HOKKAIDO UNIVERSITY

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6

THE " OSHORO MARU " CRUISE 234 EAST OF TSUGARU STRAIT

IN SEPTEMBER - OCTOBER 2011

1. Cruise Itinerary

Cruise 234	
Departure from Hakodate	Sep. 27, 2011
Start bottom trawl research (OST1103)	28
Start hydrographic research (OS11239)	28
Finish bottom trawl research (OST1106)	29
Finish hydrographic research (OS11332)	30
Return to Hakodate	Oct. 2

Total coverage 608.8 miles

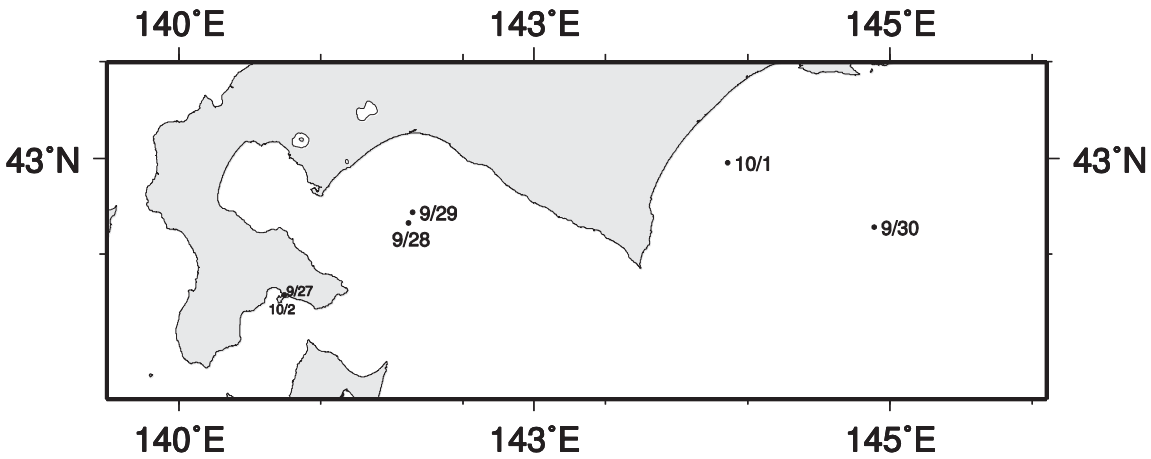

Figure 1. Noon position

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 23 men		

Cruise 234

Research Staff:

Professor	(Laboratory of Marine Environmental Science) Kenshi Kuma
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
Associate Professor	(Laboratory of Marine Environmental Science) Atsushi Ooki

Teaching Assistant: 8 persons
Under Graduate Students: 52 persons

Total 67 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
Floating gillnet observations: Fig. 4, Table 5

4. Data on Temperature, Salinity and Computed Dynamic Depth Anomaly

Hydrographic work on deck and the data processing were made by the deck officers, science officer, crews, research staff and cadets of the "*Oshoromaru*". Temperature and salinity were measured by CTD (Seabird SBE-9Plus and SBE-19Plus). Dynamic computations were made using a desk-top computer aboard the "*Oshoromaru*". Water and Plankton sampling were also carried out at almost hydrographic stations.

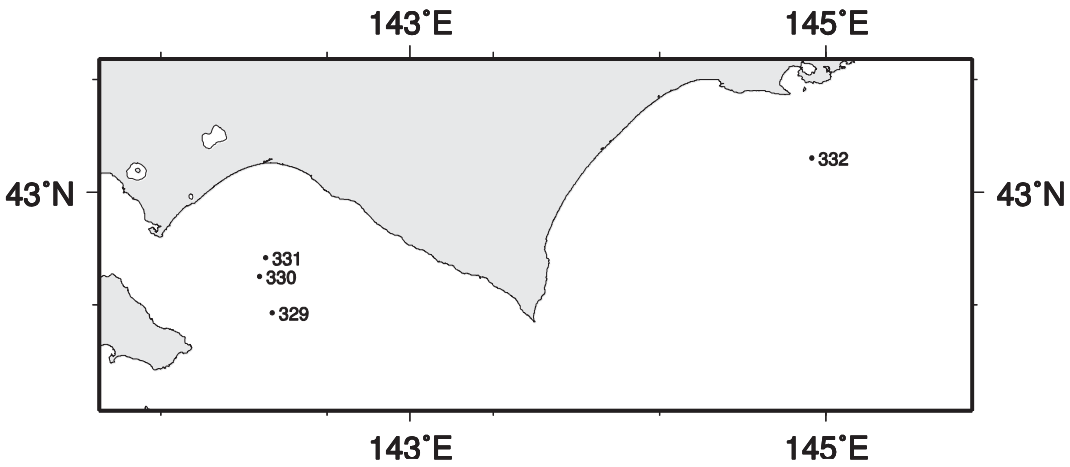

Figure 2. Oceanographic stations

Table 1. List of Oceanographic Station

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS11329	41-58.1N	141-40.0E	9/28	0759	9	837	-	-	19.3	bc	9Plus-0769
OS11330	42-07.9N	141-35.5E	9/28	1130	9	688	-	-	20.2	bc	9Plus-0769
OS11331	42-12.9N	141-37.7E	9/29	0200	9	650	-	-	20.3	bc	9Plus-0769
OS11332	42-39.4N	144-54.7E	9/30	0902	9	725	-	-	17.1	c	9Plus-0769

(*) : Fixed position by Global Positioning System

Table 2. Oceanographic data

Station OS11329
Latitude 41-58.1 N
Longitude 141-40.0 E
Depth(m) 837

Press.	Temp.	Sal.	SIG-T
5	19.286	33.438	23.755
10	19.004	33.434	23.823
20	18.920	33.440	23.849
30	18.601	33.541	24.007
40	15.819	33.979	25.003
50	14.434	34.102	25.401
75	12.122	34.083	25.853
100	10.786	34.060	26.082
125	9.784	34.009	26.215
150	8.459	33.888	26.332
175	5.774	33.629	26.498
200	3.784	33.477	26.597
250	2.809	33.541	26.737
300	3.000	33.660	26.815
400	3.284	33.851	26.942
500	3.393	34.002	27.052

Station OS11330
Latitude 42-07.9 N
Longitude 141-35.5 E
Depth(m) 688

Press.	Temp.	Sal.	SIG-T
5	20.097	33.342	23.472
10	20.106	33.342	23.470
20	19.575	33.486	23.717
30	17.718	33.843	24.455
40	14.884	34.082	25.290
50	14.216	34.116	25.459
75	13.059	34.132	25.708
100	11.568	34.120	25.987
125	9.518	33.973	26.230
150	8.534	33.900	26.329
175	6.587	33.690	26.443
200	5.697	33.608	26.490
250	3.626	33.479	26.613
300	2.872	33.541	26.732
400	3.177	33.745	26.867
500	3.466	33.946	27.000

Station OS11331
Latitude 42-12.9 N
Longitude 141-37.7 E
Depth(m) 650

Press.	Temp.	Sal.	SIG-T
5	20.397	33.450	23.476
10	20.373	33.447	23.479
20	20.265	33.427	23.492
30	19.198	33.590	23.894
40	17.257	33.851	24.571
50	14.880	34.083	25.291
75	12.918	34.134	25.738
100	12.035	34.119	25.898
125	11.105	34.076	26.037
150	10.277	34.013	26.134
175	8.091	33.835	26.346
200	5.979	33.627	26.471
250	3.166	33.492	26.666
300	2.864	33.561	26.748
400	3.186	33.755	26.874
500	3.473	33.949	27.003

Station OS11332
Latitude 42-39.4 N
Longitude 144-54.7 E
Depth(m) 725

Press.	Temp.	Sal.	SIG-T
5	15.938	33.117	24.314
10	15.905	33.117	24.321
20	15.319	33.218	24.529
30	14.563	33.242	24.711
40	13.302	33.251	24.978
50	10.286	33.293	25.571
75	6.527	33.264	26.114
100	4.679	33.323	26.381
125	3.955	33.398	26.516
150	3.114	33.370	26.574
175	2.382	33.360	26.628
200	2.087	33.367	26.657
250	2.236	33.465	26.724
300	2.410	33.564	26.789
400	3.082	33.779	26.903
500	3.378	33.967	27.026

5. Data on bottom trawl research

Four 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.

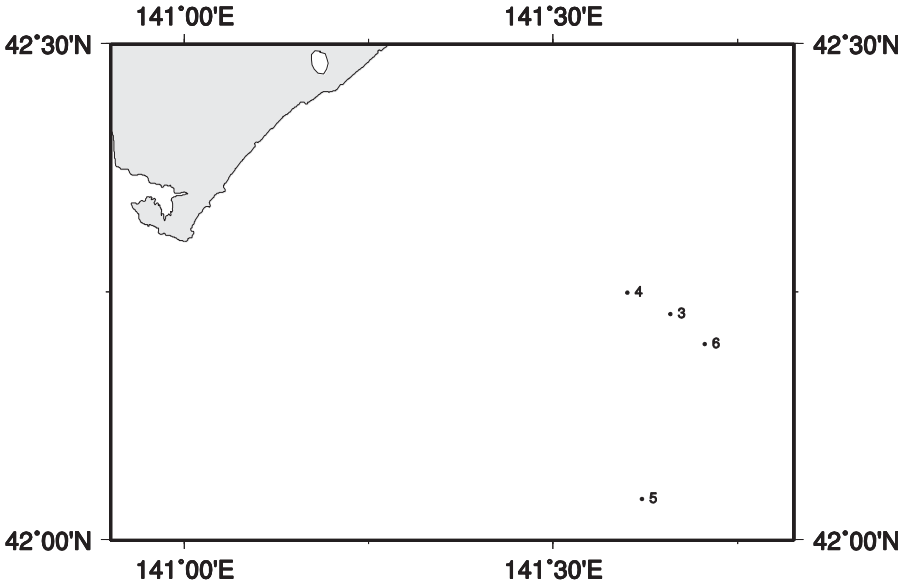

Figure 3. Locations of bottom trawl research

Table 3. Data on bottom trawl research during the "Oshoro Maru" Cruise #234

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)					
OST1103	28-Sep 0735-0835	42-13.7	141-39.5	-	-	775	bc	SE-4
OST1104	28-Sep 1110-1210	42-15.0	141-36.0	-	-	646-682	bc	SE-4
OST1105	28-Sep 1440-1540	42-02.5	141-37.2	160	3.0	751-811	bc	SE-3
OST1106	29-Sep 0730-0830	42-11.9	141-42.3	280	3.3	813	bc	ESE-3

S.T. : Surface temperature
Wr.: Weather (r: rain, o: 100% clouded, c:75-99%clouded, bc: 25-75% clouded)

Table 4. Data on catches by bottom trawl research

Japanese name	*Scientific Name*	OST1103		OST1104		OST1105		OST1106	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Itohikidara	*Laemonema longipes*	307	143.5	232	140.03	117	68.55	145	79.0
Shirogenge	*Bathrocara molle*	158	72.5	104	54.8	107	50.4	212	89.5
Kantengenge	*Bathrocara tanakae*	27	13	28	12.5	1	0.4	7	3.5
Karafutosokodara	*Coryphaenoides cinereus*	89	19.5	66	15.0	6	1.5	257	62.1
Kanadatara	*Antimora microlepis*	24	5.885	36	9.97	16	3.3	22	3.55
Irakoanago	*Synaphobranchus kaupi*	27	13.02	16	8.5	4	2.59	31	15.5
Yukihoraanago	*Ilyophis nigeli*	2	0.17	–	–	–	–	1	0.07
Kongouanago	*Simenchelys parasiticus*	1	0.18	–	–	–	–	–	–
Kuroshigiunagi	*Avocattina infans*	1	0.02	–	–	–	–	–	–
Kichiji	*Sebastolobus macrochir*	136	27.5	114	25.7	93	17.0	133	26.5
Nezumiginpo	*Lumpenella longirostris*	23	1.3	7	0.7	19	1.2	33	2.09
Mamehadaka	*Lampanyctus jordani*	10	0.25	5	0.03	27	0.6	4	0.2
Nagahadaka	*Symbolophorus californiensi*	1	0.03	1	0.03	–	–	–	–
Mikadohadaka	*Nannobrachium regale*	1	0.07	–	–	3	0.2	–	–
Kohirehadaka	*Stenobrachius leucopsarus*	–	–	–	–	1	0.03	–	–
Futasujimamehadaka	*Lestrolepis intermedia*	–	–	–	–	1	0.08	–	–
Munedara	*Coryphaenoides pectoralis*	1	4	–	–	3	3.7	12	14.0
Aburagarei	*Atheresthes evermanni*	1	1.32	1	3.9	–	–	1	1.92
Samegarei	*Clidoderma asperrimum*	2	1.35	–	–	–	–	1	0.71
Houraieso-zoku	*Chauliodus* sp.	1	0.03	–	–	–	–	–	–
Houraieso	*Chauliodus sloani*	–	–	–	–	–	–	1	0.2
Kusabiurokoeso	*Paralepis atlantica*	1	0.8	–	–	–	–	–	–
Yokoeso	*Gonostoma gracile*	–	–	–	–	–	–	1	0.01
Hadakahoteieso	*Tactostoma macropus*	–	–	–	–	–	–	1	0.2
Tachiuo-ka	Trichiuridae spp.	–	–	1	0.03	1	0.03	–	–
Kurosokogisu	*Noracanthus chemnitzi*	–	–	2	1.5	–	–	–	–
Yaegisu	*Platyberyx macropus*	–	–	–	–	1	0.7	–	–
Sokogankiei-zoku	*Bathyraja* spp.	8	0.9	8	1.31	9	1.4	1	0.08
Akadonko	*Ebinania vermiculata*	–	–	2	3.9	–	–	–	–
Suketoudara	*Theragra chalcogramma*	–	–	–	–	1	0.5	–	–
Ganko	*Dasycottus setiger*	19	1.9	12	1.18	4	0.5	4	0.42
Yumeankou-zoku	*Oneirodes* spp.	1	0.3	1	0.35	–	–	–	–
Kobushikajika	*Malacocottus zonurus*	–	–	–	–	1	0.07	–	–
Kurosokoiwashi	*Pseudobathylagus milleri*	–	–	1	0.05	4	0.3	–	–
Yasesokoiwashi	*Bathylagus pacificus*	–	–	1	0.04	–	–	–	–
Sokoiwashi-zoku	*Lipolagus* sp.	–	–	1	0.79	–	–	–	–
Hadakaiwashi	*Diaphus watasei*	–	–	–	–	1	0.025	–	–
Togariichimonjiiwashi	*Leuroglossus schmidti*	–	–	4	0.08	3	0.07	6	0.1
Ookuchiiwashi	*Notoscotelus japonicus*	–	–	–	–	1	0.03	2	0.11
Hirainkiuo	*Paraliparis grandis*	4	1.3	1	0.79	–	–	–	–
Hiregurokonnyakuuo	*Careproctus marginatus*	1	0.2	1	0.44	–	–	–	–
Benizuwaigani	*Chionoecetes japonics*	16	6.5	14	6.6	5	1.5	5	1.73
Ika-rui	Squids	18	6.9	3	0.4	12	3.55	13	4.2
Yanagidako	*Octopus conispadiceus*	39	26.7	28	7.5	34	13.0	43	13.95
Ezobaigai-rui	Buccinidae spp.	33	1.8	15	1.9	65	2.8	23	1.5
Sonota	Others	–	12.6	–	8.4	–	22.5	–	2.82

6. Data on floating gillnet research

14 operations of the floating gill net 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 catches were recorded by the deck officers and research staff.

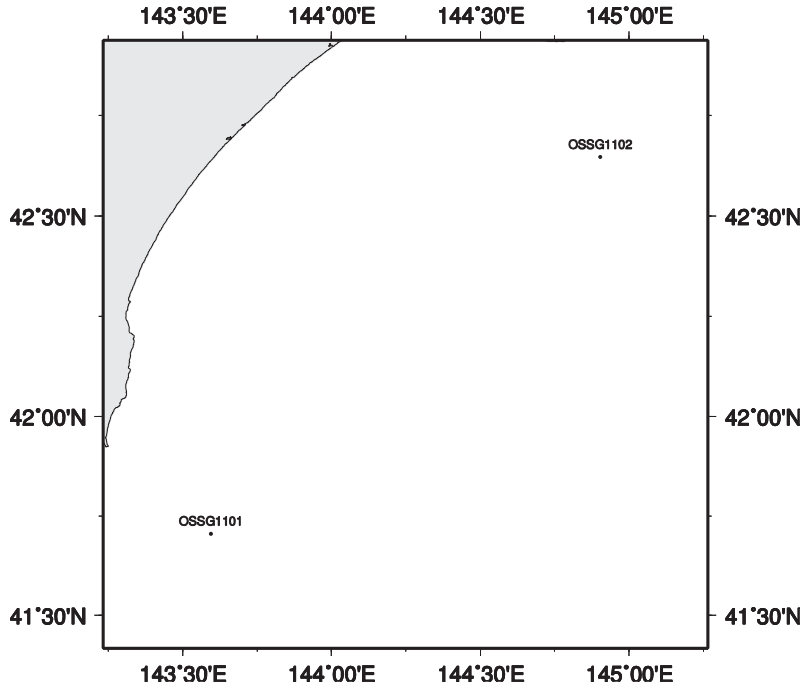

Figure 4. Locations of floating gillnet research

Table 5. Data on floating gillnet research

No. of research		OSSG 1101-01	OSSG 1101-02	OSSG 1101-03	OSSG 1101-04	OSSG 1101-05	OSSG 1101-06	OSSG 1101-07	OSSG 1101-08
Date		29-Sep	29-Sep	29-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep
position of	Lat. (N)	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4
net set	Long. (E)	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6
Time(S.M.T.)	net set	2225	2305	2330	0000	0015	0115	0305	0345
Mesh size(mm)		37	37	37	37	37	37	37	37
Surface temp. (°C)		18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Weather		c	c	c	c	c	c	c	c
Wind (force)		SE-3	SE-3	SE-3	SE-3	SE-3	SE-3	SE-3	SE-3
Pacific saury		-	-	-	-	-	-	-	-
Japanese sardine		98	21	28	48	20	3	120	80
Mackerels		18	22	42	58	20	10	20	10

S.T. : Surface temperature
Wr.: Weather (r: rain, o: 100% clouded, c:75-99%clouded, bc: 25-75% clouded)

No. of research		OSSG 1101-09	OSSG 1101-10	OSSG 1102-01	OSSG 1102-02	OSSG 1102-03	OSSG 1102-04
Date		30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep
position of	Lat. (N)	41-42.4	41-42.4	42-38.9	42-38.9	42-38.9	42-38.9
net set	Long. (E)	143-35.6	143-35.6	144-54.1	144-54.1	144-54.1	144-54.1
Time(S.M.T.)	net set	0420	0500	2040	0245	0315	0335
Mesh size(mm)		37	37	37	37	37	37
Surface temp. (°C)		18.0	18.0	16.0	17.2	17.2	17.2
Weather		c	c	bc	bc	bc	bc
Wind (force)		SE-3	SE-3	SSW-4	SSW-4	SSW-4	SSW-4
Pacific saury		-	-	11	1150	1100	1950
Japanese sardine		42	-	35	-	-	-
Mackerels		18	-	5	-	-	-