



HOKKAIDO UNIVERSITY

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THE “OSHORU MARU” CRUISE 199
TO THE WEST OF HOKKAIDO

IN MARCH 2009

1. Cruise Itinerary

Cruise 199

Departure from Hakodate	Mar. 15	, 2009
Start hydrographic research (OS09012)	16	
Arrival at Okushiri	18	
Departure from Okushiri	19	
Arrival at Hakodate and change cadets	20	
Departure from Hakodate	20	
Finish hydrographic research (OS09018)	22	
Return to Hakodate	25	

Total coverage 454.4 miles

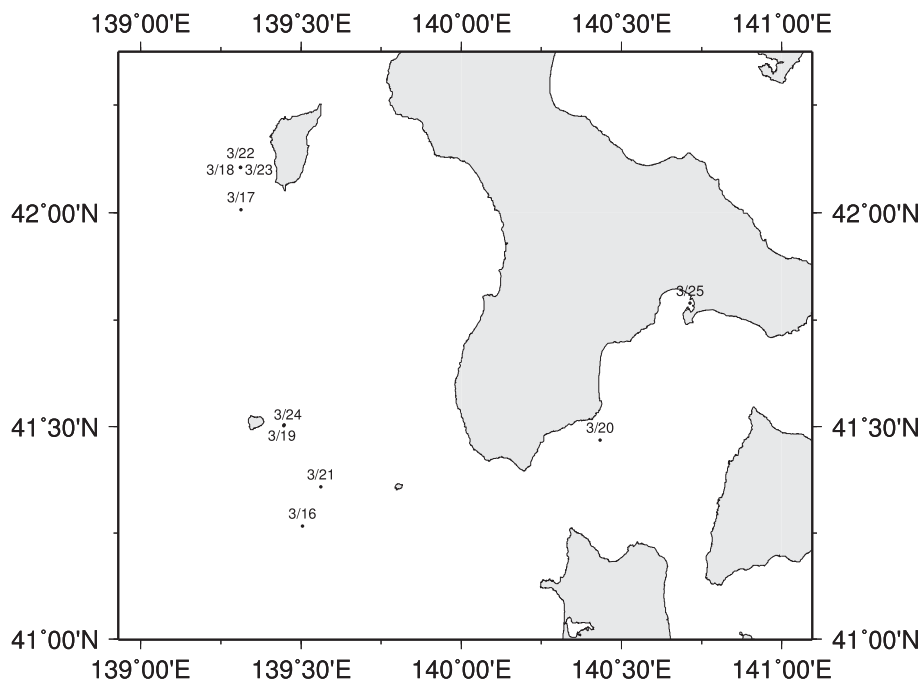


Figure 1: Noon position

2. Vessel Personnel

Captain:		Professor	Toshimi Meguro
Crew :	First Officer	Associate Professor	Shogo Takagi
	Second Officer	Instructor	Yoshihiko Kamei
	Jr. Second Officer	Instructor	Keiichiro Sakaoka
	Chief Engineer	Instructor	Jyunichi Kimura
	Third Officer	Technical Official	Naoki Hoshi
	And 25 men		

Cruise 199

Research Staff:	Associate Professor	(Laboratory of Fishing Production System)	
			Nariharu Yamashita
	Instructor	(Laboratory of Marine Environmental Science)	
			Hiroji Onishi
	Teaching Assistant		2 persons
	Under Graduate Students:		56 persons
	Total		91 persons

3. Items of Research

Hydrographic observations:	Fig. 2	Table 1,2
Mid water trawl observations:	Fig. 3	Table 3,4
Bottom long line research:	Fig. 4	Table 5

4. 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 “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

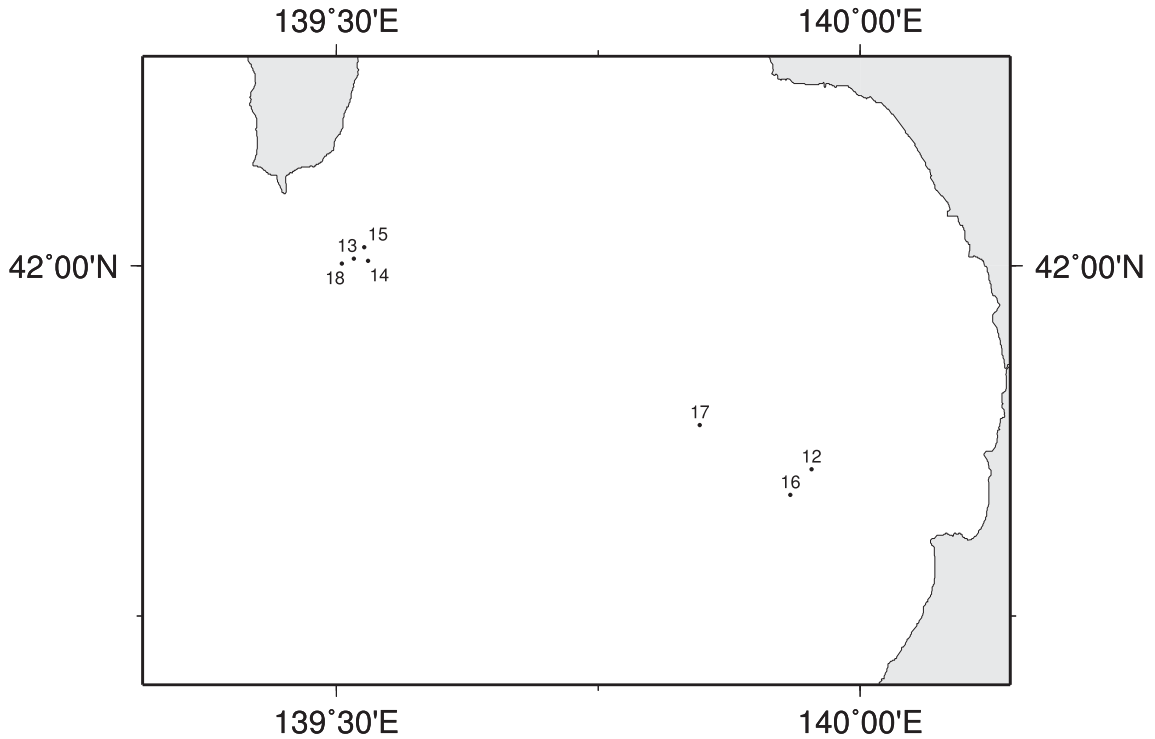


Figure 2: Oceanographic stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09012	41-51.3N	139-57.2E	3/16	1800	9	1195	-	-	6.4	o	9Plus-1588
OS09013	42-00.3N	139-31.0E	3/17	0800	9	122	4	12.5	6.2	bc	9Plus-1588
OS09014	42-00.2N	139-31.8E	3/17	1000	9	131	6	14.5	5.5	bc	9Plus-1588
OS09015	42-00.8N	139-31.6E	3/17	1400	9	125	7	11.3	7.1	bc	9Plus-1588
OS09016	41-50.2N	139-56.0E	3/21	1615	9	1275	5	7.8	8.8	bc	9Plus-1588
OS09017	41-53.2N	139-50.8E	3/21	1730	9	1333	5	9.4	8.6	c	9Plus-1588
OS09018	42-00.1N	139-30.3E	3/22	0945	9	111	6	7	8.2	o	9Plus-1588

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station		OS09012	
Longitude		41-51.3N	
Latitude		139-57.2E	
Depth(m)		1195	
Press.	Temp.	Sal.	SIG-T
5	6.110	34.065	26.800
10	6.060	34.076	26.815
20	5.981	34.087	26.834
30	5.982	34.088	26.835
40	5.785	34.085	26.857
50	5.816	34.085	26.853
75	5.300	34.096	26.923
100	4.951	34.088	26.958
125	4.580	34.084	26.996
150	3.447	34.084	27.112
200	2.534	34.063	27.178
250	1.909	34.064	27.229
300	1.257	34.064	27.276
400	0.962	34.067	27.297
500	0.712	34.066	27.313
600	0.549	34.065	27.321

Station		OS09013	
Longitude		42-00.3N	
Latitude		139-31.0E	
Depth(m)		122	
Press.	Temp.	Sal.	SIG-T
5	6.189	33.994	26.734
10	5.161	34.090	26.935
20	4.882	34.084	26.963
30	4.818	34.084	26.970
40	4.774	34.083	26.974
50	4.734	34.083	26.978
75	4.670	34.082	26.985
100	4.434	34.079	27.008

Station		OS09014	
Longitude		42-00.2N	
Latitude		139-31.8E	
Depth(m)		131	
Press.	Temp.	Sal.	SIG-T
5	5.880	34.105	26.860
10	5.153	34.087	26.934
20	4.915	34.087	26.961
30	4.832	34.082	26.967
40	4.773	34.084	26.975
50	4.732	34.083	26.979
75	4.639	34.083	26.989
100	4.445	34.080	27.008

Station		OS09015	
Longitude		42-00.8N	
Latitude		139-31.6E	
Depth(m)		125	
Press.	Temp.	Sal.	SIG-T
5	6.916	34.109	26.728
10	6.835	34.108	26.739
20	6.729	34.110	26.755
30	5.623	34.105	26.892
40	5.070	34.087	26.943
50	4.782	34.082	26.972
75	4.721	34.084	26.980
100	4.704	34.085	26.983

Station		OS09016	
Longitude		41-50.2N	
Latitude		139-56.0E	
Depth(m)		1275	
Press.	Temp.	Sal.	SIG-T
5	9.147	34.013	26.322
10	9.115	34.014	26.328
20	9.006	34.031	26.359
30	8.975	34.057	26.384
40	8.829	34.091	26.434
50	8.664	34.097	26.464
75	8.591	34.097	26.475
100	8.575	34.101	26.481
125	7.373	34.122	26.675
150	5.197	34.094	26.935
200	3.233	34.069	27.121
250	1.961	34.062	27.223
300	1.324	34.061	27.269
400	0.976	34.062	27.293
500	0.731	34.063	27.309
600	0.585	34.064	27.318

Station		OS09017	
Longitude		41-53.2N	
Latitude		139-50.8E	
Depth(m)		1333	
Press.	Temp.	Sal.	SIG-T
5	9.149	34.012	26.321
10	9.146	34.011	26.321
20	9.097	34.013	26.330
30	9.097	34.016	26.333
40	9.095	34.021	26.337
50	9.019	34.043	26.366
75	8.711	34.089	26.450
100	8.126	34.121	26.565
125	6.836	34.121	26.749
150	5.250	34.097	26.931
200	3.730	34.072	27.075
250	2.315	34.064	27.197
300	1.563	34.058	27.250
400	0.922	34.062	27.296
500	0.701	34.063	27.311
600	0.576	34.064	27.319

Station		OS09018	
Longitude		42-00.1N	
Latitude		139-30.3E	
Depth(m)		111	
Press.	Temp.	Sal.	SIG-T
5	8.442	34.069	26.476
10	8.424	34.070	26.480
20	8.355	34.072	26.492
30	7.644	34.090	26.611
40	6.654	34.098	26.755
50	5.903	34.080	26.838
75	5.297	34.090	26.919
100	4.269	34.080	27.026

5. Data on mid water trawl research

Two operations of the stern otter trawl were carried out. These operations were supervised by the captain, and were conducted by deck officers, crews, cadets and research staffs. The data of catch were recorded by the deck officers and reserch staff.

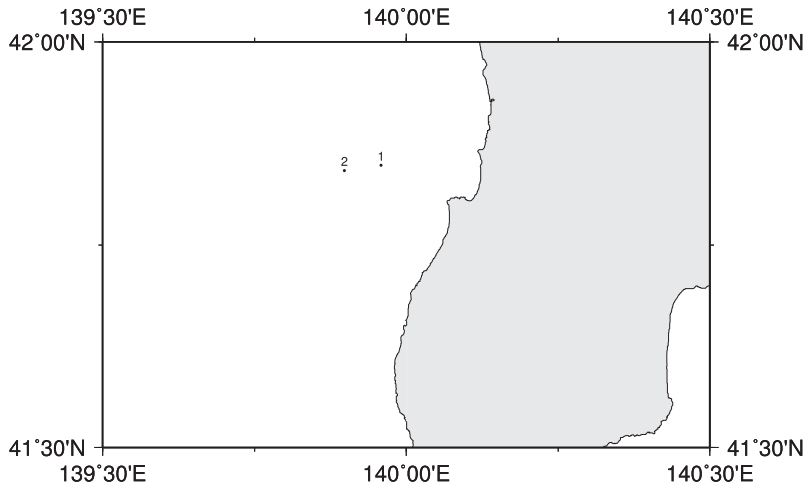


Figure 3: Locations of mid water trawl research

Table 3: Data on mid water trawl research during the "Oshoro Maru" Cruise#199

No. of research	Date and time of net tow (S.M.T.)		Position		Direction of tow	Speed of tow(K' t)	towing depth(m)	Wr	Wind
			Lat.(N)	Long.(E)					
OSMT0901	March 16	1520-1550	41-50.9	139-57.5	WNW	2.3	400	o	WSW-5
OSMT0902	March 21	1400-1430	41-50.5	139-53.9	285	3.2	400	bc	West-4

Wr.: Weather (o: 100% clouded, bc: 25-75% clouded)

Table 4: Data on catches by mid water trawl research

		OSMT 0901		OSMT 0902	
Japanese name	Scientific Name	Number	Weight (kg)	Number	Weight (kg)
Hoteiyo	<i>Aptocyclus ventricosus</i>	-	-	1	0.36
Suketoudara	<i>Theragra chalcogramma</i>	9	4.3	-	-

6. Data on bottom long line research

Three operations of the bottom long line were carried out. These operations were supervised by the captain, and deck officers, crew, research staff, and cadets were engaged in the work. The data of catch were recorded by the deck officers and research staff.



Figure 4: Locations of bottom long line research

Table 5: Data on bottom long line research

No. of research		OSBL0901	OSBL0902	OSBL0903
Date		17-Mar	17-Mar	22-Mar
position of	Lat. (N)	42-00.2	42-00.4	42-00.4
line set	Long. (E)	139-31.1	139-31.2	139-31.0
Time(S.M.T.)	line set	0625	1100	0642
Number of baskets		10	10	20
Surface temp. (°C)		7.0	8.0	8.4
Wether		bc	bc	o
Wind		WNW2	WNW4	ESE5
<i>Okhostk atka mackerel</i>		45	35	14
<i>Gymnocanthus herzensteini</i>		5	16	22
<i>Gadus macrocephalus</i>		1	1	
<i>Okamejei</i> sp.		1	5	6
<i>Hippoglossoides pinetorum</i>				1
<i>Pleuronectes mochigarei</i>			1	