

Completion Report of the Research Expedition in the Sea of Okhotsk for 2007



Chief Investigators

A. Scherbinin

T. Nakatsuka

J. Nishioka

I. Yasuda

R/V Professor Khromov

15 September, 2007

Completion Report of the Research Expedition in the Sea of Okhotsk for 2007

Chief Investigators



A. Scherbinin

On behalf of
Far Eastern Regional
Hydrometeorological
Research Institute



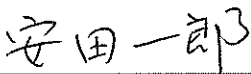
T. Nakatsuka

On behalf of
Institute of Low
Temperature Science,
Hokkaido University



J. Nishioka

On behalf of
Research Institute of
Humanity and Nature



I. Yasuda

On behalf of
Ocean Research Institute,
University of Tokyo

R/V Professor Khromov
15 September, 2007

TABLE OF CONTENTS

	Page
1. INTRODUCTION	3
2. PROGRAM OF THE EXPEDITION AND ITS IMPLEMENTATION	3
2.1. CTD observations and Water Chemistry and Biogeochemistry	3
2.1.1. CTD observations	3
2.1.2. Water Chemistry and Biogeochemistry	4
2.2. Shear Probe Observations	6
2.3. Sediment Coring and Surface Sediment Samplings	7
2.4. Aerosol Samplings	8
3. CONCLUDING REMARKS	9
4. ACKNOWLEDGEMENTS	9
5. APPENDICES	
A. Cruise Chart	
B. List of Participants	
C. Data logs	
D. Data exchange schedule	

1. INTRODUCTION

The Research Expedition in the Sea of Okhotsk for 2007 has been carried out in the period from 5 August to 15 September in 2007 by *R/V Professor Khromov* of Far Eastern Regional Hydrometeorological Research Institute (FERHRI), Vladivostok, Russia. This expedition was a collaborative research activity between following 4 institutes, FERHRI, Research Institute of Humanity and Nature (RIHN), Institute of Low Temperature Science, Hokkaido University (ILTS) and Ocean Research Institute, University of Tokyo (ORI).

The purposes of this research expedition were to understand the present transport processes of land-derived materials, especially iron, from Amur River to the Sea of Okhotsk and Pacific Ocean and their historical variability, with special emphasis on the intermediate water ventilation along east coast of Sakhalin and the vertical mixing process around Kuril straits. This research expedition had following subjects.

1) To clarify the vertical and horizontal distribution of iron and related substances in water masses of the Sea of Okhotsk, especially in areas of Amur River mouth, northern and eastern continental shelves and slopes off Sakhalin, and the area around Kuril straits.

2) To quantify the physical processes, which transport iron and related substances from Amur River to Pacific Ocean, such as shelf tidal mixing, intermediate water formation, East Sakhalin current and turbulent mixing processes around Kuril straits.

3) To reconstruct historical changes in the budget and the deposition rates of iron and related substances to the sediment on slope and deep basin of the western Sea of Okhotsk, together with past changes in water temperature & salinity in both of shelf bottom and offshore surface waters.

4) To infer the contribution of aerosol, which supply iron from atmosphere to the surface water, in the Sea of Okhotsk.

2. PROGRAM OF THE EXPEDITION AND ITS IMPLEMENTATION

2.1. CTD observations, Water Chemistry and Biogeochemistry

2.1.1. CTD observations

Purpose. The purpose of CTD (Conductivity, Temperature and Depth probe) casts was to examine the water characteristics in the Sea of Okhotsk from the Sakhalin Bay

and around Sakhalin Island through the Kuril Straits (especially Bussol' Strait), in order to elucidate the influence of the Amur River water and dense shelf water on the Okhotsk Sea water-masses and on bio-chemistry in the Sea of Okhotsk and the North Pacific.

Data Acquisition. The CTD/Carousel water sampling system was used to acquire water samples and CTD data (pressure, temperature and conductivity). The CTD is Sea-Bird 911 plus system, and Seabird Carousel bottle release systems were used. The CTD/rosette held twelve 10-liter Niskin bottles with Teflon coating for iron measurements. The CTD instruments were equipped with a dissolved oxygen sensor (Sea-bird SBE43), transmissiometer (Wet lab C-Star) and altimeter (Data sonic PSA-900D). The CTD-frame was deployed via the right-side A-frame at the sites described in Figure 1, 2 and Table C-1 in Appendix.

Water samples were drawn for dissolved oxygen and salinity at most of the CTD casts. However, in Kuril strait areas, water samples were analyzed for dissolved oxygen and salinity only about once a day to calibrate the CTD and DO sensor. The samples of dissolved oxygen were analyzed by Winkler method using an automated titration system with a colorimeter. Salinities were analyzed with a Guildline Portsal 8410A salinometer, using a computer interface and software. IAPSO Standard Seawater, batch P-146, served as the standard.

Data Processing. Conductivities and dissolved oxygen obtained by CTD sensors at each bottle level will be merged with the results from bottle salinity and oxygen analyses. Bottle salinity and oxygen concentrations will be calculated and compared with the CTD data. CTD performance will be monitored by means of these comparisons. Final processing of CTD data will be completed at a later date.

2.1.2. Water Chemistry and Biogeochemistry

Purpose. One of the most important goals of this cruise is to grasp direct evidences of the tight connections between land and ocean ecosystems through material transports via river and shelf systems. Main targets are riverine iron and related substances, which are dissolved and/or suspended in the water of the Sea of Okhotsk. In order to clarify the spatial distributions of iron and related substances, water samplings were performed during all of the CTD casts from the areas near Amur River mouth to Pacific Ocean. Suspended particles were also collected using "in-situ large volume water filtering systems" at several CTD stations.

Water Samplings and Sample Treatments. Waters were collected during the CTD casts listed in Table C-1 of Appendix. In addition, surface water was continuously analyzed for nitrate concentration using underway waters supplied from engine room, although the nitrate analyzer did not work well during the cruise. Water samples during CTD casts were distributed into various sizes of clean bottles for on-board and/or on-shore analyses. Some water samples were directly filtered through filtration unit attached to the Niskin bottles to collect dissolved forms of chemical components. Particle samples were also collected using the “in-situ large volume water filtering system” beside the CTD/water sampling at various water depths, especially focusing on the dense shelf water and its outflow to slope and basin areas around Sakhalin Island. The in-situ filtration was conducted by WTS-LV system (McLANE Inc.) with 1.0 μm pore size polycarbonate filters at the stations and depths listed in Table C-2 of Appendix.

Water and Particle Analyses. The distributed waters and filter samples are to be measured on the following list of chemical and biogeochemical parameters. Some of them have been analyzed on board, and the rests are to be analyzed on shore. The data analyzed on board have been already compiled in a separate data file.

Substance	Number of water samples *	Analytical Method or Instrument	Measurement Remarks
<u>Basic properties</u>			
Salinity	All, except for Kuril strait areas	Guildline Port-Sal	<u>On board</u>
Dissolved Oxygen	All, except for Kuril strait areas	Winkler method (Titrated by Oxidation-Reduction Electrode)	<u>On board</u>
Nutrients	All	Continuous Flow type of Auto Analyzer	On shore
<u>Biogeochemical parameters</u>			
Iron (dissolved and total)	All except for Kuril strait areas	Chemiluminescence method (Kimoto-Denshi, EN-701)	On shore (<u>partly on board</u>)

Chlorophyll a	All, but only shallow layers at some stations	Fluorescence Spectrophotometer (Turner, 10-AU)	<u>On board</u>
Chromo-Dissolved Organic Matter	Almost all, except for Kuril strait areas	3D-fluorescence method	On shore
<u>Carbon chemistry</u>			
Dissolved Inorganic Carbon	Almost all, except for Kuril strait areas	CO ₂ coulometer	On shore
Dissolved Organic Carbon	Almost all, except for Kuril strait areas	High Temperature Combustion method	On shore
<u>Other Properties</u>			
Metal composition (In-situ filtrated particles)	See Table C-2	Atomic Absorption and/or ICP/MS	On shore

* "Number of water samples" indicates that how much water samples collected by CTD/carousel systems are applied for the analyses of the corresponding substances.

2.2. Shear Probe Observations

Purpose. Around the Kuril Islands in the Okhotsk Sea, tidal currents are strong and the vertical mixing is expected to be large and to contribute to the material circulation and resulting biological activity as well as the physical processes. However the mixing activity has not been directly measured. Measurements of turbulence and microstructure were performed at sites around the Kuril Islands shown in Figure 2.

Instruments and observation. A real time system of VMP2000 (Vertical Microstructure Profiler for 2000m casts) and VMP500 (smaller type for 500m casts) manufactured in Rockland Scientific Service (Victoria Canada) were used with the hydraulic motor, winch and line puller system. The fish deploys and recoveries were from the stern using A-frame and capstan at the site listed in Table C-3 of Appendix. During the profiling, the ship moved as slowly as possible against the surface currents

or winds in order the ship to be away from the cable and to avoid the cable cut by ship propeller.

Data acquisition and processing. Shear probe, micro-temperature probe and acceleration data were obtained in 512Hz, and the pressure and Sea-Bird temperature and conductivity were obtained in 64Hz. These were used to obtain the turbulent kinetic energy dissipation rate during 2 seconds from velocity shear spectra. Very preliminary data of diapycnal mixing coefficients of density in the interval of 1dbar were processed during the cruise. But the careful treatments are necessary to make final data because the probes are quite sensitive and the Sea-Bird sensors had troubles with water invasion and also because the data is frequently influenced by various matters. The final data will be provided at a later time.

2.3. Sediment Coring and Surface Sediment Samplings

Purpose. Although the present situations on the transport of iron and related substances from the Amur River and their influences on the biogeochemistry in the Sea of Okhotsk and the northwestern North Pacific Ocean can be addressed in the physical and biogeochemical oceanographic studies in this expedition, the situations must have varied largely in the past. Especially, impacts of climate changes and anthropogenic activities on the material transports through the Amur River and the Sea of Okhotsk should be understood carefully by paleoceanographic studies using sediment cores and related materials in order to predict future changes in the biogeochemical linkages between land and ocean in this region. There are two parts of the paleoceanographic studies in this expedition. One major part is to collect several meters (5-7m) of sediment cores from 8 sites on the continental slope and basin off Sakhalin in the western Sea of Okhotsk and analyze chemical properties of the sediment cores for reconstruction of past environmental changes, especially changes in material transport processes from Amur River, during Holocene and the last glacial period. The other minor part is to collect modern and past molluscan shells from continental shelf sediments around Sakhalin and analyze their chemical compositions, especially stable oxygen isotope ratios, for estimation of past seasonal and inter-annual variations in temperature and salinity of the shelf bottom waters which is affected by seasonal sea-ice formation and Amur River discharge.

Sediment Samplings. Three types of sediment samplers (Smith-Macintyre Type of

Grab Sampler, “Ashura” type of Multiple Corer (60cm of core pipe length) and a Piston Corer (8m of core pipe length)) were applied in this research expedition. Sediment cores were collected using both of the Multiple Corer and the Piston Corer at 8 stations on the slope and basin areas as described in Table C-4 and 5 in Appendix, respectively. Surface sediments were collected for mollusk shell samplings using the Grab Sampler at many sites on the shelf areas as described in Table C-6 of Appendix.

Sample Treatments. Piston Core samples, most of which consisted of 5-7 m lengths of sediment, were divided into 1m length of core on board immediately after recovery and stored in the refrigerator until the precise sub-samplings and chemical analyses on shore. Multiple Core samples collected at the same locations as Piston Core were sliced at 1cm intervals on board, packed in plastic bags and stored in refrigerator or freezer until the chemical analyses on shore. Surface sediments collected by the Grab sampler were sieved using 5mm mesh to separate larger size of mollusk shells from sedimentary particles immediately after samplings and only the mollusk shells were stored for further species identification and chemical analyses on shore.

Chemical Analyses. Piston Core and Multiple Core samples are to be analyzed on the items such as major sediment components (total organic carbon, carbonate, biogenic silica, lithogenic silica), C/N ratio, terrestrial and marine organic molecules, major element compositions measurable by XRF, ice-rafted debris, ^{14}C contents and magnetic susceptibility for core chronology. Mollusk shells in surface sediments are to be identified of their precise species names and analyzed further for micro-scale distributions of the stable oxygen isotopic ratios across growth lines of typical large specimen.

2.4. Aerosol Samplings

Purpose. In general, land-derived iron is believed to be supplied to ocean surface via atmosphere by aerosol. Because the Sea of Okhotsk is located on the eastern end of Eurasia continent, huge amount of aerosol containing iron must be supplied to this area by the strong westerly. In order to estimate the relative importance of the iron from Amur River, it is necessary to monitor and quantify the iron load from atmosphere in the Sea of Okhotsk Therefore, aerosol samplings were conducted in this research expedition.

Observation. Aerosol samples were collected with a High Volume Sampler during the cruise (Aug. 9 – Sep. 11). Wind direction was continually monitored and the sampler was turned off if there was any risk of contamination by exhaust from the ship's stack. The samples were collected on the 90 mm Teflon filter and the filters were changed when total volume reached over 100 m³. Sampling log is shown in the Table C-7 of Appendix.

Sample analyses. Teflon filters with collected aerosol samples are to be used for analyzing major ions (Na⁺, Ca²⁺, SO₄²⁻, NO₃⁻) and trace metals (Fe, Al) at on-shore laboratory. Soluble major ions and trace metals are to be extracted from the filters and analyzed by ion chromatography and ICP-AES.

3. CONCLUDING REMARKS

In general, the program of this expedition was successfully completed with the combined efforts of Russian and Japanese specialists. In particular, it is notable that clean water samplings were successfully performed on *R/V Professor Khromov* in this expedition as well as last year. The quality of collected waters was monitored during the cruise by on-board analyses of trace amount of iron, and apparent contaminations of iron from the vessel have never been identified. This success is greatly owing to Russian efforts to clean up the vessel before the cruise and Japanese carefulness to avoid any kind of contaminations at all procedures during the samplings of water.

In this cruise, the piston core operations were successfully carried out at many sites to collect long sediment core samples, besides the water column observation. These successes clearly indicate the wider applicability of *R/V Professor Khromov* to the areas of oceanographic observations other than hydrometeorological studies.

All the primary and secondary data collected during the cruise will be shared according to the mutually agreed schedule.

4. ACKNOWLEDGEMENTS

This expedition was successfully completed with the effort and patience of many peoples, and with the good weather condition throughout the cruise. We would like deeply to appreciate Captain Alexander D'YACHENKO of the *R/V Professor Khromov* and his fine crews for their outstanding works during this cruise; without them, none of this expedition would have been possible.

5. APPENDICES

A. Cruise Chart

Figure 1. Chart of the Whole Cruise

Figure 2. Chart around Kuril Straits

B. List of participants

C. Data logs

Table C-1. CTD casts

Table C-2. In-Situ Water Filtering

Table C-3. Shear Probe operations

Table C-4. Sediment Coring (MC)

Table C-5. Sediment Coring (PC)

Table C-6. Surface Sediment Samplings (SM)

Table C-7. Aerosol Samplings

D. Data exchange schedule

Figure 1

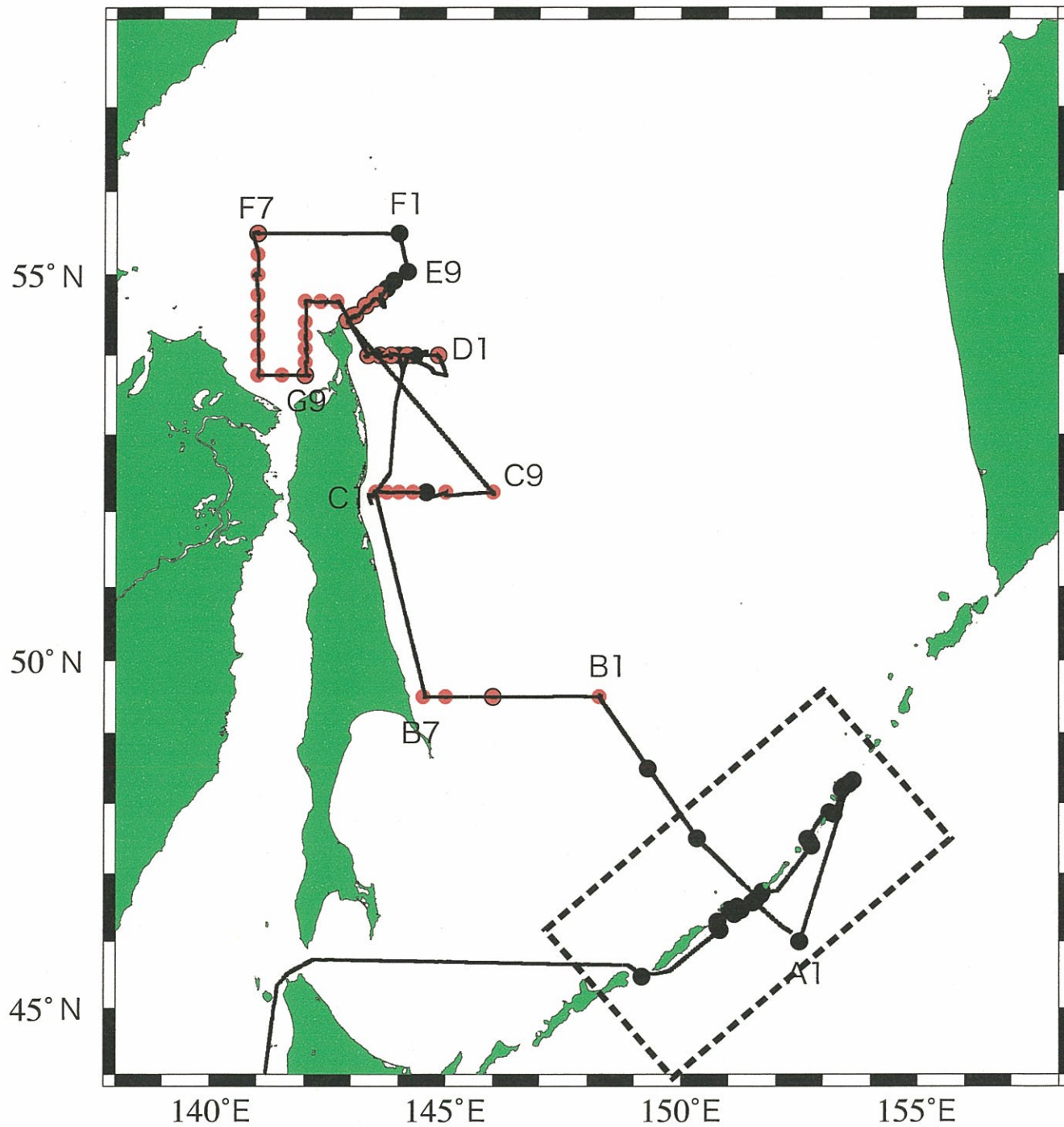
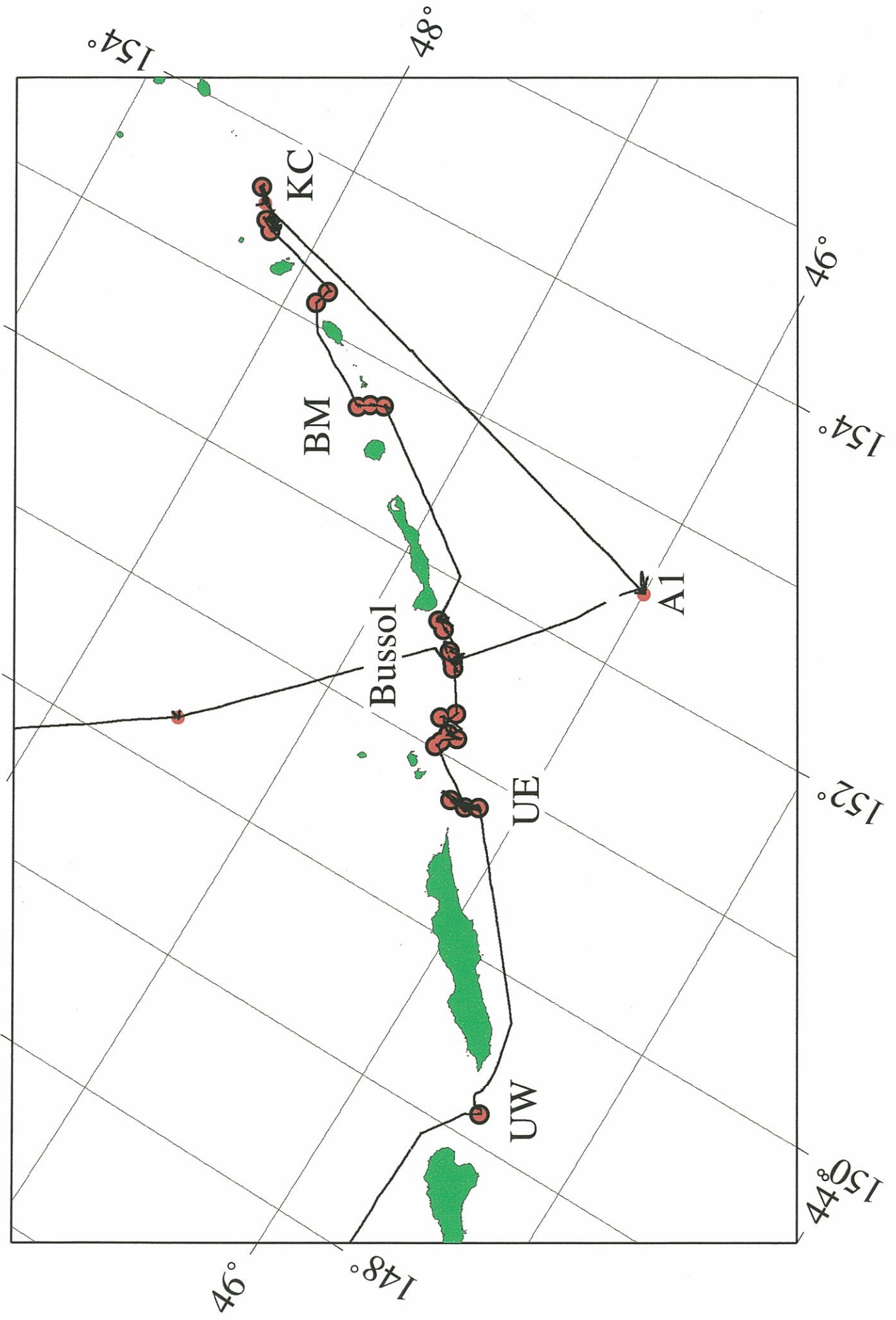


Figure 2



LIST OF PARTICIPANTS

(Research Expedition in the Sea of Okhotsk, R/V "Professor Khromov", Aug - Sep 2007)

Russia

Mr. Alexey SCHERBININ (Department of Marine Expeditions, FERHRI)
Mr. Sergey YAROSH (Department of Marine Expeditions, FERHRI)
Mr. Igor PHILIPPOV (Department of Marine Expeditions, FERHRI)
Mr. Vasily STRUGOV (Department of Marine Expeditions, FERHRI)
Mr. Eugeny VEKHOV (Department of Marine Expeditions, FERHRI)
Mr. Anatoliy KARASEV (Department of Marine Expeditions, FERHRI)
Mr. Alexander MURAV'EV (Department of Marine Expeditions, FERHRI)

Japan

Dr. Takeshi NAKATSUKA (Chemical Oceanography, Hokkaido University)
Dr. Jun NISHIOKA (Chemical Oceanography, Hokkaido University)
Mr. Kazuya ONO (Technical Staff, Hokkaido University)
Mr. Kazuyuki FUJITA (Technical Staff, Hokkaido University)
Mr. Koji SUGIE (Graduate Student, Hokkaido University)
Ms. Eri MANABE (Graduate Student, Hokkaido University)
Mr. Shuta MORISHIMA (Graduate Student, Hokkaido University)
Mr. Yohei FUKUDA (Graduate Student, Hokkaido University)
Mr. Yu MIKAMI (Graduate Student, Hokkaido University)
Mr. Keigo TADA (Graduate Student, Hokkaido University)
Dr. Ichiro YASUDA (Physical Oceanography, University of Tokyo)
Dr. Sachihiko ITOH (Physical Oceanography, University of Tokyo)
Mr. Hideo NAGAE (Technical Staff, University of Tokyo)
Mr. Satoshi OSAFUNE (Graduate Student, University of Tokyo)
Mr. Masahiro YAGI (Graduate Student, University of Tokyo)
Mr. Hitoshi KANEKO (Graduate Student, University of Tokyo)
Dr. Naomi KOBAYASHI (Paleoceanography, Japan Agency for Marine-Earth Science and Technology)
Dr. Akira IJIRI (Paleoceanography, Japan Agency for Marine-Earth Science and Technology)

Table C-1. CTD Cast Logs

Station	Cast Name	Depth (Bottom Pressure + Altitude)		Latitude (N)	Longitude (E)	Date (UTC)	Time (UTC)
UW2	UW2	600 ?	Start	45 28.404	149 10.869	11-Aug-07	2:52:00
			Bottom	45 28.548	149 11.351	11-Aug-07	3:04:31
			End	45 28.898	149 11.908	11-Aug-07	3:29:12
UE1	UE1-1	1705	Start	46 09.840	150 49.281	11-Aug-07	16:53:22
			Bottom	46 09.744	150 49.067	11-Aug-07	17:28:52
			End	46 09.297	150 48.585	11-Aug-07	18:14:52
UE2	UE2-1	640	Start	46 12.909	150 46.514	11-Aug-07	20:54:35
			Bottom	46 12.733	150 46.058	11-Aug-07	21:12:00
			End	46 12.532	150 45.482	11-Aug-07	21:33:39
UE3	UE3-1	205	Start	46 17.156	150 46.215	11-Aug-07	23:19:48
			Bottom	46 17.074	150 46.125	11-Aug-07	23:27:07
			End	46 16.982	150 45.938	11-Aug-07	23:37:46
UE2	UE2-2	452	Start	46 13.342	150 46.616	12-Aug-07	1:02:14
			Bottom	46 13.634	150 46.334	12-Aug-07	1:13:57
			End	46 14.115	150 46.017	12-Aug-07	1:32:23
UE2	UE2-3	431	Start	46 13.507	150 46.863	12-Aug-07	5:23:17
			Bottom	46 13.855	150 46.857	12-Aug-07	5:33:35
			End	46 14.467	150 46.828	12-Aug-07	5:50:17
UE2	UE2-3b	~125	Start	46 14.845	150 46.859	12-Aug-07	5:58:31
			Bottom	46 15.190	150 46.908	12-Aug-07	6:04:43
			End	46 15.585	150 46.967	12-Aug-07	6:11:55
UE3	UE3-2	180	Start	46 18.114	150 46.605	12-Aug-07	7:19:43
			Bottom	46 18.504	150 46.690	12-Aug-07	7:26:13
			End	46 19.158	150 46.893	12-Aug-07	7:37:16
UE2	UE2-4	563	Start	46 13.182	150 46.838	12-Aug-07	9:55:43
			Bottom	46 13.717	150 46.676	12-Aug-07	10:13:47
			End	46 14.511	150 46.873	12-Aug-07	10:37:01
UE2	UE2-5	632	Start	46 12.977	150 46.757	12-Aug-07	14:47:12
			Bottom	46 12.673	150 46.680	12-Aug-07	15:02:30
			End	46 12.138	150 46.754	12-Aug-07	15:24:30
UE3	UE3-3	256	Start	46 16.980	150 46.620	12-Aug-07	17:43:02 ?
			Bottom	46 16.666	150 46.616	12-Aug-07	17:50:00
			End	46 16.070	150 46.500	12-Aug-07	18:03:46
UE2	UE2-6	761	Start	46 12.451	150 46.474	12-Aug-07	19:21:03
			Bottom	46 11.867	150 45.900	12-Aug-07	19:42:18
			End	46 11.069	150 45.367	12-Aug-07	20:11:01
BE2	BE2	726	Start	46 27.705	151 01.428	13-Aug-07	0:03:12
			Bottom	46 27.606	151 01.297	13-Aug-07	0:22:09
			End	46 27.410	151 01.238	13-Aug-07	0:50:20
BF2	BF2	1243	Start	46 27.111	151 04.044	13-Aug-07	2:03:24
			Bottom	46 26.714	151 04.612	13-Aug-07	2:31:35
			End	46 26.230	151 05.089	13-Aug-07	3:11:38
BW1	BW1	1710	Start	46 23.544	151 08.023	13-Aug-07	5:14:11
			Bottom	46 23.164	151 08.394	13-Aug-07	5:53:46
			End	46 23.112	151 08.140	13-Aug-07	6:42:57

Station	Cast Name	Depth (Bottom Pressure + Altitude)		Latitude (N)	Longitude (E)	Date (UTC)	Time (UTC)
BF1	BF1-1	1698	Start	46 26.597	151 07.796	13-Aug-07	9:06:05
			Bottom	46 27.134	151 08.199	13-Aug-07	9:24:04
			End	46 28.037	151 09.080	13-Aug-07	10:29:21
BF1	BF1-2	1680	Start	46 26.396	151 07.843	13-Aug-07	13:07:48
			Bottom	46 26.419	151 08.830	13-Aug-07	13:50:30
			End	46 26.820	151 09.634	13-Aug-07	14:38:16
BF1	BF1-3	1535	Start	46 26.357	151 07.661	13-Aug-07	17:02:40
			Bottom	46 25.883	151 07.551	13-Aug-07	17:36:41
			End	46 25.447	151 07.308	13-Aug-07	18:20:59
BF1	BF1-4	1515	Start	46 26.134	151 07.503	13-Aug-07	22:35:28
			Bottom	46 25.335	151 07.591	13-Aug-07	23:03:28
			End	46 24.253	151 07.928	13-Aug-07	23:41:50
BF1	BF1-5	1507	Start	46 26.422	151 07.608	14-Aug-07	2:05:46
			Bottom	46 25.646	151 07.637	14-Aug-07	2:35:38
			End	46 24.239	151 07.500	14-Aug-07	3:13:21
BF1	BF1-6	1504	Start	46 26.021	151 07.627	14-Aug-07	5:38:00
			Bottom	46 25.146	151 07.521	14-Aug-07	6:14:40
			End	46 24.895	151 07.281	14-Aug-07	6:56:24
BF1	BF1-7	~300 (Shallow Cast)	Start	46 26.648	151 06.836	14-Aug-07	9:36:32
			Bottom	46 26.712	151 06.763	14-Aug-07	9:44:28
			End	46 26.847	151 06.596	14-Aug-07	9:57:11
BW2	BW2	2014	Start	46 30.593	151 11.520	14-Aug-07	12:58:20
			Bottom	46 30.090	151 11.837	14-Aug-07	13:48:14
			End	46 29.579	151 12.296	14-Aug-07	14:50:51
BD2	BD2	1075	Start	46 27.345	151 15.817	14-Aug-07	17:02:55
			Bottom	46 27.422	151 15.745	14-Aug-07	17:24:47
			End	46 27.249	151 15.533	14-Aug-07	17:52:16
BC1	BC1	1475	Start	46 33.740	151 30.159	14-Aug-07	20:22:07
			Bottom	46 33.483	151 29.299	14-Aug-07	20:49:24
			End	46 33.047	151 29.865	14-Aug-07	21:26:32
BB3	BB3-1	2130	Start	46 34.715	151 32.277	15-Aug-07	1:26:19
			Bottom	46 34.283	151 32.544	15-Aug-07	2:07:04
			End	46 33.558	151 33.367	15-Aug-07	3:04:15
BB3	BB3-2	2151	Start	46 34.867	151 32.222	15-Aug-07	5:23:48
			Bottom	46 34.369	151 31.944	15-Aug-07	6:07:43
			End	46 34.027	151 31.529	15-Aug-07	6:58:08
BB3	BB3-3	2259	Start	46 34.869	151 32.319	15-Aug-07	9:01:53
			Bottom	46 34.764	151 32.180	15-Aug-07	9:45:25
			End	46 34.740 ?	151 32.225 ?	15-Aug-07	10:37 ?
BB3	BB3-4	2256	Start	46 34.845	151 32.255	15-Aug-07	13:03:02
			Bottom	46 34.567	151 32.189	15-Aug-07	13:47:50
			End	46 34.311	151 32.083	15-Aug-07	14:33:41
BB3	BB3-5	2205	Start	46 34.612	151 32.244	15-Aug-07	17:00:03
			Bottom	46 34.101	151 32.285	15-Aug-07	17:37:26
			End	46 33.626	151 32.563	15-Aug-07	18:31:22
BB3	BB3-6	2087	Start	46 34.635	151 31.904	15-Aug-07	21:02:59
			Bottom	46 34.176	151 31.835	15-Aug-07	21:39:19
			End	46 33.718	151 31.997	15-Aug-07	22:31:24

Station	Cast Name	Depth (Bottom Pressure + Altitude)		Latitude (N)	Longitude (E)	Date (UTC)	Time (UTC)
BB3	BB3-7	~300 (Shallow Cast)	Start	46 34.568	151 31.438	16-Aug-07	1:32:52
			Bottom	46.34.479	151 31.418	16-Aug-07	1:41:15
			End	46.34.306	151 31.431	16-Aug-07	1:55:44
BB2	BB2	2321	Start	46 36.573	151 35.150	16-Aug-07	5:12:48
			Bottom	46 35.682	151 35.494	16-Aug-07	5:54:50
			End	46 34.706	151 35.906	16-Aug-07	6:47:21
BA2	BA2	1719	Start	46 41.076	151 41.294	16-Aug-07	10:21:18
			Bottom	46 40.596	151 41.224	16-Aug-07	10:53:59
			End	46 40.169	151 40.982	16-Aug-07	11:41:23
BA1	BA1-1	722	Start	46 43.528	151 43.242	16-Aug-07	14:17:53
			Bottom	46 43.698	151 43.142	16-Aug-07	14:34:50
			End	46 43.924	151 43.138	16-Aug-07	14:53:52
BA1	BA1-2	873	Start	46 43.445	151 43.310	16-Aug-07	18:27:25
			Bottom	46 43.295	151 43.252	16-Aug-07	18:45:57
			End	46 43.155	151 43.467	16-Aug-07	19:09:10
BA1	BA1-3	1118	Start	46 43.296	151 43.760	16-Aug-07	23:05:33
			Bottom	46 42.532	151 44.212	16-Aug-07	23:34:44
			End	46 41.812	151 45.038	17-Aug-07	0:14:49
BA1	BA1-4	1105	Start	46 43.423	151 43.560	17-Aug-07	3:30:31
			Bottom	46 42.539	151 44.487	17-Aug-07	4:01:56
			End	46 41.809	151 45.789	17-Aug-07	4:37:49
BA1	BA1-5	1048	Start	46 43.185	151 43.511	17-Aug-07	8:16:56
			Bottom	46 42.706	151 43.959	17-Aug-07	8:40:24
			End	46 42.301	151 44.691	17-Aug-07	9:11:04
BA1	BA1-6	1008	Start	46 43.270	151 43.407	17-Aug-07	12:37:54
			Bottom	46 43.025	151 43.610	17-Aug-07	13:00:18
			End	46 42.683	151 44.040	17-Aug-07	13:26:21
BM6	BM6	862	Start	47 23.307	152 45.357	17-Aug-07	23:38:15
			Bottom	47 22.745	152 45.272	17-Aug-07	23:58:43
			End	47 22.206	152 45.307	18-Aug-07	0:25:04
BM5	BM5	713	Start	47 26.759	152 43.224	18-Aug-07	2:23:33
			Bottom	47 26.402	152 43.314	18-Aug-07	2:38:52
			End	47.25.985	152 43.443	18-Aug-07	3:00:57
BM4	BM4	1262	Start	47 29.509	152 40.432	18-Aug-07	4:42:37
			Bottom	47 29.303	152 40.677	18-Aug-07	5:08:35
			End	47 29.166	152 40.952	18-Aug-07	5:37:33
KS2	KS2	600	Start	47 52.163	153 07.659	18-Aug-07	10:10:49
			Bottom	47 52.234	153 07.661	18-Aug-07	10:24:24
			End	47 52.377	153 07.706	18-Aug-07	10:44:05
KS3	KS3	1278	Start	47 50.769	153 13.883	18-Aug-07	12:04:11
			Bottom	47 50.547	153 14.193	18-Aug-07	12:31:06
			End	47 50.289	153 14.559	18-Aug-07	13:05:46
KC4	KC4-1	899	Start	48 11.555	153 24.293	18-Aug-07	17:54:51
			Bottom	48 10.872	153 25.099	18-Aug-07	18:17:18
			End	48 10.238	153 26.170	18-Aug-07	18:44:00
KC3	KC3-1	1677	Start	48 13.924	153 27.526	18-Aug-07	20:40:12
			Bottom	48 13.393	153 28.453	18-Aug-07	21:14:45
			End	48 13.085	153 29.602	18-Aug-07	22:00:37

Station	Cast Name	Depth (Bottom Pressure + Altitude)		Latitude (N)	Longitude (E)	Date (UTC)	Time (UTC)
KC4	KC4-2	913	Start	48 11.788	153 24.575	18-Aug-07	22:51:02
			Bottom	48 11.492	153 25.274	18-Aug-07	23:11:21
			End	48 11.430	153 26.073	18-Aug-07	23:38:38
KC3	KC3-2	1692	Start	48 14.283	153 27.467	19-Aug-07	1:06:23
			Bottom	48 14.090	153 28.934	19-Aug-07	1:43:28
			End	48 14.096	153 31.048	19-Aug-07	2:35:37
KC4	KC4-3	1070	Start	48 11.622	153 24.734	19-Aug-07	3:41:22
			Bottom	48 11.071	153 26.085	19-Aug-07	4:08:12
			End	48 10.495	153 27.811	19-Aug-07	4:45:15
KC3	KC3-3	1654	Start	48 13.878	153 27.387	19-Aug-07	7:16:33
			Bottom	48 13.335	153 28.395	19-Aug-07	7:51:12
			End	48 13.091	153 29.612	19-Aug-07	8:35:41
KC4	KC4-4	960	Start	48 11.577	153 24.631	19-Aug-07	11:20:04
			Bottom	48 11.182	153 25.315	19-Aug-07	11:42:43
			End	48 10.826	153 26.214	19-Aug-07	12:12:13
KC3	KC3-4	1637	Start	48 14.147	153 27.198	19-Aug-07	13:59:33
			Bottom	48 13.589	153 28.080	19-Aug-07	14:33:33
			End	48 13.274	153 29.263	19-Aug-07	15:12:43
KC4	KC4-5	984	Start	48 11.467	153 24.774	19-Aug-07	16:15:52
			Bottom	48 10.753	153 25.665	19-Aug-07	16:39:34
			End	48 10.125	153 26.778	19-Aug-07	17:08:28
KC3	KC3-5	1632	Start	48 13.675	153 27.414	19-Aug-07	19:09:38
			Bottom	48 13.196	153 27.882	19-Aug-07	19:40:13
			End	48 12.805	153 28.167	19-Aug-07	20:19:20
KC1	KC1-1	1075	Start	48 19.492	153 38.137	19-Aug-07	21:46:32
			Bottom	48 19.512	153 38.188	19-Aug-07	22:06:51
			End	48 19.524	153 38.317	19-Aug-07	22:35:44
KC2	KC2-1	1903	Start	48 16.473	153 33.005	20-Aug-07	0:12:40
			Bottom	48 16.249	153 33.020	20-Aug-07	0:46:47
			End	48 16.262	153 33.167	20-Aug-07	1:30:02
KC1	KC1-2	1131	Start	48 19.402	153 38.058	20-Aug-07	2:22:47
			Bottom	48 19.337	153 38.000	20-Aug-07	2:44:45
			End	48 19.458	153 38.078	20-Aug-07	3:10:18
KC2	KC2-2	1903	Start	48 16.429	153 33.026	20-Aug-07	4:57:44
			Bottom	48 16.558	153 32.797	20-Aug-07	5:29:05
			End	48 16.806	153 32.399	20-Aug-07	6:10:41
KC1	KC1-3	1129	Start	48 19.223	153 38.268	20-Aug-07	7:05:49
			Bottom	48 19.247	153 38.131	20-Aug-07	7:26:55
			End	48 19.383	153 38.195	20-Aug-07	7:54:29
KC2	KC2-3	1908	Start	48 16.470	153 33.205	20-Aug-07	9:25:11
			Bottom	48 16.686	153 33.335	20-Aug-07	9:58:37
			End	48 17.099	153 33.416	20-Aug-07	10:38:45
KC1	KC1-4	1054	Start	48 19.442	153 38.265	20-Aug-07	12:54:43
			Bottom	48 19.413	153 38.426	20-Aug-07	13:16:26
			End	48 19.433	153 38.578	20-Aug-07	13:43:20
KC2	KC2-4	1910	Start	48 16.469	153 33.063	20-Aug-07	15:31:37
			Bottom	48 16.387	153 33.461	20-Aug-07	16:09:36
			End	48 16.244	153 33.762	20-Aug-07	16:51:40

Station	Cast Name	Depth (Bottom Pressure + Altitude)		Latitude (N)	Longitude (E)	Date (UTC)	Time (UTC)
KC1	KC1-5	1041	Start	48 19.257	153 38.710	20-Aug-07	17:47:46
			Bottom	48 19.206	153 38.167	20-Aug-07	18:07:42
			End	48 19.240	153 38.963	20-Aug-07	18:33:11
KC2	KC2-5	1916	Start	48 16.726	153 33.299	20-Aug-07	20:14:47
			Bottom	48 17.188	153 33.527	20-Aug-07	20:47:05
			End	48 17.584	153 33.500	20-Aug-07	21:32:32
KC2	KC2-5-2	~300 (Shallow Cast)	Start	48 16.803	153 33.168	21-Aug-07	0:19:58
			Bottom	48 17.060	153 33.238	21-Aug-07	0:29:15
			End	48 17.432	153 33.235	21-Aug-07	0:43:22
A1	A1-1	~2000 (Deep Cast)	Start	45 59.829	152 30.471	21-Aug-07	19:19:04
			Bottom	46 00.673	152 31.534	21-Aug-07	19:56:29
			End	46 01.963	152 33.093	21-Aug-07	20:52:20
A1	A1-2	~300 (Shallow Cast)	Start	45 59.915	152 30.846	21-Aug-07	23:24:57
			Bottom	46 00.023	152 31.263	21-Aug-07	23:33:34
			End	46 00.231	152 31.876	21-Aug-07	23:49:46
A1	A1-3	~1000 (Biological Cast)	Start	45 59.948	152 30.816	22-Aug-07	6:59:56
			Bottom	46 00.171	152 31.345	22-Aug-07	7:22:56
			End	46 00.440	152 31.769	22-Aug-07	7:46:35
A2	A2-1	~2000 (Deep Cast)	Start	46 34.910	151 32.398	22-Aug-07	17:02:58
			Bottom	46 34.878	151 33.321	22-Aug-07	17:40:16
			End	46 34.775	151 34.248	22-Aug-07	18:28:35
A2	A2-2	~300 (Shallow Cast)	Start	46 34.543	151 32.854	22-Aug-07	21:51:00
			Bottom	46 34.466	151 32.978	22-Aug-07	21:59:09
			End	46 34.375	151 33.178	22-Aug-07	22:12:23
A2	A2-3	~1000 (Biological Cast)	Start	46 34.772	151 33.129	23-Aug-07	1:32:31
			Bottom	46 34.830	151 33.363	23-Aug-07	1:51:15
			End	46 34.951	151 33.756	23-Aug-07	2:15:01
A4	A4-1	~2000 (Deep Cast)	Start	47 29.842	150 20.781	23-Aug-07	16:56:50
			Bottom	47 29.766	150 20.539	23-Aug-07	17:33:41
			End	47 29.765	150 20.375	23-Aug-07	18:21:38
A4	A4-2	~300 (Shallow Cast)	Start	47 29.779	150 20.718	23-Aug-07	21:52:16
			Bottom	47 29.733	150 20.802	23-Aug-07	22:01:27
			End	47 29.652	150 21.076	23-Aug-07	22:21:18
A4	A4-3	~1000 (Biological Cast)	Start	47 29.832	150 20.789	24-Aug-07	2:10:14
			Bottom	47 29.780	150 20.905	24-Aug-07	2:30:29
			End	47 29.779	150 21.047	24-Aug-07	2:54:19
B1	B1-1	1037 (Deep Cast)	Start	49 29.937	148 15.694	24-Aug-07	23:13:20
			Bottom	49 29.988	148 16.515	24-Aug-07	23:36:39
			End	49 30.118	148 17.398	25-Aug-07	0:00:54
B1	B1-2	~300 (Shallow Cast)	Start	49 29.808	148 15.527	25-Aug-07	5:14:14
			Bottom	49 29.845	148 15.798	25-Aug-07	5:23:29
			End	49 29.966	148 16.195	25-Aug-07	5:40:42
B4	B4-1	604 (Deep Cast)	Start	49 29.697	146 01.161	25-Aug-07	18:04:02
			Bottom	49 29.712	146 01.854	25-Aug-07	18:19:49
			End	49 29.786	146 02.521	25-Aug-07	18:42:27
B4	B4-2	~300 (Shallow Cast)	Start	49 29.659	146 00.374	25-Aug-07	20:34:45
			Bottom	49 29.595	146 00.516	25-Aug-07	20:42:47
			End	49.29.516	146 00.754	25-Aug-07	21:00:10

Station	Cast Name	Depth (Bottom Pressure + Altitude)		Latitude (N)	Longitude (E)	Date (UTC)	Time (UTC)
C5	C5-1	381 (Deep Cast)	Start	52 14.821	144 35.271	27-Aug-07	10:52:14
			Bottom	52 14.585	144 35.118	27-Aug-07	11:02:36
			End	52 14.184	144 34.962	27-Aug-07	11:19:30
C5	C5-2	~247 (Shallow Cast)	Start	52 14.784	144 35.211	27-Aug-07	15:53:13
			Bottom	52 14.594	144 35.158	27-Aug-07	16:00:35
			End	52 14.298	144 35.049	27-Aug-07	16:11:14
E1	E1	105	Start	54 26.085	142 53.670	29-Aug-07	-
			Bottom	54 26.064	142 53.726	29-Aug-07	0:24:14
			End	54 26.014	142 53.820	29-Aug-07	0:32:33
E2	E2	83	Start	54 29.283	143 00.427	29-Aug-07	2:48:00
			Bottom	54 29.249	143 00.629	29-Aug-07	2:52:53
			End	54 29.198	143 00.861	29-Aug-07	2:59:18
E3	E3	95	Start	54 30.271	143 03.931	29-Aug-07	5:00:46
			Bottom	54 30.197	143 04.187	29-Aug-07	5:06:13
			End	54 30.043	143 04.588	29-Aug-07	5:16:47
E4	E4	107	Start	54 37.191	143 17.801	29-Aug-07	7:42:57
			Bottom	54 37.144	143 17.933	29-Aug-07	7:49:37
			End	54 37.093	143 18.060	29-Aug-07	7:59:41
E5	E5	115	Start	54 42.319	143 28.834	29-Aug-07	10:23:03
			Bottom	54 42.373	143 29.149	29-Aug-07	10:30:11
			End	54 42.438	143 29.627	29-Aug-07	10:40:35
E6	E6	117	Start	54 45.586	143 35.699	30-Aug-07	1:02:02
			Bottom	54 45.515	143 36.034	30-Aug-07	1:08:41
			End	54 45.409	143 36.634	30-Aug-07	1:20:25
E7	E7	127	Start	54 49.481	143 44.426	30-Aug-07	3:45:33
			Bottom	54 49.297	143 44.552	30-Aug-07	3:51:59
			End	54 49.076	143 44.684	30-Aug-07	4:03:16
E8	E8-1	492 (Deep Cast)	Start	54 55.352	143 54.375	30-Aug-07	6:27:59
			Bottom	54 55.155	143 54.801	30-Aug-07	6:40:10
			End	54 54.943	143 55.591	30-Aug-07	7:00:20
E8	E8-2	~50 (Shallow Cast)	Start	54 55.267	143 54.374	30-Aug-07	10:32:49
			Bottom	54 55.204	143 54.466	30-Aug-07	10:37:32
			End	54 55.123	143 54.541	30-Aug-07	10:43:45
E9	E9-1	920 (Deep Cast)	Start	55 01.918	144 11.018	31-Aug-07	1:02:18
			Bottom	55 01.900	144 11.174	31-Aug-07	1:21:27
			End	55 01.912	144 11.389	31-Aug-07	1:46:17
E9	E9-2	~150 (Shallow Cast)	Start	55 01.678	144 11.382	31-Aug-07	5:55:58
			Bottom	55 01.530	144 11.592	31-Aug-07	6:02:05
			End	55 01.301	144 11.993	31-Aug-07	6:11:49
F1	F1-1	920 (Deep Cast)	Start	55 29.864	144 00.364	31-Aug-07	9:52:13
			Bottom	55 29.720	144 00.424	31-Aug-07	10:14:05
			End	55 29.561	144 00.653	31-Aug-07	10:42:03
F1	F1-2	~200 (Shallow Cast)	Start	55 29.878	144 00.242	31-Aug-07	14:13:55
			Bottom	55 29.830	144 00.325	31-Aug-07	14:21:27
			End	55 29.753	144 00.560	31-Aug-07	14:36:25
F7	F7 (* Note)	202	Start	55 30.058	141 00.202	1-Sep-07	5:01:19
			Bottom	55 30.207	141 00.014	1-Sep-07	5:08:36
			End	55 30.760	140 59.293	1-Sep-07	5:35:52

* There are two CTD files (F7 & F7-2) for F7 cast. The latter was created only for the close of one Niskin bottle.

Station	Cast Name	Depth (Bottom Pressure + Altitude)		Latitude (N)	Longitude (E)	Date (UTC)	Time (UTC)
G2	G2	134	Start	54 59.980	141 00.228	1-Sep-07	13:42:17
			Bottom	55 00.074	141 00.069	1-Sep-07	13:49:25
			End	55 00.220	140 59.802	1-Sep-07	14:00:37
G9	G9	22	Start	53 44.793	142 00.678	2-Sep-07	18:05:06
			Bottom	53 44.828	142 01.034	2-Sep-07	18:10:52
			End	53 44.846	142 01.395	2-Sep-07	18:18:15
G9	G9-2 (Biological Cast)	23	Start	53 45.024	142 00.746	2-Sep-07	23:59:38
			Bottom	53 45.030	142 00.990	3-Sep-07	0:04:48
			End	53 45.029	142 01.195	3-Sep-07	0:09:09
D7	D7	92	Start	53 59.743	143 20.326	3-Sep-07	23:41:04
			Bottom	53 59.684	143 20.392	3-Sep-07	23:47:13
			End	53 59.581	143 20.507	3-Sep-07	23:58:17
D6	D6	108	Start	54 00.123	143 35.623	4-Sep-07	8:27:27
			Bottom	54 00.306	143 35.759	4-Sep-07	8:33:21
			End	54 00.622	143 35.919	4-Sep-07	8:42:47
D5	D5	135	Start	53 59.670	143 50.243	5-Sep-07	1:00:03
			Bottom	53 59.506	143 50.099	5-Sep-07	1:06:55
			End	53 59.264	143 49.980	5-Sep-07	1:17:23
D4	D4-1 (Deep Cast)	414	Start	53 59.751	144 00.346	5-Sep-07	8:15:08
			Bottom	53 59.755	144 00.443	5-Sep-07	8:26:32
			End	53 59.750	144 00.658	5-Sep-07	8:45:16
D4	D4-2 (Shallow Cast)	~30	Start	53 59.675	144 00.189	5-Sep-07	12:36:48
			Bottom	53 59.563	144 00.218	5-Sep-07	12:40:44
			End	53 59.410	144 00.264	5-Sep-07	12:46:24
D1	D1-1 (Deep Cast)	1441	Start	53 59.727	144 50.340	6-Sep-07	21:15:43
			Bottom	53 58.968	144 50.278	6-Sep-07	21:48:15
			End	53 58.122	144 50.353	6-Sep-07	22:29:04
D1	D1-2 (Shallow Cast)	~250	Start	53 59.938	144 50.113	7-Sep-07	2:15:50
			Bottom	-	-	7-Sep-07	-
			End	53 59.683	144 50.329	7-Sep-07	2:38:45
D2	D2-1 (Deep Cast)	1183	Start	53 59.940	144 20.400	7-Sep-07	5:27:04
			Bottom	54 00.217	144 20.420	7-Sep-07	5:52:21
			End	54 00.587	144 20.415	7-Sep-07	6:26:41
D2	D2-2 (Shallow Cast)	~200	Start	53 59.854	144 20.624	7-Sep-07	10:41:19
			Bottom	53 59.869	144 20.935	7-Sep-07	10:49:16
			End	53 59.929	144 21.425	7-Sep-07	11:04:18
D3	D3-1 (Deep Cast)	1000	Start	53 59.795	144 10.645	8-Sep-07	0:09:50
			Bottom	53 59.732	144 11.312	8-Sep-07	0:32:20
			End	53 59.645	144 12.148	8-Sep-07	1:03:33
D3	D3-2 (Shallow Cast)	~150	Start	53 59.825	144 09.988	8-Sep-07	4:59:20
			Bottom	53 59.696	144 09.852	8-Sep-07	5:05:55
			End	53 59.552	144 09.764	8-Sep-07	5:16:32

Table C-2. In-Situ Water Filterings Logs

Date	Station	Cast & LVF system ID	Sample ID (filter #)	Depth	approx Temp.	Deploy	Recover	Total pumping Volume (L)
23 Aug.	A2	A2-1 J-1	69	300-250	2.1	14:10	16:30	519
23 Aug.	A2	A2-2 Y-1	67	210-260	2.5	16:45	18:15	165.5
24 Aug.	A4	A4-1 Y-1	66	280-310	2.0	5:45	8:10	538.5
24 Aug.	A4	A4-2 J-1	68	230-280	1.9	9:30	12:10	584
25 Aug.	B1	B1-1 J-1	63	270-305	1.3	11:45	14:15	309
	B1	B1-1 Y-1	62	340-350	1.3	11:45	14:15	466
27-28 Aug	C5	C5-1 J-1	64	150-187	0.6	22:45	1:20	316.9
	C5	C5-1 Y-1	61	230-280	0.6	22:45	1:20	454.5
28 Aug.	C5	C5-2 J-2	51	165-175	0.1	3:30	5:20	172.6
		C5-2 Y-2	52	260-290	0.3	3:30	5:20	148
30 Aug.	E8	E8-1 Y-1	53	140-200	0.9	18:30	20:50	471.3
30 Aug.	E7	E7-1 J-1	54	90-100	-1.4	23:10	1:30	378.5
	E7	E7-2 Y-1	55	80-100	-1.6	2:30	5:00	53
	E7	E7-3 J-1	56	110-115	-1.5	5:50	8:00	no sample
31 Aug.	E9	E9-1 J-1	58	165-250	0.5-1.3	13:20	16:00	185
	E9	E9-1 Y-1	57	250-340	1.2	13:20	16:00	344
31 Aug.	F1	F1-1 Y-1	60	200-250	0.7	22:00	0:30	451.5
1 Sep.	F7	F7-1 J-1	59	100-107	-0.7	16:50	19:30	445
2 Sep.	G2	G2-1 J-1	42	92-84	-1.6	2:20	4:40	169.5
	G2	G2-2 Y-1	41	120	-1.6	5:45	8:00	29.5
	G2	G2-3 J-2	43	117-122	-1.6	8:45	10:30	252
3 Sep.	G9	G9-1 Y-1	44	15	10	5:45	7:30	229.6
	G9	G9-2 J-1	45	5	14	8:15	10:00	234.5
	G9	G9-3 Y-2	46	5	15	11:30	13:00	102.5
4 Sep.	D7	D7-1 J-1	47	65-70	0.3	11:30	13:30	209.5
	D7	D7-2 Y-1	48	60-75	0.2	14:20	16:30	161.4
4 Sep.	D6	D6-1 Y-1	50	70-74	-1.6	21:10	23:00	152
5 Sep.	D6	D6-2 J-1	49	85	-1.5	0:00	1:15	169.6
5 Sep.	D5	D5-1 J-1	32	115	-1.4	13:45	15:30	163.4
	D5	D5-2 Y-1	31	100	-1.2	16:05	17:45	125.6
5 Sep.	D4	D4-1 J-1	33	140-210	0.6	19:45	22:45	434
7 Sep.	D2	D2-1 J-1	35	240-280	1.1	18:20	21:00	148
	D2	D2-1 Y-1	34	250-290	1.1	18:20	21:00	409
8 Sep.	D3	D3-1 Y-1	36	330-340	-1	12:10	15:15	379
	D3	D3-1 J-1	37	320	-1	12:10	15:15	245.5

Table C-3. Shear Probe Operation Logs.

Station (file Name)	Date(Start)	Time(Start)	Latitude(Start)	Longitude(Start)	Max Depth (dBar)
UW2-T3	2007/8/11	5:10	45 30.072 N	149 11.724 E	115
UW2	2007/8/11	5:40	45 30.984 N	149 12.019 E	210
UE1-1	2007/8/11	18:39	46 09.270 N	150 48.503 E	840
UE2-1	2007/8/11	21:47	46 12.460 N	150 45.141 E	425
UE3-1	2007/8/11	23:54	46 16.914 N	150 45.786 E	135
UE2-2	2007/8/12	1:50	46 14.503 N	150 45.883 E	302
UE1-2	2007/8/12	3:27	46 10.158 N	150 48.953 E	848
UE2-3	2007/8/12	6:35	46 16.279 N	150 46.907 E	92
UE3-2	2007/8/12	8:03	46 20.103 N	150 47.198 E	90
UE2-4	2007/8/12	10:58	46 15.000 N	150 47.154 E	114
UE1-3	2007/8/12	12:34	46 09.913 N	150 49.207 E	1125
UE2-5	2007/8/12	15:36	46 11.966 N	150 46.679 E	505
UE3-3	2007/8/12	18:18	46 15.643 N	150 46.432 E	35
UE2-6	2007/8/12	20:43	46 12.242 N	150 46.223 E	560
BE2	2007/8/13	1:03	46 27.384 N	151 01.213 E	450
BF2	2007/8/13	3:29	46 26.301 N	151 05.233 E	936
BW1	2007/8/13	7:01	46 23.154 N	151 07.879 E	1075
BF1-1	2007/8/13	11:04	46 27.214 N	151 08.332 E	1150
BF1-2	2007/8/13	14:59	46 26.870 N	151 09.524 E	1050
BF1-3	2007/8/13	18:41	46 25.213 N	151 07.256 E	1440
BF1-4	2007/8/14	1:15	46 25.803 N	151 07.709 E	1105
BF1-5	2007/8/14	3:56	46 26.507 N	151 07.740 E	1001
BF1-6	2007/8/14	7:16	46 24.780 N	151 07.120 E	1010
BW2	2007/8/14	15:03	46 29.573 N	151 12.175 E	1092
BC1	2007/8/14	21:44	46 33.057 N	151 29.812 E	1243
BB3-1	2007/8/15	3:43	46 33.563 N	151 33.465 E	1332
BB3-2	2007/8/15	7:15	46 34.167 N	151 31.250 E	1340
BB3-3	2007/8/15	10:56	46 34.689 N	151 32.628 E	1260
BB3-4	2007/8/15	14:54	46 34.420 N	151 32.098 E	1062
BB3-5	2007/8/15	18:49	46 33.564 N	151 32.518 E	1088
BB3-6	2007/8/15	22:51	46 33.908 N	151 31.872 E	1240
BB2	2007/8/16	7:31	46 36.956 N	151 35.263 E	1420
BA2	2007/8/16	12:06	46 40.436 N	151 40.933 E	1532
BA1-1D1	2007/8/16	15:21	46 43.423 N	151 43.497 E	630
BA1-1S1	2007/8/16	16:51	46 43.269 N	151 43.437 E	490
BA1-3D	2007/8/17	0:53	46 43.397 N	151 43.548 E	730
BA1-3S1	2007/8/17	2:11	NO DATA	NO DATA	450
BA1-3S2	2007/8/17	2:37	46 43.512 N	151 43.801 E	500
BA1-4D1	2007/8/17	6:14	46 43.567 N	151 43.671 E	532
BA1-4D2	2007/8/17	7:16	46 43.556 N	151 43.600 E	518
BA1-5D1	2007/8/17	9:55	46 43.600 N	151 43.290 E	670

Station (file Name)	Date(Start)	Time(Start)	Latitude(Start)	Longitude(Start)	Max Depth (dBar)
BA1-6D	2007/8/17	14:42	46 43.752 N	151 43.316 E	510
BM6	2007/8/18	0:43	47 22.145 N	152 45.059 E	733
BM5	2007/8/18	3:17	47 25.843 N	152 43.279 E	455
BM4	2007/8/18	5:55	47 29.205 N	152 40.663 E	972
KS2	2007/8/18	10:56	47 52.312 N	153 07.743 E	162
KS3	2007/8/18	13:24	47 50.258 N	153 14.517 E	789
KC4-1	2007/8/18	19:09	48 10.692 N	153 25.922 E	761
KC4-2	2007/8/18	23:52	48 11.391 N	153 26.003 E	710
KC4-3	2007/8/19	5:20	48 11.216 N	153 26.348 E	818
KC3-3	2007/8/19	9:17	48 14.491 N	153 27.176 E	1521
KC4-4	2007/8/19	12:27	48 10.686 N	153 26.249 E	806
KC4-5	2007/8/19	17:41	48 10.949 N	153 25.438 E	783
KC1-1	2007/8/19	22:46	48 19.533 N	153 37.961 E	940
KC1-2	2007/8/20	3:17	48 19.432 N	153 38.099 E	854
KC2-3	2007/8/20	11:00	48 17.006 N	153 33.567 E	1106
KC1-4	2007/8/20	14:01	48 19.580 N	153 38.463 E	740
KC1-5	2007/8/20	18:46	48 19.398 N	153 38.736 E	716
KC2-5	2007/8/20	21:49	48 17.485 N	153 33.538 E	1183

Table C-4. Sediment Corings Logs ("Ashura" type of Multiple Corer)

Station		Sediment length (cm)		Distribution
Latitude (N)	B1 49°29.982'	sub-core 1	19.8	Mikami, Hokkaido Univ.
Longitude (E)	148°15.876'	sub-core 2	18.2	Ijiri, IFREE-Jamstec
Water Depth (m)	1035	sub-core 3	24.1	Harada, IORGC-Jamstec
Date	24-Aug-03			

Time (UTC)	Wire out (m)	Status
19:46	0	Start
20:00	1050	
20:05	1050	3 min. pause at the depth 1050m
20:07	1220	Hitting bottom
20:24	0	End

Station		Sediment length (cm)		Distribution
Latitude (N)	B4 49°29.730'	sub-core 1	28.6	Harada, IORGC-Jamstec
Longitude (E)	146°0.528'	sub-core 2	27.5	Ijiri, IFREE-Jamstec
Water Depth (m)	604	sub-core 3	37.5	Mikami, Hokkaido Univ.
Date	25-Aug-03			

Time (UTC)	Wire out (m)	Status
19:24	0	Start
19:30	300	
19:33	550	3 min. pause at the depth 550m
19:38	690	Hitting bottom
19:47	0	End

Station		Sediment length (cm)		Distribution
Latitude (N)	B6 49°29.919'	sub-core 1	24.4	Harada, IORGC-Jamstec
Longitude (E)	145°0.213'	sub-core 2	20.7	Ijiri, IFREE-Jamstec
Water Depth (m)	267	sub-core 3	20.9	Mikami, Hokkaido Univ.
Date	25-Aug-03			

Time (UTC)	Wire out (m)	Status
3:26	0	Start
3:28	200	3 min. pause at the depth 200m
3:32	275	Hitting bottom
3:36	0	End

Station		Sediment length (cm)		Distribution
Latitude (N)	C6 52°14.783'	sub-core 1	39.6	Mikami, Hokkaido Univ.
Longitude (E)	145°0.025'	sub-core 2	53	Ijiri, IFREE-Jamstec
Water Depth (m)	850	sub-core 3	38.5	Harada, IORGC-Jamstec
Date	27-Aug-03			

Time (UTC)	Wire out (m)	Status
20:44	0	Start
20:54	800	3 min. pause at the depth 800m
20:59	996	Hitting bottom
21:14	0	End

Station		Sediment length (cm)		Distribution
Latitude (N)	C9 52°14.923'	sub-core 1	36.7	Ijiri, IFREE-Jamstec
Longitude (E)	146°0.257'	sub-core 2	45.3	Harada, IORGC-Jamstec
Water Depth (m)	1431	sub-core 3	38.8	Mikami, Hokkaido Univ.
Date	27-Aug-03			

Time (UTC)	Wire out (m)	Status
3:09	0	Start
3:28	1350	3 min. pause at the depth 1350m
3:34	1606	Hitting bottom
3:54	0	End

Station	F7
Latitude (N)	55°30.165'
Longitude (E)	141°04.412'
Water Depth (m)	205
Date	31-Aug-03

Sediment length (cm)		Distribution
sub-core 1	27.7	Harada, IORGC-Jamstec
sub-core 2	14.8	Mikami, Hokkaido Univ.
sub-core 3	15.1	Ijiri, IFREE-Jamstec

Time (UTC)	Wire out (m)	Status
2:14	0	Start
2:16	100	3 min. pause at the depth 100m
2:21	223	Hitting bottom
2:25	0	End

Station	D1
Latitude (N)	53°59.788'
Longitude (E)	144°50.32'
Water Depth (m)	1400
Date	5-Sep-03

Sediment length (cm)		Distribution
sub-core 1	43.1	Harada, IORGC-Jamstec
sub-core 2	38.3	Ijiri, IFREE-Jamstec
sub-core 3	37.8	Mikami, Hokkaido Univ.

Time (UTC)	Wire out (m)	Status
23:04	0	Start
23:26	1400	3 min. pause at the depth 100m
23:32	1662	Hitting bottom
23:56	0	End

Station	D3
Latitude (N)	54°0.123'
Longitude (E)	144°11.265'
Water Depth (m)	900
Date	6-Sep-03

Sediment length (cm)		Distribution
sub-core 1	36.5	Mikami, Hokkaido Univ.
sub-core 2	44.5	Harada, IORGC-Jamstec
sub-core 3	40	Ijiri, IFREE-Jamstec

Time (UTC)	Wire out (m)	Status
21:01	0	Start
21:28	900	3 min. pause at the depth 100m
21:35	1239	Hitting bottom
21:52	0	End

Table C-5. Sediment Corings Logs (Piston Corer)

Station	B1	Pipe length (m)	8
Latitude (N)	49°29.982'	Main wire length (m)	15.7
Longitude (E)	148°15.876	Pilot wire length (m)	15.5
Water Depth (m)	1035	Section NO. of collected sediment	6
Date	24-Aug-03	Remarks	There are two pieces (1.5cm each) of sediment between section 2 and 3. Major lithology of sediment is siliceous ooze.

Time (UTC)	Wire out (m)	Status
21:33	0	Start
21:47	950	3 min. pouse at the depth 950m
21:53	1130	Hitting bottom
22:10	0	End

Station	B4	Pipe length (m)	8
Latitude (N)	49°29.967'	Main wire length (m)	15.7
Longitude (E)	146°0.380'	Pilot wire length (m)	15.5
Water Depth (m)	604	Section NO. of collected sediment	6
Date	25-Aug-03	Remarks	Major lithology of sediment is siliceous ooze.

Time (UTC)	Wire out (m)	Status
21:38	0	Start
21:45	550	3 min. pouse at the depth 550m
21:48	603	Hitting bottom
21:58	0	End

Station	B6	Pipe length (m)	8
Latitude (N)	49°29.918'	Main wire length (m)	15.7
Longitude (E)	145°0.596'	Pilot wire length (m)	15.5
Water Depth (m)	267	Section NO. of collected sediment	6
Date	25-Aug-03	Remarks	Major lithology of sediment is siliceous ooze.

Time (UTC)	Wire out (m)	Status
4:03	0	Start
4:06	170	3 min. pouse at the depth 170m
4:11	256?	Hitting bottom
4:17	0	End

Station	G6	Pipe length (m)	8
Latitude (N)	52°14.543'	Main wire length (m)	15.7
Longitude (E)	145°59.952'	Pilot wire length (m)	14.1
Water Depth (m)	850	Section NO. of collected sediment	7
Date	27-Aug-03	Remarks	There is a piece of sediment between Sec.3 and 4. Major lithology of sediment is siliceous ooze.

Time (UTC)	Wire out (m)	Status
21:59	0	Start
22:11	750	3 min. pouse at the depth 750m
22:18	850	Hitting bottom
22:32	0	End

Station	G9	Pipe length (m)	8
Latitude (N)	52°14.965'	Main wire length (m)	15.7
Longitude (E)	146°00.281'	Pilot wire length (m)	13
Water Depth (m)	1431	Section NO. of collected sediment	7
Date	27-Aug-03	Remarks	There is a piece of sediment between Sec.3 and 4. Major lithology of sediment is siliceous ooze.

Time (UTC)	Wire out (m)	Status
4:20	0	Start
4:53	1350	3 min. pouse at the depth 1350m
5:02	1516	Hitting bottom
5:28	0	End

Station	F7	Pipe length (m)	8
Latitude (N)	55°30.259'	Main wire length (m)	15.7
Longitude (E)	140°59.898'	Pilot wire length (m)	13
Water Depth (m)	205	Section NO. of collected sediment	5
Date	31-Aug-03	Remarks	There is a piece of sediment between Sec.1 and 2. Secs.2, 3, 5 are cut in 1m with stainless steel outer tube because outer tube was bent. Major lithology of upper sediment is siliceous ooze and lower is coarse sand.

Time (UTC)	Wire out (m)	Status
3:29	0	Start
3:32	105	3 min. pouse at the depth 105m
3:38	204	Hitting bottom
3:43	0	End

Station	D1	Pipe length (m)	8
Latitude (N)	53°59.558'	Main wire length (m)	15.7
Longitude (E)	144°50.098'	Pilot wire length (m)	13
Water Depth (m)	1400	Section NO. of collected sediment	7
Date	6-Sep-03	Remarks	There are pieces of sediment at 4 depths of 3m, 5m, 6m, and core bottom, respectively. Sec. 6 are composed of almost gas and sea water. Major lithology is siliceous ooze.

Time (UTC)	Wire out (m)	Status
0:37	0	Start
0:59	1350	3 min. pouse at the depth 1350m
1:06	1498	Hitting bottom
1:29	0	End

Station	D3	Pipe length (m)	8
Latitude (N)	53°59.854'	Main wire length (m)	15.7
Longitude (E)	144°10.515'	Pilot wire length (m)	13
Water Depth (m)	900	Section NO. of collected sediment	8
Date	6-Sep-03	Remarks	There are pieces of sediment at 3 depths of 4m, 6m, and 7m, respectively. Major lithology is siliceous ooze.

Time (UTC)	Wire out (m)	Status
22:20	0	Start
22:45	900	3 min. pouse at the depth 900m
22:53	1092	Hitting bottom
23:12	0	End

Table C-6. Surface Sediment Samplings Logs (Smith-Mcintyre Grab sampler)

Station	Cas t	Latitude (N)	Longitude (E)	Water Depth (m)	Date	Time (UTC)	Wire out (m)	Status	Remarks
B7	1	49°29.743'	144°33.7'	129	25-Aug-03	6:54	0	Start	Succeed
						6:57	100		
						6:58	150	Hitting bottom	
						7:02	0	End	
C1	1	52°14.923'	143°30.133'	30	26-Aug-03	3:17	0	Start	Succeed
						3:18	31	Hitting bottom	
						3:19	0	End	
C2	1	52°14.884'	143°45.598'	47	26-Aug-03	6:30	0	Start	Succeed
						6:32	60	Hitting bottom	
						6:34	0	End	
C3	1	52°14.936'	144°0.468'	80	26-Aug-03	7:44	0	Start	Succeed
						7:48	95	Hitting bottom	
						7:51	0	End	
C4	1	52°14.863'	144°18.319'	124	26-Aug-03	9:14	0	Start	Succeed
						9:20	134	Hitting bottom	
						9:23	0	End	
E1	1	54°25.968'	142°53.909'	113	28-Aug-03	0:38	0	Start	Succeed
						0:43	122	Hitting bottom	
						0:46	0	End	
E2	1	54°29.160'	143°0.999'	85	28-Aug-03	3:04	0	Start	Succeed
						3:06	94	Hitting bottom	
						3:09	0	End	
E3	1	54°29.972'	143°4.782'	92	28-Aug-03	5:21	0	Start	Fail
						5:24	102	Hitting bottom	
						5:27	0	End	
E3	2	54°29.854'	143°5.036'	103	28-Aug-03	5:31	0	Start	Succeed
						5:34	103	Hitting bottom	
						5:37	0	End	
E4	1	54°37.077'	143°18.099'	117	28-Aug-03	8:02	0	Start	Fail
						8:05	117	Hitting bottom	
						8:09	0	End	
E4	2	54°37.000'	143°18.285'	117	28-Aug-03	8:14	0	Start	Succeed
						8:18	116	Hitting bottom	
						8:21	0	End	
E5	1	54°42.462'	143°29.805'	120	28-Aug-03	10:44	0	Start	Succeed
						10:47	143	Hitting bottom	
						10:50	0	End	
E6	1	54°45.363'	143°35.397'	123	29-Aug-03	1:53	0	Start	Succeed
						1:57	158	Hitting bottom	
						2:00	0	End	
G1	1	55°14.904'	141°0.308'	167	31-Aug-03	10:42	0	Start	Succeed
						10:47	212	Hitting bottom	
						10:51	0	End	
G1	2	55°15.193'	141°00.289'	167	31-Aug-03	10:53	0	Start	Fail
						10:58	222	Hitting bottom	
						11:02	0	End	
G1	3	55°15.467'	141°00.269'	167	31-Aug-03	11:03	0	Start	Succeed
						11:07	243	Hitting bottom	
						11:12	0	End	
G1	4	55°15.777'	141°00.235'	167	31-Aug-03	11:15	0	Start	Succeed
						11:20	250	Hitting bottom	
						11:25	0	End	
G2	1	55°0.295'	140°59.701	134	1-Sep-03	14:04	0	Start	Succeed
						14:06	100		
						14:07	163	Hitting bottom	
G2	2	55°0.382'	140°59.404	139	1-Sep-03	14:14	0	Start	Succeed
						14:15	0	End	
						14:19	163	Hitting bottom	
						14:23	0	End	

Station	Cas t	Latitude (N)	Longitude (E)	Water Depth (m)	Date	Time (UTC)	Wire out (m)	Status	Remarks
G2	3	55°0.525'	140°59.098'	139	1-Sep-03	14:25	0	Start	Succeed
						14:26	0		
						14:30	167	Hitting bottom	
						16:34	0	End	
G3	1	54°45.011'	141°00.377'	111	1-Sep-03	1:59	0	Start	Succeed
						2:03	135	Hitting bottom	
						2:06	0	End	
G3	2	54°45.339'	141°00.428'	111	1-Sep-03	2:10	0	Start	Fail
						2:12	127	Hitting bottom	
						2:16	0	End	
G3	3	54°45.650'	141°00.507'	111	1-Sep-03	2:20	0	Start	Succeed
						2:23	150	Hitting bottom	
						2:27	0	End	
G3	4	54°45.980'	141°00.577'	111	1-Sep-03	2:31	0	Start	Fail
						2:33	145	Hitting bottom	
						2:37	0	End	
G3	5	54°46.188'	141°00.602'	111	1-Sep-03	2:37	0	Start	Succeed
						2:41	188	Hitting bottom	
						2:45	0	End	
G4	1	54°30.009'	141°0.638'	71	1-Sep-03	16:09	0	Start	Fail
						16:11	50		
						16:12	83	Hitting bottom	
						16:15	0	End	
G4	2	54°30.128'	141°0.72'	71	1-Sep-03	16:16	0	Start	Succeed
						16:18	50		
						16:19	82	Hitting bottom	
G4	3	54°30.241'	141°0.72'	71	1-Sep-03	16:21	0	End	
						16:24	0	Start	Succeed
						16:25	50		
						16:26	84	Hitting bottom	
G4	4	54°30.345'	141°0.793'	71	1-Sep-03	16:28	0	End	
						16:31	0	Start	Succeed
						16:32	50		
						16:33	76	Hitting bottom	
G5	1	54°14.874'	141°0.626'	45	1-Sep-03	16:35	0	End	
						18:39	0	Start	Succeed
						18:42	50	Hitting bottom	
						18:42	0	End	
G5	2	54°14.935'	141°0.834'	51	1-Sep-03	18:45	0	Start	Succeed
						18:46	51	Hitting bottom	
						18:48	0	End	
G5	3	54°15.015'	141°0.990'	50	1-Sep-03	18:51	0	Start	Succeed
						18:52	50	Hitting bottom	
						18:54	0	End	
G6	1	53°59.928'	141°0.467'	31	1-Sep-03	9:57	0	Start	Succeed
						9:59	32	Hitting bottom	
						10:00	0	End	
G6	2	53°59.997'	141°0.59'	31	1-Sep-03	10:02	0	Start	Succeed
						10:04	31	Hitting bottom	
						10:05	0	End	
G6	3	54°0.068'	141°0.713'	32	1-Sep-03	10:08	0	Start	Succeed
						10:10	32	Hitting bottom	
						10:11	0	End	
G7	1	53°44.909'	141°0.38'	24	1-Sep-03	12:08	0	Start	Succeed
						12:10	25	Hitting bottom	
						12:11	0	End	
G7	2	53°44.955'	141°0.551'	24	1-Sep-03	12:13	0	Start	Succeed
						12:15	25	Hitting bottom	
						12:16	0	End	
G7	3	53°45.013'	141°0.714'	24	1-Sep-03	12:19	0	Start	Succeed
						12:20	25	Hitting bottom	
						12:22	0	End	

Station	Cas t	Latitude (N)	Longitude (E)	Water Depth (m)	Date	Time (UTC)	Wire out (m)	Status	Remarks
G8	1	53°44.968'	141°30.575'	38	1-Sep-03	14:21	0	Start	Succeed
						14:23	43	Hitting bottom	
						14:25	0	End	
G8	2	53°45.053'	141°30.65'	38	1-Sep-03	14:27	0	Start	Succeed
						14:29	38	Hitting bottom	
						14:31	0	End	
G8	3	53°45.138'	141°30.77'	38	1-Sep-03	14:33	0	Start	Succeed
						14:35	39	Hitting bottom	
						14:37	0	End	
G9	1	53°44.888'	142°0.394'	24	2-Sep-03	3:03	0	Start	Succeed
						3:05	25	Hitting bottom	
						3:06	0	End	
G9	2	53°44.946'	142°0.657'	24	2-Sep-03	3:09	0	Start	Succeed
						3:11	25	Hitting bottom	
						3:12	0	End	
G9	3	53°45.024'	142°0.850'	24	2-Sep-03	3:15	0	Start	Succeed
						3:17	25	Hitting bottom	
						3:17	0	End	
G10	1	53°55.014'	142°0.408'	35	2-Sep-03	4:44	0	Start	Fail
						4:47	51	Hitting bottom	
						4:47	0	End	
G10	2	53°55.072'	142°0.666'	35	2-Sep-03	4:48	0	Start	Succeed
						4:50	54	Hitting bottom	
						4:51	0	End	
G10	3	53°55.217'	142°1.437'	35	2-Sep-03	5:00	0	Start	Succeed
						5:02	52	Hitting bottom	
						5:04	0	End	
G11	1	54°4.973'	142°0.84'	44	2-Sep-03	6:24	0	Start	Fail
						6:27	60	Hitting bottom	
						6:29	0	End	
G11	2	54°4.932'	142°1.18'	44	2-Sep-03	6:30	0	Start	Succeed
						6:32	50	Hitting bottom	
						6:33	0	End	
G11	3	54°4.909'	142°1.429'	44	2-Sep-03	6:35	0	Start	Succeed
						6:37	52	Hitting bottom	
						6:39	0	End	
G11	4	54°4.879'	142°1.701'	44	2-Sep-03	6:41	0	Start	Succeed
						6:43	50	Hitting bottom	
						6:45	0	End	
G12	1	54°15.078'	142°0.561'	52	2-Sep-03	8:21	0	Start	Succeed
						8:24	60	Hitting bottom	
						8:26	0	End	
G12	2	54°15.105'	142°0.723'	52	2-Sep-03	8:29	0	Start	Succeed
						8:31	56	Hitting bottom	
						8:33	0	End	
G12	3	54°15.118'	142°0.89'	52	2-Sep-03	8:36	0	Start	Succeed
						8:38	58	Hitting bottom	
						8:41	0	End	
G13	1	54°25.121'	142°0.398'	54	2-Sep-03	10:34	0	Start	Succeed
						10:36	60	Hitting bottom	
						10:38	0	End	
G13	2	54°25.26'	142°0.517'	54	2-Sep-03	10:40	0	Start	Succeed
						10:43	59	Hitting bottom	
						10:45	0	End	
G13	3	54°25.395'	142°0.675'	54	2-Sep-03	10:47	0	Start	Succeed
						10:50	60	Hitting bottom	
						10:52	0	End	
G14	1	54°40.13'	142°0.545'	62	2-Sep-03	12:58	0	Start	Succeed
						13:01	66	Hitting bottom	
						13:03	0	End	

Station	Cas t	Latitude (N)	Longitude (E)	Water Depth (m)	Date	Time (UTC)	Wire out (m)	Status	Remarks
G14	2	54°40.284'	142°0.825'	62	2-Sep-03	13:05	0	Start	Succeed
						13:08	66	Hitting bottom	
						13:10	0	End	
G14	3	54°40.426'	142°0.958'	62	2-Sep-03	13:12	0	Start	Succeed
						13:15	66	Hitting bottom	
						13:17	0	End	
G15	1	54°39.955'	142°20.387'	59	2-Sep-03	15:14	0	Start	Succeed
						15:16	60	Hitting bottom	
						15:18	0	End	
G15	2	54°40.025'	142°20.57'	59	2-Sep-03	15:20	0	Start	Fail
						15:23	60	Hitting bottom	
						15:25	0	End	
G15	3	54°40.033'	142°20.737'	59	2-Sep-03	15:28	0	Start	Succeed
						15:30	60	Hitting bottom	
						15:32	0	End	
G15	4	54°40.076'	142°20.873'	59	2-Sep-03	15:35	0	Start	Succeed
						15:38	60	Hitting bottom	
						15:40	0	End	
G16	1	54°40.076'	142°20.873'	75	3-Sep-03	17:27	0	Start	Succeed
						17:29	81	Hitting bottom	
						17:32	0	End	
G16	2	54°40.069'	142°40.738'	75	3-Sep-03	17:36	0	Start	Succeed
						17:38	80	Hitting bottom	
						17:41	0	End	
G16	3	54°40.159'	142°40.979'	76	3-Sep-03	17:45	0	Start	Fail
						17:47	80	Hitting bottom	
						17:49	0	End	
G16	4	54°40.223'	142°41.135'	76	3-Sep-03	17:50	0	Start	Succeed
						17:52	84	Hitting bottom	
						17:54	0	End	
G16	5	54°40.316'	142°41.35'	76	3-Sep-03	17:59	0	Start	Succeed
						18:00	83	Hitting bottom	
						18:03	0	End	
D7	1	54°0.013'	143°20.342'	97	3-Sep-03	6:16	0	Start	Succeed
						6:19	126	Hitting bottom	
						6:22	0	End	
D7	2	54°0.234'	143°20.367'	97	3-Sep-03	6:25	0	Start	Fail
						6:28	124	Hitting bottom	
						6:31	0	End	
D7	3	54°0.471'	143°20.464'	97	3-Sep-03	6:34	0	Start	Succeed
						6:36	126	Hitting bottom	
						6:39	0	End	
D7	4	54°0.714'	143°20.558'	97	3-Sep-03	6:42	0	Start	Fail
						6:45	133	Hitting bottom	
						6:48	0	End	
D7	5	54°0.875'	143°20.647'	97	3-Sep-03	6:48	0	Start	Fail
						6:50	135	Hitting bottom	
						6:53	0	End	
D7	6	54°1.148'	143°20.814'	97	3-Sep-03	6:58	0	Start	Succeed
						7:00	133	Hitting bottom	
						7:03	0	End	
D6	1	54°0.761'	143°35.983'	107	3-Sep-03	8:46	0	Start	Succeed
						8:50	147	Hitting bottom	
						8:53	0	End	
D6	2	54°1.132'	143°36.185'	107	3-Sep-03	8:56	0	Start	Succeed
						9:00	155	Hitting bottom	
						9:03	0	End	
D6	3	54°1.496'	143°36.461'	107	3-Sep-03	9:06	0	Start	Fail
						9:10	141	Hitting bottom	
						9:13	0	End	

Station	Cas t	Latitude (N)	Longitude (E)	Water Depth (m)	Date	Time (UTC)	Wire out (m)	Status	Remarks
D6	4	54°1.776'	143°36.602'	107	3-Sep-03	9:14	0	Start	Succeed
						9:17	151	Hitting bottom	
						9:20	0	End	
D5	1	53°59.198'	143°49.948'	140	4-Sep-03	1:20	0	Start	Succeed
						1:23	146	Hitting bottom	
						1:27	0	End	
D5	2	53°58.925'	143°49.809'	140	4-Sep-03	1:30	0	Start	Succeed
						1:34	150	Hitting bottom	
						1:38	0	End	
D5	3	53°58.652'	143°49.649'	140	4-Sep-03	1:41	0	Start	Succeed
						1:44	150	Hitting bottom	
						1:48	0	End	
D5	4	53°58.313'	143°49.529'	140	4-Sep-03	1:54	0	Start	Succeed
						1:58	150	Hitting bottom	
						2:01	0	End	

DATA EXCHANGE SCHEDULE

(Research Expedition in the Sea of Okhotsk, R/V "Professor Khromov", Aug-Sep 2007)

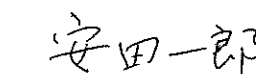
Data type	Data quantity	Remarks
Meteorological data	1 diskette (3.5")	Data have been already shared
CTD data	1 CD-ROM	
DO, Salinity, Chl.a		
Shear probe data		
Nutrients	---	Results will be shared after analysis in shore laboratories <u>within 6 months</u> after cruise
Other kinds of water chemistry (Including iron, dissolved inorganic & organic carbon, metal composition etc)	---	Results will be shared after analysis in shore laboratories <u>in about 2 years</u> after cruise
Sediment core & mollusk data	---	Results will be shared after analysis in shore laboratories <u>in about 3 years</u> after cruise
Aerosol chemistry	---	Results will be shared after analysis in shore laboratories <u>in about 2 years</u> after cruise

All the data originating from this expedition is the joint property of the participants. Data will be shared according to this schedule, and the results will be not given to any other party without mutual consent.


A. SCHERBININ


T. NAKATSUKA


J. NISHIOKA


I. YASUDA

15 September, 2007