GLOBEC CRUISE REPORT

Cruise HX276, August13-22, 2003

Funding Source: NSF-NOAA (NA-67-RJ-0147)

Chief Scientist: Thomas Weingartner
Institute of Marine Science
University of Alaska
Fairbanks, AK 99775-1080
Phone: 907-474-7993
E-mail: weingart@ims.uaf.edu

Co-Chief Scientist: Ken Coyle, IMS-UAF

Scientific Personnel:

Thomas Kline	Zooplankton stable isotope composition, PWSSC
Sarah Thornton	Nutrients/Chlorophyll, Technician, IMS-UAF
Michael Foy	Microzooplankton, Technician, UW
Alexei Pinchuk	Zooplankton, Grad Student, IMS/SMC
Hui Lui	Zooplankton, Grad Student, IMS-UAF
Leandra DeSousa	Birds/Marine Mammals, Grad Student, IMS/UAF
Melanie Rohr	Nutrients/Chlorophyll, Technician, IMS-UAF
Russell Hopcroft	Zooplankton, IMS-UAF
Dave Aldrich	Marine Technician, IMS-UAF

Scientific Purpose:

The purpose of the NE Pacific GLOBEC Program is to develop a mechanistic understanding of the response of this marine ecosystem to climate variability. Toward that end, the GLOBEC cruises on the Gulf of Alaska shelf will determine the physical-chemical structure, primary production, the distribution and abundance of zooplankton, YOY salmon, other planktivorous fishes, and marine birds and mammals. These interdisciplinary cruises will occur over a seven-year period and throughout the year so that seasonal and interannual comparisons of the oceanography of this shelf can be made. Some of the data will be compared with historical data sets, whereas, other data sets will be a product of the first systematic sampling effort from this shelf.

The August 2003 cruise was the fifth August cruise conducted as part of the Gulf of Alaska GLOBEC program Long Term Observation Program (LTOP). Cruise activities concentrated on physical oceanography (circulation and thermohaline structure), nutrient and chlorophyll concentrations, zooplankton, seabird and marine mammal distributions. Zooplankton were sampled for C-N stable isotope composition and experiments were established to estimate zooplankton growth rates and egg production and primary production. August characterizes late summer/early fall in the northern Gulf of Alaska, a time when juvenile salmon are making their way from the nearshore nursery areas to the open Gulf.

Cruise Objectives:

1. Determine thermohaline, velocity, and nutrient structure of the Gulf of Alaska shelf, emphasizing Seward Line, C. Fairfield Line, Prince William Sound stations, and offshore PWS stations (Table 1). Other lines as time permits.
2. Determine primary production and phytoplankton biomass distribution.
3. Determine the distribution and abundance of zooplankton and microzooplankton.
4. Determine the distribution and abundance of seabirds and marine mammals.
5. Determine copepod and euphausiid rates of growth and egg production.
6. Characterize the carbon and nitrogen stable isotope concentrations in zooplankton.

SAMPLING

DAYTIME ACTIVITIES

1. Occupied the hydrographic transects (Table 1) and collected vertical CTD-chlorophyll-PAR profiles.
2. Collected ADCP, sea surface salinity (SSS), temperature (SST) and fluorescence (SSF) using seachest sensors.
3. Collected discrete bottle samples at these stations for nutrients and chlorophyll pigments. Chlorophyll Size Fractionation was done at the whole numbered Seward Line stations and at every other C. Fairfield Line station.
4. Measured Primary Productivity at Stations GAK1, GAK4, GAK9, GAK13, and KIP2.
5. Observed and documented marine mammal and seabird distributions from the bridge.
6. One CalVet Net cast was done (the CalVet frame has 4 nets) on the Seward Line stations and at selected PWS stations. There were two fine mesh nets (.053mm) and two large mesh nets (.150mm) on each tow.
7. At Seward Line stations GAK1, GAK4, GAK9, GAK13 and KIP2 station, Liu performed 3-6 casts with the 10-liter Niskins/Rosette to collect water (from 10-20m) for zooplankton incubations. This was accompanied by two to three ring net tows over the upper 50m.
8. We did deep MOCNESS tows (to 600 m) near the end of the Seward Line at station GAK13 and at station PWS2.
9. Used CTD bottle water for microzooplankton analyses.

NIGHTTIME ACTIVITIES

1. Hydroacoustic samples and MOCNESS discrete samples were taken along the Seward Line, and at select PWS and Hinchinbrook Entrance Stations (see Event Log for details).
2. In addition to the normal .5mm mesh nets, fine mesh nets (.100 mm) were swapped into the MOCNESS at intermittent stations for euphausiid collection.

A detailed sampling schedule is contained in the Cruise Event Log appended to this report.

Cruise Chronology:

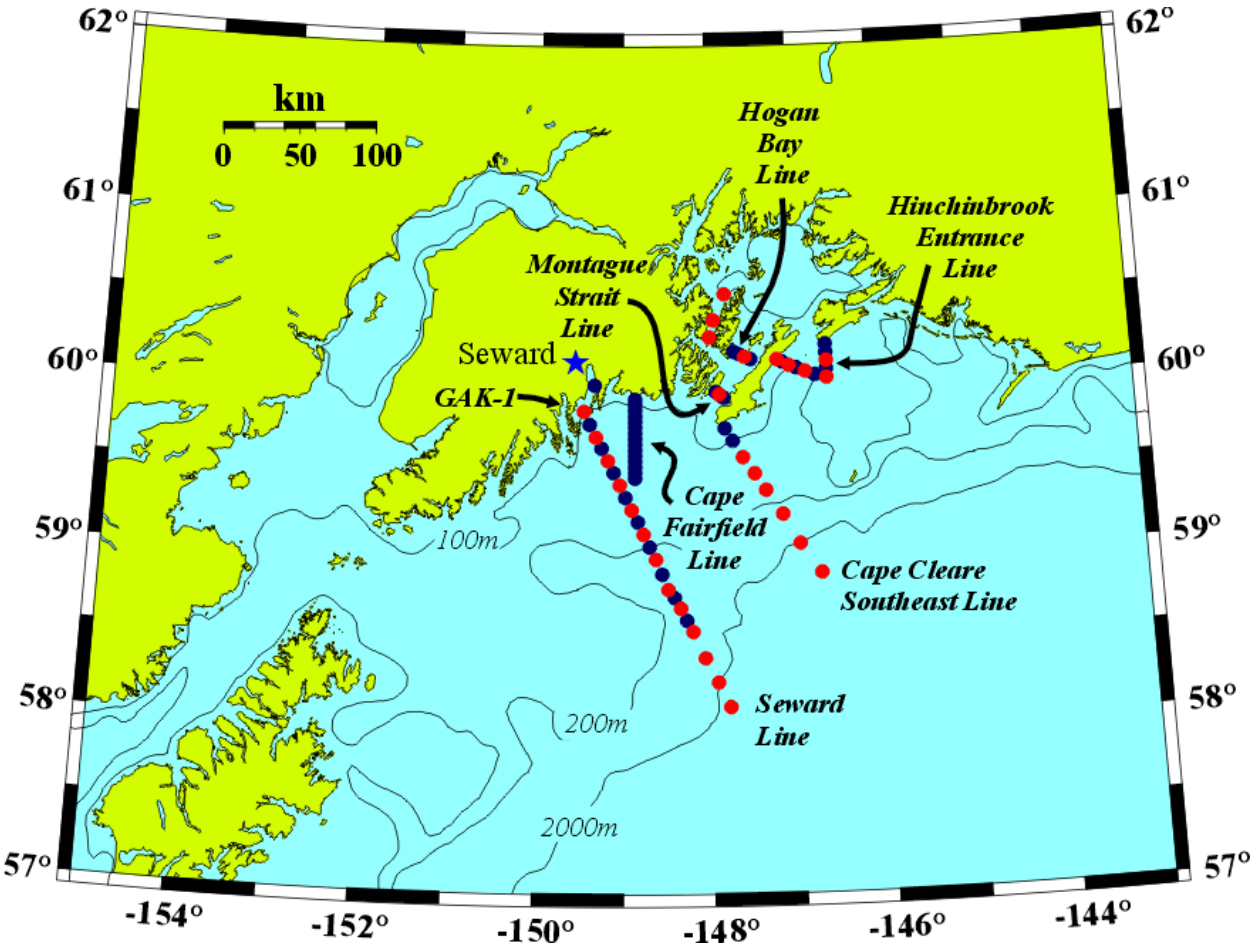
We departed Seward at 1157 on August 13, did CTDs at RES2.5 and GAK1 and transited directly for Prince William Sound because of strong SE winds. We completed our PWS work on August 15, and then began the Seward Line sampling at station GAK4. We worked our way offshore from there, in 20 knot winds which subsided to 15 knots or less for the next few days. We worked on Seward Line and Cape Fairfield Line stations until August 19, when at 2050 we received a Mayday call from a small 22' pleasure boat north of Chevia Island. Seas were ~6 feet and winds ~30 knots. At 2315 we recovered Walt St. Pierre from the water; his vessel, "Thy Will", capsized and sank. St. Pierre was treated for hypothermia on board and transported to EMS personnel at Seward. We then transited to Hinchinbrook entrance and worked on this line on August 20 and 21. Finally, we completed our work at stations HB2, nighttime work between GAK3 and GAK1 and returned to Seward at 0813 on August 22.

Table 1.

NEP GLOBEC LTOP STANDARD STATIONS				
Latitude N (degrees, minutes)		**Longitude W (degrees, minutes)**		**Station Name**
Resurrection Bay Station				
60	1.5	149	21.5	RES2.5
Seward Line				
59	50.7	149	28	GAK1
59	46	149	23.8	GAK1I
59	41.5	149	19.6	GAK2
59	37.6	149	15.5	GAK2I
59	33.2	149	11.3	GAK3
59	28.9	149	7.1	GAK3I
59	24.5	149	2.9	GAK4
59	20.1	148	58.7	GAK4I
59	15.7	148	54.5	GAK5
59	11.4	148	50.3	GAK5I
59	7	148	46.2	GAK6
59	2.7	148	42	GAK6I
58	58.3	148	37.8	GAK7
58	52.9	148	33.6	GAK7I
58	47.5	148	29.4	GAK8
58	44.6	148	25.2	GAK8I
58	40.8	148	21	GAK9
58	36.7	148	16.7	GAK9I
58	32.5	148	12.7	GAK10
58	23.3	148	4.3	GAK11
58	14.6	147	56	GAK12
58	5.9	147	47.6	GAK13
Cape Fairfield Line				
59	54.5	148	52	CF1
59	53	148	52	CF2
59	51	148	52	CF3
59	49	148	52	CF4
59	47	148	52	CF5
59	45	148	52	CF6
59	43	148	52	CF7
59	41	148	52	CF8
59	39	148	52	CF9
59	37	148	52	CF10
59	35	148	52	CF11
59	33	148	52	CF12

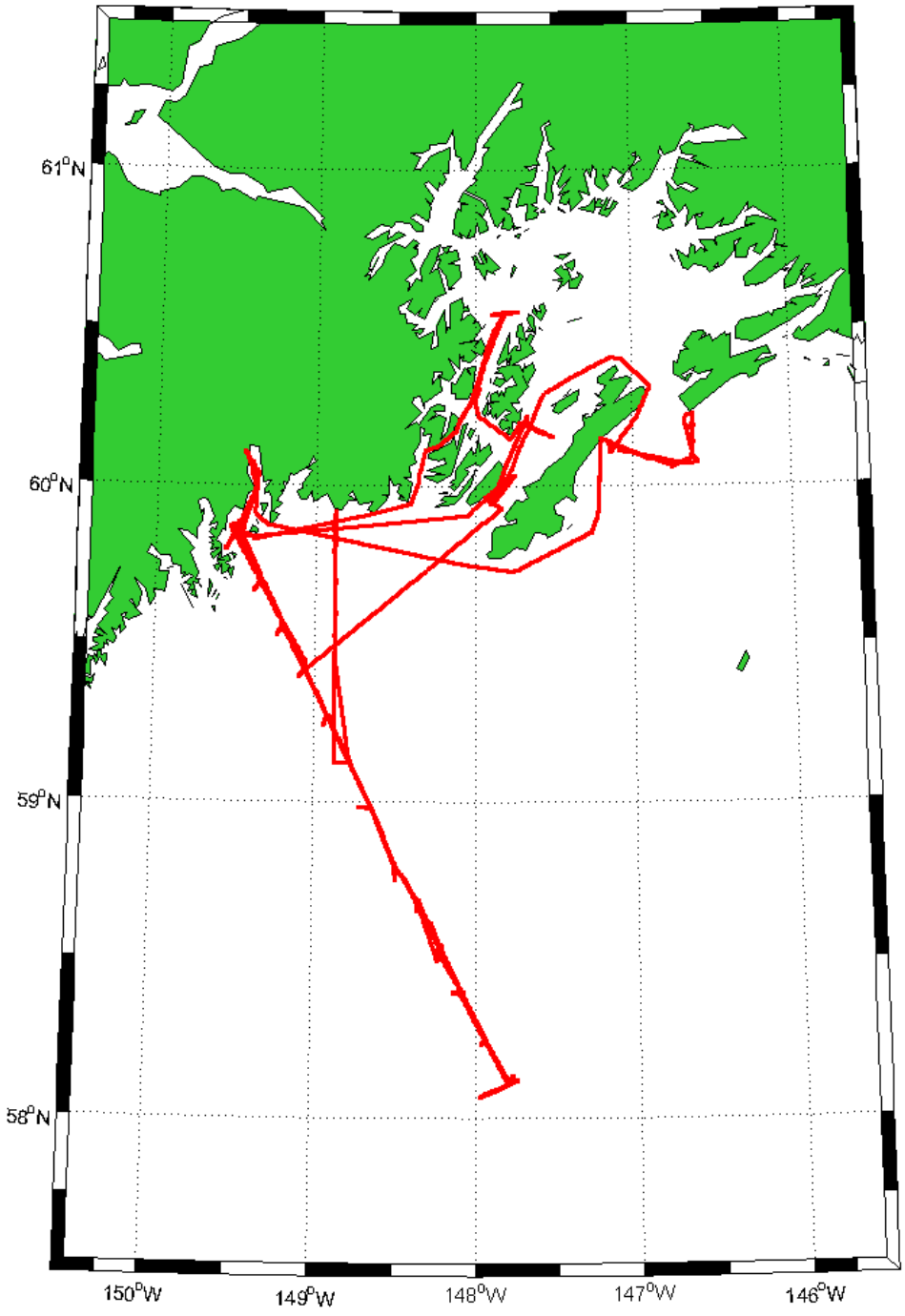
59	31	148	52	CF13
59	29	148	52	CF14
59	27	148	52	CF15
Prince William Sound Stations				
60	22.78	147	56.17	PWS1
60	32.1	147	48.2	PWS2
Knight Island Passage Station				
60	16.7	147	59.2	KIP2
Hogan Bay Line				
60	11.57	147	42	HB1
60	10.754	147	38.5	HB2
60	9.855	147	34.508	HB3
60	8.807	147	30.04	HB4
Montague Strait Line				
59	57.465	147	56.225	MS0i
59	57.257	147	55.602	MS1
59	56.982	147	54.761	MS1i
59	56.6	147	53.7	MS2
59	56.282	147	52.633	MS2i
59	55.9	147	51.4	MS3
59	55.56	147	50.611	MS3i
59	55.2	147	49.7	MS4
Hinchinbrook Entrance Line				
60	13	146	36.5	HE1
60	10.8	146	36.5	HE2
60	7.8	146	36.5	HE3
60	4.8	146	36.5	HE4
60	3.126	146	44.19	HE6.5
60	5.6	146	57.7	HE8
60	6.6	147	3	HE9
60	7.8	147	8	HE10
60	8.6	147	11.5	HE11
Cape Cleare Southeast				
59	44.5	147	49	CCSE1
59	40	147	43.6	CCSE2
59	34.25	147	36.5	CCSE3
59	28.5	147	28.5	CCSE4
59	22.5	147	21	CCSE5
59	14	147	9.5	CCSE6
59	3.5	146	58	CCSE7
58	53	146	44	CCSE8

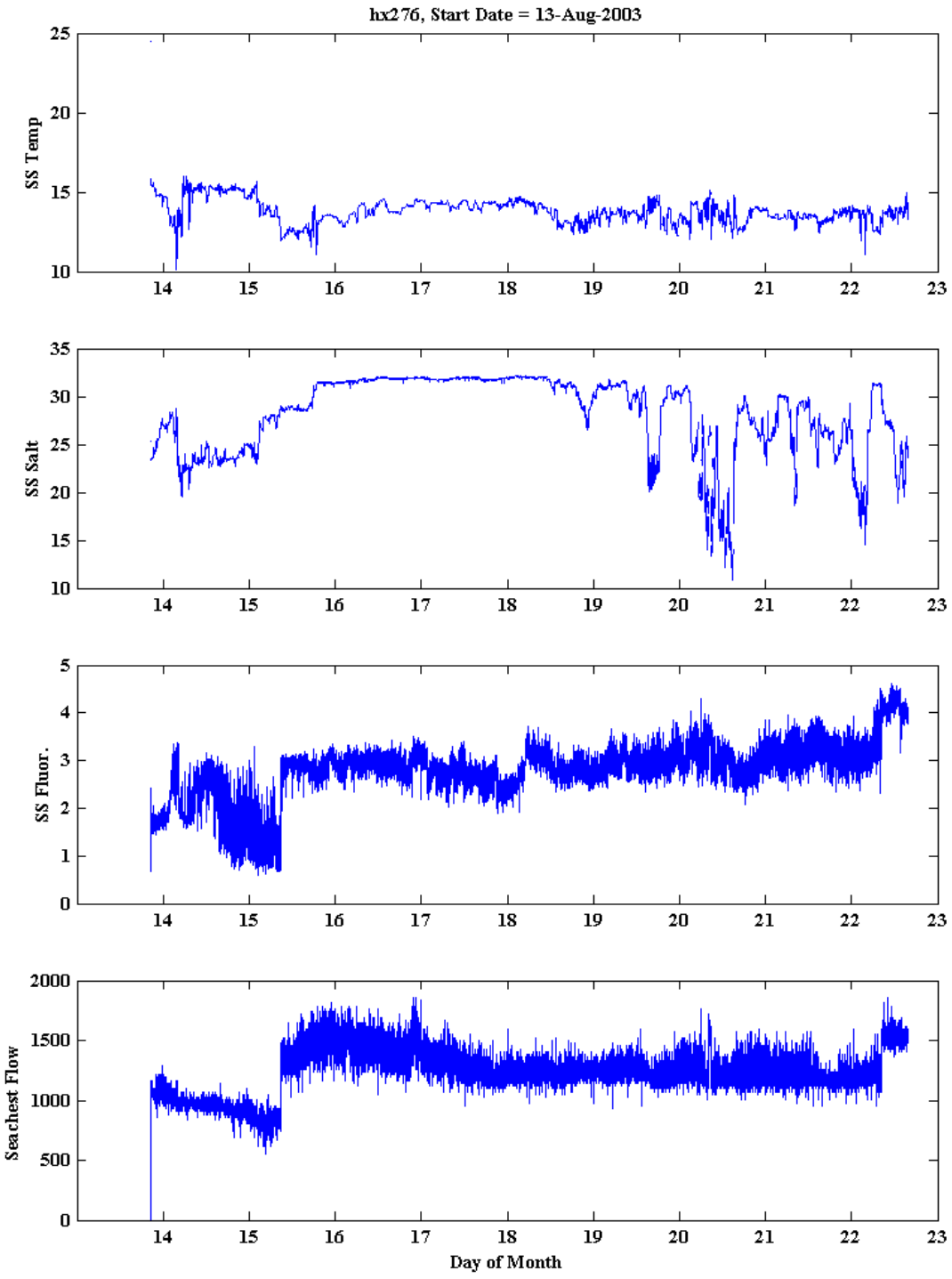
NEP GLOBEC Standard Station Map



Note: The Cape Cleare Southeast Line is a standard line only in select cruises during the Process Study sampling years.

hx276 Cruise Track

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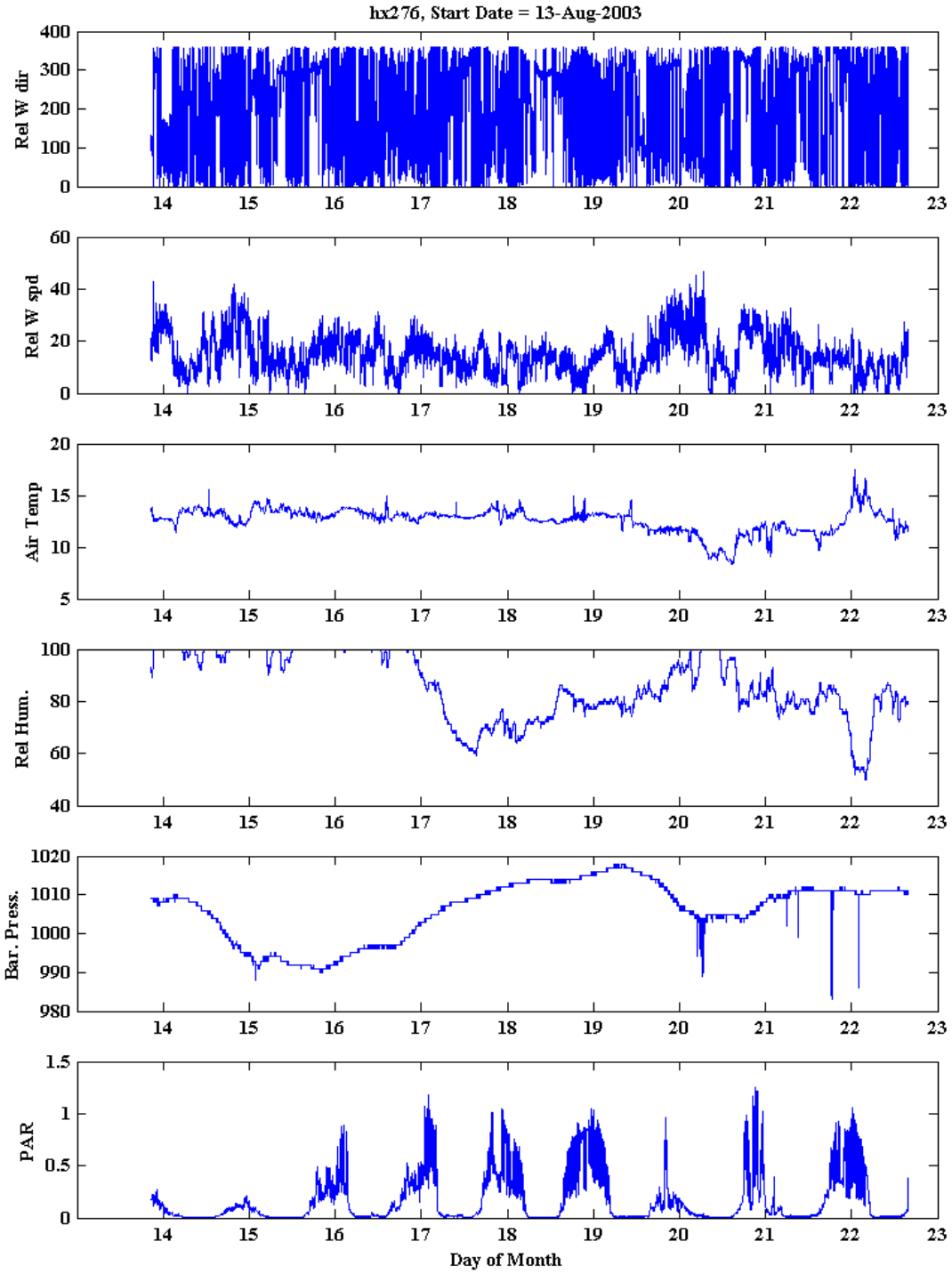
SS Salt
SS Fluor.
Seachest Flow
Day of Month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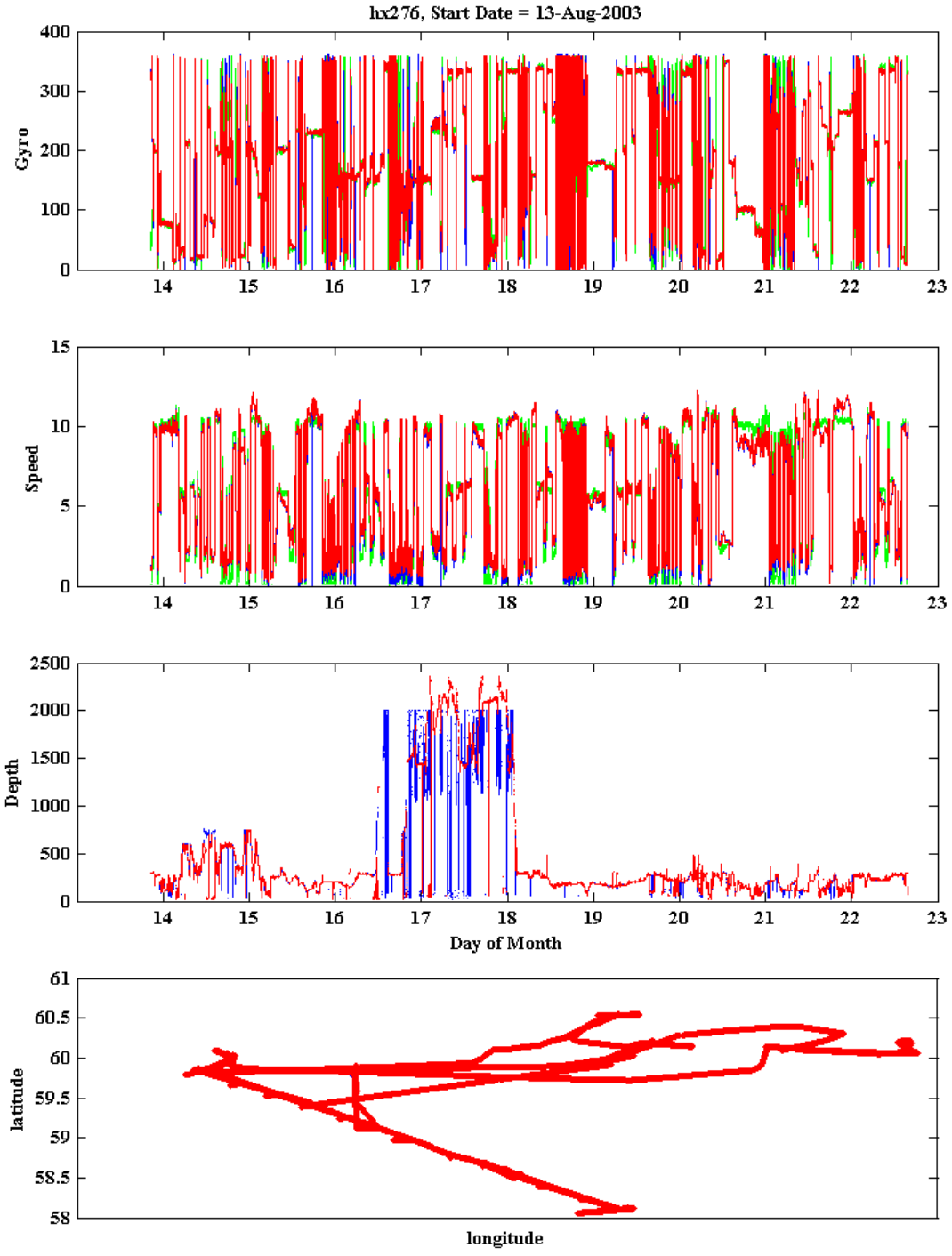
Rel Hum.
Bar. Press.
PAR
Day of Month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Gyro
Speed
Depth
Day of Month
latitude
longitude

Unless otherwise noted, CTDs were taken for T. Weingartner and T. Royer.
Water samples taken for T. Whitledge and D. Stockwell Nutrient and Chlorophyll analysis.
CalVet samples were taken for K. Coyle and R. Hopcroft.
HTI and MOCNESS samples were taken for K. Coyle.
Ring Net samples were taken for R. Hopcroft and K. Coyle.

Event #	Description	Station	Date	GMT	Latitude	Longitude	Depth	Comments	Scientist
HX27622503.001	CTD1-Start	RES2.5	8/13/2003	20:40	60.0360	149.32	296		Weingartner
HX27622503.002	CTD1-End	RES25	8/13/2003	21:06	60.0372	149.3646	296		Weingartner
HX27622503.003	CTD2-Start	GAK1	8/13/2003	22:27	59.8459	149.4658	270		Weingartner
HX27622503.004	CTD2-End	GAK1	8/13/2003	22:47	59.8459	149.4658	270		Weingartner
HX27622603.001	CTD3-Start	KIP2	8/14/2003	10:35	60.4414	147.50461	500		Pinchuk
HX27622603.002	CTD3-End	KIP2	8/14/2003	10:35	60.4414	147.50461	500		Pinchuk
HX27622603.003	HTI-Start	KIP2	8/14/2003	6:20	60.2770	147.98817	571		Pinchuk
HX27622603.004	MOCNESS-Start	KIP2	8/14/2003	6:23	60.2753	147.9903	571		Coyle
HX27622603.005	MOCNESS-End	KIP2	8/14/2003	7:16	60.2482	148.2583	272		Coyle
HX27622603.006	MOCNESS-Start	PWS1	8/14/2003	8:46	60.3792	147.9387	348		Coyle
HX27622603.007	MOCNESS-End	PWS1	8/14/2003	9:20	60.3572	147.9513	327		Coyle
HX27622603.008	HTI-End	KIP2	8/14/2003	10:29	60.4423	147.8795	341		Pinchuk
HX27622603.009	CTD4-Start	PWSx	8/14/2003	10:35	60.4414	147.50461	357	ctd for water	Pinchuk
HX27622603.010	CTD4-End	PWSx	8/14/2003	10:39	60.4409	147.50463	357		Pinchuk
HX27622603.011	MOCNESS-Start	PWS2	8/14/2003	11:22	60.5364	147.41303	752		Coyle
HX27622603.012	MOCNESS-End	PWS2	8/14/2003	12:08	60.5400	147.4073	752		Coyle
HX27622603.013	MOCNESS-Start	PWS2	8/14/2003	13:06	60.5323	147.5041	752	deep tow	Coyle
HX27622603.014	MOCNESS-End	PWS2	8/14/2003	14:15	60.5418	147.41393	752		Coyle
HX27622603.015	CTD5-Start	KIP2	8/14/2003	16:02	60.2779	147.51563	560	prim prod	Weingartner
HX27622603.016	CTD5-End	KIP2	8/14/2003	16:13	60.2741	147.51613	560		Weingartner
HX27622603.017	CalVET Net Tow-Start	KIP2	8/14/2003	16:27	60.2760	147.51562	560		Hopcroft
HX27622603.018	CalVET Net Tow-End	KIP2	8/14/2003	16:32	60.2742	147.51596	560		Hopcroft
HX27622603.019	CTD6-Start	KIP2	8/14/2003	16:43	60.2783	147.51552	567		Weingartner
HX27622603.020	CTD6-End	KIP2	8/14/2003	17:24	60.2639	148.0001	567		Weingartner
HX27622603.021	Neuston Trawl-Start	KIP2	8/14/2003	17:29	60.2653	148.00003	567		Hopcroft
HX27622603.022	Neuston Trawl-End	KIP2	8/14/2003	17:41	60.2691	147.51612	576		Hopcroft
HX27622603.023	CTD7-Start	KIP2	8/14/2003	17:54	60.2773	147.51558	565	zoop cast 1	Hopcroft
HX27622603.024	CTD7-End	KIP2	8/14/2003	17:58	60.2769	147.51559	565		Hopcroft
HX27622603.025	CTD8-Start	KIP2	8/14/2003	18:08	60.2719	147.51585	565	zoop cast 2	Hopcroft
HX27622603.026	CTD8-End	KIP2	8/14/2003	18:12	60.2716	147.51586	565		Hopcroft
HX27622603.027	CTD9-Start	KIP2	8/14/2003	18:18	60.2689	147.51605	600	zoop cast 3	Hopcroft
HX27622603.028	CTD9-End	KIP2	8/14/2003	18:22	60.2673	147.51619	600		Hopcroft
HX27622603.029	CTD10-Start	KIP2	8/14/2003	18:35	60.2784	147.51548	568	zoop cast 4	Hopcroft
HX27622603.030	CTD10-End	KIP2	8/14/2003	18:39	60.2769	147.51561	566		Hopcroft

HX27622603.031	CTD11-Start	KIP2	8/14/2003	18:50	60.2721	147.51588	566	zoop cast 5	Hopcroft
HX27622603.032	CTD11-End	KIP2	8/14/2003	18:54	60.2706	147.51596	566		Hopcroft
HX27622603.033	Ring Net-Start	KIP2	8/14/2003	19:09	60.2744	147.1567	566		Hopcroft
HX27622603.034	Ring Net-End	KIP2	8/14/2003	19:13	60.2744	147.1567	566		Hopcroft
HX27622603.035	Ring Net-Start	KIP2	8/14/2003	19:18	60.2724	147.51593	566		Hopcroft
HX27622603.036	Ring Net-End	KIP2	8/14/2003	19:27	60.2687	147.51639	566		Hopcroft
HX27622603.037	CTD12-Start	PWS1	8/14/2003	20:26	60.3665	147.511	347		Weingartner
HX27622603.038	CTD12-End	PWS1	8/14/2003	20:57	60.3665	147.51143	350		Weingartner
HX27622603.039	CalVET Net Tow-Start	PWS1	8/14/2003	21:06	60.3791	147.51016	350		Hopcroft
HX27622603.040	CalVET Net Tow-End	PWS1	8/14/2003	21:13	60.3770	147.51065	350		Hopcroft
HX27622603.041	Neuston Trawl-Start	PWS1	8/14/2003	21:28	60.3800	147.51012	350		Hopcroft
HX27622603.042	Neuston Trawl-End	PWS1	8/14/2003	21:39	60.3841	147.51007	350		Hopcroft
HX27622603.043	CTD13-Start	PWS2	8/14/2003	22:52	60.5352	147.41378	700		Weingartner
HX27622603.044	CTD13-End	PWS2	8/14/2003	23:39	60.5217	147.1488	627		Weingartner
HX27622603.045	CalVET Net Tow-Start	PWS2	8/14/2003	23:50	60.53395	147.1368	738		Hopcroft
HX27622603.046	CalVET Net Tow-End	PWS2	8/14/2003	23:57	60.5322	147.142	737		Hopcroft
HX27622703.001	Neuston Trawl-Start	PWS2	8/15/2003	0:10	60.5336	147.1365	737		Hopcroft
HX27622703.002	Neuston Trawl-End	PWS2	8/15/2003	0:21	60.5362	147.131	737		Hopcroft
HX27622703.003	CTD14-Start	HB1	8/15/2003	3:31	60.1922	147.0329	247		Weingartner
HX27622703.004	CTD14-End	HB1	8/15/2003	3:47	60.1920	147.033	247		Weingartner
HX27622703.005	CTD15-Start	HB2	8/15/2003	4:10	60.1798	147.1403	173		Weingartner
HX27622703.006	CTD15-End	HB2	8/15/2003	4:23	60.1807	147.1432	173		Weingartner
HX27622703.007	CalVET Net Tow-Start	HB2	8/15/2003	4:26	60.1815	147.1447	173		Hopcroft
HX27622703.008	CalVET Net Tow-End	HB2	8/15/2003	4:31	60.1822	147.1452	204		Hopcroft
HX27622703.009	CTD16-Start	HB3	8/15/2003	4:52	60.1652	147.075	86		Weingartner
HX27622703.010	CTD16-End	HB3	8/15/2003	4:59	60.1652	147.0766	86		Weingartner
HX27622703.011	CTD17-Start	HB4	8/15/2003	5:22	60.1474	147.1662	109		Weingartner
HX27622703.012	CTD17-End	HB4	8/15/2003	5:27	60.1476	147.0008	109		Weingartner
HX27622703.013	MOCNESS-Start	HB2	8/15/2003	6:51	60.1848	147.001	251		Coyle
HX27622703.014	MOCNESS-End	HB2	8/15/2003	7:31	60.2094	147.1588	251		Coyle
HX27622703.015	MOCNESS-Start	MS2	8/15/2003	11:18	59.9357	147.0529	188		Coyle
HX27622703.016	MOCNESS-End	MS2	8/15/2003	12:19	59.9754	147.1511	188		Coyle
HX27622703.017	CTD18-Start	MS1	8/15/2003	13:53	59.9545	147.096	165		Weingartner
HX27622703.018	CTD18-End	MS1	8/15/2003	14:16	59.9538	147.0903	165		Weingartner
HX27622703.019	CTD19-Start	MS2	8/15/2003	14:25	59.9443	147.061	195		Weingartner
HX27622703.020	CTD19-End	MS2	8/15/2003	14:41	59.9456	147.0663	186		Weingartner
HX27622703.021	CalVET Net Tow-Start	MS2	8/15/2003	14:49	59.9469	147.0685	186		Hopcroft
HX27622703.022	CalVET Net Tow-End	MS2	8/15/2003	14:54	59.9475	147.0692	186		Hopcroft

HX27622703.023	Neuston Trawl-Start	MS2	8/15/2003	15:00	59.9459	147.0672	186		Hopcroft
HX27622703.024	Neuston Trawl-End	MS2	8/15/2003	15:13	59.9410	147.0549	186		Hopcroft
HX27622703.025	CTD20-Start	MS3	8/15/2003	15:23	59.9309	147.0216	163		Weingartner
HX27622703.026	CTD20-End	MS3	8/15/2003	15:36	59.9288	147.0231	163		Weingartner
HX27622703.027	CTD21-Start	MS4	8/15/2003	15:48	59.9197	147.1602	122		Weingartner
HX27622703.028	CTD21-End	MS4	8/15/2003	16:00	59.9183	147.1595	116		Weingartner
HX27622703.029	CTD22-Start	GAK4	8/15/2003	20:40	59.4083	149.0512	200	prim prod	Whitledge
HX27622703.030	CTD22-End	GAK4	8/15/2003	20:51	59.4097	149.0567	200		Whitledge
HX27622703.031	Ring Net-Start	GAK4	8/15/2003	20:56	59.4110	149.0589	200		Hopcroft
HX27622703.032	Ring Net-End	GAK4	8/15/2003	21:03	59.4121	149.0601	200		Hopcroft
HX27622703.033	CTD23-Start	GAK4	8/15/2003	21:19	59.4089	149.0508	200		Weingartner
HX27622703.034	CTD23-End	GAK4	8/15/2003	21:36	59.4108	149.0576	200		Weingartner
HX27622703.035	Ring Net-Start	GAK4	8/15/2003	21:38	59.4112	149.0585	200		Hopcroft
HX27622703.036	Ring Net-End	GAK4	8/15/2003	21:47	59.4121	149.0597	200		Hopcroft
HX27622703.037	CalVET Net Tow-Start	GAK4	8/15/2003	21:50	59.4126	149.0599	200		Hopcroft
HX27622703.038	CalVET Net Tow-End	GAK4	8/15/2003	21:58	59.4134	149.0604	200		Hopcroft
HX27622703.039	CTD24-Start	GAK4	8/15/2003	22:07	59.4090	149.0473	200	zoop cast 1	Hopcroft
HX27622703.040	CTD24-End	GAK4	8/15/2003	22:10	59.4098	149.0484	200		Hopcroft
HX27622703.041	CTD25-Start	GAK4	8/15/2003	22:21	59.4118	149.052	200	zoop cast 2	Hopcroft
HX27622703.042	CTD25-End	GAK4	8/15/2003	22:24	59.4121	149.0527	200		Hopcroft
HX27622703.043	CTD26-Start	GAK4	8/15/2003	22:33	59.4080	149.0484	200	zoop cast 3	Hopcroft
HX27622703.044	CTD26-End	GAK4	8/15/2003	22:37	59.4085	149.0498	200		Hopcroft
HX27622703.045	CTD27-Start	GAK4	8/15/2003	22:44	59.4101	149.0507	200	zoop cast 4	Hopcroft
HX27622703.046	CTD27-End	GAK4	8/15/2003	22:47	59.4110	149.0499	200		Hopcroft
HX27622703.047	CTD28-Start	GAK4	8/15/2003	22:55	59.4129	149.0511	200	zoop cast 5	Hopcroft
HX27622703.048	CTD28-End	GAK4	8/15/2003	23:01	59.4143	149.0513	200		Hopcroft
HX27622703.049	CTD29-Start	GAK4	8/15/2003	23:08	59.4085	149.0485	200	zoop cast 6	Hopcroft
HX27622703.050	CTD29-End	GAK4	8/15/2003	23:12	59.4094	149.0493	200		Hopcroft
HX27622703.051	CTD30-Start	GAK4	8/15/2003	23:22	59.4120	149.0505	200	zoop cast 7	Hopcroft
HX27622703.052	CTD30-End	GAK4	8/15/2003	23:25	59.4128	149.0512	200		Hopcroft
HX27622703.053	CTD31-Start	GAK4	8/15/2003	23:34	59.4074	149.0454	200	zoop cast 8	Hopcroft
HX27622703.054	CTD31-End	GAK4	8/15/2003	23:37	59.4082	149.0458	200		Hopcroft
HX27622703.055	Ring Net-Start	GAK4	8/15/2003	23:54	59.4084	149.0488	200		Hopcroft
HX27622803.001	Ring Net-End	GAK4	8/16/2003	0:03	59.4105	149.0465	200		Hopcroft
HX27622803.002	Ring Net-Start	GAK4	8/16/2003	0:04	59.4108	149.0462	200		Hopcroft
HX27622803.003	Ring Net-End	GAK4	8/16/2003	0:11	59.4125	149.0441	200		Hopcroft
HX27622803.004	Neuston Trawl-Start	GAK4	8/16/2003	0:18	59.4104	149.052	200		Hopcroft
HX27622803.005	Neuston Trawl-End	GAK4	8/16/2003	0:29	59.4104	149.052	200		Hopcroft
HX27622803.006	CTD32-Start	GAK4i	8/16/2003	1:13	59.3356	148.1447	201		Weingartner
HX27622803.007	CTD32-End	GAK4i	8/16/2003	1:34	59.3395	148.1411	197		Weingartner
HX27622803.008	CTD33-Start	GAK5	8/16/2003	2:18	59.2617	148.0712	169		Weingartner
HX27622803.009	CTD33-End	GAK5	8/16/2003	2:30	59.2623	148.0685	169		Weingartner

HX27622803.010	CalVET Net Tow-Start	GAK5	8/16/2003	2:36	59.2624	148.066	169		Hopcroft
HX27622803.011	CalVET Net Tow-End	GAK5	8/16/2003	2:41	59.2625	148.0635	169		Hopcroft
HX27622803.012	CTD34-Start	GAK5i	8/16/2003	3:17	59.1897	148.0022	166		Weingartner
HX27622803.013	CTD34-End	GAK5i	8/16/2003	3:28	59.1902	148.166	166		Weingartner
HX27622803.014	CTD35-Start	GAK6	8/16/2003	4:06	59.1154	148.0995	152		Weingartner
HX27622803.015	CTD35-End	GAK6	8/16/2003	4:17	59.1142	148.0977	152		Weingartner
HX27622803.016	CalVET Net Tow-Start	GAK6	8/16/2003	4:22	59.1137	148.0957	152		Hopcroft
HX27622803.017	CalVET Net Tow-End	GAK6	8/16/2003	4:27	59.1131	148.0939	152		Hopcroft
HX27622803.018	Neuston Trawl-Start	GAK6	8/16/2003	4:32	59.1100	148.0927	152		Hopcroft
HX27622803.019	Neuston Trawl-End	GAK6	8/16/2003	4:43	59.1023	148.0879	152		Hopcroft
HX27622803.020	CTD36-Start	GAK6i	8/16/2003	5:09	59.0444	148.0315	190		Weingartner
HX27622803.021	CTD36-End	GAK6i	8/16/2003	5:21	59.0432	148.0327	190		Weingartner
HX27622803.022	MOCNESS-Start	GAK8	8/16/2003	7:09	58.7883	148.1548	286		Coyle
HX27622803.023	MOCNESS-End	GAK8	8/16/2003	7:50	58.7508	148.1473	286		Coyle
HX27622803.024	HTI Transect-Start	GAK8	8/16/2003	8:24	58.7907	148.1564	286		Coyle
HX27622803.025	HTI Transect-End	GAK9	8/16/2003	9:38	58.6790	148.0157	280		Coyle
HX27622803.026	MOCNESS-Start	GAK9	8/16/2003	9:46	58.6738	148.0138	280		Coyle
HX27622803.027	MOCNESS-End	GAK9	8/16/2003	10:20	58.6497	148.0178	280		Coyle
HX27622803.028	HTI Transect-Start	GAK9	8/16/2003	10:46	58.6798	148.0168	280		Coyle
HX27622803.029	HTI Transect-End	GAK10	8/16/2003	12:27	58.5411	148.0448	1180		Coyle
HX27622803.030	MOCNESS-Start	GAK10	8/16/2003	12:29	58.5393	148.0448	1180		Coyle
HX27622803.031	MOCNESS-End	GAK10	8/16/2003	13:10	58.5149	148.05	1180		Coyle
HX27622803.032	CTD37-Start	GAK9	8/16/2003	15:01	58.6813	148.0155	282	prim prod	Whitledge
HX27622803.033	CTD37-End	GAK9	8/16/2003	15:08	58.6822	148.0169	275		Whitledge
HX27622803.034	CalVET Net Tow-Start	GAK9	8/16/2003	15:13	58.6825	148.0163	281		Hopcroft
HX27622803.035	CalVET Net Tow-End	GAK9	8/16/2003	0.6389	58.68378	148	281		Hopcroft
HX27622803.036	CTD38-Start	GAK9	8/16/2003	15:29	58.6781	148.0159	281		Weingartner
HX27622803.037	CTD38-End	GAK9	8/16/2003	15:52	58.6797	148.0169	280		Weingartner
HX27622803.038	CTD39-Start	GAK9	8/16/2003	16:06	58.6813	148.0173	278	zoop cast 1	Hopcroft
HX27622803.039	CTD39-End	GAK9	8/16/2003	16:08	58.6815	148.0175	278		Hopcroft
HX27622803.040	Ring Net-Start	GAK9	8/16/2003	16:20	58.6797	148.0152	278		Hopcroft
HX27622803.041	Ring Net-End	GAK9	8/16/2003	16:25	58.6800	148.014	278		Hopcroft
HX27622803.042	CTD40-Start	GAK9	8/16/2003	16:30	58.6801	148.0171	278	zoop cast 2	Hopcroft
HX27622803.043	CTD40-End	GAK9	8/16/2003	16:34	58.6801	148.0171	278		Hopcroft
HX27622803.044	CTD41-Start	GAK9	8/16/2003	16:44	58.6806	148.0163	278	zoop cast 3	Hopcroft

HX27622803.045	CTD41-End	GAK9	8/16/2003	16:47	58.6809	148.016	278		Hopcroft
HX27622803.046	CTD42-Start	GAK9	8/16/2003	16:54	58.6810	148.0157	278	zoop cast 4	Hopcroft
HX27622803.047	CTD42-End	GAK9	8/16/2003	16:57	58.6810	148.0155	278		Hopcroft
HX27622803.048	CTD43-Start	GAK9	8/16/2003	17:05	58.6811	148.0138	278	zoop cast 5	Hopcroft
HX27622803.049	CTD43-End	GAK9	8/16/2003	17:09	58.6811	148.0138	278		Hopcroft
HX27622803.050	CTD44-Start	GAK9	8/16/2003	17:15	58.6814	148.0107	278	zoop cast 6	Hopcroft
HX27622803.051	CTD44-End	GAK9	8/16/2003	17:19	58.6815	148.0095	278		Hopcroft
HX27622803.052	CTD45-Start	GAK9	8/16/2003	17:27	58.6817	148.007	279	zoop cast 7	Hopcroft
HX27622803.053	CTD45-End	GAK9	8/16/2003	17:31	58.6818	148.0056	279		Hopcroft
HX27622803.054	CTD46-Start	GAK9	8/16/2003	17:39	58.6818	148.0029	279	zoop cast 8	Hopcroft
HX27622803.055	CTD46-End	GAK9	8/16/2003	17:42	58.6817	148.0022	279		Hopcroft
HX27622803.056	Ring Net-Start	GAK9	8/16/2003	17:51	58.6794	148.0175	279		Hopcroft
HX27622803.057	Ring Net-Start	GAK9	8/16/2003	17:52	58.6800	148.0152	279		Hopcroft
HX27622803.058	Ring Net-End	GAK9	8/16/2003	17:57	58.6800	148.0152	279		Hopcroft
HX27622803.059	Ring Net-Start	GAK9	8/16/2003	18:03	58.6801	148.0095	279		Hopcroft
HX27622803.060	Ring Net-End	GAK9	8/16/2003	18:05	58.6801	148.0094	279		Hopcroft
HX27622803.061	Ring Net-Start	GAK9	8/16/2003	18:09	58.6797	148.0082	279		Hopcroft
HX27622803.062	Ring Net-End	GAK9	8/16/2003	18:13	58.6792	148.0072	279		Hopcroft
HX27622803.063	CTD47-Start	GAK9i	8/16/2003	18:45	58.6105	148.1093	695		Weingartner
HX27622803.064	CTD47-End	GAK9i	8/16/2003	19:28	58.6086	148.0958	695		Weingartner
HX27622803.065	CalVET Net Tow-Start	GAK10	8/16/2003	20:12	58.5419	148.0435	1470		Hopcroft
HX27622803.066	CalVET Net Tow-End	GAK10	8/16/2003	20:17	58.5417	148.0417	1470		Hopcroft
HX27622803.067	CTD48-Start	GAK10	8/16/2003	20:21	58.5401	148.0449	1475		Weingartner
HX27622803.068	CTD48-End	GAK10	8/16/2003	21:34	58.5368	148.0256	1541		Weingartner
HX27622803.069	CalVET Net Tow-Start	GAK11	8/16/2003	22:56	58.3874	148.073	1430		Hopcroft
HX27622803.070	CalVET Net Tow-End	GAK11	8/16/2003	23:03	58.3871	148.0705	1430		Hopcroft
HX27622803.071	CTD49-Start	GAK11	8/16/2003	23:09	58.3888	148.0726	1430		Weingartner
HX27622903.001	CTD49-End	GAK11	8/17/2003	0:24	58.3903	148.0618	1438		Weingartner
HX27622903.002	MOCNESS-Start	GAK13	8/17/2003	3:02	58.0916	147.147	2094		Coyle
HX27622903.003	MOCNESS-End	GAK13	8/17/2003	4:28	58.0695	147.0775	2094		Coyle
HX27622903.004	MOCNESS-Start	GAK13	8/17/2003	6:10	58.1133	147.0789	2150		Coyle
HX27622903.005	MOCNESS-End	GAK13	8/17/2003	6:53	58.1084	147.1108	2150		Coyle
HX27622903.006	HTI Transect-Start	GAK13	8/17/2003	7:10	58.0984	147.1262	2150		Coyle
HX27622903.007	HTI Transect-End	GAK12	8/17/2003	8:49	58.2439	147.9346	2119		Coyle
HX27622903.008	MOCNESS-Start	GAK12	8/17/2003	8:54	58.2419	147.9375	2119		Coyle
HX27622903.009	MOCNESS-End	GAK12	8/17/2003	9:32	58.2264	147.9529	2119		Coyle
HX27622903.010	HTI Transect-Start	GAK12	8/17/2003	9:51	58.2452	147.933	2119		Coyle

HX27622903.011	HTI Transect-End	GAK11	8/17/2003	11:32	58.3894	148.0763	1430		Coyle
HX27622903.012	MOCNESS-Start	GAK11	8/17/2003	11:32	58.3894	148.0771	1430		Coyle
HX27622903.013	MOCNESS-End	GAK11	8/17/2003	12:05	58.3894	148.1173	1430		Coyle
HX27622903.014	HTI Transect-Start	GAK11	8/17/2003	12:27	58.3895	148.0733	1430		Coyle
HX27622903.015	HTI Transect-End	GAK10	8/17/2003	14:03	58.5423	148.2132	1462		Coyle
HX27622903.016	CTD50-Start	GAK13	8/17/2003	17:24	58.0999	147.793	2090	prim prod	Whitledge
HX27622903.017	CTD50-End	GAK13	8/17/2003	17:34	58.1037	147.7935	2090		Whitledge
HX27622903.018	CalVET Net Tow-Start	GAK13	8/17/2003	17:43	58.0980	147.795	2090		Hopcroft
HX27622903.019	CalVET Net Tow-End	GAK13	8/17/2003	17:49	58.1003	147.7953	2090		Hopcroft
HX27622903.020	Ring Net-Start	GAK13	8/17/2003	17:52	58.0982	147.7929	2090		Hopcroft
HX27622903.021	Ring Net-End	GAK13	8/17/2003	17:59	58.0982	147.7929	2090		Hopcroft
HX27622903.022	CTD51-Start	GAK13	8/17/2003	18:07	58.0987	147.7919	2090	zoop cast 1	Hopcroft
HX27622903.023	CTD51-End	GAK13	8/17/2003	18:11	58.1004	147.7911	2090		Hopcroft
HX27622903.024	CTD52-Start	GAK13	8/17/2003	18:19	58.1038	147.789	2090	zoop cast 2	Hopcroft
HX27622903.025	CTD52-End	GAK13	8/17/2003	18:23	58.1054	147.7881	2090		Hopcroft
HX27622903.026	CTD53-Start	GAK13	8/17/2003	18:32	58.0977	147.7921	2090	zoop cast 3	Hopcroft
HX27622903.027	CTD53-End	GAK13	8/17/2003	18:36	58.0991	147.7917	2090		Hopcroft
HX27622903.028	CTD54-Start	GAK13	8/17/2003	18:42	58.1016	147.7905	2090	zoop cast 4	Hopcroft
HX27622903.029	CTD54-End	GAK13	8/17/2003	18:44	58.1028	147.7901	2099		Hopcroft
HX27622903.030	CTD55-Start	GAK13	8/17/2003	18:51	58.1054	147.7889	2099	zoop cast 5	Hopcroft
HX27622903.031	CTD55-End	GAK13	8/17/2003	18:55	58.1073	147.7871	2099		Hopcroft
HX27622903.032	CTD56-Start	GAK13	8/17/2003	19:11	58.0990	147.7919	2087		Weingartner
HX27622903.033	CTD56-End	GAK13	8/17/2003	20:45	58.1263	147.7615	2087		Weingartner
HX27622903.034	Ring Net-Start	GAK13	8/17/2003	21:04	58.0992	147.7941	2087		Hopcroft
HX27622903.035	Ring Net-End	GAK13	8/17/2003	21:10	58.1007	147.7915	2087		Hopcroft
HX27622903.036	Ring Net-Start	GAK13	8/17/2003	21:12	58.1020	147.786	2087		Hopcroft
HX27622903.037	Ring Net-End	GAK13	8/17/2003	21:18	58.1034	147.7866	2087		Hopcroft
HX27622903.038	CalVET Net Tow-Start	GAK12	8/17/2003	22:22	58.2439	147.931	2087		Hopcroft
HX27622903.039	CalVET Net Tow-End	GAK12	8/17/2003	22:28	58.2429	147.9295	2160		Hopcroft
HX27622903.040	CTD57-Start	GAK12	8/17/2003	22:34	58.2431	147.9328	2196		Weingartner
HX27622903.041	CTD57-End	GAK12	8/17/2003	23:44	58.2363	147.9285	2196		Weingartner
HX27623003.001	CTD58-Start	GAK8i	8/18/2003	3:07	58.7435	148.4212	290		Weingartner
HX27623003.002	CTD58-End	GAK8i	8/18/2003	3:32	58.7445	148.4173	298		Weingartner
HX27623003.003	CTD59-Start	GAK8	8/18/2003	4:04	58.7932	148.4892	293		Weingartner
HX27623003.004	CTD59-End	GAK8	8/18/2003	4:21	58.7944	148.4805	293		Weingartner
HX27623003.005	CalVET Net Tow-Start	GAK8	8/18/2003	4:29	58.7927	148.4888	293		Hopcroft
HX27623003.006	CalVET Net Tow-End	GAK8	8/18/2003	4:34	58.7924	148.4866	293		Hopcroft
HX27623003.007	CTD60-Start	GAK7i	8/18/2003	5:14	58.8816	148.5609	293		Weingartner
HX27623003.008	CTD60-End	GAK7i	8/18/2003	5:35	58.8799	148.5482	300		Weingartner

HX27623003.009	CalVET Net Tow-Start	GAK7	8/18/2003	6:19	58.9721	148.6313	242		Hopcroft
HX27623003.010	CalVET Net Tow-End	GAK7	8/18/2003	6:26	58.9703	148.6298	242		Hopcroft
HX27623003.011	CTD61-Start	GAK7	8/18/2003	6:28	58.9699	148.6297	242		Weingartner
HX27623003.012	CTD61-End	GAK7	8/18/2003	6:44	58.9666	148.6259	245		Weingartner
HX27623003.013	HTI Transect-Start	GAK8	8/18/2003	7:54	58.7915	148.4896	288		Coyle
HX27623003.014	HTI Transect-End	GAK7	8/18/2003	9:56	58.9726	148.6332	240		Coyle
HX27623003.015	MOCNESS-Start	GAK7	8/18/2003	9:57	58.9727	148.6366	240		Coyle
HX27623003.016	MOCNESS-End	GAK7	8/18/2003	10:40	58.9756	148.7037	240		Coyle
HX27623003.017	HTI Transect-Start	GAK7	8/18/2003	11:08	58.9736	148.6318	240		Coyle
HX27623003.018	HTI Transect-End	GAK6	8/18/2003	12:31	59.1175	148.7713	150		Coyle
HX27623003.019	MOCNESS-Start	GAK6	8/18/2003	12:33	59.1174	148.7748	150		Coyle
HX27623003.020	MOCNESS-End	GAK6	8/18/2003	13:23	59.1170	148.8497	150		Coyle
HX27623003.021	CTD62-Start	CF15	8/18/2003	15:31	59.4494	148.8683	183		Weingartner
HX27623003.022	CTD62-End	CF15	8/18/2003	15:44	59.4494	148.8656	183		Weingartner
HX27623003.023	CTD63-Start	CF14	8/18/2003	16:01	59.4832	148.8689	170		Weingartner
HX27623003.024	CTD63-End	CF14	8/18/2003	16:11	59.4829	148.8673	170		Weingartner
HX27623003.025	CTD64-Start	CF13	8/18/2003	16:28	59.5170	148.8683	174		Weingartner
HX27623003.026	CTD64-End	CF13	8/18/2003	16:41	59.5185	148.8666	174		Weingartner
HX27623003.027	CTD65-Start	CF12	8/18/2003	16:56	59.5501	148.8684	184		Weingartner
HX27623003.028	CTD65-End	CF12	8/18/2003	17:07	59.5514	148.8647	181		Weingartner
HX27623003.029	CTD66-Start	CF11	8/18/2003	17:22	59.5837	148.8679	176		Weingartner
HX27623003.030	CTD66-End	CF11	8/18/2003	17:36	59.5855	148.8616	175		Weingartner
HX27623003.031	CTD67-Start	CF10	8/18/2003	17:52	59.6166	148.8678	175		Weingartner
HX27623003.032	CTD67-End	CF10	8/18/2003	nd	nd	nd	175		Weingartner
HX27623003.033	CTD68-Start	CF9	8/18/2003	18:19	59.6496	148.8675	177		Weingartner
HX27623003.034	CTD68-End	CF9	8/18/2003	18:30	59.6494	148.8658	177		Weingartner
HX27623003.035	CTD69-Start	CF8	8/18/2003	nd	nd	nd	178		Weingartner
HX27623003.036	CTD69-End	CF8	8/18/2003	18:57	59.6839	148.8623	178		Weingartner
HX27623003.037	CTD70-Start	CF7	8/18/2003	19:14	59.7162	148.8699	181		Weingartner
HX27623003.038	CTD70-End	CF7	8/18/2003	19:28	59.7137	148.8701	181		Weingartner
HX27623003.039	CTD71-Start	CF6	8/18/2003	19:47	59.7495	148.8687	188		Weingartner
HX27623003.040	CTD71-End	CF6	8/18/2003	19:57	59.7480	148.8683	188		Weingartner
HX27623003.041	CTD72-Start	CF5	8/18/2003	20:16	59.7838	148.8695	192		Weingartner
HX27623003.042	CTD72-End	CF5	8/18/2003	20:31	59.7841	148.8761	192		Weingartner
HX27623003.043	CTD73-Start	CF4	8/18/2003	20:47	59.8183	148.8694	182		Weingartner
HX27623003.044	CTD73-End	CF4	8/18/2003	20:56	59.8193	148.8762	182		Weingartner
HX27623003.045	CTD74-Start	CF3	8/18/2003	21:11	59.8508	148.8665	160		Weingartner
HX27623003.046	CTD74-End	CF3	8/18/2003	21:27	59.8517	148.8768	148		Weingartner
HX27623003.047	Ring Net-Start	CF3	8/18/2003	21:30	59.8519	148.8792	148		Hopcroft
HX27623003.048	Ring Net-End	CF3	8/18/2003	21:32	59.8520	148.8801	148		Hopcroft

HX27623003.049	CTD75-Start	CF2	8/18/2003	21:48	59.8843	148.867	112		Weingartner
HX27623003.050	CTD75-End	CF2	8/18/2003	21:57	59.8852	148.8706	109		Weingartner
HX27623003.051	CTD76-Start	CF1	8/18/2003	22:08	59.9087	148.8653	84		Weingartner
HX27623003.052	CTD76-End	CF1	8/18/2003	22:16	59.9094	148.8674	65		Weingartner
HX27623003.053	ADCP Transect-Start	CF1	8/18/2003	22:16	59.9094	148.867	65		Weingartner
HX27623103.001	ADCP Transect-End	CF15	8/19/2003	3:27	59.4456	148.8652	182		Weingartner
HX27623103.002	CTD77-Start	GAK6	8/19/2003	5:41	59.1163	148.767	151		Weingartner
HX27623103.003	CTD77-End	GAK6	8/19/2003	5:50	59.1172	148.7646	151		Weingartner
HX27623103.004	HTI Transect-Start	GAK6	8/19/2003	6:23	59.1174	148.7711	151		Coyle
HX27623103.005	HTI Transect-End	GAK5	8/19/2003	8:05	59.2624	148.9107	167		Coyle
HX27623103.006	MOCNESS-Start	GAK5	8/19/2003	8:07	59.2606	148.9123	167		Coyle
HX27623103.007	MOCNESS-End	GAK5	8/19/2003	8:50	59.2348	148.9319	167		Coyle
HX27623103.008	HTI Transect-Start	GAK5	8/19/2003	9:12	59.2640	148.91	167		Coyle
HX27623103.009	HTI Transect-End	GAK4	8/19/2003	10:49	59.4089	149.0502	198		Coyle
HX27623103.010	MOCNESS-Start	GAK4	8/19/2003	10:51	59.4079	149.0523	198		Coyle
HX27623103.011	MOCNESS-End	GAK4	8/19/2003	11:31	59.3905	149.0833	198		Coyle
HX27623103.012	HTI Transect-Start	GAK4	8/19/2003	11:51	59.4108	149.0503	198		Coyle
HX27623103.013	HTI Transect-End	GAK3	8/19/2003	13:26	59.5547	149.1898	214		Coyle
HX27623103.014	CTD78-Start	GAK1	8/19/2003	15:25	59.8462	149.4676	270		Weingartner
HX27623103.015	CTD78-End	GAK1	8/19/2003	15:43	59.8473	149.4745	270		Weingartner
HX27623103.016	CalVET Net Tow-Start	GAK1	8/19/2003	15:50	59.8450	149.4668	270		Hopcroft
HX27623103.017	CalVET Net Tow-End	GAK1	8/19/2003	15:56	59.8448	149.4679	270		Hopcroft
HX27623103.018	CTD79-Start	GAK1	8/19/2003	16:11	59.8453	149.468	270	prim prod	Whitledge
HX27623103.019	CTD79-End	GAK1	8/19/2003	16:18	59.8457	149.4687	270		Whitledge
HX27623103.020	CTD80-Start	GAK1	8/19/2003	16:41	59.8486	149.4782	270	zoop cast 1	Hopcroft
HX27623103.021	CTD80-Start	GAK1	8/19/2003	16:46	59.8486	149.4782	270		Hopcroft
HX27623103.022	CTD81-End	GAK1	8/19/2003	16:50	59.8459	149.4675	270	zoop cast 2	Hopcroft
HX27623103.023	CTD81-End	GAK1	8/19/2003	16:55	59.8459	149.4676	270		Hopcroft
HX27623103.024	CTD82-Start	GAK1	8/19/2003	17:01	59.8465	149.47	270	zoop cast 3	Hopcroft
HX27623103.025	CTD82-End	GAK1	8/19/2003	17:04	59.8468	149.4718	270		Hopcroft
HX27623103.026	CTD83-Start	GAK1	8/19/2003	17:11	59.8473	149.4755	270	zoop cast 4	Hopcroft
HX27623103.027	CTD83-End	GAK1	8/19/2003	17:13	59.8475	149.4766	270		Hopcroft
HX27623103.028	CTD84-Start	GAK1	8/19/2003	17:17	59.8479	149.4791	270	zoop cast 5	Hopcroft
HX27623103.029	CTD84-End	GAK1	8/19/2003	17:19	59.8483	149.4804	270		Hopcroft
HX27623103.030	Ring Net-Start	GAK1	8/19/2003	17:28	59.8440	149.4667	270		Hopcroft
HX27623103.031	Ring Net-End	GAK1	8/19/2003	17:31	59.8440	149.4668	270		Hopcroft

HX27623103.032	Ring Net-Start	GAK1	8/19/2003	17:38	59.8444	149.4713	270		Hopcroft
HX27623103.033	Ring Net-End	GAK1	8/19/2003	17:43	59.8444	149.4713	270		Hopcroft
HX27623103.034	Ring Net-Start	GAK1	8/19/2003	17:48	59.8447	149.474	270		Hopcroft
HX27623103.035	Ring Net-End	GAK1	8/19/2003	17:52	59.8447	149.4753	270		Hopcroft
HX27623103.036	Neuston Trawl-Start	GAK1	8/19/2003	17:58	59.8425	149.4742	270		Hopcroft
HX27623103.037	Neuston Trawl-End	GAK1	8/19/2003	18:08	59.8408	149.466	270		Hopcroft
HX27623103.038	CTD85-Start	GAK1i	8/19/2003	18:58	59.7665	149.3963	258		Weingartner
HX27623103.039	CTD85-End	GAK1i	8/19/2003	19:18	59.7643	149.4095	258		Weingartner
HX27623103.040	CTD86-Start	GAK2	8/19/2003	19:57	59.6908	149.3264	225		Weingartner
HX27623103.041	CTD86-End	GAK2	8/19/2003	20:16	59.6861	149.3353	225		Weingartner
HX27623103.042	CalVET Net Tow-Start	GAK2	8/19/2003	20:18	59.6860	149.3364	230		Hopcroft
HX27623103.043	CalVET Net Tow-End	GAK2	8/19/2003	20:24	59.6849	149.3406	230		Hopcroft
HX27623103.044	CTD87-Start	GAK2i	8/19/2003	20:57	59.6262	149.2573	213		Weingartner
HX27623103.045	CTD87-End	GAK2i	8/19/2003	21:16	59.6215	149.2657	213		Weingartner
HX27623103.046	CTD88-Start	GAK3	8/19/2003	21:54	59.5533	149.1883	212		Weingartner
HX27623103.047	CTD88-End	GAK3	8/19/2003	22:11	59.5511	149.1976	212		Weingartner
HX27623103.048	CalVET Net Tow-Start	GAK3	8/19/2003	22:15	59.5510	149.1987	212		Hopcroft
HX27623103.049	CalVET Net Tow-End	GAK3	8/19/2003	22:21	59.5514	149.2048	212		Hopcroft
HX27623103.050	CTD89-Start	GAK3i	8/19/2003	23:03	59.4815	149.1179	212		Weingartner
HX27623103.051	CTD89-End	GAK3i	8/19/2003	23:19	59.4810	149.1284	212		Weingartner
HX27623203.001	CTD90-Start	GAK4	8/20/2003	0:06	59.4088	149.0487	200		Weingartner
HX27623203.002	CTD90-End	GAK4	8/20/2003	0:21	59.4082	149.0566	200		Weingartner
HX27623203.003	Ring Net-Start	GAK1	8/20/2003	3:40	59.8547	149.5142	262		Hopcroft
HX27623203.004	Ring Net-End	GAK1	8/20/2003	3:45	59.8547	149.5142	262		Hopcroft
HX27623203.005	Ring Net-Start	GAK1	8/20/2003	3:45	59.8547	149.5142	262		Hopcroft
HX27623203.006	Ring Net-End	GAK1	8/20/2003	3:50	59.8565	149.5158	262		Hopcroft
HX27623303.001	CTD91-Start	HE11	8/21/2003	1:11	60.1432	147.1909	179		Weingartner
HX27623303.002	CTD91-End	HE11	8/21/2003	1:26	60.1424	147.1983	105		Weingartner
HX27623303.003	CalVET Net Tow-Start	HE10	8/21/2003	1:45	60.1307	147.1362	217		Hopcroft
HX27623303.004	CalVET Net Tow-End	HE10	8/21/2003	1:52	60.1293	147.1407	217		Hopcroft
HX27623303.005	CTD92-Start	HE10	8/21/2003	1:58	60.1298	147.1345	217		Weingartner
HX27623303.006	CTD92-End	HE10	8/21/2003	2:17	60.1259	147.1491	223		Weingartner
HX27623303.007	CTD93-Start	HE10	8/21/2003	2:26	60.1303	147.1277	215	cast to 50m	Weingartner
HX27623303.008	CTD93-End	HE10	8/21/2003	2:32	60.1282	147.1326	217		Weingartner
HX27623303.009	CTD94-Start	HE9	8/21/2003	2:57	60.1099	147.0507	278		Weingartner
HX27623303.010	CTD94-End	HE9	8/21/2003	3:20	60.1048	147.0731	261		Weingartner
HX27623303.011	CTD95-Start	HE8	8/21/2003	3:50	60.0938	146.9613	150		Weingartner
HX27623303.012	CTD95-End	HE8	8/21/2003	4:01	60.0930	146.9683	152		Weingartner
HX27623303.013	CTD96-Start	HE6.5	8/21/2003	4:57	60.0526	146.7359	124		Weingartner
HX27623303.014	CTD96-End	HE6.5	8/21/2003	5:08	60.0514	146.7416	124		Weingartner
HX27623303.015	CalVET Net Tow-Start	HE6.5	8/21/2003	5:10	60.0511	146.7433	124		Hopcroft

HX27623303.016	CalVET Net Tow-End	HE6.5	8/21/2003	5:15	60.0506	146.7457	124		Hopcroft
HX27623303.017	CTD97-Start	HE4	8/21/2003	5:48	60.0804	146.6078	115		Weingartner
HX27623303.018	CTD97-End	HE4	8/21/2003	6:01	60.0790	146.616	116		Weingartner
HX27623303.019	CalVET Net Tow-Start	HE4	8/21/2003	6:04	60.0783	146.6189	116		Hopcroft
HX27623303.020	CalVET Net Tow-End	HE4	8/21/2003	6:09	60.0773	146.6223	116		Hopcroft
HX27623303.021	CTD98-Start	HE3	8/21/2003	6:34	60.1297	146.6092	114		Weingartner
HX27623303.022	CTD98-End	HE3	8/21/2003	6:45	60.1265	146.6165	114		Weingartner
HX27623303.023	CTD99-Start	HE2	8/21/2003	7:15	60.1797	146.6137	197		Weingartner
HX27623303.024	CTD99-End	HE2	8/21/2003	7:33	60.1734	146.6325	182		Weingartner
HX27623303.025	CalVET Net Tow-Start	HE2	8/21/2003	7:47	60.1791	146.6077	190		Hopcroft
HX27623303.026	CalVET Net Tow-End	HE2	8/21/2003	7:52	60.1777	146.6145	190		Hopcroft
HX27623303.027	CTD100-Start	HE1	8/21/2003	8:13	60.2169	146.6104	80		Weingartner
HX27623303.028	CTD100-End	HE1	8/21/2003	8:22	60.2145	146.6189	83		Weingartner
HX27623303.029	MOCNESS-Start	HE4	8/21/2003	9:27	60.0776	146.6059	114		Coyle
HX27623303.030	MOCNESS-End	HE4	8/21/2003	10:00	60.0670	146.5825	121		Coyle
HX27623303.031	MOCNESS-Start	HE7	8/21/2003	11:08	60.0849	146.9178	112		Coyle
HX27623303.032	MOCNESS-End	HE7	8/21/2003	11:42	60.0776	146.8997	108		Coyle
HX27623303.033	MOCNESS-Start	HE10	8/21/2003	12:36	60.1257	147.1362	215		Coyle
HX27623303.034	MOCNESS-End	HE10	8/21/2003	13:11	60.1018	147.1348	215		Coyle
HX27623303.035	Ring Net-Start	HB2	8/21/2003	17:56	60.1790	147.6463	188		Hopcroft
HX27623303.036	Ring Net-End	HB2	8/21/2003	18:01	60.1790	147.6463	188		Hopcroft
HX27623303.037	CTD101-Start	HB2	8/21/2003	18:08	60.1750	147.651	188		Hopcroft
HX27623303.038	CTD101-End	HB2	8/21/2003	18:18	60.1749	147.6511	188		Hopcroft
HX27623303.039	Ring Net-Start	HB2	8/21/2003	18:20	60.1746	147.651	188		Hopcroft
HX27623303.040	Ring Net-End	HB2	8/21/2003	18:23	60.1746	147.651	188		Hopcroft
HX27623303.041	Ring Net-Start	HB2	8/21/2003	18:27	60.1733	147.6519	188		Hopcroft
HX27623303.042	Ring Net-End	HB2	8/21/2003	18:34	60.1720	147.6525	188		Hopcroft
HX27623403.001	CTD102-Start	GAK1	8/22/2003	0:29	59.8515	149.4995	263	water for Hopcroft	Hopcroft
HX27623403.002	CTD102-End	GAK1	8/22/2003	0:33	59.8511	149.4995	263		Hopcroft
HX27623403.003	Ring Net-Start	GAK1	8/22/2003	0:36	59.8508	149.4999	263		Hopcroft
HX27623403.004	Ring Net-End	GAK1	8/22/2003	0:42	59.8507	149.5016	263		Hopcroft
HX27623403.005	Ring Net-Start	GAK1	8/22/2003	0:48	59.8505	149.5036	263		Hopcroft
HX27623403.006	Ring Net-End	GAK1	8/22/2003	0:48	59.8505	149.5037	263		Hopcroft
HX27623403.007	Ring Net-Start	GAK1	8/22/2003	0:58	59.8505	149.5069	263		Hopcroft
HX27623403.008	Ring Net-End	GAK1	8/22/2003	0:58	59.8505	149.5069	263		Hopcroft
HX27623403.009	CTD103-Start	GAK3	8/22/2003	6:14	59.5516	149.1897	215		Coyle

HX27623403.010	CTD103-End	GAK3	8/22/2003	nd	nd	nd	215		Coyle
HX27623403.011	MOCNESS-Start	GAK3	8/22/2003	6:25	59.5468	149.195	215		Coyle
HX27623403.012	MOCNESS-End	GAK3	8/22/2003	7:09	59.5204	149.2273	215		Coyle
HX27623403.013	HTI Transect-Start	GAK3	8/22/2003	7:33	59.5542	149.1902	215		Coyle
HX27623403.014	HTI Transect-End	GAK2	8/22/2003	9:20	59.6901	149.3316	225		Coyle
HX27623403.015	MOCNESS-Start	GAK2	8/22/2003	9:22	59.6887	149.3336	225		Coyle
HX27623403.016	MOCNESS-End	GAK2	8/22/2003	9:57	59.6620	149.3702	225		Coyle
HX27623403.017	HTI Transect-Start	GAK2	8/22/2003	10:23	59.6913	149.3288	225		Coyle
HX27623403.018	HTI Transect-End	GAK1	8/22/2003	12:09	59.8456	149.4682	268		Coyle
HX27623403.019	MOCNESS-Start	GAK1	8/22/2003	12:13	59.8491	149.4691	268		Coyle
HX27623403.020	MOCNESS-End	GAK1	8/22/2003	12:57	59.8723	149.4756	268		Coyle
HX27623403.021	CTD104-Start	GAK1	8/22/2003	13:45	59.8453	149.466	269		Weingartner
HX27623403.022	CTD104-End	GAK1	8/22/2003	13:58	59.8453	149.466	269		Weingartner
HX27623403.023	CTD105-Start	RES2.5	8/22/2003	15:14	60.02488	149.3604	294		Weingartner
HX27623403.024	CTD105-End	RES2.5	8/22/2003	15:30	60.02488	149.3604	294		Weingartner