589	27.564							1500	2.802	34.586	27.572		1500	2.479	34.504	27.535	
										2000	2.089	34.626	27.665						
										2500	1.745	34.650	27.711						
										3000	1.616	34.665	27.733						

Station OS10120					Station OS10121					Station OS10122					Station OS10123				
Longitude 164°59.7E					Longitude 165°00.3E					Longitude 165°00.7E					Longitude 165°03.8E				
Latitude 31°45.4N					Latitude 33°41.1N					Latitude 36°01.5N					Latitude 37°39.4N				
Depth(m) 5870					Depth(m) 6065					Depth(m) 5530					Depth(m) 4960				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	24.301	34.458	23.144		5	22.679	34.610	23.730		5	20.744	34.423	24.125		5	18.233	34.541	24.840	
10	23.683	34.458	23.236		10	22.428	34.599	23.791		10	20.051	34.460	24.338		10	17.333	34.539	25.081	
20	21.446	34.486	23.982		20	21.531	34.579	24.028		20	19.495	34.469	24.490		20	15.649	34.570	25.267	
30	21.036	34.469	24.104		30	21.364	34.583	24.073		30	18.901	34.463	24.525		30	14.997	34.516	25.477	
40	20.330	34.735	24.474		40	20.728	34.629	24.274		40	16.903	34.444	25.111		40	13.883	34.439	25.778	
50	19.570	34.747	24.682		50	19.664	34.672	24.594		50	16.323	34.473	25.269		50	13.114	34.381	25.890	
75	18.612	34.657	24.858		75	18.829	34.703	24.836		75	14.672	34.439	25.611		75	12.589	34.338	25.961	
100	18.348	34.651	24.920		100	18.266	34.698	24.974		100	13.580	34.366	25.785		100	11.681	34.275	26.086	
125	17.857	34.629	25.024		125	17.802	34.698	25.061		125	12.980	34.351	25.897		125	10.348	34.262	26.138	
150	17.584	34.626	25.088		150	17.659	34.707	25.132		150	12.341	34.302	25.982		150	10.271	34.196	26.278	
200	17.078	34.605	25.194		175	17.486	34.709	25.174		200	11.093	34.211	26.145		200	8.949	34.131	26.446	
250	16.606	34.591	25.294		200	17.207	34.694	25.228		250	9.779	34.152	26.327		250	6.693	34.004	26.676	
300	15.710	34.533	25.455		250	16.417	34.669	25.395		300	8.261	34.100	26.481		300	5.137	33.985	26.853	
400	13.633	34.427	25.821		300	15.411	34.575	25.553		400	6.015	33.957	26.587		400	4.588	34.082	26.904	
500	10.500	34.213	26.252		400	12.455	34.385	26.022		500	5.153	34.019	26.880		500	3.276	34.167	27.095	
600	7.580	34.024	26.569		500	9.097	34.087	26.386		600	4.551	34.122	27.029		600	3.909	34.236	27.188	
700	5.794	34.000	26.788		600	6.826	34.037	26.683		700	4.104	34.212	27.149		700	3.536	34.299	27.275	
800	4.810	34.069	26.959		700	4.988	34.018	26.868		800	3.734	34.283	27.243		800	3.246	34.349	27.343	
900	4.225	34.179	27.110		800	4.521	34.147	27.053		900	3.424	34.346	27.323		900	2.835	34.427	27.443	
1000	3.796	34.256	27.215		900	4.037	34.237	27.169		1000	3.162	34.404	27.394		1000	2.396	34.504	27.542	
1200	3.163	34.341	27.374		1000	3.673	34.301	27.257		1200	2.677	34.480	27.499		1200	1.983	34.616	27.664	
1500	2.504	34.501	27.531		1200	3.091	34.391	27.391		1500	2.321	34.549	27.584		1500	1.694	34.633	27.732	
															2000	1.556	34.658	27.792	

Station OS10124					Station OS10125					Station OS10127					Station OS10128				
Longitude 164°58.9E					Longitude 165°01.9E					Longitude 165°02.6E					Longitude 165°09.1E				
Latitude 38°14.4N					Latitude 40°47.8N					Latitude 41°57.4N					Latitude 42°32.6N				
Depth(m) 5110					Depth(m) 5390					Depth(m) 4260					Depth(m) 5010				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	20.982	34.466	24.094		5	17.156	34.354	24.982		5	11.300	33.049	25.203		5	9.909	33.051	25.446	
10	20.527	34.465	24.215		10	16.392	34.345	25.017		10	10.351	33.051	25.295		10	8.926	33.067	25.572	
20	18.906	34.456	24.630		20	15.956	34.378	25.279		20	8.009	33.121	25.798		20	8.197	33.119	25.615	
30	17.082	34.446	25.071		30	15.803	34.378	25.314		30	6.782	33.186	26.019		30	8.441	33.137	25.746	
40	16.385	34.463	25.247		40	14.934	34.370	25.501		40	5.832	33.218	26.165		40	5.599	33.163	26.150	
50	15.750	34.503	25.423		50	14.675	34.373	25.559		50	5.332	33.230	26.234		50	5.344	33.183	26.196	
75	14.748	34.458	25.802		75	12.894	34.355	25.915		75	4.256	33.232	26.354		75	4.465	33.223	26.325	
100	13.591	34.451	26.174		100	12.426	34.363	26.068		100	3.583	33.238	26.404		100	4.166	33.245	26.399	
125	13.423	34.392	25.837		125	11.911	34.307	26.068		125	3.538	33.259	26.446		125	4.563	33.415	26.467	
150	12.830	34.360	25.931		150	11.540	34.293	26.127		150	4.009	33.269	26.488		150	5.036	33.526	26.503	
200	11.438	34.243	26.107		175	11.245	34.282	26.172		175	4.543	33.578	26.598		200	4.841	33.686	26.652	
250	10.301	34.193	26.271		200	10.949	34.257	26.206		200	4.428	33.674	26.687		250	4.514	33.790	26.770	
300	9.084	34.169	26.407		250	10.527	34.297	26.357		250	3.987	33.767	26.807		300	4.077	33.831	26.848	
400	6.543	33.972	26.671		300	9.637	34.132	26.335		300	3.692	33.790	26.854		400	3.767	33.946	26.971	
500	5.118	33.756	26.850		400	8.305	34.037	26.472		400	3.653	33.926	26.967		500	3.737	34.081	27.082	
600	4.396	34.062	26.999		500	6.053	33.944	26.712		500	3.711	34.081	27.084		600	3.530	34.165	27.169	
700	4.																		

Table 2. Oceanographic data (continued)

Station OS10133					Station OS10134					Station OS10135					Station OS10136				
Longitude 167-00.1E					Longitude 167-50.5E					Longitude 168-20.0E					Longitude 168-46.6E				
Latitude 50-10.0N					Latitude 50-10.4N					Latitude 50-10.0N					Latitude 50-10.1N				
Depth(m) 4680					Depth(m) 5815					Depth(m) 3360					Depth(m) 5210				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	6.868	32.768	25.679		5	6.794	32.978	25.854		5	4.484	33.086	26.214		5	6.852	32.905	25.789	
10	6.861	32.777	25.687		10	6.762	32.987	25.865		10	4.003	33.097	26.272		10	6.852	32.916	25.797	
20	6.843	32.789	25.695		20	6.216	32.977	25.928		20	3.504	33.107	26.329		20	6.847	32.917	25.799	
30	6.052	32.885	25.958		30	5.967	33.002	25.978		30	3.114	33.116	26.371		30	6.397	32.929	25.867	
40	5.504	33.042	26.066		40	5.164	33.025	26.091		40	2.884	33.126	26.399		40	3.908	33.021	26.221	
50	4.699	32.954	26.086		50	3.756	33.081	26.284		50	2.813	33.141	26.417		50	3.599	33.076	26.295	
75	3.491	33.012	26.254		75	3.112	33.115	26.371		75	2.884	33.184	26.446		75	3.082	33.152	26.403	
100	3.630	33.162	26.360		100	2.768	33.161	26.437		100	3.145	33.268	26.490		100	3.016	33.253	26.489	
125	4.078	33.446	26.542		125	2.839	33.183	26.449		125	3.579	33.386	26.544		125	2.652	33.273	26.536	
150	4.270	33.663	26.695		150	2.859	33.203	26.463		150	3.970	33.488	26.587		150	2.449	33.283	26.561	
200	3.792	33.853	26.895		200	4.004	33.535	26.891		200	4.199	33.656	26.697		200	4.118	33.671	26.717	
250	3.832	33.962	26.978		250	4.174	33.681	26.719		250	4.120	33.790	26.811		250	3.958	33.799	26.835	
300	3.796	34.025	27.031		300	4.064	33.800	26.825		300	4.010	33.882	26.896		300	3.918	33.896	26.916	
400	3.642	34.131	27.131		400	3.875	33.970	26.980		400	3.860	34.025	27.025		400	3.797	34.047	27.049	
500	3.470	34.210	27.211		500	3.715	34.109	27.106		500	3.710	34.134	27.127		500	3.659	34.153	27.147	
600	3.363	34.263	27.263		600	3.544	34.197	27.193		600	3.579	34.203	27.194		600	3.468	34.243	27.237	
700	3.149	34.321	27.329		700	3.414	34.256	27.253		700	3.385	34.283	27.277		700	3.368	34.290	27.290	
800	3.001	34.354	27.369		800	3.233	34.307	27.310		800	3.207	34.337	27.337		800	3.160	34.337	27.341	
900	2.867	34.392	27.412							900	3.059	34.382	27.386		900	2.985	34.379	27.391	
1000	2.715	34.429	27.455							1000	2.904	34.421	27.432		1000	2.854	34.416	27.432	
1200	2.451	34.491	27.527							1200	2.640	34.481	27.503		1200	2.570	34.484	27.511	
										1500	2.253	34.575	27.611		1500	2.214	34.566	27.607	

Station OS10137					Station OS10138					Station OS10139					Station OS10140				
Longitude 169-39.8E					Longitude 171-20.2E					Longitude 171-59.8E					Longitude 172-29.6E				
Latitude 50-09.9N					Latitude 51-14.7N					Latitude 51-15.3N					Latitude 51-15.0N				
Depth(m) 3988					Depth(m) 4715					Depth(m) 4400					Depth(m) 5115				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	7.044	32.960	25.806		5	7.034	32.849	25.720		5	6.146	32.927	25.897		5	6.959	32.846	25.728	
10	7.041	32.962	25.808		10	6.601	32.852	25.780		10	5.903	32.967	25.958		10	6.960	32.846	25.728	
20	6.988	32.972	25.823		20	5.946	32.836	25.850		20	5.844	32.980	25.976		20	6.706	32.846	25.761	
30	6.109	33.017	25.973		30	6.083	32.884	25.871		30	5.133	32.993	26.069		30	5.730	32.890	25.918	
40	5.572	33.060	26.072		40	6.048	32.888	25.878		40	3.699	33.107	26.310		40	4.758	32.953	26.079	
50	4.142	33.110	26.269		50	5.877	32.940	25.940		50	3.578	33.020	26.364		50	4.028	33.050	26.232	
75	2.582	33.215	26.496		75	4.341	33.095	26.236		75	3.230	33.187	26.418		75	3.233	33.094	26.343	
100	2.226	33.239	26.544		100	3.643	33.190	26.381		100	3.438	33.289	26.480		100	3.317	33.157	26.386	
125	2.178	33.276	26.577		125	3.603	33.265	26.525		125	3.538	33.376	26.540		125	3.660	33.262	26.437	
150	3.388	33.636	26.761		150	3.800	33.578	26.675		150	3.558	33.424	26.653		150	3.828	33.326	26.472	
200	3.781	33.904	26.936		200	3.953	33.849	26.875		200	4.018	33.578	26.656		175	3.765	33.360	26.505	
250	3.751	33.973	26.994		250	3.933	33.914	26.929		250	4.218	33.778	26.760		200	3.772	33.418	26.551	
300	3.734	34.044	27.053		300	3.873	33.975	26.984		300	4.198	33.841	26.844		250	4.060	33.562	26.636	
400	3.591	34.124	27.130		400	3.843	34.066	27.059		400	3.978	33.968	26.991		300	4.202	33.702	26.793	
500	3.420	34.208	27.214		500	3.583	34.208	27.198		500	3.749	34.082	27.081		400	4.138	33.876	26.878	
600	3.269	34.282	27.271		600	3.173	34.236	27.339		600	3.598	34.170	27.166		500	3.972	33.984	26.981	
700	3.118	34.312	27.325		700	2.888	34.410	27.424		700	3.458	34.234	27.231		600	3.820	34.070	27.065	
800	2.977	34.341	27.361		800	2.779	34.444	27.461		800	3.277	34.298	27.299		700	3.697	34.127	27.122	
900	2.846	34.383	27.406		900	2.685	34.463	27.485		900	3.145	34.339	27.344		800	3.574	34.171	27.170	
1000	2.684	34.414	27.446		1000	2.594	34.487	27.512		1000	3.005	34.372	27.383		900	3.456	34.211	27.212	
1200	2.440	34.471	27.512		1200	2.399	34.529	27.562		1200	2.719	34.448	27.470		1000	3.323	34.250	27.256	
1500	2.165	34.533	27.584		1500	2.104	34.598	27.641		1500	2.325	34.534	27.572		1200	3.064	34.323	27.339	
															1500	2.631	34.428	27.461	
															2000	2.110	34.543	27.597	

Station OS10141					Station OS10142					Station OS10143					Station OS10144				
Longitude 173-00.0E					Longitude 173-29.1E					Longitude 173-59.8E					Longitude 174-40.0E				
Latitude 51-14.8N					Latitude 51-14.7N					Latitude 51-14.9N					Latitude 51-14.9N				
Depth(m) 5610					Depth(m) 6170					Depth(m) 6798					Depth(m) 7140				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	7.051	32.821	25.696		5	7.249	32.836	25.681		5	7.471	32.657	25.509		5	7.437	32.646	25.506	
10	7.046	32.822	25.697		10	7.233	32.836	25.682		10	7.275	32.682	25.556		10	7.091	32.645	25.552	
20	6.344	32.835	25.799		20	6.203	32.844	25.824		20	6.799	32.780	25.697		20	6.325	32.673	25.673	
30	5.839	32.877	25.895		30	6.017	32.856	25.856		30	6.162	32.752	25.757		30	6.101	32.677	25.752	
40	4.470	33.001	26.148		40	4.469	33.010	26.155		40	5.420	32.783	25.870		40	5.383	32.777	25.870	
50	3.929	33.053	26.245		50	3.908	33.045	26.241		50	5.034	32.904	26.010		50	4.139	32.786	26.011	
75	3.773	33.135	26.325		75	3.299	33.086	26.339		75	4.604	33.133	26.238		75	3.824	32.970	26.189	
100	3.590	33.166	26.367		100	3.218	33.122	26.367		100	4.365	33.251	26.358		100	4.115	33.233	26.369	
125	3.771	33.270	26.432		125	3.406	33.219	26.427		125	4.284	33.353	26.447		125	4.044	33.530	26.569	
150	3.630	33.325	26.490		150	3.543	33.308	26.485		150	4.183	33.426	26.515		150	4.408	33.669	26.685	
175	3.653	33.381	26.533		175	3.598	33.339	26.520		175	4.199	33.488	26.567		175	4.375	33.774	26.740	
200	3.871	33.367	26.579		200	3.802	33.451	26.573		200	4.239	33.575	26.628		200	4.321	38.314	26.810	
250	4.020	33.583	26.657		250	4.150	33.596	26.654		250	4.172	33.701	26.735		250	4.264	33.903	26.886	
300	4.161	33.677	26.718		300	4.243	33.724	26.746		300	4.282	33.852	26.843		300	3.913	34.393	26.954	
400	4.075	33.858	26.870		400	4.024	33.892	26.902		400	4.129	33.995	26.974		400	3.824	34.065	27.060	
500	3.964	33.961	26.964		500	3.969	34.012	27.003		500	3.949	34.096	27.072		500	3.664	34.159	27.151	
600	3.941	34.026	27.017		600	3.759	34.087	27.084		600	3.670	34.179	27.160		600	3.480	34.249	27.240	
700	3.773	34.088	27.083		700	3.619	34.148	27.147		700	3.351	34.227	27.236		700	3.219			

Table 2. Oceanographic data (continued).

Station OS10149					Station OS10150					Station OS10151					Station OS10152				
Longitude 178-44.6E					Longitude 179-15.2E					Longitude 176-48.6W					Longitude 170-29.0W				
Latitude 50-39.9N					Latitude 50-40.1N					Latitude 53-27.6N					Latitude 52-20.5N				
Depth(m) 5400					Depth(m) 5635					Depth(m) 3780					Depth(m) 570				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	7.462	32.648	25.503		5	7.280	32.586	25.480		5	6.388	33.198	26.080		5	5.145	33.029	26.097	
10	7.012	32.710	25.613		10	7.183	32.601	25.505		10	6.361	33.196	26.082		10	5.061	33.082	26.148	
20	6.354	32.781	25.755		20	6.717	32.613	25.576		20	5.929	33.192	26.133		20	5.002	33.116	26.182	
30	5.721	32.850	25.888		30	6.872	32.719	25.640		30	5.907	33.191	26.136		30	4.961	33.171	26.230	
40	5.122	32.959	26.043		40	5.711	32.636	25.720		40	4.305	33.220	26.339		40	4.923	33.236	26.286	
50	4.911	33.046	26.137		50	4.874	32.741	25.899		50	5.385	33.299	26.501		50	4.880	33.274	26.320	
75	4.485	33.240	26.336		75	3.982	32.910	26.126		75	2.852	33.298	26.541		75	4.834	33.308	26.353	
100	4.409	33.280	26.423		100	3.823	33.074	26.272		100	2.726	33.305	26.556		100	4.765	33.346	26.390	
125	4.035	33.372	26.488		125	4.528	33.501	26.539		125	2.777	33.317	26.561		125	4.716	33.378	26.421	
150	3.923	33.483	26.587		150	4.646	33.732	26.710		150	2.835	33.327	26.564		150	4.716	33.387	26.428	
175	4.357	33.616	26.649		200	4.389	33.873	26.849		175	2.870	33.333	26.566		200	4.587	33.478	26.514	
200	4.439	33.700	26.714		250	3.853	33.917	26.942		200	2.900	33.338	26.567		250	4.289	33.579	26.626	
250	4.432	33.877	26.858		300	4.111	34.033	27.006							300	4.269	33.825	26.824	
300	4.178	33.969	26.948		400	3.854	34.105	27.089							400	3.968	34.117	27.087	
400	3.807	34.048	27.048		500	3.583	34.165	27.164							500	3.580	34.220	27.208	
500	3.682	34.155	27.146		600	3.443	34.235	27.233							600	3.187	35.673	26.809	
600	3.464	34.218	27.217		700	3.252	34.300	27.303											
700	3.348	34.273	27.272		800	3.071	34.348	27.358											
800	3.113	34.327	27.337		900	2.910	34.382	27.400											
900	2.965	34.359	27.377		1000	2.778	34.410	27.434											
1000	2.821	34.389	27.413		1200	2.485	34.472	27.509											
1200	2.509	34.452	27.491		1500	2.170	34.538	27.588											
1500	2.198	34.518	27.570																
2000	1.875	34.587	27.651																

Station OS10153					Station OS10154					Station OS10155					Station OS10156				
Longitude 179-30.3W					Longitude 179-30.7W					Longitude 179-30.0W					Longitude 179-29.9W				
Latitude 52-00.1N					Latitude 51-40.4N					Latitude 51-20.0N					Latitude 51-00.0N				
Depth(m) 3361					Depth(m) 4639					Depth(m) 6237					Depth(m) 7050				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	8.860	32.369	25.080		5	7.955	32.386	25.385		5	7.740	32.576	25.408		5	7.809	32.402	25.419	
10	8.720	32.363	25.095		10	7.955	32.587	25.386		10	7.727	32.576	25.410		10	7.807	32.603	25.419	
20	7.864	32.471	25.305		20	7.936	32.588	25.389		20	7.650	32.580	25.423		20	7.695	32.603	25.436	
30	7.864	32.471	25.305		30	7.394	32.593	25.465		30	7.472	32.590	25.435		30	7.630	32.601	25.443	
40	6.269	32.641	25.621		40	6.723	32.620	25.612		40	7.084	32.620	25.640		40	7.549	32.607	25.459	
50	5.872	32.667	25.724		50	4.499	32.854	26.024		50	6.542	32.636	25.616		50	7.109	32.601	25.562	
75	5.285	32.905	25.982		75	4.079	33.191	26.339		75	4.199	32.818	26.029		75	4.520	32.801	25.984	
100	5.019	33.259	26.293		100	4.354	33.498	26.555		100	3.833	32.977	26.193		100	4.030	32.853	26.075	
125	5.031	33.536	26.511		125	4.423	33.785	26.775		125	3.840	33.121	26.308		125	4.008	32.933	26.182	
150	4.957	33.664	26.621		150	4.280	33.901	26.885		150	3.933	33.505	26.603		150	4.567	33.580	26.597	
175	4.767	33.799	26.749		175	4.232	33.952	26.928		175	4.329	33.799	26.797		175	4.838	33.778	26.725	
200	4.667	33.856	26.805		200	4.158	33.977	26.956		200	4.140	33.886	26.896		200	4.580	33.845	26.806	
250	4.210	33.921	26.900		250	4.099	34.025	27.001		250	4.018	33.977	26.971		250	4.099	33.923	26.919	
300	4.117	34.006	26.983		300	3.991	34.075	27.052		300	3.995	34.025	27.011		300	4.007	34.008	26.997	
400	3.982	34.093	27.067		400	3.838	34.142	27.120		400	3.909	34.109	27.086		400	3.844	34.129	27.109	
500	3.793	34.162	27.140		500	3.636	34.205	27.190		500	3.719	34.180	27.162		500	3.636	34.193	27.181	
600	3.567	34.228	27.217		600	3.481	34.248	27.240		600	3.513	34.239	27.272		600	3.445	34.241	27.240	
700	3.378	34.278	27.274		700	3.287	34.299	27.299		700	3.256	34.295	27.299		700	3.231	34.297	27.302	
800	3.184	34.321	27.326		800	3.153	34.330	27.336		800	3.052	34.342	27.355		800	3.076	34.331	27.344	
900	2.989	34.363	27.377		900	2.964	34.368	27.384		900	2.880	34.381	27.402		900	2.919	34.363	27.384	
1000	2.842	34.393	27.430		1000	2.798	34.402	27.436		1000	2.691	34.419	27.449		1000	2.780	34.393	27.420	
1200	2.568	34.450	27.484		1200	2.472	34.467	27.506		1200	2.434	34.474	27.515		1200	2.528	34.466	27.484	
1500	2.210	34.524	27.574		1500	2.148	34.537	27.589		1500	2.185	34.530	27.589		1500	2.210	34.514	27.565	
2000	1.874	34.595	27.657		2000	1.827	34.604	27.668		2000	1.867	34.597	27.650		2000	1.916	34.579	27.641	
2500	1.694	34.632	27.701		2500	1.645	34.640	27.711		2500	1.684	34.638	27.707		2500	1.720	34.620	27.689	
					3000	1.534	34.663	27.737		3000	1.541	34.693	27.736		3000	1.589	34.647	27.720	

Station OS10157					Station OS10158					Station OS10159					Station OS10160				
Longitude 170-30.0W					Longitude 173-55.5W					Longitude 179-59.8W					Longitude 179-59.9W				
Latitude 50-40.1N					Latitude 49-04.8N					Latitude 49-30.0N					Latitude 49-45.0N				
Depth(m) 5435					Depth(m) 5235					Depth(m) 4955					Depth(m) 5172				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	7.817	32.630	25.439		5	7.878	32.787	25.554		5	7.914	32.557	25.968		5	7.811	32.590	25.409	
10	7.814	32.629	25.439		10	7.880	32.787	25.553		10	7.903	32.556	25.969		10	7.799	32.591	25.411	
20	7.657	32.634	25.465		20	7.507	32.799	25.616		20	7.389	32.579	25.459		20	7.431	32.656	25.514	
30	7.389	32.656	25.520		30	7.137	32.818	25.682		30	6.726	32.655	25.539		30	7.162	32.663	25.556	
40	6.878	32.702	25.625		40	6.001	32.855	25.857		40	5.236	32.786	25.894		40	5.274	32.706	25.826	
50	6.123	32.754	25.763		50	4.554	32.948	26.087		50	4.440	32.901	26.072		50	5.452	32.775	25.961	
75	4.312	32.824	26.014		75	3.698	32.948	26.182		75	4.531	33.044	26.068		75	4.248	32.807	25.976	
100	3.829	32.874	26.112		100	3.436	33.053	26.292		100	3.981	33.149	26.316		100	4.198	33.263	26.365	
125	3.542	32.923	26.178		125	3.136	33.551	26.716		125	3.731	33.244	26.416		125	4.444	33.606	26.631	
150	3.423	33.196	26.475		150	3.172	33.651	26.783		150	4.423	33.331	26.574		150	4.410	33.751	26.750	
175	3.403	33.688	26.765		175	3.298	33.692	26.822		175	4.368	33.408	26.678		175	4.348	33.809	26.829	
200	3.353	33.830	26.800		200	3.315	33.768	26.873		200	4.433	33.766	26.799		200	4.262	33.855	26.876	
250	3.944	33.935	26.945		250	3.426	33.866	26.941		250	4.241	33.797	26.895		250	4.089	33.956	26.948	
300	3.765	34.073	26.995		300	3.477	33.946	26.999		300	3.507	33.981	26.986		300	3.965	34.029	27.010	
400	3.409	34.049	27.107		400	3.317	34.073	27.147		400	3.477	34.044	27.068		400	3.348	34.079	27.089	
500	3.405	34.170	27.185		500	3.399	34.												

Table 2. Oceanographic data (continued)

Station OS10165				Station OS10166				Station OS10167				Station OS10168			
Longitude 177-23.1E				Longitude 177-00.3E				Longitude 176-41.8E				Longitude 176-23.9E			
Latitude 52-23.5N				Latitude 52-0.06N				Latitude 51-39.9N				Latitude 51-20.0N			
Depth(m) 1938				Depth(m) 1200				Depth(m) 2900				Depth(m) 4570			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	7.578	33.014	25.775	5	6.484	32.983	25.898	5	7.638	32.640	25.472	5	7.914	32.732	25.498
10	7.563	33.014	25.777	10	6.147	33.017	25.968	10	7.111	32.700	25.592	10	6.776	32.783	25.702
20	6.995	33.048	25.882	20	5.294	33.087	26.126	20	6.344	32.804	25.774	20	5.782	32.977	25.981
30	6.763	33.064	25.925	30	4.990	33.126	26.191	30	5.853	32.858	25.878	30	4.915	33.076	26.160
40	4.697	33.132	26.228	40	4.742	33.150	26.237	40	5.663	32.909	25.941	40	4.790	33.098	26.190
50	3.044	33.168	26.419	50	4.446	33.163	26.279	50	5.205	32.934	26.015	50	4.732	33.159	26.246
75	2.774	33.248	26.506	75	4.288	33.242	26.359	75	4.530	33.026	26.162	75	4.431	33.227	26.332
100	1.932	33.213	26.545	100	3.919	33.256	26.407	100	4.451	33.189	26.299	100	4.359	33.277	26.379
125	1.881	33.231	26.563	125	3.630	33.307	26.476	125	4.531	33.439	26.489	125	4.258	33.319	26.423
150	2.144	33.272	26.576	150	3.362	33.416	26.588	150	4.376	33.568	26.609	150	4.167	33.399	26.495
175	3.557	33.483	26.623	200	3.423	33.484	26.636	175	4.315	33.632	26.666	175	4.174	33.500	26.575
200	3.743	33.555	26.662	250	3.640	33.553	26.671	200	4.383	33.722	26.730	200	4.203	33.606	26.657
250	3.929	33.747	26.796	300	3.650	33.718	26.801	250	4.305	33.868	26.854	250	4.175	33.706	26.739
300	3.889	33.836	26.872	400	3.650	33.899	26.945	300	4.178	33.952	26.934	300	4.131	33.879	26.881
400	3.811	33.986	26.999	500	3.620	34.036	27.057	400	4.026	34.035	27.016	400	3.884	34.022	27.020
500	3.677	34.077	27.085	600	3.490	34.167	27.174	500	3.896	34.095	27.077	500	3.837	34.126	27.108
600	3.551	34.139	27.146	700	3.417	34.207	27.213	600	3.681	34.129	27.125	600	3.485	34.184	27.188
700	3.390	34.203	27.213	800	3.309	34.252	27.259	700	3.605	34.199	27.189	700	3.360	34.242	27.246
800	3.257	34.247	27.260	900	3.138	34.300	27.314	800	3.431	34.244	27.242	800	3.106	34.291	27.310
900	3.097	34.296	27.314	1000	2.946	34.355	27.375	900	3.328	34.263	27.266	900	2.927	34.345	27.369
1000	2.934	34.336	27.361	1200	2.855	15.600	12.436	1000	3.172	34.291	27.303	1000	2.751	34.391	27.421
1200	2.620	34.412	27.450					1200	2.769	34.395	27.423	1200	2.481	34.453	27.494
1500	2.248	34.497	27.549					1500	2.343	34.487	27.533	1500	2.115	34.533	27.588
								2000	1.904	34.580	27.642	2000	1.839	34.592	27.657
								2500	1.738	34.615	27.684	2500	1.651	34.628	27.701
												3000	1.546	34.651	27.727

Station OS10169				Station OS10170				Station OS10171				Station OS10172			
Longitude 176-05.8E				Longitude 175-47.9E				Longitude 175-30.1E				Longitude 175-11.9E			
Latitude 51-00.5N				Latitude 50-39.9N				Latitude 50-20.3N				Latitude 49-59.9N			
Depth(m) 7180				Depth(m) 5400				Depth(m) 4610				Depth(m) 4617			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	7.952	32.659	25.442	5	7.545	32.776	25.592	5	8.525	32.800	25.469	5	8.627	32.764	25.425
10	8.130	32.661	25.418	10	7.260	32.814	25.662	10	8.316	32.788	25.491	10	7.452	32.779	25.607
20	6.797	32.734	25.661	20	5.946	32.981	25.964	20	7.190	32.800	25.660	20	6.944	32.801	25.694
30	5.055	32.977	26.066	30	4.678	32.947	26.083	30	6.906	32.813	25.709	30	6.574	32.806	25.747
40	4.900	33.086	26.169	40	4.296	33.014	26.176	40	6.667	32.821	25.746	40	5.443	32.852	25.922
50	4.701	33.120	26.218	50	4.393	33.121	26.252	50	5.119	32.862	25.968	50	4.571	32.897	26.055
75	4.500	33.179	26.286	75	4.518	33.234	26.328	75	3.626	32.933	26.179	75	3.584	33.030	26.260
100	4.380	33.261	26.364	100	4.534	33.312	26.388	100	3.159	32.978	26.257	100	4.044	33.328	26.452
125	4.226	33.330	26.435	125	4.627	33.445	26.484	125	3.447	33.376	26.548	125	3.425	33.528	26.671
150	4.106	33.416	26.515	150	4.322	33.481	26.544	150	3.861	33.757	26.812	150	3.845	33.806	26.852
175	4.212	33.537	26.601	175	4.342	33.537	26.587	175	3.897	33.862	26.891	175	3.909	33.903	26.922
200	4.182	33.621	26.670	200	4.306	33.614	26.652	200	3.873	33.909	26.931	200	3.866	33.957	26.970
250	4.209	33.813	26.820	250	4.255	33.761	26.774	250	3.842	33.995	27.002	250	3.815	34.008	27.016
300	4.131	33.929	26.921	300	4.119	33.870	26.875	300	3.817	34.059	27.056	300	3.777	34.063	27.063
400	3.801	34.041	27.043	400	3.718	34.053	27.061	400	3.638	34.140	27.139	400	3.598	34.164	27.162
500	3.728	34.162	27.147	500	3.652	34.162	27.154	500	3.423	34.219	27.222	500	3.416	34.215	27.220
600	3.505	34.224	27.218	600	3.327	34.235	27.244	600	3.193	34.284	27.296	600	3.248	34.276	27.284
700	3.208	34.265	27.279	700	3.100	34.305	27.321	700	3.038	34.324	27.342	700	3.051	34.310	27.330
800	3.027	34.315	27.336	800	2.908	34.348	27.373	800	2.877	34.357	27.383	800	2.933	34.348	27.371
900	2.867	34.358	27.385	900	2.786	34.383	27.412	900	2.718	34.394	27.427	900	2.767	34.384	27.415
1000	2.724	34.397	27.429	1000	2.633	34.417	27.452	1000	2.572	34.428	27.466	1000	2.626	34.420	27.455
1200	2.418	34.466	27.510	1200	2.364	34.476	27.522	1200	2.343	34.481	27.528	1200	2.368	34.476	27.522
1500	2.127	34.529	27.584	1500	2.111	34.533	27.589	1500	2.089	34.537	27.594	1500	2.090	34.537	27.594
2000	1.819	34.594	27.661	2000	1.818	34.595	27.662	2000	1.804	34.597	27.664	2000	1.794	34.599	27.667
2500	1.637	34.631	27.704	2500	1.640	34.630	27.703	2500	1.620	34.633	27.707	2500	1.619	34.634	27.708
3000	1.535	34.653	27.729	3000	1.523	34.655	27.732	3000	1.522	34.657	27.733	3000	1.516	34.655	27.732

Station OS10173				Station OS10174				Station OS10175			
Longitude 155-52.5E				Longitude 155-00.0E				Longitude 145-46.7E			
Latitude 44-23.6N				Latitude 44-00.0N				Latitude 41-30.2N			
Depth(m) 5120				Depth(m) 5308				Depth(m) 6915			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	11.451	32.596	24.815	5	15.281	32.562	24.032	5	17.758	32.828	23.665
10	9.637	32.857	25.337	10	14.911	32.915	24.384	10	14.880	33.485	24.830
20	7.680	32.883	25.654	20	11.432	32.886	25.052	20	11.754	33.795	25.699
30	5.140	32.959	26.036	30	6.622	32.914	25.826	30	9.129	33.825	26.177
40	3.209	33.020	26.282	40	5.135	32.980	26.059	40	8.905	33.837	26.223
50	2.674	33.045	26.352	50	3.750	33.006	26.224	50	8.846	33.887	26.271
75	2.163	33.060	26.405	75	2.799	33.073	26.365	75	8.082	33.849	26.358
100	1.587	33.081	26.464	100	1.815	33.057	26.429	100	6.411	33.732	26.498
125	1.636	33.195	26.552	125	1.924	33.182	26.521	125	4.657	33.524	26.543
150	2.250	33.419	26.686	150	2.703	33.434	26.661</				

5. Data on drift gillnet research

Five gillnet researches were performed during this cruise. The operations were supervised by the captain, and were conducted by deck officers, crews and research staff.

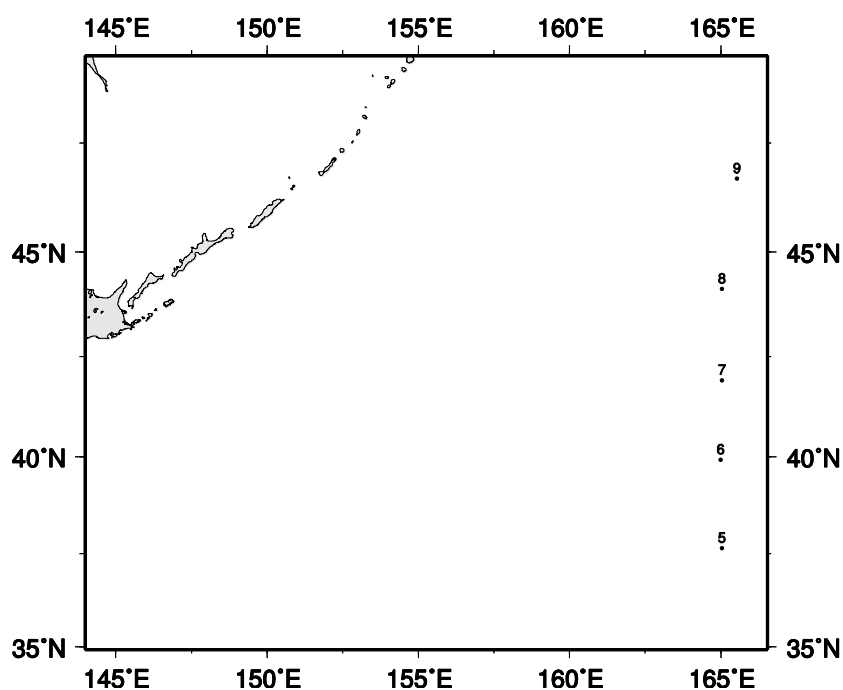


Figure 3. Locations of drift gillnet research

Table 3. Data on drift gillnet research

No. of research	Date and Time (S.M.T.)				T.D.	Position			D.D.	Bottom depth(m)	Wr	Wind	S.T. (°C)	Tr (m)
	Net set		Net haul			Lat.(N)	Long.							
OSG1005	30-Jun	1845-	1-Jul	0453-	11	37-40.0	165-00.0 (E)	90	5190	o	WNW-2	20.7	-	
OSG1006	1-Jul	1855-	2-Jul	0452-	11	39-57.0	164-58.0 (E)	270	5480	o	SSE-1	17.5	-	
OSG1007	2-Jul	1752-	3-Jul	0458-	11	41-56.0	165-00.0 (E)	60	4260	f	WSW-3	12.4	-	
OSG1008	3-Jul	1854-	4-Jul	0425-	11	44-09.0	165-00.0 (E)	40	5782	f	WSW-4	9.6	-	
OSG1009	4-Jul	1900-	5-Jul	0422-	11	46-43.2	165-30.0 (E)	320	5752	f	ESE-4	7.7	-	

T.D.: Time Difference between Greenwich Mean Time (G.M.T.) and S.M.T. D.D : Direction of Drift toward
 Wr.: Weather (o: 100% clouded, f: 75-99% clouded, d: drizzling rain) S.T. : Surface temperature Tr : Transparency

Table 4. Nets composition

No. of research	Mesh size (mm)																					Total
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	
OSG1005	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG1006	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG1007	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG1008	3	3	3	3	3	3	3	3	3	3	3	6	3	4	0	0	1	1	0	1	0	49
OSG1009	3	3	3	3	3	3	3	3	3	3	4	6	5	4	-	-	-	-	-	-	-	49

Table 5. Data on catch number of salmonids by drift gillnet research

Sockeye (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	0

Chum (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1007	0	0	0	2	4	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	9
OSG1008	0	0	0	0	4	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6
OSG1009	0	0	1	2	3	4	0	2	2	0	3	9	2	0	-	-	-	-	-	-	-	28

Pink (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1008	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3
OSG1009	0	0	0	5	34	96	49	9	0	0	28	51	35	7	-	-	-	-	-	-	-	314

Coho (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1008	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
OSG1009	0	0	0	1	0	0	1	0	1	0	0	4	2	0	-	-	-	-	-	-	-	9

Chinook (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	0

Steelhead (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1008	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
OSG1009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	0

Table 6. Biological characteristics of salmonids caught by drift gillnet research

CHUM SALMON																							
St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.
	(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)
G07	A121	438	972	M	1	G09	A112	444	981	M	2	G09	C072	352	474	M	2						
G07	C072	405	756	F	5	G09	A112	591	2620	F	80	G09	C072	484	1722	F	19						
G07	C072	440	999	F	7	G09	A112	542	1853	F	13	G09	C082	438	906	F	10						
G07	C082	417	849	F	8	G09	A115	550	2048	M	5	G09	C082	428	882	M	1						
G07	C082	451	974	M	1	G09	A115	592	2579	M	13	G09	C082	440	960	M	1						
G07	C082	392	730	F	4	G09	A115	606	2819	M	34	G09	C106	418	780	F	4						
G07	C082	443	1051	M	2	G09	A115	512	1514	F	16	G09	C106	515	1589	M	5						
G07	C093	418	877	F	6	G09	A115	448		F	3	G09	C106	450	949	M	2						
G07	C106	454	1175	M	1	G09	A115	558	2384	F	45	G09	C106	490	1387	M	2						
G08	A121	570	2400	F	46	G09	A115	555	2152	M	2	G09	C121	654	3300	F	54						
G08	C082	414	813	F	6	G09	A115	500	1489	F	30	G09	C121	625	3076	M	11						
G08	C082	414	825	M	1	G09	A115	618	3102	M	87	G09	C121	658	2800	M	7						
G08	C082	425	833	M	1	G09	A118	542	1921	F	38	G09	C121	535	1728	F	93						
G08	C082	426	864	M	1	G09	A118	612	2882	F	86												
G08	C093	415	818	M	1	G09	C063	328	409	M	1												
PINK SALMON																							
St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.
	(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)
G08	A115	494	1238	M	8	G09	A115	456	1070	M	18	G09	C082	446	1082	F	81						
G08	C082	440	1068	F	67	G09	A115	450	1160	F	60	G09	C082	462	1092	F	56						
G08	C093	470	1161	F	51	G09	A115	470	1170	M	20	G09	C082	457	1131	M	18						
G09	A112	462	1241	M	21	G09	A115	474	1150	M	20	G09	C082	464	1174	F	68						
G09	A112	448	1000	F	53	G09	A115	469	1100	M	15	G09	C082	466	1219	F	65						
G09	A112	452	1035	F	55	G09	A115	453	1100	M	27	G09	C082	450	1187	F	63						
G09	A112	451	1160	M	28	G09	A115	472	1220	M	62	G09	C082	435	1049	M	25						
G09	A112	470	1170	F	45	G09	A115	469	1270	M	43	G09	C082	472	1228	F	63						
G09	A112	467	1207	M	29	G09	A115	465	1200	F	64	G09	C082	453	1148	F	67						
G09	A112	439	1192	F	37	G09	A118	464	1214	M	59	G09	C082	462	1283	F	55						
G09	A112	465	1142	F	75	G09	A118	488	1282	M	18	G09	C082	445	1092	F	53						
G09	A112	450	1314	M	30	G09	A118	440	1090	F	40	G09	C082	441	1040	F	36						
G09	A112	454	1259	M	50	G09	A118	474	1268	F	78	G09	C082	436	721	F	31						
G09	A112	466	1106	F	46	G09	A118	458	1240	F	38	G09	C082	440	960	F	33						
G09	A112	444	1204	F	54	G09	A118	461	1098	M	17	G09	C082	461	1022	F	41						
G09	A112	462	1241	F	73	G09	A118	436	1088	M	39	G09	C082	444	1045	F	35						
G09	A112	457	1081	F	62	G09	A118	474	1338	M	20	G09	C082	458	1080	M	38						
G09	A112	456	1209	F	95	G09	A118	482	1360	M	58	G09	C082	454	1171	M	16						
G09	A112	452	1260	F	51	G09	A118	458	1241	M	14	G09	C082	480	1263	M	8						
G09	A112	476	1279	F	101	G09	A118	483	1372	F	15	G09	C082	453	1124	M	33						
G09	A112	472	1293	M	34	G09	A118	466	1232	M	20	G09	C082	435	1080	F	49						
G09	A112	454	1203	F	48	G09	A118	454	1199	M	12	G09	C082	454	1170	M	34						
G09	A112	478	1308	M	31	G09	A118	446	1074	M	12	G09	C082	452	1066	M	27						
G09	A112	464	1280	F	58	G09	A118	463	1214	M	23	G09	C082	468	109	M	12						
G09	A112	462	1285	F	59	G09	A118	457	1161	M	15	G09	C082	456	1126	F	55						
G09	A112	461	1141	M	37	G09	A118	446	1181	F	62	G09	C082	460	1079	F	66						
G09	A112	444	1298	M	20	G09	A118	442	1037	M	32	G09	C082	449	1120	M	38						
G09	A112	462	1011	M	15	G09	A118	456	1166	M	18	G09	C082	448	1172	M	25						
G09	A112	468	1180	M	27	G09	A118	481	1399	M	47	G09	C082	444	1068	F	49						
G09	A112	452	1100	M	12	G09	A118	444	1142	M	21	G09	C082	460	1108	F	56						
G09	A115	466	1200	M	18	G09	A118	455	1211	F	71	G09	C093	462	1131	M	5						
G09	A115	456	1150	F	17	G09	A118	456	1190	M	48	G09	C093	471	1190	M	47						
G09	A115	476	1180	M	20	G09	A118	468	1280	M	31	G09	C093	456	1232	F	70						
G09	A115	454	1130	M	53	G09	A118	464	1252	M	13	G09	C093	438	991	F	68						
G09	A115	434	970	F	23	G09	A118	440	1134	F	44	G09	C093	428	964	M	48						
G09	A115	468	1270	M	75	G09	A118	442	1091	F	54	G09	C093	458	1147	F	60						
G09	A115	448	1120	F	63	G09	A118	455	1120	M	26	G09	C093	452	1228	M	16						
G09	A115	409	1000	M	52	G09	A118	471	1251	F	72	G09	C093	456	1010	F	50						
G09	A115	494	1340	M	15	G09	A118	444	1047	M	15	G09	C093	439	1121	M	16						
G09	A115	456	1180	M	48	G09	A121	463	1260	M	32	G09	C093	440	1012	F	54						
G09	A115	445	1210	M	44	G09	A121	453	1050	F		G09	C093	430	969	M	21						
G09	A115	469	1270	M	80	G09	A121	460	1200	M	59	G09	C093	406	777	M	10						
G09	A115	482	1240	F	80	G09	A121	462	1190	F	14	G09	C093	436	1010	F	66						
G09	A115	456	1080	M	20	G09	C072	443	1017	F	72	G09	C093	425	927	F	50						
G09	A115	452	1170	F	73	G09	C072	460	1162	F	83	G09	C093	448	1115	F	64						
G09	A115	435	1050	M	25	G09	C072	444	1049	M	34	G09	C093	446	1098	M	29						
G09	A115	458	1070	F	18	G09	C072	455	1082	F	74	G09	C093	464	1092	F	68						
G09	A115	461	1160	F	90	G09	C072	441	1090	F	66	G09	C093	465	1141	F	84						
G09	A115	459	1150	M	24	G09	C082	449	1181	F	47	G09	C093	446	1071	F	88						
G09	A115	475	1250	F	72	G09	C082	474	1222	F	62	G09	C093	452	1198	M	76						
G09	A115	440	1040	M	35	G09	C082	451	1013	F	43	G09	C093	446	1101	M	20						

Table 6. Biological characteristics of salmonids caught by drift gillnet research (continued)

PINK SALMON																	
St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.
(mm)	(mm)	(mm)	(gr)		(gr)	(mm)	(mm)	(mm)	(gr)		(gr)	(mm)	(mm)	(mm)	(gr)		(gr)
G09	C093	406	803	F	5	G09	C106	449	980	F	47	G09	C106	462	1166	M	14
G09	C093	461	1250	F	56	G09	C106	466	1181	F	63	G09	C106	450	1128	F	53
G09	C093	442	1052	F	58	G09	C106	450	1123	F	69	G09	C106	453	1054	F	56
G09	C093	472	1218	F	64	G09	C106	467		F	45	G09	C106	453	1118	F	54
G09	C093	458	1137	F	63	G09	C106	432		F	59	G09	C106	494	1011	F	52
G09	C093	443	1024	F	51	G09	C106	456	1050	F	62	G09	C106	451	1079	F	57
G09	C093	424	847	F	25	G09	C106	485	1327	M	14	G09	C106	449	1015	F	43
G09	C093	440	1119	M	93	G09	C106	442	989	M	11	G09	C106	462	1170	M	18
G09	C093	451	1071	F	51	G09	C106	445	904	M	10	G09	C106	444	1060	F	55
G09	C093	466	1218	F	79	G09	C106	461	1175	F	46	G09	C106	470	1155	M	12
G09	C106	456	1007	F	50	G09	C106	431	974	M	28	G09	C106	484	1265	M	25
G09	C106	466	1203	F	59	G09	C106	437	1089	F	51	G09	C121	449	1239	F	46
G09	C106	457	1210	F	47	G09	C106	462	1179	M	12	G09	C121	483	1324	M	16
G09	C106	439	1026	F	50	G09	C106	469	1150	F	49	G09	C121	481	1241	M	16
G09	C106	463	1156	F	77	G09	C106	452	1049	F	93	G09	C121	468	1227	M	32
G09	C106	448	1106	M	20	G09	C106	435	935	F	45	G09	C121	475	1221	M	45
G09	C106	462	1074	F	33	G09	C106	444		F	56	G09	C121	470	1333	M	24
G09	C106	478	1209	F	66	G09	C106	452	1081	M	18	G09	C121	455	1082	F	54
G09	C106	454	1104	F	44	G09	C106	458	1147	M	10	G09	C121	492	1470	M	42
G09	C106	450	1096	M	18	G09	C106	442	1018	F	30	G09	C121	476	1391	M	40
G09	C106	459	1153	F	57	G09	C106	455	1159	M	34						
G09	C106	460	1163	F	77	G09	C106	443	898	M	9						
COHO SALMON																	
St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.
(mm)	(mm)	(mm)	(gr)		(gr)	(mm)	(mm)	(mm)	(gr)		(gr)	(mm)	(mm)	(mm)	(gr)		(gr)
G08	A118	546	1877	F	27	G09	A115	503	1441	F	32	G09	C072	495	1405	F	26
G08	C072	480	1215	F	28	G09	A115	558	2054	F	47	G09	C106	506	1576	M	23
G09	A115	515	1625	M	10	G09	A118	525	1750	M	8	G09	C121	456	1189	M	8
G09	A115	557	2339	F	48	G09	A118	548	1873	M	9						
STEELHEAD SALMON																	
St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.	St.	Gear	F. L.	B. W.	Sex	G. W.
(mm)	(mm)	(mm)	(gr)		(gr)	(mm)	(mm)	(mm)	(gr)		(gr)	(mm)	(mm)	(mm)	(gr)		(gr)
G08	A118	566	1781	M	2												

Table 7-1. The number of organisms caught by drift gillnet during the Oshoro maru Cruise # 216, Leg 2, in late June to early July, 2010. CPUE and (%) indicate numerical catch per tan and percentage of total catch by C-gear gillnet at the station, respectively.

Station		OSG 1005					OSG 1006					OSG 1007				
Common name	Scientific name	C		A	F	Total	C		A	F	Total	C		A	F	Total
		CPUE (%)					CPUE (%)					CPUE (%)				
Sockeye salmon	<i>Oncorhynchus nerka</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Chum salmon	<i>Oncorhynchus keta</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	8	0.3 (5.9)	1	0	9
Pink salmon	<i>Oncorhynchus gorbuscha</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Coho salmon	<i>Oncorhynchus kisutch</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Steelhead	<i>Oncorhynchus mykiss</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Japanese common squid	<i>Todarodes pacificus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	1	1
Boreal clubhook squid	<i>Onychoteuthis borealijaponica</i>	0	0.0 (0.0)	0	2	2	0	0.0 (0.0)	0	3	3	8	0.3 (5.9)	0	1	9
Eight-armed squid	<i>Gonatopsis borealis</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	1	0.0 (0.7)	0	0	1
Flying squid	<i>Ommastrephes bartramii</i>	52	1.7 (57.1)	0	7	59	8	0.3 (36.4)	0	0	8	0	0.0 (0.0)	0	0	0
Luminous flying squid	<i>Eucoteuthis Luminosa</i>	0	0.0 (0.0)	0	3	3	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Blue shark	<i>Prionace glauca</i>	1	0.0 (1.1)	0	0	1	4	0.1 (18.2)	6	0	10	1	0.0 (0.7)	0	0	1
Cigar shark	<i>Isistius brasiliensis</i>	1	0.0 (1.1)	0	0	1	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Japanese anchovy	<i>Engraulis japonicus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	4371	4371	0	0.0 (0.0)	0	0	0
Lantern fishes	Myctophidae	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Pacific saury	<i>Cololabis saira</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	32	32	21	0.7 (15.4)	0	273	294
Flyingfishes	Exocoetidae	18	0.6 (19.8)	0	2	20	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Yellowtail	<i>Seriola lalandi</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	8	0	8	0	0.0 (0.0)	0	0	0
Pilotfish	<i>Naucrates ductor</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Dolphinfish	<i>Coryphaena hippurus</i>	1	0.0 (1.1)	0	0	1	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Pacific pomfret	<i>Brama japonica</i>	16	0.5 (17.6)	0	2	18	8	0.3 (36.4)	0	0	8	72	2.4 (52.9)	33	5	110
Chub mackerel	<i>Scomber japonicus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	17	17	2	0.1 (1.5)	0	0	2
Bigeye tuna	<i>Thunnus obesus</i>	1	0.0 (1.1)	0	0	1	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Albacore	<i>Thunnus alalunga</i>	1	0.0 (1.1)	0	1	2	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0
Smalleye squaretail	<i>Tetragonurus atlanticus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	23	0.8 (16.9)	0	0	23
Pacific barrelfish	<i>Hyperoglyphe japonica</i>	0	0.0 (0.0)	0	0	0	2	0.1 (9.1)	0	0	2	0	0.0 (0.0)	0	0	0
Grey Fork-tailed Petrel	<i>Puffinus griseus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	1	0	1
Dall's porpoise	<i>Phocoena dalli</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0	0

Table 7-2. The number of organisms caught by drift gillnet during the Oshoro maru Cruise # 216, Leg 2, in late June to early July, 2010. CPUE and (%) indicate numerical catch per tan and percentage of total catch by C-gear gillnet at the station, respectively.

Station		OSG 1008					OSG 1009		
Common name	Scientific name	C		A	F	Total	C		Total
		CPUE (%)					CPUE (%)		
Sockeye salmon	<i>Oncorhynchus nerka</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Chum salmon	<i>Oncorhynchus keta</i>	5	0.2 (9.3)	1	0	6	14	0.5 (6.7)	28
Pink salmon	<i>Oncorhynchus gorbuscha</i>	2	0.1 (3.7)	1	0	3	193	6.4 (91.9)	314
Coho salmon	<i>Oncorhynchus kisutch</i>	1	0.0 (1.9)	1	0	2	3	0.1 (1.4)	9
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Steelhead	<i>Oncorhynchus mykiss</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Japanese common squid	<i>Todarodes pacificus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Boreal clubhook squid	<i>Onychoteuthis borealijaponica</i>	1	0.0 (1.9)	0	0	1	0	0.0 (0.0)	0
Eight-armed squid	<i>Gonatopsis borealis</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Flying squid	<i>Ommastrephes bartramii</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Luminous flying squid	<i>Eucoteuthis Luminosa</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Blue shark	<i>Prionace glauca</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Cigar shark	<i>Isistius brasiliensis</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Japanese anchovy	<i>Engraulis japonicus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Lantern fishes	Myctophidae	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Pacific saury	<i>Cololabis saira</i>	2	0.1 (3.7)	0	728	730	0	0.0 (0.0)	0
Flyingfishes	Exocoetidae	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Yellowtail	<i>Seriola lalandi</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Pilotfish	<i>Naucrates ductor</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Dolphinfish	<i>Coryphaena hippurus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Pacific pomfret	<i>Brama japonica</i>	43	1.4 (79.6)	13	1	57	0	0.0 (0.0)	0
Chub mackerel	<i>Scomber japonicus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Bigeye tuna	<i>Thunnus obesus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Albacore	<i>Thunnus alalunga</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Smalleye squaretail	<i>Tetragonurus atlanticus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Pacific barrelfish	<i>Hyperoglyphe japonica</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Grey Fork-tailed Petrel	<i>Puffinus griseus</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0
Dall's porpoise	<i>Phocoena dalli</i>	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	1

Table 8. Biological characteristics of fishes caught by drift gillnet

NEON FLYING SQUID											
St.	Gear (mm)	M. L. (mm)	B. W. (gr)	St.	Gear (mm)	M. L. (mm)	B. W. (gr)	St.	Gear (mm)	M. L. (mm)	B. W. (gr)
G05	F042	198	201	G05	C063	242	187	G05	C055	200	227
G05	F042	192	192	G05	C063	183	402	G05	C055	226	291
G05	F042	175	145	G05	C063	225	169	G05	C055	193	199
G05	F042	189	175	G05	C063	202	325	G05	C055	199	197
G05	F042	153	87	G05	C063	222	213	G05	C055	200	
G05	F042	175	132	G05	C063	226	323	G05	C055	196	
G05	F042	190	194	G05	C063	193		G05	C055	210	
G05	C048	214	217	G05	C063	240		G05	C055	201	
G05	C048	186	146	G05	C063	205		G05	C055	178	
G05	C048	171	111	G05	C063	230		G05	C055	196	
G05	C048	199	184	G05	C063	210		G05	C055	164	
G05	C048	180	130	G05	C063	230		G05	C055	196	
G05	C048	209	197	G05	C063	184		G05	C055	192	
G05	C048	229	322	G05	C063	163		G06	C055	235	335
G05	C093	280	608	G05	C063	205		G06	C055	200	184
G05	C063	245	367	G05	C072	229	304	G06	C055	226	316
G05	C063	200	212	G05	C072	249	373	G06	C055	241	365
G05	C063	260	441	G05	C072	243	404	G06	C055	237	330
G05	C063	206	189	G05	C072	238		G06	C055	257	431
G05	C063	200	208	G05	C082	238		G06	C082	246	387
G05	C063	202	184	G05	C055	228	313	G06	C072	238	380
G05	C063	180	210	G05	C055	199	182				
BOREAL CLUBHOOK SQUID											
St.	Gear (mm)	M. L. (mm)	B. W. (gr)	St.	Gear (mm)	M. L. (mm)	B. W. (gr)	St.	Gear (mm)	M. L. (mm)	B. W. (gr)
G05	F022	90	22	G07	C048	206	223	G07	C093	343	890
G05	F029	103	35	G07	C048	284	129	G07	C093	361	935
G06	F033	140	69	G07	C048	298	160	G07	F033	135	62
G06	F037	146	73	G07	C048	298	156	G08	C082	294	601
G06	F037	131	61	G07	C063	276	379				
PACIFIC SAURY											
St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)
G06	F025	109	20	G07	C048	305	135	G07	F033	305	129
G06	F029	294	121	G07	C048	296	137	G07	F033	304	115
G06	F029	300	126	G07	C048	309	154	G07	F033	291	134
G06	F029	300	132	G07	C048	305	152	G07	F033	304	135
G06	F029	298	127	G07	C048	313	171	G07	F033	290	107
G06	F029	290	112	G07	C048	307	150	G07	F033	308	130
G06	F029	299	129	G07	C048	292	130	G07	F033	300	121
G06	F029	310	145	G07	C048	300	133	G07	F033	276	92
G06	F029	305	123	G07	C048	199	144	G07	F033	293	126
G06	F029	246	69	G07	F029	296	118	G07	F033	310	150
G06	F029	295	121	G07	F029	289	105	G07	F033	298	119
G06	F029	288	114	G07	F029	314	130	G07	F033	292	120
G06	F029	248	69	G07	F029	291	106	G07	F033	293	115
G06	F029	300	127	G07	F029	290	113	G07	F033	312	135
G06	F029	300	126	G07	F029	291	139	G07	F033	303	135
G06	F029	305	131	G07	F029	290	127	G07	F033	304	119
G06	F029	301	123	G07	F029	303	132	G07	F033	292	126
G06	F029	295	114	G07	F029	291	129	G07	F033	291	99
G06	F029	297	122	G07	F029	323	141	G07	F033	296	123
G06	F029	311	136	G07	F029	305	151	G07	F033	300	121
G06	F029	300	118	G07	F029	300	128	G07	F033	302	117
G06	F029	315	149	G07	F029	303	157	G07	F033	302	117
G06	F029	290	111	G07	F029	309	151	G07	F037	315	137
G06	F029	300	127	G07	F029	300	114	G07	F037	310	138
G06	F029	313	131	G07	F029	297	108	G07	F037	300	125
G06	F037	302	123	G07	F029	300	121	G07	F037	303	130
G06	F037	313	125	G07	F029	291	108	G07	F037	305	127
G06	F037	310	133	G07	F033	300	130	G07	F037	311	145
G07	C048	312	141	G07	F033	303	124	G07	F037	305	138
G07	C048	309	170	G07	F033	288	110	G07	F037	305	140
G07	C048	291	144	G07	F033	298	113	G07	F037	297	122
G07	C048	300	149	G07	F033	302	125	G07	F037	309	133
G07	C048	304	152	G07	F033	307	135	G07	F037	297	117
G07	C048	312	154	G07	F033	394	129	G07	F037	282	113
G07	C048	303	149	G07	F033	304	122	G07	F037	217	149

Table 8. Biological characteristics of fishes caught by drift gillnet (continued)

				PACIFIC SAURY							
St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)
G07	F037	298	137	G07	F042	308	141	G08	F029	291	122
G07	F037	324	157	G07	F042	300	126	G08	F029	282	103
G07	F037	308	136	G07	F042	314	144	G08	F029	292	126
G07	F037	306	139	G07	F042	309	138	G08	F029	287	111
G07	F037	308	145	G07	F042	311	164	G08	F029	290	116
G07	F037	306	127	G07	F042	305	139	G08	F037	286	109
G07	F037	310	127	G07	F042	294	134	G08	F037	302	131
G07	F037	301	131	G07	F042	303	125	G08	F037	291	120
G07	F037	282	113	G07	F042	304	124	G08	F037	298	114
G07	F037	298	139	G07	F042	320	138	G08	F037	292	116
G07	F037	292	114	G08	C048	320	146	G08	F037	298	117
G07	F037	299	117	G08	C048	310	140	G08	F037	294	121
G07	F037	303	126	G08	F029	292	120	G08	F037	308	125
G07	F037	293	145	G08	F029	292	112	G08	F037	302	123
G07	F037	295	126	G08	F029	290	123	G08	F037	293	128
G07	F037	291	134	G08	F029	286	110	G08	F037	311	145
G07	F037	314	135	G08	F029	282	120	G08	F037	283	111
G07	F042	319	131	G08	F029	290	106	G08	F037	293	119
G07	F042	318	140	G08	F029	292	113	G08	F037	296	114
G07	F042	315	152	G08	F029	210	139	G08	F037	297	133
G07	F042	312	135	G08	F029	286	106	G08	F037	298	125
G07	F042	303	134	G08	F029	295	115	G08	F037	300	133
G07	F042	303	124	G08	F029	306	122	G08	F037	306	134
G07	F042	305	127	G08	F029	300	117	G08	F037	301	111
G07	F042	300	134	G08	F029	284	105	G08	F037	308	120
G07	F042	298	139	G08	F029	279	107	G08	F037	298	129
G07	F042	308	135	G08	F029	304	122	G08	F037	312	138
G07	F042	308	137	G08	F029	294	121	G08	F037	286	105
G07	F042	301	128	G08	F029	290	124	G08	F037	294	139
G07	F042	285	113	G08	F029	284	105	G08	F037	290	111
G07	F042	290	125	G08	F029	292	113	G08	F037	310	131
G07	F042	310	138	G08	F029	286	105	G08	F037	310	139
G07	F042	313	136	G08	F029	301	123	G08	F037	310	124
G07	F042	291	132	G08	F029	301	125	G08	F037	288	120
G07	F042	313	139	G08	F029	296	125	G08	F037	283	115
G07	F042	314	136	G08	F029	304	127				
G07	F042	299	138	G08	F029	306	122				
				PACIFIC POMFRET							
St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)
G05	C048	120	29	G07	A112	426	1589	G07	C072	441	1377
G05	C048	141	54	G07	A112	453	1529	G07	C093	450	1735
G05	C048	116	29	G07	A115	456	1683	G07	C093	420	1420
G05	C048	159	37	G07	A115	404	1261	G07	C093	460	1817
G05	C048	119	30	G07	A115	416	1231	G07	C093	404	1230
G05	C048	115	33	G07	A115	420	1375	G07	C093	420	1339
G05	C048	122	35	G07	A115	450	1368	G07	C106	442	1465
G05	C048	142	51	G07	A115	444	1546	G07	C106	428	1378
G05	C055	150	58	G07	A115	464	1759	G07	C121	432	1402
G05	C055	153	65	G07	A115	420	1530	G07	C121	435	1415
G05	C055	158	63	G07	A115	454	1510	G07	C121	412	1313
G05	C055	134	42	G07	A115	411	1205	G07	C121	440	1353
G05	C063	160	73	G07	A115	406	1184	G07	C121	400	1185
G05	C063	151	59	G07	A115	408	1152	G07	C121	436	1430
G05	C063	163	76	G07	A115	446	1658	G07	C121	396	1148
G05	C063	182	113	G07	A118	424	1526	G07	C121	412	1189
G05	F025	142	53	G07	A118	423	1257	G07	C121	394	1150
G05	F037	100	20	G07	A118	416	1320	G07	C121	420	1367
G06	C055	172	88	G07	A118	420	1523	G07	C121	452	1526
G06	C055	161	74	G07	A118	405	1226	G07	C138	450	1545
G06	C072	166	90	G07	A118	424	1335	G07	C138	426	1240
G06	C082	206	168	G07	A118	438	1300	G07	C138	444	1797
G06	C082	293	135	G07	A118	411	1279	G07	C138	413	1352
G06	C082	200	157	G07	A118	443	1578	G07	C138	488	1758
G06	C082	222	225	G07	A121	420	1206	G07	C138	452	1529
G06	C082	183	128	G07	A121	413	1271	G07	C138	416	1259
G07	A112	448	1613	G07	A121	409	1131	G07	C138	450	1726
G07	A112	430	1455	G07	A121	402	1118	G07	C138	442	1536
G07	A112	434	1301	G07	A121	418	1246	G07	C138	423	1352

Table 8. Biological characteristics of fishes caught by drift gillnet (continued)

				PACIFIC POMFRET							
St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)
G07	C138	430	1541	G07	F025	410	1236	G08	C121	450	1572
G07	C157	450	1544	G07	F029	458	1886	G08	C121	406	1153
G07	C157	416	1247	G07	F029	405	1227	G08	C121	454	1538
G07	C157	402	1165	G07	F033	430	1630	G08	C121	426	1200
G07	C157	402	1142	G07	F037	458	1567	G08	C121	406	1193
G07	C157	452	1583	G08	A112	418	1273	G08	C138	430	1417
G07	C157	427	1417	G08	A112	402	1230	G08	C138	404	1254
G07	C157	430	1557	G08	A115	410	1180	G08	C138	418	1389
G07	C157	432	1407	G08	A115	424	1240	G08	C138	412	1267
G07	C157	434	1313	G08	A115	421	1220	G08	C138	424	1356
G07	C157	434	1477	G08	A115	420	1320	G08	C138	435	1585
G07	C157	420	1253	G08	A115	449	1600	G08	C138	439	1645
G07	C157	414	1152	G08	A115	434	1330	G08	C138	426	1313
G07	C157	433	1466	G08	A115	426	1440	G08	C138	420	1145
G07	C157	412	1201	G08	A115	406	1160	G08	C138	414	1300
G07	C157	462	1719	G08	A118	424	1288	G08	C138	460	1557
G07	C157	440	1299	G08	A118	412	1356	G08	C138	422	1444
G07	C157	440	1613	G08	A121	424	1760	G08	C138	444	1514
G07	C157	401	1184	G08	C082	436	1542	G08	C138	400	1339
G07	C157	420	1600	G08	C082	414	1262	G08	C138	400	1193
G07	C157	443	1579	G08	C093	433	1369	G08	C138	462	1646
G07	C157	440	1487	G08	C121	412	1224	G08	C157	454	1733
G07	C157	463	1821	G08	C121	414	1400	G08	C157	435	1444
G07	C157	418	1239	G08	C121	404	1180	G08	C157	454	1585
G07	C157	443	1372	G08	C121	406	1210	G08	C157	410	1361
G07	C157	438	1533	G08	C121	432	1450	G08	C157	451	1690
G07	C157	417	1456	G08	C121	412	1200	G08	C157	432	1456
G07	C157	408	1367	G08	C121	432	1247	G08	C157	434	1463
G07	C157	427	1290	G08	C121	421	1320	G08	C157	422	1338
G07	C157	474	1848	G08	C121	406	1277	G08	C157	432	1393
G07	C157	407	1206	G08	C121	429	1256	G08	F037	426	1540
				ALBACORE							
St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)	St.	Gear (mm)	F. L. (mm)	B. W. (gr)
G05	C048	670	6230	G05	F025	494	2467				

6. Salmon Longline and Hook-and-Line Research

[Longline Sampling]

Six operations using a salmon longline were performed. Ten baskets (hachi) of salmon longline were used in each operation. Basket was composed of 111 m of main line with 49 branch lines and 127m of main line with 34 branch lines. The branch lines, each with hooks hung to about 2m depth. These operations were supervised by the captain, Deck officers, crews, cadets, and research staffs were engaged in the work.

[Hook-and-Line Sampling]

To collect salmon, hook-and-line gears were used in the Central North Pacific and in the Bering Sea during Cruise#216. Five to ten anglers were engaged in the work. These samplings were mainly conducted with observations when ship was under drifting.

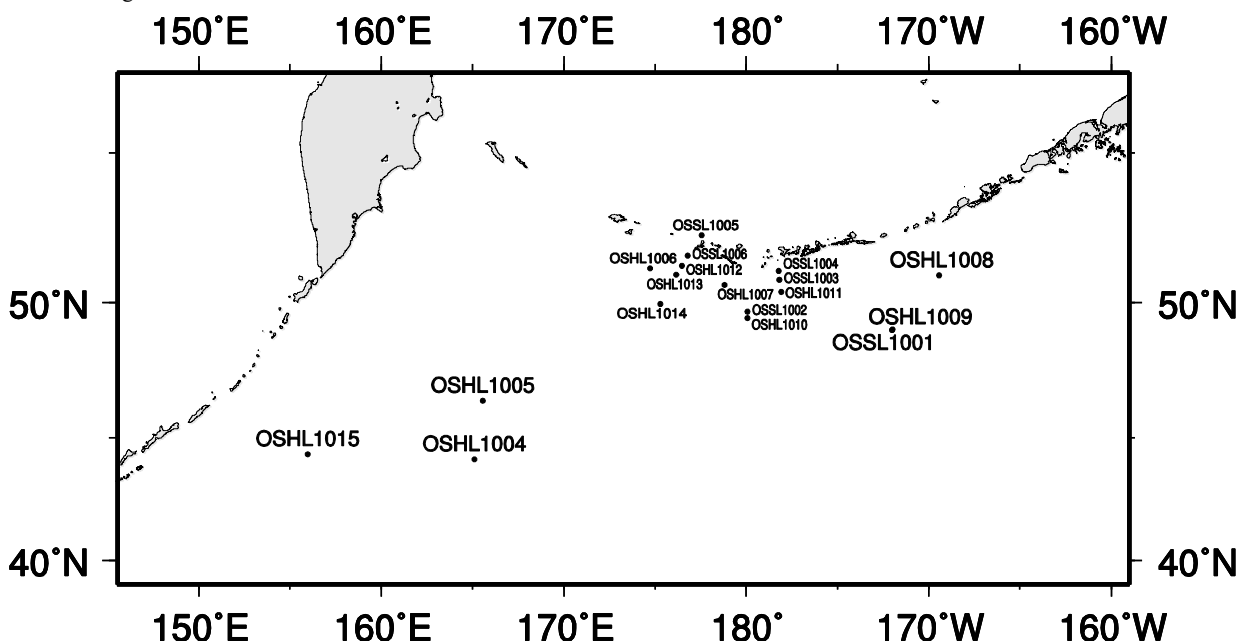


Figure 4. Location of salmon longline and hook-and-line research

Table 9. List of hook-and-line sampling (OSHL 10XX) station and salmon long line sampling (OSSL 10XX) station during the "Oshoro Maru" Cruise #216

Station	Date and Time (S.M.T.)					Set Position		D.S.	No. of hooks	Wr.	Wind (Force)	Oceanographic Station No.
	Line set		Line haul		T.D.	Lat.	Long.					
OSHL 1004	4-Jul	21:30-	5-Jul	03:00-	11	44-12.0N	165-01.0E	-	-	d	WSW-5	OS10129
OSHL 1005	5-Jul	21:30-	6-Jul	03:00-	11	46-28.0N	165-28.0E	-	-	f	ESE-5	OS10131
OSHL 1006	7-Jul	22:30-	7-Jul	01:30-	11/-12	51-15.0N	174-40.0E	-	-	o	NE-5	OS10144
OSHL 1007	8-Jul	00:15-	8-Jul	02:00-	-12	50-40.0N	178-45.0E	-	-	f	NE-5	OS10149
OSHL 1008	16-Jul	22:30-	17-Jul	01:30-	-11	51-00.0N	170-30.0W	-	-	f	Calm	OS10156
OSHL 1009	17-Jul	22:00-	18-Jul	02:30-	-11/-12	49-05.0N	173-56.0W	-	-	f	SSW-3	OS10158
OSSL 1001	18-Jul	21:00-	19-Jul	02:00-	-11	49-04.0N	173.55.0W	40	720	f	SW-5	OS10158
OSHL 1010	20-Jul	04:30-	20-Jul	07:30-	-12	49-30.0N	180.00.0	-	-	o	WSW-4	OS10159
OSSL 1002	20-Jul	08:58-	20-Jul	13:40-	-12	49-43.0N	180.00.0	60	720	o	WSW-5	OS10160
OSHL 1011	20-Jul	22:00-	21-Jul	01:45-	-12	50-25.0N	179.50.0W	-	-	o	WSW-4	OS10162
OSSL 1003	20-Jul	05:03-	20-Jul	09:47-	-12	50-50.0N	179.44.0W	75	720	o	SW-4	OS10163
OSSL 1004	20-Jul	12:45-	20-Jul	16:22	-12	51-09.0N	179.43.0W	65	720	o	SW-3	OS10164
OSSL 1005	22-Jul	06:52-	22-Jul	09:52-	11	52-22.0N	177.28.0E	100	480	f	SW-2	OS10165
OSSL 1006	22-Jul	15:24-	22-Jul	18:25-	11	51-41.0N	176.42.0E	90	480	o	West-4	OS10167
OSHL 1012	22-Jul	21:30-	23-Jul	00:20-	11	51-20.0N	176.24.0E	-	-	o	WSW-3	OS10168
OSHL 1013	23-Jul	02:45-	23-Jul	05:00-	11	51-01.0N	176.06.0E	-	-	d	West-3	OS10169
OSHL 1014	23-Jul	18:00-	23-Jul	20:40-	11	50-00.0N	175.12.0E	-	-	o	SW-3	OS10172
OSHL 1015	26-Jul	22:00-	27-Jul	02:00-	10	44-24.0N	155.53.0E	-	-	f	SE-2	OS10173

Table 10. The catch number of each salmonid at each station where salmonids were collected by hook-and-line gear, surface longline in the Oshoro maru Cruise #216-Leg 2-3, 2010.

Station Name	Sampling gear	Species name						Total
		Sockeye	Chum	Pink	Coho	Chinook	Stellhead	
Cruise #216- Leg 2								
OSHL 1004	Hook-and-line	0	2	1	1	0	1	5
OSHL 1005	Hook-and-line	0	3	60	1	0	0	64
OSHL 1006	Hook-and-line	1	2	0	0	0	0	3
OSHL 1007	Hook-and-line	1	1	0	0	0	0	2
Subtotal		2	8	61	2	0	1	74
Cruise #216- Leg 3								
OSHL 1008	Hook-and-line	1	0	0	1	0	0	2
OSSL 1001	Surface longline	2	0	0	10	0	0	12
OSHL 1009	Hook-and-line	4	0	0	6	0	1	11
OSSL 1002	Surface longline	1	3	1	20	1	6	32
OSHL 1010	Hook-and-line	0	0	0	1	0	0	1
OSHL 1011	Hook-and-line	1	5	1	0	0	2	9
OSSL 1003	Surface longline	8	20	2	9	3	1	43
OSSL 1004	Surface longline	1	15	0	2	0	0	18
OSSL 1005	Surface longline	0	15	0	1	0	0	16
OSSL 1006	Surface longline	11	4	0	1	0	0	16
OSHL 1012	Hook-and-line	3	26	0	5	0	0	34
OSHL 1013	Hook-and-line	0	0	0	2	0	0	2
OSHL 1014	Hook-and-line	0	3	0	1	0	0	4
OSHL 1015	Hook-and-line	0	1	0	0	0	0	1
Subtotal		32	92	4	59	4	10	201

Table 11. Biological characteristics of salmonids caught by hook-and-line research

SOCKEYE SALMON														
St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)
HL06	480	1240	M	1	SL01	484	1222	M	1	SL06	496	1498	M	2
HL07	476	1290	F	11	SL02	606	3112	M	63	SL06	634	3822	M	10
HL08	502	1560	M	5	SL03	350	500	F	2	SL06	530	2052	F	11
HL09	512	1620	M	6	SL03	451	1150	M	1	SL06	476	1448	F	5
HL09	612	3282	M	42	SL03	410	780	M	1	SL06	492	1575	M	2
HL09	542	2380	F	33	SL03	440	880	F	7	SL06	571	2782	F	90
HL09	600	3204	M	21	SL03	606	3150	M	10	SL06	468	1400	F	8
HL11	486	1483	M	5	SL03	464	1300	F	7	SL06	464	1297	F	5
HL12	481	1420	F	60	SL03	433	1100	F	8	SL06	462	1263	M	2
HL12	480	1340	M	2	SL03	500	1920	M	3	SL06	440	1102	F	5
HL12	500	1830	M	2	SL04	506	1706	F	54					
SL01	480	1592	F	7	SL06	468	1247	M	2					
CHUM SALMON														
St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)
HL04	431	963	M	2	HL12	646	3710	M	88	SL04	602	2615	M	7
HL04	437	979	M	2	HL12	660	3640	M	60	SL04	572	1850	F	16
HL05	422	860	M	4	HL12	654	3600	F	240	SL04	638	3084	F	67
HL05	561	2030	F	59	HL12	592	2300	M	15	SL04	610	2792	F	56
HL05	537	1900	F	48	HL12	568	1980	F	53	SL04	568	2161	F	90
HL06	608	2890	M	10	HL14	632	3110	F	108	SL04	428	930	M	2
HL06	542	2060	M	4	HL14	538	1680	F	44	SL04	572	2250	M	4
HL07	652	3370	M	25	HL14	558	2110	F	52	SL04	700	4374	M	27
HL11	664	3880	M	55	HL15	700	4900	M	90	SL04	506	1554	M	1
HL11	700	4564	M	26	SL02	410	885	M	40	SL04	594	2646	M	2
HL11	591	2440	F	58	SL02	396	745	F	6	SL04	596	2623	M	24
HL11	712	5200	F	58	SL02	466	1149	M	9	SL04	340	442	M	2
HL11	524	1666	M	2	SL03	571	2140	F	51	SL04	598	2643	M	4
HL12	616	3000	M	25	SL03	580	2660	F	43	SL05	412	825	F	5
HL12	614	2490	F	85	SL03	404	790	M	2	SL05	436	909	M	1
HL12	568	2010	F	64	SL03	538	2000	M	2	SL05	675	4122	F	165
HL12	642	3250	F	96	SL03	481	1300	F	10	SL05	506	1639	M	2
HL12	600	2550	M	26	SL03	331	405	F	2	SL05	595	2384	M	8
HL12	592	2500	M	52	SL03	416	862	M	2	SL05	600	2905	M	98
HL12	576	2600	M	22	SL03	434	890	M	2	SL05	538	1945	M	1
HL12	582	2200	F	70	SL03	331	450	F	2	SL05	580	2451	M	8
HL12	597	2570	M	43	SL03	568	2320	F	110	SL05	598	2714	M	1
HL12	624	3110	M	14	SL03	508	2100	M	3	SL05	542	1730	F	53
HL12	550	2050	F	64	SL03	304	285	F	1	SL05	696	4360	M	46
HL12	648	3160	F	70	SL03	510	1350	F	15	SL05	698	4512	F	128
HL12	604	2690	M	76	SL03	570	2350	F	105	SL05	648	3540	F	94
HL12	558	2030	F	58	SL03	622	2650	F	70	SL05	322	384	F	1
HL12	570	2220	F	120	SL03	450	950	M	1	SL05	604	2689	F	72
HL12	600	2440	M	20	SL03	516	1600	F	16	SL06	316	388	M	1
HL12	570	2610	F	64	SL03	646	3430	F	260	SL06	522	1860	F	15
HL12	527	1950	F	150	SL03	563	2000	M	7	SL06	434	938	M	1
HL12	610	2730	M	25	SL03	500	1380	F	14	SL06	415	988	M	2
HL12	648	3130	F	120	SL04	630	3280	M	28					
HL12	704	4470	M	45	SL04	582	2381	F	58					
PINK SALMON														
St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)
HL04	469	1179	F	35	HL05	444	1030	F	76	HL05	480	1280	F	85
HL05	466	1310	M	35	HL05	445	1130	F	50	HL05	457	970	F	70
HL05	446	1180	F	87	HL05	470	1220	M	19	HL05	455	1040	F	62
HL05	428	950	F	51	HL05	417	1150	F	76	HL05	431	880	M	29
HL05	453	1200	M	50	HL05	416	1080	F	83	HL05	450	1070	M	37
HL05	466	1300	M	28	HL05	440	1020	F	64	HL05	443	1070	F	54
HL05	427	880	F	37	HL05	445	1120	M	32	HL05	440	1000	F	45
HL05	457	1200	F	83	HL05	455	1150	M	20	HL05	416	830	M	30
HL05	473	1340	F	88	HL05	430	950	M	35	HL05	452	1060	M	19
HL05	459	1230	F	66	HL05	498	1520	M	80	HL05	446	1000	F	57
HL05	452	1030	M	33	HL05	461	1650	F	66	HL05	440	1090	F	50
HL05	474	1230	F	88	HL05	474	1730	F	54	HL05	422	890	M	26
HL05	457	1150	F	60	HL05	440	1050	F	55	HL05	456	1070	F	54
HL05	464	1300	F	69	HL05	448	1120	F	45	HL05	479	1350	F	80
HL05	458	1200	F	75	HL05	441	970	F	48	HL05	465	1030	F	46
HL05	451	1140	F	49	HL05	466	1130	F	62	HL05	460	1040	M	15

Table 11. Biological characteristics of salmonids caught by hook-and-line research (continued)

PINK SALMON														
St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)
HL05	457	1040	F	52	HL05	434	920	M	33	HL05	481	1290	F	73
HL05	451	1020	M	38	HL05	418	850	M	25	HL11	480	1390	M	49
HL05	439	1000	F	74	HL05	467	1160	M	24	SL02	488	1576	F	98
HL05	452	1150	M	70	HL05	443	1050	F	54	SL03	456	1200	F	83
HL05	473	1200	M	54	HL05	461	1250	F	100	SL03	480	1300	F	36
HL05	434	1040	F	68	HL05	449	1070	F	67					
COHO SALMON														
St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)
HL04	486	1226	F	29	SL01	544	1812	M	8	SL02	502	1658	F	36
HL05	532	1840	M	29	SL01	436	937	M	9	SL02	506	1693	M	13
HL08	692	4136	M	108	SL01	600	2800	M	19	SL02	514		M	7
HL08	632	3670	F	114	SL01	576	2546	F	98	SL02	498	1790	F	53
HL09	514	1541	F	32	SL01	558	2242	F	60	SL02	500	1690	M	17
HL09	482	1463	F	27	SL01	520	1881	M	8	SL02	564		F	15
HL09	474	1371	M	24	SL01	513	1700	F	28	SL02	474	1437	M	15
HL09	530	1924	F	64	SL01	631	3590	F	98	SL03	456	1320	M	43
HL09	600	2995	M	40	SL02	550	2250	F	80	SL03	546	1900	F	82
HL09	506	1717	M	22	SL02	516	1905	F	52	SL03	524	1930	F	93
HL10	568	2120	F	77	SL02	416	1016	M	12	SL03	554	2350	F	71
HL12	644	3540	F	240	SL02	514	1845	M	38	SL03	516	1700	M	18
HL12	512	1770	M	2	SL02	436	725	M	3	SL03	472	1580	M	52
HL12	505	1370	F	34	SL02	522	1947	M	20	SL03	578	2450	F	70
HL12	572	2540	F	160	SL02	518	1686	F	66	SL03	376	607	M	20
HL12	615	2790	M	34	SL02	530	1480	F	48	SL03	586	2760	M	91
HL13	670	3700	M	29	SL02	531	2031	M	89	SL04	410	810	M	3
HL13	452	1180	F	48	SL02	588	2494	M	26	SL04	544	2255	M	100
HL14	591	2400	F	92	SL02	530		F	74	SL05	484	1438	M	44
SL01	514	1794	F	34	SL02	510	1760	M	16	SL06	617	2850	M	14
SL01	628	3060	F	35	SL02	490	1449	F	45					
CHINOOK SALMON														
St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)
SL02	612	3164	F	23	SL03	558	2350	F	12	SL03	656	4500	F	27
SL03	618	3000	M	3										
STEELHEAD SALMON														
St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)	St.	F. L. (mm)	B. W. (gr)	Sex	G. W. (gr)
HL04	566	1428	M	3	SL02	756	4330	M	45	SL02	647	2766	F	31
HL09	734	3948	F	79	SL02	492	1166	M	5	SL02	594	1926	M	2
HL11	724	3804	M	10	SL02	802	4860	F	9	SL03	732	4200	M	10
HL11	710	3272	M	7	SL02	688	3156	F	10					

7. Data on mid-water trawl research

Five operations of the stern otter trawl were carried out. These operation were supervised by the captain, Deck officer, crew, research staff, and cadets were engaged in the work.

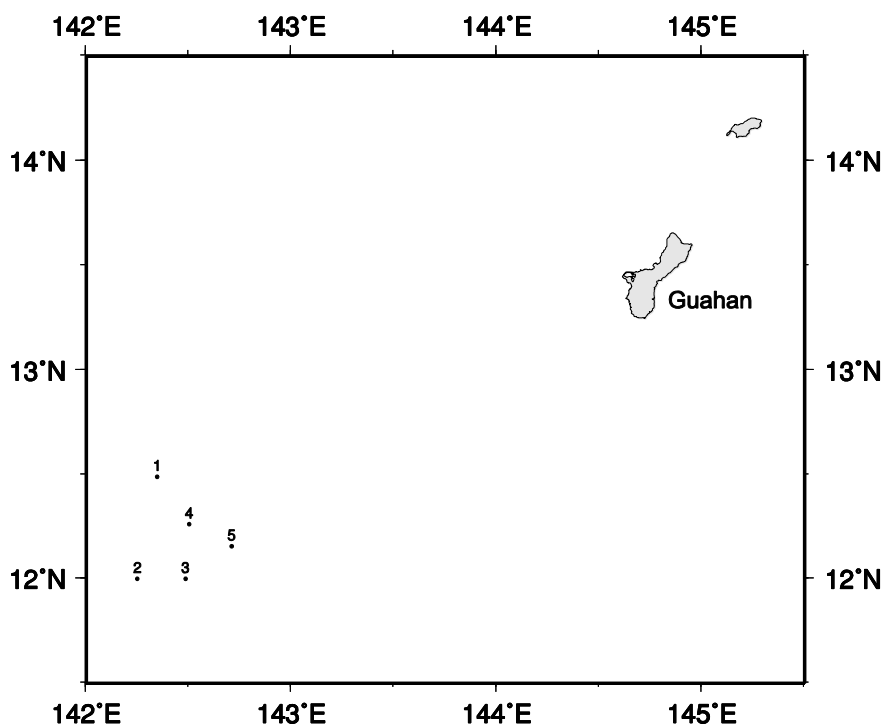


Figure 5. Locations of mid-water trawl research

Table 12. Data on mid-water trawl research during the “Oshoro Maru” Cruise #216

No. of research	Date and time of net tow (S.M.T.)		Position		Direction	Speed of	Bottom depth(m)	Wr	Wind
			Lat.(N)	Long.(E)	of tow	tow(K' t)			
OSMT1001	13, 14-Jun	2133-0648	12-29.4	142-20.8	270~300	4.2	2634	bc	East-4
OSMT1002	14-Jun	1300-1650	12-00.1	142-14.9	090	3.5	3282	bc	ESE-4
OSMT1003	14, 15-Jun	2103-0648	12-00.1	142-29.1	270~300	4.0	3200	bc	ENE-4
OSMT1004	15-Jun	1257-1637	12-15.8	142-30.1	260~230	3.4	3965	bc	ESE-3
OSMT1005	15, 16-Jun	2101-0649	12-09.4	142-42.5	270~253	3.0	3210	bc	East-3

S.T. : Surface temperature

Wr.: Weather (bc: 25-75% clouded)

Table 13. Data on catches by bottom trawl research

Japanese name	Scientific Name	OSMT 1001		OSMT 1002		OSMT 1003		OSMT 1004		OSMT 1005	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Darumazame	<i>Isistius brasiliensis</i>	1	0.04	1	0.05	-	-	-	-	-	-
Unagi-ruir	<i>Anguilliformes</i> spp.	14	0.037	5	0.025	5	0.08	5	0.006	6	0.071
Shigiunagi	<i>Nemichthys scolopaceus</i>	3	0.01	2	0.002	2	0.001	3	0.011	7	0.075
Nokobaunagi	<i>Serrivomer sector</i>	-	-	62	2.83	-	-	-	-	4	0.01
Akayagara	<i>Fistularia petimba</i>	1	0.007	-	-	-	-	-	-	-	-
Hurisodeuo-ruir	<i>Trachipteridae</i> sp.	-	-	-	-	2	0.036	-	-	-	-
Shimagatsuo	<i>Brama japonica</i>	1	0.6	-	-	-	-	1	0.018	-	-
Mukashikurotachi	<i>Scombrobrachx heterolepis</i>	2	0.088	-	-	6	0.210	-	-	1	0.044
Kurotachikamasu-ruir	<i>Gempylidae</i> sp.	-	-	-	-	2	0.09	1	0.01	8	0.06
Iboda-ruir	<i>Psenopsis</i> sp.	1	0.08	-	-	-	-	-	-	-	-
Other fishes	<i>Actinopterygii</i> spp.	2588	7.3	85	0.38	2394	8.50	74	0.44	2616	7.30
Ebi-ruir	<i>Decapoda</i> spp.	810	1	34	0.04	2842	3.33	35	0.02	1102	1.22
Akaika-ruir	<i>Ommastrephidae</i> sp.	-	-	-	-	7	0.06	-	-	11	0.10
Tobiika	<i>Sthenoteuthis oualaniensis</i>	-	-	-	-	1	0.25	-	-	2	0.80
Hotaruikamodoki-ruir	<i>Enoploteuthidae</i> spp.	120	0.265	-	-	-	-	-	-	32	0.13
Tsumeika-ruir	<i>Onychoteuthidae</i> sp.	16	0.065	-	-	-	-	-	-	-	-
Muchiika-ruir	<i>Mastigoteuthidae</i> sp.	-	-	-	-	-	-	-	-	4	0.85
Hiregireka	<i>Ctenopteryx siculus</i>	-	-	-	-	-	-	-	-	2	0.02
Gomaifuika-ruir	<i>Histioteuthidae</i> sp.	-	-	-	-	-	-	-	-	11	0.27
Yatsudeika-ruir	<i>Octopoteuthidae</i> sp.	4	0.432	-	-	-	-	-	-	-	-
Samehadahozukiika-ruir	<i>Cranchiidae</i> sp.	1	0.002	-	-	2	0.18	-	-	2	0.31
Dangoiak-ruir	<i>Sepiolidae</i> sp.	-	-	-	-	-	-	-	-	2	0.01
Hirobireika-ruir	<i>Taningia</i> sp.	-	-	-	-	3	0.31	-	-	-	-
Komoridako	<i>Vampyroteuthis infernalis</i>	-	-	-	-	1	0.01	-	-	-	-
Tosoku-ruir	<i>Cephalopoda</i> spp.	16	1	5	0.03	228	0.61	3	0.00	-	-

8. Data on plankton collected by vertical hauls with a single or twin NORPAC net.

Vertical hauls with a single or twin-NORPAC net were made at hydrographic stations. This net was composed of 45 cm mouth diameter and 180 cm long conical one which was made of GG54 and XX13 having 0.33 mm and 0.10 mm mesh, respectively. The net was lowered to the estimated depth of 150 m, 500 m or near the bottom when the bottom depth was shallower than 150 m, and immediately hauled to the surface at a speed about 1 m s⁻¹. A flowmeter was mounted at the center of mouth of the net to estimate the volume water filtered. Sampling was conducted by research staffs and measurement of wet weight of the samples were made by A. Yamaguchi, K. Ishii, K. Matsuno, R. Saito, K. Ohgi, Y. Onishi, T. Homma, R. Ohashi, C. Tsukazaki, A. Kuroda, Y. Abe, M. Kawaguchi, T. Shiota, S. Mizuhara, K. Moribe and J. Fukuda (Laboratory of Marine Biology).

Table 14. Data on plankton collected by vertical hauls with a single or twin NORPAC net.

GG54: 0.33 mm mesh, XX13: 0.10 mm mesh.

Station no.	Position			S.M.T.		Length of wire (m)	Angle of wire (°)	Depth estimated by wire angle (m)	Kind of cloth	Flowmeter		Estimated volume of water filtered (m ³)	Wet weight (g)		Sample no.
	Lat. (N)	Lon.		Date	Hour					No.	Reading		per haul	per 1000 m ³	
OS10068	40-50	142-10	E	3 June	1:06	152	9	150	GG54	2562	1565	21.48	25.8	1201	10201
									XX13	3006	1421	19.98			10202
OS10069	40-01	142-58	E	3 June	9:59	151	6	150	GG54	2562	1511	20.73	8.2	395	10203
									XX13	3006	1462	20.56			10204
OS10070	39-24	143-02	E	3 June	15:20	153	12	150	GG54	2562	1588	21.79	3.8	174	10205
									XX13	3006	1585	22.29			10206
OS10071	38-42	143-00	E	3 June	21:59	164	24	150	GG54	2562	2105	28.89	11.3	390 1)	10207
									XX13	3006	1532	21.54			10208
OS10072	38-05	143-00	E	4 June	5:18	156	16	150	GG54	2562	1868	25.63	4.2	163	10209
									XX13	3006	1605	22.57			10210
OS10073	37-40	143-00	E	4 June	10:38	158	18	150	GG54	2562	1699	23.31	8.8	376 1)	10211
									XX13	3006	1499	21.08			10212
OS10074	37-14	143-00	E	4 June	15:10	155	15	150	GG54	2562	1550	21.27	6.8	319	10213
									XX13	3006	1475	20.74			10214
					20:40	156	16	150	GG54	2562	1706	23.41	6.0	257	10215
									XX13	3006	1299	18.27			10216
OS10075	36-18	143-00	E	5 June	5:17	151	5	150	GG54	2562	1695	23.26	16.8	724 1)	10217
									XX13	3006	1216	17.10			10218
OS10077	35-45	143-01	E	5 June	10:35	150	0	150	GG54	2562	1425	19.55	1.5	77	10219
									XX13	3006	1358	19.10			10220
OS10083	34-14	142-53	E	5 June	22:46	155	15	150	GG54	2562	1868	25.63	7.3	284 2)	10221
									XX13	3006	1777	24.99			10222
OS10086	33-15	142-43	E	6 June	10:26	152	11	149	GG54	2562	1540	21.13	2.0	96	10223
									XX13	3006	1500	21.09			10224
OS10087	31-36	142-33	E	6 June	21:55	152	11	149	GG54	2562	1570	21.54	0.8	39	10225
									XX13	3006	1400	19.69			10226
OS10088	29-41	142-23	E	7 June	10:47	151	5	150	GG54	2562	1560	21.41	2.3	106	10227
									XX13	3006	1595	22.43			10228
OS10089	28-07	142-09	E	7 June	22:03	151	5	150	GG54	2562	1558	21.38	2.3	106	10229
									XX13	3006	1668	23.46			10230
OS10092	27-58	142-23	E	8 June	10:01	152	9	150	GG54	2562	1767	24.25	2.1	85	10231
									XX13	3006	1526	21.46			10232
OS10093	27-21	141-44	E	8 June	21:20	152	9	150	GG54	2562	1643	22.55	1.3	60	10233
									XX13	3006	1598	22.47			10234
OS10094	25-19	141-33	E	10 June	10:41	159	19	150	GG54	2562	2006	27.53	1.3	47	10235
									XX13	3006	1864	26.21			10236
OS10095	23-30	141-30	E	10 June	23:52	151	5	150	GG54	2562	1440	19.76	0.9	48	10237
									XX13	3006	1428	20.08			10238
OS10097	22-30	141-47	E	11 June	10:20	151	6	150	GG54	2562	1595	21.89	0.9	40	10239
									XX13	3006	1476	20.76			10240
OS10098	20-44	142-15	E	11 June	21:51	152	10	150	GG54	2562	1528	20.97	1.4	65	10241
									XX13	3006	1516	21.32			10242
OS10099	18-49	142-45	E	12 June	10:32	155	14	150	GG54	2562	1758	24.12	1.0	43	10243
									XX13	3006	1725	24.26			10244
OS10100	17-07	142-54	E	12 June	20:35	151	8	150	GG54	2562	1500	20.58	1.2	59	10245
									XX13	3006	1453	20.43			10246
OS10108	12-30	142-23	E	13 June	21:02	162	21	151	GG54	2562	2110	28.95	0.7	24	10247
									XX13	3006	2063	29.01			10248
OS10110	12-00	142-10	E	14 June	11:34	150	1	150	GG54	2562	1467	20.13	0.8	42	10249
									XX13	3006	1425	20.04			10250
OS10111	11-57	142-26	E	14 June	18:55	160	19	151	GG54	2562	1804	24.76	0.7	29	10251
									XX13	3006	1859	26.14			10252
OS10113	12-12	142-11	E	15 June	9:14	167	26	150	GG54	2562	2158	29.61	1.0	34	10253
									XX13	3006	1978	27.81			10254
OS10115	12-10	142-43	E	15 June	20:17	153	11	150	GG54	2562	1500	20.58	1.4	70	10255
									XX13	3006	1552	21.82			10256
OS10116	12-18	141-56	E	16 June	10:24	152	9	150	GG54	2562	1553	21.31	1.3	63	10257
									XX13	3006	1552	21.82			10258
OS10118	13-15	141-08	E	16 June	20:39	155	14	150	GG54	2562	1892	25.96	1.1	43	10259
									XX13	3006	1600	22.50			10260
				17 June	9:45	167	26	150	GG54	2562	2001	27.46	0.7	27	10261
									XX13	3006	2020	28.41			10262
					21:40	159	19	150	GG54	2562	2039	27.98	0.9	33	10263
									XX13	3006	1995	28.05			10264
OS10119	30-00	165-00	E	28 June	23:54	158	19	149	GG54	2562	1689	25.18	1.6	65	10265
									XX13	3006	1570	22.10			10266
OS10120	31-45	165-00	E	29 June	8:57	162	22	150	GG54	2562	2087	31.12	1.5	49	10267
									XX13	3006	1960	27.59			10268
OS10121	33-41	165-00	E	29 June	21:20	153	12	150	GG54	2562	1698	25.32	2.7	108	10269
									XX13	3006	1676	23.59			10270
OS10122	35-58	165-00	E	30 June	8:58	151	6	150	GG54	2562	1503	22.41	2.4	106	10271
									XX13	3006	1195	16.82			10272
OS10123	37-40	165-03	E	30 June	19:50	152	10	150	GG54	2562	1481	22.08	3.2	145	10273
									XX13	3006	1485	20.91			10274
OS10124	38-14	165-00	E	1 July	9:01	153	11	150	GG54	2562	1642	24.48	2.8	115	10275
									XX13	3006	1463	20.60			10276
OS10125	39-57	164-56	E	1 July	19:56	150	1	150	GG54	2562	1410	21.02	362.2	17232 5)	10277
									XX13	3006	1284	18.08			10278
OS10126	40-45	165-00	E	2 July	8:59	158	18	150	GG54	2562	1843	27.48	61.1	2222 5)	10279
									XX13	3006	1705	24.00			10280

1) Exclusively phytoplankton

2) Including some fragments of medusae.

3) *Neocalanus* abundant.

4) Gelatinous zooplankton abundant.

5) *Salpida* abundant.

6) Chaetognaths abundant.

Table 14. Data on plankton collected by vertical hauls with a single or twin NORPAC net. (continued)

GG54: 0.33 mm mesh, XX13: 0.10 mm mesh.														
Station no.	Position		S.M.T. Date	Hour	Length of wire (m)	Angle of wire (°)	Depth of estimated by wire (m)	Kind of cloth	Flowmeter		Estimated volume of water filtered (m ³)	Wet weight (g)		Sample no.
	Lat. (N)	Lon.							No.	Reading		per haul	per 1000 m ³	
OS10127	41-58	165-03	E	2 July	21:11	151	6	150	GG54	2562	1462	21.80	7.5	346 3) 10281
									XX13	3006	1310	18.44		10282
OS10128	42-29	165-00	E	3 July	9:01	153	11	150	GG54	2562	1513	22.56	12.6	560 3) 10283
									XX13	3006	1415	19.92		10284
OS10129	44-11	165-01	E	3 July	20:14	158	18	150	GG54	2562	1638	24.42	11.6	475 3) 10285
									XX13	3006	1662	23.40		10286
OS10130	44-49	165-00	E	4 July	9:00	150	2	150	GG54	2562	1381	20.59	19.9	969 3) 10287
									XX13	3006	1322	18.61		10288
OS10131	46-29	165-28	E	4 July	20:15	158	18	150	GG54	2562	1828	27.25	8.0	292 3) 10289
									XX13	3006	1793	25.24		10290
OS10132	47-00	165-00	E	5 July	8:49	151	5	150	GG54	2562	1548	23.08	8.7	377 3) 10291
									XX13	3006	1535	21.61		10292
OS10140	51-15	172-30	E	7 July	7:52	163	23	150	GG54	2562	1695	25.27	3.4	136 3) 10293
									XX13	3006	1585	22.31		10294
OS10141	51-15	173-00	E	7 July	11:25	159	19	150	GG54	2562	1677	25.00	18.7	747 3) 10295
									XX13	3006	1640	23.09		10296
OS10142	51-15	173-29	E	7 July	15:30	157	17	150	GG54	2562	1640	24.45	5.5	226 10297
									XX13	3006	1542	21.71		10298
OS10143	51-15	174-00	E	7 July	20:34	151	7	150	GG54	2562	1430	21.32	7.3	343 10299
									XX13	3006	1255	17.67		10300
OS10144	51-14	174-38	E	7 July	0:14	155	14	150	GG54	2562	1590	23.71	4.8	204 10301
									XX13	3006	1403	19.75		10302
OS10145	50-39	176-25	E	7 July	9:50	164	24	150	GG54	2562	1999	29.80	3.7	126 10303
									XX13	3006	1976	27.82		10304
OS10147	50-40	177-45	E	7 July	18:13	151	5	150	GG54	2562	1495	22.29	4.5	203 10305
									XX13	3006	1394	19.62		10306
OS10148	50-40	178-14	E	7 July	21:34	151	8	150	GG54	2562	1658	24.72	13.9	564 10307
									XX13	3006	1410	19.85		10308
OS10149	50-40	178-44	E	8 July	2:26	155	14	150	GG54	2562	1828	27.25	6.6	242 10309
									XX13	3006	1541	21.69		10310
OS10151	53-28	176-49	W	10 July	14:46	153	12	150	GG54	2562	1623	24.20	2.7	112 10311
									XX13	3006	1550	21.82		10312
OS10153	52-00	170-33	W	16 July	10:44	150	3	150	GG54	2562	1460	22.44	5.6	248 10313
									XX13	3006	1392	20.00		10314
OS10154	51-40	170-32	W	16 July	15:34	151	9	149	GG54	2562	1500	23.05	4.2	181 10315
									XX13	3006	1437	20.65		10316
OS10155	51-19	170-33	W	16 July	20:34	151	5	150	GG54	2562	1432	22.01	9.3	424 10317
									XX13	3006	1432	20.58		10318
OS10156	51-00	170-32	W	17 July	1:00	151	7	150	GG54	2562	1338	20.56	3.6	177 10319
									XX13	3006	1200	17.24		10320
OS10157	50-40	170-33	W	17 July	6:08	150	4	150	GG54	2562	1418	21.79	8.2	376 10321
									XX13	3006	1219	17.52		10322
OS10158	49-05	173-56	W	17 July	23:30	153	12	150	GG54	2562	1448	22.25	9.6	430 10323
(St. S.A)									XX13	3006	1422	20.43		10324
OS10159	49-31	179-59	W	19 July	7:40	153	12	150	GG54	2562	1458	22.41	3.8	169 10325
									XX13	3006	1240	17.82		10326
OS10160	49-46	179-59	W	19 July	12:51	151	6	150	GG54	2562	1460	22.44	4.1	181 10327
									XX13	3006	1420	20.40		10328
OS10161	50-07	179-56	W	19 July	20:01	155	15	150	GG54	2562	1664	25.57	6.7	264 10329
									XX13	3006	1558	22.39		10330
OS10162	50-26	179-50	W	20 July	1:32	151	7	150	GG54	2562	1435	22.06	5.7	260 10331
									XX13	3006	1405	20.19		10332
OS10163	50-50	179-46	W	20 July	4:30	160	20	150	GG54	2562	2015	30.97	5.6	182 10333
									XX13	3006	1865	26.80		10334
OS10164	51-11	179-42	W	20 July	15:43	155	14	150	GG54	2562	1642	25.24	5.2	208 10335
									XX13	3006	1558	22.39		10336
OS10165	52-24	177-23	E	22 July	9:10	152	10	150	GG54	2562	1505	23.13	1.8	76 10337
									XX13	3006	1353	19.44		10338
OS10167	51-40	176-42	E	22 July	17:52	152	9	150	GG54	2562	1555	23.90	5.6	234 10339
									XX13	3006	1148	16.50		10340
OS10168	51-20	176-25	E	23 July	0:02	155	14	150	GG54	2562	1515	23.28	5.9	254 10341
									XX13	3006	1475	21.20		10342
OS10169	51-01	176-06	E	23 July	5:07	153	12	150	GG54	2562	1865	28.66	2.9	103 10343
									XX13	3006	1699	24.41		10344
OS10170	50-40	175-49	E	23 July	10:25	153	12	150	GG54	2562	1480	22.75	3.4	150 10345
									XX13	3006	1432	20.58		10346
OS10171	50-21	175-32	E	23 July	14:50	163	23	150	GG54	2562	1672	25.70	9.7	376 10347
									XX13	3006	1660	23.85		10348
OS10172	50-01	175-13	E	23 July	20:25	156	15	151	GG54	2562	1534	23.58	11.2	477 10349
									XX13	3006	1420	20.40		10350
Extra 1	48-02	168-18	E	24 July	21:08	156	16	150	GG54	2562	1628	25.02	4.1	163 10351
									XX13	3006	1605	23.06		10352
Extra 2	46-14	162-15	E	25 July	21:09	161	21	150	GG54	2562	1825	28.05	10.3	368 10353
									XX13	3006	1830	26.30		10354
OS10173	44-24	155-53	E	26 July	22:11	152	10	150	GG54	2562	1599	23.19	8.9	382 10355
									XX13	3006	1518	21.81		10356
OS10174	44-01	155-02	E	27 July	8:04	153	13	149	GG54	2562	1647	25.31	6.5	256 10357
(St. KNOT)									XX13	3006	1502	21.58		10358
Extra 3	43-07	152-59	E	27 July	21:08	160	20	150	GG54	2562	1940	29.82	21.5	723 3) 10359
									XX13	3006	1938	27.85		10360
OS10175	41-30	145-46	E	29 July	2:33	151	7	150	GG54	2562	1453	22.33	7.9	354 10361
(Site H)									XX13	3006	1452	20.86		10362
					2:54	518	15	500	GG54	2562	4918	75.59	21.0	278 10363
									XX13	3006	4520	64.95		10364

1) Exclusively phytoplankton

2) Including some fragments of medusae.

3) *Noctulanus* abundant.

4) Gelatinous zooplankton abundant.

5) *Salpida* abundant.

6) Chaetognaths abundant.

9. Data on Calibration of Flowmeters

Flowmeters used for plankton nets were calibrated once in the cruise.

Table 15. Calibration data on flowmeters used for a twin NORPAC net and other kind of nets.

100-m wire out at 13°16'N, 141°11'E in 17 June 2010.

Flowmeter No.	Wire length (m)	Revolution							Mean
		1	2	3	4	5	6	7	
RG116	100	1205	1263*	1192	1265*	1181	1187	1172*	1191
RG2562	100	1310*	1235*	1276	1252	1257	1261	1249	1259
RG3006	100	1270*	1214*	1235	1223	1234	1238	1225	1231
RG3024	100	1242	1279*	1191	1205	1215	1228	1154*	1216

*: omitted from calculation

Table 15. Calibration data on flowmeters used for a twin NORPAC net and other kind of nets.

100-m wire out at 53°27'N, 176°48'W in 10 July 2010.

Flowmeter No.	Wire length (m)	Revolution							Mean
		1	2	3	4	5	6		
RG116	100	1138	1138	1151*	1122	1099	1090*		1124
RG1855	100	1072	1125	1150*	1091	1069	1052*		1089
RG1859	100	1135	1153	1167*	1138	1225	1111*		1163
RG2562	100	1073	1075	1111*	1069	1048*	1050		1067
RG3006	100	1130	1140	1167*	1134	1115	1100*		1130

*: omitted from calculation

Table 15. Calibration data on flowmeters used for a twin NORPAC net and other kind of nets.

100-m wire out at 41°30'N, 145°46'E in 29 July 2010.

Flowmeter No.	Wire length (m)	Revolution							Mean
		1	2	3	4	5	6	7	
RG1859	100	1072	1062	1082	1059	1060	1100*	1043*	1067
RG2562	100	1178*	1038	1010*	1017	1042	1062	1015	1035
RG3006	100	1115	1100	1090	1160*	1109	1120	1070*	1107

*: omitted from calculation

10. Data on nutrients

Seawater samples were collected with Niskin bottles on the CTD system. The samples for nutrient analysis were stored in polythylene bottles and kept in a freezer at -20. Nutrients were analyzed in the laboratory with Technicon Auto-analyzer.

Table 16. Data on nutrients

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	0.1	2.7	0.01	0.09
20	0.5	3.5	0.06	0.14
50	2.9	4.6	0.32	0.28
100	9.3	12.6	0.03	0.66
150	12.4	17.6	0.02	0.88
200	13.4	20.1	0.02	0.97
300	21.4	36.1	0.01	1.53
400	27.7	53.1	0.01	1.98
500	33.6	73.4	0.01	2.42
600	37.8	89.8	0.01	2.73
800	41.9	113.9	0.00	2.99
1000	43.1	129.7	0.00	3.02
1250	44.0	141.5	0.00	3.10
1500	43.9	153.9	0.00	3.00
1750	43.2	159.4	0.00	3.03
2000	42.4	156.1	0.00	2.91
2500	40.4	155.1	0.00	2.72
3000	38.9	158.8	0.00	2.73

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	1.1	6.0	0.05	0.20
20	1.3	6.1	0.05	0.22
50	3.6	7.7	0.13	0.37
100	9.9	13.6	0.09	0.74
150	12.2	16.8	0.02	0.90
200	11.3	15.7	0.02	0.86
300	13.8	20.0	0.02	1.04
400	20.0	32.4	0.02	1.50
500	28.9	55.3	0.01	2.11
600	35.2	77.2	0.01	2.59
800	40.8	96.6	0.01	2.93
1000	42.9	124.5	0.01	3.06
1250	43.8	143.6	0.00	3.14
1500	41.2	147.8	0.00	3.03
1750	43.5	154.4	0.01	3.10
2000	42.6	163.9	0.00	3.06
2500	40.8	163.1	0.00	2.91
3000	39.1	153.4	0.01	2.77

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	12.7	24.2	0.18	1.15
20	13.5	155.2	0.00	2.74
50	15.4	159.6	0.00	2.78
100	19.7	164.2	0.00	3.00
150	21.2	158.5	0.00	3.05
200	27.8	159.9	0.00	3.15
300	37.8	155.7	0.00	3.13
400	40.4	145.3	0.00	3.13
500	42.3	132.0	0.00	3.15
600	43.1	118.7	0.00	3.10
800	43.9	106.5	0.00	3.04
1000	43.8	96.0	0.00	2.92
1250	43.9	81.4	0.00	2.74
1500	44.2	50.3	0.00	2.01
1750	43.1	34.0	0.01	1.61
2000	42.2	31.2	0.03	1.55
2500	40.5	26.2	0.24	1.34
3000	39.0	25.2	0.18	1.24

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	12.8	35.3	0.21	1.61
20	12.9	165.8	0.00	2.82
50	14.9	167.6	0.00	2.92
100	17.0	171.2	0.00	3.06
150	17.2	168.5	0.00	3.09
200	17.8	166.3	0.00	3.17
300	31.2	158.2	0.00	3.19
400	37.2	143.2	0.00	3.18
500	40.3	124.7	0.00	3.13
600	41.7	113.6	0.00	3.04
800	43.0	101.5	0.00	2.94
1000	43.6	84.3	0.00	2.73
1250	44.0	64.0	0.00	2.33
1500	43.8	28.5	0.01	1.40
1750	42.3	26.7	0.00	1.38
2000	42.5	25.5	0.01	1.39
2500	40.7	24.8	0.36	1.33
3000	38.5	23.5	0.19	1.23

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	18.0	28.4	0.22	1.53
20				
50	19.2	168.2	0.00	2.82
100	22.1	171.5	0.00	2.94
150	27.3	176.8	0.01	3.09
200	32.5	177.6	0.01	3.14
300	42.1	175.5	0.01	3.21
400	43.4	161.1	0.00	3.24
500	43.0	158.4	0.01	3.27
600	43.9	145.7	0.01	3.25
800	44.0	131.6	0.00	3.23
1000	44.5	120.6	0.01	3.17
1250	44.2	111.0	0.01	3.19
1500	43.9	99.3	0.01	3.11
1750	42.7	74.2	0.00	2.54
2000	42.2	52.6	0.01	2.14
2500	40.2	38.3	0.08	1.82
3000	38.9	35.7	0.26	1.70

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	15.5	171.0	0.01	3.01
20	17.2	159.8	0.00	3.18
50	25.8	136.2	0.00	3.19
100	29.2	122.5	0.00	3.17
200	33.4	102.6	0.01	3.10
300	38.3	77.6	0.00	2.71
500	44.1	66.3	0.01	2.44
750	44.9	53.0	0.02	2.19
1000	45.1	42.4	0.41	2.00
1500	45.2	26.9	0.23	1.48
2000	41.9	23.2	0.19	1.41

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	15.6	50.3	0.01	
20	16.0	40.0	0.56	1.94
50	24.3	23.3	0.21	1.42
100	28.4	171.5	0.00	3.08
200	34.5	154.7	0.00	3.18
300	36.0	129.7	0.00	3.17
400	42.0	116.2	0.00	3.17
500	43.6	98.5	0.00	3.06
750	45.0	90.9	0.01	2.96
1000	44.6	79.5	0.01	2.65
1500	45.1	69.5	0.01	2.51
2000	43.9	22.4	0.21	1.40

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	15.5	177.3	0.01	3.02
20	16.0	167.6	0.01	3.15
50	25.2	143.4	0.01	3.19
100	28.9	127.7	0.01	3.17
200	34.6	105.5	0.01	3.13
300	38.1	94.6	0.02	3.00
400	42.6	83.6	0.01	2.76
500	44.5	70.5	0.02	2.50
750	44.9	52.0	0.03	2.15
1000	45.2	43.6	0.65	1.96
1500	44.8	25.5	0.21	1.44
2000	43.4	24.2	0.20	1.42

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	13.1	178.0	0.00	2.98
20	14.7	174.3	0.01	3.12
50	20.1	151.4	0.00	3.19
100	29.4	139.1	0.00	3.19
200	35.4	112.7	0.00	3.18
300	41.2	102.6	0.01	3.13
400	44.5	87.7	0.03	2.91
500	45.2	74.0	0.02	2.55
750	45.1	59.1	0.26	2.22
1000	45.1	37.1	0.33	1.74
1500	44.2	28.7	0.20	1.38
2000	42.5	25.6	0.16	1.27

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	10.6	176.3	0.01	2.94
20	12.2	173.4	0.00	3.10
50	21.0	158.1	0.00	3.20
100	32.3	144.7	0.00	3.20
200	40.7	119.3	0.01	3.17
300	43.6	106.1	0.01	3.14
400	44.4	100.2	0.01	3.07
500	44.7	87.2	0.03	2.89
750	45.1	56.9	0.04	2.36
1000	45.2	33.0	0.52	1.76
1500	44.1	25.0	0.15	1.25
2000	42.1	22.9	0.13	1.15

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	15.6	28.2	0.23	1.67
20	18.3	178.7	0.00	3.12
50	25.5	174.3	0.00	3.24
100	29.0	155.0	0.00	3.34
200	34.6	142.0	0.01	3.31
300	41.8	122.2	0.01	3.23
400	44.6	111.0	0.01	3.29
500	43.6	91.1	0.02	3.10
750	44.8	72.7	0.04	2.65
1000	45.1	57.8	0.24	2.33
1500	44.1	48.5	0.28	2.13
2000	42.5	34.1	0.27	1.69

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	17.5	70.1	0.04	2.38
20	22.8	170.6	0.00	3.14
50	26.6	166.9	0.00	3.20
100	32.8	153.8	0.00	3.37
200	41.3	138.8	0.00	3.38
300	42.8	118.0	0.00	3.35
400	44.1	112.2	0.00	3.33
500	45.0	102.8	0.02	3.16
750	45.2	86.8	0.02	3.07
1000	45.2	62.6	0.06	2.56
1500	41.6	44.4	0.07	2.19
2000	42.3	40.5	0.27	1.98

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	12.4	16.8	0.16	1.33
20	15.6	22.4	0.22	1.51
50	23.7	44.5	0.29	2.01
100	27.4	54.9	0.28	2.22
200	39.5	82.8	0.04	2.90
300	41.7	104.4	0.03	3.06
400	44.2	112.4	0.01	3.21
500	44.8	121.7	0.00	3.27
750	45.0	141.0	0.00	3.29
1000	44.1	154.1	0.00	3.26
1500	43.8	171.2	0.00	3.18
2000	42.2	174.2	0.00	3.06

Depth (m)	NO ₃ + NO ₂	Si	NO ₂	P
10	14.8	31.4	0.16	1.50
20	16.4	33.5	0.18	1.60
50	25.4	48.8	0.25	2.13
100	30.2	60.3	0.21	2.39
200	38.0	78.0	0.10	2.85
300	43.8	95.8	0.01	3.22
400	44.7	105.5	0.00	3.37
500	44.8	118.9	0.00	3.37
750	44.9	136.2	0.00	3.12
1000	44.9	147.5	0.00	3.11
1500	43.9	169.3	0.00	3.02
2000	42.0	172.6	0.00	2.88

