



HOKKAIDO UNIVERSITY

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PART. I

OSHORO MARU FROM JANUARY TO DECEMBER IN 2012

Oshoro Maru Crew's List (2012)

Captain	Shogo Takagi
Chief Officer	Keiichiro Sakaoka
Second Officer	Naoki Hoshi
Jr. Second Officer	Takuzo Abe
Third Officer	Maki Ohwada
Science Officer	Keiri Imai
Chief Engineer	Jyunichi Kimura
First Engineer	Hideo Ito
Second Engineer	Junpei Shimura
	Kazuya Sawanaka
Third Engineer	Kenichi Sindo
Chief Radio Officer	Satoshi Ishigaki
Boatswain	Yoshitaka Yoshida
Jr. Boatswain	Yukio Tabata
Quartermaster	Yutaka Takeda
	Tadashi Mishima
	Daisuke Sasaki
	Shohta Hagihara
Sailor	Taishi Hama
	Kenji Oguma
	Fumihito Tashiro
No.1 Oiler	Shuichi Hasegawa
Jr. No.1 Oiler	Kohya Nakamura
Oiler	Takuya Takano
	Tohru Murakami
	Akira Sugihara
Fireman	Keisuke Shindo
	Takaaki Arakawa
Chief Cook	Tsutomu Takahashi
Jr. Chief Cook	Hajime Morihiro
Head Cook	Hiroshi Nakamura
Cook	Hiroshi Tamakawa

II. Particulars

Length (o.a.)	72.85m
Length (p.p.)	66.00m
Breadth (mid)	12.60m
Depth (mid) Upper DK	5.70m
Gross Tonnage (Domestic)	1,396 tons
International Gross Tonnage	1,792 tons
Main Engine	2,353 kW
Call Sign	JDVA

1.

THE "OSHORU MARU" CRUISE 240-1
TO EAST OF THE TSUGARU STRAIT

IN MARCH 2012

1. Cruise Itinerary

Cruise 240-1

Departure from Hakodate	Mar.	6	2012
Hydrographic research (OS12001-OS12008)		8	
Bottom Trawl research (OST1201)		8	
Arrival at Aomori		9	
Departure from Aomori		10	
Return to Hakodate		11	
Total coverage 315.3 miles			

2. Vessel Personnel

Crew:	Captain	Associate Professor	Shogo Takagi
			And 28 persons
Research Staff:	Associate Professor	(Laboratory of Marine Bio resource and Environment Sensing)	Tohru Hirawake
	Associate Professor	(Laboratory of Marine Industrial Science and Technology)	Hiroki Yasuma
	Teaching Assistant:		3 persons
	Under Graduate Students:		24 persons
Total 29 persons			

3. Items of Research

Hydrographic observations (Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by Science officer, deck officers, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-19Plus). Sea water samplings by Niskin bottles.

Fig. 1, Table 1, 2

Bottom trawl research

One operation of the stern otter trawl were carried out. These operation were supervised by the captain, deck officers, crews, research staff, and cadets were engaged in the work.

Table 3, 4

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12001	42-14.67N	141-36.69E	2012/3/7	23:57	9	617	-	-	0.8	bc	19Plus-4636
OS12002	42-09.90N	141-36.72E	2012/3/8	0:57	9	706	-	-	1.2	bc	19Plus-4636
OS12003	42-05.19N	141-36.48E	2012/3/8	2:34	9	733	-	-	1.0	bc	19Plus-4636
OS12004	42-00.04N	141-36.88E	2012/3/8	3:39	9	765	-	-	1.4	bc	19Plus-4636
OS12005	41-55.16N	141-37.26E	2012/3/8	10:43	9	790	-	-	1.6	s	19Plus-4636
OS12006	41-49.99N	141-37.00E	2012/3/8	11:49	9	719	-	-	0.9	s	19Plus-4636
OS12007	41-44.47N	141-36.43E	2012/3/8	13:36	9	529	-	-	1.1	s	19Plus-4636
OS12008	41-39.68N	141-37.06E	2012/3/8	14:43	9	300	-	-	0.8	c	19Plus-4636

Fig.1 Oceanographic stations

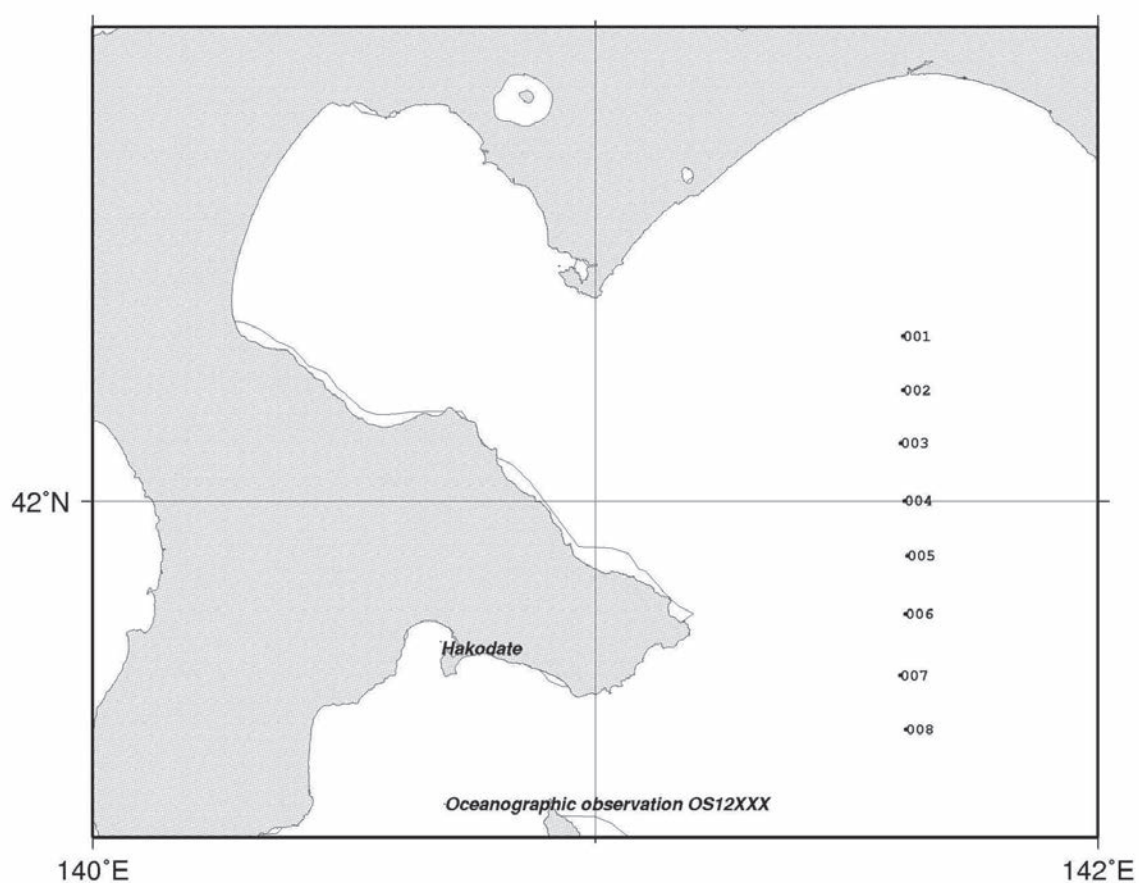


Table 2. Oceanographic data

Station OS12001 Latitude 42-14.67N Longitude 141-36.69E Depth(m) 617m				Station OS12002 Latitude 42-09.90N Longitude 141-36.72E Depth(m) 706m				Station OS12003 Latitude 42-05.19N Longitude 141-36.49E Depth(m) 733m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	0.425	32.629	26.171	5	0.797	32.743	26.243	5	0.675	32.692	26.208
10	0.707	32.697	26.211	10	0.789	32.739	26.240	10	0.606	32.696	26.216
20	0.825	32.720	26.222	20	0.874	32.765	26.256	20	0.838	32.754	26.249
30	0.867	32.748	26.243	30	1.466	32.897	26.324	30	1.284	32.839	26.290
40	0.975	32.779	26.261	40	2.648	33.093	26.393	40	1.352	32.878	26.317
50	1.016	32.789	26.267	50	2.952	33.132	26.399	50	1.382	32.883	26.319
75	1.188	32.830	26.289	75	2.252	33.085	26.418	75	2.782	33.095	26.383
100	2.710	33.109	26.401	100	3.387	33.232	26.439	100	3.462	33.222	26.424
125	4.138	33.347	26.457	125	3.508	33.268	26.456	125	4.627	33.413	26.458
150	5.327	33.545	26.484	150	3.952	33.356	26.484	150	5.252	33.522	26.474
175	5.238	33.552	26.500	175	4.000	33.391	26.507	175	5.326	33.548	26.487
200	4.513	33.473	26.518	200	4.134	33.430	26.524	200	5.052	33.530	26.504
250	3.987	33.467	26.568	250	3.253	33.401	26.586	250	3.729	33.419	26.555
300	3.427	33.464	26.620	300	3.240	33.477	26.648	300	3.138	33.453	26.638
400	2.713	33.600	26.792	400	2.676	33.592	26.789	400	2.558	33.551	26.766
500	3.031	33.774	26.904	500	3.071	33.791	26.914	500	2.955	33.735	26.879

Station OS12004 Latitude 42-00.04N Longitude 141-36.88E Depth(m) 765m				Station OS12005 Latitude 41-55.16N Longitude 141-37.26E Depth(m) 790m				Station OS12006 Latitude 41-49.99N Longitude 141-37.00E Depth(m) 719m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	0.941	32.804	26.283	5	1.435	32.804	26.252	5	0.672	32.659	26.182
10	0.964	32.810	26.287	10	1.379	32.801	26.253	10	0.698	32.657	26.179
20	1.052	32.833	26.300	20	1.391	32.804	26.255	20	0.395	32.669	26.205
30	1.402	32.891	26.324	30	1.320	32.834	26.284	30	0.677	32.756	26.260
40	1.456	32.897	26.325	40	1.576	32.915	26.331	40	1.142	32.836	26.297
50	1.552	32.913	26.332	50	1.713	32.933	26.336	50	1.874	32.941	26.332
75	1.433	32.999	26.409	75	1.644	33.008	26.402	75	3.539	33.198	26.398
100	4.519	33.408	26.466	100	3.188	33.226	26.452	100	5.203	33.480	26.447
125	4.253	33.375	26.467	125	5.081	33.515	26.489	125	6.043	33.644	26.476
150	3.799	33.331	26.479	150	5.086	33.515	26.488	150	5.712	33.617	26.495
175	4.128	33.390	26.492	175	4.902	33.498	26.496	175	4.742	33.490	26.507
200	3.613	33.349	26.511	200	3.778	33.356	26.500	200	3.982	33.395	26.511
250	2.643	33.261	26.528	250	3.220	33.315	26.521	250	3.399	33.386	26.560
300	3.175	33.358	26.559	300	3.287	33.358	26.549	300	3.202	33.397	26.587
400	2.820	33.537	26.733	400	2.791	33.530	26.730	400	2.728	33.550	26.751
500	2.829	33.680	26.846	500	2.894	33.701	26.857	500	2.897	33.701	26.857

Station OS12007
Latitude 41-44.47N
Longitude 141-36.43E
Depth(m) 529m

Press.	Temp.	Sal.	SIG-T
5	0.692	32.653	26.176
10	0.417	32.653	26.192
20	0.576	32.689	26.212
30	1.275	32.856	26.304
40	2.425	33.028	26.359
50	2.979	33.165	26.422
75	4.273	33.378	26.468
100	5.184	33.522	26.483
125	4.275	33.429	26.508
150	4.487	33.477	26.524
175	3.804	33.407	26.538
200	3.413	33.374	26.550
250	3.280	33.401	26.584
300	3.664	33.446	26.583
400	2.718	33.570	26.768

Station OS12008
Latitude 41-39.69N
Longitude 141-37.06E
Depth(m) 300m

Press.	Temp.	Sal.	SIG-T
5	0.648	32.672	26.194
10	0.668	32.672	26.193
20	2.168	33.007	26.362
30	5.229	33.571	26.517
40	5.208	33.566	26.514
50	5.241	33.572	26.516
75	5.177	33.561	26.514
100	5.153	33.555	26.513
125	5.215	33.568	26.516
150	5.125	33.550	26.511
175	5.695	33.669	26.538
200	5.151	33.546	26.506

Table 3: Data on Bottom trawl research during the Oshoromaru Cruise#240

No. of research	Date and time of net tow (S.M.T.*1)	Position		T.D.*2	D.S.*3	Speed of tow (K't)	Bottom depth (m)	Wr.*4	Wind	S.T.*5 (°C)
		Lat. (N)	Long. (E)							
OST1201	Mar. 8 1330-1655	42-01.8	141-37.4	+9h	160	3.5	855-885	bc	calm	1.7

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of tow.

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

*5 S.T. : Surface temperature

Table 4. Data on catches by bottom trawl research

Japanese name	Scientific name	OST1201	
		Number	Weight(kg)
Itohikidara	<i>Laemonema longipes</i>	20	13.4
Shirogenge	<i>Bothrocara molle</i>	19	7
Karafutosokodara	<i>Coryphaenoides cinereus</i>	865	164.2
Kanadadara	<i>Antimora microlepis</i>	87	23.6
Irakoanago	<i>Synaphobranchus kaupi</i>	13	6.8
Yukihoraanago	<i>Ilyophis nygeli</i>	2	0.02
Kichiji	<i>Sebastolobus macrochir</i>	146	27
Nezumiginpo	<i>Lumpenella longirostris</i>	14	0.9
Mamehadaka	<i>Lampanyctus jordani</i>	2	0.04
Benizuwaigani	<i>Chionoecetes japonicus</i>	9	9
Nunedara	<i>Coryphaenoides pectoralis</i>	68	221
Aburagarei	<i>Atheresthes evermanni</i>	6	19
Kurosokogisu	<i>Notacanthus chemnitzii</i>	3	2.4
Hoteieso	<i>Photoneustes albipennis</i>	4	0.45
Dosuika	<i>Berryteuthis magister</i>	6	3.55
Yanagidako	<i>Octopus conispadiceus</i>	21	5.35
Sokoganngiei	<i>Bathyraxia bergi</i>	9	7
Suketoudara	<i>Theragra chalcogramma</i>	4	1.25
Akadonko	<i>Ebinania vermiculata</i>	4	3.65
Ganko	<i>Dasycottus setiger</i>	1	0.03
Togerakudaankou	<i>Oneirodes thompsoni</i>	1	0.05
Mikadohadaka	<i>Lampanyctus regalis</i>	1	0.06
Kohirehadaka	<i>Stenobrachius leucopsarus</i>	1	0.01
Kurosokoiwasi	<i>Pseudobathylagus milleri</i>	14	0.83

2.

**THE "OSHO RO MARU" CRUISE 240-2
TO HIYAMA OFF**

IN APRIL 2012

1. Cruise Itinerary

Cruise 240-2

Departure from Hakodate	Apr.	25	2012
Mid water Trawl research (OSMT1201- OSMT1203)		26	
Hydrographic research (OS12010- OS12014)		27	
Return to Hakodate		28	
Total coverage 335.7 miles			

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 30 persons
Research Staff:	Professor	(Laboratory of Marine Bioresource and Environment Sensing)	Yasuzumi Fujimori
	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing)	Tohru Mukai
	Associate Professor	(Laboratory of Marine Industrial Science and Technology)	Hiroki Yasuma
	Teaching Assistant:		3 persons
	Under Graduate Students:		24 persons
			Total 29 persons

3. Items of Research

Hydrographic observations (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by Science officer, the deck officers, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus). Water samplings by Niskin bottles.

Fig. 1, Table 1, 2

Mid-water trawl observations

Three operations of the stern otter mid-water trawl were carried out. These operations were supervised by the captain, and were conducted by deck officers, crews, research staff and cadets.

Table 3, 4

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z	Depth	Col.	Tr.	SST	Wr.	Gear
OS12010	42-01.22N	140-00.99E	2012/4/26	21:02	9	699	-	-	10.1	bc	9Plus-0769
OS12011	42-01.26N	139-51.49E	2012/4/26	22:45	9	906	-	-	9.7	c	9Plus-0769
OS12012	41-59.75N	139-56.07E	2012/4/27	0:02	9	825	-	-	9.9	bc	9Plus-0769
OS12013	41-58.66N	140-00.85E	2012/4/27	1:14	9	852	-	-	10.1	c	9Plus-0769
OS12014	41-58.79N	139-49.95E	2012/4/27	2:55	9	1180	-	-	10.0	bc	9Plus-0769

Fig.1 Oceanographic Stations

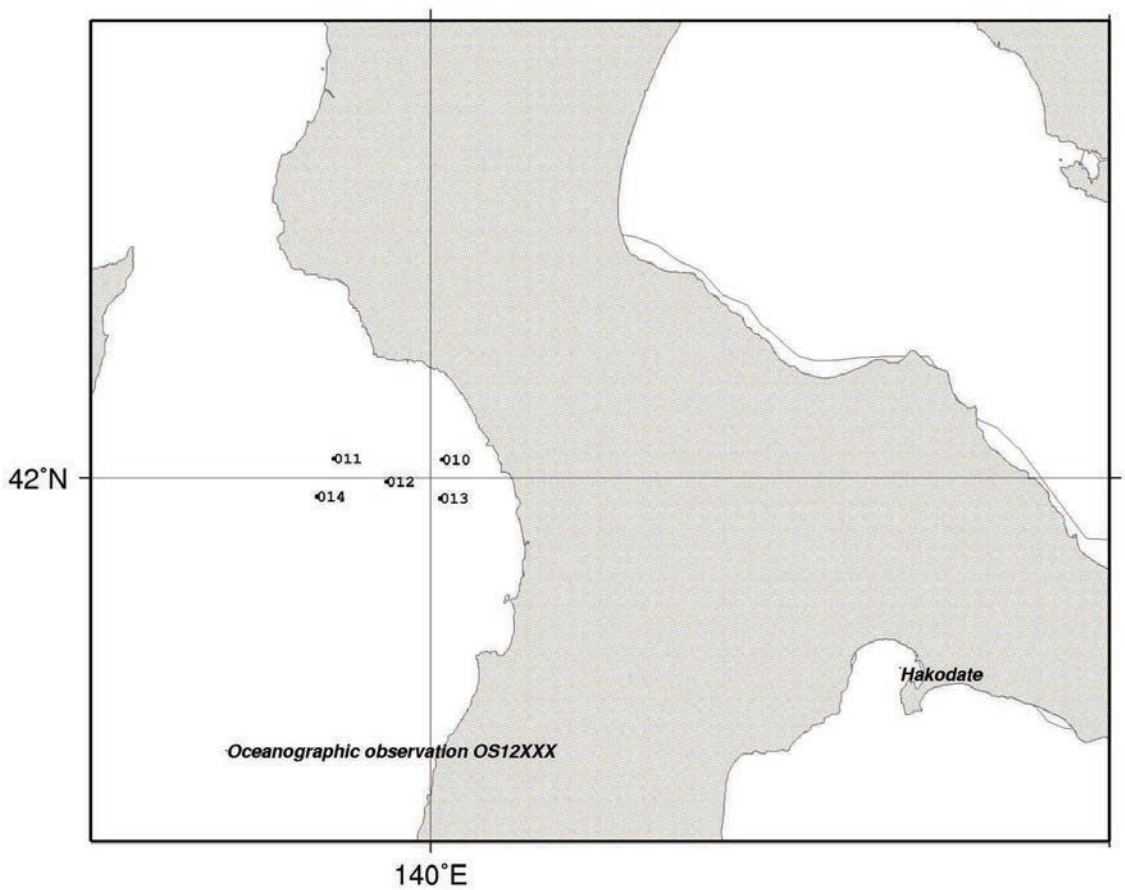


Table 2. Oceanographic data

Station OS12010				Station OS12011				Station OS12012			
Latitude 42-01.22N				Latitude 42-01.26N				Latitude 41-59.75N			
Longitude 140-00.99E				Longitude 139-51.49E				Longitude 139-56.07E			
Depth(m)				Depth(m)				Depth(m)			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	9.801	33.741	26.002	5	9.586	33.875	26.142	5	9.629	33.872	26.133
10	9.802	33.741	26.002	10	9.564	33.879	26.149	10	9.629	33.872	26.133
20	9.802	33.742	26.003	20	9.548	33.882	26.154	20	9.588	33.876	26.143
30	9.772	33.752	26.016	30	9.539	33.885	26.158	30	9.578	33.879	26.147
40	9.731	33.760	26.028	40	9.514	33.892	26.167	40	9.561	33.881	26.151
50	8.885	33.959	26.321	50	9.355	33.918	26.214	50	9.437	33.903	26.189
75	8.047	34.025	26.501	75	8.560	34.072	26.460	75	8.532	34.077	26.468
100	7.183	34.097	26.682	100	7.747	34.090	26.596	100	7.631	34.079	26.605
125	6.081	34.086	26.820	125	7.152	34.105	26.693	125	7.163	34.113	26.698
150	5.267	34.077	26.913	150	6.785	34.104	26.742	150	6.095	34.089	26.821
175	4.605	34.068	26.981	175	5.312	34.080	26.910	175	5.196	34.068	26.914
200	4.032	34.062	27.037	200	4.976	34.033	26.911	200	3.731	34.052	27.059
250	2.497	34.051	27.171	250	2.994	34.054	27.131	250	2.505	34.049	27.169
300	1.996	34.054	27.214	300	2.221	34.050	27.193	300	1.348	34.049	27.258
400	1.387	34.058	27.262	400	1.243	34.057	27.271	400	1.071	34.058	27.284
500	0.815	34.062	27.303	500	0.817	34.062	27.303	500	0.739	34.062	27.308

Station OS12013				Station OS12014			
Latitude 41-58.66N				Latitude 41-58.79N			
Longitude 140-00.85E				Longitude 139-49.95E			
Depth(m)				Depth(m)			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	9.851	33.817	26.053	5	9.776	33.854	26.094
10	9.836	33.817	26.056	10	9.676	33.857	26.114
20	9.794	33.820	26.065	20	9.633	33.867	26.128
30	9.752	33.832	26.081	30	9.612	33.875	26.138
40	9.490	33.894	26.173	40	9.435	33.900	26.187
50	8.439	34.037	26.451	50	9.212	33.954	26.265
75	7.938	34.082	26.562	75	8.673	34.095	26.461
100	6.433	34.089	26.777	100	8.070	34.106	26.561
125	6.077	34.083	26.818	125	7.608	34.113	26.634
150	4.875	34.068	26.950	150	6.796	34.106	26.742
175	3.394	34.053	27.093	175	5.567	34.086	26.884
200	2.948	34.052	27.133	200	4.549	34.062	26.982
250	1.946	34.048	27.213	250	2.300	34.048	27.185
300	1.440	34.049	27.251	300	1.516	34.046	27.243
400	0.923	34.060	27.295	400	1.072	34.058	27.283
500	0.622	34.064	27.316	500	0.733	34.063	27.309

Table 3: Data on mid trawl research during the Oshoromaru Cruise#240-2

No. of research	Date and time of net tow (S.M.T.*1)		Position		T.D.*2	D.S.*3	Speed of tow (K't)	net depth (m)	Wr.*4	Wind	S.T.*5 (°C)
			Lat. (N)	Long. (E)							
OST1201	Apr. 26	0855-1150	41-58.7	140-00.3	+9h	270	3.5	400-330	bc	ESE-7	13.2
OST1202	Apr. 26	1210-1454	41-58.9	139-51.1	+9h	080	3.0	336	bc	SE-6	10.1
OST1203	Apr. 26	1455-1710	41-58.4	140-00.8	+9h	000	4.0	350	o	SE-5	11.0

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of tow.

*4 Wr. : Weather (bc: 25-75% clouded, o: 100% clouded).

*5 S.T. : Surface temperature

Table 4. Date on catches by mid trawl research

Japanese name	Scientific Name	OSMT1201		OSMT1202		OSMT1203	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Suketodara	<i>Theragra chalcogramma</i>	30	11.04	20	8.81	6	2.97
Hatahata	<i>Arctoscopus japonicus</i>	14	0.19	11	0.20	17	0.37
Genge-rui	Zoarcidae spp.	2	0.02	-	-	-	-
Hoteiuo	<i>Aptocyclus ventricosus</i>	2	2.88	-	-	3	2.39
Mafugu	<i>Takifugu porphyreus</i>	-	-	1	0.15	-	-
Ika-rui	Cephalopoda spp.	2	0.03	1	0.03	6	0.24

3.

THE "OSHORU MARU" CRUISE 241
TO THE JAPAN SEA

IN APRIL 2012

1. Cruise Itinerary

Cruise 241

Departure from Hakodate	Apr.	17,	2012
Conduct hydrographic research (OS12009)		18	
Arrival at Tsuruga		20	
Departure from Tsuruga		21	
Return to Tsuruga		21	
Departure from Tsuruga		22	
Return to Hakodate		24	
Total coverage 1003.5 miles			

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 28 persons
Research Staff:	Professor	(Laboratory of Marine Environment engineering, Fukui Prefectural University)	Masabumi Seto
	Professor	(Laboratory of Marine Environment engineering, Fukui Prefectural University)	Shinya Otake
	Associate Professor	(Laboratory of Microbial Ecology, Fukui Prefectural University)	Ryuji Kondo
	Instructor	(Laboratory of Microbial Ecology, Fukui Prefectural University)	Yoshitake Takao
	Graduate Students:		1 person
Total 38 persons			

3. Items of Research

Hydrographic observations (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by Science officer, the deck officers and crews of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus). Water samplings by Niskin bottles and Plankton sampling were carried out at hydrographic stations.

Fig. 1, Table 1, 2

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z	Depth	Col.	Tr.	SST	Wr.	Gear
OS12009	40-39.36N	138-20.18E	2012/4/17	21:14	9	3359	-	-	7.7	bc	9Plus-0769

Fig 1. Oceanographic stations

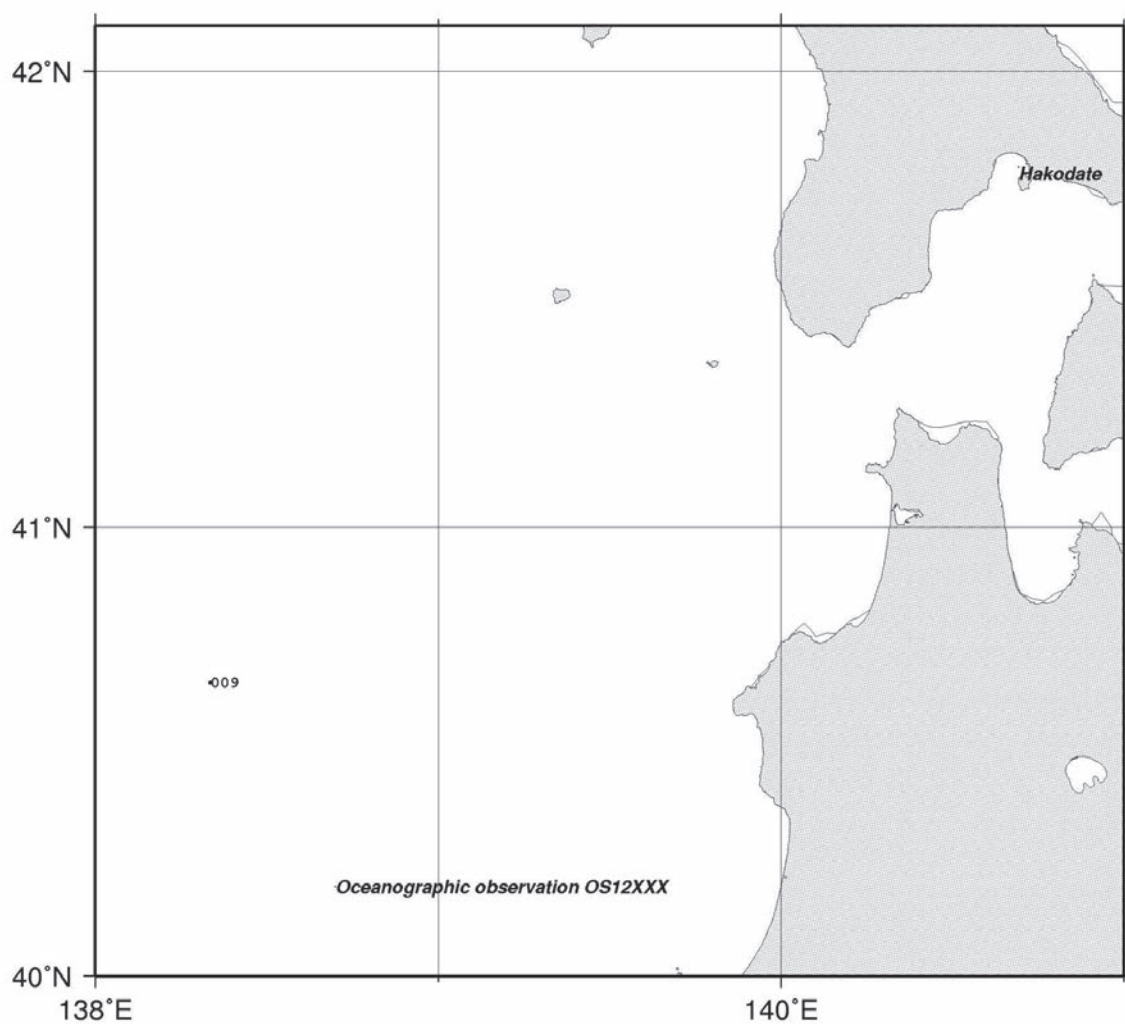


Table 2. Oceanographic data

	Station	OS12009		
	Latitude	40-39.36N		
	Longitude	138-20.18E		
	Depth(m)	depth:3359		
Press.	Temp.	Sal.	SIG-T	
5	7.843	34.164	26.641	
10	7.844	34.164	26.640	
20	7.424	34.134	26.678	
30	6.394	34.118	26.805	
40	5.639	34.088	26.877	
50	4.564	34.071	26.988	
75	3.722	34.062	27.068	
100	2.733	34.049	27.149	
125	1.928	34.049	27.215	
150	1.564	34.043	27.237	
175	1.404	34.046	27.251	
200	1.361	34.047	27.255	
250	1.181	34.051	27.271	
300	1.125	34.057	27.279	
400	0.865	34.065	27.303	
500	0.679	34.069	27.317	
600	0.584	34.069	27.323	
700	0.500	34.069	27.328	
800	0.441	34.069	27.330	
900	0.374	34.068	27.334	
1000	0.334	34.067	27.335	
1200	0.275	34.066	27.338	
1500	0.233	34.066	27.340	
2000	0.219	34.066	27.341	
2500	0.234	34.066	27.340	
3000	0.275	34.067	27.338	

4.

**THE "OSHO RO MARU" CRUISE 242
TO THE NORTHWEST PACIFIC OCEAN**

IN MAY 2012

1. Cruise Itinerary

Cruise 242

Departure from Hakodate	May	10	2012
Start hydrographic research (OS12015) and gillnet research (OSG1201)		14	
Finish gillnet research (OSG1203)		18	
Finish hydrographic research (OS12030)		22	
Return to Hakodate		23	
Total coverage 1782.9 miles			

2. Vessel Personnel

Crew:	Captain	Associate Professor	Shogo Takagi
			And 29 persons
Research Staff:	Associate Professor	(Laboratory of Strategic Studies on Marine Bioresource Conservation and Management)	
			Hideaki Kudo
	Teaching Assistant:		2 persons
	Graduate Students:		2 persons
	Under Graduate Students:		48 Persons
Total 53 persons			

3. Items of Research

Hydrographic observations: (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by the Science officer, the deck officers, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus) and XCTD. Water and Plankton sampling were also carried out at almost hydrographic stations.

Fig.1, Table 1, 2, 10, 11

Biological research for fishes caught by non-selective drift gillnets:

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

Table 3, 4, 5, 6

Salmon hook-and-line research:

Hook-and-line and surface longline sampling to collect salmons, hook-and-line gears and surface longline were used along 155°E line in the Central North Pacific. 10 to 15 anglers were engaged in the work. These samplings were mainly conducted with observations when ship was under drifting.

Table 7, 8, 9

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12015	43-59.82N	154-59.73E	2012/5/14	2:09	10	5300	-	-	4.4	c	9Plus-0769
OS12016	43-14.02N	155-02.28E	2012/5/14	9:47	10	5530	-	-	5.7	c	9Plus-0769
OS12017	42-30.57N	155-00.41E	2012/5/15	1:25	10	5150	-	-	10.9	bc	9Plus-0769
OS12018	42-56.80N	155-00.82E	2012/5/15	8:43	10	5390	-	-	9.2	c	9Plus-0769
OS12019	41-45.40N	154-59.95E	2012/5/16	3:53	10	5537	-	-	11.1	c	9Plus-0769
OS12020	41-00.04N	154-59.84E	2012/5/16	9:43	10	5489	-	-	-	r	X-CTD
OS12021	40-15.25N	154-58.80E	2012/5/16	15:07	10	5550	-	-	-	r	X-CTD
OS12022	39-26.25N	154-52.91E	2012/5/17	11:45	10	5650	-	-	13.4	b	9Plus-0769
OS12023	38-45.06N	155-00.49E	2012/5/17	23:57	10	5758	-	-	18.0	r	X-CTD
OS12024	38-04.47N	143-51.04E	2012/5/20	8:29	9	6130	-	-	17.0	bc	9Plus-0769
OS12025	39-00.04N	142-01.12E	2012/5/21	6:06	9	217	-	-	12.8	bc	9Plus-0769
OS12026	38-59.98N	141-55.16E	2012/5/21	7:24	9	140	-	-	13.5	c	9Plus-0769
OS12027	39-29.94N	142-05.99E	2012/5/21	11:01	9	144	-	-	11.7	c	9Plus-0769
OS12028	39-29.98N	142-10.97E	2012/5/21	12:19	9	228	-	-	13.0	c	9Plus-0769
OS12029	39-59.94N	142-14.97E	2012/5/21	16:44	9	226	-	-	12.0	bc	9Plus-0769
OS12030	40-00.04N	142-06.47E	2012/5/21	18:14	9	127	-	-	10.8	bc	9Plus-0769

Fig 1. Oceanographic stations

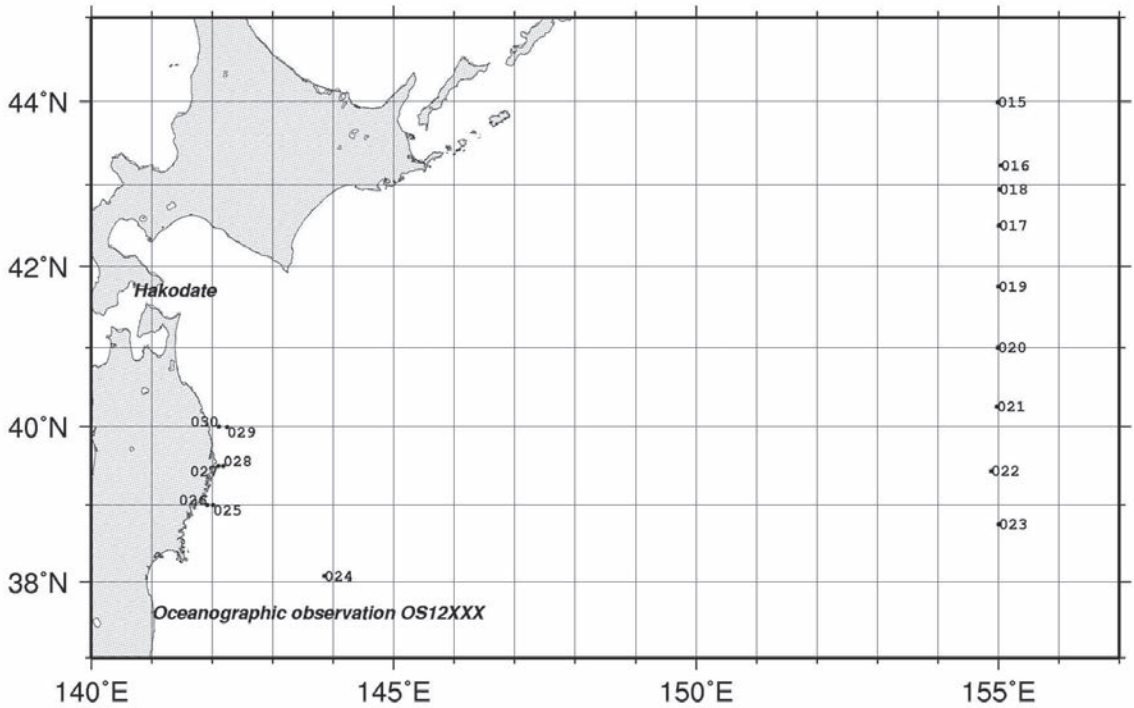


Table 2. Oceanographic data

Station OS12015			
Latitude 43-59.82N			
Longitude 154-59.73E			
Depth(m) 5300m			
Press.	Temp.	Sal.	SIG-T
5	3.789	32.999	26.216
10	3.785	33.000	26.216
20	3.733	33.000	26.221
30	3.512	32.999	26.241
40	3.072	33.018	26.297
50	2.618	33.058	26.368
75	2.364	33.170	26.477
100	2.548	33.223	26.505
125	3.065	33.343	26.556
150	3.481	33.512	26.654
175	2.550	33.493	26.721
200	2.811	33.581	26.769
250	3.202	33.755	26.873
300	3.276	33.851	26.943
400	3.423	34.016	27.060
500	3.314	34.111	27.146
600	3.213	34.201	27.228
700	3.050	34.260	27.290
800	2.921	34.326	27.354
900	2.743	34.370	27.405
1000	2.631	34.405	27.443
1200	2.395	34.462	27.509
1500	2.179	34.528	27.579
2000	1.858	34.600	27.663
2500	1.647	34.640	27.710
3000	1.535	34.661	27.735

Station OS12016			
Latitude 43-14.02N			
Longitude 155-02.28E			
Depth(m) 5530m			
Press.	Temp.	Sal.	SIG-T
5	5.585	33.035	26.050
10	5.577	33.035	26.051
20	5.223	33.020	26.080
30	4.390	33.048	26.193
40	2.702	33.118	26.408
50	2.527	33.130	26.432
75	2.266	33.110	26.437
100	1.810	33.108	26.470
125	2.178	33.237	26.546
150	1.997	33.364	26.661
175	2.629	33.549	26.759
200	3.009	33.664	26.818
250	3.207	33.782	26.894
300	3.417	33.897	26.966
400	3.485	34.046	27.078
500	3.272	34.147	27.179
600	3.113	34.222	27.254
700	2.980	34.282	27.314
800	2.865	34.330	27.362
900	2.718	34.378	27.413
1000	2.578	34.412	27.453
1200	2.371	34.463	27.511
1500	2.155	34.528	27.581

Station OS12017			
Latitude 42-30.57N			
Longitude 155-00.41E			
Depth(m) 5150m			
Press.	Temp.	Sal.	SIG-T
5	10.707	34.067	26.101
10	10.692	34.067	26.104
20	10.638	34.065	26.112
30	10.631	34.066	26.114
40	10.626	34.065	26.114
50	10.475	34.051	26.129
75	8.16	34.013	26.475
100	7.727	33.962	26.498
125	7.128	33.883	26.521
150	6.405	33.783	26.54
175	6.272	33.805	26.574
200	6.216	33.82	26.593
250	5.578	33.799	26.655
300	4.595	33.782	26.754
400	4.749	33.968	26.886
500	4.299	34.041	26.992
600	4.055	34.128	27.087
700	3.706	34.195	27.175
800	3.484	34.266	27.254
900	3.258	34.315	27.314
1000	3.057	34.356	27.366
1200	2.746	34.431	27.454
1500	2.349	34.499	27.542

Station OS12018			
Latitude 42-56.80N			
Longitude 155-00.82E			
Depth(m) 5390m			
Press.	Temp.	Sal.	SIG-T
5	9.126	33.757	26.125
10	9.157	33.768	26.128
20	8.987	33.766	26.154
30	9.047	33.785	26.159
40	8.748	33.791	26.211
50	6.815	33.755	26.463
75	6.773	33.807	26.509
100	5.21	33.584	26.529
125	4.652	33.561	26.573
150	3.886	33.51	26.612
175	4.073	33.575	26.645
200	2.607	33.502	26.723
250	3.573	33.721	26.811
300	3.418	33.756	26.853
400	3.299	33.915	26.991
500	3.964	34.132	27.099
600	3.349	34.16	27.182
700	3.1	34.222	27.255
800	3.007	34.289	27.317
900	2.839	34.326	27.362
1000	2.751	34.383	27.415
1200	2.496	34.45	27.491
1500	2.223	34.515	27.565

Station OS12019			
Latitude 41-45.40N			
Longitude 154-59.95E			
Depth(m) 5537m			
Press.	Temp.	Sal.	SIG-T
5	10.931	34.144	26.121
10	10.932	34.144	26.122
20	10.88	34.141	26.128
30	10.743	34.135	26.148
40	10.432	34.085	26.163
50	9.659	33.995	26.224
75	7.125	33.876	26.516
100	6.691	33.846	26.551
125	6.639	33.849	26.561
150	6.803	33.888	26.569
175	6.916	33.917	26.577
200	6.874	33.916	26.582
250	6.767	33.903	26.586
300	5.665	33.784	26.633
400	4.388	33.872	26.849
500	4.228	33.983	26.953
600	3.815	34.074	27.068
700	3.819	34.195	27.164
800	3.498	34.259	27.247
900	3.278	34.309	27.308
1000	3.102	34.358	27.364
1200	2.797	34.418	27.439
1500	2.408	34.486	27.527

Station OS12020			
Latitude 41-00.04N			
Longitude 154-59.84E			
Depth(m) 5489m			
Depth	Temp.	Sal.	SIG-T
5	10.404	34.008	-
10	10.385	34.018	-
20	10.366	34.017	-
30	9.502	34.019	-
40	8.523	34.028	-
50	8.332	34.023	-
75	8.162	34.011	-
100	7.939	33.991	-
125	7.757	33.976	-
150	7.439	33.943	-
175	6.656	33.859	-
200	6.381	33.837	-
250	6.131	33.883	-
300	4.997	33.845	-
400	4.797	34	-
500	4.388	34.076	-
600	4.142	34.177	-
700	3.755	34.257	-
800	3.422	34.319	-
900	3.261	34.372	-
1000	2.989	34.406	-
1200	2.664	34.472	-
1500	2.308	34.545	-

Station OS12021				
Latitude 40-15.25N				
Longitude 154-58.80E				
Depth(m) 5550				
Depth	Temp.	Sal.	SIG-T	
5	11.195	33.907	-	
10	11.129	33.93	-	
20	10.771	33.945	-	
30	8.979	33.95	-	
40	8.18	33.975	-	
50	8.046	33.97	-	
75	7.467	33.879	-	
100	6.639	33.786	-	
125	5.802	33.675	-	
150	5.305	33.614	-	
175	4.771	33.571	-	
200	5.554	33.748	-	
250	5.548	33.862	-	
300	4.137	33.752	-	
400	4.137	33.901	-	
500	4.385	34.067	-	
600	4.045	34.163	-	
700	3.718	34.228	-	
800	3.528	34.29	-	
900	3.176	34.331	-	
1000	2.985	34.371	-	
1200	2.701	34.446	-	

Station OS12022				
Latitude 39-26.25N				
Longitude 1547-52.91E				
Depth(m) 5650m				
Press.	Temp.	Sal.	SIG-T	
5	13.148	34.227	25.764	
10	13.163	34.232	25.765	
20	12.992	34.197	25.772	
30	12.17	34.134	25.884	
40	11.795	34.112	25.938	
50	10.63	34.061	26.11	
75	8.549	34.017	26.419	
100	8.004	34.004	26.491	
125	7.533	33.946	26.514	
150	7.02	33.892	26.543	
175	6.662	33.867	26.571	
200	6.552	33.864	26.584	
250	5.897	33.825	26.637	
300	5.264	33.84	26.725	
400	4.604	33.913	26.857	
500	4.319	34.018	26.972	
600	4.179	34.146	27.088	
700	3.733	34.193	27.171	
800	3.48	34.268	27.255	
900	3.308	34.313	27.308	
1000	3.071	34.358	27.366	
1200	2.703	34.423	27.451	
1500	2.328	34.494	27.54	

Station OS12023				
Latitude 38-45.06N				
Longitude 155-00.49E				
Depth(m) 5758				
Depth	Temp.	Sal.	SIG-T	
5	18.452	34.497	-	
10	18.216	34.506	-	
20	17.572	34.505	-	
30	17.285	34.498	-	
40	17.135	34.496	-	
50	16.581	34.528	-	
75	14.568	34.439	-	
100	13.361	34.42	-	
125	12.386	34.339	-	
150	11.579	34.267	-	
175	10.807	34.213	-	
200	10.158	34.151	-	
250	7.919	33.908	-	
300	5.64	33.613	-	
400	6.005	33.985	-	
500	4.995	34.025	-	
600	4.455	34.102	-	
700	4.117	34.175	-	
800	3.73	34.249	-	
900	3.427	34.298	-	
1000	3.217	34.339	-	
1200	2.782	34.41	-	
1500	2.347	34.485	-	

Station OS12024				
Latitude 38-04.47N				
Longitude 143-51.04E				
Depth(m) 6130m				
Press.	Temp.	Sal.	SIG-T	
5	16.021	34.278	25.187	
10	15.312	34.328	25.385	
20	14.972	34.337	25.467	
30	14.177	34.308	25.615	
40	12	34.187	25.958	
50	10.869	34.18	26.16	
75	9.539	34.063	26.297	
100	9.153	34.107	26.395	
125	8.141	33.994	26.463	
150	7.683	33.983	26.521	
175	7.08	33.973	26.599	
200	6.54	33.95	26.654	
250	6.53	34.067	26.747	
300	5.995	34.095	26.838	
400	4.607	34.06	26.974	
500	4.47	34.182	27.086	
600	4.031	34.241	27.179	
700	3.338	34.261	27.264	
800	3.171	34.33	27.335	
900	3.081	34.385	27.387	
1000	2.924	34.426	27.434	

Station OS12025				
Latitude 39-00.04N				
Longitude 142-01.12E				
Depth(m) 217m				
Press.	Temp.	Sal.	SIG-T	
5	11.466	33.486	25.513	
10	10.694	33.481	25.646	
20	9.768	33.536	25.848	
30	9.323	33.691	26.041	
40	9.141	33.775	26.136	
50	8.699	33.83	26.249	
75	8.338	33.876	26.341	
100	8.157	33.905	26.39	
125	8.078	33.903	26.401	
150	8.057	33.902	26.403	
175	7.998	33.901	26.411	
200	7.99	33.9	26.411	

Station OS12026				
Latitude 38-59.98N				
Longitude 141-55.16E				
Depth(m) 140m				
Press.	Temp.	Sal.	SIG-T	
5	12.628	33.715	25.47	
10	11.336	33.702	25.704	
20	11.04	33.787	25.824	
30	9.703	33.749	26.025	
40	8.878	33.735	26.147	
50	8.61	33.763	26.21	
75	8.29	33.819	26.303	
100	8.204	33.843	26.335	
125	8.13	33.863	26.362	

Station OS12027
Latitude 39-29.94N
Longitude 142-05.99E
Depth(m) 144m

Press.	Temp.	Sal.	SIG-T
5	10.635	33.333	25.542
10	10.607	33.341	25.553
20	9.04	33.457	25.904
30	8.735	33.537	26.014
40	8.76	33.614	26.071
50	8.236	33.607	26.145
75	8.48	33.877	26.32
100	8.485	33.878	26.32
125	8.476	33.882	26.324

Station OS12028
Latitude 39-29.98N
Longitude 142-10.97E
Depth(m) 228m

Press.	Temp.	Sal.	SIG-T
5	10.976	33.543	25.645
10	10.924	33.54	25.652
20	8.72	33.639	26.096
30	8.686	33.763	26.199
40	8.768	33.862	26.263
50	8.652	33.87	26.288
75	8.268	33.894	26.365
100	8.215	33.92	26.393
125	8.2	33.924	26.399
150	8.201	33.925	26.399
175	8.168	33.93	26.409
200	8.108	33.927	26.415

Station OS12029
Latitude 39-59.94N
Longitude 142-14.97E
Depth(m) 226m

Press.	Temp.	Sal.	SIG-T
5	10.845	33.569	25.689
10	10.934	33.549	25.657
20	8.794	33.507	25.982
30	9.268	33.741	26.09
40	8.286	33.711	26.219
50	8.434	33.886	26.334
75	8.346	33.922	26.375
100	8.163	33.921	26.402
125	7.956	33.903	26.419
150	7.129	33.814	26.467
175	5.83	33.672	26.524
200	5.858	33.679	26.526

Station OS12030
Latitude 40-00.04N
Longitude 142-06.47E
Depth(m) 127m

Press.	Temp.	Sal.	SIG-T
5	8.327	33.287	25.88
10	7.559	33.287	25.992
20	7.785	33.513	26.137
30	7.751	33.605	26.215
40	8.342	33.825	26.3
50	8.529	33.9	26.33
75	8.425	33.891	26.339
100	8.384	33.887	26.342

Table 3. Position and research conditions of surface drift gillnet sampling at each station during the *Oshoro maru* Cruise #242, 2012.

Station	Date and Time (S.M.T.*1)				T.D.*2	Set Position		D.S.*3	bottom depth(m)	Wr*4	Wind (Force)	S.T.*5 (°C)
	Net set		Net haul			Lat.	Long.					
Cruise #242												
OSG 1201	May 14	1900-1930	May 15	0450-0537	+10h	43-16.0N	155-00.1 E	160	5500.0	o	NNW-5	5.9
OSG 1202	May 15	1756-1722	May 16	0452-0547	+10h	42-57.4N	155-01.0 E	340	5390.0	bc	NNE-3	9.4
OSG 1203	May 17	1752-1814	May 18	0439-0518	+10h	39-25.2N	154-58.8 E	230	5619.0	bc	WSW-4	13.6

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of net set.

*4 Wr : Weather (bc: 25-75% clouded, c: 75-99% clouded, o: 100% clouded, f: fog).

*5 S.T. : Surface temperature

Table4. Details about each operation are shown in Table 2. The gillnet configuration is as follows:

Stations	net	A-Gear				C-gear										F-Gear								Total
	Mesh size (mm)	112	115	118	121	48	55	63	72	82	93	106	121	138	157	19	22	25	29	33	37	42		
OSG1201-02	Number	3	3	3	3	3	3	3	6	5	5	3	3	3	3	-	-	-	-	-	-	-	49	
OSG1203	of tan	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	0.5	-	42.5	

The net comprised of total 49 tans of A-Gear gillnet (non-selective varied research mesh, Takagi, 1975), A-Gear gillnet (commercial mesh), and F-Gear gillnet (spetal mesh). Each tan was 50m long. Gillnet gear was set in the evening, allowed to soak overnight, and retrieved in the following morning. The number of organisms caught was counted by species for mesh size. Catch per unit effort (CPUE) values were calculated as the number of fish caught by C-gear gillnet per tan.

Table 5. The number of organisms caught by drift gillnet during the Oshoro maru Cruise # 242, in May, 2012. CPUE and (%) indicate numerical catch per tan and percentage of total catch by C-gear gillnet at the station, respectively.

Station		OSG 1201					OSG 1202					OSG 1203				
Common name	Scientific name	C		A	Total	C		A	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		
Chum salmon	<i>Oncorhynchus keta</i>	11	0.3 (4.5)	26	37	51	1.4 (7.3)	34	85	2	0.1 (1.8)	7	0	9		
Pink salmon	<i>Oncorhynchus gorbuscha</i>	187	5.1 (77.3)	4	191	501	13.5 (71.7)	1	502	2	0.1 (1.8)	1	0	3		
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		
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		
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		
Boreal clubhook squid	<i>Onychoteuthis borealijaponicus</i>	42	1.1 (17.4)	0	42	138	3.7 (19.7)	0	138	81	2.7 (72.3)	0	0	81		
Eight-armed squid	<i>Gonatopsis borealis</i>	0	0.0 (0.0)	1	1	8	0.2 (1.1)	0	8	4	0.1 (3.6)	0	0	4		
Salmon shark	<i>Lamna ditropis</i>	0	0.0 (0.0)	0	0	0	0.0 (0.0)	0	0	0	0.0 (0.0)	2	0	2		
Spiny dogfish	<i>Squalus acanthias</i>	1	0.0 (0.4)	0	1	1	0.0 (0.1)	0	1	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	0	0.0 (0.0)	0	3	3		
Pacific pomfret	<i>Brama japonica</i>	0	0.0 (0.0)	0	0	0	0.0 (0.0)	0	0	23	0.8 (20.5)	9	0	32		
Ancient murrelet	<i>Synthliboramphus antiquus</i>	0	0.0 (0.0)	1	1	0	0.0 (0.0)	0	0	0	0.0 (0.0)	0	0	0		
Tufted puffin	<i>Fratercula cirrhata</i>	1	0.0 (0.4)	0	1	0	0.0 (0.0)	1	1	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.
G01	A112	498	1860	1	22	G02	A121	518	1720	1	65
G01	A112	516	1822	2	7	G02	A121	578	2100	2	2
G01	A112	548	1944	1	43	G02	A121	542	1840	2	2
G01	A112	542	1958	1	37	G02	A121	501	1540	1	20
G01	A112	522	1843	2	18	G02	A121	533	1910	1	55
G01	A112	534	1562	2	7	G02	A121	563	2400	1	60
G01	A112	564	2279	2	12	G02	C082	487	1489	1	42
G01	A115	528	1870	1	50	G02	C093	462	1011	1	11
G01	A115	235	1924	2	5	G02	C093	548	1780	1	45
G01	A115	506	1671	1	35	G02	C093	597	2543	1	32
G01	A115	536	1924	2	26	G02	C093	513	1933	1	35
G01	A115	554	2158	1	37	G02	C093	416	842	2	1
G01	A115	532	1853	1	58	G02	C093	528	1814	1	38
G01	A115	550	1941	1	20	G02	C093	446	1016	1	7
G01	A115	538	2223	2	9	G02	C093	533	1859	1	51
G01	A115	536	2088	2	7	G02	C093	440	1036	2	1
G01	A115	498	1473	1	28	G02	C093	509	1609	1	44
G01	A118	560	2379	1	19	G02	C093	528	2058	2	12
G01	A118	530	1758	2	1	G02	C093	448	835	2	8
G01	A118	469	1549	2	4	G02	C093	487	1566	1	47
G01	A118	540	2380	1	75	G02	C106	464	1120	1	12
G01	A118	494	2797	1	29	G02	C106	550	2133	2	10
G01	A121	584	2429	2	8	G02	C106	502	1407	1	22
G01	A121	564	2248	1	31	G02	C106	470	1205	1	15
G01	A121	548	1907	2	5	G02	C106	486	1396	1	30
G01	A121	508	1642	1	30	G02	C106	524	1730	2	18
G01	C093	496	1559	1	27	G02	C106	504	1668	2	38
G01	C106	542	1990	2	8	G02	C106	559	2292	1	32
G01	C106	550	2233	1	23	G02	C106	598	2457	1	65
G01	C106	574	2131	1	18	G02	C106	553	1845	2	9
G01	C106	534	1748	1	40	G02	C106	545	1962	1	11
G01	C106	538	1978	2	1	G02	C106	478	1219	2	1
G01	C121	542	1934	1	51	G02	C106	484	1261	2	15
G01	C121	530	1852	1	32	G02	C106	470	1102	1	45
G01	C121	542	1958	1	48	G02	C106	525	1979	2	9
G01	C138	522	1752	2	3	G02	C106	488	1527	2	8
G01	C138	558	2116	2	5	G02	C121	632	2779	—	—
G02	A112	532	1842	2	3	G02	C121	547	2080	—	—
G02	A112	559	1733	1	60	G02	C121	547	2184	—	—
G02	A112	512	1854	2	2	G02	C121	480	1993	—	—
G02	A112	544	2060	1	51	G02	C121	561	2455	—	—
G02	A112	508	1805	2	11	G02	C121	541	1877	2	22
G02	A112	636	3142	1	46	G02	C121	562	1993	2	17
G02	A112	549	2151	2	4	G02	C121	554	1781	2	11
G02	A112	550	2069	1	31	G02	C121	500	1455	1	17
G02	A112	558	2036	1	44	G02	C121	524	1811	2	7
G02	A112	530	1920	2	8	G02	C121	492	1561	2	1
G02	A115	591	2600	2	28	G02	C121	538	2072	2	1
G02	A115	542	2100	1	25	G02	C121	568	2084	2	10
G02	A115	573	1200	2	2	G02	C138	524	1724	2	6
G02	A115	530	1880	1	170	G02	C138	539	1789	1	15
G02	A115	540	1900	1	32	G02	C138	504	1711	2	4
G02	A115	566	2400	1	66	G02	C138	538	1868	2	8
G02	A115	526	1840	2	2	G02	C138	508	1625	1	7
G02	A115	488	1310	1	14	G03	A112	548	2020	2	7
G02	A118	608	2867	1	33	G03	A115	564	2300	2	12
G02	A118	542	1900	1	35	G03	A115	558	2140	1	77
G02	A118	519	1479	1	17	G03	A115	530	1730	1	50
G02	A118	572	2502	2	5	G03	A118	518	1770	2	2
G02	A118	508	1644	1	32	G03	A121	554	2280	2	4
G02	A118	528	1965	1	49	G03	A121	514	1810	2	5
G02	A118	580	2426	2	1	G03	C106	530	2050	1	63
G02	A121	539	2100	1	54	G03	C106	526	1940	1	23
G02	A121	530	1950	2	65						
G02	A121	497	1600	1	30						

Pink salmon											
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G01	A112	452	1060	–	–	G01	C093	382	766	2	1
G01	A112	450	1174	–	–	G01	C093	398	719	1	14
G01	A112	384	651	–	–	G01	C093	410	726	1	6
G01	A115	464	1128	2	5	G01	C093	376	598	1	12
G01	C072	396	666	2	4	G01	C093	398	748	2	3
G01	C072	442	173	2	5	G01	C093	388	668	2	2
G01	C072	400	695	2	5	G01	C093	390	670	2	3
G01	C072	428	875	2	6	G01	C093	408	753	2	2
G01	C072	368	546	2	5	G01	C093	386	652	2	2
G01	C072	384	654	1	14	G01	C093	426	889	1	8
G01	C072	400	726	2	6	G01	C093	398	694	2	4
G01	C072	392	654	1	12	G01	C093	456	1030	1	6
G01	C072	424	704	2	6	G01	C093	420	838	2	5
G01	C072	368	602	2	7	G01	C093	454	1046	1	26
G01	C072	352	553	2	5	G01	C093	432	900	2	6
G01	C072	382	627	2	2	G01	C093	426	890	1	5
G01	C072	438	935	2	4	G01	C093	408	713	1	5
G01	C072	406	689	1	9	G01	C093	408	752	1	15
G01	C072	400	737	1	5	G01	C093	424	814	1	14
G01	C072	414	771	1	16	G01	C093	406	823	1	21
G01	C072	386	645	1	8	G01	C093	410	719	1	8
G01	C072	410	757	2	3	G01	C093	404	725	2	2
G01	C072	380	615	2	3	G01	C093	450	1003	2	1
G01	C072	402	713	2	5	G01	C093	442	904	2	1
G01	C072	404	776	2	2	G01	C093	412	762	2	3
G01	C072	392	652	2	1	G01	C093	390	662	2	1
G01	C072	398	664	1	16	G01	C093	424	886	2	1
G01	C072	406	698	1	10	G01	C093	416	850	2	1
G01	C072	404	681	1	6	G01	C106	418	891	2	2
G01	C072	386	531	1	7	G01	C106	410	804	1	16
G01	C072	400	671	2	1	G01	C106	442	98	2	2
G01	C072	388	626	1	9	G01	C106	452	1082	2	3
G01	C072	400	649	2	3	G01	C106	450	933	2	12
G01	C082	366	566	2	1	G01	C121	432	863	2	1
G01	C082	422	743	2	3	G01	C121	368	606	2	2
G01	C082	444	1113	1	8	G02	A112	493	1214	2	4
G01	C082	422	784	2	10	G02	C055	339	423	1	4
G01	C082	392	748	2	1	G02	C063	392	698	1	8
G01	C082	400	718	2	3	G02	C063	300	375	1	14
G01	C082	400	644	1	19	G02	C063	370	566	2	7
G01	C082	374	592	2	1	G02	C063	356	452	1	5
G01	C082	360	596	2	1	G02	C063	362	446	1	9
G01	C082	418	768	1	7	G02	C063	359	496	2	8
G01	C082	400	638	2	1	G02	C063	360	467	2	3
G01	C082	398	666	2	1	G02	C063	350	452	2	6
G01	C082	384	553	2	2	G02	C063	320	349	2	5
G01	C082	368	533	2	1	G02	C063	374	577	2	4
G01	C082	374	567	1	7	G02	C063	358	449	2	5
G01	C082	392	662	1	10	G02	C063	337	418	1	6
G01	C082	406	736	1	7	G02	C063	343	391	1	10
G01	C082	414	723	2	3	G02	C063	376	526	2	9
G01	C082	404	809	2	2	G02	C063	380	578	1	4
G01	C082	380	624	2	2	G02	C063	352	417	1	10
G01	C082	414	760	1	20	G02	C063	335	372	2	5
G01	C082	418	748	2	3	G02	C063	356	511	2	6
G01	C082	416	758	2	5	G02	C063	312	340	2	6
G01	C082	404	691	2	3	G02	C063	363	414	1	9
G01	C082	398	677	1	17	G02	C063	329	393	2	4
G01	C082	358	683	2	5	G02	C063	338	393	1	10
G01	C082	428	835	2	5	G02	C063	302	268	1	9
G01	C082	354	475	1	7	G02	C063	351	417	1	10
G01	C082	410	691	1	9	G02	C063	356	429	1	8
G01	C082	420	770	2	2	G02	C063	354	449	1	9
G01	C093	428	793	2	6	G02	C063	344	425	2	6
G01	C093	418	829	1	9	G02	C063	376	501	2	8

Pink salmon											
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G02	C072	368	504	2	1	G02	C082	400	670	1	2
G02	C072	356	475	1	10	G02	C082	324	370	1	4
G02	C072	352	423	2	1	G02	C082	388	606	1	6
G02	C072	336	406	1	8	G02	C082	380	543	2	7
G02	C072	355	432	2	1	G02	C082	411	694	1	3
G02	C072	340	421	2	1	G02	C082	396	657	1	15
G02	C072	362	468	1	4	G02	C082	368	571	2	1
G02	C072	354	434	2	1	G02	C082	380	570	1	5
G02	C072	360	453	1	10	G02	C082	374	526	1	6
G02	C072	377	553	1	10	G02	C082	380	555	2	1
G02	C072	372	469	2	1	G02	C082	390	610	2	2
G02	C072	407	673	2	5	G02	C082	492	656	2	2
G02	C072	378	457	2	4	G02	C082	378	611	2	1
G02	C072	371	555	1	8	G02	C082	366	523	2	2
G02	C072	374	526	2	5	G02	C082	340	449	2	3
G02	C072	433	830	1	8	G02	C082	384	589	2	1
G02	C072	372	463	1	10	G02	C082	394	707	1	12
G02	C072	370	456	1	12	G02	C082	374	585	1	6
G02	C072	332	496	2	1	G02	C082	368	545	2	3
G02	C072	357	462	2	9	G02	C082	396	671	2	1
G02	C072	373	505	2	6	G02	C082	374	594	1	9
G02	C072	424	433	2	3	G02	C082	350	463	1	12
G02	C072	387	558	2	2	G02	C082	399	638	2	1
G02	C072	371	523	2	2	G02	C082	392	612	1	21
G02	C072	350	422	2	6	G02	C082	390	721	2	2
G02	C072	350	456	2	4	G02	C082	360	468	2	3
G02	C072	401	622	2	4	G02	C082	434	806	2	4
G02	C072	339	412	2	2	G02	C082	404	690	2	4
G02	C072	358	450	2	1	G02	C082	402	728	2	2
G02	C072	352	456	1	7	G02	C082	360	475	2	2
G02	C072	348	413	2	4	G02	C082	364	571	1	10
G02	C072	353	443	1	9	G02	C082	378	674	1	5
G02	C072	350	451	2	4	G02	C082	361	481	2	3
G02	C072	420	604	2	2	G02	C082	434	907	2	2
G02	C072	366	567	1	15	G02	C082	438	748	2	1
G02	C072	386	626	1	11	G02	C082	370	505	2	2
G02	C072	374	494	1	12	G02	C082	376	560	1	5
G02	C072	360	448	1	7	G02	C082	388	589	2	1
G02	C072	374	515	1	7	G02	C082	352	475	2	2
G02	C072	374	508	2	4	G02	C082	382	549	2	2
G02	C072	334	374	2	3	G02	C082	396	613	1	15
G02	C072	355	482	2	2	G02	C082	396	629	1	6
G02	C072	384	579	1	8	G02	C082	378	590	2	2
G02	C072	352	453	1	8	G02	C082	355	473	1	6
G02	C072	355	462	1	8	G02	C082	361	500	1	5
G02	C072	338	493	1	9	G02	C082	410	602	2	1
G02	C072	364	414	1	13	G02	C082	370	516	1	4
G02	C072	371	544	1	6	G02	C082	380	559	2	2
G02	C072	354	462	2	5	G02	C082	372	527	2	2
G02	C072	348	410	1	11	G02	C082	378	541	2	4
G02	C072	380	556	2	6	G02	C082	380	556	2	3
G02	C072	367	510	1	10	G02	C082	446	935	—	—
G02	C072	339	410	1	12	G02	C093	428	913	2	5
G02	C072	361	455	1	10	G02	C093	444	886	2	5
G02	C072	374	462	1	—	G02	C093	424	811	2	9
G02	C072	372	520	1	—	G02	C093	452	932	2	9
G02	C072	389	549	2	—	G02	C093	430	798	2	7
G02	C072	392	561	1	—	G02	C093	438	915	1	35
G02	C082	416	714	2	1	G02	C093	439	667	1	22
G02	C082	376	557	1	6	G02	C093	430	874	2	6
G02	C082	368	550	2	2	G02	C093	440	649	2	5
G02	C082	376	603	2	1	G02	C093	452	935	2	7
G02	C082	408	648	1	6	G02	C093	434	853	2	8
G02	C082	336	396	2	1						

Pink salmon											
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G02	C093	415	749	2	10	G02	C093	408	657	2	6
G02	C093	410	732	1	20	G02	C093	420	704	2	6
G02	C093	482	590	1	20	G02	C093	413	739	1	15
G02	C093	431	781	2	6	G02	C093	406	668	1	11
G02	C093	442	866	1	25	G02	C093	395	636	2	1
G02	C093	411	735	1	20	G02	C093	417	700	2	5
G02	C093	396	667	2	5	G02	C093	430	819	2	7
G02	C093	428	798	2	1	G02	C093	405	690	2	7
G02	C093	406	762	1	21	G02	C093	402	694	2	8
G02	C093	456	977	2	1	G02	C093	413	670	1	17
G02	C093	423	746	2	6	G02	C093	400	671	2	6
G02	C093	400	641	2	6	G02	C093	414	780	2	12
G02	C093	463	1081	1	14	G02	C093	400	690	1	14
G02	C093	407	719	2	8	G02	C093	410	712	2	6
G02	C093	438	882	2	6	G02	C106	419	797	–	–
G02	C093	426	839	2	4	G02	C106	426	909	–	–
G02	C093	380	668	2	13	G03	A115	532	2050	2	10
G02	C093	404	702	1	18	G03	C106	502	1500	2	7
G02	C093	409	772	1	16	G03	C106	456	1150	2	7
G02	C093	388	651	1	21						

Table 7. Position and research conditions of surface longline and hook-and-line sampling at each station during the *Oshoro maru* Cruise #242, 2012.

Station	Date and Time (S.M.T.*1)		T.D.*2	Set Position		D.S.*3	Number of baskets	bottom depth(m)	Wr*4	Wind (Force)	S.T.*5 (°C)		
	Line set	Line haul		Lat.	Long.								
Cruise #242													
OSHL1201	May 14	2000	May 15	0330	+10h	43-15.1N	154-59.9E	-	-	5550	c	West-4	5.9
OSSL 1201	May 15	0400-0418	May 15	0615-0715	+10h	43-10.6N	155-04.9E	325	10	5540	o	NW-5	5.5
OSHL1202	May 15	2100	May 16	0320	+10h	42-56.2N	155-05.2E	-	-	5360	bc	North-1	8.4
OSSL 1202	May 16	0400-0430	May16	0530-0720	+10h	42-58.1N	155-08.0E	315	19	5340	bc	SSE-3	8.7
OSHL1203	May 18	0000	May 18	0330	+10h	39-25.0N	154-53.0E	-	-	-	c	SSE-2	12.9

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of line set.

*4 Wr : Weather (bc: 25-75% clouded, c: 75-99% clouded, o: 100% clouded).

*5 S.T. : Surface temperature

Table 8. 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 # 242, 2012.

Station Name	Sampling gear	Species name						Total
		Sockeye	Chum	Pink	Coho	Chinook	Stellhead	
Cruise #242								
OSHL 1201	Hook-and-line	0	3	79	0	0	0	82
OSSL 1201	Surface longline	0	1	55	0	0	1	57
OSHL 1202	Hook-and-line	0	2	460	0	0	0	462
OSSL 1202	Surface longline	0	9	29	0	0	0	38
OSHL 1203	Hook-and-line	0	4	1	0	0	0	5
Total		0	19	624	0	0	1	644

Table 9. Biological characteristics of salmonids caught by hook and line research

Chum salmon									
St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
HL01	580	2300	2	3	HL01	552	2050	-	-
HL01	563	2000	-	-					
SL01	403	741	2	3	SL01	389	704	2	2
HL02	554	2000	1	28	HL02	626	2650	2	3
SL02	506	1603	1	50	SL02	583	2430	1	54
SL02	564	2224	2	11	SL02	504	1554	2	10
SL02	489	1296	2	3	SL02	515	1539	2	8
SL02	556	1425	1	71	SL02	625	2999	2	14
SL02	494	1408	2	5					
HL03	516	1850	2	12	HL03	598	2630	2	5
HL03	514	1830	2	6	HL03	568	2270	2	3
Pink salmon									
St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
HL01	450	1050	2	5	HL01	424	900	2	3
HL01	400	850	1	11	HL01	418	940	1	16
HL01	422	840	2	3	HL01	424	890	2	5
HL01	404	190	2	3	HL01	412	950	1	15
HL01	394	750	2	2	HL01	372	630	2	2
HL01	400	800	2	2	HL01	400	830	2	3
HL01	420	1050	2	7	HL01	434	850	2	3
HL01	414	940	2	4	HL01	378	730	2	3
HL01	362	700	2	2	HL01	438	980	2	5
HL01	386	850	2	5	HL01	384	700	1	9
HL01	412	700	1	11	HL01	390	710	2	2
HL01	410	780	2	5	HL01	366	740	2	5
HL01	396	720	2	3	HL01	370	690	2	4
HL01	436	910	2	5	HL01	332	630	2	4
HL01	414	690	2	5	HL01	388	890	1	15
HL01	384	700	2	3	HL01	392	710	2	5
HL01	386	780	2	3	HL01	423	950	2	3
HL01	394	630	2	5	HL01	414	830	1	9
HL01	384	650	2	3	HL01	444	980	2	4
HL01	420	900	2	3	HL01	443	900	2	2
HL01	368	720	1	10	HL01	396	750	1	6
HL01	402	810	2	3	HL01	426	810	1	11
HL01	414	800	-	-	HL01	406	650	-	-
HL01	391	750	-	-	HL01	371	600	-	-
HL01	422	790	-	-	HL01	378	610	-	-
HL01	414	710	-	-	HL01	426	830	-	-
HL01	446	880	-	-	HL01	372	630	-	-
HL01	422	790	-	-	HL01	380	610	-	-
HL01	416	780	-	-	HL01	396	670	-	-
HL01	424	790	-	-	HL01	456	900	-	-
HL01	408	850	-	-	HL01	380	530	-	-
HL01	402	700	-	-	HL01	387	790	-	-
HL01	396	770	-	-	HL01	425	780	-	-
HL01	454	690	-	-	HL01	393	679	-	-
HL01	394	730	-	-	HL01	429	780	-	-
HL01	412	760	-	-	HL01	402	670	-	-
HL01	420	850	-	-	HL01	424	960	-	-
HL01	380	670	-	-	HL01	440	950	-	-
HL01	396	670	-	-	HL01	418	890	-	-
HL01	458	960	-	-					

Pink salmon

St.	F.L.	B.W.	Sex	G.W.	St.	F.L.	B.W.	Sex	G.W.
	(mm)	(gr)		(gr)		(mm)	(gr)		(gr)
SL01	418	784	1	20	SL01	389	663	2	3
SL01	432	822	1	22	SL01	383	630	2	2
SL01	358	561	2	5	SL01	443	1068	2	16
SL01	386	593	2	3	SL01	378	644	2	2
SL01	390	672	2	1	SL01	410	788	1	20
SL01	343	500	2	1	SL01	390	705	2	2
SL01	420	840	1	23	SL01	404	472	2	3
SL01	388	611	1	18	SL01	363	543	2	1
SL01	397	611	1	12	SL01	402	677	2	1
SL01	387	665	2	2	SL01	424	830	1	20
SL01	419	817	2	2	SL01	378	613	1	16
SL01	424	821	1	13	SL01	411	744	2	8
SL01	416	759	2	3	SL01	390	606	2	4
SL01	489	684	2	2	SL01	374	629	1	9
SL01	402	703	2	2	SL01	426	848	2	3
SL01	422	897	1	32	SL01	458	1064	1	6
SL01	391	659	2	5	SL01	368	545	2	2
SL01	431	884	1	27	SL01	366	635	2	1
SL01	404	766	2	2	SL01	384	599	2	2
SL01	440	971	1	27	SL01	386	602	1	10
SL01	406	755	2	5	SL01	398	700	2	2
SL01	448	911	2	5	SL01	406	690	2	5
SL01	423	847	2	5	SL01	414	809	2	2
SL01	391	631	2	3	SL01	372	580	2	3
SL01	366	489	1	6	SL01	390	633	1	15
HL02	382	548	2	2	HL02	380	602	1	9
HL02	381	526	2	2	HL02	380	532	2	1
HL02	397	632	2	3	HL02	432	817	2	3
HL02	395	632	1	7	HL02	378	609	1	4
HL02	423	739	2	2	HL02	386	614	2	1
HL02	371	543	2	2	HL02	460	966	2	2
HL02	390	664	1	12	HL02	410	721	2	5
HL02	380	537	2	1	HL02	396	642	2	2
HL02	460	742	1	13	HL02	364	538	1	8
HL02	404	740	2	3	HL02	372	535	2	1
HL02	354	462	1	5	HL02	368	634	2	2
HL02	402	692	2	3	HL02	368	575	1	6
HL02	416	740	2	9	HL02	374	604	2	2
HL02	368	533	2	2	HL02	368	514	2	2
HL02	415	742	1	13	HL02	362	500	2	1
HL02	412	685	2	2	HL02	386	577	2	2
HL02	333	432	1	5	HL02	388	648	1	12
HL02	388	584	1	6	HL02	380	628	1	6
HL02	380	650	2	2	HL02	364	643	2	1
HL02	376	518	2	1	HL02	442	936	1	20
HL02	390	666	1	9	HL02	358	511	2	1
HL02	320	382	2	1	HL02	402	739	1	7
HL02	450	911	2	3	HL02	324	378	2	2
HL02	421	736	2	3	HL02	400	670	1	16
HL02	375	532	2	4	HL02	410	718	1	10
HL02	380	573	2	3	HL02	348	417	1	10
HL02	380	532	2	2	HL02	402	707	2	1
HL02	368	533	2	1	HL02	394	649	2	1
HL02	429	790	1	18	HL02	396	617	2	2
HL02	420	715	1	11	HL02	412	764	2	2

Pink salmon

St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
SL02	334	360	1	2	SL02	357	454	1	11
SL02	366	520	2	13	SL02	350	439	1	10
SL02	435	852	2	7	SL02	390	570	1	16
SL02	388	606	2	7	SL02	394	604	1	9
SL02	396	470	2	6	SL02	396	663	2	5
SL02	375	488	2	5	SL02	368	516	1	15
SL02	346	391	1	11	SL02	360	496	1	12
SL02	374	468	1	12	SL02	333	386	2	6
SL02	430	772	2	7	SL02	407	726	2	9
SL02	434	375	2	5	SL02	377	549	1	18
SL02	375	559	2	6	SL02	382	510	1	15
SL02	422	783	1	21	SL02	371	516	2	5
SL02	418	775	2	7	SL02	381	572	1	12
SL02	352	495	2	5	SL02	451	694	1	19
SL02	422	777	1	16	HL03	460	1180	2	4

Steelhead

St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
SL01	658	3446	1	33					

Table 10. Data on plankton collected by vertical hauls with a 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. (E)	Date	Hour					No.	Reading		per haul	per 1000 m ³				
OS12015 (Site H)	43-59	154-59	14 May	14:32	500	1	500	GG54	2562	3846	74.2	19.7	266	2)	12001		
							XX13	1858	3815	67.7						12002	
					150	1	150	GG54	2562	1278	24.7				1.8	72	12003
							XX13	1858	1218	21.6						12004	
OS12016	43-14	155-04	14 May	21:19	151	8	150	GG54	2562	1350	26.1	12.9	493		12005		
								XX13	1858	1229	21.8				12006		
OS12017	42-30	155-01	15 May	12:43	150	1	150	GG54	2562	1185	22.9	7.2	317		12007		
								XX13	1858	1134	20.1				12008		
OS12018	42-56	155-06	15 May	20:01	150	4	150	GG54	2562	1351	26.1	10.8	413		12009		
								XX13	1858	1272	22.6				12010		
OS12019	41-45	154-58	16 May	15:17	151	8	150	GG54	2562	1160	22.4	13.9	621		12011		
								XX13	1858	1250	22.2				12012		
OS12022	39-26	154-53	17 May	23:13	150	3	150	GG54	2562	1421	27.4	12.0	438		12013		
								XX13	1858	1347	23.9				12014		
OS12023	38-45	155-00	18 May	9:31	153	#	150	GG54	2562	1427	27.5	11.4	415		12015		
								XX13	1858	1290	22.9				12016		

1) Exclusively phytoplankton

2) Including some fragments of medusae.

3) *Neocalanus* abundant.

4) Gelatinous zooplankton abundant.

5) Doliolids abundant.

6) Salps abundant.

Table 11. Calibration data on flowmeters used for a twin or single NORPAC net and other kind of nets.

50-m wire out at 38-04N, 143-52E in 26 May 2012.

Flowmeter No.	Wire length (m)	Revolution						Mean
		1	2	3	4	5	6	
RG1858	50	458*	449	452	449	440*	443	448
RG2562	50	408	410	420	421*	407*	410	412

*: omitted from calculation

5.

**THE "OSHO RO MARU" CRUISE 243 THE NORTHWEST PACIFIC OCEAN AND THE BERING SEA
AND ALASKA BAY**

IN JUNE AND AUGUST 2012

1. Cruise Itinerary

Cruise 243

Departure from Hakodate	Jun.	8,	2012
Start hydrographic research (OS12031)		9	
Date change, repeat June 15 th		15	
Arrival at Dutch Harbor and change research staff		28	
Departure from Dutch Harbor	Jul.	2	
Start salmon hook and line (OSHL1204)		4	
Start mid-water trawl research (OSMT1204)		5	
Finish the mid-water trawl research (OSMT1207)		9	
Start gillnet research (OSG1204)		11	
Start Salmon longline research (OSSL1203)		12	
Finish gillnet (OSG1206), salmon hook and line (OSHL1207), and longline research (OSSL1205)		16	
Arrival at Kodiak and change research staff		19	
Departure from Kodiak		23	
Date change, skip July 29 th		28	
Finish hydrographic research (OS12125)	Aug.	4	
Return to Hakodate		6	

Total coverage 8925.3 miles

2. Vessel Personnel

Crew:	Captain	Associate Professor	Shogo Takagi
			And 30 persons
Research Staff:	Assistant Professor	(Laboratory of Marine Environmental Science)	
	Hakodate - Kodiak		Hiroji Onishi
	Assistant Professor	(Laboratory of Marine Environmental Science)	
	Hakodate - Kodiak		Hiromichi Ueno
	Assistant Professor	(Field Science Center for Northern Biosphere, Hokkaido University)	
	Dutch Harbor - Kodiak		Yoko Mitani
	Associate Professor	(Laboratory of Marine Biodiversity)	
	Hakodate - Hakodate		Atsushi Yamaguchi
	Lecturer (Pan-Okhotsk Research Center Institute of Low Temperature Science, Hokkaido University)		
	Hakodate - Dutch Harbor		Tomohiro Nakamura
	Assistant Professor	(The Hokkaido University Museum)	
	Dutch Harbor - Kodiak		Yoshiharu Fujita
	Professor	(Atmosphere and Ocean Research Institute, Tokyo University)	
	Hakodate - Dutch Harbor		Ichiro Yasuda
	Researcher (International Christian University)		
	Hakodate - Hakodate		Keiko Sekiguchi
	Graduate Students		11 persons
	Under Graduate Students		8 persons

Total 27 persons

3. Items of Research

Hydrographic observations by CTD and X-CTD casts: 4. Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly

Hydrographic work on deck and the data processing were made by Science officer, the deck officers, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus, SBE-19Plus), UCTD and XCTD2 or 4. Water and Plankton sampling were also carried out at almost hydrographic stations. Water samplings by Niskin bottles

Fig.1-1, 1-2, 1-3 Table.1, 2

Biological research for fishes caught by non-selective drift gillnets:

Three gillnet researches were performed during this cruise-Leg2. The operations were supervised by the captain, and were conducted by deck officers, crews and research staff.

Table.3, 4, 5, 6, 7

Salmon longline and hook-and-line research: [Hook-and-line and surface longline Sampling]

To collect salmon, hook-and-line gears and surface longline were used in Alaska Bay during this cruise-Leg2. Five to ten anglers were engaged in the work. These samplings were mainly conducted with observations when ship was under drifting.

Table.8, 9, 10

Biological research for fishes caught by mid-water trawl:

Four operations of the stern otter mid-water trawl were carried out. These operations were supervised by the captain, and were conducted by deck officers, Science officer, crews, research staff and cadets

Table.11, 12

Biological research for squid caught by jigging

Data on Plankton Collected by Vertical Hauls of a Twin-NORPAC Net.

Vertical hauls with a 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. Matsuno, Y. Abe, D. Arima (Laboratory of Marine Biology). Flowmeters used for plankton nets were calibrated once in the cruise. 243

Table.13, 14, 15

Sediment sampling and observation by ROV and Smith-McIntyre Grab:

Water samplings by Niskin bottles and underwater tug plane:

Objects:

The North Pacific cruise of “Oshoro Maru” was conducted in accordance with the following subjects. Study on temperature inversion and frontal structure in the northern North Pacific by crossing hydrographic section of anticyclonic eddies. Observation for turbulent flow and hydrographic condition at continental slope of the Bering Sea and Aleutian Passes. Observation of large amplitude internal wave and wave breaking by strong tidal current in the North Pacific. Hydrographic and current survey around the Aleutian Islands and Bering Sea, associated with distribution of marine mammals and birds, investigated visual evaluation. Monitoring of the distribution and ecology of salmon and other pelagic fishes in the eastern North Pacific and Bering Sea, using gillnets, longline and hook-and-line. Monitoring of community ecology of zooplankton in the North Pacific and Bering Sea using by the

NORPAC nets and VMPS. Monitoring of marine environment and resources for the Northern Elephant Seal in the Gulf of Alaska.

Fig 1-1. Oceanographic stations

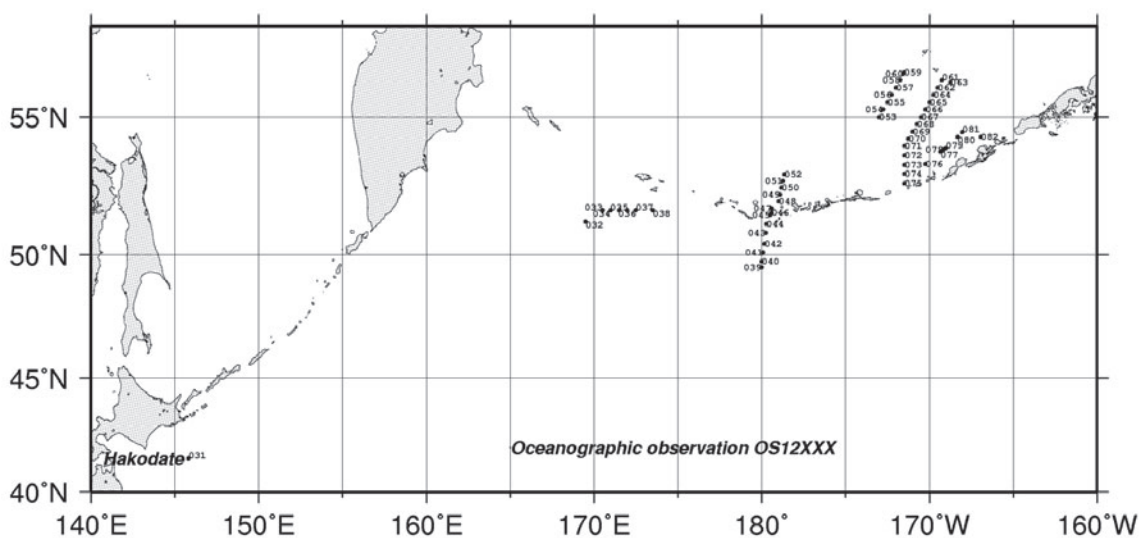


Fig 1-2. Oceanographic stations

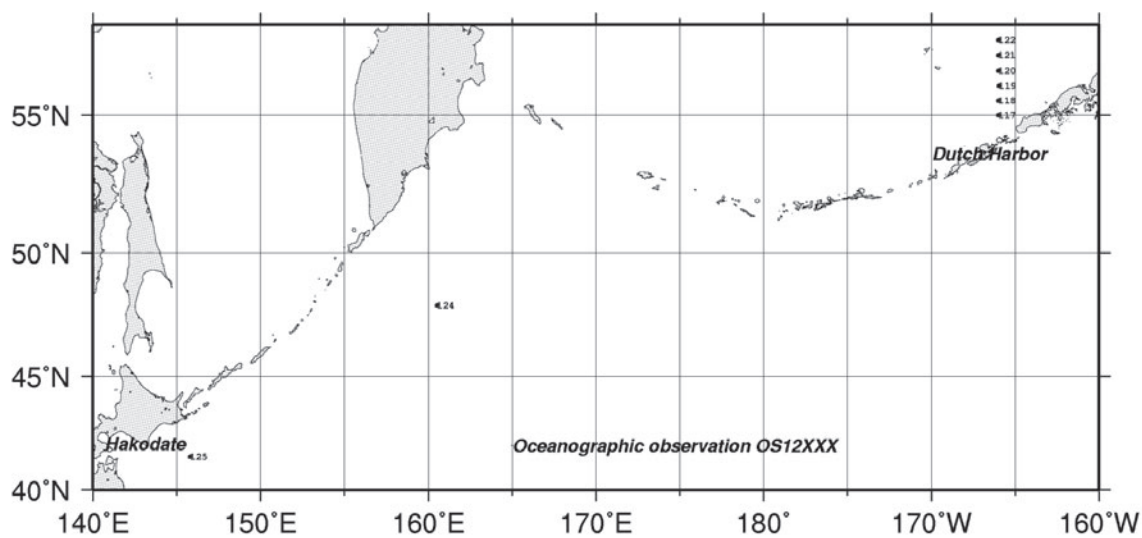


Fig 1-3. Oceanographic stations

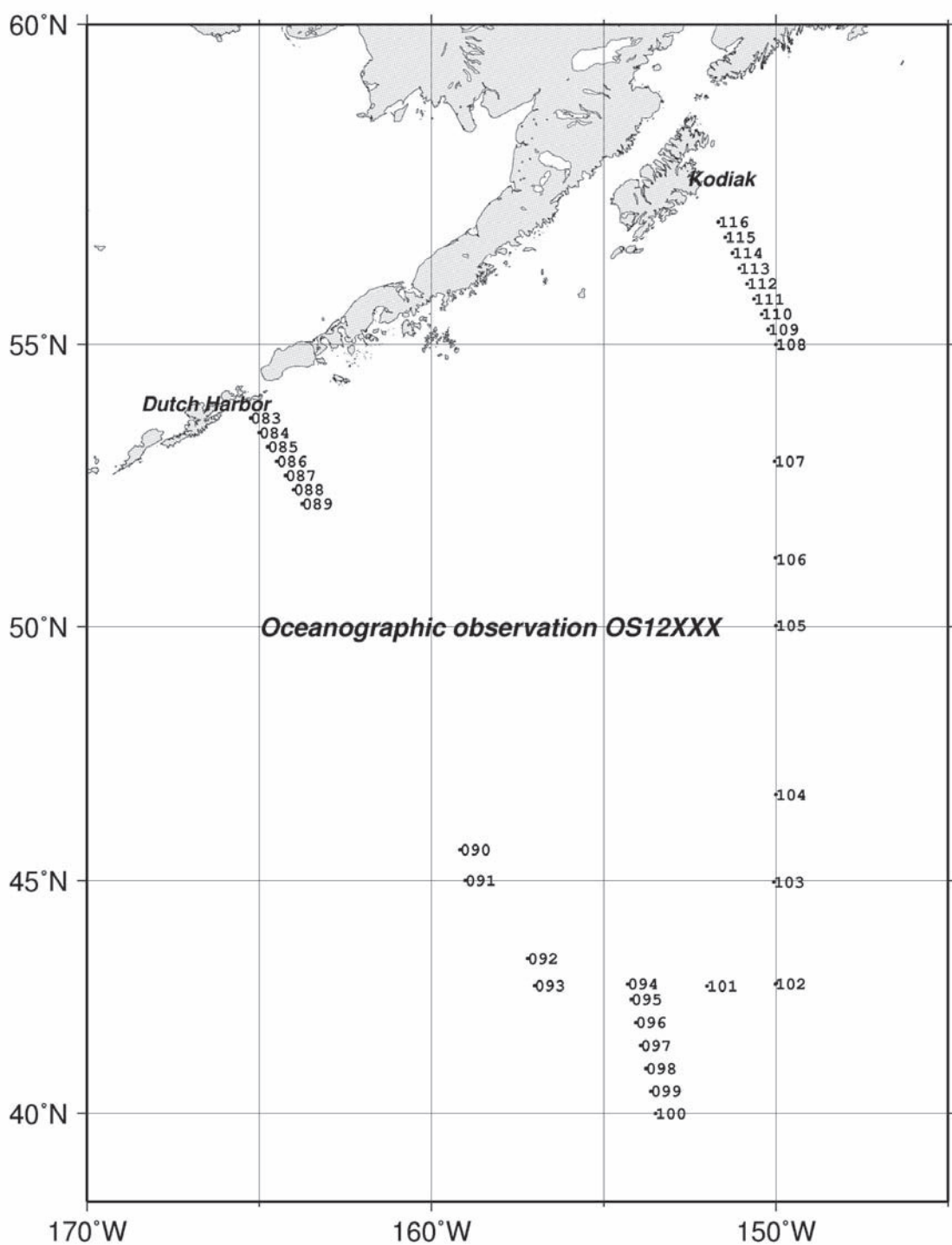


Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12032	51-15.01N	169-29.83E	6/13	9:47	11	4600	-	-	5.3	-	9Plus-0769
OS12034	51-40.01N	170-59.94E	6/13	19:22	11	4480	-	-	5.3	r	9Plus-0769
OS12035	51-39.92N	171-30.13E	6/13	23:33	11	4579	-	-	5.3	r	9Plus-0769
OS12036	51-40.01N	171-59.27E	6/14	4:40	11	6127	-	-	-	-	XCTD
OS12037	51-39.96N	172-29.58E	6/14	8:04	11	6585	-	-	5.2	o	9Plus-0769
OS12038	51-39.96N	173-29.80E	6/14	14:47	11	4985	-	-	5.1	o	9Plus-0769
OS12039	49-29.66N	179-59.01E	6/16	18:00	-12	4950	-	-	5.4	o	19Plus-4636
OS12040	49-44.79N	179-59.94E	6/16	22:29	-12	5158	-	-	-	-	XCTD
OS12041	50-04.95N	179-54.98W	6/16	0:40	-12	5970	-	-	5.8	o	9Plus-0769
OS12042	50-24.93N	179-50.29W	6/16	10:08	-12	6540	-	-	5.4	o	9Plus-0769
OS12043	50-49.77N	179-45.95W	6/17	15:48	-12	5463	-	-	5.4	-	9Plus-0769
OS12044	51-09.86N	179-42.87W	6/17	20:40	-12	3710	-	-	5.6	bc	9Plus-0769
OS12045	51-30.28N	179-29.96W	6/17	1:51	-12	1341	-	-	5.0	c	9Plus-0769
OS12046	51-35.07N	179-25.72W	6/18	5:14	-12	305	-	-	-	-	9Plus-0769
OS12047	51-44.86N	179-24.80W	6/19	5:03	-12	1150	-	-	5.1	o	9Plus-0769
OS12048	52-00.19N	178-59.77W	6/19	8:35	-12	2533	-	-	5.2	c	9Plus-0769
OS12049	52-15.11N	178-54.79W	6/19	12:00	-12	3384	-	-	-	-	XCTD
OS12050	52-30.66N	178-50.03W	6/19	14:31	-12	3488	-	-	5.6	o	9Plus-0769
OS12051	52-44.90N	178-44.96W	6/19	18:17	-12	3610	-	-	-	-	XCTD
OS12052	52-59.53N	178-39.85W	6/19	19:47	-12	3710	-	-	5.7	-	9Plus-0769
OS12053	55-00.38N	173-00.42W	6/20	22:22	-11	3843	-	-	6.0	o	9Plus-0769
OS12054	55-15.02N	172-45.01W	6/21	4:03	-11	3527	-	-	-	o	XCTD
OS12055	55-30.02N	172-29.87W	6/21	5:45	-11	3505	-	-	5.9	o	9Plus-0769
OS12056	55-45.01N	172-15.05W	6/21	10:27	-11	3338	-	-	-	-	XCTD
OS12057	55-59.68N	172-00.03W	6/21	12:38	-11	3210	-	-	5.7	o	9Plus-0769
OS12058	56-14.75N	171-45.19W	6/21	17:05	-11	2860	-	-	-	-	XCTD
OS12059	56-29.98N	171-30.54W	6/21	18:48	-11	157	-	-	5.6	o	9Plus-0769
OS12060	56-27.13N	171-34.50W	6/21	21:18	-11	650	-	-	5.4	bc	9Plus-0769
OS12061	56-14.90N	169-15.16W	6/22	20:03	-11	197	-	-	5.8	c	9Plus-0769
OS12062	55-59.93N	169-30.06W	6/22	22:38	-11	833	-	-	-	-	XCTD
OS12063	56-09.96N	168-45.06W	6/23	1:18	-11	320	-	-	6.3	o	9Plus-0769
OS12064	55-45.19N	169-45.20W	6/24	11:32	-11	2288	-	-	6.3	o	9Plus-0769
OS12065	55-30.02N	169-59.95W	6/24	15:29	-11	2870	-	-	5.9	o	9Plus-0769
OS12066	55-15.13N	170-14.94W	6/24	21:20	-11	3192	-	-	5.9	o	9Plus-0769
OS12067	55-00.08N	170-29.68W	6/25	2:46	-11	2970	-	-	5.8	bc	9Plus-0769
OS12068	54-45.29N	170-44.88W	6/25	8:21	-11	2406	-	-	5.9	-	19Plus-4636
OS12069	54-30.04N	170-59.83W	6/25	17:56	-10	3020	-	-	5.5	-	19Plus-4636
OS12070	54-15.07N	171-14.80W	6/25	23:34	-10	3236	-	-	6.0	-	19Plus-4636
OS12071	54-00.06N	171-29.78W	6/26	4:54	-10	3170	-	-	6.0	o	9Plus-0769
OS12072	53-39.96N	171-30.00W	6/26	11:10	-10	3100	-	-	5.9	o	9Plus-0769
OS12073	53-20.00N	171-29.94W	6/26	15:47	-10	2750	-	-	5.9	o	9Plus-0769
OS12074	53-00.13N	171-29.71W	6/26	20:30	-10	1352	-	-	5.7	o	9Plus-0769
OS12075	52-39.97N	171-29.91W	6/27	0:27	-10	551	-	-	5.3	o	9Plus-0769
OS12076	53-21.26N	170-15.12W	6/27	10:34	-10	2020	-	-	6.2	o	19Plus-4636
OS12077	53-47.51N	169-19.67W	6/27	19:04	-10	1604	-	-	-	c	XCTD
OS12078	53-51.48N	169-10.92W	6/27	19:54	-10	1713	-	-	-	c	XCTD
OS12079	53-55.23N	169-01.31W	6/27	20:52	-10	1944	-	-	-	-	XCTD
OS12080	54-18.26N	168-19.56W	6/28	0:35	-10	1578	-	-	-	-	XCTD
OS12081	54-28.63N	168-01.79W	6/28	2:21	-10	1352	-	-	-	-	XCTD
OS12082	54-18.34N	166-55.89W	6/28	10:54	-10	1087	-	-	6.3	o	19Plus-4636

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12083	53-44.98N	165-14.89W	7/2	23:25	-10	166	-	-	7.8	o	9Plus-0769
OS12084	53-30.17N	165-00.23W	7/3	1:33	-10	1440	-	-	8.4	o	9Plus-0769
OS12085	53-15.05N	164-45.28W	7/3	4:21	-10	3710	-	-	9.0	o	9Plus-0769
OS12086	53-00.09N	164-30.14W	7/3	8:56	-10	4282	-	-	8.9	o	19Plus-4636
OS12087	52-45.16N	164-14.59W	7/3	13:44	-10	6930	-	-	7.3	o	19Plus-4636
OS12088	52-30.14N	163-59.96W	7/3	17:52	-10	5710	-	-	7.3	o	19Plus-4636
OS12089	52-14.97N	163-44.98W	7/3	22:42	-10	4985	-	-	7.5	o	9Plus-0769
OS12090	45-38.23N	159-10.16W	7/5	3:32	-10	5280	-	-	9.4	o	19Plus-4636
OS12091	45-00.55N	159-00.76W	7/6	11:45	-10	5350	-	-	10.3	o	9Plus-0769
OS12092	43-22.56N	157-12.17W	7/7	11:23	-10	5300	-	-	12.7	o	9Plus-0769
OS12093	42-47.97N	157-00.21W	7/7	18:00	-10	5810	-	-	13.6	o	9Plus-0769
OS12094	42-49.85N	154-18.18W	7/8	11:20	-10	5060	-	-	14.0	o	9Plus-0769
OS12095	42-30.28N	154-11.88W	7/8	16:47	-10	5395	-	-	-	o	XCTD
OS12096	42-00.12N	154-03.77W	7/8	20:25	-10	5197	-	-	-	o	XCTD
OS12097	41-30.23N	153-55.23W	7/9	0:06	-10	5213	-	-	-	o	XCTD
OS12098	40-59.93N	153-46.46W	7/9	3:47	-10	5075	-	-	-	o	XCTD
OS12099	40-29.88N	153-38.16W	7/9	7:19	-10	5304	-	-	-	o	XCTD
OS12100	39-59.79N	153-29.72W	7/9	12:26	-10	4772	-	-	17.8	-	9Plus-0769
OS12101	42-47.19N	151-59.70W	7/11	0:36	-10	5160	-	-	13.2	-	9Plus-0769
OS12102	42-50.13N	150-00.42W	7/11	19:43	-10	5187	-	-	13.0	bc	9Plus-0769
OS12102	42-51.12N	149-59.03W	7/11	22:38	-10	5207	-	-	13.1	c	9Plus-0769
OS12103	44-58.65N	150-03.20W	7/12	5:03	-10	5233	-	-	12.0	c	9Plus-0769
OS12104	46-44.99N	149-59.95W	7/13	22:36	-10	5120	-	-	9.4	o	9Plus-0769
OS12104	46-45.66N	150-00.52W	7/14	1:29	-10	5115	-	-	9.4	o	9Plus-0769
OS12105	50-01.05N	149-59.53W	7/15	9:20	-10	4848	-	-	8.9	-	9Plus-0769
OS12105	50-01.44N	149-59.65W	7/15	12:12	-10	4830	-	-	9.0	-	9Plus-0769
OS12106	51-15.00N	150-00.08W	7/15	22:19	-10	4710	-	-	9.0	o	9Plus-0769
OS12106	51-16.72N	150-00.32W	7/16	1:08	-10	4704	-	-	9.0	o	9Plus-0769
OS12107	53-00.13N	150-02.17W	7/17	2:30	-10	4470	-	-	9.4	o	9Plus-0769
OS12108	54-59.92N	149-59.97W	7/17	18:54	-10	4130	-	-	9.6	o	9Plus-0769
OS12109	55-15.11N	150-13.08W	7/17	23:04	-10	4290	-	-	9.6	r	9Plus-0769
OS12110	55-30.17N	150-24.80W	7/18	3:15	-10	4440	-	-	9.5	o	9Plus-0769
OS12111	55-44.86N	150-38.07W	7/18	7:31	-10	4800	-	-	9.8	o	9Plus-0769
OS12112	56-00.00N	150-50.11W	7/18	12:25	-10	5290	-	-	10.0	o	9Plus-0769
OS12113	56-15.02N	151-03.02W	7/18	16:40	-10	5290	-	-	10.3	o	9Plus-0769
OS12114	56-29.90N	151-14.99W	7/18	20:55	-10	3197	-	-	10.7	o	9Plus-0769
OS12115	56-45.00N	151-28.23W	7/19	1:50	-10	1234	-	-	10.4	bc	19Plus-4636
OS12116	56-59.92N	151-39.73W	7/19	4:52	-10	79	-	-	9.7	bc	9Plus-0769
OS12117	55-00.09N	166-00.14W	7/25	21:13	-10	137	-	-	8.3	c	9Plus-0769
OS12118	55-29.99N	166-00.07W	7/26	0:42	-10	121	-	-	8.3	o	9Plus-0769
OS12119	55-59.87N	165-59.66W	7/26	4:10	-10	113	-	-	8.5	o	9Plus-0769
OS12120	56-29.99N	166-00.07W	7/26	7:29	-10	87	-	-	8.1	o	9Plus-0769
OS12121	56-59.98N	165-59.89W	7/26	11:04	-11	73	-	-	7.7	o	9Plus-0769
OS12122	57-29.99N	166-00.18W	7/26	14:53	-11	66	-	-	7.8	o	9Plus-0769
OS12123	58-00.07N	165-59.99W	7/26	18:23	-11	55	-	-	7.2	o	9Plus-0769
OS12124	47-55.50N	160-30.77E	8/1	10:35	9	5355	-	-	11.3	o	9Plus-0769
OS12125	41-29.83N	145-46.71E	8/4	1:12	9	6850	-	-	16.9	bc	9Plus-0769

Table 2. Oceanographic data

Station OS12032 Latitude 51-15.01N Longitude 169-29.83E Depth(m) 4600m				Station OS12034 Latitude 51-40.01N Longitude 170-59.94E Depth(m) 4480m				Station OS12035 Latitude 51-39.92N Longitude 171-30.13E Depth(m) 4579m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	4.943	32.779	25.921	5	4.922	33.075	26.158	5	4.872	33.067	26.157
10	4.966	32.781	25.92	10	4.919	33.077	26.16	10	4.853	33.07	26.162
20	5.027	32.852	25.97	20	4.671	33.086	26.194	20	4.759	33.074	26.175
30	4.931	32.867	25.992	30	4.231	33.083	26.238	30	4.65	33.076	26.189
40	4.827	32.88	26.013	40	3.444	33.119	26.343	40	3.895	33.103	26.288
50	4.517	32.874	26.042	50	3.272	33.141	26.377	50	3.469	33.125	26.346
75	3.187	33.063	26.322	75	3.053	33.152	26.406	75	3.079	33.15	26.402
100	2.788	33.129	26.41	100	2.986	33.157	26.415	100	2.989	33.151	26.41
125	3.011	33.266	26.5	125	2.979	33.165	26.422	125	2.964	33.161	26.42
150	3.477	33.497	26.642	150	3.019	33.182	26.432	150	2.977	33.171	26.427
175	3.803	33.735	26.799	175	3.208	33.224	26.449	175	3.02	33.18	26.431
200	3.78	33.798	26.852	200	3.763	33.352	26.499	200	3.374	33.255	26.459
250	3.865	33.896	26.922	250	4.14	33.503	26.581	250	4.153	33.454	26.54
300	3.821	33.968	26.983	300	4.079	33.581	26.65	300	4.223	33.541	26.603
400	3.647	34.055	27.07	400	3.985	33.787	26.823	400	4.131	33.698	26.737
500	3.613	34.15	27.149	500	3.833	33.916	26.941	500	4.008	33.873	26.889
600	3.441	34.212	27.215	600	3.767	34.013	27.025	600	3.855	33.999	27.004
700	3.266	34.266	27.275	700	3.711	34.09	27.091	700	3.721	34.081	27.083
800	3.126	34.305	27.319	800	3.599	34.152	27.152	800	3.586	34.161	27.161
900	2.987	34.342	27.361	900	3.488	34.203	27.203	900	3.428	34.222	27.224
1000	2.862	34.373	27.397	1000	3.345	34.247	27.252	1000	3.263	34.271	27.279

Station OS12036 Latitude 51-40.01N Longitude 171-59.27E Depth(m) 6127m				Station OS12037 Latitude 51-39.96N Longitude 172-29.58E Depth(m) 6585m				Station OS12038 Latitude 51-39.96N Longitude 173-29.80E Depth(m) 4985m			
Depth	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	4.934	32.969	-	5	5.011	33.021	26.105	5	4.997	32.86	25.979
10	4.928	32.987	-	10	5.011	33.021	26.106	10	4.996	32.86	25.979
20	4.898	33.01	-	20	5.009	33.021	26.106	20	4.83	32.907	26.035
30	4.691	33.02	-	30	4.8	33.035	26.14	30	4.803	33	26.112
40	4.671	33.025	-	40	4.745	33.041	26.151	40	4.602	32.994	26.129
50	3.598	33.087	-	50	3.735	33.089	26.292	50	3.697	32.991	26.217
75	3.126	33.134	-	75	3.155	33.152	26.396	75	3.239	33.105	26.351
100	3.065	33.157	-	100	3.033	33.156	26.411	100	2.988	33.142	26.403
125	2.975	33.163	-	125	2.983	33.161	26.419	125	2.961	33.164	26.423
150	2.957	33.173	-	150	2.991	33.168	26.424	150	3.124	33.217	26.451
175	3.045	33.202	-	175	2.985	33.176	26.431	175	3.314	33.296	26.497
200	3.307	33.257	-	200	3.275	33.24	26.456	200	3.652	33.404	26.551
250	4.122	33.495	-	250	4.167	33.482	26.562	250	3.787	33.533	26.64
300	4.097	33.585	-	300	4.221	33.591	26.642	300	4.047	33.728	26.769
400	4.067	33.781	-	400	4.054	33.818	26.84	400	3.928	33.932	26.944
500	3.877	33.948	-	500	3.872	33.993	26.998	500	3.768	34.035	27.042
600	3.788	34.062	-	600	3.723	34.098	27.097	600	3.665	34.127	27.125
700	3.658	34.133	-	700	3.596	34.162	27.16	700	3.49	34.194	27.196
800	3.508	34.204	-	800	3.333	34.229	27.239	800	3.334	34.248	27.253
900	3.337	34.255	-	900	3.266	34.253	27.264	900	3.185	34.292	27.303
1000	3.206	34.29	-	1000	3.22	34.275	27.286	1000	3.045	34.326	27.343
1200	2.895	34.376	-								
1500	2.458	34.469	-								

Station OS12039			
Latitude 49-29.66N			
Longitude 179-59.01E			
Depth(m) 4950m			
Press.	Temp.	Sal.	SIG-T
5	5.056	32.678	25.828
10	5.056	32.677	25.828
20	5.052	32.677	25.828
30	5.049	32.677	25.829
40	5.043	32.679	25.831
50	4.901	32.706	25.868
75	3.204	32.886	26.18
100	3.398	33.191	26.405
125	3.7	33.514	26.634
150	3.821	33.703	26.772
175	3.836	33.812	26.858
200	3.843	33.886	26.916
250	3.796	33.953	26.973
300	3.762	34.019	27.03
400	3.655	34.12	27.121
500	3.484	34.193	27.195
600	3.313	34.258	27.264
700	3.069	34.314	27.331
800	2.924	34.353	27.375
900	2.761	34.391	27.42
1000	2.613	34.429	27.464
1200	2.365	34.484	27.528
1500	2.106	34.541	27.596
2000	1.805	34.606	27.671
2500	1.619	34.638	27.711
3000	1.522	34.661	27.737

Station OS12040			
Latitude 49-44.79N			
Longitude 179-59.94E			
Depth(m) 5158m			
Depth	Temp.	Sal.	SIG-T
5	5.16	32.666	-
10	5.128	32.676	-
20	5.121	32.69	-
30	5.052	32.7	-
40	5.042	32.704	-
50	5.033	32.705	-
75	3.309	32.796	-
100	3.242	32.929	-
125	3.543	33.4	-
150	3.813	33.712	-
175	3.913	33.841	-
200	3.903	33.898	-
250	3.853	33.996	-
300	3.78	34.067	-
400	3.593	34.17	-
500	3.363	34.248	-
600	3.129	34.31	-
700	2.95	34.353	-
800	2.778	34.405	-
900	2.626	34.429	-
1000	2.484	34.464	-
1200	2.26	34.509	-
1500	1.995	34.572	-

Station OS12041			
Latitude 50-04.95N			
Longitude 179-54.98W			
Depth(m) 5970m			
Press.	Temp.	Sal.	SIG-T
20	5.139	32.704	25.84
30	5.086	32.706	25.847
40	4.987	32.701	25.854
50	3.719	32.769	26.039
75	3.338	32.786	26.088
100	3.209	32.79	26.103
125	3.074	32.801	26.123
150	3.186	32.954	26.236
175	3.515	33.222	26.419
200	3.894	33.525	26.623
250	4.051	33.844	26.861
300	4.03	33.976	26.969
400	3.549	34.191	27.188
500	3.065	34.323	27.339
600	2.803	34.382	27.409
700	2.625	34.421	27.456
800	2.47	34.455	27.497
900	2.332	34.485	27.532
1000	2.245	34.504	27.554
1200	2.093	34.536	27.593
1500	1.898	34.578	27.641
2000	1.685	34.621	27.693
2500	1.564	34.646	27.722
3000	1.472	34.665	27.744

Station OS12042			
Latitude 50°24.95N			
Longitude 179°50.20W			
Depth(m) 7262m			
Press.	Temp.	Sal.	SIG-T
5	5.116	32.696	25.836
10	5.101	32.696	25.838
20	5.074	32.697	25.842
30	4.957	32.702	25.858
40	4.944	32.702	25.86
50	4.921	32.703	25.863
75	3.279	32.783	26.091
100	3.171	32.866	26.167
125	3.541	33.299	26.478
150	3.886	33.625	26.704
175	3.937	33.799	26.837
200	3.93	33.877	26.9
250	3.893	33.975	26.982
300	3.817	34.053	27.051
400	3.587	34.169	27.166
500	3.347	34.251	27.255
600	3.154	34.303	27.315
700	2.984	34.345	27.364
800	2.79	34.383	27.411
900	2.659	34.414	27.447
1000	2.527	34.446	27.485
1200	2.297	34.495	27.544
1500	2.036	34.552	27.61
2000	1.754	34.61	27.678
2500	1.595	34.642	27.716
3000	1.505	34.66	27.737

Station OS12043			
Latitude 50-49.77N			
Longitude 179-45.95W			
Depth(m) 5463m			
Press.	Temp.	Sal.	SIG-T
5	5.165	32.722	25.851
10	5.165	32.723	25.852
20	5.101	32.718	25.855
30	5.034	32.723	25.866
40	4.672	32.727	25.909
50	3.95	32.793	26.036
75	3.517	32.85	26.123
100	3.32	32.906	26.185
125	3.467	33.117	26.34
150	3.64	33.541	26.661
175	4.19	33.802	26.813
200	3.979	33.867	26.887
250	3.621	33.928	26.971
300	3.612	33.995	27.025
400	3.584	34.099	27.111
500	3.446	34.176	27.186
600	3.298	34.239	27.25
700	3.148	34.287	27.303
800	3.017	34.32	27.341
900	2.847	34.364	27.391
1000	2.735	34.393	27.425
1200	2.492	34.455	27.495
1500	2.21	34.517	27.568
2000	1.882	34.588	27.651
2500	1.686	34.628	27.698
3000	1.553	34.655	27.729

Station OS12044			
Latitude 51-09.86N			
Longitude 179-42.87W			
Depth(m) 3710m			
Press.	Temp.	Sal.	SIG-T
5	4.872	32.698	25.865
10	4.896	32.696	25.86
20	4.082	32.733	25.975
30	3.473	32.786	26.076
40	3.486	32.903	26.168
50	3.698	33.076	26.285
75	3.837	33.328	26.472
100	3.803	33.365	26.506
125	3.82	33.43	26.556
150	3.806	33.521	26.629
175	3.883	33.608	26.691
200	3.873	33.636	26.714
250	3.64	33.676	26.769
300	3.747	33.805	26.861
400	3.586	33.901	26.953
500	3.546	34	27.036
600	3.646	34.11	27.114
700	3.449	34.166	27.177
800	3.368	34.227	27.234
900	3.203	34.252	27.27
1000	3.033	34.313	27.334
1200	2.698	34.411	27.442
1500	2.364	34.485	27.53
2000	2.007	34.564	27.622
2500	1.774	34.613	27.679
3000	1.63	34.642	27.713

Station OS12045			
Latitude 51°30.18N			
Longitude 179°30.01W			
Depth(m) 1341m			
Press.	Temp.	Sal.	SIG-T
5	4.338	33.18	26.304
10	4.273	33.192	26.32
20	4.039	33.214	26.362
30	3.992	33.223	26.374
40	3.857	33.232	26.394
50	3.733	33.234	26.408
75	3.324	33.327	26.52
100	3.409	33.356	26.536
125	3.464	33.399	26.565
150	3.479	33.41	26.572
175	3.566	33.473	26.614
200	3.621	33.535	26.658

Station OS12046			
Latitude 51-35.07N			
Longitude 179-25.72E			
Depth(m) 305m			
Depth	Temp.	Sal.	SIG-T
5	4.364	33.205	26.321
10	4.255	33.211	26.337
20	4.144	33.223	26.358
30	4.113	33.224	26.362
40	4.097	33.225	26.365
50	4.08	33.225	26.366
75	3.254	33.234	26.452
100	3.165	33.24	26.465
125	3.167	33.264	26.484
150	3.364	33.317	26.509
175	3.408	33.355	26.535
200	3.563	33.487	26.625
250	3.646	33.772	26.845

Station OS12047			
Latitude 51-44.86N			
Longitude 179-24.80W			
Depth(m) 1150m			
Press.	Temp.	Sal.	SIG-T
5	4.764	33.106	26.2
10	4.311	33.161	26.292
20	3.975	33.231	26.382
30	3.841	33.261	26.419
40	3.807	33.327	26.475
50	3.865	33.382	26.513
75	3.793	33.43	26.558
100	3.742	33.473	26.597
125	3.705	33.493	26.617
150	3.696	33.503	26.625
175	3.695	33.511	26.632
200	3.681	33.526	26.645
250	3.659	33.747	26.824
300	3.653	33.843	26.9
400	3.668	33.945	26.98
500	3.482	34.042	27.076
600	3.476	34.126	27.143
700	3.4	34.19	27.201
800	3.26	34.224	27.242
900	3.061	34.278	27.303
1000	2.879	34.327	27.359

Station OS12048			
Latitude 52-00.19N			
Longitude 178-59.77W			
Depth(m) 2533m			
Press.	Temp.	Sal.	SIG-T
5	4.764	32.979	26.1
10	4.673	32.973	26.105
20	4.451	33.016	26.162
30	4.254	33.103	26.251
40	4.136	33.189	26.332
50	4.146	33.208	26.346
75	4.056	33.234	26.376
100	3.999	33.267	26.408
125	3.942	33.333	26.466
150	3.875	33.401	26.527
175	3.826	33.442	26.564
200	3.824	33.461	26.58
250	3.761	33.517	26.63
300	3.8	33.575	26.673
400	3.777	33.802	26.855
500	3.518	33.947	26.996
600	3.425	34.08	27.111
700	3.354	34.181	27.198
800	3.143	34.238	27.264
900	3.001	34.295	27.322
1000	2.907	34.328	27.357
1200	2.721	34.381	27.416
1500	2.364	34.469	27.517
2000	1.892	34.578	27.642
2500	1.691	34.625	27.695

Station OS12049			
Latitude 52-15.11N			
Longitude 178-54.79W			
Depth(m) 3384m			
Depth	Temp.	Sal.	SIG-T
5	4.971	32.916	-
10	4.858	32.938	-
20	4.508	32.992	-
30	4.203	33.109	-
40	4.21	33.125	-
50	4.091	33.179	-
75	4.014	33.238	-
100	3.962	33.283	-
125	3.932	33.311	-
150	3.932	33.339	-
175	3.893	33.378	-
200	3.872	33.378	-
250	3.852	33.46	-
300	3.692	33.597	-
400	3.611	33.781	-
500	3.712	33.996	-
600	3.532	34.107	-
700	3.402	34.181	-
800	3.242	34.243	-
900	3.091	34.293	-
1000	2.96	34.312	-
1200	2.717	34.385	-
1500	2.322	34.481	-

Station OS12050			
Latitude 52-30.60N			
Longitude 178-49.98W			
Depth(m) 3488m			
Press.	Temp.	Sal.	SIG-T
5	5.373	33.176	26.187
10	5.059	33.171	26.219
20	4.573	33.176	26.276
30	4.54	33.178	26.281
40	4.522	33.178	26.283
50	4.47	33.181	26.291
75	3.347	33.228	26.439
100	3.249	33.235	26.454
125	3.159	33.24	26.466
150	3.127	33.249	26.476
175	3.204	33.279	26.493
200	3.246	33.313	26.516
250	3.515	33.401	26.562
300	3.609	33.473	26.61
400	3.773	33.66	26.743
500	3.745	33.867	26.91
600	3.634	34.012	27.037
700	3.541	34.111	27.125
800	3.305	34.171	27.195
900	3.181	34.258	27.276
1000	3.024	34.299	27.323
1200	2.763	34.378	27.409
1500	2.346	34.476	27.524
2000	1.951	34.568	27.629
2500	1.738	34.617	27.685
3000	1.621	34.647	27.718

Station OS12051			
Latitude 52-44.90N			
Longitude 178-44.96W			
Depth(m) 3610m			
Depth	Temp.	Sal.	SIG-T
5	4.728	33.116	-
10	4.346	33.16	-
20	4.225	33.197	-
30	4.215	33.203	-
40	4.205	33.212	-
50	4.195	33.216	-
75	3.889	33.265	-
100	3.886	33.276	-
125	3.866	33.283	-
150	3.856	33.294	-
175	3.826	33.313	-
200	3.786	33.324	-
250	3.816	33.36	-
300	3.737	33.451	-
400	3.667	33.641	-
500	3.735	33.874	-
600	3.459	33.995	-
700	3.436	34.097	-
800	3.366	34.2	-
900	3.155	34.275	-
1000	3.004	34.324	-
1200	2.751	34.393	-
1500	2.337	34.497	-

Station OS12052			
Latitude 52-59.53N			
Longitude 178-39.85W			
Depth(m) 3710m			
Press.	Temp.	Sal.	SIG-T
5	5.177	33.032	26.096
10	5.04	33.034	26.112
20	4.436	33.115	26.242
30	4.196	33.167	26.308
40	4.015	33.231	26.377
50	3.963	33.25	26.398
75	3.792	33.32	26.47
100	3.749	33.348	26.497
125	3.742	33.359	26.506
150	3.729	33.375	26.52
175	3.724	33.388	26.531
200	3.72	33.399	26.54
250	3.725	33.503	26.623
300	3.688	33.612	26.713
400	3.72	33.813	26.87
500	3.694	33.969	26.996
600	3.545	34.07	27.092
700	3.46	34.151	27.165
800	3.305	34.21	27.226
900	3.131	34.267	27.288
1000	3.012	34.314	27.336
1200	2.743	34.378	27.411
1500	2.345	34.476	27.524
2000	1.945	34.569	27.631
2500	1.73	34.619	27.687
3000	1.626	34.646	27.717

Station OS12053			
Latitude 55-00.38N			
Longitude 173-00.42W			
Depth(m) 3843m			
Press.	Temp.	Sal.	SIG-T
5	5.907	32.923	25.923
10	5.24	32.901	25.984
20	4.271	32.936	26.117
30	4.105	32.95	26.145
40	3.548	33.004	26.242
50	3.121	33.079	26.341
75	2.613	33.099	26.401
100	2.589	33.149	26.443
125	2.436	33.157	26.461
150	2.222	33.169	26.488
175	2.798	33.295	26.542
200	3.718	33.499	26.62
250	3.807	33.626	26.713
300	3.836	33.738	26.799
400	3.738	33.923	26.956
500	3.601	34.042	27.064
600	3.427	34.125	27.147
700	3.271	34.207	27.227
800	3.131	34.266	27.287
900	2.969	34.313	27.339
1000	2.809	34.354	27.387
1200	2.567	34.419	27.46
1500	2.228	34.5	27.553
2000	1.866	34.584	27.649
2500	1.689	34.626	27.696
3000	1.606	34.65	27.721

Station OS12054			
Latitude 55-15.02N			
Longitude 172-45.01W			
Depth(m) 3527m			
Depth	Temp.	Sal.	SIG-T
5	5.187	32.898	-
10	5.128	32.916	-
20	4.843	32.916	-
30	4.137	32.926	-
40	3.921	32.932	-
50	3.049	33.014	-
75	2.614	33.067	-
100	2.695	33.155	-
125	2.705	33.199	-
150	3.228	33.333	-
175	3.621	33.447	-
200	3.751	33.541	-
250	3.786	33.655	-
300	3.748	33.751	-
400	3.561	33.949	-
500	3.441	34.093	-
600	3.28	34.174	-
700	3.149	34.23	-
800	2.988	34.294	-
900	2.887	34.34	-
1000	2.715	34.389	-
1200	2.441	34.45	-
1500	2.137	34.527	-

Station OS12055			
Latitude 55-30.02N			
Longitude 172-29.87W			
Depth(m) 3505m			
Press.	Temp.	Sal.	SIG-T
5	5.64	32.94	25.969
10	5.61	32.936	25.969
20	4.721	32.943	26.075
30	4.221	32.956	26.138
40	3.552	33.013	26.249
50	3.258	33.041	26.298
75	2.9	33.092	26.371
100	2.629	33.144	26.435
125	2.604	33.181	26.467
150	2.864	33.251	26.501
175	3.155	33.332	26.54
200	3.414	33.428	26.593
250	3.65	33.596	26.704
300	3.669	33.731	26.809
400	3.635	33.916	26.96
500	3.56	34.032	27.06
600	3.428	34.142	27.161
700	3.237	34.212	27.234
800	3.097	34.273	27.296
900	2.906	34.31	27.343
1000	2.798	34.346	27.381
1200	2.533	34.419	27.463
1500	2.217	34.5	27.554
2000	1.849	34.587	27.652
2500	1.692	34.625	27.695
3000	1.606	34.65	27.722

Station OS12056			
Latitude 55-45.01N			
Longitude 172-15.05W			
Depth(m) 3338m			
Depth	Temp.	Sal.	SIG-T
5	6.057	32.901	-
10	6.048	32.911	-
20	5.921	32.901	-
30	4.654	32.994	-
40	4.416	33.002	-
50	3.81	33.02	-
75	3.068	33.099	-
100	2.854	33.169	-
125	2.582	33.18	-
150	2.724	33.229	-
175	3.129	33.329	-
200	3.389	33.419	-
250	3.56	33.536	-
300	3.64	33.66	-
400	3.64	33.841	-
500	3.56	33.978	-
600	3.4	34.11	-
700	3.329	34.187	-
800	3.138	34.26	-
900	2.936	34.295	-
1000	2.785	34.346	-
1200	2.511	34.422	-
1500	2.196	34.511	-

Station OS12057			
Latitude 55-59.68N			
Longitude 172-00.03W			
Depth(m) 3210m			
Press.	Temp.	Sal.	SIG-T
5	5.423	32.344	25.523
10	5.42	32.345	25.524
20	5.202	32.473	25.649
30	4.537	32.538	25.774
40	3.82	32.648	25.933
50	3.854	32.737	26.001
75	3.465	32.866	26.14
100	3.23	32.965	26.24
125	3.194	33.04	26.303
150	3.16	33.09	26.346
175	3.139	33.141	26.389
200	2.918	33.186	26.444
250	3.104	33.283	26.505
300	3.43	33.423	26.587
400	3.643	33.64	26.74
500	3.665	33.835	26.893
600	3.563	34.015	27.046
700	3.403	34.115	27.141
800	3.287	34.194	27.215
900	3.154	34.251	27.273
1000	2.975	34.3	27.329
1200	2.687	34.378	27.416
1500	2.324	34.476	27.526
2000	1.903	34.575	27.639
2500	1.744	34.616	27.684
3000	1.637	34.645	27.715

Station OS12058			
Latitude 56-14.75N			
Longitude 171-45.19W			
Depth(m) 2860m			
Depth	Temp.	Sal.	SIG-T
5	5.316	32.305	-
10	5.316	32.32	-
20	4.597	32.539	-
30	3.902	32.67	-
40	2.959	32.741	-
50	3.05	32.805	-
75	3.181	32.892	-
100	3.16	32.948	-
125	3.12	33.004	-
150	3.08	33.077	-
175	3.009	33.128	-
200	2.912	33.163	-
250	2.918	33.244	-
300	3.261	33.362	-
400	3.632	33.617	-
500	3.672	33.89	-
600	3.542	34.045	-
700	3.362	34.14	-
800	3.219	34.21	-
900	3.019	34.291	-
1000	2.868	34.339	-
1200	2.595	34.413	-
1500	2.32	34.484	-

Station OS12059			
Latitude 56-29.98N			
Longitude 171-30.54W			
Depth(m) 157m			
Press.	Temp.	Sal.	SIG-T
5	5.371	32.338	25.524
10	5.370	32.339	25.524
20	5.166	32.501	25.676
30	4.351	32.471	25.740
40	4.193	32.503	25.781
50	4.083	32.577	25.851
75	2.918	32.710	26.065
100	3.344	32.919	26.193
125	3.190	32.965	26.244

Station OS12060			
Latitude 56-27.13N			
Longitude 171-34.50W			
Depth(m) 650m			
Press.	Temp.	Sal.	SIG-T
5	5.191	32.458	25.639
10	5.175	32.472	25.652
20	5.079	32.545	25.720
30	4.588	32.558	25.784
40	4.054	32.558	25.839
50	4.178	32.643	25.894
75	4.423	32.844	26.028
100	3.620	32.896	26.149
125	3.056	32.929	26.227
150	3.138	33.014	26.288
175	3.128	33.072	26.335
200	3.129	33.093	26.351

Station OS12061			
Latitude 56-14.90N			
Longitude 169-15.16W			
Depth(m) 197m			
Press.	Temp.	Sal.	SIG-T
5	5.495	32.154	25.364
10	5.472	32.155	25.368
20	4.447	32.265	25.566
30	3.849	32.386	25.722
40	3.313	32.530	25.886
50	3.107	32.657	26.006
75	3.059	32.823	26.142
100	3.114	32.893	26.193
125	3.141	32.911	26.205
150	3.142	32.922	26.214

Station OS12062			
Latitude 55-59.93N			
Longitude 169-30.06W			
Depth(m) 833m			
Depth	Temp.	Sal.	SIG-T
5	5.444	32.415	-
10	5.349	32.435	-
20	5.283	32.444	-
30	4.189	32.491	-
40	4.271	32.574	-
50	3.943	32.629	-
75	3.553	32.765	-
100	3.323	32.887	-
125	3.310	33.014	-
150	3.273	33.105	-
175	3.122	33.116	-
200	3.082	33.149	-
250	2.981	33.174	-
300	3.082	33.284	-
400	3.614	33.696	-
500	3.584	33.926	-
600	3.493	34.039	-
700	3.273	34.124	-
800	3.202	34.166	-
900	4.082	16.186	-

Station OS12063			
Latitude 56-10.22N			
Longitude 168-40.14W			
Depth(m) 323m			
Press.	Temp.	Sal.	SIG-T
5	5.492	32.277	25.461
10	5.396	32.297	25.488
20	4.693	32.304	25.571
30	3.709	32.340	25.698
40	3.101	32.547	25.918
50	3.205	32.669	26.007
75	3.226	32.761	26.079
100	3.156	32.907	26.201
125	3.103	33.014	26.291
150	3.104	33.022	26.297
175	3.107	33.031	26.304
200	3.115	33.067	26.332

Station OS12064			
Latitude 55-45.19N			
Longitude 169-45.20W			
Depth(m) 2288m			
Press.	Temp.	Sal.	SIG-T
5	6.106	32.929	25.904
10	6.022	33.003	25.972
20	5.713	33.039	26.038
30	4.761	33.045	26.152
40	4.460	33.056	26.192
50	3.833	33.072	26.269
75	3.349	33.120	26.353
100	2.589	33.132	26.429
125	2.323	33.137	26.454
150	2.666	33.205	26.481
175	3.022	33.297	26.524
200	3.335	33.391	26.571
250	3.597	33.573	26.690
300	3.615	33.676	26.771
400	3.620	33.866	26.922
500	3.662	33.995	27.021
600	3.441	34.089	27.117
700	3.303	34.170	27.195
800	3.163	34.231	27.256
900	3.041	34.277	27.304
1000	2.894	34.321	27.352
1200	2.598	34.403	27.444
1500	2.275	34.486	27.538
2000	1.887	34.579	27.643

Station OS12065			
Latitude 55-30.02N			
Longitude 169-59.95W			
Depth(m) 2870m			
Press.	Temp.	Sal.	SIG-T
5	5.678	32.984	25.999
10	5.662	32.983	26.000
20	4.783	32.982	26.100
30	4.203	33.011	26.184
40	3.822	33.038	26.243
50	3.547	33.067	26.292
75	2.938	33.114	26.385
100	2.638	33.155	26.443
125	2.647	33.189	26.470
150	2.734	33.223	26.490
175	3.306	33.374	26.560
200	3.496	33.461	26.611
250	3.645	33.576	26.689
300	3.717	33.718	26.795
400	3.630	33.887	26.938
500	3.523	34.020	27.054
600	3.418	34.119	27.143
700	3.233	34.192	27.219
800	3.114	34.251	27.276
900	2.951	34.296	27.327
1000	2.821	34.340	27.375
1200	2.573	34.410	27.452
1500	2.224	34.498	27.551
2000	1.879	34.581	27.645
2500	1.725	34.619	27.688

Station OS12066			
Latitude 55-15.13N			
Longitude 170-14.94W			
Depth(m) 3192m			
Press.	Temp.	Sal.	SIG-T
5	5.706	32.970	25.984
10	5.705	32.970	25.985
20	5.705	32.971	25.986
30	4.231	32.975	26.152
40	3.811	33.000	26.214
50	3.196	33.043	26.305
75	2.821	33.129	26.407
100	2.595	33.165	26.455
125	2.756	33.221	26.486
150	3.125	33.310	26.525
175	3.415	33.423	26.589
200	3.485	33.473	26.622
250	3.587	33.591	26.706
300	3.658	33.712	26.796
400	3.669	33.848	26.903
500	3.570	33.984	27.020
600	3.421	34.093	27.122
700	3.236	34.188	27.215
800	3.093	34.254	27.281
900	2.946	34.306	27.336
1000	2.832	34.340	27.373
1200	2.564	34.419	27.460
1500	2.216	34.500	27.554
2000	1.856	34.585	27.651
2500	1.698	34.624	27.694
3000	1.606	34.650	27.722

Station OS12067			
Latitude 55-00.08N			
Longitude 170-29.68W			
Depth(m) 2970m			
Press.	Temp.	Sal.	SIG-T
5	5.466	33.066	26.089
10	5.514	33.054	26.074
20	5.451	33.066	26.091
30	4.062	33.074	26.248
40	3.694	33.072	26.282
50	3.022	33.078	26.349
75	2.601	33.134	26.430
100	2.419	33.150	26.457
125	2.296	33.163	26.477
150	2.661	33.241	26.510
175	3.355	33.386	26.564
200	3.657	33.501	26.628
250	3.626	33.601	26.710
300	3.697	33.707	26.788
400	3.691	33.905	26.946
500	3.507	34.050	27.079
600	3.363	34.132	27.159
700	3.232	34.207	27.231
800	3.060	34.271	27.298
900	2.966	34.312	27.339
1000	2.822	34.353	27.385
1200	2.555	34.419	27.461
1500	2.215	34.503	27.556
2000	1.865	34.584	27.649
2500	1.706	34.623	27.692

Station OS12068			
Latitude 54-45.29N			
Longitude 170-44.88W			
Depth(m) 2406m			
Press.	Temp.	Sal.	SIG-T
5	5.704	33.327	26.267
10	5.530	33.100	26.108
20	5.523	33.100	26.109
30	5.410	33.101	26.123
40	3.678	33.130	26.330
50	3.506	33.143	26.357
75	2.924	33.169	26.431
100	2.620	33.180	26.465
125	2.345	33.182	26.488
150	2.382	33.207	26.506
175	2.547	33.257	26.532
200	3.528	33.497	26.637
250	3.825	33.676	26.751
300	3.840	33.775	26.828
400	3.680	33.918	26.957
500	3.526	34.063	27.088
600	3.387	34.152	27.173
700	3.220	34.216	27.239
800	3.104	34.269	27.292
900	2.966	34.314	27.340
1000	2.828	34.352	27.383
1200	2.557	34.421	27.462
1500	2.217	34.504	27.557

Station OS12069			
Latitude 54-30.04N			
Longitude 170-59.83W			
Depth(m) 3020m			
Press.	Temp.	Sal.	SIG-T
5	5.666	33.272	26.228
10	5.386	33.215	26.216
20	5.328	33.096	26.129
30	4.052	33.103	26.272
40	3.263	33.097	26.343
50	2.898	33.101	26.378
75	2.428	33.134	26.444
100	2.334	33.147	26.462
125	2.706	33.207	26.479
150	2.745	33.256	26.515
175	3.224	33.371	26.564
200	3.736	33.534	26.646
250	3.819	33.678	26.753
300	3.843	33.771	26.824
400	3.655	33.926	26.966
500	3.502	34.041	27.073
600	3.386	34.136	27.159
700	3.260	34.206	27.227
800	3.115	34.263	27.286
900	2.967	34.305	27.333
1000	2.841	34.345	27.377
1200	2.591	34.416	27.455
1500	2.206	34.506	27.560
2000	1.866	34.585	27.650
2500	1.688	34.626	27.696

Station OS12070			
Latitude 54-15.07N			
Longitude 171-14.80W			
Depth(m) 3236m			
Press.	Temp.	Sal.	SIG-T
5	5.553	33.130	26.129
10	5.548	33.130	26.130
20	5.546	33.130	26.130
30	4.492	33.143	26.259
40	3.814	33.147	26.330
50	3.181	33.140	26.385
75	2.460	33.161	26.463
100	2.354	33.173	26.481
125	2.264	33.181	26.494
150	2.274	33.194	26.504
175	2.684	33.290	26.547
200	3.643	33.510	26.636
250	3.806	33.634	26.719
300	3.839	33.754	26.811
400	3.741	33.956	26.982
500	3.592	34.075	27.091
600	3.451	34.147	27.162
700	3.294	34.216	27.232
800	3.161	34.262	27.281
900	2.994	34.313	27.337
1000	2.860	34.349	27.378
1200	2.601	34.414	27.452
1500	2.234	34.501	27.553
2000	1.861	34.586	27.651
2500	1.687	34.627	27.697
3000	1.608	34.650	27.722

Station OS12071			
Latitude 54-00.06N			
Longitude 171-29.78W			
Depth(m) 3170m			
Press.	Temp.	Sal.	SIG-T
5	5.753	33.052	26.043
10	5.747	33.052	26.044
20	5.748	33.051	26.044
30	5.711	33.051	26.048
40	4.980	33.104	26.175
50	4.247	33.225	26.349
75	4.070	33.288	26.417
100	3.812	33.323	26.471
125	2.865	33.251	26.501
150	3.099	33.316	26.532
175	3.313	33.383	26.566
200	3.414	33.435	26.598
250	3.698	33.586	26.691
300	3.815	33.717	26.784
400	3.757	33.888	26.926
500	3.648	34.030	27.050
600	3.488	34.133	27.147
700	3.345	34.196	27.212
800	3.203	34.248	27.266
900	3.055	34.294	27.316
1000	2.910	34.336	27.363
1200	2.641	34.404	27.441
1500	2.280	34.488	27.539
2000	1.897	34.578	27.641
2500	1.707	34.623	27.692
3000	1.612	34.649	27.720

Station OS12072			
Latitude 53-39.96N			
Longitude 171-30.00W			
Depth(m) 3100m			
Press.	Temp.	Sal.	SIG-T
5	5.712	33.130	26.110
10	5.709	33.130	26.110
20	5.684	33.131	26.114
30	5.068	33.130	26.186
40	4.018	33.164	26.324
50	3.553	33.178	26.380
75	3.042	33.205	26.448
100	2.692	33.211	26.484
125	2.760	33.234	26.497
150	2.854	33.269	26.516
175	3.129	33.336	26.545
200	3.413	33.426	26.591
250	3.768	33.574	26.675
300	3.839	33.728	26.790
400	3.708	33.947	26.978
500	3.600	34.057	27.076
600	3.461	34.137	27.153
700	3.334	34.199	27.215
800	3.180	34.252	27.272
900	3.014	34.303	27.328
1000	2.884	34.340	27.369
1200	2.636	34.402	27.440
1500	2.274	34.490	27.541
2000	1.902	34.576	27.640
2500	1.716	34.622	27.691
3000	1.618	34.648	27.719

Station OS12073			
Latitude 53-20.00N			
Longitude 171-29.94W			
Depth(m) 2750m			
Press.	Temp.	Sal.	SIG-T
5	5.709	33.143	26.121
10	5.699	33.144	26.123
20	5.440	33.149	26.157
30	5.198	33.151	26.187
40	4.277	33.164	26.298
50	3.475	33.179	26.389
75	2.843	33.204	26.465
100	2.878	33.228	26.481
125	2.590	33.219	26.499
150	2.648	33.245	26.514
175	3.030	33.334	26.553
200	3.334	33.426	26.599
250	3.726	33.577	26.681
300	3.867	33.680	26.750
400	3.760	33.831	26.880
500	3.625	33.991	27.021
600	3.472	34.097	27.120
700	3.343	34.182	27.200
800	3.184	34.246	27.266
900	3.059	34.288	27.311
1000	2.940	34.324	27.351
1200	2.671	34.396	27.432
1500	2.266	34.492	27.543
2000	1.890	34.579	27.643
2500	1.692	34.625	27.695

Station OS12074			
Latitude 53-00.13N			
Longitude 171-29.71W			
Depth(m) 1352m			
Press.	Temp.	Sal.	SIG-T
5	5.542	33.152	26.148
10	5.394	33.144	26.159
20	5.212	33.151	26.186
30	4.526	33.170	26.277
40	4.117	33.204	26.346
50	3.983	33.221	26.373
75	3.854	33.237	26.398
100	3.411	33.240	26.443
125	3.288	33.261	26.471
150	4.104	33.392	26.497
175	4.041	33.461	26.558
200	3.978	33.507	26.601
250	3.975	33.635	26.703
300	3.925	33.704	26.763
400	3.671	33.857	26.909
500	3.629	34.045	27.064
600	3.538	34.106	27.121
700	3.355	34.191	27.207
800	3.201	34.251	27.268
900	3.057	34.295	27.317
1000	2.932	34.323	27.351

Station OS12075			
Latitude 52-39.97N			
Longitude 171-29.91W			
Depth(m) 551m			
Press.	Temp.	Sal.	SIG-T
5	4.754	33.135	26.224
10	4.433	33.205	26.314
20	4.317	33.285	26.390
30	4.312	33.292	26.396
40	4.304	33.299	26.402
50	4.291	33.309	26.412
75	4.253	33.345	26.444
100	4.218	33.374	26.470
125	4.190	33.398	26.492
150	4.172	33.416	26.509
175	4.172	33.421	26.512
200	4.173	33.421	26.512

Station OS12076			
Latitude 53-21.26N			
Longitude 170-15.12W			
Depth(m) 2020m			
Press.	Temp.	Sal.	SIG-T
5	5.907	32.998	25.983
10	5.636	32.997	26.014
20	5.204	33.021	26.083
30	5.001	33.027	26.111
40	4.861	33.041	26.138
50	4.492	33.089	26.216
75	4.057	33.181	26.334
100	3.167	33.185	26.421
125	3.045	33.213	26.455
150	2.865	33.228	26.483
175	2.969	33.273	26.509
200	3.124	33.321	26.534
250	3.502	33.452	26.604
300	3.702	33.594	26.697
400	3.769	33.812	26.865
500	3.721	33.940	26.971

Station OS12077			
Latitude 53-47.51N			
Longitude 169-19.67W			
Depth(m) 1604m			
Depth	Temp.	Sal.	SIG-T
5	6.039	32.990	-
10	6.000	33.000	-
20	5.869	33.009	-
30	5.376	33.026	-
40	4.237	33.060	-
50	3.971	33.117	-
75	3.551	33.193	-
100	3.891	33.293	-
125	3.941	33.368	-
150	3.831	33.396	-
175	3.931	33.453	-
200	3.921	33.491	-
250	3.891	33.601	-
300	3.761	33.710	-
400	3.631	33.895	-
500	3.511	33.989	-
600	3.531	34.084	-
700	3.370	34.179	-
800	3.179	34.256	-
900	3.008	34.313	-
1000	2.846	34.368	-
1200	2.593	34.422	-
1500	2.176	34.524	-

Station OS12078			
Latitude 53-51.48N			
Longitude 169-10.92W			
Depth(m) 1713m			
Depth	Temp.	Sal.	SIG-T
5	5.667	33.087	-
10	5.549	33.097	-
20	5.402	33.109	-
30	5.184	33.104	-
40	4.624	33.118	-
50	3.790	33.139	-
75	3.309	33.164	-
100	2.541	33.177	-
125	2.643	33.203	-
150	2.480	33.226	-
175	2.683	33.261	-
200	3.148	33.376	-
250	3.550	33.540	-
300	3.674	33.682	-
400	3.609	33.852	-
500	3.540	34.010	-
600	3.379	34.107	-
700	3.249	34.205	-
800	3.128	34.265	-
900	2.976	34.319	-
1000	2.805	34.373	-
1200	2.551	34.440	-
1500	2.144	34.536	-

Station OS12079			
Latitude 53-55.23N			
Longitude 169-01.31W			
Depth(m) 1944m			
Depth	Temp.	Sal.	SIG-T
5	6.213	33.004	-
10	5.979	33.031	-
20	5.803	33.077	-
30	5.520	33.054	-
40	4.673	33.105	-
50	3.769	33.132	-
75	3.107	33.156	-
100	2.926	33.206	-
125	2.498	33.207	-
150	2.733	33.254	-
175	3.359	33.357	-
200	3.489	33.437	-
250	3.598	33.570	-
300	3.543	33.664	-
400	3.709	33.890	-
500	3.529	34.003	-
600	3.338	34.116	-
700	3.258	34.219	-
800	3.111	34.281	-
900	2.956	34.334	-
1000	2.824	34.358	-
1200	2.551	34.430	-
1500	2.176	34.525	-

Station OS12080			
Latitude 54-18.26N			
Longitude 168-19.56W			
Depth(m) 1578m			
Depth	Temp.	Sal.	SIG-T
5	5.105	32.638	-
10	4.867	32.709	-
20	4.700	32.761	-
30	4.541	32.819	-
40	4.472	32.873	-
50	4.452	32.922	-
75	4.444	33.000	-
100	4.234	33.064	-
125	4.084	33.137	-
150	4.144	33.205	-
175	3.905	33.230	-
200	3.735	33.272	-
250	3.285	33.326	-
300	3.444	33.459	-
400	3.635	33.643	-
500	3.535	33.841	-
600	3.615	34.022	-
700	3.384	34.120	-
800	3.263	34.228	-
900	3.102	34.274	-
1000	2.910	34.329	-
1200	2.609	34.411	-
1500	2.189	34.521	-

Station OS12081			
Latitude 54-28.63N			
Longitude 168-01.79W			
Depth(m) 1352m			
Depth	Temp.	Sal.	SIG-T
5	5.848	32.644	-
10	5.809	32.652	-
20	5.526	32.686	-
30	4.452	32.844	-
40	3.805	32.841	-
50	3.675	32.854	-
75	3.547	32.968	-
100	3.545	33.066	-
125	3.387	33.121	-
150	3.334	33.146	-
175	2.991	33.197	-
200	3.062	33.260	-
250	3.324	33.377	-
300	3.508	33.521	-
400	3.615	33.696	-
500	3.585	33.943	-
600	3.484	34.065	-
700	3.344	34.159	-
800	3.163	34.224	-
900	3.002	34.297	-
1000	2.840	34.336	-
1200	2.576	34.417	-

Station OS12082			
Latitude 54-18.34N			
Longitude 166-55.89W			
Depth(m) 1087m			
Press.	Temp.	Sal.	SIG-T
5	6.045	32.714	25.741
10	5.847	32.783	25.820
20	5.355	32.849	25.930
30	4.572	33.052	26.178
40	4.381	33.073	26.214
50	4.195	33.099	26.254
75	4.038	33.153	26.314
100	3.477	33.142	26.359
125	3.112	33.165	26.411
150	2.968	33.189	26.443
175	3.131	33.252	26.479
200	3.639	33.360	26.517
250	3.599	33.434	26.580
300	3.571	33.528	26.657
400	3.604	33.779	26.854
500	3.646	33.964	26.998

Station OS12083			
Latitude 53-44.98N			
Longitude 165-14.89W			
Depth(m) 166m			
Press.	Temp.	Sal.	SIG-T
5	7.472	32.201	25.151
10	7.044	32.187	25.197
20	6.254	32.203	25.312
30	5.226	32.208	25.437
40	4.032	32.173	25.535
50	4.613	32.296	25.573
75	4.140	32.317	25.638
100	3.536	32.347	25.720
125	3.929	32.528	25.827
150	4.336	32.780	25.987

Station OS12084			
Latitude 53-30.17N			
Longitude 165-00.23W			
Depth(m) 1440m			
Press.	Temp.	Sal.	SIG-T
5	8.198	32.159	25.014
10	8.197	32.159	25.015
20	7.850	32.174	25.077
30	8.166	32.393	25.203
40	6.933	32.724	25.635
50	5.826	32.746	25.793
75	3.716	32.924	26.163
100	4.432	33.203	26.312
125	5.286	33.504	26.456
150	5.198	33.667	26.596
175	4.982	33.773	26.704
200	4.776	33.826	26.769
250	4.300	33.899	26.879
300	4.223	33.961	26.936
400	4.013	34.044	27.025
500	3.834	34.119	27.102
600	3.645	34.184	27.173
700	3.462	34.238	27.234
800	3.287	34.291	27.293
900	3.129	34.327	27.336
1000	2.992	34.356	27.372
1200	2.684	34.420	27.450

Station OS12085			
Latitude 53-15.05N			
Longitude 164-45.28W			
Depth(m) 3710m			
Press.	Temp.	Sal.	SIG-T
5	8.885	32.596	25.254
10	8.884	32.597	25.255
20	8.483	32.618	25.332
30	7.918	32.679	25.463
40	6.738	32.757	25.687
50	5.416	32.795	25.880
75	3.132	32.935	26.225
100	3.610	33.153	26.355
125	3.498	33.386	26.551
150	4.062	33.791	26.818
175	4.070	33.872	26.882
200	4.142	33.914	26.908
250	4.019	33.978	26.971
300	3.940	34.019	27.012
400	3.790	34.110	27.099
500	3.644	34.191	27.178
600	3.465	34.247	27.240
700	3.288	34.287	27.290
800	3.130	34.326	27.335
900	2.965	34.362	27.379
1000	2.793	34.397	27.422
1200	2.524	34.451	27.489
1500	2.210	34.518	27.569
2000	1.891	34.587	27.650
2500	1.689	34.628	27.698
3000	1.569	34.652	27.726

Station OS12086			
Latitude 53-00.09N			
Longitude 164-30.14W			
Depth(m) 4282m			
Press.	Temp.	Sal.	SIG-T
5	8.686	32.641	25.320
10	8.683	32.641	25.320
20	8.250	32.672	25.409
30	7.093	32.736	25.623
40	5.550	32.780	25.853
50	4.457	32.850	26.029
75	2.766	32.927	26.250
100	3.113	33.220	26.454
125	3.949	33.697	26.755
150	4.140	33.862	26.867
175	4.141	33.934	26.923
200	4.033	33.960	26.956
250	3.977	34.024	27.012
300	3.918	34.076	27.060
400	3.757	34.153	27.137
500	3.569	34.215	27.205
600	3.392	34.264	27.261
700	3.245	34.301	27.305
800	3.059	34.338	27.351
900	2.916	34.372	27.391
1000	2.719	34.413	27.442
1200	2.453	34.468	27.508
1500	2.123	34.538	27.592
2000	1.851	34.596	27.660
2500	1.655	34.634	27.705
3000	1.544	34.655	27.730

Station OS12087			
Latitude 52-45.16N			
Longitude 164-14.59W			
Depth(m) 6930m			
Press.	Temp.	Sal.	SIG-T
5	7.205	32.763	25.629
10	7.025	32.705	25.608
20	6.948	32.705	25.618
30	6.096	32.707	25.729
40	5.027	32.711	25.858
50	3.955	32.750	26.001
75	2.943	32.936	26.243
100	3.862	33.554	26.650
125	4.159	33.780	26.799
150	4.161	33.879	26.878
175	4.127	33.918	26.912
200	4.079	33.957	26.949
250	4.025	34.012	26.998
300	3.959	34.061	27.043
400	3.803	34.139	27.121
500	3.607	34.205	27.193
600	3.410	34.262	27.258
700	3.206	34.311	27.316
800	3.044	34.347	27.359
900	2.893	34.378	27.398
1000	2.725	34.413	27.441
1200	2.461	34.466	27.506
1500	2.125	34.537	27.591
2000	1.835	34.600	27.664
2500	1.658	34.635	27.705
3000	1.544	34.657	27.732

Station OS12088			
Latitude 52-30.14N			
Longitude 163-59.96W			
Depth(m) 5710m			
Press.	Temp.	Sal.	SIG-T
5	7.013	32.686	25.595
10	7.007	32.686	25.595
20	6.782	32.681	25.621
30	5.725	32.684	25.756
40	4.817	32.712	25.882
50	4.144	32.730	25.966
75	2.974	32.938	26.242
100	3.672	33.452	26.587
125	4.173	33.814	26.825
150	4.129	33.890	26.890
175	4.091	33.930	26.926
200	4.068	33.968	26.958
250	3.976	34.040	27.025
300	3.922	34.080	27.062
400	3.742	34.158	27.142
500	3.560	34.217	27.208
600	3.372	34.268	27.266
700	3.201	34.310	27.316
800	3.006	34.352	27.368
900	2.824	34.391	27.415
1000	2.666	34.422	27.454
1200	2.411	34.475	27.517
1500	2.122	34.538	27.592
2000	1.829	34.600	27.664
2500	1.631	34.638	27.710
3000	1.525	34.661	27.736

Station OS12089			
Latitude 52-14.97N			
Longitude 163-44.98W			
Depth(m) 4985m			
Press.	Temp.	Sal.	SIG-T
5	7.230	32.667	25.550
10	7.202	32.666	25.553
20	7.159	32.667	25.560
30	6.086	32.674	25.705
40	5.362	32.706	25.816
50	4.408	32.776	25.976
75	3.284	32.956	26.228
100	3.455	33.340	26.518
125	3.740	33.639	26.730
150	3.441	33.692	26.801
175	3.472	33.763	26.854
200	3.759	33.857	26.901
250	3.550	33.900	26.956
300	3.850	34.015	27.018
400	3.695	34.119	27.116
500	3.485	34.188	27.191
600	3.386	34.264	27.261
700	3.210	34.308	27.313
800	3.008	34.350	27.365
900	2.838	34.386	27.409
1000	2.699	34.414	27.444
1200	2.462	34.463	27.504
1500	2.162	34.528	27.581
2000	1.841	34.596	27.661
2500	1.653	34.634	27.705
3000	1.546	34.656	27.730

Station OS12090			
Latitude 45-38.23N			
Longitude 159-10.16W			
Depth(m) 5280m			
Press.	Temp.	Sal.	SIG-T
5	9.182	32.890	25.438
10	9.174	32.893	25.442
20	9.160	32.894	25.444
30	8.776	32.919	25.524
40	7.916	33.030	25.739
50	7.386	33.063	25.840
75	6.945	33.072	25.907
100	6.638	33.091	25.963
125	6.715	33.196	26.036
150	7.465	33.661	26.300
175	6.598	33.774	26.507
200	6.192	33.795	26.576
250	5.485	33.813	26.678
300	4.812	33.812	26.755
400	4.184	33.909	26.900
500	3.970	34.011	27.002
600	3.840	34.113	27.097
700	3.745	34.211	27.184
800	3.453	34.270	27.260
900	3.230	34.316	27.318
1000	3.040	34.357	27.368

Station OS12091			
Latitude 45-00.55N			
Longitude 159-00.76W			
Depth(m) 5350m			
Press.	Temp.	Sal.	SIG-T
5	9.978	32.987	25.384
10	9.977	32.987	25.384
20	9.968	32.987	25.386
30	9.513	32.996	25.468
40	8.633	33.012	25.619
50	8.207	33.037	25.702
75	7.140	33.073	25.882
100	6.802	33.104	25.952
125	6.894	33.150	25.976
150	7.203	33.469	26.185
175	7.255	33.812	26.448
200	6.802	33.821	26.517
250	6.208	33.841	26.611
300	5.214	33.842	26.732
400	4.440	33.910	26.873
500	4.220	34.018	26.982
600	4.028	34.130	27.091
700	3.710	34.196	27.176
800	3.458	34.271	27.260
900	3.247	34.312	27.313
1000	3.066	34.349	27.359
1200	2.758	34.411	27.437
1500	2.368	34.490	27.533
2000	2.003	34.572	27.629
2500	1.752	34.622	27.688
3000	1.601	34.649	27.722

Station OS12092			
Latitude 43-22.56N			
Longitude 157-12.17W			
Depth(m) 5300m			
Press.	Temp.	Sal.	SIG-T
5	12.548	32.993	24.927
10	12.547	32.994	24.927
20	12.505	33.000	24.940
30	11.834	32.987	25.057
40	9.959	33.045	25.433
50	9.116	33.024	25.553
75	8.450	33.066	25.688
100	8.094	33.131	25.793
125	7.795	33.131	25.836
150	8.094	33.453	26.045
175	8.533	33.858	26.297
200	8.042	33.877	26.386
250	7.234	33.889	26.511
300	6.410	33.903	26.634
400	5.120	33.911	26.798
500	4.571	33.994	26.926
600	4.296	34.082	27.025
700	3.955	34.169	27.129
800	3.660	34.232	27.209
900	3.408	34.282	27.274
1000	3.181	34.327	27.331

Station OS12093			
Latitude 42-47.97N			
Longitude 157-00.21W			
Depth(m) 5810m			
Press.	Temp.	Sal.	SIG-T
10	13.340	32.984	24.764
20	12.630	33.017	24.930
30	10.449	33.116	25.405
40	10.066	33.160	25.505
50	9.799	33.184	25.567
75	8.927	33.271	25.776
100	8.760	33.276	25.805
125	8.614	33.355	25.890
150	9.294	33.786	26.121
175	8.917	33.882	26.256
200	8.621	33.939	26.347
250	7.967	33.943	26.449
300	7.294	33.944	26.546
400	5.598	33.914	26.744
500	4.742	33.977	26.894
600	4.337	34.071	27.012
700	4.063	34.158	27.110
800	3.740	34.227	27.198
900	3.439	34.280	27.270
1000	3.195	34.328	27.331
1200	2.819	34.400	27.423
1500	2.425	34.483	27.523
2000	1.996	34.577	27.633

Station OS12094			
Latitude 42-49.85N			
Longitude 154-18.18W			
Depth(m) 5060m			
Press.	Temp.	Sal.	SIG-T
10	13.724	32.998	24.697
20	13.496	32.997	24.743
30	11.660	33.014	25.110
40	10.241	33.133	25.454
50	9.148	33.145	25.642
75	8.562	33.176	25.758
100	8.421	33.208	25.804
125	8.308	33.245	25.850
150	9.052	33.739	26.123
175	9.085	33.941	26.276
200	8.795	33.977	26.349
250	8.053	33.956	26.446
300	7.223	33.948	26.559
400	5.658	33.915	26.737
500	4.774	33.967	26.882
600	4.405	34.066	27.001
700	4.009	34.158	27.116
800	3.691	34.221	27.197
900	3.460	34.266	27.256
1000	3.209	34.318	27.321

Station OS12095			
Latitude 42-30.28N			
Longitude 154-11.88W			
Depth(m) 5395m			
Depth	Temp.	Sal.	SIG-T
5	14.054	32.938	-
10	13.992	32.954	-
20	12.382	32.958	-
30	10.668	33.031	-
40	9.828	33.118	-
50	9.203	33.194	-
75	8.500	33.193	-
100	8.490	33.235	-
125	8.217	33.287	-
150	9.410	33.893	-
175	9.470	34.013	-
200	9.146	34.025	-
250	8.209	33.962	-
300	7.639	33.949	-
400	6.065	33.938	-
500	4.930	33.951	-
600	4.417	34.054	-
700	4.040	34.144	-
800	3.691	34.225	-
900	3.441	34.274	-
1000	3.180	34.335	-

Station OS12096			
Latitude 42-00.12N			
Longitude 154-03.77W			
Depth(m) 5197m			
Depth	Temp.	Sal.	SIG-T
5	14.905	32.927	-
10	14.898	32.936	-
20	14.746	32.962	-
30	11.460	33.075	-
40	10.500	33.131	-
50	9.574	33.157	-
75	8.757	33.184	-
100	8.928	33.295	-
125	8.802	33.314	-
150	10.010	33.964	-
175	9.887	34.038	-
200	9.261	34.023	-
250	8.543	33.990	-
300	7.859	33.980	-
400	6.023	33.928	-
500	4.916	33.981	-
600	4.491	34.076	-
700	4.163	34.148	-
800	3.784	34.211	-
900	3.464	34.276	-
1000	3.233	34.323	-
1200	2.830	34.408	-
1500	2.424	34.496	-

Station OS12097			
Latitude 41-30.23N			
Longitude 153-55.23W			
Depth(m) 5213m			
Depth	Temp.	Sal.	SIG-T
5	16.359	33.017	-
10	16.350	33.023	-
20	15.820	33.002	-
30	12.169	33.194	-
40	10.735	33.265	-
50	10.002	33.325	-
75	9.513	33.359	-
100	9.225	33.360	-
125	9.096	33.374	-
150	9.669	33.801	-
175	9.973	34.017	-
200	9.709	34.036	-
250	8.617	33.989	-
300	8.118	33.995	-
400	6.388	33.941	-
500	5.119	33.957	-
600	4.577	34.056	-
700	4.151	34.154	-
800	3.793	34.217	-
900	3.493	34.268	-
1000	3.252	34.321	-
1200	2.808	34.414	-
1500	2.394	34.497	-

Station OS12098			
Latitude 40-59.93N			
Longitude 153-46.46W			
Depth(m) 5075m			
Depth	Temp.	Sal.	SIG-T
5	17.036	33.038	-
10	17.036	33.048	-
20	15.420	33.338	-
30	13.006	33.302	-
40	11.512	33.358	-
50	11.080	33.400	-
75	10.422	33.414	-
100	10.667	33.514	-
125	9.997	33.440	-
150	10.279	33.721	-
175	10.327	33.995	-
200	10.006	34.027	-
250	9.211	34.027	-
300	8.574	33.999	-
400	6.983	33.970	-
500	5.430	33.963	-
600	4.849	34.035	-
700	4.276	34.123	-
800	3.819	34.204	-
900	3.499	34.278	-
1000	3.258	34.325	-
1200	2.875	34.403	-
1500	2.460	34.497	-

Station OS12099			
Latitude 40-29.88N			
Longitude 153-38.16W			
Depth(m) 5304m			
Depth	Temp.	Sal.	SIG-T
5	17.575	33.133	-
10	17.575	33.145	-
20	14.484	33.201	-
30	12.057	33.328	-
40	11.171	33.391	-
50	10.730	33.379	-
75	10.409	33.414	-
100	10.730	33.524	-
125	10.808	33.601	-
150	10.031	33.564	-
175	10.579	34.022	-
200	10.271	34.084	-
250	9.444	34.052	-
300	8.693	34.001	-
400	7.198	33.965	-
500	5.570	33.956	-
600	4.791	34.025	-
700	4.316	34.110	-
800	3.899	34.186	-
900	3.559	34.256	-
1000	3.308	34.308	-
1200	2.885	34.395	-
1500	2.459	34.492	-

Station OS12100			
Latitude 39-59.79N			
Longitude 153-29.72W			
Depth(m) 4772m			
Press.	Temp.	Sal.	SIG-T
5	17.897	33.191	23.912
10	17.896	33.191	23.912
20	17.313	33.192	24.053
30	14.752	33.278	24.698
40	12.033	33.504	25.421
50	11.424	33.521	25.547
75	11.059	33.567	25.649
100	11.000	33.589	25.677
125	10.944	33.643	25.729
150	10.759	33.903	25.964
175	10.342	34.054	26.155
200	10.002	34.062	26.220
250	9.227	34.023	26.317
300	8.667	33.997	26.385
400	7.278	33.984	26.580
500	5.867	33.960	26.748
600	4.935	34.024	26.909
700	4.386	34.105	27.034
800	3.935	34.183	27.143
900	3.583	34.250	27.231
1000	3.296	34.307	27.304
1200	2.905	34.388	27.405
1500	2.510	34.479	27.512
2000	2.020	34.587	27.639

Station OS12101			
Latitude 42-47.19N			
Longitude 151-59.70W			
Depth(m) 5160m			
Press.	Temp.	Sal.	SIG-T
5	13.008	32.987	24.832
10	13.002	32.987	24.833
20	12.810	32.985	24.869
30	10.697	33.007	25.277
40	10.161	33.112	25.451
50	9.325	33.104	25.582
75	8.729	33.180	25.735
100	7.991	33.113	25.794
125	7.827	33.174	25.865
150	8.590	33.823	26.261
175	8.122	33.870	26.368
200	7.900	33.888	26.415
250	7.302	33.905	26.515
300	6.705	33.916	26.604
400	5.173	33.900	26.783
500	4.643	33.999	26.921
600	4.290	34.102	27.042
700	3.954	34.172	27.132
800	3.626	34.235	27.216
900	3.354	34.288	27.284
1000	3.153	34.333	27.339

Station OS12102			
Latitude 42-50.13N			
Longitude 150-00.42W			
Depth(m) 5187m			
Press.	Temp.	Sal.	SIG-T
5	12.636	32.852	24.800
10	12.521	32.851	24.821
20	12.123	32.866	24.909
30	10.639	32.956	25.247
40	9.694	33.018	25.455
50	9.154	33.042	25.561
75	8.628	33.137	25.717
100	8.015	33.059	25.748
125	8.305	33.166	25.789
150	8.144	33.354	25.960
175	8.725	33.888	26.291
200	8.099	33.886	26.384
250	7.587	33.918	26.484
300	6.917	33.932	26.588
400	5.639	33.929	26.751
500	4.811	33.996	26.901
600	4.363	34.085	27.020
700	3.957	34.156	27.119
800	3.604	34.229	27.213
900	3.365	34.282	27.278
1000	3.137	34.332	27.339
1200	2.799	34.406	27.429
1500	2.416	34.491	27.530
2000	1.974	34.582	27.639
2500	1.728	34.629	27.695
3000	1.571	34.655	27.728

Station OS12103			
Latitude 44-58.65N			
Longitude 150-03.20W			
Depth(m) 5233m			
Press.	Temp.	Sal.	SIG-T
5	11.596	32.760	24.925
10	11.594	32.760	24.925
20	11.546	32.760	24.933
30	10.684	32.764	25.091
40	9.468	32.830	25.345
50	8.921	32.890	25.479
75	7.434	32.990	25.776
100	7.206	33.006	25.820
125	7.174	33.050	25.859
150	7.703	33.394	26.056
175	8.233	33.842	26.329
200	7.748	33.867	26.421
250	7.021	33.886	26.538
300	6.203	33.883	26.644
400	4.968	33.903	26.809
500	4.538	34.017	26.947
600	4.184	34.108	27.058
700	3.873	34.181	27.147
800	3.564	34.243	27.228
900	3.325	34.293	27.290
1000	3.124	34.335	27.343
1200	2.808	34.404	27.427
1500	2.415	34.489	27.529
2000	1.992	34.577	27.633

Station OS12104			
Latitude 46-44.99N			
Longitude 149-59.95W			
Depth(m) 5120m			
Press.	Temp.	Sal.	SIG-T
5	9.036	32.589	25.225
10	9.016	32.592	25.231
20	8.747	32.606	25.283
30	8.353	32.607	25.343
40	8.041	32.615	25.395
50	6.909	32.687	25.609
75	5.466	32.702	25.801
100	4.973	32.732	25.881
125	4.651	32.754	25.933
150	6.163	33.574	26.405
175	5.497	33.707	26.593
200	5.021	33.735	26.670
250	4.313	33.766	26.772
300	4.342	33.873	26.854
400	4.068	33.964	26.955
500	3.922	34.077	27.060
600	3.839	34.170	27.142
700	3.570	34.230	27.216
800	3.350	34.283	27.280
900	3.158	34.323	27.330
1000	2.973	34.362	27.378
1200	2.669	34.426	27.456
1500	2.330	34.501	27.545
2000	1.946	34.582	27.641
2500	1.707	34.627	27.696
3000	1.575	34.653	27.726

Station OS12105			
Latitude 50-01.05N			
Longitude 149-59.53W			
Depth(m) 4848m			
Press.	Temp.	Sal.	SIG-T
5	8.723	32.684	25.348
10	8.723	32.684	25.348
20	8.724	32.684	25.348
30	8.305	32.693	25.418
40	6.091	32.703	25.727
50	5.412	32.729	25.828
75	4.219	32.771	25.992
100	3.884	33.126	26.307
125	4.088	33.644	26.699
150	4.046	33.762	26.796
175	3.864	33.801	26.846
200	3.923	33.852	26.881
250	3.934	33.931	26.942
300	3.912	33.998	26.998
400	3.801	34.098	27.088
500	3.684	34.166	27.154
600	3.486	34.232	27.226
700	3.302	34.283	27.285
800	3.133	34.325	27.334
900	2.979	34.360	27.376
1000	2.814	34.393	27.418
1200	2.551	34.448	27.485
1500	2.233	34.517	27.566
2000	1.897	34.589	27.650
2500	1.696	34.627	27.697
3000	1.562	34.654	27.728

Station OS12106			
Latitude 51-15.00N			
Longitude 150-00.08W			
Depth(m) 4710m			
Press.	Temp.	Sal.	SIG-T
5	8.739	32.720	25.374
10	8.704	32.719	25.378
20	8.649	32.721	25.388
30	8.420	32.721	25.423
40	6.825	32.725	25.650
50	5.379	32.760	25.857
75	3.780	32.819	26.073
100	3.261	32.953	26.228
125	3.805	33.432	26.559
150	3.990	33.726	26.774
175	3.875	33.812	26.854
200	3.888	33.860	26.890
250	3.906	33.934	26.948
300	3.870	33.999	27.003
400	3.812	34.098	27.088
500	3.662	34.165	27.156
600	3.509	34.224	27.218
700	3.296	34.273	27.277
800	3.146	34.312	27.323
900	3.023	34.354	27.367
1000	2.869	34.387	27.408
1200	2.584	34.444	27.478
1500	2.253	34.512	27.560
2000	1.906	34.585	27.647
2500	1.712	34.624	27.693
3000	1.577	34.651	27.725

Station OS12107			
Latitude 53-00.13N			
Longitude 150-02.17W			
Depth(m) 4470m			
Press.	Temp.	Sal.	SIG-T
5	9.023	32.757	25.358
10	8.921	32.757	25.374
20	8.890	32.760	25.381
30	6.015	32.786	25.802
40	4.542	32.874	26.040
50	3.894	32.949	26.166
75	3.648	33.204	26.392
100	4.401	33.580	26.615
125	4.719	33.833	26.781
150	4.380	33.872	26.849
175	4.208	33.911	26.898
200	4.014	33.916	26.923
250	3.954	33.983	26.982
300	3.910	34.052	27.041
400	3.740	34.128	27.118
500	3.562	34.193	27.188
600	3.392	34.244	27.245
700	3.231	34.287	27.295
800	3.048	34.331	27.347
900	2.893	34.367	27.389
1000	2.764	34.396	27.424

Station OS12108			
Latitude 54-59.92N			
Longitude 149-59.97W			
Depth(m) 4130m			
Press.	Temp.	Sal.	SIG-T
5	9.212	32.734	25.311
10	9.194	32.735	25.315
20	9.108	32.785	25.367
30	5.482	32.816	25.889
40	4.088	32.895	26.103
50	3.677	32.935	26.175
75	3.635	33.233	26.416
100	4.320	33.599	26.639
125	4.553	33.784	26.761
150	4.399	33.841	26.822
175	4.308	33.875	26.859
200	4.230	33.910	26.895
250	4.125	33.986	26.967
300	4.041	34.055	27.030
400	3.884	34.129	27.105
500	3.680	34.196	27.179
600	3.508	34.244	27.234
700	3.268	34.303	27.304
800	3.081	34.343	27.354
900	2.909	34.378	27.397
1000	2.779	34.404	27.429
1200	2.511	34.456	27.494
1500	2.186	34.524	27.575
2000	1.881	34.589	27.652
2500	1.696	34.627	27.696
3000	1.566	34.653	27.726

Station OS12109			
Latitude 55-15.11N			
Longitude 150-13.08W			
Depth(m) 4290m			
Press.	Temp.	Sal.	SIG-T
5	9.473	32.697	25.240
10	9.424	32.719	25.266
20	9.297	32.737	25.299
30	8.627	32.735	25.402
40	5.056	32.846	25.962
50	4.441	32.876	26.051
75	3.409	33.079	26.315
100	4.068	33.439	26.538
125	4.564	33.755	26.737
150	4.429	33.835	26.814
175	4.264	33.875	26.864
200	4.165	33.922	26.911
250	4.116	33.978	26.962
300	4.039	34.034	27.014
400	3.899	34.113	27.091
500	3.694	34.190	27.173
600	3.513	34.239	27.230
700	3.308	34.291	27.291
800	3.143	34.331	27.338
900	2.993	34.361	27.376
1000	2.842	34.392	27.414
1200	2.549	34.450	27.486
1500	2.205	34.520	27.570
2000	1.862	34.592	27.655
2500	1.688	34.628	27.698
3000	1.586	34.650	27.723

Station OS12110			
Latitude 55-30.17N			
Longitude 150-24.80W			
Depth(m) 4440m			
Press.	Temp.	Sal.	SIG-T
5	9.423	32.677	25.233
10	9.378	32.693	25.253
20	9.234	32.725	25.300
30	7.773	32.750	25.539
40	5.212	32.857	25.952
50	3.879	32.903	26.130
75	3.270	33.048	26.303
100	3.863	33.372	26.505
125	4.378	33.679	26.696
150	4.481	33.846	26.818
175	4.243	33.879	26.869
200	4.397	33.946	26.906
250	4.217	33.994	26.963
300	4.088	34.032	27.007
400	3.910	34.112	27.089
500	3.733	34.179	27.160
600	3.529	34.233	27.223
700	3.338	34.285	27.283
800	3.141	34.328	27.336
900	2.974	34.362	27.378
1000	2.824	34.394	27.417
1200	2.524	34.453	27.490
1500	2.189	34.523	27.574
2000	1.857	34.593	27.656
2500	1.668	34.631	27.702
3000	1.564	34.653	27.727

Station OS12111			
Latitude 55-44.86N			
Longitude 150-38.07W			
Depth(m) 4800m			
Press.	Temp.	Sal.	SIG-T
5	9.658	32.667	25.187
10	9.649	32.668	25.189
20	9.358	32.731	25.285
30	7.875	32.734	25.512
40	4.784	32.864	26.006
50	4.300	32.890	26.077
75	3.381	32.988	26.245
100	3.825	33.310	26.459
125	4.525	33.676	26.678
150	4.566	33.817	26.786
175	4.251	33.842	26.839
200	4.144	33.898	26.895
250	4.222	33.978	26.950
300	4.114	34.021	26.995
400	3.900	34.110	27.088
500	3.739	34.171	27.153
600	3.541	34.233	27.222
700	3.355	34.279	27.277
800	3.151	34.325	27.333
900	2.961	34.367	27.384
1000	2.772	34.405	27.431
1200	2.483	34.461	27.501
1500	2.163	34.528	27.581
2000	1.843	34.595	27.660
2500	1.656	34.633	27.704
3000	1.547	34.656	27.730

Station OS12112			
Latitude 56-00.00N			
Longitude 150-50.1W1			
Depth(m) 5290m			
Press.	Temp.	Sal.	SIG-T
5	9.756	32.714	25.208
10	9.754	32.715	25.209
20	9.659	32.735	25.240
30	8.376	32.721	25.429
40	5.493	32.801	25.876
50	3.908	32.917	26.139
75	3.649	33.126	26.330
100	4.266	33.409	26.494
125	4.743	33.758	26.719
150	4.808	33.860	26.793
175	4.562	33.894	26.847
200	4.371	33.920	26.889
250	4.266	33.975	26.943
300	4.197	34.034	26.997
400	3.930	34.129	27.101
500	3.696	34.194	27.176
600	3.498	34.248	27.238
700	3.319	34.293	27.291
800	3.101	34.339	27.348
900	2.903	34.378	27.397
1000	2.762	34.407	27.433
1200	2.481	34.462	27.502
1500	2.151	34.531	27.584
2000	1.834	34.597	27.662
2500	1.667	34.631	27.702
3000	1.553	34.655	27.729

Station OS12113			
Latitude 56-15.02N			
Longitude 151-03.02W			
Depth(m) 5290m			
Press.	Temp.	Sal.	SIG-T
5	9.946	32.709	25.172
10	9.924	32.712	25.178
20	9.815	32.731	25.211
30	7.962	32.751	25.513
40	5.088	32.856	25.966
50	4.238	32.893	26.086
75	3.411	33.040	26.284
100	3.745	33.314	26.470
125	4.044	33.529	26.611
150	4.167	33.755	26.779
175	4.131	33.833	26.844
200	4.102	33.883	26.887
250	4.043	33.933	26.933
300	4.030	33.996	26.984
400	3.867	34.091	27.076
500	3.743	34.174	27.155
600	3.574	34.226	27.213
700	3.373	34.280	27.276
800	3.175	34.324	27.329
900	2.991	34.363	27.377
1000	2.853	34.390	27.411
1200	2.548	34.450	27.486
1500	2.211	34.519	27.569
2000	1.870	34.591	27.654
2500	1.691	34.627	27.697
3000	1.571	34.652	27.726

Station OS12114			
Latitude 56-29.90N			
Longitude 151-14.99W			
Depth(m) 3197m			
Press.	Temp.	Sal.	SIG-T
5	10.422	32.400	24.852
10	10.415	32.403	24.855
20	10.394	32.411	24.865
30	8.721	32.520	25.219
40	5.966	32.734	25.766
50	5.291	32.770	25.875
75	4.261	32.917	26.103
100	4.502	33.249	26.342
125	4.751	33.450	26.474
150	5.101	33.749	26.672
175	4.930	33.809	26.739
200	4.565	33.832	26.798
250	4.424	33.919	26.882
300	4.222	33.978	26.950
400	4.033	34.078	27.049
500	3.835	34.157	27.133
600	3.623	34.221	27.204
700	3.447	34.265	27.256
800	3.263	34.305	27.306
900	3.071	34.346	27.357
1000	2.897	34.381	27.400
1200	2.628	34.434	27.466
1500	2.272	34.507	27.555
2000	1.880	34.588	27.651
2500	1.681	34.629	27.699
3000	1.568	34.653	27.726

Station OS120115			
Latitude 56-45.00N			
Longitude 151-28.23W			
Depth(m) Depth 1234m			
Press.	Temp.	Sal.	SIG-T
5	10.263	32.455	24.921
10	10.256	32.456	24.923
20	7.516	32.507	25.385
30	6.649	32.596	25.572
40	6.357	32.633	25.638
50	5.150	32.734	25.862
75	4.940	32.986	26.085
100	4.410	33.164	26.284
125	5.427	33.494	26.432
150	5.148	33.596	26.546
175	5.158	33.696	26.623
200	5.203	33.831	26.725
250	4.804	33.870	26.802
300	4.534	33.925	26.875
400	4.262	34.008	26.970
500	4.024	34.104	27.071
600	3.814	34.166	27.142
700	3.675	34.208	27.189
800	3.453	34.264	27.255
900	3.278	34.304	27.304
1000	3.173	34.328	27.333

Station OS12116			
Latitude 56-59.92N			
Longitude 151-39.73W			
Depth(m) 79m			
Press.	Temp.	Sal.	SIG-T
5	9.553	32.302	24.919
10	9.553	32.302	24.919
20	8.850	32.289	25.019
30	7.277	32.353	25.297
40	6.323	32.402	25.460
50	6.077	32.436	25.518

Station OS12117
Latitude 55-00.09N
Longitude 166-00.14W
Depth(m) 137m

Press.	Temp.	Sal.	SIG-T
5	8.079	32.079	24.969
10	7.795	32.120	25.042
20	6.175	32.308	25.404
30	5.113	32.474	25.660
40	4.751	32.536	25.749
50	4.301	32.550	25.808
75	3.722	32.743	26.018
100	3.308	32.879	26.165

Station OS12118
Latitude 55-29.99N
Longitude 166-00.07W
Depth(m) 121m

Press.	Temp.	Sal.	SIG-T
5	8.001	32.088	24.988
10	7.995	32.089	24.989
20	7.253	32.542	25.449
30	5.679	32.419	25.552
40	4.331	32.350	25.645
50	4.687	32.504	25.731
75	4.063	32.675	25.931
100	3.799	32.754	26.020

Station OS12119
Latitude 55-59.87N
Longitude 165-59.66W
Depth(m) 113m

Press.	Temp.	Sal.	SIG-T
5	8.366	31.773	24.688
10	8.358	31.771	24.687
20	7.274	31.938	24.971
30	3.944	32.068	25.460
40	3.467	32.156	25.574
50	3.314	32.233	25.650
75	2.889	32.463	25.870
100	3.022	32.524	25.907

Station OS12120
Latitude 56-29.99N
Longitude 166-00.07W
Depth(m) 87m

Press.	Temp.	Sal.	SIG-T
10	7.927	31.265	24.352
20	4.188	31.756	25.188
30	2.361	31.879	25.446
40	0.677	32.131	25.757
50	0.637	32.163	25.785

Station OS12121
Latitude 56-59.98N
Longitude 165-59.89W
Depth(m) 73m

Press.	Temp.	Sal.	SIG-T
10	7.405	31.330	24.476
20	5.216	31.408	24.805
30	-0.473	31.749	25.501
40	-0.488	31.759	25.510
50	-0.460	31.764	25.513

Station OS12122
Latitude 57-29.99N
Longitude 166-00.18W
Depth(m) 66m

Press.	Temp.	Sal.	SIG-T
5	7.470	31.443	24.556
10	7.466	31.443	24.556
20	0.589	31.537	25.284
30	0.587	31.577	25.316
40	0.584	31.573	25.313
50	0.578	31.572	25.312

Station OS12123
Latitude 58-00.07N
Longitude 165-59.99W
Depth(m) 55m

Press.	Temp.	Sal.	SIG-T
5	6.814	31.433	24.634
10	6.807	31.433	24.635
20	3.870	31.535	25.043
30	3.461	31.592	25.125
40	3.401	31.572	25.115

Station OS12124
Latitude 47-55.50N
Longitude 160-30.77E
Depth(m) 5355m

Press.	Temp.	Sal.	SIG-T
5	11.186	32.227	24.584
10	10.943	32.394	24.757
20	10.146	32.593	25.048
30	5.174	32.917	26.005
40	3.285	32.949	26.223
50	1.945	33.010	26.381
75	0.512	33.011	26.474
100	0.851	33.101	26.528
125	0.729	33.129	26.557
150	0.756	33.222	26.630
175	2.558	33.517	26.740
200	3.395	33.713	26.822
250	3.483	33.834	26.909
300	3.724	33.963	26.989
400	3.592	34.091	27.104
500	3.438	34.168	27.180
600	3.265	34.240	27.254
700	3.092	34.293	27.312
800	2.935	34.336	27.361
900	2.783	34.375	27.406
1000	2.629	34.410	27.447

Station OS12125
Latitude 41-29.83N
Longitude 145-46.71E
Depth(m) 6850m

Press.	Temp.	Sal.	SIG-T
5	16.527	32.833	23.961
10	13.451	32.718	24.535
20	8.325	32.982	25.641
30	4.138	32.972	26.159
40	2.419	33.002	26.338
50	1.632	33.051	26.437
75	1.182	33.120	26.522
100	1.209	33.178	26.567
125	1.201	33.229	26.609
150	1.249	33.277	26.644
175	1.319	33.326	26.679
200	1.434	33.370	26.706
250	1.631	33.445	26.753
300	1.978	33.545	26.808
400	2.606	33.738	26.912
500	3.198	33.952	27.030
600	3.398	34.105	27.134
700	3.239	34.181	27.209
800	3.158	34.264	27.283
900	2.911	34.306	27.339
1000	2.770	34.346	27.384
1200	2.546	34.434	27.473
1500	2.281	34.512	27.558
2000	1.932	34.592	27.651
2500	1.693	34.635	27.703
3000	1.576	34.656	27.728

Table 3. Position and research conditions of surface drift gillnet sampling at each station during the Oshoro maru Cruise #243-Leg2.

Station	Date and Time (S.M.T.*1)				T.D.*2	Set Position		D.S.*3	bottom depth(m)	Wr*4	Wind (Force)	S.T.*5 (°C)
	Net set		Net haul			Lat.	Long.					
Cruise #243 - Leg 2												
OSG 1204	July 11	1747-1814	July 12	0500-0554	-10h	42-49.9 N	149-59.7 W	090	-	o	WSW-4	13.2
OSG 1205	July 13	1750-1815	July 14	0500-0555	-10h	46-45.4 N	149-59.9 W	020	5114.5	f	SSE-2	9.7
OSG 1206	July 15	1745-1810	July 16	0430-0520	-10h	51-16.7 N	150-01.9 W	090	4737.0	c	West-2	8.9

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of net set.

*4 Wr : Weather (c: 75-99% clouded, o: 100% clouded, f: fog).

*5 S.T. : Surface temperature

table 4. Nets composition

Stations	net	A-Gear				C-gear										F-Gear								Total
	Mesh size (mm)	112	115	118	121	48	55	63	72	82	93	106	121	138	157	19	22	25	29	33	37	42		
OSG1204		4	6	3	6	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	49	
OSG1205		1	6	3	9	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	49	
OSG1206		1	6	3	9	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	49	

Table 5. Biological characteristics of salmonids caught by drift gillnet research

Sockeye Salmon																	
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G05	A115	552	2317	1	40	G06	C072	322	372	2	2	G06	C106	514	1707	2	2
G05	C121	552	2053	2	13	G06	C072	332	452	2	2	G06	C106	476	1318	2	2
G06	A118	532	1691	2	2	G06	C082	430	862	1	4	G06	C106	506	1490	1	5
G06	A118	528	1729	1	7	G06	C082	366	560	2	2	G06	C106	444	1010	1	14
G06	A121	540	1937	1	14	G06	C093	460	1145	1	8	G06	C121	448	900	1	5
G06	A121	476	1311	2	2	G06	C093	404	789	2	2						
G06	C063	594	2204	2	7	G06	C093	400	743	1	82						
Chum Salmon																	
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G05	A121	520	1731	2	2	G06	C063	354	503	1	1	G06	C093	500	1455	14	14
G05	C072	362	543	2	4	G06	C072	402	766	1	5	G06	C093	504	1592	2	4
G05	C093	360	419	1	2	G06	C072	414	517	1	6	G06	C093	524	1761	2	4
G06	A118	472	1257	1	15	G06	C072	356	573	2	2	G06	C093	480	1404	2	3
G06	A121	494	1565	1	10	G06	C082	456	1155	1	6	G06	C093	476	1410	2	2
G06	A121	468	1292	2	2	G06	C082	486	1489	1	9	G06	C093	482	1261	2	2
G06	A121	524	1821	2	4	G06	C082	456	1214	2	2	G06	C093	440	1047	1	5
G06	A121	530	1920	1	16	G06	C082	522	1562	2	2	G06	C093	440	1071	2	2
G06	A121	524	1636	1	13	G06	C082	388	675	2	2	G06	C093	416	871	1	6
G06	A121	544	2191	2	2	G06	C082	454	1043	1	4	G06	C093	426	1068	1	5
G06	A121	504	1663	2	2	G06	C082	500	1461	2	2	G06	C093	434	970	2	2
G06	A121	464	1331	2	2	G06	C082	492	1354	1	9	G06	C093	534	1972	1	8
G06	A121	504	1480	2	2	G06	C082	508	1534	1	10	G06	C093	456	1226	1	94
G06	A121	540	1967	2	2	G06	C082	404	681	1	5	G06	C106	492	1672	2	2
G06	A121	500	1450	2	2	G06	C082	428	890	2	2	G06	C106	476	1247	2	2
G06	A121	504	1666	1	12	G06	C082	438	943	1	7	G06	C106	490	1400	2	80
G06	A121	586	2452	1	19	G06	C082	434	944	1	6	G06	C121	496	1445	2	2
G06	C063	358	541	1	2	G06	C093	456	1275	2	2						
Pink Salmon																	
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G05	A112	486	1547	1	95	G06	A121	516	1820	2	77	G06	A121	548	2158	1	136
G05	A115	488	1489	1	89	G06	A121	516	1732	1	101	G06	A121	502	1695	1	138
G06	A112	500	1445	1	72	G06	A121	516	1797	1	116	G06	C082	458	1058	2	27
G06	A115	520	1704	1	137	G06	A121	498	1568	1	108	G06	C106	496	1491	2	32
G06	A121	532	1996	1	118	G06	A121	506	1538	1	87	G06	C106	538	1761	2	56
G06	A121	494	1522	2	66	G06	A121	524	2012	1	107	G06	C106	478	1312	2	31
Coho Salmon																	
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G05	A115	599	3080	2	14	G05	C138	564	2654	1	120	G06	A121	580	2532	2	19
G05	A115	586	2706	2	120	G06	A112	576	2938	2	56	G06	A121	574	2990	2	60
G05	A121	500	1693	2	28	G06	A115	442	1172	2	42	G06	C048	500	1161	2	86
G05	A121	646	4116	1	50	G06	A115	496	1767	2	63	G06	C063	568	2481	2	46
G05	C093	490	1580	2	54	G06	A121	584	2735	2	15	G06	C093	640	3450	1	1
G05	C138	652	3416	2	16	G06	A121	554	2468	1	48	G06	C106	558	2185	2	16
G05	C138	580	2795	1	67	G06	A121	600	3006	1	122	G06	C157	554	2266	1	9
Steelhead Salmon																	
St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G05	C055	580	2225	2	13	G06	A121	582	2187	2	2	G06	C121	570	2151	1	9
G06	A121	700	3906	2	4												

Table 6. The number of organisms caught by drift gillnet during the Oshoro maru Cruise # 243-Leg2, in July, 2012. CPUE and (%) indicate numerical catch per tan and percentage of total catch by C-gear gillnet at the station, respectively.

		Station		OSG 1204				OSG 1205				OSG 1206			
Common name	Scientific name	Gear		C		A	Total	C		A	Total	C		A	Total
				CPUE (%)	(%)			CPUE (%)	(%)			CPUE (%)	(%)		
Sockeye salmon	<i>Oncorhynchus nerka</i>	0	0.0 (0.0)	0	0	0	0	1	0.0 (6.7)	1	2	13	0.4 (21.0)	5	18
Chum salmon	<i>Oncorhynchus keta</i>	0	0.0 (0.0)	0	0	0	0	2	0.1 (13.3)	1	3	36	1.2 (58.1)	14	50
Pink salmon	<i>Oncorhynchus gorbuscha</i>	0	0.0 (0.0)	0	0	0	0	0	0.0 (0.0)	2	2	4	0.1 (6.5)	12	16
Coho salmon	<i>Oncorhynchus kisutch</i>	0	0.0 (0.0)	0	0	0	0	4	0.1 (26.7)	4	8	6	0.2 (9.7)	8	14
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
Steelhead	<i>Oncorhynchus mykiss</i>	0	0.0 (0.0)	0	0	0	0	1	0.0 (6.7)	0	1	1	0.0 (1.6)	2	3
Boreal clubhook squid	<i>Onychoteuthis borealijaponicus</i>	1	0.0 (1.0)	0	1	4	4	0.1 (26.7)	0	4	0	0	0.0 (0.0)	0	0
Eight-armed squid	<i>Gonatopsis borealis</i>	0	0.0 (0.0)	0	0	1	1	0.0 (6.7)	0	1	2	0.1 (3.2)	0	2	0
Flying squid	<i>Ommastrephes bartramii</i>	36	1.2 (35.0)	54	90	0	0	0.0 (0.0)	0	0	0	0.0 (0.0)	0	0	0
Blue shark	<i>Prionace glauca</i>	9	0.3 (8.7)	23	32	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0
Salmon shark	<i>Lamna ditropis</i>	0	0.0 (0.0)	0	0	1	1	0.0 (6.7)	0	1	0	0	0.0 (0.0)	0	0
Yellowtail	<i>Seriola lalandi</i>	3	0.1 (2.9)	0	3	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0
Pacific pomfret	<i>Brama japonica</i>	44	1.5 (42.7)	46	90	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0
Albacore	<i>Thunnus alalunga</i>	4	0.1 (3.9)	7	11	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0
Northern bluefin tuna	<i>Thunnus thynnus</i>	0	0.0 (0.0)	3	3	0	0	0.0 (0.0)	0	0	0	0	0.0 (0.0)	0	0
Smalleye squaretail	<i>Tetragonurus atlanticus</i>	6	0.2 (5.8)	0	6	1	1	0.0 (6.7)	0	1	0	0	0.0 (0.0)	0	0

Table 7. Biological characteristics of fishes caught by drift gillnet
NEON FLYING SQUID

St.	gear	M.L. (mm)	B.W. (mm)	St.	gear	M.L. (mm)	B.W. (mm)	St.	gear	M.L. (mm)	B.W. (mm)
G04	C93	344	1423	G04	C106	362	1367	G04	A115	388	1833
G04	C93	348	1314	G04	C106	310	1379	G04	A115	348	1635
G04	C93	388	1758	G04	C106	346	1260	G04	A115	398	2152
G04	C93	372	1570	G04	C106	386	1950	G04	A115	380	1842
G04	C93	382	1845	G04	C106	332	1385	G04	A115	402	1942
G04	C93	404	2105	G04	C121	400	1944	G04	A115	414	2195
G04	C93	348	1217	G04	C121	354	1531	G04	A115	388	1735
G04	C93	358	1277	G04	C121	408	2036	G04	A115	304	1352
G04	C93	292	936	G04	C121	384	2072	G04	A115	360	1454
G04	C93	352	1198	G04	C121	400	1915	G04	A115	342	1188
G04	C93	402	1733	G04	C138	374	1708	G04	A115	352	1591
G04	C106	462	2925	G04	C138	386	1893	G04	A115	342	1583
G04	C106	354	1435	G04	A112	366	1653	G04	A115	322	1392
G04	C106	326	1208	G04	A112	352	1195	G04	A115	338	1380
G04	C106	352	2344	G04	A112	368	2014	G04	A115	342	1724
G04	C106	404	2022	G04	A112	356	1406	G04	A121	414	2148
G04	C106	370	1693	G04	A112	382	1817	G04	A121	362	1622
G04	C106	362	1430	G04	A115	344	1624	G04	A121	360	1614
G04	C106	390	1702	G04	A115	378	2122	G04	A121	346	1453
G04	C106	364	1599	G04	A115	356	1625				

BOREL CLUBHOOK SQUID

St.	gear	M.L. (mm)	B.W. (mm)	St.	gear	M.L. (mm)	B.W. (mm)	St.	gear	M.L. (mm)	B.W. (mm)
G01	C48	156	160	G02	C82	290	526	G03	C55	240	260
G01	C72	296	537	G02	C82	292	450	G03	C55	240	300
G01	C72	302	557	G02	C82	310	586	G03	C55	214	240
G01	C72	274	430	G02	C82	304	587	G03	C55	224	270
G01	C72	274	483	G02	C82	298	528	G03	C55	220	200
G01	C72	266	446	G02	C82	310	501	G03	C63	232	310
G01	C72	312	570	G02	C82	308	554	G03	C63	275	480
G01	C72	260	426	G02	C72	300	533	G03	C63	232	270
G01	C72	286	526	G02	C72	310	653	G03	C63	188	220
G01	C72	286	467	G02	C72	308	575	G03	C63	214	370
G01	C72	296	613	G02	C72	296	568	G03	C63	222	280
G01	C72	276	461	G02	C72	282	467	G03	C63	238	320
G01	C72	306	601	G02	C72	305	507	G03	C63	248	320
G01	C72	290	493	G02	C72	270	389	G03	C63	260	360
G01	C72	292	482	G02	C72	278	459	G03	C63	238	310
G01	C72	298	540	G02	C72	298	531	G03	C63	244	300
G01	C72	286	459	G02	C72	314	545	G03	C63	242	360
G01	C72	280	509	G02	C72	288	433	G03	C63	224	270
G01	C72	288	512	G02	C72	290	448	G03	C63	228	250
G01	C72	290	544	G02	C72	318	583	G03	C63	244	330
G01	C72	280	64	G02	C72	293	429	G03	C63	230	270
G01	C72	288	474	G02	C72	300	507	G03	C63	242	240
G01	C72	280	509	G02	C72	288	475	G03	C63	242	330
G01	C72	258	351	G02	C72	308	595	G03	C63	246	330
G01	C82	298	549	G02	C72	284	428	G03	C63	253	340
G01	C82	282	464	G02	C72	266	481	G03	C63	230	250
G01	C82	292	547	G02	C72	313	526	G03	C63	214	240
G01	C82	298	503	G02	C72	300	525	G03	C63	240	310
G01	C82	300	562	G02	C72	286	412	G03	C72	272	440
G01	C82	292	544	G02	C72	290	467	G03	C72	266	400
G01	C82	308	514	G02	C72	277	411	G03	C72	260	390
G01	C82	306	567	G02	C72	292	537	G03	C72	252	340
G01	C82	296	516	G02	C72	296	567	G03	C72	276	440
G01	C82	288	481	G02	C72	308	539	G03	C72	288	500
G01	C82	296	554	G02	C72	270	418	G03	C72	228	280
G01	C82	310	609	G02	C72	284	435	G03	C72	294	650
G01	C82	304	590	G02	C72	293	504	G03	C72	274	470
G01	C82	292	543	G02	C63	250	372	G03	C72	230	280
G02	C82	284	541	G02	C63	296	501	G03	C72	272	450
G02	C82	292	586	G02	C63	274	416	G03	C72	292	490
G02	C82	314	581	G02	C63	269	385	G03	C72	246	320
G02	C82	293	637	G02	C63	267	423	G03	C72	252	360
G02	C82	308	592	G02	C93	335	739	G03	C72	268	400
G02	C82	302	583	G02	C93	298	517	G03	C72	260	410
G02	C82	298	551	G02	C93	280	510	G03	C72	313	680
G02	C82	300	573	G02	C93	330	699	G03	C72	274	540
G02	C82	310	519	G02	C93	306	625	G03	C72	238	320
G02	C82	294	525	G02	C93	310	-	G03	C72	242	370
G02	C82	298	533	G02	C106	300	562	G03	C72	274	440
G02	C82	289	499	G03	C55	234	320	G03	C72	240	380
G02	C82	280	458	G03	C55	208	210	G03	C72	238	330
G02	C82	300	544	G03	C55	227	260	G03	C72	238	380
G02	C82	294	511	G03	C55	236	290	G03	C82	318	720
G02	C82	300	538	G03	C55	228	260	G03	C82	314	610
G02	C82	319	638	G03	C55	251	400	G03	C48	228	220
G02	C82	306	610	G03	C55	224	240	G03	C48	218	210
G02	C82	302	569	G03	C55	223	250	G04	C48	172	119
G02	C82	294	479	G03	C55	210	210	G05	C48	196	194
G02	C82	326	729	G03	C55	226	280	G05	C63	211	239
G02	C82	313	572	G03	C55	236	270	G05	C63	240	343
G02	C82	320	603	G03	C55	212	200	G05	C72	250	380

PACIFIC POMFRET

St.	gear	F.L. (mm)	B.W. (mm)	St.	gear	F.L. (mm)	B.W. (mm)	St.	gear	F.L. (mm)	B.W. (mm)
G03	A112	424	1350	G03	C138	434	1480	G03	C157	436	1460
G03	A115	406	1200	G03	C138	418	1210	G03	C157	452	1480
G03	A115	426	1590	G03	C138	422	1330	G03	C157	434	1440
G03	A118	442	1470	G03	C138	446	1400	G03	C121	386	1150
G03	A118	444	1470	G03	C138	418	1340	G03	C121	414	1070
G03	A118	428	1370	G03	C138	406	1170	G03	C121	396	1100
G03	A118	389	990	G03	C138	409	1220	G03	C121	436	1350
G03	A121	472	1520	G03	C138	482	1850	G03	C121	432	1230
G03	A121	406	1250	G03	C157	424	1250	G03	C121	398	1130
G03	C138	432	1356	G03	C157	446	1450	G03	C121	449	1650
G03	C138	438	1530	G03	C157	449	1750				

ALBACORE

St.	gear	F.L. (mm)	B.W. (mm)	St.	gear	F.L. (mm)	B.W. (mm)	St.	gear	F.L. (mm)	B.W. (mm)
G04	C63	736	8850	G04	A112	618	5250	G04	A115	660	6800
G04	C72	600	4730	G04	A115	702	7925	G04	A115	816	10775
G04	C72	644	5440	G04	A115	744	8920	G04	A121	626	5672
G04	C82	636	5626	G04	A115	646	5480				

Table 8. List of salmon longline sampling(OSSL 12XX) and hook-and-line gear sampling(OSHL12XX) station during the Oshoro maru Cruise #243-Leg 2

Table of Date of hauls, haul length, haul depth, haul time, haul and time gear haulings, OSHL1204/1205 station during the Cruise #243 - Leg 2													
Station	Date and Time (S.M.T.*1)				T.D.*2	Set Position		D.S.*3	Number of baskets	bottom depth(m)	Wr*4	Wind (Force)	S.T.*5 (°C)
	Line set		Line haul			Lat.	Long.						
Cruise #243 - Leg 2													
OSHL1204	July 5	0005	July 12	0200	-10h	47-28.6N	160-27.5W	-	-	5157	d	West-4	8.1
OSSL 1203	July 12	0425-0445	July 12	0636-0703	-10h	42-51.1N	149-55.6W	200	10	5223	d	SSW-3	13.2
OSHL1205	July 13	1845	July 14	0400	-10h	46-48.3N	149-59.4W	-	-	-	f	SE-2	9.7
OSSL 1204	July 14	0415-0435	July 14	0631-0710	-10h	46-49.2N	149-54.4W	190	15	5114	f	SSW-4	9.6
OSHL1206	July 14	2330	July 15	0400	-10h	50-01.1N	149-59.6W	-	-	4827	d	SSW-5	8.9
OSSL 1205	July 16	1435-1513	July 16	1933-2042	-10h	52-59.2N	150-00.1W	045	25	4040	o	SSE-2	9.3
OSHL1207	July 15	2010	July 16	0350	-10h	51-17.9N	150-00.4W	-	-	-	c	West-2	9

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of line set.

*4 Wr : Weather (c: 75-99% clouded, o: 100% clouded, d: drizzling rain, f: fog).

*5 S.T. : Surface temperature

Table 9. 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 #243-Leg 2.

Station Name	Sampling gear	Species name						Total
		Sockeye	Chum	Pink	Coho	Chinook	Stellhead	
OSHL 1204	Hook-and-line	0	1	0	1	0	0	2
OSSL 1203	Surface longline	0	0	0	0	0	0	0
OSHL 1205	Hook-and-line	1	1	4	3	0	0	9
OSSL 1204	Surface longline	2	1	1	0	0	1	5
OSHL 1206	Hook-and-line	2	0	2	0	0	0	4
OSHL 1207	Hook-and-line	4	3	1	2	0	1	11
OSSL 1205	Surface longline	11	2	15	2	0	10	40
Subtotal		20	8	23	8	0	12	71

Table 10. 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)
HL05	586	2520	2	1	HL07	458	1050	1	13	SL05	464	1148	2	3
SL04	542	1963	1	33	HL07	578	2040	1	24	SL05	504	1528	1	13
SL04	548	2056	1	40	SL05	329	418	2	2	SL05	548	2003	2	5
HL06	593	2750	1	56	SL05	320	419	2	2	SL05	472	1245	1	8
HL06	482	1330	2	1	SL05	572	2413	2	3	SL05	488	1343	1	9
HL07	485	1220	1	11	SL05	560	2654	2	24	SL05	468	1125	2	9
HL07	468	1020	2	1	SL05	480	1364	2	1					
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	439	805	2	1	HL07	416	850	1	4	SL05	726	5640	2	18
HL05	540	1910	1	26	HL07	462	1190	2	1	SL05	448	1012	2	15
SL04	348	477	2	1	HL07	483	1325	1	10					
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	545	1800	1	85	SL05	523	1921	1	123	SL05	528	1901	1	150
HL05	536	1800	2	43	SL05	494	1518	1	66	SL05	441	1053	2	12
HL05	496	1390	2	25	SL05	502	1484	1	95	SL05	500	1423	1	140
HL05	522	1804	2	49	SL05	534	1932	2	70	SL05	506	1607	1	80
SL04	556	2089	2	37	SL05	452	1026	1	53	SL05	488	1437	1	95
HL07	465	1200	2	69	SL05	500	1529	2	39	SL05	450	1014	2	59
SL05	566	2334	1	156	SL05	504	1539	1	125					
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	487	1311	1	50	HL06	460	1220	2	42	HL07	550	2020	1	79
HL05	528	1880	1	48	HL06	572	2700	1	72	SL05	538	1978	1	70
HL05	558	2500	1	67	HL07	574	2030	1	33	SL05	548	2169	1	70
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)
SL01	658	3446	1	33	SL05	568	1955	1	7	SL05	529	1455	2	5
SL04	524	1855	1	6	SL05	664	3162	2	5	SL05	550	1641	1	3
HL07	587	2020	2	57	SL05	563	2055	1	10	SL05	740	4422	1	66
SL05	570	1983	2	1	SL05	575	2028	2	6					
SL05	594	1710	1	11	SL05	660	2509	1	14					

Table 11. Data on mid trawl research during the Oshoromaru Cruise#243

No. of research	Date and time of net tow (S.M.T.*1)		Position		T.D.*2	D.S.*3	Speed of tow (K't)	depth of tow (m)	Wr*4	Wind
			Lat.	Long.						
OSMT1204	July 6	1449-1724	45-38.8N	159-21.6W	-10h	090	4.5	0-730-0	o	West-3
OSMT1205	July 7	2151-0046	43-21.3N	157-27.5W	-10h	080	4.5	0-650-0	r	WNW-4
OSMT1206	July 8	2145-0002	42-47.8N	154-29.2W	-10h	085	3.2	0-650-0	o	East-2
OSMT1207	July 9	0648-0936	39-59.2N	153-30.4W	-10h	225	4.2	0-720-0	o	NE-6

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of tow.

*4 Wr : Weather (r: rain, o: 100% clouded).

*5 S.T. : Surface temperature

Table 12. Data on catches by mid-water trawl research

Japanese name	Scientific Name	OSMT 1204		OSMT 1205		OSMT 1206		OSMT 1207	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Mizuuo	<i>Alepisaurus ferox</i>	1	3.00	-	-	-	-	-	-
Other fishes	Actinopterygii spp.	1922	15.00	1664	23.00	2889	19.29	888	6.10
Ebi-rui	Decapoda spp.	195	0.52	1090	0.46	517	0.62	32	0.20
Tosoku-rui	Cephalopoda spp.	16	2.34	19	1.30	56 + α	1.43	30	0.16
Kurage-rui	Cnidaria spp.	19	1.54	12	1.55	12 + α	1.86	9	0.72

Table 13. 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	
OS12031 (Site H)	41-31	145-47 E		9 June	13:21	177	32	150	GG54	1039	2645	42.61	8.8	205	12101
									XX13	3691	2308	40.58			12102
					13:35	673	42	500	GG54	1039	9599	162.6	16.8	103	3) 12103
									XX13	3691	8808	154.9			12104
OS12032	51-15	169-30 E		13 June	21:45	152	10	150	GG54	1039	1549	25.07	7.9	314	12105
									XX13	3691	1358	23.88			12106
OS12034	51-40	171-00 E		14 June	7:31	155	14	150	GG54	1039	1665	26.25	11.3	429	4) 12107
									XX13	3691	1422	25.00			12108
OS12035	51-40	171-30 E		14 June	11:28	152	10	150	GG54	1039	1609	25.92	6.6	256	4) 12109
									XX13	3691	1404	24.68			12110
OS12037	51-40	172-30 E		14 June	20:07	152	10	150	GG54	1039	1525	25.25	10.5	416	12111
									XX13	3691	1368	24.05			12112
OS12038	51-40	173-30 E		15 June	2:53	152	10	150	GG54	1039	1630	25.27	8.9	353	12113
									XX13	3691	1369	24.07			12114
OS12041	50-05	179-55 W		16 June	15:13	150	0	150	GG54	1039	1209	27.14	12.1	445	12115
									XX13	3691	1470	25.84			12116
OS12042	50-25	179-50 W		17 June	0:38	151	6	150	GG54	1039	1135	24.61	9.7	396	12117
									XX13	3691	1333	23.44			12118
OS12043	50-50	179-46 W		17 June	6:28	151	8	150	GG54	1039	1100	22.32	6.9	309	12119
									XX13	3691	1209	21.26			12120
OS12044	51-10	179-43 W		17 June	11:04	151	6	150	GG54	3690	1538	23.54	6.2	264	12121
									XX13	3691	1160	20.39			12122
OS12045	51-30	179-30 W		17 June	14:20	151	8	150	GG54	3690	1549	23.71	6.0	252	12123
									XX13	3691	1208	21.24			12124
OS12047	51-45	179-25 W		18 June	18:22	151	6	150	GG54	3690	1482	22.69	5.8	255	12125
									XX13	3691	1180	20.75			12126
OS12050	52-30	178-50 W		19 June	2:06	153	12	150	GG54	3690	1581	24.20	10.7	440	12127
									XX13	3691	1190	20.92			12128
OS12052	53-00	178-40 W		19 June	10:28	155	14	150	GG54	3690	1588	24.31	6.6	271	12129
									XX13	3691	1251	21.99			12130
OS12053	55-00	173-00 W		20 June	14:05	151	6	150	GG54	3690	1544	23.63	15.5	655	12131
									XX13	3691	981	17.25			12132
OS12055	55-30	172-30 W		20 June	21:23	158	18	150	GG54	3690	1655	25.33	9.9	390	12133
									XX13	3691	1282	22.54			12134
OS12057	56-00	172-00 W		21 June	1:27	156	16	150	GG54	3690	1491	22.82	23.3	1022	1) 12135
									XX13	3691	1011	17.77			12136
OS12059	56-30	171-30 W		21 June	8:08	140	10	138	GG54	3690	1415	21.66	20.1	926	1) 12137
									XX13	3691	851	14.96			12138
OS12060 (YAS-1)	56-27	171-34 W		21 June	10:42	156	16	150	GG54	3690	1494	22.87	22.0	963	1) 12139
									XX13	3691	838	14.73			12140
OS12061	56-15	169-15 W		22 June	9:30	152	10	150	GG54	3690	1600	24.49	9.0	368	12141
									XX13	3691	1125	19.78			12142
OS12063 (YAS2-C1)	56-10	168-39 W		22 June	17:14	158	18	150	GG54	3690	1774	27.16	10.7	394	12143
									XX13	3691	1256	22.08			12144
OS12063 (YAS2-C3)	56-10	168-39 W		23 June	0:36	162	22	150	GG54	3690	1979	30.29	17.8	588	12145
									XX13	3691	1339	23.54			12146
OS12064	55-46	169-44 W		24 June	0:09	153	12	150	GG54	3690	1642	25.13	14.6	580	12147
									XX13	3691	1066	18.74			12148
OS12065	55-30	170-00 W		24 June	6:47	155	14	150	GG54	3690	1664	25.47	10.9	428	12149
									XX13	3691	1401	24.63			12150
OS12066	55-15	170-15 W		24 June	12:53	150	0	150	GG54	3690	1578	24.15	13.2	545	12151
									XX13	3691	1239	21.78			12152
OS12069	54-30	171-00 W		25 June	10:17	155	14	150	GG54	3690	1885	28.85	5.7	197	12153
									XX13	3691	1444	25.39			12154
OS12070	54-15	171-15 W		25 June	16:09	156	16	150	GG54	3690	1700	26.02	9.6	367	12155
									XX13	3691	1150	20.22			12156

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.
										No.	Reading		per haul	per 1000 m ³	
	Lat. (N)	Lon.		Date	Hour										
OS12071	54-00	171-30	W	25 June	21:25	150	0	150	GG54	3690	1668	25.53	6.4	249	12157
									XX13	3691	1031	18.13			12158
OS12072	53-40	171-30	W	26 June	0:46	155	14	150	GG54	3690	1724	26.39	9.2	348	12159
									XX13	3691	1162	20.43			12160
OS12073	53-20	171-30	W	26 June	8:05	155	14	150	GG54	3690	1782	27.28	16.9	618	12161
									XX13	3691	1280	22.50			12162
OS12074	53-00	171-30	W	26 June	11:36	155	14	150	GG54	3690	1163	17.80	5.2	290	12163
									XX13	3691	1395	24.53			12164
OS12076	53-21	170-15	W	27 June	1:08	156	16	150	GG54	3690	1664	25.47	17.7	697	12165
									XX13	3691	921	16.19			12166
OS12082	54-18	166-56	W	28 June	0:31	150	5	149	GG54	3690	1491	22.82	21.2	928	12167
									XX13	3691	1011	17.77			12168
OS12083	53-45	165-15	W	2 July	13:42	151	5	150	GG54	3690	1568	23.16	6.0	257	12169
									XX13	3691	1339	20.00			12170
OS12088	52-30	164-00	W	3 July	10:31	151	6	150	GG54	3690	1852	27.35	11.3	413	12171
									XX13	3691	1658	24.76			12172
OS12089	52-15	163-45	W	3 July	15:28	151	6	150	GG54	3690	1546	22.83	4.7	205	12173
									XX13	3691	1591	23.76			12174
Extra-1	50-51	162-35	W	4 July	0:00	152	11	149	GG54	3690	1672	24.70	3.6	144	12175
									XX13	3691	1593	23.79			12176
Extra-2	47-29	160-28	W	5 July	0:00	150	0	150	GG54	3690	1576	23.28	9.1	389	12177
									XX13	3691	1434	21.42			12178
OS12090	45-38	159-10	W	5 July	19:28	153	12	150	GG54	3690	1620	23.93	12.4	520	12179
									XX13	3691	1588	23.72			12180
OS12091	45-00	159-00	W	6 July	1:30	153	12	150	GG54	3690	1619	23.91	6.5	274	12181
									XX13	3691	1631	24.36			12182
OS12092	43-23	157-14	W	7 July	1:10	156	16	150	GG54	3690	1786	26.38	5.9	222	12183
									XX13	3691	1660	24.79			12184
OS12093	42-48	157-00	W	7 July	9:52	152	10	150	GG54	3690	1855	27.40	3.2	118	12185
									XX13	3691	1752	26.17			12186
OS12094	42-50	154-19	W	8 July	0:11	155	14	150	GG54	3690	1759	25.98	2.6	101	12187
									XX13	3691	1602	23.93			12188
OS12100	40-00	153-30	W	9 July	1:24	151	6	150	GG54	3690	1588	23.45	0.8	33	12189
									XX13	3691	1641	24.51			12190
OS12101	42-47	152-01	W	10 July	17:37	152	10	150	GG54	3690	1549	22.88	0.6	25	12191
									XX13	3691	1531	22.87			12192
OS12102	42-50	150-00	W	11 July	12:18	153	12	150	GG54	3690	1606	23.72	2.8	118	12193
									XX13	3691	1786	26.68			12194
OS12103	45-00	150-00	W	12 July	20:49	153	12	150	GG54	3690	1711	25.27	8.5	336	12195
									XX13	3691	1559	23.29			12196
OS12104	46-45	150-00	W	13 July	15:11	152	10	150	GG54	3690	1702	25.14	5.2	206	12197
									XX13	3691	1530	22.85			12198
OS12105	50-01	150-00	W	15 July	1:56	153	12	150	GG54	3690	1695	25.04	4.9	196	12199
									XX13	3691	1398	20.88			12200
OS12106	51-15	150-00	W	15 July	14:48	160	20	150	GG54	3690	2058	30.40	4.4	144	12201
									XX13	3691	1805	26.96			12202
OS12107	53-00	150-02	W	16 July	17:34	155	14	150	GG54	3690	1758	25.97	6.8	264	12203
									XX13	3691	1519	22.69			12204
OS12108	55-00	150-00	W	17 July	11:24	151	6	150	GG54	3690	1648	24.34	6.9	284	12205
									XX13	3691	1515	22.63			12206
OS12109	55-15	150-13	W	17 July	15:41	158	18	150	GG54	3690	1909	28.20	13.0	461	12207
									XX13	3691	1832	27.36			12208
OS12110	55-30	150-25	W	17 July	19:45	151	6	150	GG54	3690	1881	27.78	9.1	328	12209
									XX13	3691	1605	23.97			12210
OS12111	55-45	150-38	W	18 July	0:01	151	6	150	GG54	3690	1589	23.47	9.1	386	12211
									XX13	3691	1472	21.99			12212
OS12112	56-00	150-50	W	18 July	5:01	151	6	150	GG54	3690	1507	22.26	8.1	362	12213
									XX13	3691	1431	21.37			12214
OS12113	56-15	151-03	W	18 July	9:10	150	0	150	GG54	3690	1501	22.17	6.8	308	12215
									XX13	3691	1345	20.09			12216
OS12116	57-00	151-40	W	18 July	18:46	71	10	70	GG54	3690	765	11.30	6.3	553	12217
									XX13	3691	785	11.73			12218

Station no.	Position			S.M.T.		Length of wire	Angle of wire	Depth estimated by wire	Kind of cloth	Flowmeter		Estimated volume of water filtered (m ³)	Wet weight (g)		Sample no.
	Lat. (N)	Lon.		Date	Hour	(m)	(°)	angle (m)	No.	Reading	per haul		per 1000 m ³		
OS 12117 (B01)	55-00	166-00	W	25 July	11:33	135	20	127	GG54	3690	1376	20.32	9.8	480	12219
									XX13	3691	1338	19.82			12220
OS 12118 (B02)	55-30	166-00	W	25 July	15:03	115	0	115	GG54	3690	1222	18.04	7.8	433	12221
									XX13	3691	1076	15.94			12222
OS 12119 (B03)	56-00	166-00	W	25 July	18:26	105	0	105	GG54	3690	1228	18.13	12.7	700	12223
									XX13	3691	1029	15.24			12224
OS 12120 (B04)	56-30	166-00	W	25 July	21:52	80	5	80	GG54	3690	911	13.45	12.4	922	12225
									XX13	3691	799	11.84			12226
OS 12121 (B05)	57-00	166-00	W	26 July	0:19	65	0	65	GG54	3690	862	12.73	9.8	767	12227
									XX13	3691	718	10.64			12228
OS 12122 (B06)	57-30	166-00	W	26 July	4:10	60	5	60	GG54	3690	708	10.45	3.3	315	12229
									XX13	3691	636	9.42			12230
OS 12123 (B07)	58-00	166-00	W	26 July	7:35	50	0	50	GG54	3690	599	8.84	6.6	743	12231
									XX13	3691	588	8.71			12232
OS 12124	47-56	160-31	E	1 Aug.	22:35	158	18	150	GG54	3690	1768	26.10	7.5	287	12233
									XX13	3691	1712	25.36			12234
OS 12125	41-30	145-47	E	4 Aug.	12:40	151	6	150	GG54	3690	1462	21.59	6.0	280	12235
									XX13	3691	1368	20.27			12236
					12:51	511	12	500	GG54	3690	5171	76.35	23.7	310	12237
									XX13	3691	4296	63.64			12238

- 1) Exclusively phytoplankton
- 2) Including some fragments of medusae.
- 3) *Neocalanus* abundant.
- 4) Gelatinous zooplankton abundant.
- 5) *Salpida* abundant.

Table 14. Calibration data on flowmeters used for a twin or single NORPAC net and other kind of nets.

100-m wire out at St. OS12082 in 28 June 2012.

Flowmeter No.	Wire length (m)	Revolution							Mean
		1	2	3	4	5	6	7	
RG2826	100	1012	1010	1018*	992	981*	986	1001	1000
RG2856	100	1185*	1180	1170	1171	1151*	1155	1164	1168
RG3690	100	1062	1051	1068*	1049	1011	1010*	1022	1039
RG3691	100	912	909	912*	900	889*	900	902	905

*: omitted from calculation

50-m wire out at St. OS12116 in 18 July 2012.

Flowmeter No.	Wire length (m)	Revolution							Mean
		1	2	3	4	5	6	7	
RG1859	50	530	525	517	535*	497*	501	532	521
RG2826	50	536*	495*	505	508	496	512	501	504
RG2856	50	558	509*	599*	582	557	575	561	567
RG3690	50	568*	520*	544	533	530	547	538	538
RG3691	50	566*	518*	531	525	518	550	538	532

*: omitted from calculation

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

50-m wire out at St. OS12125 in 4 August 2012.

Flowmeter No.	Wire length (m)	Revolution							Mean
		1	2	3	4	5	6	7	
RG2826	50	520	511	508	505	483*	510	520*	511
RG3690	50	536	540	532	530	519*	555	567*	539
RG3691	50	542	535	531	525	518*	551	560*	537

*: omitted from calculation

6.

THE "OSHORU MARU" CRUISE 244-1 TO THE SANRIKU OFF

IN AUGUST 2012

1. Cruise Itinerary

Cruise 244-1	
Departure from Hakodate	Aug. 19, 2012
Arrival at Miyako and Departure from Miyako	20
Start hydrographic research (OS12126)	20
Finish hydrographic research (OS12131)	21
Arrival at Miyako	23
Total coverage 379.0miles	

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 30 persons

3. Items of Research

Hydrographic observations:

Hydrographic work on deck and the data processing were made by Science officer, deck officers, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-19Plus). Sea water samplings by Niskin bottles. Water and Plankton sampling were also carried out at almost hydrographic stations

Fig.1 Table.1, 2

Fig 1. Oceanographic Stations

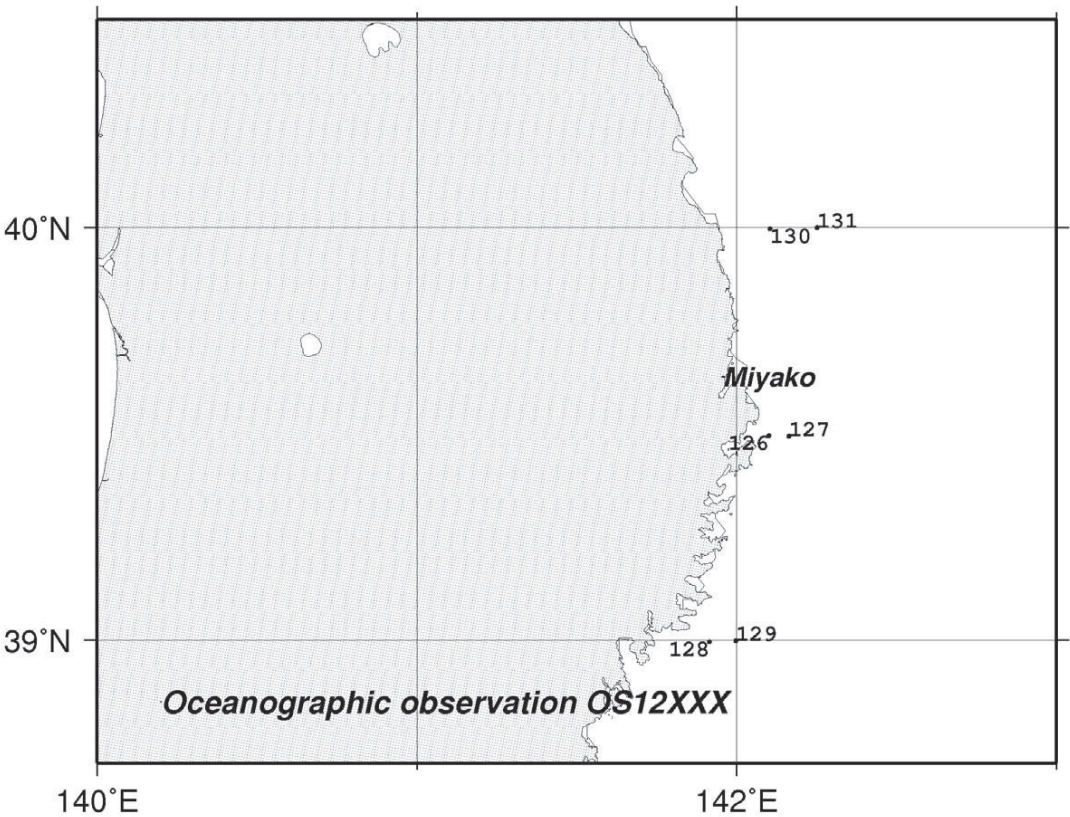


Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12126	39-29.91N	142-06.10E	8/20	8:00	9	142	-	-	21.4	bc	9Plus-0769
OS12127	39-29.84N	142-09.85E	8/20	8:51	9	195	-	-	21.8	bc	9Plus-0769
OS12128	38-59.77N	141-54.96E	8/20	14:45	9	136	-	-	20.6	bc	9Plus-0769
OS12129	38-59.98N	141-59.85E	8/20	15:43	9	193	-	-	22.1	bc	9Plus-0769
OS12130	39-59.86N	142-06.24E	8/20	23:09	9	123	-	-	22.7	bc	9Plus-0769
OS12131	40-00.03N	142-15.11E	8/21	0:31	9	233	-	-	22.2	bc	9Plus-0769

Table 2. Oceanographic data

Station OS12126 Latitude 39-29.91N Longitude 142-06.09E Depth(m) 142m				Station OS12127 Latitude 39-29.81N Longitude 142-09.85E Depth(m) 195m				Station OS12128 Latitude 38-59.75N Longitude 141-54.98E Depth(m) 136m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	20.600	33.881	23.749	5	21.055	33.857	23.609	5	19.851	33.839	23.916
10	20.593	33.883	23.753	10	20.869	33.845	23.650	10	19.812	33.840	23.926
20	20.161	33.901	23.881	20	20.059	33.753	23.795	20	19.800	33.842	23.931
30	18.446	33.949	24.357	30	18.442	33.826	24.264	30	19.165	33.848	24.099
40	17.597	33.981	24.590	40	16.393	33.925	24.831	40	17.100	34.028	24.745
50	16.284	34.034	24.940	50	15.721	33.958	25.009	50	16.255	34.065	24.970
75	14.714	34.079	25.324	75	14.044	34.210	25.567	75	15.021	34.064	25.246
100	13.294	34.058	25.604	100	12.835	34.170	25.783	100	13.869	34.065	25.491
125	12.224	34.068	25.822	125	11.114	34.073	26.033	125	11.752	34.083	25.924
				150	9.026	33.973	26.310				
				175	7.773	33.872	26.422				
Station OS12129 Latitude 38-59.93N Longitude 141-59.80E Depth(m) 193m				Station OS12130 Latitude 39-59.79N Longitude 142-06.31E Depth(m) 123m				Station OS12131 Latitude 40-0.03N Longitude 142-15.14E Depth(m) 233m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	21.435	33.840	23.493	5	22.414	33.840	23.221	5	21.566	33.688	23.342
10	21.409	33.840	23.500	10	20.793	33.858	23.681	10	20.468	33.710	23.655
20	18.948	34.126	24.366	20	19.236	33.931	24.144	20	16.652	34.019	24.843
30	16.968	34.044	24.788	30	17.806	34.023	24.571	30	13.753	33.698	25.232
40	16.222	34.110	25.012	40	17.186	34.039	24.733	40	11.925	34.062	25.875
50	15.343	34.104	25.206	50	15.850	34.013	25.022	50	11.314	34.087	26.008
75	13.213	34.237	25.759	75	12.539	33.929	25.654	75	10.642	34.128	26.161
100	11.806	34.264	26.054	100	11.430	34.083	25.983	100	10.424	34.132	26.202
125	10.288	34.186	26.267					125	9.468	34.068	26.313
150	8.947	34.067	26.396					150	8.823	34.007	26.368
175	7.927	33.919	26.436					175	7.733	33.888	26.440
								200	6.751	33.791	26.500

7.

THE "OSHO RO MARU" CRUISE 246 TO AROUND HOKKAIDO

IN SEPTEMBER 2012

1. Cruise Itinerary

Cruise 246

Departure from Hakodate

Sep. 14, 2012

Start and finish bottom trawl (OS1202)

15

Arrival at Muroran and Departure from Muroran

16

Return to Hakodate

18

Total coverage 221.4miles

2. Vessel Personnel

Crew: Captain: Associate Professor

Shogo Takagi

And 30 persons

3. Items of Training and Research

A short cruise to conduct shipboard training in hydrographic observations, plankton samplings, sighting survey of marine mammals, and biological processing of trawl catch for undergraduate students in Hokkaido University.

Bottom trawl observations:

One operation of the stern otter Bottom trawl were carried out.

These operations were supervised by the captain, and were conducted by deck officers, Science officer, crews, research staff and cadets.

Table 1, 2

Table 1: Data on bottom trawl research during the "Oshoro Maru" Cruise #246

No. of research	Date and time of net tow (S.M.T.*1)		Position		T.D.*2	D.S.*3	Speed of tow (K't)	Bottom depth(m)	Wr*4	Wind	S.T.*5 (°C)
			Lat. (N)	Long. (E)							
OST1202	Sep. 15	0600-0905	41-52.6	141-42.5	+9h	340	3.7	840	c	SSE-2	24.4

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of tow.

*4 Wr : Weather (c: 75-99% clouded).

*5 S.T. : Surface temperature.

Table 2. Date on catches by bottom trawl research

Japanese name	Scientific Name	OST1202	
		Number	Weight (kg)
Kuroshigiunagi	<i>Avocettina infans</i>	1	0.025
Irakoanago	<i>Synaphobranchus kaupi</i>	5	2.57
Mikadohadaka	<i>Nannobranchium regale</i>	8	0.411
Mamehadaka	<i>Lampanyctus jordani</i>	22	0.43
Karasudara	<i>halargyreus johnsonii</i>	2	0.474
Kanadadara	<i>Antimora microlepis</i>	17	4.50
Itohikidara	<i>Laemonema longipes</i>	82	47.60
Suketodara	<i>Theragra chalcogramma</i>	1	0.48
Munedara	<i>Coryphaenoides pectoralis</i>	1	0.78
Karafutosokodara	<i>Coryphaenoides cinereus</i>	109	23.30
Nezumiginpo	<i>Lumpenella longirostris</i>	7	0.41
Shirogenge	<i>Bothrocara molle</i>	126	49.30
Kichiji	<i>Sebastolobus macrochir</i>	41	7.30
Nyuudoukajika	<i>Psychrolutes phrictus</i>	2	1.78
Tako-rui	Octopoda spp.	48	12.2
Ika-rui	Cephalopoda spp.	14	4.5
Koukatu-rui	Crustacea spp.	4	1.07

8.

THE "OSHO RO MARU" CRUISE 247 EAST OF TSUGARU STRAIT

IN SEPTEMBER 2012

1. Cruise Itinerary

Cruise 247

Departure from Hakodate	Sep. 18, 2012
Bottom trawl (OST1203-OST1205), and start hydrographic research (OS12132)	19
Finish hydrographic research (OS12134)	20
Gill-net research (OSSG1201-1-OSSG1201-5)	21
Return to Hakodate and Departure from Hakodate	23
Bottom trawl (OST1206-OST1207), and start hydrographic research (OS12135)	24
Finish hydrographic research (OS12137)	25
Gill-net research (OSSG1202-1-OSSG1202-6)	26
Return to Hakodate	28
Total coverage 608.8 miles	

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 30 persons
Research Staff:	Professor	(Laboratory of Marine Environmental Science)	Shigeru Montani
	Associate Professor	(Laboratory of Marine Environmental Science)	Isao Kudo
	Professor	(Laboratory of Marine Bio-resources Science)	Tetsuya Takatsu
	Associate Professor	(Laboratory of Marine Ecology)	Yutaka Watanuki
	Associate Professor	(Laboratory of Marine Bio-resources Ecology)	Takashi Matsuishi
	Associate Professor	(Laboratory of Marine Biology and Biodiversity)	Hisashi Imamura
	Associate Professor	(Laboratory of Marine Biodiversity)	Atsushi Yamaguchi
	Instructor	(Museum, Hokkaido university)	Toshio Kawai
Teaching Assistant:			9 persons
Under Graduate Students:			60 persons
			Total 108 persons

3. Items of Training and Research

A short cruise to conduct shipboard training in hydrographic observations, plankton samplings, sighting survey of marine mammals, and biological processing of trawl catch for undergraduate students in the Department of Marine Biological Science.

Hydrographic observations: (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by the deck officers, Science officer, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and

SBE-19Plus). Water and Plankton sampling were also carried out at almost hydrographic stations.

Fig. 1, Table 1, 2

Bottom trawl observations:

Five operations of the stern otter bottom trawl were carried out. These operations were supervised by the captain, Deck officers, Science officer, crews, research staffs, and cadets were engaged in the work.

Table 3, 4

Saury gillnets research:

Eleven operations of gillnet Researches were carried out. These operations were supervised by the captain, Deck officers, Science officer, crews, research staffs, and cadets were engaged in the work.

Table 5

Fig 1. Oceanographic Stations

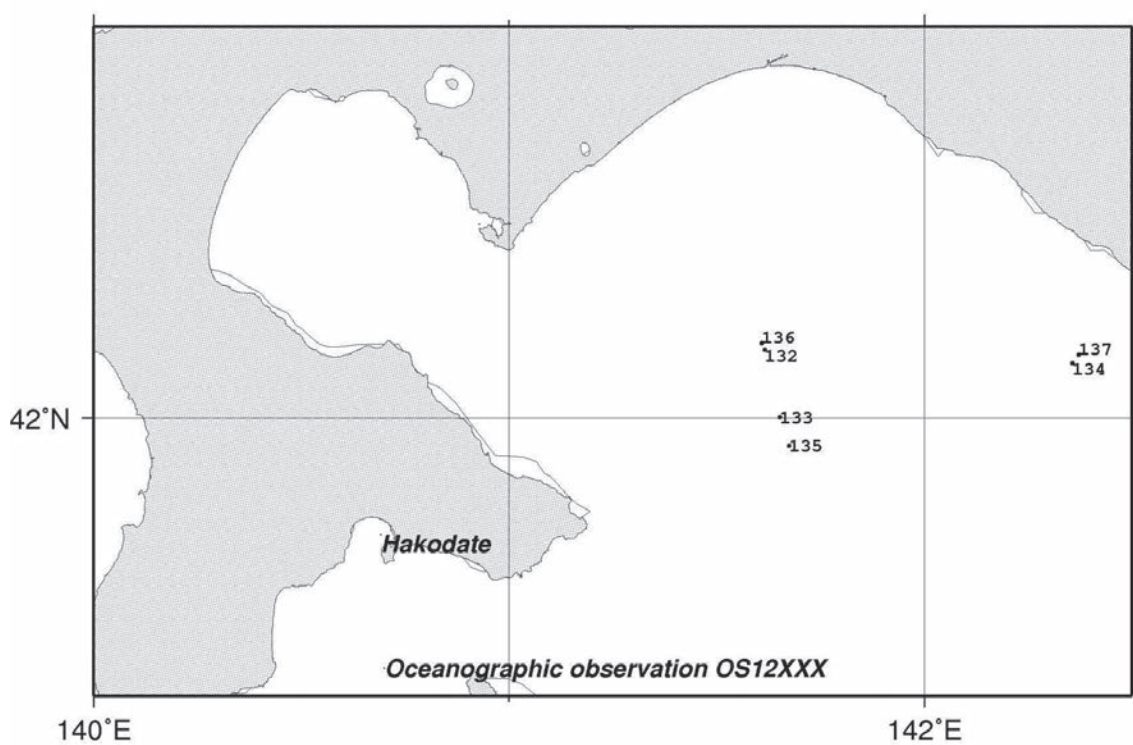


Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12132	42-07.36N	141-36.98E	9/19	7:37	9	701	-	-	-	b	9Plus-0769
OS12133	42-00.12N	141-39.12E	9/19	11:49	9	801	-	-	-	-	9Plus-0769
OS12134	42-05.96N	142-21.41E	9/20	7:34	9	734	-	-	-	-	9Plus-0769
OS12135	41-57.06N	141-40.47E	9/24	7:40	9	827	-	-	21.5	c	9Plus-0769
OS12136	42-08.10N	141-36.55E	9/24	11:26	9	688	-	-	23.6	c	19Plus-4636
OS12137	42-06.86N	142-22.34E	9/24	7:35	9	645	-	-	22.7	r	19Plus-4636

Table 2. Oceanographic data

Station OS12132 Latitude 42-07.37N Longitude 141-36.98E Depth(m) 701m				Station OS12133 Latitude 42-00.11N Longitude 141-39.15E Depth(m) 801m				Station OS12134 Latitude 42-05.97N Longitude 142-21.43E Depth(m) 734m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	23.828	33.470	22.534	5	22.772	33.621	22.953	5	24.809	33.531	22.289
10	19.707	33.785	23.912	10	23.224	33.576	22.790	10	22.283	33.558	23.044
20	15.339	34.110	25.211	20	17.660	34.136	24.693	20	18.002	33.775	24.334
30	12.697	33.776	25.504	30	15.083	34.200	25.337	30	15.198	34.072	25.213
40	12.292	34.132	25.859	40	12.727	34.151	25.789	40	13.605	34.148	25.610
50	11.929	34.248	26.018	50	11.286	34.158	26.068	50	12.970	34.185	25.767
75	11.390	34.221	26.098	75	10.409	34.184	26.244	75	11.233	34.187	26.100
100	10.262	34.130	26.228	100	8.973	33.989	26.331	100	9.303	33.983	26.273
125	8.827	33.981	26.348	125	6.837	33.791	26.488	125	8.323	33.924	26.380
150	6.730	33.737	26.460	150	4.348	33.463	26.528	150	5.570	33.597	26.497
175	6.816	33.813	26.508	175	3.774	33.448	26.574	175	5.014	33.582	26.550
200	5.343	33.650	26.565	200	3.384	33.426	26.594	200	3.951	33.485	26.586
250	4.043	33.568	26.642	250	2.424	33.415	26.669	250	2.362	33.456	26.706
300	3.611	33.625	26.731	300	2.972	33.563	26.741	300	3.147	33.634	26.781
400	3.298	33.770	26.876	400	3.168	33.772	26.890	400	3.054	33.793	26.917
500	3.472	33.949	27.003	500	3.562	34.006	27.039	500	3.556	34.003	27.037
600	3.515	34.088	27.109	600	3.536	34.110	27.125	600	3.488	34.122	27.138
				700	3.378	34.211	27.220	700	3.322	34.221	27.234

Station OS12135				Station OS12136				Station OS12137			
Latitude 41-57.07N				Latitude 42-08.10N				Latitude 42-06.86N			
Longitude 141-40.48E				Longitude 141-36.55E				Longitude 142-22.34E			
Depth(m) 827m				Depth(m) 688m				Depth(m) 645m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	21.838	33.699	23.275	20	19.438	33.870	24.046	20	23.282	33.528	22.737
10	21.597	33.724	23.360	30	16.301	34.067	24.961	30	21.47	33.694	23.372
20	18.466	33.998	24.390	50	11.794	33.849	25.733	50	16.765	34.006	24.807
30	15.399	34.119	25.205	75	11.189	34.164	26.090	75	12.564	34.034	25.731
40	13.924	34.153	25.548	100	9.947	34.106	26.263	100	11.497	34.121	26.001
50	12.765	34.177	25.802	150	8.670	34.037	26.416	150	9.967	34.107	26.26
75	11.010	34.156	26.117	200	6.894	33.834	26.515	200	7.841	33.933	26.459
100	10.907	34.155	26.134	300	3.657	33.598	26.705	300	2.746	33.52	26.726
125	9.369	34.066	26.327	400	3.269	33.736	26.852	400	3.24	33.766	26.878
150	8.344	34.002	26.439	500	3.392	33.909	26.978	500	3.486	33.953	27.004
175	7.133	33.836	26.483	600	3.541	34.062	27.086	600	3.521	34.069	27.093
200	4.969	33.599	26.568								
250	4.665	33.676	26.663								
300	3.075	33.566	26.733								
400	3.154	33.759	26.881								
500	3.473	33.951	27.004								
600	3.522	34.071	27.094								
700	3.417	34.165	27.180								
800	3.214	34.247	27.264								

Table 3: Data on Bottom trawl research during the Oshoromaru Cruise#247

No. of research	Date and time of net tow (S.M.T.*1)		Position		T.D.*2	D.S.*3	Speed of tow (K't)	Bottom depth (m)	Wr.*4	Wind	S.T.*5 (°C)
			Lat. (N)	Long. (E)							
OST1203	Sep. 19	0625-1005	41-53.8	141-41.6	+9h	320	4.5	865	c	SSE-5	24.7
OST1204	Sep. 19	1030-1325	42-03.8	141-38.2	+9h	335-000	4.5	780-670	c	SW-4	23.1
OST1205	Sep. 19	1335-1615	42-11.8	141-36.9	+9h	185	3.5	680-717	c	SW-4	23.8
OST1206	Sep. 24	1005-1255	42-12.0	141-35.8	+9h	170	3.5	620	bc	NE-5	22.4
OST1207	Sep. 24	1308-1610	42-02.5	141-36.5	+9h	160	3.2	734	bc	calm	21.9

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of tow.

*4 Wr. : Weather (bc: 25-75% clouded, c: over 75-99% clouded).

*5 S.T. : Surface temperature

Table 4. Data on catches by bottom trawl research

Japanese name	Scientific Name	OST1203		OST1204		OST1205		OST1206		OST1207	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Gangiei-ru	<i>Bathyraxa sp.</i>	3	6.50	9	1.99	-	-	2	0.12	2	1.22
Sokoganngiei	<i>Bathyraxa bergi</i>	-	-	-	-	3	0.16	-	-	-	-
Shigunagi	<i>Nemichthys scolopaceus</i>	1	0.10	-	-	-	-	-	-	-	-
Irakoaago	<i>Synaphobranchus kaupii</i>	16	11.30	17	10.57	-	6.50	19	7.64	18	7.50
Kurosokoiwashi	<i>Diaphus watasei</i>	-	-	-	-	1	0.30	-	-	-	-
Yokoeso-ru	Gonostomatidae sp.	-	-	-	-	2	0.03	-	-	-	-
Hoteieso	<i>Photoneustes albipennis</i>	-	-	-	-	-	-	1	0.17	-	-
Hadakahoteieso	<i>Tactostoma macropis</i>	1	0.06	-	-	-	-	-	-	-	-
Mamehadaka	<i>Lampanyctus jordani</i>	-	-	-	-	8	0.20	29	0.50	13	0.30
Mikadhadaka	<i>Nannobranchium regale</i>	6	0.45	-	-	3	0.20	1	0.07	2	0.17
Hadakaiwashi-ryu	<i>Diaphus watasei</i>	-	-	5	0.10	-	-	-	-	-	-
Karasudara	<i>Halargyreus johnsonii</i>	2	0.40	-	-	-	-	-	-	1	0.16
Kanadadara	<i>Antimora microlepis</i>	369	157.00	28	7.77	-	6.70	15	4.00	46	15.00
Itohikidara	<i>Laemonema longipes</i>	134	76.66	142	96.50	174	110.00	175	105.00	162	92.00
Munedara	<i>Coryphaenoides pectoralis</i>	17	13.50	1	1.09	1	3.90	-	-	5	7.70
Ibarahige	<i>Coryphaenoides acrolepis</i>	-	-	1	0.17	-	-	-	-	2	0.24
Karafutosokodara	<i>Coryphaenoides cinereus</i>	50	16.00	56	13.00	48	11.00	30	8.50	523	105.50
Onikinme	<i>Anoplogaster cornuta</i>	1	0.30	-	-	-	-	-	-	-	-
Ibodai-ru	Centrolophidae sp.	-	-	1	0.40	-	-	-	-	-	-
Nezumiginpo	<i>Lumpenella longirostris</i>	3	0.16	1	0.10	3	0.28	11	0.45	8	0.41
Genge-ru	Zoaridae sp.	-	-	-	-	-	-	280	75.50	561	240.50
Shirogenge	<i>Bothrocara molle</i>	141	143.00	143	41.50	160	58.80	-	-	-	-
Kantenngenge	<i>Bothrocara tanakae</i>	-	-	14	4.67	8	4.00	-	-	-	-
Nyuudoukajika	<i>Psychrolutes phricus</i>	1	0.70	-	-	-	-	-	-	-	-
Kobushikazika	<i>Malacocottus zonurus</i>	-	-	2	0.13	-	-	-	-	-	-
Kichiji	<i>Sebastolobus macrochir</i>	189	31.50	146	29.50	104	22.50	103	22.50	88	14.70
Ganko	<i>Dasycottus setiger</i>	3	0.46	8	0.47	2	0.07	3	0.37	3	0.28
Hoteiuo	<i>Aptocyclus ventricosus</i>	-	-	-	-	-	-	1	0.05	-	-
Hirainkiuo	<i>Paraliparis grandis</i>	-	-	-	-	1	0.17	2	0.96	-	-
Aburagarei	<i>Atheresthes evermanni</i>	-	-	1	6.60	-	-	-	-	-	-
Samegarei	<i>Clidoderma asperrimum</i>	-	-	3	4.70	-	-	-	-	-	-
Tako-ru	<i>Octopuses</i>	29	10.81	22	5.12	25	5.00	31	5.40	13	6.50
Mendako spp.	<i>Opisthoteuthis spp.</i>	-	-	4	1.21	-	-	-	-	-	-
Ika-ru	<i>Squids</i>	32	10.36	7	1.77	6	2.16	14	5.40	22	9.00
Ezobai spp.	<i>Buccinidae spp.</i>	-	-	-	12.07	16	1.80	27	1.30	-	-
Benizuwaigani	<i>Chionoecetes japonicus</i>	21	10.10	26	12.50	16	7.00	26	14.40	13	6.30

Table 5. Data on floating gill net research during the "Oshoro Maru" Cruise #247

No. of research		OSSG 1201-01	OSSG 1201-02	OSSG 1201-03	OSSG 1201-04	OSSG 1201-05
Date		21-Sep	21-Sep	21-Sep	21-Sep	21-Sep
position of	Lat. (N)	42-29.7	42-29.7	42-29.7	42-29.7	42-29.7
net set	Long. (E)	144-07.0	144-07.0	144-07.0	144-07.0	144-07.0
Time(S.M.T.*1)	net set	2030	2135	2207	2240	2335
	net houl	2040	2142	2216	2250	2345
Mesh size(mm)		42	42	42	42	42
Wr.*2		o	o	o	c	c
S.T.*3 (°C)		17.8	17.8	17.8	17.8	17.8
Wind (force)		calm	NW-2	NW-2	NNW-2	NNW-2
Pacific saury		-	-	-	-	-
Japanese sardine		420	33	69	100	181
Mackerels		18	83	8	10	4

No. of research		OSSG 1202-01	OSSG 1202-02	OSSG 1202-03	OSSG 1202-04	OSSG 1202-05	OSSG 1202-06
Date		26-Sep	26-Sep	26-Sep	26-Sep	26-Sep	26-Sep
position of	Lat. (N)	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4
net set	Long. (E)	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6
Time(S.M.T.*1)	net set	2030	2118	2151	2235	2258	2338
	net houl	2039	2126	2203	2240	2328	2350
Mesh size(mm)		42	42	42	42	42	42
Wr.*2		c	c	c	c	c	o
S.T.*3 (°C)		18.0	17.9	17.9	17.9	17.9	18.0
Wind (force)		ENE-3	East-3	East-3	East-3	East-2	East-2
Pacific saury		4	-	-	2	64	19
Japanese sardine		427	238	17	2	73	26
Mackerels		9	9	21	6	8	41

*1 S.M.T. : Ship's Mean Time.

*2 Wr. : Weather (bc: 25-75% clouded, c: over 75-99% clouded, o: 100% clouded, r: rain, d: drizzling rain, f: fog).

*3 S.T. : Surface temperature

9.

THE "OSHO RO MARU" CRUISE 248 TOHOKU OFF

IN OCTOBER 2012

1. Cruise Itinerary

Cruise 248	
Departure from Hakodate	Oct. 9, 2012
Start hydrographic research (OS12138) and gillnet research (OSG1207)	10
Finish gillnet research (OSG1208)	13
Arrival at Tokyo	16
Departure from Tokyo	20
Arrival at Oshima	21
Departure from Oshima	22
Finish hydrographic research (OS12151)	24
Return to Hakodate	26
Total coverage	582.7miles

2. Vessel Personnel

Crew:	Captain: Associate Professor	Shogo Takagi
		And 30 persons
Research Staff:	Professor (Laboratory of Marine Bioresource and Environment Sensing)	
	Hakodate-Tokyo	Yasuzumi Fujimori
	Associate Professor (Laboratory of Marine Bioresource and Environment Sensing)	
	Hakodate-Tokyo	Toru Mukai
	Assistant Professor (Field Science Center for Northern Biosphere, Hokkaido University)	
	Hakodate-Tokyo	Jun Yamamoto
	Associate Professor (Laboratory of Marine Industrial Science and Technology)	
	Tokyo-Hakodate	Hiroki Yasuma
	Assistant Professor (Laboratory of Marine Environmental Science)	
	Tokyo-Hakodate	Hiromichi Ueno
	Associate Professor (Faculty of Environmental Earth Science, Hokkaido University)	
	Hakodate-Tokyo	Yutaka Watanabe
	Professor (Kasetsart University)	
	Hakodate-Tokyo	Anongponyoskun Monton
Teaching Assistant:		4 persons
Under Graduate Students:		26 persons
Graduate Students:		3 persons
		Total 40 persons

3. Items of Training and Research

Hydrographic observations: (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by the deck officers, Science officer, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and SBE-19Plus) and X-CTD. Water and Plankton sampling were also carried out at almost hydrographic stations.

Fig. 1, Table 1,2

Saury gillnets research:

Tow operations of gillnet Researches were carried out. These operations were supervised by the captain, Deck officers, Science officer, crews, research staffs, and cadets were engaged in the work.

Table 3, 4

Fig 1. Oceanographic Stations

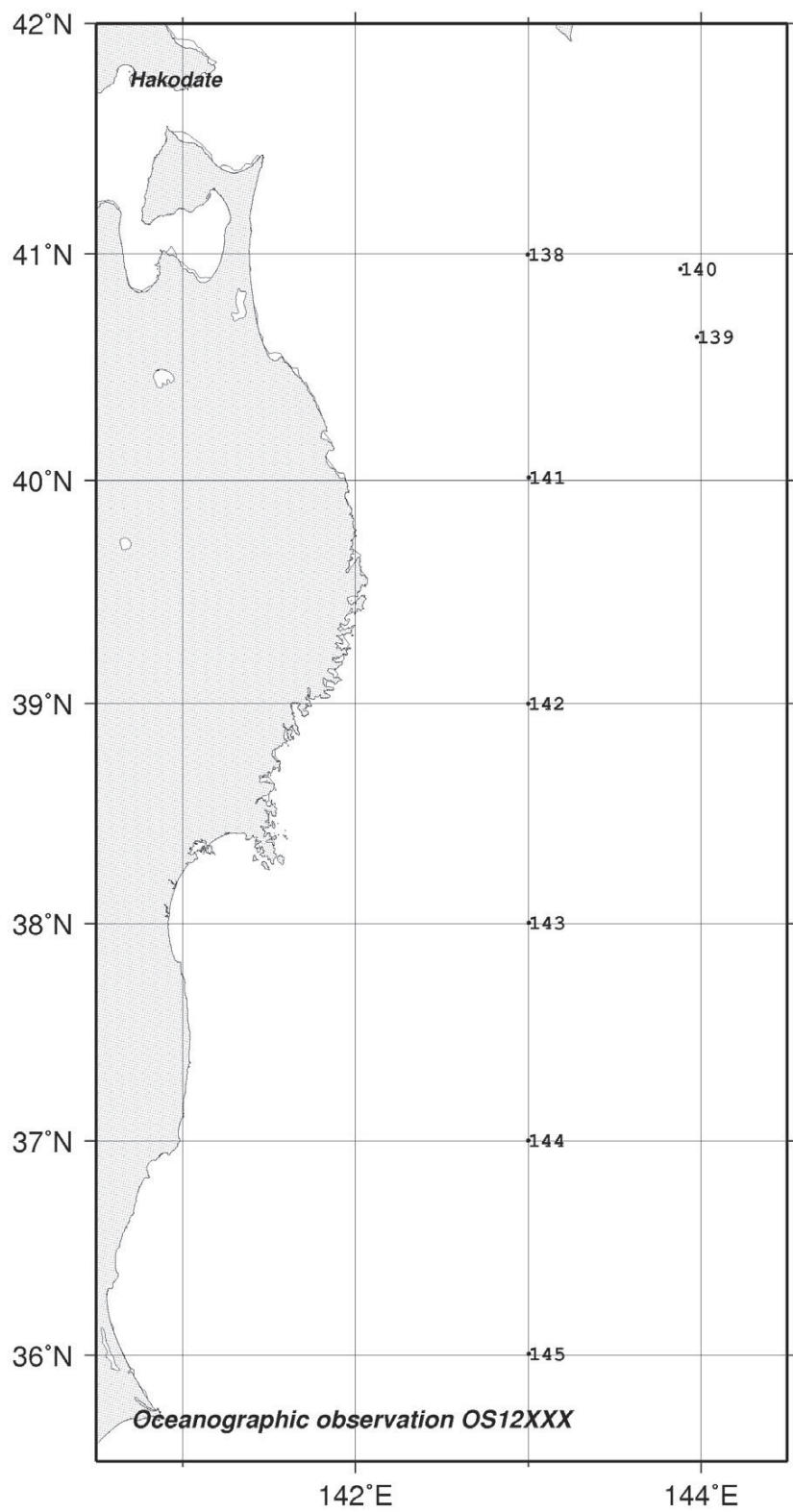


Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12138	40–59.83N	142–59.85E	10/9	23:32	9	1890	–	–	22.4	o	19Plus–4636
OS12139	40–38.07N	143–58.58E	10/10	13:18	9	4082	–	–	19.3	o	9Plus–0769
OS12140	40–55.94N	143–52.81E	10/11	23:05	9	3655	–	–	18.7	bc	9Plus–0769
OS12141	40–00.72N	143–00.10E	10/13	5:11	9	1305	–	–	20.8	bc	XCTD
OS12142	39–00.01N	143–00.08E	10/13	10:31	9	1630	–	–	20.7	o	19Plus–4636
OS12143	38–00.21N	143–00.24E	10/13	16:51	9	1860	–	–	23.0	o	19Plus–4636
OS12144	37–00.11N	142–59.98E	10/13	23:07	9	5120	–	–	25.4	bc	19Plus–4636
OS12145	36–00.38N	143–00.14E	10/14	7:10	9	4900	–	–	25.4	bc	9Plus–0769
OS12146	38–59.97N	141–59.87E	10/23	20:59	9	198	–	–	19.4	bc	9Plus–0769
OS12147	39–00.02N	141–55.20E	10/23	22:00	9	142	–	–	19.7	bc	9Plus–0769
OS12148	39–29.65N	142–10.93E	10/24	1:20	9	234	–	–	19.6	bc	9Plus–0769
OS12149	39–29.98N	142–06.22E	10/24	2:32	9	150	–	–	20.2	b	9Plus–0769
OS12150	39–59.61N	142–06.11E	10/24	6:10	9	127	–	–	20.3	b	9Plus–0769
OS12151	39–59.95N	142–14.68E	10/24	7:17	9	213	–	–	19.5	bc	9Plus–0769

Table 2. Oceanographic data

Station OS12138 Latitude 40-59.83N Longitude 142-59.85E Depth(m) 1890m				Station OS12139 Latitude 40-38.07N Longitude 143-58.58E Depth(m) 4082m				Station OS12140 Latitude 40-56.08N Longitude 143-52.85E Depth(m) 3655m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
20	23.282	33.528	22.737	5	18.556	33.869	24.269	10	18.038	33.317	23.974
30	21.470	33.694	23.372	10	18.559	33.867	24.266	20	18.029	33.316	23.975
50	16.765	34.006	24.807	20	18.523	33.855	24.266	30	17.729	33.349	24.074
75	12.564	34.034	25.731	30	17.837	33.872	24.448	40	15.731	33.669	24.784
100	11.497	34.121	26.001	40	15.086	34.090	25.252	50	13.441	34.074	25.587
150	9.967	34.107	26.260	50	14.092	34.138	25.502	75	10.377	33.959	26.075
200	7.841	33.933	26.459	75	11.793	34.145	25.964	100	9.982	34.131	26.276
300	2.746	33.520	26.726	100	10.536	34.132	26.182	125	9.073	34.054	26.366
400	3.240	33.766	26.878	125	9.620	34.092	26.307	150	8.044	33.859	26.371
500	3.486	33.953	27.004	150	8.938	34.054	26.387	175	6.469	33.696	26.462
600	3.521	34.069	27.093	175	8.599	34.014	26.409	200	5.671	33.643	26.521
				200	8.382	33.986	26.420	250	4.386	33.573	26.611
				250	8.222	33.964	26.427	300	2.763	33.467	26.682
				300	5.847	33.682	26.530	400	2.391	33.575	26.800
				400	1.703	33.302	26.633	500	2.975	33.777	26.911
				500	3.700	33.715	26.794	600	3.072	33.894	26.996
				600	2.999	33.753	26.890	700	3.468	34.089	27.114
				700	3.179	33.912	27.000	800	3.389	34.183	27.197
				800	3.517	34.093	27.112	900	3.347	34.277	27.276
				900	3.222	34.160	27.194	1000	3.002	34.308	27.332
				1000	3.153	34.272	27.290				

Station OS12141			
Latitude 40-00.72N			
Longitude 143-00.10E			
Depth(m) 1305m			
Depth	Temp.	Sal.	SIG-T
5	20.336	33.690	-
10	20.336	33.713	-
20	20.336	33.719	-
30	20.296	33.716	-
40	14.681	33.632	-
50	12.117	33.810	-
75	10.068	33.899	-
100	8.578	33.875	-
125	6.954	33.766	-
150	4.653	33.515	-
175	4.429	33.545	-
200	3.872	33.538	-
250	3.449	33.606	-
300	2.969	33.637	-
400	3.412	33.838	-
500	3.542	34.009	-
600	3.482	34.130	-
700	3.341	34.223	-
800	3.130	34.301	-
900	3.029	34.372	-
1000	2.878	34.412	-

Station OS12142			
Latitude 39-00.01N			
Longitude 143-00.08E			
Depth(m) 1630m			
Press.	Temp.	Sal.	SIG-T
20	20.124	33.509	23.592
30	20.121	33.512	23.595
50	15.095	33.706	24.954
75	11.137	33.861	25.864
100	10.539	34.112	26.166
150	8.617	34.004	26.399
200	7.373	33.865	26.473
300	3.109	33.476	26.659
400	3.275	33.689	26.813
500	3.993	33.960	26.960
600	4.005	34.110	27.078
700	3.852	34.190	27.157
800	3.437	34.253	27.248
900	3.245	34.320	27.320
1000	3.009	34.363	27.376

Station OS12143			
Latitude 38-00.21N			
Longitude 143-00.24E			
Depth(m) 1860m			
Press.	Temp.	Sal.	SIG-T
20	22.589	34.113	23.378
30	22.589	34.112	23.377
50	20.500	34.400	24.171
75	16.228	34.119	25.018
100	15.047	34.441	25.531
150	12.385	34.424	26.068
200	9.637	34.132	26.335
300	8.157	34.058	26.511
400	5.349	33.854	26.726
500	3.991	33.819	26.848
600	4.515	34.077	26.997
700	4.110	34.144	27.094
800	3.801	34.238	27.200
900	3.469	34.292	27.276

Station OS12144			
Latitude 37-00.11N			
Longitude 142-59.98E			
Depth(m) 5120m			
Press.	Temp.	Sal.	SIG-T
20	24.996	34.319	22.828
30	24.997	34.319	22.828
50	25.000	34.319	22.827
75	24.696	34.428	23.001
100	19.338	34.508	24.558
150	16.559	34.638	25.340
200	14.262	34.513	25.756
300	10.031	34.259	26.368
400	7.505	34.263	26.767
500	5.649	34.265	27.015
600	4.384	34.256	27.154
700	4.104	34.348	27.257
800	3.422	34.330	27.311
900	3.118	34.371	27.372

Station OS12145			
Latitude 36-0.48N			
Longitude 143-0.15E			
Depth(m) 4900m			
Press.	Temp.	Sal.	SIG-T
5	24.909	34.353	22.880
10	24.912	34.352	22.879
20	24.930	34.373	22.889
30	24.942	34.390	22.898
40	24.942	34.389	22.897
50	24.943	34.390	22.898
75	24.926	34.394	22.906
100	23.124	34.561	23.565
125	21.622	34.575	24.000
150	20.452	34.745	24.447
175	19.151	34.723	24.771
200	17.995	34.661	25.014
250	15.755	34.547	25.455
300	13.990	34.501	25.803
400	10.117	34.305	26.389
500	7.497	34.233	26.745
600	6.594	34.242	26.877
700	5.362	34.273	27.056
800	4.528	34.297	27.171
900	4.028	34.326	27.247
1000	3.675	34.383	27.329
1200	2.917	34.434	27.441
1500	2.401	34.515	27.550
2000	1.959	34.594	27.649
2500	1.705	34.637	27.704
3000	1.580	34.658	27.730
3500	1.524	34.670	27.743
4000	1.489	34.679	27.753

Station OS12146			
Latitude 38-59.99N			
Longitude 141-59.86E			
Depth(m) 198m			
Press.	Temp.	Sal.	SIG-T
5	18.830	33.657	24.038
10	18.824	33.658	24.040
20	18.828	33.658	24.039
30	18.838	33.658	24.036
40	18.838	33.658	24.036
50	18.837	33.658	24.036
75	17.711	33.727	24.368
100	16.009	33.975	24.957
125	14.855	34.054	25.274
150	13.537	34.153	25.629
175	12.329	34.138	25.857

Station OS12147				Station OS12148				Station OS12149			
Latitude 39-0.02N				Latitude 39-29.63N				Latitude 39-29.98N			
Longitude 141-55.20E				Longitude 142-10.94E				Longitude 142-06.23E			
Depth(m) 142m				Depth(m) 234m				Depth(m) 150m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	19.087	33.673	23.985	5	19.590	33.682	23.863	5	19.575	33.692	23.875
10	19.075	33.672	23.988	10	19.590	33.682	23.863	10	19.462	33.682	23.897
20	19.090	33.672	23.983	20	19.584	33.682	23.865	20	19.135	33.665	23.967
30	19.090	33.670	23.982	30	19.585	33.682	23.865	30	19.012	33.664	23.997
40	18.877	33.670	24.036	40	19.582	33.683	23.866	40	18.864	33.660	24.032
50	18.038	33.713	24.277	50	18.377	33.768	24.236	50	18.715	33.672	24.078
75	17.029	33.810	24.594	75	14.611	34.119	25.377	75	17.950	33.755	24.331
100	16.068	33.994	24.958	100	13.793	34.144	25.569	100	15.162	34.059	25.211
125	14.731	34.077	25.318	125	12.681	34.161	25.806	125	13.665	34.144	25.595
				150	10.806	34.130	26.132				
				175	9.647	34.049	26.268				
				200	7.471	33.850	26.447				

Station OS12150				Station OS12151			
Latitude 39-59.58N				Latitude 39-59.92N			
Longitude 142-06.12E				Longitude 142-14.69E			
Depth(m) 127m				Depth(m) 213m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	18.633	33.707	24.125	5	18.833	33.700	24.070
10	18.637	33.707	24.125	10	18.832	33.701	24.071
20	18.643	33.706	24.122	20	18.835	33.700	24.070
30	18.630	33.706	24.126	30	18.765	33.698	24.086
40	18.559	33.705	24.142	40	18.722	33.701	24.098
50	18.335	33.711	24.202	50	18.616	33.702	24.126
75	17.092	33.876	24.630	75	17.152	33.813	24.567
100	15.332	34.134	25.231	100	15.291	34.202	25.293
				125	12.238	34.179	25.906
				150	11.532	34.147	26.014
				175	11.554	34.147	26.010
				200	11.583	34.147	26.005

Table 3 Data on gill net research during the "Oshoro Maru" Cruise #248

No. of research		OSG 1207	OSG 1208
Date		10-Oct.	12, 13-Oct.
position of net set	Lat. (N)	40-30.8	40-57.2
	Long. (E)	143-59.4	143-53.4
Time(S.M.T.*1)	net set	16:30-16:35	16:53-16:57
	net haul	19:55-20:10	06:00-06:05
D.S.*2		280	305
Wr*3		bc	bc
S.T.*4 (°C)		19.5	17.7
Wind (force)		ESE-5	WNW-7
Pacific saury		-	3
Japanese sardine			
Mackerels			

*1 S.M.T. : Ship's Mean Time.

*2 D.S. : Direction of net set.

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

*4 S.T. : Surface temperature

table 4 Drift Gillnet Sampling

	Mesh size (mm)	37	25	37	33	42	48	25	37	33	42	Total
OSG1207	Number	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	5
OSG1208	of tan	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	5

10.

THE "OSHORO MARU" CRUISE 249 SEA of OKHOTSK

IN NOVEMBER 2012

1. Cruise Itinerary

Cruise 249

Departure from Hakodate	Nov. 21, 2012
Start hydrographic research (OS12152)	23
Arrival at Abashiri and departure	24
Finish hydrographic research (OS12155)	26
Return to Abashiri	27
Departure from Abashiri	28
Return to Hakodate	Dec. 01
Total coverage 1327.2 miles	

2. Vessel Personnel

Crew: Captain	Associate Professor	Shogo Takagi
		And 28 persons

Research Staff:

Professor (Civil and Environmental Engineering, Kitami Institute of Technology)
Hakodate - Abashiri Satoshi Yamashita

Professor (Aqua Bioscience and Industry, Tokyo university of agriculture)
Abashiri - Abashiri Akihiro Shiimoto

Associate Professor
(Materials Science and Engineering, Kitami Institute of Technology)
Abashiri - Abashiri Hiotsugu Minami

Associate Professor
(Environmental and Energy Engineering, Kitami Institute of Technology)
Hakodate - Abashiri Akihiro Hachikubo

Instructor (Materials Science and Engineering, Kitami Institute of Technology)
Hakodate - Abashiri Hiotoshi Sakagami

Instructor (Civil and Environmental Engineering, Kitami Institute of Technology)
Abashiri - Abashiri Shintaro Yamasaki

Instructor (Civil Engineering, Hakodate National College of Technology)
Hakodate - Abashiri Satuki Kataoka

Project Researcher
(Earth and Planetary Science, Graduate School of Science, Tokyo University)
Abashiri - Abashiri Takeshi Ohi

Contract Associate Professor (Fisheries, Hokkaido University)
Hakodate - Hakodate Mitsuhiro Nakaya

Technical staff: (New Energy Resources Research Center, Kitami Institute of Technology)
Hakodate - Abashiri Kinji H

Teaching Assistant: 4 persons

Graduate Students: 10 persons

Under Graduate Students: 36 Persons

Total 59 persons

3. Items of Research

Hydrographic observations: (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by Science officer, the deck officers, crews, research staff and cadets of the “*Oshoromaru*”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and SBE-19Plus).

Water and Plankton sampling were also carried out at almost hydrographic stations.

Fig.1, Table 1, 2

Fig 1. Oceanographic Stations

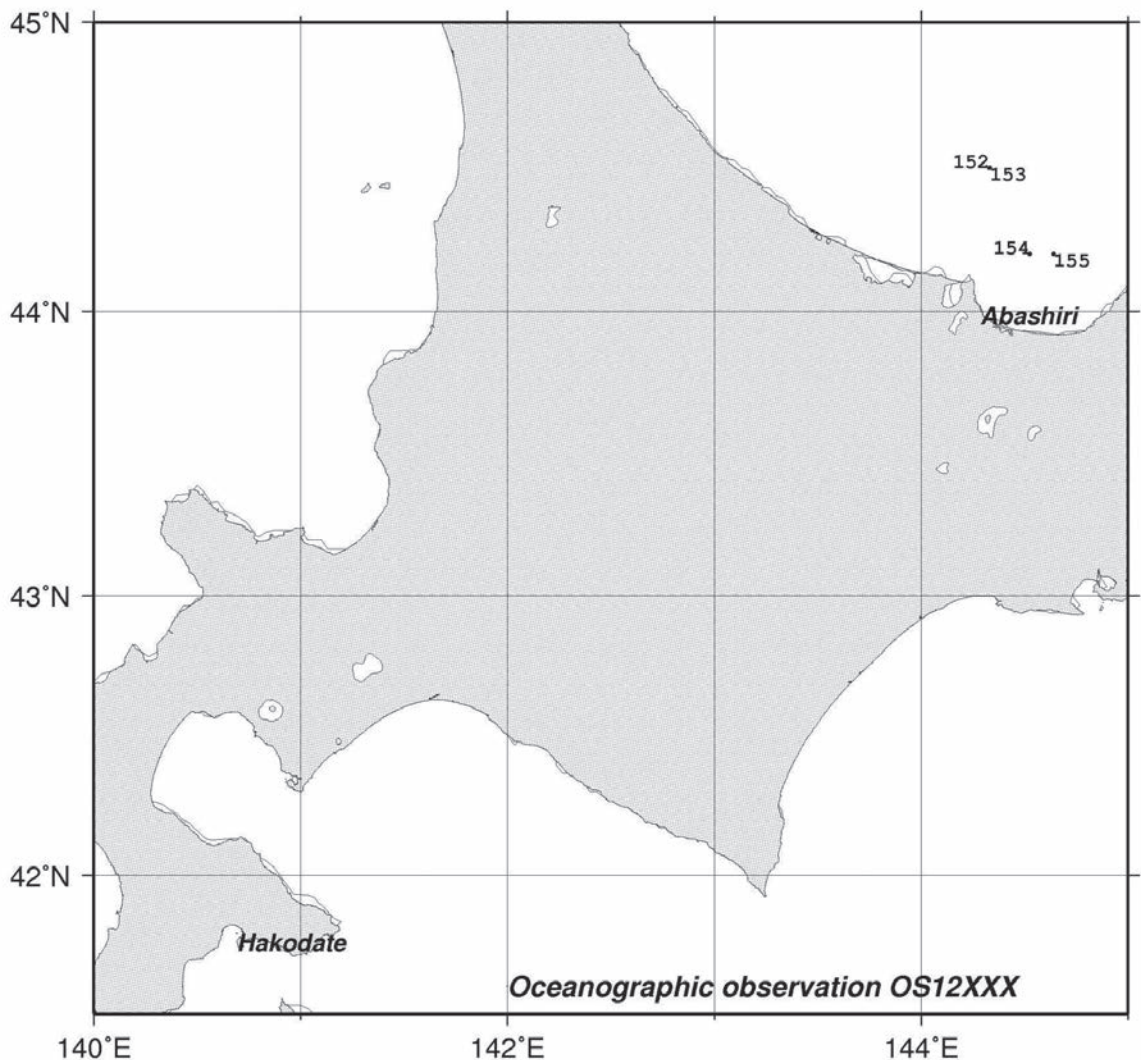


Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12152	44-30.0N	144-19.8E	11/23	—	9	826	—	—	6.9	c	19Plus-4636
OS12154	44-09.73N	144-31.54E	11/24	23:50	9	520	—	—	5.8	bc	9Plus-0769
OS12155	44-11.40N	144-37.44E	11/26	0:32	9	683	—	—	5.4	o	9Plus-0769

Table 2. Oceanographic data

Station OS12152				Station OS12154				Station OS12155			
Latitude N44-30.0				Latitude 44 9.68				Latitude 44 11.42			
Longitude E144-19.8				Longitude 144 31.7				Longitude 144 37.51			
Depth(m) Depth: 826				Depth(m)				Depth(m)			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
20	6.049	32.743	25.764	5	5.832	32.066	25.255	5	5.369	31.838	25.128
30	6.277	32.895	25.855	10	5.825	32.067	25.256	10	5.368	31.836	25.127
50	5.246	33.016	26.075	20	5.962	32.121	25.283	20	5.782	32.146	25.324
75	0.822	33.144	26.564	30	6.042	32.143	25.291	30	5.872	32.352	25.476
100	0.474	33.191	26.622	40	6.254	32.302	25.390	40	6.422	32.595	25.600
150	-0.686	33.188	26.673	50	6.511	32.459	25.482	50	6.402	32.768	25.739
200	-0.441	33.240	26.705	75	6.779	32.866	25.768	75	6.727	32.916	25.813
300	0.332	33.371	26.774	100	5.361	32.982	26.035	100	4.274	32.888	26.079
				125	5.536	33.433	26.371	125	1.406	33.068	26.466
				150	4.463	33.384	26.453	150	0.373	33.127	26.575
				175	4.128	33.360	26.469	175	0.662	33.231	26.643
				200	3.993	33.371	26.491	200	-0.352	33.187	26.659
								250	-0.379	33.207	26.676
								300	-0.030	33.274	26.714
								400	0.843	33.446	26.806
								500	1.709	33.632	26.897

11.

THE “OSHORO MARU” CRUISE 250 TO EAST OF HONSHU AND THE OGASAWARA ISLANDS

IN DECEMBER 2012

1. Cruise Itinerary

Cruise 250

Departure from Hakodate, and start hydrographic research (OS12156)	Dec.	8,	2012
Mid trawl (OSMT1208)		9	
Arrival at Tokyo		10	
Departure from Tokyo		11	
Arrival at Chichishima		13	
Departure from Chichishima and start vertical long-line research (OSVL1201)		15	
Finish hydrographic research (OS12162) and vertical long-line research (OSVL1204)		17	
Return to Tokyo		19	
Total coverage 1730.8 miles			

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 29 persons
	Professor (Department of Marine Science and Resources,Nihon University)		
	Tokyo - Tokyo		Takahito Kojima
	Associate Professor (Teikyo University of Science and Technology)		
	Tokyo - Tokyo		Kyoichi Mori
	Instructor (Department of Marine Science and Resources,Nihon University)		
	Tokyo - Tokyo		Yuya Makiguchi
Guest Scientist:			
	Professor (Fisheries Biology and Ecology, Graduate School of Agricultural Science, Tohoku University)		
	Hakodate - Tokyo		Satoshi Katayama
	Teaching Assistant:		2 persons
	Graduate Students:		1 persons
	Under Graduate Students:		33 persons
Mitsui Engineering & Shipbuilding staff	Hakodate - Tokyo		8 persons
Unit chief, Fisheries of Hokkaido University	Hakodate - Tokyo		Takatashi Yamauchi
Associate Professor (Ushio Maru, Fisheries of Hokkaido University)	Hakodate - Tokyo		Yoshihiko Kamei
Total 50persons			

3. Items of Research

Hydrographic observations: (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by Science officer, the deck officers, crews, research staff and cadets of the “*Oshoromaru*”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and SBE-19Plus). Water and Plankton sampling were also carried out at almost hydrographic stations.

Fig.1, Table 1, 2

Mid trawl observations:

One operation of the stern otter mid-water trawl were carried out. These operations were supervised by the captain, and were conducted by deck officer, Science officer, crew, research staff and cadets.

Table 3, 4

Biological research for fishes caught by vertical long-line:

Four operations using a vertical long-line were performed. The gear comprised by three types of main line (400,500,600m) with a weight attached to one end, a buoy attached to the other end, and six branch lines (18m-for tuna and 4m-for squid) attached to the main line. These operations were supervised by the captain, Deck officers, Science officer, crews, cadets, and research staffs were engaged in the work.

Table 5

Fig 1.Oceanographic Stations

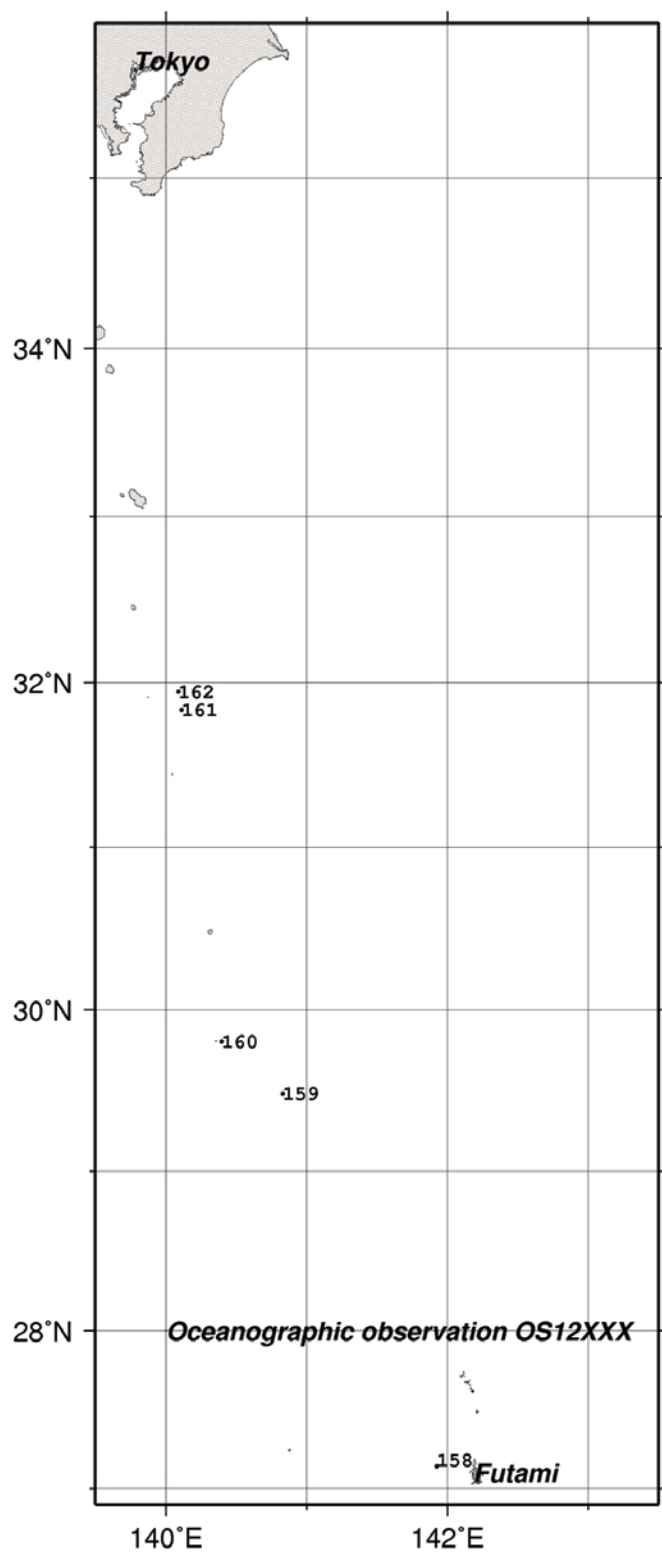


Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12158	27-08.58N	141-55.46E	12月15日	3:18	9	2008	2	29	22.7	bc	9Plus-0769
OS12159	29-28.96N	140-49.86E	12/15	22:09	9	3735	2	19.7	22.1	bc	9Plus-0769
OS12160	29-48.42N	140-23.86E	12/16	5:56	9	1047	2	21	21.8	bc	9Plus-0769
OS12161	31-50.21N	140-06.83E	12/16	22:03	9	1660	2	23.7	21.7	o	9Plus-0769
OS12162	31-56.74N	140-05.42E	12/17	3:53	9	1505	-	-	21.6	bc	9Plus-0769

Table 2. Oceanographic data

Station OS12158				Station OS12159				Station OS12160			
Latitude 27-08.57N				Latitude 29-29.03N				Latitude 29-48.45N			
Longitude 141-55.43E				Longitude 140-49.86E				Longitude 140-23.87E			
Depth(m) 2008m				Depth(m) 3735m				Depth(m) 1047m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	22.078	34.614	23.902	5	21.408	34.658	24.122	5	21.276	34.613	24.125
10	22.082	34.614	23.902	10	21.405	34.658	24.123	10	21.275	34.616	24.126
20	22.068	34.613	23.905	20	21.410	34.658	24.122	20	21.277	34.616	24.126
30	22.055	34.614	23.909	30	21.411	34.658	24.121	30	21.275	34.619	24.129
40	22.054	34.615	23.910	40	21.416	34.658	24.120	40	21.253	34.622	24.137
50	22.058	34.617	23.911	50	21.417	34.658	24.120	50	21.192	34.618	24.151
75	21.967	34.646	23.958	75	21.422	34.658	24.118	75	21.069	34.610	24.179
100	20.805	34.804	24.398	100	21.418	34.664	24.124	100	20.818	34.589	24.230
125	19.346	34.797	24.777	125	21.101	34.747	24.274	125	20.261	34.545	24.346
150	18.408	34.767	24.992	150	20.045	34.812	24.607	150	19.738	34.601	24.526
175	17.896	34.740	25.098	175	19.335	34.801	24.783	175	19.131	34.698	24.757
200	17.814	34.736	25.115	200	18.948	34.789	24.873	200	18.250	34.722	24.997
250	16.945	34.689	25.289	250	18.250	34.753	25.021	250	16.654	34.664	25.338
300	15.659	34.607	25.523	300	17.159	34.695	25.243	300	14.969	34.555	25.635
400	12.592	34.418	26.023	400	14.941	34.558	25.644	400	10.283	34.282	26.343
500	9.971	34.266	26.384	500	11.323	34.334	26.198	500	8.414	34.197	26.581
600	7.431	34.164	26.700	600	8.400	34.214	26.596				
700	5.374	34.166	26.971	700	6.039	34.168	26.890				
800	4.646	34.225	27.101	800	5.340	34.230	27.025				
900	4.035	34.283	27.213	900	4.412	34.287	27.175				
1000	3.709	34.329	27.282	1000	3.826	34.336	27.276				

Station OS12161				Station OS12162			
Latitude 31-50.22N				Latitude 31-56.75N			
Longitude 140-06.84E				Longitude 140-05.47E			
Depth(m) 1660m				Depth(m) 1505m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	21.156	34.640	24.177	5	21.004	34.661	24.235
10	21.155	34.640	24.177	10	21.008	34.661	24.234
20	21.155	34.640	24.178	20	21.009	34.661	24.233
30	21.131	34.639	24.183	30	21.010	34.661	24.233
40	21.128	34.638	24.184	40	21.011	34.662	24.234
50	21.123	34.638	24.185	50	21.003	34.663	24.236
75	21.122	34.638	24.185	75	20.993	34.665	24.241
100	21.115	34.640	24.189	100	20.955	34.670	24.255
125	21.036	34.660	24.225	125	20.723	34.705	24.344
150	20.523	34.755	24.436	150	19.410	34.789	24.754
175	19.358	34.770	24.753	175	18.727	34.764	24.910
200	18.295	34.727	24.990	200	18.207	34.754	25.032
250	17.483	34.695	25.164	250	17.603	34.724	25.158
300	16.675	34.668	25.336	300	16.986	34.689	25.279
400	15.048	34.566	25.627	400	15.319	34.584	25.581
500	12.821	34.434	25.990	500	12.353	34.401	26.056
600	8.975	34.250	26.535	600	8.940	34.250	26.540
700	6.661	34.219	26.850	700	7.104	34.238	26.804
800	5.010	34.268	27.094	800	5.820	34.260	26.991
900	4.167	34.345	27.248	900	4.514	34.333	27.201
1000	3.567	34.392	27.346	1000	3.805	34.381	27.313

Table 3: Data on mid trawl research during the Oshoromaru Cruise#250

No. of research	Date and time of net tow (S.M.T.*1)	Position		T.D.*2	D.S.*3	Speed of tow (K't)	net depth (m)	Wr.*4	Wind	S.T.*5 (°C)
		Lat. (N)	Long. (E)							
OST1208	Dec. 9 0705-0905	37-59.9	141-50.3	9h	170	4.5	0-230-100-0	bc	WNW-2	15.3

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of tow.

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

*5 S.T. : Surface temperature

Table 4: Data on catches by mid-water trawl research

Species	Scientific Name	OSMT 1208	
		Number	Weight (g)
Japanese pearlshides	<i>Maurolicus japonicus</i>	1	600
Flying squid	<i>Ommastrephes bartramii</i>	125	100

Table 5 Data on vertical long line research

No. of research		OSVL 1201-01	OSVL 1201-02	OSVL 1201-03	OSVL 1201-04	OSVL 1201-05	OSVL 1201-06
Date		15-Dec					
position of line set	Lat. (N)	27-07.3	27-07.5	27-07.8	27-08.0	27-08.3	27-08.5
	Long. (E)	141-57.1	141-56.9	141-56.6	141-56.4	141-56.2	141-55.9
Time	Line set	1135	1140	1144	1150	1154	1159
(S.M.T.)	Line haul	1535	1514	1455	1438	1415	1405
Length of main line(m)		500	500	600	500	600	500
Depth(m)		1460					
Surface temp. (°C)		22.0					
Wether		bc					
Wind		SE-6					
Bigeye tuna	1		1				
Pelagic thresher	1	1					
Flying squid	2			1			1
Rhomboid squid	1		1				
No. of research		OSVL 1202-01	OSVL 1202-02	OSVL 1202-03	OSVL 1202-04	OSVL 1202-05	OSVL 1202-06
Date		16-Dec					
position of line set	Lat. (N)	29-26.4	19-26.8	29-27.0	29-27.4	29-27.6	29-28.0
	Long. (E)	140-47.4	140-47.7	140-48.0	140-48.3	140-48.5	140-48.8
Time	Line set	0625	0630	0635	0640	0645	0650
(S.M.T.)	Line haul	1119	1057	1036	1016	0955	0930
Length of main line(m)		500	500	400	500	600	500
Depth(m)		2780-3400					
Surface temp. (°C)		21.3					
Wether		bc					
Wind		SW-5					
Sickle pomfret	1					1	
Flying squid	7		2		2	1	2
Rhomboid squid	1						1
No. of research		OSVL 1203-01	OSVL 1203-02	OSVL 1203-03	OSVL 1203-04	OSVL 1203-05	OSVL 1203-06
Date		17-Dec					
position of line set	Lat. (N)	31-48.1	31-48.3	31-48.6	48-48.8	31-49.1	31-49.4
	Long. (E)	140-07.4	140-07.4	140-07.3	140-07.3	140-07.2	140-07.2
Time	Line set	0620	0625	0631	0635	0640	0645
(S.M.T.)	Line haul	1054	1038	1018	1003	0945	0930
Length of main line(m)		500	500	400	500	600	500
Depth(m)		1744-1666					
Surface temp. (°C)		21.0					
Wether		c					
Wind		SSE-3					
noting							
No. of research		OSVL 1204-01	OSVL 1204-02	OSVL 1204-03	OSVL 1204-04	OSVL 1204-05	OSVL 1204-06
Date		17-Dec					
position of line set	Lat. (N)	31-57.2	31-57.2	31-57.1	31-57.1	31-57.0	31-57.0
	Long. (E)	140-02.9	140-03.1	140-03.3	140-03.6	140-03.9	140-04.1
Time	Line set	1158	1203	1209	1213	1217	1221
(S.M.T.)	Line haul	1411	1433	1454	1509	1527	1550
Length of main line(m)		500	500	500	400	500	500
Depth(m)		1296					
Surface temp. (°C)		20.7					
Wether		c					
Wind		West-4					
Sickle pomfret	1						1
Flying squid	3	1	1			1	