

# GLOBEC Northeast Pacific, Coastal Gulf of Alaska

Cruise Report, R/V *Kilo Moana* (KM 0309b)

29 April – 18 May 2003

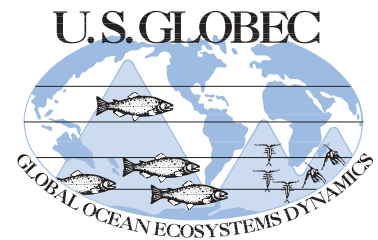
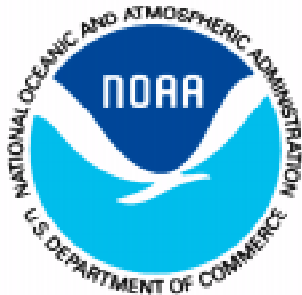


This cruise was  
sponsored by the

National Science Foundation

and the

National Oceanic and  
Atmospheric Administration



# GLOBEC Northeast Pacific, Coastal Gulf of Alaska

## Cruise Report, R/V *Kilo Moana* (KM 0309b)

29 April – 18 May 2003

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**Port of Departure:** Kodiak, Alaska

**Port of Return:** Kodiak, Alaska

### Cruise Objectives

FOCI's goal is to understand the effects of abiotic and biotic variability on ecosystems of the North Pacific Ocean and Bering Sea in order to discern the physical and biological processes that determine recruitment variability of commercially valuable finfish and shellfish stocks in Alaskan waters. This cruise is in support of the Steller Sea Lion Research Programs, FOCI base, and United States Global Ocean Ecosystems Dynamics (U.S. GLOBEC).

This cruise was undertaken by FOCI to support research into the physical, chemical, and biological mechanisms acting in the coastal Gulf of Alaska. Most of this second leg consisted of closely spaced CTD stations with MARMAP bongo tows at approximately one-third of them. From April 29 to May 11 we were focusing on the transport of nutrients and fish larvae up the troughs that incise the continental shelf between Kodiak Island and Seward AK. We occupied multiple transects across Chiniak, Stevenson and Amatuli Troughs. We also spent 1.5 days occupying transects north and east of Afognak Island to measure the transport of the Alaskan Coastal Current and the mixing that takes place in Kennedy and Stevenson Entrances. May 12-15 was spent investigating one of the warm-core eddies that often impinge on the CGOA in spring and summer. Our experiment involved deployment of four ARGOS satellite tracked drifters and 30 CTD/Bongo stations to depths of 2000-4000m with water samples to characterize the relationships between temperature, salinity, nutrients and chlorophyll within the eddy, and to measure the transport within the eddy and at the leading edge, if it was impacting the slope south of Seward, AK.

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**

Dr. Calvin Mordy	PMEL	<a href="mailto:Calvin.W.Mordy@noaa.gov">Calvin.W.Mordy@noaa.gov</a>
Dr. Carol Ladd	PMEL	<a href="mailto:Carol.Ladd@noaa.gov">Carol.Ladd@noaa.gov</a>
David Kachel	PMEL	<a href="mailto:Dave.Kachel@noaa.gov">Dave.Kachel@noaa.gov</a>
Peter Proctor	PMEL	<a href="mailto:Peter.Proctor@noaa.gov">Peter.Proctor@noaa.gov</a>
Dylan Righi	PMEL	<a href="mailto:Dylan.Righi@noaa.gov">Dylan.Righi@noaa.gov</a>
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Morgan Busby	AFSC	<a href="mailto:Morgan.Busby@noaa.gov">Morgan.Busby@noaa.gov</a>

PMEL = Pacific Marine Environmental Laboratory; 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)

**29 April.** The R/V *Kilo Moana* departed Kodiak, AK at 12:30 on the high tide. To study water properties, we made CTD measurements with dual temperature and conductivity sensors, and with attached PAR and fluorescence sensors. We sampled for chlorophyll and nutrients. At approximately one-third of the stations before May 11, MARMAP bongo tows with 0.505mm mesh nets were used to sample larval fish and zooplankton. During the eddy study, another 9 tows were made. Surface water samples were taken at 11 stations and preserved with Lugol's solution for later examination of protist species by Dr. Evelyn Lessard (Univ. of Washington), one of the GLOBEC scientists. Maps of the CTD stations are shown in Fig. 1 and Fig. 2. Stations with Bongos are shown in Fig. 3.

After departing Kodiak, the ship proceeded northward to occupy four transects (AP, GP, KE and SE), which together with Afognak I. and a portion of the Kenai Peninsula, form a box of stations east and north of Kodiak Island. Data from these lines should permit us to calculate the transport of the Alaskan Coastal Current, as well as understand the mixing processes and water properties occurring in Kennedy and Stevenson Entrances.

Next we proceeded south to the mouth of Chiniak Trough to occupy stations across a series of troughs of different sizes that cut across this continental shelf and act as conduits for nutrients to the shelf and for larval fish to move from the slope to nursery areas near the coast. We sampled three transects across Chiniak Trough (CBA, CBB, CBC), then one across an extension going between Cape Chiniak (CC) and Northern Albatross Bank, then another across the upper extension of Stevenson Trough Bank (UST). Next, we occupied four lines of stations across the main part of Stevenson Trough (STD, STC, STB, STA). During this time, fluorescence values were relatively low, and nutrient concentrations high.

Four casts were done on the transit to the first Amatuli Trough line (ATB). Pods of orcas were observed in this area. Some of them were in pursuit of a fin whale. At least one baby orca was seen among them.

Two lines of stations across Amatuli trough (ATB and ATD lines) were occupied three times each to observe the effect of tides on the cross-trough hydrography. MARMAP tows were made on the first ATB and the second ATD transects. At the end of the third transit of ATD, operations were suspended for almost 20 hours due to storm and wave conditions. Therefore, the ATE line was occupied only once.

After that, a line of stations (KCW) parallel to the Kenai coast was occupied to help understand the difference in physical/chemical/biological processes between higher and lower surface chlorophyll zones that persist across this region in summer. This was done in support of the U.S. GLOBEC/NEP scientists aboard the R/V *Alpha Helix*

(Suzanne Strom, Western Wash. Univ., Chief Scientist), who were occupying a subset of stations on the Seward Line. The position of our transect was chosen in coordination with Dave Musgrave (University of Alaska) who was surveying with a SeaSOAR aboard the R/V *Wecoma*, and from SeaWiFS images provided by other scientists on land (Fig. 4). At the end of the KCW line, the R/V *Kilo Moana* made a touch-and-go in Seward, AK to debark four of the scientists aboard.

Enroute to our next work sampling a warm core eddy, we stopped at Hinchinbrook Canyon, where one CTD with protist sampling was done for Dr. Evelyn Lessard, as well as a MARMAP tow for scientists at AFSC.

The next four days were spent occupying two transects of stations (ENS and EEW) across one of the warm-core eddies that regularly impinge on the shelf in this region. At this time, it was off the continental slope, centered south of Middleton Island at ca. 58.5°N, 146.0°W. Its diameter was approximately 200km. The location of the eddy was found from the sea surface altimetry analysis results (Fig. 4) distributed by Colorado Center for Astrodynamic Research at [http://www-ccar.colorado.edu/~realtime/global-real-time\\_ssh/](http://www-ccar.colorado.edu/~realtime/global-real-time_ssh/).

The results of the first transect from north to south allowed refinement of the location of the east to west transect. Since the eddy appeared to be moving westward, we extended our sampling westward, up the slope to the shelf south of Amatuli Trough, ending the line at the southern end of the ATB line. Crossing the eddy, we saw few seabirds, and low surface fluorescence at stations on the eastern edge, and once again on the western side (in ~2000m depth). Numerous jellyfish up ~0.5m in diameter were observed on both the eastern and western margins of the eddy, but not at the stations in between. The weather was excellent for the duration of the eddy experiment.

The final sampling of the cruise was to return to and resample the box of 28 stations north and east of Afognak I.

**18 May.** Arrived Kodiak 0900 hrs.

**Table 2: Summary of Operations:**

	<b># Events</b>
60cm bongo (60Bon) (0.505mm)	67
Seabird SeaCat CTD (CAT)	63
CTD with bottle samples (CTD)	243
Deployment of satellite buoy (SatBuoy)	4
Bathymetry Data	~2000mi
Multiscan Hydrosweep Bathymetry	2000mi

**Table 3: Samples Collected**

	<b>Number</b>
SeaBird CTD (CTD casts)	243
SeaBird SeaCat CTD (CAT)	63
Extracted chlorophyll (Chlor)	~1600
Stimulated fluorescence collected during CTD casts (Fluor)	all
Microzooplankton samples preserved in Lugol's solution (MZ)	12
Photosynthetically Active Radiation data during CTD casts (PAR)	211
Quantitative tow preserved in formalin (QTowF)	67
Water samples for nutrient analyses	~2500

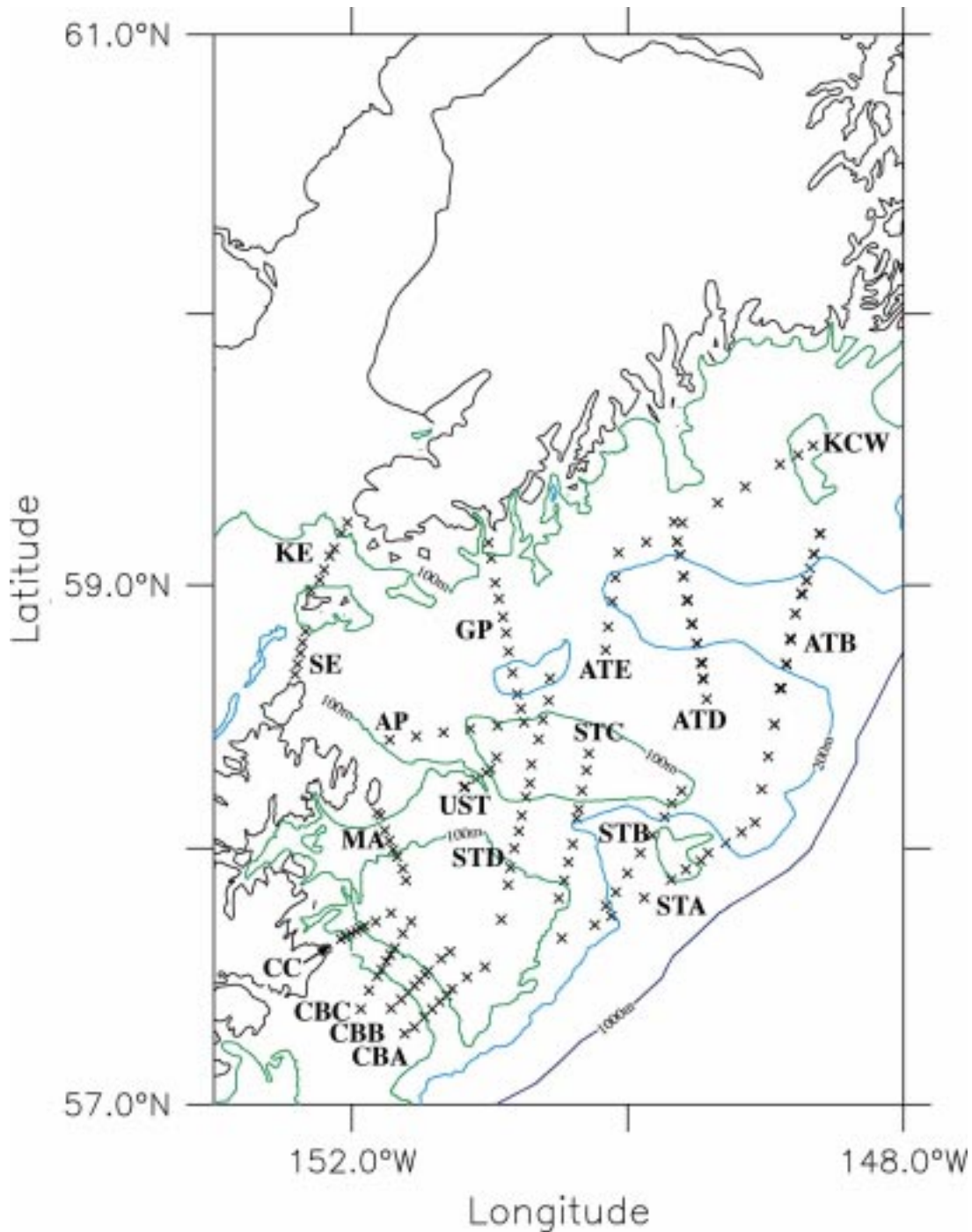


Figure 1. Map of CTD lines and stations for KM0309b for April 29 - May 11, 2003. Line AP crosses between Afognak I. and Portlock Bank. GP is the Gore Point line. SE and KE cross Stevenson and Kennedy Entrances, respectively. Lines CBA, CBB, and CBC cross Chiniak Trough, while line CC runs from Cape Chiniak to Albatross Bank. Line MA runs from Marmot Island to Albatross Bank and is at the western end of Stevenson Trough. Line UST crosses an upper branch of Stevenson Trough. STA, STB, STC, and STD traverse the main portion of Stevenson Trough. Lines ATB, ATD and ATE cross Amatuli Trough. ATB and ATD were occupied three times each, only once with bongo stations. KCW is a line of stations intended to sample differences in chlorophyll concentrations along the Kenai Shelf.

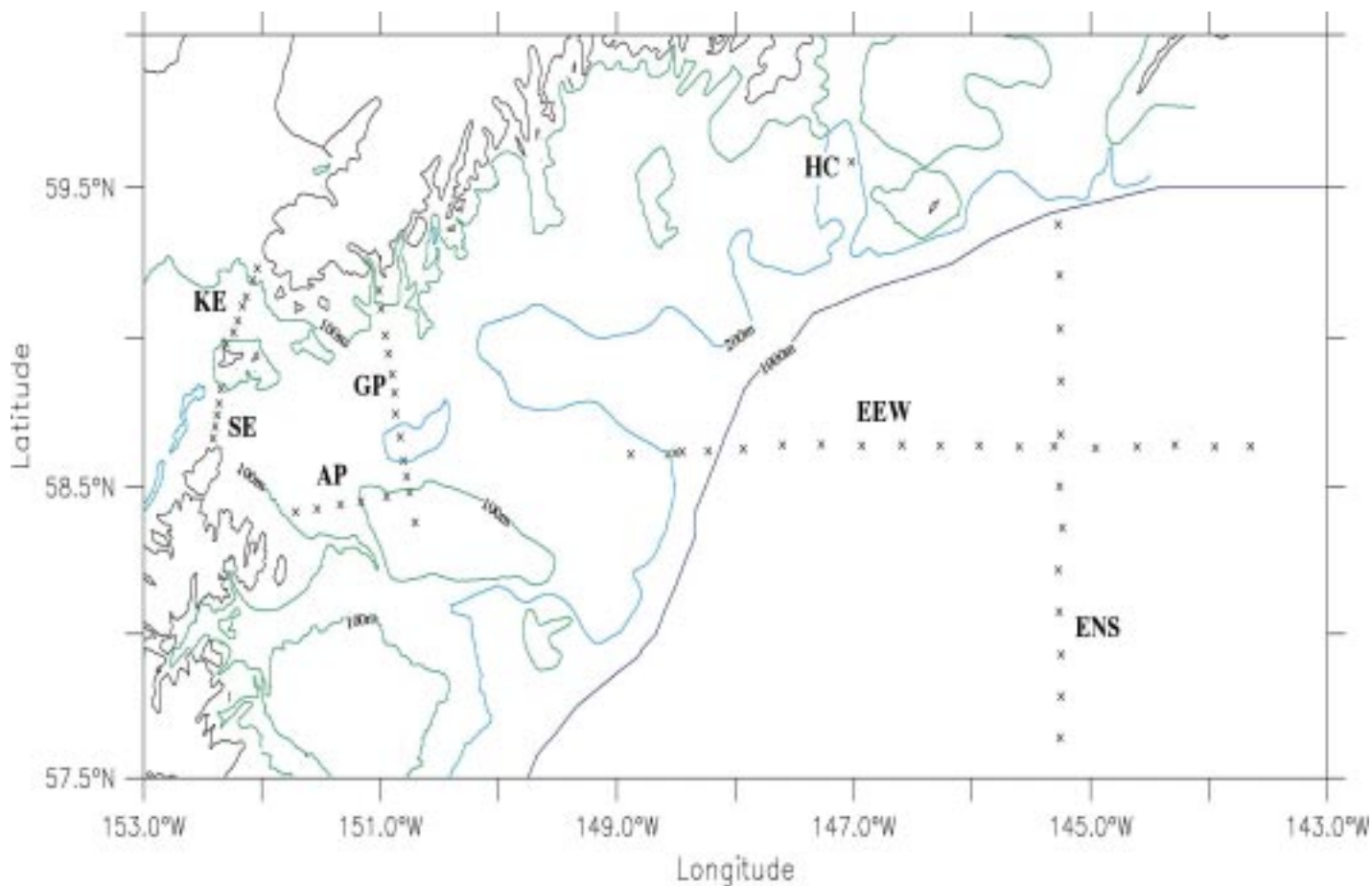


Figure 2. Station map for CTDs taken 11–18 May 2003. One station was occupied in Hinchinbrook Canyon. Then, two transects, ENS and EEW, sampled a warm core eddy from north to south and then east to west. The center of the eddy was on the EEW line, approximately 15 km west of the ENS line (see Figure 5). Lines SE and KE cross Stevenson and Kennedy Entrances, respectively. GP is the Gore Point line. AP crosses between Afognak I. and Portlock Bank.

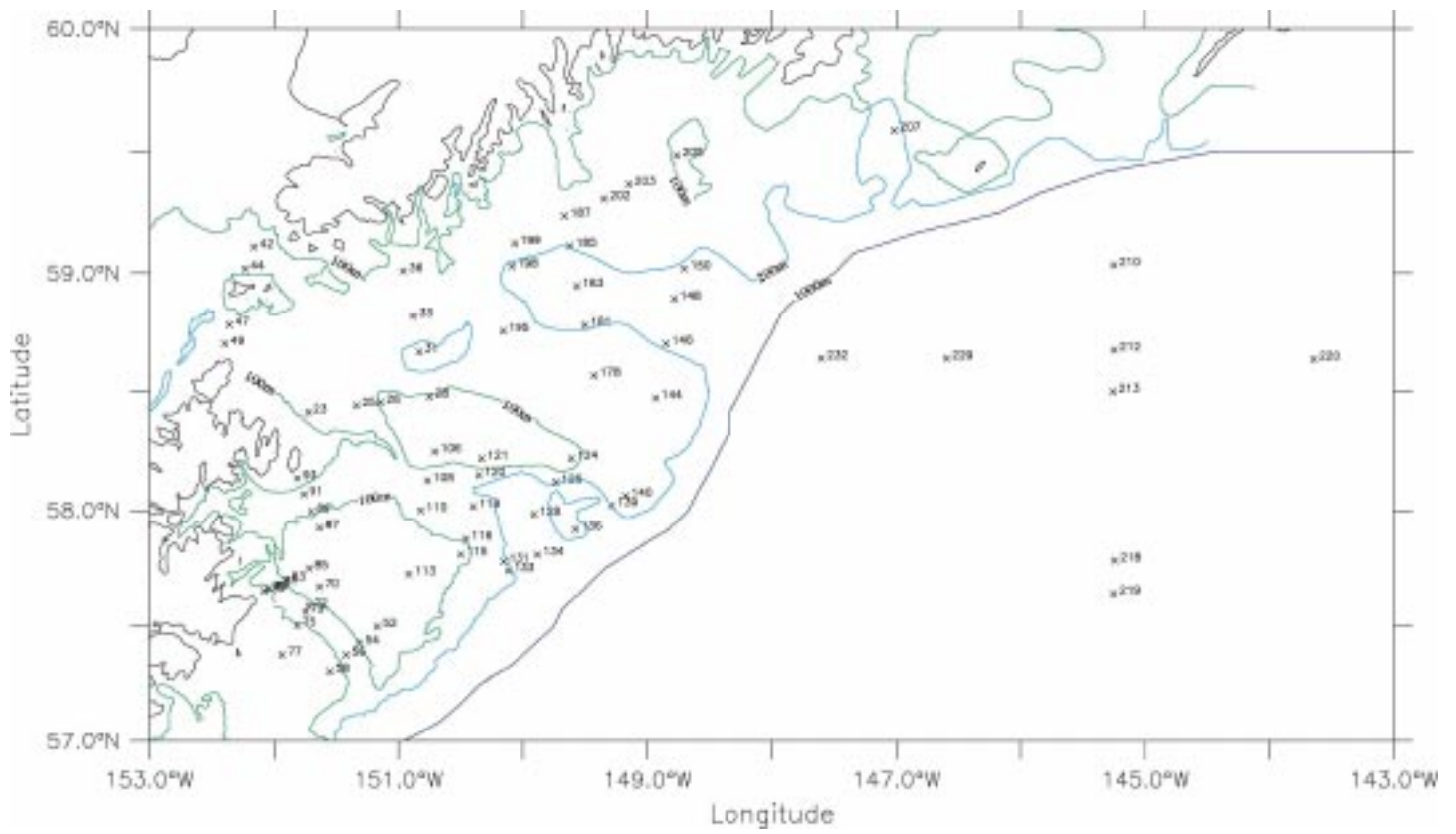


Figure 3. CTD stations with MARMAP bongo tows conducted between April 30 and May 16, 2003.



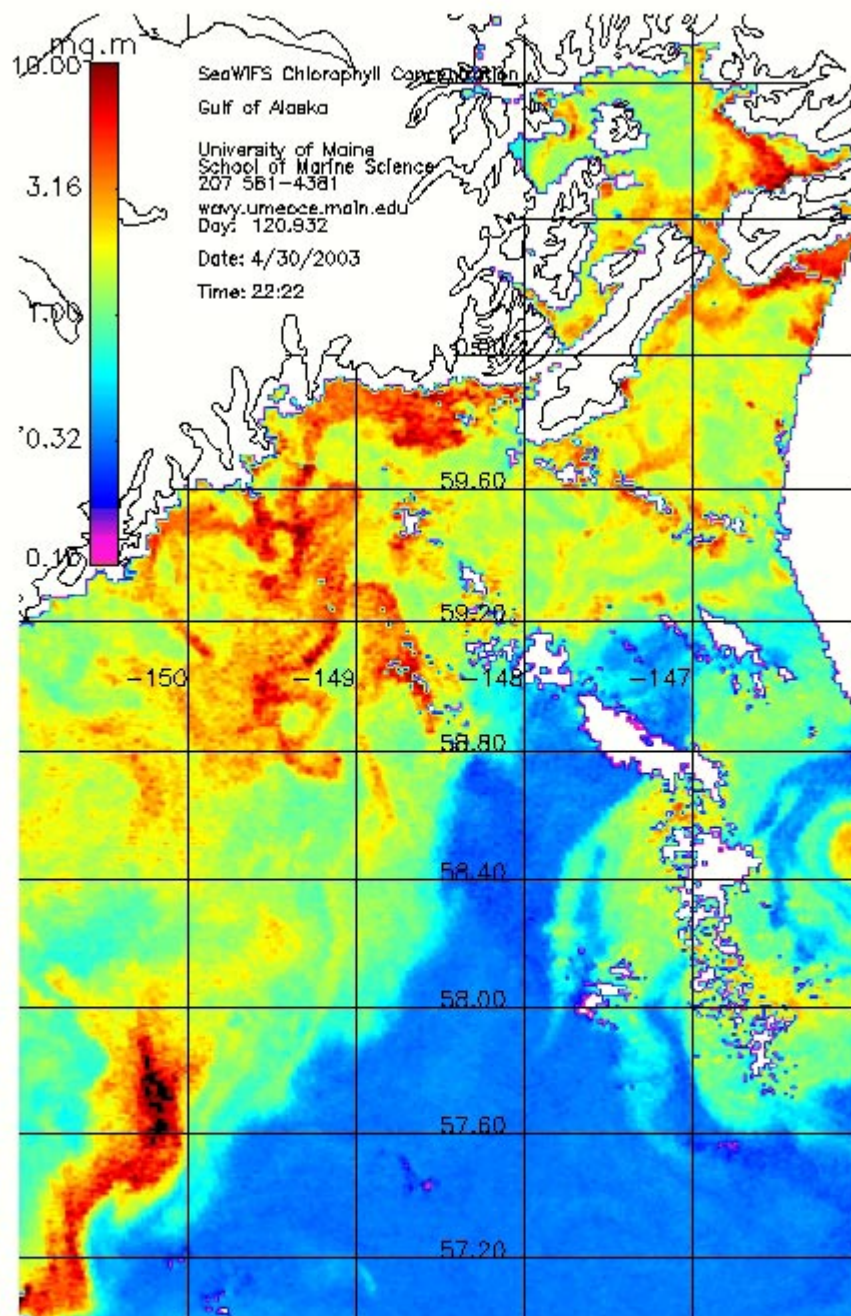


Figure 4. SeaWiFS estimated chlorophyll-a concentrations in Northern Gulf of Alaska on 30 April 2003 (JD=120.932 gmt). Figure courtesy of Andy thomas, University of Maine.

# Real-Time Mesoscale Altimetry - May 15, 2003

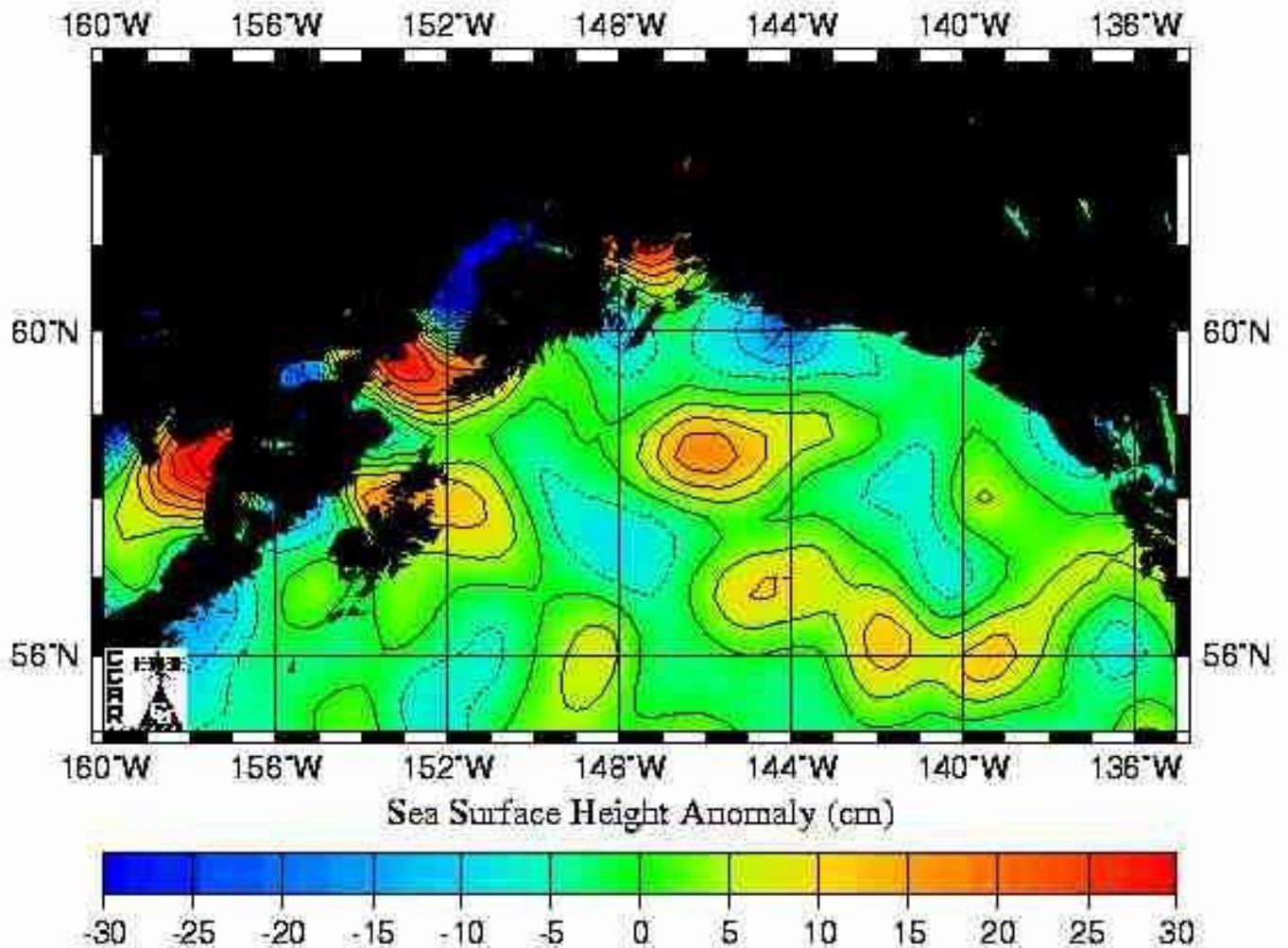


Figure 5. Satellite Altimetry estimated Sea Surface Height, showing the location of mesoscale eddies in the Northern Gulf of Alaska, and the location of the eddy that was sampled during the latter part of the cruise. Figure courtesy of Bob Leben, CCAR Group at the University of Colorado.

**Table 4: CTD Casts**

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12003.01	CTDB	23	1	AP1	30	4	0436	58.4160	-151.7268	168	CTD023	Chl, FL, PAR, nuts.
KM12003.03	CTDB	24	2	AP2	30	4	0736	58.4287	-151.5337	176	CTD024	Chl, FL, PAR, nuts.
KM12003.04	CTDB	25	3	AP3	30	4	0911	58.4442	-151.3357	134	CTD025	Chl, FL, PAR, nuts.
KM12003.05	CTDB	26	4	AP4	30	4	1018	58.4573	-151.1418	110	CTD026	Chl, FL, PAR, nuts.
KM12003.07	CTDB	27	5	AP5	30	4	1146	58.4688	-150.9440	85	CTD027	Chl, FL, PAR, nuts.
KM12003.08	CTDB	28	6	AP6	30	4	1310	58.4823	-150.7522	96	CTD028	Chl, FL, PAR, nuts.
KM12003.10	CTDB	29	7	GP7A	30	4	1416	58.5352	-150.7750	143	CTD029	Chl, FL, PAR, nuts.
KM12003.11	CTDB	30	8	GP7	30	4	1514	58.5892	-150.8003	187	CTD030	Chl, FL, PAR, nuts.
KM12003.12	CTDB	31	9	GP6A	30	4	1624	58.6702	-150.8353	204	CTD031	Chl, FL, PAR, nuts.
KM12003.14	CTDB	32	10	GP6	30	4	1808	58.7502	-150.8635	190	CTD032	Chl, FL, PAR, nuts.
KM12003.15	CTDB	33	11	GP5	30	4	1912	58.8208	-150.8818	195	CTD033	Chl, FL, PAR, nuts.
KM12003.18	CTDB	34	12	GP4	30	4	2141	58.8808	-150.9047	157	CTD034	Chl, FL, PAR, nuts.
KM12003.19	CTDB	35	13	GP3	30	4	2248	56.9480	-150.9343	158	CTD035	Chl, FL, PAR, nuts.
KM12003.20	CTDB	36	14	GP2	30	4	2337	59.0088	-150.9607	169	CTD036	Chl, FL, PAR, nuts.
KM12103.03	CTDB	37	15	GP1	1	5	0112	59.1007	-150.9900	175	CTD037	Chl, FL, PAR, nuts.
KM12103.04	CTDB	38	16	GP0	1	5	0211	59.1583	-151.0100	69	CTD038	Chl, FL, PAR, nuts.
KM12103.05	CTDB	39	17	KE1	1	5	0803	54.2340	-152.0317	85	CTD039	Chl, FL, PAR, nuts.
KM12103.06	CTDB	40	18	KE2	1	5	0850	59.1938	-152.0765	101	CTD040	Chl, FL, PAR, nuts.
KM12103.07	CTDB	41	19	KE3	1	5	0944	59.1378	-152.1273	158	CTD041	Chl, FL, PAR, nuts.
KM12103.08	CTDB	42	20	KE4	1	5	1035	59.1082	-152.1610	159	CTD042	Chl, FL, PAR, nuts.
KM12103.11	CTDB	43	21	KE5	1	5	1150	59.0583	-152.2015	139	CTD043	Chl, FL, PAR, nuts.
KM12103.12	CTDB	44	22	KE6	1	5	1252	59.0195	-152.2355	134	CTD044	Chl, FL, PAR, nuts.
KM12103.15	CTDB	45	23	KE7	1	5	1412	58.9817	-152.2967	78	CTD045	Chl, FL, PAR, nuts.
KM12103.16	CTDB	46	24	SE1	1	5	1620	58.8273	-152.3355	147	CTD046	Chl, FL, PAR, nuts.
KM12103.17	CTDB	47	25	SE2	1	5	1715	58.7840	-152.3588	132	CTD047	Chl, FL, PAR, nuts.
KM12103.20	CTDB	48	26	SE3	1	5	1837	58.7443	-152.3753	118	CTD048	Chl, FL, PAR, nuts.
KM12103.21	CTDB	49	27	SE4	1	5	1923	58.7033	-152.3940	155	CTD049	Chl, FL, PAR, nuts.
KM12103.24	CTDB	50	28	SE5	1	5	2034	58.6642	-152.4113	72	CTD050	Chl, FL, PAR, nuts.
KM12203.01	CTDB	51	29	CBA9	2	5	0442	57.5407	-151.0343	82	CTD051	Chl, FL, PAR, nuts.
KM12203.02	CTDB	52	30	CBA8	2	5	0545	57.5005	-151.1670	78	CTD052	Chl, FL, PAR, nuts.
KM12203.05	CTDB	53	31	CBA7	2	5	0650	57.4543	-151.2732	93	CTD053	Chl, FL, PAR, nuts.
KM12203.06	CTDB	54	32	CBA6	2	5	0732	57.4280	-151.3093	103	CTD054	Chl, FL, PAR, nuts.
KM12203.09	CTDB	55	33	CBA5	2	5	0836	57.4052	-151.3637	170	CTD055	Chl, FL, PAR, nuts.
KM12203.10	CTDB	56	34	CBA4	2	5	0925	57.3763	-151.4180	161	CTD056	Chl, FL, PAR, nuts.
KM12203.13	CTDB	57	35	CBA3	2	5	1028	57.3438	-151.4740	87	CTD057	Chl, FL, PAR, nuts.
KM12203.14	CTDB	58	36	CBA2	2	5	1110	57.3053	-151.5473	69	CTD058	Chl, FL, PAR, nuts.
KM12203.17	CTDB	59	37	CBA1	2	5	1202	57.2792	-151.6177	63	CTD059	Chl, FL, PAR, nuts.
KM12203.18	CTDB	60	38	CBB1	2	5	1312	57.3775	-151.7167	66	CTD060	Chl, FL, PAR, nuts.
KM12203.19	CTDB	61	39	CBB2	2	5	1357	57.4143	-151.6423	68	CTD061	Chl, FL, PAR, nuts.
KM12203.20	CTDB	62	40	CBB3	2	5	1437	57.4393	-151.5907	66	CTD062	Chl, FL, PAR, nuts.
KM12203.21	CTDB	63	41	CBB4	2	5	1515	57.4668	-151.5465	136	CTD063	Chl, FL, PAR, nuts.
KM12203.22	CTDB	64	42	CBB5	2	5	1555	57.4890	-151.5092	158	CTD064	Chl, FL, PAR, nuts.
KM12203.23	CTDB	65	43	CBB6	2	5	1644	57.5105	-151.4702	144	CTD065	Chl, FL, PAR, nuts.
KM12203.24	CTDB	66	44	CBB7	2	5	1728	57.5253	-151.4443	79	CTD066	Chl, FL, PAR, nuts.
KM12203.25	CTDB	67	45	CBB8	2	5	1822	57.5728	-151.3537	70	CTD067	Chl, FL, PAR, nuts.
KM12203.26	CTDB	68	46	CBB9	2	5	1908	57.6008	-151.2883	67	CTD068	Chl, FL, PAR, nuts.
KM12303.01	CTDB	69	47	CBC9	3	5	0112	57.7177	-151.5710	63	CTD069	Chl, FL, PAR, nuts.
KM12303.02	CTDB	70	48	CBC8	3	5	0201	57.6703	-151.6322	65	CTD070	Chl, FL, PAR, nuts.

Table 4: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12303.05	CTDB	71	49	CBC7	3	5	0304	57.6142	-151.6880	94	CTD071	Chl, FL, PAR, nuts.
KM12303.06	CTDB	72	50	CBC6	3	5	0338	57.5880	-151.7205	120	CTD072	Chl, FL, PAR, nuts.
KM12303.09	CTDB	73	51	CBC5	3	5	0459	-151.7503	-151.7503	145	CTD073	Chl, FL, PAR, nuts.
KM12303.12	CTDB	74	52	CBC4	3	5	0613	57.5305	-151.7833	132	CTD074	Chl, FL, PAR, nuts.
KM12303.13	CTDB	75	53	CBC3	3	5	0700	57.5052	-151.8168	92	CTD075	Chl, FL, PAR, nuts.
KM12303.16	CTDB	76	54	CBC2	3	5	0814	57.4492	-151.8760	73	CTD076	Chl, FL, PAR, nuts.
KM12303.17	CTDB	77	55	CBC1	3	5	0909	57.3763	-151.9360	73	CTD077	Chl, FL, PAR, nuts.
KM12303.20	CTDB	78	56	CC1	3	5	1137	57.6498	-152.0792	64	CTD078	Chl, FL, PAR, nuts.
KM12303.23	CTDB	79	57	CC2	3	5	1227	57.6593	-152.0498	102	CTD079	Chl, FL, PAR, nuts.
KM12303.26	CTDB	80	58	CC3	3	5	1323	57.6712	-152.0065	200	CTD080	Chl, FL, PAR, nuts.
KM12303.27	CTDB	81	59	CC4	3	5	1410	57.6803	-151.9675	187	CTD081	Chl, FL, PAR, nuts.
KM12303.30	CTDB	82	60	CC5	3	5	1521	57.6922	-151.9400	120	CTD082	Chl, FL, PAR, nuts.
KM12303.31	CTDB	83	61	CC6	3	5	1630	57.7000	-151.9075	95	CTD083	Chl, FL, PAR, nuts.
KM12303.34	CTDB	84	62	CC7	3	5	1735	57.7172	-151.8268	55	CTD084	Chl, FL, PAR, nuts.
KM12303.35	CTDB	85	63	CC8	3	5	1830	57.7502	-151.7168	55	CTD085	Chl, FL, PAR, nuts.
KM12303.38	CTDB	86	64	MA8	3	5	2003	57.8773	-151.7733	68	CTD086	Chl, FL, PAR, nuts.
KM12303.39	CTDB	87	65	MA7	3	5	2040	57.9232	-151.6308	71	CTD087	Chl, FL, PAR, nuts.
KM12303.42	CTDB	88	66	MA6	3	5	2135	57.9685	-151.6700	97	CTD088	Chl, FL, PAR, nuts.
KM12303.43	CTDB	89	67	MA5	3	5	2205	57.9953	-151.7005	106	CTD089	Chl, FL, PAR, nuts.
KM12303.46	CTDB	90	68	MA4	3	5	2311	58.0307	-151.7290	148	CTD090	Chl, FL, PAR, nuts.
KM12403.01	CTDB	91	69	MA3	4	5	0006	58.0698	-151.7620	169	CTD091	Chl, FL, PAR, nuts.
KM12403.04	CTDB	92	70	MA2	4	5	0135	58.1272	-151.7932	74	CTD092	Chl, FL, PAR, nuts.
KM12403.05	CTDB	93	71	MA1	4	5	0135	58.1377	-151.8155	66	CTD093	Chl, FL, PAR, nuts.
KM12403.08	CTDB	94	72	UST1	4	5	0450	58.2372	-151.1780	70	CTD094	Chl, FL, PAR, nuts.
KM12403.09	CTDB	95	73	UST2	4	5	0540	58.2652	-151.1005	70	CTD095	Chl, FL, PAR, nuts.
KM12403.10	CTDB	96	74	UST1	4	5	0719	58.2340	-151.1865	170	CTD096	Chl, FL, PAR, nuts.
KM12403.11	CTDB	97	75	UST2	4	5	0816	58.2660	-151.1008	107	CTD097	Chl, FL, PAR, nuts.
KM12403.12	CTDB	98	76	UST3	4	5	0858	58.2907	-151.0253	138	CTD098	Chl, FL, PAR, nuts.
KM12403.13	CTDB	99	77	UST4	4	5	0932	58.3060	-150.9947	97	CTD099	Chl, FL, PAR, nuts.
KM12403.14	CTDB	100	78	UST5	4	5	1014	58.3493	-150.9515	61	CTD100	Chl, FL, PAR, nuts.
KM12403.15	CTDB	101	79	PBST1	4	5	1303	58.6502	-150.5635	219	CTD101	Chl, FL, PAR, nuts.
KM12403.16	CTDB	102	80	STD2	4	5	1406	58.5652	-150.5737	170	CTD102	Chl, FL, PAR, nuts.
KM12403.17	CTDB	103	81	STD3	4	5	1505	58.4927	-150.6137	87	CTD103	Chl, FL, PAR, nuts.
KM12403.18	CTDB	104	82	STD4	4	5	1559	58.4185	-150.6453	73	CTD104	Chl, FL, PAR, nuts.
KM12403.19	CTDB	105	83	STD5	4	5	1702	58.3227	-150.6977	61	CTD105	Chl, FL, PAR, nuts.
KM12403.20	CTDB	106	84	STD6	4	5	1815	58.2507	-150.7087	71	CTD106	Chl, FL, PAR, nuts.
KM12403.23	CTDB	107	85	STD7	4	5	1909	58.1982	-150.7405	111	CTD107	Chl, FL, PAR, nuts.
KM12403.24	CTDB	108	86	STD8	4	5	2006	58.1263	-150.7683	145	CTD108	Chl, FL, PAR, nuts.
KM12403.27	CTDB	109	87	STD9	4	5	2113	58.0665	-150.7893	152	CTD109	Chl, FL, PAR, nuts.
KM12403.28	CTDB	110	88	STD10	4	5	2209	58.0000	-150.8225	133	CTD110	Chl, FL, PAR, nuts.
KM12403.31	CTDB	111	89	STD11	4	5	2320	57.9258	-150.8517	92	CTD111	Chl, FL, PAR, nuts.
KM12503.01	CTDB	112	90	STD12	5	5	0010	57.8595	-150.8668	80	CTD112	Chl, FL, PAR, nuts.
KM12503.02	CTDB	113	91	STD13	5	5	0138	57.7253	-150.9153	80	CTD113	Chl, FL, PAR, nuts.
KM12503.05	CTDB	114	92	PBA14	5	5	0412	57.6528	-150.4785	98	CTD114	Chl, FL, PAR, nuts.
KM12503.06	CTDB	115	93	PBA13	5	5	0542	57.8080	-150.5008	90	CTD115	Chl, FL, PAR, nuts.
KM12503.09	CTDB	116	94	PBA12	5	5	0659	57.8763	-150.4612	111	CTD116	Chl, FL, PAR, nuts.
KM12503.12	CTDB	117	95	PBA11	5	5	0822	57.9478	-150.4308	160	CTD117	Chl, FL, PAR, nuts.
KM12503.13	CTDB	118	96	PBA10	5	5	0924	58.0163	-150.4002	178	CTD118	Chl, FL, PAR, nuts.

Table 4: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12503.16	CTDB	119	97	PBA9	5	5	1107	58.1155	-150.3708	197	CTD119	Chl, FL, PAR, nuts.
KM12503.17	CTDB	120	98	PBA8	5	5	1200	58.1510	-150.3553	166	CTD120	Chl, FL, PAR, nuts.
KM12503.20	CTDB	121	99	PBA7	5	5	1315	58.2217	-150.3330	84	CTD121	Chl, FL, PAR, nuts.
KM12503.23	CTDB	122	100	PBA6	5	5	1423	58.2990	-150.2993	53	CTD122	Chl, FL, PAR, nuts.
KM12503.24	CTDB	123	101	PBA5	5	5	1515	58.3630	-150.2820	54	CTD123	Chl, FL, PAR, nuts.
KM12503.25	CTDB	124	102	STB1	5	5	1754	58.2213	-149.6087	66	CTD124	Chl, FL, PAR, nuts.
KM12503.28	CTDB	125	103	STB2	5	5	1851	58.1732	-149.6808	107	CTD125	Chl, FL, PAR, nuts.
KM12503.29	CTDB	126	104	STB3	5	5	1945	58.1205	-149.7348	219	CTD126	Chl, FL, PAR, nuts.
KM12503.32	CTDB	127	105	STB4	5	5	2127	58.0505	-149.8223	245	CTD127	Chl, FL, PAR, nuts.
KM12503.33	CTDB	128	106	STB5	5	5	2240	57.9823	-149.9090	265	CTD128	Chl, FL, PAR, nuts.
KM12603.01	CTDB	129	107	STB6	6	5	0030	57.9045	-150.0013	261	CTD129	Chl, FL, PAR, nuts.
KM12603.02	CTDB	130	108	STB7	6	5	0152	57.8315	-150.0855	210	CTD130	Chl, FL, PAR, nuts.
KM12603.03	CTDB	131	109	STB8	6	5	0306	57.7792	-150.1572	182	CTD131	Chl, FL, PAR, nuts.
KM12603.06	CTDB	132	110	STA1	6	5	0536	57.7080	-150.2390	132	CTD132	Chl, FL, PAR, nuts.
KM12603.07	CTDB	133	111	STA2	6	5	0537	57.7388	-150.1187	194	CTD133	Chl, FL, PAR, nuts.
KM12603.10	CTDB	134	112	STA3	6	5	0743	57.8092	-149.8813	258	CTD134	Chl, FL, PAR, nuts.
KM12603.13	CTDB	135	113	STA4	6	5	0946	57.8797	-149.6850	232	CTD135	Chl, FL, PAR, nuts.
KM12603.14	CTDB	136	114	STA5	6	5	1051	57.9187	-149.5780	129	CTD136	Chl, FL, PAR, nuts.
KM12603.17	CTDB	137	115	STA6	6	5	1217	57.9520	-149.4692	193	CTD137	Chl, FL, PAR, nuts.
KM12603.18	CTDB	138	116	STA7	6	5	1309	57.9828	-149.4173	207	CTD138	Chl, FL, PAR, nuts.
KM12603.19	CTDB	139	117	STA8	6	5	1419	58.0222	-149.2890	221	CTD139	Chl, FL, PAR, nuts.
KM12603.22	CTDB	140	118	STA9	6	5	1554	58.0630	-149.1745	110	CTD140	Chl, FL, PAR, nuts.
KM12603.25	CTDB	141	119	STA10	6	5	1713	58.0995	-149.0770	85	CTD141	Chl, FL, PAR, nuts.
KM12603.26	CTDB	142	120	SAB2	6	5	1833	58.2278	-149.0277	127	CTD142	Chl, FL, PAR, nuts.
KM12603.27	CTDB	143	121	SAB3	6	5	2345	58.3517	-148.9823	125	CTD143	Chl, FL, PAR, nuts.
KM12703.01	CTDB	144	122	SAB4	7	5	0100	58.4750	-148.9337	114	CTD144	Chl, FL, PAR, nuts.
KM12703.04	CTDB	145	123	ATB7	7	5	0241	58.6120	-148.8990	116	CTD145	Chl, FL, PAR, nuts.
KM12703.05	CTDB	146	124	GB12	7	5	0350	58.7052	-148.8498	211	CTD146	Chl, FL, PAR, nuts.
KM12703.08	CTDB	147	125	ATB5	7	5	0536	58.7957	-148.8170	251	CTD147	Chl, FL, PAR, nuts.
KM12703.09	CTDB	148	126	GB11	7	5	0658	58.8925	-148.7855	290	CTD148	Chl, FL, PAR, nuts.
KM12703.12	CTDB	149	127	ATB3	7	5	0842	58.9685	-148.7398	249	CTD149	Chl, FL, PAR, nuts.
KM12703.13	CTDB	150	128	ATB2	7	5	0946	59.0183	-148.7040	226	CTD150	Chl, FL, PAR, nuts.
KM12703.16	CTDB	151	129	ATB1	7	5	1134	59.1167	-148.6467	164	CTD151	Chl, FL, PAR, nuts.
KM12703.17	CTDB	152	130	ATB0	7	5	1236	59.1927	-148.6030	129	CTD152	Chl, FL, PAR, nuts.
KM12703.18	CTDB	153	131	ATB1	7	5	1334	59.1153	-148.6472	164	CTD153	Chl, FL, PAR, nuts.
KM12703.19	CTDB	154	132	ATB2	7	5	1445	59.0163	-148.7012	229	CTD154	Chl, FL, PAR, nuts.
KM12703.20	CTDB	155	133	ATB3	7	5	1551	58.9665	-148.7377	251	CTD155	Chl, FL, PAR, nuts.
KM12703.21	CTDB	156	134	GB11	7	5	1705	58.8915	-148.7840	289	CTD156	Chl, FL, PAR, nuts.
KM12703.22	CTDB	157	135	ATB5	7	5	1821	58.7943	-148.8157	251	CTD157	Chl, FL, PAR, nuts.
KM12703.23	CTDB	158	136	GB12	7	5	2016	58.7000	-148.8488	210	CTD158	Chl, FL, PAR, nuts.
KM12703.24	CTDB	159	137	ATB7	7	5	2125	58.6105	-148.8848	115	CTD159	Chl, FL, PAR, nuts.
KM12703.25	CTDB	160	138	SAB4	7	5	2241	58.4747	-148.9377	113	CTD160	Chl, FL, PAR, nuts.
KM12803.01	CTDB	161	139	ATB7	8	5	0007	58.6117	-148.8863	115	CTD161	Chl, FL, PAR, nuts.
KM12803.02	CTDB	162	140	GB12	8	5	0115	58.7020	-148.8523	210	CTD162	Chl, FL, PAR, nuts.
KM12803.03	CTDB	163	141	ATB5	8	5	0228	58.7998	-148.8217	254	CTD163	Chl, FL, PAR, nuts.
KM12803.04	CTDB	164	142	GB11	8	5	0350	58.8930	-148.7835	290	CTD164	Chl, FL, PAR, nuts.
KM12803.05	CTDB	165	143	ATB3	8	5	0510	58.9645	-148.7348	253	CTD165	Chl, FL, PAR, nuts.
KM12803.06	CTDB	166	144	ATB2	8	5	0619	59.0165	-148.7015	228	CTD166	Chl, FL, PAR, nuts.

Table 4: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12803.07	CTDB	167	145	ATB1A	8	5	0740	59.0632	-148.6783	180	CTD167	Chl, FL, PAR, nuts.
KM12803.08	CTDB	168	146	ATB1	8	5	0847	59.1177	-148.6517	160	CTD168	Chl, FL, PAR, nuts.
KM12803.09	CTDB	169	147	ATB0	8	5	0951	59.1912	-148.6098	124	CTD169	Chl, FL, PAR, nuts.
KM12803.10	CTDB	170	148	ATD9	8	5	1257	59.1618	-149.6433	173	CTD170	Chl, FL, PAR, nuts.
KM12803.11	CTDB	171	149	ATD8	8	5	1352	59.1127	-149.6233	210	CTD171	Chl, FL, PAR, nuts.
KM12803.12	CTDB	172	150	ATD7	8	5	1457	59.0333	-149.5935	227	CTD172	Chl, FL, PAR, nuts.
KM12803.13	CTDB	173	151	ATD6	8	5	1608	58.9400	-149.5672	241	CTD173	Chl, FL, PAR, nuts.
KM12803.14	CTDB	174	152	ATD5	8	5	1713	58.8538	-149.5372	228	CTD174	Chl, FL, PAR, nuts.
KM12803.15	CTDB	175	153	ATD4	8	5	1817	58.7822	-149.5002	196	CTD175	Chl, FL, PAR, nuts.
KM12803.16	CTDB	176	154	ATD3	8	5	1917	58.7075	-149.4695	160	CTD176	Chl, FL, PAR, nuts.
KM12803.17	CTDB	177	155	ATD2	8	5	2016	58.6452	-149.4517	138	CTD177	Chl, FL, PAR, nuts.
KM12803.18	CTDB	178	156	ATD1	8	5	2143	58.5735	-149.4310	128	CTD178	Chl, FL, PAR, nuts.
KM12803.21	CTDB	179	157	ATD2	8	5	2317	58.6497	-149.4530	138	CTD179	Chl, FL, PAR, nuts.
KM12903.01	CTDB	180	158	ATD3	9	5	0016	58.7087	-149.4658	162	CTD180	Chl, FL, PAR, nuts.
KM12903.02	CTDB	181	159	ATD4	9	5	0125	58.7818	-149.5067	197	CTD181	Chl, FL, PAR, nuts.
KM12903.05	CTDB	182	160	ATD5	9	5	0306	58.8562	-149.5337	226	CTD182	Chl, FL, PAR, nuts.
KM12903.06	CTDB	183	161	ATD6	9	5	0419	58.9453	-149.5657	240	CTD183	Chl, FL, PAR, nuts.
KM12903.09	CTDB	184	162	ATD7	9	5	0607	59.0317	-149.5950	226	CTD184	Chl, FL, PAR, nuts.
KM12903.10	CTDB	185	163	ATD8	9	5	0735	59.1127	-149.6197	209	CTD185	Chl, FL, PAR, nuts.
KM12903.13	CTDB	186	164	ATD9	9	5	0950	59.1625	-149.6407	172	CTD186	Chl, FL, PAR, nuts.
KM12903.14	CTDB	187	165	ATD10	9	5	0958	59.2357	-149.6647	124	CTD187	Chl, FL, PAR, nuts.
KM12903.17	CTDB	188	166	ATD9	9	5	1120	59.1635	-149.6392	172	CTD188	Chl, FL, PAR, nuts.
KM12903.18	CTDB	189	167	ATD8	9	5	1223	59.1143	-149.6200	209	CTD189	Chl, FL, PAR, nuts.
KM12903.19	CTDB	190	168	ATD7	9	5	1331	59.0340	-149.5980	227	CTD190	Chl, FL, PAR, nuts.
KM12903.20	CTDB	191	169	ATD6	9	5	1447	58.9442	-149.5693	241	CTD191	Chl, FL, PAR, nuts.
KM12903.21	CTDB	192	170	ATD5	9	5	1609	58.8540	-149.5332	227	CTD192	Chl, FL, PAR, nuts.
KM12903.22	CTDB	193	171	ATD4	9	5	1725	58.7813	-149.4963	196	CTD193	Chl, FL, PAR, nuts.
KM12903.23	CTDB	194	172	ATD3	9	5	1845	58.7068	-149.4582	160	CTD194	Chl, FL, PAR, nuts.
KM13003.01	CTDB	195	173	ATE5	10	5	1419	58.7572	-150.1593	167	CTD195	Chl, FL, PAR, nuts.
KM13003.04	CTDB	196	174	ATE4	10	5	1819	58.8432	-150.1422	165	CTD196	Chl, FL, PAR, nuts.
KM13003.05	CTDB	197	175	ATE3	10	5	2106	58.9390	-150.1118	205	CTD197	Chl, FL, PAR, nuts.
KM13003.06	CTDB	198	176	ATE2	10	5	2230	59.0277	-150.0887	200	CTD198	Chl, FL, PAR, nuts.
KM13103.01	CTDB	199	177	ATE1	11	5	0039	59.1220	-150.0667	146	CTD199	Chl, FL, PAR, nuts.
KM13103.02	CTDB	200	178	KCW1	11	5	0201	59.1602	-149.8653	136	CTD200	Chl, FL, PAR, nuts.
KM13103.03	CTDB	201	179	KCW2	11	5	0326	59.2325	-149.6047	137	CTD201	Chl, FL, PAR, nuts.
KM13103.04	CTDB	202	180	KCW3	11	5	0504	59.3068	-149.3477	141	CTD202	Chl, FL, PAR, nuts.
KM13103.07	CTDB	203	181	KCW4	11	5	0651	59.3657	-149.1475	209	CTD203	Chl, FL, PAR, nuts.
KM13103.10	CTDB	204	182	KCW5	11	5	0849	59.4498	-148.8967	189	CTD204	Chl, FL, PAR, nuts.
KM13103.11	CTDB	205	183	KCW6	11	5	0946	59.4838	-148.7647	99	CTD205	Chl, FL, PAR, nuts.
KM13103.14	CTDB	206	184	KCW7	11	5	1042	59.5178	-148.6553	84	CTD206	Chl, FL, PAR, nuts.
KM13203.01	CTDB	207	185	HC1	12	5	0207	59.5862	-147.0190	212	CTD207	Chlor, Fluor, PAR, nuts, protests.
KM13203.04	CTDB	208	186	ENS1	12	5	0845	59.3788	-145.2703	1841	CTD208	Chlor, Fluor, nuts.
KM13203.05	CTDB	209	187	ENS2	12	5	1239	59.2100	-145.2603	3257	CTD209	Chlor, Fluor, nuts, protests.
KM13203.06	CTDB	210	188	ENS3	12	5	1554	59.0330	-145.2562	4262	CTD210	Chlor, Fluor, Nuts.
KM13203.09	CTDB	211	189	ENS4	12	5	1938	59.8573	-145.2477	4111	CTD211	Chlor, Fluor, Nuts.
KM13203.10	CTDB	212	190	ENS5	12	5	2227	58.6770	-145.2535	4007	CTD212	Chlor, Fluor, nuts, protests.
KM13303.01	CTDB	213	191	ENS6	13	5	0125	58.5028	-145.2617	4157	CTD213	Chlor, Fluor, nuts, protests.
KM13303.05	CTDB	214	192	ENS7	13	5	0500	58.3618	-145.2363	3991	CTD214	Chlor, Fluor, nuts

Table 4: CTD Casts (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM13303.06	CTDB	215	193	ENS8	13	5	0804	58.2190	-145.2710	3942	CTD215	Chlor, Fluor, nuts, protests.
KM13303.07	CTDB	216	194	ENS9	13	5	1043	58.0753	-145.2628	3945	CTD216	Chlor, Fluor, nuts, protests.
KM13303.08	CTDB	217	195	ENS10	13	5	1332	58.9278	-145.2462	3899	CTD217	Chlor, Fluor, nuts
KM13303.09	CTDB	218	196	ENS11	13	5	1622	57.7825	-145.2485	3565	CTD218	Chlor, Fluor, nuts, protests.
KM13303.12	CTDB	219	197	ENS12	13	5	1957	57.6408	-145.2543	3865	CTD219	Chlor, Fluor, nuts
KM13403.01	CTDB	220	198	EEW1	14	5	0439	58.6390	-143.6492	3519	CTD220	Chlor, Fluor, nuts, protests.
KM13403.04	CTDB	221	199	EEW2	14	5	0829	58.6368	-143.9495	3579	CTD221	Chlor, Fluor, nuts.
KM13403.05	CTDB	222	200	EEW3	14	5	1152	58.6425	-144.2885	3705	CTD222	Chlor, Fluor, nuts.
KM13403.06	CTDB	223	201	EEW4	14	5	1509	58.6375	-144.6073	3733	CTD223	Chlor, Fluor, nuts.
KM13403.07	CTDB	224	202	EEW5	14	5	0508	58.6325	-144.9555	3869	CTD224	Chlor, Fluor, nuts.
KM13403.08	CTDB	225	203	EEW6	14	5	2226	58.6392	-145.3077	2226	CTD225	Chlor, Fluor, nuts, protests.
KM13503.01	CTDB	226	204	EEW7	15	5	0233	58.6373	-145.6007	4199	CTD226	Chlor, Fluor, nuts.
KM13503.02	CTDB	227	205	EEW8	15	5	0635	58.6402	-145.9393	4540	CTD227	Chlor, Fluor, nuts.
KM13503.04	CTDB	228	206	EEW9	15	5	1039	58.6410	-146.2680	4654	CTD228	Chlor, Fluor, nuts.
KM13503.05	CTDB	229	207	EEW10	15	5	1425	58.6415	-146.5938	3755	CTD229	Chlor, Fluor, nuts, protests.
KM13503.08	CTDB	230	208	EEW11	15	5	1820	58.6410	-146.9310	2469	CTD230	Chlor, Fluor, nuts.
KM13503.09	CTDB	231	209	EEW12	15	5	2137	58.6442	-147.2737	2728	CTD231	Chlor, Fluor, nuts.
KM13603.01	CTDB	232	210	EEW13	16	5	0047	58.6425	-147.6015	2104	CTD232	Chlor, Fluor, nuts.
KM13603.04	CTDB	233	211	EEW14	16	5	0428	58.6623	-147.9340	1781	CTD233	Chlor, Fluor, nuts.
KM13603.06	CTDB	234	212	EEW15	16	5	0656	58.6212	-148.2267	832	CTD234	Chlor, Fluor, nuts.
KM13603.07	CTDB	235	213	EEW16	16	5	0839	58.6203	-148.4505	254	CTD235	Chlor, Fluor, nuts.
KM13603.08	CTDB	236	214	EEW17	16	5	0922	58.6157	-148.5198	229	CTD236	Chlor, Fluor, nuts.
KM13603.09	CTDB	237	215	EEW18	16	5	1003	58.6128	-148.5667	193	CTD237	Chlor, Fluor, nuts.
KM13603.10	CTDB	238	216	EEW19	16	5	1143	58.6115	-148.8825	117	CTD238	Chlor, Fluor, nuts; same as sta ATB7.
KM13603.11	CTDB	239	217	SE05	16	5	2206	58.6650	-152.4107	85	CTD239	Chl, FL, PAR, nuts.
KM13603.12	CTDB	240	218	SE04	16	5	2252	58.7035	-152.3933	157	CTD240	Chl, FL, PAR, nuts.
KM13603.13	CTDB	241	219	SE03	16	5	2336	58.7430	-152.3772	125	CTD241	Chl, FL, PAR, nuts.
KM13703.01	CTDB	242	220	SE02	17	5	0026	59.7827	-152.3608	138	CTD242	Chl, FL, PAR, nuts.
KM13703.02	CTDB	243	221	SE01	17	5	0114	58.8302	-152.3400	144	CTD243	Chl, FL, PAR, nuts.
KM13703.03	CTDB	244	222	KE07	17	5	0318	58.9830	-152.3003	83	CTD244	Chl, FL, PAR, nuts.
KM13703.04	CTDB	245	223	KE06	17	5	0403	59.0200	-152.2387	130	CTD245	Chl, FL, PAR, nuts.
KM13703.05	CTDB	246	224	KE05	17	5	0452	59.0598	-152.2012	132	CTD246	Chl, FL, PAR, nuts.
KM13703.06	CTDB	247	225	KE04	17	5	0544	59.1085	-152.1605	155	CTD247	Chl, FL, PAR, nuts.
KM13703.07	CTDB	248	226	KE03	17	5	0627	59.1390	-152.1312	151	CTD248	Chl, FL, PAR, nuts.
KM13703.08	CTDB	249	227	KE02	17	5	0716	59.1943	-152.0743	99	CTD249	Chl, FL, PAR, nuts.
KM13703.09	CTDB	250	228	KE01	17	5	0810	59.2332	-152.0362	88	CTD250	Chl, FL, PAR, nuts.
KM13703.10	CTDB	251	229	GP0	17	5	1252	59.1598	-151.0062	73	CTD251	Chl, FL, PAR, nuts.
KM13703.11	CTDB	252	230	GP1	17	5	1346	59.0993	-150.9898	172	CTD252	Chl, FL, PAR, nuts.
KM13703.12	CTDB	253	231	GP2	17	5	1455	59.0093	-150.9583	166	CTD253	Chl, FL, PAR, nuts.
KM13703.13	CTDB	254	232	GP3	17	5	1559	58.9483	-150.9320	150	CTD254	Chl, FL, PAR, nuts.
KM13703.14	CTDB	255	233	GP4	17	5	0000	58.8798	-150.8988	160	CTD255	Chl, FL, PAR, nuts.
KM13703.15	CTDB	256	234	GP5	17	5	1754	58.8187	-150.8782	183	CTD256	Chl, FL, PAR, nuts.
KM13703.16	CTDB	257	235	GP6	17	5	1850	58.7473	-150.8702	181	CTD257	Chl, FL, PAR, nuts.
KM13703.17	CTDB	258	236	GP6A	17	5	1954	58.6702	-150.8312	193	CTD258	Chl, FL, PAR, nuts.
KM13703.18	CTDB	259	237	GP7	17	5	2051	58.5883	-150.8015	179	CTD259	Chl, FL, PAR, nuts.
KM13703.19	CTDB	260	238	GP7A	17	5	2140	58.5362	-150.7760	137	CTD260	Chl, FL, PAR, nuts.
KM13703.20	CTDB	261	239	GP7B	17	5	2239	58.4903	-150.7507	150	CTD261	Chl, FL, PAR, nuts; same as sta AP6.
KM13703.21	CTDB	262	240	GP8B	17	5	2346	58.3813	-150.7032	67	CTD262	Chl, FL, PAR, nuts.

**Table 4: CTD Casts (cont'd)**

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM13803.01	CTDB	263	241	AP5	18	5	0106	58.4673	-150.9442	76	CTD263	Chl, FL, PAR, nuts.
KM13803.02	CTDB	264	242	AP4	18	5	0213	58.4577	-151.1362	95	CTD264	Chl, FL, PAR, nuts.
KM13803.03	CTDB	265	243	AP3	18	5	0324	58.4402	-151.3347	128	CTD265	Chl, FL, PAR, nuts.
KM13803.04	CTDB	266	244	AP2	18	5	0447	58.4265	-151.5312	167	CTD266	Chl, FL, PAR, nuts.
KM13803.05	CTDB	267	245	AP1	18	5	0559	58.4148	-151.7148	168	CTD267	Chl, FL, PAR, nuts.



Table 5: 60 cm Bongo Tows

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12003.02	60Bon	1	2	AP2	30	4	0651	58.4270	-151.5432	195	BON001	QTowF.
KM12003.06	60Bon	2	4	AP4	30	4	1037	58.4638	-151.1545	105	BON002	QTowF.
KM12003.09	60Bon	3	6	AP6	30	4	1327	58.4828	-150.7558	96	BON003	QTowF.
KM12003.13	60Bon	4	9	GP6A	30	4	1649	58.6707	-150.8423	202	BON004	QTowF.
KM12003.16	60Bon	5	11	GP5	30	4	2006	58.8212	-150.9438	186	BON005	QTowF.
KM12103.01	60Bon	6	14	GP2	1	5	0007	59.0083	-150.9785	160	BON006	QTowF.
KM12103.09	60Bon	7	20	KE4	1	5	1058	59.1035	-152.1587	158	BON007	QTowF.
KM12103.13	60Bon	8	22	KE6	1	5	1313	59.0210	-152.2345	138	BON008	QTowF.
KM12103.18	60Bon	9	25	SE2	1	5	1741	58.7840	-152.3573	132	BON009	QTowF.
KM12103.22	60Bon	10	27	SE4	1	5	1945	58.7012	-152.4135	162	BON010	QTowF.
KM12203.03	60Bon	11	30	CBA8	2	5	0559	57.5012	-151.1715	78	BON011	QTowF.
KM12203.07	60Bon	12	32	CBA6	2	5	0753	57.4232	-151.3173	152	BON012	QTowF.
KM12203.11	60Bon	13	34	CBA4	2	5	0948	57.3758	-151.4317	160	BON013	QTowF.
KM12203.15	60Bon	14	36	CBA2	2	5	1124	57.3030	-151.5015	70	BON014	QTowF.
KM12303.03	60Bon	15	48	CBC8	3	5	0218	57.6720	-151.6337	65	BON015	QTowF.
KM12303.07	60Bon	16	50	CBC6	3	5	0400	57.6258	-151.7272	118	BON016	QTowF.
KM12303.10	60Bon	17	51	CBC5	3	5	0522	57.5657	-151.7577	147	BON017	QTowF.
KM12303.14	60Bon	18	53	CBC3	3	5	0719	57.5082	-151.8205	93	BON018	QTowF.
KM12303.18	60Bon	19	55	CBC1	3	5	0926	57.3830	-151.9445	73	BON019	QTowF.
KM12303.21	60Bon	20	56	CC1	3	5	1158	57.6522	-152.0692	78	BON020	QTowF.
KM12303.24	60Bon	21	57	CC2	3	5	1247	57.6625	-152.0530	109	BON021	QTowF.
KM12303.28	60Bon	22	59	CC4	3	5	1438	57.6762	-151.9577	186	BON022	QTowF.
KM12303.32	60Bon	23	61	CC6	3	5	1646	57.6985	-151.9038	90	BON023	QTowF.
KM12303.36	60Bon	24	63	CC8	3	5	1843	57.7513	-151.7130	55	BON024	QTowF.
KM12303.40	60Bon	25	65	MA7	3	5	2057	57.9293	-151.6293	73	BON025	QTowF.
KM12303.44	60Bon	26	67	MA5	3	5	2227	57.9900	-151.7017	110	BON026	QTowF.
KM12403.02	60Bon	27	69	MA3	4	5	0034	58.0642	-151.7627	170	BON027	QTowF.
KM12403.06	60Bon	28	71	MA1	4	5	0218	58.1385	-151.8158	67	BON028	QTowF.
KM12403.21	60Bon	29	84	STD6	4	5	1829	58.2465	-150.7170	71	BON029	QTowF.
KM12403.25	60Bon	30	86	STD8	4	5	2029	58.1192	-150.7737	145	BON030	QTowF.
KM12403.29	60Bon	31	88	STD10	4	5	2227	57.9940	-150.8245	128	BON031	QTowF.
KM12503.03	60Bon	32	91	STD13	5	5	0157	57.7213	-150.9165	80	BON032	QTowF.
KM12503.07	60Bon	33	93	PBA13	5	5	0558	57.8033	-150.5067	90	BON033	QTowF.
KM12503.10	60Bon	34	94	PBA12	5	5	0719	57.8718	-150.4692	105	BON034	QTowF.
KM12503.14	60Bon	35	96	PBA10	5	5	0947	58.0107	-150.4113	176	BON035	QTowF.
KM12503.18	60Bon	36	98	PBA8	5	5	1221	58.1535	-150.3605	159	BON036	QTowF.
KM12503.21	60Bon	37	99	PBA7	5	5	1331	58.2247	-150.3383	83	BON037	QTowF.
KM12503.26	60Bon	38	102	STB1	5	5	1808	58.2202	-149.6158	66	BON038	QTowF.
KM12503.30	60Bon	39	104	STB3	5	5	2017	58.1182	-149.7572	226	BON039	QTowF.
KM12503.34	60Bon	40	106	STB5	5	5	2314	57.9863	-149.9343	267	BON040	QTowF.
KM12603.04	60Bon	41	109	STB8	6	5	0332	57.7785	-150.1670	178	BON041	QTowF.
KM12603.08	60Bon	42	111	STA2	6	5	0602	57.7427	-150.1285	196	BON042	QTowF.
KM12603.11	60Bon	43	112	STA3	6	5	0813	57.8055	-149.8958	254	BON043	QTowF.
KM12603.15	60Bon	44	114	STA5	6	5	1112	57.9192	-149.5907	129	BON044	QTowF.
KM12603.20	60Bon	45	117	STA8	6	5	1444	58.0220	-149.3022	244	BON045	QTowF.
KM12603.23	60Bon	46	118	STA9	6	5	1612	58.0628	-149.1880	113	BON046	QTowF.
KM12703.02	60Bon	47	122	SAB4	7	5	0119	58.4775	-148.9467	114	BON047	QTowF.
KM12703.06	60Bon	48	124	GB12	7	5	0419	58.7040	-148.8515	214	BON048	QTowF.

Table 5: 60 cm Bongo Tows (cont'd)

Event#	Instr	Cast	Sta	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12703.10	60Bon	49	126	7	5	0730	58.8943	-148.8002	286	BON049	Q TowF.
KM12703.14	60Bon	50	128	7	5	1015	59.0198	-148.7245	223	BON050	Q TowF.
KM12803.19	60Bon	51	156	8	5	2209	58.5648	-149.4265	127	BON051	Q TowF.
KM12903.03	60Bon	52	159	9	5	0151	58.7767	-149.4918	195	BON052	Q TowF.
KM12903.07	60Bon	53	161	9	5	0446	58.9370	-149.5650	241	BON053	Q TowF.
KM12903.11	60Bon	54	163	9	5	0759	59.1132	-149.6083	209	BON054	Q TowF.
KM12903.15	60Bon	55	165	9	5	1020	59.2370	-149.6527	126	BON055	Q TowF.
KM13003.02	60Bon	56	173	10	5	1445	58.7510	-150.1650	161	BON056	Chl, FL, PAR, nuts.
KM13003.07	60Bon	57	176	10	5	2309	59.0150	-150.0928	196	BON057	Q TowF.
KM13103.05	60Bon	58	180	11	5	0533	59.2998	-149.3365	142	BON058	Q TowF.
KM13103.08	60Bon	59	181	11	5	0718	59.3585	-149.1343	206	BON059	Q TowF.
KM13103.12	60Bon	60	183	11	5	1003	59.4828	-148.7523	93	BON060	Q TowF.
KM13203.02	60Bon	61	185	12	5	0000	59.5862	-147.0075	213	BON061	Q TowF.
KM13203.07	60Bon	62	188	12	5	1712	59.2108	-145.2603	3257	BON062	Q TowF.
KM13303.02	60Bon	63	191	13	5	0251	58.4988	-145.2703	4157	BON063	Q TowF.
KM13303.10	60Bon	64	196	13	5	1739	57.7723	-145.2672	3427	BON064	Q TowF.
KM13403.02	60Bon	65	198	14	5	0607	58.6537	-143.6903	3538	BON065	Q TowF.
KM13503.06	60Bon	66	207	15	5	0000	58.6384	-146.5833	3635	BON066	Q TowF.
KM13603.02	60Bon	67	210	16	5	0208	58.6512	-147.6403	1911	BON067	Q TowF.

Table 6: Seabird SeaCAT CTD

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12003.17	CAT	5	11	GP5	30	4	2006	58.8212	-150.9438	186	BON005	CAT
KM12103.02	CAT	6	14	GP2	1	5	0007	59.0083	-150.9785	160	BON006	CAT
KM12103.10	CAT	7	20	KE4	1	5	1058	59.1035	-152.1587	158	BON007	CAT
KM12103.14	CAT	8	22	KE6	1	5	1313	59.0210	-152.2345	138	BON008	CAT
KM12103.19	CAT	9	25	SE2	1	5	1741	58.7840	-152.3573	132	BON009	CAT
KM12103.23	CAT	10	27	SE4	1	5	1945	58.7012	-152.4135	162	BON010	CAT
KM12203.04	CAT	11	30	CBA8	2	5	0559	57.5012	-151.1715	78	BON011	CAT
KM12203.08	CAT	12	32	CBA6	2	5	0753	57.4232	-151.3173	152	BON012	CAT
KM12203.12	CAT	13	34	CBA4	2	5	0948	57.3758	-151.4317	160	BON013	CAT
KM12203.16	CAT	14	36	CBA2	2	5	1124	57.3030	-151.5015	70	BON014	CAT
KM12303.04	CAT	15	48	CBC8	3	5	0218	57.6720	-151.6337	65	BON015	CAT
KM12303.08	CAT	16	50	CBC6	3	5	0400	57.6258	-151.7272	118	BON016	CAT
KM12303.11	CAT	17	51	CBC5	3	5	0522	57.5657	-151.7577	147	BON017	CAT
KM12303.15	CAT	18	53	CBC3	3	5	0719	57.5082	-151.8205	93	BON018	CAT
KM12303.19	CAT	19	55	CBC1	3	5	0926	57.3830	-151.9445	73	BON019	CAT
KM12303.22	CAT	20	56	CC1	3	5	1158	57.6522	-152.0692	78	BON020	CAT
KM12303.25	CAT	21	57	CC2	3	5	1247	57.6625	-152.0530	109	BON021	CAT
KM12303.29	CAT	22	59	CC4	3	5	1438	57.6762	-151.9577	186	BON022	CAT
KM12303.33	CAT	23	61	CC6	3	5	1646	57.6985	-151.9038	90	BON023	CAT
KM12303.37	CAT	24	63	CC8	3	5	1843	57.7513	-151.7130	55	BON024	CAT
KM12303.41	CAT	25	65	MA7	3	5	2057	57.9293	-151.6293	73	BON025	CAT
KM12303.45	CAT	26	67	MA5	3	5	2227	57.9900	-151.7017	110	BON026	CAT
KM12403.03	CAT	27	69	MA3	4	5	0034	58.0642	-151.7627	170	BON027	CAT
KM12403.07	CAT	28	71	MA1	4	5	0218	58.1385	-151.8158	67	BON028	CAT
KM12403.22	CAT	29	84	STD6	4	5	1829	58.2465	-150.7170	71	BON029	CAT
KM12403.26	CAT	30	86	STD8	4	5	2029	58.1192	-150.7737	145	BON030	CAT
KM12403.30	CAT	31	88	STD10	4	5	2227	57.9940	-150.8245	128	BON031	CAT
KM12503.04	CAT	32	91	STD13	5	5	0157	57.7213	-150.9165	80	BON032	CAT
KM12503.08	CAT	33	93	PBA13	5	5	0558	57.8033	-150.5067	90	BON033	CAT
KM12503.11	CAT	34	94	PBA12	5	5	0719	57.8718	-150.4692	105	BON034	CAT
KM12503.15	CAT	35	96	PBA10	5	5	0947	58.0107	-150.4113	176	BON035	CAT
KM12503.19	CAT	36	98	PBA8	5	5	1221	58.1535	-150.3605	159	BON036	CAT
KM12503.22	CAT	37	99	PBA7	5	5	1331	58.2247	-150.3383	83	BON037	CAT
KM12503.27	CAT	38	102	STB1	5	5	1808	58.2202	-149.6158	66	BON038	CAT
KM12503.31	CAT	39	104	STB3	5	5	2017	58.1182	-149.7572	226	BON039	CAT
KM12503.35	CAT	40	106	STB5	5	5	2314	57.9863	-149.9343	267	BON040	CAT
KM12603.05	CAT	41	109	STB8	6	5	0332	57.7785	-150.1670	178	BON041	CAT
KM12603.09	CAT	42	111	STA2	6	5	0602	57.7427	-150.1285	196	BON042	CAT
KM12603.12	CAT	43	112	STA3	6	5	0813	57.8055	-149.8958	254	BON043	CAT
KM12603.16	CAT	44	114	STA5	6	5	1112	57.9192	-149.5907	129	BON044	CAT
KM12603.21	CAT	45	117	STA8	6	5	1444	58.0220	-149.3022	244	BON045	CAT
KM12603.24	CAT	46	118	STA9	6	5	1612	58.0628	-149.1880	113	BON046	CAT
KM12703.03	CAT	47	122	SAB4	7	5	0119	58.4775	-148.9467	114	BON047	CAT
KM12703.07	CAT	48	124	GB12	7	5	0419	58.7040	-148.8515	214	BON048	CAT
KM12703.11	CAT	49	126	GB11	7	5	0730	58.8943	-148.8002	286	BON049	CAT
KM12703.15	CAT	50	128	ATB2	7	5	1015	59.0198	-148.7245	223	BON050	CAT
KM12803.20	CAT	51	156	ATD1	8	5	2209	58.5648	-149.4265	127	BON051	CAT
KM12903.04	CAT	52	159	ATD4	9	5	0151	58.7767	-149.4918	195	BON052	CAT

Table 6: Seabird SeaCAT CTD (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12903.08	CAT	53	161	ATD6	9	5	0446	58.9370	-149.5650	241	BON053	CAT
KM12903.12	CAT	54	163	ATD8	9	5	0759	59.1132	-149.6083	209	BON054	CAT
KM12903.16	CAT	55	165	ATD10	9	5	1020	59.2370	-149.6527	126	BON055	CAT
KM13003.03	CAT	56	173	ATE5	10	5	1445	58.7510	-150.1650	161	BON056	CAT
KM13003.08	CAT	57	176	ATE2	10	5	2309	59.0150	-150.0928	196	BON057	CAT
KM13103.06	CAT	58	180	KCW3	11	5	0533	59.2998	-149.3365	142	BON058	CAT
KM13103.09	CAT	59	181	KCW4	11	5	0718	59.3585	-149.1343	206	BON059	CAT
KM13103.13	CAT	60	183	KCW6	11	5	1003	59.4828	-148.7523	93	BON060	CAT
KM13203.03	CAT	61	185	HC1	12	5	0000	59.5862	-147.0075	213	BON061	CAT
KM13203.08	CAT	62	188	ENS3	12	5	1712	59.2108	-145.2603	3257	BON062	CAT
KM13303.03	CAT	63	191	ENS6	13	5	0251	58.4988	-145.2703	4157	BON063	CAT
KM13303.11	CAT	64	196	ENS11	13	5	1739	57.7723	-145.2672	3427	BON064	CAT
KM13403.03	CAT	65	198	EEW1	14	5	0607	58.6537	-143.6903	3538	BON065	CAT
KM13503.07	CAT	66	207	EEW10	15	5	0000	58.6384	-146.5833	3635	BON066	CAT
KM13603.03	CAT	67	210	EEW13	16	5	0208	58.6512	-147.6403	1911	BON067	CAT

**Table 7: Sat Buoy Deployments**

Event#	Instr	Cast	Sta	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM13203.11	SatBuoy	1	nd	12	5	2330	58.6678	-145.2650	nd	Drift deplo	Sat-tracked Drifter #37492.
KM13303.04	SatBuoy	2	nd	13	5	0308	58.5002	-145.2572	nd	Drift deplo	Sat-tracked Drifter #37500.
KM13503.03	SatBuoy	3	nd	15	5	0813	58.6402	-145.9393	4540	Drift deplo	Sat-tracked Drifter #37504.
KM13603.05	SatBuoy	4	211	16	5	0512	58.6623	-147.9340	1781	Drift deplo	Sat-tracked Drifter #37497.

## **APPENDIX I**

### **KM0309b EVENT LOG**

## EVENT LOG CONTENTS

### Column Label

Event#  
Instrument (Instr)

Cast  
Station (Sta)  
Station Standard (Sta std)  
Day  
Month (Mos)  
Time  
Latitude (Lat)  
Longitude (Long)  
Water Depth  
Station Alternative  
Comments

### Description

Unique identifier for each line of event log  
CTDB: Conductivity Temperature Depth cast with PAR and fluorescence; bottle samples for nutrients and extracted chlorophyll;  
60Bon: 0.505 mm mesh 0.6 diameter Bongo tows;  
CAT: Seabird SeaCAT profiles of conductivity and temperature;  
(Note: 60Bon and CAT are a single lowering of the wire, but 2 different event #s. All 60Bon/CAT were double oblique to 300m or to ca. 5m off bottom if shallower);  
SatBuoy: Satellite tracked drifter deployment.  
Sequence # for a particular instrument

Standard station name  
GMT time basis  
GMT time basis  
GMT time  
Decimal degrees; north is positive  
Decimal degrees; east is positive  
Depth of bottom  
Alternative (FOCI) station name

Appendix 1: Event Log

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12003.01	CTDB	23	1	AP1	30	4	0436	58.4160	-151.7268	168	CTD023	Chl, FL, PAR, nuts.
KM12003.02	60Bon	1	2	AP2	30	4	0651	58.4270	-151.5432	195	BON001	QTowF.
KM12003.03	CTDB	24	2	AP2	30	4	0736	58.4287	-151.5337	176	CTD024	Chl, FL, PAR, nuts.
KM12003.04	CTDB	25	3	AP3	30	4	0911	58.4442	-151.3357	134	CTD025	Chl, FL, PAR, nuts.
KM12003.05	CTDB	26	4	AP4	30	4	1018	58.4473	-151.1418	110	CTD026	Chl, FL, PAR, nuts.
KM12003.06	60Bon	2	4	AP4	30	4	1037	58.4638	-151.1545	105	BON002	QTowF.
KM12003.07	CTDB	27	5	AP5	30	4	1146	58.4688	-150.9440	85	CTD027	Chl, FL, PAR, nuts.
KM12003.08	CTDB	28	6	AP6	30	4	1310	58.4823	-150.7522	96	CTD028	Chl, FL, PAR, nuts.
KM12003.09	60Bon	3	6	AP6	30	4	1327	58.4828	-150.7558	96	BON003	QTowF.
KM12003.10	CTDB	29	7	GP7A	30	4	1416	58.5352	-150.7750	143	CTD029	Chl, FL, PAR, nuts.
KM12003.11	CTDB	30	8	GP7	30	4	1514	58.5892	-150.8003	187	CTD030	Chl, FL, PAR, nuts.
KM12003.12	CTDB	31	9	GP6A	30	4	1624	58.6702	-150.8353	204	CTD031	Chl, FL, PAR, nuts.
KM12003.13	60Bon	4	9	GP6A	30	4	1649	58.6707	-150.8423	202	BON004	QTowF.
KM12003.14	CTDB	32	10	GP6	30	4	1808	58.7502	-150.8635	190	CTD032	Chl, FL, PAR, nuts.
KM12003.15	CTDB	33	11	GP5	30	4	1912	58.8208	-150.8818	195	CTD033	Chl, FL, PAR, nuts.
KM12003.16	60Bon	5	11	GP5	30	4	2006	58.8212	-150.9438	186	BON005	QTowF.
KM12003.17	CAT	5	11	GP5	30	4	2006	58.8212	-150.9438	186	BON005	CAT.
KM12003.18	CTDB	34	12	GP4	30	4	2141	58.8808	-150.9047	157	CTD034	Chl, FL, PAR, nuts.
KM12003.19	CTDB	35	13	GP3	30	4	2248	56.9480	-150.9343	158	CTD035	Chl, FL, PAR, nuts.
KM12003.20	CTDB	36	14	GP2	30	4	2337	59.0088	-150.9607	169	CTD036	Chl, FL, PAR, nuts.
KM12103.01	60Bon	6	14	GP2	1	5	0007	59.0083	-150.9785	160	BON006	QTowF.
KM12103.02	CAT	6	14	GP2	1	5	0007	59.0083	-150.9785	160	BON006	CAT.
KM12103.03	CTDB	37	15	GP1	1	5	0112	59.1007	-150.9900	175	CTD037	Chl, FL, PAR, nuts.
KM12103.04	CTDB	38	16	GP0	1	5	0211	59.1583	-151.0100	69	CTD038	Chl, FL, PAR, nuts.
KM12103.05	CTDB	39	17	KE1	1	5	0803	54.2340	-152.0317	85	CTD039	Chl, FL, PAR, nuts.
KM12103.06	CTDB	40	18	KE2	1	5	0850	59.1938	-152.0765	101	CTD040	Chl, FL, PAR, nuts.
KM12103.07	CTDB	41	19	KE3	1	5	0944	59.1378	-152.1273	158	CTD041	Chl, FL, PAR, nuts.
KM12103.08	CTDB	42	20	KE4	1	5	1035	59.1082	-152.1610	159	CTD042	Chl, FL, PAR, nuts.
KM12103.09	60Bon	7	20	KE4	1	5	1058	59.1035	-152.1587	158	BON007	QTowF.
KM12103.10	CAT	7	20	KE4	1	5	1058	59.1035	-152.1587	158	BON007	CAT.
KM12103.11	CTDB	43	21	KE5	1	5	1150	59.0583	-152.2015	139	CTD043	Chl, FL, PAR, nuts.
KM12103.12	CTDB	44	22	KE6	1	5	1252	59.0195	-152.2355	134	CTD044	Chl, FL, PAR, nuts.
KM12103.13	60Bon	8	22	KE6	1	5	1313	59.0210	-152.2345	138	BON008	QTowF.
KM12103.14	CAT	8	22	KE6	1	5	1313	59.0210	-152.2345	138	BON008	CAT.
KM12103.15	CTDB	45	23	KE7	1	5	1412	58.9817	-152.2967	78	CTD045	Chl, FL, PAR, nuts.
KM12103.16	CTDB	46	24	SE1	1	5	1620	58.8273	-152.3355	147	CTD046	Chl, FL, PAR, nuts.
KM12103.17	CTDB	47	25	SE2	1	5	1715	58.7840	-152.3588	132	CTD047	Chl, FL, PAR, nuts.
KM12103.18	60Bon	9	25	SE2	1	5	1741	58.7840	-152.3573	132	BON009	QTowF.
KM12103.19	CAT	9	25	SE2	1	5	1741	58.7840	-152.3573	132	BON009	CAT.
KM12103.20	CTDB	48	26	SE3	1	5	1837	58.7443	-152.3753	118	CTD048	Chl, FL, PAR, nuts.
KM12103.21	CTDB	49	27	SE4	1	5	1923	58.7033	-152.3940	155	CTD049	Chl, FL, PAR, nuts.
KM12103.22	60Bon	10	27	SE4	1	5	1945	58.7012	-152.4135	162	BON010	QTowF.
KM12103.23	CAT	10	27	SE4	1	5	1945	58.7012	-152.4135	162	BON010	CAT.
KM12103.24	CTDB	50	28	SE5	1	5	2034	58.6642	-152.4113	72	CTD050	Chl, FL, PAR, nuts.
KM12203.01	CTDB	51	29	CBA9	2	5	0442	57.5407	-151.0343	82	CTD051	Chl, FL, PAR, nuts.
KM12203.02	CTDB	52	30	CBA8	2	5	0545	57.5005	-151.1670	78	CTD052	Chl, FL, PAR, nuts.
KM12203.03	60Bon	11	30	CBA8	2	5	0559	57.5012	-151.1715	78	BON011	QTowF.
KM12203.04	CAT	11	30	CBA8	2	5	0559	57.5012	-151.1715	78	BON011	CAT.



Appendix 1: Event Log (cont'd)

Event#	Instr	Cast	Sta	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
			Sta std								
KM12203.05	CTDB	53	31	2	5	0650	57.4543	-151.2732	93	CTD053	Chl, FL, PAR, nuts.
KM12203.06	CTDB	54	32	2	5	0732	57.4280	-151.3093	103	CTD054	Chl, FL, PAR, nuts.
KM12203.07	60B on	12	32	2	5	0753	57.4232	-151.3173	152	BON012	QTowF.
KM12203.08	CAT	12	32	2	5	0753	57.4232	-151.3173	152	BON012	CAT.
KM12203.09	CTDB	55	33	2	5	0836	57.4052	-151.3637	170	CTD055	Chl, FL, PAR, nuts.
KM12203.10	CTDB	56	34	2	5	0925	57.3763	-151.4180	161	CTD056	Chl, FL, PAR, nuts.
KM12203.11	60B on	13	34	2	5	0948	57.3758	-151.4317	160	BON013	QTowF.
KM12203.12	CAT	13	34	2	5	0948	57.3758	-151.4317	160	BON013	CAT.
KM12203.13	CTDB	57	35	2	5	1028	57.3438	-151.4740	87	CTD057	Chl, FL, PAR, nuts.
KM12203.14	CTDB	58	36	2	5	1110	57.3053	-151.5473	69	CTD058	Chl, FL, PAR, nuts.
KM12203.15	60B on	14	36	2	5	1124	57.3030	-151.5015	70	BON014	QTowF.
KM12203.16	CAT	14	36	2	5	1124	57.3030	-151.5015	70	BON014	CAT.
KM12203.17	CTDB	59	37	2	5	1202	57.2792	-151.6177	63	CTD059	Chl, FL, PAR, nuts.
KM12203.18	CTDB	60	38	2	5	1312	57.3775	-151.7167	66	CTD060	Chl, FL, PAR, nuts.
KM12203.19	CTDB	61	39	2	5	1357	57.4143	-151.6423	68	CTD061	Chl, FL, PAR, nuts.
KM12203.20	CTDB	62	40	2	5	1437	57.4393	-151.5907	66	CTD062	Chl, FL, PAR, nuts.
KM12203.21	CTDB	63	41	2	5	1515	57.4668	-151.5465	136	CTD063	Chl, FL, PAR, nuts.
KM12203.22	CTDB	64	42	2	5	1555	57.4890	-151.5092	158	CTD064	Chl, FL, PAR, nuts.
KM12203.23	CTDB	65	43	2	5	1644	57.5105	-151.4702	144	CTD065	Chl, FL, PAR, nuts.
KM12203.24	CTDB	66	44	2	5	1728	57.5253	-151.4443	79	CTD066	Chl, FL, PAR, nuts.
KM12203.25	CTDB	67	45	2	5	1822	57.5728	-151.3537	70	CTD067	Chl, FL, PAR, nuts.
KM12203.26	CTDB	68	46	2	5	1908	57.6008	-151.2883	67	CTD068	Chl, FL, PAR, nuts.
KM12303.01	CTDB	69	47	3	5	0112	57.7177	-151.5710	63	CTD069	Chl, FL, PAR, nuts.
KM12303.02	CTDB	70	48	3	5	0201	57.6703	-151.6322	65	CTD070	Chl, FL, PAR, nuts.
KM12303.03	60B on	15	48	3	5	0218	57.6720	-151.6337	65	BON015	QTowF.
KM12303.04	CAT	15	48	3	5	0218	57.6720	-151.6337	65	BON015	CAT.
KM12303.05	CTDB	71	49	3	5	0304	57.6142	-151.6880	94	CTD071	Chl, FL, PAR, nuts.
KM12303.06	CTDB	72	50	3	5	0338	57.5880	-151.7205	120	CTD072	Chl, FL, PAR, nuts.
KM12303.07	60B on	16	50	3	5	0400	57.6258	-151.7272	118	BON016	QTowF.
KM12303.08	CAT	16	50	3	5	0400	57.6258	-151.7272	118	BON016	CAT.
KM12303.09	CTDB	73	51	3	5	0459	57.5627	-151.7503	145	CTD073	Chl, FL, PAR, nuts.
KM12303.10	60B on	17	51	3	5	0522	57.5657	-151.7577	147	BON017	QTowF.
KM12303.11	CAT	17	51	3	5	0522	57.5657	-151.7577	147	BON017	CAT.
KM12303.12	CTDB	74	52	3	5	0613	57.5305	-151.7833	132	CTD074	Chl, FL, PAR, nuts.
KM12303.13	CTDB	75	53	3	5	0700	57.5052	-151.8168	92	CTD075	Chl, FL, PAR, nuts.
KM12303.14	60B on	18	53	3	5	0719	57.5082	-151.8205	93	BON018	QTowF.
KM12303.15	CAT	18	53	3	5	0719	57.5082	-151.8205	93	BON018	CAT.
KM12303.16	CTDB	76	54	3	5	0814	57.4492	-151.8760	73	CTD076	Chl, FL, PAR, nuts.
KM12303.17	CTDB	77	55	3	5	0909	57.3763	-151.9360	73	CTD077	Chl, FL, PAR, nuts.
KM12303.18	60B on	19	55	3	5	0926	57.3830	-151.9445	73	BON019	QTowF.
KM12303.19	CAT	19	55	3	5	0926	57.3830	-151.9445	73	BON019	CAT.
KM12303.20	CTDB	78	56	3	5	1137	57.6498	-152.0792	64	CTD078	Chl, FL, PAR, nuts.
KM12303.21	60B on	20	56	3	5	1158	57.6522	-152.0692	78	BON020	QTowF.
KM12303.22	CAT	20	56	3	5	1158	57.6522	-152.0692	78	BON020	CAT.
KM12303.23	CTDB	79	57	3	5	1227	57.6593	-152.0498	102	CTD079	Chl, FL, PAR, nuts.
KM12303.24	60B on	21	57	3	5	1247	57.6625	-152.0530	109	BON021	QTowF.
KM12303.25	CAT	21	57	3	5	1247	57.6625	-152.0530	109	BON021	CAT.
KM12303.26	CTDB	80	58	3	5	1323	57.6712	-152.0065	200	CTD080	Chl, FL, PAR, nuts.

Appendix 1: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12303.27	CTDB	81	59	CC4	3	5	1410	57.6803	-151.9675	187	CTD081	Chl, FL, PAR, nuts.
KM12303.28	60Bon	22	59	CC4	3	5	1438	57.6762	-151.9577	186	BON022	QTowF.
KM12303.29	CAT	22	59	CC4	3	5	1438	57.6762	-151.9577	186	BON022	CAT.
KM12303.30	CTDB	82	60	CC5	3	5	1521	57.6922	-151.9400	120	CTD082	Chl, FL, PAR, nuts.
KM12303.31	CTDB	83	61	CC6	3	5	1630	57.7000	-151.9075	95	CTD083	Chl, FL, PAR, nuts.
KM12303.32	60Bon	23	61	CC6	3	5	1646	57.6985	-151.9038	90	BON023	QTowF.
KM12303.33	CAT	23	61	CC6	3	5	1646	57.6985	-151.9038	90	BON023	CAT.
KM12303.34	CTDB	84	62	CC7	3	5	1735	57.7172	-151.8268	55	CTD084	Chl, FL, PAR, nuts.
KM12303.35	CTDB	85	63	CC8	3	5	1830	57.7502	-151.7168	55	CTD085	Chl, FL, PAR, nuts.
KM12303.36	60Bon	24	63	CC8	3	5	1843	57.7513	-151.7130	55	BON024	QTowF.
KM12303.37	CAT	24	63	CC8	3	5	1843	57.7513	-151.7130	55	BON024	CAT.
KM12303.38	CTDB	86	64	MA8	3	5	2003	57.8773	-151.7733	68	CTD086	Chl, FL, PAR, nuts.
KM12303.39	CTDB	87	65	MA7	3	5	2040	57.9232	-151.6308	71	CTD087	Chl, FL, PAR, nuts.
KM12303.40	60Bon	25	65	MA7	3	5	2057	57.9293	-151.6293	73	BON025	QTowF.
KM12303.41	CAT	25	65	MA7	3	5	2057	57.9293	-151.6293	73	BON025	CAT.
KM12303.42	CTDB	88	66	MA6	3	5	2135	57.9685	-151.6700	97	CTD088	Chl, FL, PAR, nuts.
KM12303.43	CTDB	89	67	MA5	3	5	2205	57.9953	-151.7005	106	CTD089	Chl, FL, PAR, nuts.
KM12303.44	60Bon	26	67	MA5	3	5	2227	57.9900	-151.7017	110	BON026	QTowF.
KM12303.45	CAT	26	67	MA5	3	5	2227	57.9900	-151.7017	110	BON026	CAT.
KM12303.46	CTDB	90	68	MA4	3	5	2311	58.0307	-151.7290	148	CTD090	Chl, FL, PAR, nuts.
KM12403.01	CTDB	91	69	MA3	4	5	0006	58.0698	-151.7620	169	CTD091	Chl, FL, PAR, nuts.
KM12403.02	60Bon	27	69	MA3	4	5	0034	58.0642	-151.7627	170	BON027	QTowF.
KM12403.03	CAT	27	69	MA3	4	5	0034	58.0642	-151.7627	170	BON027	CAT.
KM12403.04	CTDB	92	70	MA2	4	5	0135	58.1272	-151.7932	74	CTD092	Chl, FL, PAR, nuts.
KM12403.05	CTDB	93	71	MA1	4	5	0135	58.1377	-151.8155	66	CTD093	Chl, FL, PAR, nuts.
KM12403.06	60Bon	28	71	MA1	4	5	0218	58.1385	-151.8158	67	BON028	QTowF.
KM12403.07	CAT	28	71	MA1	4	5	0218	58.1385	-151.8158	67	BON028	CAT.
KM12403.08	CTDB	94	72	UST1	4	5	0450	58.2372	-151.1780	70	CTD094	Chl, FL, PAR, nuts.
KM12403.09	CTDB	95	73	UST2	4	5	0540	58.2652	-151.1005	70	CTD095	Chl, FL, PAR, nuts.
KM12403.10	CTDB	96	74	UST1	4	5	0719	58.2340	-151.1865	170	CTD096	Chl, FL, PAR, nuts.
KM12403.11	CTDB	97	75	UST2	4	5	0816	58.2660	-151.1008	107	CTD097	Chl, FL, PAR, nuts.
KM12403.12	CTDB	98	76	UST3	4	5	0858	58.2907	-151.0253	138	CTD098	Chl, FL, PAR, nuts.
KM12403.13	CTDB	99	77	UST4	4	5	0932	58.3060	-150.9947	97	CTD099	Chl, FL, PAR, nuts.
KM12403.14	CTDB	100	78	UST5	4	5	1014	58.3493	-150.9515	61	CTD100	Chl, FL, PAR, nuts.
KM12403.15	CTDB	101	79	PBSST1	4	5	1303	58.6502	-150.5635	219	CTD101	Chl, FL, PAR, nuts.
KM12403.16	CTDB	102	80	STD2	4	5	1406	58.5652	-150.5737	170	CTD102	Chl, FL, PAR, nuts.
KM12403.17	CTDB	103	81	STD3	4	5	1505	58.4927	-150.6137	87	CTD103	Chl, FL, PAR, nuts.
KM12403.18	CTDB	104	82	STD4	4	5	1559	58.4185	-150.6453	73	CTD104	Chl, FL, PAR, nuts.
KM12403.19	CTDB	105	83	STD5	4	5	1702	58.3227	-150.6977	61	CTD105	Chl, FL, PAR, nuts.
KM12403.20	CTDB	106	84	STD6	4	5	1815	58.2507	-150.7087	71	CTD106	Chl, FL, PAR, nuts.
KM12403.21	60Bon	29	84	STD6	4	5	1829	58.2465	-150.7170	71	BON029	QTowF.
KM12403.22	CAT	29	84	STD6	4	5	1829	58.2465	-150.7170	71	BON029	CAT.
KM12403.23	CTDB	107	85	STD7	4	5	1909	58.1982	-150.7405	111	CTD107	Chl, FL, PAR, nuts.
KM12403.24	CTDB	108	86	STD8	4	5	2006	58.1263	-150.7683	145	CTD108	Chl, FL, PAR, nuts.
KM12403.25	60Bon	30	86	STD8	4	5	2029	58.1192	-150.7737	145	BON030	QTowF.
KM12403.26	CAT	30	86	STD8	4	5	2029	58.1192	-150.7737	145	BON030	CAT.
KM12403.27	CTDB	109	87	STD9	4	5	2113	58.0665	-150.7893	152	CTD109	Chl, FL, PAR, nuts.
KM12403.28	CTDB	110	88	STD10	4	5	2209	58.0000	-150.8225	133	CTD110	Chl, FL, PAR, nuts.

Appendix 1: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12403.29	60Bon	31	88	STD10	4	5	2227	57.9940	-150.8245	128	BON031	QTowF.
KM12403.30	CAT	31	88	STD10	4	5	2227	57.9940	-150.8245	128	BON031	CAT.
KM12403.31	CTDB	111	89	STD11	4	5	2320	57.9258	-150.8517	92	CTD111	Chl, FL, PAR, nuts.
KM12503.01	CTDB	112	90	STD12	5	5	0010	57.8595	-150.8668	80	CTD112	Chl, FL, PAR, nuts.
KM12503.02	CTDB	113	91	STD13	5	5	0138	57.7253	-150.9153	80	CTD113	Chl, FL, PAR, nuts.
KM12503.03	60Bon	32	91	STD13	5	5	0157	57.7213	-150.9165	80	BON032	QTowF.
KM12503.04	CAT	32	91	STD13	5	5	0157	57.7213	-150.9165	80	BON032	CAT.
KM12503.05	CTDB	114	92	PBA14	5	5	0412	57.6528	-150.4785	98	CTD114	Chl, FL, PAR, nuts.
KM12503.06	CTDB	115	93	PBA13	5	5	0542	57.8080	-150.5008	90	CTD115	Chl, FL, PAR, nuts.
KM12503.07	60Bon	33	93	PBA13	5	5	0558	57.8033	-150.5067	90	BON033	QTowF.
KM12503.08	CAT	33	93	PBA13	5	5	0558	57.8033	-150.5067	90	BON033	CAT.
KM12503.09	CTDB	116	94	PBA12	5	5	0659	57.8763	-150.4612	111	CTD116	Chl, FL, PAR, nuts.
KM12503.10	60Bon	34	94	PBA12	5	5	0719	57.8718	-150.4692	105	BON034	QTowF.
KM12503.11	CAT	34	94	PBA12	5	5	0719	57.8718	-150.4692	105	BON034	CAT.
KM12503.12	CTDB	117	95	PBA11	5	5	0822	57.9478	-150.4308	160	CTD117	Chl, FL, PAR, nuts.
KM12503.13	CTDB	118	96	PBA10	5	5	0924	58.0163	-150.4002	178	CTD118	Chl, FL, PAR, nuts.
KM12503.14	60Bon	35	96	PBA10	5	5	0947	58.0107	-150.4113	176	BON035	QTowF.
KM12503.15	CAT	35	96	PBA10	5	5	0947	58.0107	-150.4113	176	BON035	CAT.
KM12503.16	CTDB	119	97	PBA9	5	5	1107	58.1155	-150.3708	197	CTD119	Chl, FL, PAR, nuts.
KM12503.17	CTDB	120	98	PBA8	5	5	1200	58.1510	-150.3553	166	CTD120	Chl, FL, PAR, nuts.
KM12503.18	60Bon	36	98	PBA8	5	5	1221	58.1535	-150.3605	159	BON036	QTowF.
KM12503.19	CAT	36	98	PBA8	5	5	1221	58.1535	-150.3605	159	BON036	CAT.
KM12503.20	CTDB	121	99	PBA7	5	5	1315	58.2217	-150.3330	84	CTD121	Chl, FL, PAR, nuts.
KM12503.21	60Bon	37	99	PBA7	5	5	1331	58.2247	-150.3383	83	BON037	QTowF.
KM12503.22	CAT	37	99	PBA7	5	5	1331	58.2247	-150.3383	83	BON037	CAT.
KM12503.23	CTDB	122	100	PBA6	5	5	1423	58.2990	-150.2993	53	CTD122	Chl, FL, PAR, nuts.
KM12503.24	CTDB	123	101	PBA5	5	5	1515	58.3630	-150.2820	54	CTD123	Chl, FL, PAR, nuts.
KM12503.25	CTDB	124	102	STB1	5	5	1754	58.2213	-149.6087	66	CTD124	Chl, FL, PAR, nuts.
KM12503.26	60Bon	38	102	STB1	5	5	1808	58.2202	-149.6158	66	BON038	QTowF.
KM12503.27	CAT	38	102	STB1	5	5	1808	58.2202	-149.6158	66	BON038	CAT.
KM12503.28	CTDB	125	103	STB2	5	5	1851	58.1732	-149.6808	107	CTD125	Chl, FL, PAR, nuts.
KM12503.29	CTDB	126	104	STB3	5	5	1945	58.1205	-149.7348	219	CTD126	Chl, FL, PAR, nuts.
KM12503.30	60Bon	39	104	STB3	5	5	2017	58.1182	-149.7572	226	BON039	QTowF.
KM12503.31	CAT	39	104	STB3	5	5	2017	58.1182	-149.7572	226	BON039	CAT.
KM12503.32	CTDB	127	105	STB4	5	5	2127	58.0505	-149.8223	245	CTD127	Chl, FL, PAR, nuts.
KM12503.33	CTDB	128	106	STB5	5	5	2240	57.9823	-149.9090	265	CTD128	Chl, FL, PAR, nuts.
KM12503.34	60Bon	40	106	STB5	5	5	2314	57.9863	-149.9343	267	BON040	QTowF.
KM12503.35	CAT	40	106	STB5	5	5	2314	57.9863	-149.9343	267	BON040	CAT.
KM12603.01	CTDB	129	107	STB6	6	5	0030	57.9045	-150.0013	261	CTD129	Chl, FL, PAR, nuts.
KM12603.02	CTDB	130	108	STB7	6	5	0152	57.8315	-150.0855	210	CTD130	Chl, FL, PAR, nuts.
KM12603.03	CTDB	131	109	STB8	6	5	0306	57.7792	-150.1572	182	CTD131	Chl, FL, PAR, nuts.
KM12603.04	60Bon	41	109	STB8	6	5	0332	57.7785	-150.1670	178	BON041	QTowF.
KM12603.05	CAT	41	109	STB8	6	5	0332	57.7785	-150.1670	178	BON041	CAT.
KM12603.06	CTDB	132	110	STA1	6	5	0536	57.7080	-150.2390	132	CTD132	Chl, FL, PAR, nuts.
KM12603.07	CTDB	133	111	STA2	6	5	0537	57.7388	-150.1187	194	CTD133	Chl, FL, PAR, nuts.
KM12603.08	60Bon	42	111	STA2	6	5	0602	57.7427	-150.1285	196	BON042	QTowF.
KM12603.09	CAT	42	111	STA2	6	5	0602	57.7427	-150.1285	196	BON042	CAT.
KM12603.10	CTDB	134	112	STA3	6	5	0743	57.8092	-149.8813	258	CTD134	Chl, FL, PAR, nuts.

Appendix 1: Event Log (cont'd)

Event#	Instr	Cast	Sta	Sta std	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12603.11	60Bon	43	112	STA3	6	5	0813	57.8055	-149.8958	254	BON043	QTowF.
KM12603.12	CAT	43	112	STA3	6	5	0813	57.8055	-149.8958	254	BON043	CAT.
KM12603.13	CTDB	135	113	STA4	6	5	0946	57.8797	-149.6850	232	CTD135	Chl, FL, PAR, nuts.
KM12603.14	CTDB	136	114	STA5	6	5	1051	57.9187	-149.5780	129	CTD136	Chl, FL, PAR, nuts.
KM12603.15	60Bon	44	114	STA5	6	5	1112	57.9192	-149.5907	129	BON044	QTowF.
KM12603.16	CAT	44	114	STA5	6	5	1112	57.9192	-149.5907	129	BON044	CAT.
KM12603.17	CTDB	137	115	STA6	6	5	1217	57.9520	-149.4692	193	CTD137	Chl, FL, PAR, nuts.
KM12603.18	CTDB	138	116	STA7	6	5	1309	57.9828	-149.4173	207	CTD138	Chl, FL, PAR, nuts.
KM12603.19	CTDB	139	117	STA8	6	5	1419	58.0222	-149.2890	221	CTD139	Chl, FL, PAR, nuts.
KM12603.20	60Bon	45	117	STA8	6	5	1444	58.0220	-149.3022	244	BON045	QTowF.
KM12603.21	CAT	45	117	STA8	6	5	1444	58.0220	-149.3022	244	BON045	CAT.
KM12603.22	CTDB	140	118	STA9	6	5	1554	58.0630	-149.1745	110	CTD140	Chl, FL, PAR, nuts.
KM12603.23	60Bon	46	118	STA9	6	5	1612	58.0628	-149.1880	113	BON046	QTowF.
KM12603.24	CAT	46	118	STA9	6	5	1612	58.0628	-149.1880	113	BON046	CAT.
KM12603.25	CTDB	141	119	STA10	6	5	1713	58.0995	-149.0770	85	CTD141	Chl, FL, PAR, nuts.
KM12603.26	CTDB	142	120	SAB2	6	5	1833	58.2278	-149.0277	127	CTD142	Chl, FL, PAR, nuts.
KM12603.27	CTDB	143	121	SAB3	6	5	2345	58.3517	-148.9823	125	CTD143	Chl, FL, PAR, nuts.
KM12703.01	CTDB	144	122	SAB4	7	5	0100	58.4750	-148.9337	114	CTD144	Chl, FL, PAR, nuts.
KM12703.02	60Bon	47	122	SAB4	7	5	0119	58.4775	-148.9467	114	BON047	QTowF.
KM12703.03	CAT	47	122	SAB4	7	5	0119	58.4775	-148.9467	114	BON047	CAT.
KM12703.04	CTDB	145	123	ATB7	7	5	0241	58.6120	-148.8990	116	CTD145	Chl, FL, PAR, nuts.
KM12703.05	CTDB	146	124	GB12	7	5	0350	58.7052	-148.8498	211	CTD146	Chl, FL, PAR, nuts.
KM12703.06	60Bon	48	124	GB12	7	5	0419	58.7040	-148.8515	214	BON048	QTowF.
KM12703.07	CAT	48	124	GB12	7	5	0419	58.7040	-148.8515	214	BON048	CAT.
KM12703.08	CTDB	147	125	ATB5	7	5	0536	58.7957	-148.8170	251	CTD147	Chl, FL, PAR, nuts.
KM12703.09	CTDB	148	126	GB11	7	5	0658	58.8925	-148.7855	290	CTD148	Chl, FL, PAR, nuts.
KM12703.10	60Bon	49	126	GB11	7	5	0730	58.8943	-148.8002	286	BON049	QTowF.
KM12703.11	CAT	49	126	GB11	7	5	0730	58.8943	-148.8002	286	BON049	CAT.
KM12703.12	CTDB	149	127	ATB3	7	5	0842	58.9685	-148.7398	249	CTD149	Chl, FL, PAR, nuts.
KM12703.13	CTDB	150	128	ATB2	7	5	0946	59.0183	-148.7040	226	CTD150	Chl, FL, PAR, nuts.
KM12703.14	60Bon	50	128	ATB2	7	5	1015	59.0198	-148.7245	223	BON050	QTowF.
KM12703.15	CAT	50	128	ATB2	7	5	1015	59.0198	-148.7245	223	BON050	CAT.
KM12703.16	CTDB	151	129	ATB1	7	5	1134	59.1167	-148.6467	164	CTD151	Chl, FL, PAR, nuts.
KM12703.17	CTDB	152	130	ATB0	7	5	1236	59.1927	-148.6030	129	CTD152	Chl, FL, PAR, nuts.
KM12703.18	CTDB	153	131	ATB1	7	5	1334	59.1153	-148.6472	164	CTD153	Chl, FL, PAR, nuts.
KM12703.19	CTDB	154	132	ATB2	7	5	1445	59.0163	-148.7012	229	CTD154	Chl, FL, PAR, nuts.
KM12703.20	CTDB	155	133	ATB3	7	5	1551	58.9665	-148.7377	251	CTD155	Chl, FL, PAR, nuts.
KM12703.21	CTDB	156	134	GB11	7	5	1705	58.8915	-148.7840	289	CTD156	Chl, FL, PAR, nuts.
KM12703.22	CTDB	157	135	ATB5	7	5	1821	58.7943	-148.8157	251	CTD157	Chl, FL, PAR, nuts.
KM12703.23	CTDB	158	136	GB12	7	5	2016	58.7000	-148.8488	210	CTD158	Chl, FL, PAR, nuts.
KM12703.24	CTDB	159	137	ATB7	7	5	2125	58.6105	-148.8848	115	CTD159	Chl, FL, PAR, nuts.
KM12703.25	CTDB	160	138	SAB4	7	5	2241	58.4747	-148.9377	113	CTD160	Chl, FL, PAR, nuts.
KM12803.01	CTDB	161	139	ATB7	8	5	0007	58.6117	-148.8863	115	CTD161	Chl, FL, PAR, nuts.
KM12803.02	CTDB	162	140	GB12	8	5	0115	58.7020	-148.8523	210	CTD162	Chl, FL, PAR, nuts.
KM12803.03	CTDB	163	141	ATB5	8	5	0228	58.7998	-148.8217	250	CTD163	Chl, FL, PAR, nuts.
KM12803.04	CTDB	164	142	GB11	8	5	0350	58.8930	-148.7835	294	CTD164	Chl, FL, PAR, nuts.
KM12803.05	CTDB	165	143	ATB3	8	5	0510	58.9645	-148.7348	253	CTD165	Chl, FL, PAR, nuts.
KM12803.06	CTDB	166	144	ATB2	8	5	0619	59.0165	-148.7015	228	CTD166	Chl, FL, PAR, nuts.

Appendix 1: EventLog (cont'd)

Event#	Instr	Cast	Sta	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM12803.07	CTDB	167	145	8	5	0740	59.0632	-148.6783	180	CTD167	Chl, FL, PAR, nuts.
KM12803.08	CTDB	168	146	8	5	0847	59.1177	-148.6517	160	CTD168	Chl, FL, PAR, nuts.
KM12803.09	CTDB	169	147	8	5	0951	59.1912	-148.6098	124	CTD169	Chl, FL, PAR, nuts.
KM12803.10	CTDB	170	148	8	5	1257	59.1127	-149.6433	173	CTD170	Chl, FL, PAR, nuts.
KM12803.11	CTDB	171	149	8	5	1352	59.1127	-149.6233	210	CTD171	Chl, FL, PAR, nuts.
KM12803.12	CTDB	172	150	8	5	1457	59.0333	-149.5935	227	CTD172	Chl, FL, PAR, nuts.
KM12803.13	CTDB	173	151	8	5	1608	58.9400	-149.5672	241	CTD173	Chl, FL, PAR, nuts.
KM12803.14	CTDB	174	152	8	5	1713	58.8538	-149.5372	228	CTD174	Chl, FL, PAR, nuts.
KM12803.15	CTDB	175	153	8	5	1817	58.7822	-149.5002	196	CTD175	Chl, FL, PAR, nuts.
KM12803.16	CTDB	176	154	8	5	1917	58.7075	-149.4695	160	CTD176	Chl, FL, PAR, nuts.
KM12803.17	CTDB	177	155	8	5	2016	58.6452	-149.4517	138	CTD177	Chl, FL, PAR, nuts.
KM12803.18	CTDB	178	156	8	5	2143	58.5735	-149.4310	128	CTD178	Chl, FL, PAR, nuts.
KM12803.19	60Bon	51	156	8	5	2209	58.5648	-149.4265	127	BON051	QTowF.
KM12803.20	CAT	51	156	8	5	2209	58.5648	-149.4265	127	BON051	CAT.
KM12803.21	CTDB	179	157	8	5	2317	58.6497	-149.4530	138	CTD179	Chl, FL, PAR, nuts.
KM12903.01	CTDB	180	158	9	5	0016	58.7087	-149.4658	162	CTD180	Chl, FL, PAR, nuts.
KM12903.02	CTDB	181	159	9	5	0125	58.7818	-149.5067	197	CTD181	Chl, FL, PAR, nuts.
KM12903.03	60Bon	52	159	9	5	0151	58.7767	-149.4918	195	BON052	QTowF.
KM12903.04	CAT	52	159	9	5	0151	58.7767	-149.4918	195	BON052	CAT.
KM12903.05	CTDB	182	160	9	5	0306	58.8562	-149.5337	226	CTD182	Chl, FL, PAR, nuts.
KM12903.06	CTDB	183	161	9	5	0419	58.9453	-149.5657	240	CTD183	Chl, FL, PAR, nuts.
KM12903.07	60Bon	53	161	9	5	0446	58.9370	-149.5650	241	BON053	QTowF.
KM12903.08	CAT	53	161	9	5	0446	58.9370	-149.5650	241	BON053	CAT.
KM12903.09	CTDB	184	162	9	5	0607	59.0317	-149.5950	226	CTD184	Chl, FL, PAR, nuts.
KM12903.10	CTDB	185	162	9	5	0735	59.1127	-149.6197	209	CTD185	Chl, FL, PAR, nuts.
KM12903.11	60Bon	54	163	9	5	0759	59.1132	-149.6083	209	BON054	QTowF.
KM12903.12	CAT	54	163	9	5	0759	59.1132	-149.6083	209	BON054	CAT.
KM12903.13	CTDB	186	164	9	5	0900	59.1625	-149.6407	172	CTD186	Chl, FL, PAR, nuts.
KM12903.14	CTDB	187	165	9	5	0958	59.2357	-149.6647	124	CTD187	Chl, FL, PAR, nuts.
KM12903.15	60Bon	55	165	9	5	1020	59.2370	-149.6527	126	BON055	QTowF.
KM12903.16	CAT	55	165	9	5	1020	59.2370	-149.6527	126	BON055	CAT.
KM12903.17	CTDB	188	166	9	5	1120	59.1635	-149.6392	172	CTD188	Chl, FL, PAR, nuts.
KM12903.18	CTDB	189	167	9	5	1223	59.1143	-149.6200	209	CTD189	Chl, FL, PAR, nuts.
KM12903.19	CTDB	190	168	9	5	1331	59.0340	-149.5980	227	CTD190	Chl, FL, PAR, nuts.
KM12903.20	CTDB	191	169	9	5	1447	58.9442	-149.5693	241	CTD191	Chl, FL, PAR, nuts.
KM12903.21	CTDB	192	170	9	5	1609	58.8540	-149.5332	227	CTD192	Chl, FL, PAR, nuts.
KM12903.22	CTDB	193	171	9	5	1725	58.7813	-149.4963	196	CTD193	Chl, FL, PAR, nuts.
KM12903.23	CTDB	194	172	9	5	1845	58.7068	-149.4582	160	CTD194	Chl, FL, PAR, nuts.
KM13003.01	CTDB	195	173	10	5	1419	58.7572	-150.1593	167	CTD195	Chl, FL, PAR, nuts.
KM13003.02	60Bon	56	173	10	5	1445	58.7510	-150.1650	161	BON056	QTowF.
KM13003.03	CAT	56	173	10	5	1445	58.7510	-150.1650	161	BON056	CAT.
KM13003.04	CTDB	196	174	10	5	1819	58.8432	-150.1422	165	CTD196	Chl, FL, PAR, nuts.
KM13003.05	CTDB	197	175	10	5	2106	58.9390	-150.1118	205	CTD197	Chl, FL, PAR, nuts.
KM13003.06	CTDB	198	176	10	5	2230	59.0277	-150.0887	200	CTD198	Chl, FL, PAR, nuts.
KM13003.07	60Bon	57	176	10	5	2309	59.0150	-150.0928	196	BON057	QTowF.
KM13003.08	CAT	57	176	10	5	2309	59.0150	-150.0928	196	BON057	CAT.
KM13103.01	CTDB	199	177	11	5	0039	59.1220	-150.0667	146	CTD199	Chl, FL, PAR, nuts.
KM13103.02	CTDB	200	178	11	5	0201	59.1602	-149.8653	136	CTD200	Chl, FL, PAR, nuts.

Appendix 1: Event Log (cont'd)

Event#	Instr	Cast	Sta	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments
KM13103.03	CTDB	201	179	KCW2	11	0326	59.2325	-149.6047	137	CTD201	Chl, FL, PAR, nuts.
KM13103.04	CTDB	202	180	KCW3	11	0504	59.3068	-149.3477	141	CTD202	Chl, FL, PAR, nuts.
KM13103.05	60Bon	58	180	KCW3	11	0533	59.2998	-149.3365	142	BON058	QTowF.
KM13103.06	CAT	58	180	KCW3	11	0533	59.2998	-149.3365	142	BON058	CAT.
KM13103.07	CTDB	203	181	KCW4	11	0651	59.3657	-149.1475	209	CTD203	Chl, FL, PAR, nuts.
KM13103.08	60Bon	59	181	KCW4	11	0718	59.3585	-149.1343	206	BON059	QTowF.
KM13103.09	CAT	59	181	KCW4	11	0718	59.3585	-149.1343	206	BON059	CAT.
KM13103.10	CTDB	204	182	KCW5	11	0849	59.4498	-148.8967	189	CTD204	Chl, FL, PAR, nuts.
KM13103.11	CTDB	205	183	KCW6	11	0946	59.4838	-148.7647	99	CTD205	Chl, FL, PAR, nuts.
KM13103.12	60Bon	60	183	KCW6	11	1003	59.4828	-148.7523	93	BON060	QTowF.
KM13103.13	CAT	60	183	KCW6	11	1003	59.4828	-148.7523	93	BON060	CAT.
KM13103.14	CTDB	206	184	KCW7	11	1042	59.5178	-148.6553	84	CTD206	Chl, FL, PAR, nuts.
KM13203.01	CTDB	207	185	HC1	12	0207	59.5862	-147.0190	212	CTD207	Chlor, Fluor, PAR, nuts, protists
KM13203.02	60Bon	61	185	HC1	12	0000	59.5862	-147.0075	213	BON061	QTowF.
KM13203.03	CAT	61	185	HC1	12	0000	59.5862	-147.0075	213	BON061	CAT.
KM13203.04	CTDB	208	186	ENS1	12	0845	59.3788	-145.2703	1841	CTD208	Chlor, Fluor, nuts.
KM13203.05	CTDB	209	187	ENS2	12	1239	59.2100	-145.2603	3257	CTD209	Chlor, Fluor, nuts, protests.
KM13203.06	CTDB	210	188	ENS3	12	1554	59.0330	-145.2562	4262	CTD210	Chlor, Fluor, nuts.
KM13203.07	60Bon	62	188	ENS3	12	1712	59.2108	-145.2603	3257	BON062	QTowF.
KM13203.08	CAT	62	188	ENS3	12	1712	59.2108	-145.2603	3257	BON062	CAT.
KM13203.09	CTDB	211	189	ENS4	12	1938	59.8573	-145.2477	4111	CTD211	Chlor, Fluor, nuts.
KM13203.10	CTDB	212	190	ENS5	12	2227	58.6770	-145.2535	4007	CTD212	Chlor, Fluor, nuts, protests.
KM13203.11	SatBuoy	1	nd	ENS5	12	2330	58.6678	-145.2650	nd	Drift deplo	Sat-tracked Drifter #37492.
KM13303.01	CTDB	213	191	ENS6	13	0125	58.5028	-145.2617	4157	CTD213	Chlor, Fluor, nuts, protests.
KM13303.02	60Bon	63	191	ENS6	13	0251	58.4988	-145.2703	4157	BON063	QTowF.
KM13303.03	CAT	63	191	ENS6	13	0251	58.4988	-145.2703	4157	BON063	CAT.
KM13303.04	SatBuoy	2	nd	ENS6	13	0308	58.5002	-145.2572	nd	Drift deplo	Sat-tracked Drifter #37500.
KM13303.05	CTDB	214	192	ENS7	13	0500	58.3618	-145.2363	3991	CTD214	Chlor, Fluor, nuts.
KM13303.06	CTDB	215	193	ENS8	13	0804	58.2190	-145.2710	3942	CTD215	Chlor, Fluor, nuts, protests.
KM13303.07	CTDB	216	194	ENS9	13	1043	58.0753	-145.2628	3945	CTD216	Chlor, Fluor, nuts, protests.
KM13303.08	CTDB	217	195	ENS10	13	1332	58.9278	-145.2462	3899	CTD217	Chlor, Fluor, nuts.
KM13303.09	CTDB	218	196	ENS11	13	1622	57.7825	-145.2485	3565	CTD218	Chlor, Fluor, nuts, protests.
KM13303.10	60Bon	64	196	ENS11	13	1739	57.7723	-145.2672	3427	BON064	QTowF.
KM13303.11	CAT	64	196	ENS11	13	1739	57.7723	-145.2672	3427	BON064	CAT.
KM13303.12	CTDB	219	197	ENS12	13	1957	57.6408	-145.2543	3865	CTD219	Chlor, Fluor, nuts.
KM13403.01	CTDB	220	198	EEW1	14	0439	58.6390	-143.6492	3519	CTD220	Chlor, Fluor, nuts, protests.
KM13403.02	60Bon	65	198	EEW1	14	0607	58.6537	-143.6903	3538	BON065	QTowF.
KM13403.03	CAT	65	198	EEW1	14	0607	58.6537	-143.6903	3538	BON065	CAT.
KM13403.04	CTDB	221	199	EEW2	14	0829	58.6368	-143.9495	3579	CTD221	Chlor, Fluor, nuts.
KM13403.05	CTDB	222	200	EEW3	14	1152	58.6425	-144.2885	3705	CTD222	Chlor, Fluor, nuts.
KM13403.06	CTDB	223	201	EEW4	14	1509	58.6375	-144.6073	3733	CTD223	Chlor, Fluor, nuts.
KM13403.07	CTDB	224	202	EEW5	14	0508	58.6325	-144.9555	3869	CTD224	Chlor, Fluor, nuts.
KM13403.08	CTDB	225	203	EEW6	14	0226	58.6392	-145.3077	2226	CTD225	Chlor, Fluor, nuts, protests.
KM13503.01	CTDB	226	204	EEW7	15	0233	58.6373	-145.6007	4199	CTD226	Chlor, Fluor, nuts.
KM13503.02	CTDB	227	205	EEW8	15	0635	58.6402	-145.9393	4540	CTD227	Chlor, Fluor, nuts.
KM13503.03	SatBuoy	3	nd	EEW8	15	0813	58.6402	-145.9393	4540	Drift deplo	Sat-tracked Drifter #37504.
KM13503.04	CTDB	228	206	EEW9	15	1039	58.6410	-146.2680	4654	CTD228	Chlor, Fluor, nuts.
KM13503.05	CTDB	229	207	EEW10	15	1425	58.6415	-146.5938	3755	CTD229	Chlor, Fluor, nuts, protests.

**Appendix 1: Event Log (cont'd)**

Event#	Instr	Cast	Sta	Day	Mos	Time	Lat	Long	Water Depth	Sta Alt	Comments	
KM13503.06	60Bon	66	207	EEW10	15	5	0000	58.6384	-146.5833	3635	BON066	QTowF.
KM13503.07	CAT	66	207	EEW10	15	5	0000	58.6384	-146.5833	3635	BON066	CAT.
KM13503.08	CTDB	230	208	EEW11	15	5	1820	58.6410	-146.9310	2469	CTD230	Chlor, Fluor, nuts.
KM13503.09	CTDB	231	209	EEW12	15	5	2137	58.6442	-147.2737	2728	CTD231	Chlor, Fluor, nuts.
KM13603.01	CTDB	232	210	EEW13	16	5	0047	58.6425	-147.6015	2104	CTD232	Chlor, Fluor, nuts.
KM13603.02	60Bon	67	210	EEW13	16	5	0208	58.6512	-147.6403	1911	BON067	QTowF.
KM13603.03	CAT	67	210	EEW13	16	5	0208	58.6512	-147.6403	1911	BON067	CAT.
KM13603.04	CTDB	233	211	EEW14	16	5	0428	58.6623	-147.9340	1781	CTD233	Chlor, Fluor, nuts.
KM13603.05	SatBuoy	4	211	EEW14	16	5	0512	58.6623	-147.9340	1781	Drift depl	Sat-tracked Drifter #37497.
KM13603.06	CTDB	234	212	EEW15	16	5	0656	58.6212	-148.2267	832	CTD234	Chlor, Fluor, nuts.
KM13603.07	CTDB	235	213	EEW16	16	5	0839	58.6203	-148.4505	254	CTD235	Chlor, Fluor, nuts.
KM13603.08	CTDB	236	214	EEW17	16	5	0922	58.6157	-148.5198	229	CTD236	Chlor, Fluor, nuts.
KM13603.09	CTDB	237	215	EEW18	16	5	1003	58.6128	-148.5667	193	CTD237	Chlor, Fluor, nuts.
KM13603.10	CTDB	238	216	EEW19	16	5	1143	58.6115	-148.8825	117	CTD238	Chlor, Fluor, nuts; same as sta ATB7.
KM13603.11	CTDB	239	217	SE05	16	5	2206	58.6650	-152.4107	85	CTD239	Chl, FL, PAR, nuts.
KM13603.12	CTDB	240	218	SE04	16	5	2252	58.7035	-152.3933	157	CTD240	Chl, FL, PAR, nuts.
KM13603.13	CTDB	241	219	SE03	16	5	2336	58.7430	-152.3772	125	CTD241	Chl, FL, PAR, nuts.
KM13703.01	CTDB	242	220	SE02	17	5	0026	59.7827	-152.3608	138	CTD242	Chl, FL, PAR, nuts.
KM13703.02	CTDB	243	221	SE01	17	5	0114	58.8302	-152.3440	144	CTD243	Chl, FL, PAR, nuts.
KM13703.03	CTDB	244	222	KE07	17	5	0318	58.9830	-152.3003	83	CTD244	Chl, FL, PAR, nuts.
KM13703.04	CTDB	245	223	KE06	17	5	0403	59.0200	-152.2387	130	CTD245	Chl, FL, PAR, nuts.
KM13703.05	CTDB	246	224	KE05	17	5	0452	59.0598	-152.2012	132	CTD246	Chl, FL, PAR, nuts.
KM13703.06	CTDB	247	225	KE04	17	5	0544	59.1085	-152.1605	155	CTD247	Chl, FL, PAR, nuts.
KM13703.07	CTDB	248	226	KE03	17	5	0627	59.1390	-152.1312	151	CTD248	Chl, FL, PAR, nuts.
KM13703.08	CTDB	249	227	KE02	17	5	0716	59.1943	-152.0743	99	CTD249	Chl, FL, PAR, nuts.
KM13703.09	CTDB	250	228	KE01	17	5	0810	59.2332	-152.0362	88	CTD250	Chl, FL, PAR, nuts.
KM13703.10	CTDB	251	229	GP0	17	5	1252	59.1598	-151.0062	73	CTD251	Chl, FL, PAR, nuts.
KM13703.11	CTDB	252	230	GP1	17	5	1346	59.0993	-150.9898	172	CTD252	Chl, FL, PAR, nuts.
KM13703.12	CTDB	253	231	GP2	17	5	1455	59.0093	-150.9583	166	CTD253	Chl, FL, PAR, nuts.
KM13703.13	CTDB	254	232	GP3	17	5	1559	58.9483	-150.9320	150	CTD254	Chl, FL, PAR, nuts.
KM13703.14	CTDB	255	233	GP4	17	5	0000	58.8798	-150.8988	160	CTD255	Chl, FL, PAR, nuts.
KM13703.15	CTDB	256	234	GP5	17	5	1754	58.8187	-150.8782	183	CTD256	Chl, FL, PAR, nuts.
KM13703.16	CTDB	257	235	GP6	17	5	1850	58.7473	-150.8702	181	CTD257	Chl, FL, PAR, nuts.
KM13703.17	CTDB	258	236	GP6A	17	5	1954	58.6702	-150.8312	193	CTD258	Chl, FL, PAR, nuts.
KM13703.18	CTDB	259	237	GP7	17	5	2051	58.5883	-150.8015	179	CTD259	Chl, FL, PAR, nuts.
KM13703.19	CTDB	260	238	GP7A	17	5	2140	58.5362	-150.7760	150	CTD260	Chl, FL, PAR, nuts.
KM13703.20	CTDB	261	239	GP7B	17	5	2239	58.4903	-150.7507	150	CTD261	Chl, FL, PAR, nuts.
KM13703.21	CTDB	262	240	GP8B	17	5	2346	58.3813	-150.7032	67	CTD262	Chl, FL, PAR, nuts.
KM13803.01	CTDB	263	241	AP5	18	5	0106	58.4673	-150.9442	76	CTD263	Chl, FL, PAR, nuts.
KM13803.02	CTDB	264	242	AP4	18	5	0213	58.4577	-151.1362	95	CTD264	Chl, FL, PAR, nuts.
KM13803.03	CTDB	265	243	AP3	18	5	0324	58.4402	-151.3347	128	CTD265	Chl, FL, PAR, nuts.
KM13803.04	CTDB	266	244	AP2	18	5	0447	58.4265	-151.5312	167	CTD266	Chl, FL, PAR, nuts.
KM13803.05	CTDB	267	245	AP1	18	5	0559	58.4148	-151.7148	168	CTD267	Chl, FL, PAR, nuts.