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Title	3.THE "OSHORO MARU" CRUISE 188 TO THE OFF HIYAMA AREA IN MARCH 2008
Citation	海洋調査漁業試験要報, 52, 17-24
Issue Date	2009-07-28
Doc URL	https://hdl.handle.net/2115/76715
Type	dataset
File Information	Data.Rec.Oceanogr.Obs.Expl.Fish.52.17.pdf

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THE “OSHORO MARU” CRUISE 188
TO THE OFF HIYAMA AREA

IN MARCH 2008

1. Cruise Itinerary

Cruise 188			
Departure from Hakodate	Mar.	18	, 2008
Start Mid-water Trawl research (OSMT0801)		19	
Start hydrographic research (OS08031)		19	
Arrival at Okushiri		21	
Departure from Okushiri		22	
Arrival at Hakodate		23	
Departure from Hakodate		23	
Finish hydrographic research (OS08042)		24	
Arrival at Okushiri		26	
Departure from Okushiri		27	
Finish Mid-water Trawl research (OSMT0803)		27	
Return to Hakodate		28	
Total coverage 830.2 miles			

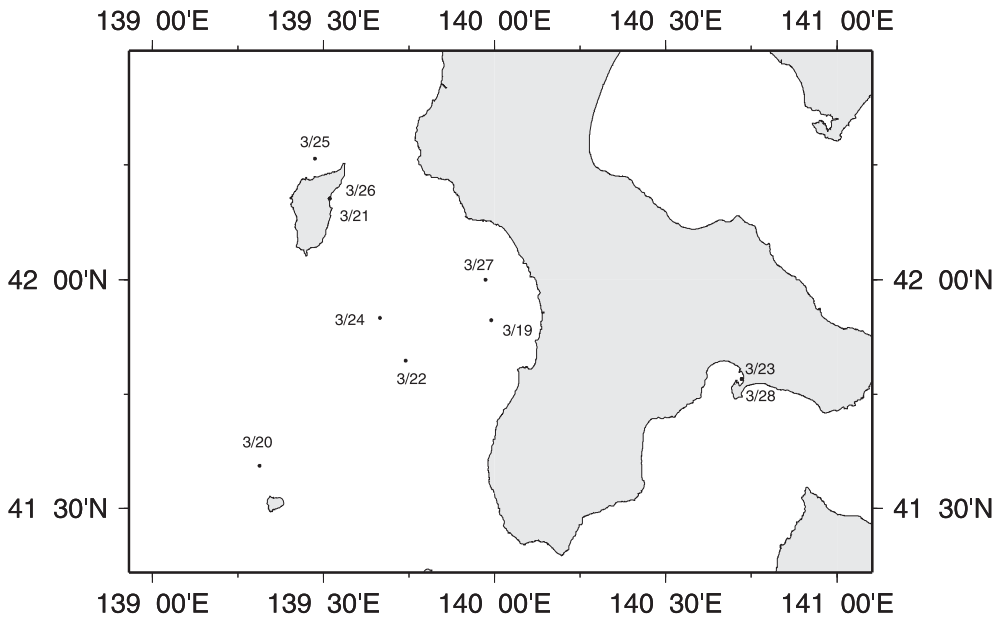

Figure 1: Noon position

2. Vessel Personnel

Captain:		Professor	Toshimi Meguro
Crew :	Chief Officer	Associated Professor	Yoshiyuki Kajiwara
	First Officer	Associated Professor	Shogo Takagi
	Second Officer	Instructor	Yoshihiko Kamei
	Jr. Second Officer	Instructor	Keiichiro Sakaoka
	Chief Engineer	Instructor	Junichi Kimura
	And 26 men		

Cruise 188

Research Staff:	Professor	(Laboratory of Marine Industrial Science and Technology) Yasuo Yoshimura
	Associate Professor	(Laboratory of Marine Industrial Science and Technology) Shunji Jyanuma
Teaching Assistant:	2 persons	
Under Graduate Students:	47 persons	
	Total 83 persons	

3. Items of Research

Hydrographic observations:	Fig. 2	Table 1, 2
Mid water trawl observations:	Fig. 3	Table 3

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”.

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS08031	42-00.2N	140-00.1E	3/19	1355	9	671	-	-	8	c	SBE-9plus
OS08032	41-15.0N	140-00.0E	3/20	0610	9	125	4	10	8	b	SBE-9plus
OS08033	41-22.5N	139-44.9E	3/20	0755	9	454	4	17.5	7.9	b	SBE-9plus
OS08034	41-30.1N	139-29.3E	3/20	0845	9	1671	3	13.8	7.9	b	SBE-9plus
OS08035	41-37.5N	139-15.1E	3/20	1310	9	1648	3	12.5	7.5	b	SBE-9plus
OS08036	41-44.7N	139-29.0E	3/20	1505	9	1366	3	13.4	6.5	b	SBE-9plus
OS08037	41-52.5N	139-44.9E	3/20	1745	9	1357	-	-	8	bc	SBE-9plus
OS08038	41-54.9N	139-54.8E	3/24	0900	9	1213	5	7.8	7.8	c	SBE-9plus
OS08039	41-55.0N	139-39.7E	3/24	1200	9	1163	4	12	6.7	c	SBE-9plus
OS08040	41-51.0N	139-24.8E	3/24	1500	9	1715	5	12	7.8	c	SBE-9plus
OS08041	41-55.0N	139-32.4E	3/24	1800	9	122	-	-	7.3	c	SBE-9plus
OS08042	41-55.0N	139-47.4E	3/24	2100	9	1324	-	-	7.1	c	SBE-9plus

(*):Fixed position by Global Positioning system

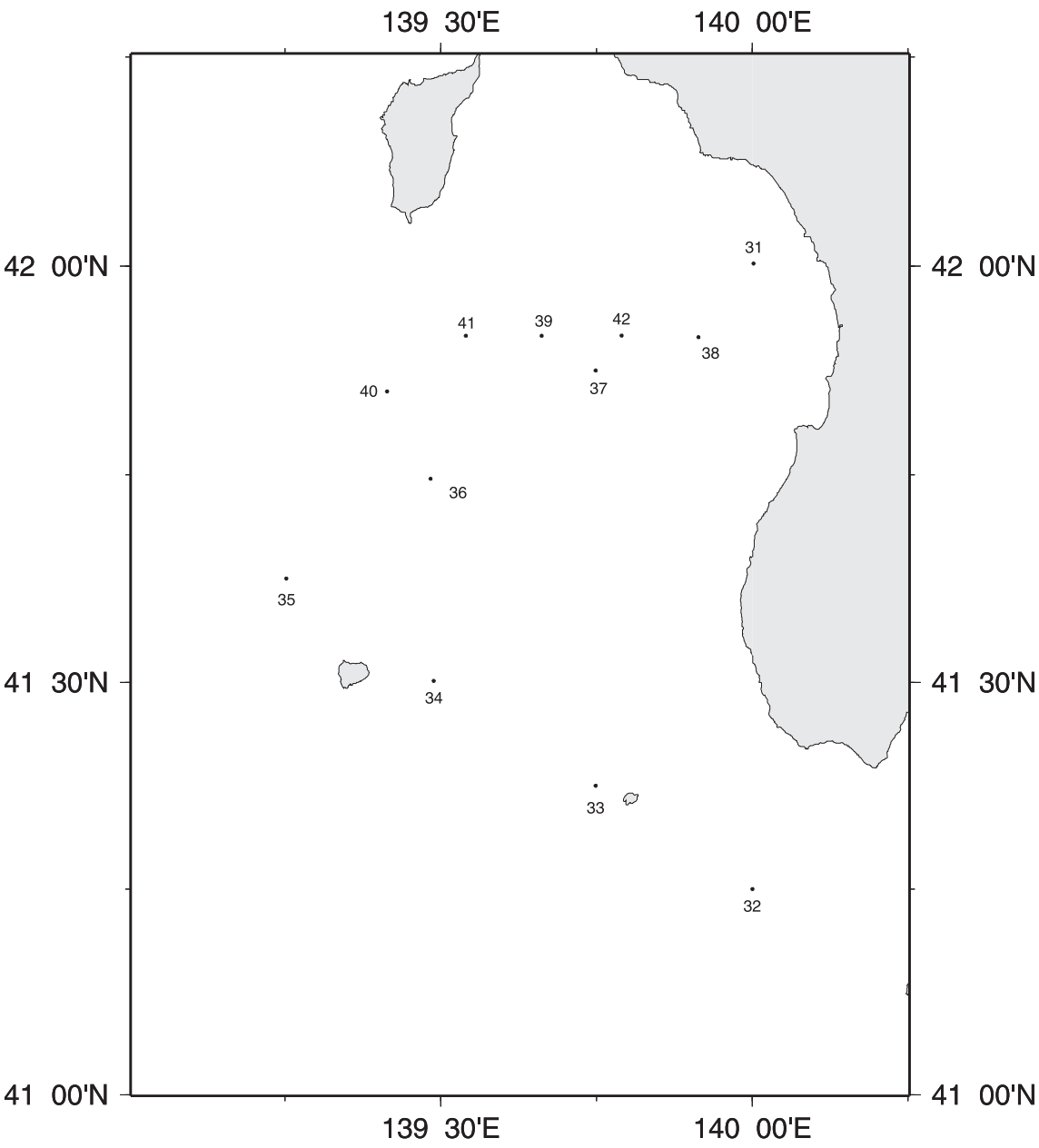

Figure 2: Oceanographic stations

Table 2: Oceanographic data

Station	OS08031
Longitude	42-00.2N
Latitude	140-00.1E
Depth(m)	671

Press.	Temp.	Sal.	SIG-T
5	7.533	34.075	26.616
10	7.531	34.075	26.616
20	7.332	34.072	26.642
30	7.235	34.078	26.660
40	7.071	34.085	26.688
50	6.491	34.087	26.769
75	5.655	34.084	26.872
100	5.479	34.085	26.894
125	5.082	34.087	26.942
150	4.068	34.076	27.044
200	2.533	34.060	27.175
250	1.747	34.055	27.234
300	1.079	34.054	27.279
400	0.681	34.055	27.306
500	0.560	34.056	27.313
600	0.485	34.056	27.318

Station	OS08032
Longitude	41-15.0N
Latitude	140-00.0E
Depth(m)	125

Press.	Temp.	Sal.	SIG-T
5	7.384	34.137	26.686
10	7.461	34.132	26.670
20	6.951	34.132	26.742
30	6.927	34.131	26.744
40	6.832	34.130	26.757
50	6.405	34.122	26.807
75	4.713	34.091	26.987
100	3.756	34.074	27.074

Station	OS08033
Longitude	41-22.5N
Latitude	139-44.9E
Depth(m)	454

Press.	Temp.	Sal.	SIG-T
5	8.001	34.137	26.596
10	7.986	34.137	26.598
20	7.445	34.126	26.668
30	6.943	34.125	26.737
40	6.650	34.116	26.770
50	6.403	34.109	26.797
75	5.050	34.094	26.952
100	4.177	34.082	27.038
125	3.669	34.073	27.082
150	2.788	34.061	27.155
200	1.839	34.053	27.225
250	1.630	34.052	27.240
300	1.507	34.051	27.248
400	0.774	34.056	27.300

Station	OS08034
Longitude	41-30.1N
Latitude	139-29.3E
Depth(m)	1671

Press.	Temp.	Sal.	SIG-T
5	7.883	34.149	26.623
10	7.880	34.149	26.624
20	7.877	34.149	26.624
30	7.849	34.148	26.628
40	7.135	34.120	26.708
50	5.719	34.093	26.871
75	5.143	34.098	26.943
100	4.291	34.094	27.035
125	3.141	34.057	27.119
150	2.168	34.045	27.193
200	1.327	34.048	27.258
250	1.085	34.052	27.278
300	0.961	34.054	27.287
400	0.728	34.056	27.304
500	0.578	34.057	27.313
600	0.501	34.058	27.318
700	0.423	34.057	27.322
800	0.361	34.056	27.325
900	0.324	34.056	27.327
1000	0.294	34.055	27.328
1200	0.246	34.055	27.330
1500	0.211	34.055	27.332

Station	OS08035
Longitude	41-37.5N
Latitude	139-15.1E
Depth(m)	1648

Press.	Temp.	Sal.	SIG-T
10	7.249	34.124	26.695
20	6.901	34.121	26.740
30	6.009	34.098	26.839
40	5.041	34.096	26.954
50	4.393	34.094	27.024
75	3.713	34.089	27.090
100	2.978	34.075	27.149
125	1.997	34.050	27.211
150	1.450	34.048	27.250
200	1.163	34.051	27.272
250	0.968	34.054	27.287
300	0.836	34.055	27.296
400	0.681	34.057	27.307
500	0.549	34.058	27.315
600	0.459	34.057	27.320
700	0.395	34.056	27.323
800	0.348	34.056	27.325
900	0.297	34.055	27.328
1000	0.267	34.055	27.329
1200	0.226	34.055	27.331
1500	0.209	34.055	27.332

Station	OS08036
Longitude	41-44.7N
Latitude	139-29.0E
Depth(m)	1366

Press.	Temp.	Sal.	SIG-T
5	6.533	34.112	26.782
10	6.468	34.111	26.790
20	6.343	34.110	26.806
30	6.356	34.110	26.804
40	6.101	34.107	26.834
50	6.064	34.105	26.837
75	4.574	34.097	27.007
100	3.906	34.094	27.075
125	3.525	34.086	27.106
150	3.193	34.076	27.130
200	1.527	34.049	27.245
250	1.166	34.052	27.272
300	0.954	34.054	27.288
400	0.720	34.055	27.303
500	0.605	34.057	27.312
600	0.513	34.057	27.317
700	0.431	34.056	27.321
800	0.384	34.056	27.323
900	0.338	34.056	27.326
1000	0.292	34.055	27.328
1200	0.236	34.055	27.331

Station	OS08037
Longitude	41-52.5N
Latitude	139-44.9E
Depth(m)	1357

Press.	Temp.	Sal.	SIG-T
5	7.988	34.136	26.598
10	7.983	34.137	26.599
20	7.684	34.121	26.630
30	6.988	34.110	26.720
40	6.141	34.113	26.834
50	5.598	34.106	26.896
75	5.025	34.105	26.963
100	3.720	34.077	27.080
125	2.929	34.056	27.138
150	2.383	34.048	27.178
200	1.694	34.049	27.233
250	1.270	34.051	27.265
300	1.064	34.053	27.280
400	0.747	34.055	27.301
500	0.638	34.056	27.309
600	0.517	34.057	27.316
700	0.414	34.056	27.322
800	0.348	34.056	27.325
900	0.299	34.055	27.328
1000	0.269	34.055	27.329
1200	0.229	34.055	27.331

Station	OS08038
Longitude	41-54.9N
Latitude	139-54.8E
Depth(m)	1213

Press.	Temp.	Sal.	SIG-T
5	7.868	34.120	26.603
10	7.870	34.120	26.602
20	7.840	34.119	26.606
30	7.823	34.119	26.608
40	7.604	34.120	26.641
50	6.024	34.108	26.845
75	4.598	34.093	27.001
100	3.939	34.074	27.056
125	3.007	34.056	27.131
150	2.218	34.053	27.196
200	1.427	34.049	27.252
250	1.132	34.051	27.274
300	0.968	34.053	27.286
400	0.726	34.054	27.302
500	0.568	34.055	27.312

Station	OS08039
Longitude	41-55.0N
Latitude	139-39.7E
Depth(m)	1163

Press.	Temp.	Sal.	SIG-T
5	6.667	34.113	26.765
10	6.670	34.113	26.765
20	6.660	34.113	26.766
30	6.625	34.112	26.770
40	6.579	34.112	26.776
50	6.318	34.108	26.807
75	4.987	34.091	26.956
100	3.946	34.078	27.059
125	3.288	34.065	27.112
150	2.327	34.048	27.183
200	1.445	34.049	27.251
250	1.226	34.051	27.268
300	1.010	34.054	27.284
400	0.722	34.055	27.303
500	0.560	34.056	27.313

Station	OS08040
Longitude	41-51.0N
Latitude	139-24.8E
Depth(m)	1715

Press.	Temp.	Sal.	SIG-T
5	7.865	34.144	26.622
10	7.864	34.143	26.621
20	7.865	34.143	26.621
30	6.871	34.117	26.741
40	5.085	34.095	26.948
50	4.647	34.095	26.997
75	4.070	34.096	27.060
100	3.621	34.089	27.100
125	3.027	34.079	27.147
150	2.251	34.058	27.197
200	1.578	34.047	27.240
250	1.169	34.051	27.271
300	0.973	34.053	27.286
400	0.683	34.054	27.305
500	0.560	34.055	27.312

Station	OS08041
Longitude	41-55.0N
Latitude	139-32.4E
Depth(m)	122

Press.	Temp.	Sal.	SIG-T
5	7.208	34.101	26.682
10	7.178	34.102	26.687
20	7.100	34.105	26.700
30	6.479	34.110	26.788
40	5.201	34.105	26.942
50	5.003	34.101	26.962
75	4.404	34.093	27.023
100	3.252	34.066	27.116

Station	OS08042
Longitude	41-55.0N
Latitude	139-47.4E
Depth(m)	1324

Press.	Temp.	Sal.	SIG-T
5	6.992	34.109	26.718
10	6.994	34.109	26.718
20	6.967	34.111	26.723
30	6.858	34.112	26.739
40	5.707	34.100	26.878
50	5.096	34.094	26.946
75	4.133	34.078	27.039
100	3.415	34.064	27.100
125	2.693	34.050	27.154
150	2.096	34.047	27.200
200	1.400	34.048	27.254
250	1.070	34.052	27.278
300	0.925	34.053	27.289
400	0.727	34.055	27.302
500	0.577	34.055	27.311

5. Data on mid-water Trawl Research

Three operations of the stern otter trawl 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.

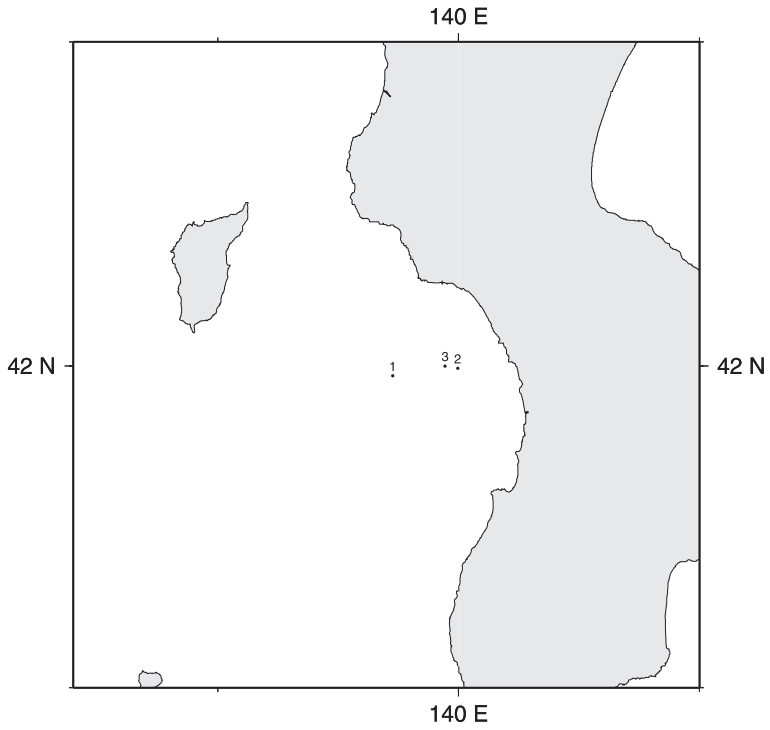

Figure 3: Location of mid-water trawl research

Table 3: Data on mid-watar trawl research

No. of research	Date and time of net tow (S.M.T.)		Position Lat.(N)	Position Long.(E)	Direction of tow	Wr	Wind	Catch number and weight of Teragra chalcogramma (Pallas) Number	Weight(kg)
OSMT0801	Mar.19	0830-1015	41-59.1	139-51.8	090	o	East-4	48	22.7
OSMT0802	19	1110-1210	41-59.8	139-59.9	180	o	ESE-3	20	9.7
OSMT0803	27	1242-1342	42-00.0	139-58.3	180	o	WSW-3	12	6.3

S.T. : Surface temperature
Wr : Weather