



HOKKAIDO UNIVERSITY

Title	1. The "Ushio Maru "Cruise 246, 247, 248 in January 2012
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THE " USHIO MARU "

CRUISE 246

CRUISE 247

CRUISE 248

IN JANUARY 2012

1. Cruise Itinerary

Cruise 246

Departure from Hakodate	Jan.	8,	2012
Arrival at and departure from Usujiri		8	
Start hydrographic research (US12001)		8	
Sampling by frame trawl net		8	
Arrival at Usujiri		9	
Departure from Usujiri		10	
Arrival at Usujiri		10	
Departure from Usujiri		12	
Arrival at and departure from Usujiri		12	
Finish hydrographic research (US12022)		12	
Return to Hakodate		13	
Total coverage 390.5 miles			

Cruise 247

Departure from Hakodate	Jan.	17,	2012
Start hydrographic research (US12023)		17	
Arrival at Fukushima		17	
Departure from Fukushima		18	
Finish hydrographic research (US12051)		18	
Return to Hakodate		19	
Total coverage 132.2 miles			

Cruise 248

Departure from Hakodate	Jan.	24,	2012
Arrival at Muroran		24	
Departure from Muroran		25	
Hydrographic research (US12052 - US12065)		25	
Return to Hakodate		26	
Total coverage 200.5 miles			

2. 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 “Ushio Maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and SBE-19). Dynamic computations were made using a desk-top computer aboard the “Ushio Maru”.

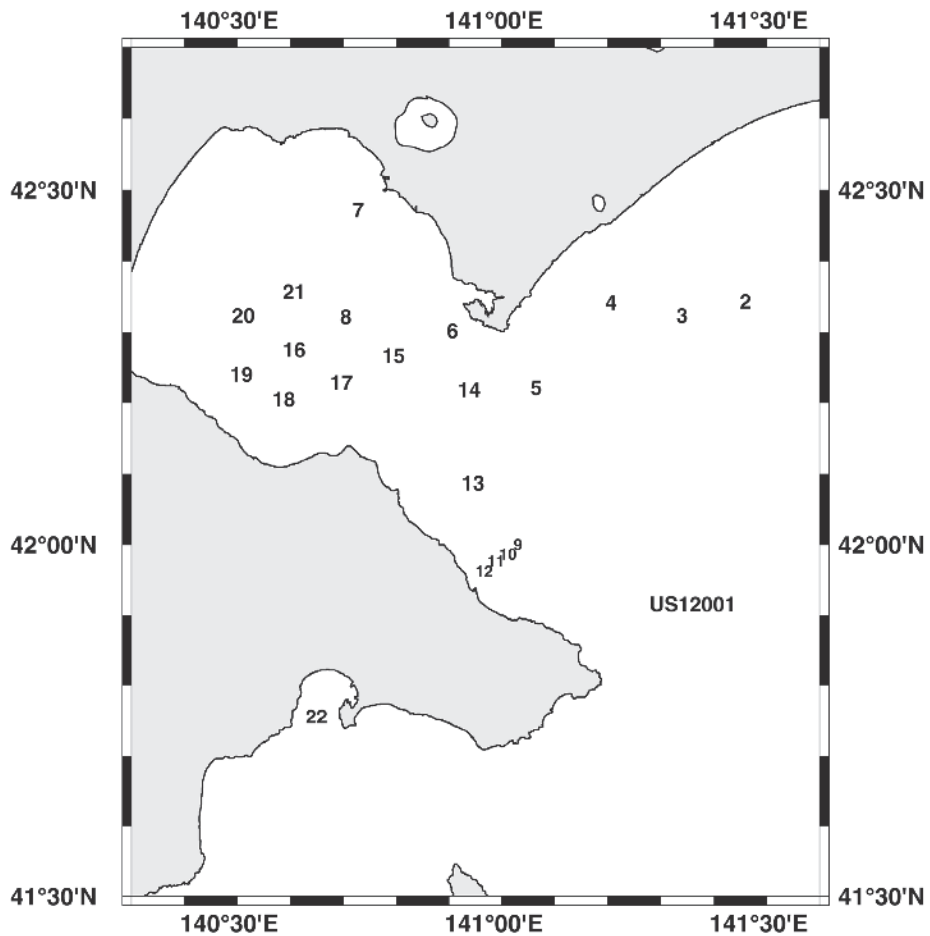


Figure 1. Oceanographic stations (Cruise 246)

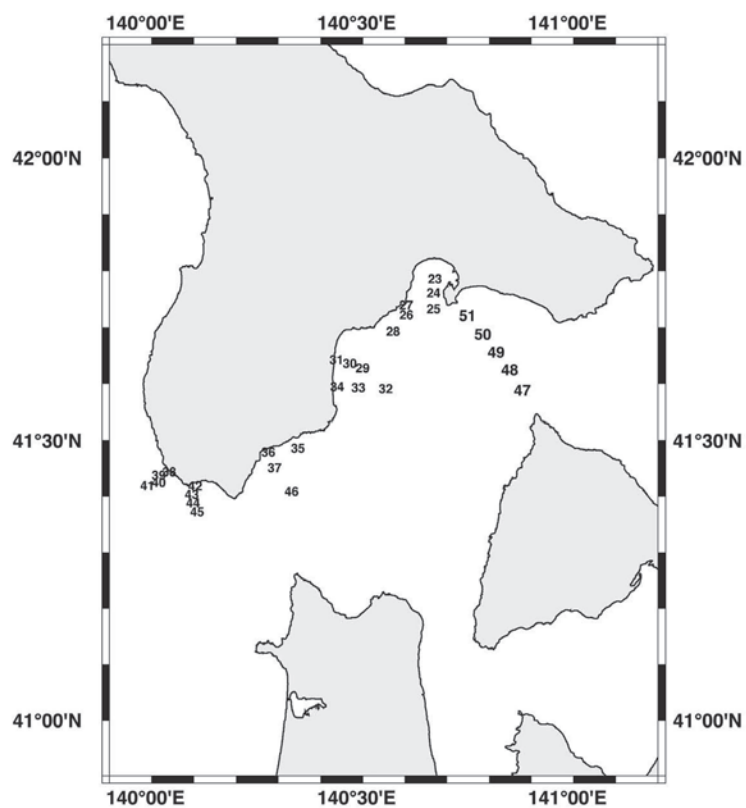


Figure 2. Oceanographic stations (Cruise 247)

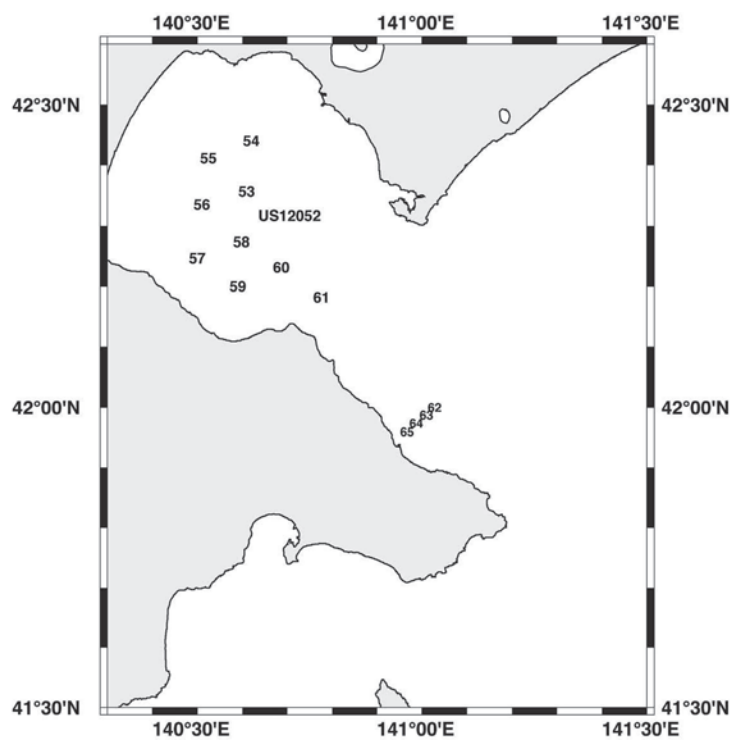


Figure 3. Oceanographic stations (Cruise 248)

Table 1. List of Oceanographic Station

Cruise 246												
Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12001	41-54.3	141-21.6	1/8	1755-1809	310	NW -2	NW -1	NW -5	0.1	6.0	bc	1025.2
US12002	42-20.0	141-27.6	1/9	0229-0248	425	WNW-2	WNW-1	WNW-5	-0.2	4.3	bc	1021.6
US12003	42-18.8	141-20.4	1/9	0406-0418	342	NW -2	NW -1	NW -4	-0.5	4.9	c	1021.2
US12004	42-19.9	141-12.4	1/9	0501-0506	85	West-2	NW -1	West-4	-0.6	4.5	c	1020.6
US12005	42-12.7	141-03.9	1/9	0644-0647	82	West-2	NW -2	West-5	-0.2	5.0	o	1020.6
US12006	42-17.5	140-54.4	1/9	0802-0805	56	WNW-2	NW -2	WNW-5	-0.1	5.5	o	1021.0
US12007	42-27.7	140-43.7	1/9	0936-0939	60	WNW-2	NW -1	WNW-4	0.1	5.8	bc	1021.6
US12008	42-18.7	140-42.3	1/9	1049-1053	69	West-3	West-1	West-5	0.2	5.8	bc	1021.2
US12009	41-59.4	141-01.8	1/9	1318-1322	101	NW -3	NW -1	NW -5	0.8	5.2	bc	1020.0
US12010	41-58.7	141-00.7	1/9	1330-1334	95	NW -3	NW -1	NW -5	0.9	5.2	bc	1019.4
US12011	41-58.1	140-59.5	1/9	1340-1344	87	NW -3	NW -1	NW -5	1.0	5.3	bc	1019.5
US12012	41-57.4	140-58.2	1/9	1351-1355	78	NW -4	NW -1	NW -6	0.9	4.6	bc	1019.6
US12013	42-04.6	140-56.7	1/10	0803-0810	85	West-3	NW -1	West-5	-1.2	4.8	bc	1021.0
US12014	42-12.5	140-56.3	1/10	0925-0929	70	WNW-3	NW -1	WNW-5	-1.5	4.9	bc	1021.1
US12015	42-15.4	140-47.7	1/10	1109-1113	71	NW -3	NW -1	NW -5	-1.9	5.1	c	1021.0
US12016	42-15.9	140-36.5	1/10	1223-1230	90	WNW-3	WNW-1	WNW-5	-2.1	5.7	bc	1020.1
US12017	42-13.1	140-41.8	1/12	0707-0711	90	WNW-3	WNW-1	WNW-5	-4.6	5.0	s	1020.2
US12018	42-11.7	140-35.3	1/12	0903-0907	83	West-3	WNW-1	West-5	-4.3	5.7	bc	1021.0
US12019	42-13.8	140-30.5	1/12	0953-0957	79	West-3	WNW-1	West-5	-4.8	5.4	bc	1021.1
US12020	42-18.8	140-30.7	1/12	1048-1052	93	West-3	West-1	West-5	-3.2	5.5	bc	1020.5
US12021	42-20.8	140-36.5	1/12	1148-1132	87	WNW-3	WNW-1	WNW-5	-3.0	5.5	bc	1019.6
US12022	41-44.8	140-39.0	1/12	2006-2009	51	West-1	South-1	West-3	-3.4	9.0	s	1018.1
Cruise 247												
Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12023	41-46.7	140-40.3	1/17	0822-0824	22	WNW-1	West-1	WNW-3	-3.5	6.7	bc	1020.7
US12024	41-45.2	140-40.1	1/17	0842-0844	45	West-1	West-1	West-3	-3.1	8.5	bc	1020.6
US12025	41-43.5	140-40.1	1/17	0903-0905	67	WNW-1	West-1	WNW-3	-3.0	8.7	bc	1020.6
US12026	41-43.6	140-36.2	1/17	0932-0934	26	NW -1	SSW-1	NW -3	-3.1	8.8	bc	1021.0
US12027	41-43.9	140-35.8	1/17	0938-0939	11	North-1	South-1	North-2	-2.7	7.9	bc	1021.1
US12028	41-41.1	140-34.3	1/17	1015-1018	42	NW -1	SSW-1	NW -2	-1.6	8.7	bc	1021.0
US12029	41-37.2	140-29.8	1/17	1054-1055	30	NW -1	SSW-1	NW -3	-2.7	8.9	bc	1020.9
US12030	41-37.7	140-28.2	1/17	1112-1114	21	NW -1	SSW-1	NW -2	-1.5	8.7	bc	1020.9
US12031	41-38.1	140-26.3	1/17	1130-1131	13	NW -1	SSE-1	NW -2	-2.2	6.5	s	1020.7
US12032	41-35.0	140-33.3	1/17	1218-1220	58	NW -1	SSE-1	NW -3	-1.3	8.8	bc	1020.6
US12033	41-35.1	140-29.4	1/17	1253-1255	33	NW -1	SSE-1	NW -3	-1.5	8.9	s	1020.0
US12034	41-35.2	140-26.4	1/17	1323-1325	13	NNW-1	SSE-1	NNW-2	-1.9	8.4	s	1020.0
US12035	41-28.7	140-20.8	1/17	1448-1451	62	West-2	SW -1	West-4	-0.8	8.9	c	1019.7
US12036	41-28.3	140-16.6	1/17	1526-1528	25	West-2	SW -1	West-4	-0.6	8.7	c	1020.0
US12037	41-26.6	140-17.5	1/18	0709-0713	64	WNW-1	SW -1	WNW-3	-0.4	8.6	bc	1022.6
US12038	41-26.2	140-02.5	1/18	0845-0847	34	NW -3	NW -1	NW -5	1.5	7.5	bc	1022.8
US12039	41-26.1	140-02.0	1/18	0901-0904	48	NW -3	NW -1	NW -5	1.7	7.7	bc	1023.0
US12040	41-25.8	140-01.4	1/18	0916-0920	82	NW -3	NW -1	NW -5	1.6	8.4	bc	1023.1
US12041	41-25.3	140-00.4	1/18	0935-0939	104	NW -3	NW -1	NW -5	1.6	9.1	bc	1023.5
US12042	41-24.5	140-06.2	1/18	1015-1017	54	NW -3	NW -1	NW -5	1.8	7.4	bc	1023.5
US12043	41-23.9	140-05.9	1/18	1030-1034	87	NW -3	NW -1	NW -5	1.8	7.9	bc	1023.0
US12044	41-23.3	140-06.1	1/18	1047-1051	99	WNW-3	NW-1	WNW-5	1.7	8.1	bc	1023.4
US12045	41-22.2	140-06.5	1/18	1107-1112	118	NW -2	NW -1	NW -4	1.8	8.6	bc	1023.5
US12046	41-24.1	140-19.9	1/18	1225-1229	95	NW -3	WSW-1	NW -5	2.7	8.1	bc	1023.0
US12047	41-34.7	140-52.7	1/18	1455-1458	35	NW -3	NW -1	NW -5	4.4	9.9	bc	1023.0
US12048	41-36.9	140-50.9	1/18	1514-1518	84	NW -3	NW -1	NW -5	2.5	9.9	bc	1023.0
US12049	41-38.8	140-49.0	1/18	1532-1545	345	NW -2	NW -1	NW -4	2.4	9.9	bc	1023.1
US12050	41-40.7	140-47.1	1/18	1604-1613	232	WNW-2	NW -1	WNW-4	2.2	9.6	bc	1023.2
US12051	41-42.7	140-44.9	1/18	1633-1637	86	NW -2	WNW-1	NW -4	1.4	9.7	bc	1023.6
Cruise 248												
Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12052	42-18.5	140-42.3	1/25	0717-0721	65	West-3	WNW -1	West-5	-4.7	3.2	c	1010.1
US12053	42-20.9	140-36.6	1/25	0809-0813	87	West-4	WNW -1	West-6	-5.0	3.7	bc	1010.5
US12054	42-25.9	140-37.2	1/25	0858-0902	83	West-3	West-1	West-5	-4.5	3.7	bc	1010.6
US12055	42-24.2	140-31.5	1/25	0943-0948	95	West-3	West-1	West-5	-5.1	4.1	bc	1011.0
US12056	42-19.6	140-30.6	1/25	1029-1033	93	West-3	West-1	West-5	-4.6	4.5	bc	1011.1
US12057	42-14.3	140-30.0	1/25	1127-1131	80	West-2	West-1	West-4	-4.4	4.2	bc	1010.7
US12058	42-15.9	140-35.9	1/25	1217-1221	91	West-2	West-1	West-5	-4.0	4.1	c	1010.7
US12059	42-11.5	140-35.4	1/25	1312-1316	82	WNW-2	WNW -1	WNW-4	-3.9	4.1	bc	1010.0
US12060	42-13.4	140-41.2	1/25	1407-1411	89	WNW-3	WNW-1	WNW-5	-4.0	3.2	bc	1010.1
US12061	42-10.4	140-46.6	1/25	1507-1512	95	WNW-3	WNW-1	WNW-5	-4.4	3.1	c	1010.1
US12062	41-59.4	141-01.7	1/25	1703-1707	101	West-2	NW -1	West-3	-4.6	2.4	bc	1011.1
US12063	41-58.8	141-00.6	1/25	1714-1718	94	NW -2	NW -1	NW -2	-4.5	2.4	bc	1011.1
US12064	41-58.1	140-59.4	1/25	1726-1730	86	West-2	NW -1	West-3	-4.5	2.3	bc	1011.1
US12065	41-57.4	140-58.2	1/25	1738-1742	79	NW -2	NW -1	NW -3	-4.6	2.7	bc	1011.5

(*): Fixed position by Global Positioning System

Table 2. Oceanographic data

STATION US12001			
LATITUDE	41-54.3	N	
LONGITUD	141-21.6	E	
DEPTH (m)	310		
Press.	Temp.	Salinity	Sigma-T
5	6.200	33.303	26.187
10	6.196	33.304	26.188
20	6.208	33.309	26.190
30	6.205	33.310	26.192
40	6.283	33.324	26.193
50	6.337	33.340	26.199
75	6.787	33.451	26.227
100	6.688	33.425	26.220
125	6.731	33.445	26.230
150	6.823	33.496	26.258
175	5.705	33.525	26.423
200	4.279	33.478	26.547
250	2.566	33.415	26.657
300	2.649	33.498	26.716

STATION US12002			
LATITUDE	42-20.0	N	
LONGITUD	141-27.6	E	
DEPTH (m)	425		
Press.	Temp.	Salinity	Sigma-T
5	4.392	32.933	26.102
10	4.393	32.934	26.103
20	4.772	33.020	26.131
30	4.942	33.045	26.132
40	5.099	33.076	26.139
50	5.637	33.175	26.155
75	5.424	33.168	26.174
100	5.328	33.198	26.209
125	5.133	33.200	26.233
150	4.829	33.205	26.271
175	4.776	33.207	26.279
200	4.676	33.216	26.297
250	4.355	33.248	26.357
300	4.322	33.382	26.466
400	2.656	33.521	26.734

STATION US12003			
LATITUDE	42-18.8	N	
LONGITUD	141-20.4	E	
DEPTH (m)	342		
Press.	Temp.	Salinity	Sigma-T
5	5.293	33.083	26.122
10	5.292	33.049	26.095
20	5.285	33.123	26.155
30	5.289	33.175	26.196
40	5.299	33.173	26.193
50	5.290	33.170	26.191
75	5.261	33.170	26.195
100	5.236	33.174	26.201
125	5.154	33.170	26.207
150	6.285	33.365	26.225
175	5.765	33.269	26.214
200	5.690	33.358	26.293
250	4.651	33.305	26.370
300	4.361	33.361	26.445

STATION US12004			
LATITUDE	42-19.9	N	
LONGITUD	141-12.4	E	
DEPTH (m)	85		
Press.	Temp.	Salinity	Sigma-T
5	4.922	33.112	26.188
10	4.927	33.111	26.186
20	4.927	33.111	26.186
30	4.927	33.111	26.186
40	4.969	33.116	26.185
50	4.998	33.120	26.185
75	5.808	33.357	26.278

STATION US12005			
LATITUDE	42-12.7	N	
LONGITUD	141-03.9	E	
DEPTH (m)	82		
Press.	Temp.	Salinity	Sigma-T
5	5.015	33.212	26.256
10	5.125	33.248	26.273
20	5.436	33.334	26.305
30	5.716	33.392	26.317
40	5.873	33.425	26.324
50	5.771	33.424	26.335

STATION US12006			
LATITUDE	42-17.5	N	
LONGITUD	140-54.4	E	
DEPTH (m)	56		
Press.	Temp.	Salinity	Sigma-T
5	5.895	33.512	26.390
10	5.898	33.511	26.389
20	5.903	33.512	26.389
30	5.896	33.509	26.388
40	5.913	33.511	26.387

STATION US12007			
LATITUDE	42-27.7	N	
LONGITUD	140-43.7	E	
DEPTH (m)	60		
Press.	Temp.	Salinity	Sigma-T
5	6.157	33.691	26.498
10	6.188	33.694	26.497
20	6.187	33.692	26.495
30	6.217	33.701	26.498
40	6.205	33.701	26.500
50	6.209	33.703	26.501

STATION US12008			
LATITUDE	42-18.7	N	
LONGITUD	140-42.3	E	
DEPTH (m)	69		
Press.	Temp.	Salinity	Sigma-T
5	6.215	33.678	26.481
10	6.234	33.681	26.481
20	6.238	33.681	26.481
30	6.235	33.680	26.480
40	6.263	33.691	26.485
50	6.270	33.691	26.484

STATION US12009			
LATITUDE	41-59.4	N	
LONGITUD	141-01.8	E	
DEPTH (m)	101		
Press.	Temp.	Salinity	Sigma-T
5	5.554	33.260	26.232
10	5.562	33.255	26.227
20	5.560	33.247	26.221
30	5.571	33.252	26.224
40	5.596	33.258	26.225
50	5.628	33.265	26.227
75	5.817	33.354	26.274

STATION US12010			
LATITUDE	41-58.7	N	
LONGITUD	141-00.7	E	
DEPTH (m)	95		
Press.	Temp.	Salinity	Sigma-T
5	5.660	33.263	26.222
10	5.670	33.269	26.225
20	5.723	33.294	26.239
30	5.718	33.298	26.242
40	5.716	33.300	26.244
50	5.757	33.311	26.248
75	5.789	33.320	26.251

STATION US12011			
LATITUDE	41-58.1	N	
LONGITUD	140-59.5	E	
DEPTH (m)	87		
Press.	Temp.	Salinity	Sigma-T
5	5.167	33.166	26.203
10	5.228	33.177	26.205
20	5.490	33.171	26.240
30	5.624	33.280	26.240
40	5.653	33.285	26.240
50	5.661	33.291	26.243
75	5.811	33.346	26.269

STATION US12012			
LATITUDE	41-57.4	N	
LONGITUD	140-58.2	E	
DEPTH (m)	78		
Press.	Temp.	Salinity	Sigma-T
5	4.856	33.108	26.192
10	4.855	33.109	26.192
20	4.911	33.119	26.194
30	5.604	33.269	26.233
40	5.617	33.268	26.231
50	5.721	33.308	26.250

STATION US12013			
LATITUDE	42-04.6	N	
LONGITUD	140-56.7	E	
DEPTH (m)	85		
Press.	Temp.	Salinity	Sigma-T
5	5.161	33.254	26.273
10	5.172	33.250	26.269
20	5.542	33.372	26.322
30	5.665	33.428	26.352
40	5.716	33.472	26.380
50	5.798	33.535	26.420
75	6.278	33.664	26.462

STATION US12014			
LATITUDE	42-12.5	N	
LONGITUD	140-56.3	E	
DEPTH (m)	70		
Press.	Temp.	Salinity	Sigma-T
5	5.259	33.306	26.303
10	5.264	33.307	26.303
20	5.279	33.308	26.302
30	5.303	33.314	26.304
40	5.368	33.337	26.315
50	5.383	33.352	26.325

STATION US12015			
LATITUDE	42-15.4	N	
LONGITUD	140-47.7	E	
DEPTH (m)	71		
Press.	Temp.	Salinity	Sigma-T
5	5.499	33.387	26.339
10	5.498	33.388	26.340
20	5.502	33.388	26.340
30	5.622	33.439	26.365
40	5.863	33.499	26.383
50	6.232	33.601	26.418

STATION US12016			
LATITUDE	42-15.9	N	
LONGITUD	140-36.5	E	
DEPTH (m)	90		
Press.	Temp.	Salinity	Sigma-T
5	5.826	6.309	58.632
10	5.902	6.843	55.252
20	5.918	6.788	39.713
30	5.930	6.782	15.498
40	5.932	6.787	6.490
50	5.945	6.752	2.973
75	6.063	6.691	0.925

STATION US12017			
LATITUDE	42-13.1	N	
LONGITUD	140-41.8	E	
DEPTH (m)	90		
Press.	Temp.	Salinity	Sigma-T
5	5.393	33.553	26.483
10	5.398	33.585	26.508
20	5.416	33.591	26.510
30	5.427	33.592	26.509
40	5.425	33.592	26.510
50	5.558	33.638	26.530
75	5.880	33.718	26.555

STATION US12018			
LATITUDE	42-11.7	N	
LONGITUD	140-35.3	E	
DEPTH (m)	83		
Press.	Temp.	Salinity	Sigma-T
5	6.071	33.763	26.566
10	6.082	33.760	26.563
20	6.083	33.760	26.562
30	6.085	33.759	26.561
40	6.084	33.757	26.560
50	6.082	33.757	26.560
75	6.071	33.757	26.562

STATION US12019			
LATITUDE	42-13.8	N	
LONGITUD	140-30.5	E	
DEPTH (m)	79		
Press.	Temp.	Salinity	Sigma-T
5	5.845	33.751	26.585
10	5.843	33.749	26.584
20	5.858	33.750	26.583
30	5.837	33.747	26.582
40	5.775	33.748	26.591
50	5.745	33.749	26.596
75	5.682	33.750	26.604

STATION US12020			
LATITUDE	42-18.8	N	
LONGITUD	140-30.7	E	
DEPTH (m)	93		
Press.	Temp.	Salinity	Sigma-T
5	5.875	33.704	26.544
10	5.883	33.705	26.544
20	5.885	33.704	26.543
30	5.880	33.703	26.543
40	5.882	33.705	26.544
50	5.884	33.703	26.542
75	5.918	33.713	26.546

STATION US12021			
LATITUDE	42-20.8	N	
LONGITUD	140-36.5	E	
DEPTH (m)	87		
Press.	Temp.	Salinity	Sigma-T
5	5.927	33.671	26.512
10	5.936	33.693	26.528
20	5.940	33.691	26.526
30	5.949	33.692	26.526
40	5.957	33.696	26.527
50	5.954	33.698	26.529
75	5.957	33.695	26.527

STATION US12022			
LATITUDE	41-44.8	N	
LONGITUD	140-39.0	E	
DEPTH (m)	51		
Press.	Temp.	Salinity	Sigma-T
5	9.273	34.057	26.336
10	9.265	34.064	26.343
20	9.268	34.059	26.339
30	9.198	34.061	26.351
40	9.201	34.055	26.346

STATION US12023			
LATITUDE	41-46.7	N	
LONGITUD	140-40.3	E	
DEPTH (m)	22		
Press.	Temp.	Salinity	Sigma-T
5	8.312	33.870	26.340
10	8.285	33.846	26.325

STATION US12024			
LATITUDE	41-45.2	N	
LONGITUD	140-40.1	E	
DEPTH (m)	45		
Press.	Temp.	Salinity	Sigma-T
5	8.834	33.967	26.335
10	8.832	33.963	26.332
20	8.604	33.926	26.339
30	8.382	33.902	26.354
40	8.847	34.010	26.367

STATION US12025			
LATITUDE	41-43.5	N	
LONGITUD	140-40.1	E	
DEPTH (m)	67		
Press.	Temp.	Salinity	Sigma-T
5	9.097	34.031	26.344
10	9.099	34.030	26.343
20	9.101	34.030	26.342
30	9.090	34.032	26.346
40	9.073	34.035	26.351
50	9.001	34.036	26.363

STATION US12026			
LATITUDE	41-43.6	N	
LONGITUD	140-36.2	E	
DEPTH (m)	26		
Press.	Temp.	Salinity	Sigma-T
5	9.089	34.009	26.328
10	9.082	34.010	26.330
20	9.004	33.997	26.332

STATION US12027			
LATITUDE	41-43.9	N	
LONGITUD	140-35.8	E	
DEPTH (m)	11		
Press.	Temp.	Salinity	Sigma-T
5	8.168	33.856	26.350

STATION US12028			
LATITUDE	41-41.1	N	
LONGITUD	140-34.3	E	
DEPTH (m)	42		
Press.	Temp.	Salinity	Sigma-T
5	9.078	34.010	26.330
10	9.078	34.010	26.330
20	9.042	34.000	26.328
30	8.746	33.985	26.363

STATION US12029			
LATITUDE	41-37.2	N	
LONGITUD	140-29.8	E	
DEPTH (m)	30		
Press.	Temp.	Salinity	Sigma-T
5	9.123	34.015	26.327
10	9.038	33.999	26.328
20	8.879	33.992	26.348

STATION US12030			
LATITUDE	41-37.7	N	
LONGITUD	140-28.2	E	
DEPTH (m)	21		
Press.	Temp.	Salinity	Sigma-T
5	8.822	33.971	26.340
10	8.292	33.946	26.402

STATION US12031			
LATITUDE	41-38.1	N	
LONGITUD	140-26.3	E	
DEPTH (m)	13		
Press.	Temp.	Salinity	Sigma-T
5	6.837	33.735	26.445

STATION US12032			
LATITUDE	41-35.0	N	
LONGITUD	140-33.3	E	
DEPTH (m)	58		
Press.	Temp.	Salinity	Sigma-T
5	9.167	34.036	26.336
10	9.181	34.036	26.334
20	9.178	34.036	26.335
30	9.170	34.036	26.336
40	8.996	34.015	26.347
50	8.920	34.009	26.354

STATION US12033			
LATITUDE	41-35.1	N	
LONGITUD	140-29.4	E	
DEPTH (m)	33		
Press.	Temp.	Salinity	Sigma-T
5	8.616	33.973	26.374
10	8.391	33.939	26.382
20	7.981	33.951	26.453

STATION US12034			
LATITUDE	41-35.2	N	
LONGITUD	140-26.4	E	
DEPTH (m)	13		
Press.	Temp.	Salinity	Sigma-T
5	8.361	33.953	26.398

STATION US12035			
LATITUDE	41-28.7	N	
LONGITUD	140-20.8	E	
DEPTH (m)	62		
Press.	Temp.	Salinity	Sigma-T
5	9.281	34.022	26.307
10	9.274	34.023	26.309
20	9.277	34.026	26.311
30	9.092	34.017	26.334
40	9.017	34.011	26.341
50	8.957	34.011	26.350

STATION US12036			
LATITUDE	41-28.3	N	
LONGITUD	140-16.6	E	
DEPTH (m)	25		
Press.	Temp.	Salinity	Sigma-T
5	8.927	34.016	26.359
10	8.934	34.016	26.358
20	8.720	33.998	26.377

STATION US12037			
LATITUDE	41-26.6	N	
LONGITUD	140-17.5	E	
DEPTH (m)	64		
Press.	Temp.	Salinity	Sigma-T
5	8.986	34.004	26.340
10	9.007	34.006	26.339
20	9.012	34.008	26.339
30	9.009	34.009	26.341
40	9.012	34.010	26.341
50	9.011	34.010	26.341

STATION US12038			
LATITUDE	41-26.2	N	
LONGITUD	140-02.5	E	
DEPTH (m)	34		
Press.	Temp.	Salinity	Sigma-T
5	7.978	34.056	26.535
10	7.837	34.044	26.547
20	7.710	34.047	26.568

STATION US12039			
LATITUDE	41-26.1	N	
LONGITUD	140-02.0	E	
DEPTH (m)	48		
Press.	Temp.	Salinity	Sigma-T
5	8.044	34.054	26.525
10	8.032	34.055	26.527
20	7.918	34.052	26.541
30	7.899	34.054	26.546
40	7.601	34.020	26.562

STATION US12040			
LATITUDE	41-25.8	N	
LONGITUD	140-01.4	E	
DEPTH (m)	82		
Press.	Temp.	Salinity	Sigma-T
5	8.287	34.041	26.478
10	8.256	34.051	26.490
20	8.249	34.055	26.494
30	8.247	34.057	26.497
40	8.233	34.057	26.498
50	7.793	34.034	26.545
75	7.182	34.063	26.655

STATION US12041			
LATITUDE	41-25.3	N	
LONGITUD	140-00.4	E	
DEPTH (m)	104		
Press.	Temp.	Salinity	Sigma-T
5	9.437	34.036	26.293
10	9.409	34.037	26.298
20	9.250	34.038	26.325
30	8.917	34.041	26.380
40	8.820	34.053	26.405
50	8.634	34.031	26.417
75	7.246	34.060	26.644

STATION US12042			
LATITUDE	41-24.5	N	
LONGITUD	140-06.2	E	
DEPTH (m)	54		
Press.	Temp.	Salinity	Sigma-T
5	7.694	34.071	26.590
10	7.318	34.050	26.626
20	7.129	34.061	26.662
30	7.064	34.062	26.671
40	6.956	34.059	26.683
50	6.936	34.061	26.688

STATION US12043			
LATITUDE	41-23.9	N	
LONGITUD	140-05.9	E	
DEPTH (m)	87		
Press.	Temp.	Salinity	Sigma-T
5	8.148	34.049	26.505
10	7.946	34.070	26.551
20	7.959	34.057	26.540
30	7.370	34.069	26.634
40	7.352	34.068	26.636
50	7.317	34.066	26.639
75	7.032	34.062	26.676

STATION US12044			
LATITUDE	41-23.3	N	
LONGITUD	140-06.1	E	
DEPTH (m)	99		
Press.	Temp.	Salinity	Sigma-T
5	8.335	34.062	26.487
10	8.320	34.061	26.489
20	7.762	34.040	26.555
30	7.579	34.064	26.600
40	7.421	34.072	26.629
50	7.377	34.072	26.635
75	7.217	34.068	26.655

STATION US12045			
LATITUDE	41-22.2	N	
LONGITUD	140-06.5	E	
DEPTH (m)	118		
Press.	Temp.	Salinity	Sigma-T
5	8.957	34.058	26.387
10	8.976	34.052	26.380
20	8.898	34.053	26.392
30	8.273	34.088	26.517
40	8.235	34.066	26.506
50	7.921	34.048	26.538
75	7.607	34.073	26.604
100	7.282	34.070	26.647

STATION US12046			
LATITUDE 41-24.1 N			
LONGITUD 140-19.9 E			
DEPTH (m) 95			
Press.	Temp.	Salinity	Sigma-T
5	8.342	34.040	26.469
10	8.257	34.047	26.487
20	8.188	34.049	26.499
30	8.160	34.052	26.505
40	8.115	34.052	26.512
50	8.047	34.049	26.520
75	7.836	34.063	26.562

STATION US12047			
LATITUDE 41-34.7 N			
LONGITUD 140-52.7 E			
DEPTH (m) 35			
Press.	Temp.	Salinity	Sigma-T
5	10.221	33.986	26.123
10	10.203	33.990	26.129
20	10.137	34.005	26.152
30	10.143	34.005	26.151

STATION US12048			
LATITUDE 41-36.9 N			
LONGITUD 140-50.9 E			
DEPTH (m) 84			
Press.	Temp.	Salinity	Sigma-T
5	10.262	33.987	26.117
10	10.253	33.988	26.118
20	10.145	34.005	26.150
30	10.060	34.014	26.172
40	9.920	34.008	26.191
50	9.774	34.030	26.233
75	9.478	34.046	26.294

STATION US12049			
LATITUDE 41-38.8 N			
LONGITUD 140-49.0 E			
DEPTH (m) 345			
Press.	Temp.	Salinity	Sigma-T
5	10.100	34.002	26.155
10	10.013	34.012	26.178
20	9.937	34.026	26.202
30	9.858	34.028	26.217
40	9.781	34.036	26.236
50	9.780	34.039	26.239
75	9.792	34.037	26.235
100	9.717	34.035	26.246
125	9.486	34.046	26.293
150	9.337	34.047	26.318
175	9.321	34.047	26.321
200	9.304	34.048	26.324
250	9.171	34.043	26.342
300	8.841	34.059	26.407

STATION US12050			
LATITUDE 41-40.7 N			
LONGITUD 140-47.1 E			
DEPTH (m) 232			
Press.	Temp.	Salinity	Sigma-T
5	9.951	34.026	26.200
10	9.950	34.026	26.200
20	9.910	34.027	26.208
30	9.805	34.035	26.231
40	9.802	34.040	26.236
50	9.805	34.045	26.239
75	9.830	34.040	26.231
100	9.434	34.031	26.289
125	9.176	34.036	26.335
150	9.155	34.040	26.341
175	8.858	34.037	26.387
200	8.630	34.044	26.428

STATION US12051			
LATITUDE 41-42.7 N			
LONGITUD 140-44.9 E			
DEPTH (m) 86			
Press.	Temp.	Salinity	Sigma-T
5	9.609	34.042	26.269
10	9.611	34.043	26.269
20	9.526	34.045	26.285
30	9.529	34.043	26.283
40	9.523	34.040	26.282
50	9.456	34.035	26.289
75	9.152	34.026	26.331

STATION US12052			
LATITUDE 42-18.5 N			
LONGITUD 140-42.3 E			
DEPTH (m) 65			
Press.	Temp.	Salinity	Sigma-T
5	3.582	33.110	26.324
10	3.585	33.128	26.338
20	3.626	33.175	26.371
30	5.095	33.704	26.637
40	5.110	33.699	26.631
50	5.138	33.702	26.630

STATION US12053			
LATITUDE 42-20.9 N			
LONGITUD 140-36.6 E			
DEPTH (m) 87			
Press.	Temp.	Salinity	Sigma-T
5	4.084	33.431	26.530
10	4.085	33.431	26.530
20	4.093	33.432	26.529
30	4.121	33.441	26.534
40	5.089	33.713	26.644
50	5.158	33.711	26.635
75	5.142	33.709	26.636

STATION US12054			
LATITUDE 42-25.9 N			
LONGITUD 140-37.2 E			
DEPTH (m) 83			
Press.	Temp.	Salinity	Sigma-T
5	4.082	33.424	26.524
10	4.072	33.423	26.524
20	4.096	33.423	26.522
30	4.113	33.427	26.523
40	4.107	33.424	26.522
50	4.440	33.515	26.560
75	5.158	33.704	26.630

STATION US12055			
LATITUDE 42-24.2 N			
LONGITUD 140-31.5 E			
DEPTH (m) 95			
Press.	Temp.	Salinity	Sigma-T
5	4.624	33.628	26.629
10	4.620	33.630	26.631
20	4.685	33.642	26.634
30	4.876	33.677	26.640
40	4.886	33.676	26.639
50	4.922	33.685	26.641
75	5.003	33.699	26.644

STATION US12056			
LATITUDE 42-19.6 N			
LONGITUD 140-30.6 E			
DEPTH (m) 93			
Press.	Temp.	Salinity	Sigma-T
5	4.861	33.704	26.664
10	4.866	33.704	26.663
20	4.870	33.704	26.662
30	4.863	33.704	26.663
40	4.870	33.705	26.663
50	4.872	33.703	26.662
75	4.867	33.702	26.661

STATION US12057			
LATITUDE 42-14.3 N			
LONGITUD 140-30.0 E			
DEPTH (m) 80			
Press.	Temp.	Salinity	Sigma-T
5	4.376	33.563	26.604
10	4.360	33.558	26.602
20	4.637	33.642	26.639
30	4.824	33.687	26.654
40	4.853	33.691	26.654
50	4.885	33.700	26.658
75	4.882	33.696	26.655

STATION US12058			
LATITUDE 42-15.9 N			
LONGITUD 140-35.9 E			
DEPTH (m) 91			
Press.	Temp.	Salinity	Sigma-T
5	4.504	33.608	26.626
10	4.529	33.609	26.624
20	4.576	33.630	26.636
30	4.596	33.636	26.639
40	4.747	33.695	26.669
50	4.783	33.700	26.669
75	4.783	33.701	26.670

STATION US12059			
LATITUDE 42-11.5 N			
LONGITUD 140-35.4 E			
DEPTH (m) 82			
Press.	Temp.	Salinity	Sigma-T
5	4.394	33.596	26.629
10	4.393	33.597	26.629
20	4.452	33.609	26.633
30	4.597	33.649	26.649
40	4.686	33.688	26.670
50	4.679	33.694	26.676
75	4.511	33.673	26.678

STATION US12060			
LATITUDE 42-13.4 N			
LONGITUD 140-41.2 E			
DEPTH (m) 89			
Press.	Temp.	Salinity	Sigma-T
5	3.533	33.224	26.419
10	3.546	33.235	26.427
20	4.586	33.678	26.673
30	4.765	33.704	26.674
40	4.792	33.701	26.669
50	4.811	33.703	26.668
75	4.811	33.704	26.669

STATION		US12061	
LATITUDE	42-10.4	N	
LONGITUD	140-46.6	E	
DEPTH (m)	95		
Press.	Temp.	Salinity	Sigma-T
5	3.516	33.253	26.443
10	3.523	33.258	26.447
20	4.693	33.674	26.659
30	4.937	33.699	26.651
40	4.974	33.702	26.649
50	4.977	33.701	26.648
75	4.951	33.697	26.648

STATION		US12062	
LATITUDE	41-59.4	N	
LONGITUD	141-01.7	E	
DEPTH (m)	101		
Press.	Temp.	Salinity	Sigma-T
5	2.836	32.882	26.209
10	2.839	32.791	26.135
20	2.914	32.785	26.125
30	3.537	32.927	26.182
40	3.700	33.026	26.245
50	3.777	33.031	26.242
75	3.934	33.107	26.287
100	3.802	33.138	26.325

STATION		US12063	
LATITUDE	41-58.8	N	
LONGITUD	141-00.6	E	
DEPTH (m)	94		
Press.	Temp.	Salinity	Sigma-T
5	2.776	32.773	26.126
10	2.781	32.771	26.125
20	2.980	32.860	26.178
30	3.243	32.919	26.202
40	3.435	32.987	26.239
50	3.911	33.078	26.266
75	4.249	33.212	26.338

STATION		US12064	
LATITUDE	41-58.1	N	
LONGITUD	140-59.4	E	
DEPTH (m)	86		
Press.	Temp.	Salinity	Sigma-T
5	2.739	32.801	26.152
10	2.985	32.872	26.188
20	3.453	32.977	26.230
30	3.564	33.039	26.268
40	3.927	33.118	26.296
50	4.050	33.145	26.306
75	4.164	33.260	26.385

STATION		US12065	
LATITUDE	41-57.4	N	
LONGITUD	140-58.2	E	
DEPTH (m)	79		
Press.	Temp.	Salinity	Sigma-T
5	3.165	32.906	26.200
10	3.318	32.944	26.216
20	3.593	33.028	26.257
30	3.677	33.074	26.286
40	3.680	33.082	26.292
50	3.967	33.201	26.358
75	4.908	33.649	26.615