

## CRUISE REPORT

Cruise Number: [RB-01-03, Leg 2](#)

FOCI Number: 1RB01

### Ship:

NOAA Ship *Ron Brown*

### Area of Operations:

Gulf of Alaska

### Itinerary:

**Date depart / port:** May 13, 2001 / Seward, AK

**Date arrive / port:** May 23, 2001 / Kodiak, AK

### Participating organizations:

NOAA - Alaska Fisheries Science Center (AFSC)

NOAA - Pacific Marine Environmental Laboratory (PMEL)

### Chief Scientist:

Nancy Kachel  
(206) 526-6780

[nkachel@pmel.noaa.gov](mailto:nkachel@pmel.noaa.gov)

F / PMEL

### Personnel:

Jay Clark

M / AFSC

Nancy Kachel

F / PMEL

Carol Ladd

F / PMEL

Bern Megrey

M / AFSC

Calvin Mordy

M / PMEL

Susan Picquelle

F / AFSC

Sigrid Salo

F / PMEL

Margaret Sullivan

F / PMEL

Destry Wion

M / AFSC

### Cruise Objectives:

The cruise objectives were to:

- (a) Detect movements of nutrient-rich slope water onto the Gulf of Alaska shelf and relate them to temporal and spatial variations in biological distributions and processes;
- (b) Support the process studies taking place concurrently on R/V *Alpha Helix* for GLOBEC/GOA;

- (c) Assess the role of Amatouli Trough in replenishing nutrients to the Gulf of Alaska shelf.

These objectives were met by occupying series of stations at which CTD, CalVET and bongo net hauls were taken, by sampling for nutrient and chlorophyll concentrations, and by deploying satellite-tracked drifters. The underway flow-through measurements included fluorescence and nitrate concentration.

**Summary of Cruise:**  
(See Table 1.)

**Narrative:**

The ship departed Seward, Alaska, on 13 May 2001 at 1600 ADT (14 May 2001 0000 GMT) and arrived at the first CTD/CalVET/Bong station approximately 7 h later. Conductivity-Temperature-Depth (CTD) casts were made with a Sea-Bird 911-Plus instrument with dual temperature and conductivity sensors, a WetLabs fluorometer and a Photosynthetically Active Radiation (PAR) sensor. Water samples for nutrient and chlorophyll analyses were taken from bottles on each cast. At sites deeper than 500 m, the fluorometer and PAR sensors were removed. We removed the latter sensors permanently due to technical problems after station 41. Bongo net hauls were made at most stations. CalVET net hauls were taken on the long lines of stations from the coast to the slope, but not on the Amatouli Trough grid.

A series of 4 lines of stations was occupied in support of the GLOBEC/GOA program (Fig. 1). Stations along the GLOBEC/GAK will also be used for calibrating instruments moored at seven sites along that line. Sampling proceeded to stations 58-90 in order to investigate the role of Amatouli Trough as a pathway for nutrient replenishment of the adjacent shelf (Fig. 2). No CalVET samples were taken on this grid. On May 20, after station 77, operations were halted for 12 h due to strong winds and rough seas. This break came after the first 3 (easternmost) lines on the Amatouli grid had been completed. Stations 91 to 98 repeated stations along the central portion of the GAK line. These will be used in conjunction with the first set of stations on this cruise, and another set taken by the R/V *Alpha Helix* earlier in the month to access temporal variability of the ecosystem on a shorter timescale than previously sampled by the GLOBEC/GOA program.

A series of 13 satellite-tracked drifters, drogued at 40 m, were deployed to measure the movement of currents in the area. First, two were released on the Gore Point line at sites of PMEL moorings, and then seven were deployed (usually near mooring sites) on the GAK line. One was deployed at the end of the Fairfield/FOCI line at FF10. This was to help detect the motion of a nearby eddy. One more was deployed at GAK71 (a mooring site) and the last at the northwestern edge of the Amatouli Trough grid.

The cruise ended at Kodiak Island on May 23 at approximately 0900 ADT. A summary of operations and samples collected follows:

**Summary of Operations:**

<b>Operation</b>	<b>Tows</b>
20-cm bongo (20Bon)	82
60-cm bongo (60Bon)	81
CalCOFI vertical egg tow net (CalVET)	57
Seabird SeaCAT CTD (CAT)	81
CTD without bottle samples (CTD)	1
CTD with bottle samples (CTDB)	9
Deployment of satellite buoy (SatBuoy)	13

<b>Samples Collected</b>	<b>Tows</b>	<b>Number</b>
SeaBird SeaCat CTD (CAT)	81	
Extracted chlorophyll (Chlor)	86	469
SeaBird CTD (CTD)	98	
Deployment of buoy or mooring (Deploy)	13	13
Stimulated fluorescence collected during CTD casts (Fluor)	41	
Larval pollock collected for otolith analysis (L-Oto)	21	55
Nutrients for Calvin Mordy (NutsCM)	94	933
Any other sample type (must explain in haul comments) (Other)	56	56
Photosynthetically Active Radiation data collected during CTD casts (PAR)	41	
Quantitative tow preserved in formalin (QTowF)	218	218
Rough count of pollock juveniles (RCountJ)	3	1
Rough count of pollock larvae (RCountL)	67	54

**Summary of Cruise – Days Lost to Weather:**

0.5

**Days Lost to Equipment Failure:**

None

**Recommendations:**

None

**Acknowledgments:**

The scientific party would like to acknowledge the hard work and support of the officers and crew of the NOAA Ship *Ron Brown*.

**Attachments:**

Table 1. Cruise Summary

Figure 1. Station Map, 4 main lines

Figure 2. Station Map, Amatouli Trough

**Table 1. Cruise Summary for FOCI Cruise 1RB01 (RB-01-03, Leg 2)**

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lon (deg)	Lon (min)	H	Gear	Samples Collected	Haul Comments
14-May-01	7:36	1	1	GP1	CTD001	172	59	6.00 N	150	59.38W	CTDB	"Chlor, CTD, Fluor, Nut"	SpE - Record both flowmeters. Combine both codends into one jar. Forgot flowmeter counts & time. Dummied 99 minutes for flowmeter and 3 min for tow time. Tow time not recorded. Getting oriented.	
14-May-01	8:07	1	2	GP1	CAL001	173	59	6.00 N	150	59.38W	CalVET	"Other, QTowF"		
14-May-01	8:24	1	3	GP1	BON001	163	59	6.16 N	150	59.16W	20Bon	QTowF	SAT DRIFTER #13137 DEPLOYED	
14-May-01	8:24	1	3	GP1	BON001	163	59	6.16 N	150	59.16W	60Bon	"L-Oto, QTowF, RCoun"		
14-May-01	8:24	1	3	GP1	BON001	163	59	6.16 N	150	59.16W	CAT	CAT	SpE- Combine codends in one jar. Codend "came off, recid tow."	
14-May-01	9:35	2	1	GP2	CTD002	160	59	0.64 N	150	57.64W	CTDB	"Chlor, CTD, Fluor, Nut"		
14-May-01	9:57	2	2	GP2	CAL002	160	59	0.64 N	150	57.63W	CalVET	Discard	SpE- Combine codends in one jar. Codend "came off, recid tow."	
14-May-01	10:04	2	3	GP2	CAL002	160	59	0.64 N	150	57.63W	CalVET	"Other, QTowF"	SpE- Combine nets in one jar.	
14-May-01	10:19	2	4	GP2	BON002	174	59	0.8 N	150	57.35W	20Bon	QTowF	SAT DRIFTER #13137 DEPLOYED	
14-May-01	10:19	2	4	GP2	BON002	174	59	0.8 N	150	57.35W	60Bon	"L-Oto, QTowF, RCoun"		
14-May-01	10:19	2	4	GP2	BON002	174	59	0.8 N	150	57.35W	CAT	CAT	SpE-Combine net one and two.	
14-May-01	10:41	2	5	GP2	SAT001	174	59	0.92 N	150	57.08W	SatBuoy	Deploy		
14-May-01	11:23	3	1	GP3	CTD003	144	58	57.01 N	150	55.8W	CTDB	"Chlor, CTD, Fluor, Nut"	SpE-Combine nets 1 and 2.	
14-May-01	11:55	3	2	GP3	CAL003	157	58	57.03 N	150	55.81W	CalVET	"Other, QTowF"		
14-May-01	12:13	3	3	GP3	BON003	156	58	57.08 N	150	55.8W	20Bon	QTowF	SAT DRIFTER # 13138 DEPLOYED	
14-May-01	12:13	3	3	GP3	BON003	156	58	57.08 N	150	55.8W	60Bon	"L-Oto, QTowF, RCoun"		
14-May-01	12:13	3	3	GP3	BON003	156	58	57.08 N	150	55.8W	CAT	CAT	SpE-Combine nets 1 and 2.	
14-May-01	12:32	4	1	GP4	CTD004	166	58	52.8 N	150	53.98W	CTDB	"Chlor, CTD, Fluor, Nut"		
14-May-01	13:41	4	2	GP4	CAL004	166	58	52.8 N	150	54W	CalVET	"Other, QTowF"	SAT DRIFTER # 13138 DEPLOYED	
14-May-01	13:59	4	3	GP4	BON004	166	58	53.23 N	150	53.4W	20Bon	QTowF		
14-May-01	13:59	4	3	GP4	BON004	166	58	53.23 N	150	53.4W	60Bon	"L-Oto, QTowF, RCoun"	SpE-Combine nets 1 and 2.	
14-May-01	13:59	4	3	GP4	BON004	166	58	53.23 N	150	53.4W	CAT	CAT		
14-May-01	14:27	4	4	GP4	SAT002	166	58	52.9 N	150	53.55W	SatBuoy	Deploy	SAT DRIFTER # 13138 DEPLOYED	
14-May-01	15:13	5	1	GP5	CTD005	192	58	49.2 N	150	52.81W	CTDB	"Chlor, CTD, Fluor, Nut"		
14-May-01	15:35	5	2	GP5	CAL005	192	58	49.19 N	150	52.81W	CalVET	"Other, QTowF"	NETS 1 AND TWO COMBINED IN ONE	
14-May-01	15:50	5	3	GP5	BON005	191	58	49.25 N	150	52.45W	20Bon	QTowF		
14-May-01	15:50	5	3	GP5	BON005	191	58	49.25 N	150	52.45W	60Bon	"L-Oto, QTowF, RCoun"	NETS 1 AND 2 COMBINED IN ONE JAR	
14-May-01	15:50	5	3	GP5	BON005	191	58	49.25 N	150	52.45W	CAT	CAT		
14-May-01	16:54	6	1	GP6	CTD006	188	58	44.93 N	150	51.96W	CTDB	"Chlor, CTD, Fluor, Nut"	NETS 1 AND 2 COMBINED IN ONE JAR	
14-May-01	17:16	6	2	GP6	CAL006	188	58	44.93 N	150	51.96W	CalVET	"Other, QTowF"		
14-May-01	17:30	6	3	GP6	BON006	187	58	45.01 N	150	51.59W	20Bon	QTowF	NETS 1 AND 2 COMBINED IN ONE JAR	
14-May-01	17:30	6	3	GP6	BON006	187	58	45.01 N	150	51.59W	60Bon	"L-Oto, QTowF, RCoun"		
14-May-01	17:30	6	3	GP6	BON006	187	58	45.01 N	150	51.59W	CAT	CAT	NETS 1 AND 2 COMBINED IN ONE JAR	
14-May-01	19:04	7	1	GP7	CTD007	184	58	35.3 N	150	47.93W	CTDB	"Chlor, CTD, Fluor, Nut"		
14-May-01	19:30	7	2	GP7	CAL007	183	58	35.3 N	150	47.93W	CalVET	"Other, QTowF"	NETS 1 AND 2 COMBINED IN ONE JAR	
14-May-01	19:38	7	3	GP7	BON007	184	58	35.35 N	150	47.8W	20Bon	QTowF		
14-May-01	19:38	7	3	GP7	BON007	184	58	35.35 N	150	47.8W	60Bon	"L-Oto, "	Chlorophyl taken from wrong Nisken bottles. None for 0 depth. Rest are OK. BAM	
14-May-01	19:38	7	3	GP7	BON007	184	58	35.35 N	150	47.8W	CAT	CAT		
14-May-01	21:09	8	1	GP8	CTD008	79	58	25.71 N	150	43.68W	CTDB	"Chlor, C"	NETS 1 AND 2 COMBINED IN ONE JAR	
14-May-01	21:30	8	2	GP8	CAL008	79	58	25.69 N	150	43.67W	CalVET	"Other, "		
14-May-01	21:40	8	3	GP8	BON008	80	58	25.83 N	150	43.74W	20Bon	QTowF	NETS 1 AND 2 COMBINED IN ONE JAR	
14-May-01	21:40	8	3	GP8	BON008	80	58	25.83 N	150	43.74W	60Bon	"L-Oto, "		
14-May-01	21:40	8	3	GP8	BON008	80	58	25.83 N	150	43.74W	CAT	CAT	HIT BOTTOM	
14-May-01	21:40	8	3	GP8	BON008	80	58	25.83 N	150	43.74W	CAT	CAT	HIT BOTTOM	

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lon (deg)	Lon (min)	H	Gear	Samples Collected	Haul Comments
14-May-01	23:08	9	1	GP9	CTD009	67	58	16.01 N	150	39.47W	CTDB	"Chlor, C"	Chlorophyll taken from wrong Nisken bottles. Depths OK. BAM	
14-May-01	23:31	9	2	GP9	CAL009	66	58	16.09 N	150	40.39W	CalVET	"Other, "	NETS ONE AND TWO COMBINED IN ONE JAR	
14-May-01	23:41	9	3	GP9	BON009	66	58	16.24 N	150	40.88W	20Bon	QTowF	"WIRE OUT NOT RECORDED, ESTIMATED AT 80. Jay Clark	
14-May-01	23:41	9	3	GP9	BON009	66	58	16.24 N	150	40.88W	60Bon	QTowF	"WIRE OUT NOT RECORDED, ESTIMATED AT 80. Jay Clark	
14-May-01	23:41	9	3	GP9	BON009	66	58	16.24 N	150	40.88W	CAT	CAT	"WIRE OUT NOT RECORDED, ESTIMATED AT 80. Jay Clark	
15-May-01	1:10	10	1	GP10	CTD010	153	58	6.28 N	150	35.22W	CTDB	"CTD, F"	No chlorophyll. Samples taken from wrong Nisken bottles. BAM	
15-May-01	1:40	10	2	GP10	CAL010	153	58	6.24 N	150	35.22W	CalVET	"Other, "	NETS 1 AND 2 COMBINED IN ONE JAR	
15-May-01	1:49	10	3	GP10	BON010	151	58	6.22 N	150	35.39W	20Bon	QTowF		
15-May-01	1:49	10	3	GP10	BON010	151	58	6.22 N	150	35.39W	60Bon	"L-Oto, "		
15-May-01	1:49	10	3	GP10	BON010	151	58	6.22 N	150	35.39W	CAT	CAT		
15-May-01	3:23	11	1	GP11	CTD011	153	58	6.23 N	150	57.71W	CTDB	"CTD, F"		
15-May-01	5:08	12	1	GP12	CTD012	142	58	6.29 N	151	20.59W	CTDB	"CTD, F"		
15-May-01	6:46	13	1	GP13	CTD013	160	58	6.24 N	151	42.98W	CTDB	"CTD, F"		
15-May-01	15:59	14	1	SR1	CTD014	206	59	31.07 N	149	48.99W	CTDB	"Chlor, C"		
15-May-01	16:23	14	2	SR1	CAL011	206	59	31.06 N	149	48.99W	CalVET	"Other, "	COMBINED NETS 1 AND 2 IN ONE JAR	
15-May-01	16:43	14	3	SR1	BON011	204	59	31.02 N	149	48.84W	20Bon	QTowF	"20BON NET 1 TANGLED IN FRAME, USED NET 2	
15-May-01	16:43	14	3	SR1	BON011	204	59	31.02 N	149	48.84W	60Bon	"L-Oto, "	"20BON NET 1 TANGLED IN FRAME, USED NET 2	
15-May-01	16:43	14	3	SR1	BON011	204	59	31.02 N	149	48.84W	CAT	CAT	"20BON NET 1 TANGLED IN FRAME, USED NET 2	
15-May-01	17:53	15	1	SR2	CTD015	202	59	25.8 N	149	45.43W	CTDB	"Chlor, C"	Spilled small amount of 30m chlorophyll	
15-May-01	18:13	15	2	SR2	CAL012	204	59	25.8 N	149	45.43W	CalVET	"Other, "	COMBINED NETS 1 AND 2 IN ONE JAR	
15-May-01	18:27	15	3	SR2	BON012	200	59	25.87 N	149	45W	20Bon	QTowF		
15-May-01	18:27	15	3	SR2	BON012	200	59	25.87 N	149	45W	60Bon	"L-Oto, "		
15-May-01	18:27	15	3	SR2	BON012	200	59	25.87 N	149	45W	CAT	CAT		
15-May-01	19:33	16	1	SR3	CTD016	128	59	20.27 N	149	39.9W	CTDB	"Chlor, C"	NETS 1 AND 2 COMBINED IN ONE J	
15-May-01	19:49	16	2	SR3	CAL013	141	59	20.27 N	149	39.9W	CalVET	"Other, QTowF"		
15-May-01	20:00	16	3	SR3	BON013	133	59	20.34 N	149	39.66W	20Bon	QTowF		
15-May-01	20:00	16	3	SR3	BON013	133	59	20.34 N	149	39.66W	60Bon	"L-Oto, QTowF, RCoun"		
15-May-01	20:00	16	3	SR3	BON013	133	59	20.34 N	149	39.66W	CAT	CAT		
15-May-01	20:56	17	1	SR4	CTD017	133	59	14.8 N	149	34.33W	CTDB	"Chlor, CTD, Fluor, Nut"	Chlorophyll taken from wrong Nisken bottle. Depths are correct as listed - Bern M.	
15-May-01	21:21	17	2	SR4	CAL014	133	59	14.8 N	149	34.33W	CalVET	"Other, QTowF"	SpE-Combined nets 1 and 2 in same jar.	
15-May-01	21:27	17	3	SR4	BON014	133	59	14.82 N	149	34.23W	20Bon	QTowF		
15-May-01	21:27	17	3	SR4	BON014	133	59	14.82 N	149	34.23W	60Bon	QTowF		
15-May-01	21:27	17	3	SR4	BON014	133	59	14.82 N	149	34.23W	CAT	CAT		
15-May-01	22:34	18	1	SR5	CTD018	148	59	9.23 N	149	28.83W	CTDB	"Chlor, CTD, Fluor, Nut"	Chlorophyll taken from the wrong Nisken bottles. Depths listed are correct - Bern	
15-May-01	22:58	18	2	SR5	CAL015	147	59	9.25 N	149	28.84W	CalVET	"Other, QTowF"	SpE- Combined nets 1 and 2 in same jar.	
15-May-01	23:03	18	3	SR5	BON015	145	59	9.34 N	149	28.56W	20Bon	QTowF	Flowmeters spinning in air - very fast.	
15-May-01	23:03	18	3	SR5	BON015	145	59	9.34 N	149	28.56W	60Bon	"L-Oto, QTowF, RCoun"	Flowmeters spinning in air - very fast.	
15-May-01	23:03	18	3	SR5	BON015	145	59	9.34 N	149	28.56W	CAT	CAT		
16-May-01	0:15	19	1	SR6	CTD019	210	59	3.65 N	149	23.29W	CTDB	"CTD, Fluor, NutsCM, P"	No Chlorophyll samples. Water taken from the wrong Nisken bottles - Bern M.	
16-May-01	0:43	19	2	SR6	CAL016	208	59	3.68 N	149	23.33W	CalVET	"Other, QTowF"	Flowmeters spinning fast in wind.	
16-May-01	0:49	19	3	SR6	BON016	210	59	3.72 N	149	23.33W	20Bon	QTowF		

Table 1-2

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lat (sec)	Lon (deg)	Lon (min)	Lon (sec)	Gear	Samples Collected	Haul Comments
16-May-01	0:49	19	3	SR6	BON016	210	59	3.72	N	149	23.33	W	60Bon	QTowF	Flowmeters spinning fast in wind.
16-May-01	0:49	19	3	SR6	BON016	210	59	3.72	N	149	23.33	W	CAT		
16-May-01	2:15	20	1	SR7	CTD020	232	58	58.08	N	149	17.9	W	CTDB	"CTD, Fluor, NutsCM, P"	No chlorophyll. Samples taken from wrong Niskin bottles - Bern M.
16-May-01	2:44	20	2	SR7	CAL017	232	58	58.1	N	149	17.91	W	CalVET	"Other, QTowF"	SpE - Combine nets 1 and 2.
16-May-01	2:50	20	3	SR7	BON017	232	58	58.12	N	149	17.86	W	20Bon	QTowF	
16-May-01	2:50	20	3	SR7	BON017	232	58	58.12	N	149	17.86	W	60Bon	"L-Oto, QTowF, RCoun"	
16-May-01	2:50	20	3	SR7	BON017	232	58	58.12	N	149	17.86	W	CAT		
16-May-01	4:09	21	1	SR8	CTD021	203	58	52.51	N	149	12.44	W	CTDB	"CTD, Fluor, NutsCM, P"	No chlorophyll. Samples taken from wrong Niskin bottles - Bern M.
16-May-01	4:35	21	2	SR8	CAL018	203	58	52.15	N	149	12.44	W	CalVET	"Other, QTowF"	SpE - Combine nets 1 and 2.
16-May-01	4:42	21	3	SR8	BON018	203	58	52.52	N	149	12.4	W	20Bon	QTowF	
16-May-01	4:42	21	3	SR8	BON018	203	58	52.52	N	149	12.4	W	60Bon	"L-Oto, QTowF, RCoun"	
16-May-01	4:42	21	3	SR8	BON018	203	58	52.52	N	149	12.4	W	CAT		
16-May-01	5:54	22	1	SR9	CTD022	218	58	46.98	N	149	6.92	W	CTDB	"Chlor, CTD, Fluor, Nut"	
16-May-01	6:20	22	2	SR9	CAL019	218	58	46.98	N	149	6.92	W	CalVET	"Other, QTowF"	SpE-Combine nets 1 and 2.
16-May-01	6:28	22	3	SR9	BON019	221	58	46.98	N	149	6.8	W	20Bon	QTowF	
16-May-01	6:28	22	3	SR9	BON019	221	58	46.98	N	149	6.8	W	60Bon	QTowF	
16-May-01	6:28	22	3	SR9	BON019	221	58	46.98	N	149	6.8	W	CAT		
16-May-01	7:50	23	1	SR10	CTD023	152	58	41.47	N	149	1.44	W	CTDB	"Chlor, CTD, Fluor, Nut"	
16-May-01	8:09	23	2	SR10	CAL020	153	58	41.47	N	149	1.45	W	CalVET	"Other, QTowF"	SpE -Combine nets 1 and 2.
16-May-01	8:22	23	3	SR10	BON020	153	58	41.6	N	149	0.81	W	20Bon	QTowF	
16-May-01	8:22	23	3	SR10	BON020	153	58	41.6	N	149	0.81	W	60Bon	QTowF	
16-May-01	8:22	23	3	SR10	BON020	153	58	41.6	N	149	0.81	W	CAT		
16-May-01	9:55	24	1	SR11	CTD024	116	58	33.12	N	148	53.3	W	CTDB	"Chlor, CTD, Fluor, Nut"	
16-May-01	10:12	24	2	SR11	CAL021	117	58	33.14	N	148	53.32	W	CalVET	"Other, QTowF"	SpE - Combine nets 1 and 2.
16-May-01	10:24	24	3	SR11	BON021	117	58	33.21	N	148	52.9	W	20Bon	QTowF	
16-May-01	10:24	24	3	SR11	BON021	117	58	33.21	N	148	52.9	W	60Bon	QTowF	
16-May-01	10:24	24	3	SR11	BON021	117	58	33.21	N	148	52.9	W	CAT		
16-May-01	11:53	25	1	SR12	CTD025	129	58	24.75	N	148	45.25	W	CTDB	"Chlor, CTD, Fluor, Nut"	
16-May-01	12:09	25	2	SR12	CAL022	129	58	24.75	N	148	45.25	W	CalVET	"Other, QTowF"	SpE -Combine nets 1 and 2.
16-May-01	12:23	25	3	SR12	BON022	129	58	24.89	N	148	45.06	W	20Bon	QTowF	
16-May-01	12:23	25	3	SR12	BON022	129	58	24.89	N	148	45.06	W	60Bon	QTowF	
16-May-01	12:23	25	3	SR12	BON022	129	58	24.89	N	148	45.06	W	CAT		
16-May-01	14:09	26	1	SR13	CTD026	329	58	16.41	N	148	37.13	W	CTDB	"Chlor, CTD, NutsCM"	Fluor and Par taken off CTD.
16-May-01	14:32	26	2	SR13	CAL023	329	58	16.41	N	148	37.12	W	CalVET	"Other, QTowF"	SpE - Combine nets 1 and 2.
16-May-01	14:51	26	3	SR13	BON023	324	58	16.51	N	148	36.97	W	20Bon	QTowF	
16-May-01	14:51	26	3	SR13	BON023	324	58	16.51	N	148	36.97	W	60Bon	QTowF	
16-May-01	14:51	26	3	SR13	BON023	324	58	16.51	N	148	36.97	W	CAT		
16-May-01	17:06	27	1	SR14	CTD027	1201	58	8.04	N	148	29.16	W	CTDB	"Chlor, CTD, NutsCM"	
16-May-01	17:39	27	2	SR14	CAL024	1200	58	8.04	N	148	29.17	W	CalVET	"Other, QTowF"	SpE - Combine nets 1 and 2.
16-May-01	17:58	27	3	SR14	BON024	1212	58	8.19	N	148	28.7	W	20Bon	QTowF	
16-May-01	17:58	27	3	SR14	BON024	1212	58	8.19	N	148	28.7	W	60Bon	QTowF	
16-May-01	17:58	27	3	SR14	BON024	1212	58	8.19	N	148	28.7	W	CAT		
16-May-01	19:38	28	1	SR15	CTD028	1254	57	59.76	N	148	21.15	W	CTDB	"Chlor, CTD, NutsCM"	
16-May-01	20:51	28	2	SR15	CAL025	1255	57	59.76	N	148	21.14	W	CalVET	"Other, QTowF"	Combined nets 1 and 2.
16-May-01	20:56	28	3	SR15	BON025	1256	57	59.78	N	148	21.09	W	20Bon	QTowF	
16-May-01	20:56	28	3	SR15	BON025	1256	57	59.78	N	148	21.09	W	60Bon	QTowF	
16-May-01	20:56	28	3	SR15	BON025	1256	57	59.78	N	148	21.09	W	CAT		
17-May-01	0:49	29	1	GAK14A	CTD029	1500	58	12	N	147	23.97	W	CTDB	"CTD, NutsCM"	
16-May-01	3:03	30	1	FATE-1	CTD030	2361	58	14	N	147	39.99	W	CTDB	"Chlor, CTD, NutsCM"	
17-May-01	6:52	31	1	GAK12	CTD031	2213	58	14.65	N	147	56.01	W	CTDB	"Chlor, CTD, NutsCM"	

Table 1-3

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lat (N)	Lon (deg)	Lon (min)	Lon (W)	Gear	Samples Collected	Haul Comments
17-May-01	7:32	31	2	GAK12	CAL026	2162	58	14.65	N	147	56.01	W	CalVET	"Other, QTowF"	NETS 1 AND 2 COMBINED
17-May-01	7:48	31	3	GAK12	BON026	2204	58	14.78	N	147	55.52	W	20Bon	QTowF	
17-May-01	7:48	31	3	GAK12	BON026	2204	58	14.78	N	147	55.52	W	20Bon	"QTowF, RCountL"	
17-May-01	7:48	31	3	GAK12	BON026	2204	58	14.78	N	147	55.52	W	CAT	CAT	
17-May-01	8:18	31	4	GAK12	SAT003	2258	58	15.09	N	147	54.8	W	SatBuoy	Deploy	DRIFTER# 13142
17-May-01	9:54	32	1	GAK11	CTD032	1435	58	23.31	N	148	4.23	W	CTDB	"Chlor, CTD, Fluor, Nut"	
17-May-01	10:37	32	2	GAK11	CAL027	1435	58	23.31	N	148	4.23	W	CalVET	"Other, QTowF"	NETS 1 AND 2 COMBINED
17-May-01	10:55	32	3	GAK11	BON027	1444	58	23.38	N	148	3.59	W	20Bon	"Other, QTowF"	
17-May-01	10:55	32	3	GAK11	BON027	1444	58	23.38	N	148	3.59	W	20Bon	"QTowF, RCountL"	
17-May-01	10:55	32	3	GAK11	BON027	1444	58	23.38	N	148	3.59	W	CAT	CAT	
17-May-01	13:08	33	1	GAK10	CTD033	1476	58	32.45	N	148	12.62	W	CTDB	"Chlor, CTD, NutsCM"	"NET 1 SAMPLE SPILLED ON DECK, ON"USED
17-May-01	13:51	33	2	GAK10	CAL028	1475	58	32.45	N	148	12.62	W	CalVET	QTowF	NET 2
17-May-01	14:07	33	3	GAK10	BON028	1467	58	32.62	N	148	12.64	W	20Bon	QTowF	
17-May-01	14:07	33	3	GAK10	BON028	1467	58	32.62	N	148	12.64	W	60Bon	"QTowF, RCountJ"	
17-May-01	14:07	33	3	GAK10	BON028	1467	58	32.62	N	148	12.64	W	CAT	CAT	
17-May-01	14:34	33	4	GAK10	SAT004	1475	58	32.97	N	148	13.05	W	SatBuoy	Deploy	DRIFTER # 13141
17-May-01	15:50	34	1	GAK9	CTD034	282	58	40.8	N	148	20.98	W	CTD	"CTD, Fluor, PAR"	"CTD CAST IS OK, BUT BOTTLES DID N"TRIP
17-May-01	16:12	34	2	GAK9	CAL029	283	58	40.8	N	148	20.98	W	CalVET	"Other, QTowF"	COMBINED NET ONE AND TWO
17-May-01	16:32	34	3	GAK9	BON029	286	58	40.79	N	148	20.41	W	20Bon	QTowF	
17-May-01	16:32	34	3	GAK9	BON029	286	58	40.79	N	148	20.41	W	60Bon	"QTowF, RCountL"	
17-May-01	16:32	34	3	GAK9	BON029	286	58	40.79	N	148	20.41	W	CAT	CAT	
17-May-01	17:21	34	4	GAK9	CTD035	283	58	40.81	N	148	21	W	CTDB	"Chlor, CTD, Fluor, Nut"	RE-DO OF HAUL 1
17-May-01	18:52	35	1	GAK8	CTD036	294	58	47.52	N	148	29.36	W	CTDB	"Chlor, CTD, Fluor, Nut"	
17-May-01	19:13	35	2	GAK8	CAL030	294	58	47.51	N	148	29.36	W	CalVET	"Other, QTowF"	Combine Nets 1 and 2
17-May-01	19:19	35	3	GAK8	BON030	294	58	47.52	N	148	29.24	W	20Bon	QTowF	
17-May-01	19:19	35	3	GAK8	BON030	294	58	47.52	N	148	29.24	W	60Bon	"L-Oto, QTowF, RCount"	
17-May-01	19:19	35	3	GAK8	BON030	294	58	47.52	N	148	29.24	W	CAT	CAT	
17-May-01	20:32	36	1	GAK71	CTD037	305	58	52.92	N	148	33.53	W	CTDB	"Chlor, CTD, Fluor, Nut"	bottles @0 and 15m did not fire. Only 2 bottles at 15m
17-May-01	21:08	36	2	GAK71	CAL031	304	58	52.96	N	148	33.72	W	CalVET	"Other, QTowF"	Combine nets 1 and 2
17-May-01	21:13	36	3	GAK71	BON031	303	58	52.97	N	148	33.68	W	20Bon	QTowF	
17-May-01	21:13	36	3	GAK71	BON031	303	58	52.97	N	148	33.68	W	60Bon	"QTowF, RCountL"	
17-May-01	21:13	36	3	GAK71	BON031	303	58	52.97	N	148	33.68	W	CAT	CAT	
17-May-01	21:51	36	4	GAK71	SAT005	274	58	53.3	N	148	32.15	W	SatBuoy	Deploy	# 13156
17-May-01	22:28	37	1	GAK7	CTD038	245	58	58.32	N	148	37.71	W	CTDB	"CTD, Fluor, NutsCM, P"	Combine nets 1 and 2
17-May-01	22:59	37	2	GAK7	CAL032	245	58	58.37	N	148	37.73	W	CalVET	"Other, QTowF"	
17-May-01	23:05	37	3	GAK7	BON032	245	58	58.38	N	148	37.62	W	20Bon	QTowF	
17-May-01	23:05	37	3	GAK7	BON032	245	58	58.38	N	148	37.62	W	60Bon	"QTowF, RCountL"	
17-May-01	23:05	37	3	GAK7	BON032	245	58	58.38	N	148	37.62	W	CAT	CAT	
17-May-01	23:05	37	3	GAK7	BON032	245	58	58.38	N	148	37.62	W	CAT	CAT	
18-May-01	0:20	38	1	GAK61	CTD039	182	59	3.73	N	148	41.98	W	CTDB	"CTD, Fluor, PAR"	bottles fired @ unknown depths
18-May-01	0:55	38	2	GAK61	CAL033	182	59	3.7	N	148	42	W	CalVET	"Other, QTowF"	Combine nets 1 and 2
18-May-01	1:01	38	3	GAK61	BON033	182	59	3.69	N	148	41.9	W	20Bon	QTowF	
18-May-01	1:01	38	3	GAK61	BON033	182	59	3.69	N	148	41.9	W	60Bon	"QTowF, RCountL"	
18-May-01	1:01	38	3	GAK61	BON033	182	59	3.69	N	148	41.9	W	CAT	CAT	
18-May-01	2:06	38	4	GAK61	CTD040	183	59	3.64	N	148	41.98	W	CTDB	"Chlor, CTD, Fluor, PA"	Bottles still wont work. Surface chlorophyll taken from ship flow thru system
18-May-01	3:04	39	1	GAK6	CTD041	154	59	7.05	N	148	46.17	W	CTDB	"Chlor, CTD, Fluor, Nut"	
18-May-01	3:29	39	2	GAK6	CAL034	155	59	7.03	N	148	46.19	W	CalVET	"Other, QTowF"	Combine nets 1 and 2
18-May-01	3:35	39	3	GAK6	BON034	155	59	7.02	N	148	46.12	W	20Bon	QTowF	
18-May-01	3:35	39	3	GAK6	BON034	155	59	7.02	N	148	46.12	W	60Bon	"QTowF, RCountL"	
18-May-01	3:35	39	3	GAK6	BON034	155	59	7.02	N	148	46.12	W	CAT	CAT	

Table 1-4



Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lat (sec)	Lon (deg)	Lon (min)	Lon (sec)	Gear	Samples Collected	Haul Comments
18-May-01	4:31	39	4	GAK6	SAT006	170	59	11.38	N	148	50.26	W	SatBuoy	Deploy	#13127 BETWEEN GAK 6 AND GAK 5
18-May-01	5:06	40	1	GAK5	CTD042	172	59	15.78	N	148	54.45	W	CTDB	"Chlor, CTD, NutsCM"	
18-May-01	5:29	40	2	GAK5	CAL035	172	59	15.78	N	148	54.46	W	CalVET	"Other, QTowF"	Combine nets 1 and 2
18-May-01	5:45	40	3	GAK5	BON035	168	59	15.67	N	148	53.71	W	20Bon	QTowF	
18-May-01	5:45	40	3	GAK5	BON035	168	59	15.67	N	148	53.71	W	60Bon	"QTowF, RCountL"	
18-May-01	5:45	40	3	GAK5	BON035	168	59	15.67	N	148	53.71	W	CAT	CAT	
18-May-01	7:23	41	1	GAK4	CTD043	224	59	24.51	N	149	2.84	W	CTDB	"Chlor, CTD, NutsCM"	One of the 15m bottles did not trip
18-May-01	7:41	41	2	GAK4	CAL036	204	59	24.52	N	149	2.84	W	CalVET	"Other, QTowF"	COMBINED NETS 1 AND 2
18-May-01	7:54	41	3	GAK4	BON36	203	59	24.6	N	149	2.31	W	20Bon	QTowF	
18-May-01	7:54	41	3	GAK4	BON36	203	59	24.6	N	149	2.31	W	60Bon	"QTowF, RCountJ"	
18-May-01	7:54	41	3	GAK4	BON36	203	59	24.6	N	149	2.31	W	CAT	CAT	
18-May-01	8:17	41	4	GAK4	SAT007	201	59	24.92	N	149	1.55	W	SatBuoy	Deploy	DRIFTER #13139
18-May-01	9:30	42	1	GAK3	CTD044	217	59	33.24	N	149	11.22	W	CTDB	"Chlor, CTD, NutsCM"	
18-May-01	9:52	42	2	GAK3	CAL037	219	59	33.23	N	149	11.21	W	CalVET	"Other, QTowF"	
18-May-01	10:06	42	3	GAK3	BON037	214	59	33.28	N	149	10.65	W	20Bon	QTowF	NETS 1 AND 2 COMBINED
18-May-01	10:06	42	3	GAK3	BON037	214	59	33.28	N	149	10.65	W	60Bon	"QTowF, RCountL"	"Net 1 of 20cm bongo wrapped up, used net"
18-May-01	10:06	42	3	GAK3	BON037	214	59	33.28	N	149	10.65	W	CAT	CAT	"Net 1 of 20cm bongo wrapped up, used net"
18-May-01	10:30	42	4	GAK3	SAT008	210	59	33.52	N	149	9.65	W	SatBuoy	Deploy	DRIFTER #13140
18-May-01	11:41	43	1	GAK2	CTD045	230	59	41.54	N	149	19.58	W	CTDB	"Chlor, CTD, NutsCM"	
18-May-01	12:00	43	2	GAK2	CAL038	230	59	41.54	N	149	19.58	W	CalVET	"Other, QTowF"	
18-May-01	12:14	43	3	GAK2	BON038	229	59	41.69	N	149	19.42	W	20Bon	QTowF	COMBINED NETS 1 AND 2
18-May-01	12:14	43	3	GAK2	BON038	229	59	41.69	N	149	19.42	W	60Bon	"L-Oto, QTowF, RCount"	
18-May-01	12:14	43	3	GAK2	BON038	229	59	41.69	N	149	19.42	W	CAT	CAT	
18-May-01	12:38	43	4	GAK2	SAT009	229	59	41.99	N	149	19.38	W	SatBuoy	Deploy	DRIFTER #13131
18-May-01	14:01	44	1	GAK1	CTD046	274	59	50.75	N	149	27.96	W	CTDB	"Chlor, CTD, NutsCM"	20M BOTTLE DID NOT TRIP
18-May-01	14:21	44	2	GAK1	CAL039	274	59	50.75	N	149	27.96	W	CalVET	"Other, QTowF"	COMBINED NETS 1 AND 2
18-May-01	14:39	44	3	GAK1	BON039	290	59	50.44	N	149	27.67	W	20Bon	QTowF	"HIT BOTTOM, SOME SILT IN SAMPLE"
18-May-01	14:39	44	3	GAK1	BON039	290	59	50.44	N	149	27.67	W	60Bon	"L-Oto, QTowF, RCount"	"HIT BOTTOM, SOME SILT IN SAMPLE"
18-May-01	14:39	44	3	GAK1	BON039	290	59	50.44	N	149	27.67	W	CAT	CAT	"HIT BOTTOM, SOME SILT IN SAMPLE"
18-May-01	17:35	45	1	FF1	CTD047	184	59	48.13	N	148	46.4	W	CTDB	"Chlor, CTD, NutsCM"	
18-May-01	17:53	45	2	FF1	CAL040	184	59	48.13	N	148	46.39	W	CalVET	"Other, QTowF"	Combine nets 1 and 2.
18-May-01	18:00	45	3	FF1	BON040	185	59	48.05	N	148	46.42	W	20Bon	QTowF	
18-May-01	18:00	45	3	FF1	BON040	185	59	48.05	N	148	46.42	W	60Bon	"QTowF, RCountL"	
18-May-01	18:00	45	3	FF1	BON040	185	59	48.05	N	148	46.42	W	CAT	CAT	
18-May-01	19:10	46	1	FF2	CTD048	196	59	42.6	N	148	40.61	W	CTDB	"Chlor, CTD, NutsCM"	Bottle for 30m did not trip.
18-May-01	19:44	46	2	FF2	CAL041	196	59	42.59	N	148	40.61	W	CalVET	"Other, QTowF"	Combine nets 1 and 2.
18-May-01	19:51	46	3	FF2	BON041	196	59	42.58	N	148	40.43	W	20Bon	QTowF	
18-May-01	19:51	46	3	FF2	BON041	196	59	42.58	N	148	40.43	W	60Bon	"QTowF, RCountL"	
18-May-01	19:51	46	3	FF2	BON041	196	59	42.58	N	148	40.43	W	CAT	CAT	
18-May-01	20:56	47	1	FF3	CTD049	96	59	37.02	N	148	35.29	W	CTDB	"Chlor, CTD, Fluor, NutsCM, PAR"	CTD 50m bottle did not fire.
18-May-01	21:17	47	2	FF3	CAL042	96	59	37.02	N	148	35.3	W	CalVET	"Other, QTowF"	Combine nets 1 and 2.
18-May-01	21:26	47	3	FF3	BON042	95	59	37.03	N	148	35.51	W	20Bon	QTowF	
18-May-01	21:26	47	3	FF3	BON042	95	59	37.03	N	148	35.51	W	60Bon	"QTowF, RCountL"	
18-May-01	21:26	47	3	FF3	BON042	95	59	37.03	N	148	35.51	W	CAT	CAT	
18-May-01	22:26	48	1	FF4	CTD050	98	59	31.49	N	148	29.66	W	CTDB	"CTD, Fluor, PAR"	No chlorophylls taken. Bottles not set right. CTD cast repeated.
18-May-01	22:46	48	2	FF4	CAL043	98	59	31.49	N	148	29.66	W	CalVET	"Other, QTowF"	Combine nets 1 and 2.
18-May-01	22:52	48	3	FF4	BON043	98	59	31.48	N	149	29.75	W	20Bon	QTowF	
18-May-01	22:52	48	3	FF4	BON043	98	59	31.48	N	149	29.75	W	60Bon	"QTowF, RCountL"	
18-May-01	22:52	48	3	FF4	BON043	98	59	31.48	N	149	29.75	W	CAT	CAT	
18-May-01	23:05	48	4	FF4	CTD051	96	59	31.4	N	148	30.37	W	CTDB	"Chlor, CTD, Fluor, NutsCM, PAR"	
19-May-01	0:12	49	1	FF5	CTD052	143	59	25.93	N	148	24.1	W	CTDB	"Chlor, CTD, Fluor, NutsCM, PAR"	

Table 1-5

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lon (deg)	Lon (min)	H	Gear	Samples Collected	Haul Comments
19-May-01	0:34	49	2	FF5	CAL044	143	59	25.93 N	148	24.1W	20Bon	CalVET	"Other, QTowF"	Combine nets 1 and 2.
19-May-01	0:39	49	3	FF5	BON044	143	59	25.93 N	148	24.1W	60Bon	QTowF		
19-May-01	0:39	49	3	FF5	BON044	143	59	25.93 N	148	24.1W	20Bon	"QTowF, RCountL"		
19-May-01	0:39	49	3	FF5	BON044	143	59	25.93 N	148	24.1W	CAT			
19-May-01	2:00	50	1	FF6	CTD053	125	59	17.57 N	148	15.78W	CTDB	"Chlor, CTD, Fluor, NutsCM, PAR"	Combine nets 1 and 2.	
19-May-01	2:19	50	2	FF6	CAL045	124	59	17.57 N	148	15.78W	CalVET	QTowF		
19-May-01	2:27	50	3	FF6	BON045	124	59	17.56 N	148	15.88W	20Bon	"QTowF, RCountL"		
19-May-01	2:27	50	3	FF6	BON045	124	59	17.56 N	148	15.88W	60Bon	CAT		
19-May-01	2:27	50	3	FF6	BON045	124	59	17.56 N	148	15.88W	CAT			
19-May-01	3:52	51	1	FF7	CTD054	141	59	9.27 N	148	7.44W	CTDB	"Chlor, CTD, Fluor, NutsCM, PAR"	Combine nets 1 and 2.	
19-May-01	4:15	51	2	FF7	CAL046	141	59	9.27 N	148	7.44W	CalVET	QTowF		
19-May-01	4:20	51	3	FF7	BON046	140	59	9.24 N	148	7.53W	20Bon	"Other, QTowF"	Combine nets 1 and 2.	
19-May-01	4:20	51	3	FF7	BON046	140	59	9.24 N	148	7.53W	60Bon	QTowF		
19-May-01	4:20	51	3	FF7	BON046	140	59	9.24 N	148	7.53W	CAT			
19-May-01	5:45	52	1	FF8	CTD055	166	59	0.92 N	147	59.27W	CTDB	"Chlor, CTD, Fluor, NutsCM, PAR"	Combine nets 1 and 2	
19-May-01	6:11	52	2	FF8	CAL047	167	59	0.92 N	147	59.27W	CalVET	"Other, QTowF"	Combine nets 1 and 2	
19-May-01	6:17	52	3	FF8	BON047	171	59	0.86 N	147	59.41W	20Bon	QTowF	Flowmeters on 60BON spinning in the wind.	
19-May-01	6:17	52	3	FF8	BON047	171	59	0.86 N	147	59.41W	60Bon	"QTowF, RCountL"	Flowmeters on 60BON spinning in the wind.	
19-May-01	6:17	52	3	FF8	BON047	171	59	0.86 N	147	59.41W	CAT			
19-May-01	8:04	53	1	FF9	CTD056	1167	58	52.6 N	147	51.05W	CTDB	"Chlor, CTD, NutsCM"	COMBINED NETS 1 AND 2	
19-May-01	8:42	53	2	FF9	CAL048	1167	58	52.59 N	147	51.05W	CalVET	"Other, QTowF"		
19-May-01	8:58	53	3	FF9	BON048	1158	58	52.37 N	147	51.5W	20Bon	QTowF		
19-May-01	8:58	53	3	FF9	BON048	1158	58	52.37 N	147	51.5W	60Bon	"QTowF, RCountL"		
19-May-01	8:58	53	3	FF9	BON048	1158	58	52.37 N	147	51.5W	CAT			
19-May-01	10:50	54	1	FF10	CTD057	2160	58	44.27 N	147	42.79W	CTDB	"Chlor, CTD, NutsCM"	30M BOTTLE DID NOT CLOSE	
19-May-01	11:33	54	2	FF10	CAL049	2160	58	44.26 N	147	42.77W	CalVET	"Other, QTowF"	COMBINED NETS 1 AND 2	
19-May-01	11:51	54	3	FF10	BON049	2138	58	44.04 N	147	43.27W	20Bon	QTowF		
19-May-01	11:51	54	3	FF10	BON049	2138	58	44.04 N	147	43.27W	60Bon	"QTowF, RCountL"		
19-May-01	11:51	54	3	FF10	BON049	2138	58	44.04 N	147	43.27W	CAT			
19-May-01	12:18	54	4	FF10	SAT010	2116	58	43.76 N	147	44.27W	SatBuoy	Deploy	DRIFTER #13130	
19-May-01	14:27	55	1	ATA1	CTD058	152	59	0.49 N	148	9.97W	CTDB	"Chlor, CTD, NutsCM"		
19-May-01	14:53	55	2	ATA1	BON050	157	59	0.29 N	148	10.58W	20Bon	QTowF		
19-May-01	14:53	55	2	ATA1	BON050	157	59	0.29 N	148	10.58W	60Bon	"QTowF, RCountL"		
19-May-01	14:53	55	2	ATA1	BON050	157	59	0.29 N	148	10.58W	CAT			
19-May-01	16:00	56	1	ATA2	CTD059	275	58	55.37 N	148	12.51W	CTDB	"Chlor, CTD, NutsCM"		
19-May-01	16:35	56	2	ATA2	BON051	279	58	55.14 N	148	13.53W	20Bon	QTowF		
19-May-01	16:35	56	2	ATA2	BON051	279	58	55.14 N	148	13.53W	60Bon	"QTowF, RCountL"		
19-May-01	16:35	56	2	ATA2	BON051	279	58	55.14 N	148	13.53W	CAT			
19-May-01	17:53	57	1	ATA3	CTD060	277	58	50.39 N	148	15.05W	CTDB	"Chlor, CTD, NutsCM"	The 10m Niskin bottle did not trip	
19-May-01	18:29	57	2	ATA3	BON052	277	58	50.16 N	148	14.7W	20Bon	QTowF		
19-May-01	18:29	57	2	ATA3	BON052	277	58	50.16 N	148	14.7W	60Bon	"QTowF, RCountL"		
19-May-01	18:29	57	2	ATA3	BON052	277	58	50.16 N	148	14.7W	CAT			
19-May-01	19:30	58	1	ATA4	CTD061	271	58	45.18 N	148	17.47W	CTDB	"Chlor, CTD, NutsCM"	The 50m Niskin bottle did not trip.	
19-May-01	20:04	58	2	ATA4	BON053	271	58	45.14 N	148	17.55W	20Bon	QTowF		
19-May-01	20:04	58	2	ATA4	BON053	271	58	45.14 N	148	17.55W	60Bon	"QTowF, RCountL"		
19-May-01	20:04	58	2	ATA4	BON053	271	58	45.14 N	148	17.55W	CAT			
19-May-01	21:12	59	1	ATA5	CTD062	280	58	39.98 N	148	19.91W	CTDB	"Chlor, CTD, NutsCM"	Surface chlorophyll came from ships flowthrough system.	
19-May-01	21:46	59	2	ATA5	BON054	279	58	39.91 N	148	19.98W	20Bon	QTowF	Surface chlorophyll came from ships flowthrough system.	
19-May-01	21:46	59	2	ATA5	BON054	279	58	39.91 N	148	19.98W	60Bon	QTowF	Surface chlorophyll came from ships flowthrough system.	

Table 1-6

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lat (sec)	Lon (deg)	Lon (min)	Lon (sec)	Gear	Samples Collected	Haul Comments
19-May-01	21:46	59	2	ATA5	BON054	279	58	39.91	N	148	19.98	W	CAT	CAT	Surface chlorophyll came from ships flowthrough system.
19-May-01	22:43	60	1	ATA6	CTD063	522	58	34.81	N	148	22.4	W	CTDB	"Chlor, CTD, NutsCM"	DEPTH 0M FROM SHIP FLOW THRU
19-May-01	23:21	60	2	ATA6	BON055	526	58	34.69	N	148	22.57	W	20Bon	QTowF	
19-May-01	23:21	60	2	ATA6	BON055	526	58	34.69	N	148	22.57	W	60Bon	"QTowF, RCountL"	
19-May-01	23:21	60	2	ATA6	BON055	526	58	34.69	N	148	22.57	W	CAT	CAT	
20-May-01	0:25	61	1	ATA7	CTD064	801	58	29.66	N	148	24.63	W	CTDB	"Chlor, CTD, NutsCM"	"30M BOTTLE MISFIREFD, DEPTH 0M "
20-May-01	1:16	61	2	ATA7	BON056	800	58	29.59	N	148	24.51	W	20Bon	QTowF	SEACAT FILE FOR THIS ACCIDENTLY OVERWRITTEN WITH NEXT BONGO FIL(BON057)
20-May-01	1:16	61	2	ATA7	BON056	800	58	29.59	N	148	24.51	W	60Bon	"QTowF, RCountL"	SEACAT FILE FOR THIS ACCIDENTLY OVERWRITTEN WITH NEXT BONGO FIL(BON057)
20-May-01	1:16	61	2	ATA7	BON056	800	58	29.59	N	148	24.51	W	CAT	CAT	SEACAT FILE FOR THIS ACCIDENTLY OVERWRITTEN WITH NEXT BONGO FIL(BON057)
20-May-01	3:40	62	1	ATB7	CTD065	125	58	36.09	N	148	48.66	W	CTDB	"Chlor, CTD, NutsCM"	depth 0 from ships flow thru system
20-May-01	4:08	62	2	ATB7	BON057	125	58	37.76	N	148	48.45	W	20Bon	QTowF	
20-May-01	4:08	62	2	ATB7	BON057	125	58	37.76	N	148	48.45	W	60Bon	"QTowF, RCountL"	
20-May-01	4:08	62	2	ATB7	BON057	125	58	37.76	N	148	48.45	W	CAT	CAT	
20-May-01	5:11	63	1	ATB6	CTD066	240	58	43.35	N	148	45.6	W	CTDB	"Chlor, CTD, NutsCM"	depth 0 from ships flow thru
20-May-01	5:42	63	2	ATB6	BON058	240	58	43.13	N	148	45.17	W	20Bon	QTowF	
20-May-01	5:42	63	2	ATB6	BON058	240	58	43.13	N	148	45.17	W	60Bon	"QTowF, RCountL"	
20-May-01	5:42	63	2	ATB6	BON058	240	58	43.13	N	148	45.17	W	CAT	CAT	"bottles at 30 and 40 did not fire, depth 0 "from ships flow thru
20-May-01	6:53	64	1	ATB5	CTD067	267	58	48.7	N	148	42.77	W	CTDB	"Chlor, CTD, NutsCM"	
20-May-01	7:24	64	2	ATB5	BON059	266	58	48.68	N	148	42.46	W	20Bon	QTowF	
20-May-01	7:24	64	2	ATB5	BON059	266	58	48.68	N	148	42.46	W	60Bon	"QTowF, RCountL"	
20-May-01	7:24	64	2	ATB5	BON059	266	58	48.68	N	148	42.46	W	CAT	CAT	filter paper not placed correctLY on 20m "chlor, some water leaked out. Depth 0m "from ships flow thru
20-May-01	8:39	65	1	ATB4	CTD068	273	58	53.94	N	148	39.84	W	CTDB	"Chlor, CTD, NutsCM"	
20-May-01	9:10	65	2	ATB4	BON060	273	58	54.04	N	148	39.44	W	20Bon	QTowF	drifter #13132
20-May-01	9:10	65	2	ATB4	BON060	273	58	54.04	N	148	39.44	W	60Bon	"QTowF, RCountL"	depth 0m chlor from ship flow thru
20-May-01	9:10	65	2	ATB4	BON060	273	58	54.04	N	148	39.44	W	CAT	CAT	
20-May-01	9:36	65	3	ATB4	SAT011	270	58	54.52	N	148	38.94	W	SatBuoy	Deploy	
20-May-01	10:19	66	1	ATB3	CTD069	243	58	59.24	N	148	36.87	W	CTDB	"Chlor, CTD, NutsCM"	
20-May-01	10:46	66	2	ATB3	BON061	243	58	59.37	N	148	36.43	W	20Bon	QTowF	
20-May-01	10:46	66	2	ATB3	BON061	243	58	59.37	N	148	36.43	W	60Bon	"QTowF, RCountL"	
20-May-01	10:46	66	2	ATB3	BON061	243	58	59.37	N	148	36.43	W	CAT	CAT	
20-May-01	10:46	66	2	ATB3	BON061	243	58	59.37	N	148	36.43	W	CTDB	"Chlor, CTD, NutsCM"	depth 0m chlor from ships flow thru
20-May-01	11:54	67	1	ATB2	CTD070	225	59	4.47	N	148	33.47	W	20Bon	QTowF	
20-May-01	12:19	67	2	ATB2	BON062	220	59	4.6	N	148	33.47	W	20Bon	"QTowF, RCountL"	
20-May-01	12:19	67	2	ATB2	BON062	220	59	4.6	N	148	33.47	W	60Bon	CAT	
20-May-01	12:19	67	2	ATB2	BON062	220	59	4.6	N	148	33.47	W	CAT	CAT	
20-May-01	13:23	68	1	ATB1	CTD071	156	59	9.74	N	148	31.12	W	CTDB	"Chlor, CTD, NutsCM"	
20-May-01	13:45	68	2	ATB1	BON063	153	59	9.77	N	148	30.7	W	20Bon	QTowF	
20-May-01	13:45	68	2	ATB1	BON063	153	59	9.77	N	148	30.7	W	60Bon	"QTowF, RCountL"	
20-May-01	13:45	68	2	ATB1	BON063	153	59	9.77	N	148	30.7	W	CAT	CAT	
20-May-01	16:20	69	1	ATC1	CTD072	147	59	5.32	N	149	8.85	W	CTDB	"Chlor, CTD, NutsCM"	
20-May-01	16:50	69	2	ATC1	BON064	150	59	5.52	N	149	8.02	W	20Bon	QTowF	
20-May-01	16:50	69	2	ATC1	BON064	150	59	5.52	N	149	8.02	W	60Bon	"QTowF, RCountL"	
20-May-01	16:50	69	2	ATC1	BON064	150	59	5.52	N	149	8.02	W	CAT	CAT	

Table 1-7

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lon (deg)	Lon (min)	H	Gear	Samples Collected	Haul Comments
20-May-01	18:09	70	1	ATC2	CTD073	226	58	59.14 N	149	11.07W	CTDB	"Chlor, CTD, NutsCM"		
20-May-01	18:35	70	2	ATC2	BON065	227	58	59.18 N	149	10.54W	20Bon	QTowF		
20-May-01	18:35	70	2	ATC2	BON065	227	58	59.18 N	149	10.54W	20Bon	"QTowF, RCountL"		
20-May-01	18:35	70	2	ATC2	BON065	227	58	59.18 N	149	10.54W	CAT	CAT		
20-May-01	19:36	71	1	ATC3	CTD074	221	58	56.05 N	149	12.06W	CTDB	"Chlor, CTD, NutsCM"		
20-May-01	20:04	71	2	ATC3	BON066	221	58	56.22 N	149	11.76W	20Bon	QTowF		
20-May-01	20:04	71	2	ATC3	BON066	221	58	56.22 N	149	11.76W	20Bon	"QTowF, RCountL"		
20-May-01	20:04	71	2	ATC3	BON066	221	58	56.22 N	149	11.76W	CAT	CAT		
20-May-01	21:02	72	1	ATC4	CTD075	206	58	52.93 N	149	13.04W	CTDB	"Chlor, CTD, NutsCM"	DEPTH 0M BOTTLE MISFIRED	
20-May-01	21:27	72	2	ATC4	BON067	206	58	53.05 N	149	12.87W	20Bon	QTowF	FLOWMETERS SPINNING IN WIND	
20-May-01	21:27	72	2	ATC4	BON067	206	58	53.05 N	149	12.87W	20Bon	"QTowF, RCountL"	FLOWMETERS SPINNING IN WIND	
20-May-01	21:27	72	2	ATC4	BON067	206	58	53.05 N	149	12.87W	CAT	CAT	FLOWMETERS SPINNING IN WIND	
20-May-01	22:42	73	1	ATC5	CTD076	182	58	46.83 N	149	15.11W	CTDB	"Chlor, CTD, NutsCM"	DEPTH 0M CHLOR FROM SHIP FLOW THRU	
21-May-01	0:15	74	1	ATC6	CTD077	133	58	40.65 N	149	17.16W	CTDB	"Chlor, CTD, NutsCM"		
21-May-01	14:21	75	1	ATD5	CTD078	135	58	38.23 N	149	38.75W	CTDB	"Chlor, CTD, NutsCM"		
21-May-01	14:45	75	2	ATD5	BON068	135	58	38.35 N	149	38.2W	20Bon	QTowF	"L-Oto, QTowF, RCountJ"	
21-May-01	14:45	75	2	ATD5	BON068	135	58	38.35 N	149	38.2W	60Bon	CAT	CAT	
21-May-01	14:45	75	2	ATD5	BON068	135	58	38.35 N	149	38.2W	CAT	CAT		
21-May-01	16:25	76	1	ATD4	CTD079	204	58	46.54 N	149	35.92W	CTDB	"Chlor, CTD, NutsCM"		
21-May-01	16:50	76	2	ATD4	BON069	205	58	46.74 N	149	35.54W	20Bon	QTowF		
21-May-01	16:50	76	2	ATD4	BON069	205	58	46.74 N	149	35.54W	20Bon	"QTowF, RCountL"		
21-May-01	16:50	76	2	ATD4	BON069	205	58	46.74 N	149	35.54W	CAT	CAT		
21-May-01	18:15	77	1	ATD3	CTD080	243	58	54.64 N	149	32.7W	CTDB	"Chlor, CTD, NutsCM"	"50M BOTTLE DID NOT TRIP, 0M CHLOR FROM FLOW THRU"	
21-May-01	18:39	77	2	ATD3	BON070	243	58	54.74 N	149	32.39W	20Bon	QTowF		
21-May-01	18:39	77	2	ATD3	BON070	243	58	54.74 N	149	32.39W	60Bon	"QTowF, RCountL"		
21-May-01	18:39	77	2	ATD3	BON070	243	58	54.74 N	149	32.39W	CAT	CAT		
21-May-01	20:00	78	1	ATD2	CTD081	229	59	2.57 N	149	29.53W	CTDB	"Chlor, CTD, NutsCM"	30M BOTTLE MISFIRED	
21-May-01	20:20	78	2	ATD2	BON071	230	59	2.64 N	149	29.35W	20Bon	QTowF	20BON NET 1 NOT USABLE. NET 2 IS PRIMARY NET	
21-May-01	20:20	78	2	ATD2	BON071	230	59	2.64 N	149	29.35W	20Bon	QTowF	20BON NET 1 NOT USABLE. NET 2 IS PRIMARY NET	
21-May-01	20:20	78	2	ATD2	BON071	230	59	2.64 N	149	29.35W	60Bon	"L-Oto, QTowF, RCountL"		
21-May-01	20:20	78	2	ATD2	BON071	230	59	2.64 N	149	29.35W	CAT	CAT		
21-May-01	21:37	79	1	ATD1	CTD082	137	59	10.55 N	149	26.43W	CTDB	"Chlor, CTD, NutsCM"		
21-May-01	21:58	79	2	ATD1	BON072	137	59	10.62 N	149	26.32W	20Bon	QTowF		
21-May-01	21:58	79	2	ATD1	BON072	137	59	10.62 N	149	26.32W	60Bon	"QTowF, RCountL"		
21-May-01	21:58	79	2	ATD1	BON072	137	59	10.62 N	149	26.32W	CAT	CAT		
22-May-01	0:19	80	1	ATE1	CTD083	151	59	7.34 N	150	3.77W	CTDB	"Chlor, CTD, NutsCM"		
22-May-01	0:45	80	2	ATE1	BON073	151	59	7.36 N	150	3.66W	20Bon	QTowF		
22-May-01	0:45	80	2	ATE1	BON073	151	59	7.36 N	150	3.66W	60Bon	"QTowF, RCountL"		
22-May-01	0:45	80	2	ATE1	BON073	151	59	7.36 N	150	3.66W	CAT	CAT		
22-May-01	1:47	81	1	ATE2	CTD084	205	59	0.95 N	150	5.27W	CTDB	"Chlor, CTD, NutsCM"	"10M BOTTLE D, FROM SHIP FL"	
22-May-01	2:13	81	2	ATE2	BON074	204	59	1.93 N	150	5.17W	20Bon	QTowF		
22-May-01	2:13	81	2	ATE2	BON074	204	59	1.93 N	150	5.17W	60Bon	"L-Oto, QTowF, RCountL"		
22-May-01	2:13	81	2	ATE2	BON074	204	59	1.93 N	150	5.17W	CAT	CAT		
22-May-01	3:38	82	1	ATE3	CTD085	211	58	56.54 N	150	6.85W	CTDB	"Chlor, CTD, NutsCM"	0M SAMPLE FROM SHIP FLOW THRU SYSTEM FAILED TOW ALL NETS. WIRE ANGLE VERTICAL. TOW TERMINATED AND REPEATED. FLOW METER AND TIME DUMMIED FROM REPEATED GOOD TOW (82-3) WHICH FOLLOWS	
22-May-01	4:03	82	2	ATE3	BON075	211	58	56.54 N	150	6.73W	20Bon	Discard		

Date (GMT)	Time (GMT)	Sta. No.	Haul No.	FOCI Grid ID	Alternate Station ID	Depth (m)	Lat (deg)	Lat (min)	Lat (sec)	Lon (deg)	Lon (min)	Lon (sec)	Gear	Samples Collected	Haul Comments
22-May-01	4:19	82	3	ATE3	BON076	216	58	56.55	N	150	5.93	W	20Bon	QTowF	
22-May-01	4:19	82	3	ATE3	BON076	216	58	56.55	N	150	5.93	W	60Bon	"QTowF, RCountL"	
22-May-01	4:19	82	3	ATE3	BON076	216	58	56.55	N	150	5.93	W	CAT	CAT	
22-May-01	5:35	83	1	ATE4	CTD086	172	58	51.11	N	150	8.24	W	CTDB	"Chlor, CTD, NutsCM"	
22-May-01	5:59	83	2	ATE4	BON077	172	58	51.09	N	150	8.07	W	20Bon	QTowF	
22-May-01	5:59	83	2	ATE4	BON077	172	58	51.09	N	150	8.07	W	60Bon	"QTowF, RCountL"	
22-May-01	5:59	83	2	ATE4	BON077	172	58	51.09	N	150	8.07	W	CAT	CAT	
22-May-01	8:32	84	1	ATX2	CTD087	252	58	54.54	N	149	32.85	W	CTDB	"Chlor, CTD, NutsCM"	DEPTH 0 FROM FLOW THRU
22-May-01	10:14	85	1	ATX3	CTD088	219	58	56.12	N	149	11.86	W	CTDB	"Chlor, CTD, NutsCM"	
22-May-01	12:25	86	1	ATX4	CTD089	272	58	53.96	N	148	39.86	W	CTDB	"Chlor, CTD, NutsCM"	DEPTH 0M FROM FLOW THRU
22-May-01	14:22	87	1	ATX5	CTD090	275	58	50.23	N	148	14.9	W	CTDB	"Chlor, CTD, NutsCM"	DEPTH 0M FROM FLOW THRU
22-May-01	15:15	88	1	GAK9	CTD091	279	58	40.74	N	148	20.95	W	CTDB	"Chlor, CTD, NutsCM"	0M SAMPLE TAKEN FROM SHIP FLOW THRU
22-May-01	16:27	88	2	GAK9	CAL050	279	58	40.74	N	148	20.95	W	CalVET	"Other, QTowF"	
22-May-01	16:27	88	2	GAK9	CAL050	279	58	40.74	N	148	20.95	W	CalVET	"Other, QTowF"	
22-May-01	16:34	88	3	GAK9	BON078	280	58	40.81	N	148	20.84	W	20Bon	QTowF	
22-May-01	16:34	88	3	GAK9	BON078	280	58	40.81	N	148	20.84	W	60Bon	"QTowF, RCountL"	
22-May-01	16:34	88	3	GAK9	BON078	280	58	40.81	N	148	20.84	W	CAT	CAT	
22-May-01	18:08	89	1	GAK8	CTD092	294	58	47.49	N	148	29.38	W	CTDB	"Chlor, CTD, NutsCM"	0M FROM SHIP FLOW THRU SYSTEM
22-May-01	18:39	89	2	GAK8	CAL051	292	58	47.49	N	148	29.38	W	CalVET	"Other, QTowF"	COMBINE NETS 1 AND 2
22-May-01	18:46	89	3	GAK8	BON079	294	58	47.57	N	148	29.31	W	20Bon	QTowF	
22-May-01	18:46	89	3	GAK8	BON079	294	58	47.57	N	148	29.31	W	60Bon	"QTowF, RCountL"	
22-May-01	18:46	89	3	GAK8	BON079	294	58	47.57	N	148	29.31	W	CAT	CAT	
22-May-01	19:48	90	1	GAK71	CTD093	304	58	57.9	N	148	33.59	W	CTDB	"Chlor, CTD, NutsCM"	CAST 1 OF 2. MIXED LAYER BOTTLES (0-40M) NOT CLOSED PROPERLY. CAST REPEATED FOR MISSED BOTTLES COMBINE NETS 1 AND 2 CAST 2 OF 2.
22-May-01	20:22	90	2	GAK71	CAL052	303	58	52.97	N	148	33.69	W	CalVET	"Other, QTowF"	#13129
22-May-01	20:35	90	3	GAK71	CTD094	303	58	52.99	N	148	33.75	W	CTDB	"Chlor, CTD, NutsCM"	COMBINE NETS 1 AND 2
22-May-01	20:51	90	4	GAK71	SAT012	302	58	53.14	N	148	33.94	W	SatBuoy	Deploy	
22-May-01	21:26	91	1	GAK7	CTD095	246	58	58.33	N	148	37.75	W	CTDB	"Chlor, CTD, NutsCM"	DEEP MIXED LAYER BETWEEN 50 AND COMBINE NETS 1 AND 2
22-May-01	21:59	91	2	GAK7	CAL054	247	58	58.39	N	148	37.81	W	CalVET	"Other, QTowF"	
22-May-01	22:05	91	3	GAK7	BON080	247	58	58.47	N	148	37.7	W	20Bon	QTowF	
22-May-01	22:05	91	3	GAK7	BON080	247	58	58.47	N	148	37.7	W	60Bon	"QTowF, RCountL"	
22-May-01	22:05	91	3	GAK7	BON080	247	58	58.47	N	148	37.7	W	CAT	CAT	
22-May-01	23:12	92	1	GAK61	CTD096	184	59	3.71	N	148	41.91	W	CTDB	"Chlor, CTD, NutsCM"	0M SAMLE FROM SHIP FLOW THRU SYSTEM. SAMPLE BOTTLE VOLUMES FOR 15M REPLICATES 15M-1 - 283ML 15M-2 283ML 15M- 3 285ML
22-May-01	23:39	92	2	GAK61	CAL055	184	59	3.71	N	148	41.9	W	CalVET	"Other, QTowF"	COMBINE NETS 1 AND 2
23-May-01	0:23	93	1	GAK6	CTD097	184	59	7.02	N	148	46.17	W	CTDB	"Chlor, CTD, NutsCM"	
23-May-01	0:51	93	2	GAK6	CAL056	155	59	7.03	N	148	46.17	W	CalVET	"Other, QTowF"	
23-May-01	0:56	93	3	GAK6	BON081	155	59	7.06	N	148	46.15	W	20Bon	QTowF	
23-May-01	0:56	93	3	GAK6	BON081	155	59	7.06	N	148	46.15	W	60Bon	"QTowF, RCountL"	
23-May-01	0:56	93	3	GAK6	BON081	155	59	7.06	N	148	46.15	W	CAT	CAT	
23-May-01	2:22	94	1	GAK5	CTD098	171	59	15.78	N	148	54.48	W	CTDB	"Chlor, CTD, NutsCM"	30M BOTTLE(BOTTLE #9) DIDN'T FIRE
23-May-01	2:50	94	2	GAK5	CAL057	171	59	15.79	N	148	54.46	W	CalVET	"Other, QTowF"	COMBINE NETS 1 AND 2
23-May-01	2:58	94	3	GAK5	BON082	171	59	15.81	N	148	54.43	W	20Bon	QTowF	
23-May-01	2:58	94	3	GAK5	BON082	171	59	15.81	N	148	54.43	W	60Bon	"QTowF, RCountL"	
23-May-01	2:58	94	3	GAK5	BON082	171	59	15.81	N	148	54.43	W	CAT	CAT	
23-May-01	6:42	95	1	ATE5	SAT013	206	58	48.3	N	149	55.28	W	SatBuoy	Deploy	# 13136

Table 1-9

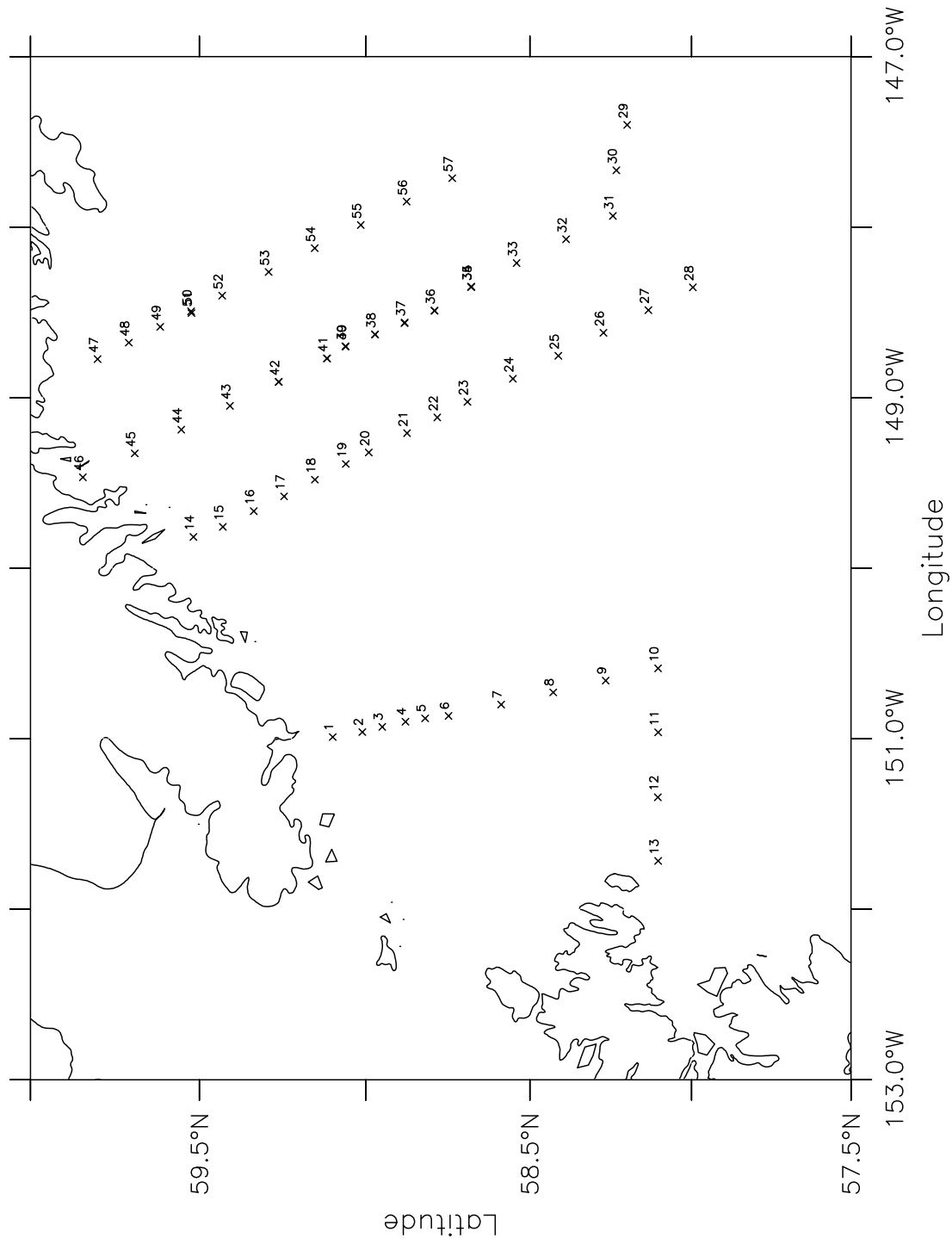


Fig. 1—CTD Stations on FOCI/GLOBEC Lines

