



HOKKAIDO UNIVERSITY

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THE “USHIO MARU”

CRUISE 142

CRUISE 143

CRUISE 144

IN FEBRUARY-MARCH 2008

1. Cruise Itinerary

Cruise 142			
Departure from Hakodate	Feb.	19	, 2008
Arrival at and departure from Usujiri		19	
Start hydrographic research (US08029) and larvae net sampling		19	
Sampling by Frame trawl net		19	
Arrival at Usujiri		20	
Departure from Usujiri		22	
Retrieval mooring sea temperature meter system		22	
Set Sediment trap system		22	
Arrival at Usujiri		22	
Departure from Usujiri		25	
Research by tawl net		25	
Finish hydrographic research (US08043) and larvae net sampling		25	
Return to Hakodate		26	
Total coverage 325.6 miles			
Cruise 143			
Departure from Hakodate	Mar.	4	, 2008
Start hydrographic research (US08044) and larvae net sampling		5	
Start trawl net research		5	
Finish hdrographic research (US08058) and larvae net sampling		6	
Finish trawl net research		6	
Return to Hakodate		7	
Total coverage 211.0 miles			
Cruise 144			
Departure from Hakodate	Mar.	11	, 2008
Start hydrographic research (US08059) and larvae net sampling		11	
Arrival at Fukushima		11	
Departure from Fukushima		12	
Fisnish hydrographic research (US08074) and larvae net sampling		12	
Returen toHakodate		13	
Return to Hakodate 81.4 miles			

2. Vessel Personnel

Captain:		Associate Professor	Hidekazu Yamaguchi
Crew :	Chief Officer	Assistant Professor	Osamu Kimura
	Second Officer	Assistant Professor	Naoto Kobayashi
	And 13 men		

Cruise 142			
Research Staff:	Associate Professor	(Laboratory of Marine Bioresource Science)	
			Toshikuni Nakatani
	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing)	
			Tohru Mukai
	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing)	
			Susumu Shimizu

Graduate Students :	Laboratory of Marine Bioresource Science :	2 persons
	Laboratory of Marine Bioresource and Environment Sensing :	4 persons
	Laboratory of Marine Environmental Science :	1 person

Under Graduate Students :	Department of Marine Biological Science :	3 persons
	Department of Marine Production System Science :	7 persons
	Department of Fisheries Oceanography and Marine Science :	5 persons

Cruise 143			
Research Staff :	Associate Professor	(Laboratory of Marine Bioresource Science)	
			Tetsuya Takatsu

Graduate Students :	Laboratory of Marine Bioresource Science :	1 person
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Under Graduate Students :	Department of Marine Biological Science :	3 persons
	Department of Marine Biological Science (Third grade) :	3 persons

Cruise 144			
Research Staff :	Associate Professor	(Laboratory of Marine Bioresource Science)	
			Tetsuya Takatsu

Graduate Students :	Laboratory of Marine Bioresource Science :	2 persons
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Under Graduate Students :	Department of Marine Biological Science (Third grade) :	2 persons
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3. 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 142)

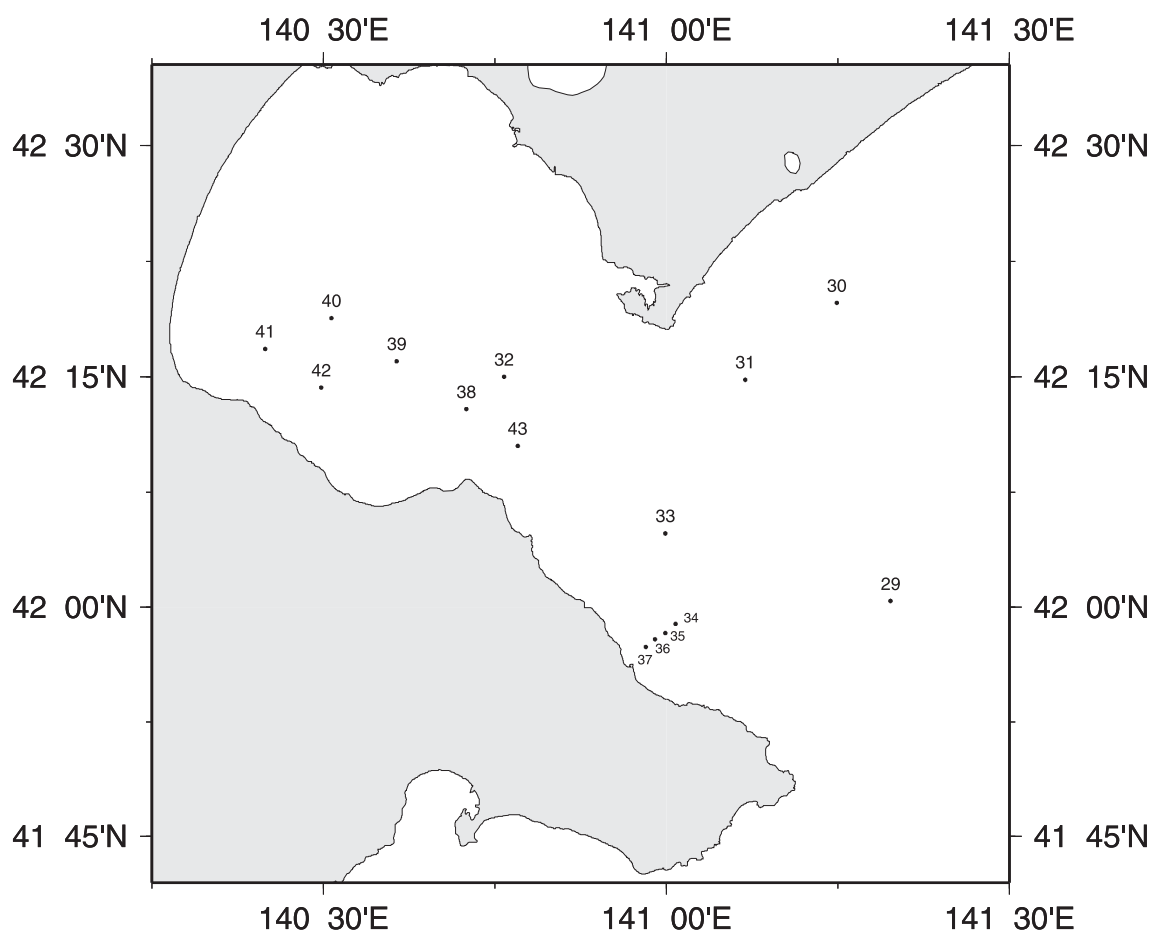


Figure 2: Oceanographic stations (Cruise 143)

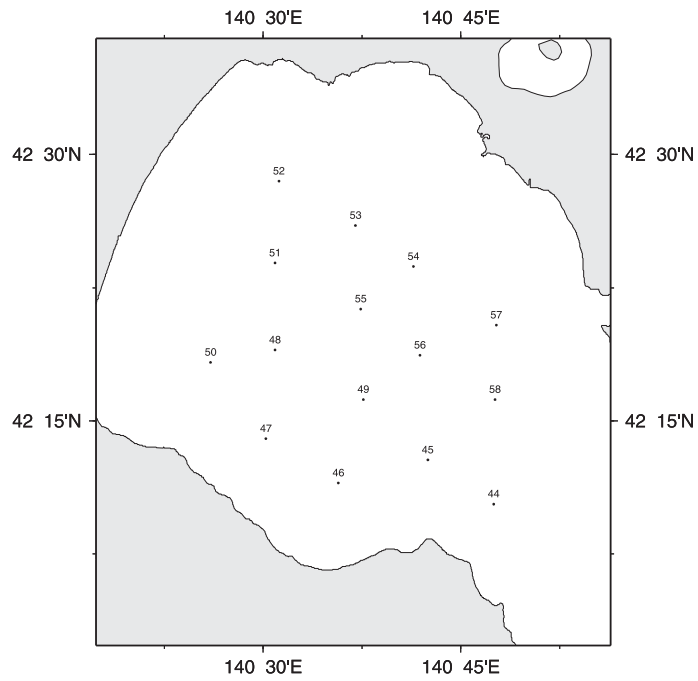


Figure 3: Oceanographic stations (Cruise 144)

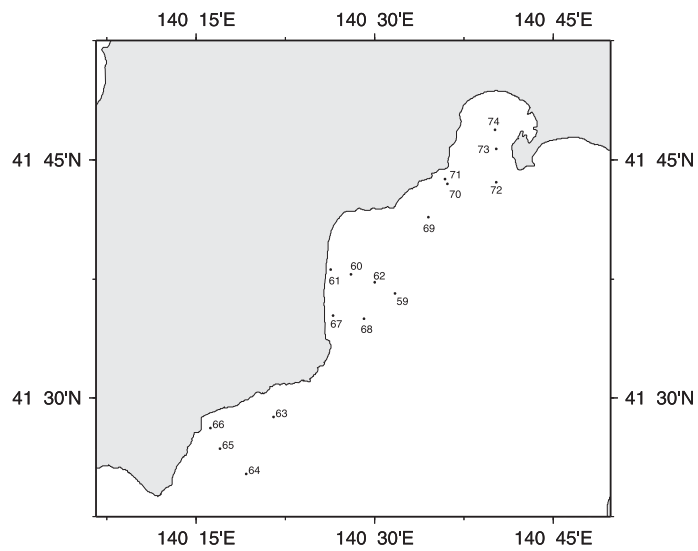


Table 1: List of oceanographic stations

Cruise 142

Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr. Bar. (hPa)
US08029	42-00.4	141-19.6	2/19	1829-1843	307	SE -1	NNW-1	SE -2	0.0	2.7	bc 1020.1
US08030	42-19.8	141-14.9	2/19	2340-2345	97	West-1	West-1	West-4	1.9	3.2	bc 1017.6
US08031	42-14.8	141-06.9	2/20	0209-0213	86	West-2	West-1	West-4	1.4	3.0	bc 1017.1
US08032	42-15.0	140-45.8	2/20	0410-0414	78	West-1	West-1	West-3	0.8	3.5	bc 1016.5
US08033	42-04.8	140-59.9	2/20	0611-0615	83	West-1	West-1	West-2	1.1	3.2	b 1016.1
US08034	41-58.9	141-00.8	2/20	0650-0655	96	Calm	NW -1	Calm	1.2	2.9	b 1015.6
US08035	41-58.3	140-59.9	2/20	0702-0707	90	South-1	NW -1	South-2	1.0	2.9	b 1015.7
US08036	41-57.9	140-59.0	2/20	0713-0717	86	Calm	NW -1	Calm	1.3	2.8	b 1015.7
US08037	41-57.4	140-58.2	2/20	0722-0727	80	Calm	NW -1	Calm	0.6	2.8	b 1015.8
US08038	42-12.9	140-42.5	2/22	0820-0824	91	ESE-2	East-1	ESE-4	0.1	3.5	s 1018.2
US08039	42-16.0	140-36.4	2/22	0918-0927	91	SE -2	East-1	SE -4	-0.2	3.5	s 1018.0
US08040	42-18.8	140-30.7	2/22	1110-1118	94	SE -2	East-1	SE -4	1.1	3.5	o 1016.0
US08041	42-16.8	140-24.9	2/22	1212-1216	58	SE -2	East-1	SE -4	1.7	3.6	o 1014.4
US08042	42-14.3	140-29.8	2/22	1331-1335	79	SE -3	East-1	SE -5	2.3	3.6	r 1013.1
US08043	42-10.5	140-47.0	2/22	1545-1550	94	Calm	East-1	Calm	3.4	3.6	o 1011.6

Cruise 143

Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr. Bar. (hPa)
US08044	42-10.3	140-47.5	3/5	1008-1012	93	NE -1	East-1	NE -3	0.9	3.2	c 1017.6
US08045	42-12.8	140-42.5	3/5	1050-1055	92	NE -1	East-1	NE -3	0.8	3.3	c 1017.7
US08046	42-11.5	140-35.7	3/5	1211-1215	84	NE -1	East-1	NE -3	2.2	3.4	c 1017.6
US08047	42-14.0	140-30.2	3/5	1339-1343	80	ENE-1	East-1	ENE-3	1.7	3.3	bc 1017.2
US08048	42-19.0	140-30.9	3/5	1424-1428	95	NE -1	East-1	NE -2	1.3	3.7	bc 1017.1
US08049	42-16.2	140-37.6	3/5	1550-1555	90	SE -1	East-1	SE -2	1.6	3.4	bc 1017.2
US08050	42-18.3	140-26.0	3/6	0600-0604	72	NNW-3	ESE-1	NNW-5	0.3	3.5	c 1019.6
US08051	42-23.9	140-30.9	3/6	0732-0737	96	NNW-2	ESE-1	NNW-4	1.3	3.3	bc 1020.2
US08052	42-28.5	140-31.2	3/6	0822-0827	79	NW -2	ESE-1	NW -4	0.9	3.5	bc 1020.5
US08053	42-26.0	140-37.0	3/6	0907-0911	85	NW -1	ESE-1	NW -3	2.7	3.4	bc 1020.6
US08054	42-23.7	140-41.4	3/6	0945-0949	70	NNW-1	ESE-1	NNW-3	2.7	3.2	bc 1020.6
US08055	42-21.3	140-37.4	3/6	1022-1026	86	NW -1	ESE-1	NW -3	2.5	3.1	bc 1020.6
US08056	42-18.7	140-41.9	3/6	1102-1105	71	NW -1	ESE-1	NW -3	3.2	3.2	c 1020.6
US08057	42-20.4	140-47.7	3/6	1145-1148	58	West-1	ESE-1	West-3	3.8	2.8	bc 1020.5
US08058	42-16.2	140-47.6	3/6	1224-1228	71	West-1	ESE-1	West-3	3.2	2.5	bc 1020.0

Cruise 144

Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr. Bar. (hPa)
US08059	41-36.6	140-31.7	3/11	1007-1010	42	NW -2	SW -1	NW -4	6.6	7.3	r 1011.1
US08060	41-37.8	140-28.0	3/11	1126-1129	19	WNW-3	SW -1	WNW-5	6.5	6.3	c 1011.1
US08061	41-38.1	140-26.3	3/11	1110-1113	12	WNW-2	SW -1	WNW-5	6.0	6.1	c 1011.1
US08062	41-37.3	140-30.0	3/11	1148-1151	32	WNW-3	SW -1	WNW-5	6.4	7.0	c 1011.5
US08063	41-28.8	140-21.5	3/11	1313-1317	74	WNW-1	SW -1	WNW-3	6.0	7.7	c 1011.7
US08064	41-25.2	140-19.2	3/11	1416-1420	85	NW -3	SW -1	NW -5	6.7	7.7	c 1013.5
US08065	41-26.8	140-17.0	3/11	1451-1455	59	NW -3	SW -1	NW -5	5.7	7.4	c 1014.1
US08066	41-28.1	140-16.2	3/11	1533-1536	23	West-1	SW -1	West-3	6.2	7.7	c 1014.6
US08067	41-35.2	140-26.5	3/12	0734-0738	13	WNW-1	SSE-1	WNW-2	2.5	5.7	bc 1029.6
US08068	41-35.0	140-29.1	3/12	0801-0804	32	West-1	SSE-1	West-2	3.7	7.7	bc 1029.6
US08069	41-41.4	140-34.5	3/12	0924-0927	43	Calm	SE -1	Calm	4.7	7.2	bc 1030.1
US08070	41-43.5	140-36.1	3/12	1005-1008	30	NNE-1	SE -1	NNE-3	5.1	6.6	bc 1030.1
US08071	41-43.8	140-35.9	3/12	1020-1023	17	NNE-1	SE -1	NNE-3	5.6	6.6	bc 1030.1
US08072	41-43.6	140-40.2	3/12	1053-1057	67	East-1	SW -1	East-2	5.1	7.4	bc 1030.2
US08073	41-45.7	140-40.2	3/12	1132-1135	33	SE -1	SW -1	SE -3	5.1	6.9	bc 1030.5
US08074	41-46.9	140-40.1	3/12	1155-1158	21	SSE-2	SW -1	SSE-3	4.7	6.6	bc 1030.5

(*):Fixed position by Global Positioning System

Table 2: Oceanographic data

STATION US08029 LATITUDE 42-00.4 N LONGITUDE 141-19.6 E DEPTH (m) 307				STATION US08030 LATITUDE 42-19.8 N LONGITUDE 141-14.9 E DEPTH (m) 97				STATION US08031 LATITUDE 42-14.8 N LONGITUDE 141-06.9 E DEPTH (m) 86			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.033	33.174	26.425	5	3.693	33.311	26.473	5	3.371	33.371	26.551
10	3.008	33.173	26.426	10	3.699	33.310	26.471	10	3.366	33.372	26.552
20	2.930	33.184	26.442	20	3.709	33.308	26.469	20	3.373	33.367	26.548
30	2.977	33.193	26.444	30	4.476	33.445	26.500	30	3.381	33.378	26.556
40	2.996	33.190	26.441	40	3.812	33.340	26.484	40	3.589	33.426	26.574
50	3.074	33.205	26.446	50	3.810	33.337	26.482	50	3.803	33.499	26.612
75	4.229	33.389	26.482	75	4.396	33.466	26.525	75	3.926	33.534	26.627
100	4.643	33.450	26.486								
125	4.906	33.522	26.514								
150	5.913	33.692	26.530								
175	4.158	33.463	26.548								
200	3.980	33.619	26.690								
250	3.940	33.739	26.789								

STATION US08032 LATITUDE 42-15.0 N LONGITUDE 140-45.8 E DEPTH (m) 78				STATION US08033 LATITUDE 42-04.8 N LONGITUDE 140-59.9 E DEPTH (m) 83				STATION US08034 LATITUDE 41-58.9 N LONGITUDE 141-00.8 E DEPTH (m) 96			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	4.082	33.444	26.540	5	3.700	33.311	26.473	5	3.416	33.266	26.463
10	4.039	33.449	26.548	10	3.702	33.311	26.472	10	3.429	33.272	26.467
20	3.668	33.484	26.613	20	3.743	33.317	26.472	20	3.520	33.288	26.471
30	3.645	33.504	26.631	30	3.780	33.326	26.476	30	3.528	33.282	26.465
40	3.577	33.559	26.681	40	3.742	33.348	26.498	40	3.655	33.303	26.470
50	3.968	33.657	26.721	50	3.742	33.385	26.527	50	3.729	33.335	26.489
				75	4.031	33.700	26.749	75	3.985	33.658	26.720

STATION US08035 LATITUDE 41-58.3 N LONGITUDE 140-59.9 E DEPTH (m) 90				STATION US08036 LATITUDE 41-57.9 N LONGITUDE 140-59.0 E DEPTH (m) 86				STATION US08037 LATITUDE 41-57.4 N LONGITUDE 140-58.2 E DEPTH (m) 80			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.346	33.254	26.460	5	3.299	33.272	26.479	5	3.455	33.324	26.506
10	3.344	33.251	26.458	10	3.295	33.274	26.481	10	3.520	33.349	26.520
20	3.469	33.291	26.479	20	3.888	33.417	26.538	20	3.688	33.381	26.529
30	3.770	33.371	26.513	30	4.070	33.461	26.555	30	3.422	33.410	26.578
40	3.833	33.427	26.552	40	3.987	33.446	26.551	40	3.673	33.479	26.609
50	3.821	33.412	26.540	50	3.801	33.455	26.577	50	3.656	33.466	26.600
75	3.976	33.685	26.743	75	3.900	33.677	26.744	75	3.936	33.683	26.745

STATION US08038 LATITUDE 42-12.9 N LONGITUDE 140-42.5 E DEPTH (m) 91				STATION US08039 LATITUDE 42-16.0 N LONGITUDE 140-36.4 E DEPTH (m) 91				STATION US08040 LATITUDE 42-18.8 N LONGITUDE 140-30.7 E DEPTH (m) 94			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.534	33.563	26.689	5	3.504	33.482	26.627	5	3.415	33.513	26.660
10	3.515	33.557	26.686	10	3.510	33.483	26.627	10	3.426	33.518	26.663
20	3.521	33.561	26.689	20	3.530	33.487	26.628	20	3.540	33.574	26.697
30	3.626	33.590	26.701	30	3.629	33.527	26.651	30	3.624	33.606	26.714
40	3.785	33.627	26.715	40	4.062	33.692	26.740	40	3.689	33.619	26.719
50	4.187	33.743	26.767	50	4.111	33.709	26.748	50	3.712	33.625	26.721
75	4.608	33.895	26.843	75	4.783	33.864	26.799	75	4.446	33.808	26.791

STATION US08041 LATITUDE 42-16.8 N LONGITUDE 140-24.9 E DEPTH (m) 58				STATION US08042 LATITUDE 42-14.3 N LONGITUDE 140-29.8 E DEPTH (m) 79				STATION US08043 LATITUDE 42-10.5 N LONGITUDE 140-47.0 E DEPTH (m) 94			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.488	33.556	26.688	5	3.532	33.569	26.694	5	3.543	33.528	26.661
10	3.481	33.562	26.693	10	3.613	33.595	26.707	10	3.553	33.532	26.662
20	3.484	33.564	26.694	20	3.670	33.608	26.711	20	3.557	33.555	26.680
30	3.583	33.593	26.708	30	3.676	33.609	26.712	30	3.532	33.554	26.682
40	4.793	33.895	26.822	40	3.665	33.610	26.714	40	3.552	33.559	26.684
50	4.855	33.890	26.811	50	4.263	33.768	26.779	50	3.584	33.566	26.686
				75	4.603	33.860	26.816	75	4.057	33.583	26.653

STATION US08044 LATITUDE 42-10.3 N LONGITUDE 140-47.5 E DEPTH (m) 93				STATION US08045 LATITUDE 42-12.8 N LONGITUDE 140-42.5 E DEPTH (m) 92				STATION US08046 LATITUDE 42-11.5 N LONGITUDE 140-35.7 E DEPTH (m) 84			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.147	33.426	26.615	5	3.213	33.430	26.613	5	3.293	33.488	26.652
10	3.099	33.412	26.608	10	3.191	33.488	26.661	10	3.300	33.518	26.675
20	3.107	33.440	26.630	20	3.200	33.492	26.663	20	3.297	33.538	26.691
30	3.159	33.474	26.653	30	3.251	33.510	26.673	30	3.303	33.542	26.693
40	3.379	33.545	26.689	40	3.273	33.520	26.679	40	3.372	33.557	26.700
50	3.416	33.567	26.703	50	3.466	33.575	26.705	50	3.443	33.577	26.708
75	4.244	33.708	26.733	75	4.455	33.810	26.792	75	4.404	33.769	26.765

STATION US08047 LATITUDE 42-14.0 N LONGITUDE 140-30.2 E DEPTH (m) 80				STATION US08048 LATITUDE 42-19.0 N LONGITUDE 140-30.9 E DEPTH (m) 95				STATION US08049 LATITUDE 42-16.2 N LONGITUDE 140-37.6 E DEPTH (m) 90			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.296	33.407	26.587	5	3.315	33.398	26.578	5	3.131	33.342	26.550
10	3.132	33.418	26.610	10	3.243	33.439	26.618	10	3.026	33.359	26.573
20	3.558	33.573	26.694	20	3.229	33.460	26.635	20	3.016	33.373	26.585
30	3.696	33.615	26.715	30	3.272	33.477	26.645	30	3.303	33.484	26.648
40	3.812	33.645	26.727	40	3.272	33.492	26.657	40	3.330	33.503	26.660
50	3.909	33.666	26.734	50	3.408	33.534	26.678	50	3.439	33.533	26.674
75	4.424	33.801	26.788	75	4.296	33.777	26.783	75	4.668	33.881	26.826

STATION US08050 LATITUDE 42-18.3 N LONGITUDE 140-26.0 E DEPTH (m) 72				STATION US08051 LATITUDE 42-23.9 N LONGITUDE 140-30.9 E DEPTH (m) 96				STATION US08052 LATITUDE 42-28.5 N LONGITUDE 140-31.2 E DEPTH (m) 79			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.391	33.557	26.698	5	3.222	33.423	26.606	5	3.376	33.443	26.608
10	3.266	33.551	26.705	10	3.225	33.426	26.609	10	3.374	33.442	26.608
20	3.311	33.576	26.720	20	3.237	33.433	26.613	20	3.313	33.471	26.636
30	3.407	33.593	26.725	30	3.367	33.542	26.688	30	3.361	33.508	26.662
40	3.186	33.569	26.726	40	3.430	33.578	26.710	40	3.559	33.573	26.694
50	3.206	33.590	26.741	50	3.473	33.600	26.724	50	4.172	33.734	26.762
				75	4.114	33.747	26.778	75	4.581	33.871	26.827

STATION US08053 LATITUDE 42-26.0 N LONGITUDE 140-37.0 E DEPTH (m) 85				STATION US08054 LATITUDE 42-23.7 N LONGITUDE 140-41.4 E DEPTH (m) 70				STATION US08055 LATITUDE 42-21.3 N LONGITUDE 140-37.4 E DEPTH (m) 86			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.288	33.446	26.619	5	2.992	33.290	26.521	5	3.020	33.264	26.498
10	3.260	33.444	26.620	10	2.950	33.289	26.524	10	3.018	33.315	26.539
20	3.275	33.452	26.625	20	3.063	33.314	26.534	20	2.983	33.318	26.544
30	3.294	33.480	26.645	30	3.184	33.340	26.544	30	3.090	33.391	26.593
40	3.282	33.485	26.650	40	3.230	33.350	26.547	40	3.339	33.502	26.658
50	3.329	33.499	26.657	50	3.197	33.376	26.571	50	3.476	33.543	26.678
75	3.747	33.587	26.687					75	3.893	33.647	26.721

STATION US08056 LATITUDE 42-18.7 N LONGITUDE 140-41.9 E DEPTH (m) 71				STATION US08057 LATITUDE 42-20.4 N LONGITUDE 140-47.7 E DEPTH (m) 58				STATION US08058 LATITUDE 42-16.2 N LONGITUDE 140-47.6 E DEPTH (m) 71			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.095	33.207	26.446	5	2.717	33.204	26.476	5	2.393	33.079	26.402
10	3.067	33.293	26.517	10	2.997	33.271	26.505	10	2.332	33.080	26.408
20	3.107	33.329	26.542	20	2.920	33.281	26.520	20	2.857	33.207	26.467
30	3.156	33.354	26.557	30	2.935	33.290	26.526	30	2.991	33.255	26.493
40	3.222	33.400	26.588	40	2.950	33.315	26.544	40	2.932	33.260	26.502
50	3.391	33.488	26.642	50	3.059	33.350	26.563	50	2.924	33.264	26.506

STATION US08059 LATITUDE 41-36.6 N LONGITUDE 140-31.7 E DEPTH (m) 42				STATION US08060 LATITUDE 41-37.8 N LONGITUDE 140-28.0 E DEPTH (m) 19				STATION US08061 LATITUDE 41-38.1 N LONGITUDE 140-26.3 E DEPTH (m) 12			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	7.976	34.070	26.547	5	7.403	34.108	26.660	5	6.367	33.846	26.594
10	7.982	34.078	26.552	10	7.480	34.037	26.593				
20	7.744	34.031	26.551								
30	7.540	34.054	26.598								
STATION US08062 LATITUDE 41-37.3 N LONGITUDE 140-30.0 E DEPTH (m) 32				STATION US08063 LATITUDE 41-28.8 N LONGITUDE 140-21.5 E DEPTH (m) 74				STATION US08064 LATITUDE 41-25.2 N LONGITUDE 140-19.2 E DEPTH (m) 85			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	7.654	33.974	26.519	5	8.108	34.061	26.521	5	8.123	34.146	26.585
10	7.769	34.059	26.569	10	8.094	34.083	26.540	10	8.126	34.145	26.584
20	7.858	34.087	26.578	20	8.074	34.091	26.549	20	8.129	34.143	26.581
				30	8.058	34.092	26.552	30	8.115	34.145	26.585
				40	8.045	34.093	26.555	40	8.119	34.145	26.585
				50	8.047	34.095	26.556	50	8.121	34.141	26.581
								75	8.100	34.143	26.586
STATION US08065 LATITUDE 41-26.8 N LONGITUDE 140-17.0 E DEPTH (m) 59				STATION US08066 LATITUDE 41-28.1 N LONGITUDE 140-16.2 E DEPTH (m) 23				STATION US08067 LATITUDE 41-35.2 N LONGITUDE 140-26.5 E DEPTH (m) 13			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	8.118	34.129	26.572	5	8.177	34.029	26.485	5	7.585	33.967	26.523
10	8.060	34.129	26.581	10	8.167	34.108	26.549				
20	7.939	34.133	26.602								
30	7.867	34.136	26.615								
40	7.835	34.142	26.624								
50	7.825	34.141	26.625								
STATION US08068 LATITUDE 41-35.0 N LONGITUDE 140-29.1 E DEPTH (m) 32				STATION US08069 LATITUDE 41-41.4 N LONGITUDE 140-34.5 E DEPTH (m) 43				STATION US08070 LATITUDE 41-43.5 N LONGITUDE 140-36.1 E DEPTH (m) 30			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	8.159	34.106	26.548	5	7.408	33.954	26.538	5	7.449	33.826	26.431
10	8.159	34.108	26.550	10	7.470	33.997	26.563	10	7.640	34.038	26.571
20	8.160	34.108	26.549	20	7.558	34.062	26.602	20	7.725	34.077	26.589
				30	7.487	34.054	26.606				
STATION US08071 LATITUDE 41-43.8 N LONGITUDE 140-35.9 E DEPTH (m) 17				STATION US08072 LATITUDE 41-43.6 N LONGITUDE 140-40.2 E DEPTH (m) 67				STATION US08073 LATITUDE 41-45.7 N LONGITUDE 140-40.2 E DEPTH (m) 33			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	7.242	33.640	26.314	5	7.924	34.083	26.565	5	7.359	33.974	26.561
10	7.542	34.013	26.565	10	7.921	34.096	26.575	10	7.652	34.060	26.587
				20	7.950	34.115	26.586	20	7.636	34.056	26.586
				30	7.961	34.119	26.588				
				40	7.926	34.113	26.588				
				50	7.901	34.110	26.590				
STATION US08074 LATITUDE 41-46.9 N LONGITUDE 140-40.1 E DEPTH (m) 21											
Press.	Temp.	Salinity	Sigma-T								
5	7.158	33.690	26.366								
10	7.438	34.016	26.582								

