

# GLOBEC Northeast Pacific, Coastal Gulf of Alaska

Cruise Report, R/V *Pandalus* (PA0402)

(Alternate Cruise ID: G04-2)

17 - 24 August 2004

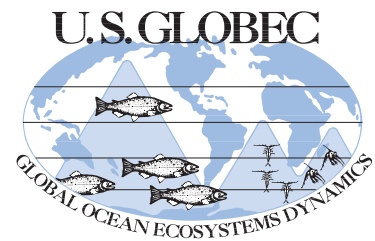
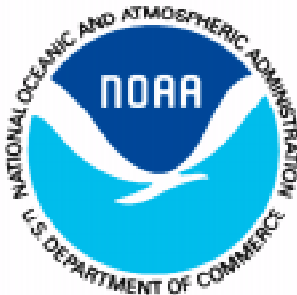


This cruise was  
sponsored by the

National Science Foundation

and the

National Oceanic and  
Atmospheric Administration



**GLOBEC Northeast Pacific, Coastal Gulf of Alaska**  
**Cruise Report, R/V *Pandalus* (PA0402)**  
**(Alternate Cruise ID: G04-2)**  
**17 - 24 August 2004**

**Chief Scientist:**

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**Port of Departure:** Seward, Alaska  
**Port of Return:** Seward, Alaska

**Cruise Objectives**

The objectives of the fish studies along the Seward and Cape Fairfield hydrographic transects and in Southwest Prince William Sound were to:

- 1.) Determine the distribution and abundance of fish along the Seward Line, in Southwest Prince William Sound, and in ACC and Shelf Water on the Cape Fairfield Line.
- 2.) Determine the distribution and species composition of zooplankton in surface waters at all stations.
- 3.) Determine the temperature, salinity, density, and fluorescence of the water column at all stations.

Summaries of each of the GLOBEC projects may be found at the web site: <http://globec.coas.oregonstate.edu/groups/nep/projs.html>.

**Table 1. GLOBEC Cruise Participants**

Jack Piccolo	Juneau Center School of Fishery Ocean Sciences
Mikhail Blikshteyn	Juneau Center School of Fishery Ocean Sciences
Sean Burril	Juneau Center School of Fishery Ocean Sciences

**Daily Cruise Summary (Narrative)**

**August 16.** Scientists arrived in Seward, sorted gear and prepared for cruise.

**August 17.** Loaded gear on R/V *Pandalus* at Seward Marine Station, sampled fish and plankton, CTD at stations GAK 1i and GAK 2 on the Seward Line.

**August 18 - 23.** Sampled fish, surface plankton, and measured temperature during the day along the Seward transect, in PWS, and along the Cape Fairfield transect using the surface trawl, the Bongo nets, and a CTD.

**August 24.** Offloaded gear at the Seward Marine Station and scientists left Seward.

### **Summary of Sampling Operations**

A surface trawl was used to sample fish at Seward Line GAK stations 1-6, PWS stations 1-3, and Cape Fairfield stations 3,4,5,10,11 (Table 2). Fish caught were mainly juvenile pink, chum, and sockeye salmon, as well as a few maturing coho salmon. Catches of all juvenile salmon were lower than in July 2004, and chum and sockeye made up a greater proportion of the catch. The catch of juvenile pink salmon was greatest at GAK 5 (37) and CF 10 (34), both stations outside the ACC current in shelf water. Catches of juvenile pinks were generally low in ACC water, and only one pink was caught in PWS. Other species caught included 31 dogfish, 2 herring, and 2 sablefish. Fish were identified, sorted to species, and counted. Fish were measured and frozen in seawater.

Surface zooplankton was sampled with a Bongo net (60 cm diameter, 0.333 mm mesh). At all stations sampled for fish, 2 replicates of two vertically towed Bongo nets from 10 m depth were completed (Table 3). In addition, a series of bongos were taken at several stations to determine the horizontal (300 m intervals) and vertical (5 m increments to 20 m depth) variation in zooplankton distribution. All zooplankton samples were preserved in 5% buffered formalin. A CalVet net (4 replicates, 2 each 0.053 mm and 0.150 mm mesh) was used to sample zooplankton to 100 m depth at GAK stations 1i,2,5, and 6. These samples were collected for Russ Hopcroft, UAF IMS. They were preserved in 5% buffered formalin.

A Seabird Seacat SBE-19 CTD was used to measure temperature, salinity, and fluorescence to 100 m depth at each station where surface trawls and Bongo tows were conducted (Table 4).

### **Summary of Gear Deployments**

See Appendix 1 (Event Log).

PA0402 Stations: 17–24 August 2004

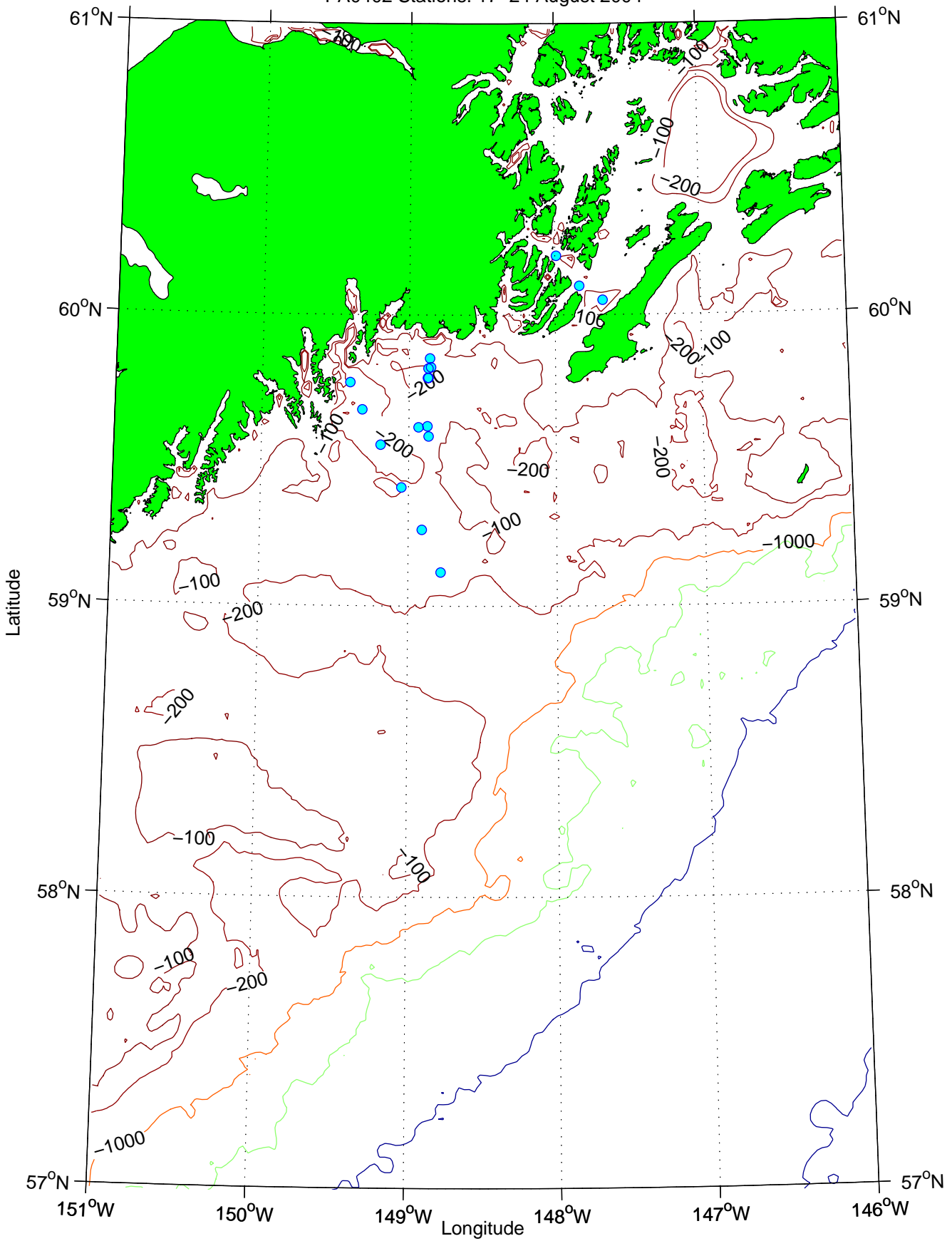


Figure 1. Stations Sampled on PA0402

**Table 2: Trawls**

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04230.07	Trawl	4	1	GAK2	17	8	1338	S	59.6778	-149.3102	221	0	1	Reset from 50 fathoms(start 1333); hauled back at 1348 because port door wire was fouled and would not submerge.
PA04230.08	Trawl	4	1	GAK2	17	8	1348	E	59.6845	-149.3073	nd	0	1	
PA04230.15	Trawl	4	2	GAK1i	17	8	1550	S	59.7672	-149.4122	268	0	2	
PA04230.16	Trawl	4	2	GAK1i	17	8	1620	E	59.7695	-149.3740	nd	0	2	
PA04231.07	Trawl	4	3	GAK4	18	8	0920	S	59.4052	-149.0438	197	0	3	Starboard door surfaced for a couple of minutes; TSG start 30.3 end 30.0; 16.8 C srfc bucket temp.
PA04231.08	Trawl	4	3	GAK4	18	8	0950	E	59.3937	-149.0848	nd	0	3	
PA04231.15	Trawl	4	4	GAK5	18	8	1157	S	59.2658	-148.9132	167	0	4	TSG 31.35.
PA04231.16	Trawl	4	4	GAK5	18	8	1227	E	59.2607	-148.8785	167	0	4	
PA04231.23	Trawl	4	5	GAK6	18	8	1437	S	59.1142	-148.7842	148	0	5	Towed at 138 degrees.
PA04231.24	Trawl	4	5	GAK6	18	8	1507	E	59.1002	-148.7598	nd	0	5	
PA04232.07	Trawl	4	6	GAK3	19	8	1558	S	59.5618	-149.2087	219	0	6	Towed at 320 degrees.
PA04232.08	Trawl	4	6	GAK3	19	8	1628	E	59.5805	-149.2388	nd	0	6	
PA04233.05	Trawl	3	7	CF10	20	8	1005	S	59.6170	-148.8595	175	0	7	
PA04233.06	Trawl	3	7	CF10	20	8	1035	E	59.6137	-148.8255	nd	0	7	
PA04233.15	Trawl	4	8	CF11	20	8	1144	S	59.5850	-148.8728	176	0	8	Towed at 101 degrees.
PA04233.16	Trawl	4	8	CF11	20	8	1214	E	59.5810	-148.8352	nd	0	8	
PA04233.23	Trawl	4	9	CF5	20	8	1422	S	59.7858	-148.8620	192	0	9	
PA04233.24	Trawl	4	9	CF5	20	8	1452	E	59.7972	-148.9038	nd	0	9	
PA04233.31	Trawl	4	10	CF4	20	8	1559	S	59.8172	-148.8720	183	0	10	
PA04233.32	Trawl	4	10	CF4	20	8	1629	E	59.8320	-148.9107	nd	0	10	
PA04234.07	Trawl	4	11	CF3	21	8	0943	S	59.8482	-148.8757	155	0	11	Towed at 274 deg; prior trawl aborted because port door surfaced due to strong current; 25.9 TSG while passing CF4.
PA04234.08	Trawl	4	11	CF3	21	8	1013	E	59.8503	-148.9300	nd	0	11	
PA04234.35	Trawl	14	12	CF5	21	8	1235	S	59.7840	-148.8730	191	0	12	TSG 29.17; ACC front within sight to south.
PA04234.36	Trawl	14	12	CF5	21	8	1305	E	59.7782	-148.8420	nd	0	12	
PA04234.63	Trawl	14	13	CF10	21	8	1550	S	59.6232	-148.8673	177	0	13	Towed 321 degrees; TSG start 31.35, end 31.43.
PA04234.64	Trawl	14	13	CF10	21	8	1620	E	59.6410	-148.8960	nd	0	13	
PA04235.15	Trawl	8	14	CF4	22	8	0912	S	59.8180	-148.8640	182	0	14	Towed at 50 degrees; TSG start 26.20, end 26.97.
PA04235.16	Trawl	8	14	CF4	22	8	0942	E	59.7993	-148.8433	nd	0	14	
PA04235.17	Trawl	9	14	CF4	22	8	1019	S	59.8010	-148.8667	191	0	15	Towed at 90 degrees; TSG 26.18; handheld thermometer 15.3 at 1 m.
PA04235.18	Trawl	9	14	CF4	22	8	nd	E	59.8008	-148.8307	nd	0	15	
PA04235.33	Trawl	8	15	PWS3	22	8	1620	S	60.0527	-147.6670	152	0	16	Towed at 190 degrees; start TSG 26.58, end 27.05.
PA04235.34	Trawl	8	15	PWS3	22	8	1650	E	60.0318	-147.6743	nd	0	16	
PA04236.11	Trawl	6	16	PWS1	23	8	0815	S	60.1960	-147.9997	158	0	17	Towed at 017 degrees; TSG start 18.93, end 21.37.
PA04236.12	Trawl	6	16	PWS1	23	8	0845	E	60.2180	-147.9867	nd	0	17	
PA04236.19	Trawl	4	17	PWS2	23	8	1022	S	60.0897	-147.8488	165	0	18	Towed at 031 degrees; TSG start 21.90; end 25.34.
PA04236.20	Trawl	4	17	PWS2	23	8	1052	E	60.1075	-147.8280	nd	0	18	

**Table 3: Bongo Nets**

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04230.03	Bongo	2	1	GAK2	17	8	1251	S	59.6802	-149.3232	222	10	1	Blue net/Red net.
PA04230.04	Bongo	2	1	GAK2	17	8	nd	E	nd	nd	nd	10	1	
PA04230.05	Bongo	3	1	GAK2	17	8	1256	S	59.6908	-149.3325	222	10	2	Blue net/Red net.
PA04230.06	Bongo	3	1	GAK2	17	8	nd	E	nd	nd	nd	10	2	
PA04230.11	Bongo	2	2	GAK1i	17	8	1523	S	59.7667	-149.4035	263	10	3	Blue net/Red net.
PA04230.12	Bongo	2	2	GAK1i	17	8	nd	E	nd	nd	nd	10	3	
PA04230.13	Bongo	3	2	GAK1i	17	8	1529	S	59.7668	-149.4052	265	10	4	Blue net/Red net.
PA04230.14	Bongo	3	2	GAK1i	17	8	nd	E	nd	nd	nd	10	4	
PA04231.03	Bongo	2	3	GAK4	18	8	0854	S	59.4080	-149.0482	197	10	5	Blue net/Red net.
PA04231.04	Bongo	2	3	GAK4	18	8	nd	E	nd	nd	nd	10	5	
PA04231.05	Bongo	3	3	GAK4	18	8	0901	S	59.4062	-149.0482	198	10	6	Blue net/Red net.
PA04231.06	Bongo	3	3	GAK4	18	8	nd	E	nd	nd	nd	10	6	
PA04231.11	Bongo	2	4	GAK5	18	8	1123	S	59.2623	-148.9092	166	10	7	Blue net/Red net.
PA04231.12	Bongo	2	4	GAK5	18	8	nd	E	nd	nd	nd	10	7	
PA04231.13	Bongo	3	4	GAK5	18	8	1127	S	59.2628	-148.9105	166	10	8	Blue net/Red net.
PA04231.14	Bongo	3	4	GAK5	18	8	nd	E	nd	nd	nd	10	8	
PA04231.19	Bongo	2	5	GAK6	18	8	1415	S	59.1167	-148.7822	147	10	9	Blue net/Red net.
PA04231.20	Bongo	2	5	GAK6	18	8	nd	E	nd	nd	nd	10	9	
PA04231.21	Bongo	3	5	GAK6	18	8	1419	S	59.1173	-148.7840	146	10	10	Blue net/Red net.
PA04231.22	Bongo	3	5	GAK6	18	8	nd	E	nd	nd	nd	10	10	
PA04232.03	Bongo	2	6	GAK3	19	8	1539	S	59.5537	-149.1922	215	10	11	Blue net/Red net.
PA04232.04	Bongo	2	6	GAK3	19	8	nd	E	nd	nd	nd	10	11	
PA04232.05	Bongo	3	6	GAK3	19	8	1543	S	59.5540	-149.1938	216	10	12	Blue net/Red net.
PA04232.06	Bongo	3	6	GAK3	19	8	nd	E	nd	nd	nd	10	12	
PA04233.01	Bongo	1	7	CF10	20	8	0945	S	59.6175	-149.8708	174	10	13	Blue net/Red net; TSG 31.19; Test cast of CTD done south of CF 9 (Cast 01, named [042cf9.hex]).
PA04233.02	Bongo	1	7	CF10	20	8	nd	E	nd	nd	nd	10	13	
PA04233.03	Bongo	2	7	CF10	20	8	0950	S	59.6177	-148.8710	174	10	14	Blue net/Red net.
PA04233.04	Bongo	2	7	CF10	20	8	nd	E	nd	nd	nd	10	14	
PA04233.11	Bongo	2	8	CF11	20	8	1124	S	59.5837	-148.8677	175	10	15	Blue net/Red net.
PA04233.12	Bongo	2	8	CF11	20	8	nd	E	nd	nd	nd	10	15	
PA04233.13	Bongo	3	8	CF11	20	8	1127	S	59.5840	-148.8688	175	10	16	Blue net/Red net.
PA04233.14	Bongo	3	8	CF11	20	8	nd	E	nd	nd	nd	10	16	
PA04233.19	Bongo	2	9	CF5	20	8	1359	S	59.7850	-148.8688	192	10	17	Blue net/Red net.
PA04233.20	Bongo	2	9	CF5	20	8	nd	E	nd	nd	nd	10	17	
PA04233.21	Bongo	3	9	CF5	20	8	1402	S	59.7853	-148.8695	193	10	18	Blue net/Red net.
PA04233.22	Bongo	3	9	CF5	20	8	nd	E	nd	nd	nd	10	18	
PA04233.27	Bongo	2	10	CF4	20	8	1533	S	59.8165	-148.8712	184	10	19	Blue net/Red net.
PA04233.28	Bongo	2	10	CF4	20	8	nd	E	nd	nd	nd	10	19	
PA04233.29	Bongo	3	10	CF4	20	8	1540	S	59.8168	-148.8745	182	10	20	Blue net/Red net.
PA04233.30	Bongo	3	10	CF4	20	8	nd	E	nd	nd	nd	10	20	
PA04234.03	Bongo	2	11	CF3	21	8	0832	S	59.8505	-148.8608	165	10	21	Blue net/Red net.
PA04234.04	Bongo	2	11	CF3	21	8	nd	E	nd	nd	nd	10	21	
PA04234.05	Bongo	3	11	CF3	21	8	0836	S	59.8502	-148.8615	165	10	22	Blue net/Red net.
PA04234.06	Bongo	3	11	CF3	21	8	nd	E	nd	nd	nd	10	22	
PA04234.11	Bongo	2	12	CF5	21	8	1133	S	59.7825	-148.8688	190	10	23	Blue net/Red net; 10 m vertical tow, 300 m

**Table 3: Bongo Nets (cont'd)**

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04234.12	Bongo	2	12	CF5	21	8	nd	E	nd	nd	nd	10	23	horizontal variation sample.
PA04234.13	Bongo	3	12	CF5	21	8	1138	S	59.7832	-148.8697	190	10	24	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.14	Bongo	3	12	CF5	21	8	nd	E	nd	nd	nd	10	24	
PA04234.15	Bongo	4	12	CF5	21	8	1145	S	59.7838	-148.8748	190	5	25	Blue net/Red net; 5 m vertical variation sample.
PA04234.16	Bongo	4	12	CF5	21	8	nd	E	nd	nd	nd	5	25	
PA04234.17	Bongo	5	12	CF5	21	8	1149	S	59.7840	-148.8758	191	5	26	Blue net/Red net; 5 m vertical variation sample.
PA04234.18	Bongo	5	12	CF5	21	8	nd	E	nd	nd	nd	5	26	
PA04234.19	Bongo	6	12	CF5	21	8	1152	S	59.7842	-148.8747	191	10	27	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.20	Bongo	6	12	CF5	21	8	nd	E	nd	nd	nd	10	27	
PA04234.21	Bongo	7	12	CF5	21	8	1155	S	59.7845	-148.8752	191	10	28	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.22	Bongo	7	12	CF5	21	8	nd	E	nd	nd	nd	10	28	
PA04234.23	Bongo	8	12	CF5	21	8	1159	S	59.7848	-148.8743	191	15	29	Blue net/Red net; 15 m vertical variation sample.
PA04234.24	Bongo	8	12	CF5	21	8	nd	E	nd	nd	nd	15	29	
PA04234.25	Bongo	9	12	CF5	21	8	1203	S	59.7852	-148.8742	191	15	30	Blue net/Red net; 15 m vertical variation sample.
PA04234.26	Bongo	9	12	CF5	21	8	nd	E	nd	nd	nd	15	30	
PA04234.27	Bongo	10	12	CF5	21	8	1207	S	59.7843	-148.8735	191	20	31	Blue net/Red net; 20 m vertical variation sample.
PA04234.28	Bongo	10	12	CF5	21	8	nd	E	nd	nd	nd	20	31	
PA04234.29	Bongo	11	12	CF5	21	8	1211	S	59.7845	-148.8737	191	20	32	Blue net/Red net; 20 m vertical variation sample.
PA04234.30	Bongo	11	12	CF5	21	8	nd	E	nd	nd	nd	20	32	
PA04234.31	Bongo	12	12	CF5	21	8	1217	S	59.7857	-148.8797	191	10	33	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.32	Bongo	12	12	CF5	21	8	nd	E	nd	nd	nd	10	33	
PA04234.33	Bongo	13	12	CF5	21	8	1220	S	59.7860	-148.8797	191	10	34	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.34	Bongo	13	12	CF5	21	8	nd	E	nd	nd	nd	10	34	
PA04234.39	Bongo	2	13	CF10	21	8	1451	S	59.6175	-148.8710	176	10	35	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.40	Bongo	2	13	CF10	21	8	nd	E	nd	nd	nd	10	35	
PA04234.41	Bongo	3	13	CF10	21	8	1458	S	59.6172	-148.8682	177	10	36	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.42	Bongo	3	13	CF10	21	8	nd	E	nd	nd	nd	10	36	
PA04234.43	Bongo	4	13	CF10	21	8	1503	S	59.6162	-148.8635	177	5	37	Blue net/Red net; 5 m vertical variation sample.
PA04234.44	Bongo	4	13	CF10	21	8	nd	E	nd	nd	nd	5	37	
PA04234.45	Bongo	5	13	CF10	21	8	1506	S	59.6162	-148.8630	177	5	38	Blue net/Red net; 5 m vertical variation sample.
PA04234.46	Bongo	5	13	CF10	21	8	nd	E	nd	nd	nd	5	38	
PA04234.47	Bongo	6	13	CF10	21	8	1509	S	59.6163	-148.8628	177	10	39	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.48	Bongo	6	13	CF10	21	8	nd	E	nd	nd	nd	10	39	
PA04234.49	Bongo	7	13	CF10	21	8	1512	S	59.6163	-148.8627	177	10	40	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.50	Bongo	7	13	CF10	21	8	nd	E	nd	nd	nd	10	40	
PA04234.51	Bongo	8	13	CF10	21	8	1515	S	59.6165	-148.8623	176	15	41	Blue net/Red net; 15 m vertical variation sample.
PA04234.52	Bongo	8	13	CF10	21	8	nd	E	nd	nd	nd	15	41	
PA04234.53	Bongo	9	13	CF10	21	8	1518	S	59.6163	-148.8618	176	15	42	Blue net/Red net; 15 m vertical variation sample.

Table 3: Bongo Nets (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04234.54	Bongo	9	13	CF10	21	8	nd	E	nd	nd	nd	15	42	
PA04234.55	Bongo	10	13	CF10	21	8	1522	S	59.6167	-148.8618	176	20	43	Blue net/Red net; 20 m vertical variation sample.
PA04234.56	Bongo	10	13	CF10	21	8	nd	E	nd	nd	nd	20	43	
PA04234.57	Bongo	11	13	CF10	21	8	1526	S	59.6168	-148.8617	177	20	44	Blue net/Red net; 20 m vertical variation sample.
PA04234.58	Bongo	11	13	CF10	21	8	nd	E	nd	nd	nd	20	44	
PA04234.59	Bongo	12	13	CF10	21	8	1533	S	59.6157	-148.8568	177	10	45	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.60	Bongo	12	13	CF10	21	8	nd	E	nd	nd	nd	10	45	
PA04234.61	Bongo	13	13	CF10	21	8	1537	S	59.6160	-148.8565	177	10	46	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.62	Bongo	13	13	CF10	21	8	nd	E	nd	nd	nd	10	46	
PA04235.03	Bongo	2	14	CF4	22	8	0832	S	59.8197	-148.8532	181	10	47	Blue net/Red net; 10 m vertical variation sample.
PA04235.04	Bongo	2	14	CF4	22	8	nd	E	nd	nd	nd	10	47	
PA04235.05	Bongo	3	14	CF4	22	8	0836	S	59.8198	-148.8538	181	10	48	Blue net/Red net; 10 m vertical variation sample.
PA04235.06	Bongo	3	14	CF4	22	8	nd	E	nd	nd	nd	10	48	
PA04235.07	Bongo	4	14	CF4	22	8	0840	S	59.8200	-148.8542	181	15	49	Blue net/Red net; 15 m vertical variation sample.
PA04235.08	Bongo	4	14	CF4	22	8	nd	E	nd	nd	nd	15	49	
PA04235.09	Bongo	5	14	CF4	22	8	0845	S	59.8203	-148.8547	181	15	50	Blue net/Red net; 15 m vertical variation sample.
PA04235.10	Bongo	5	14	CF4	22	8	nd	E	nd	nd	nd	15	50	
PA04235.11	Bongo	6	14	CF4	22	8	0851	S	59.8207	-148.8548	181	20	51	Blue net/Red net; 20 m vertical variation sample.
PA04235.12	Bongo	6	14	CF4	22	8	nd	E	nd	nd	nd	20	51	
PA04235.13	Bongo	7	14	CF4	22	8	0856	S	59.8212	-148.8553	181	20	52	Blue net/Red net; 20 m vertical variation sample.
PA04235.14	Bongo	7	14	CF4	22	8	nd	E	nd	nd	nd	20	52	
PA04235.21	Bongo	2	15	PWS3	22	8	1535	S	60.0510	-147.6687	149	10	53	Blue net/Red net; 10 m vertical variation sample.
PA04235.22	Bongo	2	15	PWS3	22	8	nd	E	nd	nd	nd	10	53	
PA04235.23	Bongo	3	15	PWS3	22	8	1540	S	60.0513	-147.6678	149	10	54	Blue net/Red net; 10 m vertical variation sample.
PA04235.24	Bongo	3	15	PWS3	22	8	nd	E	nd	nd	nd	10	54	
PA04235.25	Bongo	4	15	PWS3	22	8	1545	S	60.0520	-147.6687	148	15	55	Blue net/Red net; 15 m vertical variation sample.
PA04235.26	Bongo	4	15	PWS3	22	8	nd	E	nd	nd	nd	15	55	
PA04235.27	Bongo	5	15	PWS3	22	8	1555	S	60.0520	-147.6675	149	15	56	Blue net/Red net; 15 m vertical variation sample.
PA04235.28	Bongo	5	15	PWS3	22	8	nd	E	nd	nd	nd	15	56	
PA04235.29	Bongo	6	15	PWS3	22	8	1559	S	60.0525	-147.6682	148	20	57	Blue net/Red net; 20 m vertical variation sample.
PA04235.30	Bongo	6	15	PWS3	22	8	nd	E	nd	nd	nd	20	57	
PA04235.31	Bongo	7	15	PWS3	22	8	1604	S	60.0527	-147.6667	152	20	58	Blue net/Red net; 20 m vertical variation sample.
PA04235.32	Bongo	7	15	PWS3	22	8	nd	E	nd	nd	nd	20	58	
PA04236.03	Bongo	2	16	PWS1	23	8	0734	S	60.2015	-147.9908	265	10	59	Blue net/Red net; 10 m vertical variation sample.
PA04236.04	Bongo	2	16	PWS1	23	8	nd	E	nd	nd	nd	10	59	
PA04236.05	Bongo	3	16	PWS1	23	8	0738	S	60.2007	-147.9910	232	10	60	Blue net/Red net; 10 m vertical variation sample.
PA04236.06	Bongo	3	16	PWS1	23	8	nd	E	nd	nd	nd	10	60	
PA04236.07	Bongo	4	16	PWS1	23	8	0753	S	60.1988	-147.9940	176	20	61	Blue net/Red net; 20 m vertical variation sample.
PA04236.08	Bongo	4	16	PWS1	23	8	nd	E	nd	nd	nd	20	61	
PA04236.09	Bongo	5	16	PWS1	23	8	0758	S	60.1987	-147.9960	170	20	62	Blue net/Red net; 20 m vertical variation sample.
PA04236.10	Bongo	5	16	PWS1	23	8	nd	E	nd	nd	nd	20	62	
PA04236.15	Bongo	2	17	PWS2	23	8	0959	S	60.0987	-147.8353	251	10	63	Blue net/Red net.
PA04236.16	Bongo	2	17	PWS2	23	8	nd	E	nd	nd	nd	10	63	
PA04236.17	Bongo	3	17	PWS2	23	8	1003	S	60.0983	-147.8365	250	10	64	Blue net/Red net.
PA04236.18	Bongo	3	17	PWS2	23	8	nd	E	nd	nd	nd	10	64	



**Table 4: CTD Casts**

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04230.01	CTD	1	1	GAK2	17	8	1242	S	59.6742	-149.3177	222	100	1	Cast 0; Pandalus thermosalinograph (TSG) 27.85 ppt; CalVet plankton samples collected at GAK2 for R.Hopcroft.
PA04230.02	CTD	1	1	GAK2	17	8	nd	E	nd	nd	nd	100	1	
PA04230.09	CTD	1	2	GAK1i	17	8	1519	S	59.7670	-149.4013	263	100	2	Cast 1; TSG 25.76 ppt; 17.9 C srfc bucket temp; CalVet plankton samples collected at GAK1i for R.Hopcroft.
PA04230.10	CTD	1	2	GAK1i	17	8	nd	E	nd	nd	nd	100	2	
PA04231.01	CTD	1	3	GAK4	18	8	0846	S	59.4075	-149.0478	197	100	3	Cast 0; TSG at passing GAK 3 31.289; TSG at GAK 4 30.3.
PA04231.02	CTD	1	3	GAK4	18	8	nd	E	nd	nd	nd	100	3	
PA04231.09	CTD	1	4	GAK5	18	8	1120	S	59.2618	-148.9087	166	100	4	Cast 01; TSG 31.35; sighted FOCI bouy near GAK 5; CalVet plankton samples collected at GAK5 for R.Hopcroft.
PA04231.10	CTD	1	4	GAK5	18	8	nd	E	nd	nd	nd	100	4	
PA04231.17	CTD	1	5	GAK6	18	8	1411	S	59.1162	-148.7803	148	100	5	TSG 31.45; CalVet plankton samples collected at GAK6 for R.Hopcroft.
PA04231.18	CTD	1	5	GAK6	18	8	nd	E	nd	nd	nd	100	5	
PA04232.01	CTD	1	6	GAK3	19	8	1535	S	59.5538	-149.1908	216	100	6	Cast 00; TSG 31.38.
PA04232.02	CTD	1	6	GAK3	19	8	nd	E	nd	nd	nd	100	6	
PA04233.07	CTD	4	7	CF10	20	8	1056	S	59.6142	-148.9345	177	100	7	Cast 00; TSG 31.11.
PA04233.08	CTD	4	7	CF10	20	8	nd	E	nd	nd	nd	100	7	
PA04233.09	CTD	1	8	CF11	20	8	1119	S	59.5830	-148.8663	175	100	8	Cast 01; TSG 31.33.
PA04233.10	CTD	1	8	CF11	20	8	nd	E	nd	nd	nd	100	8	
PA04233.17	CTD	1	9	CF5	20	8	1356	S	59.7847	-148.8678	192	100	9	Cast 00; TSG 29.94.
PA04233.18	CTD	1	9	CF5	20	8	nd	E	nd	nd	nd	100	9	
PA04233.25	CTD	1	10	CF4	20	8	1530	S	59.8165	-148.8695	184	100	10	Cast 00; TSG 27.75.
PA04233.26	CTD	1	10	CF4	20	8	nd	E	nd	nd	nd	100	10	
PA04234.01	CTD	1	11	CF3	21	8	0827	S	59.8510	-148.8585	165	100	11	Cast 00; TSG 25.75.
PA04234.02	CTD	1	11	CF3	21	8	nd	E	nd	nd	nd	100	11	
PA04234.09	CTD	1	12	CF5	21	8	1127	S	59.7837	-148.8720	190	100	12	Cast 01; TSG 27.02.
PA04234.10	CTD	1	12	CF5	21	8	nd	E	nd	nd	nd	100	12	
PA04234.37	CTD	1	13	CF10	21	8	1445	S	59.6182	-148.8738	176	100	13	Cast 02; TSG 31.42.
PA04234.38	CTD	1	13	CF10	21	8	nd	E	nd	nd	nd	100	13	
PA04235.01	CTD	1	14	CF4	22	8	0827	S	59.8205	-148.8515	181	100	14	Cast 03; TSG 26.20.
PA04235.02	CTD	1	14	CF4	22	8	nd	E	nd	nd	nd	100	14	
PA04235.19	CTD	1	15	PWS3	22	8	1532	S	60.0507	-147.6733	155	100	15	Cast 04.
PA04235.20	CTD	1	15	PWS3	22	8	nd	E	nd	nd	nd	100	15	
PA04236.01	CTD	1	16	PWS1	23	8	0726	S	60.2027	-147.9927	255	100	16	Cast 00; TSG 19.44.
PA04236.02	CTD	1	16	PWS1	23	8	nd	E	nd	nd	nd	100	16	
PA04236.13	CTD	1	17	PWS2	23	8	0955	S	60.0992	-147.8342	254	100	17	Cast 01.
PA04236.14	CTD	1	17	PWS2	23	8	nd	E	nd	nd	nd	100	17	

# **APPENDIX I**

## **PA0402 EVENT LOG**

## EVENT LOG CONTENTS

### Column Label

Event#  
Instrument (Instr)

Cast  
Station (Sta)  
Station Standard (Sta std)  
Day  
Month (Mos)  
Time  
Start/End (S/E) flag  
Latitude (Lat)  
Longitude (Long)  
Water Depth  
Cast Depth  
Haul  
Comments

### Description

Unique identifier for each line of event log.  
Trawl: Surface Rope Trawl; 198-m long; 25-m wide; 35-m deep, 1.2 cm mesh liner in cod end; usually towed 20-30 minutes at surface;  
Bongo: Bongo net: paired 60 cm diameter mouth opening; 0.333 mm mesh; equipped with flowmeter; towed vertically from 10 m depth;  
CTD: Seabird Seacat SBE-19, with pump and Wetlabs fluorometer; lowered to 100-m depth at all fish stations.

Sequence # for gear deployed at current station.  
Sequence # for station occupied.

Local time basis.  
Local time basis.  
Local time. (Local time = GMT - 8 hrs or UTC - 8)  
S=Start of event; E=End of event.  
Decimal degrees; north is positive.  
Decimal degrees; east is positive.  
Depth of bottom.  
Maximum depth of deployment.  
Cruise sequence number for a particular gear deployment.

Appendix I: Event Log		Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
Event#	Instr													
PA04230.01	CTD	1	1	GAK2	17	8	1242	S	59.6742	-149.3177	222	100	1	Cast 0; Pandalus thermosalinograph (TSG) 27.85 ppt; CalVet plankton samples collected at GAK2 for R.Hopcroft.
PA04230.02	CTD	1	1	GAK2	17	8	nd	E	nd	nd	nd	100	1	
PA04230.03	Bongo	2	1	GAK2	17	8	1251	S	59.6802	-149.3232	222	10	1	Blue net/Red net.
PA04230.04	Bongo	2	1	GAK2	17	8	nd	E	nd	nd	nd	10	1	
PA04230.05	Bongo	3	1	GAK2	17	8	1256	S	59.6908	-149.3325	222	10	2	Blue net/Red net.
PA04230.06	Bongo	3	1	GAK2	17	8	nd	E	nd	nd	nd	10	2	
PA04230.07	Trawl	4	1	GAK2	17	8	1338	S	59.6778	-149.3102	221	0	1	Reset from 50 fathoms(start 1333); hauled back at 1348 because port door wire was fouled and would not submerge.
PA04230.08	Trawl	4	1	GAK2	17	8	1348	E	59.6845	-149.3073	nd	0	1	
PA04230.09	CTD	1	2	GAK1i	17	8	1519	S	59.7670	-149.4013	263	100	2	Cast 1; TSG 25.76 ppt; 17.9 C srfc bucket temp; CalVet plankton samples collected at GAK1i for R.Hopcroft.
PA04230.10	CTD	1	2	GAK1i	17	8	nd	E	nd	nd	nd	100	2	
PA04230.11	Bongo	2	2	GAK1i	17	8	1523	S	59.7667	-149.4035	263	10	3	Blue net/Red net.
PA04230.12	Bongo	2	2	GAK1i	17	8	nd	E	nd	nd	nd	10	3	
PA04230.13	Bongo	3	2	GAK1i	17	8	1529	S	59.7668	-149.4052	265	10	4	Blue net/Red net.
PA04230.14	Bongo	3	2	GAK1i	17	8	nd	E	nd	nd	nd	10	4	
PA04230.15	Trawl	4	2	GAK1i	17	8	1550	S	59.7672	-149.4122	268	0	2	
PA04230.16	Trawl	4	2	GAK1i	17	8	1620	E	59.7695	-149.3740	nd	0	2	
PA04231.01	CTD	1	3	GAK4	18	8	0846	S	59.4075	-149.0478	197	100	3	Cast 0; TSG at passing GAK 3 31.289; TSG at GAK 4 30.3.
PA04231.02	CTD	1	3	GAK4	18	8	nd	E	nd	nd	nd	100	3	
PA04231.03	Bongo	2	3	GAK4	18	8	0854	S	59.4080	-149.0482	197	10	5	Blue net/Red net.
PA04231.04	Bongo	2	3	GAK4	18	8	nd	E	nd	nd	nd	10	5	
PA04231.05	Bongo	3	3	GAK4	18	8	0901	S	59.4062	-149.0482	198	10	6	Blue net/Red net.
PA04231.06	Bongo	3	3	GAK4	18	8	nd	E	nd	nd	nd	10	6	
PA04231.07	Trawl	4	3	GAK4	18	8	0920	S	59.4052	-149.0438	197	0	3	Starboard door surfaced for a couple of minutes; TSG start 30.3 end 30.0; 16.8 C srfc bucket temp.
PA04231.08	Trawl	4	3	GAK4	18	8	0950	E	59.3937	-149.0848	nd	0	3	
PA04231.09	CTD	1	4	GAK5	18	8	1120	S	59.2618	-148.9087	166	100	4	Cast 01; TSG 31.35; sighted FOCI bouy near GAK 5; CalVet plankton samples collected at GAK5 for R.Hopcroft.
PA04231.10	CTD	1	4	GAK5	18	8	nd	E	nd	nd	nd	100	4	
PA04231.11	Bongo	2	4	GAK5	18	8	1123	S	59.2623	-148.9092	166	10	7	Blue net/Red net.
PA04231.12	Bongo	2	4	GAK5	18	8	nd	E	nd	nd	nd	10	7	
PA04231.13	Bongo	3	4	GAK5	18	8	1127	S	59.2628	-148.9105	166	10	8	Blue net/Red net.
PA04231.14	Bongo	3	4	GAK5	18	8	nd	E	nd	nd	nd	10	8	
PA04231.15	Trawl	4	4	GAK5	18	8	1157	S	59.2658	-148.9132	167	0	4	TSG 31.35.
PA04231.16	Trawl	4	4	GAK5	18	8	1227	E	59.2607	-148.8785	167	0	4	
PA04231.17	CTD	1	5	GAK6	18	8	1411	S	59.1162	-148.7803	148	100	5	TSG 31.45; CalVet plankton samples collected at GAK6 for R.Hopcroft.
PA04231.18	CTD	1	5	GAK6	18	8	nd	E	nd	nd	nd	100	5	
PA04231.19	Bongo	2	5	GAK6	18	8	1415	S	59.1167	-148.7822	147	10	9	Blue net/Red net.
PA04231.20	Bongo	2	5	GAK6	18	8	nd	E	nd	nd	nd	10	9	
PA04231.21	Bongo	3	5	GAK6	18	8	1419	S	59.1173	-148.7840	146	10	10	Blue net/Red net.

## Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04231.22	Bongo	3	5	GAK6	18	8	nd	E	nd	nd	nd	10	10	
PA04231.23	Trawl	4	5	GAK6	18	8	1437	S	59.1142	-148.7842	148	0	5	Towed at 138 degrees.
PA04231.24	Trawl	4	5	GAK6	18	8	1507	E	59.1002	-148.7598	nd	0	5	
PA04232.01	CTD	1	6	GAK3	19	8	1535	S	59.5538	-149.1908	216	100	6	Cast 00; TSG 31.38.
PA04232.02	CTD	1	6	GAK3	19	8	nd	E	nd	nd	nd	100	6	
PA04232.03	Bongo	2	6	GAK3	19	8	1539	S	59.5537	-149.1922	215	10	11	Blue net/Red net.
PA04232.04	Bongo	2	6	GAK3	19	8	nd	E	nd	nd	nd	10	11	
PA04232.05	Bongo	3	6	GAK3	19	8	1543	S	59.5540	-149.1938	216	10	12	Blue net/Red net.
PA04232.06	Bongo	3	6	GAK3	19	8	nd	E	nd	nd	nd	10	12	
PA04232.07	Trawl	4	6	GAK3	19	8	1558	S	59.5618	-149.2087	219	0	6	Towed at 320 degrees.
PA04232.08	Trawl	4	6	GAK3	19	8	1628	E	59.5805	-149.2388	nd	0	6	
PA04233.01	Bongo	1	7	CF10	20	8	0945	S	59.6175	-149.8708	174	10	13	Blue net/Red net; TSG 31.19; Test cast of CTD done south of CF 9 (Cast 01, named [042cf9.hex]).
PA04233.02	Bongo	1	7	CF10	20	8	nd	E	nd	nd	nd	10	13	
PA04233.03	Bongo	2	7	CF10	20	8	0950	S	59.6177	-148.8710	174	10	14	Blue net/Red net.
PA04233.04	Bongo	2	7	CF10	20	8	nd	E	nd	nd	nd	10	14	
PA04233.05	Trawl	3	7	CF10	20	8	1005	S	59.6170	-148.8595	175	0	7	
PA04233.06	Trawl	3	7	CF10	20	8	1035	E	59.6137	-148.8255	nd	0	7	
PA04233.07	CTD	4	7	CF10	20	8	1056	S	59.6142	-148.9345	177	100	7	Cast 00; TSG 31.11.
PA04233.08	CTD	4	7	CF10	20	8	nd	E	nd	nd	nd	100	7	
PA04233.09	CTD	1	8	CF11	20	8	1119	S	59.5830	-148.8663	175	100	8	Cast 01; TSG 31.33.
PA04233.10	CTD	1	8	CF11	20	8	nd	E	nd	nd	nd	100	8	
PA04233.11	Bongo	2	8	CF11	20	8	1124	S	59.5837	-148.8677	175	10	15	Blue net/Red net.
PA04233.12	Bongo	2	8	CF11	20	8	nd	E	nd	nd	nd	10	15	
PA04233.13	Bongo	3	8	CF11	20	8	1127	S	59.5840	-148.8688	175	10	16	Blue net/Red net.
PA04233.14	Bongo	3	8	CF11	20	8	nd	E	nd	nd	nd	10	16	
PA04233.15	Trawl	4	8	CF11	20	8	1144	S	59.5850	-148.8728	176	0	8	Towed at 101 degrees.
PA04233.16	Trawl	4	8	CF11	20	8	1214	E	59.5810	-148.8352	nd	0	8	
PA04233.17	CTD	1	9	CF5	20	8	1356	S	59.7847	-148.8678	192	100	9	Cast 00; TSG 29.94.
PA04233.18	CTD	1	9	CF5	20	8	nd	E	nd	nd	nd	100	9	
PA04233.19	Bongo	2	9	CF5	20	8	1359	S	59.7850	-148.8688	192	10	17	Blue net/Red net.
PA04233.20	Bongo	2	9	CF5	20	8	nd	E	nd	nd	nd	10	17	
PA04233.21	Bongo	3	9	CF5	20	8	1402	S	59.7853	-148.8695	193	10	18	Blue net/Red net.
PA04233.22	Bongo	3	9	CF5	20	8	nd	E	nd	nd	nd	10	18	
PA04233.23	Trawl	4	9	CF5	20	8	1422	S	59.7858	-148.8620	192	0	9	
PA04233.24	Trawl	4	9	CF5	20	8	1452	E	59.7972	-148.9038	nd	0	9	
PA04233.25	CTD	1	10	CF4	20	8	1530	S	59.8165	-148.8695	184	100	10	Cast 00; TSG 27.75.
PA04233.26	CTD	1	10	CF4	20	8	nd	E	nd	nd	nd	100	10	
PA04233.27	Bongo	2	10	CF4	20	8	1533	S	59.8165	-148.8712	184	10	19	Blue net/Red net.
PA04233.28	Bongo	2	10	CF4	20	8	nd	E	nd	nd	nd	10	19	
PA04233.29	Bongo	3	10	CF4	20	8	1540	S	59.8168	-148.8745	182	10	20	Blue net/Red net.
PA04233.30	Bongo	3	10	CF4	20	8	nd	E	nd	nd	nd	10	20	
PA04233.31	Trawl	4	10	CF4	20	8	1559	S	59.8172	-148.8720	183	0	10	
PA04233.32	Trawl	4	10	CF4	20	8	1629	E	59.8320	-148.9107	nd	0	10	
PA04234.01	CTD	1	11	CF3	21	8	0827	S	59.8510	-148.8585	165	100	11	Cast 00; TSG 25.75.
PA04234.02	CTD	1	11	CF3	21	8	nd	E	nd	nd	nd	100	11	
PA04234.03	Bongo	2	11	CF3	21	8	0832	S	59.8505	-148.8608	165	10	21	Blue net/Red net.
PA04234.04	Bongo	2	11	CF3	21	8	nd	E	nd	nd	nd	10	21	

## Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04234.05	Bongo	3	11	CF3	21	8	0836	S	59.8502	-148.8615	165	10	22	Blue net/Red net.
PA04234.06	Bongo	3	11	CF3	21	8	nd	E	nd	nd	nd	10	22	
PA04234.07	Trawl	4	11	CF3	21	8	0943	S	59.8482	-148.8757	155	0	11	Towed at 274 deg;prior trawl aborted because port door surfaced due to strong current; 25.9 TSG while passing CF4.
PA04234.08	Trawl	4	11	CF3	21	8	1013	E	59.8503	-148.9300	nd	0	11	
PA04234.09	CTD	1	12	CF5	21	8	1127	S	59.7837	-148.8720	190	100	12	Cast 01; TSG 27.02.
PA04234.10	CTD	1	12	CF5	21	8	nd	E	nd	nd	nd	100	12	
PA04234.11	Bongo	2	12	CF5	21	8	1133	S	59.7825	-148.8688	190	10	23	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.12	Bongo	2	12	CF5	21	8	nd	E	nd	nd	nd	10	23	
PA04234.13	Bongo	3	12	CF5	21	8	1138	S	59.7832	-148.8697	190	10	24	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.14	Bongo	3	12	CF5	21	8	nd	E	nd	nd	nd	10	24	
PA04234.15	Bongo	4	12	CF5	21	8	1145	S	59.7838	-148.8748	190	5	25	Blue net/Red net; 5 m vertical variation sample.
PA04234.16	Bongo	4	12	CF5	21	8	nd	E	nd	nd	nd	5	25	
PA04234.17	Bongo	5	12	CF5	21	8	1149	S	59.7840	-148.8758	191	5	26	Blue net/Red net; 5 m vertical variation sample.
PA04234.18	Bongo	5	12	CF5	21	8	nd	E	nd	nd	nd	5	26	
PA04234.19	Bongo	6	12	CF5	21	8	1152	S	59.7842	-148.8747	191	10	27	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.20	Bongo	6	12	CF5	21	8	nd	E	nd	nd	nd	10	27	
PA04234.21	Bongo	7	12	CF5	21	8	1155	S	59.7845	-148.8752	191	10	28	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.22	Bongo	7	12	CF5	21	8	nd	E	nd	nd	nd	10	28	
PA04234.23	Bongo	8	12	CF5	21	8	1159	S	59.7848	-148.8743	191	15	29	Blue net/Red net; 15 m vertical variation sample.
PA04234.24	Bongo	8	12	CF5	21	8	nd	E	nd	nd	nd	15	29	
PA04234.25	Bongo	9	12	CF5	21	8	1203	S	59.7852	-148.8742	191	15	30	Blue net/Red net; 15 m vertical variation sample.
PA04234.26	Bongo	9	12	CF5	21	8	nd	E	nd	nd	nd	15	30	
PA04234.27	Bongo	10	12	CF5	21	8	1207	S	59.7843	-148.8735	191	20	31	Blue net/Red net; 20 m vertical variation sample.
PA04234.28	Bongo	10	12	CF5	21	8	nd	E	nd	nd	nd	20	31	
PA04234.29	Bongo	11	12	CF5	21	8	1211	S	59.7845	-148.8737	191	20	32	Blue net/Red net; 20 m vertical variation sample.
PA04234.30	Bongo	11	12	CF5	21	8	nd	E	nd	nd	nd	20	32	
PA04234.31	Bongo	12	12	CF5	21	8	1217	S	59.7857	-148.8797	191	10	33	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.32	Bongo	12	12	CF5	21	8	nd	E	nd	nd	nd	10	33	
PA04234.33	Bongo	13	12	CF5	21	8	1220	S	59.7860	-148.8797	191	10	34	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.34	Bongo	13	12	CF5	21	8	nd	E	nd	nd	nd	10	34	
PA04234.35	Trawl	14	12	CF5	21	8	1235	S	59.7840	-148.8730	191	0	12	TSG 29.17; ACC front within sight to south.
PA04234.36	Trawl	14	12	CF5	21	8	1305	E	59.7782	-148.8420	nd	0	12	
PA04234.37	CTD	1	13	CF10	21	8	1445	S	59.6182	-148.8738	176	100	13	Cast 02; TSG 31.42.
PA04234.38	CTD	1	13	CF10	21	8	nd	E	nd	nd	nd	100	13	
PA04234.39	Bongo	2	13	CF10	21	8	1451	S	59.6175	-148.8710	176	10	35	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.40	Bongo	2	13	CF10	21	8	nd	E	nd	nd	nd	10	35	
PA04234.41	Bongo	3	13	CF10	21	8	1458	S	59.6172	-148.8682	177	10	36	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.42	Bongo	3	13	CF10	21	8	nd	E	nd	nd	nd	10	36	

## Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04234.43	Bongo	4	13	CF10	21	8	1503	S	59.6162	-148.8635	177	5	37	Blue net/Red net; 5 m vertical variation sample.
PA04234.44	Bongo	4	13	CF10	21	8	nd	E	nd	nd	nd	5	37	
PA04234.45	Bongo	5	13	CF10	21	8	1506	S	59.6162	-148.8630	177	5	38	Blue net/Red net; 5 m vertical variation sample.
PA04234.46	Bongo	5	13	CF10	21	8	nd	E	nd	nd	nd	5	38	
PA04234.47	Bongo	6	13	CF10	21	8	1509	S	59.6163	-148.8628	177	10	39	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.48	Bongo	6	13	CF10	21	8	nd	E	nd	nd	nd	10	39	
PA04234.49	Bongo	7	13	CF10	21	8	1512	S	59.6163	-148.8627	177	10	40	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.50	Bongo	7	13	CF10	21	8	nd	E	nd	nd	nd	10	40	
PA04234.51	Bongo	8	13	CF10	21	8	1515	S	59.6165	-148.8623	176	15	41	Blue net/Red net; 15 m vertical variation sample.
PA04234.52	Bongo	8	13	CF10	21	8	nd	E	nd	nd	nd	15	41	
PA04234.53	Bongo	9	13	CF10	21	8	1518	S	59.6163	-148.8618	176	15	42	Blue net/Red net; 15 m vertical variation sample.
PA04234.54	Bongo	9	13	CF10	21	8	nd	E	nd	nd	nd	15	42	
PA04234.55	Bongo	10	13	CF10	21	8	1522	S	59.6167	-148.8618	176	20	43	Blue net/Red net; 20 m vertical variation sample.
PA04234.56	Bongo	10	13	CF10	21	8	nd	E	nd	nd	nd	20	43	
PA04234.57	Bongo	11	13	CF10	21	8	1526	S	59.6168	-148.8617	177	20	44	Blue net/Red net; 20 m vertical variation sample.
PA04234.58	Bongo	11	13	CF10	21	8	nd	E	nd	nd	nd	20	44	
PA04234.59	Bongo	12	13	CF10	21	8	1533	S	59.6157	-148.8568	177	10	45	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.60	Bongo	12	13	CF10	21	8	nd	E	nd	nd	nd	10	45	
PA04234.61	Bongo	13	13	CF10	21	8	1537	S	59.6160	-148.8565	177	10	46	Blue net/Red net; 10 m vertical tow, 300 m horizontal variation sample.
PA04234.62	Bongo	13	13	CF10	21	8	nd	E	nd	nd	nd	10	46	
PA04234.63	Trawl	14	13	CF10	21	8	1550	S	59.6232	-148.8673	177	0	13	Towed 321 degrees; TSG start 31.35, end 31.43.
PA04234.64	Trawl	14	13	CF10	21	8	1620	E	59.6410	-148.8960	nd	0	13	
PA04235.01	CTD	1	14	CF4	22	8	0827	S	59.8205	-148.8515	181	100	14	Cast 03; TSG 26.20.
PA04235.02	CTD	1	14	CF4	22	8	nd	E	nd	nd	nd	100	14	
PA04235.03	Bongo	2	14	CF4	22	8	0832	S	59.8197	-148.8532	181	10	47	Blue net/Red net; 10 m vertical variation sample.
PA04235.04	Bongo	2	14	CF4	22	8	nd	E	nd	nd	nd	10	47	
PA04235.05	Bongo	3	14	CF4	22	8	0836	S	59.8198	-148.8538	181	10	48	Blue net/Red net; 10 m vertical variation sample.
PA04235.06	Bongo	3	14	CF4	22	8	nd	E	nd	nd	nd	10	48	
PA04235.07	Bongo	4	14	CF4	22	8	0840	S	59.8200	-148.8542	181	15	49	Blue net/Red net; 15 m vertical variation sample.
PA04235.08	Bongo	4	14	CF4	22	8	nd	E	nd	nd	nd	15	49	
PA04235.09	Bongo	5	14	CF4	22	8	0845	S	59.8203	-148.8547	181	15	50	Blue net/Red net; 15 m vertical variation sample.
PA04235.10	Bongo	5	14	CF4	22	8	nd	E	nd	nd	nd	15	50	
PA04235.11	Bongo	6	14	CF4	22	8	0851	S	59.8207	-148.8548	181	20	51	Blue net/Red net; 20 m vertical variation sample.
PA04235.12	Bongo	6	14	CF4	22	8	nd	E	nd	nd	nd	20	51	
PA04235.13	Bongo	7	14	CF4	22	8	0856	S	59.8212	-148.8553	181	20	52	Blue net/Red net; 20 m vertical variation sample.
PA04235.14	Bongo	7	14	CF4	22	8	nd	E	nd	nd	nd	20	52	
PA04235.15	Trawl	8	14	CF4	22	8	0912	S	59.8180	-148.8640	182	0	14	Towed at 50 degrees; TSG start 26.20, end 26.97.
PA04235.16	Trawl	8	14	CF4	22	8	0942	E	59.7993	-148.8433	nd	0	14	
PA04235.17	Trawl	9	14	CF4	22	8	1019	S	59.8010	-148.8667	191	0	15	Towed at 90 degrees; TSG 26.18; handheld thermometer 15.3 at 1 m.
PA04235.18	Trawl	9	14	CF4	22	8	nd	E	59.8008	-148.8307	nd	0	15	
PA04235.19	CTD	1	15	PWS3	22	8	1532	S	60.0507	-147.6733	155	100	15	Cast 04.
PA04235.20	CTD	1	15	PWS3	22	8	nd	E	nd	nd	nd	100	15	
PA04235.21	Bongo	2	15	PWS3	22	8	1535	S	60.0510	-147.6687	149	10	53	Blue net/Red net; 10 m vertical variation sample.

## Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	S/E flag	Lat	Long	Water Depth	Cast Depth	Haul	Comments
PA04235.22	Bongo	2	15	PWS3	22	8	nd	E	nd	nd	nd	10	53	
PA04235.23	Bongo	3	15	PWS3	22	8	1540	S	60.0513	-147.6678	149	10	54	Blue net/Red net; 10 m vertical variation sample.
PA04235.24	Bongo	3	15	PWS3	22	8	nd	E	nd	nd	nd	10	54	
PA04235.25	Bongo	4	15	PWS3	22	8	1545	S	60.0520	-147.6687	148	15	55	Blue net/Red net; 15 m vertical variation sample.
PA04235.26	Bongo	4	15	PWS3	22	8	nd	E	nd	nd	nd	15	55	
PA04235.27	Bongo	5	15	PWS3	22	8	1555	S	60.0520	-147.6675	149	15	56	Blue net/Red net; 15 m vertical variation sample.
PA04235.28	Bongo	5	15	PWS3	22	8	nd	E	nd	nd	nd	15	56	
PA04235.29	Bongo	6	15	PWS3	22	8	1559	S	60.0525	-147.6682	148	20	57	Blue net/Red net; 20 m vertical variation sample.
PA04235.30	Bongo	6	15	PWS3	22	8	nd	E	nd	nd	nd	20	57	
PA04235.31	Bongo	7	15	PWS3	22	8	1604	S	60.0527	-147.6667	152	20	58	Blue net/Red net; 20 m vertical variation sample.
PA04235.32	Bongo	7	15	PWS3	22	8	nd	E	nd	nd	nd	20	58	
PA04235.33	Trawl	8	15	PWS3	22	8	1620	S	60.0527	-147.6670	152	0	16	Towed at 190 degrees; start TSG 26.58, end 27.05.
PA04235.34	Trawl	8	15	PWS3	22	8	1650	E	60.0318	-147.6743	nd	0	16	
PA04236.01	CTD	1	16	PWS1	23	8	0726	S	60.2027	-147.9927	255	100	16	Cast 00; TSG 19.44.
PA04236.02	CTD	1	16	PWS1	23	8	nd	E	nd	nd	nd	100	16	
PA04236.03	Bongo	2	16	PWS1	23	8	0734	S	60.2015	-147.9908	265	10	59	Blue net/Red net; 10 m vertical variation sample.
PA04236.04	Bongo	2	16	PWS1	23	8	nd	E	nd	nd	nd	10	59	
PA04236.05	Bongo	3	16	PWS1	23	8	0738	S	60.2007	-147.9910	232	10	60	Blue net/Red net; 10 m vertical variation sample.
PA04236.06	Bongo	3	16	PWS1	23	8	nd	E	nd	nd	nd	10	60	
PA04236.07	Bongo	4	16	PWS1	23	8	0753	S	60.1988	-147.9940	176	20	61	Blue net/Red net; 20 m vertical variation sample.
PA04236.08	Bongo	4	16	PWS1	23	8	nd	E	nd	nd	nd	20	61	
PA04236.09	Bongo	5	16	PWS1	23	8	0758	S	60.1987	-147.9960	170	20	62	Blue net/Red net; 20 m vertical variation sample.
PA04236.10	Bongo	5	16	PWS1	23	8	nd	E	nd	nd	nd	20	62	
PA04236.11	Trawl	6	16	PWS1	23	8	0815	S	60.1960	-147.9997	158	0	17	Towed at 017 degrees; TSG start 18.93, end 21.37.
PA04236.12	Trawl	6	16	PWS1	23	8	0845	E	60.2180	-147.9867	nd	0	17	
PA04236.13	CTD	1	17	PWS2	23	8	0955	S	60.0992	-147.8342	254	100	17	Cast 01.
PA04236.14	CTD	1	17	PWS2	23	8	nd	E	nd	nd	nd	100	17	
PA04236.15	Bongo	2	17	PWS2	23	8	0959	S	60.0987	-147.8353	251	10	63	Blue net/Red net.
PA04236.16	Bongo	2	17	PWS2	23	8	nd	E	nd	nd	nd	10	63	
PA04236.17	Bongo	3	17	PWS2	23	8	1003	S	60.0983	-147.8365	250	10	64	Blue net/Red net.
PA04236.18	Bongo	3	17	PWS2	23	8	nd	E	nd	nd	nd	10	64	
PA04236.19	Trawl	4	17	PWS2	23	8	1022	S	60.0897	-147.8488	165	0	18	Towed at 031 degrees; TSG start 21.90; end 25.34.
PA04236.20	Trawl	4	17	PWS2	23	8	1052	E	60.1075	-147.8280	nd	0	18	