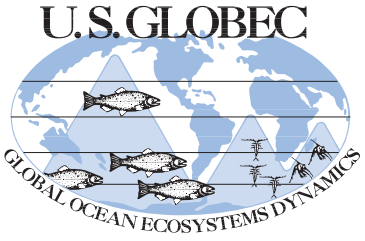
GLOBEC Northeast Pacific, Coastal Gulf of Alaska

Cruise Report, R/V *Alpha Helix* (HX275)

20 July – 12 August 2003



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 *Alpha Helix* (HX275)

20 July – 12 August 2003

Chief Scientist:
Jeff Napp
NOAA/NMFS/AFSC
7600 Sand Point Way, NE
Seattle, WA 98115-0070
206-526-4148
E-mail: jeff.napp@NOAA.gov

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

Cruise Goals / Scientific Purpose

The GLOBEC Northeast Pacific program seeks to understand the relationship between climate variability and the success of marine fish, bird and mammal populations. In the coastal Gulf of Alaska, the program focuses on the mechanisms by which climate and weather can influence the physical - chemical structure of the coastal zone, how this, in turn, affects the coastal planktonic food web, and how food web variations influence distribution and recruitment success of pink salmon. Process cruises were conducted twice in 2003. On each cruise, the aim was to visit four sites representing a diversity of physical - chemical conditions in the coastal Gulf of Alaska. At each of these core sites, rates of phytoplankton growth, zooplankton grazing and zooplankton egg production were measured, as well as aspects of phytoplankton and zooplankton community structure.

On this second 2003 process cruise, we focused on post-spring phytoplankton bloom conditions, the responses of the zooplankton community to changes in the phytoplankton community, the conditions leading to mesoscale variability in planktonic distribution and biological rates, and the distribution of specific prey taken by juvenile salmon after they leave Prince William Sound. Research on salmon prey and the food webs that produce them were investigated during coordinated operations with other GLOBEC supported investigators/ships (R/V *Pandalus* and NOAA Ship R/V *Miller Freeman*). Mesoscale physical processes were concurrently mapped by GLOBEC supported research aboard the R/V *Wecoma*. Comparison with data collected during 2001 and spring 2003 process cruises will be important for testing hypotheses about planktonic processes, as well as understanding the effects of interannual variability.

Cruise Objectives

1. Determine phytoplankton growth and ^{14}C production rates;
2. Determine rates of microzooplankton herbivory;
3. Determine rates of grazing on phyto- and microzooplankton by selected copepod taxa;
4. Determine grazing rates and distribution of larvaceans and pteropods;
5. Measure rates of egg production by copepods *Calanus*, *Pseudocalanus*, *Metridia* and other Copepoda;
6. Assess vertical distribution of temperature, salinity, light, nutrients, chlorophyll and microzooplankton at core process stations;
7. Conduct net tows (QuadNet, MOCNESS, closing Ring net, Tucker) for distribution and abundance of zooplankton at core process stations;
8. Coordinate and communicate with R/V *Wecoma* for study of mesoscale physical features and related chlorophyll/zooplankton gradients (using the measurements listed above);
9. Coordinate and communicate with R/V *Pandalus* and NOAA Ship R/V *Miller Freeman* to study distribution of juvenile salmon prey.

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

Suzanne Strom (Project co-PI)	Microzooplankton grazing., WWU, stroms@cc.wwu.edu
Erin Macri	^{14}C productivity, WWU
Kerri Fredrickson	Microzooplankton grazing, WWU
Franchesca Perez	Chlorophyll/nutrients, WWU
Nicole Moore	Microzooplankton grazing, WWU
Jesse Swanko	Microzooplankton grazing, WWU
Riki Sato	Larvacean grazing, LUMCON
Adriana Hashinaga	Larvacean grazing, LUMCON
Colleen Harpold	Grazing/egg production., AFSC
Cheryl Williams	Grazing/egg production, AFSC

AFSC = Alaska Fisheries Science Center (NOAA); LUMCON = Louisiana Universities Marine Consortium; WWU = Western Washington University.

Summary of Cruise

See Appendix 1 (Event Log).

Daily Cruise Summary (Narrative)

20 July (Sunday). Departed Seward 0900 hrs for a spot in Resurrection Bay to test the ship's communications systems. We learned that the ship's InMarSat system was not working and that the Iridium system was not configured for data transfer. We returned to the dock to drop off the Lead Marine Technician and steamed to GAK10 with short stops along the way to do CTDs at RB2.5, GAK1 and GAK2.

21 July (Monday). We commenced a 4-day cycle of process studies at GAK10, conducting daytime and nighttime sampling and experimental activities (dilution, grazing, and egg production). During our time there, we also ventured both offshore (GAK11 – GAK13) and inshore (GAK7 – GAK9) to characterize copepod and microplankton communities, nutrient and chlorophyll levels, and phytoplankton growth rates/nutrient limitation.

23 July (Wednesday). In the afternoon, we conducted a special study of internal waves and the chlorophyll max at GAK9 as part of an NSF REU project.

24 July (Thursday). In the early morning hours, we ended operations to return to Seward for repairs to the InMarSat antenna. A marine electrician met the ship in the afternoon and attempted to fix the system by replacing the antenna controller unit. Unfortunately, this was unsuccessful, and we departed Seward that evening for operations in Prince William Sound.

25 July (Friday). We arrived at station PWS-2 in the early morning and began our cycle of sampling and experimental activities. During our four days there, we not only accomplished all base activities, but also had time to examine nutrient conditions in an arm of the fjord significantly affected by freshwater runoff (Port Nellie Juan), probe a "deep" hole in Prince William Sound for overwintering *Neocalanus* using the MOCNESS and TAPS, and examine fine-structure associated with the subsurface fluorescence maximum.

28 July (Monday). We departed Knight Island Passage in the early morning to begin a study of the connection between outflow from Prince William Sound and the Alaska Coastal Current (ACC). For this study, we occupied transect stations in 5 locations between Prince William Sound and the Seward Line. The 5 locations were: Seal Island, Hogan Bay, Montague Strait, Prince William Sound Southwest, Cape Fairfield, and the Seward Line. Along each transect, three or four exploratory CTDs were done to establish the location of the ACC (or strongest gradient in Prince William Sound) and then the chosen stations were revisited and sampled for chlorophyll, nutrients, microplankton community, and mesozooplankton. A microplankton growth assay experiment was also conducted at each location.

29 July (Tuesday). This special study was concluded midday on the 29th, after which we terminated operations again and returned to Seward for another attempt at fixing the InMarSat antenna. This attempt was also unsuccessful as the parts sent were either faulty or incomplete. The Seward Marine Facility was able to configure the Iridium phone to access data on a server. During the inport we met with the scientific party from the R/V *Miller Freeman* and planned our joint studies. We returned to the inner shelf (ACC) and began a juvenile salmon ACC front study with scientists aboard the R/V *Miller Freeman*. Over the course of 2 days, we sampled for prey, hydrographic properties and conducted microplankton growth assays at 3 inshore, 3 midshelf and 2 frontal stations. Stations were aligned on an east-west, onshore-offshore gradient. Scientists aboard the R/V *Miller Freeman* sampled hydrographic properties and juvenile salmon abundance.

2 August (Saturday). The morning was spent setting up experiments in the ACC along the Seward Line. After this, we again terminated operations and steamed to Seward for another attempt at fixing the InMarSat antenna and to seek medical treatment for an injured crew member. This attempt to fix the antenna was successful and we left in the early evening, (with a replacement crew member), to rendezvous with the R/V *Pandalus* and plan joint operations. The meeting was held in Mary's Cove. We then resumed our measurements and experiments at the core midshelf stations (GAK4 and GAK5). During this time, we also ventured from that location to map chlorophyll, nutrients, and hydrographic properties at other mid-shelf stations (GAK3 to GAK6).

5 August (Tuesday). We met the R/V *Pandalus* and began surveying the mid- and inner-shelf together over the next two days. The suite of measurements was similar to those done with the R/V *Miller Freeman.*

7 August (Thursday). On the third day, we both ventured west, off the Seward Line to work in an area where the ACC turned south (away from the coast), and then west. We called this area the "western front" and continued our joint measurements of juvenile salmon and the food webs that support them. The R/V *Pandalus* had to break off after only one half day as it had to return to port the next day. We continued sampling in a triangle pattern to resolve currents and hydrographic properties in this area. The area was outside of the fine-scale surveys conducted to date by the R/V *Wecoma*.

8 August (Friday). After completing this study, we steamed to Hinchinbrook Entrance to repeat our previous ACC transect, but with additional stations to better resolve the contributions of the ACC and Prince William Sound to conditions along the Seward Line.

10 August (Sunday). The transect ended in the early morning hours along the Seward Line. We then concluded the cruise by repeatedly surveying the mid-shelf region to examine the diel periodicity in the fluorescence maximum that was noted during our previous occupation.

11 August (Monday). Operations were concluded around noon, and we returned to Seward to offload and prepare the ship for the LTOP cruise.

Acknowledgements

We thank Captain Bill Rook and the crew of the R.V. *Alpha Helix* for their hard work and helpful attitude during the cruise. We also thank Pam Blusk for filling in at First Mate, and Kevin Marlow and Rawlins Apperson for exercising great flexibility when an injured crew member was unable to return to the boat. Dan Mahalak, our Marine Technician, overhauled the CTD and MOCNESS before the cruise and they ran without any failures.

ACCOMPLISHMENTS AND PRELIMINARY RESULTS:

Microplankton rate processes and water column sampling (Strom, Macri, Fredrickson, Perez, Moore, Swanko)

A major goal of the microplankton effort on this cruise was to contrast conditions in the surface (50% incident irradiance) layer with conditions in the chlorophyll maximum layer. A well-developed chlorophyll maximum layer was observed at all stations except, at times, stations within the ACC. To this end, we conducted 11 sets of paired reduced dilution experiments (22 total, one with near-surface water, and one with water from the chlorophyll maximum layer in each case) during the cruise, at both core stations, and during the cross-frontal study with the NOAA Ship R/V *Miller Freeman*. These experiments yielded rates of phytoplankton growth and microzooplankton grazing, as well as estimates of the degree of phytoplankton nutrient limitation by nitrate, phosphate, and ammonium. These and all other experiments (below) employed chlorophyll size fractionation so that differences in the response of <5 μm, 5 to 20 μm, and >20 μm phytoplankton to experimental treatments could be measured. In addition, four full dilution experiments were conducted to examine microzooplankton grazing functional responses. A newly developed assay for phytoplankton growth rate and nutrient limitation assessment was employed with great success during this cruise. We were able to conduct 32 growth assay experiments, including at all Seward Line stations, during transects from Prince William Sound to the Seward Line, and during cross-frontal studies with the NOAA Ship R/V *Miller Freeman* and the R/V *Pandalus*. This allowed us to see how phytoplankton growth and the degree of nutrient limitation varied spatially across mesoscale physical features in the study area.

As a counterpart to studies of phytoplankton nutrient limitation, we conducted photosynthesis-irradiance (P vs I) experiments to evaluate the extent of light limitation of phytoplankton photosynthesis rates. As for the reduced dilution experiments, P vs I studies were paired, using water from the chlorophyll maximum layer and from the near-surface layer to contrast the production responses of the two communities. The photosynthesis response of phytoplankton in 2 size fractions (<20 μm, >20 μm) was determined. A total of 20 P vs I experiments were conducted. Twice at each of the four core process stations, we also measured the relationship between synthesis of new chlorophyll and uptake of 14_C by phytoplankton at both target depths. This will allow determination of a carbon:chlorophyll ratio for comparison of results from dilution experiments and growth assays (phytoplankton response measured in units of chlorophyll) and results from P vs I experiments (phytoplankton response measured in units of carbon).

Finally, this group had primary responsibility for hydrographic work and water column sampling for core environmental parameters (chlorophyll and microplankton standing stocks, nutrient concentrations [with C. Mordy at PMEL]). With marine technician, Dan Mahalak, we conducted nearly 300 CTD casts for determination of hydrographic properties and frontal locations. We conducted FlowCAM analysis of samples from the chlorophyll maximum layer during some CTD transects, as well. More focused studies of the position, magnitude, diel cycling patterns, and fluorescence yield of the chlorophyll maximum layer were conducted at GAK9 and GAK5 on the Seward Line, and at PWS2 in Prince William Sound.

Preliminary results:

1. The outer shelf phytoplankton community was not the same as it had been in July of 2001. While still exhibiting low total chlorophyll levels and dominance by <5 μm phytoplankton, there was little *Synechococcus* present and both phytoplankton growth and microzooplankton grazing rates were low. Over the GAK7 to GAK13 transect, nutrient limitation was evident only at the two outermost stations, and the extent of limitation was slight.

2. Very high rates of phytoplankton growth and microzooplankton grazing were measured in the mid-shelf region (GAK4 to GAK5). There was no evidence of nutrient limitation of growth rates in either the chlorophyll maximum layer or in near-surface waters, even though the degree of temperature stratification was large. Relative rates of growth and grazing measured over 3 consecutive days in the GAK5 chlorophyll maximum layer indicated that the balance between microzooplankton grazing and phytoplankton growth, the latter perhaps dictated by light availability, determined the evolution of phytoplankton biomass levels from one day to the next. We returned to the GAK5 area at the very end of the cruise to obtain more information on this day-to-day cycling through further experimental work and repeated day vs. night CTD transects of the mid-shelf region.

3. The ACC was the only region to have any substantial fraction of the chlorophyll biomass as large cells (primarily mixed species of chain diatoms). However, the largest gradients in phytoplankton physiology, as indicated by growth assay results, were not across ACC offshore frontal gradients (e.g. at Cape Fairfield, on the Seward Line, or in the Western Front region), but rather along an east-west gradient from east of Montague Strait to the Western Front region. Phytoplankton grew rapidly with little evidence of nutrient limitation in eastern waters. The contribution of large phytoplankton to total chlorophyll increased progressively as we worked to the west. Growth rates decreased progressively from east to west; in the Seward Line region of the ACC growth rates were low to moderate and responded strongly to added macronutrients, while in the Western Front region growth rates were very low and phytoplankton were unresponsive to nutrient enrichments.

4. The Prince William Sound phytoplankton community was dominated by small (<5 μm) phytoplankton, both in near-surface and in chlorophyll-maximum waters. As observed in July 2001, this appeared to be an intensely regenerative community, showing a growth rate response only to added ammonium.

Mesozooplankton Standing Stock and Rate Processes (Napp, Harpold and Williams)

Three major activities were conducted:

1) Shipboard incubation experiments for copepod egg production, egg viability, and diet;
2) Night time assessments of zooplankton standing stock;
3) Daytime assessments of salmon prey availability.

For the shipboard incubation experiments, females of the target species (*Calanus* spp., *Pseudocalanus* spp. and *Metridia* spp.) were used when available. In addition to the plankton net tows (MOCNESS and QuadNet) taken at the central station within each shelf regime, zooplankton samples were collected on two transects along the axis of the ACC and one triangle sampling pattern encompassing the western front of the ACC west of the Seward Line. We also collected bioacoustic profiles of zooplankton abundance and size distribution on almost all of the CTD casts taken for hydrography (N > 280).

Activities/Preliminary Results

- Egg production and grazing experiments were conducted in all core regions using the available species. *Pseudocalanus* females seemed to be much more abundant than in the summer of 2001 and were used at each and every station. *Calanus* and *Metridia* females were much less abundant and were used whenever possible. Egg production by *Calanus* and *Metridia* seemed low in Prince William Sound and was moderate in the ACC. Higher proportions of *Calanus* and *Metridia* females were actively laying eggs on the shelf than in PWS. We completed over 40 egg production and 11 grazing experiments.

- The abundance of pteropods (*Limacina*) appeared to be too low to estimate grazing rates from gut fluorescence and gut passage time. Only at one mid-shelf station were there enough animals to attempt the gut fluorescence measurements.

- Species-specific *Pseudocalanus* egg production experiments were conducted at each location during the transects. Species composition and total egg production will be used to help characterize stations and the percent contribution by Prince William Sound water in the ACC transects. Sample analysis will take place on shore.

- Eggs from all three genera hatched in the viability experiments (12 experiments in all). Viability rates will be calculated after the preserved samples are returned to our laboratory.

- Approximately 100 samples were collected to determine the carbon and nitrogen weights of the target species used in the grazing and egg production experiments.

- Three to four nighttime zooplankton collections were taken at each core station using the NEP GOA GLOBEC protocol (MOCNESS 0.500 mm and QuadNet 0.150 mm mesh) to determine the concentration and depth distribu-

tion of GLOBEC target species. In addition, tows were taken on transects between regions to look at gradients and fronts (on a coarse scale). Approximately 14 pairs of night QuadNet/MOCNESS samples were taken at the core stations. Another 12 pairs were taken as part of the ACC Transects.

- A Tracor Acoustic Profiling System (TAPS) was mounted on the CTD and used during each hydrographic cast. This will provide estimates of the size distribution and numbers of mesozooplankton in each core area as well as the transects and allow us to compare and contrast the mesozooplankton communities with more spatial and temporal resolution than provided by the MOCNESS and QuadNet. The data will be analyzed back on shore.

- The concentration of potential salmon prey was assessed at the core stations (Tucker neuston tows) and at special stations in coordinated work with the NOAA Ship R/V *Miller Freeman* and the R/V *Pandalus* (Tucker neuston and MOCNESS surface layer tow). In general, preferred prey items from two of the past three years (larvaceans and pteropods) did not appear to be very abundant. Pteropods were found in high concentrations at only one mid-shelf station. Neustonic copepods (*Epilabidocera*) were common, but much less abundant than other copepods in the same collections. At some inshore stations, gelatinous zooplankton (ctenophores) dominated the neuston. Absolute concentrations of potential prey items should be available by late spring of 2004.

Cruise report from LUMCON Research Component (R. Sato and A. Hashinaga)

We conducted vertical tows using a closing ring net above and below the thermocline to determine the abundance and the vertical distribution of appendicularians along the Seward line (GAK1 - GAK13) and in Prince William Sound (PWS2). *Oikopleura labradoriensis*, our target appendicularian species, was observed at almost all the stations, but its abundance was very low. A smaller species, *Fritillaria borealis*, however, was very abundant at outer shelf stations. The inshore species, *O. dioica*, was found in PWS and inner shelf stations.

O. labradoriensis was not abundant enough to conduct experiments. Moreover, captured animals were seriously damaged and never rebuilt houses in the incubation bottles. Therefore, we could not conduct experiments with this species. We tried incubation of eggs (or mature individuals) of *F. borealis* to trace their growth at four GAK stations. In addition, *O. dioica* were incubated and their clearance rates, house renewal rates and fecal pellet production rates were measured at 6 inner shelf stations.

Mesozooplankton grazing experiments were conducted at stations GAK1, GAK5, GAK10 and in PWS. These experiments measure the grazing rate of the whole mesozooplankton community on phytoplankton (three size fractions). During this cruise, *Neocalanus* spp. were not always present. The intent of these experiments was to compare grazing rates of the non-*Neocalanus* component of the mesozooplankton community under conditions of *Neocalanus* presence (spring cruise) and absence (this cruise).

Individuals of *O. labradoriensis* were sorted from live ring net samples and frozen in liquid nitrogen for later measurement of dry weight, which will be used to estimate their carbon biomass at each station. *Neocalanus* were also collected for determination of dry weight and body lipid content.

Water samples were collected for flow cytometric analysis of picoplankton and DON analysis from 5 - 6 depths at several GAK stations.

We also worked with Jeff Napp's group in conducting QuadNet, MOCNESS net and Tucker trawl sampling.

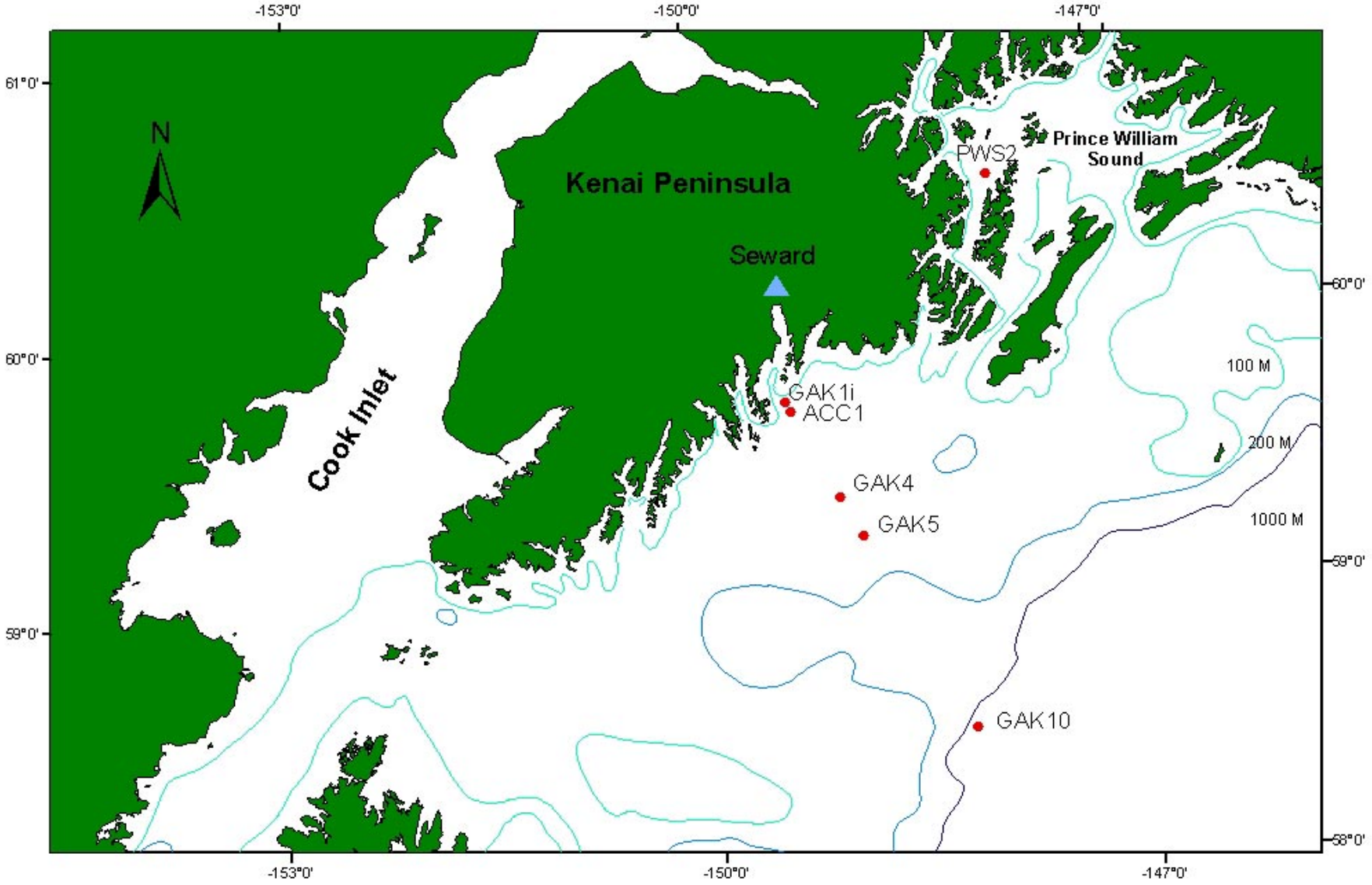


Figure 1: Core Station Map

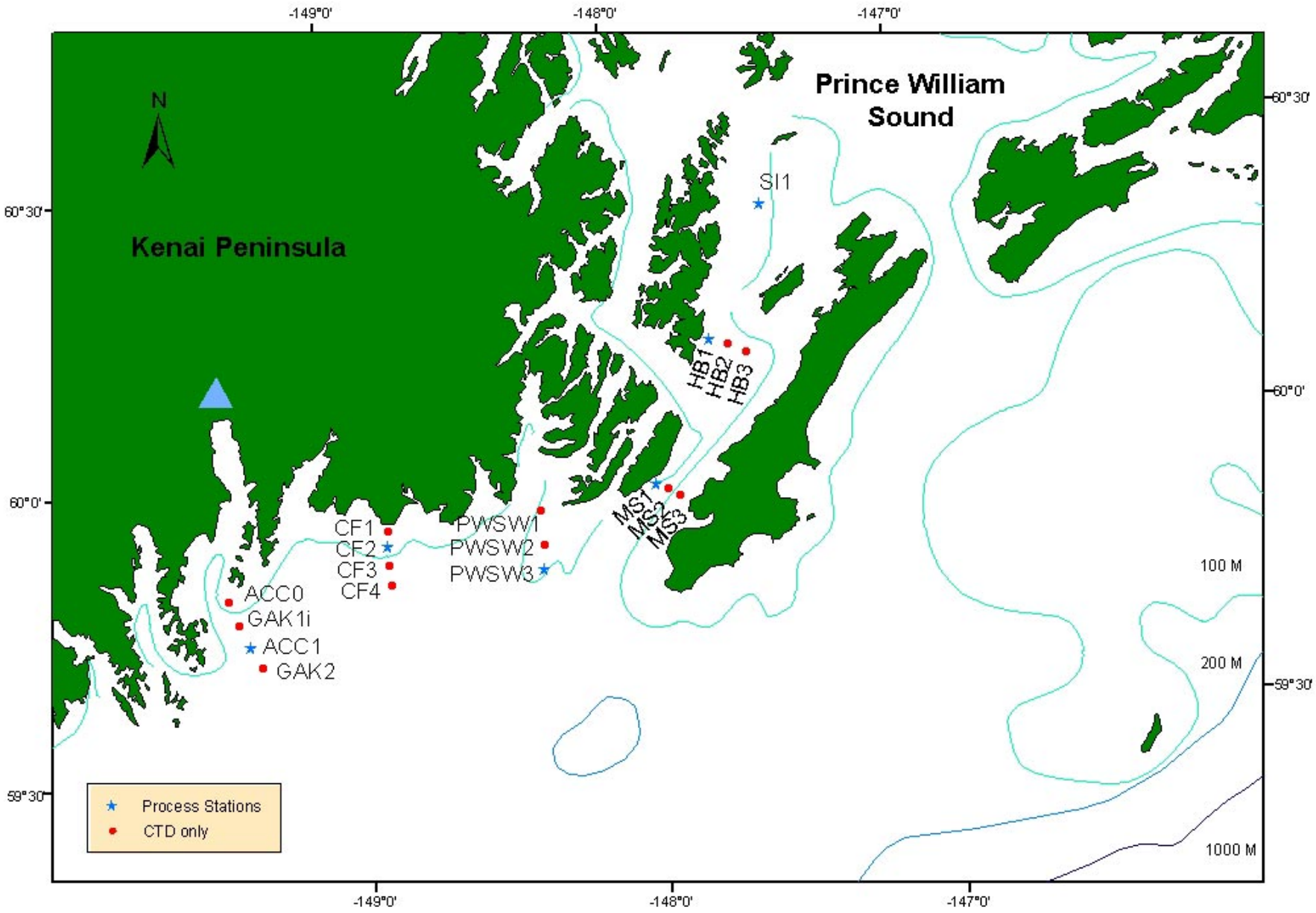


Figure 2a: ACC Transect #1 Stations (July 28-29 2003)

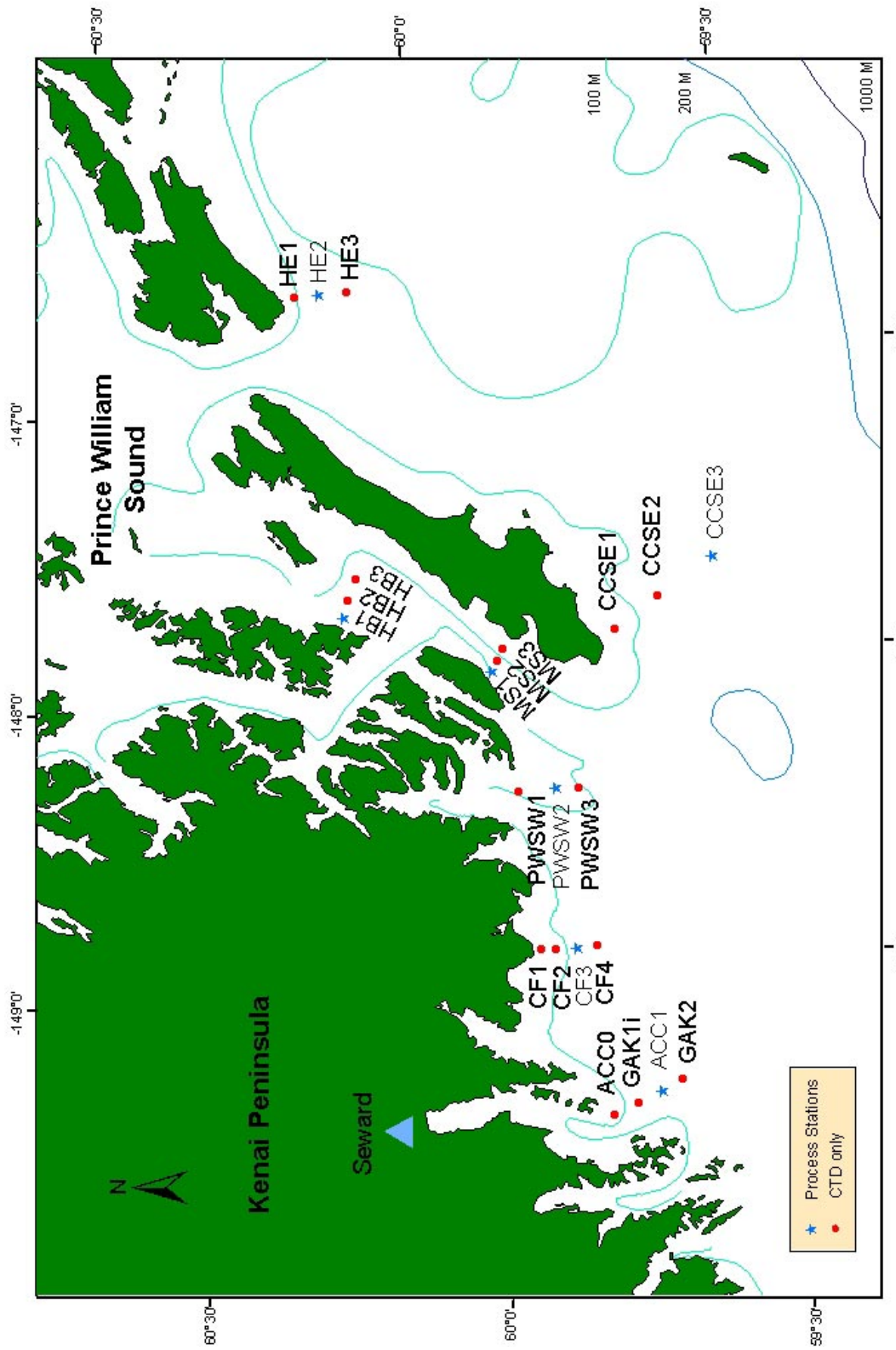


Figure 2b: ACC Transect #2 Stations (Aug 8-10 2003)

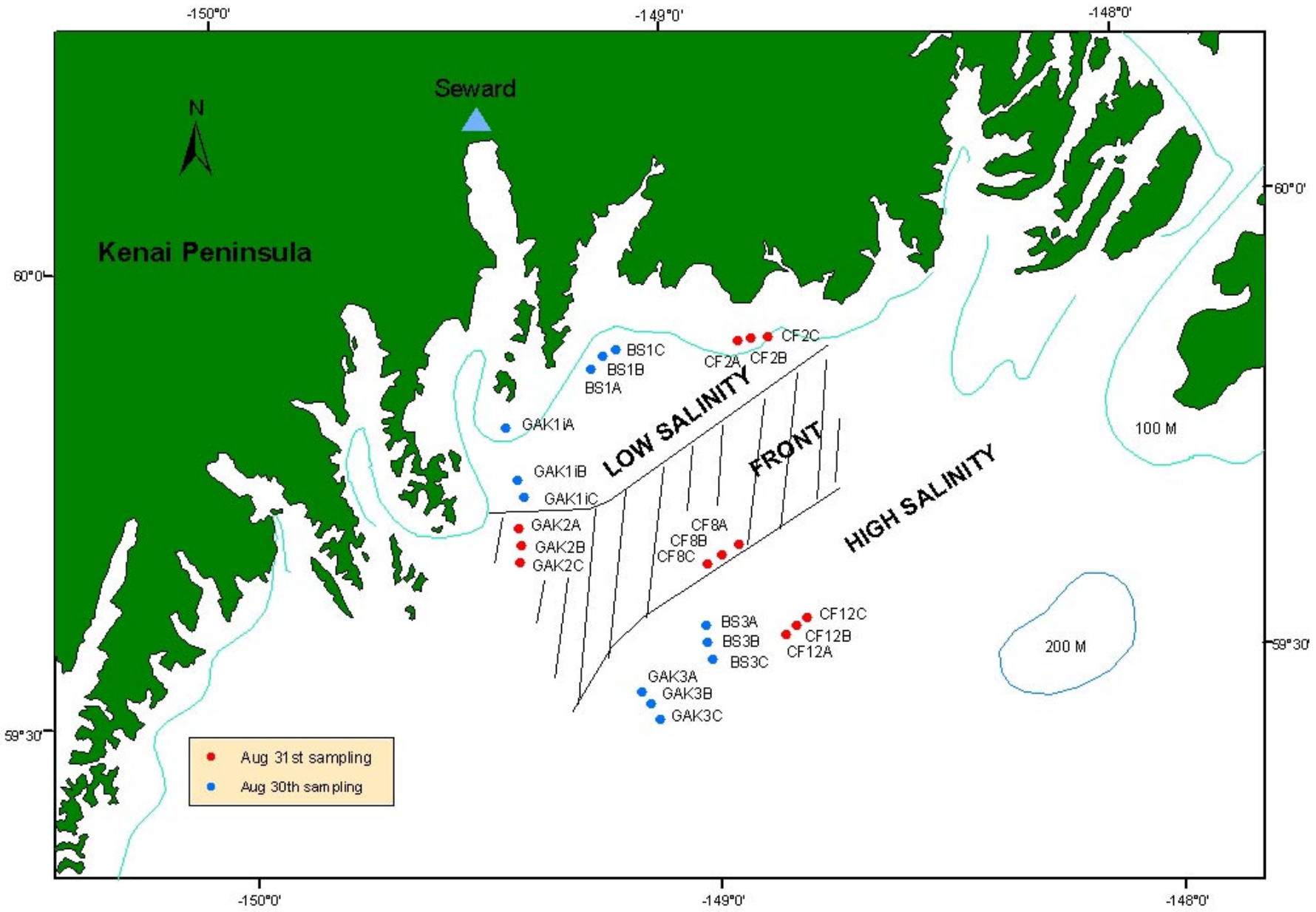


Figure 3: Special Frontal Study with the *Miller Freeman*
Note: GAK 2=Miller Freeman Station AC1 BS1=Miller Freeman Station BS2

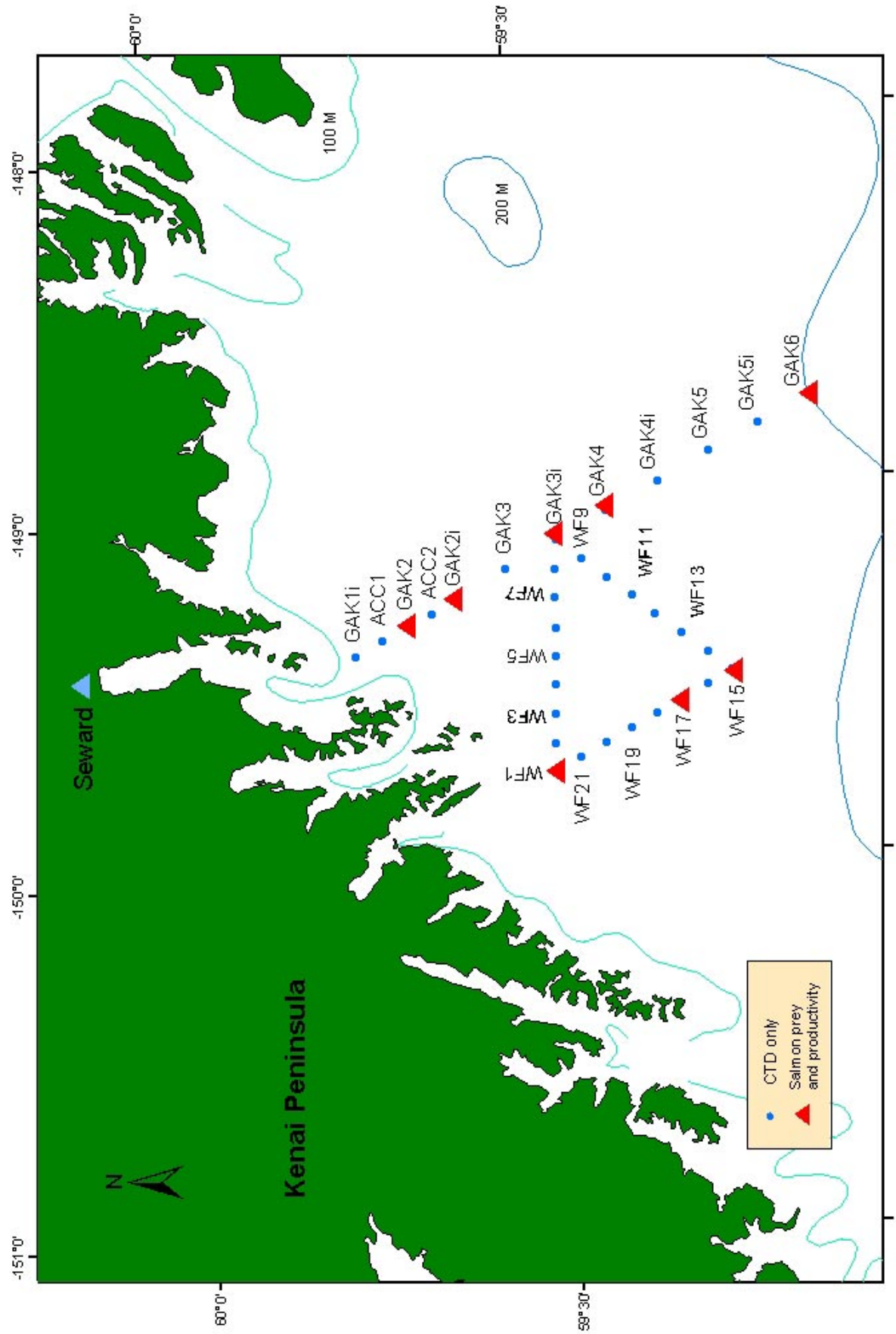


Figure 4: Joint studies with R/V *Pandalus*

Table 2: Collection of Live Animals for Shipboard Experiments

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20203.01	LiveNet	1	4	GAK10	21	7	0708	58.5418	-148.2102	1400	8	OS	Napp
HX20203.02	LiveNet	2	4	GAK10	21	7	0716	58.5417	-148.2135	1400	9	OS	Napp
HX20203.03	LiveNet	3	4	GAK10	21	7	0725	58.5415	-148.2168	1400	10	OS	Dagg
HX20203.04	LiveNet	4	4	GAK10	21	7	0735	58.5413	-148.2192	1400	11	OS	Dagg
HX20203.12	LiveNet	5	4	GAK10	21	7	1345	58.5400	-148.2177	1400	19	OS	Napp
HX20203.13	LiveNet	6	4	GAK10	21	7	1400	58.5400	-148.2177	1400	20	OS	Napp
HX20203.18	LiveNet	7	5	GAK13	21	7	1830	58.1088	-147.7875	2099	24	OS	Dagg
HX20303.04	LiveNet	8	9	GAK10	22	7	0700	58.5407	-148.2117	1400	32	OS	Napp
HX20303.05	LiveNet	9	9	GAK10	22	7	0715	58.5400	-148.2152	1400	33	OS	Napp
HX20303.06	LiveNet	10	9	GAK10	22	7	0731	58.5395	-148.2190	1400	33a	OS	Dagg
HX20303.07	LiveNet	11	9	GAK10	22	7	0740	58.5392	-148.2213	1400	33b	OS	Dagg
HX20303.09	LiveNet	12	9	GAK10	22	7	1037	58.5415	-148.2103	1400	35	OS	Napp
HX20303.10	LiveNet	13	9	GAK10	22	7	1045	58.5423	-148.2122	1400	36	OS	Napp
HX20303.13	LiveNet	14	10	GAK9	22	7	1405	58.6792	-148.3407	277	39	OS	Dagg
HX20303.14	LiveNet	15	10	GAK9	22	7	1438	58.6797	-148.3498	277	39a	OS	Dagg
HX20303.20	LiveNet	16	11	GAK8	22	7	1641	58.7912	-148.4962	289	45	MS	Dagg
HX20303.21	LiveNet	17	11	GAK8	22	7	1656	58.7912	-148.4997	289	46	MS	Dagg
HX20303.22	LiveNet	18	11	GAK8	22	7	1708	58.7915	-148.5032	289	47	MS	Dagg
HX20303.24	LiveNet	19	12	GAK7	22	7	1850	58.9755	-148.6305	241	49	MS	Napp
HX20303.25	LiveNet	20	12	GAK7	22	7	1902	58.9768	-148.6320	241	50	MS	Failed.
HX20303.26	LiveNet	21	12	GAK7	22	7	1907	58.9768	-148.6320	241	51	MS	Dagg
HX20403.04	LiveNet	22	13	GAK10	23	7	0702	58.5423	-148.2135	1458	57	OS	Napp
HX20403.05	LiveNet	23	13	GAK10	23	7	0715	58.5427	-148.2157	1458	58	OS	Napp
HX20403.06	LiveNet	24	13	GAK10	23	7	0727	58.5433	-148.2185	1458	59	OS	Dagg
HX20403.07	LiveNet	25	13	GAK10	23	7	0731	58.5435	-148.2197	1458	60	OS	Dagg
HX20403.24	LiveNet	26	14	GAK9	23	7	1541	58.6802	-148.3640	280	77	OS	Dagg
HX20603.01	LiveNet	27	16	PWS2	25	7	0659	60.5348	-147.8043	740	88	PWS	Dagg
HX20603.02	LiveNet	28	16	PWS2	25	7	0703	60.5347	-147.8052	740	89	PWS	Napp
HX20603.03	LiveNet	29	16	PWS2	25	7	0712	60.5350	-147.8077	740	90	PWS	Napp
HX20603.12	LiveNet	30	16	PWS2	25	7	1349	60.5337	-147.8005	735	99	PWS	Dagg
HX20603.13	LiveNet	31	16	PWS2	25	7	1356	60.5335	-147.8027	735	100	PWS	Dagg
HX20603.14	LiveNet	32	16	PWS2	25	7	1404	60.5335	-147.8053	735	101	PWS	Napp
HX20603.22	LiveNet	33	24	PWS2	25	7	2331	60.5340	-147.8045	745	109	PWS	Napp
HX20703.05	LiveNet	34	25	PWS3	26	7	0659	60.6543	-147.6760	745	114	PWS	Dagg
HX20703.06	LiveNet	35	25	PWS3	26	7	0705	60.6545	-147.6780	745	115	PWS	Dagg
HX20703.12	LiveNet	36	26	PWS2	26	7	1337	60.5342	-147.8007	740	121	PWS	Napp
HX20703.13	LiveNet	37	26	PWS2	26	7	1350	60.5333	-147.8023	738	122	PWS	Napp
HX20703.14	LiveNet	38	26	PWS2	26	7	1405	60.5328	-147.8030	735	123	PWS	Dagg
HX20703.15	LiveNet	39	26	PWS2	26	7	1414	60.5325	-147.8035	735	124	PWS	Dagg: failed.
HX20703.16	LiveNet	40	26	PWS2	26	7	1421	60.5323	-147.8040	742	125	PWS	Dagg: failed.
HX20703.17	LiveNet	41	26	PWS2	26	7	1428	60.5320	-147.8045	742	126	PWS	Dagg
HX20703.22	LiveNet	42	26	PWS2	26	7	2203	60.5335	-147.8028	735	131	PWS	Napp: Metridia EP.
HX20703.23	LiveNet	43	26	PWS2	26	7	2220	60.5328	-147.8032	738	132	PWS	Napp: Metridia EP.
HX20703.24	LiveNet	44	26	PWS2	26	7	2316	60.5347	-147.8018	735	133	PWS	Napp: Metridia EP.
HX20803.04	LiveNet	45	26	PWS2	27	7	0702	60.5345	-147.8043	740	137	PWS	Dagg
HX20803.05	LiveNet	46	26	PWS2	27	7	0714	60.5345	-147.8027	735	138	PWS	Napp
HX20803.06	LiveNet	47	26	PWS2	27	7	0726	60.5342	-147.8013	730	139	PWS	Napp
HX20803.07	LiveNet	48	26	PWS2	27	7	0738	60.5338	-147.7993	730	140	PWS	Napp

Table 2: Collection of Live Animals for Shipboard Experiments (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20803.08	LiveNet	49	26	PWS2	27	7	0744	60.5335	-147.7983	730	141	PWS	Dagg
HX20803.14	LiveNet	50	26	PWS2	27	7	1250	60.5340	-147.8028	735	147	PWS	Dagg
HX20803.15	LiveNet	51	26	PWS2	27	7	1255	60.5332	-147.8040	735	148	PWS	Dagg
HX20803.23	LiveNet	52	26	PWS2	27	7	2320	60.5330	-147.8033	742	156	PWS	Napp
HX21003.10	LiveNet	53	47	ACC1	29	7	0701	59.0772	-149.3618	240	193	IS	Dagg
HX21003.11	LiveNet	54	47	ACC1	29	7	0707	59.7257	-149.3618	240	194	IS	Dagg
HX21003.12	LiveNet	55	47	ACC1	29	7	0714	59.7240	-149.3615	239	195	IS	Napp
HX21003.13	LiveNet	56	47	ACC1	29	7	0725	59.7213	-149.3605	232	196	IS	Napp
HX21103.13	LiveNet	57	56	GAK1iB	30	7	1013	59.7528	-149.3893	254	214	IS	Dagg
HX21103.14	LiveNet	58	56	GAK1iB	30	7	1024	59.7502	-149.3915	255	215	IS	Dagg
HX21103.15	LiveNet	59	56	GAK1iB	30	7	1037	59.7472	-149.4250	255	216	IS	Napp
HX21103.23	LiveNet	60	59	GAK3B	30	7	1425	59.4883	-149.1640	206	224	MS	Napp
HX21103.24	LiveNet	61	59	GAK3B	30	7	1434	59.4897	-149.1293	206	225	MS	Dagg
HX21103.25	LiveNet	62	59	GAK3B	30	7	1445	59.4907	-149.1297	205	226	MS	Dagg
HX21103.33	LiveNet	63	62	BS3B	30	7	1727	59.5555	-148.9928	180	234	MS	Napp
HX21103.34	LiveNet	64	62	BS3B	30	7	1741	59.5573	-148.9868	179	235	MS	Dagg
HX21103.35	LiveNet	65	62	BS3B	30	7	1747	59.5577	-148.9837	180	236	MS	Dagg
HX21103.43	LiveNet	66	65	BS1B	30	7	2214	59.8757	-149.1710	212	244	IS	Dagg: BS1 = Miller Freeman station BS2.
HX21103.44	LiveNet	67	65	BS1B	30	7	2229	59.8747	-149.1755	212	245	IS	Dagg: BS1 = Miller Freeman station BS2.
HX21103.45	LiveNet	68	65	BS1B	30	7	2237	59.8738	-149.1780	211	246	IS	Napp: BS1 = Miller Freeman station BS2.
HX21203.17	LiveNet	69	76	CF2B	31	7	0959	59.8843	-148.8518	nd	265	IS	Dagg
HX21203.18	LiveNet	70	76	CF2B	31	7	1006	59.8855	-148.8563	113	266	IS	Dagg
HX21203.19	LiveNet	71	76	CF2B	31	7	1012	59.8865	-148.8570	102	267	IS	Napp
HX21203.28	LiveNet	72	79	CF12B	31	7	1432	59.5648	-148.7995	107	276	MS	Dagg
HX21203.29	LiveNet	73	79	CF12B	31	7	1438	59.5658	-148.8003	108	277	MS	Dagg
HX21203.30	LiveNet	74	79	CF12B	31	7	1444	59.5663	-148.8007	109	278	MS	Napp
HX21203.38	LiveNet	75	82	CF8B	31	7	1739	59.6493	-148.9507	177	286	Front	Dagg
HX21203.39	LiveNet	76	82	CF8B	31	7	1752	59.6492	-148.9517	176	287	Front	Napp
HX21203.47	LiveNet	77	85	GAK2B	31	7	2313	59.6788	-149.3840	203	295	Front	Dagg: GAK2 = Miller Freeman Station AC1.
HX21203.48	LiveNet	78	85	GAK2B	31	7	2326	59.6742	-149.3873	209	296	Front	Napp: GAK2 = Miller Freeman Station AC1.
HX21303.03	LiveNet	79	88	GAK1i	1	8	0754	59.7672	-149.3960	259	301	IS	Napp
HX21303.04	LiveNet	80	88	GAK1i	1	8	0802	59.7653	-149.3965	259	302	IS	Napp
HX21303.05	LiveNet	81	88	GAK1i	1	8	0809	59.7632	-149.3967	257	303	IS	Dagg
HX21303.06	LiveNet	82	88	GAK1i	1	8	0919	59.7602	-149.3970	257	304	IS	Dagg
HX21303.11	LiveNet	83	90	GAK1i	1	8	1302	59.7673	-149.3965	259	309	IS	Napp
HX21303.12	LiveNet	84	90	GAK1i	1	8	1309	59.7660	-149.3983	259	310	IS	Dagg
HX21303.13	LiveNet	85	90	GAK1i	1	8	1316	59.7645	-149.4005	259	310a	IS	Dagg
HX21303.17	LiveNet	86	90	GAK1i	1	8	2300	59.7673	-149.3958	258	314	IS	Napp
HX21403.11	LiveNet	87	95	ACC1	2	8	0658	59.7283	-149.3625	242	325	IS	Dagg
HX21403.12	LiveNet	88	95	ACC1	2	8	0705	59.7292	-149.3610	241	326	IS	Dagg
HX21403.13	LiveNet	89	95	ACC1	2	8	0712	59.7288	-149.3587	240	327	IS	Napp
HX21403.14	LiveNet	90	95	ACC1	2	8	0719	59.7282	-149.3568	240	328	IS	Napp
HX21403.19	LiveNet	91	95	ACC1	2	8	1259	59.7288	-149.3607	240	333	IS	Dagg
HX21403.20	LiveNet	92	95	ACC1	2	8	1306	59.7288	-149.3607	240	334	IS	Dagg
HX21403.21	LiveNet	93	95	ACC1	2	8	1311	59.7267	-149.3655	240	335	IS	Napp
HX21503.01	LiveNet	94	96	GAK4	3	8	0800	59.4082	-149.0492	200	337	MS	Dagg
HX21503.02	LiveNet	95	96	GAK4	3	8	0808	59.4088	-149.0453	200	338	MS	Dagg
HX21503.03	LiveNet	96	96	GAK4	3	8	0816	59.4095	-149.0920	200	339	MS	Napp

Table 2: Collection of Live Animals for Shipboard Experiments (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21503.04	LiveNet	97	96	GAK4	3	8	0823	59.4098	-149.0393	200	340	MS	Napp
HX21503.07	LiveNet	98	96	GAK4	3	8	1310	59.4073	-149.0512	200	343	MS	Dagg
HX21503.08	LiveNet	99	96	GAK4	3	8	1324	59.4060	-149.0533	200	344	MS	Napp
HX21503.09	LiveNet	100	96	GAK4	3	8	1336	59.4048	-149.0557	200	345	MS	Napp
HX21503.23	LiveNet	101	102	GAK4	3	8	2336	59.4068	-149.0475	199	358	MS	Napp
HX21603.03	LiveNet	102	103	GAK5	4	8	0701	59.2615	-148.9065	168	362	MS	Dagg
HX21603.04	LiveNet	103	103	GAK5	4	8	0707	59.2615	-148.9063	168	363	MS	Napp
HX21603.05	LiveNet	104	103	GAK5	4	8	0714	59.2617	-148.9070	168	364	MS	Napp
HX21603.06	LiveNet	105	103	GAK5	4	8	0723	59.2620	-148.9082	168	365	MS	Dagg
HX21603.12	LiveNet	106	103	GAK5	4	8	1255	59.2617	-148.9080	167	371	MS	Dagg
HX21603.13	LiveNet	107	103	GAK5	4	8	1301	59.2617	-148.9103	167	372	MS	Napp
HX21603.14	LiveNet	108	103	GAK5	4	8	1310	59.2607	-148.9122	167	373	MS	Napp
HX21603.17	LiveNet	109	103	GAK5	4	8	2330	59.2617	-148.9048	165	376	MS	Napp
HX21703.08	LiveNet	110	108	GAK5	5	8	0830	59.2561	-148.9082	168	384	MS	Dagg
HX21703.09	LiveNet	111	108	GAK5	5	8	0839	59.2632	-148.9045	168	385	MS	Napp
HX21703.10	LiveNet	112	108	GAK5	5	8	0849	59.2648	-148.9007	168	386	MS	Napp
HX21703.14	LiveNet	113	108	GAK5	5	8	1226	59.2625	-148.9082	166	390	MS	Dagg
HX21703.31	LiveNet	114	116	GAK5	5	8	2333	59.2630	-148.9073	167	407	MS	Napp
HX21803.08	LiveNet	115	121	GAK5	6	8	0704	59.2618	-148.9103	168	416	MS	Dagg
HX21803.09	LiveNet	116	121	GAK5	6	8	0715	59.2642	-148.9087	168	417	MS	Napp
HX21803.10	LiveNet	117	121	GAK5	6	8	0727	59.2665	-148.9078	168	418	MS	Napp
HX21903.08	LiveNet	118	138	WF1	7	8	0704	59.5002	-149.7495	162	448	nd	Dagg
HX21903.09	LiveNet	119	138	WF1	7	8	0714	59.4993	-149.7510	162	449	nd	Dagg
HX21903.10	LiveNet	120	138	WF1	7	8	0722	59.4983	-149.7520	167	450	nd	Napp
HX21903.11	LiveNet	121	138	WF1	7	8	0735	59.4970	-149.7552	170	451	nd	Napp
HX21903.18	LiveNet	122	142	WF5	7	8	1058	59.4915	-149.4328	122	458	nd	Dagg
HX21903.19	LiveNet	123	142	WF5	7	8	1106	59.4893	-149.4370	119	459	nd	Dagg
HX21903.20	LiveNet	124	142	WF5	7	8	1115	59.4872	-149.4418	118	460	nd	Napp
HX21903.26	LiveNet	125	144	WF7	7	8	1346	59.4867	-149.2757	212	466	nd	Napp
HX21903.39	LiveNet	126	153	WF15	7	8	1905	59.2497	-149.4993	138	479	nd	Dagg
HX21903.40	LiveNet	127	153	WF15	7	8	1910	59.2497	-149.4998	137	480	nd	Dagg
HX21903.41	LiveNet	128	153	WF15	7	8	1913	59.2495	-149.5007	137	481	nd	Napp
HX21903.46	LiveNet	129	155	WF17	7	8	2053	59.3198	-149.5722	124	486	nd	Napp
HX21903.47	LiveNet	130	155	WF17	7	8	2101	59.3192	-149.5758	123	487	nd	Dagg
HX22003.10	LiveNet	131	164	HE2	8	8	1614	60.1785	-146.6072	187	505	nd	Napp
HX22003.11	LiveNet	132	164	HE2	8	8	1623	60.1788	-146.6050	187	506	nd	Dagg
HX22103.01	LiveNet	133	168	HB1	9	8	0025	60.1922	-147.6995	247	513	nd	Napp
HX22103.08	LiveNet	134	174	CCSE3	9	8	0847	59.5712	-147.6082	109	520	nd	Napp
HX22103.09	LiveNet	135	174	CCSE3	9	8	0859	59.5733	-147.6095	110	521	nd	Napp
HX22103.10	LiveNet	136	174	CCSE3	9	8	0910	59.5747	-147.6100	110	522	nd	Dagg
HX22103.11	LiveNet	137	174	CCSE3	9	8	0920	59.5757	-147.6100	110	523	nd	Dagg
HX22103.22	LiveNet	138	178	PWSW2	9	8	1612	59.8755	-148.3305	69	534	IS	Dagg
HX22103.23	LiveNet	139	178	PWSW2	9	8	1621	59.8740	-48.3290	65	535	IS	Napp
HX22103.31	LiveNet	140	183	CF3	9	8	2140	59.8497	-148.8638	164	543	IS	Napp
HX22203.07	LiveNet	141	188	ACC1	10	8	0339	59.7307	-149.3588	240	551	IS	Dagg
HX22203.08	LiveNet	142	189	GAK5	10	8	0657	59.2612	-148.9098	165	552	MS	Napp
HX22203.09	LiveNet	143	189	GAK5	10	8	0712	59.2615	-148.9107	165	553	MS	Napp

Table 3: CTD Casts

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20103.01	CTD	1	1	ResBay2	5	20	7	1209	60.0248	-149.3580	293	1	Res Bay	
HX20103.02	CTD	2	2	GAK1		20	7	1457	59.8442	-149.4676	270	2	IS	
HX20103.05	CTD	3	3	GAK2		20	7	1725	59.6907	-149.3270	227	5	IS	
HX20203.05	CTD	4	4	GAK10		21	7	0800	58.5422	-148.2119	1400	12	OS	6m fsw de1.
HX20203.06	CTD	5	4	GAK10		21	7	0845	58.5421	-148.2157	1400	13	OS	6m wsw de#1.
HX20203.07	CTD	6	4	GAK10		21	7	1000	58.5419	-148.2122	1400	14	OS	18m fsw de#2.
HX20203.08	CTD	7	4	GAK10		21	7	1100	58.5424	-148.2135	1400	15	OS	18m fsw de#2.
HX20203.09	CTD	8	4	GAK10		21	7	1200	58.5421	-148.2106	1400	16	OS	
HX20203.14	CTD	9	5	GAK13		21	7	1725	58.1005	-147.7890	2099	21	OS	ga#1.
HX20203.19	CTD	10	6	GAK12		21	7	1930	58.2438	-147.9339	2176	25	OS	ga#2.
HX20203.22	CTD	11	7	GAK11		21	7	2129	58.3913	-148.0839	1411	28	OS	Aborted.
HX20203.25	CTD	12	7	GAK11		21	7	2209	58.3913	-148.0839	1411	28c	OS	ga#3.
HX20303.01	CTD	13	8	GAK10		22	7	0005	58.5428	-148.2131	1400	29	OS	
HX20303.08	CTD	14	9	GAK10		22	7	0801	58.5381	-148.1755	1400	34	OS	Lumcon grazing.
HX20303.11	CTD	15	9	GAK10		22	7	1159	58.5417	-148.2116	1400	37	OS	
HX20303.12	CTD	16	10	GAK9		22	7	1340	58.5417	-148.2116	279	38	OS	ga#4.
HX20303.17	CTD	17	11	GAK8		22	7	1557	58.5417	-148.2116	289	42	MS	ga#5.
HX20303.23	CTD	18	12	GAK7		22	7	1830	58.9737	-148.6302	241	48	MS	ga#6.
HX20403.01	CTD	19	13	GAK10		23	7	0003	58.9737	-148.6302	1458	54	OS	
HX20403.08	CTD	20	13	GAK10		23	7	0801	58.5412	-148.2121	1458	61	OS	9m fsw de#3.
HX20403.09	CTD	21	13	GAK10		23	7	0856	58.5423	-148.2106	1458	62	OS	9m wsw de#3.
HX20403.10	CTD	22	13	GAK10		23	7	1003	58.5433	-148.2101	1458	63	OS	21m fsw de#4.
HX20403.11	CTD	23	13	GAK10		23	7	1100	58.5414	-148.2106	1458	64	OS	21m wsw de#4.
HX20403.12	CTD	24	13	GAK10		23	7	1201	58.5412	-148.2095	1458	65	OS	
HX20403.13	CTD	25	14	GAK9		23	7	1423	58.6793	-148.3457	279	66	OS	CTD yo-yo 1.
HX20403.14	CTD	26	14	GAK9		23	7	1433	58.6795	-148.3442	279	67	OS	CTD yo-yo 2.
HX20403.15	CTD	27	14	GAK9		23	7	1438	58.6798	-148.3407	279	68	OS	CTD yo-yo 3.
HX20403.16	CTD	28	14	GAK9		23	7	1445	58.6801	-148.3387	279	69	OS	CTD yo-yo 4.
HX20403.17	CTD	29	14	GAK9		23	7	1450	58.6803	-148.3362	279	70	OS	CTD yo-yo 5.
HX20403.18	CTD	30	14	GAK9		23	7	1455	58.6806	-148.3306	279	71	OS	CTD yo-yo 6.
HX20403.19	CTD	31	14	GAK9		23	7	1501	58.6806	-148.3306	279	72	OS	CTD yo-yo 7.
HX20403.20	CTD	32	14	GAK9		23	7	1507	58.6807	-148.3275	279	73	OS	CTD yo-yo 8.
HX20403.21	CTD	33	14	GAK9		23	7	1513	58.6807	-148.3248	279	74	OS	CTD yo-yo 9.
HX20403.22	CTD	34	14	GAK9		23	7	1517	58.6808	-148.3221	279	75	OS	CTD yo-yo 10.
HX20403.23	CTD	35	14	GAK9		23	7	1523	58.6809	-148.3201	279	76	OS	CTD yo-yo 11.
HX20403.25	CTD	36	14	GAK9		23	7	1628	58.6789	-148.3482	280	78	OS	CTD hourly series.
HX20403.26	CTD	37	14	GAK9		23	7	1729	58.6788	-148.3498	280	79	OS	CTD hourly series.
HX20403.27	CTD	38	14	GAK9		23	7	1835	58.6786	-148.3468	280	80	OS	CTD hourly series.
HX20403.28	CTD	39	14	GAK9		23	7	1932	58.6795	-148.3495	280	81	OS	CTD hourly series.
HX20403.29	CTD	40	14	GAK9		23	7	2030	58.6802	-148.3517	280	82	OS	CTD hourly series.
HX20403.30	CTD	41	14	GAK9		23	7	2131	58.6817	-148.3507	280	83	OS	CTD hourly series.
HX20403.31	CTD	42	14	GAK9		23	7	2230	58.6795	-148.3495	280	84	OS	Final hourly.
HX20503.01	CTD	43	15	GAK10		24	7	0004	58.5438	-148.2105	1486	85	OS	
HX20603.04	CTD	44	16	PWS2		25	7	0801	60.5373	-147.8022	740	91	PWS	5m fsw de#5.
HX20603.05	CTD	45	16	PWS2		25	7	0900	60.5361	-147.8027	740	92	PWS	5m wsw de#5.
HX20603.06	CTD	46	16	PWS2		25	7	0958	60.5355	-147.8029	740	93	PWS	21m fsw de#6.
HX20603.07	CTD	47	16	PWS2		25	7	1058	60.5357	-147.8033	740	94	PWS	21m wsw de#6.
HX20603.08	CTD	48	16	PWS2		25	7	1158	60.5358	-147.8031	740	95	PWS	

Table 3: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20603.15	CTD	49	17	PNJ1	25	7	1443	60.5659	-147.8917	317	102	PWS	Port Nellie Juan nutrient transect.
HX20603.16	CTD	50	18	PNJ2	25	7	1604	60.5649	-148.2270	620	103	PWS	Port Nellie Juan nutrient transect.
HX20603.17	CTD	51	19	PNJ3	25	7	1621	60.5459	-148.2581	530	104	PWS	Port Nellie Juan nutrient transect.
HX20603.18	CTD	52	20	PNJ4	25	7	1715	60.5523	-148.4714	466	105	PWS	Port Nellie Juan nutrient transect.
HX20603.19	CTD	53	21	PNJ5	25	7	1731	60.3251	-148.3030	464	106	PWS	Port Nellie Juan nutrient transect.
HX20603.20	CTD	54	22	PNJ6	25	7	1746	60.5324	-148.5327	463	107	PWS	Port Nellie Juan nutrient transect.
HX20603.21	CTD	55	23	PNJ7	25	7	1901	60.5007	-148.6120	427	108	PWS	Port Nellie Juan nutrient transect.
HX20703.01	CTD	56	24	PWS2	26	7	0000	60.5370	-147.8036	738	110	PWS	
HX20703.08	CTD	57	25	PWS3	26	7	0901	60.6560	-147.6786	745	117	PWS	For bottle soaking.
HX20703.09	CTD	58	25	PWS3	26	7	0935	60.6560	-147.6762	745	118	PWS	Deep CTD/TAPS.
HX20703.11	CTD	59	26	PWS2	26	7	1249	60.5356	-147.8026	740	120	PWS	Deep CTD/TAPS
HX20703.20	CTD	60	26	PWS2	26	7	1502	60.5354	-147.8026	750	129	PWS	5m fsw de#7.
HX20703.21	CTD 10	61	26	PWS2	26	7	1613	60.5348	-147.8045	742	130	PWS	5m wsw de#7.
HX20803.01	CTD	62	26	PWS2	27	7	0005	60.5349	-147.8053	735	134	PWS	
HX20803.09	CTD	63	26	PWS2	27	7	0759	60.5346	-147.8041	740	142	PWS	5m fsw de#8.
HX20803.10	CTD	64	26	PWS2	27	7	0847	60.5349	-147.8035	735	143	PWS	5m wsw de#8.
HX20803.11	CTD	65	26	PWS2	27	7	1000	60.5345	-147.8044	735	144	PWS	21m fsw de#9.
HX20803.12	CTD 10	66	26	PWS2	27	7	1100	60.5344	-147.8037	740	145	PWS	23m wsw de#9 10L CTD.
HX20803.13	CTD	67	26	PWS2	27	7	1159	60.5352	-147.8026	735	146	PWS	
HX20803.20	CTD	68	26	PWS2	27	7	1535	60.5369	-147.8001	735	153	PWS	Slow 15-40m: Fine Structure.
HX20803.21	CTD	69	26	PWS2	27	7	1545	60.5378	-147.7993	735	154	PWS	Slow 3-40m.
HX20803.22	CTD	70	26	PWS2	27	7	1555	60.5394	-147.7980	735	155	PWS	Slow 3-40m.
HX20903.01	CTD	71	26	PWS2	28	7	0000	60.5392	-147.8034	747	157	PWS	
HX20903.04	CTD	72	27	SI1	28	7	0602	60.4173	-147.4845	144	160	PWS	Begin ACC Transect.
HX20903.07	CTD	73	28	HB1	28	7	0902	60.1924	-147.7007	245	163	PWS	
HX20903.08	CTD	74	29	HB2	28	7	0934	60.1806	-147.6420	172	164	PWS	
HX20903.09	CTD	75	30	HB3	28	7	1008	60.1653	-147.5764	85	165	PWS	
HX20903.10	CTD	76	31	HB1	28	7	1040	60.1945	-147.7011	245	166	PWS	
HX20903.13	CTD	77	32	MS1	28	7	1407	59.9541	-147.9270	168	169	PWS	
HX20903.14	CTD	78	33	MS2	28	7	1430	59.9429	-147.8914	197	170	PWS	
HX20903.15	CTD	79	34	MS3	28	7	1453	59.9311	-147.8541	162	171	PWS	
HX20903.16	CTD	80	35	MS1	28	7	1527	59.9544	-147.9276	166	172	PWS	
HX20903.19	CTD	81	36	PWSW1	28	7	1828	59.9255	-148.3352	108	175	IS	
HX20903.20	CTD	82	37	PWSW2	28	7	1902	59.8658	-148.3325	69	176	IS	
HX20903.21	CTD	83	38	PWSW3	28	7	1932	59.8256	-148.3384	122	177	IS	
HX20903.22	CTD	84	38	PWSW3	28	7	1958	59.8255	-148.3378	119	178	IS	
HX20903.25	CTD	85	39	CF1	28	7	2254	59.9096	-148.8678	82	181	IS	
HX20903.26	CTD	86	40	CF2	28	7	2315	59.8848	-148.8713	111	182	IS	
HX20903.27	CTD	87	41	CF3	28	7	2343	59.8513	-148.8707	155	183	IS	
HX21003.01	CTD	88	42	CF2	29	7	0023	59.8839	-148.8692	112	184	IS	
HX21003.04	CTD	89	43	ACC0	29	7	0321	59.8075	-149.4332	278	187	IS	
HX21003.05	CTD	90	44	GAK1i	29	7	0400	59.7662	-149.3991	260	188	IS	
HX21003.06	CTD	91	45	ACC1	29	7	0433	59.7277	-149.3647	243	189	IS	
HX21003.07	CTD	92	46	GAK2	29	7	0505	59.6904	-149.3293	228	190	IS	
HX21003.14	CTD	93	47	ACC1	29	7	0758	59.7279	-149.3619	240	197	IS	4m fsw de#10.
HX21003.15	CTD	94	47	ACC1	29	7	0859	59.7285	-149.3631	240	198	IS	4m wsw de#10.
HX21003.16	CTD	95	47	ACC1	29	7	1001	59.7290	-149.3640	240	199	IS	19m fsw de#11.
HX21003.17	CTD	96	47	ACC1	29	7	1103	59.7287	-149.3645	240	200	IS	19m wsw de#11.

Table 3: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21003.18	CTD	97	47	ACC1	29	7	1130	59.7286	-149.3641	242	201	IS	
HX21103.01	CTD	98	48	GAK3i	30	7	0303	59.4816	-149.1150	205	202	IS	Start transect to define ACC.
HX21103.02	CTD	99	49	GAK3	30	7	0354	59.5533	-149.1841	214	203	IS	Transect to define ACC.
HX21103.03	CTD	100	50	GAK2i	30	7	0445	59.6260	-149.2538	212	204	IS	Transect to define ACC.
HX21103.04	CTD	101	51	ACC2	30	7	0520	59.6572	-149.2892	219	205	IS	Transect to define ACC.
HX21103.05	CTD	102	52	GAK2	30	7	0553	59.6903	-149.3272	225	206	IS	Transect to define ACC.
HX21103.06	CTD	103	53	ACC1	30	7	0637	59.7237	-149.3631	242	207	IS	Transect to define ACC.
HX21103.07	CTD	104	54	GAK1i	30	7	0717	59.7671	-149.3974	259	208	IS	End Transect to define ACC.
HX21103.08	CTD	105	55	GAK1iA	30	7	0832	59.7718	-149.4052	262	209	IS	Start work with Miller Freeman.
HX21103.10	CTD	106	56	GAK1iB	30	7	0915	59.7509	-149.3902	252	211	IS	
HX21103.16	CTD	107	57	GAK1iC	30	7	1157	59.7311	-149.3758	245	217	IS	
HX21103.18	CTD	108	58	GAK3A	30	7	1253	59.5036	-149.1459	208	219	MS	
HX21103.20	CTD	109	59	GAK3B	30	7	1324	59.4884	-149.1300	205	221	MS	
HX21103.26	CTD	110	60	GAK3C	30	7	1502	59.4734	-149.1126	204	227	MS	
HX21103.28	CTD	111	61	BS3A	30	7	1601	59.5704	-149.0000	180	229	MS	
HX21103.30	CTD	112	62	BS3B	30	7	1633	59.5533	-148.9973	181	231	MS	
HX21103.36	CTD	113	63	BS3C	30	7	1807	59.5371	-148.9926	186	237	MS	
HX21103.38	CTD	114	64	BS1A	30	7	2048	59.8642	-149.2086	133	239	IS	BS1 = Miller Freeman station BS2.
HX21103.40	CTD	115	65	BS1B	30	7	2120	59.8755	-149.1755	211	241	IS	BS1 = Miller Freeman station BS2.
HX21103.46	CTD	116	66	BS1C	30	7	2257	59.8829	-149.1478	212	247	IS	BS1 = Miller Freeman station BS2.
HX21203.03	CTD	117	67	CF8	31	7	0302	59.6849	-148.8688	180	251	IS	Start Cape Fairfield Transect to define ACC.
HX21203.04	CTD	118	68	CF7	31	7	0331	59.7171	-148.8670	184	252	IS	Cape Fairfield Transect to define ACC.
HX21203.05	CTD	119	69	CF6	31	7	0358	59.7504	-148.8672	191	253	IS	Cape Fairfield Transect to define ACC.
HX21203.06	CTD	120	70	CF5	31	7	0423	59.7838	-148.8660	195	254	IS	Cape Fairfield Transect to define ACC.
HX21203.07	CTD	121	71	CF4	31	7	0451	59.8171	-148.8643	183	255	IS	Cape Fairfield Transect to define ACC.
HX21203.08	CTD	122	72	CF3	31	7	0520	59.8490	-148.8637	165	256	IS	Cape Fairfield Transect to define ACC.
HX21203.09	CTD	123	73	CF2	31	7	0546	59.8835	-148.8672	112	257	IS	Cape Fairfield Transect to define ACC.
HX21203.10	CTD	124	74	CF1	31	7	0605	59.9085	-148.8664	85	258	IS	End Cape Fairfield Transect to define ACC.
HX21203.11	CTD	125	75	CF2A	31	7	0807	59.8826	-148.8811	100	259	IS	Recorded as CF2 on CTD record.
HX21203.13	CTD	126	76	CF2B	31	7	0837	59.8833	-148.8458	120	261	IS	VP and 4m fsw de#12.
HX21203.16	CTD	127	76	CF2B	31	7	0949	59.8836	-148.8488	121	264	IS	4m wsw de#12.
HX21203.20	CTD	128	77	CF2C	31	7	1030	59.8853	-148.8148	134	268	IS	
HX21203.22	CTD	129	78	CF12A	31	7	1254	59.5563	-148.8249	136	270	MS	
HX21203.24	CTD	130	79	CF12B	31	7	1328	59.5642	-148.7984	105	272	MS	VP and 5m fsw de#13.
HX21203.27	CTD	131	79	CF12B	31	7	1423	59.5633	-148.7987	107	275	MS	5m wsw de#13 recorded as CF2B on CTD file.
HX21203.31	CTD	132	80	CF12C	31	7	1501	59.5712	-148.7692	98	279	MS	
HX21203.33	CTD	133	81	CF8A	31	7	1602	59.6594	-148.9128	177	281	Front	
HX21203.35	CTD	134	82	CF8B	31	7	1634	59.6493	-148.9546	177	283	Front	
HX21203.40	CTD	135	83	CF8C	31	7	1808	59.6411	-148.9837	176	288	Front	
HX21203.42	CTD	136	84	GAK2A	31	7	1954	59.6979	-149.3935	189	290	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.44	CTD	137	85	GAK2B	31	7	2214	59.6753	-149.3890	207	292	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.49	CTD	138	86	GAK2C	31	7	2343	59.6576	-149.3887	227	297	Front	GAK 2 = Miller Freeman Station AC1.
HX21303.07	CTD	139	89	ACC1	1	8	0857	59.7281	-149.3633	240	305	IS	
HX21303.08	CTD	140	90	GAK1i	1	8	0932	59.7647	-149.3994	257	306	IS	5m fsw de#14.
HX21303.09	CTD 10	141	90	GAK1i	1	8	1049	59.7654	-149.3990	257	307	IS	5m wsw de#14 10L CTD.
HX21303.10	CTD	142	90	GAK1i	1	8	1203	59.7651	-149.4017	259	308	IS	
HX21403.01	CTD	143	90	GAK1i	2	8	0002	59.7668	-149.3978	260	315	IS	File overwritten. Blank.
HX21403.05	CTD	144	91	GAK3i	2	8	0353	59.4819	-149.1239	208	319	MS	

Table 3: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21403.06	CTD	145	91	GAK3i	2	8	0436	59.5530	-149.1897	214	320	MS	
HX21403.07	CTD	146	92	GAK2i	2	8	0517	59.6264	-149.2607	214	321	IS	
HX21403.08	CTD	147	93	ACC2	2	8	0543	59.6589	-149.2933	220	322	IS	
HX21403.09	CTD	148	94	GAK2	2	8	0610	59.6913	-149.3280	227	323	IS	
HX21403.10	CTD	149	95	ACC1	2	8	0639	59.7290	-149.3632	242	324	IS	
HX21403.15	CTD	150	95	ACC1	2	8	0758	59.7278	-149.3604	240	329	IS	18m fsw de#15.
HX21403.16	CTD	151	95	ACC1	2	8	0856	59.7283	-149.3622	240	330	IS	16m wsw de#15.
HX21403.17	CTD	152	95	ACC1	2	8	1000	59.7300	-149.3634	240	331	IS	4m fsw de#16.
HX21403.18	CTD	153	95	ACC1	2	8	1058	59.7297	-149.3650	240	332	IS	4m wsw de#16.
HX21403.22	CTD	154	95	ACC1	2	8	1336	59.7273	-149.3662	242	336	IS	
HX21503.05	CTD	155	96	GAK4	3	8	1200	59.4077	-149.0489	200	341	MS	
HX21503.06	CTD	156	96	GAK4	3	8	1302	59.4077	-149.0489	200	342	MS	20m fsw de#17.
HX21503.13	CTD	157	96	GAK4	3	8	1415	59.4087	-149.0489	200	348	MS	20m wsw de#17.
HX21503.17	CTD	158	97	GAK6	3	8	1818	59.1169	-148.7733	150	352	MS	
HX21503.18	CTD	159	98	GAK5i	3	8	1903	59.1908	-148.8382	165	353	MS	
HX21503.19	CTD	160	99	GAK5	3	8	1945	59.2620	-148.9061	167	354	MS	
HX21503.20	CTD	161	100	GAK4i	3	8	2035	59.3350	-148.9745	195	355	MS	
HX21503.21	CTD	162	101	GAK3i	3	8	2155	59.4815	-149.1202	204	356	MS	
HX21503.22	CTD	163	102	GAK4	3	8	2241	59.4068	-149.0500	204	357	MS	
HX21503.24	CTD	164	102	GAK4	3	8	2356	59.4082	-149.0495	199	359	MS	
HX21603.07	CTD	165	103	GAK5	4	8	0758	59.2625	-148.9088	168	366	MS	5m fsw de#18.
HX21603.08	CTD 10	166	103	GAK5	4	8	0850	59.2603	-148.9093	168	367	MS	5m wsw de#18 10L CTD.
HX21603.09	CTD	167	103	GAK5	4	8	0957	59.2618	-148.9099	167	368	MS	23m fsw de#19.
HX21603.10	CTD	168	103	GAK5	4	8	1041	59.2619	-148.9094	167	369	MS	23m wsw de#19.
HX21603.11	CTD	169	103	GAK5	4	8	1154	59.2623	-148.9096	166	370	MS	
HX21703.01	CTD	170	103	GAK5	5	8	0003	59.2604	-148.9081	167	377	MS	
HX21703.04	CTD	171	104	GAK4i	5	8	0142	59.4093	-149.0496	195	380	MS	
HX21703.05	CTD	172	105	GAK4	5	8	0225	59.4094	-149.0497	199	381	MS	
HX21703.06	CTD	173	106	GAK3i	5	8	0308	59.4818	-149.1187	204	382	MS	
HX21703.07	CTD	174	107	GAK3	5	8	0353	59.5526	-149.1909	213	383	MS	
HX21703.11	CTD	175	108	GAK5	5	8	0931	59.2608	-148.9080	167	387	MS	23m fsw de#20.
HX21703.12	CTD	176	108	GAK5	5	8	1021	59.2601	-148.9063	167	388	MS	21m wsw de#20.
HX21703.13	CTD	177	108	GAK5	5	8	1200	59.2603	-148.9073	167	389	MS	
HX21703.18	CTD	178	109	GAK6	5	8	1441	59.1156	-148.7697	150	394	MS	GA#.
HX21703.22	CTD	179	110	GAK5i	5	8	1627	59.1895	-148.8401	167	398	MS	
HX21703.23	CTD	180	111	GAK5	5	8	1711	59.2618	-148.9101	168	399	MS	chl sampled 25m (chl max).
HX21703.24	CTD	181	112	GAK4i	5	8	1757	59.3344	-148.9780	195	400	MS	
HX21703.25	CTD	182	113	GAK4	5	8	1844	59.4079	-149.0483	201	401	MS	
HX21703.29	CTD	183	114	GAK3i	5	8	2030	59.4798	-149.1176	205	405	MS	
HX21703.30	CTD	184	115	GAK3	5	8	2121	59.5528	-149.1877	214	406	MS	
HX21703.32	CTD	185	116	GAK5	5	8	2347	59.2636	-148.9024	164	408	MS	
HX21803.03	CTD	186	116	GAK5	6	8	0138	59.2600	-148.9098	167	411	MS	
HX21803.04	CTD	187	117	GAK4i	6	8	0225	59.3337	-148.9786	195	412	MS	
HX21803.05	CTD	188	118	GAK4	6	8	0310	59.4069	-149.0487	200	413	MS	
HX21803.06	CTD	189	119	GAK3i	6	8	0357	59.4805	-149.1194	202	414	MS	
HX21803.07	CTD	190	120	GAK3	6	8	0443	59.5519	-149.1899	213	415	MS	
HX21803.11	CTD	191	121	GAK5	6	8	0802	59.2622	-148.9073	168	419	MS	5m fsw de#21.
HX21803.12	CTD	192	121	GAK5	6	8	0858	59.2616	-148.9074	168	420	MS	5m wsw de#21.

Table 3: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21803.13	CTD	193	121	GAK5	6	8	1001	59.2619	-148.9057	167	421	MS	20m fsw de#22.
HX21803.14	CTD	194	121	GAK5	6	8	1104	59.2615	-148.9063	167	422	MS	22m wsw de#22.
HX21803.15	CTD	195	121	GAK5	6	8	1159	59.2616	-148.9063	167	423	MS	
HX21803.17	CTD	196	123	GAK3i	6	8	1407	59.4810	-149.1216	204	424	MS	
HX21803.21	CTD	197	124	GAK3	6	8	1547	59.5534	-149.1882	212	428	MS	
HX21803.22	CTD	198	125	GAK2i	6	8	1639	59.6263	-149.2590	212	429	IS	
HX21803.27	CTD	199	126	ACC2	6	8	1843	59.6576	-149.2958	220	434	IS	
HX21803.28	CTD	200	127	GAK2	6	8	1917	59.6912	-149.3276	227	435	IS	
HX21803.32	CTD	201	128	ACC1	6	8	2040	59.7289	-149.3629	244	438a	IS	
HX21803.33	CTD	202	129	GAK1i	6	8	2115	59.7663	-149.3985	262	438b	IS	
HX21803.34	CTD	203	130	GAK3i	6	8	2323	59.4807	-149.1217	207	439	IS	
HX21803.35	CTD	204	131	WF8	6	8	2353	59.4836	-149.1982	242	440	nd	
HX21903.01	CTD	205	132	WF7	7	8	0025	59.4866	-149.2754	212	441	nd	
HX21903.02	CTD	206	133	WF6	7	8	0055	59.4893	-149.3546	147	442	nd	
HX21903.03	CTD	207	134	WF5	7	8	0124	59.4916	-149.4330	120	443	nd	
HX21903.04	CTD	208	135	WF4	7	8	0158	59.4934	-149.5095	108	444	nd	
HX21903.05	CTD	209	136	WF3	7	8	0225	59.4966	-149.5928	96	445	nd	
HX21903.06	CTD	210	137	WF2	7	8	0248	59.4996	-149.6687	87	446	nd	
HX21903.07	CTD	211	138	WF1	7	8	0312	59.5004	-149.7517	164	447	nd	
HX21903.12	CTD	212	138	WF1	7	8	0810	59.5005	-149.7495	165	452	nd	TAPS off; GA#23.
HX21903.15	CTD	213	139	WF2	7	8	0927	59.4999	-149.6700	89	455	nd	TAPS off.
HX21903.16	CTD	214	140	WF3	7	8	0956	59.4968	-149.5911	98	456	nd	TAPS off.
HX21903.17	CTD	215	141	WF4	7	8	1024	59.4936	-149.5108	108	457	nd	TAPS off.
HX21903.21	CTD	216	142	WF5	7	8	1129	59.4918	-149.4343	120	461	nd	TAPS back on GA #24.
HX21903.24	CTD	217	143	WF6	7	8	1246	59.4882	-149.3563	146	464	nd	
HX21903.25	CTD	218	144	WF7	7	8	1318	59.4864	-149.2751	212	465	nd	GA #25.
HX21903.29	CTD	219	145	WF8	7	8	1440	59.4836	-149.1969	240	469	nd	
HX21903.30	CTD	220	146	GAK3i	7	8	1520	59.4808	-149.1160	202	470	nd	
HX21903.33	CTD	221	147	WF9	7	8	1603	59.4470	-149.1753	226	473	nd	
HX21903.34	CTD	222	148	WF10	7	8	1636	59.4141	-149.2297	168	474	nd	
HX21903.35	CTD	223	149	WF11	7	8	1707	59.3813	-149.2832	156	475	nd	
HX21903.36	CTD	224	150	WF12	7	8	1737	59.3500	-149.3355	153	476	nd	
HX21903.37	CTD	225	151	WF13	7	8	1808	59.3167	-149.3918	136	477	nd	
HX21903.38	CTD	226	152	WF14	7	8	1837	59.2817	-149.4476	149	478	nd	
HX21903.42	CTD	227	153	WF15	7	8	1924	59.2494	-149.5017	137	482	nd	
HX21903.45	CTD	228	154	WF16	7	8	2025	59.2841	-149.5366	128	485	nd	
HX21903.48	CTD	229	155	WF17	7	8	2113	59.3167	-149.5802	123	488	nd	
HX21903.51	CTD	230	156	WF18	7	8	2215	59.3563	-149.6070	101	491	nd	
HX21903.52	CTD	231	157	WF19	7	8	2240	59.3935	-149.6425	110	492	nd	
HX21903.53	CTD	232	158	WF20	7	8	2305	59.4283	-149.6779	103	493	nd	
HX21903.54	CTD	233	159	WF21	7	8	2330	59.4645	-149.7130	113	494	nd	
HX21903.55	CTD	234	160	WF1	7	8	2355	59.5002	-149.7472	161	495	nd	
HX22003.03	CTD	235	161	HE3	8	8	1256	60.1300	-146.6076	114	498	nd	
HX22003.04	CTD	236	162	HE2	8	8	1330	60.1798	-146.6097	197	499	nd	
HX22003.05	CTD	237	163	HE1	8	8	1355	60.2168	-146.6095	77	500	nd	
HX22003.06	CTD	238	164	HE2	8	8	1425	60.1783	-146.6074	192	501	nd	DE23 fsw.
HX22003.09	CTD	239	164	HE2	8	8	1558	60.1798	-146.6072	192	504	nd	DE23 wsw.
HX22003.12	CTD	240	165	HB1	8	8	2110	60.1926	-147.6989	248	507	nd	

Table 3: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX22003.13	CTD	241	166	HB2	8	8	2142	60.1803	-147.6409	177	508	nd	
HX22003.14	CTD	242	167	HB3	8	8	2209	60.1646	-147.5746	85	509	nd	
HX22003.15	CTD	243	168	HB1	8	8	2248	60.1935	-147.7000	248	510	nd	
HX22103.02	CTD	244	169	MS3	9	8	0210	59.9319	-147.8597	171	514	nd	
HX22103.03	CTD	245	170	MS2	9	8	0235	59.9429	-147.8965	192	515	nd	
HX22103.04	CTD	246	171	MS1	9	8	0257	59.9534	-147.9276	166	516	nd	
HX22103.05	CTD	247	172	CCSE1	9	8	0636	59.7420	-147.8215	61	517	nd	
HX22103.06	CTD	248	173	CCSE2	9	8	0723	59.6674	-147.7262	112	518	nd	
HX22103.07	CTD	249	174	CCSE3	9	8	0823	59.5722	-147.6069	108	519	nd	
HX22103.13	CTD	250	174	CCSE3	9	8	0944	59.5701	-147.6104	109	525	nd	DE24 fsw.
HX22103.15	CTD	251	174	CCSE3	9	8	1040	59.5699	-147.6096	109	527	nd	DE24 wsw.
HX22103.16	CTD	252	175	PWSW3	9	8	1339	59.8261	-148.3304	121	528	IS	
HX22103.17	CTD	253	176	PWSW2	9	8	1409	59.8751	-148.3326	77	529	IS	
HX22103.18	CTD	254	177	PWSW1	9	8	1438	59.9242	-148.3346	96	530	IS	
HX22103.19	CTD	255	178	PWSW2	9	8	1509	59.8741	-148.3324	76	531	IS	
HX22103.24	CTD	256	179	CF4	9	8	1813	59.8170	-148.8687	181	536	IS	
HX22103.25	CTD	257	180	CF3	9	8	1843	59.8498	-148.8674	161	537	IS	
HX22103.26	CTD	258	181	CF2	9	8	1909	59.8833	-148.8678	112	538	IS	
HX22103.27	CTD	259	182	CF1	9	8	1931	59.9079	-148.8664	85	539	IS	
HX22103.28	CTD	260	183	CF3	9	8	2017	59.8500	-148.8724	159	540	IS	
HX22103.32	CTD	261	184	ACC0	9	8	2330	59.4840	-149.2584	280	544	IS	
HX22203.01	CTD	262	185	GAK1i	10	8	0007	59.7667	-149.3968	262	545	IS	
HX22203.02	CTD	263	186	ACC1	10	8	0041	59.7287	-149.3667	245	546	IS	
HX22203.03	CTD	264	187	GAK2	10	8	0120	59.6910	-149.3308	230	547	IS	
HX22203.04	CTD	265	188	ACC1	10	8	0155	59.7282	-149.3630	242	548	IS	
HX22203.10	CTD	266	189	GAK5	10	8	0800	59.2607	-148.9099	165	554	MS	20m fsw de#25.
HX22203.11	CTD	267	189	GAK5	10	8	0901	59.2615	-148.9092	166	555	MS	15m wsw de#25.
HX22203.13	CTD	268	189	GAK5	10	8	1014	59.2623	-148.9090	167	557	MS	5m fsw de#26.
HX22203.14	CTD	269	189	GAK5	10	8	1111	59.2625	-148.9085	167	558	MS	5m wsw de#26.
HX22203.15	CTD	270	189	GAK5	10	8	1202	59.2630	-148.9084	167	559	MS	
HX22203.17	CTD	271	190	GAK6	10	8	1352	59.1160	-148.7675	150	561	MS	DM on watch.
HX22203.18	CTD	272	191	GAK5i	10	8	1436	59.1897	-148.8391	167	562	MS	
HX22203.19	CTD	273	192	GAK5	10	8	1521	59.2630	-148.9061	167	563	MS	
HX22203.20	CTD	274	193	GAK4i	10	8	1607	59.3364	-148.9756	196	564	MS	
HX22203.21	CTD	275	194	GAK4	10	8	1652	59.4092	-149.0460	199	565	MS	
HX22203.22	CTD	276	195	GAK3i	10	8	1737	59.4823	-149.1161	202	566	MS	
HX22203.23	CTD	277	196	GAK3	10	8	1825	59.5534	-149.1886	215	567	MS	
HX22303.01	CTD	278	196	GAK3	11	8	0200	59.5543	-149.1905	214	568	MS	
HX22303.02	CTD	279	197	GAK3i	11	8	0300	59.4815	-149.1177	204	569	MS	
HX22303.03	CTD	280	198	GAK4	11	8	0345	59.9093	-149.0467	202	570	MS	
HX22303.04	CTD	281	199	GAK4i	11	8	0430	59.3353	-148.9770	196	571	MS	
HX22303.05	CTD	282	200	GAK5	11	8	0515	59.2622	-148.9062	166	572	MS	
HX22303.06	CTD	283	201	GAK5i	11	8	0600	59.1897	-148.8358	163	573	MS	
HX22303.07	CTD	284	202	GAK6	11	8	0656	59.1172	-148.7683	148	574	MS	
HX22303.08	CTD	285	203	GAK5	11	8	0830	59.2622	-148.9075	166	575	MS	
HX22303.09	CTD	286	204	GAK4i	11	8	0920	59.3358	-148.9773	194	576	MS	
HX22303.10	CTD	287	205	GAK4	11	8	1000	59.4085	-149.0485	198	577	MS	
HX22303.11	CTD	288	206	GAK3i	11	8	1044	59.4818	-149.0337	203	578	MS	
HX22303.12	CTD	289	207	GAK3	11	8	1128	59.5543	-149.1888	213	579	MS	

Table 4: MOCNESS Sampling

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20303.03	MOC	1	9	GAK10	22	7	0100	58.5381	-148.1755	1400	31	OS	
HX20403.03	MOC	2	13	GAK10	23	7	0102	58.5447	-148.1992	1458	56	OS	
HX20503.03	MOC	3	15	GAK10	24	7	0058	58.6342	-148.2592	1486	87	OS	
HX20703.03	MOC	4	24	PWS2	26	7	0043	60.5383	-147.7993	735	112	PWS	Fail.
HX20703.04	MOC	5	24	PWS2	26	7	0212	60.5342	-147.8032	735	113	PWS	Repeat of moc4.
HX20703.07	MOC	6	25	PWS3	26	7	0734	60.6480	-147.7210	757	116	PWS	Deep MOCNESS.
HX20703.10	MOC	7	26	PWS2	26	7	1117	60.5318	-147.8557	600	119	PWS	Deep MOCNESS.
HX20803.03	MOC	8	26	PWS2	27	7	0058	60.5316	-147.8043	735	136	PWS	
HX20903.03	MOC	9	26	PWS2	28	7	0036	60.5359	-147.7989	735	159	PWS	
HX20903.06	MOC	10	27	SI1	28	7	0643	60.4198	-147.5134	173	162	PWS	
HX20903.12	MOC	11	31	HB1	28	7	1116	60.1949	-147.6983	246	168	PWS	
HX20903.18	MOC	12	35	MS1	28	7	1607	59.9536	-147.9265	172	174	PWS	
HX20903.24	MOC	13	38	PWSW3	28	7	2035	59.8241	-148.3361	119	180	IS	
HX21003.03	MOC	14	42	CF2	29	7	0107	59.8824	-148.8716	107	186	IS	
HX21003.09	MOC	15	47	ACC1	29	7	0604	59.7262	-149.3613	240	192	IS	
HX21103.12	MOC	16	56	GAK1iB	30	7	0952	59.7509	-149.3902	255	213	IS	
HX21103.22	MOC	17	59	GAK3B	30	7	1402	59.4866	-149.1269	205	223	MS	
HX21103.32	MOC	18	62	BS3B	30	7	1711	59.5609	-148.9936	180	233	MS	
HX21103.42	MOC	19	65	BS1B	30	7	2157	59.8830	-149.1852	207	243	IS	BS1 = Miller Freeman station BS2.
HX21203.02	MOC	20	66	BS1C	31	7	0030	59.8694	-149.1943	193	250	IS	BS1 = Miller Freeman station BS2.
HX21203.15	MOC	21	76	CF2B	31	7	0915	59.8815	-148.8547	120	263	IS	
HX21203.26	MOC	22	79	CF12B	31	7	1401	59.5632	-148.8019	111	274	MS	
HX21203.37	MOC	23	82	CF8B	31	7	1711	59.6520	-148.9586	177	285	Front	
HX21203.46	MOC	24	85	GAK2B	31	7	2255	59.6715	-149.3889	223	294	Front	GAK 2 = Miller Freeman Station AC1.
HX21303.02	MOC	25	87	GAK2B	1	8	0036	59.6708	-149.3959	220	300	Front	GAK 2 = Miller Freeman Station AC1.
HX21403.04	MOC	26	90	GAK1i	2	8	0117	59.7631	-149.4004	262	318	IS	
HX21603.02	MOC	27	102	GAK4	4	8	0021	59.4040	-149.0576	200	361	MS	
HX21703.03	MOC	28	103	GAK5	5	8	0035	59.2578	-148.8997	165	379	MS	
HX21703.17	MOC	29	108	GAK5	5	8	1327	59.2608	-148.9081	166	393	MS	
HX21703.21	MOC	30	109	GAK6	5	8	1537	59.1170	-148.7720	150	397	MS	
HX21703.28	MOC	31	113	GAK4	5	8	1936	59.4055	-149.0517	201	404	MS	
HX21803.02	MOC	32	116	GAK5	6	8	0023	59.2603	-148.9222	167	410	MS	
HX21803.20	MOC	33	123	GAK3i	6	8	1458	59.4758	-149.1313	206	427	MS	
HX21803.26	MOC	34	125	GAK2i	6	8	1741	59.6257	-149.2613	213	433	IS	
HX21803.31	MOC	35	127	GAK2	6	8	2008	59.6948	-149.3255	228	438	IS	
HX21903.14	MOC	36	138	WF1	7	8	0852	59.5029	-149.7418	156	454	nd	
HX21903.23	MOC	37	142	WF5	7	8	1206	59.4909	-149.4359	150	463	nd	
HX21903.28	MOC	38	144	WF7	7	8	1411	59.4885	-149.2738	216	468	nd	
HX21903.44	MOC	39	153	WF15	7	8	1954	59.2544	-149.4986	137	484	nd	
HX21903.50	MOC	40	155	WF17	7	8	2142	59.3200	-149.5767	123	490	nd	
HX22003.02	MOC	41	160	WF1	8	8	0025	59.4986	-149.7531	171	497	nd	
HX22003.08	MOC	42	164	HE2	8	8	1502	60.1785	-146.6074	209	503	nd	
HX22003.17	MOC	43	168	HB1	8	8	2330	60.1937	-147.6985	253	512	nd	
HX22103.14	MOC	44	174	CCSE3	9	8	1003	59.5702	-147.6104	109	526	nd	
HX22103.21	MOC	45	178	PWSW2	9	8	1539	59.8729	-148.3287	86	533	IS	
HX22103.30	MOC	46	183	CF3	9	8	2053	59.8491	-148.8708	173	542	IS	
HX22203.06	MOC	47	188	ACC1	10	8	0245	59.7265	-149.3607	240	550	IS	

Table 5: QuadNets

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20303.02	Quad053_150	1	9	GAK10	22	7	0035	58.5437	-148.2188	1400	30	OS	
HX20403.02	Quad053_150	2	13	GAK10	23	7	0035	58.5442	-148.2018	1458	55	OS	
HX20503.02	Quad053_150	3	15	GAK10	24	7	0031	58.6342	-148.2592	1486	86	OS	
HX20703.02	Quad053_150	4	24	PWS2	26	7	0021	60.5351	-147.8053	735	111	PWS	
HX20803.02	Quad053_150	5	26	PWS2	27	7	0030	60.5326	-147.8071	735	135	PWS	
HX20903.02	Quad053_150	6	26	PWS2	28	7	0022	60.5377	-147.8069	747	158	PWS	
HX20903.05	Quad053_150	7	27	SI1	28	7	0624	60.4163	-147.4860	137	161	PWS	
HX20903.11	Quad053_150	8	31	HB1	28	7	1104	60.1925	-147.6997	246	167	PWS	
HX20903.17	Quad053_150	9	35	MS1	28	7	1542	59.9553	-147.9292	166	173	PWS	
HX20903.23	Quad053_150	10	38	PWSW3	28	7	2021	59.8246	-148.3356	120	179	IS	
HX21003.02	Quad053_150	11	42	CF2	29	7	0042	59.8827	-148.8668	114	185	IS	
HX21003.08	Quad053_150	12	47	ACC1	29	7	0545	58.7285	-149.3660	240	191	IS	
HX21203.01	Quad053_150	13	66	BS1C	31	7	0017	59.8700	-149.1948	183	249	IS	2 tows labeled 249:1 failed,1 good; BS1=Miller Freeman sta BS2.
HX21303.01	Quad053_150	14	87	GAK2B	1	8	0015	59.6755	-149.3894	210	299	Front	GAK 2 = Miller Freeman Station AC1.
HX21403.02	Quad053_150	15	90	GAK1i	2	8	0028	59.7619	-149.4067	260	316	IS	
HX21403.03	Quad053_150	16	90	GAK1i	2	8	0100	59.7640	-149.3990	260	317	IS	Fail.
HX21603.01	Quad053_150	17	102	GAK4	4	8	0008	59.4069	-149.0506	200	360	MS	
HX21703.02	Quad053_150	18	103	GAK5	5	8	0020	59.2587	-148.9039	163	378	MS	
HX21703.15	Quad053_150	19	108	GAK5	5	8	1254	59.2617	-148.8980	163	391	MS	
HX21703.19	Quad053_150	20	109	GAK6	5	8	1504	59.1165	-148.7700	150	395	MS	
HX21703.26	Quad053_150	21	113	GAK4	5	8	1907	59.4122	-149.0427	200	402	MS	
HX21803.01	Quad053_150	22	116	GAK5	6	8	0006	59.2653	-148.8963	165	409	MS	
HX21803.18	Quad053_150	23	123	GAK3i	6	8	1428	59.4800	-149.1227	204	425	MS	
HX21803.23	Quad053_150	24	125	GAK2i	6	8	1702	59.6238	-149.2565	212	430	IS	
HX21803.29	Quad053_150	25	127	GAK2	6	8	1940	59.6900	-149.3263	227	436	IS	
HX22003.01	Quad053_150	26	160	WF1	8	8	0013	59.5009	-149.7466	163	496	nd	
HX22003.07	Quad053_150	27	164	HE2	8	8	1443	60.1792	-146.6042	187	502	nd	
HX22003.16	Quad053_150	28	168	HB1	8	8	2311	60.1927	-147.6997	250	511	nd	
HX22103.12	Quad053_150	29	174	CCSE3	9	8	0930	59.5767	-147.6098	112	524	nd	
HX22103.20	Quad053_150	30	178	PWSW2	9	8	1528	59.8742	-148.3325	76	532	IS	
HX22103.29	Quad053_150	31	183	CF3	9	8	2040	59.8490	-148.8697	161	541	IS	
HX22203.05	Quad053_150	32	188	ACC1	10	8	0225	59.7268	-149.3612	242	549	IS	

Table 6: Ring Net Deployments

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20103.03	RingNet	1	2	GAK1	20	7	1533	59.8435	-149.4668	270	3	IS	Dagg
HX20103.04	RingNet	2	2	GAK1	20	7	1554	59.8427	-149.4673	270	4	IS	Dagg
HX20103.06	RingNet	3	3	GAK2	20	7	1738	59.6912	-149.3255	227	6	IS	Dagg
HX20103.07	RingNet	4	3	GAK2	20	7	1743	59.6912	-149.3265	227	7	IS	Dagg
HX20203.10	RingNet	5	4	GAK10	21	7	1325	58.5412	-148.2125	1400	17	OS	Dagg
HX20203.11	RingNet	6	4	GAK10	21	7	1330	58.5407	-148.2155	1400	18	OS	Dagg
HX20203.15	RingNet	7	5	GAK13	21	7	1810	58.1065	-147.7912	2099	22	OS	Aborted.
HX20203.16	RingNet	8	5	GAK13	21	7	1815	58.1077	-147.7867	2099	22	OS	Dagg
HX20203.17	RingNet	9	5	GAK13	21	7	1820	58.1088	-147.7875	2099	23	OS	Dagg
HX20203.20	RingNet	10	6	GAK12	21	7	2000	58.2467	-147.9442	2176	26	OS	Dagg
HX20203.21	RingNet	11	6	GAK12	21	7	2020	58.2473	-147.9487	2176	27	OS	Dagg
HX20203.23	RingNet	12	7	GAK11	21	7	2150	58.3907	-148.0775	1411	28a	OS	Dagg
HX20203.24	RingNet	13	7	GAK11	21	7	2154	58.3908	-148.0792	1411	28b	OS	Dagg
HX20303.15	RingNet	14	10	GAK9	22	7	1443	58.6792	-148.3493	277	40	OS	Dagg
HX20303.16	RingNet	15	10	GAK9	22	7	1447	58.6790	-148.3487	277	41	OS	Dagg
HX20303.18	RingNet	16	11	GAK8	22	7	1622	58.7915	-148.4930	289	43	MS	Dagg
HX20303.19	RingNet	17	11	GAK8	22	7	1625	58.7915	-148.4935	289	44	MS	Dagg
HX20303.27	RingNet	18	12	GAK7	22	7	1915	58.9788	-148.6330	241	52	MS	Dagg
HX20303.28	RingNet	19	12	GAK7	22	7	1920	58.9800	-148.6333	241	53	MS	Dagg
HX20703.18	RingNet	20	26	PWS2	26	7	1440	60.5317	-147.8052	733	127	PWS	Dagg
HX20703.19	RingNet	21	26	PWS2	26	7	1444	60.5315	-147.8053	733	128	PWS	Dagg
HX21503.10	RingNet	22	96	GAK4	3	8	1346	59.4043	-149.0572	200	346	MS	Dagg
HX21503.11	RingNet	23	96	GAK4	3	8	1351	59.4040	-149.0582	200	346a	MS	Dagg
HX21503.12	RingNet	24	96	GAK4	3	8	1400	59.4032	-149.0610	200	347	MS	Dagg
HX21603.15	RingNet	25	103	GAK5	4	8	1323	59.2590	-148.9143	167	374	MS	Dagg
HX21603.16	RingNet	26	103	GAK5	4	8	1327	59.2587	-148.9152	167	375	MS	Dagg
HX21903.31	RingNet	27	146	GAK3i	7	8	1534	59.4802	-149.1160	202	471	nd	Dagg
HX21903.32	RingNet	28	146	GAK3i	7	8	1538	59.4797	-149.1167	202	472	nd	Dagg

Table 7: Tucker Tawls

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20603.09	Tucker	1	16	PWS2	25	7	1255	60.5353	-147.8217	738	96	PWS	
HX20603.10	Tucker	2	16	PWS2	25	7	1312	60.5347	-147.8058	748	97	PWS	
HX20603.11	Tucker	3	16	PWS2	25	7	1329	60.5347	-147.7907	730	98	PWS	
HX20803.16	Tucker	4	26	PWS2	27	7	1401	60.5320	-147.8080	735	149	PWS	
HX20803.17	Tucker	5	26	PWS2	27	7	1422	60.5367	-147.7918	730	150	PWS	
HX20803.18	Tucker	6	26	PWS2	27	7	1448	60.5237	-147.8022	592	151	PWS	
HX20803.19	Tucker	7	26	PWS2	27	7	1511	60.5123	-147.8097	473	152	PWS	
HX21103.09	Tucker	8	55	GAK1iA	30	7	0853	59.8052	-149.4053	262	210	IS	
HX21103.11	Tucker	9	56	GAK1iB	30	7	0937	59.7467	-149.3865	252	212	IS	
HX21103.17	Tucker	10	57	GAK1iC	30	7	1113	59.7272	-149.3745	247	218	IS	
HX21103.19	Tucker	11	58	GAK3A	30	7	1307	59.5042	-149.1472	207	220	MS	
HX21103.21	Tucker	12	59	GAK3B	30	7	1346	59.4903	-149.1318	206	222	MS	
HX21103.27	Tucker	13	60	GAK3C	30	7	1514	59.4768	-149.1135	204	228	MS	
HX21103.29	Tucker	14	61	BS3A	30	7	1613	59.5725	-148.9990	180	230	MS	
HX21103.31	Tucker	15	62	BS3B	30	7	1654	59.5580	-148.9933	181	232	MS	
HX21103.37	Tucker	16	63	BS3C	30	7	1820	59.5342	-148.9887	182	238	MS	
HX21103.39	Tucker	17	64	BS1A	30	7	2058	59.8655	-149.2110	129	240	IS	BS1 = Miller Freeman station BS2.
HX21103.41	Tucker	18	65	BS1B	30	7	2141	59.8765	-149.1813	209	242	IS	BS1 = Miller Freeman station BS2.
HX21103.47	Tucker	19	66	BS1C	30	7	2315	59.8833	-149.1517	212	248	IS	BS1 = Miller Freeman station BS2.
HX21203.12	Tucker	20	75	CF2A	31	7	0820	59.8827	-148.8795	107	260	IS	
HX21203.14	Tucker	21	76	CF2B	31	7	0853	59.8830	-148.8397	122	262	IS	
HX21203.21	Tucker	22	77	CF2C	31	7	1042	59.8853	-148.8210	122	269	IS	
HX21203.23	Tucker	23	78	CF12A	31	7	1305	59.5563	-148.8273	138	271	MS	
HX21203.25	Tucker	24	79	CF12B	31	7	1342	59.5643	-148.8002	106	273	MS	
HX21203.32	Tucker	25	80	CF12C	31	7	1511	59.5725	-148.7757	102	280	MS	
HX21203.34	Tucker	26	81	CF8A	31	7	1615	59.6597	-148.9170	177	282	Front	
HX21203.36	Tucker	27	82	CF8B	31	7	1654	59.6493	-148.9570	177	284	Front	
HX21203.41	Tucker	28	83	CF8C	31	7	1821	59.6395	-148.9840	175	289	Front	
HX21203.43	Tucker	29	84	GAK2A	31	7	2004	59.6940	-149.3907	194	291	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.45	Tucker	30	85	GAK2B	31	7	2240	59.6687	-149.3898	226	293	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.50	Tucker	31	86	GAK2C	31	7	2355	59.6558	-149.3935	224	298	Front	GAK 2 = Miller Freeman Station AC1.
HX21303.14	Tucker	32	90	GAK1i	1	8	1345	59.7635	-149.4003	260	311	IS	
HX21303.15	Tucker	33	90	GAK1i	1	8	1358	59.7740	-149.4065	265	312	IS	
HX21303.16	Tucker	34	90	GAK1i	1	8	1412	59.7812	-149.4120	270	313	IS	
HX21503.14	Tucker	35	96	GAK4	3	8	1521	59.4085	-149.0690	202	349	MS	
HX21503.15	Tucker	36	96	GAK4	3	8	1539	59.4098	-149.0542	202	350	MS	
HX21503.16	Tucker	37	96	GAK4	3	8	1600	59.4127	-149.0362	198	351	MS	
HX21703.16	Tucker	38	108	GAK5	5	8	1308	59.2610	-148.8958	162	392	MS	
HX21703.20	Tucker	39	109	GAK6	5	8	1518	59.1155	-148.7680	150	396	MS	
HX21703.27	Tucker	40	113	GAK4	5	8	1920	59.4120	-149.0437	200	403	MS	
HX21803.16	Tucker	41	122	GAK4	6	8	1324	59.4092	-149.0462	199	423a	MS	Live Tucker for Jeff, no samples preserved.
HX21803.19	Tucker	42	123	GAK3i	6	8	1441	59.4810	-149.1237	204	426	MS	
HX21803.24	Tucker	43	125	GAK2i	6	8	1714	59.6222	-149.2577	214	431	IS	Failed, timer stopped.
HX21803.25	Tucker	44	125	GAK2i	6	8	1726	59.6260	-149.2583	213	432	IS	
HX21803.30	Tucker	45	127	GAK2	6	8	1952	59.6907	-149.3255	227	437	IS	
HX21903.13	Tucker	46	138	WF1	7	8	0831	59.4998	-149.7463	160	453	nd	
HX21903.22	Tucker	47	142	WF5	7	8	1149	59.4897	-149.4393	119	462	nd	
HX21903.27	Tucker	48	144	WF7	7	8	1357	59.4850	-149.2765	212	467	nd	
HX21903.43	Tucker	49	153	WF15	7	8	1940	59.2492	-149.5047	138	483	nd	
HX21903.49	Tucker	50	155	WF17	7	8	2128	59.3167	-149.5838	120	489	nd	

APPENDIX I

HX275 EVENT LOG

EVENT LOG CONTENTS

Column Label	Description
Event#	Unique identifier for each line of event log
Instrument (Instr)	LiveNet: 0.75 m diameter ring net with 0.200-mm mesh for collecting animals for experiments; CTD: Conductivity Temperature Depth profile collected with Seabird SBE with 5 liter Niskins, fluorescence; MOC: 1m^2 MOCNESS with 0.505-mm mesh; QuadNet: Quad053_150 - 4 net frame, each 0.25-m diameter for quantitative zooplankton sampling; 2 nets with 0.053-mm mesh and 2 nets with 0.150-mm mesh; Ring Net: Puget Sound Style closing net; 0.75m diam.; 0.100-mm mesh; Tucker Trawl: Surface Tow; 1m^2 mouth; 0.333 mm mesh.
Cast	Sequence # for a particular instrument
Station (Sta)	Sequence # for cruise stations
Station Standard (Sta std)	GLOBEC NEP station name
Day	Local time basis
Month (Mos)	Local time basis
Time	Local time
Latitude (Lat)	Decimal degrees; north is positive
Longitude (Long)	Decimal degrees; east is positive
Water Depth	Depth of bottom
Cast Depth	Maximum depth of deployment
Station Alternative Region	Sampling Region IS: Inner Shelf OS: Outer Shelf MS: Middle Shelf PWS: Prince William Sound Front: Frontal Stations
Scientific Investigator (SI) / Comments	

Appendix I: Event Log

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20103.01	CTD	1	1	ResBay2 5	20	7	1209	60.0248	-149.3580	293	1	Res Bay	
HX20103.02	CTD	2	2	GAK1	20	7	1457	59.8442	-149.4676	270	2	IS	
HX20103.03	RingNet	1	2	GAK1	20	7	1533	59.8435	-149.4668	270	3	IS	Dagg
HX20103.04	RingNet	2	2	GAK1	20	7	1554	59.8427	-149.4673	270	4	IS	Dagg
HX20103.05	CTD	3	3	GAK2	20	7	1725	59.6907	-149.3270	227	5	IS	
HX20103.06	RingNet	3	3	GAK2	20	7	1738	59.6912	-149.3255	227	6	IS	Dagg
HX20103.07	RingNet	4	3	GAK2	20	7	1743	59.6912	-149.3265	227	7	IS	Dagg
HX20203.01	LiveNet	1	4	GAK10	21	7	0708	58.5418	-148.2102	1400	8	OS	Napp
HX20203.02	LiveNet	2	4	GAK10	21	7	0716	58.5417	-148.2135	1400	9	OS	Napp
HX20203.03	LiveNet	3	4	GAK10	21	7	0725	58.5415	-148.2168	1400	10	OS	Dagg
HX20203.04	LiveNet	4	4	GAK10	21	7	0735	58.5413	-148.2192	1400	11	OS	Dagg
HX20203.05	CTD	4	4	GAK10	21	7	0800	58.5422	-148.2119	1400	12	OS	6m fsw de1.
HX20203.06	CTD	5	4	GAK10	21	7	0845	58.5421	-148.2157	1400	13	OS	6m wsw de#1.
HX20203.07	CTD	6	4	GAK10	21	7	1000	58.5419	-148.2122	1400	14	OS	18m fsw de#2.
HX20203.08	CTD	7	4	GAK10	21	7	1100	58.5424	-148.2135	1400	15	OS	18m fsw de#2.
HX20203.09	CTD	8	4	GAK10	21	7	1200	58.5421	-148.2106	1400	16	OS	
HX20203.10	RingNet	5	4	GAK10	21	7	1325	58.5412	-148.2125	1400	17	OS	Dagg
HX20203.11	RingNet	6	4	GAK10	21	7	1330	58.5407	-148.2155	1400	18	OS	Dagg
HX20203.12	LiveNet	5	4	GAK10	21	7	1345	58.5400	-148.2177	1400	19	OS	Napp
HX20203.13	LiveNet	6	4	GAK10	21	7	1400	58.5400	-148.2177	1400	20	OS	Napp
HX20203.14	CTD	9	5	GAK13	21	7	1725	58.1005	-147.7890	2099	21	OS	ga#1.
HX20203.15	RingNet	7	5	GAK13	21	7	1810	58.1065	-147.7912	2099	22	OS	Aborted.
HX20203.16	RingNet	8	5	GAK13	21	7	1815	58.1077	-147.7867	2099	22	OS	Dagg
HX20203.17	RingNet	9	5	GAK13	21	7	1820	58.1088	-147.7875	2099	23	OS	Dagg
HX20203.18	LiveNet	7	5	GAK13	21	7	1830	58.1088	-147.7875	2099	24	OS	Dagg
HX20203.19	CTD	10	6	GAK12	21	7	1930	58.2438	-147.9339	2176	25	OS	ga#2.
HX20203.20	RingNet	10	6	GAK12	21	7	2000	58.2467	-147.9442	2176	26	OS	Dagg
HX20203.21	RingNet	11	6	GAK12	21	7	2020	58.2473	-147.9487	2176	27	OS	Dagg
HX20203.22	CTD	11	7	GAK11	21	7	2129	58.3913	-148.0839	1411	28	OS	Aborted.
HX20203.23	RingNet	12	7	GAK11	21	7	2150	58.3907	-148.0775	1411	28a	OS	Dagg
HX20203.24	RingNet	13	7	GAK11	21	7	2154	58.3908	-148.0792	1411	28b	OS	Dagg
HX20203.25	CTD	12	7	GAK11	21	7	2209	58.3913	-148.0839	1411	28c	OS	ga#3.
HX20303.01	CTD	13	8	GAK10	22	7	0005	58.5428	-148.2131	1400	29	OS	
HX20303.02	Quad053 150	1	9	GAK10	22	7	0035	58.5437	-148.2188	1400	30	OS	
HX20303.03	MOC	1	9	GAK10	22	7	0100	58.5381	-148.1755	1400	31	OS	
HX20303.04	LiveNet	8	9	GAK10	22	7	0700	58.5407	-148.2117	1400	32	OS	Napp
HX20303.05	LiveNet	9	9	GAK10	22	7	0715	58.5400	-148.2152	1400	33	OS	Napp
HX20303.06	LiveNet	10	9	GAK10	22	7	0731	58.5395	-148.2190	1400	33a	OS	Dagg
HX20303.07	LiveNet	11	9	GAK10	22	7	0740	58.5392	-148.2213	1400	33b	OS	Dagg
HX20303.08	CTD	14	9	GAK10	22	7	0801	58.5381	-148.1755	1400	34	OS	Lumcon grazing.
HX20303.09	LiveNet	12	9	GAK10	22	7	1037	58.5415	-148.2103	1400	35	OS	Napp
HX20303.10	LiveNet	13	9	GAK10	22	7	1045	58.5423	-148.2122	1400	36	OS	Napp
HX20303.11	CTD	15	9	GAK10	22	7	1159	58.5417	-148.2116	1400	37	OS	
HX20303.12	CTD	16	10	GAK9	22	7	1340	58.5417	-148.2116	279	38	OS	ga#4.
HX20303.13	LiveNet	14	10	GAK9	22	7	1405	58.6792	-148.3407	277	39	OS	Dagg
HX20303.14	LiveNet	15	10	GAK9	22	7	1438	58.6797	-148.3498	277	39a	OS	Dagg
HX20303.15	RingNet	14	10	GAK9	22	7	1443	58.6792	-148.3493	277	40	OS	Dagg
HX20303.16	RingNet	15	10	GAK9	22	7	1447	58.6790	-148.3487	277	41	OS	Dagg

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20303.17	CTD	17	11	GAK8	22	7	1557	58.5417	-148.2116	289	42	MS	ga#5.
HX20303.18	RingNet	16	11	GAK8	22	7	1622	58.7915	-148.4930	289	43	MS	Dagg
HX20303.19	RingNet	17	11	GAK8	22	7	1625	58.7915	-148.4935	289	44	MS	Dagg
HX20303.20	LiveNet	16	11	GAK8	22	7	1641	58.7912	-148.4962	289	45	MS	Dagg
HX20303.21	LiveNet	17	11	GAK8	22	7	1656	58.7912	-148.4997	289	46	MS	Dagg
HX20303.22	LiveNet	18	11	GAK8	22	7	1708	58.7915	-148.5032	289	47	MS	Dagg
HX20303.23	CTD	18	12	GAK7	22	7	1830	58.9737	-148.6302	241	48	MS	ga#6.
HX20303.24	LiveNet	19	12	GAK7	22	7	1850	58.9755	-148.6305	241	49	MS	Napp
HX20303.25	LiveNet	20	12	GAK7	22	7	1902	58.9768	-148.6320	241	50	MS	Failed.
HX20303.26	LiveNet	21	12	GAK7	22	7	1907	58.9768	-148.6320	241	51	MS	Dagg
HX20303.27	RingNet	18	12	GAK7	22	7	1915	58.9788	-148.6330	241	52	MS	Dagg
HX20303.28	RingNet	19	12	GAK7	22	7	1920	58.9800	-148.6333	241	53	MS	Dagg
HX20403.01	CTD	19	13	GAK10	23	7	0003	58.9737	-148.6302	1458	54	OS	
HX20403.02	Quad053 150	2	13	GAK10	23	7	0035	58.5442	-148.2018	1458	55	OS	
HX20403.03	MOC	2	13	GAK10	23	7	0102	58.5447	-148.1992	1458	56	OS	
HX20403.04	LiveNet	22	13	GAK10	23	7	0702	58.5423	-148.2135	1458	57	OS	Napp
HX20403.05	LiveNet	23	13	GAK10	23	7	0715	58.5427	-148.2157	1458	58	OS	Napp
HX20403.06	LiveNet	24	13	GAK10	23	7	0727	58.5433	-148.2185	1458	59	OS	Dagg
HX20403.07	LiveNet	25	13	GAK10	23	7	0731	58.5435	-148.2197	1458	60	OS	Dagg
HX20403.08	CTD	20	13	GAK10	23	7	0801	58.5412	-148.2121	1458	61	OS	9m fsw de#3.
HX20403.09	CTD	21	13	GAK10	23	7	0856	58.5423	-148.2106	1458	62	OS	9m wsw de#3.
HX20403.10	CTD	22	13	GAK10	23	7	1003	58.5433	-148.2101	1458	63	OS	21m fsw de#4.
HX20403.11	CTD	23	13	GAK10	23	7	1100	58.5414	-148.2106	1458	64	OS	21m wsw de#4.
HX20403.12	CTD	24	13	GAK10	23	7	1201	58.5412	-148.2095	1458	65	OS	
HX20403.13	CTD	25	14	GAK9	23	7	1423	58.6793	-148.3457	279	66	OS	CTD yo-yo 1.
HX20403.14	CTD	26	14	GAK9	23	7	1433	58.6795	-148.3442	279	67	OS	CTD yo-yo 2.
HX20403.15	CTD	27	14	GAK9	23	7	1438	58.6798	-148.3407	279	68	OS	CTD yo-yo 3.
HX20403.16	CTD	28	14	GAK9	23	7	1445	58.6801	-148.3387	279	69	OS	CTD yo-yo 4.
HX20403.17	CTD	29	14	GAK9	23	7	1450	58.6803	-148.3362	279	70	OS	CTD yo-yo 5.
HX20403.18	CTD	30	14	GAK9	23	7	1455	58.6806	-148.3306	279	71	OS	CTD yo-yo 6.
HX20403.19	CTD	31	14	GAK9	23	7	1501	58.6806	-148.3306	279	72	OS	CTD yo-yo 7.
HX20403.20	CTD	32	14	GAK9	23	7	1507	58.6807	-148.3275	279	73	OS	CTD yo-yo 8.
HX20403.21	CTD	33	14	GAK9	23	7	1513	58.6807	-148.3248	279	74	OS	CTD yo-yo 9.
HX20403.22	CTD	34	14	GAK9	23	7	1517	58.6808	-148.3221	279	75	OS	CTD yo-yo 10.
HX20403.23	CTD	35	14	GAK9	23	7	1523	58.6809	-148.3201	279	76	OS	CTD yo-yo 11.
HX20403.24	LiveNet	26	14	GAK9	23	7	1541	58.6802	-148.3640	280	77	OS	Dagg
HX20403.25	CTD	36	14	GAK9	23	7	1628	58.6789	-148.3482	280	78	OS	CTD hourly series.
HX20403.26	CTD	37	14	GAK9	23	7	1729	58.6788	-148.3498	280	79	OS	CTD hourly series.
HX20403.27	CTD	38	14	GAK9	23	7	1835	58.6786	-148.3468	280	80	OS	CTD hourly series.
HX20403.28	CTD	39	14	GAK9	23	7	1932	58.6795	-148.3495	280	81	OS	CTD hourly series.
HX20403.29	CTD	40	14	GAK9	23	7	2030	58.6802	-148.3517	280	82	OS	CTD hourly series.
HX20403.30	CTD	41	14	GAK9	23	7	2131	58.6817	-148.3507	280	83	OS	CTD hourly series.
HX20403.31	CTD	42	14	GAK9	23	7	2230	58.6795	-148.3495	280	84	OS	Final hourly.
HX20503.01	CTD	43	15	GAK10	24	7	0004	58.5438	-148.2105	1486	85	OS	
HX20503.02	Quad053 150	3	15	GAK10	24	7	0031	58.6342	-148.2592	1486	86	OS	
HX20503.03	MOC	3	15	GAK10	24	7	0058	58.6342	-148.2592	1486	87	OS	
HX20503.04	nd	nd	nd	nd	24	7	0730	nd	nd	nd	nd	nd	RTN to Seward for Inmarsat repair.
HX20503.05	nd	nd	nd	nd	24	7	1830	nd	nd	nd	nd	nd	Depart Seward.

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20603.01	LiveNet	27	16	PWS2	25	7	0659	60.5348	-147.8043	740	88	PWS	Dagg
HX20603.02	LiveNet	28	16	PWS2	25	7	0703	60.5347	-147.8052	740	89	PWS	Napp
HX20603.03	LiveNet	29	16	PWS2	25	7	0712	60.5350	-147.8077	740	90	PWS	Napp
HX20603.04	CTD	44	16	PWS2	25	7	0801	60.5373	-147.8022	740	91	PWS	5m fsw de#5.
HX20603.05	CTD	45	16	PWS2	25	7	0900	60.5361	-147.8027	740	92	PWS	5m wsw de#5.
HX20603.06	CTD	46	16	PWS2	25	7	0958	60.5355	-147.8029	740	93	PWS	21m fsw de#6.
HX20603.07	CTD	47	16	PWS2	25	7	1058	60.5357	-147.8033	740	94	PWS	21m wsw de#6.
HX20603.08	CTD	48	16	PWS2	25	7	1158	60.5358	-147.8031	740	95	PWS	
HX20603.09	Tucker	1	16	PWS2	25	7	1255	60.5353	-147.8217	738	96	PWS	
HX20603.10	Tucker	2	16	PWS2	25	7	1312	60.5347	-147.8058	748	97	PWS	
HX20603.11	Tucker	3	16	PWS2	25	7	1329	60.5347	-147.7907	730	98	PWS	
HX20603.12	LiveNet	30	16	PWS2	25	7	1349	60.5337	-147.8005	735	99	PWS	Dagg
HX20603.13	LiveNet	31	16	PWS2	25	7	1356	60.5335	-147.8027	735	100	PWS	Dagg
HX20603.14	LiveNet	32	16	PWS2	25	7	1404	60.5335	-147.8053	735	101	PWS	Napp
HX20603.15	CTD	49	17	PNJ1	25	7	1443	60.5659	-147.8917	317	102	PWS	Port Nellie Juan nutrient transect.
HX20603.16	CTD	50	18	PNJ2	25	7	1604	60.5649	-148.2270	620	103	PWS	Port Nellie Juan nutrient transect.
HX20603.17	CTD	51	19	PNJ3	25	7	1621	60.5459	-148.2581	530	104	PWS	Port Nellie Juan nutrient transect.
HX20603.18	CTD	52	20	PNJ4	25	7	1715	60.5523	-148.4714	466	105	PWS	Port Nellie Juan nutrient transect.
HX20603.19	CTD	53	21	PNJ5	25	7	1731	60.3251	-148.3030	464	106	PWS	Port Nellie Juan nutrient transect.
HX20603.20	CTD	54	22	PNJ6	25	7	1746	60.5324	-148.5327	463	107	PWS	Port Nellie Juan nutrient transect.
HX20603.21	CTD	55	23	PNJ7	25	7	1901	60.5007	-148.6120	427	108	PWS	Port Nellie Juan nutrient transect.
HX20603.22	LiveNet	33	24	PWS2	25	7	2331	60.5340	-147.8045	745	109	PWS	Napp
HX20703.01	CTD	56	24	PWS2	26	7	0000	60.5370	-147.8036	738	110	PWS	
HX20703.02	Quad053 150	4	24	PWS2	26	7	0021	60.5351	-147.8053	735	111	PWS	
HX20703.03	MOC	4	24	PWS2	26	7	0043	60.5383	-147.7993	735	112	PWS	Fail.
HX20703.04	MOC	5	24	PWS2	26	7	0212	60.5342	-147.8032	735	113	PWS	Repeat of moc4.
HX20703.05	LiveNet	34	25	PWS3	26	7	0659	60.6543	-147.6760	745	114	PWS	Dagg
HX20703.06	LiveNet	35	25	PWS3	26	7	0705	60.6545	-147.6780	745	115	PWS	Dagg
HX20703.07	MOC	6	25	PWS3	26	7	0734	60.6480	-147.7210	757	116	PWS	Deep MOCNESS.
HX20703.08	CTD	57	25	PWS3	26	7	0901	60.6560	-147.6786	745	117	PWS	For bottle soaking.
HX20703.09	CTD	58	25	PWS3	26	7	0935	60.6560	-147.6762	745	118	PWS	Deep CTD/TAPS.
HX20703.10	MOC	7	26	PWS2	26	7	1117	60.5318	-147.8557	600	119	PWS	Deep MOCNESS.
HX20703.11	CTD	59	26	PWS2	26	7	1249	60.5356	-147.8026	740	120	PWS	Deep CTD/TAPS.
HX20703.12	LiveNet	36	26	PWS2	26	7	1337	60.5342	-147.8007	740	121	PWS	Napp
HX20703.13	LiveNet	37	26	PWS2	26	7	1350	60.5333	-147.8023	738	122	PWS	Napp
HX20703.14	LiveNet	38	26	PWS2	26	7	1405	60.5328	-147.8030	735	123	PWS	Dagg
HX20703.15	LiveNet	39	26	PWS2	26	7	1414	60.5325	-147.8035	735	124	PWS	Dagg: failed.
HX20703.16	LiveNet	40	26	PWS2	26	7	1421	60.5323	-147.8040	742	125	PWS	Dagg: failed.
HX20703.17	LiveNet	41	26	PWS2	26	7	1428	60.5320	-147.8045	742	126	PWS	Dagg
HX20703.18	RingNet	20	26	PWS2	26	7	1440	60.5317	-147.8052	733	127	PWS	Dagg
HX20703.19	RingNet	21	26	PWS2	26	7	1444	60.5315	-147.8053	733	128	PWS	Dagg
HX20703.20	CTD	60	26	PWS2	26	7	1502	60.5354	-147.8026	750	129	PWS	5m fsw de#7.
HX20703.21	CTD 10	61	26	PWS2	26	7	1613	60.5348	-147.8045	742	130	PWS	5m wsw de#7..
HX20703.22	LiveNet	42	26	PWS2	26	7	2203	60.5335	-147.8028	735	131	PWS	Napp: Metridia EP.
HX20703.23	LiveNet	43	26	PWS2	26	7	2220	60.5328	-147.8032	738	132	PWS	Napp: Metridia EP.
HX20703.24	LiveNet	44	26	PWS2	26	7	2316	60.5347	-147.8018	735	133	PWS	Napp: Metridia EP.
HX20803.01	CTD	62	26	PWS2	27	7	0005	60.5349	-147.8053	735	134	PWS	
HX20803.02	Quad053 150	5	26	PWS2	27	7	0030	60.5326	-147.8071	735	135	PWS	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX20803.03	MOC	8	26	PWS2	27	7	0058	60.5316	-147.8043	735	136	PWS	
HX20803.04	LiveNet	45	26	PWS2	27	7	0702	60.5345	-147.8043	740	137	PWS	Dagg
HX20803.05	LiveNet	46	26	PWS2	27	7	0714	60.5345	-147.8027	735	138	PWS	Napp
HX20803.06	LiveNet	47	26	PWS2	27	7	0726	60.5342	-147.8013	730	139	PWS	Napp
HX20803.07	LiveNet	48	26	PWS2	27	7	0738	60.5338	-147.7993	730	140	PWS	Napp
HX20803.08	LiveNet	49	26	PWS2	27	7	0744	60.5335	-147.7983	730	141	PWS	Dagg
HX20803.09	CTD	63	26	PWS2	27	7	0759	60.5346	-147.8041	740	142	PWS	5m fsw de#8.
HX20803.10	CTD	64	26	PWS2	27	7	0847	60.5349	-147.8035	735	143	PWS	5m wsw de#8.
HX20803.11	CTD	65	26	PWS2	27	7	1000	60.5345	-147.8044	735	144	PWS	21m fsw de#9.
HX20803.12	CTD 10	66	26	PWS2	27	7	1100	60.5344	-147.8037	740	145	PWS	23m wsw de#9 10L CTD.
HX20803.13	CTD	67	26	PWS2	27	7	1159	60.5352	-147.8026	735	146	PWS	
HX20803.14	LiveNet	50	26	PWS2	27	7	1250	60.5340	-147.8028	735	147	PWS	Dagg
HX20803.15	LiveNet	51	26	PWS2	27	7	1255	60.5332	-147.8040	735	148	PWS	Dagg
HX20803.16	Tucker	4	26	PWS2	27	7	1401	60.5320	-147.8080	735	149	PWS	
HX20803.17	Tucker	5	26	PWS2	27	7	1422	60.5367	-147.7918	730	150	PWS	
HX20803.18	Tucker	6	26	PWS2	27	7	1448	60.5237	-147.8022	592	151	PWS	
HX20803.19	Tucker	7	26	PWS2	27	7	1511	60.5123	-147.8097	473	152	PWS	
HX20803.20	CTD	68	26	PWS2	27	7	1535	60.5369	-147.8001	735	153	PWS	Slow 15-40m: Fine Structure.
HX20803.21	CTD	69	26	PWS2	27	7	1545	60.5378	-147.7993	735	154	PWS	Slow 3-40m.
HX20803.22	CTD	70	26	PWS2	27	7	1555	60.5394	-147.7980	735	155	PWS	Slow 3-40m.
HX20803.23	LiveNet	52	26	PWS2	27	7	2320	60.5330	-147.8033	742	156	PWS	Napp
HX20903.01	CTD	71	26	PWS2	28	7	0000	60.5392	-147.8034	747	157	PWS	
HX20903.02	Quad053 150	6	26	PWS2	28	7	0022	60.5377	-147.8069	747	158	PWS	
HX20903.03	MOC	9	26	PWS2	28	7	0036	60.5359	-147.7989	735	159	PWS	
HX20903.04	CTD	72	27	SI1	28	7	0602	60.4173	-147.4845	144	160	PWS	Begin ACC Transect.
HX20903.05	Quad053 150	7	27	SI1	28	7	0624	60.4163	-147.4860	137	161	PWS	
HX20903.06	MOC	10	27	SI1	28	7	0643	60.4198	-147.5134	173	162	PWS	
HX20903.07	CTD	73	28	HB1	28	7	0902	60.1924	-147.7007	245	163	PWS	
HX20903.08	CTD	74	29	HB2	28	7	0934	60.1806	-147.6420	172	164	PWS	
HX20903.09	CTD	75	30	HB3	28	7	1008	60.1653	-147.5764	85	165	PWS	
HX20903.10	CTD	76	31	HB1	28	7	1040	60.1945	-147.7011	245	166	PWS	
HX20903.11	Quad053 150	8	31	HB1	28	7	1104	60.1925	-147.6997	246	167	PWS	
HX20903.12	MOC	11	31	HB1	28	7	1116	60.1949	-147.6983	246	168	PWS	
HX20903.13	CTD	77	32	MS1	28	7	1407	59.9541	-147.9270	168	169	PWS	
HX20903.14	CTD	78	33	MS2	28	7	1430	59.9429	-147.8914	197	170	PWS	
HX20903.15	CTD	79	34	MS3	28	7	1453	59.9311	-147.8541	162	171	PWS	
HX20903.16	CTD	80	35	MS1	28	7	1527	59.9544	-147.9276	166	172	PWS	
HX20903.17	Quad053 150	9	35	MS1	28	7	1542	59.9553	-147.9292	166	173	PWS	
HX20903.18	MOC	12	35	MS1	28	7	1607	59.9536	-147.9265	172	174	PWS	
HX20903.19	CTD	81	36	PWSW1	28	7	1828	59.9255	-148.3352	108	175	IS	
HX20903.20	CTD	82	37	PWSW2	28	7	1902	59.8658	-148.3325	69	176	IS	
HX20903.21	CTD	83	38	PWSW3	28	7	1932	59.8256	-148.3384	122	177	IS	
HX20903.22	CTD	84	38	PWSW3	28	7	1958	59.8255	-148.3378	119	178	IS	
HX20903.23	Quad053 150	10	38	PWSW3	28	7	2021	59.8246	-148.3356	120	179	IS	
HX20903.24	MOC	13	38	PWSW3	28	7	2035	59.8241	-148.3361	119	180	IS	
HX20903.25	CTD	85	39	CF1	28	7	2254	59.9096	-148.8678	82	181	IS	
HX20903.26	CTD	86	40	CF2	28	7	2315	59.8848	-148.8713	111	182	IS	
HX20903.27	CTD	87	41	CF3	28	7	2343	59.8513	-148.8707	155	183	IS	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21003.01	CTD	88	42	CF2	29	7	0023	59.8839	-148.8692	112	184	IS	
HX21003.02	Quad053 150	11	42	CF2	29	7	0042	59.8827	-148.8668	114	185	IS	
HX21003.03	MOC	14	42	CF2	29	7	0107	59.8824	-148.8716	107	186	IS	
HX21003.04	CTD	89	43	ACC0	29	7	0321	59.8075	-149.4332	278	187	IS	
HX21003.05	CTD	90	44	GAK1i	29	7	0400	59.7662	-149.3991	260	188	IS	
HX21003.06	CTD	91	45	ACC1	29	7	0433	59.7277	-149.3647	243	189	IS	
HX21003.07	CTD	92	46	GAK2	29	7	0505	59.6904	-149.3293	228	190	IS	
HX21003.08	Quad053 150	12	47	ACC1	29	7	0545	58.7285	-149.3660	240	191	IS	
HX21003.09	MOC	15	47	ACC1	29	7	0604	59.7262	-149.3613	240	192	IS	
HX21003.10	LiveNet	53	47	ACC1	29	7	0701	59.0772	-149.3618	240	193	IS	Dagg
HX21003.11	LiveNet	54	47	ACC1	29	7	0707	59.7257	-149.3618	240	194	IS	Dagg
HX21003.12	LiveNet	55	47	ACC1	29	7	0714	59.7240	-149.3615	239	195	IS	Napp
HX21003.13	LiveNet	56	47	ACC1	29	7	0725	59.7213	-149.3605	232	196	IS	Napp
HX21003.14	CTD	93	47	ACC1	29	7	0758	59.7279	-149.3619	240	197	IS	4m fsw de#10.
HX21003.15	CTD	94	47	ACC1	29	7	0859	59.7285	-149.3631	240	198	IS	4m wsw de#10.
HX21003.16	CTD	95	47	ACC1	29	7	1001	59.7290	-149.3640	240	199	IS	19m fsw de#11.
HX21003.17	CTD	96	47	ACC1	29	7	1103	59.7287	-149.3645	240	200	IS	19m wsw de#11.
HX21003.18	CTD	97	47	ACC1	29	7	1130	59.7286	-149.3641	242	201	IS	
HX21003.19	nd	nd	nd	nd	29	7	1200	nd	nd	nd	nd	nd	RTN to Seward for repairs.
HX21003.20	nd	nd	nd	nd	29	7	2025	nd	nd	nd	nd	nd	Depart Seward.
HX21103.01	CTD	98	48	GAK3i	30	7	0303	59.4816	-149.1150	205	202	IS	Start transect to difine ACC.
HX21103.02	CTD	99	49	GAK3	30	7	0354	59.5533	-149.1841	214	203	IS	Transect to define ACC
HX21103.03	CTD	100	50	GAK2i	30	7	0445	59.6260	-149.2538	212	204	IS	Transect to define ACC.
HX21103.04	CTD	101	51	ACC2	30	7	0520	59.6572	-149.2892	219	205	IS	Transect to define ACC.
HX21103.05	CTD	102	52	GAK2	30	7	0553	59.6903	-149.3272	225	206	IS	Transect to define ACC.
HX21103.06	CTD	103	53	ACC1	30	7	0637	59.7237	-149.3631	242	207	IS	Transect to define ACC.
HX21103.07	CTD	104	54	GAK1i	30	7	0717	59.7671	-149.3974	259	208	IS	End Transect to define ACC.
HX21103.08	CTD	105	55	GAK1iA	30	7	0832	59.7718	-149.4052	262	209	IS	Start work with Miller Freeman.
HX21103.09	Tucker	8	55	GAK1iA	30	7	0853	59.8052	-149.4053	262	210	IS	
HX21103.10	CTD	106	56	GAK1iB	30	7	0915	59.7509	-149.3902	252	211	IS	
HX21103.11	Tucker	9	56	GAK1iB	30	7	0937	59.7467	-149.3865	252	212	IS	
HX21103.12	MOC	16	56	GAK1iB	30	7	0952	59.7509	-149.3902	255	213	IS	
HX21103.13	LiveNet	57	56	GAK1iB	30	7	1013	59.7528	-149.3893	254	214	IS	Dagg
HX21103.14	LiveNet	58	56	GAK1iB	30	7	1024	59.7502	-149.3915	255	215	IS	Dagg
HX21103.15	LiveNet	59	56	GAK1iB	30	7	1037	59.7472	-149.4250	255	216	IS	Napp
HX21103.16	CTD	107	57	GAK1iC	30	7	1157	59.7311	-149.3758	245	217	IS	
HX21103.17	Tucker	10	57	GAK1iC	30	7	1113	59.7272	-149.3745	247	218	IS	
HX21103.18	CTD	108	58	GAK3A	30	7	1253	59.5036	-149.1459	208	219	MS	
HX21103.19	Tucker	11	58	GAK3A	30	7	1307	59.5042	-149.1472	207	220	MS	
HX21103.20	CTD	109	59	GAK3B	30	7	1324	59.4884	-149.1300	205	221	MS	
HX21103.21	Tucker	12	59	GAK3B	30	7	1346	59.4903	-149.1318	206	222	MS	
HX21103.22	MOC	17	59	GAK3B	30	7	1402	59.4866	-149.1269	205	223	MS	
HX21103.23	LiveNet	60	59	GAK3B	30	7	1425	59.4883	-149.1640	206	224	MS	Napp
HX21103.24	LiveNet	61	59	GAK3B	30	7	1434	59.4897	-149.1293	206	225	MS	Dagg
HX21103.25	LiveNet	62	59	GAK3B	30	7	1445	59.4907	-149.1297	205	226	MS	Dagg
HX21103.26	CTD	110	60	GAK3C	30	7	1502	59.4734	-149.1126	204	227	MS	
HX21103.27	Tucker	13	60	GAK3C	30	7	1514	59.4768	-149.1135	204	228	MS	
HX21103.28	CTD	111	61	BS3A	30	7	1601	59.5704	-149.0000	180	229	MS	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21103.29	Tucker	14	61	BS3A	30	7	1613	59.5725	-148.9990	180	230	MS	
HX21103.30	CTD	112	62	BS3B	30	7	1633	59.5533	-148.9973	181	231	MS	
HX21103.31	Tucker	15	62	BS3B	30	7	1654	59.5580	-148.9933	181	232	MS	
HX21103.32	MOC	18	62	BS3B	30	7	1711	59.5609	-148.9936	180	233	MS	
HX21103.33	LiveNet	63	62	BS3B	30	7	1727	59.5555	-148.9928	180	234	MS	Napp
HX21103.34	LiveNet	64	62	BS3B	30	7	1741	59.5573	-148.9868	179	235	MS	Dagg
HX21103.35	LiveNet	65	62	BS3B	30	7	1747	59.5577	-148.9837	180	236	MS	Dagg
HX21103.36	CTD	113	63	BS3C	30	7	1807	59.5371	-148.9926	186	237	MS	
HX21103.37	Tucker	16	63	BS3C	30	7	1820	59.5342	-148.9887	182	238	MS	
HX21103.38	CTD	114	64	BS1A	30	7	2048	59.8642	-149.2086	133	239	IS	BS1 = Miller Freeman station BS2.
HX21103.39	Tucker	17	64	BS1A	30	7	2058	59.8655	-149.2110	129	240	IS	BS1 = Miller Freeman station BS2.
HX21103.40	CTD	115	65	BS1B	30	7	2120	59.8755	-149.1755	211	241	IS	BS1 = Miller Freeman station BS2.
HX21103.41	Tucker	18	65	BS1B	30	7	2141	59.8765	-149.1813	209	242	IS	BS1 = Miller Freeman station BS2.
HX21103.42	MOC	19	65	BS1B	30	7	2157	59.8830	-149.1852	207	243	IS	BS1 = Miller Freeman station BS2.
HX21103.43	LiveNet	66	65	BS1B	30	7	2214	59.8757	-149.1710	212	244	IS	Dagg: BS1 = Miller Freeman station BS2.
HX21103.44	LiveNet	67	65	BS1B	30	7	2229	59.8747	-149.1755	212	245	IS	Dagg: BS1 = Miller Freeman station BS2.
HX21103.45	LiveNet	68	65	BS1B	30	7	2237	59.8738	-149.1780	211	246	IS	Napp: BS1 = Miller Freeman station BS2.
HX21103.46	CTD	116	66	BS1C	30	7	2257	59.8829	-149.1478	212	247	IS	BS1 = Miller Freeman station BS2.
HX21103.47	Tucker	19	66	BS1C	30	7	2315	59.8833	-149.1517	212	248	IS	BS1 = Miller Freeman station BS2.
HX21203.01	Quad053 150	13	66	BS1C	31	7	0017	59.8700	-149.1948	183	249	IS	2 tows labeled 249:1 failed,1 good; BS1=Miller Freeman sta BS2.
HX21203.02	MOC	20	66	BS1C	31	7	0030	59.8694	-149.1943	193	250	IS	BS1 = Miller Freeman station BS2.
HX21203.03	CTD	117	67	CF8	31	7	0302	59.6849	-148.8688	180	251	IS	Start Cape Fairfield Transect to define ACC.
HX21203.04	CTD	118	68	CF7	31	7	0331	59.7171	-148.8670	184	252	IS	Cape Fairfield Transect to define ACC.
HX21203.05	CTD	119	69	CF6	31	7	0358	59.7504	-148.8672	191	253	IS	Cape Fairfield Transect to define ACC.
HX21203.06	CTD	120	70	CF5	31	7	0423	59.7838	-148.8660	195	254	IS	Cape Fairfield Transect to define ACC.
HX21203.07	CTD	121	71	CF4	31	7	0451	59.8171	-148.8643	183	255	IS	Cape Fairfield Transect to define ACC.
HX21203.08	CTD	122	72	CF3	31	7	0520	59.8490	-148.8637	165	256	IS	Cape Fairfield Transect to define ACC.
HX21203.09	CTD	123	73	CF2	31	7	0546	59.8835	-148.8672	112	257	IS	Cape Fairfield Transect to define ACC.
HX21203.10	CTD	124	74	CF1	31	7	0605	59.9085	-148.8664	85	258	IS	End Cape Fairfield Transect to define ACC.
HX21203.11	CTD	125	75	CF2A	31	7	0807	59.8826	-148.8811	100	259	IS	Recorded as CF2 on CTD record.
HX21203.12	Tucker	20	75	CF2A	31	7	0820	59.8827	-148.8795	107	260	IS	
HX21203.13	CTD	126	76	CF2B	31	7	0837	59.8833	-148.8458	120	261	IS	VP and 4m fsw de#12.
HX21203.14	Tucker	21	76	CF2B	31	7	0853	59.8830	-148.8397	122	262	IS	
HX21203.15	MOC	21	76	CF2B	31	7	0915	59.8815	-148.8547	120	263	IS	
HX21203.16	CTD	127	76	CF2B	31	7	0949	59.8836	-148.8488	121	264	IS	4m wsw de#12.
HX21203.17	LiveNet	69	76	CF2B	31	7	0959	59.8843	-148.8518	nd	265	IS	Dagg
HX21203.18	LiveNet	70	76	CF2B	31	7	1006	59.8855	-148.8563	113	266	IS	Dagg
HX21203.19	LiveNet	71	76	CF2B	31	7	1012	59.8865	-148.8570	102	267	IS	Napp
HX21203.20	CTD	128	77	CF2C	31	7	1030	59.8853	-148.8148	134	268	IS	
HX21203.21	Tucker	22	77	CF2C	31	7	1042	59.8853	-148.8210	122	269	IS	
HX21203.22	CTD	129	78	CF12A	31	7	1254	59.5563	-148.8249	136	270	MS	
HX21203.23	Tucker	23	78	CF12A	31	7	1305	59.5563	-148.8273	138	271	MS	
HX21203.24	CTD	130	79	CF12B	31	7	1328	59.5642	-148.7984	105	272	MS	VP and 5m fsw de#13.
HX21203.25	Tucker	24	79	CF12B	31	7	1342	59.5643	-148.8002	106	273	MS	
HX21203.26	MOC	22	79	CF12B	31	7	1401	59.5632	-148.8019	111	274	MS	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21203.27	CTD	131	79	CF12B	31	7	1423	59.5633	-148.7987	107	275	MS	5m wsw de#13 recorded as CF2B on CTD file.
HX21203.28	LiveNet	72	79	CF12B	31	7	1432	59.5648	-148.7995	107	276	MS	Dagg
HX21203.29	LiveNet	73	79	CF12B	31	7	1438	59.5658	-148.8003	108	277	MS	Dagg
HX21203.30	LiveNet	74	79	CF12B	31	7	1444	59.5663	-148.8007	109	278	MS	Napp
HX21203.31	CTD	132	80	CF12C	31	7	1501	59.5712	-148.7692	98	279	MS	
HX21203.32	Tucker	25	80	CF12C	31	7	1511	59.5725	-148.7757	102	280	MS	
HX21203.33	CTD	133	81	CF8A	31	7	1602	59.6594	-148.9128	177	281	Front	
HX21203.34	Tucker	26	81	CF8A	31	7	1615	59.6597	-148.9170	177	282	Front	
HX21203.35	CTD	134	82	CF8B	31	7	1634	59.6493	-148.9546	177	283	Front	
HX21203.36	Tucker	27	82	CF8B	31	7	1654	59.6493	-148.9570	177	284	Front	
HX21203.37	MOC	23	82	CF8B	31	7	1711	59.6520	-148.9586	177	285	Front	
HX21203.38	LiveNet	75	82	CF8B	31	7	1739	59.6493	-148.9507	177	286	Front	Dagg
HX21203.39	LiveNet	76	82	CF8B	31	7	1752	59.6492	-148.9517	176	287	Front	Napp
HX21203.40	CTD	135	83	CF8C	31	7	1808	59.6411	-148.9837	176	288	Front	
HX21203.41	Tucker	28	83	CF8C	31	7	1821	59.6395	-148.9840	175	289	Front	
HX21203.42	CTD	136	84	GAK2A	31	7	1954	59.6979	-149.3935	189	290	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.43	Tucker	29	84	GAK2A	31	7	2004	59.6940	-149.3907	194	291	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.44	CTD	137	85	GAK2B	31	7	2214	59.6753	-149.3890	207	292	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.45	Tucker	30	85	GAK2B	31	7	2240	59.6687	-149.3898	226	293	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.46	MOC	24	85	GAK2B	31	7	2255	59.6715	-149.3889	223	294	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.47	LiveNet	77	85	GAK2B	31	7	2313	59.6788	-149.3840	203	295	Front	Dagg: GAK 2 = Miller Freeman Station AC1.
HX21203.48	LiveNet	78	85	GAK2B	31	7	2326	59.6742	-149.3873	209	296	Front	Napp: GAK2 = Miller Freeman Station AC1.
HX21203.49	CTD	138	86	GAK2C	31	7	2343	59.6576	-149.3887	227	297	Front	GAK 2 = Miller Freeman Station AC1.
HX21203.50	Tucker	31	86	GAK2C	31	7	2355	59.6558	-149.3935	224	298	Front	GAK 2 = Miller Freeman Station AC1.
HX21303.01	Quad053 150	14	87	GAK2B	1	8	0015	59.6755	-149.3894	210	299	Front	GAK 2 = Miller Freeman Station AC1.
HX21303.02	MOC	25	87	GAK2B	1	8	0036	59.6708	-149.3959	220	300	Front	GAK 2 = Miller Freeman Station AC1.
HX21303.03	LiveNet	79	88	GAK1i	1	8	0754	59.7672	-149.3960	259	301	IS	Napp
HX21303.04	LiveNet	80	88	GAK1i	1	8	0802	59.7653	-149.3965	259	302	IS	Napp
HX21303.05	LiveNet	81	88	GAK1i	1	8	0809	59.7632	-149.3967	257	303	IS	Dagg
HX21303.06	LiveNet	82	88	GAK1i	1	8	0919	59.7602	-149.3970	257	304	IS	Dagg
HX21303.07	CTD	139	89	ACC1	1	8	0857	59.7281	-149.3633	240	305	IS	
HX21303.08	CTD	140	90	GAK1i	1	8	0932	59.7647	-149.3994	257	306	IS	5m fsw de#14.
HX21303.09	CTD 10	141	90	GAK1i	1	8	1049	59.7654	-149.3990	257	307	IS	5m wsw de#14 10L CTD.
HX21303.10	CTD	142	90	GAK1i	1	8	1203	59.7651	-149.4017	259	308	IS	
HX21303.11	LiveNet	83	90	GAK1i	1	8	1302	59.7673	-149.3965	259	309	IS	Napp
HX21303.12	LiveNet	84	90	GAK1i	1	8	1309	59.7660	-149.3983	259	310	IS	Dagg
HX21303.13	LiveNet	85	90	GAK1i	1	8	1316	59.7645	-149.4005	259	310a	IS	Dagg
HX21303.14	Tucker	32	90	GAK1i	1	8	1345	59.7635	-149.4003	260	311	IS	
HX21303.15	Tucker	33	90	GAK1i	1	8	1358	59.7740	-149.4065	265	312	IS	
HX21303.16	Tucker	34	90	GAK1i	1	8	1412	59.7812	-149.4120	270	313	IS	
HX21303.17	LiveNet	86	90	GAK1i	1	8	2300	59.7673	-149.3958	258	314	IS	Napp
HX21403.01	CTD	143	90	GAK1i	2	8	0002	59.7668	-149.3978	260	315	IS	File overwritten— Blank.
HX21403.02	Quad053 150	15	90	GAK1i	2	8	0028	59.7619	-149.4067	260	316	IS	
HX21403.03	Quad053 150	16	90	GAK1i	2	8	0100	59.7640	-149.3990	260	317	IS	Fail.
HX21403.04	MOC	26	90	GAK1i	2	8	0117	59.7631	-149.4004	262	318	IS	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21403.05	CTD	144	91	GAK3i	2	8	0353	59.4819	-149.1239	208	319	MS	
HX21403.06	CTD	145	91	GAK3i	2	8	0436	59.5530	-149.1897	214	320	MS	
HX21403.07	CTD	146	92	GAK2i	2	8	0517	59.6264	-149.2607	214	321	IS	
HX21403.08	CTD	147	93	ACC2	2	8	0543	59.6589	-149.2933	220	322	IS	
HX21403.09	CTD	148	94	GAK2	2	8	0610	59.6913	-149.3280	227	323	IS	
HX21403.10	CTD	149	95	ACC1	2	8	0639	59.7290	-149.3632	242	324	IS	
HX21403.11	LiveNet	87	95	ACC1	2	8	0658	59.7283	-149.3625	242	325	IS	Dagg
HX21403.12	LiveNet	88	95	ACC1	2	8	0705	59.7292	-149.3610	241	326	IS	Dagg
HX21403.13	LiveNet	89	95	ACC1	2	8	0712	59.7288	-149.3587	240	327	IS	Napp
HX21403.14	LiveNet	90	95	ACC1	2	8	0719	59.7282	-149.3568	240	328	IS	Napp
HX21403.15	CTD	150	95	ACC1	2	8	0758	59.7278	-149.3604	240	329	IS	18m fsw de#15.
HX21403.16	CTD	151	95	ACC1	2	8	0856	59.7283	-149.3622	240	330	IS	16m wsw de#15.
HX21403.17	CTD	152	95	ACC1	2	8	1000	59.7300	-149.3634	240	331	IS	4m fsw de#16.
HX21403.18	CTD	153	95	ACC1	2	8	1058	59.7297	-149.3650	240	332	IS	4m wsw de#16.
HX21403.19	LiveNet	91	95	ACC1	2	8	1259	59.7288	-149.3607	240	333	IS	Dagg
HX21403.20	LiveNet	92	95	ACC1	2	8	1306	59.7288	-149.3607	240	334	IS	Dagg
HX21403.21	LiveNet	93	95	ACC1	2	8	1311	59.7267	-149.3655	240	335	IS	Napp
HX21403.22	CTD	154	95	ACC1	2	8	1336	59.7273	-149.3662	242	336	IS	
HX21403.23	nd	nd	nd	nd	2	8	1400	nd	nd	nd	nd	nd	Return to Seward for repairs.
HX21403.24	nd	nd	nd	nd	2	8	1930	nd	nd	nd	nd	nd	Depart Seward for rendezvous with Haldorson.
HX21503.01	LiveNet	94	96	GAK4	3	8	0800	59.4082	-149.0492	200	337	MS	Dagg
HX21503.02	LiveNet	95	96	GAK4	3	8	0808	59.4088	-149.0453	200	338	MS	Dagg
HX21503.03	LiveNet	96	96	GAK4	3	8	0816	59.4095	-149.0920	200	339	MS	Napp
HX21503.04	LiveNet	97	96	GAK4	3	8	0823	59.4098	-149.0393	200	340	MS	Napp
HX21503.05	CTD	155	96	GAK4	3	8	1200	59.4077	-149.0489	200	341	MS	
HX21503.06	CTD	156	96	GAK4	3	8	1302	59.4077	-149.0489	200	342	MS	20m fsw de#17.
HX21503.07	LiveNet	98	96	GAK4	3	8	1310	59.4073	-149.0512	200	343	MS	Dagg
HX21503.08	LiveNet	99	96	GAK4	3	8	1324	59.4060	-149.0533	200	344	MS	Napp
HX21503.09	LiveNet	100	96	GAK4	3	8	1336	59.4048	-149.0557	200	345	MS	Napp
HX21503.10	RingNet	22	96	GAK4	3	8	1346	59.4043	-149.0572	200	346	MS	Dagg
HX21503.11	RingNet	23	96	GAK4	3	8	1351	59.4040	-149.0582	200	346a	MS	Dagg
HX21503.12	RingNet	24	96	GAK4	3	8	1400	59.4032	-149.0610	200	347	MS	Dagg
HX21503.13	CTD	157	96	GAK4	3	8	1415	59.4087	-149.0489	200	348	MS	20m wsw de#17.
HX21503.14	Tucker	35	96	GAK4	3	8	1521	59.4085	-149.0690	202	349	MS	
HX21503.15	Tucker	36	96	GAK4	3	8	1539	59.4098	-149.0542	202	350	MS	
HX21503.16	Tucker	37	96	GAK4	3	8	1600	59.4127	-149.0362	198	351	MS	
HX21503.17	CTD	158	97	GAK6	3	8	1818	59.1169	-148.7733	150	352	MS	
HX21503.18	CTD	159	98	GAK5i	3	8	1903	59.1908	-148.8382	165	353	MS	
HX21503.19	CTD	160	99	GAK5	3	8	1945	59.2620	-148.9061	167	354	MS	
HX21503.20	CTD	161	100	GAK4i	3	8	2035	59.3350	-148.9745	195	355	MS	
HX21503.21	CTD	162	101	GAK3i	3	8	2155	59.4815	-149.1202	204	356	MS	
HX21503.22	CTD	163	102	GAK4	3	8	2241	59.4068	-149.0500	204	357	MS	
HX21503.23	LiveNet	101	102	GAK4	3	8	2336	59.4068	-149.0475	199	358	MS	Napp
HX21503.24	CTD	164	102	GAK4	3	8	2356	59.4082	-149.0495	199	359	MS	
HX21603.01	Quad053 150	17	102	GAK4	4	8	0008	59.4069	-149.0506	200	360	MS	
HX21603.02	MOC	27	102	GAK4	4	8	0021	59.4040	-149.0576	200	361	MS	
HX21603.03	LiveNet	102	103	GAK5	4	8	0701	59.2615	-148.9065	168	362	MS	Dagg

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21603.04	LiveNet	103	103	GAK5	4	8	0707	59.2615	-148.9063	168	363	MS	Napp
HX21603.05	LiveNet	104	103	GAK5	4	8	0714	59.2617	-148.9070	168	364	MS	Napp
HX21603.06	LiveNet	105	103	GAK5	4	8	0723	59.2620	-148.9082	168	365	MS	Dagg
HX21603.07	CTD	165	103	GAK5	4	8	0758	59.2625	-148.9088	168	366	MS	5m fsw de#18.
HX21603.08	CTD 10	166	103	GAK5	4	8	0850	59.2603	-148.9093	168	367	MS	5m wsw de#18 10L CTD.
HX21603.09	CTD	167	103	GAK5	4	8	0957	59.2618	-148.9099	167	368	MS	23m fsw de#19.
HX21603.10	CTD	168	103	GAK5	4	8	1041	59.2619	-148.9094	167	369	MS	23m wsw de#19.
HX21603.11	CTD	169	103	GAK5	4	8	1154	59.2623	-148.9096	166	370	MS	
HX21603.12	LiveNet	106	103	GAK5	4	8	1255	59.2617	-148.9080	167	371	MS	Dagg
HX21603.13	LiveNet	107	103	GAK5	4	8	1301	59.2617	-148.9103	167	372	MS	Napp
HX21603.14	LiveNet	108	103	GAK5	4	8	1310	59.2607	-148.9122	167	373	MS	Napp
HX21603.15	RingNet	25	103	GAK5	4	8	1323	59.2590	-148.9143	167	374	MS	Dagg
HX21603.16	RingNet	26	103	GAK5	4	8	1327	59.2587	-148.9152	167	375	MS	Dagg
HX21603.17	LiveNet	109	103	GAK5	4	8	2330	59.2617	-148.9048	165	376	MS	Napp
HX21703.01	CTD	170	103	GAK5	5	8	0003	59.2604	-148.9081	167	377	MS	
HX21703.02	Quad053 150	18	103	GAK5	5	8	0020	59.2587	-148.9039	163	378	MS	
HX21703.03	MOC	28	103	GAK5	5	8	0035	59.2578	-148.8997	165	379	MS	
HX21703.04	CTD	171	104	GAK4i	5	8	0142	59.4093	-149.0496	195	380	MS	
HX21703.05	CTD	172	105	GAK4	5	8	0225	59.4094	-149.0497	199	381	MS	
HX21703.06	CTD	173	106	GAK3i	5	8	0308	59.4818	-149.1187	204	382	MS	
HX21703.07	CTD	174	107	GAK3	5	8	0353	59.5526	-149.1909	213	383	MS	
HX21703.08	LiveNet	110	108	GAK5	5	8	0830	59.2561	-148.9082	168	384	MS	Dagg
HX21703.09	LiveNet	111	108	GAK5	5	8	0839	59.2632	-148.9045	168	385	MS	Napp
HX21703.10	LiveNet	112	108	GAK5	5	8	0849	59.2648	-148.9007	168	386	MS	Napp
HX21703.11	CTD	175	108	GAK5	5	8	0931	59.2608	-148.9080	167	387	MS	23m fsw de#20.
HX21703.12	CTD	176	108	GAK5	5	8	1021	59.2601	-148.9063	167	388	MS	21m wsw de#20.
HX21703.13	CTD	177	108	GAK5	5	8	1200	59.2603	-148.9073	167	389	MS	
HX21703.14	LiveNet	113	108	GAK5	5	8	1226	59.2625	-148.9082	166	390	MS	Dagg
HX21703.15	Quad053 150	19	108	GAK5	5	8	1254	59.2617	-148.8980	163	391	MS	
HX21703.16	Tucker	38	108	GAK5	5	8	1308	59.2610	-148.8958	162	392	MS	
HX21703.17	MOC	29	108	GAK5	5	8	1327	59.2608	-148.9081	166	393	MS	
HX21703.18	CTD	178	109	GAK6	5	8	1441	59.1156	-148.7697	150	394	MS	GA#
HX21703.19	Quad053 150	20	109	GAK6	5	8	1504	59.1165	-148.7700	150	395	MS	
HX21703.20	Tucker	39	109	GAK6	5	8	1518	59.1155	-148.7680	150	396	MS	
HX21703.21	MOC	30	109	GAK6	5	8	1537	59.1170	-148.7720	150	397	MS	
HX21703.22	CTD	179	110	GAK5i	5	8	1627	59.1895	-148.8401	167	398	MS	
HX21703.23	CTD	180	111	GAK5	5	8	1711	59.2618	-148.9101	168	399	MS	chl sampled 25m (chl max).
HX21703.24	CTD	181	112	GAK4i	5	8	1757	59.3344	-148.9780	195	400	MS	
HX21703.25	CTD	182	113	GAK4	5	8	1844	59.4079	-149.0483	201	401	MS	
HX21703.26	Quad053 150	21	113	GAK4	5	8	1907	59.4122	-149.0427	200	402	MS	
HX21703.27	Tucker	40	113	GAK4	5	8	1920	59.4120	-149.0437	200	403	MS	
HX21703.28	MOC	31	113	GAK4	5	8	1936	59.4055	-149.0517	201	404	MS	
HX21703.29	CTD	183	114	GAK3i	5	8	2030	59.4798	-149.1176	205	405	MS	
HX21703.30	CTD	184	115	GAK3	5	8	2121	59.5528	-149.1877	214	406	MS	
HX21703.31	LiveNet	114	116	GAK5	5	8	2333	59.2630	-148.9073	167	407	MS	Napp
HX21703.32	CTD	185	116	GAK5	5	8	2347	59.2636	-148.9024	164	408	MS	
HX21803.01	Quad053 150	22	116	GAK5	6	8	0006	59.2653	-148.8963	165	409	MS	
HX21803.02	MOC	32	116	GAK5	6	8	0023	59.2603	-148.9222	167	410	MS	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21803.03	CTD	186	116	GAK5	6	8	0138	59.2600	-148.9098	167	411	MS	
HX21803.04	CTD	187	117	GAK4i	6	8	0225	59.3337	-148.9786	195	412	MS	
HX21803.05	CTD	188	118	GAK4	6	8	0310	59.4069	-149.0487	200	413	MS	
HX21803.06	CTD	189	119	GAK3i	6	8	0357	59.4805	-149.1194	202	414	MS	
HX21803.07	CTD	190	120	GAK3	6	8	0443	59.5519	-149.1899	213	415	MS	
HX21803.08	LiveNet	115	121	GAK5	6	8	0704	59.2618	-148.9103	168	416	MS	Dagg
HX21803.09	LiveNet	116	121	GAK5	6	8	0715	59.2642	-148.9087	168	417	MS	Napp
HX21803.10	LiveNet	117	121	GAK5	6	8	0727	59.2665	-148.9078	168	418	MS	Napp
HX21803.11	CTD	191	121	GAK5	6	8	0802	59.2622	-148.9073	168	419	MS	5m fsw de#21.
HX21803.12	CTD	192	121	GAK5	6	8	0858	59.2616	-148.9074	168	420	MS	5m wsw de#21.
HX21803.13	CTD	193	121	GAK5	6	8	1001	59.2619	-148.9057	167	421	MS	20m fsw de#22.
HX21803.14	CTD	194	121	GAK5	6	8	1104	59.2615	-148.9063	167	422	MS	22m wsw de#22.
HX21803.15	CTD	195	121	GAK5	6	8	1159	59.2616	-148.9063	167	423	MS	
HX21803.16	Tucker	41	122	GAK4	6	8	1324	59.4092	-149.0462	199	423a	MS	Live Tucker for Jeff, no samples preserved.
HX21803.17	CTD	196	123	GAK3i	6	8	1407	59.4810	-149.1216	204	424	MS	
HX21803.18	Quad053 150	23	123	GAK3i	6	8	1428	59.4800	-149.1227	204	425	MS	
HX21803.19	Tucker	42	123	GAK3i	6	8	1441	59.4810	-149.1237	204	426	MS	
HX21803.20	MOC	33	123	GAK3i	6	8	1458	59.4758	-149.1313	206	427	MS	
HX21803.21	CTD	197	124	GAK3	6	8	1547	59.5534	-149.1882	212	428	MS	
HX21803.22	CTD	198	125	GAK2i	6	8	1639	59.6263	-149.2590	212	429	IS	
HX21803.23	Quad053 150	24	125	GAK2i	6	8	1702	59.6238	-149.2565	212	430	IS	
HX21803.24	Tucker	43	125	GAK2i	6	8	1714	59.6222	-149.2577	214	431	IS	Failed, timer stopped.
HX21803.25	Tucker	44	125	GAK2i	6	8	1726	59.6260	-149.2583	213	432	IS	
HX21803.26	MOC	34	125	GAK2i	6	8	1741	59.6257	-149.2613	213	433	IS	
HX21803.27	CTD	199	126	ACC2	6	8	1843	59.6576	-149.2958	220	434	IS	
HX21803.28	CTD	200	127	GAK2	6	8	1917	59.6912	-149.3276	227	435	IS	
HX21803.29	Quad053 150	25	127	GAK2	6	8	1940	59.6900	-149.3263	227	436	IS	
HX21803.30	Tucker	45	127	GAK2	6	8	1952	59.6907	-149.3255	227	437	IS	
HX21803.31	MOC	35	127	GAK2	6	8	2008	59.6948	-149.3255	228	438	IS	
HX21803.32	CTD	201	128	ACC1	6	8	2040	59.7289	-149.3629	244	438a	IS	
HX21803.33	CTD	202	129	GAK1i	6	8	2115	59.7663	-149.3985	262	438b	IS	
HX21803.34	CTD	203	130	GAK3i	6	8	2323	59.4807	-149.1217	207	439	IS	
HX21803.35	CTD	204	131	WF8	6	8	2353	59.4836	-149.1982	242	440	nd	
HX21903.01	CTD	205	132	WF7	7	8	0025	59.4866	-149.2754	212	441	nd	
HX21903.02	CTD	206	133	WF6	7	8	0055	59.4893	-149.3546	147	442	nd	
HX21903.03	CTD	207	134	WF5	7	8	0124	59.4916	-149.4330	120	443	nd	
HX21903.04	CTD	208	135	WF4	7	8	0158	59.4934	-149.5095	108	444	nd	
HX21903.05	CTD	209	136	WF3	7	8	0225	59.4966	-149.5928	96	445	nd	
HX21903.06	CTD	210	137	WF2	7	8	0248	59.4996	-149.6687	87	446	nd	
HX21903.07	CTD	211	138	WF1	7	8	0312	59.5004	-149.7517	164	447	nd	
HX21903.08	LiveNet	118	138	WF1	7	8	0704	59.5002	-149.7495	162	448	nd	Dagg
HX21903.09	LiveNet	119	138	WF1	7	8	0714	59.4993	-149.7510	162	449	nd	Dagg
HX21903.10	LiveNet	120	138	WF1	7	8	0722	59.4983	-149.7520	167	450	nd	Napp
HX21903.11	LiveNet	121	138	WF1	7	8	0735	59.4970	-149.7552	170	451	nd	Napp
HX21903.12	CTD	212	138	WF1	7	8	0810	59.5005	-149.7495	165	452	nd	TAPS off; GA#23.
HX21903.13	Tucker	46	138	WF1	7	8	0831	59.4998	-149.7463	160	453	nd	
HX21903.14	MOC	36	138	WF1	7	8	0852	59.5029	-149.7418	156	454	nd	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX21903.15	CTD	213	139	WF2	7	8	0927	59.4999	-149.6700	89	455	nd	TAPS off.
HX21903.16	CTD	214	140	WF3	7	8	0956	59.4968	-149.5911	98	456	nd	TAPS off.
HX21903.17	CTD	215	141	WF4	7	8	1024	59.4936	-149.5108	108	457	nd	TAPS off.
HX21903.18	LiveNet	122	142	WF5	7	8	1058	59.4915	-149.4328	122	458	nd	Dagg
HX21903.19	LiveNet	123	142	WF5	7	8	1106	59.4893	-149.4370	119	459	nd	Dagg
HX21903.20	LiveNet	124	142	WF5	7	8	1115	59.4872	-149.4418	118	460	nd	Napp
HX21903.21	CTD	216	142	WF5	7	8	1129	59.4918	-149.4343	120	461	nd	TAPS back on GA #24.
HX21903.22	Tucker	47	142	WF5	7	8	1149	59.4897	-149.4393	119	462	nd	
HX21903.23	MOC	37	142	WF5	7	8	1206	59.4909	-149.4359	150	463	nd	
HX21903.24	CTD	217	143	WF6	7	8	1246	59.4882	-149.3563	146	464	nd	
HX21903.25	CTD	218	144	WF7	7	8	1318	59.4864	-149.2751	212	465	nd	GA #25.
HX21903.26	LiveNet	125	144	WF7	7	8	1346	59.4867	-149.2757	212	466	nd	Napp
HX21903.27	Tucker	48	144	WF7	7	8	1357	59.4850	-149.2765	212	467	nd	
HX21903.28	MOC	38	144	WF7	7	8	1411	59.4885	-149.2738	216	468	nd	
HX21903.29	CTD	219	145	WF8	7	8	1440	59.4836	-149.1969	240	469	nd	
HX21903.30	CTD	220	146	GAK3i	7	8	1520	59.4808	-149.1160	202	470	nd	
HX21903.31	RingNet	27	146	GAK3i	7	8	1534	59.4802	-149.1160	202	471	nd	Dagg
HX21903.32	RingNet	28	146	GAK3i	7	8	1538	59.4797	-149.1167	202	472	nd	Dagg
HX21903.33	CTD	221	147	WF9	7	8	1603	59.4470	-149.1753	226	473	nd	
HX21903.34	CTD	222	148	WF10	7	8	1636	59.4141	-149.2297	168	474	nd	
HX21903.35	CTD	223	149	WF11	7	8	1707	59.3813	-149.2832	156	475	nd	
HX21903.36	CTD	224	150	WF12	7	8	1737	59.3500	-149.3355	153	476	nd	
HX21903.37	CTD	225	151	WF13	7	8	1808	59.3167	-149.3918	136	477	nd	
HX21903.38	CTD	226	152	WF14	7	8	1837	59.2817	-149.4476	149	478	nd	
HX21903.39	LiveNet	126	153	WF15	7	8	1905	59.2497	-149.4993	138	479	nd	Dagg
HX21903.40	LiveNet	127	153	WF15	7	8	1910	59.2497	-149.4998	137	480	nd	Dagg
HX21903.41	LiveNet	128	153	WF15	7	8	1913	59.2495	-149.5007	137	481	nd	Napp
HX21903.42	CTD	227	153	WF15	7	8	1924	59.2494	-149.5017	137	482	nd	
HX21903.43	Tucker	49	153	WF15	7	8	1940	59.2492	-149.5047	138	483	nd	
HX21903.44	MOC	39	153	WF15	7	8	1954	59.2544	-149.4986	137	484	nd	
HX21903.45	CTD	228	154	WF16	7	8	2025	59.2841	-149.5366	128	485	nd	
HX21903.46	LiveNet	129	155	WF17	7	8	2053	59.3198	-149.5722	124	486	nd	Napp
HX21903.47	LiveNet	130	155	WF17	7	8	2101	59.3192	-149.5758	123	487	nd	Dagg
HX21903.48	CTD	229	155	WF17	7	8	2113	59.3167	-149.5802	123	488	nd	
HX21903.49	Tucker	50	155	WF17	7	8	2128	59.3167	-149.5838	120	489	nd	
HX21903.50	MOC	40	155	WF17	7	8	2142	59.3200	-149.5767	123	490	nd	
HX21903.51	CTD	230	156	WF18	7	8	2215	59.3563	-149.6070	101	491	nd	
HX21903.52	CTD	231	157	WF19	7	8	2240	59.3935	-149.6425	110	492	nd	
HX21903.53	CTD	232	158	WF20	7	8	2305	59.4283	-149.6779	103	493	nd	
HX21903.54	CTD	233	159	WF21	7	8	2330	59.4645	-149.7130	113	494	nd	
HX21903.55	CTD	234	160	WF1	7	8	2355	59.5002	-149.7472	161	495	nd	
HX22003.01	Quad053 150	26	160	WF1	8	8	0013	59.5009	-149.7466	163	496	nd	
HX22003.02	MOC	41	160	WF1	8	8	0025	59.4986	-149.7531	171	497	nd	
HX22003.03	CTD	235	161	HE3	8	8	1256	60.1300	-146.6076	114	498	nd	
HX22003.04	CTD	236	162	HE2	8	8	1330	60.1798	-146.6097	197	499	nd	
HX22003.05	CTD	237	163	HE1	8	8	1355	60.2168	-146.6095	77	500	nd	
HX22003.06	CTD	238	164	HE2	8	8	1425	60.1783	-146.6074	192	501	nd	DE23 fsw.
HX22003.07	Quad053 150	27	164	HE2	8	8	1443	60.1792	-146.6042	187	502	nd	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX22003.08	MOC	42	164	HE2	8	8	1502	60.1785	-146.6074	209	503	nd	
HX22003.09	CTD	239	164	HE2	8	8	1558	60.1798	-146.6072	192	504	nd	DE23 wsw.
HX22003.10	LiveNet	131	164	HE2	8	8	1614	60.1785	-146.6072	187	505	nd	Napp
HX22003.11	LiveNet	132	164	HE2	8	8	1623	60.1788	-146.6050	187	506	nd	Dagg
HX22003.12	CTD	240	165	HB1	8	8	2110	60.1926	-147.6989	248	507	nd	
HX22003.13	CTD	241	166	HB2	8	8	2142	60.1803	-147.6409	177	508	nd	
HX22003.14	CTD	242	167	HB3	8	8	2209	60.1646	-147.5746	85	509	nd	
HX22003.15	CTD	243	168	HB1	8	8	2248	60.1935	-147.7000	248	510	nd	
HX22003.16	Quad053 150	28	168	HB1	8	8	2311	60.1927	-147.6997	250	511	nd	
HX22003.17	MOC	43	168	HB1	8	8	2330	60.1937	-147.6985	253	512	nd	
HX22103.01	LiveNet	133	168	HB1	9	8	0025	60.1922	-147.6995	247	513	nd	Napp
HX22103.02	CTD	244	169	MS3	9	8	0210	59.9319	-147.8597	171	514	nd	
HX22103.03	CTD	245	170	MS2	9	8	0235	59.9429	-147.8965	192	515	nd	
HX22103.04	CTD	246	171	MS1	9	8	0257	59.9534	-147.9276	166	516	nd	
HX22103.05	CTD	247	172	CCSE1	9	8	0636	59.7420	-147.8215	61	517	nd	
HX22103.06	CTD	248	173	CCSE2	9	8	0723	59.6674	-147.7262	112	518	nd	
HX22103.07	CTD	249	174	CCSE3	9	8	0823	59.5722	-147.6069	108	519	nd	
HX22103.08	LiveNet	134	174	CCSE3	9	8	0847	59.5712	-147.6082	109	520	nd	Napp
HX22103.09	LiveNet	135	174	CCSE3	9	8	0859	59.5733	-147.6095	110	521	nd	Napp
HX22103.10	LiveNet	136	174	CCSE3	9	8	0910	59.5747	-147.6100	110	522	nd	Dagg
HX22103.11	LiveNet	137	174	CCSE3	9	8	0920	59.5757	-147.6100	110	523	nd	Dagg
HX22103.12	Quad053 150	29	174	CCSE3	9	8	0930	59.5767	-147.6098	112	524	nd	
HX22103.13	CTD	250	174	CCSE3	9	8	0944	59.5701	-147.6104	109	525	nd	DE24 fsw.
HX22103.14	MOC	44	174	CCSE3	9	8	1003	59.5702	-147.6104	109	526	nd	
HX22103.15	CTD	251	174	CCSE3	9	8	1040	59.5699	-147.6096	109	527	nd	DE24 wsw.
HX22103.16	CTD	252	175	PWSW3	9	8	1339	59.8261	-148.3304	121	528	IS	
HX22103.17	CTD	253	176	PWSW2	9	8	1409	59.8751	-148.3326	77	529	IS	
HX22103.18	CTD	254	177	PWSW1	9	8	1438	59.9242	-148.3346	96	530	IS	
HX22103.19	CTD	255	178	PWSW2	9	8	1509	59.8741	-148.3324	76	531	IS	
HX22103.20	Quad053 150	30	178	PWSW2	9	8	1528	59.8742	-148.3325	76	532	IS	
HX22103.21	MOC	45	178	PWSW2	9	8	1539	59.8729	-148.3287	86	533	IS	
HX22103.22	LiveNet	138	178	PWSW2	9	8	1612	59.8755	-148.3305	69	534	IS	Dagg
HX22103.23	LiveNet	139	178	PWSW2	9	8	1621	59.8740	-48.3290	65	535	IS	Napp
HX22103.24	CTD	256	179	CF4	9	8	1813	59.8170	-148.8687	181	536	IS	
HX22103.25	CTD	257	180	CF3	9	8	1843	59.8498	-148.8674	161	537	IS	
HX22103.26	CTD	258	181	CF2	9	8	1909	59.8833	-148.8678	112	538	IS	
HX22103.27	CTD	259	182	CF1	9	8	1931	59.9079	-148.8664	85	539	IS	
HX22103.28	CTD	260	183	CF3	9	8	2017	59.8500	-148.8724	159	540	IS	
HX22103.29	Quad053 150	31	183	CF3	9	8	2040	59.8490	-148.8697	161	541	IS	
HX22103.30	MOC	46	183	CF3	9	8	2053	59.8491	-148.8708	173	542	IS	
HX22103.31	LiveNet	140	183	CF3	9	8	2140	59.8497	-148.8638	164	543	IS	Napp
HX22103.32	CTD	261	184	ACC0	9	8	2330	59.4840	-149.2584	280	544	IS	
HX22203.01	CTD	262	185	GAK1i	10	8	0007	59.7667	-149.3968	262	545	IS	
HX22203.02	CTD	263	186	ACC1	10	8	0041	59.7287	-149.3667	245	546	IS	
HX22203.03	CTD	264	187	GAK2	10	8	0120	59.6910	-149.3308	230	547	IS	
HX22203.04	CTD	265	188	ACC1	10	8	0155	59.7282	-149.3630	242	548	IS	
HX22203.05	Quad053 150	32	188	ACC1	10	8	0225	59.7268	-149.3612	242	549	IS	
HX22203.06	MOC	47	188	ACC1	10	8	0245	59.7265	-149.3607	240	550	IS	

Appendix I: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Cast Depth	Region	SI / Comments
HX22203.07	LiveNet	141	188	ACC1	10	8	0339	59.7307	-149.3588	240	551	IS	Dagg
HX22203.08	LiveNet	142	189	GAK5	10	8	0657	59.2612	-148.9098	165	552	MS	Napp
HX22203.09	LiveNet	143	189	GAK5	10	8	0712	59.2615	-148.9107	165	553	MS	Napp
HX22203.10	CTD	266	189	GAK5	10	8	0800	59.2607	-148.9099	165	554	MS	20m fsw de#25.
HX22203.11	CTD	267	189	GAK5	10	8	0901	59.2615	-148.9092	166	555	MS	15m wsw de#25.
HX22203.12	flow calib	nd	189	GAK5	10	8	0943	59.2633	-148.9160	167	556	MS	Dagg
HX22203.13	CTD	268	189	GAK5	10	8	1014	59.2623	-148.9090	167	557	MS	5m fsw de#26.
HX22203.14	CTD	269	189	GAK5	10	8	1111	59.2625	-148.9085	167	558	MS	5m wsw de#26.
HX22203.15	CTD	270	189	GAK5	10	8	1202	59.2630	-148.9084	167	559	MS	
HX22203.16	flow calib	nd	189	GAK5	10	8	1226	59.2672	-148.9190	167	560	MS	Dagg
HX22203.17	CTD	271	190	GAK6	10	8	1352	59.1160	-148.7675	150	561	MS	DM on watch.
HX22203.18	CTD	272	191	GAK5i	10	8	1436	59.1897	-148.8391	167	562	MS	
HX22203.19	CTD	273	192	GAK5	10	8	1521	59.2630	-148.9061	167	563	MS	
HX22203.20	CTD	274	193	GAK4i	10	8	1607	59.3364	-148.9756	196	564	MS	
HX22203.21	CTD	275	194	GAK4	10	8	1652	59.4092	-149.0460	199	565	MS	
HX22203.22	CTD	276	195	GAK3i	10	8	1737	59.4823	-149.1161	202	566	MS	
HX22203.23	CTD	277	196	GAK3	10	8	1825	59.5534	-149.1886	215	567	MS	
HX22303.01	CTD	278	196	GAK3	11	8	0200	59.5543	-149.1905	214	568	MS	
HX22303.02	CTD	279	197	GAK3i	11	8	0300	59.4815	-149.1177	204	569	MS	
HX22303.03	CTD	280	198	GAK4	11	8	0345	59.9093	-149.0467	202	570	MS	
HX22303.04	CTD	281	199	GAK4i	11	8	0430	59.3353	-148.9770	196	571	MS	
HX22303.05	CTD	282	200	GAK5	11	8	0515	59.2622	-148.9062	166	572	MS	
HX22303.06	CTD	283	201	GAK5i	11	8	0600	59.1897	-148.8358	163	573	MS	
HX22303.07	CTD	284	202	GAK6	11	8	0656	59.1172	-148.7683	148	574	MS	
HX22303.08	CTD	285	203	GAK5	11	8	0830	59.2622	-148.9075	166	575	MS	
HX22303.09	CTD	286	204	GAK4i	11	8	0920	59.3358	-148.9773	194	576	MS	
HX22303.10	CTD	287	205	GAK4	11	8	1000	59.4085	-149.0485	198	577	MS	
HX22303.11	CTD	288	206	GAK3i	11	8	1044	59.4818	-149.0337	203	578	MS	
HX22303.12	CTD	289	207	GAK3	11	8	1128	59.5543	-149.1888	213	579	MS	