



Title	PART I -6. THE " OSHORO MARU " CRUISE 045 to EAST OF THE TSUGARU STRAIT (IBURI/HIDAKA OFF) IN OCTOBER 2017
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**THE "OSHORO MARU" CRUISE 045
TO EAST OF THE TSUGARU STRAIT
(IBURI / HIDAKA OFFING)**

IN OCTOBER 2017

1. Cruise Itinerary

Cruise 045

Departure from Hakodate	Oct.	17, 2017
Start hydrographic research and bottom trawl research (OST1701)		18
Finish hydrographic research		21
Return to Hakodate		22

Total coverage 634.1nm

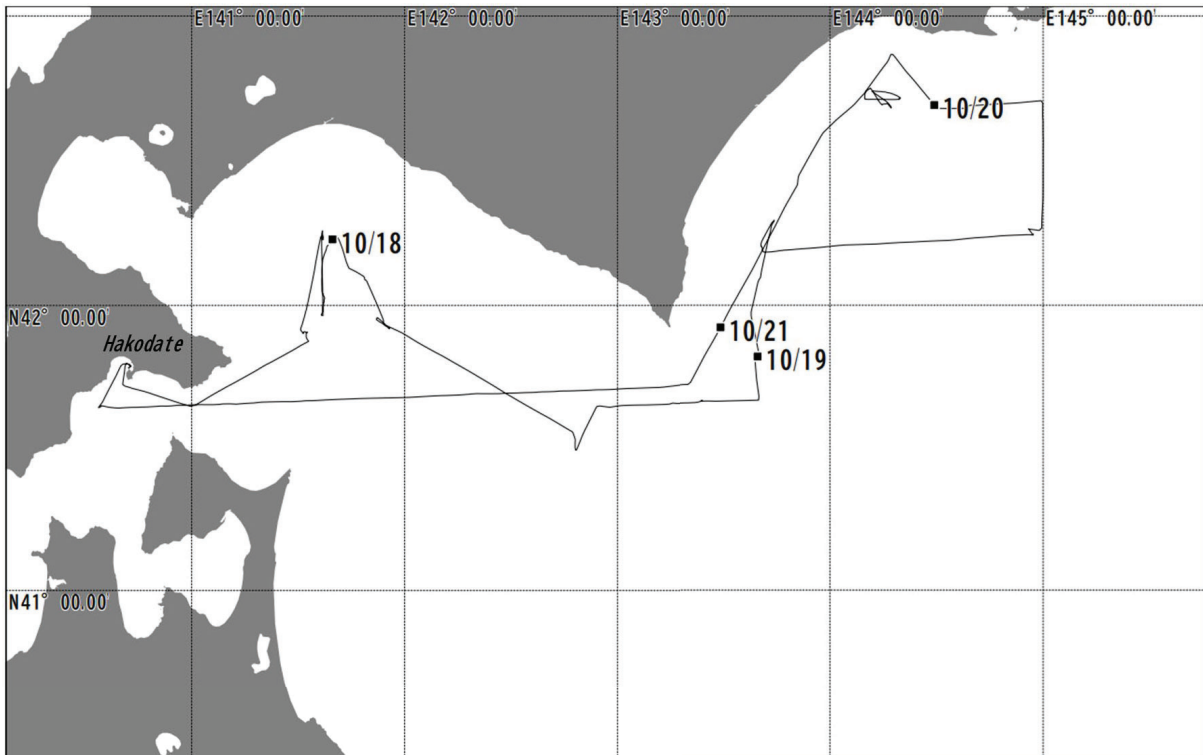


Fig. 1 Noon Position

2. Vessel Personnel

Crew: Captain: Associate Professor Shogo Takagi
And 32 persons

Undergraduate instructor:

Professor (Laboratory of Marine Biology and Biodiversity, Hokkaido University)

Hisashi Imamura

Professor (Laboratory of Marine Bio-resource science, Hokkaido University)

Takashi Matsuishi

Associate Professor (Laboratory of Marine Environmental Science, Hokkaido University)

Atsushi Ooki

Associate Professor (Laboratory of Marine Bio-resource science, Hokkaido University)

Orio Yamamura

Teaching Assistant: 6 persons

Undergraduate Student: 48 persons

Research assistant: 3 persons

3. Items of Research

A short cruise to conduct shipboard training in hydrographic observations, net samplings, sighting survey of marine mammals and floating marine debris, and biological processing of trawl for undergraduate students in the department of marine biological science. Hydrographic observations: Temperature and salinity were measured by CTD (Seabird SBE-9Plus). Dynamic computations were made using a desk-top computer aboard the “*Oshoromaru*”. Water sampling were also carried out at almost every hydrographic stations.

Table 1, 2

Bottom trawl observations: One operations of the stern otter bottom trawl were carried out. These operations were supervised by the captain, Deck officer, Science officer, crew, research staff, and cadets were engaged in the work.

Table 3, 4

Net sampling: MOHT, and NNORPAC NET for plankton collection, and NEUSTON NET for floating trash collection

4. Data on temperature, salinity and computed dynamic depth anomaly

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS17311	41-55.25N	141-55.69E	10/18	7:53	9	-	-	15.9	bc	Sea-Bird	SBE9
OS17312	41-40.08N	143-24.06E	10/18	23:44	9	182	-	13.6	bc	Sea-Bird	SBE9
OS17313	42-17.61N	143-44.2E	10/19	7:24	9	374	-	13.8	bc	Sea-Bird	SBE9
OS17314	42-42.85N	144-19.5E	10/20	7:04	9	897	-	14.0	c	Sea-Bird	SBE9

T.Z.: Time difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.)

Col.: Water color in Forel-Ule scale

Tr.: Transparency in meters with Secchi disc

SST: Sea Surface temperature

Wr.: Weather in WMO Code 4501

Table 2. Oceanographic data

Station OS17311				Station OS17312				Station OS17313			
Latitude 41-55.25 N				Latitude 41-40.08 N				Latitude 42-17.61 N			
Longitude 41-55.69 E				Longitude 43-24.06 E				Longitude 43-44.20 E			
Depth(m)				Depth(m) 182				Depth(m) 374			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	15.961	33.912	24.920	5	13.658	32.990	24.704	5	13.794	32.850	24.568
10	15.974	33.911	24.916	10	13.651	32.990	24.706	10	13.789	32.877	24.590
20	15.949	33.913	24.923	20	13.612	32.994	24.717	20	13.647	32.918	24.651
30	15.951	33.912	24.922	30	12.234	33.118	25.084	30	11.322	33.063	25.210
40	15.970	33.912	24.918	40	10.670	33.175	25.412	40	7.656	33.148	25.869
50	15.929	33.918	24.932	50	8.629	33.619	26.095	50	4.985	33.136	26.199
75	13.923	34.132	25.532	75	4.239	33.327	26.431	75	4.140	33.192	26.334
100	12.296	34.113	25.844	100	4.176	33.397	26.493	100	3.122	33.205	26.441
125	11.029	34.049	26.030	125	2.855	33.285	26.529	125	2.435	33.238	26.527
150	9.643	33.934	26.179	150	2.337	33.313	26.594	150	2.649	33.345	26.594
175	8.224	33.842	26.331					175	2.506	33.336	26.599
200	6.850	33.690	26.407					200	2.450	33.371	26.632
250	3.547	33.402	26.559					250	2.574	33.472	26.702
300	2.712	33.528	26.735					300	2.622	33.506	26.725
400	3.424	33.873	26.946								
500	3.567	34.036	27.063								
600	3.442	34.138	27.155								
700	3.419	34.234	27.235								
800	3.196	34.310	27.316								
900	3.007	34.358	27.372								

Station OS17314			
Latitude 42-42.85 N			
Longitude 44-19.50 E			
Depth(m) 897			
Press.	Temp.	Sal.	SIG-T
5	14.008	33.038	24.670
10	13.987	33.035	24.672
20	13.001	33.123	24.939
30	12.467	33.188	25.093
40	10.542	33.467	25.662
50	9.313	33.405	25.820
75	9.738	33.989	26.207
100	8.382	33.855	26.318
125	6.991	33.732	26.421
150	5.790	33.603	26.475
175	5.523	33.604	26.508
200	4.947	33.562	26.541
250	2.936	33.376	26.595
300	2.772	33.420	26.643
400	2.969	33.615	26.782
500	3.560	33.857	26.921
600	3.653	34.020	27.041
700	3.522	34.123	27.136
800	3.269	34.208	27.228

5. Data on bottom trawl research

Table 3. Data on Bottom trawl research during the Oshoromaru Cruise#045

No. of research	Date and time of net tow (S.M.T*1)		Position		T.D.*2	D.S.*3	Speed of tow (Kt)	Bottom depth (m)	Wr.*4	Wind	SST*5 (°C)
			Lat. (N)	Long. (E)							
OST1701	Oct. 10	0819-1119	42-01.6	141-37.5	+9h	000°	3.3	716	bc	N6-3	16.7

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

*2 T.D.: Time difference between Greenwich Mean Time (G.M.T.) and S.M.T.

*3 D.S.: Direction of tow

*4 Wr.: Weather in WMO Code 4501(bc: 25-75% clouded, o: 100% clouded)

*5 SST: Sea Surface temperature

Table 4. Data on catches by Bottom trawl research

Japanese name	Scientific name	OST1701	
		Number	Weight (kg)
Kichiji	<i>Sebastolobus macrochir</i>	89	20.4
Osaga	<i>Sebastes iracundus</i>	1	4.7
Sokoganpiei spp.	<i>Bathyraja spp.</i>	3	1.497
Munedara	<i>Coryphaenoides pectoralis</i>	1	0.53
Karafutosokodara	<i>Coryphaenoides cinereus</i>	4	0.78
Kurosokoiwashi	<i>Pseudobathylagus milleri</i>	2	0.12
Yasesokoiwashi	<i>Bathylagus pacificus</i>	6	0.185
Ika	Squids	59	6.81
Kobushikazika	<i>Malacocottus zonurus</i>	1	0.07
Ganko	<i>Dasycottus setiger</i>	3	0.3
Kanadadara	<i>Antimora microlepis</i>	11	1.6
Karasudara	<i>Halargyreus johnsonii</i>	6	1.55
Hadakahoteieso	<i>Tactostoma macropus</i>	2	0.185
Hadakaeso sp.	<i>Paralepididae sp.</i>	1	0.045
Togariochimonziiwashi	<i>Leuroglossus schmidti</i>	2	0.02
Norogenge	<i>Bothrocara hollandi</i>	1	0.02
Mamehadaka	<i>Lampanyctus jordani</i>	16	0.33
Ookuchiiwashi	<i>Notoscopelus japonicus</i>	7	0.155
Higashihouraesio	<i>Chauliodus macouni</i>	5	0.03
Yokoeso	<i>Sigmops gracile</i>	2	0.01
Tako	Octopuses	38	11.5
Kai	Shellfish	114	5
Yukihoraanago	<i>Ilyophis nigeli</i>	3	0.09
Kohirehadaka	<i>Stenobranchius leucopsarus</i>	2	0.015
Hadakaiwashi sp	<i>Myctophidae sp.</i>	3	0.03
Ishoginntyaku	<i>Sea anemones</i>	25	2.55
Benizuwaigani	<i>Chionoecetes japonicus</i>	1	0.74
Irakoanago	<i>Synaphobranchus kaupii</i>	7	0.7
Shirogenge	<i>Bothrocara zestum</i>	146	51.25
Kantengenngge	<i>Bothrocara tanakae</i>	2	1.55
Nezumiginnpo	<i>Lumpenella longirostris</i>	22	1.37
Itohikidara	<i>Laemonema longipes</i>	23	9.25
Yadokari	<i>Paguroidea</i>	10	0.17