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THE " OSHORO MARU " CRUISE 215 TO THE NORTHWEST PACIFIC OCEAN

IN MAY 2010

1. Cruise Itinerary

Cruise 215

Departure from Hakodate	May	9	,	2010
Start hydrographic research (OS10052)		10		
Start Gillnet research (OSG1001)		12		
Finish Gillnet research (OSG1004)		17		
Finish hydrographic research (OS10067)		19		
Return to Hakodate		21		

Total coverage 1991.5 miles

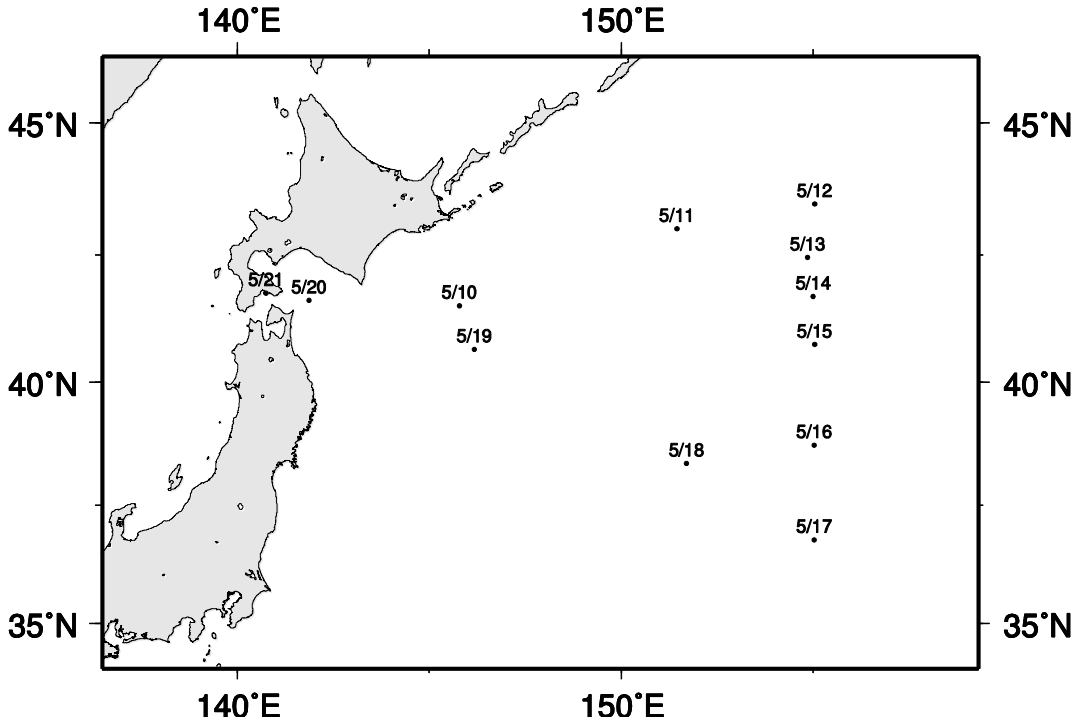

Figure 1. Noon position

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
	Science Officer	Technical official	Keiri Imai
	Chief Engineer	Instructor	Jyunichi Kimura
	And 22 men		

Cruise 215

Research Staff:

Associate Professor (Laboratory of Strategic Studies on Marine Bioresource Conservation and Management) Hideaki Kudo

Research Fellow:	1 Person
Teaching Assistant:	1 Person
Graduate Students:	1 Person
Under Graduate Students:	8 Persons
	Total 12 persons

3. Items of Research

Hydrographic observations:	Fig. 2	Table 1,2
Biological research for fishes caught by non-selective drift gillnets:	Fig. 3	Table 3 - 8
Salmon hook-and-line research:	Fig. 4	Table 9 - 11
Plankton sampling:		Table 12

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".

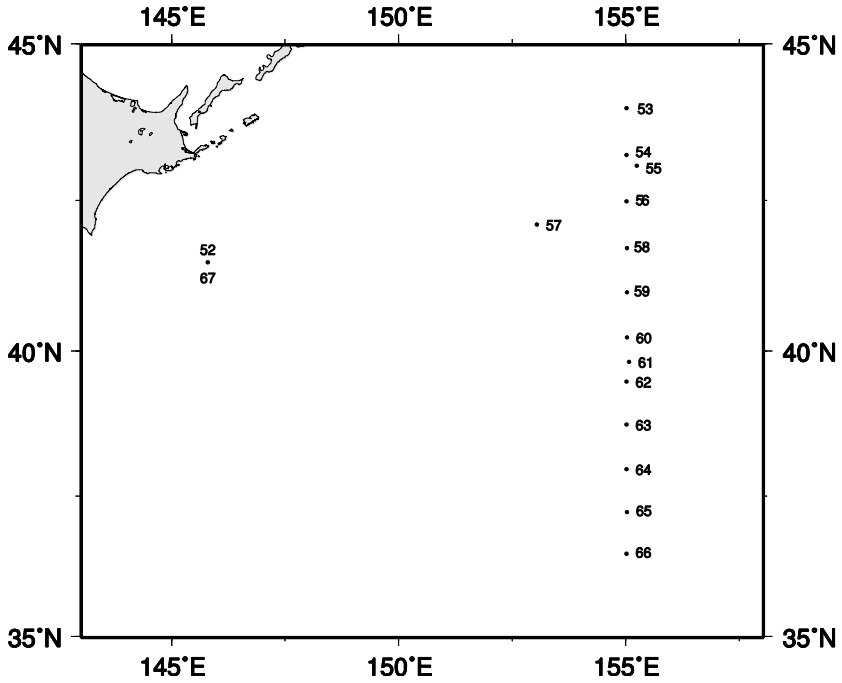

Figure 2. Oceanographic station

Table 1. List of Oceanographic Station

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS10052	41-30.1N	145-46.8E	5/10	0050	9	6950	5	5.5	3.5	b	9Plus-0769
OS10053	44-00.0N	155-00.0E	5/11	-	10	5290	-	-	-	o	19Plus-4636
OS10054	43-15.2N	155-00.0E	5/12	-	10	5490	4	-	-	f	19Plus-4636
OS10055	43-04.9N	155-13.3E	5/12	0842	10	5190	-	-	8.3	o	9Plus-91588
OS10056	42-29.9N	155-00.0E	5/13	0010	10	5155	-	-	7.1	o	19Plus-4636
OS10057	42-07.5N	153-01.5E	5/13	0938	10	5322	-	-	5.6	r	XCTD
OS10058	41-44.3N	155-00.7E	5/14	0304	10	5540	4	17.5	8.6	o	9Plus-91588
OS10059	41-00.0N	155-00.1E	5/14	2311	10	5475	3	13.8	10.6	c	9Plus-91588
OS10060	40-15.0N	155-00.2E	5/15	0452	10	5550	4	12.5	11.9	c	9Plus-91588
OS10061	39-50.2N	155-02.9E	5/15	0901	10	5550	-	-	11.2	c	9Plus-91588
OS10062	39-30.0N	155-00.0E	5/15	2015	10	5620	4	17.5	10.6	c	9Plus-91588
OS10063	38-45.6N	154-59.8E	5/16	0135	10	5775	4	12.4	13.5	c	9Plus-91588
OS10064	37-59.5N	154-59.6E	5/16	0743	10	5970	-	-	12.8	c	9Plus-91588
OS10065	37-14.4N	155-00.4E	5/16	2341	10	5755	4	15.4	14.5	o	XCTD-2
OS10066	36-30.0N	154-59.9E	5/17	0340	10	5705	4	14	17.6	bc	XCTD-2
OS10067	41-30.1N	145-46.8E	5/19	0809	9	6867	-	-	4.3	f	9Plus-91588

(*) : Fixed position by Global Positioning System

Table 2. Oceanographic data

Station	OS10052
Longitude	145-46.8E
Latitude	41-30.1N
Depth(m)	6950

Press.	Temp.	Sal.	SIG-T
5	2.382	32.800	26.180
10	2.422	32.819	26.192
20	2.153	32.839	26.229
30	2.011	32.856	26.253
40	2.410	32.988	26.329
50	1.508	32.897	26.322
75	0.494	32.882	26.372
100	2.211	33.145	26.470
125	1.550	33.160	26.530
150	0.549	33.137	26.574
175	0.912	33.203	26.606
200	0.830	33.231	26.633
250	1.247	33.352	26.705
300	1.703	33.455	26.755
400	2.040	33.635	26.875
500	3.301	33.912	26.989
600	3.404	34.049	27.089
700	3.261	34.129	27.166
800	3.194	34.215	27.241
900	3.147	34.269	27.288
1000	2.968	34.320	27.345
1200	2.646	34.372	27.416
1500	2.443	34.468	27.509

Station	OS10053
Longitude	155-00.0E
Latitude	44-00.0N
Depth(m)	5290

Press.	Temp.	Sal.	SIG-T
5	3.834	33.112	26.301
10	3.838	33.112	26.300
20	3.839	33.112	26.301
30	3.768	33.106	26.302
40	3.516	33.080	26.306
50	3.478	33.083	26.312
75	3.251	33.123	26.365
100	3.060	33.251	26.484
125	2.853	33.398	26.619
150	2.369	33.461	26.710
175	2.589	33.555	26.767
200	2.672	33.635	26.824
250	2.843	33.740	26.893
300	3.525	33.907	26.963
400	3.137	33.980	27.058
500	3.215	34.107	27.152
600	3.194	34.208	27.235
700	3.107	34.284	27.304
800	2.947	34.330	27.355
900	2.845	34.371	27.397
1000	2.713	34.408	27.438
1200	2.402	34.457	27.504
1500	2.196	34.527	27.577

Station	OS10054
Longitude	155-00.0E
Latitude	43-15.2N
Depth(m)	5490

Press.	Temp.	Sal.	SIG-T
5	5.245	33.364	26.351
10	5.250	33.364	26.350
20	5.197	33.366	26.357
30	5.130	33.372	26.370
40	5.078	33.390	26.390
50	5.072	33.399	26.398
75	4.932	33.443	26.449
100	5.232	33.542	26.493
125	5.336	33.578	26.509
150	5.308	33.598	26.528
175	4.589	33.612	26.620
200	3.981	33.635	26.702
250	3.153	33.658	26.800
300	3.211	33.735	26.856
400	3.506	33.909	26.967
500	3.962	34.122	27.092
600	3.228	34.137	27.175
700	3.060	34.210	27.249
800	3.157	34.309	27.319
900	2.940	34.344	27.367
1000	2.762	34.389	27.418
1200	2.527	34.449	27.487
1500	2.270	34.518	27.564

Station	OS10055
Longitude	155-13.3E
Latitude	43-04.9N
Depth(m)	5190

Press.	Temp.	Sal.	SIG-T
5	8.198	33.897	26.378
10	8.191	33.895	26.377
20	8.189	33.901	26.385
30	7.491	33.791	26.398
40	6.611	33.651	26.408
50	6.641	33.660	26.411
75	6.284	33.615	26.423
100	6.559	33.737	26.483
125	5.951	33.647	26.490
150	6.392	33.757	26.520
175	5.759	33.746	26.592
200	4.727	33.694	26.670
250	4.562	33.826	26.793
300	3.658	33.784	26.853
400	3.491	33.907	26.967
500	3.394	34.009	27.058
600	3.276	34.104	27.145
700	3.108	34.187	27.226
800	3.156	34.285	27.300
900	2.929	34.330	27.356
1000	2.800	34.372	27.402
1200	2.596	34.441	27.474
1500	2.290	34.509	27.555

Station	OS10056
Longitude	155-00.0E
Latitude	42-29.9N
Depth(m)	5155

Press.	Temp.	Sal.	SIG-T
5	6.731	33.701	26.432
10	6.728	33.701	26.432
20	6.728	33.701	26.432
30	6.728	33.701	26.432
40	6.638	33.700	26.443
50	6.535	33.713	26.467
75	6.097	33.704	26.517
100	6.257	33.759	26.539
125	6.201	33.756	26.544
150	6.138	33.751	26.548
175	5.861	33.723	26.561
200	5.671	33.708	26.572
250	4.891	33.753	26.699
300	4.087	33.757	26.788
400	3.888	33.889	26.914
500	3.738	34.018	27.031
600	3.779	34.147	27.130
700	3.601	34.229	27.213
800	3.347	34.299	27.293
900	3.156	34.340	27.344
1000	2.866	34.371	27.395
1200	2.608	34.432	27.466
1500	2.270	34.504	27.552

Station	OS10057
Longitude	153-01.5E
Latitude	42-07.5N
Depth(m)	5322

Press.	Temp.	Sal.	SIG-T
5	5.623	33.132	26.123
10	5.623	33.141	26.130
20	5.613	33.155	26.142
30	6.463	33.565	26.360
40	6.632	33.634	26.392
50	5.994	33.579	26.431
75	4.251	33.391	26.481
100	4.182	33.460	26.543
125	3.824	33.479	26.594
150	3.172	33.502	26.674
200	5.469	33.943	26.783
250	3.979	33.812	26.843
300	2.878	33.761	26.907
400	3.713	34.015	27.032
500	3.206	34.078	27.130
600	3.352	34.234	27.241
700	3.110	34.297	27.314
800	2.908	34.340	27.367
900	2.782	34.385	27.414
1000	2.637	34.428	27.461

Station	OS10058
Longitude	155-00.7E
Latitude	41-44.3N
Depth(m)	5540

Press.	Temp.	Sal.	SIG-T
5	8.757	33.901	26.296
10	8.725	33.896	26.297
20	8.532	33.879	26.313
30	8.080	33.845	26.355
40	7.405	33.825	26.437
50	6.576	33.708	26.458
75	6.108	33.686	26.501
100	6.184	33.723	26.520
125	5.969	33.698	26.528
150	5.744	33.673	26.536
175	5.740	33.691	26.550
200	5.881	33.761	26.588
250	4.899	33.767	26.709
300	4.100	33.766	26.794
400	4.463	34.003	26.944
500	3.906	34.066	27.053
600	3.661	34.144	27.140
700	3.586	34.243	27.225
800	3.259	34.274	27.282
900	3.057	34.319	27.336
1000	2.874	34.363	27.388
1200	2.692	34.439	27.465
1500	2.326	34.503	27.547

Station	OS10059
Longitude	155-00.1E
Latitude	41-00.0N
Depth(m)	5475

Press.	Temp.	Sal.	SIG-T
5	10.521	34.096	26.156
10	10.483	34.098	26.165
20	10.452	34.093	26.166
30	10.419	34.090	26.170
40	9.571	33.968	26.217
50	8.417	33.847	26.306
75	7.514	33.781	26.387
100	7.488	33.837	26.434
125	6.249	33.672	26.472
150	6.435	33.740	26.501
175	5.980	33.721	26.545
200	5.507	33.699	26.585
250	5.122	33.797	26.708
300	4.075	33.748	26.783
400	4.554	33.980	26.916
500	4.418	34.077	27.008
600	3.852	34.128	27.108
700	3.798	34.233	27.197
800	3.470	34.296	27.279
900	3.230	34.335	27.333
1000	3.016	34.377	27.387
1200	2.623	34.428	27.462
1500	2.315	34.506	27.550

Station	OS10060
Longitude	155-00.2E
Latitude	40-15.0N
Depth(m)	5550

Press.	Temp.	Sal.	SIG-T
5	11.748	34.275	26.074
10	11.710	34.275	26.080
20	11.646	34.278	26.095
30	11.634	34.278	26.097
40	11.629	34.278	26.098
50	11.619	34.278	26.100
75	11.162	34.256	26.167
100	10.825	34.232	26.209
125	10.477	34.190	26.237
150	10.151	34.164	26.273
175	9.689	34.114	26.313
200	9.326	34.079	26.344
250	7.976	33.945	26.449
300	7.077	33.959	26.588
400	5.026	33.880	26.784
500	4.109	33.930	26.924
600	4.037	34.064	27.038
700	3.925	34.206	27.162
800	3.554	34.267	27.248
900	3.252	34.304	27.307
1000	3.073	34.355	27.364
1200	2.709	34.425	27.452
1500	2.339	34.499	27.543

Station	OS10061
Longitude	155-02.9E
Latitude	39-50.2N
Depth(m)	5550

Press.	Temp.	Sal.	SIG-T
5	11.186	34.212	26.128
10	11.181	34.214	26.130
20	11.165	34.212	26.132
30	11.072	34.212	26.149
40	11.072	34.214	26.150
50	11.061	34.212	26.151
75	10.442	34.135	26.201
100	7.729	33.798	26.369
125	6.506	33.714	26.472
150	6.007	33.662	26.495
175	6.122	33.690	26.502
200	6.012	33.690	26.516
250	5.857	33.772	26.600
300	4.973	33.769	26.702
400	3.907	33.812	26.851
500	4.077	33.969	26.958
600	4.110	34.138	27.089
700	3.786	34.201	27.172
800	3.368	34.269	27.267
900	3.152	34.320	27.328
1000	2.994	34.352	27.368
1200	2.657	34.424	27.455
1500	2.352	34.503	27.545

Station	OS10062
Longitude	155-00.0E
Latitude	39-30.0N
Depth(m)	5620

Press.	Temp.	Sal.	SIG-T
5	10.439	34.113	26.184
10	10.440	34.113	26.184
20	10.444	34.114	26.184
30	10.346	34.094	26.186
40	10.024	34.059	26.213
50	10.018	34.060	26.215
75	8.944	34.039	26.375
100	8.576	34.015	26.413
125	7.580	33.890	26.463
150	6.762	33.780	26.490
175	6.283	33.744	26.525
200	6.484	33.816	26.555
250	6.108	33.874	26.649
300	5.393	33.885	26.746
400	4.350	33.924	26.894
500	4.071	34.036	27.012
600	3.849	34.136	27.114
700	3.711	34.224	27.198
800	3.424	34.279	27.270
900	3.205	34.322	27.325
1000	3.057	34.368	27.375
1200	2.717	34.429	27.455
1500	2.326	34.505	27.549

Station	OS10063
Longitude	154-59.8E
Latitude	38-45.6N
Depth(m)	5775

Press.	Temp.	Sal.	SIG-T
5	13.476	34.417	25.845
10	13.403	34.414	25.858
20	13.311	34.411	25.874
30	13.276	34.407	25.878
40	13.248	34.402	25.880
50	13.213	34.397	25.883
75	13.121	34.384	25.892
100	11.905	34.272	26.042
125	10.935	34.193	26.159
150	10.374	34.180	26.247
175	9.880	34.132	26.294
200	9.624	34.109	26.319
250	8.362	33.977	26.416
300	6.884	33.810	26.497
400	4.735	33.833	26.780
500	4.953	34.030	26.912
600	4.413	34.139	27.058
700	4.069	34.208	27.149
800	3.721	34.277	27.239
900	3.410	34.333	27.315
1000	3.144	34.375	27.373
1200	2.646	34.425	27.458
1500	2.383	34.497	27.537

Station	OS10064
Longitude	154-59.6E
Latitude	37-59.5N
Depth(m)	5970

Press.	Temp.	Sal.	SIG-T
5	12.888	34.304	25.876
10	12.876	34.303	25.878
20	12.820	34.302	25.888
30	12.383	34.279	25.956
40	12.103	34.266	26.000
50	12.047	34.261	26.007
75	10.857	34.211	26.187
100	10.594	34.207	26.230
125	10.183	34.159	26.264
150	9.357	34.069	26.332
175	8.745	34.009	26.382
200	8.404	33.978	26.411
250	7.728	33.898	26.449
300	6.386	33.857	26.600
400	4.526	33.843	26.811
500	4.512	34.006	26.941
600	4.359	34.124	27.051
700	3.986	34.191	27.144
800	3.603	34.265	27.242
900	3.327	34.314	27.307
1000	3.039	34.354	27.366
1200	2.758	34.430	27.452
1500	2.380	34.502	27.542

Station	OS10065
Longitude	155-00.4E
Latitude	37-14.4N
Depth(m)	5755

Press.	Temp.	Sal.	SIG-T
5	14.477	34.405	25.627
10	14.455	34.427	25.649
20	14.441	34.437	25.659
30	14.415	34.437	25.665
40	14.390	34.436	25.670
50	14.334	34.436	25.681
75	13.687	34.390	25.781
100	12.299	34.264	25.961
125	11.547	34.224	26.072
150	11.012	34.204	26.154
200	10.784	34.210	26.199
250	10.510	34.189	26.231
300	9.778	34.096	26.284
400	7.353	33.971	26.559
500	5.340	33.942	26.797
600	4.421	34.002	26.948
700	4.193	34.126	27.071
800	3.822	34.207	27.174
900	3.493	34.270	27.256
1000	3.223	34.314	27.317
1200	2.778	34.418	27.440
1500	2.361	34.508	27.548

Station	OS10066
Longitude	154-59.9E
Latitude	36-30.0N
Depth(m)	5705

Press.	Temp.	Sal.	SIG-T
5	17.582	34.631	25.093
10	17.532	34.651	25.120
20	17.510	34.656	25.129
30	17.501	34.660	25.134
40	17.492	34.668	25.143
50	17.295	34.654	25.179
75	17.098	34.636	25.213
100	16.162	34.585	25.392
125	15.358	34.529	25.531
150	14.874	34.521	25.631
200	14.016	34.451	25.760
250	12.245	34.326	26.019
300	10.471	34.176	26.228
400	8.236	34.060	26.501
500	5.893	33.946	26.733
600	4.846	33.969	26.875
700	4.488	34.114	27.030
800	4.021	34.205	27.152
900	3.592	34.275	27.251
1000	3.301	34.349	27.338
1200	2.868	34.421	27.435
1500	2.412	34.521	27.554

Station	OS10067
Longitude	145-46.8E
Latitude	41-30.1N
Depth(m)	6867

Press.	Temp.	Sal.	SIG-T
5	3.796	32.828	26.078
10	3.793	32.828	26.079
20	2.688	32.848	26.194
30	1.668	32.868	26.288
40	1.729	32.896	26.306
50	1.387	32.898	26.331
75	0.670	32.977	26.438
100	0.442	33.041	26.502
125	0.499	33.094	26.542
150	0.758	33.160	26.580
175	0.944	33.225	26.621
200	1.238	33.293	26.658
250	1.521	33.409	26.732
300	1.849	33.508	26.787
400	2.034	33.647	26.885
500	2.637	33.830	26.983
600	3.322	34.018	27.071
700	3.256	34.118	27.157
800	3.171	34.196	27.228
900	3.004	34.260	27.294
1000	2.844	34.315	27.352
1200	2.630	34.394	27.434
1500	2.307	34.469	27.522

5. Data on drift gillnet research

Four gillnet researches were performed during this cruise. The operations were supervised by the captain, and were conducted by deck officers, crews and research staff.

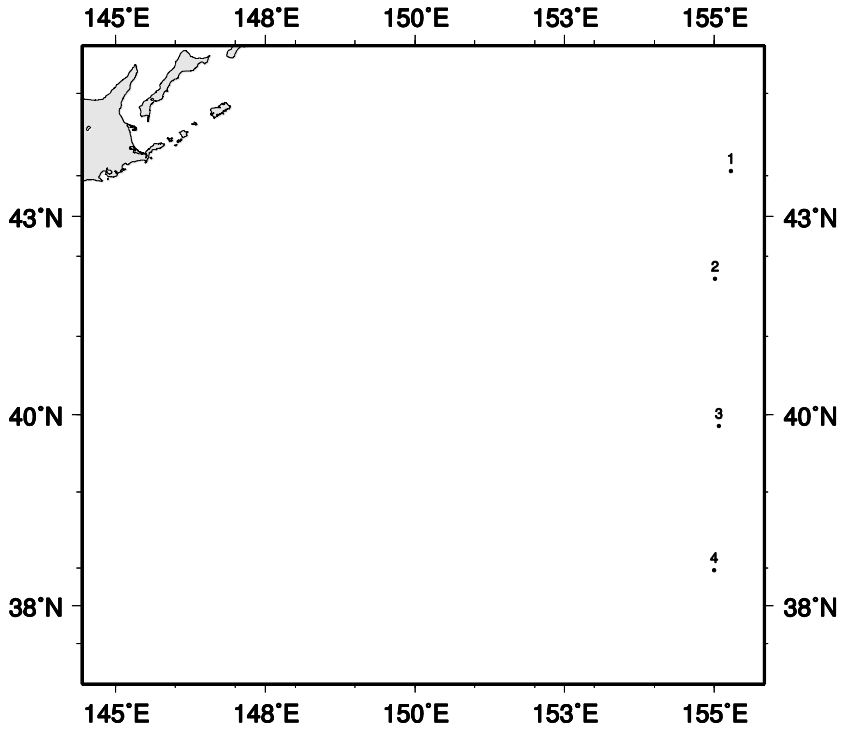

Figure 3. Locations of drift gillnet research

Table 3. Data on drift gillnet research

No. of research	Date and Time (S.M.T.) Net set		Net haul		T.D.	Position Lat.(N)	Long.		D.D.	Bottom depth(m)	Wr	Wind	S.T. (℃)	Tr (m)
OSG1001	13-May	1745-	14-May	0440-	10	43-04.0	155-16.0	(E)	275	5245	o	ESE-5	8.1	-
OSG1002	14-May	1745-	15-May	0423-	10	41-44.0	155-00.0	(E)	165	5548	o	NNW-5	7.8	-
OSG1003	15-May	1810-	16-May	0420-	10	39-52.0	155-04.0	(E)	30	5500	d	North-5	11.2	-
OSG1004	16-May	1850-	17-May	0423-	10	37-59.0	154-59.0	(E)	230	5970	o	NNE-3	12.8	-

T.D.: Time Difference between Greenwich Mean Time (G.M.T.) and S.M.T. D.D : Direction of Drift toward
Wr.: Weather (o: 100% clouded, f: 75-99% clouded, d: drizzling rain) S.T. : Surface temperature Tr : Transparency

Table 4. Nets composition

No. of research	Mesh size (mm) 48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1001	3	3	3	3	3	3	3	3	3	3	5	5	3	3	0	0	1	1	0	1	0	49
OSG1002	3	3	3	5	5	5	3	3	3	3	5	2	3	0	0	0	1	1	0	1	0	49
OSG1003	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49
OSG1004	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	49

Table 5. Data on catch number of salmonids by drift gillnet research

Sockeye (catch number)

No. of research	Mesh size (mm)																				
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Chum (catch number)

No. of research	Mesh size (mm)																				
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1001	0	0	1	0	2	3	10	12	0	1	17	16	11	7	0	0	0	0	0	0	0	80
OSG1002	0	0	0	2	3	4	15	9	1	0	33	8	11	0	0	0	0	0	0	0	0	86
OSG1003	0	0	0	0	0	2	2	5	3	1	2	3	2	1	0	0	0	0	0	0	0	21
OSG1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pink (catch number)

No. of research	Mesh size (mm)																				
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1001	0	0	4	74	54	16	2	1	0	1	2	1	1	0	0	0	0	0	0	0	0	156
OSG1002	0	0	8	97	92	53	3	1	0	0	3	2	1	0	0	0	0	0	0	0	0	260
OSG1003	0	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
OSG1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Coho (catch number)

No. of research	Mesh size (mm)																				
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Chinook (catch number)

No. of research	Mesh size (mm)																				
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Steelhead (catch number)

No. of research	Mesh size (mm)																				
	48	55	63	72	82	93	106	121	138	157	112	115	118	121	19	22	25	29	33	37	42	Total
OSG1001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSG1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6. Biological characteristics of salmonids caught by drift gillnet research

CHUM SALMON

St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G01	A112	560	2020	M	2	G01	C106	542	1854	F	45	G02	A118	512	1700	F	29
G01	A112	616	2890	F	35	G01	C106	592	2304	M	12	G02	A118	551	2025	F	53
G01	A112	511	1550	M	4	G01	C106	536	1603	M	9	G02	A118	550	2040	F	49
G01	A112	580	1860	M	2	G01	C106			F	37	G02	A118	523	1622	M	5
G01	A112	542	1880	M	7	G01	C121	540	1894	F	45	G02	A118	548	1836	F	62
G01	A112	532	1760	M	7	G01	C121	552	1987	M	5	G02	A118	592	2401	F	38
G01	A112	548	1910	M	7	G01	C121	530	1720	M	5	G02	A118	552	1996	F	42
G01	A112	556	1780	F	3	G01	C121	562	2056	M	10	G02	C072	530	1758	F	39
G01	A112	560	1836	M	2	G01	C121	576	2030	M	7	G02	C072	582	1911	M	6
G01	A112	544	1880	F	21	G01	C121	510	1600	M	6	G02	C082	541	1800	F	60
G01	A112	532	1620	F	15	G01	C121	536	1842	M	4	G02	C082	558	1980	F	66
G01	A112	528	1660	F	16	G01	C121	562	2407	M	21	G02	C082	528	1790	F	50
G01	A112	520	1890	F	31	G01	C121	564	2218	M	10	G02	C093	497	1480	F	31
G01	A112	520	1932	F	36	G01	C121	524	1530	F	24	G02	C093	540	1800	M	14
G01	A112	558	1900	F	34	G01	C121	536	1667	F	18	G02	C093	508	1480	F	45
G01	A112	570	2294	M	5	G01	C121	542	1780	M	5	G02	C106	538	2032	F	55
G01	A112	546	1920	F	32	G01	C157	532	1765	M	2	G02	C106	485	1200	F	10
G01	A115	600	2260	M	1	G02	A112	528	1719	M	5	G02	C106	492	1380	M	1
G01	A115	532	1560	F	27	G02	A112	478	1439	M	23	G02	C106	458	1109	M	2
G01	A115	542	1710	F	46	G02	A112	556	2123	M	15	G02	C106	536	1697	F	37
G01	A115	563	2000	F	42	G02	A112	542	1877	F	47	G02	C106	592	2306	M	4
G01	A115	556	1900	F	49	G02	A112	513	1766	M	7	G02	C106	532	1924	F	32
G01	A115	590	2400	F	32	G02	A112	533	1790	F	52	G02	C106	556	2024	F	23
G01	A115	591	2300	F	58	G02	A112	560	2011	M	5	G02	C106	542	1745	F	47
G01	A115	522	1780	F	25	G02	A112	560	1883	M	2	G02	C106	510	1776	M	6
G01	A115	560	2280	F	170	G02	A112	528	1769	M	61	G02	C106	536	1893	M	6
G01	A115	578	2050	F	65	G02	A112	530	2086	F	24	G02	C106	545	1822	M	2
G01	A115	514	1770	F	55	G02	A112	550	1913	F	3	G02	C106	586	2683	M	4
G01	A115	534	1730	F	42	G02	A112	496	1471	M	12	G02	C106	540	1748	F	38
G01	A115	575	1650	F	42	G02	A112	572	2130	M	23	G02	C106	550	1891	M	1
G01	A115	535	1730	F	43	G02	A112	528	1750	M	22	G02	C121	587	2227	M	3
G01	A115	530	1550	F	57	G02	A112	502	1654	M	32	G02	C121	524	1761	F	45
G01	A115	542	1660	M	6	G02	A112	532	1730	F	2	G02	C121	530	1756	M	3
G01	A118	596	2340	F	24	G02	A112	546	1850	M	11	G02	C121	603	2641	F	27
G01	A118	588	2200	F	33	G02	A112	564	2134	M	5	G02	C121	563	2149	M	5
G01	A118	570	2082	M	1	G02	A112	556	1987	M	51	G02	C121	604	2916	M	29
G01	A118	632	2720	M	5	G02	A112	550	1923	M	9	G02	C121	548	2140	F	54
G01	A118	542	1810	F	19	G02	A112	544	2355	M	8	G02	C121	536	2087	F	37
G01	A118	570	2132	M	10	G02	A112	570	2107	M	8	G02	C121	562	2059	M	2
G01	A118	580	2160	F	22	G02	A112	568	1995	M	7	G02	C138	592	2619	F	48
G01	A118	586	2391	F	50	G02	A112	523	1729	M	14	G03	A112	552	1843	F	18
G01	A118	554	1920	M	2	G02	A112	521	1851	F	41	G03	A112	554	2089	M	2
G01	A118	564	1950	F	26	G02	A112	479	1524	F	27	G03	A115	511	1621	F	32
G01	A121	498	1490	F	26	G02	A112	576	2247	F	28	G03	A115	550	2301	F	41
G01	A121	518	1728	M	8	G02	A112	580	2069	M	9	G03	A115	585	2204	F	31
G01	A121	532	1836	M	7	G02	A112	540	1937	F	40	G03	A118	565	2301	M	3
G01	A121	584	2066	M	6	G02	A112	530	1816	M	3	G03	A118	553	2213	M	5
G01	A121	540	1786	F	27	G02	A112	528	1822	M	7	G03	A121	547	2196	F	49
G01	A121	528	1800	F	38	G02	A112	484	1336	0		G03	C093	558	2221	F	70
G01	A121	534	1920	M	12	G02	A115	528	1855	F	39	G03	C093	586	2703	M	34
G01	C063	536	1932	M	32	G02	A115	518	1833	F	40	G03	C106	563	2057	F	20
G01	C082	500	1540	0		G02	A115	500	1715	M	5	G03	C106	521	2004	M	3
G01	C082	466	1200	0		G02	A115	517	1937	M	6	G03	C121	528	1931	F	13
G01	C093	546	1830	M	5	G02	A115	572	2200	F	27	G03	C121	532	2077	M	6
G01	C093	548	1860	M	7	G02	A115	540	1904	F	70	G03	C121	663	3310	M	3
G01	C106			M	6	G02	A115	514	1717	M	5	G03	C121	568	2102	M	1
G01	C106	484	1312	M	2	G02	A115	578	2354	M	9	G03	C121	600	2682	M	2
G01	C106	548	1665	M	9	G02	A118	554	2083	M	6	G03	C138	564	2304	M	5
G01	C106	558	2032	M	18	G02	A118	504	1661	F	36	G03	C138	562	2228	M	3
G01	C106	588	2024	M	5	G02	A118	552	2392	M	11	G03	C138	606	3034	M	12
G01	C106	510	1810	F	60	G02	A118	546	1689	M	4	G03	C157	700	4338	M	6

Table 6. Biological characteristics of salmonids caught by drift gillnet research (continued)

PINK SALMON

St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.	St.	Gear	F.L.	B.W.	Sex	G.W.
	(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)		(mm)	(mm)	(gr)		(gr)
G01	C072	350	451			G01	C082	410	700	M	4	G02	C072	341	357	M	1
G01	C072	372	573	M	4	G01	C082	388	618	M	2	G02	C072	381	522	F	9
G01	C072	380	616			G01	C082	374	612	F	18	G02	C072	368	453	F	9
G01	C072	370	550			G01	C082	380	604	M	3	G02	C072	388	637	F	5
G01	C072	378	531			G01	C082	344	460	M	1	G02	C072	362	467	F	5
G01	C072	360	482			G01	C082	382	608	F	22	G02	C072	346	385	F	8
G01	C072	388	688			G01	C082	390	671	F	13	G02	C072	406	654	F	8
G01	C072	408	733	F	12	G01	C082	392	626	M	5	G02	C072	392	616	F	7
G01	C072	324	402	M	1	G01	C082	558	524	M	5	G02	C072	402	656	F	7
G01	C072	336	398	F	4	G01	C082	360	516	F	39	G02	C072	397		M	1
G01	C072	370	552	M	2	G01	C082	370	588	F	8	G02	C072	370	540	M	2
G01	C072	378	630			G01	C082	384	620	F	8	G02	C072	409	684	M	3
G01	C072	368	568			G01	C082	676	532	F	8	G02	C072	378	531	F	8
G01	C072	368	610			G01	C082	362	552	F	6	G02	C072	368	491	M	3
G01	C072	372	565			G01	C082	392	693	M	2	G02	C072	389	564	F	5
G01	C072	360	532			G01	C082	390	664	F	11	G02	C072	370	556	F	4
G01	C072	362	514			G01	C082	380	595	M	1	G02	C072	401	683	F	16
G01	C072	372	601			G01	C082	368	582	M	3	G02	C072	368	549	M	2
G01	C072	362	532			G01	C082	432	838	M	3	G02	C072	418	743	F	17
G01	C072	354	467			G01	C082	402	752	F	10	G02	C072	397	651	F	7
G01	C072	388	605			G01	C082	408	715	M	2	G02	C072	436		M	5
G01	C072	342	472			G01	C082	382	619	F	10	G02	C072	368	524	F	7
G01	C072	388	614			G01	C082	394	710	M	2	G02	C072	354	414	M	1
G01	C072	404	702			G01	C082	392	615	F	11	G02	C072	383		F	9
G01	C072	356	467			G01	C082	394	653	M	4	G02	C072	390	620	F	7
G01	C072	360	470			G01	C093			M	5	G02	C072	360	466	F	9
G01	C072	410	706			G01	C093			M	7	G02	C072	386	638	F	14
G01	C072	344	489			G01	C093	394	696	M	2	G02	C072	382	581	F	9
G01	C072	354	484			G01	C093	398	680	M	6	G02	C072	363	506	M	2
G01	C072	336	484			G01	C093	394	680	M	3	G02	C072	396	605	M	1
G01	C072	366	547			G01	C093	470	1160	M	5	G02	C072	361	363	M	2
G01	C072	392	615			G01	C093	410	782	F	14	G02	C072	374	433	F	7
G01	C072	350	471	F	5	G01	C093	448	955	M	7	G02	C072	388	575	F	18
G01	C072	368	617			G01	C093	372	694	F	21	G02	C072	406	582	F	13
G01	C072	404	732	F	13	G01	C093	446	840	M	5	G02	C072	426	855	M	3
G01	C072	362	482	F	6	G01	C093	386	660	F	13	G02	C072	396	650	M	5
G01	C072	364	568	F	8	G01	C093	382	621	F	13	G02	C072	348	400	M	3
G01	C072	366	463	M	2	G01	C093	426	625	M	5	G02	C072	382	520	F	5
G01	C072	384	620	M	3	G01	C093	376	638	M	5	G02	C072	398	620	F	7
G01	C072	360	551	F	8	G01	C093	420	808	M	6	G02	C072	388	656	F	2
G01	C072	384	547	M	3	G01	C093	400	695	M	5	G02	C072	346	420	M	3
G01	C072	368	527	F	8	G01	C106	440	976	M	6	G02	C072	368	560	F	12
G01	C072	402	694	F	12	G01	C106	386	607	F	10	G02	C072	412	720	F	22
G01	C072	348	476	M	2	G01	C121	374	570	M	4	G02	C072	363	460	F	11
G01	C072	398	660	M	4	G01	C157	402	688	F	10	G02	C072	383	530	M	4
G01	C072	372	471	F	8	G02	A112	456	1129	M	7	G02	C072	417	830	F	18
G01	C072	400	691	M	4	G02	A112	496	1423	F	7	G02	C082	405	669	F	6
G01	C072	366	520	M	2	G02	A112	398	710	F	13	G02	C082	368	515	F	2
G01	C072	394	647	M	4	G02	A115	399		M	2	G02	C082	416	731	M	1
G01	C072	364	598	F	10	G02	A115	378	522	M	2	G02	C082	403		F	11
G01	C072	358	503	F	10	G02	A118	400	682	M	6	G02	C082	395	618	M	1
G01	C072	364	528	F	8	G02	C063	358	463	F	5	G02	C082	382	616	F	9
G01	C072	354	490	F	4	G02	C063	372	519	F	6	G02	C082	398	807	M	3
G01	C082	358	532	M	2	G02	C063	355	446	F	3	G02	C082	414	705	M	1
G01	C082	360	546	F	16	G02	C063	336	405	F	1	G02	C082	401	663	M	2
G01	C082	384	586	F	11	G02	C063	336	397	M	1	G02	C082	370	557	F	10
G01	C082	382	609	F	8	G02	C072	378	528	F	11	G02	C082	442	868	M	3
G01	C082	358	542	F	6	G02	C072	363	542	M	1	G02	C082	392	574	F	6
G01	C082	336	462	F	12	G02	C072	396	635	M	3	G02	C082	370	545	F	6
G01	C082	430	816	M	1	G02	C072	362	533	F	16	G02	C082	432	815	M	2
G01	C082	380	612	M	3	G02	C072	391	554	M	2	G02	C082	370	443	F	6
G01	C082	376	695	F	11	G02	C072	376	488	F	3	G02	C082	382	599	M	2
G01	C082	358	542	F	7	G02	C072	408	697	F	15	G02	C082	400	633	M	2
G01	C082	384	620	M	2	G02	C072	340	424	F	5	G02	C082	404	676	F	14
G01	C082	370	584	M	2	G02	C072	395	630	M	2	G02	C082	358	507	F	3
G01	C082	424	790	M	2	G02	C072	346	416	M	2	G02	C082	376	630	F	10
G01	C082	388	674	F	5	G02	C072	367	523	M	6	G02	C082	395	719	F	14
G01	C082	364	546	F	4	G02	C072	358	504	M	1	G02	C082	367	607	M	3
G01	C082	400	702	F	24	G02	C072	374	507	M	2	G02	C082	384	651	M	2
G01	C082	400	620	M	2	G02	C072	388	604	M	6	G02	C082	382	505	M	1

Table 6. Biological characteristics of salmonids caught by drift gillnet research (continued)

PINK SALMON

St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	Gear	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
G02	C082	391	691	F	23	G02	C082	386	573	F	10	G02	C093	422	760	F	12
G02	C082	420	702	F	5	G02	C082	402	708	F	21	G02	C093	406	780	M	2
G02	C082	382	605	M	5	G02	C082	369	557	F	10	G02	C093	396	710	M	2
G02	C082	420	755	M	7	G02	C082	377	555	M	2	G02	C093	402	640	F	10
G02	C082	390	679	M	2	G02	C082	396	654	M	2	G02	C093	391	600	M	5
G02	C082	395	665	F	10	G02	C093	409	700	F	13	G02	C093	409	680	F	13
G02	C082	408	754	M	4	G02	C093	429	720	M	6	G02	C093	410	700	F	16
G02	C082	462	1081	M	5	G02	C093	380	550	F	10	G02	C093	392	600	F	11
G02	C082	406	748	M	8	G02	C093	408	650	F	10	G02	C093	396	620	F	10
G02	C082	375	584	M	56	G02	C093	370		F	8	G02	C093	425	630	M	4
G02	C082	380	660	F	10	G02	C093	421		F	20	G02	C093	380	560	M	4
G02	C082	354	525	F	9	G02	C093	398		M	7	G02	C093	416	750	F	10
G02	C082	423	769	M	7	G02	C093	431		M	4	G02	C093	400	670	F	14
G02	C082	381	638	F	10	G02	C093	382		F	14	G02	C093	408	720	M	5
G02	C082	412	808	F	38	G02	C093	419		F	13	G02	C093	374	560	F	11
G02	C082	388	585	F	12	G02	C093	400		M	6	G02	C093	410	690	M	5
G02	C082	422	758	M	1	G02	C093	468	1060	M	9	G02	C093	408	700	M	7
G02	C082	405	694	M	2	G02	C093	402	680	F	10	G02	C093	470	1040	M	6
G02	C082	384	592	M	1	G02	C093	460	1060	M	8	G02	C093	414	700	F	14
G02	C082	377	633	M	6	G02	C093	402	640	M	4	G02	C106	432	925	M	2
G02	C082	380	560	M	1	G02	C093	405	840	F	20	G02	C106	420	857	M	5
G02	C082	410	712	M	3	G02	C093	406	660	F	15	G02	C106	450	937	M	3
G02	C082	393	696	M	3	G02	C093	428	780	M	5	G02	C121	393	642	M	3
G02	C082	408	705	M	5	G02	C093	424	780	M	4	G03	A112	469	1140	M	5
G02	C082	374	529	F	8	G02	C093	418	700	M	7	G03	A112	501	1541	M	4
G02	C082	410	750	F	16	G02	C093	400	680	M	3	G03	A112	502	1604	M	5
G02	C082	396	647	F	17	G02	C093	398	600	F	9	G03	C082	376	627	F	14
G02	C082	385	595	F	8	G02	C093	422	800	M	7	G03	C082	395	555	M	1
G02	C082	446	938	M	5	G02	C093	418	720	F	12	G03	C082	415	768	F	9
G02	C082	391	640	F	10	G02	C093	450	840	M	8	G03	C082	364	521	F	5
G02	C082	370	577	F	15	G02	C093	422	820	F	25						

Table 7. The number of organisms caught by drift gillnet during the Oshoro maru Cruise # 215 in May, 2010.CPUE and (%) indicate mumerical catch per tan and percentage of total catch by C-gear gillnet at the station, respectively.

Common name	Scientific name	OSG 1001						OSG 1002						OSG 1003						OSG 1004					
	Gear	C			A	F	Total	C			A	F	Total	C			A	F	Total	C			A	F	Total
			CPUE	(%)					CPUE	(%)					CPUE	(%)					CPUE	(%)			
Sockeye salmon	*Oncorhynchus nerka*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Chum salmon	*Oncorhynchus keta*	29	1.0	(14.3)	51	0	80	34	0.9	(9.5)	52	0	86	13	0.4	(25.5)	8	0	21	0	0.0	(0.0)	0	0	0
Pink salmon	*Oncorhynchus gorbuscha*	152	5.1	(74.9)	4	0	156	254	7.1	(70.9)	6	0	260	4	0.1	(7.8)	3	0	7	0	0.0	(0.0)	0	0	0
Coho salmon	*Oncorhynchus kisutch*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Chinook salmon	*Oncorhynchus tshawytscha*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Steelhead	*Oncorhynchus mykiss*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Boreal clubhook squid	*Onychoteuthis borealijaponicu*	20	0.7	(9.9)	0	0	20	60	1.7	(16.8)	0	0	60	13	0.4	(25.5)	0	0	13	4	0.1	(21.1)	0	11	15
Eight-armed squid	*Gonatopsis borealis*	0	0.0	(0.0)	0	0	0	2	0.1	(0.6)	0	0	2	7	0.2	(13.7)	0	0	7	0	0.0	(0.0)	0	0	0
Flying squid	*Ommastrephes bartramii*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	1	0.0	(5.3)	0	0	1
Blue shark	*Prionace glauca*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	1	0	1
Salmon shark	*Lamna ditropis*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	1	0	1	0	0.0	(0.0)	0	0	0
Spiny dogfish	*Squalus acanthias*	1	0.0	(0.5)	1	0	2	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Japanese scaled sardine	*Sardinops melanostictus*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	2	2
Japanese anchovy	*Engraulis japonicus*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	13	0.4	(68.4)	4	8361	8378
Lantern fishes	Myctophidae	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	8	8	0	0.0	(0.0)	0	0	0
Pacific saury	*Cololabis saira*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	6	6
Pilotfish	*Naucrates ductor*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	1	0.0	(5.3)	0	0	1
Pacific pomfret	*Brama japonica*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	14	0.5	(27.5)	7	1	22	0	0.0	(0.0)	0	0	0
Chub mackerel	*Scomber japonicus*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	1	1
Smalleye squaretail	*Tetragonurus atlanticus*	0	0.0	(0.0)	0	0	0	2	0.1	(0.6)	0	0	2	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Atka mackerel	*Pleurogrammus monopterygius*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Common Murre	*Uria aalge*	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Short-tailed shearwater	*Puffinus tenuirostris*	1	0.0	(0.5)	0	0	1	6	0.2	(1.7)			6	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0
Horned puffin	*Fratercula corniculata*	0	0.0	(0.0)	0		0	0	0.0	(0.0)	1	0	1	0	0.0	(0.0)	0	0	0	0	0.0	(0.0)	0	0	0

Table 8. Biological characteristics of fishes caught by drift gillnet

NEON FLYING SQUID

St.	Gear	M. L. (mm)	B. W. (gr)	St.	Gear	M. L. (mm)	B. W. (gr)	St.	Gear	M. L. (mm)	B. W. (gr)
				G04	C093	345	1319				

BOREAL CLUBHOOK SQUID

St.	Gear	M. L. (mm)	B. W. (gr)	St.	Gear	M. L. (mm)	B. W. (gr)	St.	Gear	M. L. (mm)	B. W. (gr)
G01	C072	316	640	G02	C072	302	494	G02	C093	310	
G01	C072	298	550	G02	C072	294	486	G02	C093	300	
G01	C072	332	710	G02	C072	316	681	G02	C093	318	
G01	C072	312	650	G02	C072	312	595	G02	C093	308	
G01	C072	292	600	G02	C072	312	547	G02	C093	314	
G01	C072	304	590	G02	C072	294	569	G02	C093	284	422
G01	C072	304	580	G02	C072	296	479	G02	C093	314	325
G01	C072	312	580	G02	C072	318	706	G02	C106	288	
G01	C072	335	620	G02	C072	284	477	G03	C055	224	
G01	C082	292	600	G02	C072	306	566	G03	C055	208	
G01	C082	304	610	G02	C072	296	513	G03	C055	228	213
G01	C082	304	600	G02	C072	284	456	G03	C055	214	190
G01	C082	314	580	G02	C072	306		G03	C055	221	212
G01	C082	310	570	G02	C072	322		G03	C063	228	237
G01	C082	314	680	G02	C072	308		G03	C063	234	255
G01	C082	314	680	G02	C072	306		G03	C063	258	334
G01	C082	318	700	G02	C072	298		G03	C072	278	470
G01	C082	326	600	G02	C072	388		G03	C072	286	445
G01	C082	290	560	G02	C082	298	643	G03	C072	274	393
G01	C138	312	620	G02	C082	302	608	G03	C072	271	416
G02	C063	282	504	G02	C082	388	469	G03	C082	324	679
G02	C063	292	503	G02	C082	394	492	G04	C048	186	162
G02	C063			G02	C082	294	605	G04	C048	208	209
G02	C072	306		G02	C082	316		G04	C055	160	152
G02	C072	286		G02	C082	310	593	G04	C072	260	431
G02	C072	306		G02	C082	320	584	G04	F025	102	40
G02	C072	252		G02	C082	332	670	G04	F029	103	29
G02	C072	308	552	G02	C082	308	554	G04	F029	110	31
G02	C072	284	495	G02	C082	306	543	G04	F033	122	55
G02	C072	320	623	G02	C082	324	690	G04	F037	160	100
G02	C072	304	563	G02	C082	342	768	G04	F037	165	103
G02	C072	306	545	G02	C082	300	549	G04	F037	178	130
G02	C072	318	605	G02	C082	318	494	G04	F042	142	83
G02	C072	202	437	G02	C082	314	638	G04	F042	178	125
G02	C072	300		G02	C093	320	630	G04	F042	164	112
G02	C072	304	618	G02	C093	291	542	G04	F042	193	147

PACIFIC SAURY

St.	Gear	F. L. (mm)	B. W. (gr)	St.	Gear	F. L. (mm)	B. W. (gr)	St.	Gear	F. L. (mm)	B. W. (gr)
G04	F019	150	12	G04	F033	282	96	G04	F033	280	90
G04	F033	260	82	G04	F033	268	85	G04	F033	283	94

PACIFIC POMFRET

St.	Gear	F. L. (mm)	B. W. (gr)	St.	Gear	F. L. (mm)	B. W. (gr)	St.	Gear	F. L. (mm)	B. W. (gr)
G03	A115	402	1107	G03	C121	474	1759	G03	C138	460	1610
G03	A115	400	1176	G03	C121	402	1343	G03	C157	436	1675
G03	A121	450	1377	G03	C121	401	1162	G03	C157	406	1143
G03	A121	412	1149	G03	C121	428	1290	G03	C157	460	1616
G03	A121	406	1157	G03	C138	406	1118	G03	C157	459	1712
G03	A121	418	1569	G03	C138	449	1617	G03	F029	415	1270
G03	A121	407	1158	G03	C138	456	1595				
G03	C055	458	1583	G03	C138	418	1208				

6. Data on salmon hook-and-line Research

To collect salmons, hook-and-line gears were used along 155◦E line in the Central North Pacific during Cruise#215. Five to ten anglers were engaged in the work. These samplings were mainly conducted with observations when ship was under drifting.

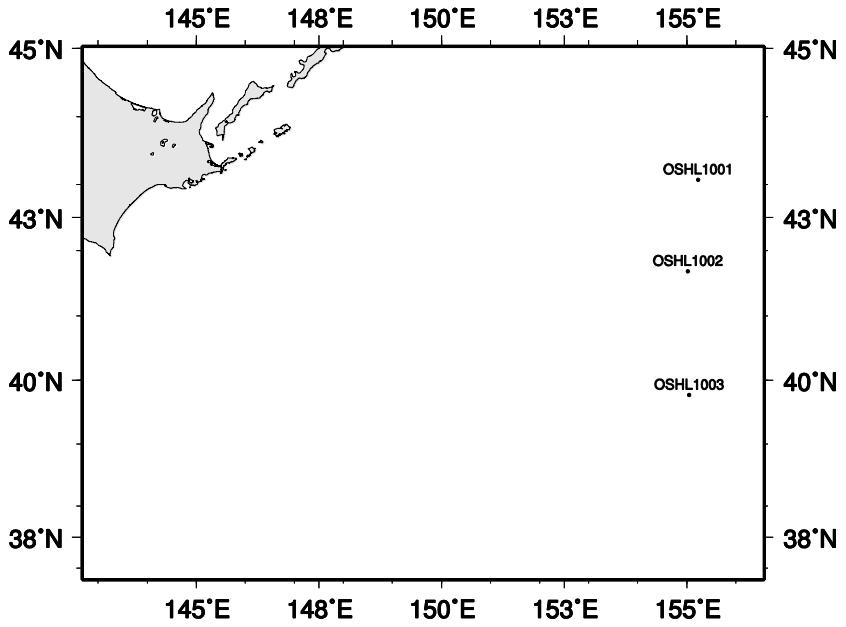

Figure 4. Locations of salmon hook-and-line Research

Table 9. List of hook-and-line sampling (OSHL 10XX) station during the "Oshoro Maru" Cruise #215

Station	Date and Time (S.M.T.)					Set Position		D.S.	No. of hooks	Wr.	Wind (Force)	Oceanographic Station No.
	Line set		Line haul		T.D.	Lat.	Long.					
OSHL 1001	13-May	20:30-	14-May	03:30-	10	43-05.0N	155-13.0E	-	-	d	East-5	OS10055
OSHL 1002	15-May	20:35-	16-May	03:15-	10	41-42.0N	155-00.0E	-	-	o	NNW-5	OS10058
OSHL 1003	16-May	21:30-	17-May	01:30-	10	39-47.0N	155-02.0E	-	-	d	NNW-4	OS10061

S.M.T. : Ship's Mean Time T.D.: Time Difference between Greenwich Mean Time (G.M.T.) and S.M.T.
D.S. : Direction in which line was set Wr.: Weather (o: 100% clouded, f: fog, d: drizzling rain)

Table 10. The catch number of each salmonid at each station where salmonids were collected by hook-and-line gear, surface longline

Station Name	Sampling gear	Species name						Total
		Sockeye	Chum	Pink	Coho	Chinook	Stellhead	
Cruise #215								
OSHL 1001	Hook-and-line	0	12	51	0	0	0	63
OSHL 1002	Hook-and-line	0	6	439	0	0	0	445
OSHL 1003	Hook-and-line	0	4	0	0	0	0	4
	total	0	22	490	0	0	0	512

Table 11. Biological characteristics of salmonids caught by hook-and-line research

CHUM SALMON

St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
HL01	572	2360	F	55	HL01	482	1258	M	2	HL02	582	2190	F	20
HL01	539	1980	M	4	HL01	454	1037	F	12	HL02	532	1563	M	4
HL01	534	1764	M	5	HL01	452	1080	F	11	HL03	590	2000	F	28
HL01	558	2130	M	5	HL01	554	1860	F	64	HL03	540	2100	M	12
HL01	508	1620	M	6	HL02	595	2459	M	3	HL03	587	2530	M	23
HL01	604	2840	M	3	HL02	600	2390	M	2	HL03	610	2750	M	12
HL01	530	1980	F	40	HL02	529	1700	M	3					
HL01	568	2360	F	56	HL02	470	1208	M	2					

PINK SALMON

St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)	St.	F.L. (mm)	B.W. (gr)	Sex	G.W. (gr)
HL01	380	590	F	6	HL01	391	500	M	4	HL02	438	930	M	5
HL01	400	720	M	4	HL01	389	600	F	7.3	HL02	422	830	M	2
HL01	402	730	M	2	HL01	370	500	M	1	HL02	385	651	F	9
HL01	397	633	M	2	HL01	378	537	M	1	HL02	410	650	F	7
HL01	352	594	0		HL01	430	777	M	4	HL02	405	660	M	4
HL01	382	630	F	9	HL01	391	610	M	1.3	HL02	368	570	M	2
HL01	405	727	M	2	HL01	400	630	M	1.9	HL02	378	569	F	5
HL01	364	541	F	5	HL01	408	650	M	6.7	HL02	418	837	F	16
HL01	414	729	M	3	HL01	378	520	M	0.9	HL02	380	574	F	6
HL01	485	574	M	2	HL01	376	580	M	1.7	HL02	400	657	F	14
HL01	400	683	M	3	HL01	420	730	M	0.7	HL02	382	598	M	3
HL01	365	540	F	4	HL01	355	415	F	4.2	HL02	390	577	F	8
HL01	390	600	F	10	HL01	387	600	M	1.5	HL02	385	623	F	13
HL01	386	641	M	2	HL01	380	570	F	10	HL02	392	728	F	12
HL01	490	510	F	5	HL02	391	670	F	12	HL02	393	690	F	10
HL01	370	570	F	6	HL02	355	470	F	4	HL02	395	459	M	2
HL01	415	766	F	10	HL02	379	617	F	9	HL02	401	688	M	2
HL01	429	805	M	2	HL02	390	709	F	14	HL02	391	655	F	9
HL01	360	551	F	7	HL02	392	632	F	7	HL02	363	528	M	2
HL01	383	584	M	2	HL02	391	665	F	6	HL02	336	426	M	2
HL01	352	462	M	1	HL02	397	670	M	4	HL02	329	430	F	12
HL01	394	660	F	11	HL02	382	634	F	11	HL02	374	514	M	2
HL01	382	641	M	2	HL02	388	566	F	10	HL02	386	548	F	9
HL01	375	573	F	5	HL02	389	666	M	3	HL02	400	752	M	4
HL01	376	530	M	3	HL02	411	676	M	1	HL02	398	680	F	9
HL01	400	659	M	3	HL02	377	559	M	2	HL02	370	541	F	8
HL01	408	700	M	4	HL02	358	525	M	2	HL02	409	663	F	8
HL01	421	770	F	21.7	HL02	394	683	F	9	HL02	400	655	F	14
HL01	387	600	F	11.8	HL02	374	587	F	6	HL02	388	622	F	10
HL01	411	750	M	2.3	HL02	420	769	M	2	HL02	362	497	M	1
HL01	396	595	M	1.2	HL02	401	676	F	10	HL02	376	564	F	9
HL01	420	770	F	18.8	HL02	409	738	M	3	HL02	399	643	M	4
HL01	404	690	F	13.2	HL02	361	461	F	6	HL02	401	742	M	6
HL01	371	540	F	6.6	HL02	408	712	F	13	HL02	400	725	F	16
HL01	398	640	M	1.5	HL02	418	795	M	4	HL02	435	830	M	4
HL01	404	670	F	27.8	HL02	386	564	M	2	HL02	400	661	M	3
HL01	372	560	M	1.4	HL02	375	565	F	8	HL02	419	686	M	2

7. Data on plankton collected by vertical hauls with twin NORPAC net.

Vertical hauls with twin-NORPAC net were made at hydrographic stations. This net was composed of 45 cm mouth diameter and 180 cm long conical one which was made of GG54 and XX13 having 0.33 mm and 0.10 mm mesh, respectively. The net was lowered to the estimated depth of 150 m, 500 m or near the bottom when the bottom depth was shallower than 150 m, and immediately hauled to the surface at a speed about 1 m s^{-1}. A flowmeter was mounted at the center of mouth of the net to estimate the volume water filtered. Sampling was conducted by research staffs and measurement of wet weight of the samples were made by A. Yamaguchi, K. Ishii, K. Matsuno, R. Saito, K. Ohgi, Y. Onishi, T. Homma, R. Ohashi, C. Tsukazaki, A. Kuroda, Y. Abe, M. Kawaguchi, T. Shiota, S. Mizuhara, K. Moribe and J. Fukuda (Laboratory of Marine Biology).

Table 12. Data on plankton samples collected by vertical hauls with twin NORPAC net.

GG54: 0.33 mm mesh, XX13: 0.10 mm mesh.

Station no.	Position Lat. (N)	Lon.		S.M.T. Date	Hour	Length of wire (m)	Angle of wire (°)	Depth estimated by wire angle (m)	Kind of cloth	Flowmeter No.	Reading	Estimated volume of water filtered (m^3)	Wet weight (g) per haul	per 1000 m^3		Sample no.
OS10052	41-30	145-47	E	10 May	11:20	150	1	150	GG54	2562	1420	22.33	23.0	1031	1)	10101
(Site H)									XX13	3006	1161	16.84			1)	10102
					11:36	500	1	500	GG54	2562	4746	74.62	29.2	391	1)	10103
									XX13	3006	4356	63.20			1)	10104
OS10053	44-00	155-00	E	12 May	4:26	152	9	150	GG54	2562	1827	28.73	15.3	532		10105
(St. KNOT)									XX13	3006	1811	26.27				10106
OS10054	43-15	155-00	E	12 May	13:52	152	10	150	GG54	2562	1720	27.04	12.4	459		10107
									XX13	3006	1598	23.18				10108
OS10055	43-04	155-14	E	12 May	20:21	151	5	150	GG54	2562	1642	25.82	10.7	413		10109
									XX13	3006	1568	22.75				10110
OS10058	41-45	155-00	E	14 May	14:42	163	23	150	GG54	2562	2074	32.61	6.5	200		10111
									XX13	3006	2056	29.83				10112
OS10059	41-00	155-00	E	15 May	10:35	152	10	150	GG54	2562	1758	27.64	4.3	155		10113
									XX13	3006	1640	23.79				10114
OS10060	40-15	155-00	E	15 May	15:52	151	8	150	GG54	2562	1678	26.38	8.0	304	2)	10115
									XX13	3006	1766	25.62				10116
OS10061	39-48	155-02	E	15 May	21:04	151	8	150	GG54	2562	1587	24.95	11.3	452		10117
									XX13	3006	1642	23.82				10118
OS10062	39-30	155-00	E	16 May	7:34	154	13	150	GG54	2562	1613	25.36	8.5	333		10119
									XX13	3006	1471	21.34				10120
OS10063	38-45	155-00	E	16 May	12:47	154	13	150	GG54	2562	1688	26.54	3.5	130		10121
									XX13	3006	1219	17.69				10122
OS10064	38-00	155-00	E	16 May	16:50	154	13	150	GG54	2562	1705	26.81	6.1	229		10123
									XX13	3006	1164	16.89				10124
OS10065	37-15	155-00	E	17 May	9:29	156	15	151	GG54	2562	1750	27.52	9.9	361	5)	10125
									XX13	3006	1717	24.91				10126
OS10066	36-30	155-00	E	17 May	13:51	151	5	150	GG54	2562	1498	23.55	5.9	252		10127
									XX13	3006	1333	19.34				10128
OS10067	41-30	145-47	E	19 May	18:30	153	11	150	GG54	2562	1500	23.59	28.6	1215	1)	10129
									XX13	3006	950	13.78			1)	10130
					18:45	518	15	500	GG54	2562	5180	81.45	31.6	389	1)	10131
									XX13	3006	4425	64.20			1)	10132

1) Exclusively phytoplankton
2) Including some fragments of medusae.
3) *Neocalanus* abundant.
4) Gelatinous zooplankton abundant.
5) Salpida abundant.
6) Chaetognaths abundant.

8. Data on Calibration of Flowmeters

Flowmeters used for plankton nets were calibrated once in the cruise.

Table 13. Calibration data on flowmeters used for a twin or single NORPAC net and other kind of nets.

100-m wire out at St. OS10067, 19 May 2010.

Flowmeter No.	Wire length (m)	Revolution 1	2	3	4	5	6	Mean
RG2562	100	1028	1003	1097*	977*	999	1016	1012
RG3006	100	1125*	1115	1091	1082*	1096	1083	1096

*: omitted from calculation