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Title	2. The "Oshoro maru" Cruise 240-2 to Hiyama off in April 2012
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2.

**THE "OSHO RO MARU" CRUISE 240-2
TO HIYAMA OFF**

IN APRIL 2012

1. Cruise Itinerary

Cruise 240-2

Departure from Hakodate	Apr.	25	2012
Mid water Trawl research (OSMT1201- OSMT1203)		26	
Hydrographic research (OS12010- OS12014)		27	
Return to Hakodate		28	
Total coverage 335.7 miles			

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 30 persons
Research Staff:	Professor	(Laboratory of Marine Bioresource and Environment Sensing)	Yasuzumi Fujimori
	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing)	Tohru Mukai
	Associate Professor	(Laboratory of Marine Industrial Science and Technology)	Hiroki Yasuma
	Teaching Assistant:		3 persons
	Under Graduate Students:		24 persons
			Total 29 persons

3. Items of Research

Hydrographic observations (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by Science officer, the deck officers, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus). Water samplings by Niskin bottles.

Fig. 1, Table 1, 2

Mid-water trawl observations

Three operations of the stern otter mid-water trawl were carried out. These operations were supervised by the captain, and were conducted by deck officers, crews, research staff and cadets.

Table 3, 4

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z	Depth	Col.	Tr.	SST	Wr.	Gear
OS12010	42-01.22N	140-00.99E	2012/4/26	21:02	9	699	-	-	10.1	bc	9Plus-0769
OS12011	42-01.26N	139-51.49E	2012/4/26	22:45	9	906	-	-	9.7	c	9Plus-0769
OS12012	41-59.75N	139-56.07E	2012/4/27	0:02	9	825	-	-	9.9	bc	9Plus-0769
OS12013	41-58.66N	140-00.85E	2012/4/27	1:14	9	852	-	-	10.1	c	9Plus-0769
OS12014	41-58.79N	139-49.95E	2012/4/27	2:55	9	1180	-	-	10.0	bc	9Plus-0769

Fig.1 Oceanographic Stations

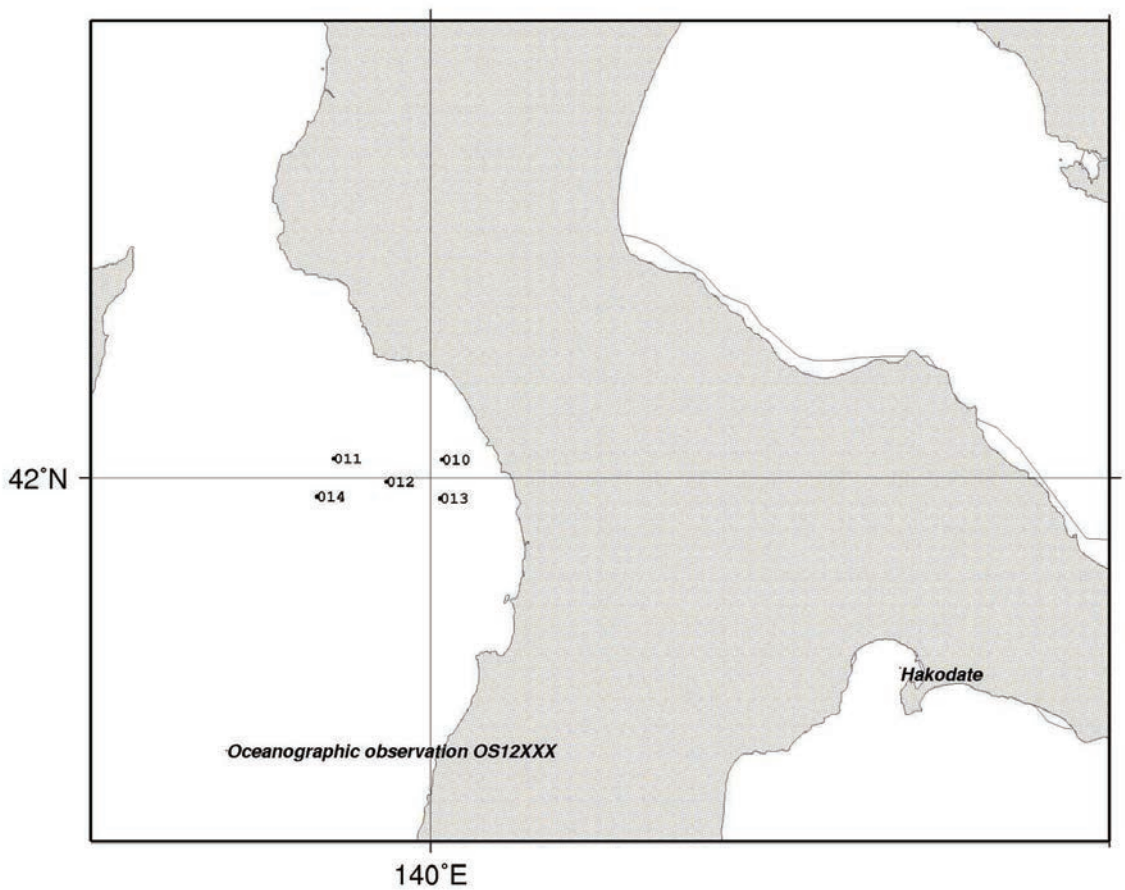


Table 2. Oceanographic data

Station OS12010					Station OS12011					Station OS12012				
Latitude 42-01.22N					Latitude 42-01.26N					Latitude 41-59.75N				
Longitude 140-00.99E					Longitude 139-51.49E					Longitude 139-56.07E				
Depth(m)					Depth(m)					Depth(m)				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	9.801	33.741	26.002		5	9.586	33.875	26.142		5	9.629	33.872	26.133	
10	9.802	33.741	26.002		10	9.564	33.879	26.149		10	9.629	33.872	26.133	
20	9.802	33.742	26.003		20	9.548	33.882	26.154		20	9.588	33.876	26.143	
30	9.772	33.752	26.016		30	9.539	33.885	26.158		30	9.578	33.879	26.147	
40	9.731	33.760	26.028		40	9.514	33.892	26.167		40	9.561	33.881	26.151	
50	8.885	33.959	26.321		50	9.355	33.918	26.214		50	9.437	33.903	26.189	
75	8.047	34.025	26.501		75	8.560	34.072	26.460		75	8.532	34.077	26.468	
100	7.183	34.097	26.682		100	7.747	34.090	26.596		100	7.631	34.079	26.605	
125	6.081	34.086	26.820		125	7.152	34.105	26.693		125	7.163	34.113	26.698	
150	5.267	34.077	26.913		150	6.785	34.104	26.742		150	6.095	34.089	26.821	
175	4.605	34.068	26.981		175	5.312	34.080	26.910		175	5.196	34.068	26.914	
200	4.032	34.062	27.037		200	4.976	34.033	26.911		200	3.731	34.052	27.059	
250	2.497	34.051	27.171		250	2.994	34.054	27.131		250	2.505	34.049	27.169	
300	1.996	34.054	27.214		300	2.221	34.050	27.193		300	1.348	34.049	27.258	
400	1.387	34.058	27.262		400	1.243	34.057	27.271		400	1.071	34.058	27.284	
500	0.815	34.062	27.303		500	0.817	34.062	27.303		500	0.739	34.062	27.308	

Station OS12013					Station OS12014				
Latitude 41-58.66N					Latitude 41-58.79N				
Longitude 140-00.85E					Longitude 139-49.95E				
Depth(m)					Depth(m)				
Press.	Temp.	Sal.	SIG-T		Press.	Temp.	Sal.	SIG-T	
5	9.851	33.817	26.053		5	9.776	33.854	26.094	
10	9.836	33.817	26.056		10	9.676	33.857	26.114	
20	9.794	33.820	26.065		20	9.633	33.867	26.128	
30	9.752	33.832	26.081		30	9.612	33.875	26.138	
40	9.490	33.894	26.173		40	9.435	33.900	26.187	
50	8.439	34.037	26.451		50	9.212	33.954	26.265	
75	7.938	34.082	26.562		75	8.673	34.095	26.461	
100	6.433	34.089	26.777		100	8.070	34.106	26.561	
125	6.077	34.083	26.818		125	7.608	34.113	26.634	
150	4.875	34.068	26.950		150	6.796	34.106	26.742	
175	3.394	34.053	27.093		175	5.567	34.086	26.884	
200	2.948	34.052	27.133		200	4.549	34.062	26.982	
250	1.946	34.048	27.213		250	2.300	34.048	27.185	
300	1.440	34.049	27.251		300	1.516	34.046	27.243	
400	0.923	34.060	27.295		400	1.072	34.058	27.283	
500	0.622	34.064	27.316		500	0.733	34.063	27.309	

Table 3: Data on mid trawl research during the Oshoromaru Cruise#240-2

No. of research	Date and time of net tow (S.M.T.*1)		Position		T.D.*2	D.S.*3	Speed of tow (K't)	net depth (m)	Wr.*4	Wind	S.T.*5 (°C)
			Lat. (N)	Long. (E)							
OST1201	Apr. 26	0855-1150	41-58.7	140-00.3	+9h	270	3.5	400-330	bc	ESE-7	13.2
OST1202	Apr. 26	1210-1454	41-58.9	139-51.1	+9h	080	3.0	336	bc	SE-6	10.1
OST1203	Apr. 26	1455-1710	41-58.4	140-00.8	+9h	000	4.0	350	o	SE-5	11.0

*1 S.M.T. : Ship's Mean Time.

*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).

*3 D.S. : Direction of tow.

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

*5 S.T. : Surface temperature

Table 4. Date on catches by mid trawl research

Japanese name	Scientific Name	OSMT1201		OSMT1202		OSMT1203	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Suketodara	<i>Theragra chalcogramma</i>	30	11.04	20	8.81	6	2.97
Hatahata	<i>Arctoscopus japonicus</i>	14	0.19	11	0.20	17	0.37
Genge-rui	Zoarcidae spp.	2	0.02	-	-	-	-
Hoteiuo	<i>Aptocyclus ventricosus</i>	2	2.88	-	-	3	2.39
Mafugu	<i>Takifugu porphyreus</i>	-	-	1	0.15	-	-
Ika-rui	Cephalopoda spp.	2	0.03	1	0.03	6	0.24

