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THE "OSHORU MARU" CRUISE 207
TO THE JAPAN SEA AND TO THE EAST CHINA SEA

IN OCTOBER-NOVEMBER 2009

1. Cruise Itinerary

Cruise 207

Departure from Hakodate	Oct. 22	, 2009
Start hydrographic research (OS09153)	22	
Start bottom trawl research (OST0916)	29	
Finish bottom trawl research (OST0918)	30	
Finish hydrographic research (OS09170)	29	
Arrival at Yeosu	31	
Departure from Yeosu	Nov. 2	
Return to Hakodate	6	

Total coverage 2116.0miles

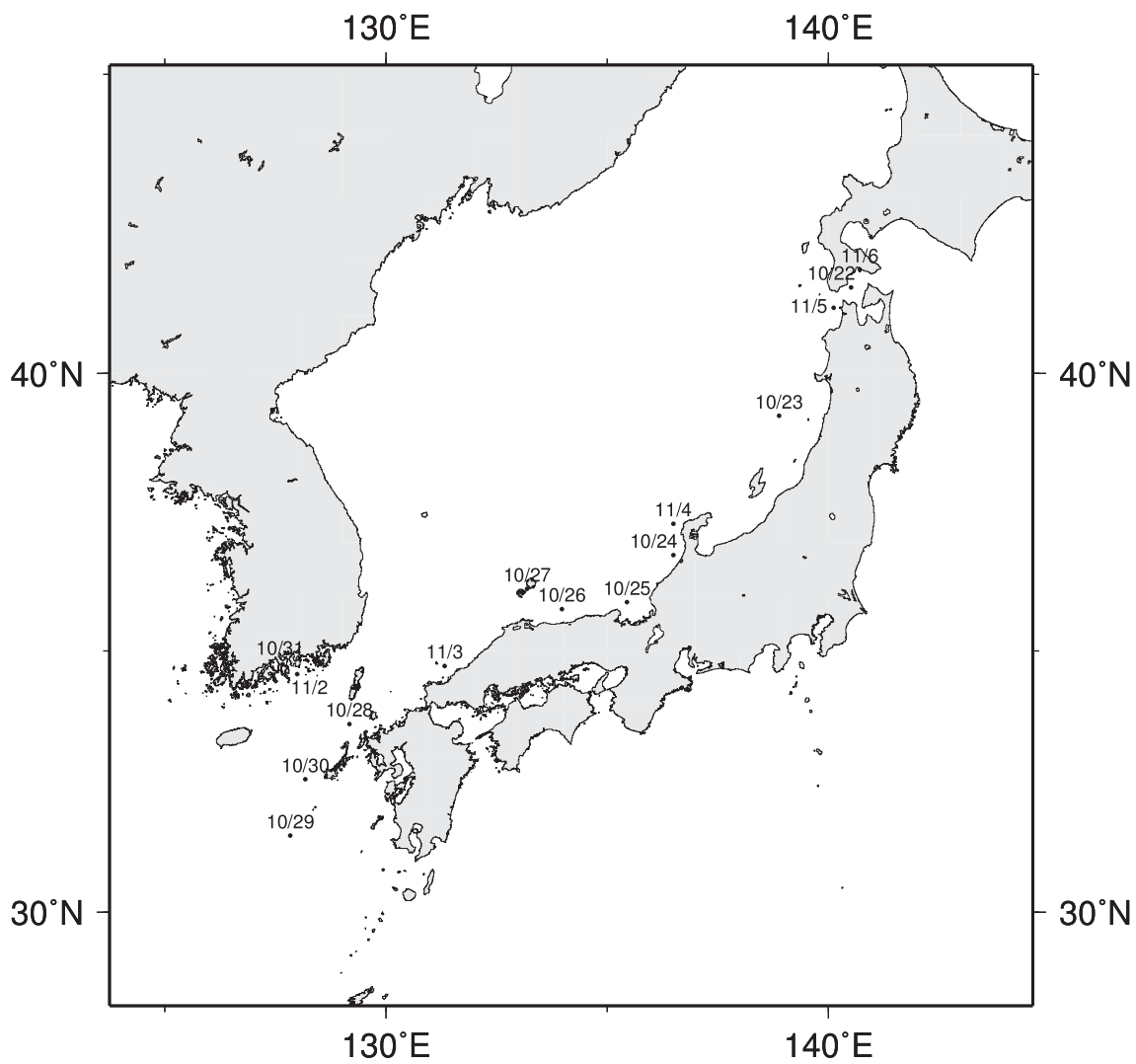


Figure 1: Noon position

2. Vessel Personnel

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

Cruise 207

Under Graduate instructor:	Associate Professor	(Laboratory of Marine Bioresource and Environment Sensing, Hokkaido University)	Toru Mukai
	Professor	(Laboratory of Marine Industrial Science and Technology, Hokkaido University)	Yasuzumi Fujimori
	Associate Professor	(Laboratory of Marine ecosystem Change Analysis, Hokkaido University)	Jun Yamamoto
Guest Scientist:	Professor	(Graduate School of Information Science and Technology, Hokkaido University)	Hidemi Watanabe
	Professor	(Graduate School of Information Science and Technology, Hokkaido University)	Hiroki Arimura
	Invitation professor	(faculty of fishing sciences, Chonnam National University)	Miyuki Hirose
	Science researcher	(Graduate School of Information Science and Technology, Hokkaido University)	Toshihiro Iwamori
	Teaching Assistant:		4 persons
	Graduate Students:		4 persons
	Under Graduate Students:		22 persons
	Total		67 persons

3. Items of Research

Hydrographic observations: Fig. 2 Table 1,2
 Biological research for fishes caught by bottom trawl research: 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”.

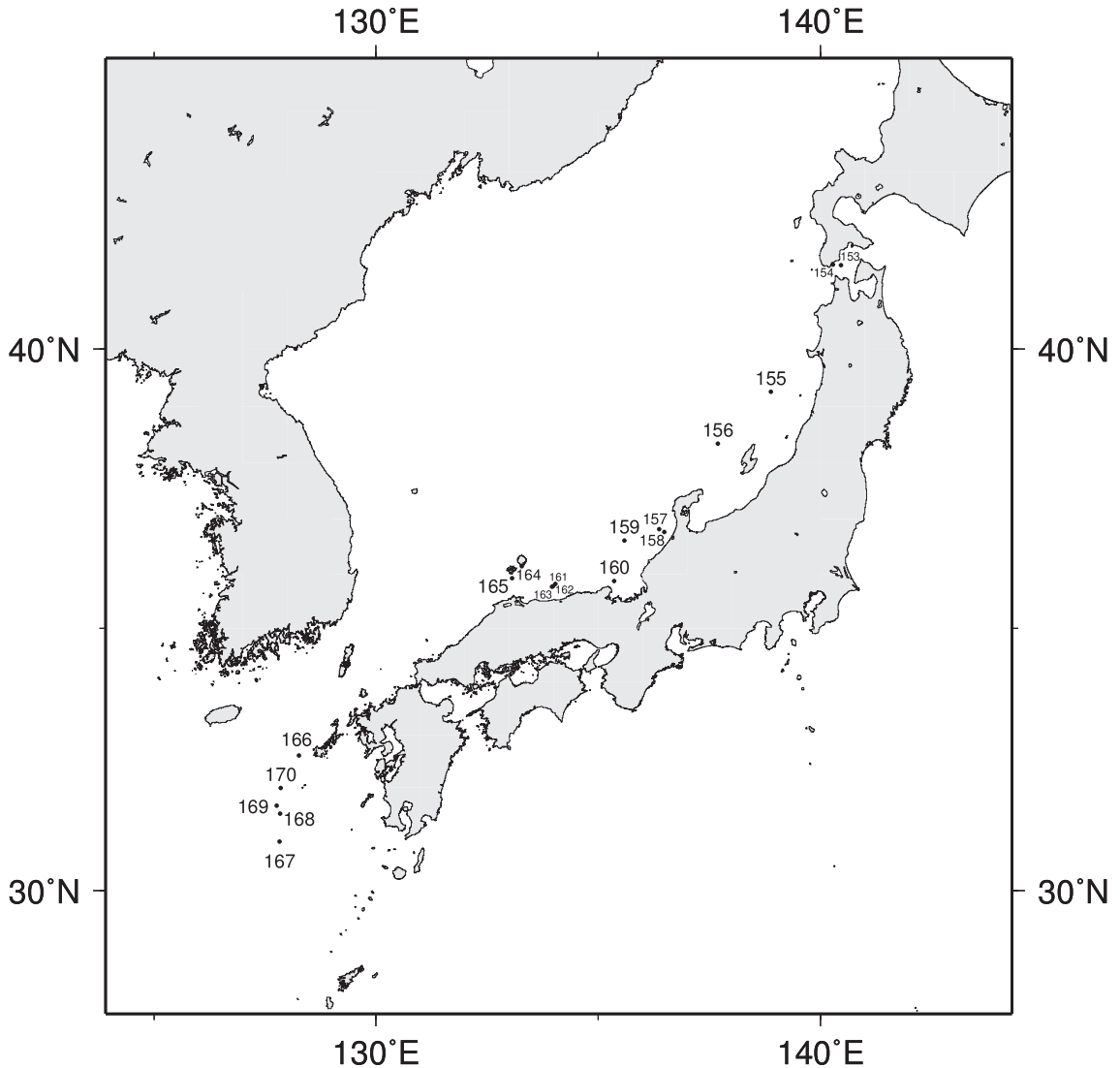


Figure 2: Oceanographic stations

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS09153	41-26.3N	140-28.1E	10/22	1320	9	228	-	-	18.3	c	9Plus-0769
OS09154	41-27.0N	140-17.0E	10/22	1908	9	55	-	-	-	-	9Plus-0769
OS09155	39-15.7N	138-52.9E	10/23	1024	9	203	-	-	19.6	bc	9Plus-0769
OS09156	38-20.9N	137-41.8E	10/23	1945	9	1979	-	-	19	bc	9Plus-0769
OS09157	36-48.6N	136-22.2E	10/24	1006	9	203	-	-	20.6	c	9Plus-0769
OS09158	36-45.9N	136-29.4E	10/24	1208	9	76	-	-	-	c	9Plus-0769
OS09159	36-36.6N	135-35.0E	10/24	2006	9	390	-	-	20.1	c	9Plus-0769
OS09160	35-52.5N	135-21.4E	10/25	1006	9	205	-	-	21.3	c	9Plus-0769
OS09161	35-49.2N	134-02.4E	10/25	2016	9	250	-	-	20.9	c	9Plus-0769
OS09162	35-46.1N	133-57.6E	10/26	0804	9	254	-	-	20.9	c	9Plus-0769
OS09163	35-46.5N	133-58.7E	10/26	1211	9	254	-	-	20.8	c	9Plus-0769
OS09164	36-08.3N	133-17.1E	10/27	0624	9	63	-	-	20.5	bc	9Plus-0769
OS09165	35-55.5N	133-03.3E	10/27	1617	9	73	-	-	21.5	bc	9Plus-0769
OS09166	32-36.8N	128-16.1E	10/28	1945	9	300	-	-	23.5	bc	9Plus-0769
OS09167	30-57.6N	127-49.8E	10/29	0635	9	144	-	-	23.9	c	9Plus-0769
OS09168	31-30.1N	127-50.1E	10/29	1200	9	140	-	-	25	c	9Plus-0769
OS09169	31-39.1N	127-45.5E	10/29	1530	9	140	-	-	24.9	c	9Plus-0769
OS09170	31-59.4N	127-51.2E	10/29	1930	9	142	-	-	24.3	c	9Plus-0769

(*):Fixed position by Global Positioning system

Table 2: Oceanographic data

Station		OS09153	
Longitude		41-26.3N	
Latitude		140-28.1E	
Depth(m)		228	
Press.	Temp.	Sal.	SIG-T
5	18.375	33.517	24.045
10	18.369	33.519	24.049
20	18.373	33.516	24.045
30	18.438	33.547	24.053
40	18.454	33.579	24.073
50	18.411	33.589	24.092
75	17.044	33.909	24.667
100	16.022	34.013	24.984
125	13.423	34.196	25.686
150	12.167	34.204	25.940
200	9.954	34.167	26.310

Station		OS09154	
Longitude		41-27.0N	
Latitude		140-17.0E	
Depth(m)		55	
Press.	Temp.	Sal.	SIG-T
5	15.521	33.762	24.904
10	15.492	33.768	24.915
20	15.505	33.764	24.909
30	15.484	33.769	24.917
40	15.481	33.770	24.919

Station		OS09155	
Longitude		39-15.7N	
Latitude		138-52.9E	
Depth(m)		203	
Press.	Temp.	Sal.	SIG-T
5	19.420	33.637	23.874
10	19.415	33.635	23.873
20	19.421	33.636	23.873
30	19.418	33.635	23.873
40	19.424	33.639	23.874
50	19.566	33.695	23.881
75	16.739	34.062	24.857
100	15.055	34.290	25.413
125	12.185	34.236	25.961
150	9.588	34.166	26.370
200	4.540	34.104	27.016

Station		OS09156	
Longitude		38-20.9N	
Latitude		137-41.8E	
Depth(m)		1979	
Press.	Temp.	Sal.	SIG-T
5	19.473	33.677	23.891
10	19.467	33.676	23.891
20	19.445	33.683	23.903
30	19.424	33.691	23.914
40	19.405	33.693	23.920
50	15.570	34.012	25.086
75	10.573	34.194	26.224
100	7.160	34.140	26.719
125	5.342	34.117	26.936
150	3.859	34.088	27.075
200	2.355	34.072	27.200
250	1.608	34.071	27.257
300	1.180	34.071	27.286
400	0.778	34.072	27.313
500	0.624	34.073	27.323

Station		OS09157	
Longitude		36-48.6N	
Latitude		136-22.2E	
Depth(m)		203	
Press.	Temp.	Sal.	SIG-T
5	20.818	33.492	23.397
10	20.818	33.491	23.396
20	20.815	33.490	23.396
30	20.816	33.490	23.396
40	20.844	33.547	23.431
50	19.463	34.021	24.156
75	18.231	34.133	24.553
100	14.915	34.309	25.458
125	11.647	34.223	26.053
150	8.908	34.177	26.488

Station		OS09158	
Longitude		36-45.9N	
Latitude		136-29.4E	
Depth(m)		76	
Press.	Temp.	Sal.	SIG-T
5	20.895	29.617	20.430
10	20.974	33.583	23.424
20	20.975	33.472	23.339
30	20.910	33.508	23.384
40	20.845	33.516	23.407
50	20.800	33.503	23.410

Station		OS09159	
Longitude		36-36.6N	
Latitude		135-35.0E	
Depth(m)		390	
Press.	Temp.	Sal.	SIG-T
5	20.638	33.494	23.446
10	20.637	33.493	23.446
20	20.653	33.497	23.445
30	20.793	33.680	23.546
40	20.770	33.680	23.553
50	20.755	33.690	23.564
75	17.355	34.236	24.844
100	14.753	34.311	25.495
125	11.097	34.210	26.143
150	7.500	34.150	26.679
200	3.258	34.088	27.133
250	1.659	34.073	27.254
300	0.974	34.071	27.300

Station		OS09160	
Longitude		35-52.5N	
Latitude		135-21.4E	
Depth(m)		205	
Press.	Temp.	Sal.	SIG-T
5	21.218	33.544	23.328
10	21.215	33.543	23.328
20	21.206	33.542	23.330
30	21.204	33.542	23.331
40	21.206	33.542	23.330
50	21.208	33.542	23.330
75	21.209	33.542	23.329
100	18.768	34.129	24.415
125	12.210	34.244	25.962
150	7.333	34.151	26.703

Station		OS09161	
Longitude		35-49.2N	
Latitude		134-02.4E	
Depth(m)		250	
Press.	Temp.	Sal.	SIG-T
5	20.974	33.639	23.467
10	20.984	33.639	23.463
20	20.976	33.638	23.465
30	20.988	33.638	23.462
40	20.988	33.638	23.462
50	20.990	33.637	23.461
75	18.826	34.143	24.412
100	15.772	34.259	25.230
125	11.700	34.214	26.036
150	8.400	34.173	26.564
200	1.922	34.077	27.238

Station		OS09162	
Longitude		35-46.1N	
Latitude		133-57.6E	
Depth(m)		254	
Press.	Temp.	Sal.	SIG-T
5	21.099	33.674	23.459
10	21.100	33.673	23.459
20	21.100	33.674	23.459
30	21.102	33.673	23.458
40	21.105	33.673	23.457
50	21.106	33.673	23.457
75	21.080	33.685	23.473
100	17.126	34.239	24.901
125	12.394	34.270	25.947
150	3.496	34.085	27.108
200	1.146	34.072	27.289

Station		OS09163	
Longitude		35-46.5N	
Latitude		133-58.7E	
Depth(m)		254	
Press.	Temp.	Sal.	SIG-T
5	21.010	33.648	23.464
10	21.033	33.664	23.470
20	21.017	33.661	23.472
30	21.020	33.668	23.476
40	21.020	33.669	23.477
50	21.027	33.670	23.476
75	20.374	33.878	23.809
100	17.001	34.267	24.953
125	11.561	34.225	26.070
150	3.143	34.072	27.131
200	1.244	34.073	27.284

Station		OS09164	
Longitude		36-08.3N	
Latitude		133-17.1E	
Depth(m)		63	
Press.	Temp.	Sal.	SIG-T
5	20.925	33.736	23.553
10	20.925	33.737	23.554
20	20.927	33.735	23.552
30	20.927	33.734	23.552
40	20.926	33.734	23.552
50	20.928	33.734	23.551

Station		OS09165	
Longitude		35-55.5N	
Latitude		133-03.3E	
Depth(m)		73	
Press.	Temp.	Sal.	SIG-T
5	21.792	33.853	23.406
10	21.792	33.853	23.405
20	21.779	33.854	23.410
30	21.730	33.841	23.414
40	21.689	33.828	23.416
50	21.673	33.826	23.418

Station		OS09166	
Longitude		32-36.8N	
Latitude		128-16.1E	
Depth(m)		300	
Press.	Temp.	Sal.	SIG-T
5	23.650	34.235	23.167
10	23.556	34.226	23.188
20	23.100	34.196	23.297
30	23.058	34.199	23.311
40	23.012	34.204	23.328
50	22.535	34.260	23.507
75	20.851	34.438	24.108
100	18.484	34.491	24.764
125	17.379	34.560	25.087
150	15.818	34.557	25.449
200	14.118	34.516	25.789
250	12.193	34.461	26.134
300	11.695	34.449	26.219

Station		OS09167	
Longitude		30-57.6N	
Latitude		127-49.8E	
Depth(m)		144	
Press.	Temp.	Sal.	SIG-T
5	24.061	34.200	23.020
10	24.054	34.199	23.021
20	24.060	34.199	23.019
30	24.064	34.199	23.018
40	24.079	34.206	23.019
50	24.084	34.209	23.019
75	23.863	34.241	23.109
100	20.664	34.546	24.241
125	18.504	34.588	24.833

Station		OS09168	
Longitude		31-30.1N	
Latitude		127-50.1E	
Depth(m)		140	
Press.	Temp.	Sal.	SIG-T
5	24.236	34.163	22.940
10	24.217	34.165	22.947
20	24.208	34.172	22.955
30	24.186	34.177	22.965
40	24.186	34.186	22.972
50	24.176	34.202	22.987
75	23.626	34.288	23.214
100	21.062	34.533	24.123
125	18.567	34.587	24.816

Station		OS09169	
Longitude		31-39.1N	
Latitude		127-45.5E	
Depth(m)		140	
Press.	Temp.	Sal.	SIG-T
5	24.283	34.221	22.970
10	24.266	34.220	22.974
20	24.259	34.222	22.978
30	24.231	34.224	22.988
40	24.207	34.224	22.994
50	24.194	34.224	22.998
75	24.102	34.220	23.023
100	21.180	34.509	24.072
125	18.723	34.583	24.774

Station		OS09170	
Longitude		31-59.4N	
Latitude		127-51.2E	
Depth(m)		142	
Press.	Temp.	Sal.	SIG-T
5	24.213	34.188	22.965
10	24.210	34.188	22.966
20	24.082	34.209	23.020
30	24.069	34.214	23.028
40	24.022	34.234	23.057
50	24.005	34.237	23.064
75	23.966	34.245	23.082
100	19.184	34.537	24.622
125	16.592	34.576	25.286

5. Data on bottom trawl research

Three operations of the stern otter bottom trawl were carried out. These operations were supervised by the captain, were conducted by deck officer, crew, research staff and cadets of the "Oshoro Maru".

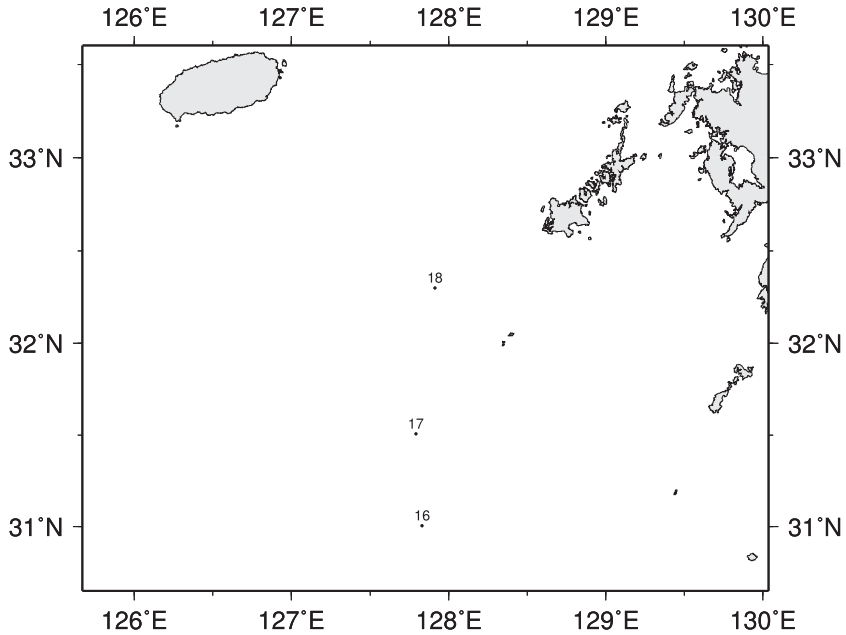


Figure 3: Locations of bottom trawl research

Table 3: Data on bottom trawl research during the "Oshoro Maru" Cruise #207

No. of research	Date and time of net tow (S.M.T.)		Position		Direction of tow	Speed of tow(K' t)	Bottom depth(m)	Wind	
			Lat.(N)	Long.(E)				Wr	(force)
OST0916	29-Oct	0720-0920	31-00.3	127-49.8	000	3.9	149	bc	East-3
OST0917	29-Oct	1242-1445	31-30.4	127-47.6	270-000	4.0	138	bc	Calm
OST0918	30-Oct	0725-0804	32-17.9	127-54.8	178	3.5	150	bc	Calm

Wr.: Weather (bc: 25-75% clouded)

Table 4: Data on catches by bottom trawl research

Japanese name	Scientific Name	OST 0916		OST 0917		OST 0918	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
akaamadai	<i>Branchiostegus japonicus</i>	1	1.2				
akamutu	<i>Peristedion orientale</i>	10	1.2	1	0.1	5	0.4
anko	<i>Lophiomus setigerus</i>			1	0.2		
izukasago	<i>Scorpaena neglecta</i>	65	20.5	31	11.2		
ibodai	<i>Scorpaenoidei</i>	6	1.1	1	0.1		
ukkarikasago	<i>Sebastes tertius</i>			2	0.3		
umazurahagi	<i>Thamnaconus modestus</i>					2	0.9
akagutu	<i>Halientaea stellata</i>	1	0.2				
kaiwari	<i>Synagrops japonicus</i>	93	5.7			10	1.3
kagamidai	<i>Psenopsis anomala</i>	1	0.2				
kagokakidai	<i>Scorpaena onaria</i>	3	0.8				
kasago	<i>Sebastes marmoratus</i>	1	0.6				
onikanagshira	<i>Lepidotrigla kishinouyei</i>					11	1.1
kanagashira sp.	<i>Lepidotrigla</i> sp.			190	7.6		
kanado	<i>Loligo edulis</i>	327	14.5			9	0.4
kawaragarei	<i>Poecilopsetta plinthus</i>	1	0.1				
kidai	<i>Lepidotrigla microptera</i>	285	75	248	65	41	12.8
chikamekintoki	<i>Helicolenus hilgendorfi</i>	2	0.7	7	0.7	1	0.1
kochi sp.	<i>Platycephalus</i> sp.					1	0.1
sagifue	<i>Macroramphosus scolopax</i>	133	2.5	1	0.1		
sarasahagi	<i>Thamnaconus hypargyreus</i>			2	0.2		
shikishimahanadai	<i>Malakichthys wakiyae</i>					2	0.2
tachiuo	<i>Navodon modestus</i>	1	0.6				
koubedarumagarei	<i>Crossorhombus kobensis</i>	1	0.1				
shitabirame sp	<i>Cynoglossus joyneri</i> sp.			1	0.1		
chikamedarumagarei	<i>Engyprosoyon multsquama</i>	5	0.5				
natuharigochi	<i>Hoplichthys langsdorfi</i>			2	0.1		
hime	<i>Monocetrus japonica</i>	134	8.2	23	1.9	4	0.5
himeji	<i>Hoplobrotula armata</i>			5	0.3		
beniteguri	<i>Rexea prometheoides</i>	1	0.1	1	0.1	1	0.1
hobo	<i>Chelidionichthys spinosus</i>	3	1				
maaji	<i>Antigonia capros</i>	890	41	320	15.2	6	0.2
maeso	<i>Saurida macrolepis</i>	1	0.5				
masaba	<i>Pleuronichthys comutas</i>	2	0.7				
matsukasauo	<i>Chelidoperca hirundinacea</i>					1	0.1
matodai	<i>Histiogaster typus</i>	54	10.4	18	2.2	2	0.2
midorifusaankou	<i>Upeneus bensasi</i>	1	0.1				
meitagarei	<i>Pleuronichthys cornutus</i>			1	0.1		
yatumedarumagarei	<i>Tosarhombus octoculatus</i>	1	0.2				
yoritofugu	<i>Sphoeroides pachygaster</i>	10	5.2	6	2.4		
kurosabafugu	<i>Lagocephalus gloveri</i>			1	0.7		
uchiwaebi	<i>Ibacus ciliatus</i>	3	0.4	8	0.9	3	0.4
hiratumegani	<i>Rajidae</i>	1930	143.8	1900	140.6	38	2.6
taiwangazami	<i>Coelorrhynchus multispinulosus</i>			3	0.3		
kensakiika	<i>Loligo edulis edulis</i> Hoyle	23	2.3	53	4.1	16	0.9
surumeika	<i>Todarodes pacificus</i> Steenstrup	21	5.8	54	20.7	7	2.4
kouika	<i>Sepia (Platysepia) esculenta</i>					1	0.1
gangiei	<i>Dipturus kwangtungensis</i>	7	4.7	8	10.4		
komonnkasube sp.	<i>Okamejei kenojei</i> sp.					3	1.4
nekozame	<i>Heterodontus japonicus</i>					2	0.2
Suketoudara	<i>Theragra chalcogramma</i>	4017	349.9	2888	285.6	166	26.4