



Title	6. The "Oshoro Maru" Cruise 220 east of Tsugaru Strait in September - October 2010
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THE " OSHORO MARU " CRUISE 220 EAST OF TSUGARU STRAIT

IN SEPTEMBER - OCTOBER 2010

1. Cruise Itinerary

Cruise 220

Departure from Hakodate

Sep. 28, 2010

Bottom trawl research (OST1001-03)

30

Start hydrographic research (OS10176)

30

Finish hydrographic research (OS10179)

Oct. 1

Return to Hakodate

3

Total coverage 564.2 miles

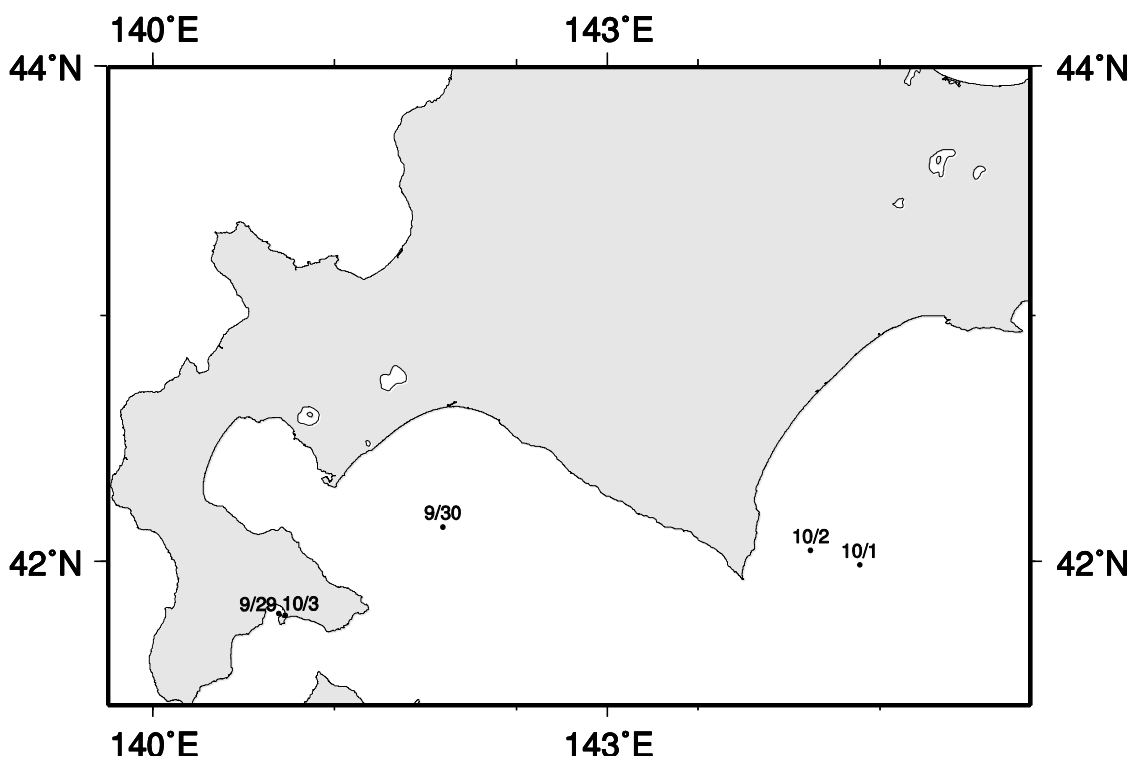


Figure 1. Noon position

2. Vessel Personnel

Captain:		Associate Professor	Shogo Takagi
Crew:	Chief Officer	Associate Professor	Yoshihiko Kamei
	First Officer	Instructor	Keiichiro Sakaoka
	Second Officer	Technical official	Naoki Hoshi
	Third Officer	Technical official	Takuzo Abe
	Science Officer	Technical official	Keiri Imai
	Chief Engineer	Instructor	Jyunichi Kimura
	And 24 men		

Cruise 220

Research Staff:

Professor	(Laboratory of Marine Environmental Science)	Shigeru Montani
Professor	(Laboratory of Marine Bio-resources Science)	Tetsuya Takatsu
Associate Professor	(Laboratory of Marine Ecology)	Yutaka Watanuki
Associate Professor	(Laboratory of Marine Bio-resources Ecology)	Takashi Matsuishi
Associate Professor	(Laboratory of Marine Biology and Biodiversity)	Hisashi Imamura
Associate Professor	(Laboratory of Marine Biodiversity)	Atsushi Yamaguchi

Teaching Assistant: 8 Persons

Under Graduate Students: 56 Persons

Total 70 persons

3. Items of Training and Research

A short cruise to conduct shipboard training in hydrographic observations, plankton samplings, sighting survey of marine mammals, and biological processing of trawl catch for undergraduate students in the Department of Marine Biological Science.

Hydrographic observations : Fig. 2, Table 1,2

Bottom trawl observations : Fig. 3, Table 3,4

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”.

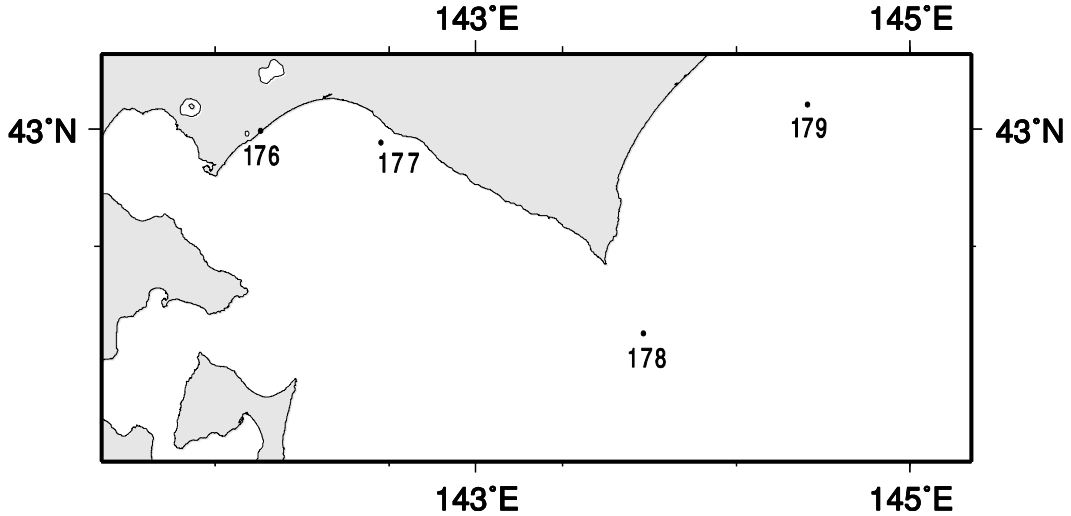


Figure 2. Oceanographic station

Table 1. List of Oceanographic Station

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS10176	42-16.1N	141-16.1E	9/30	0824	9	640	-	-	18.3	bc	9Plus-0769
OS10177	42-13.4N	141-57.6E	9/30	1113	9	743	-	-	18.2	bc	9Plus-0769
OS10178	41-32.5N	143-28.2E	9/30	2140	9	871	-	-	19.3	bc	9Plus-0769
OS10179	42-21.6N	144-24.9E	10/1	0858	9	1410	-	-	17.1	c	9Plus-0769

(*) : Fixed position by Global Positioning System

Table 2. Oceanographic data

Station OS10176				Station OS10177				Station OS10178				Station OS10179			
Longitude 141-16.1E				Longitude 141-57.6E				Longitude 143-28.2E				Longitude 144-24.9E			
Latitude 42-16.1N				Latitude 42-13.4N				Latitude 41-32.5N				Latitude 42-21.6N			
Depth(m) 640				Depth(m) 743				Depth(m) 871				Depth(m) 1410			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	18.109	33.356	23.986	5	18.197	33.350	23.960	5	19.577	33.463	23.700	5	17.114	33.288	24.174
10	18.076	33.355	23.994	10	18.203	33.349	23.958	10	19.564	33.462	23.702	10	17.072	33.328	24.215
20	17.774	33.303	24.028	20	18.044	33.346	23.995	20	18.727	33.536	23.971	20	16.332	33.395	24.438
30	16.253	33.817	24.780	30	17.978	33.455	24.094	30	18.776	33.658	24.052	30	13.903	33.643	25.158
40	13.963	33.785	25.256	40	15.387	33.836	24.990	40	18.297	33.675	24.184	40	12.323	33.707	25.524
50	13.001	33.703	25.388	50	13.221	33.792	25.413	50	15.952	33.878	24.896	50	11.376	33.718	25.709
75	8.787	33.636	26.083	75	8.659	33.674	26.133	75	13.307	34.118	25.648	75	10.607	34.062	26.114
100	5.516	33.457	26.393	100	7.472	33.609	26.258	100	12.536	34.067	25.761	100	9.325	33.983	26.269
125	4.550	33.385	26.445	125	5.445	33.472	26.413	125	6.437	33.515	26.324	125	7.878	33.842	26.382
150	3.360	33.316	26.509	150	3.145	33.352	26.556	150	3.837	33.348	26.489	150	7.617	33.926	26.486
175	2.698	33.282	26.539	175	2.301	33.323	26.605	175	2.526	33.275	26.549	175	7.051	33.904	26.548
200	2.425	33.291	26.570	200	2.122	33.349	26.639	200	2.153	33.299	26.597	200	3.739	33.515	26.631
250	2.083	33.379	26.667	250	2.021	33.403	26.691	250	2.031	33.396	26.684	250	2.446	33.432	26.681
300	2.228	33.483	26.739	300	2.156	33.492	26.751	300	1.688	33.438	26.743	300	2.392	33.479	26.722
400	2.594	33.664	26.854	400	2.708	33.701	26.874	400	2.319	33.589	26.816	400	3.392	33.739	26.842
500	3.103	33.881	26.982	500	3.234	33.923	27.004	500	3.133	33.861	26.963	500	3.441	33.877	26.948

5. Data on bottom trawl research

Three operations of the stern otter bottom trawl were carried out. These operation were supervised by the captain, Deck officer, crew, research staff, and cadets were engaged in the work.

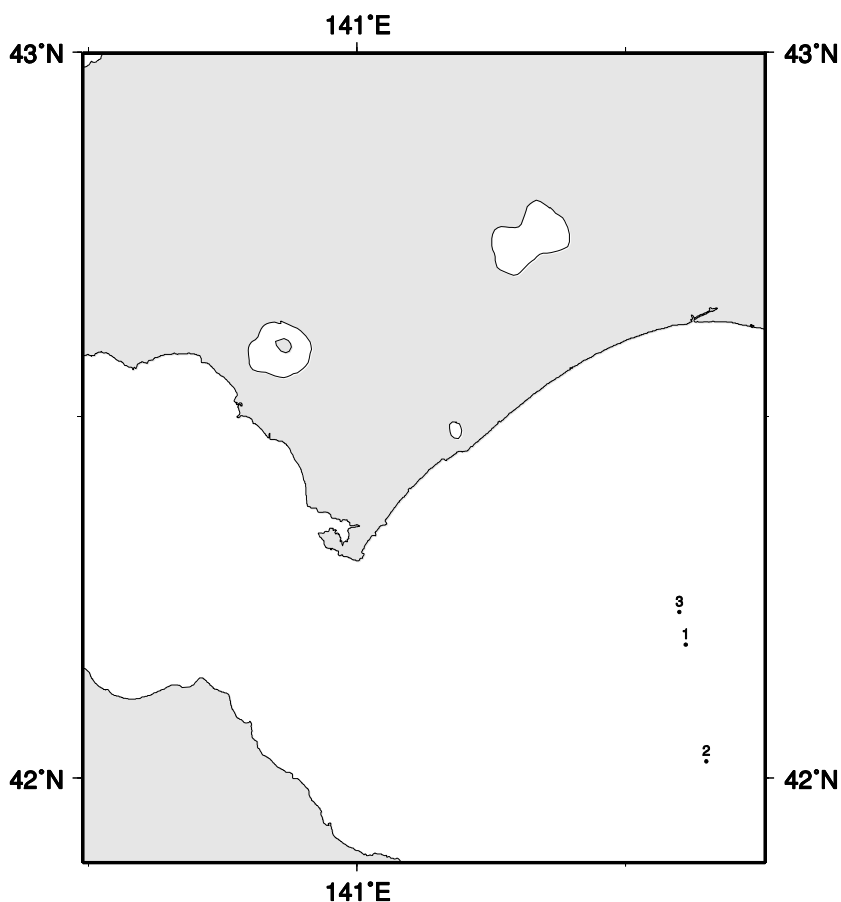


Figure 3. Locations of bottom trawl research

Table 3. Data on bottom trawl research during the “Oshoro Maru” Cruise#220

No. of research	Date and time of net tow (S.M.T.)		Position		Direction of tow	Speed of tow(K' t)	Bottom depth(m)	Wr	Wind
			Lat.(N)	Long.(E)					
OST1001	30-Sep	0627-0735	42-11.2	141-36.6	180	-	690	bc	West-4
OST1002	30-Sep	1006-1104	42-01.5	141-38.9	315->000->010	3.0	810-675	bc	West-3/5
OST1003	12-Jul	1337-1430	42-13.9	141-35.9	080	3.1	615-716	bc	SSW-2/3

S.T. : Surface temperature

Wr: Weather (r: rain, o: 100% clouded, d: drizzling rain, f: fog, bc: 25-75% clouded)

Table 4. Data on catches by bottom trawl research

Japanese name	Scientific Name	OST 1001		OST 1002		OST 1003	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Ribonkasube	<i>Bathyrāja diplotaenia</i>	1	0.30	10	1.15	3	0.25
Aryushankasube	<i>Bathyrāja aleutica</i>	-	-	-	-	1	0.75
Onagakasube	<i>Rhinorāja longicauda</i>	2	0.10	-	-	-	-
Irakoanago	<i>Synaphobranchus kaupi</i>	17	11.00	8	4.00	41	24.00
Yukihoraanago	<i>Ilyophis nygeli</i>	5	0.20	4	0.12	5	0.20
Kongouanago	<i>Simenchelys parasiticus</i>	-	-	1	0.25	-	-
Kurosokogisu	<i>Notacanthus chemnitzii</i>	-	-	-	-	1	0.90
Togariichimonjiuwashi	<i>Leuroglossus schmidti</i>	-	-	2	0.01	-	-
Sokoiwashi	<i>Lipolagus ochotensis</i>	-	-	-	-	1	0.02
Horaiso	<i>Chauliodus sloani</i>	1	0.10	-	-	1	0.10
Hoteieso	<i>Photonetes albipennis</i>	-	-	1	0.10	2	0.10
Nagahadaka	<i>Symbolophorus californiensis</i>	-	-	-	-	2	0.12
Sekkihadaka	<i>Stenobranchius namochir</i>	-	-	1	0.01	1	0.05
Mamehadaka	<i>Lampantus jordani</i>	6	0.10	7	0.10	20	0.35
Hadakaiwashi	<i>Diaphus watasei</i>	-	-	1	0.01	-	-
Karasudara	<i>Halargyreus johnsonii</i>	1	0.20	-	-	-	-
Kanadadara	<i>Antimora microlepis</i>	31	5.50	25	4.80	-	-
Itohikidara	<i>Laemonema longipes</i>	1853	1228.80	2690	1829.20	550	349.00
Karafutosokodara	<i>Coryphaenoides cinereus</i>	40	8.50	21	4.80	55	9.80
Togerakudaanko	<i>Oneirodes thompsoni</i>	-	-	-	-	1	0.30
Hiregurokonnyakuuo	<i>Careproctus marginatus</i>	-	-	-	-	1	0.10
Hirainkiuo	<i>Paraliparis grandis</i>	2	1.30	-	-	6	2.40
Shirohigekonnyakuuo	<i>Paraliparis barbulifer</i>	-	-	-	-	1	0.01
Shirogenge	<i>Bothrocara molle</i>	301	134.00	446	139.00	259	259.00
Kantengenge	<i>Bothrocara tanakae</i>	3	0.70	16	8.50	18	8.00
Nezumigimpo	<i>Lumpenella longirostris</i>	27	1.80	68	4.60	22	19.40
kichiji	<i>Sebastolobus macrochir</i>	120	24.50	165	29.80	246	45.50
Ganko	<i>Dasycottus setiger</i>	1	0.10	2	0.15	9	0.75
Kobushikajika	<i>Malacocottus zonurus</i>	-	-	1	0.10	1	0.10
Samegare	<i>Clidoderma asperimum</i>	-	-	-	-	1	0.55
Benizuwaigani	<i>Chionoecetes japonicus</i>	20	15.50	21	12.00	16	11.00
Ezobai-rui	Buccinidae spp.	-	-	23	2.30	37	3.00
Ika-rui	Squids	36	16.85	24	9.00	28	15.10
Yanagidako	<i>Octopus conispadiceus</i>	14	5.40	32	13.00	23	9.30
Mendako	<i>Opishoteuthis depressa</i>	-	-	2	2.55	-	-