



HOKKAIDO UNIVERSITY

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**THE "OSHOROMARU" CRUISE 005
TO IBURI OFF and HACHINOHE-KUSHIRO OFF**

IN OCTOBER 2014

1. Cruise Itinerary

Cruise 005

Departure from Hakodate and start hydrographic research (OS14124)	October 18	2014
Start bottom-trawl research (OST1403)	19	
Finish Bottom-trawl (OST1406) and hydrographic research (OS14129)	20	
Arrival at Hachinohe	21	
Departure from Hachinohe and start hydrographic research (OS14130)	22	
Finish hydrographic research (OS14131)	23	
Return to Hakodate	25	
Total coverage 708.7 miles		

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 30 persons
(Hakodate-Hachinohe)			
Research Staff:	Professor (Laboratory of Marine Bioresources Ecology, Hokkaido University)		
		Tetsuya Takatsu	
	Associate Professor (Laboratory of Marine Biodiversity, Hokkaido University)		
		Hisashi Imamura	
	Associate Professor (Laboratory of Marine Biodiversity, Hokkaido University)		
		Atsushi Yamaguchi	
	Teaching Assistant:	10 persons	
(Hakodate-Hakodate)			
Research Staff:	Associate Professor (Laboratory of Marine Bioresources Ecology, Hokkaido University)		
		Takashi Matsuishi	
	Associate Professor (Laboratory of Marine Environmental Science, Hokkaido University)		
		Atsushi Ooki	
	Undergraduate Students:	47 persons	
(Hachinohe-Hakodate)			
	Technical Staff:	2 persons	
	Teaching Assistant:	9 persons	
		Total 67 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 the Science officer, the deck officers, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus) and XCTD.

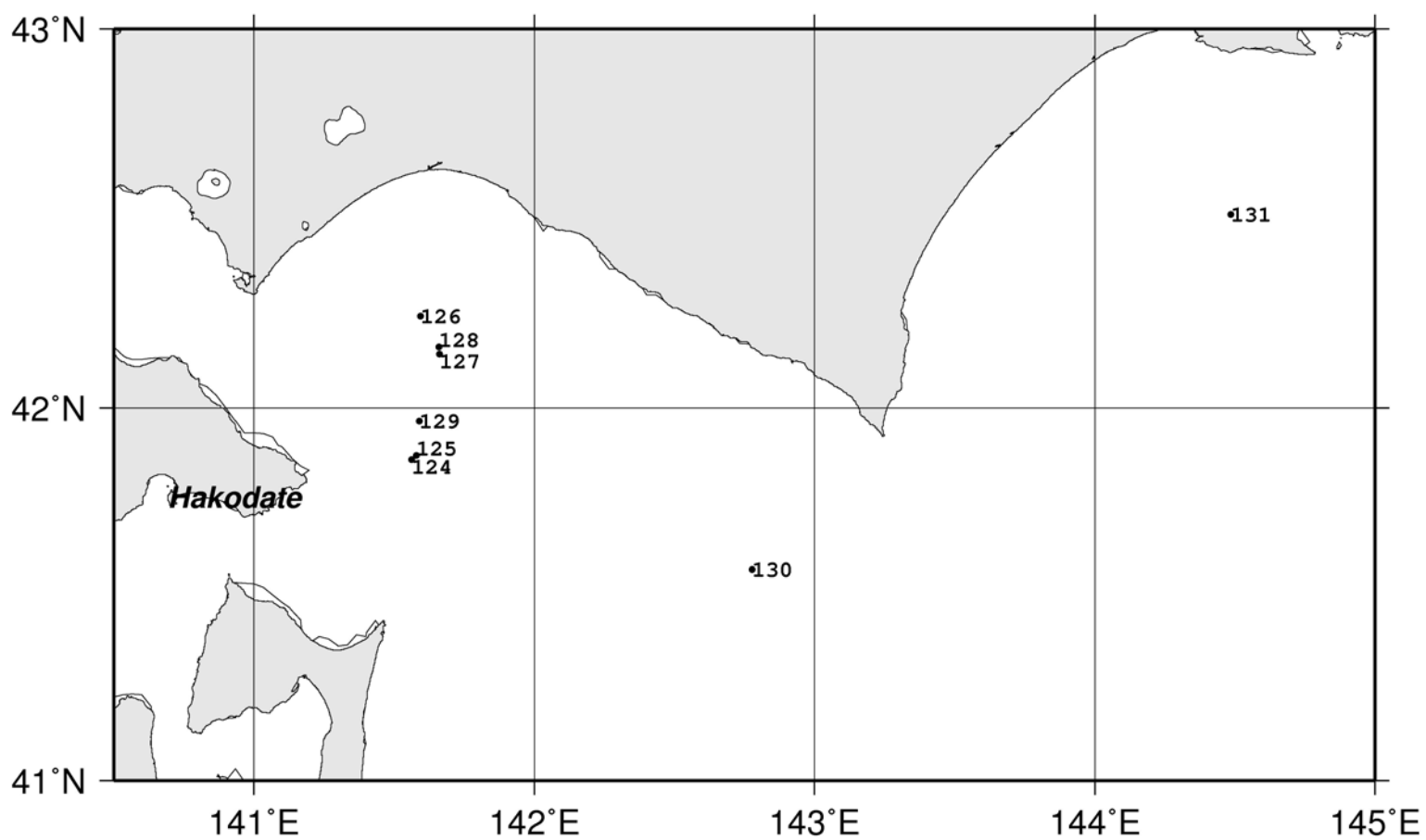


Fig.-1 Oceanographic stations

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS14124	41 51.69 N	141 33.73 E	10/18	10:20	9	595	-	-	16.6	bc	9p-1171
OS14125	41 52.35 N	141 34.82 E	10/18	12:45	9	655	-	-	18.0	bc	9p-1171
OS14126	42 14.64 N	141 35.72 E	10/18	21:08	9	600	-	-	17.9	b	9p-1171
OS14127	42 08.56 N	141 39.68 E	10/19	8:34	9	762	-	-	18.4	bc	9p-1171
OS14128	42 09.71 N	141 39.57 E	10/19	11:04	9	745	-	-	18.3	b	9p-1171
OS14129	41 57.85 N	141 35.40 E	10/19	21:05	9	727	-	-	17.7	c	9p-1171
OS14130	41 34.09 N	142 46.69 E	10/22	7:37	9	1020	-	-	17.1	c	9p-1171
OS14131	42 30.75 N	144 29.17 E	10/23	9:08	9	1479	-	-	11.5	bc	9p-1171

T.Z.: Time Difference between G.M.T and S.M.T.

Col.: Water color in Forel-Ule scale

Tr.: Transparency in meters with Secchi disc

SST: Surface temperature

Wr.: Weather in WMO Code 4501

Table 2. Oceanographic data

Station OS14124				Station OS14125				Station OS14126			
Latitude 41-51.68N				Latitude 41-52.36N				Latitude 42-14.64N			
Longitude 141-33.74E				Longitude 141-34.81E				Longitude 141-35.72E			
Depth(m) 595				Depth(m) 655				Depth(m) 600			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	16.411	33.906	24.812	5	17.883	33.936	24.486	5	17.792	33.945	24.515
10	16.428	33.906	24.808	10	17.890	33.935	24.483	10	17.791	33.945	24.515
20	16.424	33.905	24.809	20	16.689	33.889	24.735	20	17.792	33.945	24.515
30	16.424	33.905	24.809	30	16.285	33.883	24.823	30	17.797	33.945	24.514
40	16.420	33.906	24.810	40	16.250	33.880	24.829	40	17.799	33.945	24.513
50	15.060	34.131	25.289	50	15.931	33.970	24.971	50	17.267	34.060	24.730
75	13.382	34.158	25.664	75	13.871	34.169	25.571	75	15.032	34.150	25.310
100	12.088	34.116	25.886	100	12.521	34.143	25.823	100	12.978	34.146	25.736
125	10.150	33.976	26.126	125	11.306	34.063	25.991	125	9.758	33.949	26.172
150	8.103	33.787	26.306	150	9.112	33.904	26.243	150	3.969	33.185	26.345
175	6.935	33.710	26.411	175	7.786	33.789	26.354	175	3.581	33.257	26.441
200	4.526	33.457	26.504	200	4.725	33.450	26.477	200	3.608	33.351	26.513
250	2.773	33.421	26.645	250	2.905	33.429	26.639	250	2.886	33.470	26.674
300	2.900	33.545	26.732	300	2.904	33.565	26.748	300	2.862	33.568	26.754
400	3.097	33.775	26.899	400	3.143	33.801	26.915	400	3.066	33.747	26.879
500	3.265	33.908	26.989	500	3.340	33.956	27.021	500	3.359	33.949	27.013
				600	3.405	34.071	27.106				

Station OS14127				Station OS14128				Station OS14129			
Latitude 42-8.57N				Latitude 42-9.71N				Latitude 41-57.85N			
Longitude 141-39.67E				Longitude 141-39.57E				Longitude 141-35.39E			
Depth(m) 762				Depth(m) 745				Depth(m) 727			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	18.131	33.904	24.400	5	18.129	33.912	24.407	5	17.515	33.834	24.497
10	18.132	33.903	24.400	10	18.135	33.915	24.408	10	17.516	33.834	24.497
20	18.132	33.903	24.400	20	18.142	33.915	24.407	20	17.293	33.870	24.578
30	18.014	33.880	24.411	30	18.142	33.915	24.406	30	16.481	33.869	24.767
40	17.933	33.862	24.417	40	18.142	33.915	24.406	40	16.258	33.878	24.826
50	17.872	33.849	24.422	50	18.145	33.914	24.405	50	16.266	33.889	24.833
75	15.854	34.070	25.065	75	16.290	34.053	24.953	75	14.220	34.102	25.447
100	12.661	34.078	25.746	100	13.176	34.131	25.684	100	12.368	34.123	25.837
125	11.444	34.070	25.971	125	11.435	34.062	25.966	125	10.499	34.000	26.085
150	7.762	33.628	26.231	150	5.713	33.306	26.250	150	8.599	33.836	26.269
175	6.061	33.523	26.378	175	6.047	33.541	26.394	175	6.301	33.599	26.407
200	6.098	33.654	26.476	200	6.077	33.670	26.492	200	3.847	33.381	26.514
250	2.842	33.439	26.653	250	2.991	33.448	26.647	250	2.576	33.400	26.645
300	2.872	33.561	26.748	300	3.118	33.585	26.745	300	2.887	33.547	26.735
400	3.091	33.752	26.881	400	3.096	33.756	26.883	400	3.033	33.739	26.876
500	3.287	33.925	27.001	500	3.284	33.917	26.994	500	3.458	33.982	27.030
600	3.400	34.057	27.096	600	3.421	34.044	27.083	600	3.483	34.104	27.125
700	3.380	34.167	27.185	700	3.394	34.149	27.169				

Station OS14130				Station OS14131			
Latitude 41-34.09N				Latitude 42-30.74N			
Longitude 142-46.7E				Longitude 144-29.16E			
Depth(m) 1020				Depth(m) 1479			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	16.945	33.855	24.649	5	11.217	33.104	25.261
10	16.951	33.855	24.647	10	11.221	33.103	25.259
20	16.961	33.864	24.651	20	11.123	33.080	25.258
30	16.955	33.894	24.676	30	11.108	33.083	25.263
40	16.902	33.902	24.695	40	10.892	33.118	25.330
50	16.700	33.923	24.758	50	9.042	32.972	25.524
75	15.018	34.087	25.264	75	6.322	33.092	26.005
100	11.899	34.117	25.922	100	6.650	33.590	26.355
125	11.632	34.141	25.991	125	3.795	33.287	26.444
150	9.763	33.931	26.157	150	3.049	33.250	26.484
175	6.812	33.617	26.355	175	3.285	33.342	26.536
200	4.716	33.450	26.478	200	3.265	33.392	26.578
250	3.531	33.483	26.625	250	2.981	33.505	26.694
300	3.229	33.534	26.694	300	2.986	33.577	26.750
400	2.911	33.647	26.813	400	3.216	33.755	26.872
500	3.232	33.840	26.938	500	3.329	33.921	26.993
600	3.396	34.075	27.110	600	3.595	34.070	27.087
700	3.411	34.147	27.166	700	3.332	34.154	27.179
800	3.288	34.245	27.256	800	3.317	34.255	27.261
900	3.117	34.307	27.321	900	3.030	34.285	27.311
1000	2.898	34.362	27.385	1000	2.870	34.341	27.371
				1200	2.589	34.434	27.469

Bottom Trawl Research

4 operations of the stern otter bottom trawl were carried out.

These operations were supervised by the captain, Deck officer, Science officer, crew and research staff were engaged in the work.

Table 3: Data on Bottom trawl research during the Oshoromaru Cruise#005

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)	Bottom depth (m)	Wr.*4	Wind	S.T.*5 (°C)
			Lat. (N)	Long. (E)							
OST1403	Oct. 19	0925-1015	42-08.5	141-35.6	+9h	183	3.5	656	bc	West-2	17.8
OST1404	Oct. 19	1408-1510	42-09.1	141-35.7	+9h	006	3.5	710	bc	South-3	17.9
OST1405	Oct. 20	0920-0950	42-05.6	141-35.6	+9h	010	2.0	713	o	SSW-4	17.3
OST1406	Oct. 20	1255-1355	42-14.9	141-43.2	+9h	095	3.0	645	o	SSW-4	17.5

*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, c: over 75-99% clouded).

*5 S.T. : Surface temperature

Japanese name	Scientific Name	OST1403		OST1404		OST1405		OST1406	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Shigiunagi	<i>Nemichthys scolopaceus</i>	-	-	-		1	0.02	1	0.07
Irakoanago	<i>Synaphobranchus kaupii</i>	24	15.58	25	13.4	7	1.96	35	28
Yukihoraanago	<i>Ilyophis nigeli</i>	-	-	2	0.02	2	0.02	1	0.09
Onihige	<i>Caelorinchus gilberti</i>	-	-	-	-	-	-	5	3.9
Onagakasube	<i>Rhinoraja longicauda</i>	7	0.79	2	0.06	-	-	5	1.12
Gangiei-rui	<i>Bathyraja</i> sp.	1	0.61	1	0.39	-	-	-	-
Togariichimonjiuwashi	<i>Leuroglossus schmidtii</i>	1	0.01	-	-	4	0.055	-	-
Ginsokoiwashi	<i>Dolicholagus longirostris</i>	-	-	-	-	-	-	2	0.005
Sokoiwashi	<i>Lipolagus ochotensis</i>	-	-	-	-	4	TR	2	0.005
Sokoiwashi rui	<i>Lipolagus</i> spp.	7	0.24	7	0.33	11	0.5	7	0.435
Hadakahoteieso	<i>Tactostoma macropus</i>	-	-	-	-	3	0.16	2	0.35
Demeiso	<i>Benthalbella linguidentis</i>			1	0.05	-	-	-	-
Yokoeso	<i>Gonostoma gracile</i>	-	-	-	-	14	0.03	1	0.01
Houraieso	<i>Chauliodus sloani</i>			1	0.03	3	0.02	2	0.12
Isaribihadaka	<i>Notoscopelus resplendens</i>	-	-	-	-	1	0.01		
Kohirehadaka	<i>Stenobranchius leucosparsus</i>	-	-	-	-	-	-	2	0.02
Todohadaka	<i>Diabhus theta</i>	-	-	-	-	4	0.02		
Mamehadaka	<i>Lampanyctus jordani</i>	9	0.2	11	0.24	32	0.75	9	0.34
Mikadohadaka	<i>Nannobranchium regale</i>	-	-	1	0.07	-	-	-	-
Nagahadaka	<i>Symbolophorus californiensis</i>	1	0.02	2	0.02	-	-	-	-
Sekkihadaka	<i>Symbolophorus californiensis</i>	1	0.02	-	-	8	0.0815	4	0.02
Futasuzinamehadaka	<i>Lestrolepis intermedia</i>	-	-	-	-	1	0.07	-	-
Karasudara	<i>Halargyreus johnsonii</i>	3	0.57	18	5	6	1.62	5	1.57
Kanadadara	<i>Antimora microlepis</i>	24	4.35	46	11.25	1	0.05	15	2.69
Itohikidara	<i>Laemonema longipes</i>	21	12	58	31.1	8	3.07	38	21
Munedara	<i>Coryphaenoides pectoralis</i>	-	-	1	2.65	-	-	-	-
Ibarahige	<i>Coryphaenoides acrolepis</i>	1	0.96	-	-	-	-	-	-
Karafutosokodara	<i>Coryphaenoides cinereus</i>	28	7.1			2	0.51	10	3.2
Yumeankou	<i>Oneirodes bullbosus</i>	1	0.17	-	-	-	-	-	-
Ogurokonnyakuuo	<i>Careproctus furcellus</i>	-	-	-	-	-	-	1	0.28
Kantennoo	<i>Nectoliparis pelagicus</i>	-	-	-	-	1	0.001	-	-
Hirainkiuo	<i>Paraliparis grandis Schmidt</i>	-	-	-	-	-	-	12	4.1
Kantenngenge	<i>Bothrocara tanakae</i>	15	8	15	8.6	-	-	7	4.4
Kamuchakkagenge	<i>Bothrocarina microcephala</i>	2	0.85	-	-	-	-	-	-
Shirogenge	<i>Bothrocara molle</i>	119	69.7	167	101.4	15	7.106	114	54.9
Kichiji	<i>Sebastolobus macrochir</i>	121	19.5	93	19.7	14	2.32	94	14.2
Ganko	<i>Dasycottus setiger</i>	13	0.9	2	0.7	-	-	4	1.23
Nezumiginpo	<i>Lumpenella longirostris</i>	37	3.1	33	2.67	6	0.33	9	0.95
Akadonko	<i>Ebinania vermiculata</i>	-	-	1	2	-	-	-	-
Kobushikazika	<i>Malacocottus zonurus</i>	6	0.59	2	0.29	-	-	-	-
Aburagarei	<i>Atheresthes evermanni</i>	1	0.825	-	-	-	-	2	2.35
Samegarei	<i>Clidoderma asperrimum</i>	-	-	2	2.45	-	-	1	2.6
Namako	<i>Holothurian</i>	55	3.61	-	1.29	1	0.02	21	2.49
Mendako spp.	<i>Opisthoteuthis</i> spp.	27	15.5	21	9.14	-	-	18	10.3
Kokaku rui	<i>Crustacean</i>	-	-	-	-	-	-	14	0.19
Ebi rui	<i>shrimps</i>			3	0.58	-	-	-	-
Benizuwaigani	<i>Chionoecetes japonicus</i>	44	22.85	-	-	-	-	7	2.7
Dosuika	<i>Berrytenthis magister</i>	-	-	-	-	6	1.29	115	24
Ika-rui	<i>Squids</i>	35	8.05	-	-	-	-	7	0.49
Tako-rui	<i>Octopuses</i>	130	46	22	4.9	4	0.43	65	31
Ezobai spp.	<i>Buccinidae</i> spp.	57	5.15	73	3.25	1	0.07	66	4.45
Kokonohoshiginzame	<i>Hydrolagus barbouri</i>	-	-	-	-	-	-	1	2.15
Kassumizame	<i>Centroscyllium ritteri</i>	1	0.5	-	-	-	-	-	-