



HOKKAIDO UNIVERSITY

Title	4. The "Ushio Maru" Cruise 224, 225 and 226 in April 2011
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THE " USHIO MARU "

CRUISE 224

CRUISE 225

CRUISE 226

IN APRIL 2011

1. Cruise Itinerary

Cruise 224

Departure from Hakodate	Apr. 2, 2011
Arrival at Fukushima	2
Departure from Fukushima	3
Start hydrographic research (US11177)	3
Arrival at Aomori	3
Departure from Aomori	4
Finish hydrographic research (US11197)	4
Return to Hakodate	5
Total coverage 206.4 miles	

Cruise 225

Departure from Hakodate	Apr. 9, 2011
Arrival at and departure from Usujiri	9
Start hydrographic research (US11198)	9
Sampling by frame trawl net	9
Retrieval mooring ADCP system	11
Arrival at Usujiri	11
Departure from Usujiri	12
Set mooring ADCP system	12
Arrival at Mori	12
Departure from Mori	13
Finish hydrographic research (US11239)	13
Arrival at and departure from Usujiri	13
Return to Hakodate	14
Total coverage 495.9 miles	

Cruise 226

Departure from Hakodate	Apr. 18, 2011
Arrival at Esashi	18
Departure from and arrival at Esashi	19
Departure from Esashi	20
Sampling by gill net (for catching fur seal)	20
Return to Hakodate	21
Total coverage 243.8 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 SBE9Plus and SBE-19). Dynamic computations were made using a desk-top computer aboard the “Ushio Maru”.

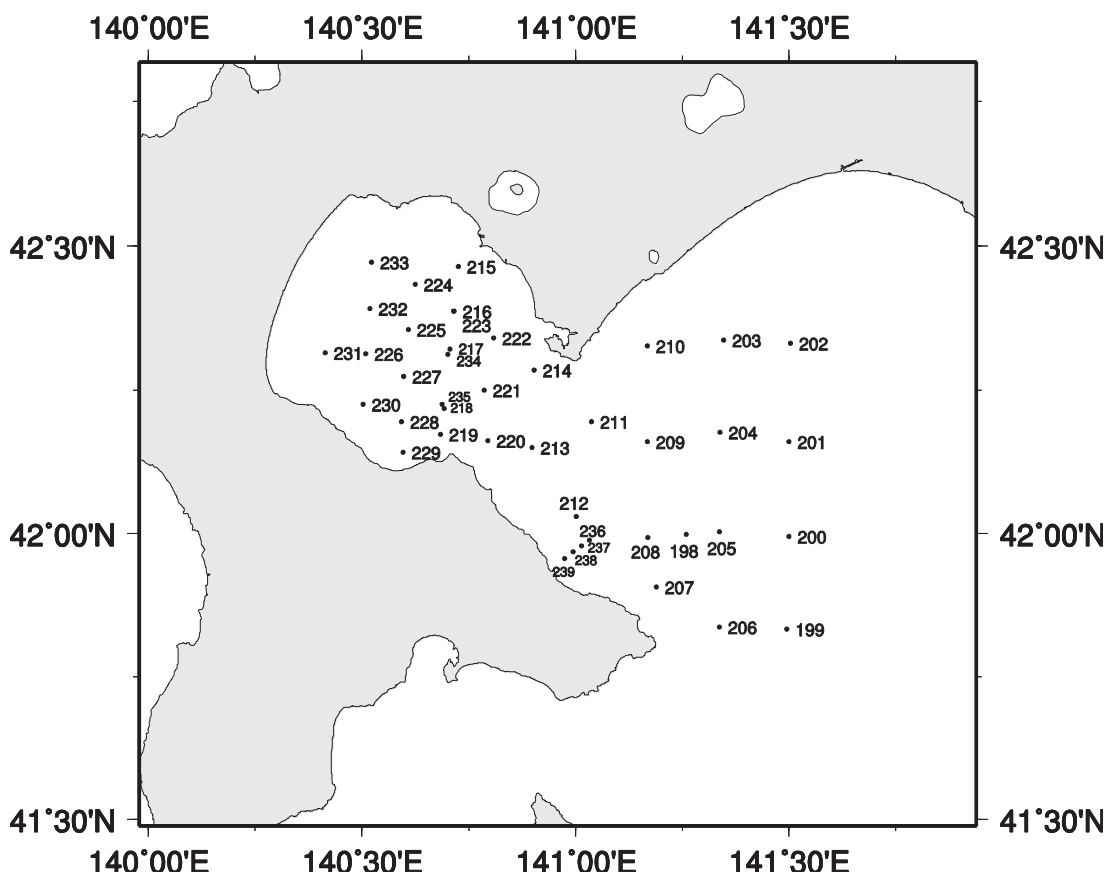


Figure 1. Oceanographic stations (Cruise 225)

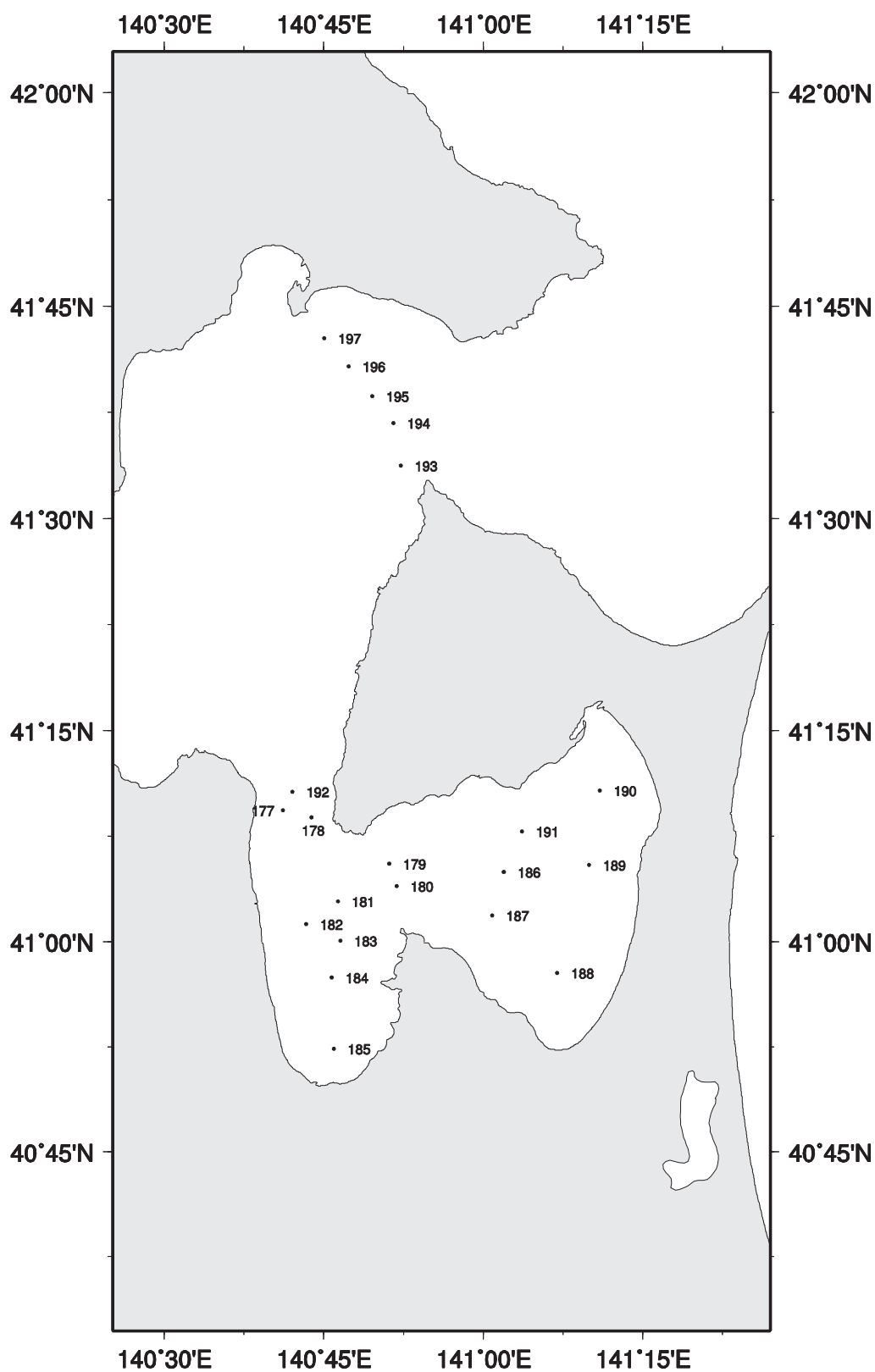


Figure 2. Oceanographic stations (Cruise 224)

Table 1: List of oceanographic stations

Cruise 224

Station	Lat. (N)*	Long. (E)*	Date	S.M.T	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US11177	41-09.4	140-41.1	4/3	0930-0938	56	NW -3	NW -1	NW -5	2.8	7.8	c	1017.2
US11178	41-08.9	140-43.8	4/3	1005-1011	61	West-2	NW -1	West-4	3.8	6.4	c	1017.5
US11179	41-05.6	140-51.1	4/3	1058-1105	54	West-2	West-1	West-4	3.5	3.9	c	1017.2
US11180	41-04.0	140-51.8	4/3	1122-1129	52	West-3	West-1	West-5	2.5	3.7	o	1017.2
US11181	41-02.9	140-46.3	4/3	1201-1207	58	West-3	West-1	West-5	3.0	4.1	c	1017.2
US11182	41-01.3	140-43.3	4/3	1232-1238	57	West-3	West-1	West-5	2.3	4.1	bc	1017.2
US11183	41-00.1	140-46.5	4/3	1300-1307	53	West-3	West-1	West-5	2.7	4.1	c	1017.5
US11184	40-57.5	140-45.7	4/3	1353-1358	51	West-3	West-1	West-5	3.2	4.1	c	1017.1
US11185	40-52.4	140-45.9	4/3	1536-1541	31	West-3	West-1	West-5	3.1	4.2	o	1017.5
US11186	41-05.0	141-01.9	4/4	0834-0840	48	NW -1	NNE-1	NW -2	2.2	3.5	bc	1023.2
US11187	41-01.9	141-00.8	4/4	1000-1008	49	SSW-1	NNE-1	SSW-2	2.8	3.9	bc	1023.6
US11188	40-57.8	141-06.9	4/4	1049-1054	39	Calm	NNE-1	Calm	3.8	3.8	bc	1023.6
US11189	41-05.5	141-09.9	4/4	1147-1152	39	South-1	North-1	South-2	4.3	4.0	bc	1023.6
US11190	41-10.8	141-10.9	4/4	1227-1231	31	South-1	South-1	South-3	4.0	4.6	bc	1023.2
US11191	41-07.9	141-03.6	4/4	1316-1322	38	WNW-2	West-1	WNW-5	4.6	3.9	bc	1022.5
US11192	41-10.7	140-42.0	4/4	1507-1514	67	WNW-3	WNW-1	WNW-5	5.5	7.9	bc	1022.1
US11193	41-33.8	140-52.2	4/4	1731-1734	57	WSW-3	West-1	WSW-5	5.8	8.2	bc	1022.1
US11194	41-36.8	140-51.5	4/4	1756-1800	84	WNW-3	West-1	WNW-5	5.5	8.3	bc	1022.1
US11195	41-38.7	140-49.5	4/4	1818-1830	328	WNW-3	West-1	WNW-5	4.9	8.6	bc	1022.1
US11196	41-40.8	140-47.3	4/4	1850-1858	226	WNW-3	West-1	WNW-5	4.8	8.1	bc	1022.1
US11197	41-42.8	140-45.0	4/4	1916-1920	84	West-3	West-1	West-5	4.7	7.8	bc	1022.2

Cruise 225

Station	Lat. (N)*	Long. (E)*	Date	S.M.T	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US11198	42-00.0	141-15.5	4/9	1540-1550	244	ESE-2	SE -1	ESE-4	3.1	2.4	o	1019.2
US11199	41-50.1	141-29.6	4/10	0215-0226	357	NW -2	SE -1	NW -4	2.6	2	bc	1018.5
US11200	41-59.8	141-29.9	4/10	0351-0407	473	WNW-2	SE -1	WNW-3	2.6	2.1	bc	1018.5
US11201	42-09.7	141-29.9	4/10	0530-0545	548	West-2	SE -1	West-3	2.9	2.6	bc	1018.3
US11202	42-20.0	141-30.1	4/10	0708-0725	436	Calm	SE -1	Calm	2.2	2.5	f	1018.3
US11203	42-20.3	141-20.7	4/10	0830-0841	268	Calm	South-1	Calm	2.1	3.8	f	1018.7
US11204	42-10.7	141-20.2	4/10	0957-1010	368	Calm	SE -1	Calm	2.9	3.1	f	1017.1
US11205	42-00.3	141-20.1	4/10	1130-1140	307	South-2	SE -1	South-4	5.1	2.7	bc	1015.5
US11206	41-50.3	141-20.1	4/10	1258-1308	286	SSW-3	SE -1	SSW-5	6.3	3	bc	1014.6
US11207	41-54.5	141-11.3	4/10	1407-1415	202	Calm	SE -1	Calm	9.6	4.5	bc	1013.6
US11208	41-59.7	141-10.1	4/10	1513-1518	138	South-1	SE -1	South-3	9.9	3.8	bc	1012.5
US11209	42-09.7	141-10.0	4/10	1628-1633	124	SE -1	SE -1	SE -3	7.1	3.6	bc	1011.6
US11210	42-19.7	141-10.0	4/10	1744-1750	75	NNE -1	SE -1	NNE-3	4.4	3.1	bc	1011.6
US11211	42-11.8	141-02.2	4/10	1857-1902	81	NNE-1	ESE-1	NNE-3	4	3.4	c	1011.1
US11212	42-01.9	141-00.0	4/10	2019-2052	86	SE -3	SE -1	SE -3	7.3	3.3	c	1010.7
US11213	42-09.1	140-53.8	4/10	2200-2203	78	SSW-3	SE -1	SSW-4	9.4	4.1	o	1010.2
US11214	42-17.2	140-54.1	4/10	2325-2328	59	West-4	SE -1	West-5	6.6	4.1	r	1009.2
US11215	42-28.0	140-43.5	4/11	0120-0123	60	West-1	SE -1	West-2	5.7	4	o	1008.7
US11216	42-23.3	140-42.9	4/11	0242-0245	61	WNW-3	ESE-1	WNW-5	5.5	4	o	1009.1
US11217	42-19.4	140-42.3	4/11	0340-0344	70	WNW-1	ESE-1	WNW-3	5.3	4	o	1009.1
US11218	42-13.2	140-41.5	4/11	0452-0456	90	West-2	ESE-1	West-4	5.1	4	o	1009.1
US11219	42-10.5	140-41.0	4/11	0544-0548	88	West-2	ESE-1	West-4	5.2	3.9	o	1010
US11220	42-09.8	140-47.6	4/12	0729-0733	94	West-3	SE -1	West-5	4.1	3.2	bc	1013.6
US11221	42-15.1	140-47.1	4/12	0822-0826	74	West-2	SE -1	West-4	4.6	3.2	bc	1013.7
US11222	42-20.5	140-48.4	4/12	0911-0915	55	WNW-1	SE -1	WNW-3	5.2	3.4	bc	1013.7
US11223	42-23.3	140-42.8	4/12	1002-1006	61	WNW-1	SE -1	WNW-2	5	4.2	bc	1013.7
US11224	42-26.1	140-37.4	4/12	1045-1051	83	Calm	SE -1	Calm	6.6	4.5	bc	1013.6
US11225	42-21.4	140-36.5	4/12	1203-1207	89	SE -3	SW -1	SE -2	6.2	5.3	bc	1013.1
US11226	42-18.9	140-30.5	4/12	1300-1305	92	West-3	SE -1	West-5	7.6	4.8	bc	1012.6
US11227	42-16.5	140-35.8	4/12	1300-1305	91	West-3	SE -1	West-3	7.5	4.9	bc	1012.1
US11228	42-11.8	140-35.5	4/12	1635-1639	84	West-2	SE -1	West-4	7.2	4.7	bc	1011.6
US11229	42-08.6	140-35.7	4/12	1714-1718	62	West-2	West-1	West-4	7.3	4.2	bc	1011.6
US11230	42-13.6	140-30.1	4/13	0655-0659	77	East-1	SE -1	East-3	6.1	5.1	r	1004.8
US11231	42-19.0	140-24.8	4/13	0803-0807	66	East-2	ESE-1	East-4	5.3	4.6	r	1003.9
US11232	42-23.6	140-31.1	4/13	0913-0917	97	East-3	ESE-1	East-5	5.2	4.4	o	1003.9
US11233	42-28.4	140-31.3	4/13	1000-1004	79	East-1	ESE-1	East-3	5.1	4.4	o	1004.6
US11234	42-18.8	140-42.0	4/13	1129-1133	71	SE -1	SE -1	SE -2	6	3.7	bc	1005
US11235	42-13.6	140-41.2	4/13	1222-1226	89	ESE-1	SE -1	ESE-3	6.2	3.7	bc	1005.5
US11236	41-59.4	141-01.9	4/13	1504-1509	101	ENE-1	SE -1	ENE-2	4.9	4.2	bc	1006.1
US11237	41-58.8	141-00.8	4/13	1515-1519	95	ESE-1	SE -1	ESE-2	5.8	4	bc	1006.6
US11238	41-58.2	140-59.6	4/13	1525-1529	87	Calm	SE -1	Calm	6.4	4.2	bc	1006.6
US11239	41-57.5	140-58.4	4/13	1536-1540	80	Calm	SE -1	Calm	6.4	4.4	bc	1006.6

Cruise 226

No data

(*): Fixed position by Global Positioning System

Table 2: Oceanographic data

STATION US11177			
LATITUDE 41-09.4 N			
LONGITUDE 140-41.1 E			
DEPTH (m) 56			
Press.	Temp.	Salinity	Sigma-T
5	8.030	33.727	26.270
10	8.074	33.800	26.320
20	8.067	33.804	26.325
30	8.050	33.804	26.327
40	8.016	33.806	26.334

STATION US11180			
LATITUDE 41-04.0 N			
LONGITUDE 140-51.8 E			
DEPTH (m) 52			
Press.	Temp.	Salinity	Sigma-T
5	3.777	32.768	26.032
10	3.775	32.795	26.054
20	3.812	32.840	26.086
30	4.002	32.882	26.101
40	4.248	33.028	26.192

STATION US11183			
LATITUDE 41-00.1 N			
LONGITUDE 140-46.5 E			
DEPTH (m) 53			
Press.	Temp.	Salinity	Sigma-T
5	4.468	32.900	26.068
10	4.495	32.989	26.136
20	4.481	32.989	26.137
30	4.453	32.986	26.138
40	4.619	33.165	26.263

STATION US11186			
LATITUDE 41-05.0 N			
LONGITUDE 141-01.9 E			
DEPTH (m) 48			
Press.	Temp.	Salinity	Sigma-T
5	3.838	32.740	26.004
10	3.826	32.788	26.043
20	3.819	32.790	26.046
30	3.783	32.793	26.052
40	3.729	32.802	26.064

STATION US11189			
LATITUDE 41-05.5 N			
LONGITUDE 141-09.9 E			
DEPTH (m) 39			
Press.	Temp.	Salinity	Sigma-T
5	4.179	32.838	26.049
10	3.930	32.798	26.042
20	3.702	32.776	26.046
30	3.674	32.782	26.053

STATION US11192			
LATITUDE 41-10.7 N			
LONGITUDE 140-42.0 E			
DEPTH (m) 67			
Press.	Temp.	Salinity	Sigma-T
5	8.402	33.663	26.164
10	8.445	33.780	26.249
20	8.378	33.850	26.314
30	8.277	33.851	26.330
40	8.271	33.852	26.332
50	8.254	33.852	26.335

STATION US11178			
LATITUDE 41-08.9 N			
LONGITUDE 140-43.8 E			
DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T
5	5.515	33.297	26.266
10	5.658	33.360	26.299
20	5.960	33.427	26.315
30	6.224	33.492	26.333
40	7.662	33.819	26.395
50	8.046	33.892	26.397

STATION US11181			
LATITUDE 41-02.9 N			
LONGITUDE 140-46.3 E			
DEPTH (m) 58			
Press.	Temp.	Salinity	Sigma-T
5	4.357	32.981	26.144
10	4.364	33.007	26.164
20	4.380	33.013	26.167
30	4.448	33.035	26.178
40	4.462	33.061	26.196

STATION US11184			
LATITUDE 40-57.5 N			
LONGITUDE 140-45.7 E			
DEPTH (m) 51			
Press.	Temp.	Salinity	Sigma-T
5	4.460	32.946	26.105
10	4.469	32.985	26.136
20	4.484	33.020	26.162
30	4.484	33.027	26.168
40	5.651	33.450	26.371

STATION US11187			
LATITUDE 41-01.9 N			
LONGITUDE 141-00.8 E			
DEPTH (m) 49			
Press.	Temp.	Salinity	Sigma-T
5	3.877	32.813	26.059
10	3.802	32.813	26.066
20	3.781	32.805	26.062
30	3.776	32.807	26.064
40	3.770	32.808	26.065

STATION US11190			
LATITUDE 41-10.8 N			
LONGITUDE 141-10.9 E			
DEPTH (m) 31			
Press.	Temp.	Salinity	Sigma-T
5	4.942	32.522	25.718
10	4.561	32.607	25.826
20	3.979	32.728	25.981

STATION US11193			
LATITUDE 41-33.8 N			
LONGITUDE 140-52.2 E			
DEPTH (m) 57			
Press.	Temp.	Salinity	Sigma-T
5	8.511	33.909	26.340
10	8.512	33.912	26.342
20	8.464	33.910	26.348
30	8.431	33.911	26.354
40	8.422	33.912	26.356
50	8.424	33.913	26.356

STATION US11179			
LATITUDE 41-05.6 N			
LONGITUDE 140-51.1 E			
DEPTH (m) 54			
Press.	Temp.	Salinity	Sigma-T
5	4.091	32.876	26.088
10	4.089	32.897	26.104
20	4.081	32.897	26.105
30	4.345	33.005	26.164
40	4.924	33.240	26.288
50	7.354	33.784	26.412

STATION US11182			
LATITUDE 41-01.3 N			
LONGITUDE 140-43.3 E			
DEPTH (m) 57			
Press.	Temp.	Salinity	Sigma-T
5	4.575	33.004	26.139
10	4.564	33.005	26.141
20	4.520	33.011	26.151
30	4.574	33.113	26.226
40	6.621	33.673	26.424
50	7.223	33.761	26.412

STATION US11185			
LATITUDE 40-52.4 N			
LONGITUDE 140-45.9 E			
DEPTH (m) 31			
Press.	Temp.	Salinity	Sigma-T
5	4.666	32.902	26.049
10	4.673	32.930	26.070
20	4.654	32.973	26.106

STATION US11188			
LATITUDE 40-57.8 N			
LONGITUDE 141-06.9 E			
DEPTH (m) 39			
Press.	Temp.	Salinity	Sigma-T
5	3.986	32.798	26.036
10	3.904	32.803	26.048
20	3.883	32.808	26.054
30	3.882	32.809	26.055

STATION US11191			
LATITUDE 41-07.9 N			
LONGITUDE 141-03.6 E			
DEPTH (m) 38			
Press.	Temp.	Salinity	Sigma-T
5	3.926	32.782	26.029
10	3.658	32.821	26.086
20	3.594	32.875	26.135
30	3.604	32.903	26.157

STATION US11194			
LATITUDE 41-36.8 N			
LONGITUDE 140-51.5 E			
DEPTH (m) 84			
Press.	Temp.	Salinity	Sigma-T
5	8.626	33.897	26.313
10	8.565	33.900	26.324
20	8.434	33.920	26.361
30	8.444	33.921	26.359
40	8.404	33.924	26.368
50	8.387	33.924	26.371
75	8.397	33.924	26.369

	STATION	US11195		
	LATITUDE	41-38.7	N	
	LONGITUDE	140-49.5	E	
	DEPTH (m)	328		
Press.	Temp.	Salinity	Sigma-T	
5	8.308	33.930	26.388	
10	8.315	33.928	26.385	
20	8.264	33.937	26.399	
30	8.163	33.949	26.425	
40	8.180	33.949	26.422	
50	8.190	33.947	26.418	
75	8.158	33.951	26.427	
100	8.136	33.953	26.432	
125	8.111	33.956	26.437	
150	8.051	33.960	26.449	
175	8.009	33.963	26.458	
200	8.021	33.963	26.456	
250	7.993	33.966	26.463	
300	7.592	33.989	26.539	

	STATION	US11198		
	LATITUDE	42-00.0	N	
	LONGITUDE	141-15.5	E	
	DEPTH (m)	244		
Press.	Temp.	Salinity	Sigma-T	
5	2.713	32.665	26.046	
10	2.688	32.670	26.052	
20	2.457	32.763	26.144	
30	2.347	33.018	26.357	
40	2.810	33.129	26.408	
50	3.695	33.280	26.448	
75	4.138	33.345	26.456	
100	4.689	33.481	26.506	
125	3.074	33.297	26.519	
150	3.279	33.373	26.561	
175	3.143	33.382	26.581	
200	2.834	33.390	26.615	

	STATION	US11201		
	LATITUDE	42-09.7	N	
	LONGITUDE	141-29.9	E	
	DEPTH (m)	548		
Press.	Temp.	Salinity	Sigma-T	
5	2.730	32.709	26.079	
10	2.730	32.710	26.081	
20	2.597	32.718	26.097	
30	2.113	32.829	26.224	
40	4.816	33.445	26.463	
50	5.665	33.568	26.462	
75	5.678	33.560	26.454	
100	5.679	33.560	26.454	
125	5.675	33.559	26.454	
150	5.589	33.554	26.460	
175	4.872	33.483	26.487	
200	4.567	33.514	26.545	
250	2.817	33.351	26.584	
300	2.352	33.380	26.646	
400	2.410	33.570	26.794	

	STATION	US11204		
	LATITUDE	42-10.7	N	
	LONGITUDE	141-20.2	E	
	DEPTH (m)	368		
Press.	Temp.	Salinity	Sigma-T	
5	2.972	32.722	26.069	
10	2.910	32.728	26.079	
20	2.871	32.735	26.088	
30	2.459	32.817	26.188	
40	3.035	33.139	26.397	
50	3.612	33.235	26.420	
75	5.195	33.496	26.461	
100	5.011	33.462	26.455	
125	3.862	33.328	26.470	
150	3.882	33.386	26.514	
175	4.133	33.484	26.567	
200	3.812	33.463	26.582	
250	2.352	33.358	26.629	
300	2.442	33.479	26.718	

	STATION	US11196		
	LATITUDE	41-40.8	N	
	LONGITUDE	140-47.3	E	
	DEPTH (m)	226		
Press.	Temp.	Salinity	Sigma-T	
5	7.978	33.911	26.421	
10	7.971	33.909	26.421	
20	7.973	33.912	26.423	
30	8.055	33.929	26.424	
40	8.061	33.931	26.426	
50	8.023	33.937	26.435	
75	7.779	33.928	26.464	
100	7.731	33.929	26.472	
125	7.657	33.937	26.489	
150	7.501	33.975	26.541	
175	7.432	33.984	26.559	
200	7.340	33.995	26.580	

	STATION	US11199		
	LATITUDE	41-50.1	N	
	LONGITUDE	141-29.6	E	
	DEPTH (m)	357		
Press.	Temp.	Salinity	Sigma-T	
5	2.375	32.550	25.981	
10	2.378	32.552	25.982	
20	2.515	32.662	26.060	
30	2.383	32.755	26.144	
40	2.955	33.139	26.403	
50	3.309	33.250	26.460	
75	3.153	33.248	26.473	
100	3.045	33.287	26.514	
125	2.800	33.312	26.555	
150	2.624	33.334	26.587	
175	2.496	33.365	26.623	
200	2.491	33.407	26.657	
250	2.449	33.466	26.707	
300	2.325	33.520	26.761	

	STATION	US11202		
	LATITUDE	42-20.0	N	
	LONGITUDE	141-30.1	E	
	DEPTH (m)	436		
Press.	Temp.	Salinity	Sigma-T	
5	2.897	32.676	26.039	
10	2.871	32.676	26.041	
20	2.055	32.690	26.117	
30	2.321	32.762	26.155	
40	2.050	32.864	26.257	
50	1.852	32.891	26.293	
75	3.587	33.267	26.448	
100	4.039	33.339	26.461	
125	3.378	33.287	26.484	
150	3.170	33.291	26.506	
175	2.981	33.316	26.543	
200	2.799	33.330	26.570	
250	2.413	33.377	26.639	
300	2.440	33.474	26.714	
400	2.831	33.694	26.858	

	STATION	US11205		
	LATITUDE	42-00.3	N	
	LONGITUDE	141-20.1	E	
	DEPTH (m)	307		
Press.	Temp.	Salinity	Sigma-T	
5	2.945	32.650	26.014	
10	2.767	32.664	26.040	
20	2.767	32.717	26.083	
30	2.064	32.816	26.217	
40	2.321	32.983	26.331	
50	3.407	33.202	26.413	
75	5.167	33.490	26.459	
100	4.415	33.417	26.484	
125	3.955	33.393	26.513	
150	4.885	33.577	26.560	
175	5.074	33.627	26.579	
200	4.594	33.595	26.607	
250	2.383	33.389	26.651	

	STATION	US11197		
	LATITUDE	41-42.8	N	
	LONGITUDE	140-45.0	E	
	DEPTH (m)	84		
Press.	Temp.	Salinity	Sigma-T	
5	8.160	32.261	25.100	
10	8.157	32.272	25.109	
20	8.046	32.373	25.204	
30	7.940	33.957	26.464	
40	7.812	33.964	26.488	
50	7.808	33.967	26.491	
75	7.579	33.981	26.535	

	STATION	US11200		
	LATITUDE	41-59.8	N	
	LONGITUDE	141-29.9	E	
	DEPTH (m)	473		
Press.	Temp.	Salinity	Sigma-T	
5	2.424	32.641	26.049	
10	2.502	32.659	26.058	
20	2.581	32.753	26.126	
30	2.322	32.780	26.169	
40	2.236	32.838	26.222	
50	2.808	33.104	26.388	
75	4.667	33.432	26.469	
100	4.160	33.380	26.481	
125	3.628	33.336	26.499	
150	3.092	33.322	26.537	
175	2.727	33.325	26.572	
200	2.219	33.292	26.587	
250	2.462	33.379	26.637	
300	2.486	33.466	26.704	
400	2.418	33.606	26.822	

	STATION	US11203		
	LATITUDE	42-20.3	N	
	LONGITUDE	141-20.7	E	
	DEPTH (m)	268		
Press.	Temp.	Salinity	Sigma-T	
5	3.574	32.871	26.134	
10	3.695	32.931	26.171	
20	3.297	32.930	26.206	
30	2.870	32.955	26.264	
40	2.807	32.991	26.298	
50	2.970	33.117	26.385	
75	4.752	33.441	26.467	
100	3.468	33.271	26.463	
125	3.237	33.292	26.500	
150	3.124	33.353	26.560	
175	3.007	33.378	26.590	
200	2.566	33.383	26.631	
250	2.491	33.467	26.705	

	STATION	US11206		
	LATITUDE	41-50.3	N	
	LONGITUDE	141-20.1	E	
	DEPTH (m)	286		
Press.	Temp.	Salinity	Sigma-T	
5	3.164	32.678	26.017	
10	3.065	32.679	26.027	
20	2.852	32.694	26.058	
30	2.440	32.805	26.180	
40	2.546	33.051	26.368	
50	3.001	33.155	26.412	
75	4.178	33.364	26.467	
100	4.636	33.477	26.508	
125	4.404	33.491	26.544	
150	4.728	33.577	26.578	
175	4.352	33.548	26.595	
200	3.105	33.449	26.637	
250	2.305	33.436	26.695	

STATION	US11207		
LATITUDE	41-54.5	N	
LONGITUDE	141-11.3	E	
DEPTH (m)	202		
Press.	Temp.	Salinity	Sigma-T
5	3.324	32.690	26.013
10	3.122	32.698	26.037
20	2.355	32.731	26.127
30	2.022	32.817	26.221
40	2.576	33.049	26.364
50	3.410	33.209	26.418
75	4.274	33.373	26.464
100	3.827	33.343	26.485
125	3.216	33.308	26.516
150	2.830	33.323	26.561
175	2.586	33.346	26.600

STATION	US11210		
LATITUDE	42-19.7	N	
LONGITUDE	141-10.0	E	
DEPTH (m)	75		
Press.	Temp.	Salinity	Sigma-T
5	3.973	32.918	26.133
10	3.861	32.929	26.152
20	3.235	32.923	26.207
30	3.137	33.003	26.279
40	3.326	33.080	26.323
50	2.899	33.141	26.410

STATION	US11213		
LATITUDE	42-09.1	N	
LONGITUDE	140-53.8	E	
DEPTH (m)	78		
Press.	Temp.	Salinity	Sigma-T
5	3.768	32.804	26.062
10	3.638	32.805	26.075
20	3.432	32.832	26.116
30	2.762	33.002	26.311
40	3.159	33.333	26.540
50	3.216	33.348	26.547

STATION	US11216		
LATITUDE	42-23.3	N	
LONGITUDE	140-42.9	E	
DEPTH (m)	61		
Press.	Temp.	Salinity	Sigma-T
5	4.456	33.003	26.151
10	4.333	33.005	26.166
20	2.683	32.894	26.231
30	2.870	32.992	26.294
40	2.904	33.139	26.408
50	3.021	33.231	26.471

STATION	US11219		
LATITUDE	42-10.5	N	
LONGITUDE	140-41.0	E	
DEPTH (m)	88		
Press.	Temp.	Salinity	Sigma-T
5	4.020	32.822	26.052
10	4.000	32.837	26.066
20	3.608	33.057	26.279
30	3.268	33.138	26.375
40	3.014	33.193	26.442
50	3.048	33.245	26.480
75	3.510	33.459	26.608

STATION	US11208		
LATITUDE	41-59.7	N	
LONGITUDE	141-10.1	E	
DEPTH (m)	138		
Press.	Temp.	Salinity	Sigma-T
5	3.624	32.697	25.990
10	2.993	32.678	26.033
20	2.413	32.671	26.074
30	2.056	32.699	26.124
40	2.070	32.848	26.243
50	2.659	33.093	26.392
75	4.736	33.433	26.462
100	3.894	33.352	26.486
125	3.162	33.332	26.539

STATION	US11211		
LATITUDE	42-11.8	N	
LONGITUDE	141-02.2	E	
DEPTH (m)	81		
Press.	Temp.	Salinity	Sigma-T
5	3.808	32.879	26.118
10	3.728	32.886	26.131
20	3.570	32.895	26.154
30	3.271	32.922	26.203
40	2.895	32.943	26.252
50	2.844	32.966	26.275

STATION	US11214		
LATITUDE	42-17.2	N	
LONGITUDE	140-54.1	E	
DEPTH (m)	59		
Press.	Temp.	Salinity	Sigma-T
5	4.020	32.930	26.138
10	4.014	32.936	26.143
20	3.864	32.955	26.173
30	3.734	33.024	26.240
40	3.215	33.062	26.319
50	2.936	33.196	26.450

STATION	US11217		
LATITUDE	42-19.4	N	
LONGITUDE	140-42.3	E	
DEPTH (m)	70		
Press.	Temp.	Salinity	Sigma-T
5	4.296	32.928	26.108
10	4.293	32.929	26.109
20	4.294	32.930	26.110
30	2.558	32.866	26.219
40	2.669	32.993	26.311
50	3.082	33.228	26.463

STATION	US11220		
LATITUDE	42-09.8	N	
LONGITUDE	140-47.6	E	
DEPTH (m)	94		
Press.	Temp.	Salinity	Sigma-T
5	3.495	32.775	26.065
10	3.491	32.775	26.065
20	3.628	32.987	26.221
30	3.325	33.061	26.308
40	2.929	33.133	26.401
50	3.294	33.355	26.546
75	3.629	33.471	26.607

STATION	US11209		
LATITUDE	42-09.7	N	
LONGITUDE	141-10.0	E	
DEPTH (m)	124		
Press.	Temp.	Salinity	Sigma-T
5	3.471	32.700	26.008
10	3.346	32.768	26.073
20	3.334	32.845	26.135
30	2.716	32.899	26.232
40	2.753	32.932	26.255
50	2.703	32.945	26.270
75	2.723	33.077	26.374
100	3.327	33.248	26.457

STATION	US11212		
LATITUDE	42-01.9	N	
LONGITUDE	141-00.0	E	
DEPTH (m)	86		
Press.	Temp.	Salinity	Sigma-T
5	3.245	32.754	26.071
10	3.242	32.760	26.076
20	2.884	32.883	26.205
30	2.625	32.884	26.227
40	2.497	32.939	26.282
50	2.640	33.067	26.373
75	3.182	33.297	26.510

STATION	US11215		
LATITUDE	42-28.0	N	
LONGITUDE	140-43.5	E	
DEPTH (m)	60		
Press.	Temp.	Salinity	Sigma-T
5	4.225	32.975	26.153
10	4.170	32.976	26.159
20	3.840	32.977	26.193
30	3.134	33.026	26.298
40	2.911	33.187	26.445
50	2.927	33.232	26.480

STATION	US11218		
LATITUDE	42-13.2	N	
LONGITUDE	140-41.5	E	
DEPTH (m)	90		
Press.	Temp.	Salinity	Sigma-T
5	3.955	32.837	26.071
10	3.945	32.839	26.073
20	3.376	32.907	26.181
30	3.634	33.078	26.293
40	3.341	33.104	26.341
50	3.096	33.250	26.480
75	3.660	33.486	26.616

STATION	US11221		
LATITUDE	42-15.1	N	
LONGITUDE	140-47.1	E	
DEPTH (m)	74		
Press.	Temp.	Salinity	Sigma-T
5	3.676	32.853	26.110
10	3.630	32.854	26.115
20	2.908	32.895	26.213
30	2.531	32.952	26.290
40	2.516	32.990	26.321
50	2.682	33.071	26.372

STATION	US11222		
LATITUDE	42-20.5	N	
LONGITUDE	140-48.4	E	
DEPTH (m)	55		
Press.	Temp.	Salinity	Sigma-T
5	3.739	32.760	26.030
10	3.641	32.764	26.042
20	3.512	32.869	26.138
30	2.984	32.897	26.208
40	3.107	33.021	26.296
50	2.980	33.153	26.413

STATION	US11225		
LATITUDE	42-21.4	N	
LONGITUDE	140-36.5	E	
DEPTH (m)	89		
Press.	Temp.	Salinity	Sigma-T
5	4.666	32.957	26.092
10	4.552	32.983	26.125
20	4.377	33.001	26.158
30	3.460	33.075	26.307
40	3.110	33.261	26.487
50	3.420	33.441	26.603
75	3.577	33.478	26.618

STATION	US11228		
LATITUDE	42-11.8	N	
LONGITUDE	140-35.5	E	
DEPTH (m)	84		
Press.	Temp.	Salinity	Sigma-T
5	5.023	32.814	25.940
10	4.911	32.806	25.946
20	3.577	32.990	26.228
30	3.340	33.108	26.344
40	3.177	33.310	26.520
50	3.398	33.377	26.554
75	3.586	33.456	26.599

STATION	US11231		
LATITUDE	42-19.0	N	
LONGITUDE	140-24.8	E	
DEPTH (m)	66		
Press.	Temp.	Salinity	Sigma-T
5	4.844	32.593	25.785
10	4.508	32.868	26.038
20	3.627	33.037	26.261
30	3.040	33.169	26.420
40	3.004	33.272	26.505
50	3.149	33.330	26.539

STATION	US11234		
LATITUDE	42-18.8	N	
LONGITUDE	140-42.0	E	
DEPTH (m)	71		
Press.	Temp.	Salinity	Sigma-T
5	3.945	32.783	26.029
10	3.885	32.790	26.040
20	3.238	32.796	26.105
30	2.292	32.933	26.293
40	2.789	33.097	26.384
50	3.211	33.317	26.523

STATION	US11237		
LATITUDE	41-58.8	N	
LONGITUDE	141-00.8	E	
DEPTH (m)	95		
Press.	Temp.	Salinity	Sigma-T
5	3.443	32.685	25.998
10	3.306	32.708	26.029
20	3.121	32.713	26.049
30	2.275	32.775	26.168
40	2.168	32.912	26.287
50	2.610	33.049	26.361
75	3.139	33.256	26.481

STATION	US11223		
LATITUDE	42-23.3	N	
LONGITUDE	140-42.8	E	
DEPTH (m)	61		
Press.	Temp.	Salinity	Sigma-T
5	4.606	32.978	26.116
10	4.483	32.975	26.126
20	3.894	33.047	26.243
30	3.655	33.107	26.314
40	3.108	33.189	26.430
50	3.169	33.260	26.481

STATION	US11226		
LATITUDE	42-18.9	N	
LONGITUDE	140-30.5	E	
DEPTH (m)	92		
Press.	Temp.	Salinity	Sigma-T
5	4.881	32.953	26.065
10	4.656	32.951	26.088
20	3.972	32.994	26.194
30	3.085	33.152	26.403
40	3.324	33.394	26.574
50	3.473	33.455	26.609
75	3.624	33.486	26.619

STATION	US11229		
LATITUDE	42-08.6	N	
LONGITUDE	140-35.7	E	
DEPTH (m)	62		
Press.	Temp.	Salinity	Sigma-T
5	5.266	32.198	25.425
10	5.120	32.333	25.548
20	4.042	32.960	26.159
30	3.455	33.100	26.327
40	3.196	33.325	26.531
50	3.359	33.363	26.546

STATION	US11232		
LATITUDE	42-23.6	N	
LONGITUDE	140-31.1	E	
DEPTH (m)	97		
Press.	Temp.	Salinity	Sigma-T
5	4.747	32.954	26.081
10	4.716	32.976	26.102
20	3.556	33.045	26.274
30	3.001	33.188	26.439
40	3.168	33.317	26.527
50	3.411	33.434	26.598
75	3.575	33.479	26.618

STATION	US11235		
LATITUDE	42-13.6	N	
LONGITUDE	140-41.2	E	
DEPTH (m)	89		
Press.	Temp.	Salinity	Sigma-T
5	4.044	32.764	26.003
10	3.951	32.762	26.011
20	3.309	32.867	26.155
30	2.597	32.906	26.247
40	3.228	33.121	26.365
50	2.927	33.213	26.465
75	3.601	33.481	26.617

STATION	US11238		
LATITUDE	41-58.2	N	
LONGITUDE	140-59.6	E	
DEPTH (m)	87		
Press.	Temp.	Salinity	Sigma-T
5	4.262	32.660	25.899
10	3.475	32.673	25.986
20	3.242	32.691	26.021
30	2.367	32.770	26.158
40	2.262	32.956	26.314
50	2.681	33.069	26.371
75	3.170	33.327	26.535

STATION	US11224		
LATITUDE	42-26.1	N	
LONGITUDE	140-37.4	E	
DEPTH (m)	83		
Press.	Temp.	Salinity	Sigma-T
5	4.467	33.015	26.160
10	4.400	33.024	26.174
20	3.807	33.030	26.238
30	3.554	33.123	26.336
40	3.069	33.164	26.413
50	3.083	33.272	26.499
75	3.581	33.476	26.615

STATION	US11227		
LATITUDE	42-16.5	N	
LONGITUDE	140-35.8	E	
DEPTH (m)	91		
Press.	Temp.	Salinity	Sigma-T
5	5.178	32.894	25.985
10	4.728	32.888	26.031
20	3.700	33.048	26.263
30	3.385	33.130	26.358
40	3.132	33.317	26.530
50	3.406	33.437	26.600
75	3.629	33.480	26.613

STATION	US11230		
LATITUDE	42-13.6	N	
LONGITUDE	140-30.1	E	
DEPTH (m)	77		
Press.	Temp.	Salinity	Sigma-T
5	5.409	32.341	25.522
10	4.562	32.772	25.956
20	3.757	33.019	26.234
30	3.205	33.100	26.351
40	3.179	33.292	26.506
50	3.282	33.382	26.568

STATION	US11233		
LATITUDE	42-28.4	N	
LONGITUDE	140-31.3	E	
DEPTH (m)	79		
Press.	Temp.	Salinity	Sigma-T
5	4.795	32.953	26.075
10	4.784	32.957	26.080
20	4.063	33.061	26.237
30	3.679	33.101	26.307
40	3.420	33.141	26.363
50	3.071	33.282	26.508

STATION	US11236		
LATITUDE	41-59.4	N	
LONGITUDE	141-01.9	E	
DEPTH (m)	101		
Press.	Temp.	Salinity	Sigma-T
5	3.878	32.860	26.096
10	3.402	32.734	26.041
20	3.343	32.790	26.091
30	2.587	32.802	26.165
40	2.267	32.927	26.291
50	2.672	33.062	26.366
75	3.066	33.225	26.462

STATION	US11239		
LATITUDE	41-57.5	N	
LONGITUDE	140-58.4	E	
DEPTH (m)	80		
Press.	Temp.	Salinity	Sigma-T
5	3.691	32.674	25.966
10	3.485	32.692	26.000
20	3.123	32.687	26.028
30	2.929	32.903	26.217
40	2.672	33.076	26.377
50	2.878	33.142	26.413
75	3.192	33.334	26.538

