



HOKKAIDO UNIVERSITY

Title	4. THE "USHIO MARU" CRUISE 148, 149 AND 150 IN MAY-JUNE 2008
Citation	海洋調査漁業試験要報, 52, 157-171
Issue Date	2009-07-28
Doc URL	https://hdl.handle.net/2115/76602
Type	dataset
File Information	Data.Rec.Oceanogr.Obs.Expl.Fish.52.157.pdf



THE “USHIO MARU”

CRUISE 148

CRUISE 149

CRUISE 150

IN MAY-JUNE 2008

1. Cruise Itinerary

Cruise 148			
Departure from Hakodate	May	23	, 2008
Arrival at and departure from Shiraoi		23	
Start hydrographic research (US08171)		24	
Arrival at Nemuro		25	
Departure from Nemuro		29	
Start frame trawl net sampling		29	
Arrival at Rausu		29	
Departure from Rausu		30	
Start juvenile salmon sampling		30	
Research by R.O.V.	Jun.	1	
Finish frame trawl net sampling		1	
Finish juvenile salmon sampling		2	
Finish hydrographic research (US08213)		2	
Arrival at Abashiri		2	
Departure from Abashiri		3	
Arrival at Otaru		4	
Departure from Otaru		5	
Return to Hakodate		7	
Total coverage 1204.5 miles			
Cruise 149			
Departure from Hakodate	Jun.	11	, 2008
Start hydrographic research (US08214) and larvae net sampling		11	
Start trawl net research		11	
Arrival at Wakinosawa		11	
Departure from Wakinosawa		12	
Arrival at Aomori		12	
Departure from Aomori		13	
Arrival at Noheji		13	
Departure from Noheji		14	
Finish hydrographic research (US08237) and larvae net sampling		14	
Finish trawl net research		14	
Return to Hakodate		15	
Total coverage 236.0 miles			
Cruise 150			
Departure from Hakodate	Jun.	20	, 2008
Arrival at and departure from		20	
Start hydrographic research (US08238) and larvae net sampling		20	
Sampling by frame trawl net		20	
Arrival at Usujiri		21	
Departure from Usujiri		22	
Arrival at Usujiri		22	
Departure from Usujiri		23	
Retrieval Sediment trap system		23	
Arrival at Usujiri		23	
Departure from Usujiri		24	
Arrival at and departure from Muroran		24	
Arrival at and departure from Muroran		25	
Arrival at Usujiri		25	
Departure from Usujiri		26	
Set Sediment trap system		26	
Research by trawl net and mid water trawl net		26	
Arrival at Usujiri		26	
Departure from Usujiri		28	
Sampling by frame trawl net		28	
Finish hydrographic research (US08269) and larvae net sampling		29	
Return to Hakodate		30	
Total coverage 684.1 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 148			
Research Staff :	Professor	(Laboratory of Marine Environmental Science)	Shigeru Montani
	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing)	Tohru Hirawake
	Assistant Professor	(Field Science Center for Northern Biosphere)	Jun Yamamoto
	Research Associate	(Field Science Center for Northern Biosphere)	Toshihiro Iwamori
Guest Scientist (Domestic) :	Professor	(Tokyo University of Agriculture)	Akihiro Shiimoto

Graduate Students :	Chair of Marine Bioresource and Environment Sensing :	1 person
	Chair of of Marine Bioresource Science :	1 person
	Chair of Strategic Studies on Marine Bioresource Conservation and Management :	1 person
	Graduate School of the Fisheries Sciences :	1 person
	Graduate School of Environmental Science :	5 persons

Under Graduate Students :	Department of Fisheries Oceanography and Marine Science :	3 persons
---------------------------	---	-----------

Cruise 149			
Research Staff :	Associate Professor	(Laboratory of Marine Bioresource Science)	Tetsuya Takatsu

Graduate Students :	Chair of Marine Bioresource Science :	2 persons
---------------------	---------------------------------------	-----------

Under Graduate Students :	Department of Marine Biological Science :	10 persons
---------------------------	---	------------

Cruise 150			
Research Staff :	Associate Professor	(Laboratory of Marine Bioresource Science)	Toshikuni Nakatani
	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing)	Tohru Mukai
	Assistant Professor	(Field Science Center for Northern Biosphere)	Jun Yamamoto

Graduate Students :	Chair of Marine Bioresource Science :	3 persons
	Chair of Marine Bioresource and Environment Sensing :	3 persons
	Chair of Marine Environmental Science :	1 person
	Graduate School of the Fisheries Sciences :	1 person
	Graduate School of Environmental Science :	2 persons

Under Graduate Students :	Department of Marine Biological Science :	3 persons
	Department of Marine Production System Science :	8 persons
	Department of Marine Production System Science (Third grade) :	1 person
	Department of Applied Marine Science (Third grade) :	2 persons

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 148)

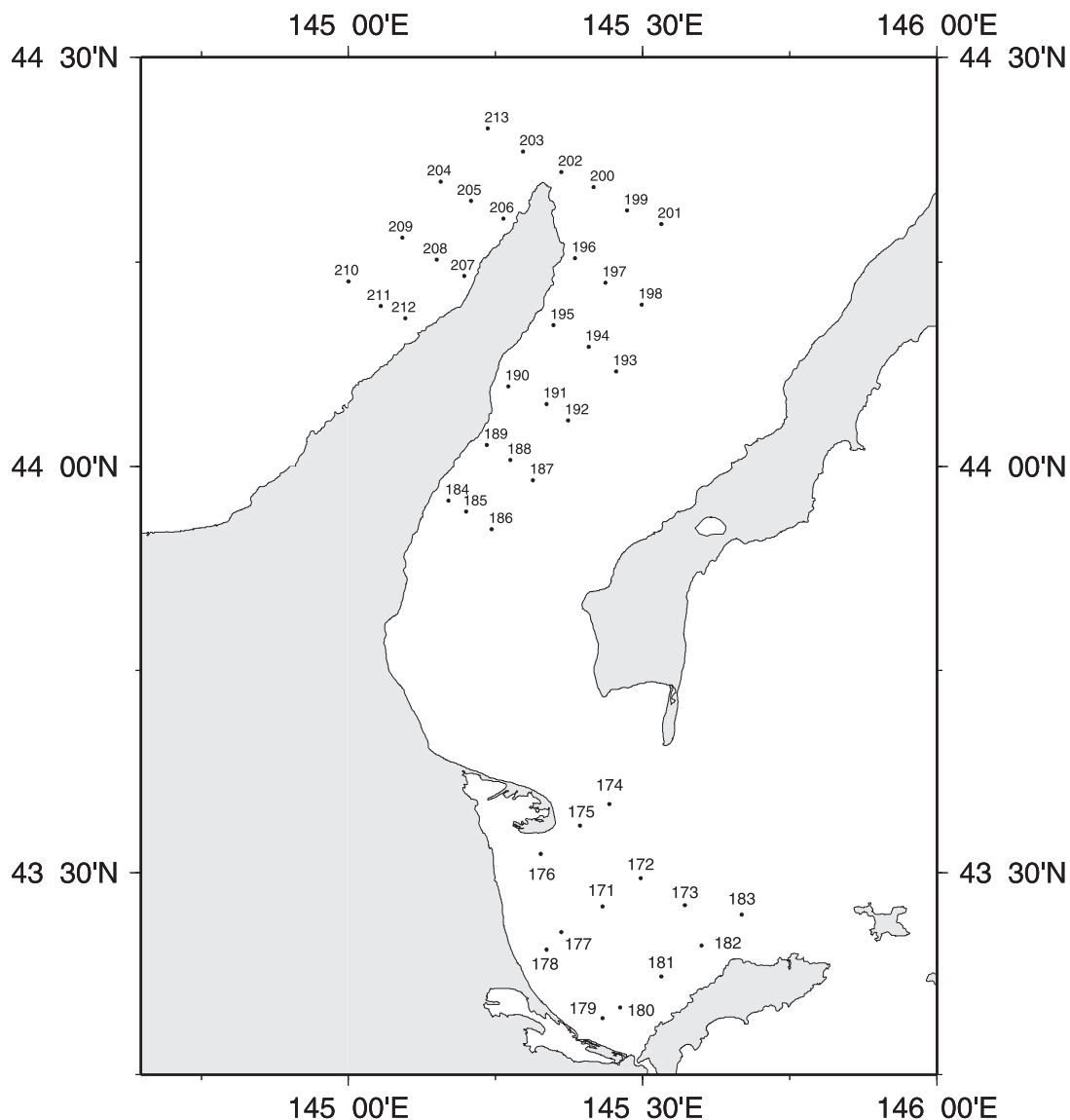


Figure 2: Oceanographic stations (Cruise 149)

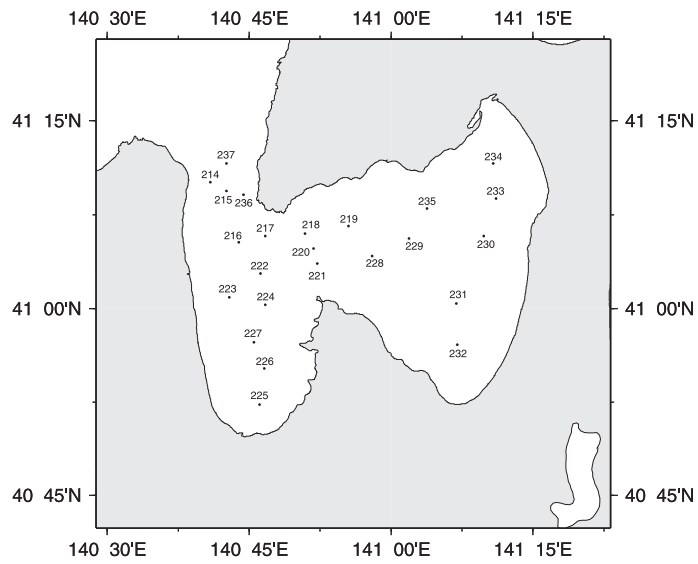


Figure 3: Oceanographic stations (Cruise 150)

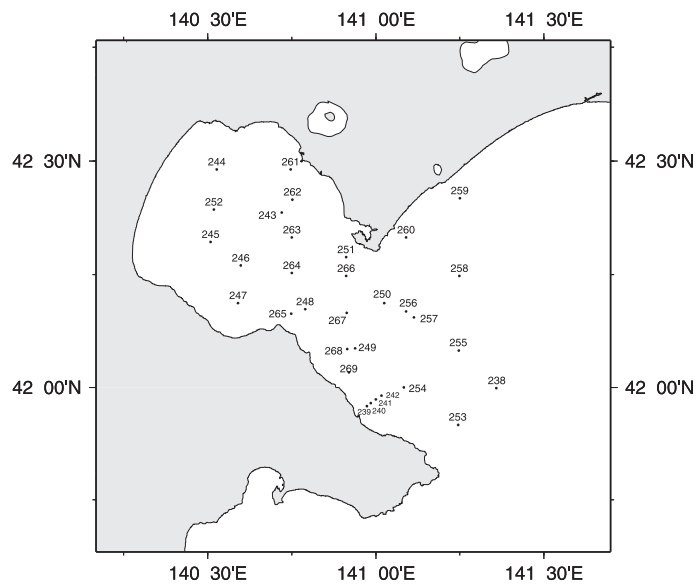


Table 1: List of oceanographic stations

Cruise 148

Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US08171	43-27.5	145-25.9	5/25	0501-0505	20	SSE-1	East-1	SSE-3	8.6	6.8	f	1012.2
US08172	43-29.6	145-29.8	5/25	0533-0541	24	SSE-1	East-1	SSE-3	8.1	6.4	f	1012.0
US08173	43-27.6	145-34.3	5/25	0609-0614	30	South-2	East-1	South-4	8.5	6.5	f	1011.6
US08174	43-35.1	145-26.6	5/25	0712-0714	13	South-1	East-1	South-3	8.7	6.1	f	1011.0
US08175	43-33.5	145-23.6	5/25	0739-0742	12	SSE-2	East-1	SSE-4	9.2	8.1	f	1010.3
US08176	43-31.4	145-19.6	5/25	0814-0817	6	SSE-1	East-1	SSE-3	9.3	8.5	f	1010.1
US08177	43-25.6	145-21.7	5/25	0857-0900	11	SSW-1	East-1	SSW-3	9.7	7.3	f	1010.1
US08178	43-24.3	145-20.2	5/25	0915-0918	9	SSW-2	East-1	SSW-5	10.4	7.1	f	1010.2
US08179	43-19.2	145-25.9	5/25	1002-1009	12	SSW-3	East-1	SSW-5	9.5	7.0	f	1010.2
US08180	43-20.0	145-27.7	5/25	1017-1020	14	SSW-3	East-1	SSW-5	9.7	6.7	f	1010.5
US08181	43-22.3	145-31.9	5/25	1047-1050	17	SSW-3	South-1	SSW-5	9.4	6.7	f	1010.3
US08182	43-24.6	145-36.0	5/25	1113-1117	25	South-2	South-1	South-3	9.4	6.4	f	1010.1
US08183	43-26.9	145-40.1	5/25	1141-1144	31	SSE-1	South-1	SSE-3	9.0	6.3	f	1010.1
US08184	43-57.5	145-10.2	5/29	1305-1317	79	East-2	NE -1	East-4	5.2	5.6	bc	1015.6
US08185	43-56.7	145-12.0	5/29	1344-1350	84	East-2	NE -1	East-4	5.7	5.7	bc	1015.6
US08186	43-55.4	145-14.6	5/29	1415-1422	82	NE -3	NE -1	NE -5	5.2	5.0	bc	1016.0
US08187	43-59.0	145-18.8	5/29	1519-1531	270	ENE-3	NE -1	ENE-5	5.2	5.2	bc	1015.7
US08188	44-00.5	145-16.5	5/29	1550-1609	442	NNE-3	NE -1	NNE-5	5.6	5.9	bc	1015.8
US08189	44-01.6	145-14.1	5/29	1629-1641	288	SSW-1	NE -1	SSW-3	6.7	5.9	bc	1016.0
US08190	44-05.9	145-16.3	5/30	0547-0601	328	NNE-2	NE -1	NNE-4	4.0	4.8	o	1022.1
US08191	44-04.6	145-20.2	5/30	0650-0723	828	NNE-2	NE -1	NNE-4	3.9	4.2	o	1022.5
US08192	44-03.4	145-22.4	5/30	0758-0822	540	NNE-2	NE -1	NNE-4	4.3	3.8	o	1022.4
US08193	44-07.0	145-27.3	5/30	0919-1001	1124	NNE-2	NNE-1	NNE-4	4.0	3.8	o	1023.1
US08194	44-08.8	145-24.5	5/30	1034-1120	1512	NNE-2	NNE-1	NNE-4	3.7	4.0	o	1023.6
US08195	44-10.4	145-20.9	5/30	1141-1152	264	NNE-2	NNE-1	NNE-4	4.0	3.9	o	1023.7
US08196	44-15.3	145-23.1	5/30	1232-1243	140	North-2	NNE-1	North-4	5.1	4.1	c	1023.6
US08197	44-13.5	145-26.2	5/30	1306-1357	1570	North-1	NE -1	North-4	5.4	4.3	o	1023.6
US08198	44-11.9	145-29.9	5/30	1424-1514	2057	NNE-2	NE -1	NNE-4	5.0	4.3	o	1023.7
US08199	44-18.8	145-28.4	5/30	1612-1705	1599	NE -2	NE -1	NE -3	3.6	4.2	o	1023.7
US08200	44-20.5	145-25.0	5/30	1723-1756	1038	East-1	NNE-1	East-3	3.8	4.2	o	1024.0
US08201	44-17.8	145-31.9	5/31	0557-0649	2120	South-3	SE -1	South-5	2.9	3.9	f	1023.0
US08202	44-21.6	145-21.7	5/31	0753-0800	73	SSE-3	SSW-1	SSE-6	4.6	3.9	c	1021.8
US08203	44-23.1	145-17.8	5/31	0830-0852	723	NW -1	NE -1	NW -3	5.2	5.4	bc	1021.5
US08204	44-20.9	145-09.4	5/31	0942-1017	1235	Calm	NE -1	Calm	5.7	3.9	bc	1021.6
US08205	44-19.5	145-12.5	5/31	1058-1118	741	NNE-1	NE -1	NNE-2	8.3	6.2	bc	1020.6
US08206	44-18.2	145-15.8	5/31	1146-1152	100	Calm	NE -1	Calm	9.2	6.4	bc	1020.1
US08207	44-14.0	145-11.8	5/31	1232-1239	101	ESE-3	North-1	ESE-6	11.9	6.1	bc	1019.1
US08208	44-15.2	145-09.0	5/31	1305-1328	595	SSE-2	NE -1	SSE-4	10.1	6.9	bc	1019.2
US08209	44-16.8	145-05.5	5/31	1404-1425	901	Calm	NE -1	Calm	8.0	4.5	bc	1019.1
US08210	44-13.6	145-00.0	5/31	1515-1536	671	ENE-1	South-1	ENE-2	11.0	4.5	bc	1018.5
US08211	44-11.8	145-03.3	5/31	1612-1628	465	NNW-1	Soouth-1	NNW-2	11.1	4.5	bc	1017.6
US08212	44-10.9	145-05.8	6/1	0604-0625	368	Calm	NE -1	Calm	7.0	6.4	bc	1018.0
US08213	44-24.8	145-14.2	6/2	0400-0453	1425	Calm	East-1	Calm	5.9	4.9	bc	1023.4

Cruise 149

Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr. Bar.	(hPa)
US08214	41-10.1	140-40.9	6/11	1233-1236	58	West-3	WNW-1	West-5	15.5	13.8	bc	1006.5
US08215	41-09.4	140-42.6	6/11	1257-1301	77	West-2	WNW-1	West-4	19.7	14.4	bc	1006.3
US08216	41-05.3	140-43.9	6/11	1407-1411	61	WNW-2	West-1	WNW-4	18.4	14.2	bc	1006.2
US08217	41-05.8	140-46.7	6/11	1500-1504	63	NW -1	NW -1	NW -3	19.2	14.3	bc	1006.0
US08218	41-06.0	140-50.9	6/11	1530-1534	54	WNW-2	West-1	WNW-4	19.1	12.9	bc	1006.1
US08219	41-06.6	140-55.5	6/12	0631-0635	48	WSW-1	South-1	WSW-2	13.8	13.7	bc	1007.6
US08220	41-04.8	140-51.8	6/12	0838-0842	53	Calm	South-1	Calm	15.7	14.1	bc	1007.6
US08221	41-03.6	140-52.2	6/12	0913-0917	51	Calm	South-1	Calm	17.5	13.9	bc	1007.6
US08222	41-02.8	140-46.2	6/12	1004-1008	53	Calm	South-1	Calm	17.9	14.7	bc	1007.1
US08223	41-00.9	140-42.9	6/12	1042-1046	56	Calm	South-1	Calm	18.9	14.6	bc	1006.6
US08224	41-00.3	140-46.7	6/12	1230-1234	53	Calm	NNW-1	Calm	22.0	16.0	bc	1005.8
US08225	40-52.3	140-46.1	6/12	1352-1355	31	NNW-2	NNW-1	NNW-4	19.6	17.3	bc	1005.1
US08226	40-55.2	140-46.6	6/13	0721-0724	42	Calm	NNW-1	Calm	17.6	15.8	bc	1005.4
US08227	40-57.3	140-45.5	6/13	0823-0826	51	NNE-1	North-1	NNE-3	17.7	14.9	bc	1006.0
US08228	41-04.2	140-58.0	6/13	1011-1015	51	NE -2	ENE-1	NE -4	15.5	14.5	r	1006.7
US08229	41-05.6	141-01.9	6/13	1128-1132	47	ENE-1	ENE-1	ENE-3	14.7	14.4	c	1007.1
US08230	41-05.8	141-09.8	6/13	1237-1241	39	ESE-2	NE -1	ESE-3	14.4	14.5	c	1007.4
US08231	41-00.4	141-06.9	6/13	1454-1458	44	ESE-2	SE -1	ESE-4	13.0	14.5	r	1008.0
US08232	40-57.1	141-07.0	6/13	1541-1545	37	ESE-3	SE -1	ESE-5	14.0	14.7	o	1007.5
US08233	41-08.8	141-11.1	6/14	0728-0730	35	NNE-1	NNE-1	NNE-3	12.6	14.6	o	1013.6
US08234	41-11.6	141-10.8	6/14	0841-0844	29	Calm	North-1	Calm	14.0	14.8	bc	1013.6
US08235	41-08.0	141-03.8	6/14	0947-0950	37	South-1	North-1	South-2	14.6	14.7	c	1013.6
US08236	41-09.1	140-44.4	6/14	1137-1141	62	Calm	NW -1	Calm	16.3	14.9	bc	1013.7
US08237	41-11.6	140-42.6	6/14	1203-1207	73	Calm	NW -1	Calm	15.8	14.5	bc	1013.7

Cruise 150

Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr. Bar.	(hPa)
US08238	41-59.9	141-21.5	6/20	1758-1810	332	SSW-1	South-1	SSW-2	16.1	14.5	c	1007.6
US08239	41-57.5	140-58.4	6/22	0903-0907	80	ESE-1	East-1	ESE-3	14.7	11.5	o	1007.7
US08240	41-57.9	140-59.1	6/22	0911-0915	85	SE -2	East-2	SE -4	13.5	11.4	o	1007.7
US08241	41-58.4	141-00.0	6/22	0921-0925	90	SE -2	East-2	SE -4	13.4	12.0	o	1007.7
US08242	41-58.9	141-01.0	6/22	0931-0935	96	ESE-2	East-2	ESE-4	13.2	12.5	o	1007.7
US08243	42-23.2	140-43.2	6/24	1304-1311	58	WSW-1	SE -1	WSW-3	18.3	15.1	bc	1006.7
US08244	42-28.9	140-31.6	6/24	1414-1422	76	Calm	SE -1	Calm	20.3	15.9	bc	1006.1
US08245	42-19.3	140-30.5	6/24	1621-1627	94	SE -1	SE -1	SE -2	18.1	15.4	c	1005.6
US08246	42-16.2	140-35.9	6/24	1711-1719	92	Calm	SE -1	Calm	18.9	16.6	bc	1005.6
US08247	42-11.2	140-35.4	6/25	0613-0622	82	Calm	SE -1	Calm	17.1	15.9	bc	1007.1
US08248	42-10.4	140-47.4	6/25	0717-0725	93	ESE-1	SE -1	ESE-2	16.9	15.2	c	1007.6
US08249	42-05.2	140-56.3	6/25	0825-0831	86	Calm	SE -1	Calm	17.2	15.8	c	1007.6
US08250	42-11.2	141-01.5	6/25	0916-0922	81	Calm	SE -1	Calm	17.3	14.8	bc	1007.6
US08251	42-17.3	140-54.7	6/25	1008-1013	57	SE -1	SE -1	SE -3	19.1	16.2	bc	1007.7
US08252	42-23.6	140-31.1	6/26	1306-1312	96	ESE-2	ESE-1	ESE-4	15.2	16.1	bc	1008.2
US08253	41-55.0	141-14.7	6/28	0819-0827	240	NE -1	East-1	NE -3	15.0	14.5	c	1015.6
US08254	42-00.0	141-05.0	6/28	0930-0934	117	Calm	East-1	Calm	16.0	15.3	c	1015.2
US08255	42-04.9	141-14.8	6/28	1035-1043	224	Calm	East-1	Calm	16.2	14.7	c	1015.1
US08256	42-10.1	141-05.4	6/28	1145-1149	93	Calm	ESE-1	Calm	18.5	15.9	c	1014.6
US08257	42-09.3	141-06.8	6/28	1204-1209	100	Calm	ESE-1	Calm	19.6	15.9	c	1014.6
US08258	42-14.8	141-14.9	6/28	1337-1343	172	ESE-1	ESE-1	ESE-3	15.9	16.4	c	1014.2
US08259	42-25.1	141-15.0	6/28	1549-1552	69	Calm	ESE-1	Calm	15.9	16.1	c	1013.5
US08260	42-19.9	141-05.4	6/28	1757-1800	52	SE -1	ESE-1	SE -2	16.6	16.8	bc	1012.4
US08261	42-28.9	140-44.8	6/29	No Data								
US08262	42-24.9	140-45.1	6/29	0534-0536	55	SSE-1	SSE-1	SSE-2	16.2	17.3	o	1011.6
US08263	42-19.9	140-45.0	6/29	0610-0614	59	SSW-1	SSE-1	SSW-3	16.1	16.7	o	1011.5
US08264	42-15.2	140-45.0	6/29	0646-0650	78	SW -2	SSE-1	SW -2	15.8	16.0	o	1011.4
US08265	42-09.8	140-44.9	6/29	0729-0733	87	Calm	SSE-1	Calm	16.1	15.8	o	1011.5
US08266	42-14.8	140-54.7	6/29	0834-0837	61	Calm	SE -1	Calm	16.9	17.7	o	1011.3
US08267	42-09.9	140-54.8	6/29	0909-0913	76	Calm	SE -1	Calm	17.8	16.1	c	1011.1
US08268	42-05.1	140-54.9	6/29	0946-0950	88	SE -1	SE -1	SE -3	16.9	16.6	o	1011.1
US08269	42-02.0	140-55.2	6/29	1012-1016	79	East-2	SE -1	East-4	16.4	16.0	o	1010.8

(*):Fixed position by Global Positioning System

Table 2: Oceanographic data

STATION US08171 LATITUDE 43-27.5 N LONGITUDE 145-25.9 E DEPTH (m) 20				STATION US08172 LATITUDE 43-29.6 N LONGITUDE 145-29.8 E DEPTH (m) 24				STATION US08173 LATITUDE 43-27.6 N LONGITUDE 145-34.3 E DEPTH (m) 30			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	6.941	32.123	25.161	5	6.874	32.034	25.100	5	6.635	32.243	25.295
10	5.143	32.280	25.503	10	5.853	32.415	25.528	10	5.613	32.443	25.578
				20	3.646	32.688	25.982	20	3.808	32.654	25.939
STATION US08174 LATITUDE 43-35.1 N LONGITUDE 145-26.6 E DEPTH (m) 13				STATION US08175 LATITUDE 43-33.5 N LONGITUDE 145-23.6 E DEPTH (m) 12				STATION US08176 LATITUDE 43-31.4 N LONGITUDE 145-19.6 E DEPTH (m) 6			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	6.578	32.090	25.182	5	7.946	31.757	24.735	5	8.032	31.778	24.739
10	5.356	32.298	25.494								
STATION US08177 LATITUDE 43-25.6 N LONGITUDE 145-21.7 E DEPTH (m) 11				STATION US08178 LATITUDE 43-24.3 N LONGITUDE 145-20.2 E DEPTH (m) 9				STATION US08179 LATITUDE 43-19.2 N LONGITUDE 145-25.9 E DEPTH (m) 12			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	7.723	31.942	24.912	5	6.973	31.963	25.030	5	6.466	32.144	25.239
STATION US08180 LATITUDE 43-20.0 N LONGITUDE 145-27.7 E DEPTH (m) 14				STATION US08181 LATITUDE 43-22.3 N LONGITUDE 145-31.9 E DEPTH (m) 17				STATION US08182 LATITUDE 43-24.6 N LONGITUDE 145-36.0 E DEPTH (m) 25			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	7.035	31.901	24.974	5	7.080	31.994	25.041	5	6.613	32.127	25.206
10	4.933	32.295	25.539	10	6.476	32.112	25.212	10	5.406	32.312	25.499
								20	3.673	32.683	25.975
STATION US08183 LATITUDE 43-26.9 N LONGITUDE 145-40.1 E DEPTH (m) 31				STATION US08184 LATITUDE 43-57.5 N LONGITUDE 145-10.2 E DEPTH (m) 79				STATION US08185 LATITUDE 43-56.7 N LONGITUDE 145-12.0 E DEPTH (m) 84			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	6.701	32.216	25.266	5	6.268	32.094	25.224	5	6.118	32.125	25.267
10	5.178	32.550	25.714	10	5.636	32.140	25.337	10	5.616	32.137	25.337
20	3.779	32.712	25.988	20	4.804	32.264	25.528	20	5.136	32.283	25.507
				30	3.681	32.280	25.653	30	3.940	32.290	25.637
				40	-0.236	32.813	26.352	40	1.071	32.458	25.997
				50	-0.022	32.925	26.432	50	-0.213	32.801	26.341
				75	-0.104	33.036	26.526	75	-0.089	33.038	26.527
STATION US08186 LATITUDE 43-55.4 N LONGITUDE 145-14.6 E DEPTH (m) 82				STATION US08187 LATITUDE 43-59.0 N LONGITUDE 145-18.8 E DEPTH (m) 270				STATION US08188 LATITUDE 44-00.5 N LONGITUDE 145-16.5 E DEPTH (m) 442			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	5.336	32.198	25.417	5	5.938	32.090	25.262	5	5.305	32.258	25.468
10	5.259	32.191	25.420	10	5.160	32.204	25.442	10	5.162	32.269	25.492
20	5.025	32.264	25.504	20	4.644	32.445	25.688	20	4.824	32.254	25.518
30	4.776	32.258	25.526	30	4.076	32.582	25.855	30	4.052	32.419	25.728
40	3.531	32.310	25.691	40	4.043	32.627	25.895	40	4.052	32.496	25.790
50	0.275	32.607	26.161	50	2.743	32.729	26.094	50	2.090	32.707	26.128
75	-0.217	33.057	26.548	75	0.090	32.938	26.438	75	0.173	32.943	26.438
				100	-0.309	33.062	26.556	100	-0.133	33.038	26.528
				125	-0.158	33.143	26.615	125	-0.266	33.085	26.573
				150	-0.014	33.170	26.629	150	-0.190	33.140	26.614
				175	0.073	33.210	26.658	175	0.031	33.211	26.661
				200	0.165	33.246	26.682	200	0.271	33.290	26.712
								250	0.591	33.363	26.753
								300	0.783	33.436	26.801
								400	1.072	33.534	26.862

STATION US08189				STATION US08190				STATION US08191			
LATITUDE 44-01.6 N				LATITUDE 44-05.9 N				LATITUDE 44-04.6 N			
LONGITUDE 145-14.1 E				LONGITUDE 145-16.3 E				LONGITUDE 145-20.2 E			
DEPTH (m) 288				DEPTH (m) 328				DEPTH (m) 828			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	5.572	32.143	25.347	5	5.335	32.168	25.393	5	4.555	32.352	25.624
10	5.188	32.247	25.472	10	4.671	32.301	25.572	10	4.330	32.387	25.675
20	4.699	32.279	25.551	20	4.347	32.349	25.643	20	4.254	32.403	25.695
30	4.184	32.343	25.655	30	4.308	32.395	25.683	30	3.850	32.476	25.793
40	2.200	32.407	25.880	40	2.037	32.475	25.946	40	3.492	32.597	25.923
50	0.500	32.701	26.225	50	0.386	32.723	26.249	50	2.849	32.771	26.119
75	0.019	32.972	26.468	75	0.205	33.002	26.483	75	1.432	33.010	26.418
100	-0.158	33.078	26.562	100	-0.102	33.057	26.543	100	-0.147	33.113	26.590
125	-0.160	33.140	26.612	125	-0.072	33.095	26.572	125	-0.336	33.113	26.599
150	-0.150	33.165	26.632	150	-0.177	33.151	26.622	150	-0.268	33.145	26.621
175	-0.073	33.209	26.664	175	0.119	33.181	26.632	175	-0.145	33.182	26.645
200	0.003	33.237	26.683	200	0.281	33.260	26.687	200	0.121	33.236	26.676
250	0.336	33.315	26.729	250	0.458	33.344	26.746	250	0.450	33.345	26.747
								300	0.834	33.431	26.794
								400	1.025	33.529	26.861
								500	1.249	33.623	26.922
								600	1.476	33.713	26.979
								700	1.720	33.815	27.043

STATION US08192				STATION US08193				STATION US08194			
LATITUDE 44-03.4 N				LATITUDE 44-07.0 N				LATITUDE 44-08.8 N			
LONGITUDE 145-22.4 E				LONGITUDE 145-27.3 E				LONGITUDE 145-24.5 E			
DEPTH (m) 540				DEPTH (m) 1124				DEPTH (m) 1512			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	4.356	32.033	25.392	5	4.223	32.462	25.746	5	4.426	32.376	25.657
10	4.095	32.469	25.764	10	4.019	32.492	25.790	10	4.395	32.406	25.683
20	4.100	32.614	25.879	20	3.884	32.567	25.862	20	3.914	32.539	25.837
30	3.610	32.677	25.976	30	3.345	32.625	25.959	30	3.726	32.611	25.913
40	3.175	32.818	26.128	40	3.067	32.659	26.011	40	3.685	32.628	25.930
50	3.143	32.959	26.243	50	2.690	32.732	26.101	50	3.720	32.632	25.930
75	1.146	33.226	26.610	75	1.454	32.953	26.371	75	2.609	32.966	26.295
100	1.362	33.123	26.513	100	1.548	33.125	26.502	100	0.673	33.070	26.513
125	0.118	33.167	26.621	125	0.482	33.147	26.585	125	-0.292	33.103	26.589
150	-0.136	33.176	26.640	150	-0.174	33.178	26.643	150	-0.347	33.151	26.629
175	-0.118	33.198	26.657	175	-0.141	33.211	26.669	175	-0.392	33.174	26.650
200	0.082	33.254	26.693	200	0.389	33.279	26.697	200	0.055	33.219	26.666
250	0.549	33.345	26.741	250	0.782	33.399	26.771	250	0.680	33.367	26.752
300	0.680	33.378	26.761	300	0.830	33.446	26.807	300	0.958	33.462	26.812
400	1.091	33.545	26.870	400	1.142	33.560	26.879	400	1.205	33.563	26.877
				500	1.346	33.628	26.920	500	1.265	33.615	26.915
				600	1.402	33.675	26.953	600	1.424	33.696	26.969
				700	1.647	33.773	27.015	700	1.701	33.794	27.028
				800	2.030	33.952	27.129	800	2.083	33.983	27.150
				900	2.238	34.127	27.253	900	2.241	34.114	27.243
								1000	2.273	34.220	27.325
								1200	2.258	34.367	27.444

STATION US08195				STATION US08196				STATION US08197			
LATITUDE 44-10.4 N				LATITUDE 44-15.3 N				LATITUDE 44-13.5 N			
LONGITUDE 145-20.9 E				LONGITUDE 145-23.1 E				LONGITUDE 145-26.2 E			
DEPTH (m) 264				DEPTH (m) 140				DEPTH (m) 1570			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	4.391	32.331	25.624	5	4.394	32.368	25.654	5	4.652	32.283	25.559
10	4.375	32.334	25.628	10	4.340	32.419	25.699	10	4.607	32.352	25.619
20	4.177	32.382	25.687	20	4.097	32.569	25.843	20	4.244	32.485	25.761
30	3.965	32.478	25.783	30	3.571	32.873	26.136	30	4.152	32.509	25.790
40	3.661	32.649	25.949	40	3.879	32.978	26.190	40	4.082	32.548	25.828
50	3.393	32.735	26.042	50	4.642	33.138	26.239	50	4.033	32.611	25.883
75	0.702	32.948	26.413	75	3.317	33.308	26.506	75	1.927	32.992	26.369
100	0.400	33.101	26.553	100	1.853	33.237	26.570	100	1.010	33.065	26.489
125	0.284	33.132	26.584					125	0.220	33.089	26.552
150	0.052	33.174	26.629					150	-0.370	33.120	26.606
175	0.148	33.214	26.658					175	-0.258	33.159	26.632
200	0.206	33.243	26.678					200	0.047	33.210	26.659
								250	0.287	33.298	26.717
								300	0.703	33.417	26.791
								400	1.096	33.559	26.881
								500	1.273	33.621	26.919
								600	1.405	33.686	26.962
								700	1.684	33.790	27.026
								800	2.133	34.020	27.176
								900	2.242	34.134	27.259
								1000	2.305	34.239	27.338
								1200	2.258	34.380	27.455

STATION US08198				STATION US08199				STATION US08200			
LATITUDE 44-11.9 N				LATITUDE 44-18.8 N				LATITUDE 44-20.5 N			
LONGITUDE 145-29.9 E				LONGITUDE 145-28.4 E				LONGITUDE 145-25.0 E			
DEPTH (m) 2057				DEPTH (m) 1599				DEPTH (m) 1038			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	4.701	32.290	25.559	5	4.721	32.251	25.526	5	4.634	32.330	25.598
10	4.699	32.294	25.563	10	4.628	32.313	25.585	10	4.613	32.348	25.615
20	4.535	32.369	25.640	20	4.404	32.410	25.685	20	4.348	32.516	25.776
30	3.461	32.664	25.980	30	3.973	32.539	25.831	30	4.068	32.637	25.900
40	4.172	32.894	26.094	40	3.788	32.664	25.949	40	2.681	32.904	26.239
50	4.159	33.014	26.190	50	3.317	32.811	26.110	50	0.227	32.966	26.453
75	4.750	33.269	26.331	75	1.774	33.073	26.444	75	0.953	33.053	26.482
100	1.498	33.301	26.647	100	1.148	33.155	26.552	100	0.301	33.107	26.563
125	0.466	33.107	26.554	125	0.451	33.099	26.549	125	0.530	33.095	26.541
150	0.032	33.138	26.602	150	-0.280	33.131	26.610	150	-0.221	33.184	26.650
175	0.065	33.191	26.643	175	-0.606	33.196	26.676	175	0.564	33.271	26.681
200	-0.136	33.225	26.680	200	-0.206	33.194	26.658	200	1.989	33.438	26.721
250	0.513	33.359	26.755	250	0.264	33.309	26.728	250	1.372	33.434	26.762
300	0.775	33.441	26.806	300	0.541	33.372	26.764	300	1.491	33.461	26.776
400	1.105	33.563	26.883	400	0.900	33.484	26.832	400	1.071	33.556	26.880
500	1.375	33.645	26.931	500	1.139	33.589	26.902	500	1.263	33.636	26.932
600	1.461	33.701	26.970	600	1.325	33.659	26.946	600	1.464	33.704	26.973
700	1.625	33.767	27.011	700	1.863	33.868	27.075	700	1.707	33.795	27.028
800	2.056	33.955	27.130	800	2.190	34.061	27.205				
900	2.251	34.126	27.252	900	2.278	34.158	27.275				
1000	2.291	34.243	27.342	1000	2.308	34.254	27.350				
1200	2.275	34.364	27.440	1200	2.270	34.378	27.452				

STATION US08201				STATION US08202				STATION US08203			
LATITUDE 44-17.8 N				LATITUDE 44-21.6 N				LATITUDE 44-23.1 N			
LONGITUDE 145-31.9 E				LONGITUDE 145-21.7 E				LONGITUDE 145-17.8 E			
DEPTH (m) 2120				DEPTH (m) 73				DEPTH (m) 723			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	4.698	32.351	25.608	5	4.803	33.093	26.185	5	5.765	33.171	26.136
10	4.695	32.347	25.606	10	4.934	33.130	26.200	10	5.837	33.274	26.209
20	4.363	32.450	25.722	20	5.261	33.224	26.238	20	5.701	33.396	26.322
30	3.800	32.730	26.000	30	5.271	33.256	26.262	30	5.495	33.394	26.345
40	3.010	32.801	26.129	40	5.355	33.271	26.264	40	5.130	33.435	26.420
50	4.086	33.077	26.248	50	5.232	33.346	26.338	50	4.988	33.449	26.447
75	4.090	33.223	26.364					75	3.511	33.388	26.551
100	4.775	33.382	26.418					100	3.015	33.424	26.625
125	4.174	33.408	26.502					125	3.152	33.521	26.691
150	2.716	33.415	26.645					150	2.953	33.506	26.696
175	0.143	33.261	26.696					175	2.833	33.512	26.712
200	-0.110	33.223	26.677					200	1.904	33.510	26.785
250	0.388	33.328	26.736					250	1.400	33.433	26.759
300	1.044	33.453	26.799					300	1.457	33.505	26.814
400	1.214	33.548	26.864					400	2.232	33.686	26.901
500	1.176	33.600	26.908					500	1.950	33.704	26.937
600	1.393	33.684	26.961								
700	1.741	33.802	27.031								
800	2.123	34.001	27.161								
900	2.269	34.151	27.270								
1000	2.308	34.258	27.352								
1200	2.258	34.389	27.462								

STATION US08204				STATION US08205				STATION US08206			
LATITUDE 44-20.9 N				LATITUDE 44-19.5 N				LATITUDE 44-18.2 N			
LONGITUDE 145-09.4 E				LONGITUDE 145-12.5 E				LONGITUDE 145-15.8 E			
DEPTH (m) 1235				DEPTH (m) 741				DEPTH (m) 100			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	3.816	32.788	26.045	5	6.503	33.418	26.239	5	5.922	33.324	26.238
10	3.837	32.820	26.068	10	5.196	33.343	26.339	10	5.499	33.349	26.309
20	4.037	33.110	26.280	20	4.514	33.269	26.356	20	5.232	33.469	26.435
30	3.412	33.162	26.381	30	4.489	33.433	26.489	30	5.049	33.535	26.508
40	2.477	33.193	26.487	40	5.118	33.545	26.508	40	4.944	33.520	26.508
50	1.023	33.133	26.543	50	4.507	33.560	26.588	50	4.860	33.512	26.511
75	0.337	33.187	26.626	75	3.130	33.432	26.622	75	4.281	33.524	26.583
100	1.121	33.270	26.647	100	2.794	33.502	26.707				
125	2.996	33.508	26.695	125	2.705	33.515	26.726				
150	1.329	33.633	26.924	150	2.469	33.532	26.759				
175	1.271	33.472	26.799	175	2.305	33.562	26.796				
200	1.753	33.538	26.819	200	2.201	33.571	26.812				
250	2.869	33.704	26.862	250	2.296	33.642	26.860				
300	1.635	33.602	26.878	300	2.165	33.663	26.888				
400	2.049	33.658	26.893	400	2.251	33.698	26.909				
500	1.667	33.716	26.968	500	2.257	33.763	26.960				
600	2.026	33.808	27.015								
700	2.051	33.836	27.035								
800	2.086	33.965	27.136								
900	2.267	34.167	27.283								
1000	2.298	34.267	27.361								

STATION US08207 LATITUDE 44-14.0 N LONGITUDE 145-11.8 E DEPTH (m) 101				STATION US08208 LATITUDE 44-15.2 N LONGITUDE 145-09.0 E DEPTH (m) 595				STATION US08209 LATITUDE 44-16.8 N LONGITUDE 145-05.5 E DEPTH (m) 901			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	6.730	33.489	26.265	5	7.259	33.529	26.225	5	4.088	33.020	26.202
10	6.634	33.486	26.275	10	5.164	33.480	26.451	10	3.412	33.229	26.434
20	5.746	33.469	26.375	20	5.522	33.620	26.521	20	2.091	33.442	26.717
30	5.645	33.515	26.422	30	5.145	33.594	26.544	30	0.806	33.386	26.760
40	5.698	33.573	26.462	40	5.031	33.584	26.549	40	0.420	33.309	26.719
50	5.579	33.597	26.496	50	4.798	33.579	26.572	50	0.711	33.339	26.727
75	5.363	33.600	26.524	75	3.866	33.543	26.641	75	1.051	33.340	26.708
				100	2.421	33.514	26.748	100	2.453	33.513	26.745
				125	2.899	33.578	26.759	125	0.821	33.401	26.771
				150	3.351	33.621	26.752	150	0.672	33.425	26.799
				175	2.977	33.639	26.801	175	0.766	33.437	26.803
				200	2.931	33.672	26.831	200	0.867	33.464	26.819
				250	2.420	33.662	26.867	250	2.453	33.676	26.875
				300	2.001	33.640	26.882	300	2.830	33.768	26.917
				400	1.951	33.701	26.934	400	2.683	33.784	26.942
				500	2.161	33.741	26.950				

STATION US08210 LATITUDE 44-13.6 N LONGITUDE 145-00.0 E DEPTH (m) 671				STATION US08211 LATITUDE 44-11.8 N LONGITUDE 145-03.3 E DEPTH (m) 465				STATION US08212 LATITUDE 44-10.9 N LONGITUDE 145-05.8 E DEPTH (m) 368			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	4.332	33.162	26.291	5	7.214	33.360	26.097	5	6.521	33.308	26.149
10	4.034	33.242	26.385	10	7.159	33.384	26.124	10	6.091	33.416	26.289
20	3.558	33.429	26.580	20	6.687	33.537	26.308	20	5.816	33.484	26.377
30	2.485	33.449	26.691	30	6.431	33.565	26.364	30	5.837	33.513	26.398
40	2.413	33.381	26.643	40	6.197	33.571	26.399	40	5.836	33.545	26.423
50	2.182	33.422	26.693	50	5.951	33.588	26.443	50	5.713	33.569	26.457
75	2.454	33.442	26.688	75	4.821	33.601	26.586	75	5.352	33.578	26.508
100	2.064	33.473	26.744	100	4.370	33.647	26.672	100	2.746	33.502	26.712
125	1.953	33.495	26.769	125	3.837	33.630	26.713	125	2.515	33.472	26.707
150	2.367	33.533	26.768	150	2.995	33.522	26.706	150	3.126	33.563	26.727
175	3.128	33.694	26.831	175	3.267	33.677	26.805	175	3.465	33.679	26.788
200	3.165	33.723	26.851	200	3.388	33.703	26.814	200	3.223	33.694	26.823
250	3.057	33.732	26.868	250	3.467	33.742	26.838	250	3.154	33.691	26.826
300	1.930	33.645	26.891	300	3.166	33.736	26.861	300	2.964	33.676	26.831
400	2.375	33.747	26.939								

STATION US08213 LATITUDE 44-24.8 N LONGITUDE 145-14.2 E DEPTH (m) 1425				STATION US08214 LATITUDE 41-10.1 N LONGITUDE 140-40.9 E DEPTH (m) 58				STATION US08215 LATITUDE 41-09.4 N LONGITUDE 140-42.6 E DEPTH (m) 77			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	5.317	33.141	26.166	5	14.200	33.770	25.195	5	13.789	33.795	25.299
10	5.405	33.173	26.181	10	13.785	33.795	25.301	10	13.619	33.805	25.342
20	4.997	33.310	26.336	20	13.586	33.825	25.365	20	13.461	33.858	25.415
30	5.396	33.426	26.382	30	13.405	33.835	25.409	30	12.872	33.878	25.549
40	4.139	33.426	26.520	40	13.045	33.858	25.499	40	12.283	33.918	25.695
50	3.102	33.471	26.655	50	11.799	33.936	25.801	50	11.507	33.928	25.848
75	2.770	33.498	26.706								
100	2.174	33.486	26.745								
125	2.950	33.547	26.730								
150	2.366	33.592	26.815								
175	2.009	33.567	26.823								
200	2.016	33.555	26.813								
250	2.002	33.585	26.838								
300	2.207	33.643	26.868								
400	2.091	33.729	26.947								
500	2.357	33.778	26.965								
600	2.050	33.786	26.995								
700	1.983	33.816	27.024								
800	2.120	33.994	27.157								
900	2.282	34.165	27.280								
1000	2.317	34.274	27.365								
1200	2.237	34.405	27.476								

STATION US08216 LATITUDE 41-05.3 N LONGITUDE 140-43.9 E DEPTH (m) 61				STATION US08217 LATITUDE 41-05.8 N LONGITUDE 140-46.7 E DEPTH (m) 63				STATION US08218 LATITUDE 41-06.0 N LONGITUDE 140-50.9 E DEPTH (m) 54			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	13.931	33.681	25.182	5	14.300	33.511	24.974	5	13.379	33.439	25.108
10	13.720	33.699	25.240	10	12.275	33.515	25.384	10	12.243	33.532	25.403
20	12.394	33.825	25.601	20	11.632	33.624	25.589	20	11.716	33.634	25.582
30	11.367	33.681	25.682	30	11.320	33.685	25.694	30	11.630	33.774	25.706
40	11.092	33.741	25.779	40	10.969	33.775	25.827	40	10.285	33.665	25.861
50	10.433	33.883	26.006	50	9.618	33.739	26.031	50	7.745	33.564	26.183

STATION US08219 LATITUDE 41-06.6 N LONGITUDE 140-55.5 E DEPTH (m) 48				STATION US08220 LATITUDE 41-04.8 N LONGITUDE 140-51.8 E DEPTH (m) 53				STATION US08221 LATITUDE 41-03.6 N LONGITUDE 140-52.2 E DEPTH (m) 51			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.036	33.404	24.947	5	13.770	33.441	25.030	5	13.962	33.381	24.944
10	13.132	33.482	25.191	10	12.717	33.474	25.267	10	13.646	33.406	25.028
20	10.870	33.421	25.569	20	11.787	33.612	25.552	20	11.949	33.540	25.465
30	10.496	33.514	25.707	30	11.045	33.670	25.732	30	10.420	33.483	25.696
40	9.242	33.550	25.944	40	10.433	33.752	25.904	40	10.965	33.843	25.881
				50	9.765	33.901	26.133				

STATION US08222 LATITUDE 41-02.8 N LONGITUDE 140-46.2 E DEPTH (m) 53				STATION US08223 LATITUDE 41-00.9 N LONGITUDE 140-42.9 E DEPTH (m) 56				STATION US08224 LATITUDE 41-00.3 N LONGITUDE 140-46.7 E DEPTH (m) 53			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.371	33.386	24.862	5	14.100	33.425	24.950	5	15.047	33.579	24.866
10	12.951	33.439	25.194	10	14.008	33.692	25.175	10	12.844	33.495	25.258
20	12.030	33.652	25.537	20	12.987	33.827	25.487	20	11.748	33.631	25.573
30	11.408	33.687	25.679	30	11.762	33.687	25.614	30	11.262	33.689	25.707
40	11.428	33.831	25.788	40	11.204	33.718	25.741	40	11.063	33.802	25.832
50	10.830	33.886	25.939	50	10.809	33.918	25.967	50	10.633	33.918	25.998

STATION US08225 LATITUDE 40-52.3 N LONGITUDE 140-46.1 E DEPTH (m) 31				STATION US08226 LATITUDE 40-55.2 N LONGITUDE 140-46.6 E DEPTH (m) 42				STATION US08227 LATITUDE 40-57.3 N LONGITUDE 140-45.5 E DEPTH (m) 51			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	15.450	33.350	24.601	5	14.591	33.408	24.833	5	14.455	33.729	25.109
10	14.187	33.424	24.930	10	14.340	33.650	25.072	10	13.986	33.783	25.250
20	12.267	33.679	25.512	20	12.196	33.493	25.381	20	13.342	33.826	25.415
30	11.523	33.726	25.688	30	11.614	33.642	25.606	30	12.668	33.840	25.560
								40	12.360	33.874	25.646
								50	10.809	33.911	25.962

STATION US08228 LATITUDE 41-04.2 N LONGITUDE 140-58.0 E DEPTH (m) 51				STATION US08229 LATITUDE 41-05.6 N LONGITUDE 141-01.9 E DEPTH (m) 47				STATION US08230 LATITUDE 41-05.8 N LONGITUDE 141-09.8 E DEPTH (m) 39			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.814	33.341	24.734	5	14.745	33.324	24.735	5	14.861	33.220	24.630
10	14.441	33.376	24.840	10	14.337	33.356	24.846	10	14.601	33.241	24.702
20	12.006	33.553	25.464	20	11.277	33.375	25.460	20	11.130	33.323	25.446
30	11.639	33.698	25.645	30	10.792	33.423	25.585	30	10.666	33.418	25.603
40	10.776	33.712	25.812	40	9.493	33.537	25.893				

STATION US08231 LATITUDE 41-00.4 N LONGITUDE 141-06.9 E DEPTH (m) 44				STATION US08232 LATITUDE 40-57.1 N LONGITUDE 141-07.0 E DEPTH (m) 37				STATION US08233 LATITUDE 40-08.8 N LONGITUDE 141-11.1 E DEPTH (m) 35			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.768	33.242	24.667	5	15.050	33.201	24.575	5	14.799	33.068	24.526
10	13.138	33.187	24.961	10	12.961	33.188	24.997	10	12.720	33.225	25.073
20	11.561	33.310	25.358	20	11.025	33.352	25.488	20	11.665	33.394	25.404
30	9.973	33.423	25.725	30	10.401	33.464	25.685	30	10.342	33.479	25.706
40	9.520	33.664	25.989								

STATION US08234 LATITUDE 41-11.6 N LONGITUDE 141-10.8 E DEPTH (m) 29				STATION US08235 LATITUDE 41-08.0 N LONGITUDE 141-03.8 E DEPTH (m) 37				STATION US08236 LATITUDE 41-09.1 N LONGITUDE 140-44.4 E DEPTH (m) 62			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.802	33.034	24.499	5	14.643	33.193	24.656	5	14.649	33.304	24.740
10	13.095	33.192	24.974	10	14.617	33.220	24.682	10	14.070	33.454	24.978
20	11.864	33.311	25.303	20	12.343	33.284	25.192	20	13.474	33.779	25.352
				30	11.189	33.371	25.473	30	12.971	33.874	25.527
								40	12.319	33.922	25.691
								50	10.917	33.806	25.861

STATION US08237 LATITUDE 41-11.6 N LONGITUDE 140-42.6 E DEPTH (m) 73				STATION US08238 LATITUDE 41-59.9 N LONGITUDE 141-21.5 E DEPTH (m) 332				STATION US08239 LATITUDE 41-57.5 N LONGITUDE 140-58.4 E DEPTH (m) 80			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.449	33.619	25.026	5	11.915	33.068	25.105	5	10.305	32.435	24.898
10	14.182	33.737	25.173	10	10.907	33.106	25.317	10	8.323	32.574	25.322
20	13.507	33.796	25.358	20	8.423	33.104	25.723	20	8.416	32.970	25.618
30	13.091	33.851	25.485	30	8.198	33.374	25.967	30	8.257	33.307	25.906
40	11.685	33.952	25.835	40	7.058	33.364	26.122	40	7.312	33.460	26.163
50	11.450	33.979	25.899	50	7.023	33.567	26.287	50	6.978	33.703	26.400
				75	7.615	33.938	26.496	75	5.599	33.721	26.591
				100	6.732	33.841	26.542				
				125	5.920	33.754	26.578				
				150	5.320	33.687	26.598				
				175	4.940	33.643	26.606				
				200	4.710	33.639	26.629				
				250	4.564	33.685	26.681				

STATION US08240 LATITUDE 41-57.9 N LONGITUDE 140-59.1 E DEPTH (m) 85				STATION US08241 LATITUDE 41-58.4 N LONGITUDE 141-00.0 E DEPTH (m) 90				STATION US08242 LATITUDE 41-58.9 N LONGITUDE 141-01.0 E DEPTH (m) 96			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	10.438	32.410	24.855	5	12.775	32.228	24.290	5	10.053	32.456	24.955
10	8.408	32.536	25.279	10	8.533	32.503	25.235	10	8.890	32.547	25.215
20	8.222	32.922	25.610	20	8.657	33.004	25.608	20	8.037	32.781	25.526
30	8.579	33.340	25.884	30	8.885	33.314	25.816	30	8.388	33.220	25.818
40	7.933	33.444	26.061	40	8.289	33.421	25.991	40	8.317	33.371	25.947
50	6.013	33.442	26.320	50	5.282	33.347	26.333	50	5.917	33.416	26.311
75	5.660	33.745	26.603	75	5.791	33.776	26.611	75	5.686	33.740	26.596

STATION US08243 LATITUDE 42-23.2 N LONGITUDE 140-43.2 E DEPTH (m) 58				STATION US08244 LATITUDE 42-28.9 N LONGITUDE 140-31.6 E DEPTH (m) 76				STATION US08245 LATITUDE 42-19.3 N LONGITUDE 140-30.5 E DEPTH (m) 94			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.438	32.153	23.897	5	14.529	32.089	23.829	5	14.717	32.094	23.793
10	13.862	32.164	24.025	10	12.558	32.091	24.225	10	13.938	32.516	24.281
20	8.969	32.302	25.011	20	9.305	32.276	24.938	20	9.218	32.423	25.067
30	7.974	32.679	25.455	30	8.022	32.635	25.414	30	7.859	32.630	25.433
40	7.896	33.046	25.755	40	6.656	32.931	25.835	40	5.874	32.775	25.810
50	5.651	33.081	26.078	50	3.280	32.833	26.131	50	5.797	33.145	26.112
								75	3.930	33.329	26.464

STATION US08246 LATITUDE 42-16.2 N LONGITUDE 140-35.9 E DEPTH (m) 92				STATION US08247 LATITUDE 42-11.2 N LONGITUDE 140-35.4 E DEPTH (m) 82				STATION US08248 LATITUDE 42-10.4 N LONGITUDE 140-47.4 E DEPTH (m) 93			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.781	32.395	24.011	5	14.566	32.250	23.945	5	14.122	32.328	24.098
10	13.201	32.810	24.657	10	11.113	32.258	24.620	10	13.290	32.374	24.302
20	9.260	32.496	25.117	20	8.564	32.437	25.179	20	8.674	32.561	25.259
30	7.459	32.703	25.547	30	7.893	32.791	25.554	30	8.593	33.038	25.645
40	6.341	33.005	25.933	40	6.837	32.925	25.806	40	9.227	33.398	25.828
50	3.554	32.830	26.103	50	5.266	33.062	26.109	50	8.679	33.471	25.971
75	3.138	33.303	26.518	75	3.090	33.276	26.501	75	5.439	33.598	26.513

STATION US08249 LATITUDE 42-05.2 N LONGITUDE 140-56.3 E DEPTH (m) 86				STATION US08250 LATITUDE 42-11.2 N LONGITUDE 141-01.5 E DEPTH (m) 81				STATION US08251 LATITUDE 42-17.3 N LONGITUDE 140-54.7 E DEPTH (m) 57			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.580	32.118	23.840	5	14.670	32.296	23.959	5	15.018	32.010	23.664
10	10.609	32.349	24.780	10	11.584	32.647	24.839	10	10.732	32.649	24.992
20	8.622	32.940	25.563	20	10.227	33.356	25.630	20	9.298	33.026	25.526
30	7.107	33.025	25.849	30	8.208	33.445	26.022	30	8.986	33.271	25.766
40	9.071	33.702	26.090	40	7.992	33.624	26.195	40	8.397	33.424	25.977
50	7.995	33.630	26.198	50	7.020	33.645	26.349	50	8.255	33.604	26.140
75	5.185	33.611	26.553	75	5.456	33.643	26.547				

STATION US08252 LATITUDE 42-23.6 N LONGITUDE 140-31.1 E DEPTH (m) 96				STATION US08253 LATITUDE 41-55.0 N LONGITUDE 141-14.7 E DEPTH (m) 240				STATION US08254 LATITUDE 42-00.0 N LONGITUDE 141-05.0 E DEPTH (m) 117			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	15.669	32.132	23.616	5	13.702	32.539	24.347	5	13.398	32.619	24.468
10	12.096	32.417	24.566	10	12.887	33.081	24.929	10	9.852	33.134	25.519
20	9.695	32.276	24.876	20	10.944	33.397	25.537	20	9.302	33.561	25.943
30	8.129	32.539	25.323	30	8.503	33.325	25.884	30	8.206	33.577	26.126
40	7.956	32.811	25.562	40	8.187	33.417	26.003	40	8.947	33.916	26.278
50	6.049	33.061	26.015	50	7.542	33.546	26.199	50	8.763	33.911	26.303
75	2.927	33.141	26.408	75	7.168	33.806	26.455	75	8.056	33.856	26.367
				100	6.795	33.812	26.511	100	6.963	33.777	26.461
				125	6.248	33.776	26.554				
				150	5.762	33.747	26.592				
				175	5.154	33.687	26.617				
				200	5.048	33.709	26.646				

STATION US08255 LATITUDE 42-04.9 N LONGITUDE 141-14.8 E DEPTH (m) 224				STATION US08256 LATITUDE 42-10.1 N LONGITUDE 141-05.4 E DEPTH (m) 93				STATION US08257 LATITUDE 42-09.3 N LONGITUDE 141-06.8 E DEPTH (m) 100			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	14.614	32.361	24.020	5	15.366	32.631	24.067	5	15.585	32.608	24.001
10	10.860	32.921	25.182	10	13.055	32.946	24.791	10	14.430	32.592	24.237
20	8.540	33.199	25.779	20	8.977	33.127	25.655	20	9.189	33.181	25.664
30	8.886	33.603	26.042	30	8.677	33.418	25.929	30	8.619	33.430	25.948
40	8.354	33.648	26.159	40	7.750	33.404	26.057	40	7.383	33.486	26.173
50	8.574	33.800	26.245	50	8.511	33.808	26.261	50	7.612	33.698	26.308
75	7.601	33.817	26.403	75	5.654	33.446	26.367	75	5.885	33.530	26.405
100	6.809	33.801	26.500								
125	6.133	33.746	26.545								
150	5.516	33.704	26.588								
175	4.979	33.652	26.609								
200	4.987	33.698	26.645								

STATION US08258 LATITUDE 42-14.8 N LONGITUDE 141-14.9 E DEPTH (m) 172				STATION US08259 LATITUDE 42-25.1 N LONGITUDE 141-15.0 E DEPTH (m) 69				STATION US08260 LATITUDE 42-19.9 N LONGITUDE 141-05.4 E DEPTH (m) 52			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	16.016	32.592	23.893	5	15.781	32.057	23.534	5	15.025	32.100	23.731
10	14.868	32.612	24.160	10	14.353	32.442	24.138	10	10.983	32.520	24.847
20	10.038	32.880	25.291	20	12.591	33.195	25.075	20	8.805	33.007	25.588
30	8.224	33.206	25.832	30	8.813	33.108	25.666	30	8.654	33.221	25.779
40	8.942	33.619	26.046	40	7.986	33.317	25.954	40	8.339	33.314	25.900
50	8.540	33.730	26.195	50	7.932	33.427	26.049				
75	7.045	33.761	26.437								
100	6.994	33.875	26.533								
125	6.218	33.785	26.565								
150	5.782	33.739	26.583								

STATION US08261				STATION US08262				STATION US08263			
LATITUDE 42-28.9 N				LATITUDE 42-24.9 N				LATITUDE 42-19.9 N			
LONGITUDE 140-44.8 E				LONGITUDE 140-45.1 E				LONGITUDE 140-45.0 E			
DEPTH (m) 52				DEPTH (m) 55				DEPTH (m) 59			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
No data				5	17.144	32.131	23.280	5	16.459	32.145	23.449
				10	15.053	32.199	23.802	10	15.169	32.103	23.703
				20	10.801	32.404	24.789	20	12.796	32.497	24.494
				30	7.904	32.565	25.376	30	7.444	32.584	25.455
				40	4.782	32.799	25.954	40	6.776	33.027	25.895
								50	5.829	33.204	26.155
STATION US08264				STATION US08265				STATION US08266			
LATITUDE 42-15.2 N				LATITUDE 42-09.8 N				LATITUDE 42-14.8 N			
LONGITUDE 140-45.0 E				LONGITUDE 140-44.9 E				LONGITUDE 140-54.7 E			
DEPTH (m) 78				DEPTH (m) 87				DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	15.780	32.191	23.637	5	16.281	32.296	23.605	5	15.057	32.007	23.648
10	15.176	32.180	23.761	10	14.163	32.530	24.245	10	12.389	32.587	24.642
20	13.525	32.520	24.367	20	8.877	32.415	25.114	20	10.190	32.779	25.186
30	8.271	32.705	25.432	30	8.493	32.808	25.480	30	8.852	33.042	25.608
40	7.299	33.070	25.858	40	8.858	33.194	25.726	40	8.522	33.229	25.805
50	5.677	33.147	26.128	50	5.567	33.012	26.034	50	8.090	33.330	25.949
				75	2.922	33.189	26.447				
STATION US08267				STATION US08268				STATION US08269			
LATITUDE 42-09.9 N				LATITUDE 42-05.1 N				LATITUDE 42-02.0 N			
LONGITUDE 140-54.8 E				LONGITUDE 140-54.9 E				LONGITUDE 140-55.2 E			
DEPTH (m) 76				DEPTH (m) 88				DEPTH (m) 79			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	15.658	32.652	24.019	5	16.258	32.489	23.758	5	15.973	32.171	23.579
10	12.806	33.053	24.923	10	13.657	32.891	24.628	10	12.364	32.684	24.722
20	8.536	33.011	25.632	20	9.545	33.054	25.508	20	9.964	33.193	25.548
30	8.042	33.166	25.827	30	8.769	33.410	25.909	30	8.920	33.433	25.904
40	8.533	33.431	25.962	40	8.620	33.646	26.117	40	8.691	33.612	26.079
50	8.060	33.522	26.104	50	8.838	33.820	26.220	50	8.693	33.743	26.182
				75	4.154	33.335	26.447				

