HOKKAIDO UNIVERSITY

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PART I

OSHORO MARU CRUISES

FROM JANUARY TO DECEMBER 2009

I. Crew List

Captain:		Toshimi Meguro (Cruise - 199)
		Shogo Takagi (Cruise 200 -)
Crew:	Chief Officer	Yoshiyuki Kajiwara (Cruise - 199)
		Yoshihiko Kamei (Cruise 200 -)
	First Officer	Shogo Takagi (Cruise - 199)
		Keiichiro Sakaoka (Cruise 202 -)
	Second Officer	Yoshihiko Kamei (Cruise - 199)
		Keiichiro Sakaoka (Cruise 200 - 201)
		Naoki Hoshi (Cruise 202 -)
	Jr.Second Officer	Keiichiro Sakaoka (Cruise - 199)
	Third Officer	Naoki Hoshi (Cruise 199 - 201)
		Takuzo Abe (Cruise 202 -)
	Chief Engineer	Junichi Kimura
	First Engineer	Fumio Fujimoto
	Second Engineer	Kazuya Sawanaka
	Jr. Second Engineer	Jumpei Shimura
	Chief Radio Officer	Akio Kamijo
	Second Radio Officer	Satoshi Ishigaki
	Boatswain	Yoshiharu Matsui
	Jr. Boatswain	Toshiharu Yosoe
	Quartermaster	Sen Sunakoma
	Quartermaster	Yoshihiro Onodera
	Quartermaster	Naoyuki Eda
	Quartermaster	Tadashi Mishima
	Sailor	Daisuke Sasaki (Cruise 200 -)
	Sailor	Shota Hagiwara
	Sailor	Takahiro Kanazawa(Cruise - 199)
	Sailor	Shunpei Komatsu(Cruise - 206)
	No.1 Oiler	Shuiti Hasegawa
	Junior No.1 Oiler	Kohya Nakamura
	Oiler	Takuya Takano
	Oiler	Tohru Murakami
	Fireman	Keisuke Shindo
	Fireman	Takaaki Arakawa
	Chief Steward	Yoshinori Sawada
	Jr. Chief Steward	Kazuhiro Ikeda
	Head Steward	Kazuo Ishikawa
	Head Steward	Hiroshi Nakamura

II. Particulars

Length (o.a.)	72.85 m
Length (p.p.)	66.00 m
Breadth (mid)	12.60 m
Depth (mid) Upper DK	5.70 m
Gross tonnage (Domestic)	1,396.00 tons
International gross tonnage	1,792.00 tons
Main engine	2,353 kW
Call sign	JDVA

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THE “OSHORO MARU” CRUISE 197
TO THE OYASHIO REGION

IN FEBRUARY 2009

1. Cruise Itinerary

Cruise 197

Departure from Hakodate	Feb.	17	2009
Start hydrographic research (OS09001)		18	
Finish hydrographic research (OS09002)		19	
Return to Hakodate		20	

Total coverage 595.1 miles

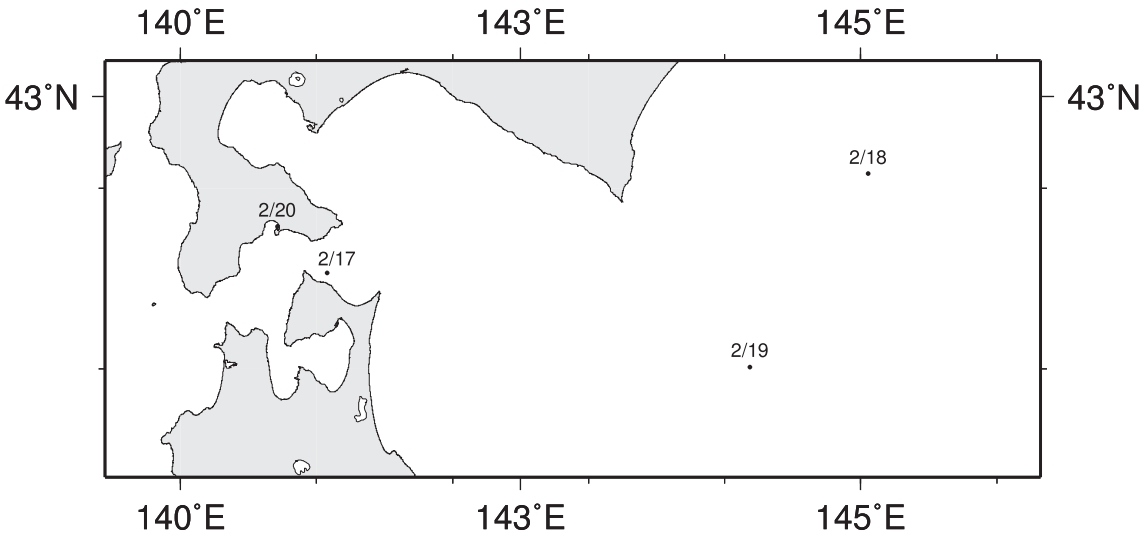


Figure 1: Noon position

2. Vessel Personnel

Captain:		Professor	Toshimi Meguro
Crew :	First Officer	Associate Professor	Shogo Takagi
	Second Officer	Instructor	Yoshihiko Kamei
	Jr. Second Officer	Instructor	Keiichiro Sakaoka
	Chief Engineer	Instructor	Jyunichi Kimura
	And 24 men		

Cruise 197

Research Staff:	Associate Professor	(Graduate School of Environmental Science) Yutaka Watanabe
	Associate Professor	(Institute of Low Temperature Science, Hokkaido University) Jun Nishioka
	Total	31 persons

3. Items of Research

Hydrographic observations: Fig. 2 Table 1,2

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09001	42-15.0N	145-00.0E	2/18	0500	9	2624	-	-	1.5	bc	9Plus-0769
OS09002	41-00.0N	146-00.0E	2/19	2300	9	5370	-	-	7.8	r	9Plus-0769

(*):Fixed position by Global Positioning system

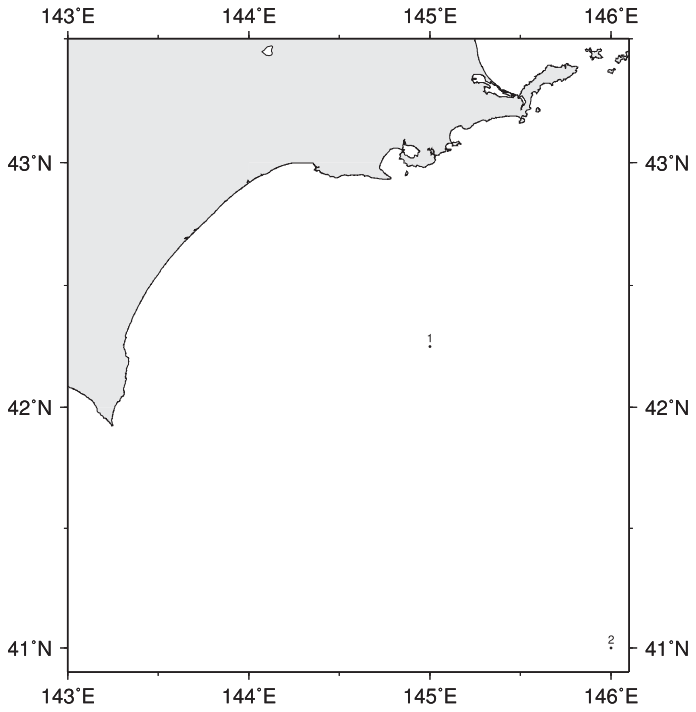


Figure 2: Oceanographic stations

Table 2: Oceanographic data

Station		OS09001	
Longitude		42-15.0N	
Latitude		145-00.0E	
Depth(m)		2624	
Press.	Temp.	Sal.	SIG-T
5	1.576	33.213	26.571
10	1.576	33.213	26.571
20	1.577	33.212	26.570
30	1.577	33.211	26.569
40	1.572	33.211	26.569
50	1.580	33.211	26.569
75	1.585	33.212	26.569
100	1.596	33.214	26.570
125	1.667	33.246	26.591
150	2.038	33.373	26.665
200	2.193	33.497	26.753
250	2.205	33.545	26.790
300	2.275	33.626	26.849
400	2.453	33.752	26.936
500	2.522	33.868	27.023
600	2.844	33.979	27.084
700	2.926	34.092	27.167
800	2.822	34.208	27.269
900	2.685	34.272	27.332
1000	2.648	34.331	27.383

Station		OS09002	
Longitude		41-00.0N	
Latitude		146-00.0E	
Depth(m)		5370	
Press.	Temp.	Sal.	SIG-T
5	8.053	34.081	26.544
10	8.059	34.082	26.544
20	8.059	34.081	26.544
30	8.061	34.081	26.544
40	8.059	34.081	26.544
50	8.056	34.082	26.545
75	8.067	34.081	26.543
100	8.074	34.081	26.541
125	8.069	34.080	26.541
150	8.071	34.080	26.541
200	8.076	34.080	26.540
250	8.081	34.080	26.539
300	8.085	34.081	26.539
400	5.227	33.681	26.604
500	3.636	33.619	26.724
600	3.182	33.702	26.833
700	2.873	33.806	26.943
800	3.487	34.036	27.071
900	3.487	34.159	27.168
1000	3.336	34.253	27.257

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THE “OSHORO MARU” CRUISE 198
TO THE NORTHWEST PACIFIC OCEAN

IN FEBRUARY TO MARCH 2009

1. Cruise Itinerary

Cruise 198

Departure from Hakodate	Feb.	27	, 2009
Start hydrographic research (OS09003)		28	
Finish hydrographic research (OS09011)	Mar.	6	
Return to Hakodate		8	

Total coverage 1653.7 miles

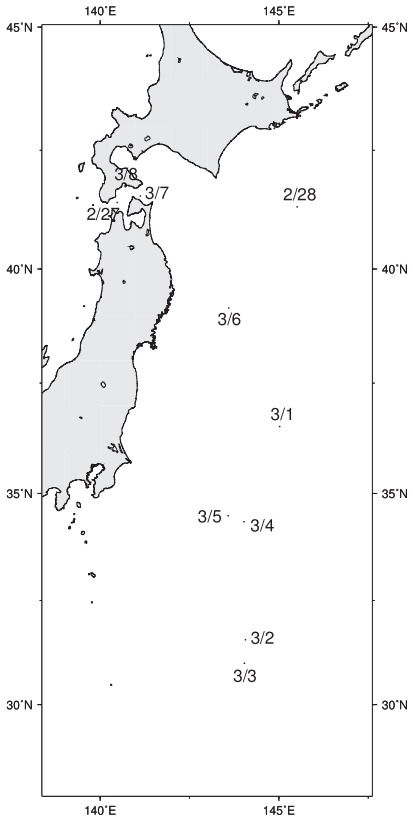


Figure 1: Noon position

2. Vessel Personnel

Captain:		Professor	Toshimi Meguro
Crew :	First Officer	Associate Professor	Shogo Takagi
	Second Officer	Instructor	Yoshihiko Kamei
	Jr. Second Officer	Instructor	Keiichiro Sakaoka
	Chief Engineer	Instructor	Jyunichi Kimura
	And 24 men		

Cruise 198

Research Staff:	Associate Professor	(Laboratory of Marine Biodiversity)	Atsushi Yamaguchi
	Graduate Students		2 persons
	Under Graduate Students		3 persons
	Total		35 persons

3. Items of Research

Hydrographic observations:	Fig. 2	Table 1,2
Plankton sampling collected by vertical hauls with a single or twin NORPAC net:	Fig. 2	Table 3,4

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09003	41-30.2N	145-46.9E	2/28	0630	9	6918	5	16.2	2.8	b	9Plus-1588
OS09004	31-00.4N	144-03.1E	3/3	1100	9	5777	4	19	19.4	bc	9Plus-1588
OS09005	31-43.0N	143-57.8E	3/3	1815	9	5726	-	-	18.2	c	9Plus-1588
OS09006	32-29.9N	144-00.0E	3/4	0005	9	5384	-	-	18.1	-	9Plus-1588
OS09007	34-45.1N	144-00.0E	3/4	1301	9	5615	4	20.1	17.9	c	9Plus-1588
OS09008	36-59.8N	144-00.1E	3/5	1444	9	6090	3	21	11.6	bc	9Plus-1588
OS09009	37-47.6N	143-59.4E	3/5	2055	9	7030	-	-	13.3	c	9Plus-1588
OS09010	38-30.0N	143-59.8E	3/6	0500	9	7035	4	31.3	12.6	bc	9Plus-1588
OS09011	39-14.5N	143-60.0E	3/6	1021	9	5100	-	-	12.9	c	9Plus-1588

(*):Fixed position by Global Positioning system

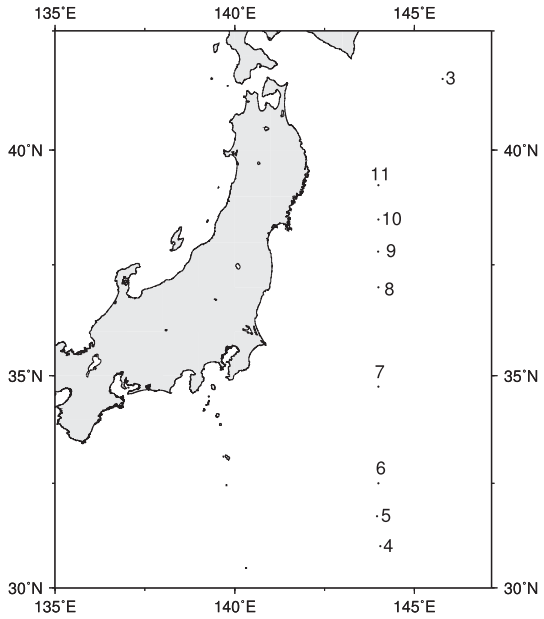


Figure 2: Oceanographic stations

Table 2: Oceanographic data

Station	OS09003
Longitude	41-30.2N
Latitude	145-46.9E
Depth(m)	6918

Press.	Temp.	Sal.	SIG-T
5	2.725	33.276	26.533
10	2.729	33.276	26.532
20	2.733	33.276	26.532
30	2.735	33.276	26.532
40	2.730	33.275	26.532
50	2.716	33.274	26.532
75	2.685	33.276	26.536
100	3.108	33.349	26.558
125	2.812	33.391	26.617
150	2.280	33.416	26.681
200	2.682	33.539	26.746
250	2.650	33.607	26.803
300	2.880	33.701	26.859
400	3.096	33.855	26.962
500	3.305	33.987	27.048
600	3.076	34.070	27.136
700	2.998	34.154	27.210
800	2.874	34.226	27.279
900	2.842	34.290	27.332
1000	2.834	34.358	27.387
1200	2.624	34.434	27.466
1500	2.335	34.506	27.549
2000	1.996	34.583	27.637
2500	1.755	34.627	27.692
3000	1.611	34.654	27.724

Station	OS09004
Longitude	31-00.4N
Latitude	144-03.1E
Depth(m)	5777

Press.	Temp.	Sal.	SIG-T
5	19.950	34.694	24.543
10	19.949	34.694	24.543
20	19.952	34.694	24.542
30	19.953	34.694	24.542
40	19.954	34.694	24.542
50	19.952	34.694	24.542
75	19.628	34.706	24.636
100	18.639	34.613	24.818
125	18.594	34.632	24.843
150	18.471	34.640	24.881
200	18.327	34.767	25.014
250	17.440	34.755	25.222
300	16.796	34.719	25.348
400	14.296	34.541	25.771
500	11.437	34.350	26.190
600	7.997	34.091	26.561
700	5.656	34.018	26.819
800	4.818	34.102	26.984
900	4.284	34.187	27.110
1000	3.864	34.268	27.218

Station	OS09005
Longitude	31-43.0N
Latitude	143-57.8E
Depth(m)	5726

Press.	Temp.	Sal.	SIG-T
5	18.430	34.662	24.908
10	18.433	34.662	24.907
20	18.436	34.662	24.907
30	18.434	34.661	24.906
40	18.438	34.662	24.906
50	18.435	34.662	24.907
75	18.444	34.661	24.904
100	18.427	34.660	24.907
125	18.269	34.658	24.945
150	18.224	34.665	24.961
200	18.190	34.684	24.984
250	17.372	34.754	25.237
300	16.690	34.717	25.371
400	14.637	34.564	25.715
500	11.934	34.385	26.124
600	9.102	34.175	26.456
700	6.288	34.018	26.740
800	5.168	34.062	26.913
900	4.435	34.161	27.073
1000	3.947	34.276	27.216

Station OS09006
Longitude 32-29.9N
Latitude 144-00.0E
Depth(m) 5384

Press.	Temp.	Sal.	SIG-T
5	18.472	34.658	24.894
10	18.485	34.658	24.891
20	18.488	34.657	24.889
30	18.486	34.657	24.890
40	18.488	34.657	24.890
50	18.489	34.657	24.889
75	18.496	34.657	24.887
100	18.502	34.657	24.886
125	18.508	34.657	24.885
150	18.503	34.657	24.885
200	18.414	34.649	24.902
250	18.341	34.731	24.983
300	17.446	34.749	25.216
400	15.948	34.653	25.494
500	13.155	34.466	25.948
600	10.553	34.304	26.313
700	8.030	34.190	26.633
800	5.622	34.090	26.881
900	5.073	34.230	27.057
1000	4.293	34.269	27.174

Station OS09007
Longitude 34-45.1N
Latitude 144-00.0E
Depth(m) 5615

Press.	Temp.	Sal.	SIG-T
5	18.052	34.641	24.985
10	18.051	34.641	24.985
20	18.042	34.643	24.990
30	18.044	34.653	24.997
40	18.046	34.662	25.003
50	18.042	34.671	25.011
75	18.039	34.675	25.014
100	18.037	34.677	25.017
125	18.021	34.678	25.021
150	18.005	34.677	25.025
200	18.008	34.679	25.025
250	17.940	34.728	25.079
300	17.193	34.743	25.272
400	14.986	34.588	25.658
500	12.392	34.404	26.052
600	9.396	34.183	26.415
700	7.521	34.188	26.706
800	5.992	34.203	26.924
900	4.981	34.239	27.074
1000	4.052	34.254	27.187

Station OS09008
Longitude 36-59.8N
Latitude 144-00.1E
Depth(m) 6090

Press.	Temp.	Sal.	SIG-T
5	12.153	34.338	26.047
10	12.156	34.339	26.047
20	12.154	34.339	26.047
30	12.151	34.339	26.048
40	12.144	34.340	26.049
50	12.146	34.339	26.049
75	12.141	34.340	26.050
100	12.140	34.339	26.050
125	12.137	34.338	26.050
150	12.124	34.337	26.051
200	10.316	34.185	26.262
250	8.039	33.970	26.459
300	6.923	33.994	26.637
400	5.347	34.009	26.849
500	4.093	34.002	26.983
600	4.254	34.191	27.117
700	3.911	34.257	27.204
800	3.485	34.294	27.276
900	3.113	34.338	27.346
1000	2.978	34.395	27.404

Station OS09009
Longitude 37-47.6N
Latitude 143-59.4E
Depth(m) 7030

Press.	Temp.	Sal.	SIG-T
5	13.457	34.471	25.892
10	13.461	34.471	25.891
20	13.459	34.471	25.891
30	13.455	34.469	25.890
40	13.441	34.467	25.892
50	13.177	34.430	25.917
75	13.053	34.427	25.939
100	13.024	34.428	25.945
125	12.997	34.426	25.950
150	12.512	34.343	25.980
200	12.071	34.308	26.039
250	10.069	34.218	26.330
300	8.035	34.028	26.506
400	6.346	34.060	26.766
500	5.080	34.062	26.922
600	4.052	34.115	27.077
700	3.889	34.233	27.187
800	3.308	34.281	27.283
900	3.325	34.376	27.357
1000	3.126	34.407	27.401

Station OS09010
Longitude 38-30.0N
Latitude 143-59.8E
Depth(m) 7035

Press.	Temp.	Sal.	SIG-T
5	12.820	34.385	25.953
10	12.830	34.384	25.950
20	12.832	34.384	25.950
30	12.833	34.384	25.950
40	12.834	34.384	25.949
50	12.832	34.384	25.949
75	12.835	34.384	25.949
100	12.845	34.384	25.947
125	12.851	34.384	25.946
150	12.853	34.383	25.945
200	12.863	34.385	25.944
250	12.867	34.385	25.943
300	11.135	34.233	26.154
400	7.627	34.031	26.568
500	4.701	33.855	26.801
600	3.767	33.889	26.926
700	4.418	34.143	27.060
800	4.369	34.297	27.188
900	3.875	34.345	27.278
1000	3.499	34.367	27.333

Station OS09011
Longitude 39-14.5N
Latitude 143-60.0E
Depth(m) 5100

Press.	Temp.	Sal.	SIG-T
5	13.196	34.460	25.936
10	13.199	34.459	25.935
20	13.197	34.460	25.935
30	13.199	34.459	25.935
40	13.167	34.455	25.938
50	13.183	34.458	25.937
75	13.143	34.453	25.941
100	13.072	34.440	25.945
125	13.044	34.440	25.951
150	13.041	34.441	25.952
200	11.166	34.249	26.161
250	9.439	34.099	26.343
300	8.790	34.178	26.508
400	5.963	33.988	26.757
500	3.956	33.861	26.885
600	4.973	34.178	27.027
700	3.929	34.180	27.141
800	3.380	34.218	27.225
900	3.319	34.300	27.297
1000	3.052	34.347	27.359
1200	2.683	34.434	27.461
1500	2.373	34.504	27.544
2000	1.958	34.593	27.649
2500	1.710	34.636	27.702
3000	1.580	34.659	27.730

5. Data on plankton collected by vertical hauls with a single or 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. Ishii, K. Matsuno, R. Saito, K. Ohgi, Y. Onishi, T. Homma, R. Ohashi, C. Tsukazaki and K. Mishima (Laboratory of Marine Biology).

Table 3: Data on plankton collected by vertical hauls with a single or twin NORPAC net.

GG54:0.33mm mesh, XX13:0.10mm 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	
OS09003	41-31	145-48 E	28 Feb.	8:45	151	6	150	GG54	1479	1563	23.02	1.7	72	09001
(Site H)								XX13	2446	1537	22.63			09002
				8:56	511	12	500	GG54	1479	5218	76.84	19.4	253	09003
								XX13	2446	5078	74.78			09004
OS09004	31-00	144-00 E	3 Mar.	7:46	151	5	150	GG54	1479	1338	19.70	1.6	79	09005
								XX13	2446	1898	27.95			09006
OS09005	31-45	144-00 E	3 Mar.	17:29	157	17	150	GG54	1479	1830	26.95	1.0	37	09007
								XX13	2446	1825	26.88			09008
OS09006	32-30	144-00 E	4 Mar.	0:53	150	0	150	GG54	1479	1830	26.95	1.2	46	09009
								XX13	2446	1855	27.32			09010
OS09007	34-45	144-00 E	4 Mar.	14:10	150	4	150	GG54	1479	1880	27.69	0.6	23	09011
								XX13	2446	2270	33.43			09012
OS09008	37-00	144-00 E	5 Mar.	15:42	151	8	150	GG54	1479	1520	22.38	0.5	23	09013
								XX13	2446	1788	26.33			09014
OS09009	37-47	144-00 E	5 Mar.	22:15	150	4	150	GG54	1479	1781	26.23	10.2	390	09015
								XX13	2446	2138	31.48			09016
OS09010	38-30	144-00 E	6 Mar.	6:21	155	13	151	GG54	1479	1760	25.92	0.5	21	09017
								XX13	2446	1762	25.95			09018

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

6. Data on calibration of flowmeters

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

Table 4. Calibration data on flowmeters used for a twin or single NORPAC net and other kind of nets. 50-m wire out at St. OS09010 in 6 Mar. 2009.

Flowmeter No.	Wire length (m)	Revolution						
		1	2	3	4	5	6	Mean
RG1479	50	830*	718	738	658	610*	650	691
RG2446	50	728*	689	680	642	592*	631	661

*: omitted from calculation

3

THE “OSHORO MARU” CRUISE 199
TO THE WEST OF HOKKAIDO

IN MARCH 2009

1. Cruise Itinerary

Cruise 199			
Departure from Hakodate	Mar.	15	, 2009
Start hydrographic research (OS09012)		16	
Arrival at Okushiri		18	
Departure from Okushiri		19	
Arrival at Hakodate and change cadets		20	
Departure from Hakodate		20	
Finish hydrographic research (OS09018)		22	
Return to Hakodate		25	

Total coverage 454.4 miles

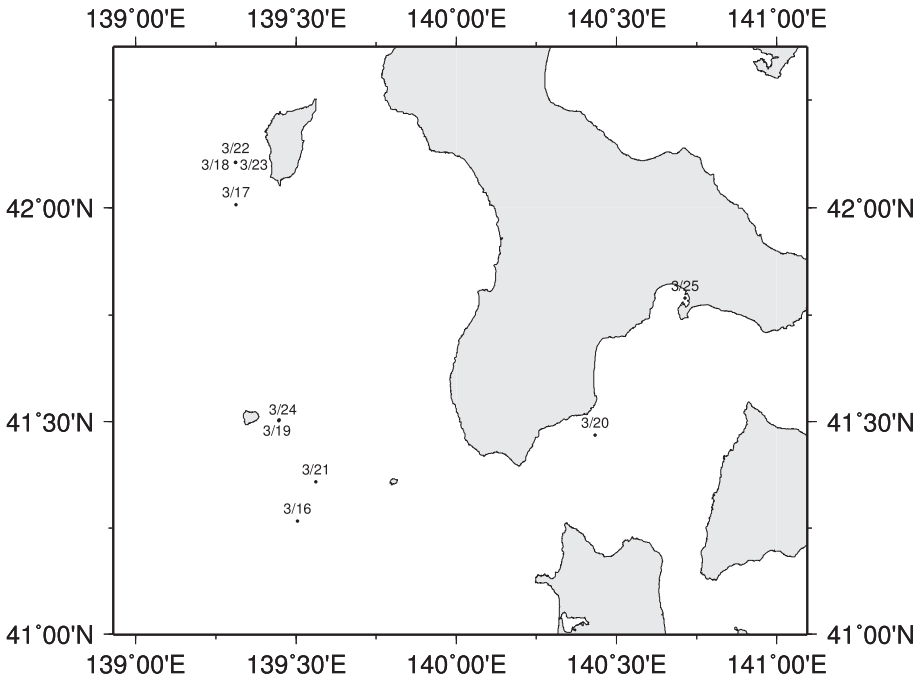


Figure 1: Noon position

2. Vessel Personnel

Captain:		Professor	Toshimi Meguro
Crew :	First Officer	Associate Professor	Shogo Takagi
	Second Officer	Instructor	Yoshihiko Kamei
	Jr. Second Officer	Instructor	Keiichiro Sakaoka
	Chief Engineer	Instructor	Jyunichi Kimura
	Third Officer	Technical Official	Naoki Hoshi
	And 25 men		

Cruise 199

Research Staff:	Associate Professor	(Laboratory of Fishing Production System) Nariharu Yamashita
	Instructor	(Laboratory of Marine Environmental Science) Hiroji Onishi
	Teaching Assistant	2 persons
	Under Graduate Students:	56 persons
	Total	91 persons

3. Items of Research

Hydrographic observations:	Fig. 2	Table 1,2
Mid water trawl observations:	Fig. 3	Table 3,4
Bottom long line research:	Fig. 4	Table 5

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

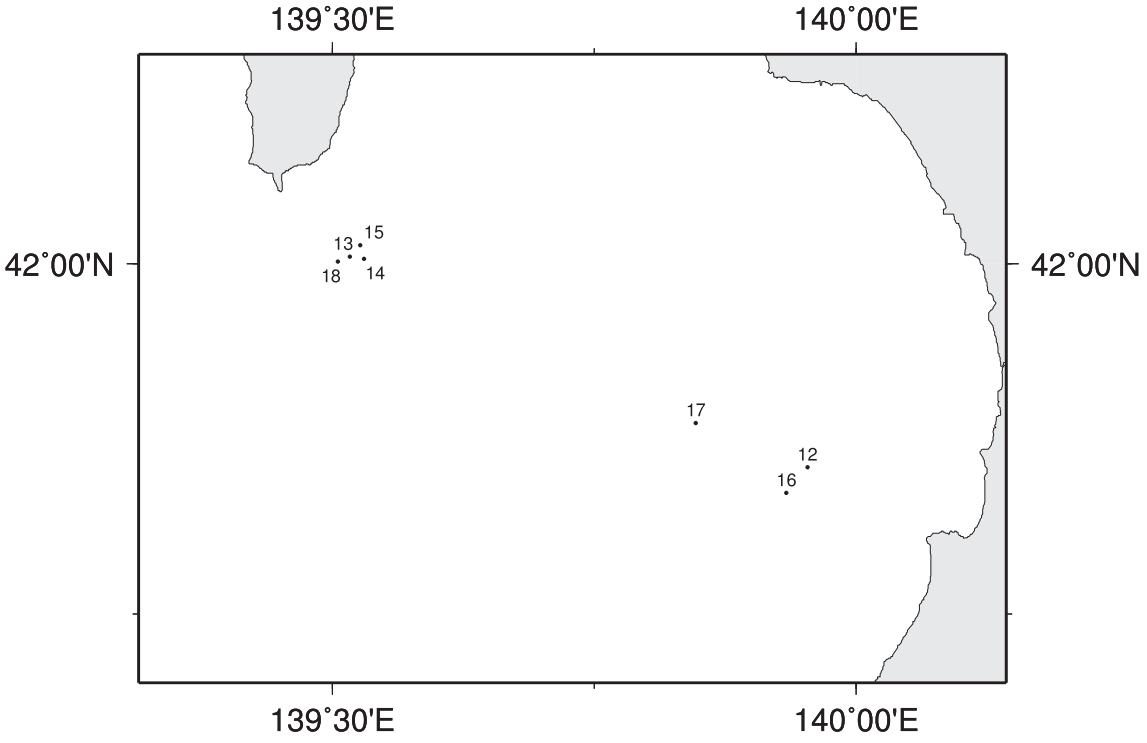


Figure 2: Oceanographic stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09012	41-51.3N	139-57.2E	3/16	1800	9	1195	-	-	6.4	o	9Plus-1588
OS09013	42-00.3N	139-31.0E	3/17	0800	9	122	4	12.5	6.2	bc	9Plus-1588
OS09014	42-00.2N	139-31.8E	3/17	1000	9	131	6	14.5	5.5	bc	9Plus-1588
OS09015	42-00.8N	139-31.6E	3/17	1400	9	125	7	11.3	7.1	bc	9Plus-1588
OS09016	41-50.2N	139-56.0E	3/21	1615	9	1275	5	7.8	8.8	bc	9Plus-1588
OS09017	41-53.2N	139-50.8E	3/21	1730	9	1333	5	9.4	8.6	c	9Plus-1588
OS09018	42-00.1N	139-30.3E	3/22	0945	9	111	6	7	8.2	o	9Plus-1588

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station	OS09012
Longitude	41-51.3N
Latitude	139-57.2E
Depth(m)	1195

Press.	Temp.	Sal.	SIG-T
5	6.110	34.065	26.800
10	6.060	34.076	26.815
20	5.981	34.087	26.834
30	5.982	34.088	26.835
40	5.785	34.085	26.857
50	5.816	34.085	26.853
75	5.300	34.096	26.923
100	4.951	34.088	26.958
125	4.580	34.084	26.996
150	3.447	34.084	27.112
200	2.534	34.063	27.178
250	1.909	34.064	27.229
300	1.257	34.064	27.276
400	0.962	34.067	27.297
500	0.712	34.066	27.313
600	0.549	34.065	27.321

Station	OS09013
Longitude	42-00.3N
Latitude	139-31.0E
Depth(m)	122

Press.	Temp.	Sal.	SIG-T
5	6.189	33.994	26.734
10	5.161	34.090	26.935
20	4.882	34.084	26.963
30	4.818	34.084	26.970
40	4.774	34.083	26.974
50	4.734	34.083	26.978
75	4.670	34.082	26.985
100	4.434	34.079	27.008

Station	OS09014
Longitude	42-00.2N
Latitude	139-31.8E
Depth(m)	131

Press.	Temp.	Sal.	SIG-T
5	5.880	34.105	26.860
10	5.153	34.087	26.934
20	4.915	34.087	26.961
30	4.832	34.082	26.967
40	4.773	34.084	26.975
50	4.732	34.083	26.979
75	4.639	34.083	26.989
100	4.445	34.080	27.008

Station	OS09015
Longitude	42-00.8N
Latitude	139-31.6E
Depth(m)	125

Press.	Temp.	Sal.	SIG-T
5	6.916	34.109	26.728
10	6.835	34.108	26.739
20	6.729	34.110	26.755
30	5.623	34.105	26.892
40	5.070	34.087	26.943
50	4.782	34.082	26.972
75	4.721	34.084	26.980
100	4.704	34.085	26.983

Station	OS09016
Longitude	41-50.2N
Latitude	139-56.0E
Depth(m)	1275

Press.	Temp.	Sal.	SIG-T
5	9.147	34.013	26.322
10	9.115	34.014	26.328
20	9.006	34.031	26.359
30	8.975	34.057	26.384
40	8.829	34.091	26.434
50	8.664	34.097	26.464
75	8.591	34.097	26.475
100	8.575	34.101	26.481
125	7.373	34.122	26.675
150	5.197	34.094	26.935
200	3.233	34.069	27.121
250	1.961	34.062	27.223
300	1.324	34.061	27.269
400	0.976	34.062	27.293
500	0.731	34.063	27.309
600	0.585	34.064	27.318

Station	OS09017
Longitude	41-53.2N
Latitude	139-50.8E
Depth(m)	1333

Press.	Temp.	Sal.	SIG-T
5	9.149	34.012	26.321
10	9.146	34.011	26.321
20	9.097	34.013	26.330
30	9.097	34.016	26.333
40	9.095	34.021	26.337
50	9.019	34.043	26.366
75	8.711	34.089	26.450
100	8.126	34.121	26.565
125	6.836	34.121	26.749
150	5.250	34.097	26.931
200	3.730	34.072	27.075
250	2.315	34.064	27.197
300	1.563	34.058	27.250
400	0.922	34.062	27.296
500	0.701	34.063	27.311
600	0.576	34.064	27.319

Station	OS09018
Longitude	42-00.1N
Latitude	139-30.3E
Depth(m)	111

Press.	Temp.	Sal.	SIG-T
5	8.442	34.069	26.476
10	8.424	34.070	26.480
20	8.355	34.072	26.492
30	7.644	34.090	26.611
40	6.654	34.098	26.755
50	5.903	34.080	26.838
75	5.297	34.090	26.919
100	4.269	34.080	27.026

5. Data on mid water trawl research

Two operations of the stern otter trawl were carried out. These operations were supervised by the captain, and were conducted by deck officers, crews, cadets and research staffs. The data of catch were recorded by the deck officers and reserch staff.

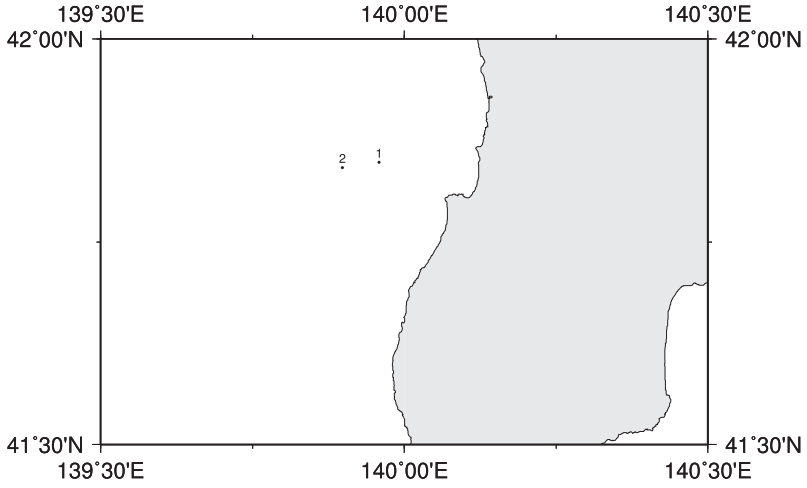


Figure 3: Locations of mid water trawl research

Table 3: Data on mid water trawl research during the "Oshoro Maru" Cruise#199

No. of research	Date and time of net tow (S.M.T.)		Position Lat.(N)	Long.(E)	Direction of tow	Speed of tow(K' t)	towing depth(m)	Wr	Wind
OSMT0901	March 16	1520-1550	41-50.9	139-57.5	WNW	2.3	400	o	WSW-5
OSMT0902	March 21	1400-1430	41-50.5	139-53.9	285	3.2	400	bc	West-4

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

Table 4: Data on catches by mid water trawl research

		OSMT 0901		OSMT 0902	
Japanese name	Scientific Name	Number	Weight (kg)	Number	Weight (kg)
Hoteiuo	*Aptocyclus ventricosus*	-	-	1	0.36
Suketoudara	*Theragra chalcogramma*	9	4.3	-	-

6. Data on bottom long line research

Three operations of the bottom long line were carried out. These operations were supervised by the captain, and deck officers, crew, research staff, and cadets were engaged in the work. The data of catch were recorded by the deck officers and research staff.



Figure 4: Locations of bottom long line research

Table 5: Data on bottom long line research

No. of research		OSBL0901	OSBL0902	OSBL0903
Date		17-Mar	17-Mar	22-Mar
position of	Lat. (N)	42-00.2	42-00.4	42-00.4
line set	Long. (E)	139-31.1	139-31.2	139-31.0
Time(S.M.T.)	line set	0625	1100	0642
Number of baskets		10	10	20
Surface temp. (°C)		7.0	8.0	8.4
Wether		bc	bc	o
Wind		WNW2	WNW4	ESE5
Okhostk atka mackerel		45	35	14
Gymnocanthus herzensteini		5	16	22
Gadus macrocephalus		1	1	
Okamejei sp.		1	5	6
Hippoglossoides pinetorum				1
Pleuronectes mochigarei			1	

4

THE “OSHORO MARU” CRUISE 200 TO THE JAPAN SEA

IN APRIL 2009

1. Cruise Itinerary

Cruise 200			
Departure from Hakodate	Apr.	23	, 2009
Start hydrographic research (OS09019)		24	
Arrival at Tsuruga		25	
Departure from Tsuruga		27	
Finish hydrographic research (OS09041)		28	
Return to Hakodate		29	

Total coverage 990.6 miles

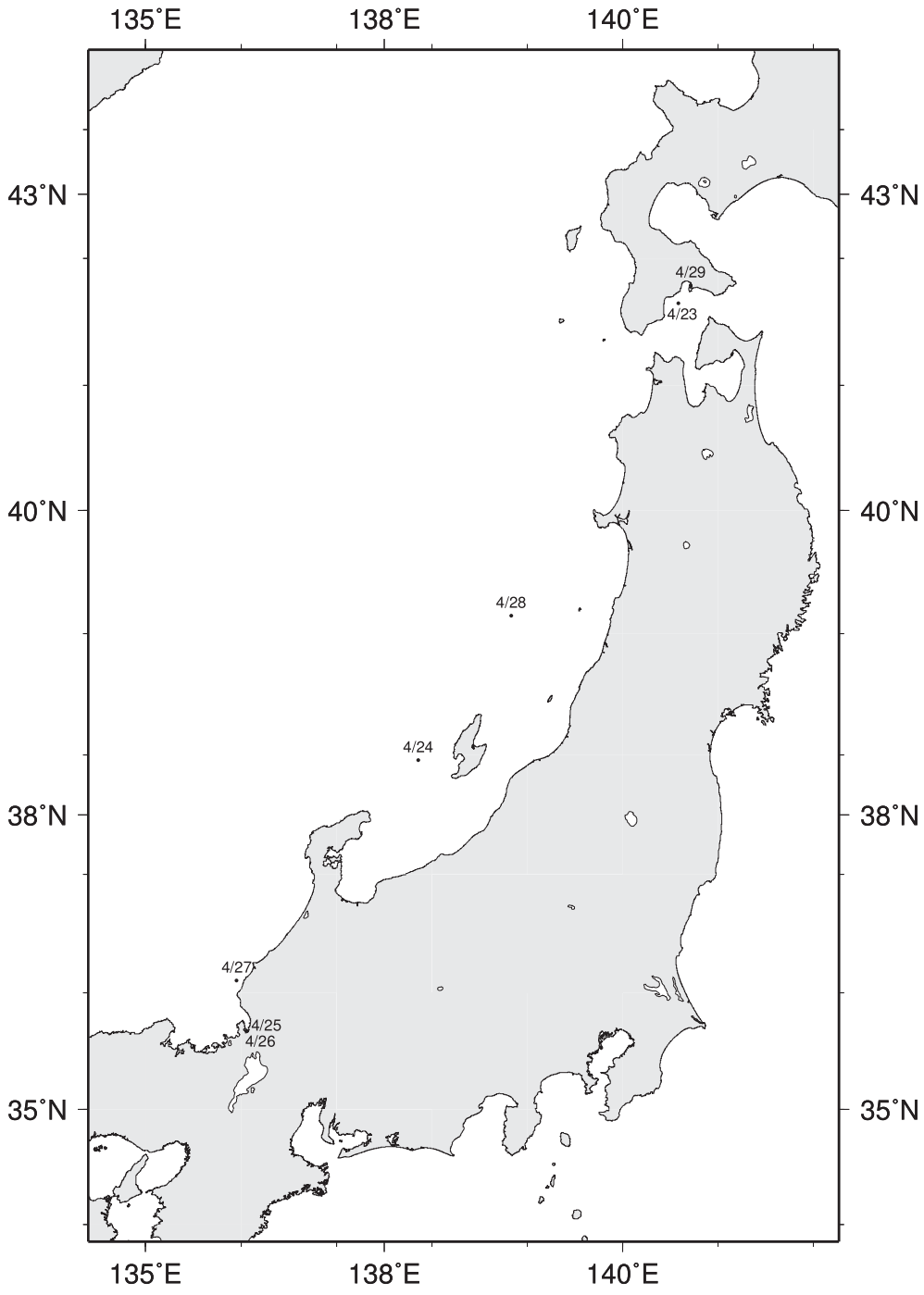


Figure 1: Noon position

2. Vessel Personnel

Captain:		Associate Professor	Shogo Takagi
Crew :	Chief Officer	Instructor	Yoshihiko Kamei
	Second Officer	Instructor	Keiichiro Sakaoka
	Third Officer	Technical Official	Naoki Hoshi
	Chief Engineer	Instructor	Jyunichi Kimura
	And 25 men		

Cruise 200

Research Staff:	Professor	(Research Center for Marine Bioresources) Osamu Tominaga
	Associate Professor	(Laboratory of Marine Bioresources Ecology) Tetsuya Takatsu
	Associate Professor	(Laboratory of Marine Environment engineering) Masabumi Seto
	Associate Professor	(Laboratory of Microbial Ecology) Ryuji Kondo
	Lecturer	(Laboratory of Marine Environment engineering) Atsushi kaneda
	Instructor	(Laboratory of Microbial Ecology) Yoshitake Takao

Graduate Students	2 persons
Teaching Assistant	5 persons
Under Graduate Students	53 persons
Total	66 persons

3. Items of Research

Hydrographic observations: Fig. 2 Table 1,2

Beam trawl observations

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

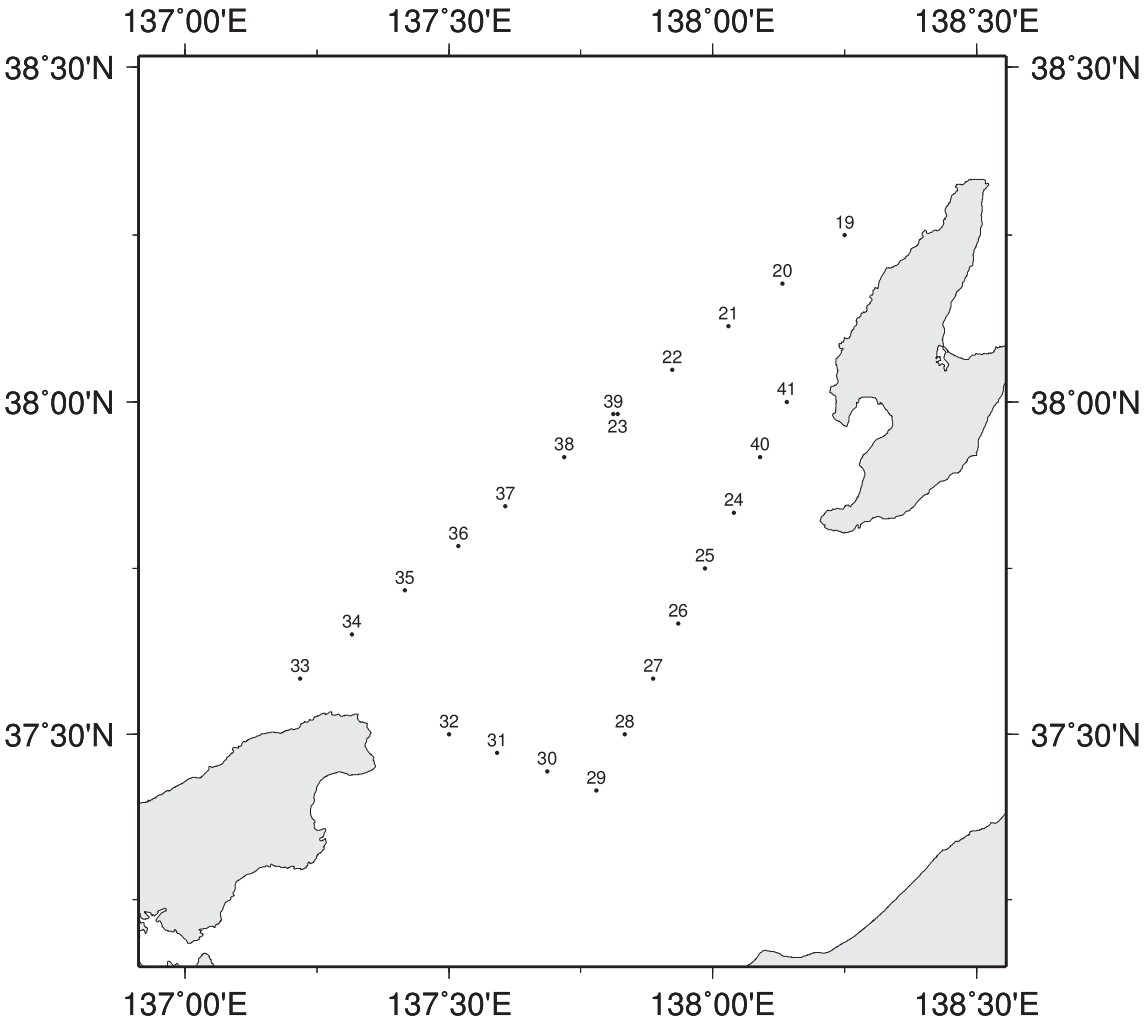


Figure 2: Oceanographic stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09019	38-15.0N	138-15.0E	4/24	0750	9	420	-	-	-	o	XBT

(*):Fixed position by Global Positioning system

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09020	38-10.6N	138-07.9E	4/24	0828	9	1605	-	-	-	o	XBT
OS09021	38-06.8N	138-01.8E	4/24	0859	9	1855	-	-	-	o	XBT
OS09022	38-02.9N	137-55.4E	4/24	0931	9	1845	-	-	-	o	XBT
OS09023	37-58.9N	137-49.2E	4/24	1010	9	2050	-	-	-	o	9Plus-1588
OS09024	37-50.0N	138-02.4E	4/24	1300	9	1700	-	-	-	o	XBT
OS09025	37-45.0N	137-59.1E	4/24	1328	9	1635	-	-	-	c	XBT
OS09026	37-40.0N	137-56.1E	4/24	1355	9	1570	-	-	-	c	XBT
OS09027	37-35.0N	137-53.2E	4/24	1421	9	1345	-	-	-	c	XBT
OS09028	37-30.0N	137-50.0E	4/24	1449	9	1023	-	-	-	c	XBT
OS09029	37-24.9N	137-46.8E	4/24	1520	9	1515	-	-	12.1	c	9Plus-1588
OS09030	37-26.6N	137-41.2E	4/24	1759	9	660	-	-	-	c	XBT
OS09031	37-28.3N	137-35.5E	4/24	1822	9	331	-	-	-	c	XBT
OS09032	37-30.0N	137-30.0E	4/24	1846	9	483	-	-	-	c	XBT
OS09033	37-35.0N	137-13.1E	4/27	2207	9	90	-	-	-	bc	XBT
OS09034	37-39.0N	137-19.0E	4/27	2238	9	105	-	-	-	bc	XBT
OS09035	37-43.0N	137-25.0E	4/27	2310	9	140	-	-	-	bc	XBT
OS09036	37-47.0N	137-31.1E	4/27	2343	9	315	-	-	-	bc	XBT
OS09037	37-50.6N	137-36.4E	4/28	0016	9	760	-	-	-	bc	XBT
OS09038	37-55.0N	137-43.1E	4/28	0049	9	1570	-	-	-	bc	XBT
OS09039	37-58.9N	137-48.7E	4/28	0125	9	2010	-	-	-	bc	9Plus-1588
OS09040	37-55.0N	138-05.4E	4/28	0458	9	1559	-	-	-	bc	XBT
OS09041	38-00.0N	138-843.0E	4/28	0528	9	647	-	-	-	bc	XBT

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station	OS09019
Longitude	38-15.0N
Latitude	138-15.0E
Depth(m)	420

Press.	Temp.	Sal.	SIG-T
5	11.912	-	-
10	11.892	-	-
20	11.898	-	-
30	11.898	-	-
40	11.832	-	-
50	10.890	-	-
75	10.789	-	-
100	10.918	-	-
125	10.470	-	-
150	9.842	-	-
200	6.721	-	-
250	3.301	-	-
300	1.700	-	-
400	0.970	-	-

Station	OS09020
Longitude	38-10.6N
Latitude	138-07.9E
Depth(m)	1605

Press.	Temp.	Sal.	SIG-T
5	12.060	-	-
10	12.063	-	-
20	11.893	-	-
30	11.780	-	-
40	10.957	-	-
50	10.805	-	-
75	10.600	-	-
100	10.538	-	-
125	10.140	-	-
150	9.950	-	-
200	7.263	-	-
250	2.443	-	-
300	1.487	-	-
400	0.990	-	-
500	0.710	-	-
600	0.510	-	-
700	0.406	-	-

Station	OS09021
Longitude	38-06.8N
Latitude	138-01.8E
Depth(m)	1855

Press.	Temp.	Sal.	SIG-T
5	12.099	-	-
10	12.081	-	-
20	12.067	-	-
30	11.931	-	-
40	10.990	-	-
50	10.785	-	-
75	10.630	-	-
100	10.636	-	-
125	10.350	-	-
150	9.536	-	-
200	4.311	-	-
250	2.203	-	-
300	1.397	-	-
400	0.873	-	-
500	0.631	-	-
600	0.481	-	-
700	0.416	-	-

Station	OS09022
Longitude	38-02.9N
Latitude	137-55.4E
Depth(m)	1845

Press.	Temp.	Sal.	SIG-T
5	12.239	-	-
10	12.240	-	-
20	12.112	-	-
30	12.130	-	-
40	12.092	-	-
50	12.058	-	-
75	11.270	-	-
100	10.696	-	-
125	10.020	-	-
150	8.814	-	-
200	5.870	-	-
250	2.689	-	-
300	1.677	-	-
400	0.927	-	-
500	0.667	-	-
600	0.499	-	-
700	0.414	-	-

Station	OS09023
Longitude	37-58.9N
Latitude	137-49.2E
Depth(m)	2050

Press.	Temp.	Sal.	SIG-T
5	12.262	34.102	25.842
10	12.233	34.101	25.847
20	12.217	34.101	25.850
30	12.214	34.103	25.852
40	12.164	34.116	25.872
50	12.120	34.129	25.890
75	11.433	34.179	26.058
100	10.390	34.202	26.263
125	9.806	34.199	26.359
150	9.030	34.179	26.471
200	6.069	34.108	26.839
250	2.977	34.063	27.139
300	1.657	34.056	27.241
400	0.892	34.060	27.296
500	0.641	34.062	27.313
600	0.504	34.063	27.322
700	0.412	34.063	27.328
800	0.352	34.063	27.331
900	0.309	34.064	27.334
1000	0.278	34.064	27.336
1200	0.244	34.064	27.338
1500	0.215	34.064	27.339

Station	OS09024
Longitude	37-50.0N
Latitude	138-02.4E
Depth(m)	1700

Press.	Temp.	Sal.	SIG-T
5	11.821	-	-
10	11.710	-	-
20	11.392	-	-
30	11.310	-	-
40	10.770	-	-
50	10.758	-	-
75	10.680	-	-
100	10.486	-	-
125	10.190	-	-
150	9.980	-	-
200	8.380	-	-
250	3.543	-	-
300	1.707	-	-
400	1.070	-	-

Station OS09025
Longitude 37-45.0N
Latitude 137-59.1E
Depth(m) 1635

Press.	Temp.	Sal.	SIG-T
5	11.311	-	-
10	11.310	-	-
20	11.150	-	-
30	11.110	-	-
40	10.882	-	-
50	10.612	-	-
75	10.699	-	-
100	10.550	-	-
125	10.350	-	-
150	10.054	-	-
200	7.262	-	-
250	3.362	-	-
300	1.873	-	-
400	0.873	-	-

Station OS09026
Longitude 37-40.0N
Latitude 137-56.1E
Depth(m) 1570

Press.	Temp.	Sal.	SIG-T
5	12.329	-	-
10	12.268	-	-
20	12.157	-	-
30	12.130	-	-
40	10.716	-	-
50	10.644	-	-
75	10.491	-	-
100	10.310	-	-
125	10.080	-	-
150	9.044	-	-
200	4.864	-	-
250	2.370	-	-
300	1.450	-	-
400	0.870	-	-
500	0.659	-	-
600	0.491	-	-
700	0.396	-	-

Station OS09027
Longitude 37-35.0N
Latitude 137-53.2E
Depth(m) 1345

Press.	Temp.	Sal.	SIG-T
5	12.080	-	-
10	12.029	-	-
20	11.950	-	-
30	11.315	-	-
40	10.782	-	-
50	10.664	-	-
75	10.589	-	-
100	10.386	-	-
125	10.140	-	-
150	9.086	-	-
200	5.362	-	-
250	2.633	-	-
300	1.610	-	-
400	0.843	-	-
500	0.600	-	-
600	0.549	-	-
700	0.466	-	-

Station OS09028
Longitude 37-30.0N
Latitude 137-50.0E
Depth(m) 1023

Press.	Temp.	Sal.	SIG-T
5	12.520	-	-
10	12.520	-	-
20	12.262	-	-
30	12.212	-	-
40	11.624	-	-
50	11.112	-	-
75	10.920	-	-
100	10.648	-	-
125	10.000	-	-
150	9.620	-	-
200	6.621	-	-
250	2.781	-	-
300	1.463	-	-
400	0.847	-	-
500	0.591	-	-
600	0.469	-	-
700	0.380	-	-

Station OS09029
Longitude 37-24.9N
Latitude 137-46.8E
Depth(m) 1515

Press.	Temp.	Sal.	SIG-T
5	12.105	33.735	25.587
10	12.081	33.737	25.594
20	12.174	33.972	25.758
30	11.818	33.914	25.781
40	11.244	33.906	25.880
50	11.063	33.975	25.966
75	10.921	34.013	26.021
100	10.742	34.020	26.058
125	10.587	34.051	26.110
150	10.568	34.184	26.217
200	7.495	34.123	26.659
250	3.438	34.074	27.105
300	1.678	34.059	27.242
400	0.889	34.060	27.297
500	0.593	34.062	27.316
600	0.460	34.062	27.324
700	0.375	34.063	27.330
800	0.322	34.063	27.333
900	0.293	34.063	27.335
1000	0.268	34.063	27.336
1200	0.212	34.063	27.339

Station OS09030
Longitude 37-26.6N
Latitude 137-41.2E
Depth(m) 660

Press.	Temp.	Sal.	SIG-T
5	12.350	-	-
10	12.341	-	-
20	12.333	-	-
30	12.304	-	-
40	11.702	-	-
50	11.360	-	-
75	11.210	-	-
100	11.154	-	-
125	11.030	-	-
150	10.464	-	-
200	6.441	-	-
250	2.853	-	-
300	1.707	-	-
400	0.969	-	-
500	0.480	-	-
600	0.371	-	-

Station OS09031
Longitude 37-28.3N
Latitude 137-35.5E
Depth(m) 331

Press.	Temp.	Sal.	SIG-T
5	12.601	-	-
10	12.600	-	-
20	12.415	-	-
30	11.974	-	-
40	11.720	-	-
50	11.798	-	-
75	11.690	-	-
100	11.470	-	-
125	11.230	-	-
150	10.892	-	-
200	7.301	-	-
250	1.801	-	-
300	1.350	-	-

Station OS09032
Longitude 37-30.0N
Latitude 137-30.0E
Depth(m) 483

Press.	Temp.	Sal.	SIG-T
5	12.640	-	-
10	12.641	-	-
20	12.510	-	-
30	12.440	-	-
40	12.314	-	-
50	12.140	-	-
75	12.090	-	-
100	12.064	-	-
125	11.720	-	-
150	11.578	-	-
200	4.950	-	-
250	2.462	-	-
300	1.607	-	-
400	0.997	-	-

Station OS09033
Longitude 37-35.0N
Latitude 137-13.1E
Depth(m) 90

Press.	Temp.	Sal.	SIG-T
5	13.049	-	-
10	13.021	-	-
20	12.977	-	-
30	12.852	-	-
40	12.622	-	-
50	12.494	-	-
75	12.399	-	-

Station OS09034
Longitude 37-39.0N
Latitude 137-19.0E
Depth(m) 105

Press.	Temp.	Sal.	SIG-T
5	12.421	-	-
10	12.449	-	-
20	12.412	-	-
30	12.430	-	-
40	12.412	-	-
50	12.398	-	-
75	12.369	-	-
100	12.178	-	-

Station OS09035
Longitude 37-43.0N
Latitude 137-25.0E
Depth(m) 140

Press.	Temp.	Sal.	SIG-T
5	11.859	-	-
10	11.830	-	-
20	11.788	-	-
30	11.750	-	-
40	11.740	-	-
50	11.720	-	-
75	11.720	-	-
100	11.790	-	-
125	11.650	-	-

Station OS09036
Longitude 37-47.0N
Latitude 137-31.1E
Depth(m) 315

Press.	Temp.	Sal.	SIG-T
5	12.110	-	-
10	12.099	-	-
20	12.088	-	-
30	12.050	-	-
40	12.040	-	-
50	12.036	-	-
75	11.710	-	-
100	11.080	-	-
125	10.930	-	-
150	10.546	-	-
200	4.384	-	-
250	1.950	-	-
300	0.920	-	-

Station	OS09037
Longitude	37-50.6N
Latitude	137-36.4E
Depth(m)	760

Press.	Temp.	Sal.	SIG-T
5	11.049	-	-
10	11.030	-	-
20	11.035	-	-
30	11.040	-	-
40	11.032	-	-
50	11.052	-	-
75	10.709	-	-
100	10.516	-	-
125	10.430	-	-
150	10.742	-	-
200	8.083	-	-
250	5.190	-	-
300	4.420	-	-
400	2.137	-	-

Station	OS09038
Longitude	37-55.0N
Latitude	137-43.1E
Depth(m)	1570

Press.	Temp.	Sal.	SIG-T
5	11.889	-	-
10	11.873	-	-
20	11.878	-	-
30	11.872	-	-
40	11.872	-	-
50	11.850	-	-
75	11.030	-	-
100	10.840	-	-
125	10.620	-	-
150	10.264	-	-
200	7.951	-	-
250	4.755	-	-
300	2.047	-	-
400	0.904	-	-
500	0.600	-	-
600	0.490	-	-
700	0.416	-	-

Station	OS09039
Longitude	37-58.9N
Latitude	137-48.7E
Depth(m)	2010

Press.	Temp.	Sal.	SIG-T
5	11.679	-	-
10	11.691	-	-
20	11.663	-	-
30	11.702	-	-
40	11.189	-	-
50	10.978	-	-
75	10.620	-	-
100	10.156	-	-
125	9.970	-	-
150	9.142	-	-
200	6.551	-	-
250	2.960	-	-
300	1.647	-	-
400	0.946	-	-

Station	OS09040
Longitude	37-55.0N
Latitude	138-05.4E
Depth(m)	1559

Press.	Temp.	Sal.	SIG-T
5	11.501	-	-
10	11.500	-	-
20	11.510	-	-
30	11.455	-	-
40	11.108	-	-
50	10.865	-	-
75	10.620	-	-
100	10.418	-	-
125	9.750	-	-
150	8.962	-	-
200	7.271	-	-
250	3.482	-	-
300	2.070	-	-
400	1.303	-	-

5

THE “OSHORO MARU” CRUISE 201 TO THE NORTHWEST PACIFIC OCEAN

IN MAY 2009

1. Cruise Itinerary

Cruise 201			
Departure from Hakodate	May	8	, 2009
Start hydrographic research (OS09042)		9	
Start Gillnet research (OSG0901)		11	
Finish Gillnet research (OSG0903)		14	
Finish hydrographic research (OS09059)		16	
Return to Hakodate		20	

Total coverage 2239.0 miles

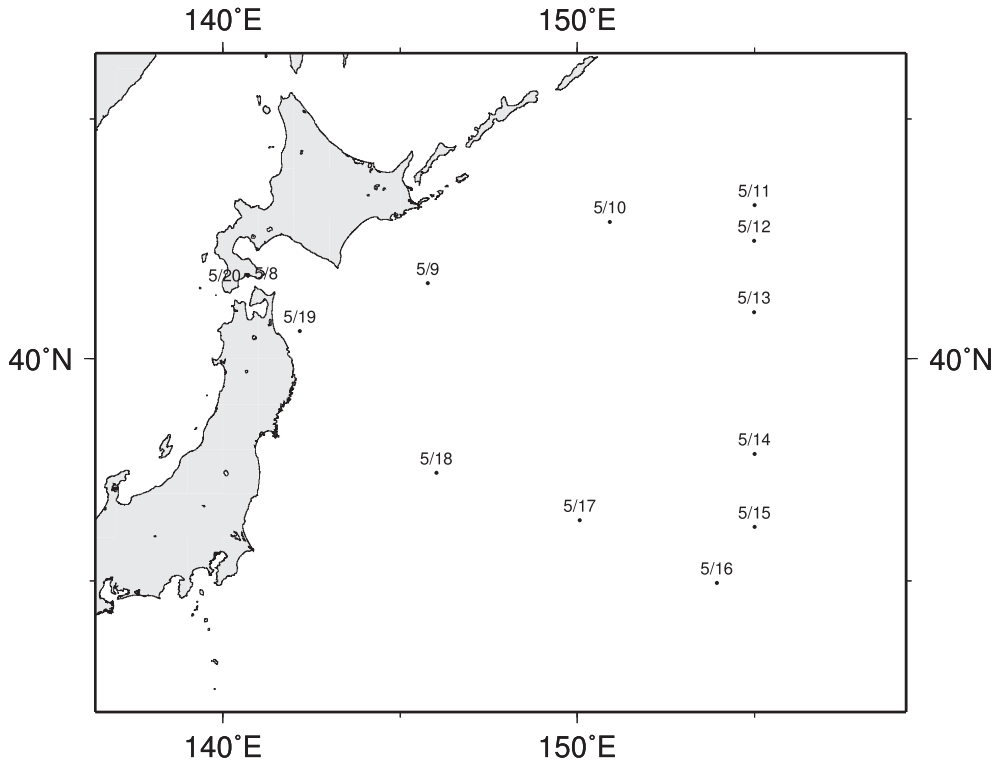


Figure 1: Noon position

2. Vessel Personnel

Captain:		Associate Professor	Shogo Takagi
Crew :	Chief Officer	Instructor	Yoshihiko Kamei
	Second Officer	Technical official	Keiichiro Sakaoka
	Third Officer	Technical official	Naoki Hoshi
	Chief Engineer	Instructor	Jyunichi Kimura
	And 26 men		

Cruise 201

Research Staff:	Associate Professor	(Laboratory of Strategic Studies on Marine Bioresource Conservation and Management) Hideaki Kudo
	Graduate Students	2 persons
	Teaching Assistant	1 persons
	Under Graduate Students	7 persons
	Total	42 persons

3. Items of Research

Hydrographic observations:	Fig. 2	Table 1,2
Biological research for fishes caught by non-selective drift gillnets:	Fig. 3	Table 3-7
Salmon hook-and-line research:	Fig. 4	Table 8,9
Plankton sampling collected by vertical hauls with single or twin NORPAC net:	Fig. 2	Table 10,11

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09042	41-33.0N	145-48.0E	5/9	1440	9	6950	4	17	11.7	b	9Plus-91588
OS09043	44-00.0N	155-00.0E	5/11	0528	10	5298	6	9.9	4.8	b	9Plus-91588
OS09044	43-15.0N	155-00.0E	5/11	1044	10	5490	5	18.8	8	bc	9Plus-91588
OS09045	43-33.0N	155-00.0E	5/11	1526	10	5455	4	16.5	6.3	bc	9Plus-91588
OS09046	42-30.0N	155-00.0E	5/12	1055	10	5165	5	15.5	8	o	9Plus-91588
OS09047	41-46.3N	154-58.3E	5/12	1822	10	5515	-	-	8.1	o	9Plus-91588
OS09048	41-00.0N	155-00.0E	5/13	1006	10	5450	6	14.5	10.2	o	9Plus-91588
OS09049	40-15.0N	155-00.0E	5/13	1544	10	5550	5	11.1	10.2	o	9Plus-91588
OS09050	39-30.0N	155-00.0E	5/13	2129	10	5625	-	-	14.9	o	9Plus-91588
OS09051	38-45.0N	155-00.0E	5/14	0540	10	5770	-	-	15.8	r	XCTD2
OS09052	38-00.0N	155-00.0E	5/14	1012	10	5975	5	12.5	14.5	o	9Plus-91588
OS09053	37-15.0N	155-00.0E	5/14	1523	10	5751	5	10	15.6	r	9Plus-91588
OS09054	37-06.6N	155-00.0E	5/14	1828	10	5800	-	-	15.6	o	9Plus-91588
OS09055	36-30.0N	155-00.0E	5/15	0851	10	5600	4	11.9	16.7	r	9Plus-91588
OS09056	35-45.0N	155-00.0E	5/15	1446	10	5235	-	-	16.4	bc	XCTD2
OS09057	35-00.0N	155-00.0E	5/15	1900	10	5634	-	-	17	bc	XCTD2
OS09058	34-17.0N	155-00.0E	5/16	0505	10	5794	3	20.5	19.3	bc	XCTD2
OS09059	35-52.0N	151-56.4E	5/16	2212	10	6020	-	-	18.3	b	9Plus-91588

(*):Fixed position by Global Positioning system

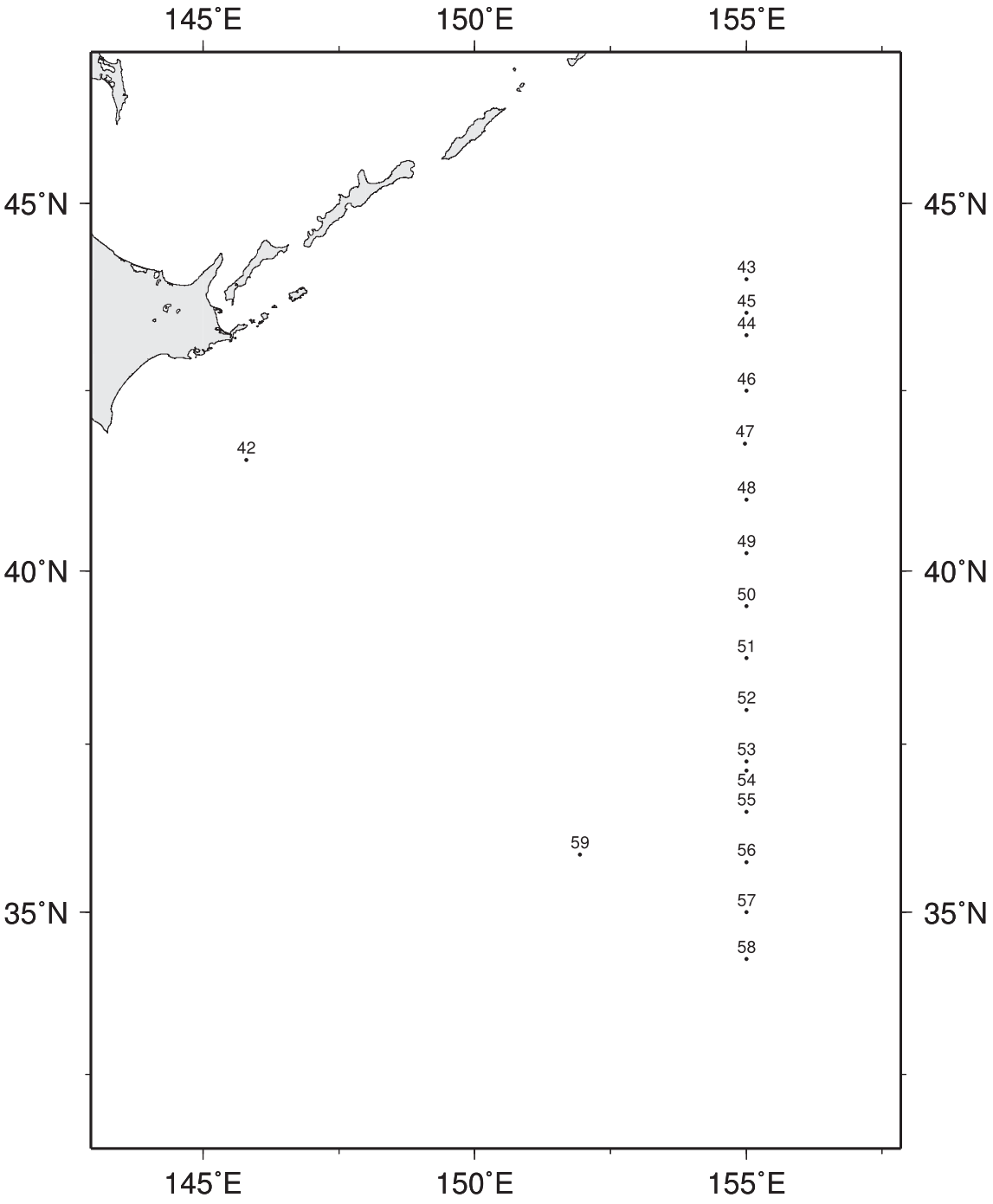


Figure 2: Oceanographic stations

Table 2: Oceanographic data

Station	OS09042
Longitude	41-33.0N
Latitude	145-48.0E
Depth(m)	6950

Press.	Temp.	Sal.	SIG-T
5	11.320	34.251	26.135
10	11.214	34.240	26.145
20	10.962	34.199	26.159
30	9.674	34.022	26.243
40	9.655	34.086	26.296
50	9.553	34.080	26.309
75	9.253	34.043	26.329
100	9.103	34.028	26.341
125	7.407	33.827	26.438
150	6.014	33.675	26.504
200	5.799	33.688	26.541
250	5.024	33.657	26.608
300	3.543	33.530	26.662
400	3.162	33.629	26.776
500	3.870	33.861	26.893
600	3.703	33.974	27.000
700	3.410	34.060	27.097
800	3.248	34.150	27.183
900	3.156	34.253	27.274
1000	3.183	34.334	27.336
1200	2.757	34.407	27.433
1500	2.396	34.481	27.523

Station	OS09043
Longitude	44-00.0N
Latitude	155-00.0E
Depth(m)	5298

Press.	Temp.	Sal.	SIG-T
5	4.887	33.251	26.301
10	4.856	33.250	26.304
20	4.229	33.261	26.379
30	4.187	33.333	26.441
40	4.254	33.348	26.447
50	4.319	33.366	26.454
75	-	-	-
100	4.712	33.534	26.545
125	-	-	-
150	3.116	33.553	26.720
200	3.786	33.736	26.802
250	2.964	33.717	26.864
300	3.063	33.803	26.924
400	3.697	34.026	27.042
500	3.101	34.048	27.116

Station	OS09044
Longitude	43-15.0N
Latitude	155-00.0E
Depth(m)	5490

Press.	Temp.	Sal.	SIG-T
5	7.996	33.836	26.361
10	7.947	33.833	26.365
20	7.846	33.833	26.380
30	7.792	33.841	26.394
40	7.331	33.848	26.466
50	7.130	33.840	26.487
75	-	-	-
100	6.744	33.826	26.529
125	-	-	-
150	6.384	33.826	26.576
200	5.014	33.776	26.703
250	4.401	33.792	26.784
300	4.230	33.863	26.858
400	4.130	34.008	26.984
500	3.929	34.102	27.079

Station	OS09045
Longitude	43-33.0N
Latitude	155-00.0E
Depth(m)	5455

Press.	Temp.	Sal.	SIG-T
5	5.954	33.323	26.233
10	5.715	33.331	26.269
20	5.628	33.352	26.296
30	5.662	33.369	26.306
40	5.348	33.400	26.367
50	5.213	33.472	26.440
75	5.907	33.622	26.475
100	5.950	33.674	26.511
125	5.244	33.588	26.528
150	4.118	33.517	26.594
200	3.559	33.654	26.759
250	4.119	33.821	26.836
300	4.250	33.909	26.892
400	3.447	33.940	26.997
500	3.053	34.007	27.087
600	3.338	34.156	27.180
700	3.215	34.234	27.254
800	3.033	34.288	27.314
900	2.973	34.351	27.370
1000	2.768	34.385	27.415
1200	2.549	34.448	27.485
1500	2.224	34.513	27.563

Station	OS09046
Longitude	42-30.0N
Latitude	155-00.0E
Depth(m)	5165

Press.	Temp.	Sal.	SIG-T
5	7.900	33.815	26.358
10	7.847	33.815	26.366
20	7.805	33.815	26.372
30	7.444	33.806	26.417
40	6.668	33.822	26.536
50	6.649	33.824	26.539
75	-	-	-
100	6.604	33.821	26.543
125	-	-	-
150	6.528	33.824	26.556
200	6.313	33.823	26.583
250	5.856	33.808	26.628
300	4.676	33.769	26.736
400	4.165	33.888	26.884
500	3.984	34.007	26.998

Station	OS09047
Longitude	41-46.3N
Latitude	154-58.3E
Depth(m)	5515

Press.	Temp.	Sal.	SIG-T
5	7.954	33.747	26.297
10	7.955	33.751	26.300
20	7.544	33.719	26.334
30	6.799	33.671	26.399
40	6.311	33.641	26.440
50	6.558	33.770	26.509
75	-	-	-
100	6.175	33.741	26.536
125	-	-	-
150	6.107	33.744	26.547
200	5.824	33.774	26.606
250	4.686	33.785	26.747
300	4.181	33.791	26.806
400	3.991	33.919	26.927
500	3.951	34.056	27.041

Station	OS09048
Longitude	41-00.0N
Latitude	155-00.0E
Depth(m)	5450

Press.	Temp.	Sal.	SIG-T
5	9.894	34.053	26.231
10	9.874	34.054	26.235
20	9.843	34.053	26.239
30	9.324	34.012	26.292
40	9.104	34.038	26.348
50	8.575	33.991	26.395
75	-	-	-
100	7.639	33.915	26.475
125	-	-	-
150	6.668	33.842	26.552
200	5.936	33.826	26.633
250	4.858	33.798	26.738
300	4.510	33.864	26.829
400	3.923	33.937	26.949
500	3.765	34.055	27.058

Station	OS09049
Longitude	40-15.0N
Latitude	155-00.0E
Depth(m)	5550

Press.	Temp.	Sal.	SIG-T
5	9.952	33.988	26.171
10	9.928	33.989	26.175
20	9.760	34.005	26.215
30	9.142	34.003	26.315
40	8.628	34.008	26.400
50	8.564	34.009	26.410
75	-	-	-
100	7.348	33.879	26.487
125	-	-	-
150	6.502	33.849	26.579
200	4.907	33.774	26.714
250	4.364	33.809	26.801
300	4.326	33.865	26.849
400	4.191	33.987	26.960
500	3.903	34.073	27.059

Station	OS09050
Longitude	39-30.0N
Latitude	155-00.0E
Depth(m)	5625

Press.	Temp.	Sal.	SIG-T
5	14.770	34.461	25.607
10	14.767	34.461	25.608
20	14.450	34.479	25.690
30	14.008	34.487	25.790
40	13.539	34.461	25.867
50	13.309	34.449	25.904
75	-	-	-
100	11.057	34.239	26.173
125	-	-	-
150	9.641	34.141	26.342
200	8.656	34.052	26.430
250	7.352	33.894	26.499
300	5.716	33.772	26.618
400	4.286	33.791	26.795
500	4.295	33.976	26.941

Station	OS09051
Longitude	38-45.0N
Latitude	155-00.0E
Depth(m)	5770

Press.	Temp.	Sal.	SIG-T
5	15.796	34.475	25.391
10	15.805	34.496	25.405
20	15.796	34.508	25.416
30	14.989	34.491	25.583
40	14.625	34.494	25.664
50	14.373	34.487	25.713
75	13.920	34.452	25.781
100	13.222	34.442	25.917
125	12.605	34.385	25.995
150	11.693	34.302	26.105
200	10.167	34.158	26.266
250	9.350	34.160	26.404
300	8.200	34.071	26.515
400	5.814	33.941	26.739
500	4.667	33.969	26.895
600	4.370	34.094	27.027
700	4.052	34.739	27.573
800	3.683	34.415	27.353
900	3.417	34.501	27.448
1000	3.140	34.547	27.511
1200	2.776	34.631	27.611
1500	2.341	34.699	27.703

Station	OS09052
Longitude	38-00.0N
Latitude	155-00.0E
Depth(m)	5975

Press.	Temp.	Sal.	SIG-T
5	14.534	34.387	25.601
10	14.550	34.401	25.608
20	14.485	34.435	25.649
30	13.039	34.321	25.859
40	11.363	34.247	26.124
50	10.840	34.218	26.196
75	-	-	-
100	9.568	34.125	26.341
125	-	-	-
150	8.781	34.045	26.405
200	8.099	33.965	26.446
250	7.208	33.902	26.525
300	6.121	33.866	26.642
400	4.264	33.808	26.811
500	4.437	34.003	26.947

Station	OS09053
Longitude	37-15.0N
Latitude	155-00.0E
Depth(m)	5751

Press.	Temp.	Sal.	SIG-T
5	15.568	34.441	25.416
10	15.564	34.441	25.417
20	14.067	34.407	25.716
30	12.541	34.377	26.002
40	12.074	34.341	26.064
50	11.616	34.274	26.098
75	-	-	-
100	10.519	34.231	26.263
125	-	-	-
150	9.061	34.117	26.417
200	7.896	33.985	26.492
250	6.540	33.887	26.604
300	6.619	34.048	26.720
400	5.432	34.063	26.882
500	4.677	34.097	26.996

Station OS09054
Longitude 37-06.6N
Latitude 155-00.0E
Depth(m) 5800

Press.	Temp.	Sal.	SIG-T
5	15.820	34.470	25.382
10	15.807	34.471	25.385
20	15.681	34.471	25.414
30	15.223	34.466	25.512
40	13.685	34.446	25.825
50	13.459	34.438	25.866
75	12.670	34.379	25.978
100	11.938	34.337	26.086
125	11.313	34.287	26.164
150	10.713	34.239	26.235
200	8.873	34.087	26.424
250	6.896	33.885	26.555
300	6.626	33.991	26.674
400	4.929	33.952	26.852
500	4.948	34.090	26.960
600	4.454	34.164	27.074
700	4.131	34.240	27.168
800	3.799	34.309	27.257
900	3.390	34.336	27.318
1000	3.086	34.367	27.372
1200	2.750	34.430	27.453
1500	2.380	34.504	27.544

Station OS09055
Longitude 36-30.0N
Latitude 155-00.0E
Depth(m) 5600

Press.	Temp.	Sal.	SIG-T
5	16.662	34.522	25.228
10	16.657	34.523	25.230
20	16.635	34.522	25.234
30	16.617	34.521	25.238
40	15.636	34.515	25.458
50	15.301	34.503	25.523
75	-	-	-
100	14.436	34.500	25.709
125	-	-	-
150	13.981	34.470	25.782
200	13.037	34.406	25.925
250	11.671	34.313	26.118
300	9.765	34.135	26.317
400	8.243	34.017	26.466
500	5.772	33.961	26.760

Station OS09056
Longitude 35-45.0N
Latitude 155-00.0E
Depth(m) 5235

Press.	Temp.	Sal.	SIG-T
5	16.490	34.328	25.119
10	16.459	34.348	25.142
20	16.182	34.357	25.212
30	15.420	34.416	25.430
40	14.899	34.415	25.544
50	14.721	34.408	25.577
75	14.365	34.427	25.668
100	14.085	34.414	25.717
125	13.885	34.410	25.756
150	13.589	34.399	25.809
200	12.690	34.355	25.955
250	11.234	34.247	26.147
300	10.212	34.190	26.284
400	7.507	33.996	26.557
500	5.525	33.979	26.804
600	4.848	34.057	26.945
700	4.393	34.147	27.066
800	3.945	34.243	27.190
900	3.565	34.312	27.283
1000	3.274	34.366	27.354
1200	2.820	34.442	27.456
1500	2.343	34.523	27.562

Station OS09057
Longitude 35-00.0N
Latitude 155-00.0E
Depth(m) 5634

Press.	Temp.	Sal.	SIG-T
5	17.046	34.335	24.994
10	16.942	34.347	25.028
20	16.806	34.349	25.061
30	16.537	34.342	25.119
40	15.621	34.358	25.340
50	14.875	34.366	25.511
75	13.303	34.376	25.849
100	12.357	34.309	25.985
125	11.437	34.256	26.117
150	10.921	34.245	26.202
200	9.634	34.154	26.353
250	8.238	34.051	26.493
300	7.086	34.018	26.634
400	5.124	33.949	26.828
500	4.728	34.067	26.966
600	4.247	34.166	27.097
700	3.886	34.241	27.194
800	3.538	34.315	27.288
900	3.265	34.374	27.361
1000	3.024	34.406	27.409
1200	2.599	34.481	27.506
1500	2.232	34.567	27.606

Station OS09058
Longitude 34-17.0N
Latitude 155-00.0E
Depth(m) 5794

Press.	Temp.	Sal.	SIG-T
5	19.629	34.619	24.569
10	19.639	34.633	24.577
20	19.613	34.637	24.587
30	19.592	34.643	24.597
40	18.864	34.651	24.790
50	18.572	34.660	24.871
75	17.900	34.640	25.022
100	16.448	34.569	25.314
125	15.674	34.588	25.505
150	14.732	34.532	25.670
200	13.228	34.419	25.898
250	11.765	34.337	26.119
300	10.033	34.239	26.352
400	5.638	33.779	26.633
500	5.874	34.096	26.854
600	4.506	34.089	27.008
700	4.138	34.192	27.129
800	3.719	34.267	27.232
900	3.428	34.335	27.314
1000	3.166	34.380	27.375
1200	2.732	34.458	27.476
1500	2.325	34.539	27.576

Station OS09059
Longitude 35-52.0N
Latitude 151-56.4E
Depth(m) 6020

Press.	Temp.	Sal.	SIG-T
5	18.413	34.614	24.875
10	18.413	34.615	24.876
20	18.303	34.603	24.894
30	18.181	34.598	24.920
40	18.080	34.694	25.019
50	17.756	34.696	25.100
75	17.114	34.693	25.253
100	16.221	34.631	25.414
125	15.353	34.607	25.591
150	14.307	34.538	25.766
200	13.140	34.477	25.960
250	12.389	34.391	26.042
300	11.082	34.251	26.178
400	7.397	33.939	26.528
500	5.383	33.843	26.714
600	4.953	34.008	26.894
700	4.531	34.121	27.031
800	4.077	34.212	27.152
900	3.728	34.281	27.242
1000	3.423	34.334	27.314
1200	2.982	34.426	27.429
1500	2.482	34.496	27.528

5. Data on drift gillnet research

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

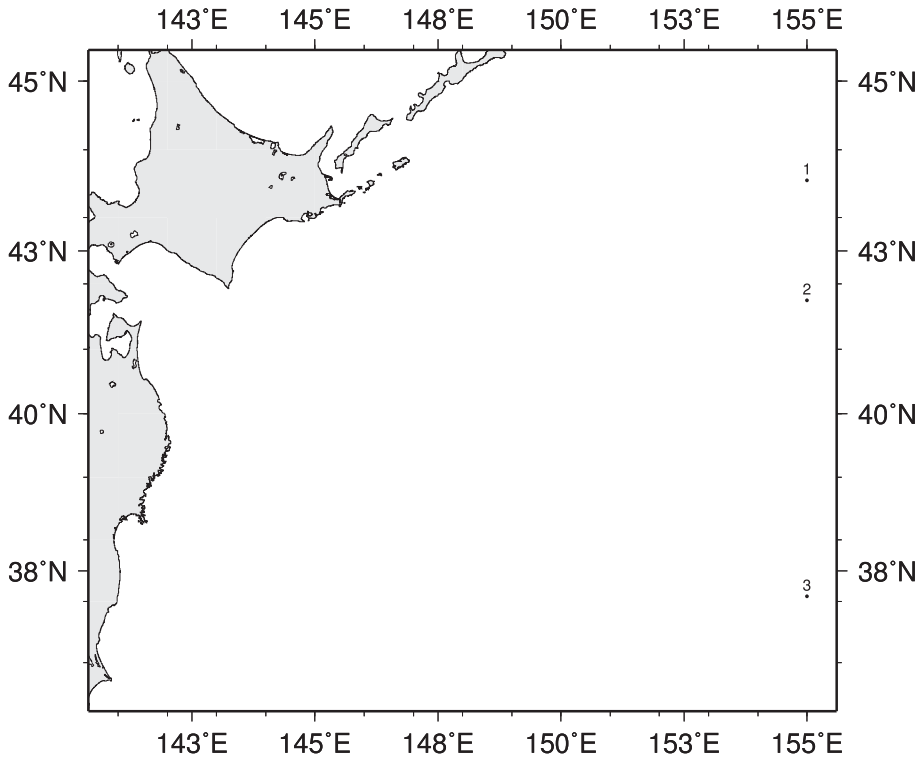


Figure 3: Locations of drift gillnet research

Table 3: Data on drift gillnet research

No. of research	Date and Time (S.M.T.) Net set	Net haul	T.D.	Position Lat.(N)	Long.		D.D.	Bottom depth(m)	Wr	Wind	S.T. (°C)	Tr (m)
OSG0901	11-May 1751-1814	12-May 0428-0514	+10h	43-33.1	155-00.0	(E)	220	5450	o	North-2	6.3	16.5
OSG0902	12-May 1751-1812	13-May 0424-0520	+10h	41-44.9	154-59.8	(E)	335	5515	c	ESE-5	8.1	-
OSG0903	14-May 1755-1815	15-May 0424-0536	+10h	37-05.2	154-59.9	(E)	340	5800	c	NE-6	15.1	10.0

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

Table 4: Nets composition

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0901	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0902	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0903	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49

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

Sockeye (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0901	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0902	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0903	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Chum (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0901	0	0	1	0	1	4	14	8	0	0	7	7	2	10	0	0	0	0	0	0	0	54
OSG0902	0	0	0	0	0	2	1	3	2	0	3	2	0	3	0	0	0	0	0	0	0	16
OSG0903	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pink (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0901	0	0	1	4	51	108	12	1	0	0	3	1	1	0	0	0	0	0	0	0	0	182
OSG0902	0	0	0	75	207	70	15	0	0	0	0	0	2	1	0	0	0	0	0	0	0	370
OSG0903	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Coho (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0901	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0902	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0903	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Chinook (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0901	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0902	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0903	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Steelhead (catch number)

No. of research	Mesh size (mm)																					
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0901	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0902	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0903	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

CHUM SALMON

St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.
	(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)
G01	A112	520	1800	M	3	G01	A121	517	1655	M	2	G01	C121	510	1567	F	37
G01	A112	579	2240	F	20	G01	A121	562	2126	M	2	G01	C121	600	2327	F	22
G01	A112	522	1820	M	4	G01	A121	536	1645	M	1	G01	C121	511	1628	F	37
G01	A112	483	1320	F	25	G01	C063	471	1363	M	2	G01	C121	524	1615	F	21
G01	A112	496	1600	F	32	G01	C082	525	1749	F	52	G01	C121	579	2092	F	53
G01	A112	510	1440	F	17	G01	C093	522	1634	F	21	G01	C121	522	1673	M	2
G01	A112	496	1540	M	2	G01	C093	508	1388	F	15	G01	C121	519	1848	M	5
G01	A115	541	1612	M	1	G01	C093	528	1956	M	10	G02	C093	504	1389	F	12
G01	A115	509	1513	F	16	G01	C093	502	1594	M	3	G02	C093	530	1625	F	25
G01	A115	525	1557	M	2	G01	C106	506	1456	M	4	G02	A112	599	2665	F	33
G01	A115	520	1692	M	3	G01	C106	458	1155	F	14	G02	A112	496	1324	F	26
G01	A115	524	1690	M	3	G01	C106			F	16	G02	A112	538	1616	M	2
G01	A115	561	1873	M	2	G01	C106	475	1520	F	27	G02	A115	586	2380	M	4
G01	A115	525	1803	M	3	G01	C106	540	1707	F	30	G02	A115	528	1670	F	23
G01	A118	508	1960	M	2	G01	C106	538	1782	M	2	G02	A121	554	2069	M	3
G01	A118	552	1800	M	5	G01	C106	510	1660	F	32	G02	A121	532	1988	F	62
G01	A121	565	1988	M	1	G01	C106	477	1276	F	8	G02	A121	491	1457	F	21
G01	A121	534	1814	F	53	G01	C106	546	2012	F	39	G02	C106	528	1625	M	1
G01	A121	606	2442	F	29	G01	C106	524	1615	M	2	G02	C121	558	2343	M	6
G01	A121	580	2229	M	3	G01	C106	503	1635	M	3	G02	C121	522	1643	F	18
G01	A121	508	1416	F	22	G01	C106	503	1724	F	41	G02	C121	508	1583	F	35
G01	A121	504	1578	F	27	G01	C106	513	1638	M	3	G02	C138	594	2356	F	28
G01	A121	526	1758	M	2	G01	C121	617	2646	M	2	G02	C138	608	2558	M	3

PINK SALMON

St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.
	(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)
G01	A112	482	1160	M	6	G01	C082	395	680	M	3	G01	C093	432	857	M	4
G01	A112	452	1040	M	6	G01	C082	423	848	M	5	G01	C093	414	813	M	1
G01	A112	492	1260	M	8	G01	C082	433	848	M	4	G01	C093	384	722	M	2
G01	A118	474	1180	M	5	G01	C082	386	717	F	7	G01	C093	420	850	M	1
G01	A121	488	1213	M	2	G01	C082	395	710	F	8	G01	C093	415	827	M	2
G01	C063	402	840	F	37	G01	C082	420	847	M	2	G01	C093	425	898	M	4
G01	C072	400	720	M	4	G01	C082	426	895	M	3	G01	C093	404	718	F	11
G01	C072	398	790	M	3	G01	C082	400	767	M	1	G01	C093	395	731	F	11
G01	C072	350	500	M	2	G01	C082	404	755	M	1	G01	C093	394	673	M	2
G01	C072	396	700	F	9	G01	C082	422	839	M	2	G01	C093	398	757	M	3
G01	C082	403	745	M	3	G01	C082	390	695	M	1	G01	C093	418	816	M	2
G01	C082	383	632	F	5	G01	C082	407	790	M	2	G01	C093	402	758	F	19
G01	C082	432	852	F	10	G01	C082	423	853	M	4	G01	C093	400	764	F	10
G01	C082	390	678	M	3	G01	C082	417	834	F	14	G01	C093	402	744	F	20
G01	C082	422	829	M	1	G01	C082	384	682	F	6	G01	C093	427	861	M	3
G01	C082	401	741	F	18	G01	C082	418	825	M	3	G01	C093	400	751	F	11
G01	C082	428	916	M	4	G01	C082	439	861	M	2	G01	C093	388	709	F	12
G01	C082	396	685	M	2	G01	C093	438	894	M	4	G01	C093	385	680	F	7
G01	C082	397	760	F	14	G01	C093	398	745	M	2	G01	C093	411	846	F	9
G01	C082	408	816	M	2	G01	C093	422	903	M	4	G01	C093	447	965	M	3
G01	C082	393	713	M	3	G01	C093	392	742	F	8	G01	C093	426	903	M	1
G01	C082	385	633	F	6	G01	C093	462	1158	M	4	G01	C093	396	709	F	7
G01	C082	379	673	M	2	G01	C093	391	742	M	1	G01	C093	389	746	M	4
G01	C082	436	1077	M	4	G01	C093	410	818	M	1	G01	C093	429	907	M	3
G01	C082	380	655	M	4	G01	C093	452	977	M	2	G01	C093	410	846	M	4
G01	C082	394	725	F	13	G01	C093	422	840	M	3	G01	C093	431	922	M	2
G01	C082	383	682	F	8	G01	C093	403	863	M	3	G01	C093	420	876	M	2
G01	C082	400	724	F	7	G01	C093	424	857	M	2	G01	C093	418	825	M	1
G01	C082	388	702	F	18	G01	C093	406	804	M	1	G01	C093	432	850	F	7
G01	C082	381	611	M	2	G01	C093	414	883	M	2	G01	C093	431	934	M	2
G01	C082	405	792	M	3	G01	C093	402	779	F	21	G01	C093	372	577	F	5
G01	C082	414	817	M	2	G01	C093	422	890	M	2	G01	C093	412	814	M	2
G01	C082	375	640	F	8	G01	C093	394	738	M	3	G01	C093	423	901	M	3
G01	C082	388	665	M	3	G01	C093	436	883	M	2	G01	C093	434	953	M	3
G01	C082	411	856	M	2	G01	C093	398	665	F	9	G01	C106	404	779	F	16
G01	C082	390	639	M	2	G01	C093	407	770	M	3	G01	C106	435	960	M	2
G01	C082	403	723	F	9	G01	C093	400	735	M	2	G01	C106	429	965	M	7
G01	C082	408	814	M	3	G01	C093	434	973	M	3	G01	C106	395	769	F	10
G01	C082	388	669	F	6	G01	C093	422	800	F	19	G01	C106	499	1005	M	4
G01	C082	425	915	M	2	G01	C093	419	815	M	4	G01	C106	428	918	M	1
G01	C082	401	737	F	11	G01	C093	425	878	F	12	G01	C106	445	1050	M	5
G01	C082	421	871	M	3	G01	C093	410	792	M	3	G01	C106	442	974	M	8

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

PINK SALMON

St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.
	(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)
G01	C106	448	1035	M	2	G02	C072	390	649	F	7	G02	C093	392	718	F	20
G01	C106	416	786	M	1	G02	C082	418	857	M	3	G02	C093	386	754	M	2
G01	C106	441	902	M	2	G02	C082	381	630	F	8	G02	C093	408	819	M	5
G01	C121	485	1407	M	3	G02	C082	381	571	M	3	G02	C093	426	936	M	5
G02	A118	482	1250	M	7	G02	C082	434	896	M	4	G02	C093	394	763	M	5
G02	A118	475	1180	M	3	G02	C082	421	832	F	12	G02	C093	400	750	M	4
G02	A121	442	962	M	3	G02	C082	378	617	F	8	G02	C093	431	926	F	20
G02	C072	394	706	M	4	G02	C082	408	714	F	42	G02	C093	436	925	M	3
G02	C072	398	764	F	13	G02	C082	421	844	F	24	G02	C093	405	795	F	18
G02	C072	414	821	F	14	G02	C082	390	712	F	13	G02	C093	401	765	F	20
G02	C072	406	762	F	15	G02	C082	394	688	M	6	G02	C093	402	782	M	4
G02	C072	392	661	F	12	G02	C082	384	648	F	13	G02	C093	392	775	F	16
G02	C072	421	872	M	7	G02	C082	368	535	M	2	G02	C093	419	894	M	5
G02	C072	391	665	F	18	G02	C082	389	667	F	9	G02	C093	390	749	F	17
G02	C072	376	608	F	7	G02	C082	419	735	M	3	G02	C093	408	828	M	4
G02	C072	385	693	F	7	G02	C082	389	680	F	5	G02	C093	397	753	F	50
G02	C072	396	710	F	9	G02	C082	382	674	M	2	G02	C093	403	772	M	4
G02	C072	381	624	M	2	G02	C082	402	669	M	2	G02	C093	406	788	F	12
G02	C072	352	510	M	1	G02	C082	401	672	F	7	G02	C093	380	682	M	3
G02	C072	401	700	M	4	G02	C082	395	755	F	12	G02	C093	451	999	M	4
G02	C072	389	644	M	2	G02	C082	409	775	F	3	G02	C093	399	805	F	23
G02	C072	395	731	M	2	G02	C082	388	595	F	7	G02	C093	444	976		
G02	C072	382	677	F	12	G02	C082	393	613	F	7	G02	C093	393	770	F	12
G02	C072	413	772	F	14	G02	C082	382	585	M	3	G02	C093	438	961	M	5
G02	C072	353	422	F	8	G02	C082	388	635	F	12	G02	C093	388	682	M	7
G02	C072	399	722	F	7	G02	C082	362	497	F	8	G02	C093	408	808	M	5
G02	C072	394	657	M	3	G02	C082	388	643	M	3	G02	C093	406	774	F	32
G02	C072	384	649	F	4	G02	C082	380	620	F	12	G02	C093	396	695	F	11
G02	C072	388	673	F	6	G02	C082	407	731	F	8	G02	C093	418	842	F	7
G02	C072	372	626	M	4	G02	C082	365	640	M	2	G02	C093	384	661	F	13
G02	C072	353	477	F	4	G02	C082	377	591	M	4	G02	C093	444	935	M	3
G02	C072	385	693	M	5	G02	C082	394	680	M	3	G02	C093	409	808	M	5
G02	C072	394	686	F	9	G02	C082	404	740	M	1	G02	C093	402	792	F	12
G02	C072	380	664	F	11	G02	C082	423	800	M	5	G02	C093	410	795	F	13
G02	C072	386	654	M	4	G02	C082	348	590	M	3	G02	C093	371	593	M	2
G02	C072	385	617	F	9	G02	C082	390	700	F	20	G02	C093	430	885	M	4
G02	C072	371	574	F	8	G02	C082	391	660	F	12	G02	C093	374	668	F	19
G02	C072	386	685	F	12	G02	C082	387	750	F	18	G02	C093	406	767	F	17
G02	C072	426	873	F	32	G02	C082	402	720	M	2	G02	C093	412	806	F	12
G02	C072	390	682	M	2	G02	C082	384	680	M	2	G02	C093	441	876	M	3
G02	C072	389	707	F	6	G02	C082	342	550	M	1	G02	C093	408	816	F	10
G02	C072	374	641	F	6	G02	C082	392	670	F	20	G02	C093	401	703	F	20
G02	C072	426	782	F	5	G02	C082	378	620	F	12	G02	C093	426	856	M	2
G02	C072	381	620	M	2	G02	C082	393	731	F	6	G02	C093	388	635	M	3
G02	C072	376	584	F	5	G02	C082	418	840	M	3	G02	C093	390	598	M	2
G02	C072	374	613	F	5	G02	C082	415	812	F	8	G02	C093	423	783	F	18
G02	C072	388	653	F	7	G02	C082	389	660	F	18	G02	C093	466	1092	M	3
G02	C072	403	717	F	15	G02	C082	396	600	M	2	G02	C093	390	696	M	7
G02	C072	368	599	F	6	G02	C082	424	870	F	23	G02	C093	389	733	F	15
G02	C072	384	651	M	1	G02	C082	366	700	F	5	G02	C093	427	901	F	17
G02	C072	353	486	F	5	G02	C082	390	700	M	2	G02	C093	386	673	M	9
G02	C072	378	644	M	4	G02	C082	381	700	F	15	G02	C093	400	708	F	29
G02	C072	398	698	M	7	G02	C082	407	670	M	2	G02	C106	453	959	M	5
G02	C072	393	662	M	1	G02	C082	394	750	F	21	G02	C106	451	1144		
G02	C072	402	696	M	3	G02	C082	394	780	M	3	G02	C106	428	923	F	38
G02	C072	382	621	F	7	G02	C082	402	700	M	2	G02	C106	438	963	M	4
G02	C072	389	695	M	4	G02	C082	429	850	M	2	G02	C106	386	723	M	10
G02	C072	410	801	M	3	G02	C082	388	720	M	3	G02	C106	431	887	F	8
G02	C072	378	580	M	1	G02	C082	393	700	M	3	G02	C106	445	977	M	5
G02	C072	390	662	F	9	G02	C082	333	540	M	2	G02	C106	400	771	M	5
G02	C072	364	552	M	3	G02	C082	394	710	M	2	G02	C106	451	997	F	26
G02	C072	396	721	F	7	G02	C093	406	837	M	7	G02	C106	422	866	M	4
G02	C072	375	604	M	2	G02	C093	438	996	F	14	G02	C106	450	1087	M	5
G02	C072	375	640	M	1	G02	C093	396	837	F	16	G02	C106	431	872	M	2
G02	C072	389	630	M	2	G02	C093	396	750	M	6	G02	C106	419	932	M	3
G02	C072	379	682	M	3	G02	C093	407	817	M	5						

Table 7. Biological characteristics of fishes caught by drift gillnet

NEON FLYING SQUID

St.	Gear (mm)	M.L. (mm)	B.W. (gr)	St.	Gear (mm)	M.L. (mm)	B.W. (gr)	St.	Gear (mm)	M.L. (mm)	B.W. (gr)
G03	A121	374	1692	G03	C157	450	3000				

BOREAL CLUBHOOK SQUID

St.	Gear (mm)	M.L. (mm)	B.W. (gr)	St.	Gear (mm)	M.L. (mm)	B.W. (gr)	St.	Gear (mm)	M.L. (mm)	B.W. (gr)
G02	C072			G03	F19	76	14	G03	F33	128	52
G02	C082			G03	F22	96		G03	F37	140	75
G03	A112	142	64	G03	F29	130	52				

PACIFIC SAURY

St.	Gear (mm)	F.L. (mm)	B.W. (gr)	St.	Gear (mm)	F.L. (mm)	B.W. (gr)	St.	Gear (mm)	F.L. (mm)	B.W. (gr)
G03	F19	175	20	G03	F22	186	23	G03	F25	190	26
G03	F19	159	14	G03	F22	200	33	G03	F25	194	27
G03	F19	153	13	G03	F22	197	31	G03	F25	202	41
G03	F19	188	26	G03	F22	184	21	G03	F25	196	27
G03	F19	146	12	G03	F22	183	21	G03	F25	200	28
G03	F19	139	11	G03	F22			G03	F25	192	27
G03	F19	200	32	G03	F22	166	14	G03	F25	204	32
G03	F19	177	26	G03	F22	170	18	G03	F25	182	22
G03	F19	167	17	G03	F22	178	21	G03	F25	197	24
G03	F19	165	16	G03	F22	201	35	G03	F25	204	33
G03	F19	193	23	G03	F22	177	20	G03	F25	206	33
G03	F19	157	16	G03	F22	180	15	G03	F25	200	29
G03	F19	184	22	G03	F22	188	30	G03	F25	204	35
G03	F22	170	18	G03	F22	187	24	G03	F25	200	31
G03	F22	182	26	G03	F22	160	11	G03	F25	220	39
G03	F22	202	30	G03	F22	160	14	G03	F25	198	27
G03	F22	167	21	G03	F22	198	29	G03	F25	203	33
G03	F22	173	18	G03	F22	167	19	G03	F25	196	31
G03	F22	171	20	G03	F22	180	18	G03	F25	214	38
G03	F22	186	25	G03	F22	189	31	G03	F25	194	30
G03	F22	187	17	G03	F22	190	28	G03	F25	202	31
G03	F22	165	19	G03	F22	200	33	G03	F25	185	24
G03	F22	182	22	G03	F22	180	24	G03	F25	194	27
G03	F22	194	27	G03	F22	168	19	G03	F25	224	46
G03	F22	170	17	G03	F22	172	17	G03	F25	185	19
G03	F22	195	22	G03	F22	186	24	G03	F25	199	29
G03	F22	190	25	G03	F22	170	19	G03	F25	193	28
G03	F22	188	26	G03	F25	224	39	G03	F25		
G03	F22	188	24	G03	F25	188	25	G03	F25	196	29
G03	F22	165	18	G03	F25	189	25	G03	F25	192	26
G03	F22	174	17	G03	F25	208	3	G03	F25	200	30
G03	F22	205	33	G03	F25	193	28	G03	F25	195	31
G03	F22	186	26	G03	F25	205	32	G03	F29	168	17
G03	F22	203	35	G03	F25	194	28	G03	F29	215	38
G03	F22	194	24	G03	F25	190	28	G03	F29	224	42
G03	F22	175	20	G03	F25	208	37	G03	F29	220	45
G03	F22	182	24	G03	F25	194	28	G03	F29	206	35
G03	F22	195	30	G03	F25	205	26	G03	F29	302	81
G03	F22	167	21	G03	F25	200	28	G03	F29	224	43
G03	F22	173	10	G03	F25	182	22	G03	F29	228	46
G03	F22	184	24	G03	F25	189	26	G03	F29	238	47
G03	F22	182	22	G03	F25	192	23	G03	F29		
G03	F22	175	21	G03	F25	198	29	G03	F33	246	56.3
G03	F22	183	22	G03	F25	206	33	G03	F33	135	54.3
G03	F22	169	18	G03	F25	188	25	G03	F37	310	
G03	F22	178	20	G03	F25	205	33	G03	F37	273	75

PACIFIC POMFRET

St.	Gear (mm)	F.L. (mm)	B.W. (gr)	St.	Gear (mm)	F.L. (mm)	B.W. (gr)	St.	Gear (mm)	F.L. (mm)	B.W. (gr)
G03	A112	498	1359	G03	A118	408	1250	G03	A121	430	1479
G03	A112	425	1965	G03	A118	416	1430	G03	A121	442	1383
G03	A112	441	5482	G03	A118	452	1500	G03	A121	430	1505
G03	A115	444	1484	G03	A118	422	1370	G03	C106	436	1688
G03	A115	424	1369	G03	A121	436	1563	G03	C106	452	1796
G03	A115	450	1606	G03	A121	430	1411	G03	C121	450	1491
G03	A115	395	1227	G03	A121	442	1600	G03	C121	443	1355
G03	A118	428	1210	G03	A121	405	1086	G03	C121	455	1399

Table 7. Biological characteristics of fishes caught by drift gillnet (continued)

PACIFIC POMFRET

St.	Gear	F.L.	B.W.	St.	Gear	F.L.	B.W.	St.	Gear	F.L.	B.W.
	(mm)	(mm)	(gr)		(mm)	(mm)	(gr)		(mm)	(mm)	(gr)
G03	C121	413	1470	G03	C138	450	1518	G03	C157	482	2035
G03	C121	429	1306	G03	C138	418	1428	G03	C157	390	996
G03	C121	439	1308	G03	C138	440	1405	G03	C157	400	1164
G03	C138	435	1441	G03	C138	435	1350	G03	C157	404	1101
G03	C138	438	1467	G03	C157	384	948	G03	C157	436	1575
G03	C138	453	1623	G03	C157	437	1391	G03	C157	446	1466
G03	C138	455	1698	G03	C157	420	1341	G03	C157	453	1668
G03	C138	450	1391	G03	C157	434	1548	G03	C157	445	1425
G03	C138	443	1519	G03	C157	430	1395	G03	C157	477	1677
G03	C138	423	1192	G03	C157	465	1770	G03	C157	440	1633
G03	C138	422	1235	G03	C157	440	1508	G03	C55	440	1558
G03	C138	440	1561	G03	C157	440	1394	G03	C55	155	66
G03	C138	464	1718	G03	C157	455	1719	G03	C55	154	70
G03	C138	430	1332	G03	C157	432	1533	G03	C55	150	61
G03	C138	425	1405	G03	C157	460	1484	G03	C63	148	57
G03	C138	413	1331	G03	C157	474	1751	G03	C72	450	1558
G03	C138	460	1706	G03	C157	430	1464	G03	C82	435	1501
G03	C138	413	1173	G03	C157	429	1204	G03	C82	440	1509
G03	C138	457	1586	G03	C157	466	1745	G03	F37	436	1400
								G03	F42	448	1403

ALBACORE

St.	Gear	F.L.	B.W.	St.	Gear	F.L.	B.W.	St.	Gear	F.L.	B.W.
	(mm)	(mm)	(gr)		(mm)	(mm)	(gr)		(mm)	(mm)	(gr)
G03	A112	630	5482	G03	C106	610	4760	G03	C63	500	2612
G03	A121	485	2394	G03	C121	630	5590	G03	C72	618	5342
G03	C106	625	5544	G03	C138	495	2511	G03	C72	512	2900
G03	C106	618	4824	G03	C138	636	5250	G03	C72	500	2619
								G03	C72	698	6315

6. Salmon Hook-and-Line Research

To collect salmons, hook-and-line gears were used along 155°E line in the Central North Pacific during Cruise#201. Five to ten anglers were engaged in the work. These samplings were mainly conducted with observations when ship was under drifting.

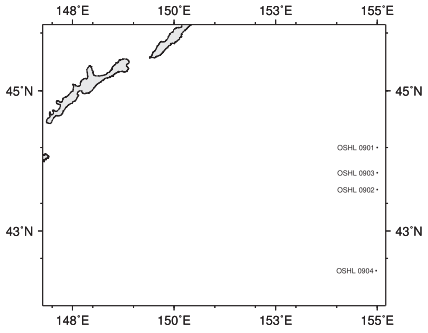


Figure 4: Locations of salmon hook-and-line research

Table 8: List of hook-and-line sampling (OSHL 09XX) station during the ”Oshoro Maru” Cruise #201

Station	Date and Time (S.M.T.)					Set Position		D.S.	No. of hooks	Wr.	Wind (Force)	Oceanographic Station No.
	Line set		Line haul		T.D.	Lat.	Long.					
OSHL 0901	11-May	05:45	11-May	06:45	+10h	44-00.0N	155-00.0E	-	-	b	NNE-4	OS 09043
OSHL 0902	11-May	10:45	11-May	12:25	+10h	43-15.0N	155-00.0E	-	-	bc	NNE-4	OS 09044
OSHL 0903	11-May	15:30	12-May	03:00	+10h	43-33.0N	155-00.0E	-	-	bc	NNW-2	OS 09045
OSHL 0904	12-May	20:45	13-May	03:00	+10h	41-46.3N	154-58.3E	-	-	o	ESE-5	OS 09047

S.M.T. : Ship’s Mean Time T.D.: Time Difference between Greenwich Mean Time (G.M.T.) and S.M.T.
D.S. : Direction in which line was set Wr.: Weather (o: 100% clouded, b: 0-25% clouded, bc: 25-75% clouded)

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)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
HL03	472	1200			HL03	482	1320	F	30	HL03	540	2150	F	25
HL03	528	1570	F	25	HL03	514	1600	F	24	HL03	558	2300	M	9
HL03	466	1100	M	1	HL03	506	1620	F	25	HL04	620	3500	F	35
HL03	605	2750	F	37	HL03	556	1960	M	8	HL04	539	1700	M	4
HL03	598	2500	F	35	HL03	612	3000	M	7					

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)
HL01	434	880	F	28	HL03	433	820	M	10	HL04	456	1000		
HL01	422	830	M	2	HL03	405	740			HL04	400	680		
HL02	412	780	M	5	HL03	424	980			HL04	437	860		
HL03	394	720			HL03	407	720	M	14	HL04	424	820		
HL03	397	680			HL03	423	920	F	25	HL04	398	620		
HL03	401	800			HL03	378	580	M	4	HL04	441	960		
HL03	393	740			HL03	406	780	M	6	HL04	422	820		
HL03	409	840			HL03	424	820	M	8	HL04	408	780		
HL03	360	620			HL03	418	810	M	5	HL04	414	800		
HL03	393	660			HL03	410	760			HL04	404	720		
HL03	406	900			HL03	444	940	M	10	HL04	410	680		
HL03	403	780			HL03	398	810	F	17	HL04	378	600		
HL03	392	720			HL03	402	740	M	10	HL04	384	620	F	7
HL03	400	720			HL03	390	680	F	23	HL04	348	490	M	4
HL03	417	960			HL03	400	690	M	5	HL04	370	600	M	3
HL03	399	720			HL03	413	700	M	10	HL04	420	770	M	8
HL03	418	940			HL03	418	820	M	7	HL04	390	630	F	8
HL03	402	840			HL03	390	660	F	20	HL04	392	640		
HL03	410	880			HL03	382	640	F	17	HL04	417	830	M	6
HL03	415	980			HL03	404	700	M	6	HL04	412	680		
HL03	400	680			HL03	401	740	F	12	HL04	393	660		
HL03	396	720			HL03	400	700	F	15	HL04	405	680		
HL03	410	800			HL03	436	850	M	8	HL04	404	720		
HL03	390	720			HL04	419	740			HL04	398	720		
HL03	389	700			HL04	426	840			HL04	408	700		
HL03	399	740			HL04	395	680			HL04	442	820		
HL03	398	720			HL04	395	670	M	4	HL04	412	800	F	7
HL03	410	800			HL04	420	775	F	25	HL04	392	690	F	10
HL03	400	600			HL04	410	805	F	24	HL04	402	660	F	16
HL03	408	800	M	6	HL04	398	720	M	4	HL04	402	720	F	10
HL03	429	1000	F	14	HL04	430	895	F	13	HL04	381	660	F	1
HL03	414	740			HL04	421	840			HL04	388	660	F	2
HL03	407	800	M	6	HL04	400	660	F	10	HL04	392	650	M	5
HL03	401	780	M	7	HL04	440	870	F	15	HL04	405	740	F	5
HL03	402	700	M	8	HL04	417	840			HL04	375	550	F	7
HL03	403	720	M	6	HL04	400	720			HL04	410	760	F	5
HL03	404	760	F	16	HL04	408	710	M	7	HL04	410	740	F	7
HL03	408	760	M	10	HL04	394	640			HL04	420	870	F	12
HL03	412	840	F	16	HL04	400	760			HL04	398	650	F	14
HL03	426	780	M	8	HL04	432	940			HL04	380	680	F	12
HL03	416	740	F	14	HL04	471	1050			HL04	383	620	F	16
										HL04	397	660	M	8

7. Data on plankton collected by vertical hauls with a single or 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. Ishii, K. Matsuno, R. Saito, K. Ohgi, Y. Onishi, T. Homma, R. Ohashi, C. Tsukazaki and K. Mishima (Laboratory of Marine Biology).

Table 10: Data on plankton collected by vertical hauls with a single or twin NORPAC net.

GG54:0.33mm mesh, XX13:0.10mm 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		
OS09042	41-30	145-47 E	9-May	13:53	150	1	150	GG54	1852	1354	22.69	12.2	540		09101
(site H)								XX13	2555	1098	22.45				09102
				14:04	500	1	500	GG54	1852	4530	75.92	15.2	200	3)	09103
								XX13	2555	3198	65.38				09104
OS09043	44-00	155-00 E	11-May	6:37	150	1	150	GG54	1852	1368	22.93	7.7	335		09105
								XX13	2555	1003	20.50				09106
OS09044	43-15	155-00 E	11-May	12:17	150	14	146	GG54	1852	1474	24.70	10.8	436		09107
								XX13	2555	1142	23.35				09108
OS09045	43-33	155-00 E	11-May	15:23	155	15	150	GG54	1852	1533	25.69	17.6	686	3)	09109
								XX13	2555	1178	24.08				09110
OS09046	42-30	155-00 E	12-May	12:16	158	18	150	GG54	1852	1688	28.29	7.9	280		09111
								XX13	2555	1303	26.64				09112
OS09047	41-47	154-57 E	12-May	19:33	162	22	150	GG54	1852	2015	33.77	29.1	863	2)	09113
								XX13	2555	1441	29.46				09114
OS09048	41-00	155-00 E	13-May	11:41	156	16	150	GG54	1852	1556	26.08	8.1	310		09115
								XX13	2555	1278	26.13				09116
OS09049	40-15	155-00 E	13-May	17:05	152	10	150	GG54	1852	1517	25.42	11.3	444		09117
								XX13	2555	1068	21.83				09118
OS09050	39-30	155-00 E	13-May	23:07	163	23	150	GG54	1852	1596	26.75	9.4	352	1)	09119
								XX13	2555	1070	21.87				09120
OS09052	38-00	155-00 E	14-May	11:17	150	4	150	GG54	1852	1435	24.05	12.8	531	1)	09121
								XX13	2555	913	18.66				09122
OS09053	37-15	155-00 E	14-May	15:44	151	6	150	GG54	1852	1481	24.82	15.9	640	1)	09123
								XX13	2555	1062	21.71				09124
OS09054	37-05	155-00 E	14-May	20:23	151	8	150	GG54	1852	1501	25.16	28.4	1129	1)	09125
								XX13	2555	1006	20.57				09126
OS09055	36-30	155-00 E	15-May	10:23	150	2	150	GG54	1852	1570	26.31	44.9	1706	1)	09127
								XX13	2555	1030	21.06				09128
OS09058	34-13	154-57 E	16-May	3:00	153	12	150	GG54	1852	1761	29.51	13.7	465		09129
								XX13	2555	1553	31.75				09130

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

8. Data on calibration of flowmeters

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

Table 11. Calibration data on flowmeters used for a twin or single NORPAC net and other kind of nets. 100-m wire out at 35°48'N, 151°57'E in 16 May 2009.

Flowmeter	Wire length	Revolution						
No.	(m)	1	2	3	4	5	6	Mean
RG1852	100	938	972*	968	950	927*	940	949
RG2555	100	778	778	780*	768*	778	778	778
RG2826	100	1020	1005	1095*	1090	1004*	1025	1035
RG3023	100	1030	1027	1034	1019	951*	1035*	1028
RG3024	100	1010*	1036	1080*	1078	1030	1048	1048

*: omitted from calculation

6

THE “OSHORO MARU” CRUISE 202
TO THE NORTHWEST PACIFIC OCEAN AND THE BERING SEA

IN JUNE - JULY 2009

1. Cruise Itinerary

Cruise 202			
Departure from Hakodate	June	2	, 2009
Start hydrographic research (OS09060)		3	
Start salmon hook and line research (OSHL0905)		5	
Gillnet research (OSG0904)		6	
Date change, repeat June 11th		11	
Start salmon long line research (OSSL0901)		13	
Arrival at Dutch Harbor and change research staff		19	
Departure from Dutch Harbor		22	
Finish salmon long line research (OSSL0902)		29	
Finish Gillnet research (OSG0910)	July	3	
Arrival at Dutch Harbor and change research staff		5	
Departure from Dutch Harbor		8	
Start bottom trawl research (OST0901)		4	
Finish bottom trawl research (OST0906)		14	
Finish salmon hook and line research (OSHL0926)		17	
Arrival at Dutch Harbor and change research staff		17	
Departure from Dutch Harbor		20	
Date change, skip July 23		22	
Finish hydrographic research (OS09143)		29	
Return to Hakodate	July	31	, 2009
Total coverage 9350.9 miles 51days at sea and 9days in port			

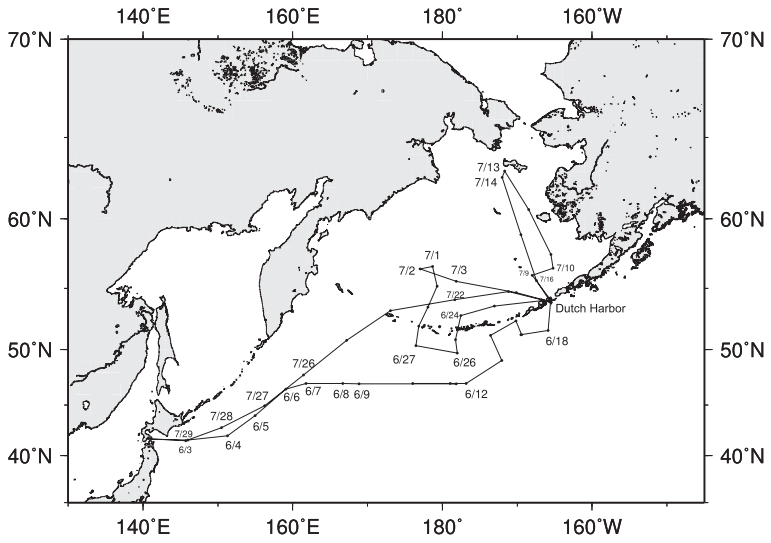


Figure 1: Track and Noon position

2. Vessel Personnel

Captain:		Associate Professor	Shogo Takagi
Crew :	Chief Officer	Instructor	Yoshihiko Kamei
	First Officer	Instructor	Keiichiro Sakaoka
	Second Officer		Naoki Hoshi
	Third Officer		Takuzo Abe
	Chief Engineer	Instructor	Junichi Kimura
	And 25 men		

Cruise 202

Research Staff:	Professor	(Laboratory of Marine Environmental Science)	
		Hakodate - Dutch Harbor	Kenshi Kuma
	Professor	(Laboratory of Marine Environment and Resource Sensing)	
		Dutch Harbor - Dutch Harbor	Seiichi Saitoh
	Accosiate Professor	(Laboratory of Marine Biodiversity)	
		Hakodate - Hakodate	Atsushi Yamaguchi
	Instructor	(Laboratory of Marine Environmental Science)	
		Hakodate - Dutch Harbor	Hiroji Onishi
	Instructor	(Laboratory of Marine Environmental Science)	
		Hakodate - Dutch Harbor	Hiromichi Ueno
	Professor	(Graduate School of Science, The University of Tokyo)	
		Hakodate - Dutch Harbor	Ichirou Yasuda
	Associate Professor	(Graduate School of Environmental Science)	
		Hakodate - Dutch Harbor	Yutaka Watanabe
	Associate Professor	(Institute of Low Temperature Science, Hokkaido University)	
		Hakodate - Dutch Harbor	Jun Nishioka
	Associate Professor	(TEIKYO University of Science & Technology)	
		Hakodate - Hakodate	Kyoichi Mori
	Instructor	(Field Science Center for Northern Biospher, Hokkaido University)	
		Dutch Harbor - Dutch Harbor	Jun Yamamoto
	Instructor	(Field Science Center for Northern Biospher, Hokkaido University)	
		Dutch Harbor - Dutch Harbor	Yoko Mitani
	Post Doctor		1 person
	Graduate Students		14 persons
	Under Graduate Students		5 persons

Foreign Scientists:	(Pacific Aquaculture and Coastal Resources Center, University of Hawaii at Hiro)	
	Hakodate - Hakodate	Keiko Sekiguchi
	(Institute Marine Science, University of Alaska Fairbanks)	
	Dutch Harbor - Dutch Harbor	Michael Kong
	(Institute Marine Science, University of Alaska Fairbanks)	
	Dutch Harbor - Dutch Harbor	Kristen L. Shake
	(Pacific Rim Services, USA)	
	Dutch Harbor - Dutch Harbor	Thoru Chino
	(Bigwlow Laboratory for Ocean Science)	
	Dutch Harbor - Dutch Harbor	Joaquim I. Goes
	(Bigwlow Laboratory for Ocean Science)	
	Dutch Harbor - Dutch Harbor	Andrew R. Gross
	(Bigwlow Laboratory for Ocean Science)	
	Dutch Harbor - Dutch Harbor	Stacey Keith
	(Bigwlow Laboratory for Ocean Science)	
	Dutch Harbor - Dutch Harbor	Eurico D'Sa
Total		70 persons

3. Items and Objects of Research

Items

Hydrographic observation by CTD, XCTD, XCP, and VMP-5500 casts and set Mooring-current-meter: Table 1,2 ; Figure 2
Biological research for fishes caught by non-selective drift gillnets: Table 3 - 7 ; Figure 3
Salmon longline and hook-and-line research: Table 8 - 11 ; Figure 4
Biological research for fishes caught by bottom trawl observations: Table 12, 13 ; Figure 5
Biological research for squid caught by jigging:
Plankton samplings by NORPAC-net, MTD-net, Closing-net, Bongo-net, SCOR-net, and VMPS-net: Table 14, 15 ; Figure 2
Water samplings by Niskin bottles and underwater tug plane: Table 16

Objects

Study on geochemistry and metal distributions in the water along the 170E line, Bering Sea.
A study about the elucidation of the behavior of the material circulation change of the North Pacific.
CTD, X-CTD, and ADCP observation are performed, Recovery and installation of sediment-traps are performed for the purpose of investigating correspondence with a climate change and relation of an east-and-west subarctic gyre.
About turbulence strength direct observation and nutrient cloth in the North Pacific subarctic.
In order to clarify the relation between micro-scale (∽1cm) and fine-scale(∽10cm) current shear in the deep ocean , we carry out micro-scale measurements using TurboMAP D2 and fine-scale measurements using XCP simul tenuously.
Sampling for comparative study on the nekton and zooplankton distributions along the Bering Sea
Ecological study of Gadid fish in Bering Sea. Distribution of larval fishes in the North Pacific and Bering Sea. Identification, count, and measurement of weight of fishes collected by bottom trawl net.
Study on experimental biology of marine zooplankton in the northern North Pacific.
Vertical distribution of diatom assemblages using sea waters obtained with CTD observation
Geographical distribution of diatom and radiolarian assemblages using plankton tows obtained with Twin Norpac plankton net.
Recoveries, maintenances and re-deployments of two sediment traps.
Research of growth, feeding ecology and trophic dynamics of Pacific salmon in the North Pacific and Bering Sea.
Marine mammal shipboard sighting survey.
Fundamental study for the development of the high latitude bio-optical algorithm for satellite ocean color remote sensing.
Ecological Study on Benthos in the Bering Sea.
Production Process of DMS in the Bering Sea.
Taking some sea water samples by depth to check the contamination of plastic and observe any bad influences to plankton/seaweed.

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the "*Oshoromaru*". Temperature and salinity were measured by CTD (Seabird SBE-9Plus, SBE-19Plus and XCTD1 or 2). Dynamic computations were made using a desk-top computer aboard the "*Oshoromaru*". Water and Plankton sampling were also carried out at almost hydrographic stations.

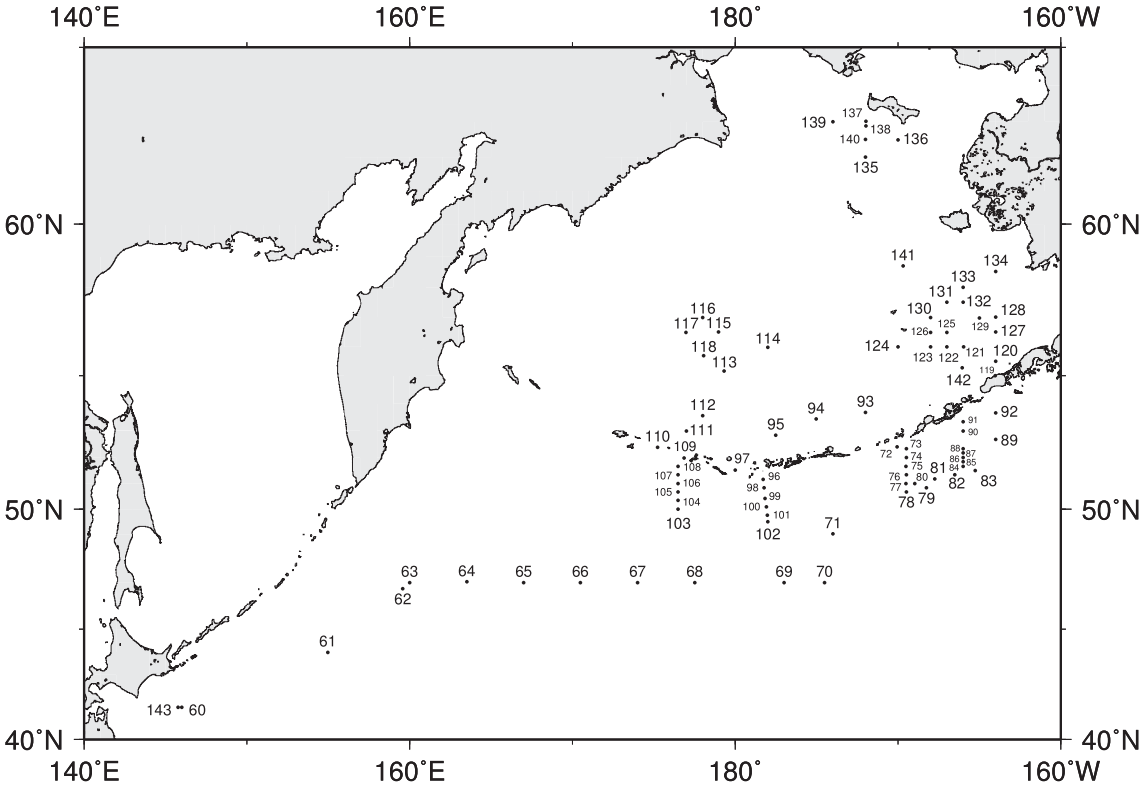


Figure 2: Oceanographic Stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09060	41-29.6N	146-00.1E	6/3	0704	9	6371	6	8.7	12.2	bc	9Plus-0769
OS09061	43-59.0N	154-57.5E	6/5	1240	10	5310	4	19.8	8.6	c	9Plus-0769
OS09062	46-44.8N	159-33.9E	6/6	1418	10	5150	-	-	-	o	XCTD1
OS09063	47-00.0N	159-59.9E	6/6	2256	10	5173	5	10	5.5	f	9Plus-0769
OS09064	47-01.9N	163-31.2E	6/7	2040	10	5745	4	13.3	6.1	c	9Plus-0769
OS09065	46-59.7N	166-59.9E	6/8	1315	11	5985	4	12.3	5.4	c	9Plus-0769
OS09066	47-00.0N	170-29.3E	6/9	1758	11	6310	4	13	5.9	c	9Plus-0769
OS09067	47-00.0N	173-59.9E	6/10	1232	11	5607	4	10	6.1	o	9Plus-0769

(*):Fixed position by Global Positioning system

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09068	47-00.1N	177-30.1E	6/11	1739	11	5478	4	11.6	7.1	r	9Plus-0769
OS09069	46-60.0N	178-59.9W	6/11	1235	-12	5300	4	13.2	8.9	bc	9Plus-0769
OS09070	46-60.0N	175-30.0W	6/12	1744	-12	5644	3	17.7	10.0	c	9Plus-0769
OS09071	49-00.1N	174-00.1W	6/13	1357	-12	5415	7	7	10.0	r	9Plus-0769
OS09072	52-23.7N	171-56.8W	6/15	1347	-11	305	4	16	5.1	r	9Plus-0769
OS09073	52-20.0N	170-30.7W	6/15	2243	-11	560	-	-	6.9	o	9Plus-0769
OS09074	52-00.0N	170-30.3W	6/16	0327	-11	3360	4	9.5	7.5	r	9Plus-0769
OS09075	51-40.0N	170-30.0W	6/16	1338	-11	4645	5	15	7.7	bc	9Plus-0769
OS09076	51-20.5N	170-30.2W	6/17	0841	-10	6140	5	10.7	7.8	c	9Plus-0769
OS09077	50-59.8N	170-30.0W	6/17	1331	-10	6940	4	10	8.0	o	9Plus-0769
OS09078	50-40.0N	170-30.1W	6/17	1759	-10	5473	4	13.2	8.2	o	9Plus-0769
OS09079	50-50.1N	169-45.3W	6/17	2340	-10	5510	-	-	-	c	XCTD1
OS09080	50-59.6N	169-01.2W	6/18	0204	-10	5255	-	-	-	c	XCTD1
OS09081	51-10.2N	168-15.0W	6/18	0445	-10	5144	-	-	-	c	XCTD1
OS09082	51-20.1N	167-29.9W	6/18	0723	-10	4965	-	-	-	c	XCTD1
OS09083	51-30.3N	166-44.2W	6/18	0958	-10	4960	-	-	-	c	XCTD1
OS09084	51-40.0N	166-00.0W	6/18	1235	-10	4920	-	-	-	bc	XCTD2
OS09085	51-50.0N	166-00.2W	6/18	1338	-10	5290	-	-	-	bc	XCTD2
OS09086	51-59.9N	166-00.1W	6/18	1437	-10	5900	-	-	-	bc	XCTD2
OS09087	52-10.0N	166-00.1W	6/18	1541	-10	6615	-	-	-	bc	XCTD2
OS09088	52-20.0N	166-00.0W	6/18	1637	-10	7025	-	-	-	c	XCTD2
OS09089	52-40.6N	165-59.8W	6/18	1839	-10	4613	-	-	-	r	XCTD2
OS09090	52-59.6N	166-00.1W	6/18	2055	-10	3870	-	-	-	r	XCTD2
OS09091	53-19.9N	166-00.2W	6/18	2341	-10	625	-	-	-	bc	XCTD2
OS09092	53-40.0N	165-59.9W	6/19	0200	-10	84	-	-	-	c	XCTD2
OS09093	53-40.1N	173-59.7W	6/23	0826	-11	3650	4	17.5	6.9	c	XCTD2
OS09094	53-25.8N	176-59.0W	6/23	2030	-11	3775	5	6.1	7.8	c	9Plus-0769
OS09095	52-50.1N	178-28.8W	6/24	1215	-11	3700	6	5	7.1	c	9Plus-0769
OS09096	51-10.0N	179-43.4W	6/24	2252	-11	3675	-	-	5.2	c	9Plus-0769
OS09097	51-30.6N	179-59.9E	6/25	0349	-11	1045	-	-	4.2	c	9Plus-0769
OS09098	50-50.6N	179-46.2W	6/25	1044	-11	5440	4	15.9	7.2	c	9Plus-0769
OS09099	50-25.3N	179-50.0W	6/25	1803	-11	6453	4	12.2	7.7	o	9Plus-0769
OS09100	50-05.4N	179-54.5W	6/26	0015	-11	5990	-	-	6.8	o	9Plus-0769
OS09101	49-45.8N	179-59.1W	6/26	0755	-11	5178	5	9.2	6.2	o	9Plus-0769
OS09102	49-30.3N	179-60.0W	6/26	1415	-11	4810	4	18.2	7.7	o	9Plus-0769
OS09103	49-59.9N	176-29.7E	6/27	0544	-11	4674	5	8.6	7.4	r	9Plus-0769
OS09104	50-20.5N	176-28.9E	6/27	1054	-11	5010	4	13.5	7.3	r	9Plus-0769
OS09105	50-40.0N	176-29.9E	6/27	1528	-11	6480	4	15.7	7.3	o	SBE-19plus
OS09106	50-59.9N	176-29.8E	6/27	2018	-11	6250	4	11.3	7.3	r	SBE-19plus
OS09107	51-20.2N	176-30.0E	6/28	0035	-11	4750	-	-	5.6	c	SBE-19plus
OS09108	51-39.8N	176-29.8E	6/28	0527	-11	3934	5	11.1	6.1	o	9Plus-0769
OS09109	51-58.3N	176-51.2E	6/28	1127	-11	160	4	17	4.5	o	9Plus-0769
OS09110	52-22.7N	175-13.9E	6/28	2006	-11	740	4	16.7	6.9	c	9Plus-0769

(*):Fixed position by Global Positioning system

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09111	52-59.9N	177-00.6E	6/29	0452	-11	3939	6	7.5	6.5	f	9Plus-0769
OS09112	53-33.2N	178-00.1E	6/30	0007	-11	3903	5	10	6.6	r	9Plus-0769
OS09113	55-09.6N	179-19.3E	6/30	1138	-11	3830	6	6.1	6.3	o	XCTD2
OS09114	55-59.1N	179-59.2W	6/30	2000	-11	3840	4	19.5	6.5	r	9Plus-0769
OS09115	56-30.2N	178-58.4E	7/1	1000	-11	3845	6	9.3	6.4	r	9Plus-0769
OS09116	56-59.9N	178-00.1E	7/1	1554	-11	3840	6	8.7	6.4	o	9Plus-0769
OS09117	56-29.8N	176-58.4E	7/2	1035	-11	3855	5	11.6	6.6	f	9Plus-0769
OS09118	55-41.8N	178-04.0E	7/2	1904	-11	3850	5	7.5	6.5	o	9Plus-0769
OS09119	54-60.0N	165-59.1W	7/8	1715	-8	135	6	11	6.8	o	9Plus-0769
OS09120	55-30.0N	165-59.9W	7/8	2200	-8	121	5	9.7	8.5	c	9Plus-0769
OS09121	55-59.5N	166-00.9W	7/9	0200	-8	113	-	-	8.3	c	9Plus-0769
OS09122	55-59.8N	167-00.0W	7/9	0555	-8	133	4	6	7.9	c	9Plus-0769
OS09123	56-00.1N	168-00.6W	7/9	1225	-8	136	8	5.2	6.9	o	9Plus-0769
OS09124	55-59.7N	170-00.2W	7/9	2010	-8	220	6	10.1	7.0	c	9Plus-0769
OS09125	56-29.5N	168-59.9W	7/10	0208	-8	102	-	-	7.0	c	9Plus-0769
OS09126	56-29.7N	168-00.0W	7/10	0613	-8	115	6	7	7.2	c	9Plus-0769
OS09127	56-30.1N	165-59.9W	7/10	1435	-8	84	5	10.8	7.9	f	9Plus-0769
OS09128	57-00.2N	165-59.6W	7/10	1852	-8	70	6	9	7.4	f	9Plus-0769
OS09129	56-59.0N	166-59.9W	7/10	2306	-8	75	5	7.7	7.6	f	9Plus-0769
OS09130	56-59.7N	168-00.1W	7/11	0344	-8	77	-	-	7.0	f	9Plus-0769
OS09131	57-30.0N	167-00.1W	7/11	0825	-8	70	5	11.9	7.0	f	9Plus-0769
OS09132	57-30.0N	166-00.5W	7/11	1335	-8	64	6	8.3	7.6	f	9Plus-0769
OS09133	57-59.5N	166-00.2W	7/11	1730	-8	54	5	11	6.1	c	9Plus-0769
OS09134	58-30.1N	165-59.6W	7/11	2112	-8	45	6	10.6	7.2	c	9Plus-0769
OS09135	62-00.0N	172-00.1W	7/12	2109	-8	55	5	12.2	3.9	o	9Plus-0769
OS09136	62-29.5N	171-60.0W	7/13	0100	-8	45	-	-	5.1	o	9Plus-0769
OS09137	63-00.5N	172-00.9W	7/13	1315	-8	53	3	15.4	5.1	o	9Plus-0769
OS09138	62-53.4N	172-01.5W	7/13	1543	-8	50	3	17	5.1	o	9Plus-0769
OS09139	63-00.0N	174-00.2W	7/13	2122	-8	74	6	12.4	4.8	o	9Plus-0769
OS09140	62-30.1N	173-59.9W	7/14	1430	-8	68	-	-	3.9	f	SBE-19plus
OS09141	58-41.1N	170-19.2W	7/15	1400	-8	70	4	12	5.8	o	9Plus-0769
OS09142	55-15.9N	167-56.4W	7/16	1505	-8	424	9	2.9	7.5	o	9Plus-0769
OS09143	41-30.0N	145-46.7E	7/29	0835	10	6860	3	14.7	17.7	f	9Plus-0769

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station OS09060
Longitude 41-29.6N
Latitude 146-00.1E
Depth(m) 6371

Press.	Temp.	Sal.	SIG-T
5	11.710	34.158	25.990
10	11.561	34.166	26.024
20	11.522	34.163	26.029
30	11.516	34.164	26.031
40	11.512	34.164	26.032
50	11.392	34.158	26.049
75	10.412	34.252	26.298
100	9.935	34.182	26.325
125	8.465	34.007	26.424
150	7.291	33.874	26.492
200	7.076	33.945	26.578
250	6.469	33.862	26.594
300	4.796	33.684	26.655
400	3.549	33.678	26.779
500	3.599	33.828	26.894
600	3.520	33.943	26.993
700	3.487	34.065	27.093
800	3.352	34.157	27.179
900	3.077	34.225	27.259
1000	2.997	34.294	27.322
1200	2.850	34.414	27.431
1500	2.432	34.486	27.524
2000	2.067	34.574	27.625

Station OS09061
Longitude 43-59.0N
Latitude 154-57.5E
Depth(m) 5310

Press.	Temp.	Sal.	SIG-T
5	8.040	33.313	25.943
10	7.924	33.317	25.964
20	7.933	33.332	25.974
30	6.977	33.455	26.205
40	7.481	33.749	26.366
50	7.294	33.788	26.424
75	6.373	33.701	26.479
100	5.288	33.596	26.529
125	4.223	33.528	26.592
150	4.311	33.624	26.660
200	3.886	33.707	26.769
250	3.447	33.744	26.841
300	3.490	33.840	26.913
400	3.445	33.988	27.036
500	3.761	34.151	27.135
600	3.136	34.163	27.204
700	3.032	34.246	27.281
800	3.129	34.334	27.341
900	2.952	34.370	27.386
1000	2.776	34.401	27.427
1200	2.459	34.453	27.496
1500	2.206	34.516	27.567
2000	1.903	34.599	27.658
2500	1.688	34.639	27.706
3000	1.562	34.662	27.734

Station OS09062
Longitude 46-44.8N
Latitude 159-33.9E
Depth(m) 5150

Press.	Temp.	Sal.	SIG-T
5	2.787	33.020	26.323
10	2.396	33.039	26.370
20	1.781	33.059	26.433
30	1.607	33.073	26.456
40	1.525	33.087	26.473
50	1.425	33.095	26.486
75	1.297	33.129	26.522
100	2.190	33.393	26.670
125	3.206	33.655	26.793
150	3.498	33.774	26.860
200	3.658	33.909	26.953
250	3.668	34.004	27.027
300	3.638	34.082	27.092
400	3.488	34.181	27.186
500	3.327	34.247	27.254
600	3.144	34.313	27.324
700	2.984	34.365	27.380
800	2.843	34.410	27.428
900	2.684	34.447	27.472
1000	2.540	34.479	27.510

Station OS09063
Longitude 47-00.0N
Latitude 159-59.9E
Depth(m) 5173

Press.	Temp.	Sal.	SIG-T
5	4.708	32.938	26.073
10	3.491	32.937	26.194
20	2.992	32.947	26.247
30	2.437	32.946	26.292
40	2.052	32.964	26.337
50	1.555	33.000	26.401
75	-	-	-
100	0.993	33.068	26.492
125	-	-	-
150	1.868	33.309	26.627
200	3.274	33.639	26.774
250	3.623	33.811	26.878
300	3.704	33.921	26.958
400	3.640	34.050	27.066
500	3.482	34.143	27.156

Station OS09064
Longitude 47-01.9N
Latitude 163-31.2E
Depth(m) 5745

Press.	Temp.	Sal.	SIG-T
5	6.134	33.327	26.214
10	6.135	33.327	26.214
20	6.082	33.326	26.220
30	5.417	33.338	26.310
40	4.463	33.348	26.424
50	4.173	33.368	26.471
75	-	-	-
100	4.025	33.390	26.503
125	-	-	-
150	4.061	33.427	26.529
200	3.996	33.630	26.697
250	3.767	33.721	26.792
300	3.725	33.813	26.870
400	3.752	33.947	26.973
500	3.660	34.062	27.074

Station OS09065
Longitude 46-59.7N
Latitude 166-59.9E
Depth(m) 5985

Press.	Temp.	Sal.	SIG-T
5	4.987	32.961	26.060
10	4.986	32.961	26.061
20	4.972	32.960	26.061
30	4.955	32.960	26.063
40	4.557	32.969	26.114
50	4.107	32.978	26.167
75	-	-	-
100	2.710	33.043	26.348
125	-	-	-
150	3.027	33.584	26.753
200	3.494	33.820	26.898
250	3.506	33.914	26.971
300	3.490	33.981	27.026
400	3.437	34.106	27.131
500	3.334	34.192	27.209

Station	OS09066
Longitude	47-00.0N
Latitude	170-29.3E
Depth(m)	6310

Press.	Temp.	Sal.	SIG-T
5	5.729	32.908	25.933
10	5.730	32.908	25.932
20	5.693	32.906	25.935
30	5.638	32.906	25.942
40	4.365	32.928	26.101
50	3.907	32.957	26.170
75	-	-	-
100	3.041	33.017	26.299
125	-	-	-
150	3.223	33.623	26.765
200	3.516	33.835	26.908
250	3.506	33.921	26.977
300	3.543	33.999	27.035
400	3.493	34.111	27.130
500	3.390	34.196	27.207

Station	OS09067
Longitude	47-00.0N
Latitude	173-59.9E
Depth(m)	5607

Press.	Temp.	Sal.	SIG-T
5	5.864	32.884	25.897
10	5.836	32.885	25.902
20	5.831	32.886	25.903
30	5.829	32.889	25.906
40	5.536	32.897	25.947
50	4.263	32.920	26.105
75	-	-	-
100	3.430	32.963	26.220
125	-	-	-
150	3.066	33.627	26.783
200	3.236	33.758	26.872
250	3.452	33.877	26.947
300	3.555	33.985	27.023
400	3.566	34.095	27.110
500	3.450	34.194	27.200

Station	OS09068
Longitude	47-00.1N
Latitude	177-30.1E
Depth(m)	5478

Press.	Temp.	Sal.	SIG-T
5	6.901	32.936	25.807
10	6.900	32.939	25.809
20	6.881	32.944	25.816
30	6.528	32.956	25.871
40	5.159	32.999	26.071
50	4.867	33.008	26.111
75	-	-	-
100	4.205	33.001	26.175
125	-	-	-
150	3.880	33.546	26.642
200	3.414	33.663	26.780
250	3.427	33.761	26.857
300	3.443	33.843	26.921
400	3.661	34.033	27.051
500	3.570	34.134	27.141

Station	OS09069
Longitude	46-60.0N
Latitude	178-59.9W
Depth(m)	5300

Press.	Temp.	Sal.	SIG-T
5	8.651	32.770	25.426
10	8.619	32.769	25.430
20	6.936	32.801	25.696
30	5.732	32.842	25.881
40	5.171	32.843	25.946
50	4.840	32.835	25.977
75	-	-	-
100	4.144	32.932	26.127
125	-	-	-
150	3.268	33.620	26.760
200	3.289	33.722	26.839
250	3.384	33.823	26.911
300	3.490	33.903	26.964
400	3.621	34.046	27.065
500	3.527	34.156	27.162

Station	OS09070
Longitude	46-60.0N
Latitude	175-30.0W
Depth(m)	5644

Press.	Temp.	Sal.	SIG-T
5	9.822	32.750	25.225
10	9.683	32.744	25.243
20	7.455	32.760	25.592
30	6.568	32.790	25.736
40	6.247	32.796	25.781
50	6.006	32.807	25.820
75	-	-	-
100	5.028	32.841	25.961
125	-	-	-
150	3.867	33.632	26.711
200	3.665	33.746	26.822
250	3.667	33.839	26.896
300	3.736	33.922	26.955
400	3.728	34.049	27.057
500	3.643	34.149	27.145

Station	OS09071
Longitude	49-00.1N
Latitude	174-00.1W
Depth(m)	5415

Press.	Temp.	Sal.	SIG-T
5	9.252	32.771	25.334
10	7.792	32.769	25.552
20	5.970	32.812	25.828
30	5.477	32.832	25.903
40	5.092	32.843	25.955
50	4.770	32.850	25.996
75	4.012	32.858	26.081
100	3.799	32.876	26.116
125	3.592	33.034	26.262
150	3.931	33.717	26.773
200	3.864	33.898	26.923
250	3.810	33.971	26.987
300	3.757	34.022	27.033
400	3.595	34.138	27.141
500	3.423	34.209	27.215
600	3.266	34.269	27.277
700	3.109	34.320	27.332
800	2.946	34.359	27.379
900	2.807	34.391	27.416
1000	2.651	34.424	27.457
1200	2.401	34.478	27.521
1500	2.117	34.542	27.595
2000	1.840	34.602	27.665

Station OS09072
Longitude 52-23.7N
Latitude 171-56.8W
Depth(m) 305

Press.	Temp.	Sal.	SIG-T
5	4.872	32.825	25.965
10	4.863	32.824	25.966
20	4.870	32.824	25.965
30	4.837	32.834	25.976
40	4.746	32.935	26.067
50	4.684	32.993	26.119
75	4.532	33.201	26.300
100	4.443	33.459	26.515
125	4.450	33.492	26.540
150	4.429	33.577	26.610
200	4.167	33.604	26.658
250	4.094	33.672	26.721

Station OS09073
Longitude 52-20.0N
Latitude 170-30.7W
Depth(m) 560

Press.	Temp.	Sal.	SIG-T
5	6.726	32.427	25.429
10	6.708	32.429	25.432
20	6.743	32.427	25.426
30	6.735	32.427	25.428
40	5.869	32.408	25.521
50	3.699	32.625	25.926
75	4.012	32.909	26.122
100	4.646	33.274	26.346
125	4.605	33.377	26.432
150	4.585	33.475	26.512
200	4.814	33.641	26.619
250	4.923	33.736	26.682
300	4.777	33.751	26.710
400	4.425	33.928	26.889
500	3.721	34.127	27.120

Station OS09074
Longitude 52-00.0N
Latitude 170-30.3W
Depth(m) 3360

Press.	Temp.	Sal.	SIG-T
5	7.229	32.617	25.511
10	7.221	32.621	25.515
20	7.215	32.628	25.522
30	7.212	32.632	25.526
40	4.726	32.418	25.659
50	4.356	32.663	25.892
75	4.017	32.780	26.019
100	3.750	32.859	26.107
125	4.101	33.166	26.317
150	3.480	33.491	26.637
200	3.332	33.707	26.823
250	3.492	33.816	26.894
300	3.640	33.903	26.949
400	4.012	34.083	27.056
500	3.612	34.122	27.127
600	3.484	34.196	27.198
700	3.339	34.260	27.263
800	3.203	34.316	27.320
900	3.061	34.341	27.353
1000	2.921	34.373	27.392
1200	2.693	34.424	27.453
1500	2.312	34.502	27.548
2000	1.933	34.586	27.646
2500	1.734	34.627	27.693
3000	1.593	34.654	27.726

Station OS09075
Longitude 51-40.0N
Latitude 170-30.0W
Depth(m) 4645

Press.	Temp.	Sal.	SIG-T
5	7.508	32.702	25.540
10	7.498	32.701	25.541
20	7.414	32.701	25.552
30	7.265	32.704	25.574
40	5.304	32.769	25.873
50	4.700	32.788	25.955
75	4.102	32.800	26.026
100	3.864	32.818	26.064
125	3.732	32.989	26.213
150	3.787	33.611	26.703
200	3.896	33.889	26.913
250	3.873	33.971	26.980
300	3.793	34.022	27.029
400	3.672	34.120	27.119
500	3.504	34.192	27.193
600	3.345	34.251	27.255
700	3.187	34.299	27.308
800	3.016	34.343	27.359
900	2.854	34.379	27.403
1000	2.723	34.408	27.438
1200	2.459	34.466	27.506
1500	2.177	34.530	27.581
2000	1.881	34.594	27.656
2500	1.676	34.635	27.704
3000	1.552	34.660	27.734

Station OS09076
Longitude 51-20.5N
Latitude 170-30.2W
Depth(m) 6140

Press.	Temp.	Sal.	SIG-T
5	7.812	32.681	25.480
10	7.804	32.681	25.481
20	7.790	32.681	25.483
30	7.710	32.681	25.495
40	5.657	32.771	25.833
50	4.635	32.800	25.971
75	4.097	32.807	26.032
100	3.896	32.851	26.087
125	3.639	33.253	26.432
150	3.806	33.724	26.791
200	3.878	33.878	26.906
250	3.851	33.950	26.966
300	3.806	34.006	27.015
400	3.691	34.101	27.102
500	3.485	34.191	27.194
600	3.289	34.261	27.269
700	3.135	34.307	27.319
800	2.951	34.351	27.372
900	2.791	34.390	27.417
1000	2.680	34.417	27.448
1200	2.464	34.465	27.505
1500	2.187	34.528	27.579
2000	1.874	34.596	27.658
2500	1.685	34.634	27.703
3000	1.569	34.659	27.731

Station OS09077
Longitude 50-59.8N
Latitude 170-30.0W
Depth(m) 6940

Press.	Temp.	Sal.	SIG-T
5	7.879	32.685	25.474
10	7.867	32.686	25.476
20	7.861	32.685	25.476
30	6.593	32.734	25.688
40	5.445	32.784	25.868
50	4.945	32.795	25.934
75	4.256	32.807	26.016
100	3.779	32.809	26.065
125	3.605	33.021	26.251
150	3.849	33.620	26.703
200	3.881	33.857	26.889
250	3.820	33.940	26.962
300	3.768	34.013	27.024
400	3.685	34.115	27.114
500	3.480	34.195	27.198
600	3.285	34.261	27.269
700	3.123	34.311	27.324
800	2.971	34.350	27.369
900	2.812	34.386	27.412
1000	2.709	34.411	27.441
1200	2.479	34.463	27.502
1500	2.218	34.522	27.571
2000	1.876	34.597	27.658
2500	1.671	34.637	27.706
3000	1.561	34.660	27.732

Station	OS09078
Longitude	50-40.0N
Latitude	170-30.1W
Depth(m)	5473

Press.	Temp.	Sal.	SIG-T
5	8.085	32.679	25.439
10	8.034	32.678	25.446
20	6.308	32.755	25.741
30	5.494	32.799	25.874
40	4.696	32.806	25.969
50	4.267	32.804	26.012
75	4.019	32.814	26.046
100	3.780	32.925	26.157
125	3.797	33.539	26.645
150	3.877	33.753	26.807
200	3.867	33.870	26.901
250	3.830	33.945	26.964
300	3.798	34.012	27.021
400	3.663	34.108	27.110
500	3.569	34.180	27.177
600	3.354	34.242	27.247
700	3.171	34.292	27.305
800	3.011	34.334	27.353
900	2.883	34.368	27.391
1000	2.747	34.401	27.430
1200	2.477	34.462	27.502
1500	2.173	34.531	27.582
2000	1.852	34.600	27.663
2500	1.665	34.638	27.707
3000	1.544	34.662	27.736

Station	OS09079
Longitude	50-50.1N
Latitude	169-45.3W
Depth(m)	5510

Press.	Temp.	Sal.	SIG-T
5	8.095	32.617	25.389
10	8.095	32.632	25.401
20	7.960	32.652	25.436
30	5.641	32.765	25.830
40	4.522	32.788	25.974
50	4.287	32.797	26.005
75	4.054	32.817	26.045
100	3.865	32.861	26.098
125	3.535	33.298	26.478
150	3.102	33.569	26.734
200	3.323	33.773	26.876
250	3.484	33.880	26.946
300	3.600	33.982	27.016
400	3.554	34.105	27.119
500	3.434	34.187	27.196
600	3.283	34.253	27.263
700	3.172	34.304	27.314
800	2.981	34.354	27.371
900	2.839	34.391	27.413
1000	2.718	34.415	27.443

Station	OS09080
Longitude	50-59.6N
Latitude	169-01.2W
Depth(m)	5255

Press.	Temp.	Sal.	SIG-T
5	7.856	32.199	25.096
10	7.861	32.218	25.110
20	7.610	32.443	25.322
30	6.620	32.454	25.464
40	4.250	32.551	25.814
50	4.289	32.635	25.876
75	3.791	32.727	25.999
100	3.661	32.956	26.193
125	4.785	33.482	26.496
150	3.281	33.540	26.694
200	3.324	33.702	26.819
250	3.551	33.833	26.902
300	3.591	33.905	26.956
400	3.668	34.050	27.064
500	3.581	34.126	27.133
600	3.470	34.205	27.207
700	3.310	34.266	27.270
800	3.148	34.326	27.334
900	2.973	34.367	27.382
1000	2.806	34.409	27.431

Station	OS09081
Longitude	51-10.2N
Latitude	168-15.0W
Depth(m)	5144

Press.	Temp.	Sal.	SIG-T
5	6.957	31.982	25.048
10	6.957	31.993	25.057
20	5.645	32.176	25.364
30	5.353	32.243	25.451
40	4.325	32.218	25.541
50	3.790	32.278	25.642
75	3.711	32.519	25.841
100	3.928	32.726	25.985
125	4.436	33.006	26.156
150	5.137	33.322	26.330
200	5.277	33.695	26.609
250	5.015	33.823	26.741
300	4.723	33.882	26.820
400	4.375	33.975	26.932
500	4.079	34.042	27.016
600	3.850	34.137	27.115
700	3.661	34.209	27.191
800	3.450	34.261	27.253
900	3.225	34.303	27.308
1000	3.038	34.349	27.362

Station	OS09082
Longitude	51-20.1N
Latitude	167-29.9W
Depth(m)	4965

Press.	Temp.	Sal.	SIG-T
5	7.699	32.252	25.159
10	7.690	32.282	25.184
20	7.449	32.425	25.330
30	7.333	32.470	25.381
40	5.403	32.637	25.757
50	4.676	32.642	25.841
75	3.501	32.775	26.064
100	3.540	33.030	26.264
125	4.191	33.454	26.537
150	4.489	33.777	26.762
200	4.370	33.909	26.880
250	4.241	33.965	26.938
300	3.982	33.998	26.991
400	3.740	34.096	27.093
500	3.742	34.195	27.172
600	3.551	34.253	27.237
700	3.320	34.295	27.293
800	3.139	34.356	27.358
900	2.967	34.390	27.401
1000	2.836	34.431	27.446

Station	OS09083
Longitude	51-30.3N
Latitude	166-44.2W
Depth(m)	4960

Press.	Temp.	Sal.	SIG-T
5	7.607	32.285	25.198
10	7.588	32.305	25.217
20	7.559	32.321	25.233
30	6.248	32.372	25.446
40	4.745	32.527	25.743
50	4.153	32.556	25.827
75	3.763	32.640	25.932
100	3.823	32.921	26.150
125	4.272	33.370	26.462
150	4.551	33.681	26.679
200	4.322	33.841	26.831
250	4.040	33.912	26.917
300	3.958	33.987	26.985
400	3.853	34.119	27.100
500	3.612	34.192	27.182
600	3.361	34.260	27.261

Station	OS09084
Longitude	51-40.0N
Latitude	166-00.0W
Depth(m)	4920

Press.	Temp.	Sal.	SIG-T
5	7.579	32.310	25.222
10	7.546	32.326	25.239
20	7.447	32.342	25.265
30	6.934	32.343	25.335
40	4.917	32.494	25.698
50	4.294	32.520	25.784
75	3.656	32.646	25.947
100	3.696	32.935	26.173
125	4.155	33.396	26.495
150	4.323	33.702	26.720
200	4.234	33.861	26.856
250	4.145	33.945	26.932
300	4.046	33.998	26.984
400	3.876	34.085	27.071
500	3.646	34.179	27.169
600	3.416	34.255	27.252
700	3.195	34.299	27.308
800	3.024	34.349	27.363
900	2.862	34.382	27.404
1000	2.721	34.421	27.448
1200	2.446	34.478	27.517
1500	2.131	34.560	27.609

Station	OS09085
Longitude	51-50.0N
Latitude	166-00.2W
Depth(m)	5290

Press.	Temp.	Sal.	SIG-T
5	7.717	32.367	25.247
10	7.716	32.363	25.244
20	7.618	32.372	25.265
30	6.770	32.424	25.421
40	4.534	32.565	25.795
50	3.881	32.641	25.922
75	3.541	32.818	26.095
100	4.080	33.294	26.421
125	4.286	33.674	26.702
150	4.113	33.751	26.781
200	3.947	33.885	26.905
250	3.876	33.946	26.960
300	4.038	34.036	27.016
400	3.831	34.117	27.101
500	3.671	34.195	27.179
600	3.451	34.246	27.241
700	3.230	34.289	27.296
800	3.058	34.330	27.345
900	2.876	34.367	27.391
1000	2.715	34.403	27.434
1200	2.451	34.466	27.507
1500	2.177	34.522	27.575

Station	OS09086
Longitude	51-59.9N
Latitude	166-00.1W
Depth(m)	5900

Press.	Temp.	Sal.	SIG-T
5	7.663	32.434	25.307
10	7.587	32.439	25.322
20	7.529	32.451	25.339
30	7.462	32.461	25.357
40	5.942	32.599	25.663
50	4.455	32.684	25.898
75	3.427	32.797	26.089
100	3.745	33.197	26.377
125	4.593	33.663	26.661
150	4.613	33.811	26.776
200	4.386	33.923	26.889
250	4.257	33.977	26.946
300	4.144	34.027	26.997
400	3.929	34.099	27.077
500	3.700	34.184	27.167
600	3.520	34.243	27.232
700	3.270	34.286	27.290
800	3.137	34.337	27.343
900	2.958	34.380	27.394
1000	2.807	34.412	27.433
1200	2.524	34.474	27.507
1500	2.220	34.542	27.587

Station	OS09087
Longitude	52-10.0N
Latitude	166-00.1W
Depth(m)	6615

Press.	Temp.	Sal.	SIG-T
5	7.564	32.206	25.142
10	7.432	32.230	25.179
20	7.198	32.268	25.241
30	4.405	32.444	25.713
40	4.471	32.658	25.876
50	4.332	32.747	25.961
75	4.291	33.024	26.185
100	4.914	33.349	26.376
125	4.698	33.552	26.561
150	5.063	33.788	26.707
200	4.866	33.893	26.813
250	4.510	33.934	26.885
300	4.371	33.971	26.929
400	4.043	34.066	27.039
500	3.803	34.146	27.127
600	3.623	34.206	27.193
700	3.432	34.259	27.253
800	3.241	34.313	27.314
900	3.030	34.364	27.375
1000	2.878	34.389	27.408
1200	2.584	34.448	27.481
1500	2.268	34.521	27.566

Station	OS09088
Longitude	52-20.0N
Latitude	166-00.0W
Depth(m)	7025

Press.	Temp.	Sal.	SIG-T
5	6.928	32.338	25.332
10	6.894	32.361	25.355
20	6.949	32.720	25.630
30	6.525	32.734	25.697
40	6.294	32.777	25.760
50	6.022	32.793	25.806
75	4.020	32.977	26.175
100	4.357	33.225	26.338
125	5.156	33.545	26.504
150	5.152	33.677	26.609
200	4.893	33.830	26.760
250	4.706	33.931	26.861
300	4.567	33.990	26.923
400	4.209	34.068	27.023
500	3.880	34.139	27.114
600	3.660	34.186	27.173
700	3.570	34.262	27.242
800	3.289	34.309	27.307
900	3.108	34.363	27.367
1000	2.996	34.414	27.418
1200	2.673	34.479	27.498
1500	2.315	34.561	27.594

Station	OS09089
Longitude	52-40.6N
Latitude	165-59.8W
Depth(m)	4613

Press.	Temp.	Sal.	SIG-T
5	6.848	31.878	24.980
10	6.799	31.918	25.018
20	6.576	31.952	25.074
30	4.733	32.046	25.363
40	3.797	32.144	25.534
50	3.554	32.222	25.619
75	3.774	32.418	25.755
100	4.084	32.627	25.891
125	4.264	32.817	26.023
150	4.572	33.057	26.182
200	5.274	33.513	26.465
250	5.274	33.761	26.662
300	5.136	33.883	26.774
400	4.542	33.983	26.920
500	4.134	34.056	27.021
600	3.914	34.138	27.109
700	3.724	34.203	27.180
800	3.404	34.257	27.254
900	3.271	34.316	27.314
1000	3.110	34.361	27.365
1200	2.785	34.440	27.457
1500	2.388	34.533	27.566

Station	OS09090
Longitude	52-59.6N
Latitude	166-00.1W
Depth(m)	3870

Press.	Temp.	Sal.	SIG-T
5	7.069	31.890	24.961
10	7.059	31.930	24.994
20	6.967	31.940	25.014
30	5.369	32.072	25.314
40	3.633	32.112	25.524
50	3.553	32.218	25.616
75	3.482	32.388	25.758
100	3.623	32.556	25.879
125	4.031	32.784	26.021
150	4.628	33.041	26.163
200	5.190	33.454	26.428
250	5.302	33.703	26.612
300	5.056	33.834	26.745
400	4.532	33.946	26.892
500	4.193	34.038	27.001
600	3.974	34.117	27.086
700	3.784	34.175	27.152
800	3.603	34.232	27.215
900	3.332	34.279	27.279
1000	3.181	34.328	27.332
1200	2.854	34.404	27.423
1500	2.419	34.493	27.531

Station	OS09091
Longitude	53-19.9N
Latitude	166-00.2W
Depth(m)	625

Press.	Temp.	Sal.	SIG-T
5	7.315	31.965	24.987
10	7.306	31.972	24.994
20	7.281	31.984	25.006
30	6.686	32.245	25.290
40	6.570	32.417	25.441
50	5.831	32.478	25.581
75	4.255	32.602	25.854
100	4.311	32.786	25.994
125	4.431	32.973	26.130
150	4.846	33.246	26.302
200	5.277	33.599	26.533
250	5.251	33.787	26.685
300	4.758	33.874	26.810
400	4.192	33.978	26.953
500	3.873	34.112	27.093
600	4.025	14.880	11.817

Station	OS09092
Longitude	53-40.0N
Latitude	165-59.9W
Depth(m)	84

Press.	Temp.	Sal.	SIG-T
5	6.775	31.959	25.054
10	6.766	31.979	25.071
20	6.713	31.931	25.040
30	4.840	32.053	25.357
40	4.225	32.128	25.480
50	3.927	32.195	25.563
75	4.384	32.350	25.640

Station	OS09093
Longitude	53-40.1N
Latitude	173-59.7W
Depth(m)	3650

Press.	Temp.	Sal.	SIG-T
5	6.655	33.068	25.943
10	6.646	33.088	25.960
20	6.639	33.100	25.970
30	6.629	33.109	25.979
40	4.110	33.186	26.332
50	3.390	33.218	26.428
75	2.946	33.212	26.463
100	2.907	33.266	26.509
125	2.591	33.266	26.536
150	2.377	33.260	26.549
200	3.410	33.486	26.639
250	3.791	32.761	26.026
300	3.832	33.803	26.851
400	3.691	33.995	27.018
500	3.541	34.108	27.122
600	3.450	34.176	27.185
700	3.330	34.233	27.242
800	3.188	34.290	27.301
900	3.017	34.344	27.360
1000	2.865	34.383	27.405
1200	2.591	34.452	27.484
1500	2.234	34.548	27.591

Station	OS09094
Longitude	53-25.8N
Latitude	176-59.0W
Depth(m)	3775

Press.	Temp.	Sal.	SIG-T
5	6.231	33.149	26.061
10	6.234	33.148	26.061
20	5.734	33.139	26.115
30	4.167	33.145	26.294
40	3.357	33.179	26.399
50	2.691	33.219	26.490
75	2.179	33.217	26.529
100	2.111	33.227	26.543
125	1.710	33.206	26.556
150	1.678	33.218	26.568
200	2.679	33.383	26.622
250	3.759	33.649	26.735
300	3.871	33.781	26.830
400	3.741	33.965	26.989
500	3.614	34.076	27.090
600	3.505	34.151	27.160
700	3.348	34.215	27.226
800	3.183	34.272	27.288
900	3.067	34.307	27.326
1000	2.897	34.347	27.373
1200	2.623	34.417	27.453
1500	2.269	34.500	27.549
2000	1.875	34.589	27.652
2500	1.696	34.631	27.700
3000	1.607	34.655	27.726

Station	OS09095
Longitude	52-50.1N
Latitude	178-28.8W
Depth(m)	3700

Press.	Temp.	Sal.	SIG-T
5	6.092	33.144	26.075
10	6.098	33.144	26.074
20	6.085	33.144	26.075
30	5.634	33.149	26.135
40	3.677	33.175	26.366
50	3.225	33.218	26.443
75	2.433	33.225	26.516
100	2.234	33.228	26.534

Station OS09096
Longitude 51-10.0N
Latitude 179-43.4W
Depth(m) 3675

Press.	Temp.	Sal.	SIG-T
5	4.776	33.017	26.128
10	4.748	33.109	26.204
20	4.726	33.135	26.227
30	4.741	33.147	26.235
40	4.757	33.160	26.244
50	4.741	33.189	26.268
75	4.413	33.352	26.433
100	4.170	33.498	26.574
125	4.111	33.551	26.622
150	4.033	33.627	26.691
200	4.034	33.654	26.712
250	4.042	33.660	26.716
300	4.036	33.743	26.783
400	3.991	33.854	26.876
500	3.731	34.056	27.062
600	3.685	34.100	27.102
700	3.411	34.209	27.215
800	3.222	34.283	27.292
900	3.099	34.320	27.333
1000	2.974	34.355	27.372
1200	2.648	34.428	27.460
1500	2.401	34.484	27.526
2000	1.945	34.581	27.641
2500	1.721	34.627	27.695
3000	1.586	34.655	27.727

Station OS09097
Longitude 51-30.6N
Latitude 179-59.9E
Depth(m) 1045

Press.	Temp.	Sal.	SIG-T
5	4.025	33.331	26.456
10	4.026	33.331	26.456
20	3.967	33.350	26.477
30	3.847	33.399	26.528
40	3.835	33.406	26.534
50	3.825	33.410	26.539
75	3.630	33.477	26.611
100	3.605	33.515	26.644
125	3.584	33.523	26.652
150	3.557	33.547	26.674
200	3.547	33.640	26.749
250	3.547	33.710	26.805
300	3.557	33.742	26.829
400	3.530	33.839	26.909
500	3.494	33.891	26.954
600	3.533	33.927	26.979
700	3.338	34.059	27.102
800	2.988	34.277	27.309
900	2.783	34.374	27.405
1000	2.592	34.432	27.468

Station OS09098
Longitude 50-50.6N
Latitude 179-46.2W
Depth(m) 5440

Press.	Temp.	Sal.	SIG-T
5	7.391	32.619	25.491
10	7.382	32.621	25.493
20	7.386	32.619	25.491
30	7.381	32.629	25.500
40	7.083	32.641	25.550
50	4.733	32.723	25.900
75	3.682	32.895	26.142
100	3.789	33.191	26.368
125	3.880	33.560	26.653
150	3.972	33.744	26.790
200	3.992	33.914	26.923
250	3.912	33.975	26.980
300	3.868	34.029	27.027
400	3.706	34.120	27.116
500	3.551	34.181	27.180
600	3.361	34.250	27.253
700	3.217	34.297	27.304
800	3.038	34.338	27.353
900	2.920	34.370	27.390
1000	2.787	34.399	27.424
1200	2.554	34.450	27.485
1500	2.210	34.524	27.573
2000	1.904	34.590	27.651
2500	1.687	34.634	27.703
3000	1.558	34.660	27.733

Station OS09099
Longitude 50-25.3N
Latitude 179-50.0W
Depth(m) 6453

Press.	Temp.	Sal.	SIG-T
5	7.050	32.774	25.659
10	7.052	32.773	25.658
20	7.046	32.773	25.659
30	6.972	32.774	25.669
40	5.923	32.751	25.786
50	4.338	32.814	26.013
75	3.488	32.976	26.226
100	3.841	33.435	26.557
125	4.068	33.753	26.787
150	4.059	33.858	26.872
200	4.001	33.951	26.951
250	3.903	34.005	27.005
300	3.823	34.066	27.061
400	3.693	34.147	27.138
500	3.506	34.219	27.215
600	3.314	34.273	27.276
700	3.123	34.321	27.332
800	2.961	34.358	27.376
900	2.800	34.395	27.420
1000	2.658	34.424	27.456
1200	2.418	34.477	27.518
1500	2.112	34.543	27.597
2000	1.834	34.603	27.666
2500	1.645	34.640	27.711
3000	1.530	34.663	27.738

Station OS09100
Longitude 50-05.4N
Latitude 179-54.5W
Depth(m) 5990

Press.	Temp.	Sal.	SIG-T
5	6.679	32.756	25.694
10	6.681	32.756	25.694
20	6.681	32.755	25.693
30	6.682	32.755	25.693
40	6.635	32.756	25.700
50	6.144	32.757	25.763
75	3.653	32.879	26.133
100	3.569	33.095	26.313
125	3.957	33.650	26.717
150	3.697	33.773	26.841
200	3.735	33.886	26.927
250	3.799	33.976	26.992
300	3.858	34.064	27.056
400	3.668	34.163	27.154
500	3.481	34.227	27.223
600	3.258	34.284	27.290
700	3.054	34.332	27.347
800	2.884	34.370	27.392
900	2.741	34.399	27.428
1000	2.599	34.433	27.468
1200	2.378	34.484	27.527
1500	2.114	34.544	27.597
2000	1.804	34.607	27.672
2500	1.632	34.642	27.713
3000	1.514	34.665	27.741

Station OS09101
Longitude 49-45.8N
Latitude 179-59.1W
Depth(m) 5178

Press.	Temp.	Sal.	SIG-T
5	6.914	32.816	25.710
10	6.902	32.816	25.712
20	6.901	32.817	25.713
30	5.535	32.856	25.915
40	3.892	32.907	26.132
50	3.801	32.913	26.145
75	3.712	32.945	26.180
100	3.274	33.271	26.481
125	3.115	33.647	26.795
150	3.233	33.734	26.853
200	3.456	33.850	26.925
250	3.485	33.926	26.983
300	3.485	33.987	27.031
400	3.445	34.107	27.131
500	3.406	34.192	27.203
600	3.244	34.257	27.269
700	3.089	34.307	27.324
800	2.922	34.353	27.375
900	2.762	34.394	27.423
1000	2.636	34.425	27.459
1200	2.399	34.479	27.522
1500	2.142	34.538	27.591
2000	1.842	34.603	27.666
2500	1.647	34.641	27.711
3000	1.536	34.664	27.738

Station OS09102
Longitude 49-30.3N
Latitude 179-60.0W
Depth(m) 4810

Press.	Temp.	Sal.	SIG-T
5	7.101	32.838	25.703
10	7.055	32.837	25.708
20	7.014	32.838	25.714
30	6.947	32.837	25.722
40	6.659	32.837	25.760
50	4.659	32.885	26.036
75	3.887	32.920	26.143
100	3.605	33.007	26.239
125	3.353	33.483	26.642
150	3.299	33.696	26.817
200	3.511	33.831	26.905
250	3.667	33.959	26.991
300	3.663	34.017	27.038
400	3.567	34.137	27.143
500	3.405	34.208	27.215
600	3.249	34.260	27.271
700	3.101	34.306	27.322
800	2.948	34.348	27.369
900	2.813	34.383	27.409
1000	2.680	34.415	27.447
1200	2.438	34.471	27.512
1500	2.183	34.530	27.581
2000	1.873	34.597	27.659
2500	1.658	34.639	27.709
3000	1.539	34.663	27.737

Station OS09103
Longitude 49-59.9N
Latitude 176-29.7E
Depth(m) 4674

Press.	Temp.	Sal.	SIG-T
5	7.037	32.715	25.614
10	7.029	32.715	25.616
20	6.884	32.720	25.638
30	6.545	32.735	25.695
40	5.128	32.779	25.901
50	3.775	32.851	26.099
75	3.466	32.947	26.205
100	3.617	33.260	26.440
125	3.847	33.550	26.648
150	4.015	33.785	26.818
200	3.992	33.913	26.923
250	3.950	33.983	26.983
300	3.885	34.051	27.043
400	3.665	34.163	27.154
500	3.434	34.236	27.235
600	3.235	34.290	27.296
700	3.053	34.331	27.346
800	2.884	34.375	27.396
900	2.719	34.410	27.440
1000	2.589	34.439	27.474
1200	2.329	34.495	27.540
1500	2.067	34.552	27.608
2000	1.770	34.614	27.680
2500	1.601	34.646	27.719
3000	1.516	34.667	27.742

Station OS09104
Longitude 50-20.5N
Latitude 176-28.9E
Depth(m) 5010

Press.	Temp.	Sal.	SIG-T
5	7.007	32.671	25.584
10	7.000	32.671	25.585
20	6.993	32.671	25.586
30	6.940	32.670	25.592
40	4.929	32.685	25.848
50	4.072	32.760	25.997
75	3.751	32.851	26.101
100	3.607	32.945	26.190
125	3.814	33.413	26.542
150	3.940	33.745	26.794
200	3.931	33.915	26.930
250	3.868	33.989	26.996
300	3.798	34.055	27.055
400	3.668	34.143	27.138
500	3.475	34.224	27.221
600	3.316	34.275	27.277
700	3.121	34.321	27.332
800	2.956	34.360	27.378
900	2.814	34.391	27.416
1000	2.673	34.421	27.452
1200	2.416	34.477	27.519
1500	2.125	34.541	27.594
2000	1.816	34.605	27.670
2500	1.631	34.642	27.713
3000	1.539	34.665	27.739

Station OS09105
Longitude 50-40.0N
Latitude 176-29.9E
Depth(m) 6480

Press.	Temp.	Sal.	SIG-T
5	7.129	32.769	25.644
10	7.078	32.655	25.562
20	7.073	32.653	25.561
30	6.999	32.655	25.572
40	4.456	32.746	25.947
50	4.033	32.795	26.029
75	3.609	32.869	26.129
100	3.726	33.088	26.292
125	3.837	33.501	26.610
150	3.931	33.773	26.818
200	3.918	33.917	26.933
250	3.897	33.982	26.987
300	3.795	34.051	27.052
400	3.620	34.152	27.150
500	3.450	34.225	27.224
600	3.293	34.273	27.278
700	3.108	34.313	27.327
800	2.931	34.355	27.376
900	2.777	34.390	27.418
1000	2.624	34.421	27.457
1200	2.384	34.479	27.523
1500	2.119	34.538	27.592
2000	1.821	34.600	27.665
2500	1.637	34.637	27.709
3000	1.542	34.658	27.732

Station OS09106
Longitude 50-59.9N
Latitude 176-29.8E
Depth(m) 6250

Press.	Temp.	Sal.	SIG-T
5	7.017	32.679	25.589
10	7.042	32.691	25.595
20	6.595	32.726	25.681
30	5.859	32.795	25.828
40	5.494	32.831	25.900
50	4.502	32.793	25.980
75	4.498	33.043	26.179
100	4.370	33.206	26.321
125	4.179	33.489	26.566
150	4.008	33.719	26.767
200	3.998	33.891	26.904
250	3.940	33.964	26.968
300	3.812	34.017	27.023
400	3.657	34.117	27.119
500	3.526	34.185	27.185
600	3.332	34.246	27.253
700	3.201	34.292	27.301
800	3.060	34.333	27.347
900	2.906	34.367	27.389
1000	2.739	34.390	27.422
1200	2.485	34.460	27.499
1500	2.207	34.520	27.571
2000	1.879	34.592	27.654
2500	1.690	34.629	27.699
3000	1.564	34.655	27.729

Station OS09107
Longitude 51-20.2N
Latitude 176-30.0E
Depth(m) 4750

Press.	Temp.	Sal.	SIG-T
5	5.369	32.900	25.969
10	5.183	32.930	26.014
20	4.992	32.999	26.090
30	4.299	32.983	26.151
40	4.346	33.090	26.232
50	4.283	33.158	26.292
75	4.240	33.303	26.412
100	4.106	33.352	26.465
125	4.033	33.365	26.483
150	3.978	33.391	26.508
200	3.829	33.460	26.578
250	3.859	33.663	26.737
300	3.842	33.822	26.865
400	3.687	33.988	27.013
500	3.683	34.119	27.117
600	3.512	34.201	27.199
700	3.297	34.258	27.265
800	3.146	34.310	27.321
900	2.994	34.337	27.357
1000	2.899	34.369	27.391
1200	2.658	34.425	27.456
1500	2.333	34.495	27.540
2000	1.939	34.580	27.640
2500	1.717	34.624	27.692
3000	1.591	34.651	27.723

Station	OS09108
Longitude	51-39.8N
Latitude	176-29.8E
Depth(m)	3934

Press.	Temp.	Sal.	SIG-T
5	5.813	32.851	25.878
10	5.814	32.850	25.877
20	5.464	32.980	26.021
30	4.902	33.129	26.203
40	4.469	33.198	26.305
50	4.312	33.217	26.336
75	4.092	33.273	26.403
100	3.963	33.325	26.457
125	3.853	33.357	26.494
150	3.812	33.384	26.519
200	3.751	33.456	26.582
250	3.729	33.518	26.634
300	3.738	33.619	26.714
400	3.772	33.776	26.836
500	3.787	33.971	26.990
600	3.693	34.112	27.110
700	3.363	34.223	27.231
800	3.316	34.239	27.249
900	3.213	34.273	27.285
1000	3.089	34.317	27.331
1200	2.948	34.368	27.385
1500	2.413	34.481	27.522
2000	1.953	34.580	27.639
2500	1.722	34.627	27.694
3000	1.589	34.654	27.726

Station	OS09109
Longitude	51-58.3N
Latitude	176-51.2E
Depth(m)	160

Press.	Temp.	Sal.	SIG-T
5	3.976	33.328	26.458
10	3.973	33.328	26.459
20	3.902	33.326	26.464
30	3.888	33.332	26.471
40	3.895	33.337	26.474
50	3.887	33.343	26.480
75	3.926	33.362	26.491
100	3.994	33.396	26.511

Station	OS09110
Longitude	52-22.7N
Latitude	175-13.9E
Depth(m)	740

Press.	Temp.	Sal.	SIG-T
5	6.499	32.905	25.835
10	6.492	32.907	25.838
20	6.491	32.909	25.839
30	6.470	32.904	25.838
40	6.473	32.904	25.838
50	6.094	32.913	25.892
75	5.368	32.968	26.023
100	3.627	33.134	26.339
125	3.430	33.260	26.457
150	3.565	33.373	26.535
200	3.740	33.544	26.654
250	3.751	33.591	26.690
300	3.741	33.690	26.770
400	3.717	33.872	26.917
500	3.666	34.011	27.033
600	3.578	34.087	27.102
700	3.216	34.241	27.259

Station	OS09111
Longitude	52-59.9N
Latitude	177-00.6E
Depth(m)	3939

Press.	Temp.	Sal.	SIG-T
5	6.383	33.013	25.934
10	6.379	33.013	25.936
20	6.290	33.013	25.947
30	6.205	33.015	25.959
40	5.060	33.072	26.140
50	4.026	33.120	26.288
75	3.250	33.153	26.389
100	2.784	33.195	26.463
125	2.613	33.215	26.493
150	2.749	33.259	26.517
200	3.325	33.444	26.614
250	3.973	33.658	26.722
300	4.042	33.793	26.822
400	3.839	33.942	26.961
500	3.763	34.042	27.048
600	3.661	34.125	27.124
700	3.454	34.189	27.195
800	3.307	34.243	27.252
900	3.163	34.286	27.300
1000	2.994	34.332	27.353

Station	OS09112
Longitude	53-33.2N
Latitude	178-00.1E
Depth(m)	3903

Press.	Temp.	Sal.	SIG-T
5	6.680	33.096	25.962
10	6.679	33.096	25.962
20	6.438	33.102	25.998
30	6.359	33.102	26.008
40	5.427	33.122	26.138
50	4.500	33.170	26.279
75	2.828	33.227	26.485
100	2.699	33.250	26.514
125	2.667	33.266	26.529
150	2.776	33.310	26.556
200	3.603	33.522	26.649
250	3.870	33.694	26.761
300	3.880	33.830	26.868
400	3.759	33.985	27.003
500	3.639	34.076	27.087
600	3.497	34.154	27.163
700	3.358	34.213	27.224
800	3.227	34.265	27.277
900	3.073	34.309	27.327
1000	2.912	34.352	27.376
1200	2.639	34.418	27.453
1500	2.287	34.498	27.547
2000	1.901	34.585	27.647
2500	1.695	34.632	27.700
3000	1.603	34.656	27.727

Station	OS09113
Longitude	55-09.6N
Latitude	179-19.3E
Depth(m)	3830

Press.	Temp.	Sal.	SIG-T
5	5.812	33.022	26.013
10	5.812	33.040	26.027
20	5.700	33.047	26.046
30	5.441	33.064	26.090
40	4.109	33.090	26.256
50	3.191	33.138	26.382
75	2.056	33.183	26.512
100	1.747	33.200	26.548
125	1.625	33.196	26.554
150	1.574	33.194	26.556
200	1.574	33.241	26.593
250	3.691	33.621	26.720
300	3.871	33.733	26.791
400	3.831	33.887	26.918
500	3.661	34.047	27.062
600	3.544	34.130	27.140
700	3.461	34.165	27.176
800	3.341	34.205	27.219
900	3.212	34.252	27.269
1000	3.019	34.308	27.331
1200	2.696	34.388	27.424
1500	2.331	34.476	27.525

Station OS09114
Longitude 55-59.1N
Latitude 179-59.2W
Depth(m) 3840

Press.	Temp.	Sal.	SIG-T
5	6.663	33.141	25.999
10	6.659	33.140	26.000
20	6.401	33.142	26.034
30	6.351	33.144	26.042
40	3.630	33.143	26.345
50	3.402	33.157	26.378
75	2.160	33.199	26.517
100	2.073	33.209	26.531
125	2.134	33.228	26.542
150	1.937	33.222	26.552
200	3.005	33.453	26.650
250	3.818	33.680	26.754
300	3.871	33.787	26.835
400	3.789	33.941	26.966
500	3.646	34.052	27.068
600	3.482	34.132	27.147
700	3.341	34.201	27.216
800	3.212	34.260	27.275
900	3.062	34.301	27.321
1000	2.937	34.339	27.363
1200	2.628	34.416	27.452
1500	2.280	34.495	27.545
2000	1.909	34.583	27.644
2500	1.719	34.628	27.695
3000	1.620	34.654	27.723

Station OS09115
Longitude 56-30.2N
Latitude 178-58.4E
Depth(m) 3845

Press.	Temp.	Sal.	SIG-T
5	6.178	33.124	26.048
10	6.165	33.127	26.052
20	6.045	33.127	26.067
30	5.591	33.131	26.126
40	4.039	33.150	26.311
50	3.341	33.177	26.399
75	2.797	33.242	26.499
100	2.654	33.260	26.526
125	2.412	33.252	26.540
150	1.923	33.228	26.558
200	2.768	33.410	26.636
250	3.752	33.649	26.737
300	3.894	33.773	26.821
400	3.786	33.934	26.960
500	3.661	34.065	27.077
600	3.539	34.143	27.151
700	3.394	34.204	27.213
800	3.245	34.252	27.265
900	3.080	34.294	27.314
1000	2.942	34.340	27.364

Station OS09116
Longitude 56-59.9N
Latitude 178-00.1E
Depth(m) 3840

Press.	Temp.	Sal.	SIG-T
5	6.093	33.055	26.004
10	5.691	33.072	26.067
20	4.701	33.116	26.215
30	4.050	33.125	26.290
40	2.795	33.152	26.428
50	2.257	33.173	26.489
75	1.742	33.174	26.528
100	1.657	33.186	26.543
125	1.626	33.198	26.555
150	1.672	33.209	26.560
200	1.688	33.245	26.589
250	2.914	33.496	26.692
300	3.828	33.727	26.791
400	3.832	33.915	26.940
500	3.740	34.029	27.040
600	3.573	34.129	27.136
700	3.349	34.190	27.206
800	3.187	34.249	27.269
900	3.021	34.299	27.324
1000	2.871	34.343	27.372
1200	2.599	34.416	27.454
1500	2.283	34.494	27.543
2000	1.914	34.582	27.643
2500	1.726	34.626	27.694
3000	1.625	34.653	27.722

Station OS09117
Longitude 56-29.8N
Latitude 176-58.4E
Depth(m) 3855

Press.	Temp.	Sal.	SIG-T
5	6.319	33.047	25.970
10	6.106	33.066	26.012
20	5.635	33.062	26.066
30	4.914	33.087	26.169
40	3.104	33.121	26.376
50	2.352	33.133	26.449
75	2.017	33.165	26.501
100	2.002	33.189	26.521
125	1.915	33.204	26.540
150	1.931	33.219	26.550
200	1.838	33.238	26.572
250	3.017	33.475	26.666
300	3.799	33.681	26.757
400	3.817	33.867	26.904
500	3.674	34.007	27.029
600	3.558	34.113	27.125
700	3.414	34.182	27.194
800	3.243	34.244	27.259
900	3.101	34.291	27.310
1000	2.929	34.328	27.355

Station OS09118
Longitude 55-41.8N
Latitude 178-04.0E
Depth(m) 3850

Press.	Temp.	Sal.	SIG-T
5	5.988	33.090	26.045
10	5.901	33.097	26.062
20	5.579	33.101	26.103
30	4.710	33.115	26.213
40	4.031	33.135	26.300
50	3.282	33.166	26.396
75	2.464	33.200	26.493
100	2.209	33.209	26.521
125	2.385	33.254	26.543
150	2.411	33.285	26.566
200	3.336	33.504	26.660
250	3.828	33.684	26.757
300	3.869	33.801	26.845
400	3.797	33.977	26.993
500	3.667	34.074	27.083
600	3.526	34.147	27.155
700	3.389	34.206	27.216
800	3.251	34.256	27.268
900	3.111	34.299	27.316
1000	2.993	34.331	27.352
1200	2.701	34.404	27.436
1500	2.332	34.489	27.535
2000	1.943	34.577	27.637
2500	1.738	34.624	27.691
3000	1.624	34.653	27.723

Station OS09119
Longitude 54-60.0N
Latitude 165-59.1W
Depth(m) 135

Press.	Temp.	Sal.	SIG-T
5	6.217	32.515	25.563
10	6.096	32.525	25.586
20	6.075	32.594	25.642
30	6.059	32.597	25.647
40	5.709	32.604	25.695
50	4.927	32.647	25.818
75	4.105	32.786	26.015
100	3.612	32.955	26.197
125	3.679	32.985	26.215

Station	OS09120
Longitude	55-30.0N
Latitude	165-59.9W
Depth(m)	121

Press.	Temp.	Sal.	SIG-T
5	7.996	31.973	24.898
10	7.620	31.967	24.946
20	7.592	31.981	24.962
30	5.913	32.117	25.286
40	4.773	32.222	25.498
50	4.222	32.343	25.651
75	3.277	32.550	25.906
100	3.534	32.878	26.143

Station	OS09121
Longitude	55-59.5N
Latitude	166-00.9W
Depth(m)	113

Press.	Temp.	Sal.	SIG-T
5	8.078	31.905	24.833
10	7.730	31.902	24.880
20	7.456	31.904	24.920
30	5.932	32.052	25.232
40	4.377	32.155	25.486
50	3.872	32.229	25.595
75	3.235	32.459	25.836
100	3.550	32.612	25.930

Station	OS09122
Longitude	55-59.8N
Latitude	167-00.0W
Depth(m)	133

Press.	Temp.	Sal.	SIG-T
5	7.747	31.930	24.899
10	7.594	31.924	24.916
20	7.455	31.933	24.943
30	7.404	31.943	24.957
40	3.155	32.096	25.554
50	2.262	32.072	25.607
75	2.923	32.423	25.835
100	3.329	32.782	26.086
125	3.344	32.790	26.090

Station	OS09123
Longitude	56-00.1N
Latitude	168-00.6W
Depth(m)	136

Press.	Temp.	Sal.	SIG-T
5	6.684	32.126	25.197
10	6.313	32.234	25.329
20	5.860	32.233	25.384
30	3.317	32.152	25.585
40	2.746	32.255	25.716
50	2.918	32.416	25.830
75	3.437	32.823	26.108
100	3.424	32.856	26.136
125	3.414	32.873	26.150

Station	OS09124
Longitude	55-59.7N
Latitude	170-00.2W
Depth(m)	220

Press.	Temp.	Sal.	SIG-T
5	6.693	32.374	25.391
10	6.692	32.428	25.434
20	5.525	32.444	25.590
30	4.769	32.484	25.707
40	3.887	32.559	25.856
50	3.829	32.573	25.873
75	3.434	32.749	26.050
100	3.398	32.984	26.241
125	3.364	33.085	26.324
150	3.380	33.115	26.347
200	3.443	33.262	26.458

Station	OS09125
Longitude	56-29.5N
Latitude	168-59.9W
Depth(m)	102

Press.	Temp.	Sal.	SIG-T
5	6.800	31.989	25.074
10	6.714	31.999	25.093
20	6.185	31.990	25.153
30	2.885	31.967	25.474
40	1.862	32.042	25.612
50	1.882	32.109	25.664
75	1.985	32.157	25.696

Station	OS09126
Longitude	56-29.7N
Latitude	168-00.0W
Depth(m)	115

Press.	Temp.	Sal.	SIG-T
5	6.946	31.741	24.859
10	6.945	31.752	24.868
20	7.009	31.811	24.907
30	6.818	31.799	24.922
40	2.014	31.910	25.495
50	1.837	32.081	25.645
75	1.850	32.124	25.679
100	1.908	32.159	25.703

Station	OS09127
Longitude	56-30.1N
Latitude	165-59.9W
Depth(m)	84

Press.	Temp.	Sal.	SIG-T
5	7.149	31.501	24.644
10	6.777	31.500	24.692
20	6.481	31.555	24.773
30	3.878	31.476	24.995
40	-0.666	31.669	25.443
50	-0.448	31.718	25.476
75	0.086	31.810	25.527

Station	OS09128
Longitude	57-00.2N
Latitude	165-59.6W
Depth(m)	70

Press.	Temp.	Sal.	SIG-T
5	6.473	31.283	24.559
10	6.380	31.283	24.571
20	3.937	31.285	24.838
30	-0.715	31.530	25.333
40	-0.718	31.533	25.335
50	-0.718	31.530	25.333

Station	OS09129
Longitude	56-59.0N
Latitude	166-59.9W
Depth(m)	75

Press.	Temp.	Sal.	SIG-T
5	7.118	31.498	24.646
10	6.276	31.500	24.755
20	2.686	31.427	25.059
30	-0.234	31.591	25.365
40	-0.231	31.589	25.363
50	-0.227	31.587	25.361

Station	OS09130
Longitude	56-59.7N
Latitude	168-00.1W
Depth(m)	77

Press.	Temp.	Sal.	SIG-T
5	6.745	31.654	24.818
10	6.228	31.613	24.850
20	5.932	31.614	24.886
30	5.242	31.594	24.950
40	0.059	31.722	25.458
50	0.060	31.723	25.459

Station	OS09131
Longitude	57-30.0N
Latitude	167-00.1W
Depth(m)	70

Press.	Temp.	Sal.	SIG-T
5	6.582	31.031	24.347
10	6.178	31.009	24.380
20	2.755	31.141	24.825
30	-0.729	31.484	25.296
40	-0.736	31.482	25.294
50	-0.744	31.483	25.296

Station	OS09132
Longitude	57-30.0N
Latitude	166-00.5W
Depth(m)	64

Press.	Temp.	Sal.	SIG-T
5	6.096	31.283	24.605
10	5.839	31.281	24.634
20	4.620	31.340	24.814
30	0.371	31.469	25.239
40	0.031	31.519	25.295
50	-0.057	31.522	25.301

Station	OS09133
Longitude	57-59.5N
Latitude	166-00.2W
Depth(m)	54

Press.	Temp.	Sal.	SIG-T
5	5.579	31.245	24.636
10	4.956	31.235	24.697
20	4.456	31.271	24.776
30	3.106	31.389	24.995
40	3.076	31.390	24.998

Station	OS09134
Longitude	58-30.1N
Latitude	165-59.6W
Depth(m)	45

Press.	Temp.	Sal.	SIG-T
5	5.575	31.473	24.817
10	5.211	31.594	24.953
20	4.584	31.674	25.084
30	4.582	31.674	25.083
40	4.586	31.674	25.083

Station	OS09135
Longitude	62-00.0N
Latitude	172-00.1W
Depth(m)	55

Press.	Temp.	Sal.	SIG-T
5	3.440	30.726	24.438
10	3.441	30.725	24.438
20	2.271	30.786	24.578
30	-1.570	31.945	25.693
40	-1.638	32.209	25.908

Station	OS09136
Longitude	62-29.5N
Latitude	171-60.0W
Depth(m)	45

Press.	Temp.	Sal.	SIG-T
5	4.858	30.347	24.003
10	4.856	30.346	24.003
20	1.525	31.419	25.136
30	-1.499	32.696	26.301
40	-1.504	32.692	26.298

Station	OS09137
Longitude	63-00.5N
Latitude	172-00.9W
Depth(m)	53

Press.	Temp.	Sal.	SIG-T
5	4.725	30.948	24.493
10	4.688	30.963	24.509
20	3.069	31.339	24.958
30	-1.185	32.205	25.894
40	-1.652	32.486	26.134

Station	OS09138
Longitude	62-53.4N
Latitude	172-01.5W
Depth(m)	50

Press.	Temp.	Sal.	SIG-T
5	4.778	30.535	24.161
10	4.778	30.535	24.160
20	3.407	31.263	24.869
30	-1.325	32.366	26.028
40	-1.628	32.532	26.170

Station	OS09139
Longitude	63-00.0N
Latitude	174-00.2W
Depth(m)	74

Press.	Temp.	Sal.	SIG-T
5	4.311	30.840	24.449
10	4.304	30.840	24.450
20	4.187	30.867	24.482
30	-1.601	32.036	25.767
40	-1.497	32.100	25.817
50	-1.444	32.128	25.838

Station	OS09140
Longitude	62-30.1N
Latitude	173-59.9W
Depth(m)	68

Press.	Temp.	Sal.	SIG-T
5	3.610	30.781	24.467
10	3.605	30.781	24.468
20	3.543	30.791	24.481
30	-1.278	31.984	25.717
40	-1.660	32.195	25.898
50	-1.668	32.195	25.898

Station	OS09141
Longitude	58-41.1N
Latitude	170-19.2W
Depth(m)	70

Press.	Temp.	Sal.	SIG-T
5	5.371	31.581	24.925
10	5.355	31.580	24.926
20	5.006	31.579	24.964
30	3.088	31.537	25.114
40	0.112	31.575	25.337
50	0.058	31.588	25.350

Station	OS09142
Longitude	55-15.9N
Latitude	167-56.4W
Depth(m)	424

Press.	Temp.	Sal.	SIG-T
5	7.191	32.906	25.744
10	7.180	32.905	25.744
20	6.858	32.934	25.811
30	6.182	32.964	25.922
40	5.545	33.043	26.062
50	4.607	33.169	26.267
75	4.086	33.294	26.420
100	4.016	33.334	26.460
125	4.032	33.389	26.502
150	3.855	33.402	26.530
200	3.779	33.514	26.626
250	3.747	33.572	26.676
300	3.727	33.641	26.732
400	3.702	33.734	26.809

Station	OS09143
Longitude	41-30.0N
Latitude	145-46.7E
Depth(m)	6860

Press.	Temp.	Sal.	SIG-T
5	17.009	32.658	23.716
10	16.814	32.823	23.889
20	12.778	36.024	27.232
30	12.171	36.347	27.603
40	10.184	36.920	28.420
50	5.601	33.454	26.380
75	4.099	33.398	26.502
100	4.293	33.501	26.563
125	3.489	33.448	26.602
150	4.748	33.680	26.657
200	3.692	33.641	26.736
250	3.481	33.710	26.811
300	3.907	33.849	26.880
400	3.324	33.915	26.990
500	3.473	34.046	27.080
600	3.255	34.137	27.172
700	3.108	34.214	27.248
800	3.183	34.307	27.315
900	2.956	34.352	27.372
1000	2.802	34.392	27.417
1200	2.546	34.453	27.489
1500	2.295	34.521	27.564
2000	1.927	34.593	27.651
2500	1.685	34.636	27.704
3000	1.621	34.651	27.721

5. Data on Drift Gillnet Research

Seven gillnet researches were performed during this cruise. The operations were supervised by the captain, Deck officers, crew and research staff were engaged in the work.

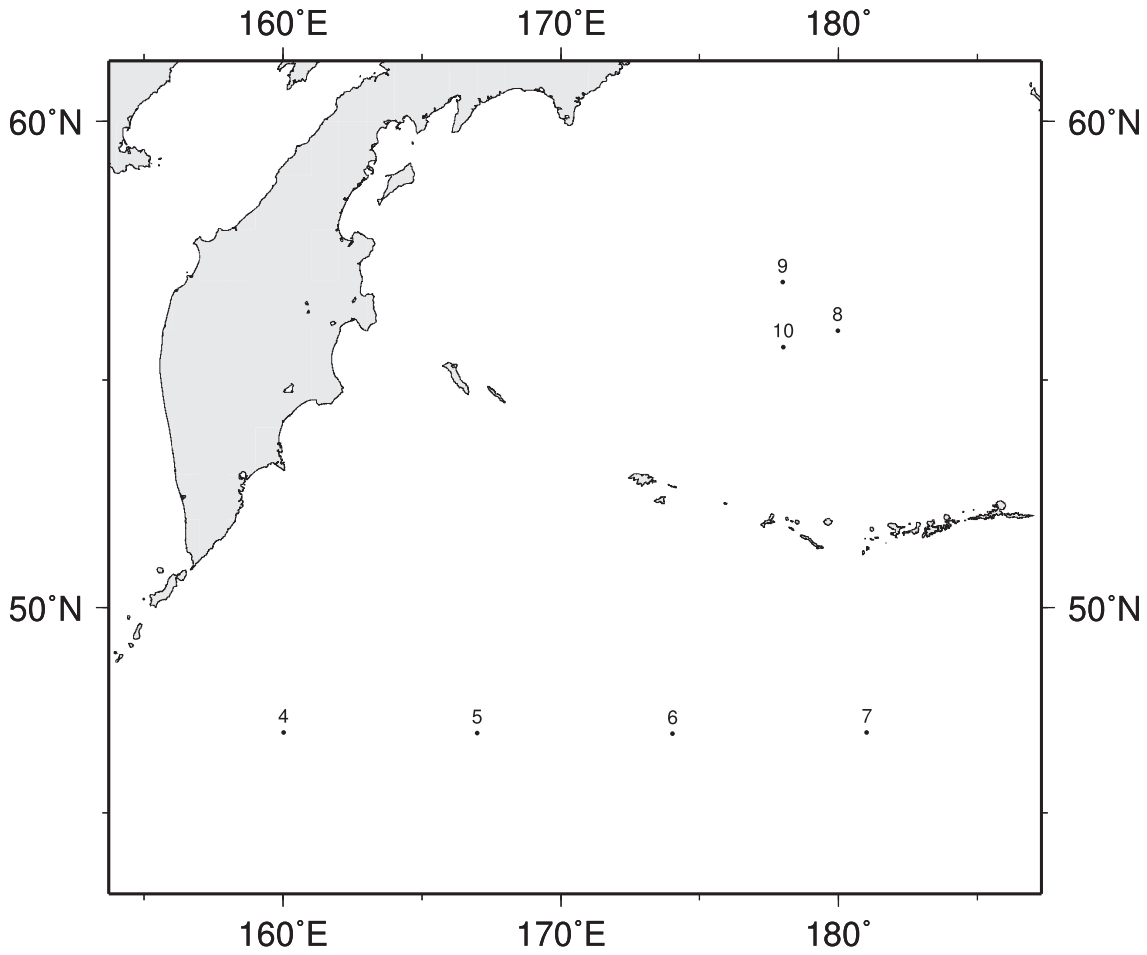


Figure 3: Locations of drift gillnet research

Table 3. Position and research conditions of surface drift gillnet sampling at each station during the Oshoro maru Cruise #202-Leg 1,Leg2, 2009.

Station	Date and Time (S.M.T.*1)		T.D.*2	Set Position		D.S.*3	Wr*4	Wind (Force)
	Net set	Net haul		Lat.	Long.			
Cruise #202 - Leg 1								
OSG 0904	June 6 17:50-18:15	June 7 04:25-05:30	+10h	47-00.7 N	160-01.2 E	270	o	West-5
OSG 0905	June 8 17:45-18:05	June 9 04:20-05:05	+11h	47-00.3 N	166-59.6 E	335	c	NNW-5
OSG 0906	June 10 17:48-18:09	June 11 04:17-05:03	+11h	46-59.6 N	174-01.1 E	150	o	NW-5
OSG 0907	June 11 17:50-18:10	June 12 04:20-05:00	-12h	47-01.1 N	179-00.3 W	050	o	SW-5
Cruise #202 - Leg 2								
OSG 0908	June 30 18:59-19:17	July 1 04:25-05:17	-11h	56-00.6 N	179-57.8 E	125	o	ESE-5
OSG 0909	July 1 18:29-18:50	July 2 04:22-05:25	-11h	56-58.8 N	177-58.9 E	270	f	East-3
OSG 0910	July 2 18:25-18:45	July 3 04:43-05:50	-11h	55-40.6 N	178-00.2 E	070	o	WNW-2

*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 (o: 100% clouded, c: over 75-99% clouded).

Table 4. Nets composition

No. of research	Mesh size (mm)																				
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0904	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0905	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0906	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0907	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0908	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0909	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG0910	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49

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

Sockeye (catch number)

No. of	Mesh size (mm)																					
research	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0904	0	0	0	0	0	2	0	2	3	0	1	2	0	3	0	0	0	0	0	0	0	13
OSG0905	0	2	3	4	9	16	17	4	0	0	6	7	7	2	0	0	0	0	0	0	0	77
OSG0906	0	0	0	1	3	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8
OSG0907	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0908	0	0	1	2	2	1	3	1	1	0	3	4	0	3	0	0	0	0	0	0	0	21
OSG0909	0	2	3	1	1	1	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	13
OSG0910	0	2	5	3	8	4	0	0	1	1	0	1	0	2	0	0	0	0	0	0	0	27

Chum (catch number)

No. of	Mesh size (mm)																					
research	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0904	0	0	0	0	1	2	3	0	3	0	1	1	2	1	0	0	0	0	0	0	0	14
OSG0905	0	0	0	1	0	1	8	8	3	1	8	7	5	7	0	0	0	0	0	0	0	49
OSG0906	0	0	0	1	8	5	4	7	4	0	5	5	5	7	0	0	0	0	0	1	0	52
OSG0907	0	13	49	9	3	2	2	0	0	1	1	0	1	1	0	0	0	0	0	1	0	83
OSG0908	0	0	0	1	2	5	7	10	2	0	9	3	0	6	0	0	0	0	0	0	0	45
OSG0909	0	0	3	0	0	0	6	6	7	0	5	6	2	12	0	0	0	0	0	0	0	47
OSG0910	0	1	53	50	9	17	12	15	3	1	15	8	10	11	0	0	0	0	0	0	0	205

Pink (catch number)

No. of	Mesh size (mm)																					
research	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0904	0	3	1	1	38	60	75	37	2	0	79	75	70	33	0	0	0	0	0	0	0	474
OSG0905	0	1	1	2	11	14	20	19	0	0	75	22	13	11	0	0	0	0	0	0	0	189
OSG0906	0	0	1	2	19	25	8	0	0	0	1	1	0	0	0	0	0	0	0	0	0	57
OSG0907	0	0	8	1	3	5	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	21
OSG0908	0	0	1	3	16	56	38	21	2	0	15	28	2	18	0	0	0	0	0	0	0	200
OSG0909	2	6	1	17	123	255	248	61	11	0	187	136	54	84	0	0	0	0	0	0	1	1186
OSG0910	0	0	0	5	47	95	91	26	5	0	95	0	44	60	0	0	0	0	0	0	0	468

Coho (catch number)

No. of	Mesh size (mm)																					
research	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0904	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0905	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0906	0	0	0	0	1	0	1	3	0	0	3	2	0	1	0	0	0	0	0	0	0	11
OSG0907	0	0	0	1	4	3	6	3	0	0	1	6	0	0	0	0	0	0	0	0	0	24
OSG0908	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0910	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Chinook (catch number)

No. of	Mesh size (mm)																					
research	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0904	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0905	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0906	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	4
OSG0907	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0908	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
OSG0909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0910	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2

Steelhead (catch number)

No. of	Mesh size (mm)																					
research	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG0904	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0905	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0906	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0907	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3
OSG0908	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG0910	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

SOCKEYE SALMON

St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G04	A112	587	2882	M	6
G04	A115	548	2061	F	64
G04	A115	594	2619	M	6
G04	A121	612	2957	F	24
G04	A121	540	1931	F	64
G04	A121	500	1574	F	27
G04	C093	588	2746	M	7
G04	C093	490	1531	F	40
G04	C121	570	2717	F	71
G04	C121	589	2784	M	10
G04	C138	586	2549	M	44
G04	C138	583	2356	F	73
G04	C138	609	2831	M	21
G05	A112	528	1809	M	1
G05	A112	578	2243	F	27
G05	A112	489	1492	M	8
G05	A112	508	1794	M	6
G05	A112	484	1367	F	23
G05	A112	476	1248	M	1
G05	A115	506	1560	M	16
G05	A115	554	1919		
G05	A115	508	1778	F	30
G05	A115	486	1413	M	13
G05	A115	459	1265	M	7
G05	A115	498	1545	F	23
G05	A115	550	2037	F	39
G05	A118	508	1510	M	6
G05	A118	478	1250	F	32
G05	A118	486	1300	F	23
G05	A118	540	1680	M	24
G05	A118	454	1140	M	2
G05	A118	498			
G05	A118	520	1680	F	24
G05	A121	484	1440	F	24
G05	A121	471	1339	M	19
G05	C055	272	255	F	1
G05	C055	280	280	F	3
G05	C063	356	566	M	1
G05	C063	464	1155	F	8
G05	C063	288	306	F	2
G05	C072	412	940	F	14
G05	C072	378	640	M	15
G05	C072	448	1100	M	2
G05	C072	470	1220	F	13
G05	C082	428	740	F	12
G05	C082	424	920	F	12
G05	C082	440	910	M	2
G05	C082	460	920	F	13
G05	C082	452	1020	M	2
G05	C082	448	1020		
G05	C082	470	1150	M	3
G05	C082	460	1140		
G05	C082	468	1100	M	2
G05	C093	370	623	F	22
G05	C093	430	839	M	1
G05	C093	510	1530	F	10
G05	C093	492	1465	F	24
G05	C093	504	1436	F	7
G05	C093	436	938	M	1
G05	C093	439	982	M	1
G05	C093	454	1111	M	10
G05	C093	504	1493	F	5
G05	C093	421	894	F	8
G05	C093	471	1242	F	9
G05	C093	453	1107	F	6
G05	C093	457	1114	M	1
G05	C093	451	1096	M	1
G05	C093	486	1293		
G05	C106	508	1252	M	1
G05	C106	514	1724	M	2
G05	C106	464	1184	M	1
G05	C106	502	1538	F	24
G05	C106	486	1611	F	30
G05	C106	446	965	F	6
G05	C106	470	1216		
G05	C106	469	1286	M	3
G05	C106	519	1757	F	56
G05	C106	546	1990	M	1
G05	C106	434	969		
G05	C106	445	1020	M	1
G05	C106	446	1040		
G05	C106	478	1361	F	12
G05	C106	506	1429	M	1
G05	C121	506	1340	F	32
G05	C121	478	1264	M	4
G05	C121	536	2200	F	43
G05	C121	580	2580	F	42
G06	A112	490	1324	M	1
G06	C072	300	290	M	1
G06	C082	389	708	F	5
G06	C082	444	829	M	
G06	C082	426	841	F	6
G06	C093	414	814	F	7
G06	C106	431	981	F	9
G06	C106	512	1430	F	16
G08	A112	504	1580	F	43
G08	A112	600	2700	M	66
G08	A112	606	3300	M	16
G08	A115	540	2097	M	21
G08	A115	524	1920	F	83
G08	A115	562	2774	F	64
G08	A115	618	3412	M	13
G08	A121	624	3166	M	38
G08	A121	547	1950	M	6
G08	A121	600	2584	M	10
G08	C063	630	3700	M	56
G08	C072	451	1060	M	1
G08	C082	608	3428	M	61
G08	C082	481	1261	M	2
G08	C093	476	1318	M	2
G08	C106	553	2261	F	81
G08	C106	550	2125	F	150
G08	C106	617	2850	F	57
G08	C121	638	3578	M	80
G08	C138	590	2776	F	100
G09	A118	529	1931	F	40
G09	A118	552	1982	M	2
G09	A118	624	3584	M	52
G09	C055	312	367	F	2
G09	C055	494	1323	M	1
G09	C063	398	285	F	1
G09	C063	531	1736	M	2
G09	C063	350	444	M	1
G09	C072	347	431	F	3
G09	C093	458	1155	F	7
G09	C121	499	1379	M	2
G09	C138	620	3230	M	38
G10	A115	584	2058	M	12
G10	A121	514	1534	M	1
G10	A121	534	1892	F	57
G10	C055	440	961	M	1
G10	C055	446	1120	M	1
G10	C063	336	372		
G10	C063	574	2368	M	55
G10	C063	324	391	F	1
G10	C063	336	395	F	1
G10	C063	319	290	M	1
G10	C072	574	1539	F	154
G10	C072	294	280	F	2
G10	C082	429	976	F	8
G10	C082	449	1104	F	8
G10	C082	438	1058	F	7
G10	C082	469	1315	M	2
G10	C082	418	834	M	1
G10	C082	461	1153	F	4
G10	C082	441	1116	F	10
G10	C082	431	975	M	1
G10	C093	454	1148	M	1
G10	C093	448	1029	F	5
G10	C093	508	1532	M	1
G10	C093	444	1023	F	9
G10	C138	604	3014	M	24
G10	C157	589	2899	F	256

CHUM SALMON

St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G04	A112	520	1665	F	23
G04	A115	580	2394	M	4
G04	A118	512	1670	F	25
G04	A118	524	1725	F	18
G04	A121	516	1753	M	60
G04	C082	486	1250	M	1
G04	C093	534	1903	F	49
G04	C093	445	1032	F	8
G04	C106	527	1729	F	18
G04	C106	516	1655	M	7
G04	C106	528	1597	F	22
G04	C138	530	1638	M	10
G04	C138	590	2447	F	44
G04	C138	578	2319	M	7
G05	A112	547	1840	M	1
G05	A112	524	1736	M	1
G05	A112	508	1629	F	29
G05	A112	550	1915	M	1
G05	A112	518	1721	M	7
G05	A112	554		F	89
G05	A112	534	1844	F	14
G05	A112	530	1875	F	41
G05	A115	576	2423	M	17
G05	A115	600	2581	M	6
G05	A115	569	2537	F	83
G05	A115	504	1807	F	89
G05	A115	592	2075	M	2
G05	A118	590	2400	M	6
G05	A118	534	2050	M	8
G05	A118	658	3100	M	68
G05	A118	598	2360	M	14
G05	A118	490	1520	M	38
G05	A121	557	2439	F	24
G05	A121	504	1556	M	8
G05	A121	560	2138	M	5
G05	A121	552	1888	F	33
G05	A121	535	2267	F	235
G05	A121	512	1853	M	8
G05	A121	551	1969	F	64
G05	C072	548	2300	F	44
G05	C093	473	1278	F	27
G05	C106	584	2510	M	27
G05	C106	624	2911	M	5
G05	C106	504	1640	F	53
G05	C106	540	1713	M	1

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

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	C106	574	2380	F	47	G07	C055	313	320	F	2	G07	C106	472	1346	F	16
G05	C106	514	1665	M	14	G07	C055	312	325	M	1	G07	C106	476		F	9
G05	C106	530	1969	F	60	G07	C055	290	262	F	2	G07	C157	460	1239	F	10
G05	C106	525	1877	F	10	G07	C055	296	272	F	2	G07	F037	316	396	M	1
G05	C121	503	1720	F	44	G07	C055	324	370	M	1	G08	A112	600	2550	M	16
G05	C121	512	1510	F	18	G07	C055	304	278	M	1	G08	A112	518	1740	F	17
G05	C121	560	1820	F	104	G07	C055	307	319	M	1	G08	A112	506		M	5
G05	C121	524	1600	F	23	G07	C055	308	331	M	1	G08	A112	540	1920	M	4
G05	C121	518	1740	M	3	G07	C055	312	340	F	2	G08	A112	610	2600	F	58
G05	C121	532	1750	F	32	G07	C063	332	438	M	1	G08	A112	518	1660	F	15
G05	C121	537	2020	F	40	G07	C063	321	373	M	1	G08	A112	538	1550	F	18
G05	C121	579	2120	M	8	G07	C063	340	394	F	2	G08	A112	510	1640	M	6
G05	C138	569	2600	M	13	G07	C063	332	415	F	2	G08	A112	554	1820	M	10
G05	C138	617	2950	M	8	G07	C063	308	349	M	1	G08	A115	513	1758	F	10
G05	C138	546	2050	F	28	G07	C063	298	312	F	2	G08	A115	546	1899	M	3
G05	C157	497	1396	M	1	G07	C063	292	284	M	1	G08	A115	559	2343	F	57
G06	A112	504	1520	F	24	G07	C063	328	400	M	1	G08	A121	547	2041	F	40
G06	A112	518	1620	M	2	G07	C063	340	420	M	1	G08	A121	503	1560	M	1
G06	A112	542	1940	F	54	G07	C063	310	318	F	2	G08	A121	596	2406	M	8
G06	A112	494	1480	M	2	G07	C063	315	314	M	1	G08	A121	545	2007	F	81
G06	A112	504	1440	F	14	G07	C063	310	340			G08	A121	505	1599	M	2
G06	A115	536	1844	M	2	G07	C063	300	295	M	1	G08	A121	624	2916	F	61
G06	A115	482	1360	M	1	G07	C063	324	382	F	2	G08	C072	334	460	F	2
G06	A115	505	1532	F	10	G07	C063	302	287			G08	C082	402	754	F	5
G06	A115	500	1620	F	10	G07	C063	304	264			G08	C082	517	1754	M	1
G06	A115	514	1453	M	1	G07	C063	286	255			G08	C093	494	1572	M	2
G06	A118	498	1520	M	2	G07	C063	308	316			G08	C093	462	1351	F	8
G06	A118	540	1960	F	40	G07	C063	312	330			G08	C093	575	2550	F	227
G06	A118	509	1600	M	2	G07	C063	306	288			G08	C093	506	1511	F	13
G06	A118	530	1520	M	6	G07	C063	306	312	F	2	G08	C093	458	1249	F	11
G06	A118	500	1440	M	6	G07	C063	308	330	M	1	G08	C106	500	1629	M	2
G06	A121	512	1588	F	14	G07	C063	344	430	F	3	G08	C106	560	2304	F	58
G06	A121	562	2505	F	58	G07	C063	310	314	F	2	G08	C106	518	1496	F	12
G06	A121	550	1923	F	24	G07	C063	310	336	F	2	G08	C106	490	1420	M	2
G06	A121	515	1611	M	1	G07	C063	314	336	M	1	G08	C106	589	2410	M	6
G06	A121	530	1949	F	47	G07	C063	290	270	F	1	G08	C106	503	1617	M	2
G06	A121	501	1523	F	10	G07	C063	319	337	M	1	G08	C106	470	1355	F	10
G06	A121	478	1393	F	12	G07	C063	309	312	M	1	G08	C121	547	2118	F	16
G06	C072	321	374	F	1	G07	C063	306	314	F	2	G08	C121	537	0	F	21
G06	C082	468	1274	M	1	G07	C063	308	325	F	2	G08	C121	493	1643	F	11
G06	C082	448	1055	M	1	G07	C063	324	372	M	1	G08	C121	615	2829	F	49
G06	C082	460	1149	F	6	G07	C063	297	299	F	2	G08	C121	592	2471	M	9
G06	C082	446	1043	F	9	G07	C063	316	325	M	1	G08	C121	516	1563	F	11
G06	C082	476	1333	F	7	G07	C063	301	289	M	1	G08	C121	500	1589	M	2
G06	C082	566	2326	F	162	G07	C063	305	310	F	2	G08	C121	537	1691	F	5
G06	C082	397	754	M	1	G07	C063	304	311	F	2	G08	C121	580	2961	M	94
G06	C082	463	1164	M	1	G07	C063	301	293	M	1	G08	C138	577	2558	M	10
G06	C093	500	1350	F	26	G07	C063	312	350	M	1	G08	C138	604	2979	M	173
G06	C093	466	1163	F	8	G07	C063	302	311	M	1	G09	A112	478	1366	F	10
G06	C093	470	1230	M	1	G07	C063	329	355	F	2	G09	A112	485	1653	M	2
G06	C093	497	1499	M	1	G07	C063	307	312	M	1	G09	A112	590	2841	M	10
G06	C093	464	1068	M	1	G07	C063	336	429	M	1	G09	A112	495	1612	M	2
G06	C106	472	1453	M	2	G07	C063	312	357	F	2	G09	A112	598	2751	F	316
G06	C106	485	1324	F	11	G07	C063	322	376	F	2	G09	A115	529	1858	M	55
G06	C106	577	2670	F	56	G07	C063	324	350	M	1	G09	A115	562	2467	F	79
G06	C106	461	1242	M	1	G07	C063	304	333	M	1	G09	A115	611	2818	M	14
G06	C121	530	1882	F	31	G07	C063	310	289	F	2	G09	A115	535	1818	F	25
G06	C121	534	1869	F	68	G07	C063	306	326	F	2	G09	A115	533	2040	F	79
G06	C121	519	1775	F	23	G07	C072	311	332	F	1	G09	A115	544	1854	M	2
G06	C121	500	1560	M	2	G07	C072	306	321	F	4	G09	A118	525	2005	F	141
G06	C121	472	1306	M	7	G07	C072	300	313	M	1	G09	A118	514	1746	M	2
G06	C121	551	2147	F	46	G07	C072	320	360	F	4	G09	A121	658	4032	M	87
G06	C121	535	1857	F	92	G07	C072	326	392	M	1	G09	A121	554	2553	F	63
G06	C138	594	2694	M	7	G07	C072	312	348	M	1	G09	A121	488	1582	M	1
G06	C138	588	2490	M	9	G07	C072	320	361	F	1	G09	A121	601	2891	F	245
G06	C138	530	2184	M	5	G07	C082	400	757	F	3	G09	A121	489	1629	M	2
G06	F037	518	1620	M	2	G07	C082	438	977	F	4	G09	A121	570	2704	F	241
G07	A112	504	1527	M	2	G07	C082	438	967	M	2	G09	A121	564	2150	M	2
G07	A121	600	2663	M	6	G07	C093	423	926	M	1	G09	A121	522	2064	F	141
G07	C055	288	246	F	1	G07	C093	430	952	M	1	G09	A121	589	2917	F	166

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

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)
G09	A121	559	2438	F	243	G10	C063	346	477	F	3	G10	C072	322	397	F	2
G09	A121	536	2360	F	69	G10	C063	341	390	M	1	G10	C072	346	439	M	1
G09	A121	502	1749	F	117	G10	C063	321	368	F	2	G10	C072	341	423	F	3
G09	C063	548	2258	M	141	G10	C063	326	388	M	1	G10	C072	321	378	M	1
G09	C063	683	4270	M	200	G10	C063	334	390	M	1	G10	C072	326	408	M	1
G09	C063	488	1662	M	3	G10	C063	326	374	M	1	G10	C072	340	448	F	2
G09	C106	491	1444	M	2	G10	C063	331	387	F	2	G10	C072	364	523	F	3
G09	C106	620	3150	M	50	G10	C063	329	366	M	1	G10	C072	336	427	M	1
G09	C106	569	2859	F	236	G10	C063	349	460	F	3	G10	C072	322	403	F	2
G09	C106	498	1667	M	2	G10	C063	315	341	F	1	G10	C072	348	505	M	1
G09	C106	499	1541	F	10	G10	C063	342	448	M	1	G10	C072	340	431	M	1
G09	C106	645	3208	F	92	G10	C063	344	522	M	1	G10	C072	348	517	M	1
G09	C121	661	4126	M	137	G10	C063	324	388	F	1	G10	C072	341	464	M	1
G09	C121	505	2956	M	142	G10	C063	338	435	F	2	G10	C072	349	482	F	2
G09	C121	585	2302	M	21	G10	C063	346	410	M	1	G10	C072	344	454	M	1
G09	C121	589	1591	M	2	G10	C063	324	376	M	1	G10	C072	342	480	M	1
G09	C121	464	1244	M	2	G10	C063	330	426	F	2	G10	C072	311	360	F	2
G09	C121	590	2456	M	122	G10	C063	314	378	M	1	G10	C072	318	375	F	2
G09	C138	604	2840	M	146	G10	C063	354	435	M	1	G10	C072	330	424	M	1
G09	C138	629	3606	F	590	G10	C063	294	256	M	1	G10	C072	340	465	F	3
G09	C138	654	3528	F	91	G10	C063	310	331	F	2	G10	C072	316	462	M	1
G09	C138	532	2085	M	4	G10	C063	370	533	M	1	G10	C072	324	422	F	3
G09	C138	601	3068	M	139	G10	C063	354	470	F	2	G10	C072	320	373	M	1
G09	C138	650	3456	F	308	G10	C063	346	442	M	1	G10	C072	332	418	M	1
G09	C138	568	2406	F	193	G10	C063	310	304	M	1	G10	C072	322	400	F	2
G10	A112	592	2800	M	13	G10	C063	354	478	F	1	G10	C072	332	418	M	1
G10	A112	498	1510	M	1	G10	C063	352	479	F	3	G10	C072	339	474	M	1
G10	A112	556	2490	F	2	G10	C063	324	352	F	1	G10	C072	314	381	F	2
G10	A112	550	2650	F	88	G10	C063	338	436	M	2	G10	C072	342	458	F	3
G10	A112	612	3150	F	320	G10	C063	329	417	M	1	G10	C072	314	333	F	2
G10	A112	548	1800	F	35	G10	C063	340	493	F	3	G10	C072	366	550	M	1
G10	A112	504	1640	F	17	G10	C063	346	458	F	3	G10	C072	336	414	F	2
G10	A112	512	1550	F	16	G10	C063	330	434	F	2	G10	C072	361	569	M	1
G10	A112	546	1780	F	152	G10	C063	316	352	F	2	G10	C082	479	1340	M	2
G10	A112	466	1240	F	16	G10	C063	320	369	M	1	G10	C082	510	1639	F	17
G10	A112	478	1270	M	2	G10	C063	294	256	F	1	G10	C082	342	510	M	1
G10	A112	530	1080	F	14	G10	C063	334	371	F	2	G10	C082	420	1075	F	4
G10	A112	550	2350	M	3	G10	C063	334	428	F	2	G10	C082	470	1429	M	3
G10	A112	502	1460	M	2	G10	C063	332	449	M	1	G10	C082	454	1282	F	4
G10	A112	520	1600	M	1	G10	C063	331	362	F	2	G10	C082	516	1792	F	16
G10	A115	454	1243	M	2	G10	C063	338	409	F	3	G10	C082	430	1054	M	2
G10	A115	616	3594	F	365	G10	C063	336	446	F	3	G10	C082	462	1394	F	11
G10	A115	521	1771	F	9	G10	C063	347	368	M	1	G10	C093	420	921	F	5
G10	A115	514	2178	M	3	G10	C063	348	412	M	1	G10	C093	470	1203	F	6
G10	A115	524	1888	M	3	G10	C063	343	442	M	1	G10	C093	396	699	F	6
G10	A115	504	1670	F	11	G10	C063	351	435	F	2	G10	C093	441	1050	F	8
G10	A115	536	1998	M	32	G10	C063	340	447	F	2	G10	C093	440	1094	F	6
G10	A115	459	1235	M	2	G10	C063	324	397	F	1	G10	C093	484	1443	F	10
G10	A118	560	2442	F	138	G10	C063	344	470	M	1	G10	C093	486	1311	F	10
G10	A118	576	2554	M	46	G10	C063	330	389	M	1	G10	C093	434	1046	M	1
G10	A118	521	1589	F	13	G10	C063	334	418	M	1	G10	C093	421	933	F	9
G10	A118	551	2394	F	235	G10	C063	338	409	M	1	G10	C093	454	1212	M	1
G10	A118	548	1966	M	2	G10	C072	340	445	M	1	G10	C093	452	1205	F	8
G10	A118	516	1507	F	10	G10	C072	334	460	M	1	G10	C093	482	1437	F	10
G10	A118	489	1511	M	2	G10	C072	339	435	M	1	G10	C093	476	1456	F	2
G10	A118	474	1353			G10	C072	351	481	M	1	G10	C093	444	1107	F	7
G10	A118	520	1805	F	12	G10	C072	326	397	F	2	G10	C093	446	1107	F	7
G10	A121	524	1926	F	15	G10	C072	336	489	F	3	G10	C093	470	1333	M	2
G10	A121	484	1592	F	6	G10	C072	344	445	F	2	G10	C093	488	1504	F	12
G10	A121	588	2373	F	36	G10	C072	340	446	M	1	G10	C106	488	1605	F	12
G10	A121	552	2590	F	96	G10	C072	341	440	F	2	G10	C106	338	440	M	1
G10	A121	511	1802	F	48	G10	C072	338	427	F	2	G10	C106	444	1055	F	9
G10	A121	580	2612	F	62	G10	C072	344	481	M	1	G10	C106	542	1976	M	3
G10	A121	598	2665	F	85	G10	C072	378	682	M	1	G10	C106	486	1424	F	16
G10	A121	639	3346	F	80	G10	C072	331	418	F	2	G10	C106	469	1138	F	15
G10	A121	492	1525	F	10	G10	C072	336	415	F	3	G10	C106	484	1532	F	13
G10	A121	508	1830	M	3	G10	C072	361	458	M	1	G10	C106	476	1420	F	11
G10	A121	481	1411	F	7	G10	C072	354	485	M	1	G10	C106	461	1217	F	7
G10	C055	339	465	F	2	G10	C072	364	472	M	1	G10	C106	441	1083	F	10
G10	C063	348	395	F	2	G10	C072	330	438	M	1	G10	C106	490	1484	F	12

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

CHUM SALMON

St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G10	C106	452	1223	M	2
G10	C121	556	2534	F	131
G10	C121	464	1312	F	6
G10	C121	516	1768	M	2
G10	C121	489	1556	M	2
G10	C121	498	1624	M	3
G10	C121	458	1224	F	6
G10	C121	528	1881	F	13
G10	C121	541	2179	M	2
G10	C121	471	2408	F	7
G10	C121	566	2549	M	109
G10	C121	550	2646	F	271
G10	C121	479	1518	F	13
G10	C121	538	2077	F	57
G10	C121	484	1398	M	1
G10	C138	512	1786	M	2
G10	C138	538	2132	M	2
G10	C138	584	2713	F	260
G10	C157	524	2213	F	74

PINK SALMON

St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G04	A112	446	1133	F	57
G04	A112	438	1131	M	32
G04	A112	444	1236	M	8
G04	A112	454	1154	M	22
G04	A112	470	1320	M	13
G04	A112	461	1238	F	49
G04	A112	452	1220	F	31
G04	A112	459	1303	F	74
G04	A112	437	1114	M	19
G04	A112	450	1165	F	56
G04	A112	452	1064	M	18
G04	A112	462	1389	M	11
G04	A112	486	1435	M	20
G04	A112	475	1372	M	5
G04	A112	456	1206	M	6
G04	A112	458	1265	M	24
G04	A112	461	1232	M	7
G04	A112	418	1114	M	11
G04	A112	432	1181	M	6
G04	A112	446	1234	F	57
G04	A112	432	1029	M	4
G04	A112	452	1260	M	23
G04	A112	480	1569	M	10
G04	A112	474	1314	M	12
G04	A112	498	1703	M	23
G04	A112	434	1095	F	52
G04	A112	471	1232	F	82
G04	A112	450	1232	M	8
G04	A112	464	1143	M	5
G04	A112	440	1106	F	36
G04	A112	461	1217	M	17
G04	A112	455	1062	M	16
G04	A112	440	1210	F	48
G04	A112	425	1070	M	23
G04	A112	429	1042	M	10
G04	A112	465	1366	M	16
G04	A112	486	1426	M	9
G04	A112	433	1079	M	9
G04	A112	450	1167	M	18
G04	A112	468	1279	M	9
G04	A112	458	1377	M	7
G04	A112	436	1177	M	6
G04	A112	446	1219	F	51
G04	A112	456	1125	F	14
G04	A112	453	1184	M	5
G04	A112	434	1115	M	28
G04	A112	456	1125	M	16
G04	A112	464	1331	F	44
G04	A112	450	1667	M	16
G04	A112	488	1454	M	4
G04	A112	476	1330	M	13
G04	A112	478	1358	M	8
G04	A112	438	1081	M	10
G04	A112	436	986	F	40
G04	A112	441	1133	M	7
G04	A112	448	1152	M	10
G04	A112	450	1099	F	71
G04	A112	448	1188	M	18
G04	A112	429	1005	F	60
G04	A112	456	1191	M	8
G04	A118	450	1238	M	9
G04	A118	468	1255	M	20
G04	A118	444	1119	M	5
G04	A118	456	1167	M	15
G04	A118	447	1287	M	16
G04	A118	444	1234	M	21
G04	A118	451	1084	M	22
G04	A118	454	1142	F	51
G04	A118	461	1192	M	32
G04	A118	504	1780	M	20
G04	A118	442	1120	M	8
G04	A118	444	1172	M	8
G04	A118	463	1289	M	14
G04	A118	480	1558	M	9
G04	A118	436	1145	F	38
G04	A118	498	1580	M	25
G04	A118	484	1429	M	15
G04	A118	462	1275	M	12
G04	A118	466	1384	M	16
G04	A118	448	1206	F	30
G04	A118	440	1208	F	53
G04	A118	468	1331	M	4
G04	A118	448	1174	M	9
G04	A118	466	1661	M	13
G04	A118	460	1284	M	9
G04	A118	434	1060	M	14
G04	A118	460	1402	M	23
G04	A118	453	1044	M	16
G04	A118	458	1359	F	40
G04	A118	469	1253	M	5
G04	A118	434	1106	F	39
G04	A118	465	1274	M	6
G04	A118	450	1242	M	23
G04	A118	432	1142	M	16
G04	A118	455	1253	M	17
G04	A118	474	1346	F	85
G04	A118	472	1359	M	8
G04	A118	458	1243	M	5
G04	A118	438	1111	F	43
G04	A118	442	1203	F	38
G04	A118	458	1344	M	14.2
G04	A118	466	1312	M	28
G04	A118	492	1638	M	20
G04	A118	474	1450	F	13.6
G04	A118	460	1292	M	9.6
G04	A118	474	1360	M	10.2
G04	A118	458	1210	F	44.4
G04	A118	462	1303	M	8.9
G04	A118	448	1216	F	52
G04	A118	468	1300	M	17
G04	A118	434	1093	M	23
G04	A118	474	1251	M	5
G04	A118	454	1267	F	30
G04	A118	460	1275	M	7
G04	A118	528	1904	M	20
G04	A118	452	1090	M	9
G04	A118	444	1243	M	9
G04	A118	490	1405	M	6
G04	A118	456	1355	F	40
G04	A118	480	1359	M	13
G04	C055	396	835	F	4
G04	C055	406	901	F	65
G04	C055	454	1173	F	64
G04	C063	479	1447	M	4
G04	C072	380	732	M	5
G04	C082	433	943	F	25
G04	C082	441	1169	F	40
G04	C082	424	1048	F	24
G04	C082	445	1232	F	60
G04	C082	438	1058	M	4
G04	C082	404	969	M	20
G04	C082	430	1106	F	49
G04	C082	399	862	M	5
G04	C082	400	891	F	38
G04	C082	431	1066	F	70
G04	C082	436	1086	M	16
G04	C082	406	839	F	25
G04	C082	458	1109	M	3
G04	C082	452	1204	F	30
G04	C082	347	485	M	4
G04	C082	444	991	F	10
G04	C082	431	1064	F	54
G04	C082	440	1119	F	48
G04	C082	429	1058	F	45
G04	C082	445	1215	M	8
G04	C082	455	1229	M	4
G04	C082	387	864	M	19
G04	C082	420	943	F	54
G04	C082	426	891	M	3
G04	C082	430	1097	M	5
G04	C082	450	1012	M	4
G04	C082	364	703	M	32
G04	C082	398	828	M	9
G04	C082	416	791	F	35
G04	C082	434	1079	F	30
G04	C082	434	975	F	16
G04	C082	476	1367	M	15
G04	C082	460	1269	F	40
G04	C082	436	953	M	20
G04	C082	440	1225	F	58
G04	C082	440	971	M	2
G04	C082	420	989	M	15
G04	C082	443	1149	F	45
G04	C093	439	1150	M	5
G04	C093	430	1030	M	5
G04	C093	458	1100	F	23
G04	C093	474	1230	M	6
G04	C093	454	1200	F	25
G04	C093	424	1180	M	13
G04	C093	448	1120	M	6
G04	C093	440	1320	F	15
G04	C093	404	880	F	7
G04	C093	452	1230	F	20
G04	C093	434	1250	M	5
G04	C093	458	1150	F	15
G04	C093	430	1120	F	20
G04	C093	450	1130	M	3

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

PINK SALMON

St.	Gear	F.L.	B.W.	Sex	G.W.
	(mm)	(mm)	(gr)		(gr)
G04	C093	451	1220	M	5
G04	C093	468	1260	F	23
G04	C093	478	1240	F	25
G04	C093	434	1190	F	22
G04	C093	432	1160	F	20
G04	C093	438	1170	M	3
G04	C093	462	1310	F	34
G04	C093	470	1280	M	3
G04	C093	456	1210	F	25
G04	C093	450	1230	F	25
G04	C093	434	1030	M	3
G04	C093	456	1230	M	4
G04	C093	496	1630	M	6
G04	C093	442	1100	F	15
G04	C093	444	1170	F	26
G04	C093	438	1060	M	5
G04	C093	472	1340	M	5
G04	C093	490	1420	M	7
G04	C093	432	1120	F	25
G04	C093	442	1070	F	25
G04	C093	440	1110	F	25
G04	C093	430	1050	F	13
G04	C093	460	1160	F	13
G04	C093	402	1050	M	5
G04	C093	473	1430	M	6
G04	C093	476	1600	M	7
G04	C093	451	1230	F	13
G04	C093	440	1440	M	6
G04	C093	439	1240	F	25
G04	C093	431	1660	F	20
G04	C093	432	1460	M	15
G04	C093	453	1160	M	3
G04	C093	450	1200	F	13
G04	C093	451	1230	F	23
G04	C093	471	1330	M	13
G04	C093	450	1180	M	12
G04	C093	462	1310	F	12
G04	C093	442	1150	M	3
G04	C106	438	1210	F	12
G04	C106	444	1240	M	4
G04	C106	444	1100	F	10
G04	C106	377	740	M	6
G04	C106	472	1380	M	6
G04	C106	425	1140	M	6
G04	C106	442	1260	M	5
G04	C106	449	1210	F	18
G04	C106	452	1230	F	17
G04	C106	486	1460	M	8
G04	C106	448	1230	F	10
G04	C106	490	1840	M	13
G04	C106	460	1310	F	15
G04	C106	460	1290	F	12
G04	C106	463	1260	M	3
G04	C106	430	880	M	3
G04	C106	412	1090	M	7
G04	C106	453	1186	F	51
G04	C106	428	1120	F	14
G04	C106	451	1210	F	14
G04	C106	447	1230	F	14
G04	C106	452	1202	F	37
G04	C106	451	1110	F	10
G04	C106	427	1120	F	13
G04	C106	464	1250	F	10
G04	C106	461	1206	M	14
G04	C106	392	799	M	12
G04	C106	450	1199	F	19
G04	C106	454	1211	M	4
G04	C106	452	1094	M	25
G04	C106	466	1132	M	5
G04	C106	443	1180	F	15
G04	C106	454	1115	M	4
G04	C106	450	1180	M	3
G04	C106	469	1201	M	4
G04	C106	442	1068	F	64
G04	C106	476	1341	M	8
G04	C106	454	1192	F	53
G04	C106	444	1103	M	23
G04	C106	440	1031	F	37
G04	C106	469	1131	M	13
G04	C106	414	941	F	20
G04	C106	442	1129	M	20
G04	C106	450	1200	M	5
G04	C106	478	1440	M	5
G04	C106	478	1460	M	5
G04	C106	470	1400	F	17
G04	C106	465	1240	M	4
G04	C106	448	1180	M	7
G04	C106	409	1040	F	13
G04	C106	448	1220	F	8
G04	C106	452	1240	F	10
G04	C106	423	1040	F	12
G04	C106	463	1310	M	7
G04	C106	452	1280	F	18
G04	C106	442	1150	F	15
G04	C106	445	1170	M	4
G04	C106	451	1270	M	3
G04	C106	463	1230	M	3
G04	C106	454	1340	M	8
G04	C106	462	1210	M	5
G04	C106	421	1100	M	5
G04	C106	432	1180	M	7
G04	C121	464	1220	M	4
G04	C121	464	1422	M	10
G04	C121	500	1478	M	9
G04	C121	441	1134	M	8
G04	C121	466	1248	F	32
G04	C121	447	1283	M	6
G04	C121	462	1277	F	75
G04	C121	468	1380	M	12
G04	C121	454	1161	M	23
G04	C121	480	1444	F	67
G04	C121	431	1096	M	19
G04	C121	455	1244	F	73
G04	C121	437	1106	M	5
G04	C121	439	1178	M	20
G04	C121	445	1068	M	5
G04	C121	446	1141	M	6
G04	C121	454	1292	F	40
G04	C121	446	1212	F	54
G04	C121	450	1254	F	21
G04	C121	446	1146	M	15
G04	C121	456	1269	M	10
G04	C121	456	1260	F	47
G04	C121	444	1211	F	24
G04	C121	447	1234	F	29
G04	C121	444	1245	F	41
G04	C121	448	1181	M	9
G04	C121	444	1205	F	18
G04	C121	500	1627	M	15
G04	C121	432	1114	F	62
G04	C121	478	1378	M	11
G04	C121	462	1332	F	72
G04	C121	510	1777	M	4
G04	C121	504	1520	M	14
G04	C121	434	1090	F	57
G04	C121	463	1269	M	19
G04	C121	458	1362	F	47
G04	C121	460	1208	M	10
G04	C138	458	1252	F	72
G04	C138	454	1305	F	55
G04	C157	446	1120	M	3
G04	C157	484	1600	M	6
G04	C157	458	1170	M	3
G04	C157	458	1250	M	8
G04	C157	452	1140	F	25
G04	C157	430	930	M	4
G04	C157	444	1100	F	28
G04	C157	444	1130	F	12
G04	C157	456	1370	F	10
G04	C157	429	1160	M	5
G04	C157	504	1630	M	5
G04	C157	449	1240	F	12
G04	C157	435	1130	F	18
G04	C157	470	1120	F	14
G04	C157	471	1070	F	12
G04	C157	453	1200	F	8
G04	C157	462	1350	M	10
G04	C157	436	1210	F	15
G04	C157	457	1240	F	14
G04	C157	465	1050	M	7
G05	A112	487	1493	M	38
G05	A112	463	1184	M	4
G05	A112	446	1123	M	8
G05	A112	471	1418	M	23
G05	A112	430	1077	F	21
G05	A112	469	1365	M	8
G05	A112	464	1359	M	10
G05	A112	486	1550	M	28
G05	A112	462	1264	M	24
G05	A112	454	1296	M	10
G05	A112	448	1192	M	6
G05	A112	460	1311	M	8
G05	A112	448	1220	M	29
G05	A112	428	1032	M	5
G05	A112	458	1262	F	34
G05	A112	437	1081	F	39
G05	A112	422	1051	M	27
G05	A112	444	1025	M	5
G05	A112	478	1297	M	10
G05	A112	486	1430	M	28
G05	A112	480	1331	M	22
G05	A112	446	1061	F	55
G05	A112	439	1056	M	18
G05	A112	466	1323	M	12
G05	A112	490	1476	M	15
G05	A112	466	1377	M	5
G05	A112	444	1320	M	13
G05	A112	488	1535	M	24
G05	A112	440	1160	F	63
G05	A112	462	1313	M	20
G05	A115	456	1361		
G05	A115	456	1313	F	28
G05	A115	469	1341	F	69
G05	A115	444	1221	F	55
G05	A115	471	1424	F	45
G05	A115	451	1249	F	49
G05	A115	500	1501	M	16
G05	A115	444	1122	F	73
G05	A115	469	1372	M	25
G05	A115	460	1435	F	60
G05	A115	426	1021		
G05	A115	447	1316	M	25
G05	A115	498	1481		
G05	A115	408	941	F	44
G05	A115	466	1524		
G05	A115	433	1133		
G05	A115	465	1302	M	12
G05	A115	446	1199	M	20
G05	A115	434	1157	F	48
G05	A115	424	1058	F	17
G05	A115	461	1244	F	42
G05	A121	450	1388	F	55
G05	A121	471	1331	M	8
G05	A121	467	1283	M	13
G05	A121	460	1235	M	10
G05	A121	431	1085	F	55
G05	A121	446	1213	M	9
G05	A121	496	1433	M	3
G05	A121	460	1320	M	8
G05	A121	452	1131	M	11
G05	A121	492	1459	M	13
G05	A121	463	1406	M	16
G05	C055	434	1160	F	48
G05	C063	474	1332	F	45
G05	C072	366	520	F	15
G05	C072	444	1140	M	20
G05	C082	438	960	M	38
G05	C082	403	0		
G05	C082	456	1020	M	13
G05	C082	490	1280	M	7
G05	C082	442	1040	F	60
G05	C082	449	1020	M	28
G05	C082	422	800	F	28
G05	C082	422	680	F	20
G05	C082	408	740	M	20
G05	C082	435	920	F	32
G05	C082	420	900	F	18
G05	C093	428	987	F	52
G05	C093	432	977	M	3
G05	C093	440	1048	M	6
G05	C093	408	788	F	21
G05	C093	447	1180	M	11
G05	C093	481	1455	M	16
G05	C093	451	1128	M	24
G05	C093	461	1428	M	39
G05	C093	415	999	F	33
G05	C093	445	1176	M	12
G05	C093	456	1343	M	13
G05	C093	436	959	F	34
G05	C093	474	979	F	40
G05	C106	479	1422	F	74
G05	C106	456	1140	M	4
G05	C106	422	1061	F	40
G05	C106	451	1212	M	42
G05	C106	450	971	M	2
G05	C106	458	1245	F	35
G05	C106	416	926	F	37
G05	C106	414	966	M	16
G05	C106	478	1352	M	8
G05	C106	444	1154	F	58
G05	C106	430	971	M	14
G05	C106	427	1016	M	7
G05	C106	434	1060	M	34
G05	C106	451	1232	M	12
G05	C106	468	1309	M	18
G05	C106	436	1071	F	36
G05	C106	457	1292	M	30
G05	C106	465	1416	F	65
G05	C121	483	1423	M	8
G05	C121	462	0		
G05	C121	489	1325	M	5
G05	C121	454	1391	F	40
G05	C121	459	1177	M	22
G05	C121	460	1289	M	10
G05	C121	464	1273	M	10
G05	C121	441	1314	F	32
G05	C121	463	1421	M	43
G05	C121	485	1296	F	73
G05	C121	472	1546	M	12
G05	C121	446	1137	M	5
G05	C121	436	1186	F	55
G05	C121	464	1206	M	26
G05	C121	468	1261	M	12
G05	C121	459	1329	M	23
G05	C121	440	1129	M	20
G06	A112	476	1269	M	52
G06	A115	464	1132	M	28
G06	C063	430	950	M	24

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

PINK SALMON

St.	Gear	F.L.	B.W.	Sex	G.W.
	(mm)	(mm)	(gr)		(gr)
G06	C072	410	804	F	36
G06	C072	414	762	F	36
G06	C082	424	837	F	46
G06	C082	422	961	F	56
G06	C082	400	738	F	45
G06	C082	428	811	F	40
G06	C082	406	745	F	36
G06	C082	400	655	M	6
G06	C082	448	907	F	32
G06	C082	396	721	F	34
G06	C082	388	658	F	37
G06	C082	401	811	F	38
G06	C082	412	863	F	50
G06	C082	415	787	F	42
G06	C082	404	756	F	46
G06	C082	426	791	F	37
G06	C082	428	913	F	54
G06	C082	416	822	F	46
G06	C082	433	1036	F	54
G06	C082	418	840	F	45
G06	C082	430	858	F	33
G06	C093	444	901		
G06	C093	418	786	F	40
G06	C093	401	759	M	14
G06	C093	406	784	F	38
G06	C093	411	855	M	12
G06	C093	416	798	F	37
G06	C093	379	651	M	15
G06	C093	406	817	F	49
G06	C093	415	841	F	65
G06	C093	408	722		
G06	C093	397	811		
G06	C093	403	773	F	46
G06	C093	418	817		
G06	C093	439	1010	F	69
G06	C093	412	756	F	28
G06	C093	411	747	F	24
G06	C093	421	926	F	54
G06	C093	419	887	F	34
G06	C093	458	1000	M	12
G06	C093	419	833	M	23
G06	C093	406	729	M	5
G06	C093	430	865	M	12
G06	C093	399	718	F	31
G06	C093	445	936		
G06	C106	434	960	F	64
G06	C106	481	1250	M	13
G06	C106	445	1050	F	57
G06	C106	424	820	F	46
G06	C106	410	800	M	26
G06	C106	424	900	M	30
G06	C106	418	940	F	64
G06	C106	436	980	F	63
G07	A121	486	1528	M	90
G07	C072	394	730	F	47
G07	C082	406	732	F	45
G07	C082	389	680	F	24
G07	C082	436	924		
G07	C093	474	1262	M	37
G07	C093	343	645	F	35
G07	C093	457	1011	M	4
G07	C093	448	986	F	40
G07	C093	461	1297	F	99
G07	C121	428	1044	F	68
G08	A112	442	1253	F	86
G08	A112	432	1089	M	66
G08	A112	444	1256	F	85
G08	A112	450	1168	M	78
G08	A112	440	1276	M	63
G08	A112	475	1330	M	70
G08	A112	471	1197	F	83
G08	A112	389	658	F	44
G08	A112	450	1337	M	46
G08	A112	444	1095	M	68
G08	A112	437	1185	F	97
G08	A112	478	1480	F	145
G08	A112	440	1047	F	96
G08	A112	459	1103	M	76
G08	A112	468	1298	F	126
G08	A115	471	1388	F	118
G08	A115	432	1153	M	59
G08	A115	444	1168	F	86
G08	A115	483	1582	M	77
G08	A115	436	1133	F	84
G08	A115	481	1546	M	38
G08	A115	466	1342	F	118
G08	A115	475	1418	F	119
G08	A115	482	1441	F	165
G08	A115	478	1409	M	48
G08	A115	454	1222	M	76
G08	A115	448	1022	M	64
G08	A115	440	1180	M	70
G08	A115	466	1257	M	60
G08	A115	447	1270	M	69
G08	A115	464	1222	F	91
G08	A115	492	1626	M	96
G08	A115	513	1597	M	95
G08	A115	459	1313	M	53
G08	A115	470	1251	M	38
G08	A115	456	1158	M	96
G08	A115	471	1351	M	60
G08	A115	487	1157	F	82
G08	A115	440	1161	F	125
G08	A115	461	1212	M	55
G08	A115	450	1166	M	54
G08	A115	500	1751	M	80
G08	A115	410	1045	M	70
G08	A118	439	1170	M	50
G08	A118	451		M	40
G08	A121	507	1638	M	67
G08	A121	482	1475	M	102
G08	A121	450	1256	M	75
G08	A121	486	1440	F	113
G08	A121	435	1161	M	78
G08	A121	504	1637	M	96
G08	A121	490	1432	M	78
G08	A121	466	1304	F	85
G08	A121	462	1338	M	50
G08	A121	454	1196	M	56
G08	A121	460	1267	F	77
G08	A121	462	1332	M	71
G08	A121	500	1481	M	82
G08	A121	460	1243	M	42
G08	A121	495	1710	F	173
G08	A121	442	1188	M	83
G08	A121	460	1242	M	63
G08	C063	390	550	M	35
G08	C072	404	1040	F	64
G08	C072	422		M	44
G08	C072	334	460	F	50
G08	C082	423	959	F	76
G08	C082	467	1340	M	67
G08	C082	439	1135	F	77
G08	C082	450	1072	F	77
G08	C082	450	1258	M	76
G08	C082	480	1368	M	64
G08	C082	434	1143	F	114
G08	C082	404	858	M	70
G08	C082	443	1085	F	81
G08	C082	448	1227	F	82
G08	C082	386	754	F	10
G08	C082	431	1028	F	71
G08	C082	407	769	M	12
G08	C082	420	1072	M	43
G08	C082	438	1148	F	122
G08	C082	431	1079	M	6
G08	C093	435	984	F	97
G08	C093	466	1231	F	75
G08	C093	436	1090	F	112
G08	C093	413	878	F	60
G08	C093	446	1087	M	63
G08	C093	422	914	M	53
G08	C093	429	937	M	53
G08	C093	422	976	M	44
G08	C093	426	922	F	83
G08	C093	435	1118	F	95
G08	C093	449	1158	F	82
G08	C093	407	834	F	82
G08	C093	420	945	F	89
G08	C093	448	1102	F	75
G08	C093	340	578	F	37
G08	C093	458	1367	M	56
G08	C093	454	1211	F	87
G08	C093	439	1033	F	76
G08	C093	415	939	M	46
G08	C093	460	1345	M	90
G08	C093	434	1027	F	82
G08	C093	437	1001	F	65
G08	C093	454	1248	F	74
G08	C093	422	932	M	49
G08	C093	431	936	M	33
G08	C093	427	1196	M	44
G08	C093	427	1066	M	58
G08	C093	463	1339	F	118
G08	C093	457	1217	F	96
G08	C093	424	998	F	67
G08	C093	440	1095	F	88
G08	C093	425	923	F	67
G08	C093	432	1093	F	82
G08	C093	450	1090	F	70
G08	C093	433	1000	M	56
G08	C093	446	1324	F	96
G08	C093	429	987	F	80
G08	C093	440	1079	F	62
G08	C093	430	1047	M	56
G08	C093	457	1154	M	69
G08	C093	435	967	F	80
G08	C093	445	1118	M	54
G08	C093	441	1147	F	102
G08	C093	428	989	M	52
G08	C093	432	1020	M	56
G08	C093	417	931	F	60
G08	C093	405	836	F	78
G08	C093	434	982	F	43
G08	C093	456	1321	F	116
G08	C093	442	1035	M	47
G08	C093	421	931	F	67
G08	C106	428	1053	F	88
G08	C106	459	1011	M	49
G08	C106	442	1117	M	67
G08	C106	455	1219	F	85
G08	C106	452	1222	M	55
G08	C106	430	999	F	63
G08	C106	453	1029	M	28
G08	C106	437	1104	F	84
G08	C106	408	884	F	66
G08	C106	436	1143	F	87
G08	C106	445	1476	F	118
G08	C106	436	968	M	33
G08	C106	423	981	F	89
G08	C106	427	901	F	60
G08	C106	444	1211	F	37
G08	C106	426	1050	M	80
G08	C106	434	990	F	85
G08	C106	469	1361	F	129
G08	C106	440	1069	F	84
G08	C106	446	1184	F	86
G08	C106	434	961	F	75
G08	C106	501	1774	M	60
G08	C106	436	1126	M	77
G08	C106	447	1320	M	63
G08	C106	464	1435	M	70
G08	C106	429	1001	M	53
G08	C106	465	1243	F	107
G08	C106	444	1127	F	87
G08	C106	417	1027	F	93
G08	C106	464	1297	F	117
G08	C106	428	1016	M	50
G08	C106	447	1182	F	85
G08	C106	445	1156	M	55
G08	C106	450	1078	F	95
G08	C106	474	1261	F	108
G08	C106	477	1469	M	65
G08	C121	458	1359	F	98
G08	C121	457	1157	M	39
G08	C121	475	1433	M	74
G08	C121	445	1185	M	73
G08	C121	518	1787	M	84
G08	C121	467	1392	M	64
G08	C121	449	1176	M	69
G08	C121	450	1240	F	104
G08	C121	423	1063	M	62
G08	C121	469	1444	M	70
G08	C121	477	1428	F	120
G08	C121	503	1711	M	104
G08	C121	478	1412	M	48
G08	C121	437	1200	F	76
G08	C121	520	1759	M	97
G08	C121	463	1323	F	112
G08	C121	479	1575	M	105
G08	C121	450	1201	M	68
G08	C121	470	1437	M	116
G08	C121	442	1237	M	64
G08	C121	535	1867	M	107
G08	C138	504	1798	M	118
G08	C138	442	1168	M	92
G09	A121	466	1406	M	59
G09	A121	449	1232	F	104
G09	A121	512	1477	M	61
G09	A121	457	1338	M	86
G09	A121	433	1058	M	87
G09	A121	451	1255	M	74
G09	A121	445	1216	F	89
G09	A121	478	1337	M	91
G09	A121	475	1475	M	71
G09	A121	472	1423	M	65
G09	A121	432	1184	M	67
G09	A121	480	1539	M	74
G09	A121	456	1195	M	60
G09	A121	470	1138	F	121
G09	A121	456	1278	F	124
G09	A121	464	1304	F	131
G09	A121	471	1433	M	60
G09	A121	446	1275	M	92
G09	A121	533	1245	M	160
G09	A121	475	1452	M	2
G09	A121	440	1130	M	53
G09	A121	470	1334	F	123
G09	A121	452	1195	M	71
G09	A121	471	1325	M	85
G09	A121	478	1420	F	142
G09	A121	471	1427	M	96
G09	A121	451	1378	M	60
G09	A121	456	1218	M	69
G09	A121	470	1448	M	89
G09	A121	491	1451	F	140
G09	A121	469	1283	M	73
G09	A121	489	1487	M	122

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

PINK SALMON

St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G09	A121	479	1469	F	129
G09	A121	511	1689	M	76
G09	A121	443	1163	M	84
G09	A121	480	1381	M	72
G09	A121	466	1301	M	97
G09	A121	465	1438	F	91
G09	A121	498	1539	M	68
G09	A121	462	1192	M	51
G09	A121	468	1395	F	96
G09	A121	435	1314	F	98
G09	A121	494	1544	M	36
G09	A121	486	1450	M	65
G09	A121	477	1380	M	66
G09	A121	436	1218	M	69
G09	A121	477	1509	M	101
G09	A121	450	1277	M	79
G09	A121	439	1289	M	82
G09	A121	467	1209	M	58
G09	A121	432	1179	M	75
G09	A121	467	1367	M	71
G09	A121	467	1430	M	120
G09	A121	464	1372	M	76
G09	A121	473	1335	F	139
G09	A121	439	1088	M	45
G09	A121	475	1329	M	93
G09	A121	452	1234	M	78
G09	A121	478	1306	M	57
G09	C048	462	1211	F	117
G09	C048	434	1063	M	56
G09	C055	455	1215	F	131
G09	C055	429	1002	F	74
G09	C055	412	1003	F	88
G09	C055	459	1227	F	91
G09	C055	465	1300	F	88
G09	C063	442	1180	M	91
G09	C072	398	681	F	64
G09	C072	375	616	F	45
G09	C072	431	1094	F	80
G09	C072	434	1180	M	26
G09	C072	444	1117	F	76
G09	C072	455	1188	F	110
G09	C072	442	834	F	71
G09	C072	398	573	M	27
G09	C072	438	986	F	9
G09	C072	412	986	M	68
G09	C072	439	1090	F	98
G09	C072	440	1102	M	72
G09	C072	439	1074	F	83
G09	C072	397	699	M	35
G09	C072	424	998	M	53
G09	C072	327	393	M	77
G09	C072	458	1232	F	124
G09	C082	442	1170	F	94
G09	C082	422	1020	F	80
G09	C082	426	1040	F	90
G09	C082	446	1140	F	67
G09	C082	474	1240	F	84
G09	C082	402	980	F	58
G09	C082	434	1120	F	68
G09	C082	434	1050	F	80
G09	C082	436	1050	F	65
G09	C082	422	1020	F	66
G09	C082	446	1050	F	80
G09	C082	442	1120	F	80
G09	C082	392	820	M	34
G09	C082	438	1050	F	70
G09	C082	432	1060	F	92
G09	C082	426	1050	F	75
G09	C082	440		F	87
G09	C082	464	1250	F	96
G09	C082	412	920	M	50
G09	C082	414		F	82
G09	C082	404	900	F	65
G09	C082	406	870	M	45
G09	C082	456	1320	F	120
G09	C082	436	1150	F	100
G09	C082	434	1150	F	110
G09	C082	438	1120	F	95
G09	C082	442	1100	M	33
G09	C082	442	1130	M	60
G09	C082	418	1070	F	80
G09	C082	414	980	F	93
G09	C082	462	1220	F	115
G09	C082	414	960	F	78
G09	C082	418	830	F	65
G09	C082	438	1080	F	84
G09	C082	438	1120	F	100
G09	C082	448	1120	F	93
G09	C082	418	930	F	75
G09	C082	458	940	M	70
G09	C082	416	910	F	70
G09	C082	456	1310	M	78
G09	C082	452	1180	F	83
G09	C082	490	1320	F	134
G09	C082	446	1120	F	73
G09	C082	408	1030	M	30
G09	C082	450	1060	F	70
G09	C082	418	1060	F	85
G09	C082	442	1030	F	82
G09	C082	412	970	F	85
G09	C082	438	1030	F	85
G09	C082	456	1170	F	110
G09	C082	420	1130	F	90
G09	C082	440	1120	M	95
G09	C082	454	1440	M	92
G09	C082	426	1030	F	88
G09	C082	418	1030	F	83
G09	C082	438	1010	F	87
G09	C082	422	990	F	85
G09	C082	448	1100	M	73
G09	C082	406	1030	F	100
G09	C082	428	1030	F	88
G09	C093	423	952	F	84
G09	C093	456	1210	F	63
G09	C093	448	1081	F	79
G09	C093	411	971	M	48
G09	C093	410	876	M	36
G09	C093	430	1026	F	78
G09	C093	442	1013	F	113
G09	C093	433	1148	M	61
G09	C093	428	1053	M	61
G09	C093	442	1093	M	68
G09	C093	412	950	F	94
G09	C093	451	1211	F	111
G09	C093	454	1317	M	65
G09	C093	441	1089	F	81
G09	C093	438	1133	F	70
G09	C093	439	1056	M	91
G09	C093	446	1193	F	75
G09	C093	448	1208	M	63
G09	C093	414	850	M	34
G09	C093	441	1017	F	67
G09	C093	439	948	M	40
G09	C093	431	1186	F	98
G09	C093	441	1083	F	86
G09	C093	440	1142	F	83
G09	C093	424	1011	F	67
G09	C093	499	1782	M	93
G09	C093	456	1316	M	99
G09	C093	440	1093	F	103
G09	C093	439	1057	M	54
G09	C093	415	1041	F	94
G09	C093	444	1139	F	88
G09	C093	416	879	F	67
G09	C093	449	1236	M	45
G09	C093	432	909	F	80
G09	C093	444	1162	F	90
G09	C093	441	1112	F	87
G09	C093	438	1058	F	71
G09	C093	466	1259	F	108
G09	C093	424	942	F	71
G09	C093	431	1093	F	81
G09	C093	445	1212	F	99
G09	C093	394	841	M	42
G09	C093	406	897	F	74
G09	C093	395	840	M	55
G09	C093	448	1175	M	72
G09	C093	469	1333	F	146
G09	C093	453	1175	M	62
G09	C093	421	985	F	45
G09	C093	414	895	F	85
G09	C093	430	1083	F	97
G09	C093	436	1095	F	112
G09	C093	426	968	F	95
G09	C093	428	1007	M	52
G09	C093	425	991	F	68
G09	C093	468	1290	M	69
G09	C093	429	1049	M	38
G09	C093	415	983	M	77
G09	C093	423	992	M	90
G09	C093	444	1076	F	83
G09	C106	439	1178	F	78
G09	C106	460	1465	M	75
G09	C106	458	1242	F	60
G09	C106	438	1082	F	76
G09	C106	453	1167	M	56
G09	C106	450	1154	F	75
G09	C106	463	1278	M	76
G09	C106	422	997	M	46
G09	C106	426	1003	M	57
G09	C106	471	1441	M	90
G09	C106	449	1106	F	92
G09	C106	445	1132	F	93
G09	C106	457	1260	M	59
G09	C106	459	1281	F	103
G09	C106	443	1113	F	118
G09	C106	472	1440	M	110
G09	C106	454	1222	F	102
G09	C106	456	1262	M	67
G09	C106	453	1299	M	113
G09	C106	440	1102	F	110
G09	C106	440	1109	F	95
G09	C106	433	998	F	65
G09	C106	431	994	M	44
G09	C106	433	1051	M	22
G09	C106	448	1160	F	83
G09	C106	464	1255	F	83
G09	C106	440	1097	F	92
G09	C106	453	1177	M	78
G09	C106	446	1133	F	79
G09	C106	421	932	M	43
G09	C106	432	1087	M	85
G09	C106	418	973	F	99
G09	C106	471	1348	F	74
G09	C106	435	1085	F	97
G09	C106	454	1215	F	88
G09	C106	456	1170	F	88
G09	C106	458	1153	M	53
G09	C106	465	1314	F	116
G09	C106	460	1329	F	109
G09	C106	459	1110	M	53
G09	C106	456	1209	F	110
G09	C106	434	1085	F	95
G09	C106	445	1198	F	87
G09	C106	454	1178	F	85
G09	C106	455	1215	M	43
G09	C106	443	1104	F	96
G09	C106	430	1109	F	109
G09	C106	421	1046	F	87
G09	C106	440	1089	F	75
G09	C106	431	1010	M	62
G09	C106	441	1069	F	94
G09	C106	454	1297	M	66
G09	C106	476	1454	F	124
G09	C106	415	1068	F	84
G09	C121	448	1291	M	79
G09	C121	455	1170	M	51
G09	C121	459	1254	F	110
G09	C121	473	1417	F	128
G09	C121	425	1061	M	44
G09	C121	437	1133	M	79
G09	C121	450	1302	F	92
G09	C121	442	1168	F	128
G09	C121	450	1271	F	83
G09	C121	466	1231	M	72
G09	C121	465	1308	F	125
G09	C121	439	1184	F	84
G09	C121	432	1109	M	44
G09	C121	458	1243	M	47
G09	C121	454	1272	M	84
G09	C121	490	1557	M	73
G09	C121	429	1145	M	70
G09	C121	508	1694	M	58
G09	C121	473	1506	M	62
G09	C121	491	1609	M	68
G09	C121	443	1306	F	113
G09	C121	450	1280	F	83
G09	C121	481	1379	F	99
G09	C121	435	1184	F	84
G09	C121	460	1426	M	76
G09	C121	488	1618	M	89
G09	C121	441	1131	M	55
G09	C121	464	1253	F	117
G09	C121	428	1054	F	72
G09	C121	472	1351	M	87
G09	C121	429	1127	F	82
G09	C121	428	1070	F	69
G09	C121	442	1277	M	61
G09	C121	454	1285	F	106
G09	C121	478	1522	F	127
G09	C121	492	1531	M	91
G09	C121	447	1122	F	114
G09	C121	462	1353	F	73
G09	C121	471	1385	M	63
G09	C121	438	1119	M	52
G09	C121	485	1374	F	102
G09	C121	473	1566	M	94
G09	C121	487	1393	M	50
G09	C121	473	1356	M	71
G09	C121	458	1220	M	72
G09	C121	422	1252	M	79
G09	C121	448	1130	M	96
G09	C121	462	1274	M	47
G09	C121	468	1326	M	49
G09	C121	465	1468	F	130
G09	C121	475	1525	F	115
G09	C121	442	1124	M	59
G09	C121	461	1270	M	98
G09	C121	442	1204	M	116
G09	C121	466	1271	M	73
G09	C121	467	1309	M	47
G09	C121	484	1470	M	89
G09	C121	451	1135	M	59
G09	C121	443	1144	F	88
G09	C121	462	1345	M	86
G09	C138	477	1587	M	85
G09	C138	538	1923	M	71
G09	C138	479	1494	F	145

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

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)
G09	C138	501	1844	M	92	G10	C082	412		F	82	G10	C106	414	914	M	48
G09	C138	542	2457	M	115	G10	C082	388		F	55	G10	C106	441	1082	M	38
G09	C138	539	2284	M	84	G10	C082	424	960	M	53	G10	C106	475	1303	F	116
G09	C138	518	2115	M	71	G10	C082	438	1000	F	68	G10	C106	470	1390	M	35
G09	C138	550	2110	M	120	G10	C082	442	990	F	85	G10	C106	429	974	M	55
G09	C138	498	1693	M	105	G10	C082	420	1080	F	88	G10	C106	408	909	F	75
G09	C138	499	1780	M	100	G10	C082	438	1020	F	63	G10	C106	433	1077	F	71
G09	C138	598	1718	M	103	G10	C082	466		F	83	G10	C106	461	1438	F	91
G09	F042	437	1115	M	76	G10	C082	411		F	42	G10	C106	438	1084	F	116
G10	A115	471	1378	M	60	G10	C082	427	1080	F	65	G10	C106	455	1053	M	72
G10	A115	504	1646	M	66	G10	C082	446	1050	M	53	G10	C106	424	950	M	47
G10	A115	468	1328	F	126	G10	C082	420	820	F	51	G10	C106	458	1243	F	80
G10	A115	486	1534	M	91	G10	C082	420	890	F	72	G10	C106	438	971	F	35
G10	A115	466	1339	M	100	G10	C082	440	1080	F	82	G10	C106	450	1126	F	90
G10	A115	451	1328	M	52	G10	C082	405	850	F	13	G10	C106	469	1283	F	73
G10	A115	520	1757	M	54	G10	C082	441	1130	M	75	G10	C106	426	989	F	102
G10	A115	471	1318	M	79	G10	C082	409	870	F	72	G10	C106	430	1044	F	61
G10	A115	456	1201	M	56	G10	C082	420	860	F	91	G10	C106	454	1054	F	65
G10	A115	474	1363	M	105	G10	C082	426	980	F	92	G10	C106	446	933	F	80
G10	A115	444	1206	F	98	G10	C082	431	990	F	94	G10	C106	450	1202	F	67
G10	A115	486	1670	M	60	G10	C082	434	1110	F	93	G10	C106	423	1005	M	66
G10	A115	456	1158	M	98	G10	C082	403	790	F	62	G10	C106	440	1095	M	35
G10	A115	470	1447	M	125	G10	C082	436	990	F	93	G10	C106	425	1013	M	83
G10	A115	429	1076	M	86	G10	C082	440	980	F	97	G10	C106	455	1122	F	52
G10	A115	479	1377	F	106	G10	C082	440	1030	F	72	G10	C106	444	1173	F	96
G10	A115	476	1355	M	90	G10	C082	429	870	M	72	G10	C106	442	1200	F	77
G10	A115	468	1257	M	71	G10	C082	433	980	F	95	G10	C106	444	1108	M	48
G10	A115	499	1664	M	125	G10	C082	425		F	48	G10	C106	432	1063	F	93
G10	A115	438	1108	M	60	G10	C082	423	970	F	73	G10	C106	462	1280	M	70
G10	A115	479	1628	F	145	G10	C082	434	1030	F	65	G10	C106	442	1180	F	90
G10	A115	454	1140	F	98	G10	C082	431	1020	M	62	G10	C106	498	1490	M	90
G10	A115	460	1395	M	59	G10	C093	436	1037	M	54	G10	C106	466	1280	M	83
G10	A115	468	1258	M	74	G10	C093	424	881	F	91	G10	C106	458	1300	M	97
G10	A115	464	1292	M	77	G10	C093	434	1046	M	65	G10	C106	452	1060	F	55
G10	A115	478	1460	M	2	G10	C093	439	1040	F	73	G10	C106	442	960	M	65
G10	A115	444	1163	M	91	G10	C093	434	854	M	57	G10	C106	438	1100	F	82
G10	A115	458	1321	M	46	G10	C093	442	1020	F	68	G10	C106	450	1050	F	90
G10	A115	436	1150	M	113	G10	C093	440	1167	M	45	G10	C106	469	1279	F	142
G10	A115	478	1480	M	99	G10	C093	421	927	F	91	G10	C106	432	1180	F	70
G10	A121	436	1119	M	56	G10	C093	426	1040	F	73	G10	C106	420	790	M	34
G10	A121	478	1482	M	116	G10	C093	429	932	F	66	G10	C106	432	1080	F	85
G10	A121	444	1184	M	68	G10	C093	416	892	F	84	G10	C106	428	860	F	84
G10	A121	448	1217	F	78	G10	C093	436	1123	F	108	G10	C106	462	1200	F	125
G10	A121	414	1043	M	59	G10	C093	440	1042	M	92	G10	C106	422	950	F	95
G10	A121	466	1170	M	74	G10	C093	464	1232	M	91	G10	C106	448	1040	F	73
G10	A121	446	1183	M	58	G10	C093	440	1066	M	47	G10	C106	440	1114	M	59
G10	A121	480	1547	F	111	G10	C093	422	1003	F	85	G10	C106	442	1040	F	86
G10	A121	469	1324	M	97	G10	C093	481	1374	F	138	G10	C106	478	1300	F	90
G10	A121	476	1439	M	62	G10	C093	470	1253	M	58	G10	C106	448	1110	M	74
G10	A121	440	1180	M	80	G10	C093	429	969	F	74	G10	C106	412	960	F	80
G10	A121	444	1248	F	86	G10	C093	482	1308	F	91	G10	C106	416	860	F	78
G10	A121	452	1323	M	97	G10	C093	426	951	F	89	G10	C106	450	1020	M	35
G10	A121	474	1491	M	59	G10	C093	422	862	F	69	G10	C106	436	940	F	66
G10	A121	466	1295	F	125	G10	C093	416	900	M	56	G10	C106	426	1010	F	70
G10	A121	473	1299	M	63	G10	C093	452	1060	F	94	G10	C106	440	1130	F	95
G10	A121	466	1369	M	99	G10	C093	438	1000	M	53	G10	C106	418	850	F	70
G10	A121	450	1199	F	79	G10	C093	422	870	F	75	G10	C106	452	1080	F	90
G10	A121	461	1258	F	145	G10	C093	412	880	F	78	G10	C106	522	1920	F	230
G10	A121	464	1352	M	91	G10	C093	462	1120	F	84	G10	C121	488	1360	M	75
G10	A121	458	1244	F	113	G10	C093	442	1170	M	97	G10	C121	454	1300	F	88
G10	A121	444	1193	M	48	G10	C093	464	1160	F	75	G10	C121	438	1110	M	80
G10	A121	450	1294	M	62	G10	C093	404	720	F	56	G10	C121	472	1300	F	110
G10	A121	460	1253	M	96	G10	C093	438	960	M	90	G10	C121	448	1160	F	96
G10	A121	466	1284	F	118	G10	C093	452	1120	F	97	G10	C121	444	1080	M	55
G10	A121	458	1136	M	91	G10	C093	436	1020	F	100	G10	C121	486	1540	M	76
G10	A121	444	1070	M	50	G10	C093	436	950	M	76	G10	C121	438	1060	M	75
G10	A121	456	1198	F	116	G10	C093	448	1151	F	75	G10	C121	446	1160	M	72
G10	A121	456	1294	M	66	G10	C093	452	1130	F	85	G10	C121	492	1440	F	140
G10	A121	440	1126	F	92	G10	C093	420	920	M	43	G10	C121	468	1310	F	110
G10	C072	372	711	M	42	G10	C093	429	949	M	67	G10	C121	452	1040	M	75
G10	C072	428	954	F	80	G10	C093	448	1010	F	97	G10	C121	458	1180	M	72
G10	C072	439	1145	F	93	G10	C093	434	985	M	41	G10	C121	454	1110	M	86
G10	C072	462	1203	M	91	G10	C093	426	980	F	86	G10	C121	452	1100	M	53
G10	C072	474	1525	M	67	G10	C093	432	950	F	65	G10	C121	486	1410	M	87
G10	C082	400	780	F	60	G10	C093	421	883	F	79	G10	C121	458	1160	M	78
G10	C082	424	1050	F	52	G10	C093	406	820	F	55	G10	C121	504	1580	M	72
G10	C082	408	850	F	83	G10	C093	434	1065	M	62	G10	C121	484	1500	M	68
G10	C082	410	850	F	61	G10	C093	398	740	F	62	G10	C121	494	1440	M	100
G10	C082	411	830	F	74	G10	C093	428	960	M	55	G10	C121	488	1460	F	90
G10	C082	433	950	F	75	G10	C093	444	1020	F	70	G10	C121	456	1300	F	94
G10	C082	432	950	F	75	G10	C093	432	1050	F	68	G10	C121	472	1440	F	96
G10	C082	414		F	72	G10	C093	456	1220	F	120	G10	C121	446	1180	M	70
G10	C082	400	860	F	61	G10	C093	438	1040	F	86	G10	C121	460	1260	F	130
G10	C082	402	780	M	46	G10	C093	436	940	F	80	G10	C121	472	1220	M	48
G10	C082	436	1040	F	82	G10	C093	438	960	F	80	G10	C138	458	1278	M	70
G10	C082	422	880	M	37	G10	C093	410	1120	M	46	G10	C138	554	2286	M	204
G10	C082	440	1108	M	73	G10	C093	413	993	F	56	G10	C138	490	1630	M	154
G10	C082	402	660	F	56	G10	C093	414	930	F	58	G10	C138	429	1043	F	80
G10	C082	384	750	M	54	G10	C093	496	1520	F	150	G10	C138	514	1844	M	53
G10	C082	404	620	F	63	G10	C106	430	1022	F	81						

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

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)
G06	A112	559	2333	M	24	G07	A112	510	1855	M	13	G07	C093	417	896	M	2
G06	A112	538	1845	F	38	G07	A115	501	1919	F	39	G07	C093	474	1497	F	22
G06	A112	556	2147	M	4	G07	A115	508	1672	M	2	G07	C093	442	1145	F	16
G06	A115	572	2387	M	10	G07	A115	494	1525	M	5	G07	C106	510	1805	M	10
G06	A115	488	1314	F	25	G07	A115	506	1797	F	33	G07	C106	480	1260	M	4
G06	A121	519	1757	M	8	G07	A115	491	1547	F	18	G07	C106	490	1513	F	27
G06	C055	494	1432	F	29	G07	C072	492	1382	F	15	G07	C106	522	1861	F	38
G06	C106	487	1601	F	27	G07	C082	482	1452	F	20	G07	C106	495	1582	F	24
G06	C121	520	1646	F	35	G07	C082	449	1107	M	5	G07	C106	531	1967	F	38
G06	C121	574	2314	F	45	G07	C082	496	1475	F	26	G07	C121	508	1812	M	6
G06	C121	546	2235	F	39	G07	C082	446	1131	F	10	G07	C121	566	2360	M	4
												G07	C121	541	1983	M	9

CHINOOK 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)
G06	A112	636	4072	F	25	G06	C138	549	2165	F	12	G08	C138	820	6405	F	47
G06	C093	614	3102	M	4	G06	C157	632	3268	F	18	G10	C072	534	535	M	2
												G10	C121	608	2789	M	2

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)
G07	A115	610	2246	M	2	G07	A115	529	2576	M	1	G07	C093	561	1920	M	2

Table 7. The number of organisms caught by drift gillnet during the Oshoro maru Cruise # 202-Leg1,Leg2, 2009.
(%) indicates % of total numeric catch by C-gear gillnet at the station.

Common name	Scientific name	Station	OSG 0904						OSG 0905					
		Gear					Total	Gear					Total
		A	C	F	CPUE	(%)		A	C	F	CPUE	(%)	
Sockeye salmon	*Oncorhynchus nerka*	6	7	0	0.2	(2.9)	13	22	55	0	1.8	(36.4)	77
Chum salmon	*Oncorhynchus keta*	5	9	0	0.3	(3.8)	14	27	22	0	0.7	(14.6)	49
Pink salmon	*Oncorhynchus gorbuscha*	257	217	0	7.2	(91.2)	474	121	68	0	2.3	(45.0)	189
Coho salmon	*Oncorhynchus kisutch*	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0
Chinook salmon	*Oncorhynchus tshawytscha*	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0
Steelhead	*Oncorhynchus mykiss*	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0
								0	0	0	0.0	(0.0)	0
Eight-armed squid	*Gonatopsis borealis*	0	3	0	0.1	(1.3)	3	3	0	2	0.0	(0.0)	5
Atka mackerel	*Pleurogrammus monopterygius*	0	0	0	0.0	(0.0)	0	1	0	0	0.0	(0.0)	1
Common Murre	*Uria aalge*	0	1	0	0.0	(0.4)	1	0	0	0	0.0	(0.0)	0
Short-tailed shearwater	*Puffinus tenuirostris*	0	1	0	0.0	(0.4)	1	0	6	0	0.0	(4.0)	6

Common name	Scientific name	Station	OSG 0906						OSG 0907					
		Gear					Total	Gear					Total
		A	C	F	CPUE	(%)		A	C	F	CPUE	(%)	
Sockeye salmon	*Oncorhynchus nerka*	1	7	0	0.2	(4.5)	8	0	0	0	0.0	(0.0)	0
Chum salmon	*Oncorhynchus keta*	22	29	1	1.0	(18.7)	52	3	79	1	2.6	(61.7)	83
Pink salmon	*Oncorhynchus gorbuscha*	2	55	0	1.8	(35.5)	57	1	20	0	0.7	(15.6)	21
Coho salmon	*Oncorhynchus kisutch*	6	5	0	0.2	(3.2)	11	7	17	0	0.6	(13.3)	24
Chinook salmon	*Oncorhynchus tshawytscha*	2	2	0	0.1	(1.3)	4	0	0	0	0.0	(0.0)	0
Steelhead	*Oncorhynchus mykiss*	0	0	0	0.0	(0.0)	0	2	1	0	0.0	(0.8)	3
Eight-armed squid	*Gonatopsis borealis*	0	8	15	0.3	(5.2)	23	0	11	2	0.4	(8.6)	13
Atka mackerel	*Pleurogrammus monopterygius*	0	48	3	1.6	(31.0)	51	0	0	0	0.0	(0.0)	0
Short-tailed shearwater	*Puffinus tenuirostris*	0	1	0	0.0	(0.6)	1	0	0	0	0.0	(0.0)	0

Common name	Scientific name	Station	OSG 0908						OSG 0909					
		Gear					Total	Gear					Total
		A	C	F	CPUE	(%)		A	C	F	CPUE	(%)	
Sockeye salmon	*Oncorhynchus nerka*	10	11	0	0.4	(6.0)	21	3	10	0	0.3	(1.3)	13
Chum salmon	*Oncorhynchus keta*	18	27	0	0.9	(14.8)	45	25	22	0	0.7	(2.9)	47
Pink salmon	*Oncorhynchus gorbuscha*	63	137	0	4.6	(75.3)	200	461	724	1	24.1	(95.1)	1186
Coho salmon	*Oncorhynchus kisutch*	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0
Chinook salmon	*Oncorhynchus tshawytscha*	0	1	0	0.0	(0.5)	1	0	0	0	0.0	(0.0)	0
Steelhead	*Oncorhynchus mykiss*	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0
Eight-armed squid	*Gonatopsis borealis*	0	2	0	0.1	(1.1)	2	0	1	1	0.0	(0.1)	2
Spiny dogfish	*Squalus acanthias*	0	0	0	0.0	(0.0)	0	1	0	0	0.0	(0.0)	1
Atka mackerel	*Pleurogrammus monopterygius*	0	2	0	0.1	(1.1)	2	0	0	0	0.0	(0.0)	0
Short-tailed shearwater	*Puffinus tenuirostris*	0	2	0	0.0	(1.1)	2	2	4	0	0.0	(0.5)	6

Common name	Scientific name	Station	OSG 0910					
		Gear					Total
		A	C	F	CPUE	(%)	
Sockeye salmon	*Oncorhynchus nerka*	3	24	0	0.8	(5.2)	27
Chum salmon	*Oncorhynchus keta*	44	161	0	5.4	(34.8)	205
Pink salmon	*Oncorhynchus gorbuscha*	199	269	0	9.0	(58.2)	468
Coho salmon	*Oncorhynchus kisutch*	0	0	0	0.0	(0.0)	0
Chinook salmon	*Oncorhynchus tshawytscha*	0	2	0	0.1	(0.4)	2
Steelhead	*Oncorhynchus mykiss*	0	0	0	0.0	(0.0)	0
Eight-armed squid	*Gonatopsis borealis*	0	1	0	0.0	(0.2)	1
Ragfish	*Icosteus aenigmaticus*	1	0	0	0.0	(0.0)	1
Common Murre	*Uria aalge*	0	1	0	0.0	(0.2)	1
Short-tailed shearwater	*Puffinus tenuirostris*	4	4	0	0.0	(0.9)	8
Fulmar	*Fulmarus glacialis*	1	0	0	0.0	(0.0)	1
Tufted Puffin	*Fratercula cirrhata*	1	0	0	0.0	(0.0)	1

6. Salmon Longline and Hook-and-Line Research

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

[Hook-and-Line Sampling]
To collect salmons, hook-and-line gears were used along 44degN line and 47degN line in the Central North Pacific and in the Bering Sea during Cruise#202. Five to ten anglers were engaged in the work. These samplings were mainly conducted with observations when ship was under drifting.

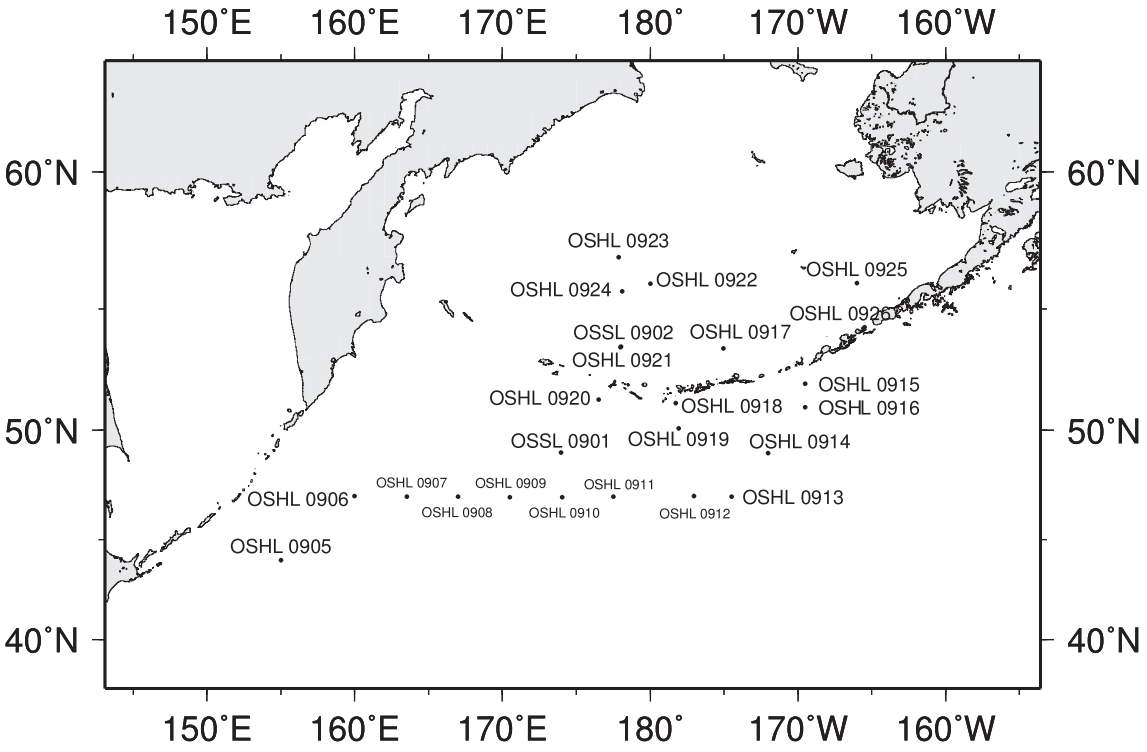


Figure 4: Locations of salmon longline (OSSL 09XX) and hook-and-line (OSHL 09XX) research

Table 8. List of hook-and-line sampling station during the Oshoromaru Cruise #202

Station	Date and Time (S.M.T.)					Set Position		D.S.	No. of hooks	Wr.	Wind (Force)	Oceanographic Station No.
	Line set		Line haul		T.D.	Lat.	Long.					
OSHL 0905	June 5	07:00	June 5	16:00	+10h	43-59.8N	155-00.1E	-	-	o	East-3	OS 09061
OSHL 0906	June 6	20:00	June 7	03:00	+10h	47-02.3N	159-58.3E	-	-	o	West-5	OS 09063
OSHL 0907	June 7	20:00	June 7	23:30	+10h	47-02.0N	163-31.0E	-	-	f	NW-3	OS 09064
OSHL 0908	June 8	20:00	June 9	03:00	+11h	47-02.0N	166-59.6E	-	-	o	North-5	OS 09065
OSHL 0909	June 9	20:00	June 9	23:45	+11h	47-00.0N	170-30.0E	-	-	o	NNW-4	OS 09066
OSHL 0910	June 10	20:00	June 11	03:00	+11h	46-59.1N	174-03.2E	-	-	o	NW-5	OS 09067
OSHL 0911	June 11	20:00	June 11	23:30	+11h	47-00.9N	177-31.0E	-	-	r	SW-5	OS 09068
OSHL 0912	June 11	20:00	June 12	03:30	-12h	47-02.5N	178-57.7W	-	-	c	SW-5	OS 09069
OSHL 0913	June 12	20:00	June 12	23:30	-12h	47-01.1N	175-30.2W	-	-	d	SW-4	OS 09070
OSHL 0914	June 13	20:00	June 13	23:30	-12h	49-00.0N	173-59.8W	-	-	r	SE-6	OS 09071
OSHL 0915	June 16	03:20	June 16	08:00	-11h	52-00.0N	170-30.2W	-	-	d	East-5	OS 09074
OSHL 0916	June 17	13:30	June 17	16:00	-10h	51-00.0N	170-30.0W	-	-	o	NW-3	OS 09077
OSHL 0917	June 23	22:00	June 24	03:30	-11h	53-27.0N	176-57.5W	-	-	d	NW-4	OS 09094
OSHL 0918	June 24	22:30	June 25	01:30	-11h	51-10.0N	179-43.3W	-	-	f	WNW-5	OS 09096
OSHL 0919	June 26	00:00	June 26	03:50	-11h	50-05.2N	179-54.7W	-	-	d	West-6	OS 09100
OSHL 0920	June 28	00:30	June 28	03:15	-11h	51-20.0N	176-30.0E	-	-	r	South-5	OS 09107
OSHL 0921	June 29	23:30	June 30	02:30	-11h	53-30.0N	178-00.0E	-	-	o	SE-4	OS 09112
OSHL 0922	June 30	21:00	July 1	04:00	-11h	55-59.0N	180-00.0E	-	-	o	ESE-5	OS 09114
OSHL 0923	July 1	23:00	July 2	02:40	-11h	56-58.0N	177-52.7E	-	-	f	ESE-3	OS 09116
OSHL 0924	July 2	22:00	July 3	02:30	-11h	55-41.0N	178-06.0E	-	-	o	West-3	OS 09118
OSHL 0925	July 9	01:40	July 9	02:40	-8h	56-00.0N	166-00.0W	-	-	o	NE-4	OS 09121
OSHL 0926	July 17	02:00	July 17	05:30	-8h	54-17.0N	166-31.0W	-	-	bc	SSW-3	-

S.M.T. : Ship's Mean Time T.D.: Time Difference between Greenwich Mean Time (G.M.T.) and S.M.T.
D.S. : Direction in which line was set Wr.: Weather (r: rain, o: 100% clouded, d: drizzling rain, f: fog, bc: 25-75% clouded)

Table 9. Position and research conditions of surface longline sampling at each station during the Oshoro maru Cruise #202-Leg 1 and Leg 2, 2009.

Station	Date and Time (S.M.T.*1)		T.D.*2	Set Position		D.S.*3	Number of baskets	Wr*4	Wind (Force)
	Line set	Line haul		Lat.	Long.				
Cruise #202 - Leg 1									
OSSL 0901	June 13 13:13-13:29	June 13 18:00-18:36	-12h	49-01.8N	173-57.3W	310	10	o	ESE-4
Cruise #202 - Leg 2									
OSSL 0902	June 29 11:40-12:01	June 29 17:00-17:23	-11h	53-30.7N	178-02.6E	080	10	d	West-2

*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: over 75-99% clouded, o: 100% clouded, d: drizzling rain, f: fog).

Table 10. The catch number of each salmonid at each station where salmonids were collected by hook-and-line gear, surface longline in the Oshoro maru Cruise #202-Leg 1-2-3, 2009.

	Station Name	Sampling gear	Species name					Total
			Sockeye	Chum	Pink	Coho	Stellhead	
Cruise #202- Leg 1	OSHL 0905	Hook-and-line	0	0	12	0	0	12
	OSHL 0906	Hook-and-line	1	1	6	0	0	8
	OSHL 0907	Hook-and-line	0	1	19	0	0	20
	OSHL 0908	Hook-and-line	2	2	35	0	0	39
	OSHL 0909	Hook-and-line	0	2	19	0	0	21
	OSHL 0910	Hook-and-line	3	2	36	0	0	41
	OSHL 0911	Hook-and-line	0	0	2	0	0	2
	OSHL 0912	Hook-and-line	0	5	4	3	1	13
	OSHL 0913	Hook-and-line	0	1	5	8	1	15
	OSHL 0914	Hook-and-line	0	0	1	0	0	1
	OSSL 0901	Surface longline	0	12	10	0	5	27
	OSHL 0915	Hook-and-line	4	1	5	0	0	10
	OSHL 0916	Hook-and-line	1	5	0	0	0	6
	Subtotal		11	32	154	11	7	215
Leg 2	OSHL 0917	Hook-and-line	1	0	1	0	0	2
	OSHL 0918	Hook-and-line	3	0	1	0	0	4
	OSHL 0919	Hook-and-line	2	0	1	0	0	3
	OSHL 0920	Hook-and-line	1	0	0	0	0	1
	OSHL 0921	Hook-and-line	0	1	31	0	0	32
	OSSL 0902	Surface longline	0	0	0	0	0	0
	OSHL 0922	Hook-and-line	2	2	6	0	0	10
	OSHL 0923	Hook-and-line	0	0	4	0	0	4
	OSHL 0924	Hook-and-line	3	1	7	0	0	11
	Subtotal		12	4	51	0	0	67
Leg 3	OSHL 0925	Hook-and-line	1	0	0	0	0	1
	OSHL 0926	Hook-and-line	2	1	4	1	0	8
	Subtotal		3	1	4	1	0	9
Total			26	37	209	12	7	291

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

SOCKEYE SALMON

St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
HL06	600	2580	M	10	HL15	588	2310	M	5	HL20	676	4020	M	42
HL08	495	1530	F	40	HL15	636	3150	M	36	HL22	609	3000	F	195
HL08	512	1520	M	2	HL16	604	2860	F	62	HL22	630	3600	M	23
HL10	462	1100	M	2	HL17	570	2450	F	135	HL24	473	1330	F	6
HL10	442	990	F	15	HL18	429	860	F	9	HL24	474	1310	M	2
HL10	424	920	F	12	HL18	422	820			HL24	464	1200	F	7
HL15	620	2640	F	52	HL18	493	1320	M	1	HL25	625	3200	M	82
HL15	560	2170	F	56	HL19	632	3400	M	50	HL26	508	1600	M	7
										HL26	563	2050	F	95

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)
HL06	526	2450	M	7	HL13	476	1260	M	1	HL26	496	1320	M	3
HL07	570	1900	M	7	HL15	466	1110	F	10	SL01	518	1500	M	5
HL08	555	2000	F	46	HL16	465	1150	F	15	SL01	334	380	F	3
HL08	590	2500	M	19	HL16	474	1060	M	1	SL01	370	490	M	1
HL09	598	2750	M	12	HL16	498	1400	F	39	SL01	344	420	M	4
HL09	506	1470	F	18	HL16	428	1010	M	1	SL01	366	470	M	1
HL10	492	1380	M	2	HL16	464	1160	M	1	SL01	500	1560	F	12
HL10	498	1210	M	2	HL21	468	1420	F	12	SL01	410	760	F	18
HL12	340	380	M	1	HL21	487	1480	M	2	SL01	394	740	F	8
HL12	444	1020	M	1	HL22	519	1680	M	1	SL01	444	1040	F	88
HL12	344	400	M	1	HL22	633	3300	F	60	SL01	444	920	M	1
HL12	452	1140	F	11	HL22	536	1600	M	3	SL01	404	720	M	4
HL12	327	380	F	1	HL24	598	2900	M	150	SL01	320	340	F	1

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	415	760	M	7	HL08	442	1030	F	26	HL10	478	1130	M	24
HL05	438	900	F	17	HL08	461	1190	F	40	HL10	394	820	F	35
HL05	440	940	M	6	HL08	480	1390	M	15	HL10	416	890	F	52
HL05	448	980	F	35	HL08	483	1420	M	15	HL10	396	780	F	49
HL05	431	920	M	13	HL08	420	1010	F	30	HL10	426	880	F	37
HL05	440	970	M	11	HL08	464	1180	M	18	HL10	410	740	F	35
HL05	482	1380	M	7	HL08	456	1200	M	7	HL10	422	760	F	40
HL05	450	970	M	7	HL08	446	1050	M	22	HL10	383	780	F	32
HL05	452	1050	M	6	HL08	416	810	M	12	HL10	390	820	F	45
HL05	445	1000	F	26	HL08	470	1540	M	25	HL10	400	850	F	38
HL05	440	980	F	36	HL08	465	1280	F	80	HL10	406	760	F	38
HL05	430	900	M	13	HL08	455	1080	M	8	HL10	418	830	F	33
HL06	420	1030	F	55	HL08	420	1020	F	62	HL10	440	980	F	48
HL06	446	1250	M	30	HL08	486	1440	M	35	HL10	414	830	F	43
HL06	475	1530	M	40	HL08	448	1050	F	45	HL11	438	980	F	55
HL06	476	1300	F	45	HL09	407	680	M	13	HL11	429	940	F	65
HL06	492	1390	M	10	HL09	430	990	F	64	HL12	408	710	F	43
HL06	450	1140	F	40	HL09	455	1220	M	10	HL12	365	510	F	29
HL07	475	1265	M	22	HL09	450	1050	M	36	HL12	417	800	F	36
HL07	482	1240	M	7	HL09	405	730	F	29	HL12	411	710	F	35
HL07	420	950	M	5	HL09	390	710	F	43	HL13	470	1130	F	93
HL07	445	1020	F	17	HL09	444	1140	M	13	HL13	448	990	F	49
HL07	481	1310	F	77	HL09	434	1010	F	37	HL13	460	1120	F	95
HL07	448	1030	M	10	HL09	423	880	F	46	HL13	426	800	F	37
HL07	451	1000	F	17	HL09	406	900	F	38	HL13	480	1200	M	27
HL07	430	990	M	11	HL09	448	1130	F	26	HL14	410	760	M	25
HL07	444	1190	M	9	HL09	430	820	F	37	HL15	422	920	F	54
HL07	445	1030	F	27	HL09	478	1380	M	19	HL15	434	920	M	34
HL07	439	1260	F	62	HL09	450	1100	M	10	HL15	448	1060	F	92
HL07	444	1080	M	13	HL09	445	1120	M	16	HL15	436	940	M	48
HL07	456	1180	M	20	HL09	446	960	F	38	HL15	394	800	F	42
HL07	438	980	F	34	HL09	448	920	F	29	HL17	414	800	F	52
HL07	448	1120	M	16	HL09	411	810	F	57	HL18	428	780	M	
HL07	450	1100	F	37	HL09	424	770	F	39	HL19	393	720	F	59
HL07	421	1020	M	27	HL10	424	960	F	52	HL21	426	920	M	59
HL07	464	1310	M	8	HL10	422	940	M	17	HL21	421	950	F	54
HL08	420	980	F	43	HL10	395	820	F	49	HL21	448	980	F	70
HL08	468	1190	F	33	HL10	394	800	F	36	HL21	421	960	F	80
HL08	461	1180	F	49	HL10	390	750	F	56	HL21	445	920	F	69
HL08	456	1280	F	37	HL10	406	760	F	35	HL21	441	1040	F	109
HL08	444	1160	F	35	HL10	427	940	M	30	HL21	468	1140	F	140
HL08	444	1110	F	42	HL10	414	860	F	37	HL21	460	1280	M	53
HL08	450	1240	M	47	HL10	414	840	F	37	HL21	454	1180	F	100
HL08	461	1290	M	45	HL10	428	850	F	36	HL21	393	670	F	55
HL08	430	1040	M	30	HL10	376	650	M	20	HL21	445	1000	F	88
HL08	382	620	M	8	HL10	410	740	M	25	HL21	413	880	M	57
HL08	430	1000	F	58	HL10	412	760	F	48	HL21	423	780	M	42
HL08	422	1040	F	40	HL10	390	670	M	14	HL21	420	980	F	82
HL08	480	1540	M	32	HL10	386	690	F	36	HL21	438	950	M	67
HL08	470	1265	F	62	HL10	398	770	M	15	HL21	432	1080	F	77
HL08	437	920	M	23	HL10	424	920	F	48	HL21	406	820	M	53
HL08	474	1270	F	54	HL10	454	1060	F	77	HL21	490	1680	M	55
HL08	474	1560	F	44	HL10	412	780	F	43	HL21	418	1000	F	73
HL08	470	1220	M	23	HL10	410	790	F	32	HL21	444	1100	F	77
HL08	452	1070	M	25	HL10	382	640	F	42	HL21	425	1020	M	50
HL08	444	1120	F	55	HL10	446	990	F	18	HL21	440	1000	F	88

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

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)
HL21	413	810	F	64	HL22	426	960	F	115	HL26	442	920	M	54
HL21	502	1700	M	77	HL22	430	1040	F	58	HL26	498	1400	M	84
HL21	444	1080	F	65	HL23	422	950	F	82	HL26	488	1230	M	74
HL21	441	1070	M	67	HL23	430	954	F	85	HL26	540	1900	M	73
HL21	438	940	F	95	HL23	420	1040	F	94	SL01	450	960	F	66
HL21	434	1020	F	82	HL23	456	1016	F	94	SL01	364	480	F	15
HL21	422	990	F	65	HL24	443	1080	M	64	SL01	422	830	F	44
HL21	429	960	F	98	HL24	454	1240	F	140	SL01	432	820	F	60
HL21	410	1010	F	63	HL24	480	1170	M	98	SL01	478	1220	F	7
HL22	485	1560	F	140	HL24	449	1290	M	46	SL01	396	630	M	5
HL22	458	1026	M	52	HL24	449	1050	F	93	SL01	378	550	M	20
HL22	454	1220	F	95	HL24	441	1060	M	83	SL01	424	840	F	50
HL22	473	1032	F	130	HL24	410	790	F	74	SL01	410	780	F	34
										SL01	384	640	M	15

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)
HL12	458	1000	M	5	HL13	508	1630	M	10	HL13	532	1060	F	26
HL12	531	1770	F	27	HL13	478	1390	F	20	HL13	544	2050	M	12
HL12	396	680	M	8	HL13	554	1940	M	12	HL13	520	1670	F	29
HL13	477	1360	M	8	HL13	526	1920	M	15	HL26	616	3350	M	140

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)
HL12	590	1930	F	6	SL01	588	2700		1	SL01	680	3000	F	29
HL13	559	1780	M	1	SL01	710	3000	M	10	SL01	572	2100	M	1
										SL01	574	1740	M	2

7. Bottom Trawl Research

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

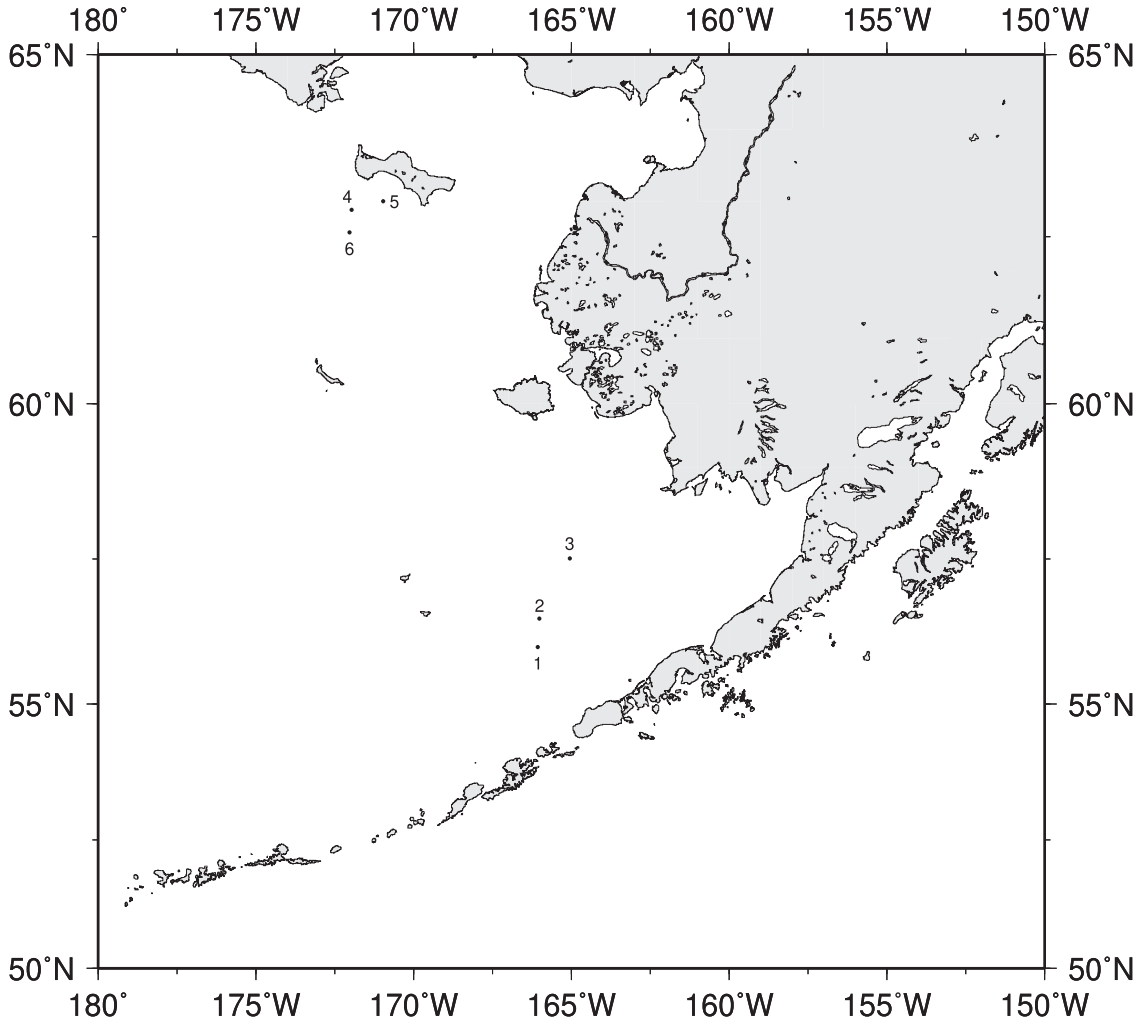


Figure 5: Locations of bottom trawl research

Table 12. Position and research conditions of bottom trawl sampling at each station during the Oshoro maru Cruise #202-Leg 3, 2009.

Station	Date and Time of net tow (*S.M.T.)		Position		Towing direction	Bottom depth (m)	**Wr	Wind (Force)
			Lat. (N)	Long. (W)				
Cruise #202 - Leg 3								
OST0901	July 9	10:25-10:55	55-59.9	167-55.7	260	136	o	ENE-4
OST0902	10	08:00-08:15	56-29.3	167-59.4	090	123	o	East-4
OST0903	11	09:54-10:24	57-30.8	166-57.0	090	70	f	SE-4
OST0904	13	08:51-09:16	62-53.0	172-01.9	320	50	d	SE-6
OST0905	14	07:17-07:47	63-00.3	171-01.6	330	71	f	SE-6
OST0906	14	13:00-13:20	62-33.6	173-58.5	180	67	d	South-7

*S.M.T. : Ship's Mean Time. (Time difference from Greenwich Mean Time is -8 hours.)
** Wr : Weather (c: over 75-99% clouded, o: 100% clouded, r: rain, d:drizzling rain, f: fog)

Table 13: Data on catches by bottom trawl research

		OST 0901		OST 0902		OST 0903		OST 0904		OST 0905		OST 0906	
Japanese name	Scientific Name	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Sokogangiei-rui	*Bathyraja* spp.	6	31	-	-	1	3.2	2	10	2	11.1	3	14
Nishin	*Clupea pallasii*	-	-	-	-	-	-	31	0.36	2	0.03	-	-
Karafutoshisyamo	*Mallotus villosus*	-	-	-	-	5	0.05	8	0.078	1	0.03	3	0.03
Lousokuuo	*Thaleichthys pacificus*	3	0.05	-	-	-	-	-	-	-	-	-	-
Suketoudara	*Theragra chalcogramma*	132	184	-	-	21	0.4	35	Unmeasurable	22	0.2	80	0.4
Komai	*Eleginus gracilis*	-	-	-	-	1	0.1	-	-	-	-	-	-
Madara	*Gadus macrocephalus*	21	35	-	-	7	10.3	-	-	2	5.5	-	-
Hokkyokudara	*Boreogadus saida*	-	-	-	-	-	-	12	Unmeasurable	45	1.6	172	Unmeasurable
Arasukamenuke	*Sebastes alutus*	1	1.0	-	-	-	-	-	-	-	-	-	-
Nameyokosujikajika	*Hemilepidotus jordani*	-	-	-	-	-	-	-	-	3	0.13	5	0.19
Togekajika	*Myoxocephalus polyacanthocephalus*	-	-	-	-	3	6.1	-	-	-	-	-	-
Ibogisukajika	*Myoxocephalus verrucosus*	-	-	-	-	1	0.8	-	-	-	-	-	-
Kourikajika-rui	*Icelus uncinalis*	-	-	-	-	-	-	-	-	1	0.02	-	-
Kemushikajikamodoki	*Hemitripterus bolini*	2	12	1	4.9	-	-	-	-	-	-	-	-
Kitanotokubire	*Podothecus accipenserinus*	-	-	-	-	4	0.4	-	-	-	-	-	-
Fujiitokubire	*Ulsina olrikii*	-	-	-	-	-	-	6	0.017	-	-	-	-
Yasetengutokubire	*Sarritor frenatus*	-	-	1	0.04	-	-	-	-	-	-	-	-
Kusauo-rui	*Liparis* spp.	-	-	-	-	1	0.45	80	0.64	32	3.5	56	1.25
Mayugaji-rui	*Lycodes* spp.	-	-	-	-	-	-	21	1	166	25	146	7.0
Nisemedamaginpo	*Anisarchus medius*	-	-	-	-	-	-	14	0.08	442	9	16	0.14
Ohyo	*Hippoglossus stenolepis*	4	19	2	8.7	2	3.2	-	-	-	-	-	-
Arasukaaburagarei	*Atheresthes stomias*	624	216	-	-	-	-	-	-	46	1.1	3	0.05
Akagarei-rui	*Hippooglossoides* spp.	191	48	3	1.6	3	1.6	193	4.0	435	28	121	4.3
Syumusyugarei	*Lepidopsetta bilineata*	2	2.3	27	5.5	27	5.5	-	-	-	-	-	-
Koganegarei	*Limanda aspera*	-	-	237	96	237	96	13	2.0	2	0.2	1	0.2
Tsunogarei	*Pleuronectes quadrituberculatus*	-	-	78	73.2	78	73.2	18	13	2	0.8	-	-
Hirenaganameta	*Glyptocephalus zachirus*	37	16	7	1.3	-	-	-	-	-	-	-	-
Tako-rui	Octopuses	2	0.05	-	-	-	-	-	-	1	0.04	-	-
Ika-rui	Squids	-	-	-	-	-	-	-	-	-	-	1	0.01
Zuwaigani	*Chionoecetes opilio*	10	2.0	23	10.5	103	31	-	-	-	-	2689	63
Ozuwaigani	*Chionoecetes bairdi*	-	-	-	-	-	-	12000	139	-	-	-	-
Hikigani-rui	*Hyas* spp.	-	-	-	-	40	1.1	-	-	-	-	-	-
Yadokari-rui	Hermit crabs	17	1.4	4	0.3	96	3.0	14	0.1	-	-	9	0.05
Jyakoebi-rui	Crangonidae spp.	-	-	-	-	-	-	318	1.8	390	2.4	294	1.0
Ezobai-rui	Neptune whelks	26	2.1	6	0.5	227	16	264	12	-	-	28	0.36
Makigai-rui	Conches	-	-	-	-	-	-	-	-	256	1.8	235	1.5
Nimaigai-rui	Bivalves	1	0.2	-	-	-	-	-	-	-	-	-	-
Kashipan-rui	Sand dollars	-	-	129	1.2	129	1.2	-	-	-	-	-	-
Hitode-rui	Starfishes	-	-	68	27.5	68	27.5	180	15	-	-	7	0.6
Kumohitode-rui	Ophiuroids	-	-	-	-	Uncountable	5.8	174	0.4	-	-	-	-
Isoginchaku-rui	Actiniae	-	-	59	3.8	-	-	-	-	-	-	3	0.05
Hoya-rui	Sea squirts	-	-	2317	434	2317	434	164	12	-	-	-	-

8. Data on plankton collected by vertical hauls of a single or 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. Ishii, K. Matsuno, R. Saito, K. Ohgi, Y. Onishi, T. Homma, R. Ohashi, C. Tsukazaki and K. Mishima (Laboratory of Marine Biology).

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

GG54:0.33mm mesh, XX13:0.10mm 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		
OS09060	41-31	146-00 E	3-Jun	8:50	151	8	150	GG54	1858	1460	21.91	5.1	231		09201
(Site H)								XX13	2555	1045	20.78				09202
				9:10	526	18	500	GG54	1858	5268	79.04	12.3	155		09203
								XX13	2555	3370	67.00				09204
OS09061	44-00	155-00 E	5-Jun	11:10	156	16	150	GG54	1479	1598	25.35	9.2	362		09205
(St. KNOT)								XX13	2446	1399	19.39				09206
OS09063	47-00	160-00 E	6-Jun	17:06	162	22	150	GG54	1479	1928	30.59	25.8	842	3)	09207
								XX13	2446	1255	17.39				09208
OS09064	47-00	163-30 E	7-Jun	19:00	158	18	150	GG54	1479	1782	28.27	6.0	212		09209
								XX13	2446	1538	21.31				09210
OS09065	47-00	167-00 E	8-Jun	16:36	151	8	150	GG54	1479	1561	24.77	2.5	100		09211
								XX13	2446	1463	20.27				09212
OS09066	47-00	170-30 E	9-Jun	21:34	158	19	149	GG54	1479	1899	30.13	7.7	256		09213
								XX13	2446	1672	23.17				09214
OS09067	47-00	174-00 E	10-Jun	15:49	150	0	150	GG54	1479	1439	22.83	5.4	238		09215
								XX13	2446	1310	18.15				09216
OS09068	47-00	177-30 E	11-Jun	21:05	152	10	150	GG54	1479	1670	26.50	8.8	331		09217
								XX13	2446	1448	20.06				09218
OS09069	47-00	179-00 W	11-Jun	15:52	158	19	149	GG54	1479	1629	25.85	12.3	475		09219
								XX13	2446	1441	19.97				09220
OS09070	47-00	175-30 W	12-Jun	21:15	162	22	150	GG54	1479	1743	27.65	10.8	391		09221
								XX13	2446	1670	23.14				09222
OS09071	49-00	174-00 W	13-Jun	15:35	164	24	150	GG54	1479	1835	29.11	101.1	3473	1)	09223
(Trap SA)								XX13	2446	1330	18.43				09224
OS09072	52-24	172-00 W	15-Jun	14:16	164	24	150	GG54	1479	1775	28.16	3.8	134		09225
(Mooring station 1)								XX13	2446	1860	25.77				09226
OS09073	52-20	170-30 W	15-Jun	23:25	151	8	150	GG54	1479	1490	23.64	7.1	300		09227
								XX13	2446	1430	19.81				09228
OS09074	52-00	170-30 W	16-Jun	5:40	152	10	150	GG54	1479	1551	24.61	3.4	137		09229
								XX13	2446	1579	21.88				09230
OS09075	51-40	170-30 W	16-Jun	15:40	155	15	150	GG54	1479	1582	25.10	2.4	97		09231
								XX13	2446	1651	22.88				09232
OS09076	51-20	170-30 W	17-Jun	11:18	160	20	150	GG54	1479	1815	28.80	4.4	154		09233
								XX13	2446	1695	23.49				09234
OS09077	51-00	170-30 W	17-Jun	15:40	153	12	150	GG54	1479	1520	24.12	2.6	106		09235
								XX13	2446	1420	19.68				09236
OS09078	50-40	170-30 W	17-Jun	20:21	156	16	150	GG54	1479	1510	23.96	20.9	873	3)	09237
								XX13	2446	1420	19.68				09238
OS09089	52-40	166-00 W	18-Jun	18:50	160	20	150	GG54	1479	1848	29.32	36.7	1251	1)	09239
								XX13	2446	1151	15.95				09240
OS09090	53-00	166-00 W	18-Jun	21:05	167	26	150	GG54	1479	1780	28.24	31.4	1113	1)	09241

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

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

GG54:0.33mm mesh, XX13:0.10mm 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		
								XX13	2446	1205	16.70				09242
OS09091	53-20	166-00 W	18-Jun	23:25	164	24	150	GG54	1479	1941	30.80	32.3	1050	1)	09243
								XX13	2446	1505	20.85				09244
OS09093	53-40	174-00 W	23-Jun	8:33	156	17	149	GG54	1479	1628	24.84	15.6	627		09245
								XX13	2446	1305	19.90				09246
OS09094	53-27	176-57 W	23-Jun	23:20	155	13	151	GG54	1479	1548	23.62	122.4	5182	1)	09247
(Trap AB)								XX13	2446	1020	15.56				09248
OS09095	52-50	178-30 W	24-Jun	12:29	167	26	150	GG54	1479	1788	27.28	58.3	2135	1)	09249
								XX13	2446	1230	18.76				09250
OS09096	51-10	179-43 W	24-Jun	22:27	158	18	150	GG54	1479	1800	27.46	7.8	284		09251
								XX13	2446	1630	24.86				09252
OS09097	51-30	180-00	25-Jun	5:21	164	24	150	GG54	1479	2275	34.71	32.1	924	1)	09253
(Mooring station 2)								XX13	2446	1131	17.25				09254
OS09098	50-50	179-46 W	25-Jun	10:27	155	14	150	GG54	1479	1678	25.60	2.9	113		09255
								XX13	2446	1349	20.57				09256
OS09099	50-25	179-50 W	25-Jun	17:41	150	1	150	GG54	1479	1290	19.68	18.0	917	1)	09257
								XX13	2446	1685	25.70				09258
OS09100	50-05	179-55 W	25-Jun	23:50	161	21	150	GG54	1479	1572	23.98	29.7	1238	1)	09259
								XX13	2446	1031	15.72				09260
OS09101	49-45	180-00	26-Jun	7:30	153	11	150	GG54	1479	1589	24.24	5.9	244		09261
								XX13	2446	1230	18.76				09262
OS09102	49-30	180-00	26-Jun	14:00	150	4	150	GG54	1479	1633	24.92	6.8	275		09263
								XX13	2446	1206	18.39				09264
OS09103	50-00	176-30 E	27-Jun	5:29	154	13	150	GG54	1479	1380	21.06	26.5	1257	1)	09265
								XX13	2446	710	10.83				09266
OS09104	50-20	176-30 E	27-Jun	10:28	166	25	150	GG54	1479	2005	30.59	4.4	143		09267
								XX13	2446	1440	21.96				09268
OS09105	50-40	176-30 E	27-Jun	15:04	153	13	149	GG54	1479	1690	25.79	6.2	241		09269
								XX13	2446	1368	20.86				09270
OS09108	51-40	176-30 E	28-Jun	5:13	150	0	150	GG54	1479	1672	25.51	7.2	283		09271
								XX13	2446	1118	17.05				09272
OS09109	51-58	176-51 E	28-Jun	13:00	140	14	136	GG54	1479	1610	24.56	9.0	365		09273
(Mooring station 3)								XX13	2446	901	13.74				09274
OS09110	52-24	175-15 E	28-Jun	21:25	156	16	150	GG54	1479	1623	24.76	20.4	824	1)	09275
(Mooring station 4)								XX13	2446	992	15.13				09276
OS09111	53-00	177-00 E	29-Jun	4:38	155	15	150	GG54	1479	1682	25.66	22.8	888	1)	09277
								XX13	2446	993	15.14				09278
OS09112	53-30	178-00 E	29-Jun	10:40	155	14	150	GG54	1479	1520	23.19	23.5	1013	1)	09279
								XX13	2446	724	11.04				09280
OS09113	55-10	179-20 E	30-Jun	11:52	150	6	149	GG54	1479	1330	20.29	41.8	2060	1)	09281
								XX13	2446	860	13.12				09282
OS09114	56-00	180-00	30-Jun	17:54	156	17	149	GG54	1479	1690	25.79	12.9	502		09283
								XX13	2446	1361	20.76				09284
OS09115	56-30	179-00 E	1-Jul	9:45	153	12	150	GG54	1479	1760	26.85	21.1	784	1)	09285
								XX13	2446	915	13.96				09286
OS09116	57-00	178-00 E	1-Jul	15:28	152	11	149	GG54	1479	1385	21.13	39.6	1875	1)	09287
								XX13	2446	839	12.80				09288
OS09117	56-30	177-00 E	2-Jul	10:20	152	10	150	GG54	1479	1840	28.07	16.4	583		09289
								XX13	2446	980	14.95				09290
OS09118	55-40	178-00 E	2-Jul	17:50	153	12	150	GG54	1479	1772	27.04	33.3	1231	1)	09291
								XX13	2446	1160	17.69				09292
OS09119	55-00	166-00 W	8-Jul	17:29	125	7	124	GG54	1479	1240	18.68	17.3	929		09293
								XX13	2446	1015	15.63				09294
OS09120	55-30	166-00 W	8-Jul	22:15	118	10	116	GG54	1479	1288	19.40	14.7	760		09295
								XX13	2446	1096	16.88				09296
OS09121	56-00	166-00 W	9-Jul	2:05	110	12	108	GG54	1479	1130	17.02	15.5	910	1)	09297
								XX13	2446	968	14.91				09298

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

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

GG54:0.33mm mesh, XX13:0.10mm 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		
OS09122	56-00	167-00 W	9-Jul	6:12	134	17	128	GG54	1479	1332	20.06	86.8	4327	1)	09299
								XX13	2446	1140	17.56				09300
OS09123	56-00	168-00 W	9-Jul	15:03	137	18	130	GG54	1479	1479	22.28	9.9	443		09301
								XX13	2446	1210	18.63				09302
OS09124	56-00	170-00 W	9-Jul	21:11	151	8	150	GG54	1479	1553	23.39	3.0	127		09303
								XX13	2446	1340	20.63				09304
OS09125	56-30	169-00 W	10-Jul	2:34	99	9	98	GG54	1479	1004	15.12	20.2	1338	1)	09305
								XX13	2446	814	12.53				09306
OS09126	56-30	168-00 W	10-Jul	7:02	118	19	112	GG54	1479	1220	18.37	68.5	3726	1)	09307
								XX13	2446	1076	16.57				09308
OS09127	56-30	166-00 W	10-Jul	15:35	79	1	79	GG54	1479	684	10.30	36.1	3503	1)	09309
								XX13	2446	492	7.58				09310
OS09128	57-00	166-00 W	10-Jul	19:36	65	5	65	GG54	1479	636	9.58	8.1	845		09311
								XX13	2446	340	5.24				09312
OS09129	57-00	167-00 W	10-Jul	23:49	70	0	70	GG54	1479	700	10.54	7.6	718		09313
								XX13	2446	578	8.90				09314
OS09130	57-00	168-00 W	11-Jul	3:55	72	1	72	GG54	1479	690	10.39	12.1	1169	1)	09315
								XX13	2446	492	7.58				09316
OS09131	57-30	167-00 W	11-Jul	9:12	66	9	65	GG54	1479	662	9.97	5.5	548		09317
								XX13	2446	410	6.31				09318
OS09132	57-30	166-00 W	11-Jul	14:26	59	0	59	GG54	1479	560	8.43	11.4	1352	1)	09319
								XX13	2446	350	5.39				09320
OS09133	58-00	166-00 W	11-Jul	18:10	50	13	49	GG54	1479	509	7.67	2.6	345		09321
								XX13	2446	410	6.31				09322
OS09134	58-30	168-00 W	11-Jul	22:50	40	4	40	GG54	1479	415	6.25	1.1	180		09323
								XX13	2446	344	5.30				09324
OS09135	61-00	172-00 W	12-Jul	21:50	50	14	49	GG54	1479	580	8.74	1.4	163		09325
								XX13	2446	292	4.50				09326
OS09136	62-30	172-00 W	13-Jul	1:45	40	15	39	GG54	1479	451	6.79	1.6	230		09327
								XX13	2446	319	4.91				09328
OS09137	63-00	172-00 W	13-Jul	13:45	49	17	47	GG54	1479	560	8.43	7.8	930		09329
								XX13	2446	168	2.59				09330
OS09139	63-00	174-00 W	13-Jul	22:15	71	14	69	GG54	1479	835	12.58	2.7	215		09331
								XX13	2446	435	6.70				09332
OS09141	58-41	170-19 W	15-Jul	14:45	65	5	65	GG54	1479	700	10.54	3.6	342		09333
								XX13	2446	280	4.31				09334
Extra station	54-31	170-46 W	20-Jul	23:01	164	24	150	GG54	1479	2160	31.87	10.9	343		09335
								XX13	2446	1863	26.69				09336
Extra station	53-15	177-36 E	22-Jul	22:55	156	16	150	GG54	1479	1551	22.88	11.8	518		09337
								XX13	2446	1462	20.95				09338
Extra station	52-24	170-30 E	24-Jul	22:20	151	8	150	GG54	1479	1448	21.36	14.1	662		09339
								XX13	2446	1340	19.20				09340
Extra station	49-35	164-51 E	25-Jul	22:38	150	5	149	GG54	1479	1442	21.27	15.1	709		09341
								XX13	2446	1248	17.88				09342
Extra station	46-38	159-18 E	26-Jul	21:45	164	24	150	GG54	1479	2422	35.73	6.3	176		09343
								XX13	2446	2305	33.03				09344
Extra station	43-53	154-24 E	27-Jul	21:38	151	7	150	GG54	1479	1412	20.83	11.4	547		09345
								XX13	2446	1290	18.48				09346
OS09143	41-30	145-47 E	29-Jul	12:46	161	21	150	GG54	1479	1911	28.19	5.4	192		09347
(Site H)								XX13	2446	1830	26.22				09348
				12:58	577	30	500	GG54	1479	6848	101.03	16.1	159		09349
								XX13	2446	6137	87.93				09350
Extra station	41-36	144-35 E	29-Jul	21:03	152	10	150	GG54	1479	1648	24.31	10.6	435		09351
								XX13	2446	1540	22.07				09352

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

9. Calibration of Flowmeters

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

Table 15-1. Calibration data on flowmeters used for a twin or single NORPAC net and other kind of nets.
100-m wire out at St. OS09091 in 18 June 2009.

Flowmeter	Wire length	Revolution							
No.	(m)	1	2	3	4	5	6	7	Mean
RG1479	100	1000	1011	978*	1010	1000	991	1078*	1002
RG2446	100	1157	1180*	1138	1168	1142	1130*	1134	1148
RG3023	100	1232	1268*	1232	1258	1218	1228	1210*	1234
RG3556	100	1030	1045*	1028*	1038	1037	1031	1031	1033

*: omitted from calculation

Table 15-2. Calibration data on flowmeters used for a twin NORPAC net and other kind of nets.
100-m wire out at 54°39'N, 171°45'W in 4 July 2009.

Flowmeter	Wire length	Revolution							
No.	(m)	1	2	3	4	5	6	7	Mean
RG1479	100	1052	1025*	1029	1032	1032	1067	1078*	1042
RG2446	100	1045	1030*	1032	1041	1038	1058	1070*	1043
RG3023	100	1075*	1006	1002*	1010	1008	1032	1052	1022
RG3556	100	1019	982*	997	1102*	1100	1011	1069	1039

*: omitted from calculation

Table 15-3. Calibration data on flowmeters used for a twin NORPAC net and other kind of nets.
50-m wire out at St. OS09141 in 15 July 2009.

Flowmeter	Wire length	Revolution							
No.	(m)	1	2	3	4	5	6	7	Mean
RG1479	50	539	521	510	540	505*	530	550*	528
RG2446	50	528	515	506	530*	505*	518	515	516
RG2856	50	680*	640	621	645	612*	645	635	637
RG3023	50	595*	578	560	581	561	580	560*	572
RG3556	50	578*	562	555	563	535*	560	555	559

*: omitted from calculation

Table 15-4. Calibration data on flowmeters used for a twin NORPAC net and other kind of nets.
50-m wire out at St. OS09143 in 29 July 2009.

Flowmeter	Wire length	Revolution							
No.	(m)	1	2	3	4	5	6	7	Mean
RG1479	50	564*	542	542	535	531*	543	533	539
RG2446	50	565*	560	562	551	551*	551	551	555

*: omitted from calculation

10. Data on Nutrients

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

Table 16. Data on Nutrients

OS09060

Depth (m)	6371		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
0	0.61	5.82	0.22
10	0.60	5.80	0.21
30	0.60	5.77	0.36
50	0.68	7.03	0.48
100	0.98	11.41	0.10
150	1.29	15.50	0.09
200	1.25	15.12	0.09
300	1.60	20.38	0.09
500	2.73	36.54	0.08
750	3.07	42.77	0.09
1000	3.22	44.62	0.08
2000	3.04	43.17	0.06

OS09064

Depth (m)	5745		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
0	1.52	14.87	0.30
5	1.51	14.74	0.28
10	1.52	14.77	0.28
20	1.51	14.87	0.30
30	1.58	15.90	0.35
50	1.66	17.83	0.62
75	1.70	19.15	0.44
100	1.69	18.61	0.22
150	1.68	18.61	0.08
200	2.17	26.17	0.08
300	2.82	35.79	0.07
500	3.19	41.30	0.07
750	3.35	43.94	0.07
1000	3.36	44.15	0.07
1250	3.35	43.97	0.08
1500	3.35	44.69	0.11
2000	3.22	42.31	0.08
2500	3.06	41.07	0.09
3000	2.92	38.90	0.08
3500	2.84	37.93	0.08
4000	2.78	37.26	0.08
4500	2.74	36.89	0.10
5000	2.72	36.77	0.08

OS09066

Depth (m)	6310		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
0	1.45	16.81	0.27
5	1.51	16.80	0.26
10	1.46	16.79	0.26
20	1.50	16.80	0.26
30	1.49	18.00	0.27
50	1.58	21.56	0.37
75	1.76	22.52	0.41
100	1.81	23.48	0.25
150	2.17	37.34	0.08
200	2.85	43.39	0.08
300	3.13	45.42	0.08
500	3.16	45.48	0.08
750	3.10	45.47	0.07
1000	3.20	45.21	0.08
1250	3.17	44.84	0.07
1500	3.11	43.88	0.07
2000	3.04	42.43	0.07
2500	3.00	40.66	0.07
3000	2.96	38.94	0.07
3500	2.89	37.99	0.07
4000	2.70	45.50	0.07
4500	2.73	36.84	0.07
5000	2.72	37.17	0.07

OS09068

Depth (m)	5478		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
0	1.56	15.68	0.24
5	1.59	16.36	0.25
10	1.59	15.80	0.23
20	1.61	15.82	0.23
30	1.54	15.30	0.22
50	1.63	16.82	0.30
75	1.66	18.65	0.40
100	1.83	21.70	0.08
150	2.41	31.12	0.07
200	2.78	36.32	0.08
300	3.09	40.69	0.07
500	3.16	41.33	0.07
750	3.26	44.71	0.07
1000	3.33	44.87	0.07
1250	3.29	44.60	0.08
1500	3.16	41.70	0.08
2000	3.14	43.40	0.10
2500	2.62	32.96	0.08
3000	2.91	39.73	0.08
3500	2.74	38.39	0.08
4000	2.75	37.87	0.09
4500	2.68	37.48	0.09
5000	2.66	37.43	0.08

OS09070

Depth (m)	5644		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
0	1.39	13.22	0.24
5	1.42	13.24	0.22
10	1.39	13.22	0.23
20	1.41	13.30	0.20
30	1.36	13.66	0.20
50	1.51	14.91	0.25
75	1.60	16.36	0.38
100	1.75	20.16	0.18
150	2.53	33.24	0.08
200	2.80	37.11	0.08
300	3.05	41.47	0.08
500	3.22	44.25	0.08
750	3.14	44.17	0.08
1000	3.30	45.27	0.08
1250	3.28	45.38	0.08
1500	3.24	44.70	0.09
2000	3.12	43.59	0.08
2500	3.01	41.66	0.09
3000	2.90	40.13	0.08
3500	2.81	38.90	0.08
4000	2.62	37.71	0.08
4500	2.66	37.85	0.08
5000	2.77	37.83	0.08

OS09112

Depth (m)	3903		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
0	1.52	15.80	0.44
5	1.57	15.99	0.42
10	1.58	16.20	0.42
20	1.70	16.12	0.43
30	1.80	17.99	0.44
50	2.25	24.55	0.50
75	2.39	29.05	0.22
100	2.43	29.72	0.12
150	2.50	30.42	0.16
200	2.76	34.66	0.14
300	3.12	41.44	0.13
500	3.22	42.03	0.12
750	3.39	45.74	0.09
1000	3.37	45.30	0.17
1250	3.39	44.92	0.10
1500	3.36	44.91	0.10
1750	3.22	42.45	0.15
2000	3.22	41.98	0.10
2250	3.27	41.54	0.08
2500	3.24	40.69	0.08
3000	3.18	39.44	0.09
3500	3.12	38.82	0.08
3750	3.05	37.65	0.15

OS09114

Depth (m)	3840		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
0	1.78	17.09	0.35
5	1.75	17.48	0.33
10	1.81	17.42	0.33
20	1.77	17.11	0.33
30	1.81	17.89	0.33
50	2.24	25.03	0.34
75	2.40	29.14	0.69
100	2.39	29.52	0.21
150	2.41	29.88	0.13
200	2.67	34.67	0.11
300	3.08	40.84	0.14
500	3.36	44.81	0.08
750	3.37	45.56	0.08
1000	3.39	45.71	0.09
1250	3.39	45.19	0.08
1500	3.34	35.84	0.09
1750	3.33	43.46	0.08
2000	3.22	42.87	0.10
2250	3.27	42.03	0.12
2500	3.16	40.56	0.09
3000	3.15	39.34	0.10
3500	3.13	38.93	0.08
3700	3.12	38.68	0.08

OS09116

Depth (m)	3840		
Depth (m)	PO_4(μM)	NO_3+NO_2(μM)	NO_2(μM)
5	1.16	13.88	0.28
10	1.23	13.91	0.28
20	1.24	14.22	0.29
30	1.69	17.56	0.32
50	2.01	22.14	0.33
75	2.34	28.68	0.35
100	2.35	28.87	0.12
150	2.36	29.12	0.12
200	2.37	29.08	0.10
300	3.01	40.74	0.09
500	3.29	44.78	0.10
750	3.31	44.87	0.09
1000	3.41	45.53	0.09
1250	3.38	44.36	0.09
1500	3.32	44.21	0.09
1750	3.22	42.48	0.09
2000	3.22	42.47	0.08
2250	3.25	42.57	0.09
2500	3.16	40.62	0.08
3000	3.12	39.67	0.08
3500	3.08	38.94	0.09
3700	2.96	38.77	0.10

7

THE “OSHORO MARU” CRUISE 206
TO EAST OF TSUGARU STRAIT

IN SEPTEMBER TO OCTOBER 2009

1. Cruise Itinerary

Cruise 206

Departure from Hakodate	Sep.	28	,2009
Start bottom trawl research (OST0908)		29	
Start hydrographic research (OS09144)		29	
Start saury gillnet (OSSG0901)	Oct.	1	
Arrival at Hakodate and change cadets		3	
Departure from Hakodate		3	
Finish bottom trawl research (OST0915)		5	
Finish hydrographic research (OS09152)		5	
Finish saury gillnet (OSSG0902)		7	
Return to Hakodate		8	

Total coverage 1226.2 miles

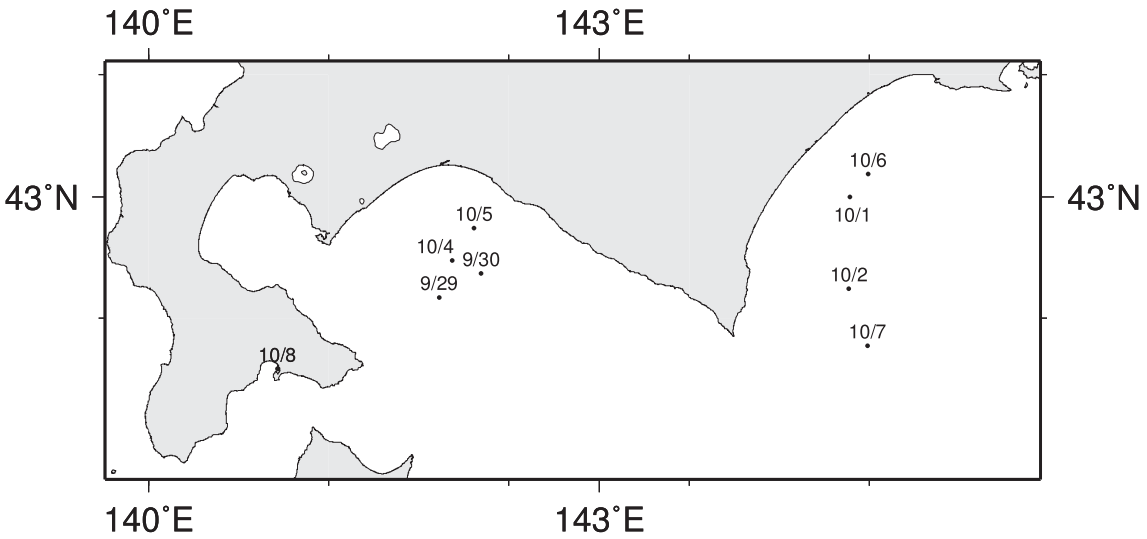


Figure 1: Noon position

2. Vessel Personnel

Captain:		Associate Professor	Shogo Takagi
Crew :	Chief Officer	Instructor	Yoshihiko Kamei
	First Officer	Instructor	Keiichiro Sakaoka
	Second Officer	Technical official	Naoki Hoshi
	Third Officer	Technical official	Takuzo Abe
	Chief Engineer	Instructor	Jyunichi Kimura
	And 25 men		

Cruise 206

Research Staff:	Professor	(Laboratory of Marine Environmental Science) Kenshi Kuma
	Professor	(Laboratory of Marine Biology and Biodiversity) Mamoru Yabe
	Accosiate Professor	(Laboratory of Marine Bio-resources Science) Yutaka Watanuki
	Accosiate Professor	(Laboratory of Marine Environmental Science) Isao Kudo
	Accosiate Professor	(Laboratory of Marine Bio-resources Science) Takashi Matsuishi
	Accosiate Professor	(Laboratory of Marine Bio-resources Science) Tetsuya Takatsu
	Accosiate Professor	(Laboratory of Marine Biology and Biodiversity) Hisashi Imamura
	Instructor	(Laboratory of Marine ecosystem Change Analysis) Yoko Mitani
	Teaching Assistant:	15 persons
	Cadets:	81 Cadets
	Total	139 persons

3. Items of 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:	Fig. 2 Table 1,2
Bottom trawl observations:	Fig. 3 Table 3,4
Saury floating gillnet research	Fig. 4 Table 5

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

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

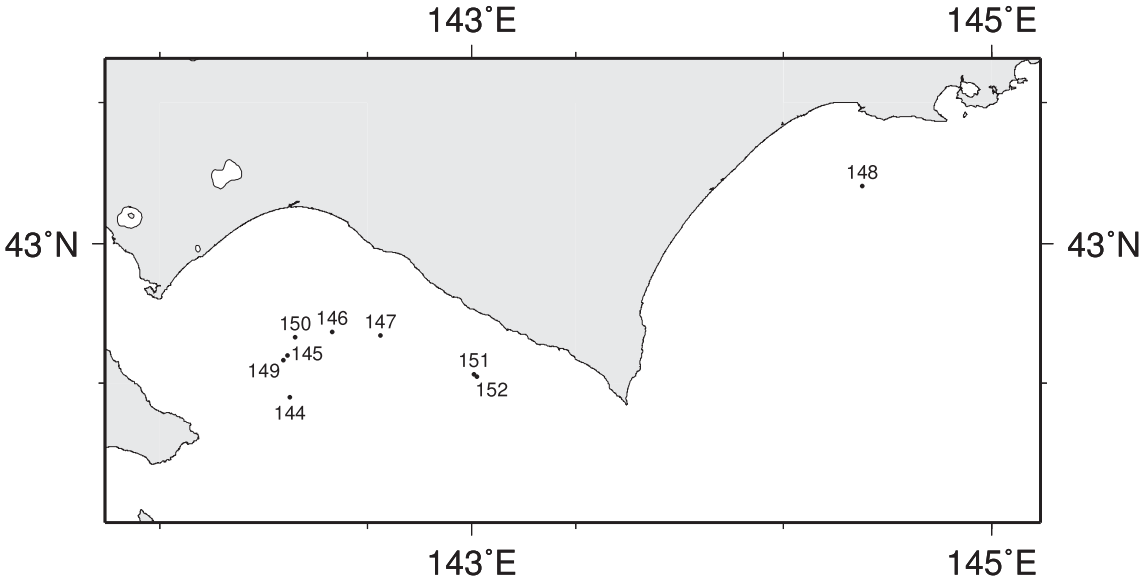


Figure 2: Oceanographic stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09144	41-57.0N	141-37.6E	9/29	1724	9	783	-	-	16.9	bc	9Plus-0769
OS09145	42-06.0N	141-37.0E	9/29	2051	9	719	-	-	16.3	-	9Plus-0769
OS09146	42-11.0N	141-49.8E	9/30	1100	9	813	5	14.4	16.4	bc	9Plus-0769
OS09147	42-10.4N	142-03.6E	9/30	1901	9	816	-	-	15.6	bc	9Plus-0769
OS09148	42-42.2N	144-22.7E	10/1	1735	9	598	-	-	-	bc	9Plus-0769
OS09149	42-05.0N	141-35.7E	10/4	1630	9	720	-	-	16.3	bc	9Plus-0769
OS09150	42-09.9N	141-39.1E	10/4	2100	9	718	-	-	15.1	-	9Plus-0769
OS09151	42-01.9N	142-30.7E	10/5	1610	9	730	-	-	16.5	-	9Plus-0769
OS09152	42-01.5N	142-31.6E	10/5	2000	9	730	-	-	16.1	-	9Plus-0769

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station	OS09144
Longitude	41-57.0N
Latitude	141-37.6E
Depth(m)	783

Press.	Temp.	Sal.	SIG-T
5	16.898	32.730	23.798
10	16.806	32.771	23.850
20	12.213	33.120	25.090
30	9.620	33.340	25.719
40	8.543	33.407	25.942
50	8.130	33.421	26.015
75	8.288	33.760	26.258
100	6.929	33.697	26.403
125	4.521	33.456	26.504
150	3.795	33.460	26.582
200	2.714	33.426	26.653
250	2.191	33.457	26.721
300	2.355	33.554	26.785
400	2.592	33.656	26.847
500	2.822	33.743	26.898

Station	OS09145
Longitude	42-06.0N
Latitude	141-37.0E
Depth(m)	719

Press.	Temp.	Sal.	SIG-T
5	16.531	33.063	24.138
10	16.530	33.063	24.138
20	14.688	33.043	24.532
30	11.233	33.123	25.273
40	10.948	33.246	25.420
50	10.258	33.352	25.622
75	7.662	33.416	26.079
100	6.367	33.422	26.259
125	5.177	33.458	26.433
150	4.001	33.397	26.511
200	3.144	33.418	26.609
250	2.566	33.469	26.700
300	2.362	33.530	26.766
400	2.647	33.688	26.868
500	2.990	33.856	26.973

Station	OS09146
Longitude	42-11.0N
Latitude	141-49.8E
Depth(m)	813

Press.	Temp.	Sal.	SIG-T
5	15.985	32.772	24.039
10	16.188	32.913	24.101
20	15.168	33.109	24.479
30	14.435	33.365	24.834
40	13.505	33.454	25.095
50	12.944	33.408	25.171
75	10.687	33.331	25.532
100	8.833	33.405	25.895
125	6.049	33.474	26.341
150	5.086	33.499	26.476
200	3.297	33.435	26.609
250	2.273	33.464	26.720
300	2.237	33.532	26.777
400	2.784	33.738	26.896
500	3.000	33.861	26.976

Station	OS09147
Longitude	42-10.4N
Latitude	142-03.6E
Depth(m)	816

Press.	Temp.	Sal.	SIG-T
5	17.093	33.108	24.042
10	16.541	33.044	24.121
20	14.686	33.207	24.658
30	13.407	33.456	25.116
40	13.197	33.481	25.178
50	13.022	33.492	25.221
75	12.432	33.500	25.342
100	8.107	33.484	26.068
125	5.636	33.485	26.401
150	4.009	33.416	26.525
200	2.377	33.373	26.639
250	2.307	33.468	26.721
300	2.385	33.549	26.779
400	2.691	33.719	26.890
500	2.973	33.849	26.969

Station	OS09148
Longitude	42-42.2N
Latitude	144-22.7E
Depth(m)	598

Press.	Temp.	Sal.	SIG-T
5	14.313	32.802	24.425
10	14.082	32.818	24.485
20	13.005	32.887	24.756
30	10.266	33.449	25.696
40	8.732	33.410	25.916
50	7.706	33.367	26.034
75	5.319	33.265	26.264
100	4.365	33.315	26.408
125	3.213	33.325	26.529
150	2.444	33.323	26.593
200	2.434	33.391	26.649
250	2.230	33.413	26.683
300	2.223	33.463	26.723
400	3.078	33.683	26.827
500	3.790	33.864	26.903

Station	OS09149
Longitude	42-05.0N
Latitude	141-35.7E
Depth(m)	720

Press.	Temp.	Sal.	SIG-T
5	16.127	32.843	24.061
10	15.791	33.069	24.310
20	15.282	33.153	24.487
30	14.100	33.247	24.812
40	11.054	33.483	25.585
50	9.931	33.473	25.772
75	10.245	33.967	26.104
100	9.038	33.835	26.200
125	5.808	33.514	26.402
150	4.465	33.461	26.514
200	2.851	33.378	26.603
250	2.544	33.425	26.667
300	2.377	33.482	26.726
400	2.485	33.623	26.830
500	2.921	33.802	26.936

Station	OS09150
Longitude	42-09.9N
Latitude	141-39.1E
Depth(m)	718

Press.	Temp.	Sal.	SIG-T
5	16.142	32.759	23.993
10	16.133	32.869	24.080
20	15.442	33.108	24.418
30	13.819	33.300	24.911
40	12.774	33.462	25.246
50	12.428	33.494	25.338
75	9.808	33.377	25.717
100	10.349	33.886	26.023
125	7.939	33.742	26.295
150	4.951	33.451	26.453
200	3.273	33.422	26.601
250	2.577	33.448	26.683
300	2.290	33.508	26.754
400	2.955	33.728	26.874
500	2.887	33.806	26.942

Station	OS09151
Longitude	42-01.9N
Latitude	142-30.7E
Depth(m)	730

Press.	Temp.	Sal.	SIG-T
5	16.186	32.859	24.060
10	16.113	32.900	24.108
20	14.944	33.177	24.580
30	13.993	33.362	24.924
40	13.412	33.411	25.080
50	12.305	33.482	25.353
75	9.903	33.482	25.783
100	9.533	33.898	26.169
125	7.371	33.758	26.389
150	6.993	33.791	26.467
200	4.221	33.550	26.610
250	3.459	33.577	26.707
300	3.240	33.633	26.773
400	3.428	33.795	26.884
500	3.016	33.871	26.982

Station	OS09152
Longitude	42-01.5N
Latitude	142-31.6E
Depth(m)	730

Press.	Temp.	Sal.	SIG-T
5	16.219	32.871	24.062
10	16.200	32.872	24.067
20	15.577	33.048	24.342
30	14.200	33.332	24.858
40	13.591	33.318	24.972
50	12.796	33.427	25.215
75	10.022	33.477	25.759
100	9.664	33.877	26.132
125	8.305	33.844	26.321
150	6.649	33.733	26.468
200	3.232	33.407	26.592
250	3.455	33.563	26.696
300	3.580	33.659	26.761
400	3.509	33.816	26.893
500	3.119	33.862	26.966

5. Data on bottom trawl research

Eight operations of the stern otter bottom trawl were carried out. These operations were supervised by the captain, and were conducted by deck officer, crew, research staff and cadets.

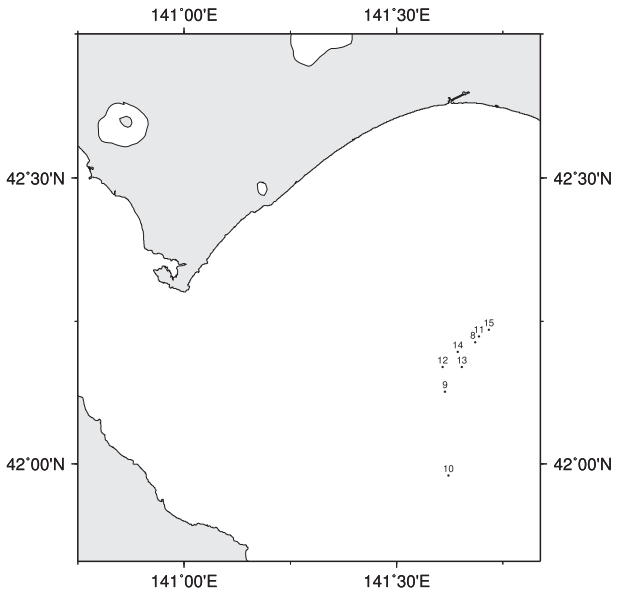


Figure 3: Locations of bottom trawl research

Table 3: Data on bottom trawl research during the ”Oshoro Maru” Cruise#206

No. of research	Date and time of net tow (S.M.T.)		Position Lat.(N)	Long.(E)	Direction of tow	Speed of tow(K’ t)	Bottom depth(m)	Wr	Wind (force)
OST0908	29-Sep	0745-0845	42-12.8	141-41.1	300	3.5	800	bc	NNW-3
OST0909	29-Sep	1110-1210	42-07.6	141-36.8	160	3.0	650-750	bc	WNW-5
OST0910	29-Sep	1433-1533	41-58.8	141-37.3	170	3.5	750-790	bc	West-5
OST0911	30-Sep	0840-0940	42-13.4	141-41.6	110	-	580-760	b	WSW-3
OST0912	4-Oct	0725-0825	42-10.2	141-36.5	180	3.5	600	c	West-3
OST0913	4-Oct	1040-1140	42-10.2	141-39.2	010	-	725	c	SSE-2
OST0914	4-Oct	1400-1500	42-11.8	141-38.6	200	4.5	640-700	c	South-3
OST0915	5-Oct	0725-0825	42-14.1	141-43.0	270	3.5	740	bc	WSW-4

Wr.: Weather (b: 0-25% clouded, bc: 25-75% clouded, c:75-99% clouded)

Table 4: Data on catches by bottom trawl research

		OST 0908		OST 0909		OST 0910		OST 0911		OST 0912		OST 0913		OST 0914		OST 0915	
Japanese name	Scientific Name	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Sokogangiei-rui	*Bathyraja* sp.	2	0.45	11	1.0	118	0.9	3	1.0	2	0.7	-	-	-	-	3	0.75
Kurosokogisu	*Notacanthus chemnitzi*	1	1.0	7	5.5	1	0.7	3	2.1	1	0.1	2	1.3	-	-	1	0.8
Irakoanago	*Synaphobranchus kaupii*	47	42.5	16	6.8	24	15.5	24	17.5	17	13.5	13	11	27	18.5	22	18.5
Kongouanago	*Simenchelys parasiticus*	-	-	1	0.2	-	-	1	0.1	-	-	8	0.41	-	-	-	-
Ryukyuhoraanago	*Ilyophis brunneus*	-	-	1	0.03	1	0.01	1	0.05	-	-	-	-	13	0.5	-	-
Shigiunagi	*Nemichthys scolopaceus*	1	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Togariichimonjiwashi	*Leuroglossus schmidti*	-	-	2	0.05	-	-	-	-	-	-	-	-	2	0.01	-	-
Sokoiwashi	*Lipolagus ochotensis*	1	0.01	-	-	-	-	-	-	-	-	-	-			-	-
Kurosokoiwashi	*Pseudobathylagus milleri*	2	0.1	-	-	5	0.7	3	0.3	-	-	-	-	-	-	3	0.35
Yokoeso	*Gonostoma gracile*	1	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Demeeso	*Benthalbella linguidens*	-	-	-	-	-	-	1	0.3	-	-	-	-	-	-	-	-
Mamehadaka	*Lampanyctus jordani*	5	0.3	8	0.1	12	0.3	23	0.8	18	0.9	17	0.5	49	1.3	16	0.35
Todohadaka	*Diaphus theta*	-	-	-	-	1	0.02			-	-	-	-	-	-	-	-
Mikadohadaka	*Nannobrachium regale*	-	-	-	-	3	0.15	1	0.2	-	-	-	-	-	-	-	-
Suketoudara	*Theiragra chalcogramna*	-	-	-	-	-	-	-	-	-	-	-	-	1	0.6	-	-
Munedara	*Coryphaenoides pectoralis*	4	6.5	2	4.6	-	-	48	155	2	7.5	5	11.5	-	-	-	-
Ibarahige	*Coryphaenoides acrolepis*	-	-	-	-	-	-	-	-	-	-	-	-	1	0.74	-	-
Onihige	*Coelorinchus gilberti*	1	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Karafutosokodara	*Coryphaenoides cinereus*	127	28.5	132	32.5	159	36.5	91	75	128	30.5	124	29.5	78	19.5	154	37.5
Karasudara	*Halargyreus johnsonii*	-	-	-	-	-	-	4	1.6	-	-	-	-	-	-	-	-
Kanadadara	*Antimora microlepis*	25	5.4	68	15.5	77	17.5	64	13.5	50	10	53	10.5	57	12.5	48	9.5
Itohikidara	*Laemonema longipes*	144	129.5	121	167.5	233	144	180	110	849	504	451	289.5	430	252	354	205.4
Sokodara-rui	Macrouridae sp.	-	-	1	1.5	-	-	-	-	-	-	1	0.9	-	-	-	-
Togerakudaankou	*Oneirodes thompsoni*	-	-	-	-	-	-	1	0.2	-	-	-	-	-	-	-	-
Osaga	*Sebastes iracundus*	2	10.0	-	-	-	-	-	-	-	-	-	-	3	5.8	-	-
kichiji	*Sebastolobus macrochir*	234	55.5	235	49.5	179	32.5	187	44	119	40	226	46.5	259	52.7	297	61.5
Uranaikajika	*Dasycottus setiger*	-	-	8	0.7	-	-	-	-	-	-	-	-	-	-	-	-
Kobushikajika	*Malacocottus zonurus*	1	0.1	-	-	-	-	-	-	1	0.1	-	-	-	-	-	-
Ganko	*Dasycottus setiger*	4	1.15	-	-	7	0.8	3	0.9	1	0.1	6	0.7	5	0.62	10	0.78
Nyudoukajika	*Psychrolutes phrictus*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.88
Hirainkiuo	*Paraliparis grandis*	-	-	-	-	-	-	3	1.5	-	-	4	2.25	-	-	-	-
Inkiuo-rui	*Paraliparis* sp.	-	-	-	-	-	-	-	-	-	-	-	-	3	1.66	6	6.45
Shirogenge	*Bothrocana molle*	187	112	1066	266.8	129	68.5	176	84	426	114.3	292	105	533	172	468	174.5
Kantengenge	*Bothrocara tanakae*	12	6.5	9	5.9	-	-	9	4.5	13	6.0	5	1.7	11	5.4	11	8.5
Yawaragenge	*Lycodapus microchir*	-	-	-	-	-	-	-	-	-	-	-	-	3	0.1		
Nezumiginpo	*Lumpenella longirostris*	9	0.6	27	1.46	119	10	25	2.0	16	1.0	14	1.02	28	2.4	20	1.1
Ibodai-rui	*Centrolophidae* sp.	-	-	-	-	-	-			1	1.0	-	-	-	-	-	-
Aburagarei	*Atheresthes evermanni*	2	3.3	-	-	1	2.1	2	4.85	3	3.6	2	3.5	1	1.11	1	2.5
Benizuwaigani	*Chionoecetes japonicus*	15	7.5	63	39.5	16	4.0	22	12	43	22	34	14.5	27	12	15	8.5
Ezobai-rui	Buccinidae spp.	34	3.7	14	1.3	93	3.3	11	1.12	10	0.5	43	4.0	-	-	53	4.7
Tako-rui	Octopuses	20	9.5	30	12.5	43	13.5	11	5.2	10	5.9	20	9.5	40	21	27	15.5
Mendako		1	1.82	5	3.7	4	3.3	2	3.3	2	1.5	1	2.0	1	1.6	-	-
Ika-rui	Squids	35	12.5	92	27.5	12	3.5	38	18.5	71	27	43	14.5	56	16.5	53	20.5

6. Data on floating gillnet research

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

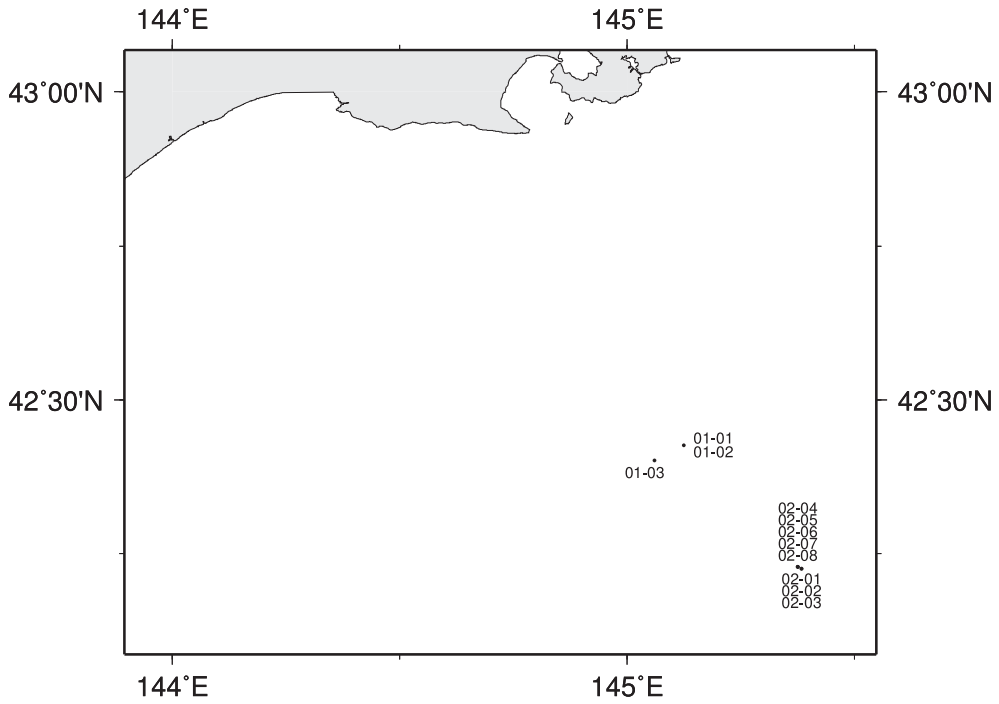


Figure 4: Locations of floating gillnet research

Table 5: Data on floating gill net research

No. of research		OSSG 0901-01	OSSG 0901-02	OSSG 0901-03	OSSG0902-01	OSSG0902-02	OSSG0902-03	OSSG0902-04	OSSG0902-05	OSSG0902-06	OSSG0902-07	OSSG0902-08
Date		1-Oct	1-Oct	2-Oct	6-Oct	6-Oct	6-Oct	6-Oct	7-Oct	7-Oct	7-Oct	7-Oct
position of	Lat. (N)	42-25.6	42-25.6	42-24.1	42-13.5	42-13.5	42-13.5	42-13.7	42-13.7	42-13.7	42-13.7	42-13.7
net set	Long. (E)	145-07.5	145-07.5	145-03.6	145-23.0	145-23.0	145-23.0	145-22.5	145-22.5	145-22.5	145-22.5	145-22.5
Time(S.M.T.)	net set	2330	2330	0215	2100	2140	2215	2335	0030	0120	0225	0300
Mesh size(mm)		42	42	42	42	42	42	42	42	42	42	42
Surface temp. (°C)		13.1	13.1	13.3	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Weather		bc	bc	bc	bc	bc	bc	bc	bc	bc	bc	bc
Wind (force)		SSE-3	SSE-3	SSE-3	Calm	Calm	Calm	Calm	Calm	Calm	Calm	Calm
Pacific saury		643	201	316	81	472	375	300	200	2160	360	400
Japanese common squid					1							
Mackerels							2					

Weather (bc: 25-75% clouded)

8

THE “OSHORO MARU” CRUISE 207
TO THE JAPAN SEA AND TO THE EAST CHINA SEA

IN OCTOBER-NOVEMBER 2009

1. Cruise Itinerary

Cruise 207

Departure from Hakodate	Oct.	22	, 2009
Start hydrographic research (OS09153)		22	
Start bottom trawl research (OST0916)		29	
Finish bottom trawl research (OST0918)		30	
Finish hydrographic research (OS09170)		29	
Arrival at Yeosu		31	
Departure from Yeosu	Nov.	2	
Return to Hakodate		6	

Total coverage 2116.0miles

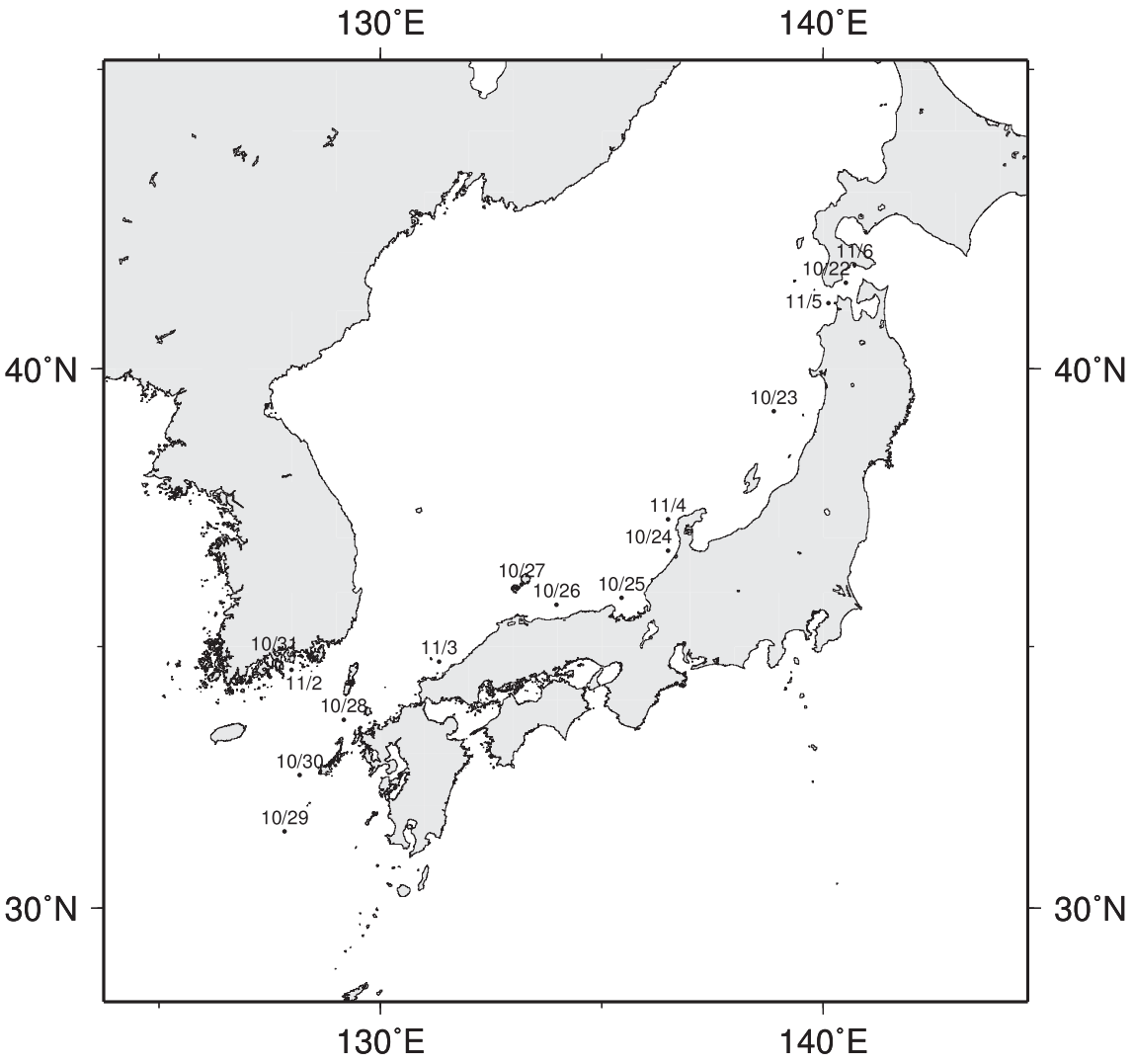


Figure 1: Noon position

2. Vessel Personnel

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

Cruise 207

Under Graduate instructor:	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing, Hokkaido University) Toru Mukai
	Professor	(Laboratory of Marine Industrial Science and Technology, Hokkaido University) Yasuzumi Fujimori
	Accosiate Professor	(Laboratory of Marine ecosystem Change Analysis, Hokkaido University) Jun Yamamoto
Guest Scientist:	Professor	(Graduate School of Information Science and Technology, Hokkaido University) Hidemi Watanabe
	Professor	(Graduate School of Information Science and Technology, Hokkaido University) Hiroki Arimura
	Invitation professor	(faculty of fishing sciences, Chonnam National University) Miyuki Hirose
	Science researcher	(Graduate School of Information Science and Technology, Hokkaido University) Toshihiro Iwamori

Teaching Assistant:	4 persons
Graduate Students:	4 persons
Under Graduate Students:	22 persons
Total	67 persons

3. Items of Research

Hydrographic observations:	Fig. 2 Table 1,2
Biological research for fishes caught by bottom trawl research:	Fig. 3 Table 3,4

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

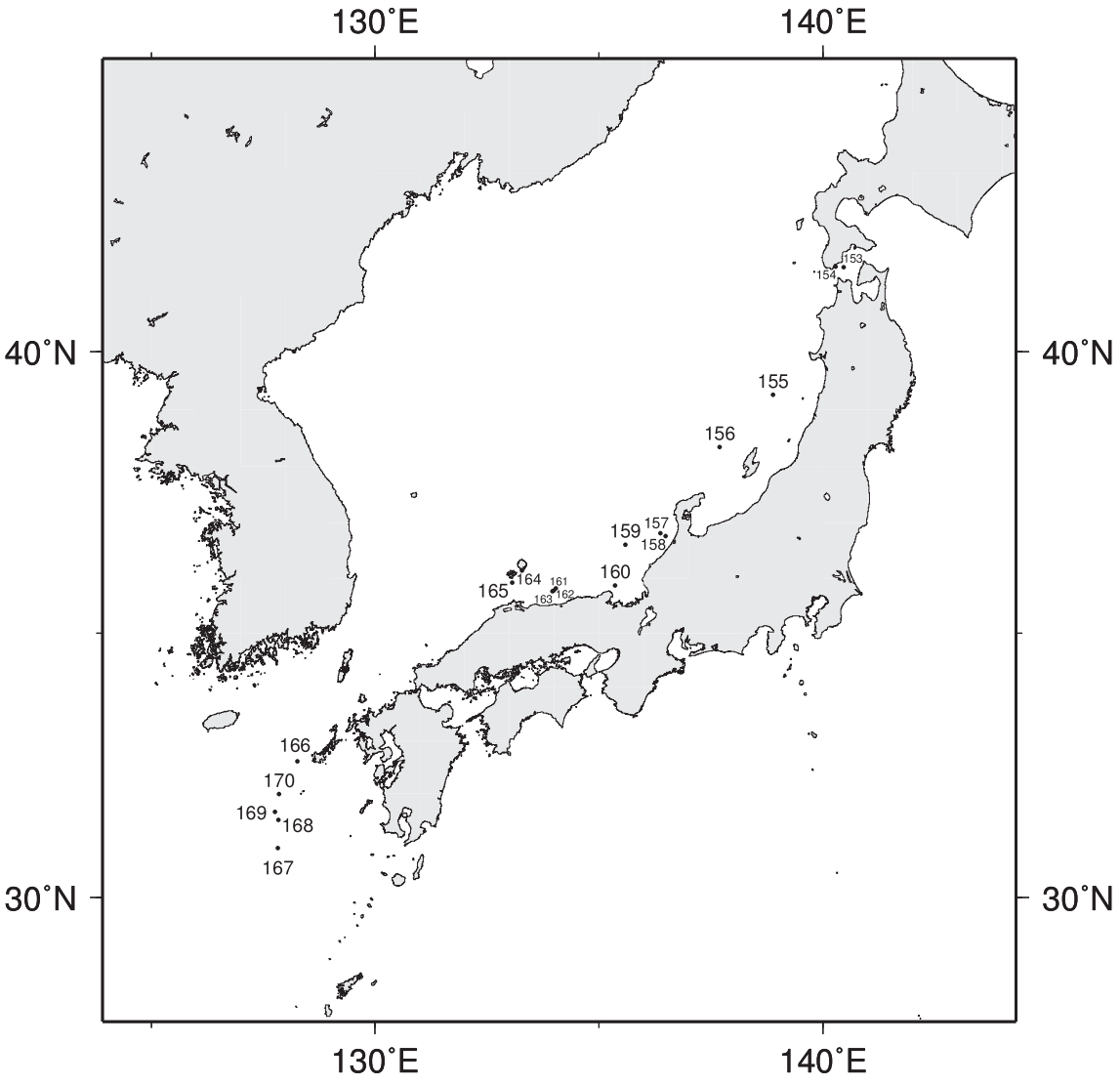


Figure 2: Oceanographic stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09153	41-26.3N	140-28.1E	10/22	1320	9	228	-	-	18.3	c	9Plus-0769
OS09154	41-27.0N	140-17.0E	10/22	1908	9	55	-	-	-	-	9Plus-0769
OS09155	39-15.7N	138-52.9E	10/23	1024	9	203	-	-	19.6	bc	9Plus-0769
OS09156	38-20.9N	137-41.8E	10/23	1945	9	1979	-	-	19	bc	9Plus-0769
OS09157	36-48.6N	136-22.2E	10/24	1006	9	203	-	-	20.6	c	9Plus-0769
OS09158	36-45.9N	136-29.4E	10/24	1208	9	76	-	-	-	c	9Plus-0769
OS09159	36-36.6N	135-35.0E	10/24	2006	9	390	-	-	20.1	c	9Plus-0769
OS09160	35-52.5N	135-21.4E	10/25	1006	9	205	-	-	21.3	c	9Plus-0769
OS09161	35-49.2N	134-02.4E	10/25	2016	9	250	-	-	20.9	c	9Plus-0769
OS09162	35-46.1N	133-57.6E	10/26	0804	9	254	-	-	20.9	c	9Plus-0769
OS09163	35-46.5N	133-58.7E	10/26	1211	9	254	-	-	20.8	c	9Plus-0769
OS09164	36-08.3N	133-17.1E	10/27	0624	9	63	-	-	20.5	bc	9Plus-0769
OS09165	35-55.5N	133-03.3E	10/27	1617	9	73	-	-	21.5	bc	9Plus-0769
OS09166	32-36.8N	128-16.1E	10/28	1945	9	300	-	-	23.5	bc	9Plus-0769
OS09167	30-57.6N	127-49.8E	10/29	0635	9	144	-	-	23.9	c	9Plus-0769
OS09168	31-30.1N	127-50.1E	10/29	1200	9	140	-	-	25	c	9Plus-0769
OS09169	31-39.1N	127-45.5E	10/29	1530	9	140	-	-	24.9	c	9Plus-0769
OS09170	31-59.4N	127-51.2E	10/29	1930	9	142	-	-	24.3	c	9Plus-0769

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station	OS09153
Longitude	41-26.3N
Latitude	140-28.1E
Depth(m)	228

Press.	Temp.	Sal.	SIG-T
5	18.375	33.517	24.045
10	18.369	33.519	24.049
20	18.373	33.516	24.045
30	18.438	33.547	24.053
40	18.454	33.579	24.073
50	18.411	33.589	24.092
75	17.044	33.909	24.667
100	16.022	34.013	24.984
125	13.423	34.196	25.686
150	12.167	34.204	25.940
200	9.954	34.167	26.310

Station	OS09154
Longitude	41-27.0N
Latitude	140-17.0E
Depth(m)	55

Press.	Temp.	Sal.	SIG-T
5	15.521	33.762	24.904
10	15.492	33.768	24.915
20	15.505	33.764	24.909
30	15.484	33.769	24.917
40	15.481	33.770	24.919

Station	OS09155
Longitude	39-15.7N
Latitude	138-52.9E
Depth(m)	203

Press.	Temp.	Sal.	SIG-T
5	19.420	33.637	23.874
10	19.415	33.635	23.873
20	19.421	33.636	23.873
30	19.418	33.635	23.873
40	19.424	33.639	23.874
50	19.566	33.695	23.881
75	16.739	34.062	24.857
100	15.055	34.290	25.413
125	12.185	34.236	25.961
150	9.588	34.166	26.370
200	4.540	34.104	27.016

Station	OS09156
Longitude	38-20.9N
Latitude	137-41.8E
Depth(m)	1979

Press.	Temp.	Sal.	SIG-T
5	19.473	33.677	23.891
10	19.467	33.676	23.891
20	19.445	33.683	23.903
30	19.424	33.691	23.914
40	19.405	33.693	23.920
50	15.570	34.012	25.086
75	10.573	34.194	26.224
100	7.160	34.140	26.719
125	5.342	34.117	26.936
150	3.859	34.088	27.075
200	2.355	34.072	27.200
250	1.608	34.071	27.257
300	1.180	34.071	27.286
400	0.778	34.072	27.313
500	0.624	34.073	27.323

Station	OS09157
Longitude	36-48.6N
Latitude	136-22.2E
Depth(m)	203

Press.	Temp.	Sal.	SIG-T
5	20.818	33.492	23.397
10	20.818	33.491	23.396
20	20.815	33.490	23.396
30	20.816	33.490	23.396
40	20.844	33.547	23.431
50	19.463	34.021	24.156
75	18.231	34.133	24.553
100	14.915	34.309	25.458
125	11.647	34.223	26.053
150	8.908	34.177	26.488

Station	OS09158
Longitude	36-45.9N
Latitude	136-29.4E
Depth(m)	76

Press.	Temp.	Sal.	SIG-T
5	20.895	29.617	20.430
10	20.974	33.583	23.424
20	20.975	33.472	23.339
30	20.910	33.508	23.384
40	20.845	33.516	23.407
50	20.800	33.503	23.410

Station	OS09159
Longitude	36-36.6N
Latitude	135-35.0E
Depth(m)	390

Press.	Temp.	Sal.	SIG-T
5	20.638	33.494	23.446
10	20.637	33.493	23.446
20	20.653	33.497	23.445
30	20.793	33.680	23.546
40	20.770	33.680	23.553
50	20.755	33.690	23.564
75	17.355	34.236	24.844
100	14.753	34.311	25.495
125	11.097	34.210	26.143
150	7.500	34.150	26.679
200	3.258	34.088	27.133
250	1.659	34.073	27.254
300	0.974	34.071	27.300

Station	OS09160
Longitude	35-52.5N
Latitude	135-21.4E
Depth(m)	205

Press.	Temp.	Sal.	SIG-T
5	21.218	33.544	23.328
10	21.215	33.543	23.328
20	21.206	33.542	23.330
30	21.204	33.542	23.331
40	21.206	33.542	23.330
50	21.208	33.542	23.330
75	21.209	33.542	23.329
100	18.768	34.129	24.415
125	12.210	34.244	25.962
150	7.333	34.151	26.703

Station	OS09161
Longitude	35-49.2N
Latitude	134-02.4E
Depth(m)	250

Press.	Temp.	Sal.	SIG-T
5	20.974	33.639	23.467
10	20.984	33.639	23.463
20	20.976	33.638	23.465
30	20.988	33.638	23.462
40	20.988	33.638	23.462
50	20.990	33.637	23.461
75	18.826	34.143	24.412
100	15.772	34.259	25.230
125	11.700	34.214	26.036
150	8.400	34.173	26.564
200	1.922	34.077	27.238

Station	OS09162
Longitude	35-46.1N
Latitude	133-57.6E
Depth(m)	254

Press.	Temp.	Sal.	SIG-T
5	21.099	33.674	23.459
10	21.100	33.673	23.459
20	21.100	33.674	23.459
30	21.102	33.673	23.458
40	21.105	33.673	23.457
50	21.106	33.673	23.457
75	21.080	33.685	23.473
100	17.126	34.239	24.901
125	12.394	34.270	25.947
150	3.496	34.085	27.108
200	1.146	34.072	27.289

Station	OS09163
Longitude	35-46.5N
Latitude	133-58.7E
Depth(m)	254

Press.	Temp.	Sal.	SIG-T
5	21.010	33.648	23.464
10	21.033	33.664	23.470
20	21.017	33.661	23.472
30	21.020	33.668	23.476
40	21.020	33.669	23.477
50	21.027	33.670	23.476
75	20.374	33.878	23.809
100	17.001	34.267	24.953
125	11.561	34.225	26.070
150	3.143	34.072	27.131
200	1.244	34.073	27.284

Station	OS09164
Longitude	36-08.3N
Latitude	133-17.1E
Depth(m)	63

Press.	Temp.	Sal.	SIG-T
5	20.925	33.736	23.553
10	20.925	33.737	23.554
20	20.927	33.735	23.552
30	20.927	33.734	23.552
40	20.926	33.734	23.552
50	20.928	33.734	23.551

Station	OS09165
Longitude	35-55.5N
Latitude	133-03.3E
Depth(m)	73

Press.	Temp.	Sal.	SIG-T
5	21.792	33.853	23.406
10	21.792	33.853	23.405
20	21.779	33.854	23.410
30	21.730	33.841	23.414
40	21.689	33.828	23.416
50	21.673	33.826	23.418

Station	OS09166
Longitude	32-36.8N
Latitude	128-16.1E
Depth(m)	300

Press.	Temp.	Sal.	SIG-T
5	23.650	34.235	23.167
10	23.556	34.226	23.188
20	23.100	34.196	23.297
30	23.058	34.199	23.311
40	23.012	34.204	23.328
50	22.535	34.260	23.507
75	20.851	34.438	24.108
100	18.484	34.491	24.764
125	17.379	34.560	25.087
150	15.818	34.557	25.449
200	14.118	34.516	25.789
250	12.193	34.461	26.134
300	11.695	34.449	26.219

Station	OS09167
Longitude	30-57.6N
Latitude	127-49.8E
Depth(m)	144

Press.	Temp.	Sal.	SIG-T
5	24.061	34.200	23.020
10	24.054	34.199	23.021
20	24.060	34.199	23.019
30	24.064	34.199	23.018
40	24.079	34.206	23.019
50	24.084	34.209	23.019
75	23.863	34.241	23.109
100	20.664	34.546	24.241
125	18.504	34.588	24.833

Station	OS09168
Longitude	31-30.1N
Latitude	127-50.1E
Depth(m)	140

Press.	Temp.	Sal.	SIG-T
5	24.236	34.163	22.940
10	24.217	34.165	22.947
20	24.208	34.172	22.955
30	24.186	34.177	22.965
40	24.186	34.186	22.972
50	24.176	34.202	22.987
75	23.626	34.288	23.214
100	21.062	34.533	24.123
125	18.567	34.587	24.816

Station	OS09169
Longitude	31-39.1N
Latitude	127-45.5E
Depth(m)	140

Press.	Temp.	Sal.	SIG-T
5	24.283	34.221	22.970
10	24.266	34.220	22.974
20	24.259	34.222	22.978
30	24.231	34.224	22.988
40	24.207	34.224	22.994
50	24.194	34.224	22.998
75	24.102	34.220	23.023
100	21.180	34.509	24.072
125	18.723	34.583	24.774

Station	OS09170
Longitude	31-59.4N
Latitude	127-51.2E
Depth(m)	142

Press.	Temp.	Sal.	SIG-T
5	24.213	34.188	22.965
10	24.210	34.188	22.966
20	24.082	34.209	23.020
30	24.069	34.214	23.028
40	24.022	34.234	23.057
50	24.005	34.237	23.064
75	23.966	34.245	23.082
100	19.184	34.537	24.622
125	16.592	34.576	25.286

5. Data on bottom trawl research

Three operations of the stern otter bottom trawl were carried out. These operations were supervised by the captain, were conducted by deck officer, crew, research staff and cadets of the ”Oshoro Maru”.

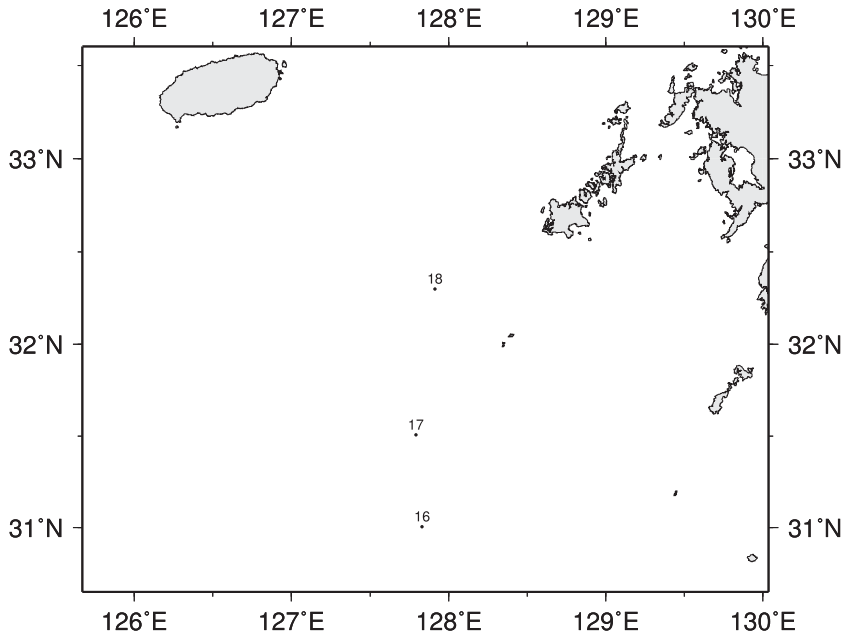


Figure 3: Locations of bottom trawl research

Table 3: Data on bottom trawl research during the ”Oshoro Maru” Cruise #207

No. of research	Date and time of net tow (S.M.T.)		Position Lat.(N)	Position Long.(E)	Direction of tow	Speed of tow(K’ t)	Bottom depth(m)	Wr	Wind (force)
OST0916	29-Oct	0720-0920	31-00.3	127-49.8	000	3.9	149	bc	East-3
OST0917	29-Oct	1242-1445	31-30.4	127-47.6	270-000	4.0	138	bc	Calm
OST0918	30-Oct	0725-0804	32-17.9	127-54.8	178	3.5	150	bc	Calm

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

Table 4: Data on catches by bottom trawl research

		OST 0916		OST 0917		OST 0918	
Japanese name	Scientific Name	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
akaamadai	*Branchiostegus japonicus*	1	1.2				
akamutu	*Peristedion orientale*	10	1.2	1	0.1	5	0.4
anko	*Lophiomus setigerus*			1	0.2		
izukasago	*Scorpaena neglecta*	65	20.5	31	11.2		
ibodai	*Scorpaenoidei*	6	1.1	1	0.1		
ukkarikasago	*Sebastiscus tertius*			2	0.3		
umazurahagi	*Thamnaconus modestus*					2	0.9
akagutu	*Halieutaea stellata*	1	0.2				
kaiwari	*Synagrops japonicus*	93	5.7			10	1.3
kagamidai	*Psenopsis anomala*	1	0.2				
kagokakidai	*Scorpaena onaria*	3	0.8				
kasago	*Sebastiscus marmoratus*	1	0.6				
onikanagshira	*Lepidotrigla kishinouyei*					11	1.1
kanagashira sp.	*Lepidotrigla* sp.			190	7.6		
kanado	*Loligo edulis*	327	14.5			9	0.4
kawaragarei	*Poecilopsetta plinthus*	1	0.1				
kidai	*Lepidotrigla microptera*	285	75	248	65	41	12.8
chikamekintoki	*Helicolenus hilgendorfi*	2	0.7	7	0.7	1	0.1
kochi sp.	*Platycephalus* sp.					1	0.1
sagifue	*Macroramphosus scolopax*	133	2.5	1	0.1		
sarasahagi	*Thamnaconus hypargyreus*			2	0.2		
shikishimahanadai	*Malakichtys wakiyae*					2	0.2
tachiuuo	*Navodon modestus*	1	0.6				
koubedarumagarei	*Crossorhombus kobensis*	1	0.1				
shitabirame sp	*Cynoglossus joyneri* sp.			1	0.1		
chikamedarumagarei	*Engyprosopon multisquama*	5	0.5				
natuharigochi	*Hoplichthys langsdorfii*			2	0.1		
hime	*Monocetris japonica*	134	8.2	23	1.9	4	0.5
himeji	*Hoplobrotula armata*			5	0.3		
beniteguri	*Rexea prometheoides*	1	0.1	1	0.1	1	0.1
hobo	*Chelidonichthys spinosus*	3	1				
maaji	*Antigonia capros*	890	41	320	15.2	6	0.2
maeso	*Saurida macrolepis*	1	0.5				
masaba	*Pleuronichthys comutas*	2	0.7				
matsukasauo	*Chelidoperca hirundinacea*					1	0.1
matodai	*Histiopterus typus*	54	10.4	18	2.2	2	0.2
midorifusaankou	*Upeneus bensasi*	1	0.1				
meitagarei	*Pleuronichthys cornutus*			1	0.1		
yatumedarumagarei	*Tosarhombus octoculatus*	1	0.2				
yoritofugu	*Sphoeroides pachygaster*	10	5.2	6	2.4		
kurosabafugu	*Lagocephalus gloveri*			1	0.7		
uchiwaebi	*Ibacus ciliatus*	3	0.4	8	0.9	3	0.4
hiratumegani	*Rajidae*	1930	143.8	1900	140.6	38	2.6
taiwangazami	*Coelorhynchus multispinulosus*			3	0.3		
kensakiika	*Loligo edulis edulis Hoyle*	23	2.3	53	4.1	16	0.9
surumeika	*Todarodes pacificus Steenstrup*	21	5.8	54	20.7	7	2.4
kouika	*Sepia (Platysepia) esculenta*					1	0.1
gangiei	*Dipturus kwangtungensis*	7	4.7	8	10.4		
komonnkasube sp.	*Okamejei kenojei* sp.					3	1.4
nekozame	*Heterodontus japonicus*					2	0.2
Suketoudara	*Theragra chalcogramma*	4017	349.9	2888	285.6	166	26.4

9

THE “OSHORO MARU” CRUISE 209
TO WATERS EAST OF HONSHU AND TO THE OGASAWARA ISLANDS

IN DECEMBER 2009

1. Cruise Itinerary

Cruise 209

Departure from Hakodate	Dec.	8	, 2009
Arrival at Yokohama		10	
Departure from Yokohama		13	
Start hydrographic research (OS09171)		15	
Finish hydrographic research (OS09174)		16	
Arrival at Futami		17	
Departure from Futami		19	
Arrival at Ofunato		22	

Total coverage 1922.3miles

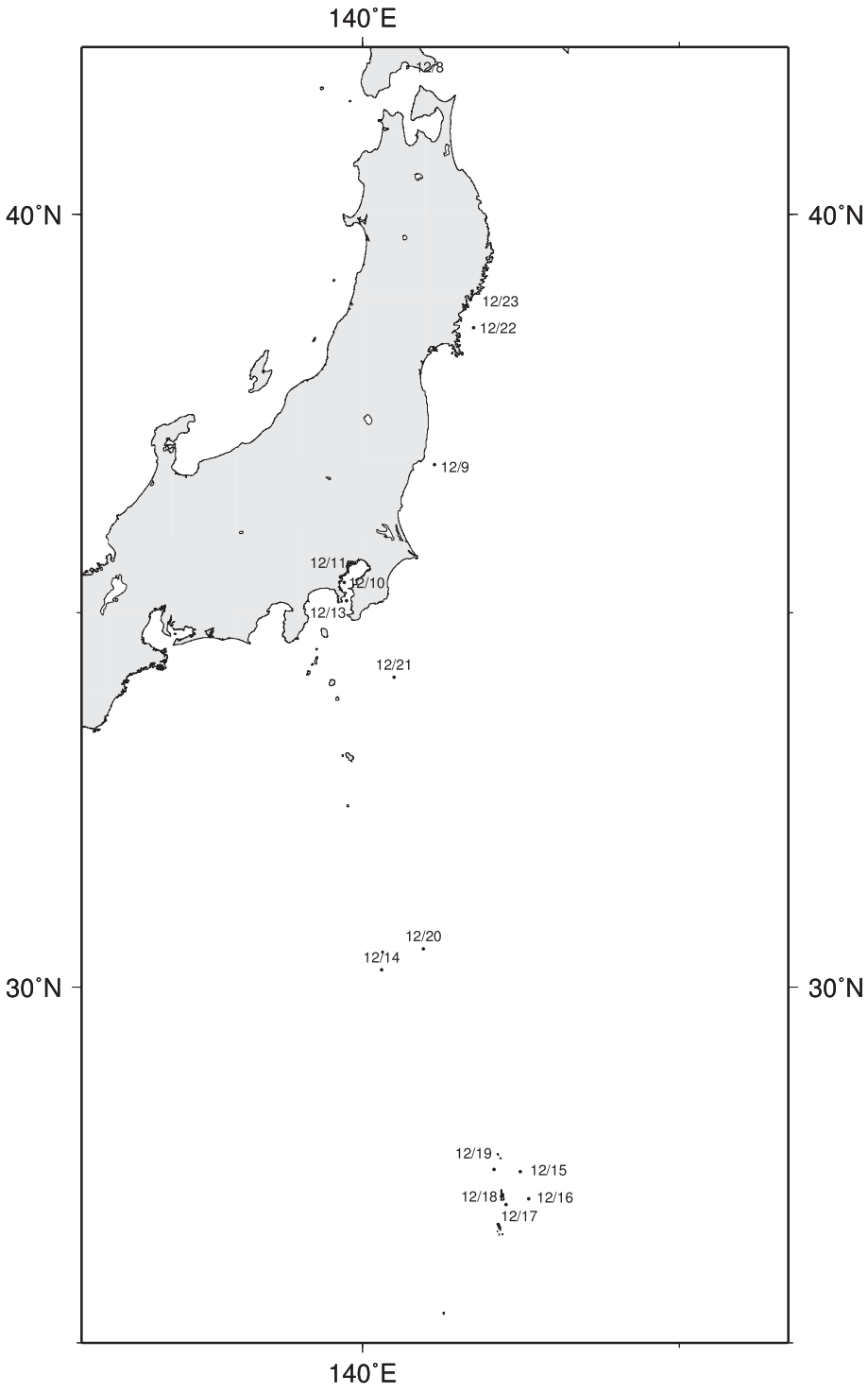


Figure 1: Noon position

2. Vessel Personnel

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

Cruise 209

Under Graduate instructor:	Associate Professor	(Department of Marine Science and Resources, Nihon University) Takahito Kojima
	Associate Professor	(Teikyo University of Science and Technology) Kyoichi Mori
	Associate Professor	(Trainig ship Oshoro maru, Hokkaido University) Yoshiyuki Kajiwara
	Lecturer	(Department of Marine Science and Resources, Nihon University) Miwa Suzuki
Guest Scientist:	Professors emeritus	(Division of Marine Bioresource and Environmental Science, Hokkaido University) Kazuhiro Nakaya
	Professor	(Loboratory of Marine Bioresources Chemistry, Hokkaido University) Ryuichi Sakai
	Researcher	(National Museum of nature and Science) Tsunemi Kubodera
	Post Doctor	(Department of Earth and Planetary Science, University of Tokyo) Maki Nagasawa
	Post Doctor	(Department of Earth and Planetary Science, University of Tokyo) Naoki Furuichi
	Technical Assistant	(Laboratory of Marine Bioresources Chemistry, Hokkaido University) Satoko Matsunaga

Teaching Assistant:	1 Person
Graduate Students:	5 Persons
Under Graduate Students:	24 Persons
(Department of Marine Science and Resources, Nihon University)	20 Persons
(Teikyo University of Science and Technology)	4 Persons
Total	69 Persons

3. Items of Research

Hydrographic observations:	Fig. 2 Table 1,2
Biological research for fishes caught by vertical long-line:	Fig. 3 Table 3

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

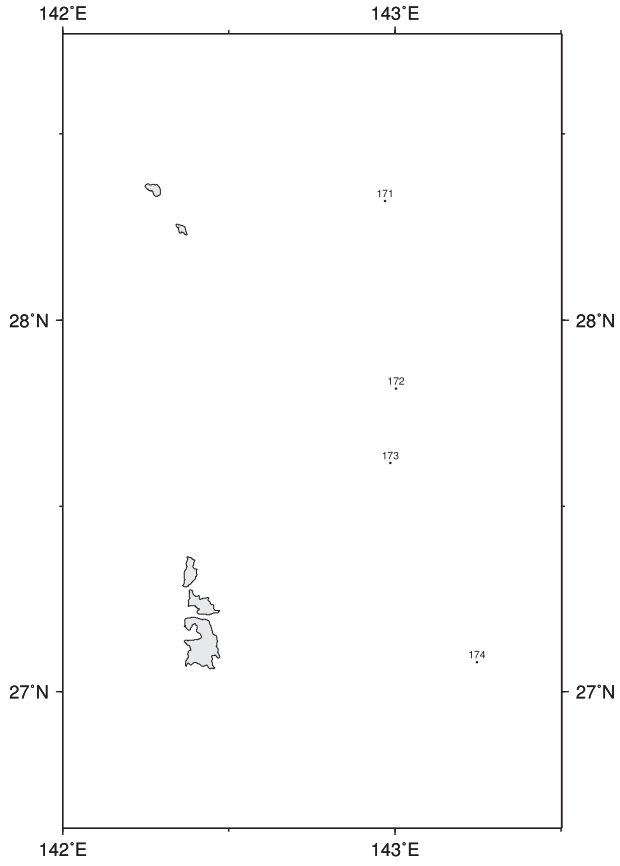


Figure 2: Oceanographic stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09171	27-39.6N	142-29.1E	12/15	0420	9	1335	-	-	23.2	bc	XBT
OS09172	27-24.5N	142-30.1E	12/15	0805	9	2030	2	37.8	22.6	bc	9Plus-0769
OS09173	27-18.5N	142-29.6E	12/15	1455	9	1760	-	-	-	c	XBT
OS09174	27-02.4N	142-37.4E	12/16	1040	9	2100	2	37.4	23.5	bc	XBT

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station	OS09171
Longitude	27-39.6N
Latitude	142-29.1E
Depth(m)	1335

Press.	Temp.	Sal.	SIG-T
5	23.591	-	-
10	23.590	-	-
20	23.572	-	-
30	23.570	-	-
40	23.570	-	-
50	23.580	-	-
75	23.580	-	-
100	21.472	-	-
125	20.060	-	-
150	19.018	-	-
200	17.981	-	-
250	17.151	-	-
300	16.490	-	-
400	13.663	-	-
500	10.500	-	-
600	7.779	-	-
700	6.164	-	-

Station	OS09172
Longitude	27-24.5N
Latitude	142-30.1E
Depth(m)	2030

Press.	Temp.	Sal.	SIG-T
5	23.604	34.675	23.514
10	23.603	34.675	23.514
20	23.605	34.675	23.513
30	23.603	34.675	23.514
40	23.601	34.675	23.514
50	23.603	34.674	23.513
75	21.628	34.707	24.100
100	20.447	34.743	24.448
125	19.327	34.740	24.739
150	18.897	34.747	24.855
200	18.193	34.748	25.032
250	17.667	34.748	25.161
300	16.894	34.722	25.327
400	14.768	34.573	25.694
500	11.435	34.335	26.179
600	9.186	34.190	26.455
700	6.356	34.114	26.807
800	5.122	34.157	26.993
900	4.251	34.253	27.166
1000	3.632	34.342	27.300

Station	OS09173
Longitude	27-18.5N
Latitude	142-29.6E
Depth(m)	1760

Press.	Temp.	Sal.	SIG-T
5	23.770	-	-
10	23.770	-	-
20	23.760	-	-
30	23.750	-	-
40	23.750	-	-
50	23.740	-	-
75	23.710	-	-
100	22.359	-	-
125	20.490	-	-
150	19.520	-	-
200	18.350	-	-
250	17.720	-	-
300	16.643	-	-
400	14.173	-	-
500	11.439	-	-
600	8.409	-	-
700	6.330	-	-

Station	OS09174
Longitude	27-02.4N
Latitude	142-37.4E
Depth(m)	2100

Press.	Temp.	Sal.	SIG-T
5	23.710	-	-
10	23.710	-	-
20	23.710	-	-
30	23.700	-	-
40	23.700	-	-
50	23.702	-	-
75	23.710	-	-
100	23.062	-	-
125	20.570	-	-
150	19.872	-	-
200	18.601	-	-
250	17.431	-	-
300	16.730	-	-
400	14.113	-	-
500	11.079	-	-
600	8.600	-	-
700	6.800	-	-

5. Data on vertical long-line research

Three operations using a vertical long-line were performed. The gear was comprised of a main line, a weight which attached to end of the main line, a buoy which attached to another end of the main line, and six branch lines (18m-for tuna and 4 m-for squid) which attached to the main line. Seven types of main lines (220, 270, 400, 500, 600, 700 and 800 m) were used for the research. These operations were supervised by the captain, and were conducted by deck officers, crews, cadets, and research staff.

Group		A	B	C	D	E	F	E
Main line	(m)	220	270	400	500	600	700	800
Three branch line(for tuna)	(m)	18	18	18	18	18	18	18
Three branch line(for squid)	(m)	4	4	4	4	4	4	4

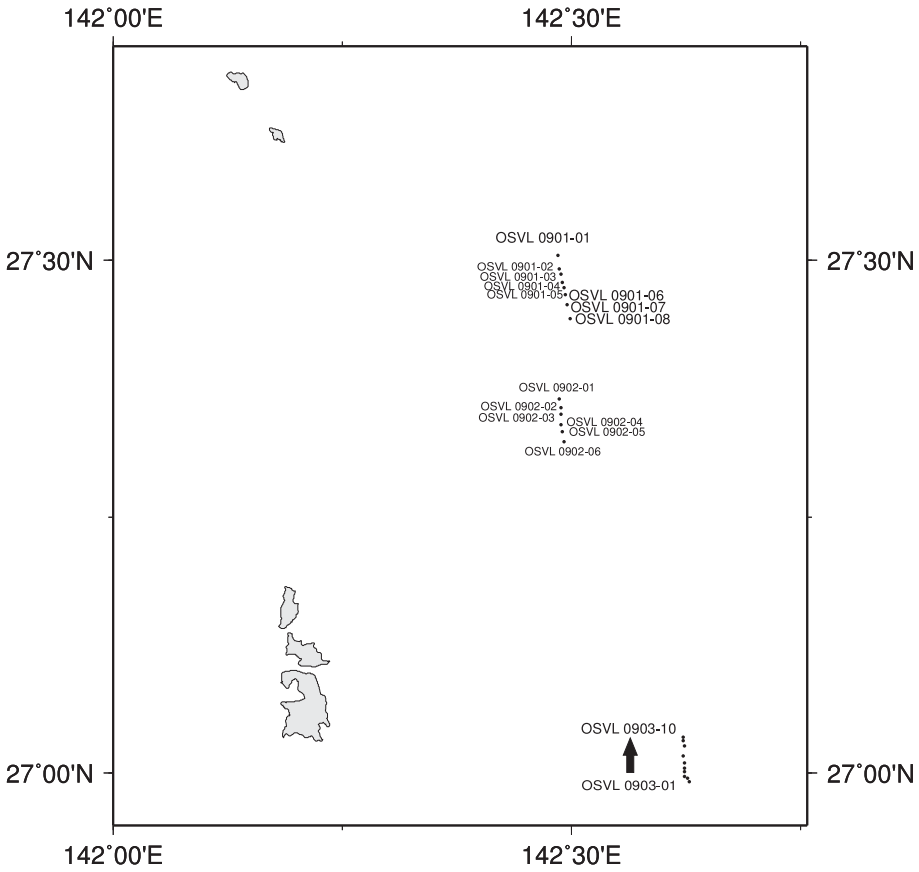


Figure 3: Locations of vertical long-line research

Table 3. Data on vertical long line research

No. of research		OSVL 0901-01	OSVL 0901-02	OSVL 0901-03	OSVL 0901-04	OSVL 0901-05	OSVL 0901-06	OSVL 0901-07	OSVL 0901-08
Date		15-Dec	15-Dec	15-Dec	15-Dec	15-Dec	15-Dec	15-Dec	15-Dec
position of	Lat. (N)	27-30.3	27-29.5	27-29.2	27-28.7	27-28.4	27-28.0	27-27.4	27-26.6
line set	Long. (E)	142-29.1	142-29.2	142-29.3	142-29.4	142-29.5	142-29.6	142-29.7	142-29.9
Time	Line set	0559-0605	0610-0614	0616-0620	0622-0625	0627-0630	0634-0640	0643-0650	0652-0658
(S.M.T.)	Line haul	1228-1240	1207-1217	1149-1158	1025-1030	1012-1017	1117-1140	1046-1106	0937-0958
Length of main line(m)		600	500	400	270	220	800	700	600
Depth(m)		1524	1564	1655	1780	1850	1897	1840	1794
Surface temp. (°C)		23.6	23.6	23.4	23.4	23.4	23.4	23.4	23.4
Wether		bc	bc	bc	bc	bc	bc	bc	bc
Wind		NNW4	NNW4	NNW4	NNW4	NNW4	NNW4	North4	North4
Flying squid		2		1					
Diamondback squid									
Sickle pomfret									

No. of research		OSVL 0902-01	OSVL 0902-02	OSVL 0902-03	OSVL 0902-04	OSVL 0902-05	OSVL 0902-06	OSVL 0903-01	OSVL 0903-02
Date		15-Dec	15-Dec	15-Dec	15-Dec	15-Dec	15-Dec	16-Dec	16-Dec
position of	Lat. (N)	27-21.9	27-21.4	27-21.0	27-20.4	27-20.0	27-19.4	26-59.5	26-59.7
line set	Long. (E)	142-29.2	142-29.3	142-29.3	142-29.3	142-29.4	142-29.5	142-37.7	142-37.6
Time	Line set	1309-1316	1319-1324	1325-1334	1325-1340	1342-1350	1351-1356	0907-0912	0913-0918
(S.M.T.)	Line haul	1830-1902	1805-1818	1725-1740	1656-1715	1617-1649	1537-1602	1633-1643	1614-1626
Length of main line(m)		500	500	400	400	700	600	400	400
Depth(m)		1840	1890	1760	1760	1780	1770	1988	1988
Surface temp. (°C)		23.4	23.6	23.4	23.6	23.5	23.5	23.6	23.6
Wether		c	c	c	bc	bc	bc	bc	bc
Wind		NNW3	NNW3	North2	North2	North3	North3	North5	SSE5
Flying squid		2	1	1	2				
Diamondback squid		1							
Sickle pomfret		1							

No. of research		OSVL 0903-03	OSVL 0903-04	OSVL 0903-05	OSVL 0903-06	OSVL 0903-07	OSVL 0903-08	OSVL 0903-09	OSVL 0903-10
Date		16-Dec	16-Dec	16-Dec	16-Dec	16-Dec	16-Dec	16-Dec	16-Dec
position of	Lat. (N)	26-59.8	27-00.1	27-00.3	27-00.6	27-01.0	27-01.6	27-01.9	27-02.1
line set	Long. (E)	142-37.4	142-37.4	142-37.4	142-37.4	142-37.3	142-37.4	142-37.3	142-37.3
Time	Line set	0919-0923	0924-0929	0929-0935	0935-0942	0943-1002	1005-1013	1015-1021	1024-1032
(S.M.T.)	Line haul	1555-1608	1534-1546	1459-1520	1431-1447	1400-1417	1711-1748	1316-1345	1228-1259
Length of main line(m)		400	500	500	500	600	700	600	800
Depth(m)		1988	1988	1950	1900	1880	1996	2020	2060
Surface temp. (°C)		23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
Wether		bc	bc	bc	bc	bc	bc	bc	bc
Wind		SSE5	SSE5	SSE5	SSE5	SSE5	SSE5	SSE5	SSE5
Flying squid		1		3	2	2			
Diamondback squid									
Sickle pomfret									

10

THE “OSHORO MARU” CRUISE 210 TO THE COAST OF SANRIKU

IN DECEMBER 2009

1. Cruise Itinerary

Cruise 210

Departure from Ofunato	Dec.	23	, 2009
Start hydrographic research (OS09175)		24	
Finish hydrographic research (OS09178)		25	
Return to Ofunato		26	
Departure from Ofunato		26	
Return to Hakodate		27	

Total coverage 448.5 miles 5 days at sea

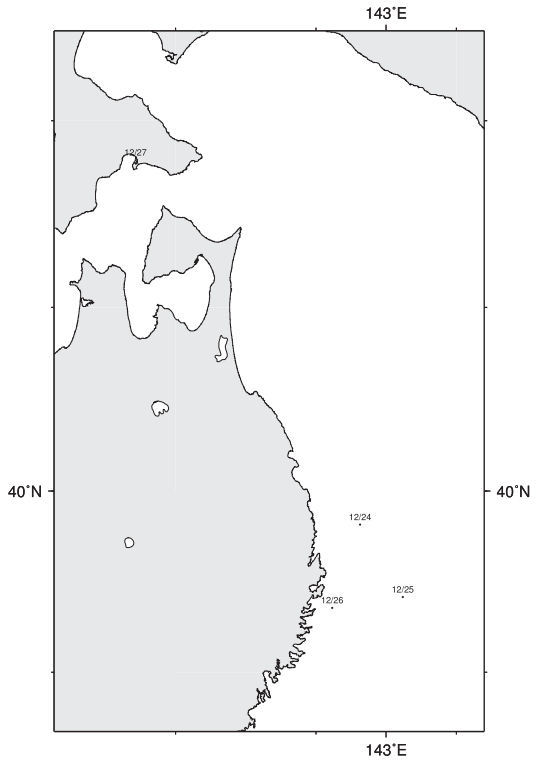


Figure 1: Noon position

2. Vessel Personnel

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

Cruise 210

Under Graduate instructor:	Professor	(School of Marine Biosciences, Kitasato University) Ryousuke Kado
	Lecturer	(School of Marine Biosciences, Kitasato University) Yuichiro Yamada
	Associate Professor	(Trainig ship Oshoro maru, Hokkaido University) Yoshiyuki Kajiwara
	Teaching Assistant:	3 Person
	Under Graduate Students:	61 Persons
	Total	97 Persons

3. Items of Research

Hydrographic observations: Fig. 2 Table 1,2

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

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09175	39-59.7N	143-00.4E	12/24	0357	9	1306	-	-	9.5	bc	9Plus-0769
OS09176	39-47.2N	142-19.5E	12/24	1405	9	506	-	-	-	bc	9Plus-0769
OS09177	39-31.1N	142-44.1E	12/25	0832	9	1370	3	12	12.1	c	9Plus-0769
OS09178	39-18.0N	142-26.5E	12/25	1258	9	995	3	14	11	c	9Plus-0769

(*):Fixed position by Global Positioning system

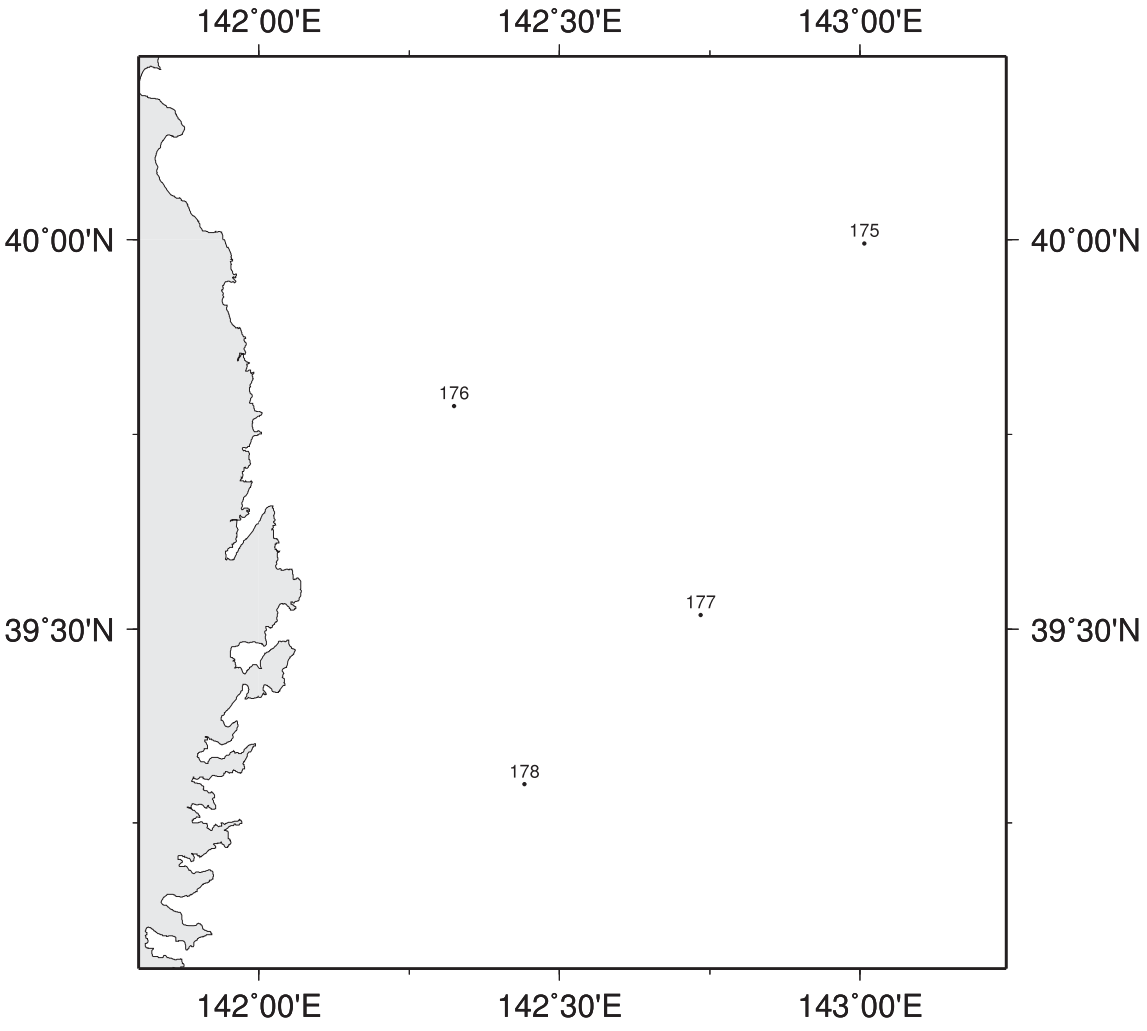


Figure 2: Oceanographic stations

Table 2: Oceanographic data

Station	OS09175
Longitude	39-59.7N
Latitude	143-00.4E
Depth(m)	1306

Press.	Temp.	Sal.	SIG-T
5	9.849	33.704	25.966
10	9.186	33.637	26.022
20	8.723	33.587	26.056
30	8.200	33.534	26.093
40	7.838	33.495	26.116
50	7.508	33.456	26.132
75	7.070	33.490	26.220
100	5.154	33.503	26.471
125	4.583	33.525	26.552
150	4.185	33.536	26.603
200	3.328	33.564	26.709
250	2.935	33.589	26.764
300	3.051	33.687	26.833
400	3.278	33.846	26.939
500	3.389	34.029	27.074

Station	OS09176
Longitude	39-47.2N
Latitude	142-19.5E
Depth(m)	506

Press.	Temp.	Sal.	SIG-T
5	9.998	33.815	26.027
10	9.999	33.815	26.027
20	9.868	33.792	26.032
30	9.541	33.746	26.049
40	9.257	33.700	26.059
50	9.090	33.673	26.065
75	8.003	33.509	26.103
100	7.887	33.494	26.108
125	7.699	33.464	26.112
150	7.278	33.412	26.130
200	6.258	33.550	26.375
250	4.452	33.531	26.571
300	3.619	33.555	26.674
400	3.078	33.716	26.853

Station	OS09177
Longitude	39-31.1N
Latitude	142-44.1E
Depth(m)	1370

Press.	Temp.	Sal.	SIG-T
5	12.556	33.964	25.679
10	12.569	33.964	25.676
20	12.579	33.964	25.674
30	12.580	33.964	25.674
40	12.576	33.964	25.674
50	12.570	33.962	25.674
75	12.554	33.961	25.676
100	10.957	33.809	25.856
125	9.540	33.841	26.124
150	7.587	33.764	26.364
200	7.231	33.961	26.569
250	3.567	33.580	26.699
300	3.313	33.631	26.764
400	3.222	33.788	26.897
500	3.430	33.942	27.001

Station	OS09178
Longitude	39-18.0N
Latitude	142-26.5E
Depth(m)	995

Press.	Temp.	Sal.	SIG-T
5	11.781	33.869	25.752
10	11.336	33.830	25.804
20	10.223	33.758	25.944
30	9.177	33.621	26.010
40	8.890	33.603	26.042
50	8.642	33.576	26.060
75	8.020	33.504	26.096
100	7.906	33.529	26.133
125	7.297	33.531	26.221
150	6.081	33.533	26.383
200	4.332	33.569	26.614
250	3.398	33.561	26.700
300	3.015	33.606	26.771
400	3.243	33.795	26.901
500	3.328	33.920	26.993