



HOKKAIDO UNIVERSITY

Title	8. The "Oshoro Maru" Cruise 236 to the Japan Sea in October - November 2011
Citation	海洋調査漁業試験要報, 55, 93-100
Issue Date	2013-03-29
Doc URL	https://hdl.handle.net/2115/77437
Type	dataset
File Information	Data.Rec.Oceanogr.Obs.Expl.Fish.55.93.pdf



THE " OSHORO MARU " CRUISE 236 TO THE JAPAN SEA

IN OCTOBER-NOVEMBER 2011

1. Cruise Itinerary

Cruise 236

Departure from Hakodate

Oct. 19, 2011

Start hydrographic research (OS11354)

20

Start mid-water trawl research (OSMT1107)

26

Finish mid-water trawl research (OSMT1109)

27

Arrival at Nagasaki

28

Departure from Nagasaki

30

Finish hydrographic research (OS11375)

Nov. 4

Return to Hakodate

5

Total coverage 2201.3miles 17days at sea and one day at port

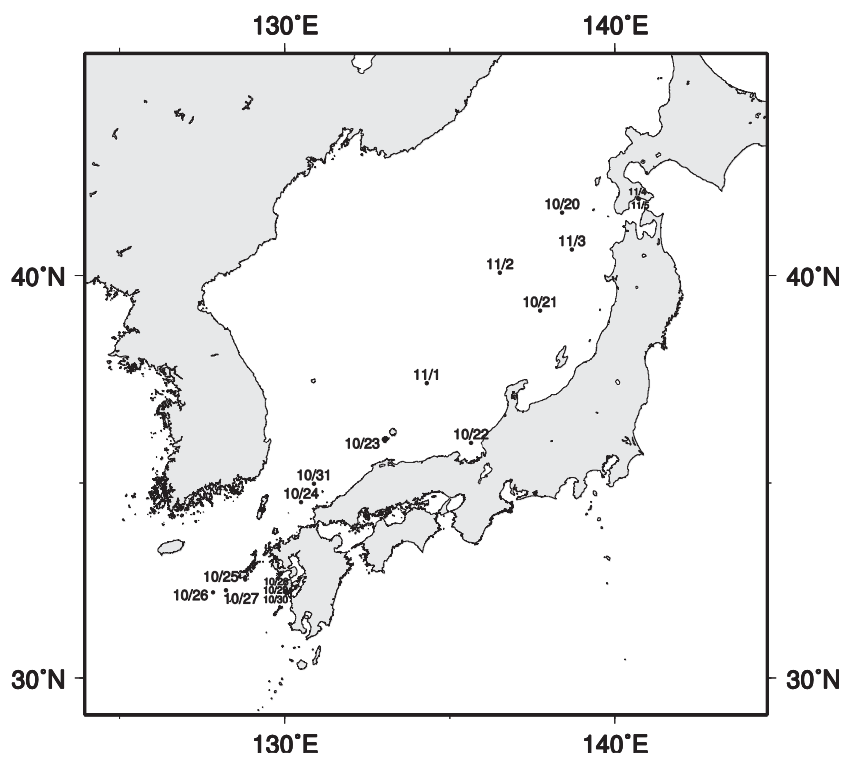


Figure 1. Noon position

2. Vessel Personnel

Captain:		Associate Professor	Shogo Takagi
Crew:	Chief Officer	Associate Professor	Keiichiro Sakaoka
	Chief Second Officer	Instructor	Naoki Hoshi
	Jr. Second Officer	Technical official	Takuzo Abe
	Third Officer	Technical official	Maki Ohwada
	Science Officer	Technical official	Keiri Imai
	Chief Engineer	Instructor	Jyunichi Kimura
	And 23 men		

Cruise 236

Under Graduate instructor:	Professor	(Laboratory of Marine Bioresource and Environment Sensing)	Yasuzumi Fujimori
	Associate Professor	(Laboratory of Marine Bioresource and EnvironmentSensing)	Toru Mukai
	Assistant Professor	(Laboratory of Marine Environmental Science)	Hiroji Onishi
	Associate Professor	(Laboratory of Marine Industrial Science and Technology)	Hiroki Yasuma
	Assistant Professor	(Laboratory of Marine Environmental Science)	Hiromichi Ueno
	Assistant Professor	(Field Science Center for Northern Biosphere, Hokkaido University)	Jun Yamamoto
	Research Fellow	(Graduate School of Information and Technology GCOE)	Toshiro Iwamori

Teaching Assistant:	5 person
Graduate Students:	1 person
Under Graduate Students:	22 persons
	Total 35 persons

3. Items of Research

Hydrographic observations:	Fig. 2	Table 1, 2
Bottom trawl observations:	Fig. 3	Table 3, 4
Biological research for squid caught by jigging:		
Plankton and jellyfish samplings by NORPAC-net, FMT-net and Bongo-net:		
Sediment sampling and observation by Smith-McIntyre Grab:		
Water samplings by Niskin bottles:		

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.

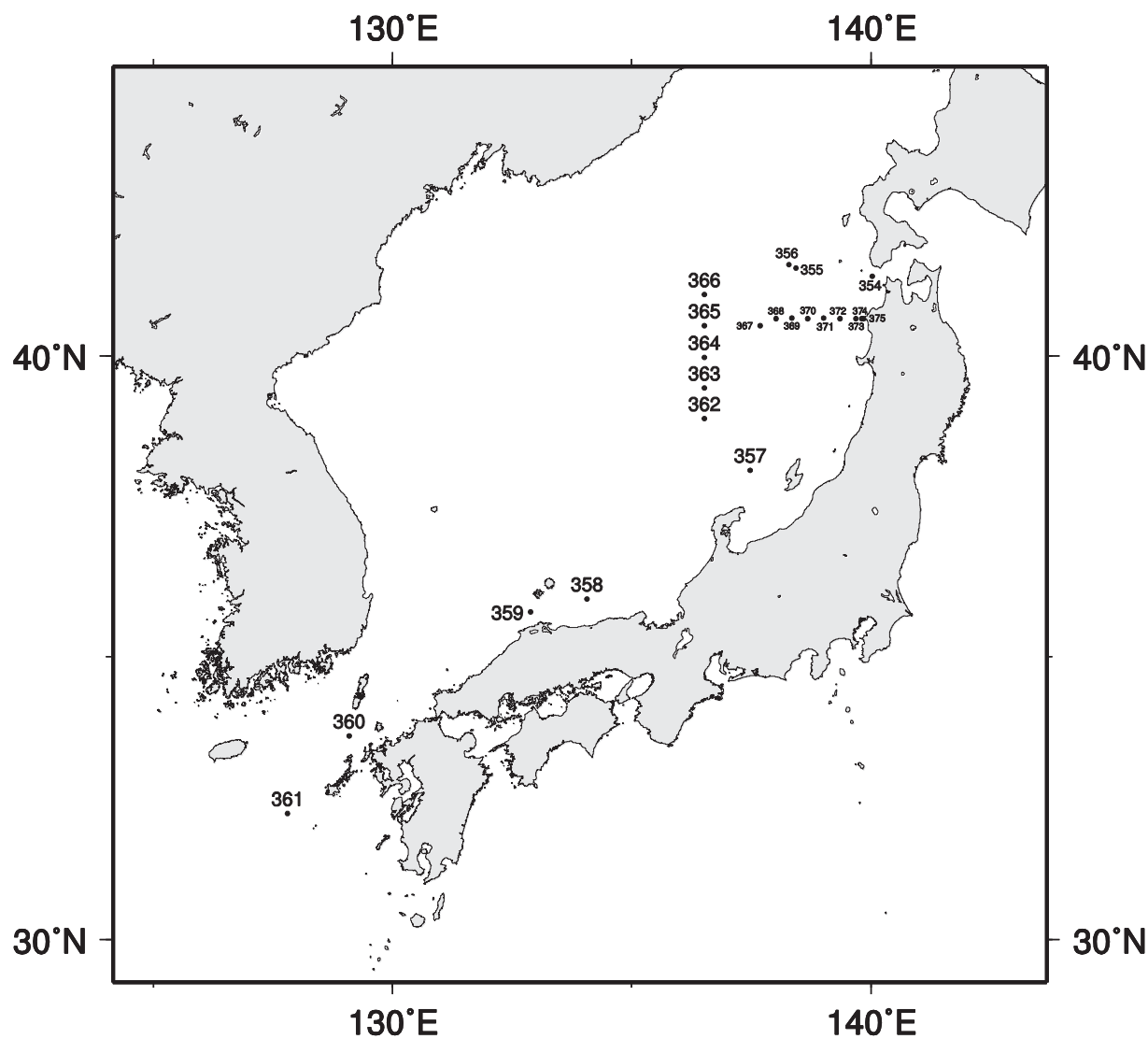


Figure 2. Oceanographic stations

Table 1. List of Oceanographic Station

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS11354	41-17.0N	140-01.0E	10/19	-	9	223	-	-	17.8	c	19Plus-4636
OS11355	41-25.1N	138-24.9E	10/20	0600	9	3700	-	-	16.2	bc	19Plus-4636
OS11356	41-28.2N	138-16.4E	10/20	0857	9	3695	-	-	15.0	bc	19Plus-4636
OS11357	38-09.6N	137-27.9E	10/21	1100	9	1507	-	-	20.2	bc	19Plus-4636
OS11358	36-00.0N	134-03.1E	10/22	1100	9	353	-	-	22.5	o	19Plus-4636
OS11359	35-46.8N	132-52.1E	10/23	1054	9	114	-	-	22.8	bc	19Plus-4636
OS11360	33-38.5N	129-04.4E	10/24	1029	9	129	-	-	23.6	r	19Plus-4636
OS11361	32-16.5N	127-47.3E	10/26	0759	9	148	-	-	24.4	bc	19Plus-4636
OS11362	39-00.1N	136-30.2E	11/1	1638	9	2705	-	-	18.3	b	9Plus-0769
OS11363	39-30.0N	136-30.0E	11/1	2107	9	2678	3	18.0	17.7	bc	9Plus-0769
OS11364	39-59.8N	136-30.3E	11/2	0118	9	1919	3	17.5	18.2	bc	9Plus-0769
OS11365	40-30.0N	136-29.9E	11/2	0538	9	3390	2	19.9	17.4	c	9Plus-0769
OS11366	40-59.9N	136-30.1E	11/2	0935	9	3355	-	-	13.9	bc	9Plus-0769
OS11367	40-30.0N	137-40.1E	11/2	1732	9	3105	-	-	14.8	bc	9Plus-0769
OS11368	40-37.1N	138-00.2E	11/2	2049	9	3422	-	-	17.0	bc	9Plus-0769
OS11369	40-37.6N	138-20.2E	11/2	2321	9	3283	3	13.5	18.0	bc	9Plus-0769
OS11370	40-37.0N	138-40.0E	11/3	0202	9	3357	3	22.3	18.2	bc	9Plus-0769
OS11371	40-37.0N	139-50.1E	11/3	0735	9	106	-	-	18.7	bc	9Plus-0769
OS11372	40-37.1N	139-47.9E	11/3	0811	9	442	-	-	19.0	bc	9Plus-0769
OS11373	40-37.0N	139-40.0E	11/3	0924	9	1073	-	-	18.9	bc	9Plus-0769
OS11374	40-37.1N	139-20.2E	11/3	1216	9	2414	-	-	18.9	bc	9Plus-0769
OS11375	40-37.3N	139-00.1E	11/3	1455	9	3259	-	-	18.1	bc	9Plus-0769

(*) : Fixed position by Global Positioning System

Table 2. Oceanographic data

Station OS11354				Station OS11355				Station OS11356				Station OS11357			
Latitude 41-17.0 N				Latitude 41-25.1 N				Latitude 41-28.2 N				Latitude 38-09.6 N			
Longitude 140-01.0 E				Longitude 138-24.9 E				Longitude 138-16.4 E				Longitude 137-27.9 E			
Depth(m) 223				Depth(m) 3700				Depth(m) 3695				Depth(m) 1507			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	17.908	33.592	24.217	5	16.039	33.637	24.690	5	14.779	33.749	25.055	5	20.029	33.343	23.490
10	17.892	33.602	24.228	10	15.949	33.634	24.709	10	14.743	33.748	25.063	10	20.005	33.344	23.498
20	17.537	33.859	24.510	20	15.914	33.636	24.718	20	14.610	33.747	25.090	20	19.819	33.358	23.557
30	16.395	34.347	25.155	30	15.776	33.643	24.754	30	14.594	33.748	25.094	30	19.803	33.391	23.586
40	15.851	34.314	25.254	40	6.424	33.961	26.677	40	7.479	33.979	26.548	40	19.447	33.744	23.947
50	15.332	34.359	25.404	50	5.111	33.992	26.863	50	5.819	34.021	26.802	50	17.705	34.336	24.836
75	12.425	34.342	25.996	75	3.344	34.025	27.075	75	3.617	34.042	27.063	75	15.824	34.428	25.348
100	11.291	34.289	26.169	100	2.379	34.055	27.184	100	2.692	34.050	27.154	100	14.093	34.475	25.762
125	10.377	34.259	26.308	125	1.790	34.040	27.219	125	1.997	34.050	27.211	125	12.341	34.393	26.052
150	9.727	34.232	26.399	150	1.615	34.044	27.234	150	1.765	34.056	27.233	150	11.033	34.282	26.211
175	9.367	34.216	26.445	175	1.510	34.052	27.249	175	1.603	34.057	27.246	175	10.528	34.266	26.287
				200	1.327	34.053	27.262	200	1.469	34.061	27.258	200	9.280	34.207	26.452

Station OS11358				Station OS11359				Station OS11360				Station OS11361			
Latitude 36-00.0 N				Latitude 35-46.8 N				Latitude 33-38.5 N				Latitude 32-16.5 N			
Longitude 134-03.1 E				Longitude 132-52.1 E				Longitude 129-04.4 E				Longitude 127-47.3 E			
Depth(m) 353				Depth(m) 114				Depth(m) 129				Depth(m) 148			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	22.405	33.712	23.126	5	22.767	33.837	23.118	5	23.649	34.108	23.069	5	24.530	34.130	22.825
10	22.388	33.707	23.128	10	22.774	33.836	23.116	10	23.641	34.110	23.073	10	24.554	34.130	22.819
20	22.038	33.616	23.156	20	22.788	33.841	23.116	20	23.644	34.110	23.073	20	24.557	34.130	22.817
30	22.048	33.624	23.159	30	22.837	33.869	23.123	30	23.691	34.136	23.079	30	24.360	34.088	22.844
40	22.072	33.637	23.163	40	22.847	33.894	23.139	40	23.688	34.137	23.080	40	24.100	34.043	22.888
50	22.062	33.649	23.175	50	22.753	33.867	23.145	50	23.557	34.110	23.098	50	24.108	34.057	22.896
75	19.092	34.033	24.259	75	22.668	33.861	23.165	75	21.327	34.445	23.982	75	19.653	34.527	24.492
100	16.863	34.283	24.996	100	19.031	34.084	24.313	100	19.321	34.493	24.551	100	17.102	34.596	25.180
125	15.172	34.365	25.444									125	16.731	34.595	25.267
150	11.638	34.375	26.172												
175	6.785	34.122	26.756												

Station OS11362				
Latitude 39-00.1 N				
Longitude 136-30.2 E				
Depth(m) 2705				
Press.	Temp.	Sal.	SIG-T	
5	18.391	33.424	23.970	
10	18.289	33.417	23.989	
20	17.655	33.467	24.182	
30	17.698	33.479	24.202	
40	16.903	33.636	24.490	
50	16.473	33.763	24.688	
75	10.050	34.204	26.322	
100	6.383	34.036	26.742	
125	4.417	34.009	26.954	
150	3.090	34.004	27.082	
175	2.272	34.036	27.178	
200	1.659	34.038	27.226	
250	1.164	34.052	27.273	
300	0.933	34.056	27.291	
400	0.766	34.061	27.305	
500	0.600	34.063	27.316	
600	0.483	34.063	27.324	
700	0.407	34.063	27.328	
800	0.350	34.063	27.331	
900	0.311	34.062	27.333	
1000	0.283	34.062	27.334	
1200	0.245	34.062	27.336	
1500	0.222	34.062	27.337	
2000	0.222	34.062	27.337	

Station OS11366				
Latitude 40-59.9 N				
Longitude 136-30.1 E				
Depth(m) 3355				
Press.	Temp.	Sal.	SIG-T	
5	13.715	33.762	25.289	
10	13.528	33.760	25.326	
20	13.491	33.760	25.334	
30	13.464	33.760	25.339	
40	6.194	33.881	26.644	
50	4.428	33.952	26.908	
75	2.709	33.978	27.095	
100	1.995	34.006	27.176	
125	1.708	34.018	27.207	
150	1.457	34.024	27.230	
175	1.339	34.030	27.243	
200	1.282	34.039	27.254	
250	1.068	34.049	27.276	
300	0.917	34.056	27.291	
400	0.740	34.060	27.306	
500	0.641	34.064	27.315	
600	0.548	34.065	27.321	
700	0.473	34.064	27.325	
800	0.406	34.064	27.329	
900	0.353	34.063	27.331	
1000	0.311	34.063	27.333	
1200	0.261	34.062	27.335	
1500	0.226	34.062	27.337	
2000	0.218	34.062	27.338	

Station OS11370				
Latitude 40-37.0 N				
Longitude 138-40.0 E				
Depth(m) 3357				
Press.	Temp.	Sal.	SIG-T	
5	18.223	33.398	23.991	
10	18.196	33.397	23.997	
20	18.119	33.399	24.017	
30	18.019	33.405	24.046	
40	17.759	34.282	24.781	
50	16.493	34.361	25.143	
75	14.083	34.429	25.729	
100	11.828	34.329	26.101	
125	10.546	34.247	26.269	
150	9.587	34.217	26.410	
175	8.168	34.149	26.581	
200	6.268	34.080	26.792	
250	3.260	34.033	27.090	
300	1.901	34.045	27.214	
400	1.048	34.058	27.285	
500	0.743	34.062	27.307	
600	0.596	34.064	27.317	
700	0.510	34.064	27.323	
800	0.439	34.064	27.327	
900	0.384	34.063	27.330	
1000	0.342	34.063	27.332	

Station OS11374				
Latitude 40-37.1 N				
Longitude 139-20.2 E				
Depth(m) 2414				
Press.	Temp.	Sal.	SIG-T	
5	19.090	33.248	23.660	
10	19.092	33.247	23.659	
20	19.097	33.247	23.658	
30	18.951	33.288	23.725	
40	18.565	33.386	23.897	
50	18.392	33.396	23.948	
75	16.078	34.410	25.276	
100	14.210	34.434	25.706	
125	12.116	34.339	26.053	
150	10.626	34.264	26.269	
175	9.536	34.215	26.417	
200	8.051	34.133	26.585	
250	2.858	34.035	27.127	
300	2.040	34.033	27.193	
400	1.063	34.051	27.278	
500	0.724	34.060	27.307	
600	0.524	34.061	27.320	
700	0.416	34.062	27.326	
800	0.346	34.062	27.330	
900	0.305	34.061	27.332	
1000	0.264	34.061	27.334	

Station OS11363				
Latitude 39-30.0 N				
Longitude 136-30.0 E				
Depth(m) 2678				
Press.	Temp.	Sal.	SIG-T	
5	17.671	33.399	24.126	
10	17.667	33.399	24.127	
20	17.678	33.399	24.124	
30	17.678	33.399	24.125	
40	17.679	33.400	24.125	
50	12.915	34.250	25.828	
75	9.588	34.214	26.407	
100	6.011	34.053	26.803	
125	3.843	34.021	27.023	
150	2.869	34.029	27.121	
175	2.094	34.041	27.196	
200	1.713	34.043	27.227	
250	1.285	34.052	27.264	
300	1.019	34.057	27.286	
400	0.742	34.060	27.306	
500	0.595	34.062	27.316	
600	0.489	34.063	27.323	
700	0.416	34.063	27.328	
800	0.367	34.063	27.330	
900	0.327	34.063	27.332	
1000	0.288	34.062	27.334	

Station OS11367				
Latitude 40-30.0 N				
Longitude 137-40.1 E				
Depth(m) 3105				
Press.	Temp.	Sal.	SIG-T	
5	14.716	33.685	25.020	
10	14.719	33.685	25.019	
20	14.512	33.695	25.071	
30	14.226	33.707	25.141	
40	13.590	33.673	25.246	
50	4.883	33.927	26.838	
75	2.652	33.984	27.105	
100	2.000	34.019	27.186	
125	1.739	34.031	27.215	
150	1.560	34.039	27.234	
175	1.331	34.044	27.254	
200	1.172	34.047	27.268	
250	0.972	34.054	27.287	
300	0.868	34.059	27.297	
400	0.689	34.062	27.311	
500	0.568	34.064	27.320	
600	0.484	34.064	27.324	
700	0.411	34.064	27.328	
800	0.361	34.063	27.331	
900	0.319	34.062	27.332	
1000	0.291	34.062	27.334	
1200	0.249	34.062	27.336	
1500	0.219	34.062	27.337	
2000	0.217	34.062	27.338	

Station OS11371				
Latitude 139-50.1 E				
Depth(m) 106				
Press.	Temp.	Sal.	SIG-T	
5	18.749	32.846	23.438	
10	18.753	33.037	23.583	
20	18.803	33.083	23.606	
30	18.695	33.085	23.635	
40	18.747	33.115	23.645	
50	18.852	33.184	23.671	
75	18.401	33.652	24.141	

Station			OS11375
Latitude			40-37.3 N
Longitude			139-00.1 E
Depth(m)			3259
Press.	Temp.	Sal.	SIG-T
5	18.359	33.342	23.915
10	18.362	33.342	23.914
20	18.308	33.350	23.933
30	18.245	33.361	23.957
40	18.085	33.490	24.095
50	16.510	34.304	25.095
75	14.835	34.444	25.579
100	12.785	34.372	25.949
125	11.075	34.290	26.209
150	10.252	34.252	26.325
175	9.311	34.204	26.445
200	7.241	34.103	26.679
250	3.324	34.032	27.082
300	1.909	34.033	27.204
400	1.223	34.050	27.267
500	0.882	34.059	27.296
600	0.692	34.062	27.310
700	0.556	34.062	27.319
800	0.472	34.063	27.324
900	0.417	34.063	27.327
1000	0.367	34.063	27.330

5. Data on bottom trawl research

Three 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.

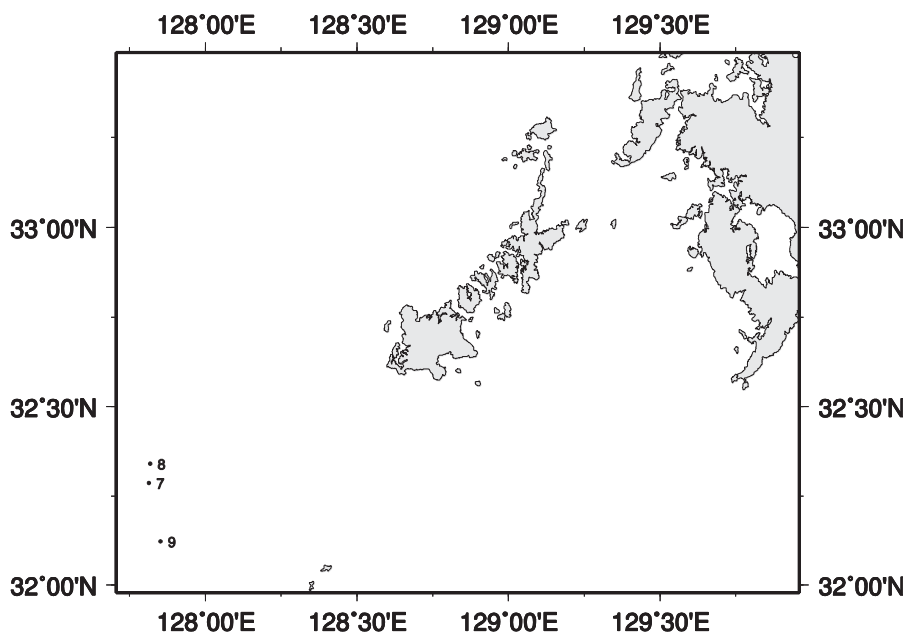


Figure 3. Locations of bottom trawl research

Table 3. Data on bottom trawl research during the "Oshoro Maru" Cruise #236

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)					
OST1107	26-Oct	1243-1345	32-17.3	127-48.7	005	3.0	145	bc	NNW-5
OST1108	26-Oct	1510-1610	32-20.6	127-49.0	183	3.5	145	bc	NE-5
OST1109	27-Oct	0725-0825	32-07.5	127-51.0	350	3.0	150	bc	NE-2

S.T. : Surface temperature

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

Table 4. Date on catches by bottom trawl research

Japanese name	Scientific Name	OST1107		OST1108		OST1109	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
akamutu	<i>Peristedion orientale</i>	-	-	-	-	1	0.27
anko	<i>Lophiomus setigerus</i>	-	-	1	17	2	2.27
izukasago	<i>Scorpaena neglecta</i>	1	0.2	-	-	-	-
umazurahagi	<i>Thamnaconus modestus</i>	12	8.3	2	1.4	16	8.5
kaiwari	<i>Synagrops japonicus</i>	5	1.28	14	4.5	26	3.3
kagamidai	<i>Psenopsis anomala</i>	-	-	-	-	1	0.85
kagokakidai	<i>Scorpaena onaria</i>	-	-	-	-	3	1.21
kasago	<i>Sebastiscus marmoratus</i>	-	-	1	0.16	-	-
kasago-amoku	<i>Sepia esculenta</i>	-	-	-	-	6	1.69
kanado	<i>Loligo edulis</i>	22	4	12	1.3	-	-
kidai	<i>Lepidotrigla microptera</i>	87	24	73	22	112	34
chikamekintoki	<i>Helicolenus hilgendorfi</i>	1	0.2	4	0.33	5	3.3
shikishimahanadai	<i>Malakichtys wakiyae</i>	302	80	2	0.42	52	15.5
nigisu	<i>Ateleopus japonicus</i>	1	0.03	-	-	-	-
hime	<i>Monocetrus japonica</i>	8	1.36	8	1.3	10	1.53
beniteguri	<i>Rexea prometheoides</i>	4	1.13	3	0.36	-	-
hobo	<i>Chelidonichthys spinosus</i>	-	-	-	-	47	7.5
hata	<i>Epinephelinae</i>	-	-	-	-	20	24.2
madai	<i>Hoplosebastes armatus</i>	2	2.05	4	6	29	35
maaji	<i>Antigonia capros</i>	10	1.25	18	2.25	9	1.6
maeso	<i>Saurida macrolepis</i>	-	-	1	0.5	-	-
masaba	<i>Pleuronichthys comutas</i>	1	0.28	1	0.23	-	-
matodai	<i>Histiogaster typus</i>	19	9	10	1.8	19	10.5
uchiwaebi	<i>Ibacus ciliatus</i>	4	1.24	6	0.54	2	0.1
hiratumeigani	<i>Rajidae</i>	-	-	2	0.17	-	-
taiwangazami	<i>Coelorrhynchus multispinulosus</i>	-	-	-	-	1	0.15
kensakiika	<i>Loligo edulis edulis Hoyle</i>	53	8.89	-	-	118	23
surumeika	<i>Todarodes pacificus Steenstrup</i>	11	6.5	19	4.1	17	5
kouika	<i>Sepia (Platysepia) esculenta</i>	-	-	1	0.11	1	0.11
tosoku-rui	<i>Cephalopoda</i>	-	-	55	7	-	23
gangiei	<i>Dipturus kwangtungensis</i>	9	13	9	11	-	-
komonnkasube sp.	<i>Okamejei kenojei sp.</i>	-	-	-	-	7	10.5
nekozame	<i>Heterodontus japonicus</i>	-	-	-	-	3	1.64
nanukazame	<i>Gnathagnus elongatus</i>	1	0.35	-	-	-	-