GLOBEC CRUISE REPORT
CRUISE HX257 – 5-14 April 2002

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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 this end the GLOBEC cruises on the Gulf of Alaska shelf will determine the physical-chemical structure, primary production and the distribution and abundance of zooplankton, yoy salmon and other planktivorous fish. These interdisciplinary cruises will occur over a seven-year period and throughout the year so that seasonal and interannual depictions of the oceanography of this shelf will be available. 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 April 2002 cruise focused on the distribution of physical properties, nutrients, and chlorophyll, zooplankton, and seabird populations over the shelf along the Seward Line, within western Prince William Sound, and on the shelf south of Hinchinbrook Entrance. The purpose was to characterize both the cross- and along-shore variability in the physical and chemical properties and the biological components of the northern Gulf of Alaska shelf.

Cruise Objectives

Determine thermohaline, velocity, and nutrient structure of the Gulf of Alaska shelf, emphasizing Seward Line, C. Fairfield Line, Prince William Sound stations, offshore PWS stations and the Cape Cleare Southeast Line. Other lines as time permits
Determine primary production and phytoplankton biomass distribution.
Determine the distribution and abundance of zooplankton.
Determine the distribution and abundance of seabirds and marine mammals.
Determine copepod and euphausiid rates of growth and egg production.

SAMPLING
DAYTIME ACTIVITIES
Occupied the various hydrographic transects and collect vertical CTD-chlorophyll-PAR profiles. Station Transect priorities are (in order): Seward, C. Fairfield, W. PWS, and Hinchinbrook Entrance. AHC Line; PWSSW Line, and Cape Cleare Line. Collected ADCP, sea surface salinity (SSS), temperature (SST) and fluorescence (SSF) using seachest sensors, 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.
Measured Primary Productivity at Stations GAK 1, 4, 9, and 13, within Prince William Sound and on the Cape Cleare Line.
Observed and documented marine mammal and seabird distributions from the bridge.
One CalVet Net cast was done (the current CalVet net frame accommodates at total of four nets, of two different mesh sizes) along the Seward Line, at selected PWS stations and along the Cape Cleare Line.
At 2 Seward Line stations and one PWS station Hopcroft performed 7 casts with the 10-liter Niskins/Rosette to collect water (from ~ 20m) for zooplankton incubations.
One deep MOCNESS tow (to 600 m) was done near the end of the Seward Line and one in PWS at station PWS2.

NIGHTTIME ACTIVITIES
Hydroacoustic samples and MOCNESS discrete samples were done along the Seward Line, in PWS, and at Hinchinbrook Entrance.

Chronology

The cruise departed Seward, Alaska at 1800 (0900 AST) 5 April 2002 and occupied the first CTD station within Resurrection Bay (RES2.5) and then GAK 1. We took advantage of the fair weather and low sea states by proceeding to GAK 10 where the towing of the HTI began followed by MOCNESS tows out to GAK13. While at GAK13 we collected water for Dr. Hopcroft's zooplankton growth rate work. We completed the outer CTD stations on the Seward Line before making HTI and MOCNESS tows into GAK7. We then returned to GAK9 for productivity sampling, followed by CTDs working toward shore. HTI and MOCNESS tows began at GAK7

and worked into GAK4. Another productivity station was done at GAK4 and water was collected there for Hopcroft, followed by CTDs working toward shore. Since there was some time remaining prior to darkness, additional CTDs were occupied around GAK4 to better resolve the spatial hydrographic patterns near to the mooring there. HTI and MOCNESS tows were made from GAK4 to GAK1. Water was collected for Hopcroft at GAK1 and another productivity cast was done at GAK1.

CTD sampling was carried out for the Cape Fairfield Line. This was followed by a non-stop ADCP run from CF15 to CF1.

MOCNESS tows on the Montague Strait and Hinchinbrook Entrance sections were completed. CTDs were completed on the Hinchinbrook Entrance stations. Several CTD stations were done on the Along Hinchinbrook Canyon line (AHC stations) prior to doing MOCNESS tows on the HE section.

We occupied PWS2 doing a CTD cast and then proceeded to Whittier to pick up a replacement circuit board to the HTI. We were attempting to trouble shoot a problem with one of the HTI channels. The replacement board did not correct the problem. We then occupied the interior of Prince William Sound, running from NI1 to PWS3. MOCNESS tows were then done from PWS2 to KIP2. Water was collected for Hopcroft at PWS2 and a productivity cast done at KIP2. We finished the CTD sampling within Prince William Sound with PWS1, the Hogan Bay and Montague Strait sections. With the remaining time, we were able to continue the Along Hinchinbrook Canyon section (AHC5-AHC11) and work our way inward along the CCSE Line. Prior to returning to Seward on 14 March at 0600 ADT we reoccupied GAK1 and RES2.5.

Results

Hydrography *(Royer)*

In general, there appeared to be an intrusion of relatively high salinity water along the bottom from offshore as indicated both by the high salinity and the ADCP measurements. Generally, the surface layer velocities were offshore. We specifically attempted to occupy the outer ends of the Along Hinchinbrook Entrance and Cape Cleare Southeast Lines to sample a region where SeaWifs imagery indicated that an eddy was present. We did see some unusual flows there with high fluorescence at the outer end of the section. Fluorescence was highest at the near shore Cape Fairfield stations, inner Seward line and within Prince William Sound. Once again, Prince William Sound seems to be a strong source of phytoplankton. CTD casts for physical sampling were completed to a maximum depth of 1500m, or to within 5m of the bottom (determined by the altimeter mounted on the CTD), whichever was shallower.

Zooplankton (Hydroacoustics and MOCNESS) (*K. Coyle*)

Large zooplankton were collected with a 1-m MOCNESS net system equipped with .5mm mesh nets. The MOCNESS was fished at night in the upper 100 m. Samples were taken in 20 m increments from 100 m to the surface. The small zooplankton were sampled with a 25 cm diameter CalVet system equipped with .150 mm mesh nets towed vertically from 100 m to the surface. Copepod eggs and nauplii were

sampled with a 25 cm diameter CalVet system equipped with .053 mm mesh nets, also towed vertically from 100 m depth to the surface.

A MOCNESS tow was collected at each of the Seward Line stations, at five stations in Prince William Sound and at four stations in Hinchinbrook Entrance. CalVet net samples were collected at all stations on the Seward Line, at five stations in Prince William Sound and at four stations in Hinchinbrook Entrance. Acoustic transects were run along the Seward Line using a Hydroacoustics Technology Inc. multifrequency acoustic system. The frequencies included 38, 120, 200 and 420 kHz. All transducers were split beam and collected target strength in addition to volume scattering data. Acoustic data were collected during each MOCNESS tow to aid in interpreting the acoustic results. Supplemental deep MOCNESS tows were collected at the outer end of the Seward Line (GAK13) and at the north end of Knight Island Passage in Prince William Sound (PWS2).

A total of 168 zooplankton samples were collected. The samples were preserved in a 10% formalin seawater solution and returned to the laboratory for processing. The 420 kHz transducer on the HTI system had unacceptably high noise levels making all data at depths greater than about 30 m unusable. In addition, the noise levels in the 38 kHz system were high below about 100 m depth when the vessel was running at 6 kts.

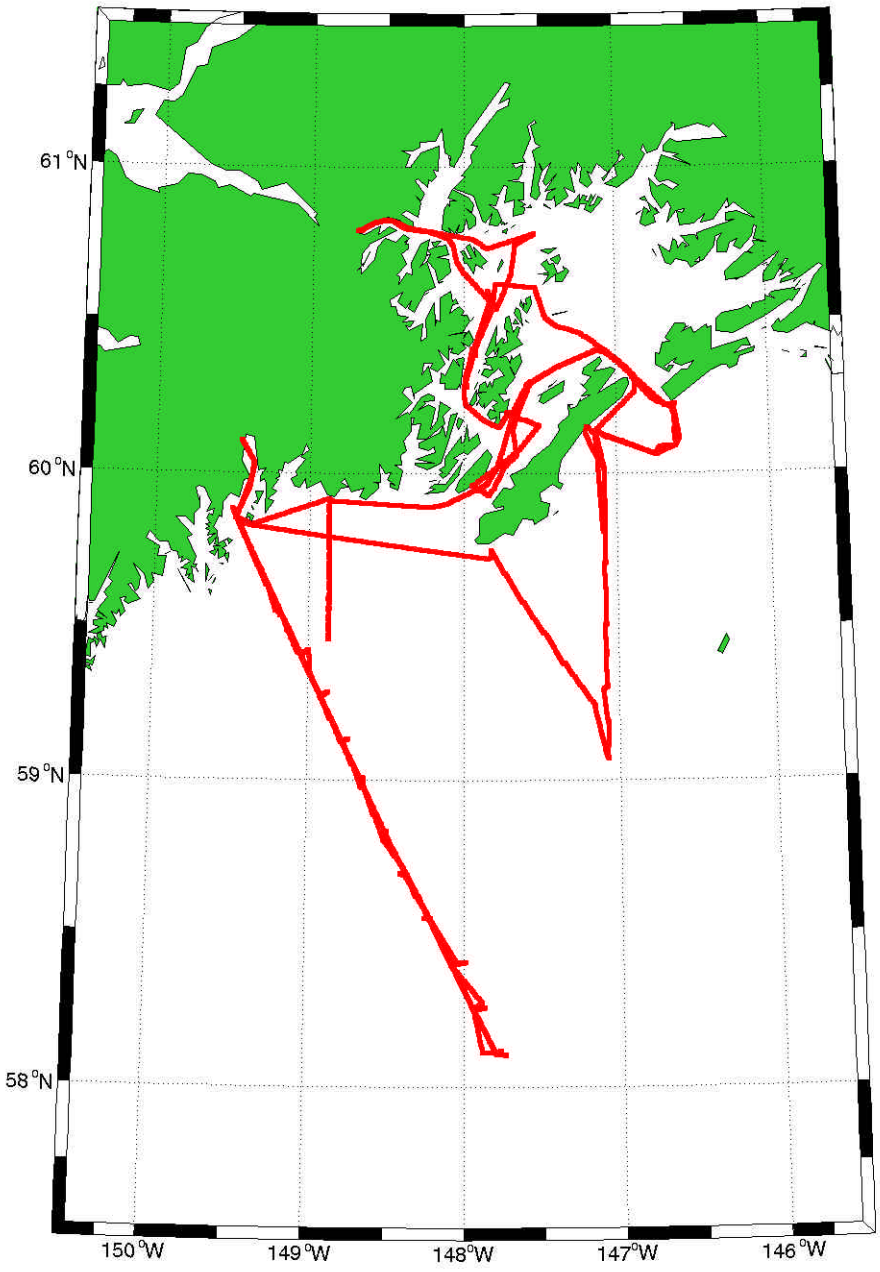
Zooplankton Growth *(**Hopcroft)***

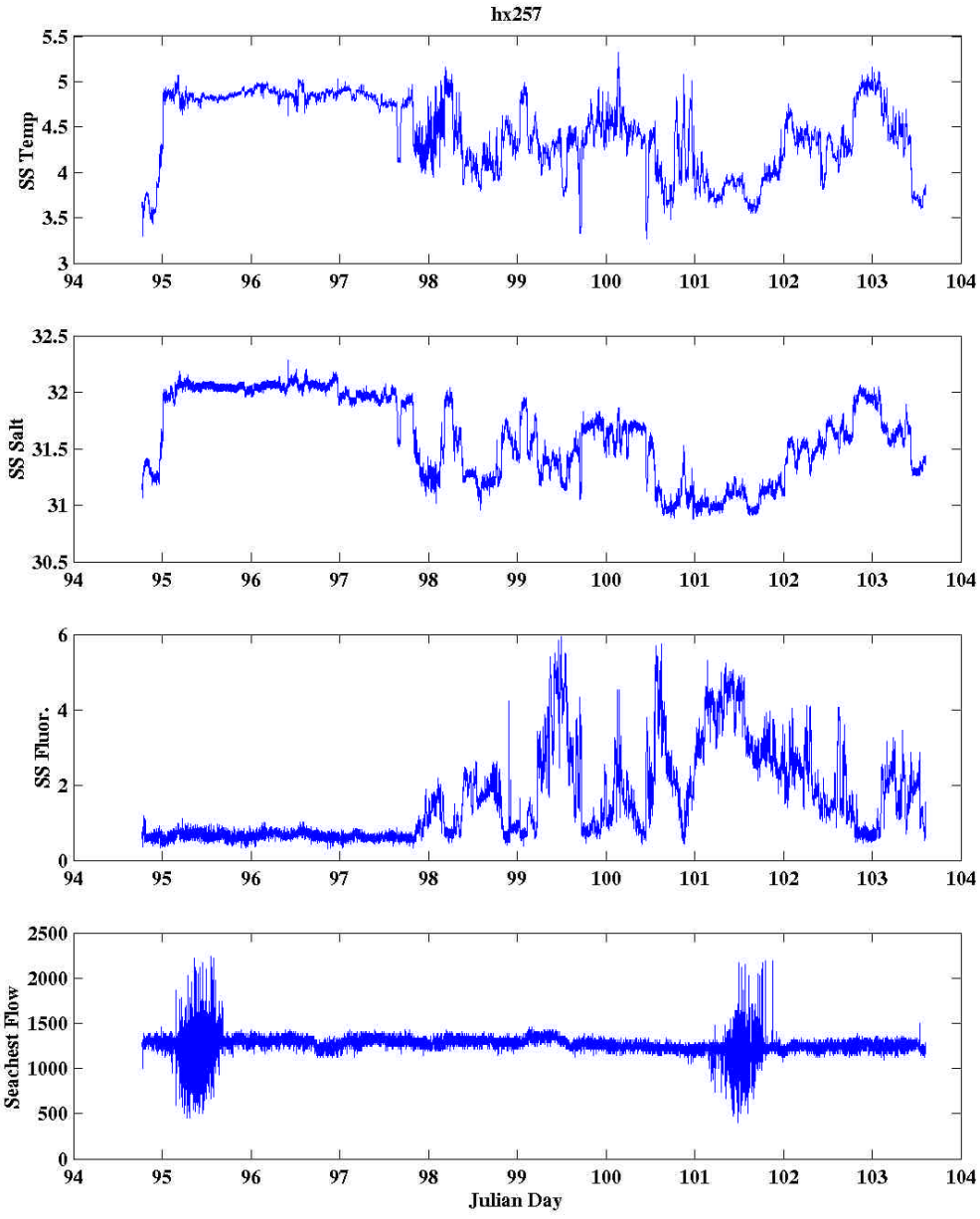
Full community artificial cohorts incubations were done at GAK1, GAK13 and PWS2 to estimate copepod growth rates. Specific stages of *Neocalanus* were picked and incubated at GAK1, GAK4, GAK9 and GAK13 to determine molt rates. Egg production experiments were done for *Pseudocalanus* at GAK1, GAK4 and PWS2, for *Gaetanus* at PWS2, and for both *Metridia* species at MS2. Molt rate experiments were done for euphausiids at GAK13 and PWS1.

Bird Sampling *(DeSousa)*

Seabird identification and abundance were recorded on the Seward, Cape Fairfield, Hinchinbrook Entrance, Hinchinbrook Canyon and Cape Clear Lines, and in Knight Island Passage. Seabirds were identified to species and age when possible, and flock occurrences were recorded as single or multiple species flock. Counts were recorded in 5 min. bins and the locations and time was recorded for each sighting.

hx257 Cruise Track




hx257
SS Temp
SS Salt
SS Fluor.
Seachest Flow
Julian Day
94
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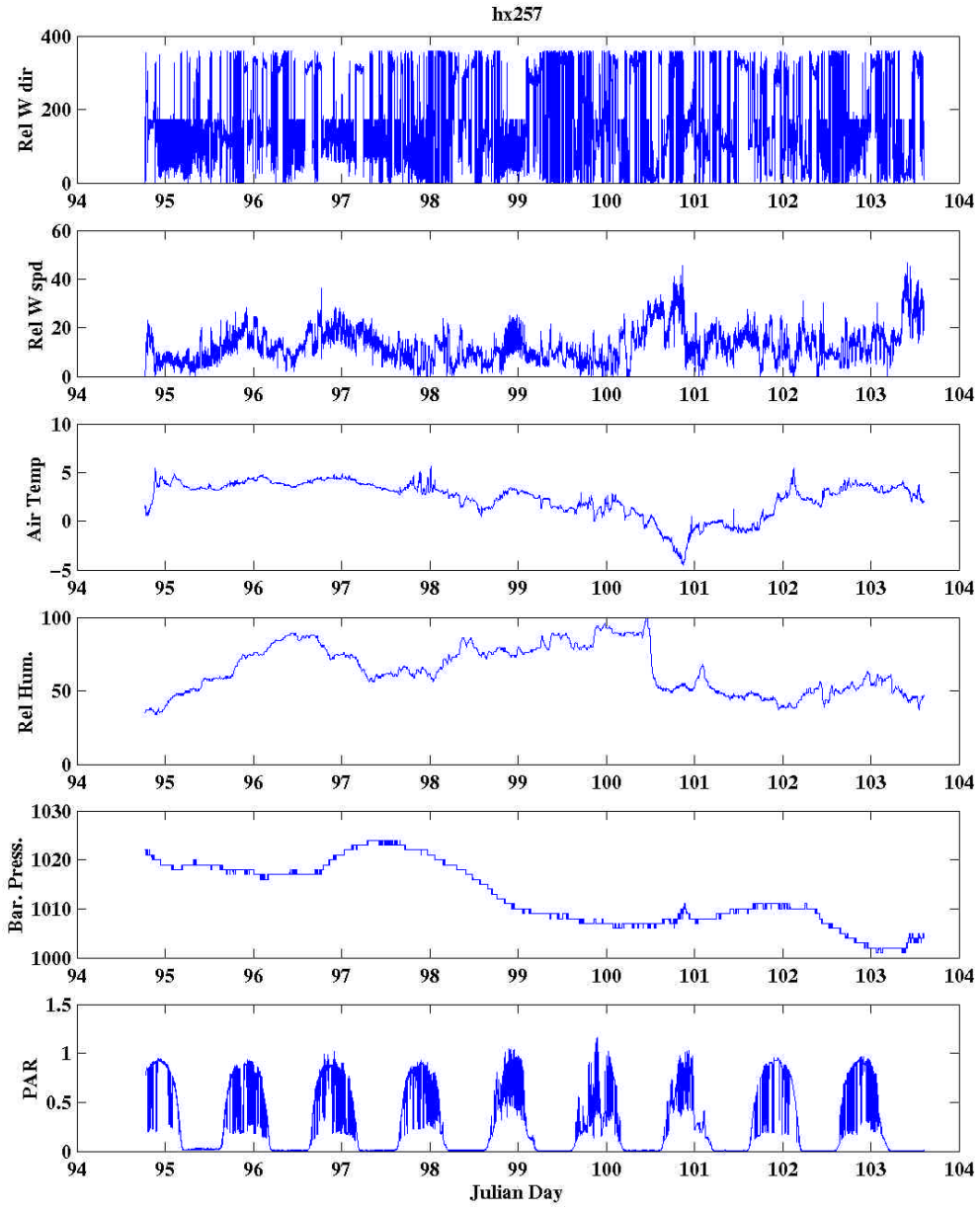
103
104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PAR
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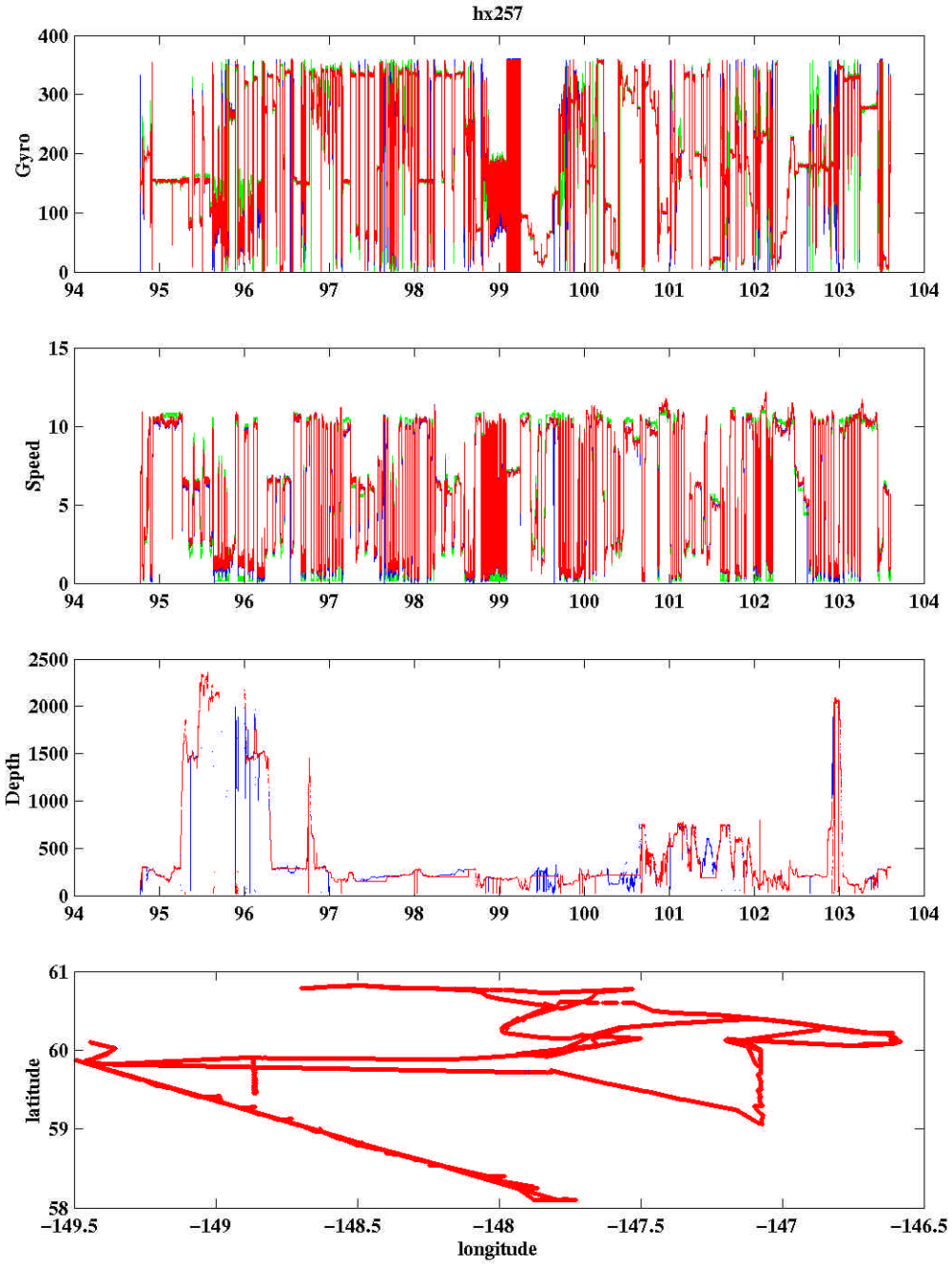
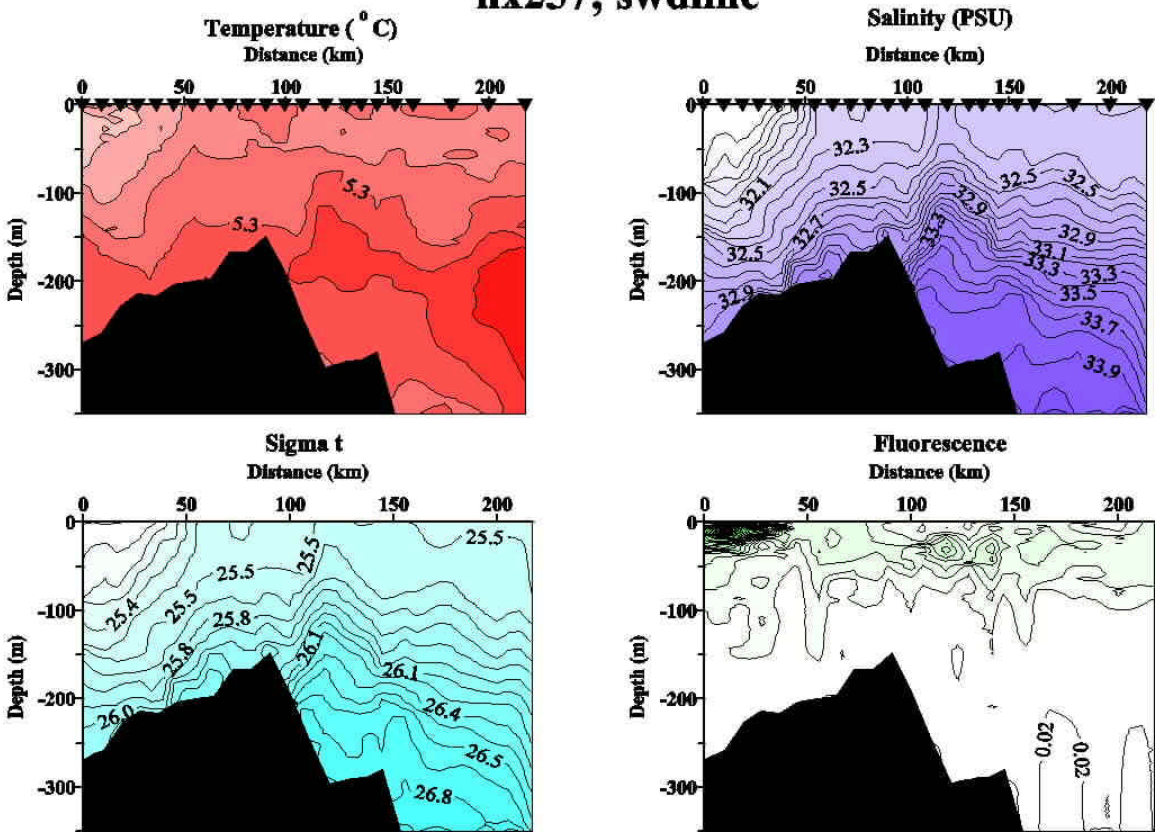

hx257
Gyro
Speed
Depth
latitude
longitude

hx257; swdline



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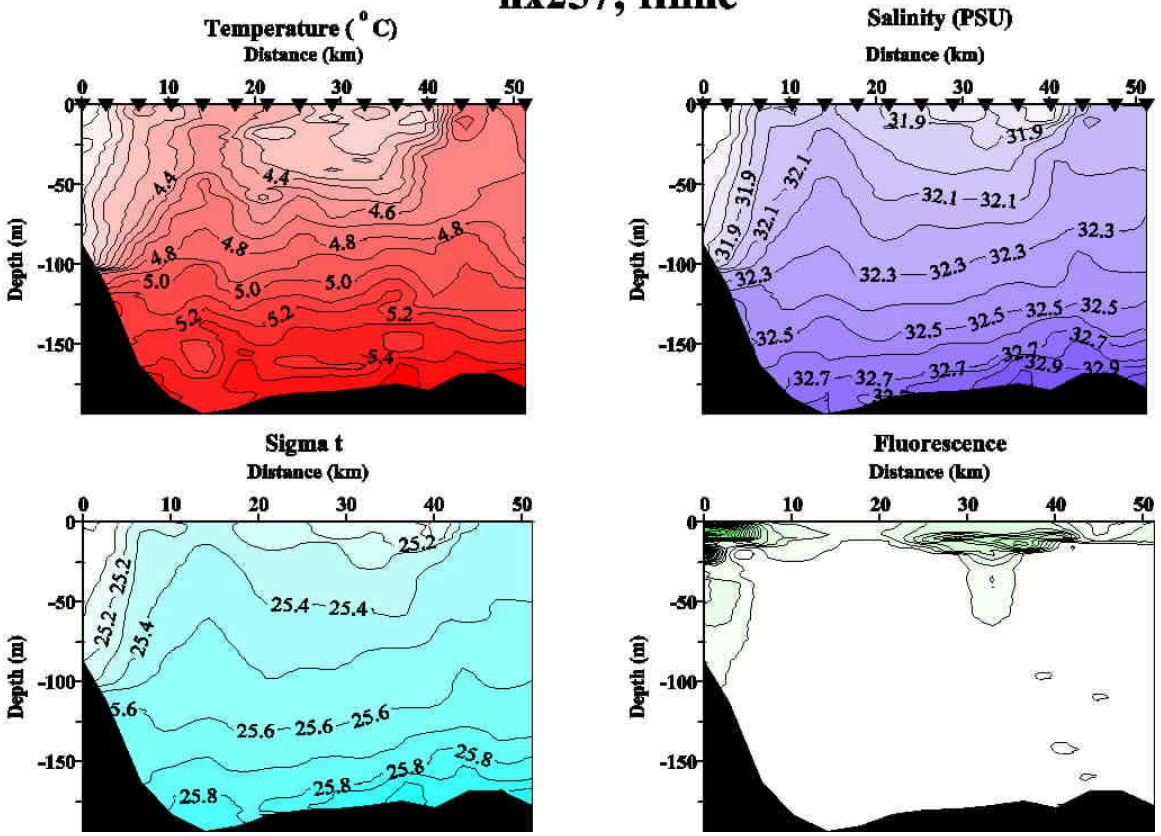
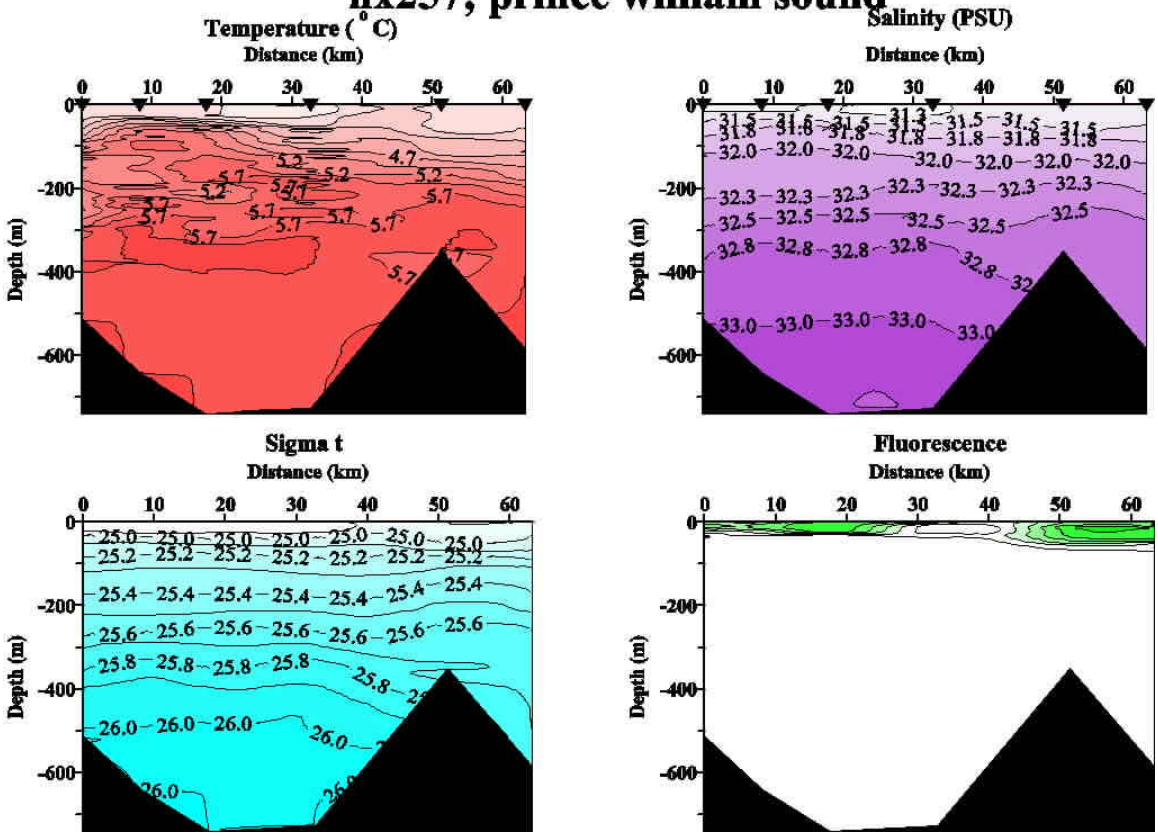
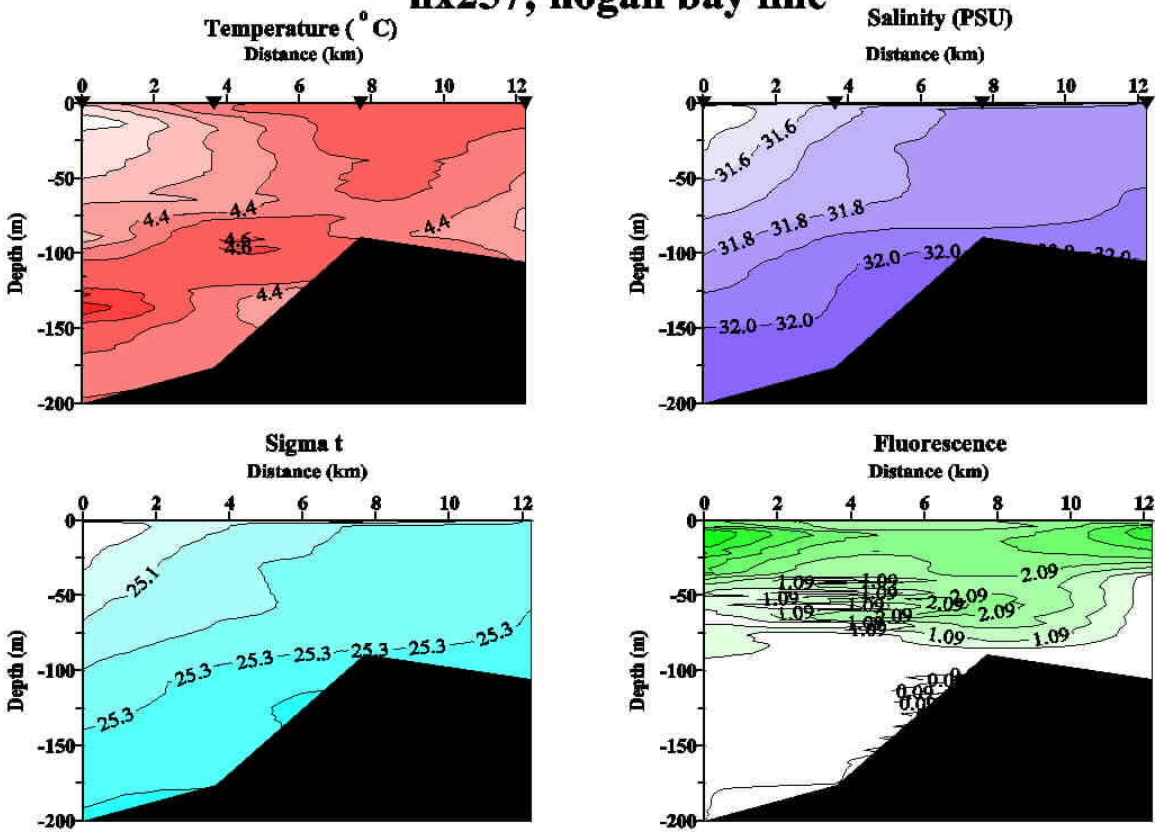


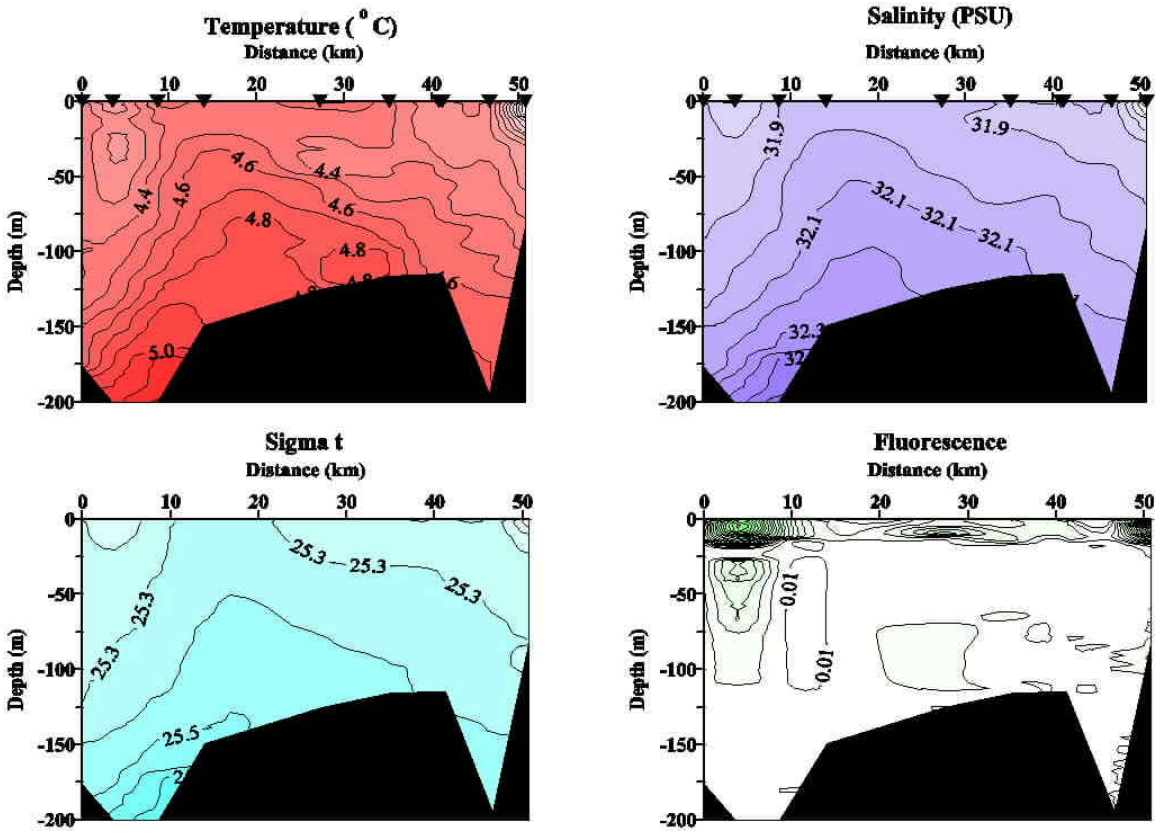
hx257; prince william sound



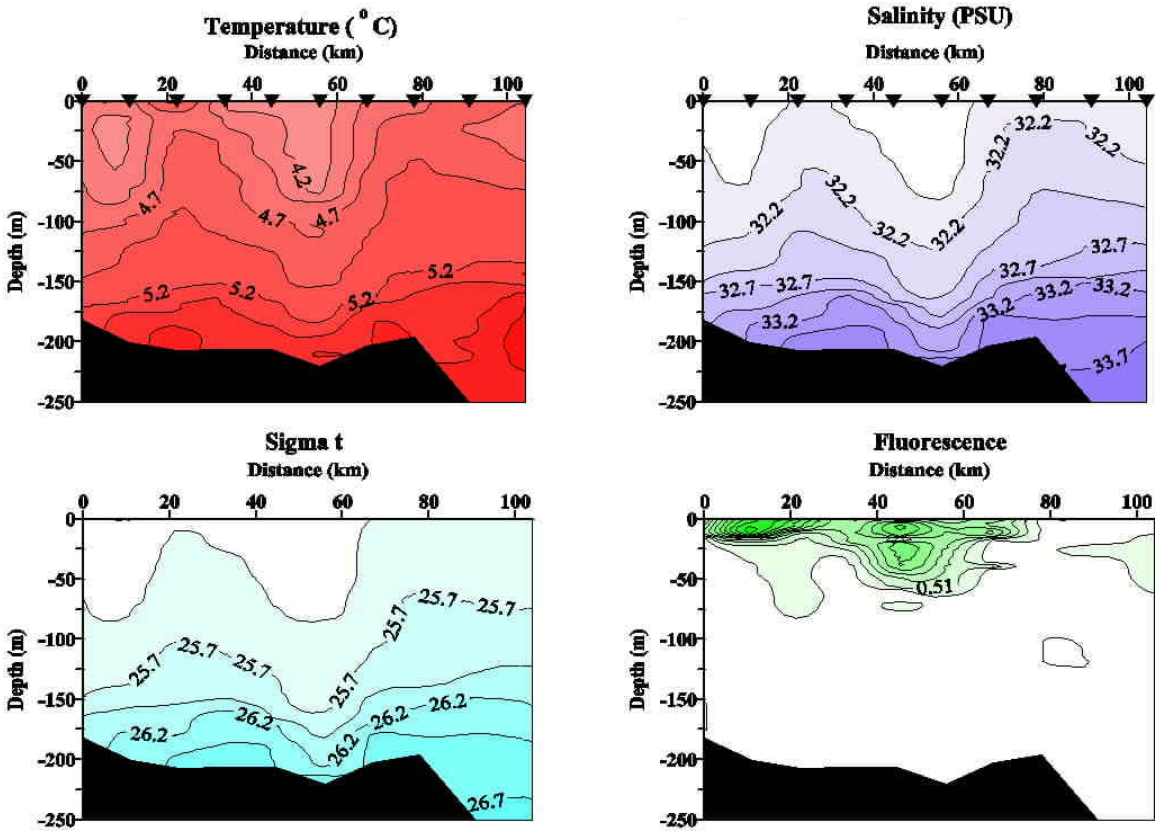
hx257; hogan bay line



Hinchinbrook Entrance (HE) Line:



Hinchinbrook Canyon (AHC) Line:



EVENT LOG:

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
HX25709502.001	CTD1 Start	RES2.5	4/5/02	19:27	60.02357	149.3578	297		Royer
HX25709502.002	CTD1 End	RES2.5	4/5/02	19:43	60.02132	149.355	297		Royer
HX25709502.003	CTD 2 Start	GAK1	4/5/02	21:39	59.84415	149.4673	271		Royer
HX25709502.004	CTD 2 End	GAK1	4/5/02	21:59	59.84303	149.4669	271		Royer
HX25709602.001	HTI Transect Start	GAK10	4/6/02	7:05	58.51123	148.1839	1210		Coyle
HX25709602.002	HTI Transect End	GAK11	4/6/02	8:26	58.38772	148.0679	1439		Coyle
HX25709602.003	MOCNESS Start	GAK11	4/6/02	8:58	58.39228	148.0268	1439		Coyle
HX25709602.004	MOCNESS End	GAK11	4/6/02	9:26	58.39597	147.9897	1439		Coyle
HX25709602.005	HTI Transect Start	GAK11	4/6/02	9:59	58.38805	148.0686	1439		Coyle
HX25709602.006	HTI Transect End	GAK12	4/6/02	11:36	58.24275	147.9304	2160		Coyle
HX25709602.007	MOCNESS Start	GAK12	4/6/02	11:39	58.24325	147.9239	2165		Coyle
HX25709602.008	MOCNESS End	GAK12	4/6/02	12:14	58.2472	147.8738	2165		Coyle
HX25709602.009	HTI Transect Start	GAK12	4/6/02	12:46	58.23955	147.9261	2129		Coyle
HX25709602.010	HTI Transect End	GAK13	4/6/02	14:17	58.09932	147.7892	2097		Coyle
HX25709602.011	MOCNESS Start	GAK13	4/6/02	14:17	58.09923	147.788	2097		Coyle
HX25709602.012	MOCNESS End	GAK13	4/6/02	14:56	58.09455	147.7361	2097		Coyle
HX25709602.013	CTD3 Start	GAK13	4/6/02	15:23	58.09982	147.7926	2097		Royer
HX25709602.014	CTD3 End	GAK13	4/6/02	16:42	58.10882	147.7574	2097		Royer
HX25709602.015	CTD4 Start	GAK13	4/6/02	17:00	58.09845	147.7902	2097		Royer
HX25709602.016	CTD4 End	GAK13	4/6/02	17:32	58.10032	147.7754	2097		Royer
HX25709602.017	CTD5 Start	GAK13	4/6/02	18:02	58.10172	147.7838	2097	water for russ	Royer
HX25709602.018	CTD5 End	GAK13	4/6/02	18:06	58.10172	147.7838	2097		Royer
HX25709602.019	CTD6 Start	GAK13	4/6/02	18:23	58.10428	147.7748	2097	water for russ	Royer
HX25709602.020	CTD6 End	GAK13	4/6/02	18:39	58.0983	147.7919	2097		Royer
HX25709602.021	CTD7 Start	GAK13	4/6/02	18:42	58.09855	147.7907	2097	water for russ	Royer
HX25709602.022	CTD7 End	GAK13	4/6/02	18:44	58.09873	147.7896	2097		Royer
HX25709602.023	Ring Net Start	GAK13	4/6/02	18:48	58.09845	147.789	2097		Hopcroft
HX25709602.024	CTD8 Start	GAK13	4/6/02	19:01	58.09998	147.7851	2097	water for russ	Royer
HX25709602.025	CTD8 End	GAK13	4/6/02	19:04	58.1003	147.7839	2097		Royer
HX25709602.026	CTD9 Start	GAK13	4/6/02	19:14	58.09835	147.7896	2097	water for russ	Royer
HX25709602.027	CTD9 End	GAK13	4/6/02	19:17	58.09862	147.7883	2097		Royer
HX25709602.028	Ring Net Start	GAK13	4/6/02	19:21	58.09862	147.7878	2097		Hopcroft
HX25709602.029	Ring Net Start	GAK13	4/6/02	19:22	58.09885	147.787	2097		Hopcroft
HX25709602.030	MOCNESS Start	GAK13	4/6/02	19:50	58.103	147.7856	2097	deep mocness (600m)	Hopcroft
HX25709602.031	MOCNESS End	GAK13	4/6/02	21:08	58.10315	147.8519	2097		Hopcroft
HX25709602.032	CTD10 Start	GAK12	4/6/02	22:24	58.2444	147.932	2150		Royer

HX25709602.033	CTD10 End	GAK12	4/6/02	23:50	58.26114	147.884	2150			Royer
HX25709602.034	CalVET Net Tow Start	GAK12	4/6/02	23:56	58.2622	147.8798	2150			Pinchuk
HX25709702.001	CTD11 Start	GAK11	4/7/02	1:11	58.38811	148.071	1430			Royer
HX25709702.002	CTD11 End	GAK11	4/7/02	2:25	58.39503	148.0392	1430			Royer
HX25709702.003	CalVET Net Tow Start	GAK11	4/7/02	2:27	58.39508	148.0385	1430			Pinchuk
HX25709702.004	CTD12 Start	GAK10	4/7/02	3:44	58.54145	148.2135	1507			Royer
HX25709702.005	CTD12 End	GAK10	4/7/02	4:54	58.5397	148.2016	1507			Royer
HX25709702.006	CalVET Net Tow Start	GAK10	4/7/02	5:01	58.538	148.2027	1507			Pinchuk
HX25709702.007	MOCNESS Start	GAK10	4/7/02	5:53	58.53937	148.2081	1507			Coyle
HX25709702.008	MOCNESS End	GAK10	4/7/02	6:28	58.54113	148.2435	1507			Coyle
HX25709702.009	HTI Transect Start	GAK10	4/7/02	6:42	58.54347	148.2117	1507			Coyle
HX25709702.010	HTI Transect End	GAK9	4/7/02	8:07	58.6808	148.3538	280			Coyle
HX25709702.011	MOCNESS Start	GAK9	4/7/02	8:09	58.68103	148.3566	280			Coyle
HX25709702.012	MOCNESS End	GAK9	4/7/02	8:43	58.6863	148.3934	280			Coyle
HX25709702.013	HTI Transect Start	GAK9	4/7/02	9:05	58.68452	148.3533	280			Coyle
HX25709702.014	HTI Transect End	GAK8	4/7/02	10:16	58.79163	148.4899	288			Coyle
HX25709702.015	MOCNESS Start	GAK8	4/7/02	10:19	58.79555	148.4906	288			Coyle
HX25709702.016	MOCNESS End	GAK8	4/7/02	10:54	58.82162	148.4843	288			Coyle
HX25709702.017	HTI Transect Start	GAK8	4/7/02	11:24	58.79253	148.4892	288			Coyle
HX25709702.018	HTI Transect End	GAK7	4/7/02	13:11	58.9732	148.6305	244			Coyle
HX25709702.019	MOCNESS Start	GAK7	4/7/02	13:12	58.97427	148.6304	241			Coyle
HX25709702.020	MOCNESS End	GAK7	4/7/02	13:48	58.99435	148.6317	241			Coyle
HX25709702.021	CTD13 Start	GAK9	4/7/02	16:07	58.68067	148.3504	281			Royer
HX25709702.022	CTD13 End	GAK9	4/7/02	16:27	58.68158	148.3593	281			Royer
HX25709702.023	Ring Net Start	GAK9	4/7/02	16:32	58.68193	148.36	281			Hopcroft
HX25709702.024	Ring Net Start	GAK9	4/7/02	16:41	58.68205	148.364	281			Hopcroft
HX25709702.025	CTD14 Start	GAK9	4/7/02	16:56	58.68082	148.3514	281		PRODS	Royer
HX25709702.026	CTD14 End	GAK9	4/7/02	17:04	58.6813	148.3553	281		prods	Royer
HX25709702.027	CTD15 Start	GAK9	4/7/02	17:11	58.68112	148.3552	281		recast prods	Royer
HX25709702.028	CTD15 End	GAK9	4/7/02	17:19	58.68087	148.3586	281		recast prods	Royer
HX25709702.029	CalVET Net Tow Start	GAK9	4/7/02	17:23	58.68118	148.3589	281			Pinchuk
HX25709702.030	CTD16 Start	GAK9I	4/7/02	18:58	58.61198	148.2804	676			Royer
HX25709702.031	CTD16 End	GAK9I	4/7/02	19:38	58.61322	148.2959	676			Royer
HX25709702.032	CTD17 Start	GAK8I	4/7/02	20:32	58.74377	148.4209	290			Royer
HX25709702.033	CTD17 End	GAK8I	4/7/02	20:54	58.74313	148.4278	290			Royer
HX25709702.034	CTD18 Start	GAK8	4/7/02	21:25	58.79228	148.4915	291			Royer
HX25709702.035	CTD18 End	GAK8	4/7/02	21:47	58.79363	148.4966	291			Royer
HX25709702.036	CalVET Net Tow Start	GAK8	4/7/02	21:52	58.7941	148.4971	291			Pinchuk
HX25709702.037	CTD19 Start	GAK7I	4/7/02	22:36	58.88133	148.561	300			Royer
HX25709702.038	CTD19 End	GAK7I	4/7/02	22:57	58.87973	148.566	300			Royer
HX25709702.039	CTD20 Start	GAK7	4/7/02	23:44	58.97149	148.6322	243			Royer
HX25709802.001	CTD20 End	GAK7	4/8/02	0:03	58.96815	148.6394	243			Royer
HX25709802.002	CalVET Net Tow Start	GAK7	4/8/02	0:09	58.96772	148.6414	243			Pinchuk
HX25709802.003	CTD21 Start	GAK6I	4/8/02	0:49	59.04545	148.7024	190			Royer
HX25709802.004	CTD21 End	GAK6I	4/8/02	1:05	59.0444	148.707	190			Royer
HX25709802.005	CTD22 Start	GAK6	4/8/02	1:45	59.11713	148.7711	150			Royer

HX25709802.006	CTD22 End	GAK6	4/8/02	1:58	59.1163	148.7759	150			Royer
HX25709802.007	CalVET Net Tow Start	GAK6	4/8/02	2:05	59.11705	148.7781	150			Pinchuk
HX25709802.008	CTD23 Start	GAK5I	4/8/02	2:42	59.19045	148.8403	166			Royer
HX25709802.009	CTD23 End	GAK5I	4/8/02	2:58	59.19232	148.8507	166			Royer
HX25709802.010	CTD24 Start	GAK5	4/8/02	3:30	59.2629	148.9077	157			Royer
HX25709802.011	CTD24 End	GAK5	4/8/02	3:44	59.26557	148.9138	157			Royer
HX25709802.012	CalVET Net Tow Start	GAK5	4/8/02	3:51	59.26725	148.9155	157			Pinchuk
HX25709802.013	HTI Transect Start	GAK7	4/8/02	6:13	58.9712	148.6298	243			Coyle
HX25709802.014	HTI Transect End	GAK6	4/8/02	7:38	59.11695	148.772	150			Coyle
HX25709802.015	MOCNESS Start	GAK6	4/8/02	7:42	59.11693	148.7687	150			Coyle
HX25709802.016	MOCNESS End	GAK6	4/8/02	8:15	59.12355	148.7365	150			Coyle
HX25709802.017	HTI Transect Start	GAK6	4/8/02	8:35	59.1173	148.7704	150			Coyle
HX25709802.018	HTI Transect End	GAK5	4/8/02	10:10	59.26255	148.9083	167			Coyle
HX25709802.019	MOCNESS Start	GAK5	4/8/02	10:14	59.26608	148.9025	167			Coyle
HX25709802.020	MOCNESS End	GAK5	4/8/02	10:49	59.27713	148.8662	167			Coyle
HX25709802.021	HTI Transect Start	GAK5	4/8/02	11:13	59.26347	148.9098	167			Coyle
HX25709802.022	HTI Transect End	GAK4	4/8/02	12:44	59.4008	149.0361	200			Coyle
HX25709802.023	MOCNESS Start	GAK4	4/8/02	12:46	59.40158	149.0335	200			Coyle
HX25709802.024	MOCNESS End	GAK4	4/8/02	13:25	59.41107	149.0019	200			Coyle
HX25709802.025	CTD25 Start	GAK4I	4/8/02	14:25	59.33575	148.9778	195			Royer
HX25709802.026	CTD25 End	GAK4I	4/8/02	14:42	59.33677	148.9819	195			Royer
HX25709802.027	CTD26 Start	GAK3I	4/8/02	15:53	59.48183	149.1204	204			Royer
HX25709802.028	CTD26 End	GAK3I	4/8/02	16:11	59.48117	149.1288	204			Royer
HX25709802.029	CTD27 Start	GAK4	4/8/02	16:48	59.40782	149.0469	204			Royer
HX25709802.030	CTD27 End	GAK4	4/8/02	17:05	59.40723	149.0556	204			Royer
HX25709802.031	CalVET Net Tow Start	GAK4	4/8/02	17:09	59.40747	149.0565	204			Pinchuk
HX25709802.032	CTD28 Start	GAK4	4/8/02	17:25	59.40915	149.05	200		PRODS	Royer
HX25709802.033	CTD28 End	GAK4	4/8/02	17:33	59.40948	149.0538	200		bottles 7&8 did not trip	Royer
HX25709802.034	CTD29 Start	GAK4	4/8/02	17:39	59.40955	149.0569	202		Recast Prods	Royer
HX25709802.035	CTD29 End	GAK4	4/8/02	17:47	59.40963	149.0607	202		bottle 8 did not trip	Royer
HX25709802.036	Ring Net Start	GAK4	4/8/02	17:51	59.4098	149.0607	202			Hopcroft
HX25709802.037	CTD30 Start	GAK4	4/8/02	18:07	59.40967	149.0494	202		recast of the recast for PRODS	Royer
HX25709802.038	CTD30 End	GAK4	4/8/02	18:15	59.41028	149.0526	202			Royer
HX25709802.039	CTD31 Start	GAK4	4/8/02	18:39	59.40927	149.0539	202		Water for Hopcroft # 1	Hopcroft
HX25709802.040	CTD32 Start	GAK4	4/8/02	18:53	59.40933	149.0598	202		Water for Hopcroft #2	Hopcroft
HX25709802.041	CTD33 Start	GAK4	4/8/02	19:07	59.40925	149.0486	202		Water for Hopcroft #3	Hopcroft
HX25709802.042	CTD34 Start	GAK4	4/8/02	19:18	59.40958	149.0553	202		Water for Hopcroft #4	Hopcroft
HX25709802.043	Ring Net Start	GAK4	4/8/02	19:25	59.41027	149.0567	202			Hopcroft
HX25709802.044	CTD35 Start	GAK3	4/8/02	20:42	59.5525	149.1897	215			Royer
HX25709802.045	CTD35 End	GAK3	4/8/02	21:03	59.54778	149.1991	215			Royer
HX25709802.046	CalVET Net Tow Start	GAK3	4/8/02	21:13	59.54592	149.2032	215			Hopcroft
HX25709802.047	CTD36 Start	GAK2I	4/8/02	22:06	59.62663	149.2592	214			Royer
HX25709802.048	CTD36 End	GAK2I	4/8/02	22:30	59.6245	149.2667	214			Royer
HX25709802.049	CTD37 Start	GAK2	4/8/02	23:03	59.69193	149.3273	228			Royer
HX25709802.050	CTD37 End	GAK2	4/8/02	23:19	59.68992	149.3274	228			Royer

HX25709802.051	CalVET Net Tow Start	GAK2	4/8/02	23:21	59.68962	149.327	228		Pinchuk
HX25709902.001	CTD38 Start	GAK1I	4/9/02	0:03	59.76682	149.3961	262		Royer
HX25709902.002	CTD38 End	GAK1I	4/9/02	0:21	59.76645	149.393	262		Royer
HX25709902.003	CTD39 Start	GAK1	4/9/02	0:56	59.8455	149.4668	270		Royer
HX25709902.004	CTD39 End	GAK1	4/9/02	1:13	59.84572	149.469	270		Royer
HX25709902.005	CalVET Net Tow Start	GAK1	4/9/02	1:20	59.84575	149.4693	270		Pinchuk
HX25709902.006	CTD40 Start	GAK3I	4/9/02	3:53	59.4823	149.1163	202		Royer
HX25709902.007	CTD40 End	GAK3I	4/9/02	4:03	59.48307	149.1178	202		Royer
HX25709902.008	CTD41 Start	GAK4	4/9/02	4:39	59.40788	149.0468	200		Royer
HX25709902.009	CTD41 End	GAK4	4/9/02	4:51	59.40837	149.0507	200		Royer
HX25709902.010	CTD42 Start	GAK4I	4/9/02	5:26	59.3357	148.9767	196		Royer
HX25709902.011	CTD42 End	GAK4I	4/9/02	5:40	59.33923	148.981	196		Royer
HX25709902.012	HTI Transect Start	GAK4	4/9/02	6:10	59.4043	149.0447	200		Coyle
HX25709902.013	HTI Transect End	GAK3	4/9/02	7:45	59.5543	149.194	215		Coyle
HX25709902.014	MOCNESS Start	GAK3	4/9/02	7:52	59.5543	149.194	215		Coyle
HX25709902.015	MOCNESS End	GAK3	4/9/02	8:39	59.52735	149.174	215		Coyle
HX25709902.016	HTI Transect Start	GAK3	4/9/02	9:02	59.55522	149.1913	215		Coyle
HX25709902.017	HTI Transect End	GAK2	4/9/02	10:38	59.6923	149.3285	225		Coyle
HX25709902.018	MOCNESS Start	GAK2	4/9/02	10:40	59.6903	149.3266	229		Coyle
HX25709902.019	MOCNESS End	GAK2	4/9/02	11:16	59.67055	149.2974	229		Coyle
HX25709902.020	HTI Transect Start	GAK2	4/9/02	11:39	59.69247	149.3273	229		Coyle
HX25709902.021	HTI Transect End	GAK1	4/9/02	13:14	59.84673	149.4683	270		Coyle
HX25709902.022	MOCNESS Start	GAK1	4/9/02	13:16	59.84807	149.4697	270		Coyle
HX25709902.023	MOCNESS End	GAK1	4/9/02	13:54	59.86922	149.4899	270		Coyle
HX25709902.024	CTD43 Start	GAK1	4/9/02	14:27	59.8449	149.4661	270	#1 water for hopcroft	Hopcroft
HX25709902.025	CTD43 End	GAK1	4/9/02	14:31	59.84458	149.4672	270	#1 water for hopcroft	Hopcroft
HX25709902.026	CTD44 Start	GAK1	4/9/02	14:39	59.84418	149.4688	270	#2 water for hopcroft	Hopcroft
HX25709902.027	CTD44 End	GAK1	4/9/02	14:43	59.844	149.4693	270	#2 water for hopcroft	Hopcroft
HX25709902.028	CTD45 Start	GAK1	4/9/02	14:51	59.84355	149.4702	270	#3 water for hopcroft	Hopcroft
HX25709902.029	CTD45 End	GAK1	4/9/02	14:54	59.8434	149.4704	270	#3 water for hopcroft	Hopcroft
HX25709902.030	CTD46 Start	GAK1	4/9/02	15:02	59.84295	149.4709	270	#4 water for hopcroft	Hopcroft
HX25709902.031	CTD46 End	GAK1	4/9/02	15:05	59.8428	149.4711	270	#4 water for hopcroft	Hopcroft
HX25709902.032	Ring Net Start	GAK1	4/9/02	15:17	59.84218	149.4721	270		Hopcroft
HX25709902.033	Ring Net Start	GAK1	4/9/02	15:36	59.84505	149.4641	270		Hopcroft
HX25709902.034	Ring Net Start	GAK1	4/9/02	15:57	59.84595	149.464	270		Hopcroft
HX25709902.035	CTD47 Start	GAK1	4/9/02	16:20	59.84495	149.4698	270		Royer
HX25709902.036	CTD47 End	GAK1	4/9/02	16:38	59.84415	149.4722	270		Royer
HX25709902.037	CalVET Net Tow Start	GAK1	4/9/02	16:46	59.84473	149.4731	270		Hopcroft
HX25709902.038	CTD48 Start	GAK1	4/9/02	16:57	59.8453	149.4689	270	Prod cast	Royer
HX25709902.039	CTD48 End	GAK1	4/9/02	17:03	59.8451	149.4705	270		Royer
HX25709902.040	CTD49 Start	CF1	4/9/02	19:05	59.90765	148.8667	88		Royer
HX25709902.041	CTD49 End	CF1	4/9/02	19:13	59.9081	148.8665	88		Royer
HX25709902.042	CTD50 Start	CF2	4/9/02	19:26	59.8834	148.8668	115		Royer
HX25709902.043	CTD50 End	CF2	4/9/02	19:34	59.8836	148.869	115		Royer
HX25709902.044	CTD51 Start	CF3	4/9/02	19:51	59.8495	148.8671	164		Royer
HX25709902.045	CTD51 End	CF3	4/9/02	20:04	59.84898	148.8686	164		Royer

HX25709902.046	CTD52 Start	CF4	4/9/02	20:20	59.8161	148.8667	185		Royer
HX25709902.047	CTD52 End	CF4	4/9/02	20:31	59.8161	148.8667	185		Royer
HX25709902.048	CTD53 Start	CF5	4/9/02	20:48	59.78277	148.8665	194		Royer
HX25709902.049	CTD53 End	CF5	4/9/02	21:02	59.78271	148.8651	194		Royer
HX25709902.050	CTD54 Start	CF6	4/9/02	21:21	59.7494	148.8655	192		Royer
HX25709902.051	CTD54 End	CF6	4/9/02	21:33	59.74983	148.8613	192		Royer
HX25709902.052	CTD55 Start	CF7	4/9/02	21:49	59.71637	148.8652	183		Royer
HX25709902.053	CTD55 End	CF7	4/9/02	22:04	59.7176	148.8606	183		Royer
HX25709902.054	CTD56 Start	CF8	4/9/02	22:20	59.68308	148.8655	180		Royer
HX25709902.055	CTD56 End	CF8	4/9/02	22:32	59.68372	148.862	180		Royer
HX25709902.056	CTD57 Start	CF9	4/9/02	22:49	59.64972	148.8652	180		Royer
HX25709902.057	CTD57 End	CF9	4/9/02	23:02	59.65063	148.8594	180		Royer
HX25709902.058	CTD58 Start	CF10	4/9/02	23:19	59.6163	148.8651	177		Royer
HX25709902.059	CTD58 End	CF10	4/9/02	23:30	59.61668	148.8583	177		Royer
HX25709902.060	CTD59 Start	CF11	4/9/02	23:47	59.58298	148.8647	177		Royer
HX25710002.001	CTD59 End	CF11	4/10/02	0:01	59.5834	148.8589	177		Royer
HX25710002.002	CTD60 Start	CF12	4/10/02	0:24	59.54893	148.8655	182		Royer
HX25710002.003	CTD60 End	CF12	4/10/02	0:33	59.5488	148.8631	182		Royer
HX25710002.004	CTD61 Start	CF13	4/10/02	0:50	59.516	148.8656	171		Royer
HX25710002.005	CTD61 End	CF13	4/10/02	1:03	59.51628	148.8607	171		Royer
HX25710002.006	CTD62 Start	CF14	4/10/02	1:25	59.48285	148.8652	170		Royer
HX25710002.007	CTD62 End	CF14	4/10/02	1:37	59.4827	148.8606	170		Royer
HX25710002.008	CTD63 Start	CF15	4/10/02	1:51	59.44982	148.8641	180		Royer
HX25710002.009	CTD63 End	CF15	4/10/02	2:06	59.4502	148.8586	180		Royer
HX25710002.010	ADCP Line Start	CF15	4/10/02	2:27	59.48442	148.8581	180		Royer
HX25710002.011	ADCP Line End	CF15	4/10/02	6:02	59.908	148.8661	86		Royer
HX25710002.012	MOCNESS Start	MS2	4/10/02	9:07	59.94447	147.8872	203		Coyle
HX25710002.013	MOCNESS End	MS2	4/10/02	9:51	59.9547	147.8488	203		Coyle
HX25710002.014	MOCNESS Start	HB2	4/10/02	12:05	60.18213	147.6707	257		Coyle
HX25710002.015	MOCNESS End	HB2	4/10/02	12:40	60.19545	147.6642	257		Coyle
HX25710002.016	CTD64 Start	HE1	4/10/02	17:02	60.21558	146.6121	84		Royer
HX25710002.017	CTD64 End	HE1	4/10/02	17:11	60.21583	146.6199	84		Royer
HX25710002.018	CTD65 Start	HE2	4/10/02	17:29	60.17955	146.6087	194		Royer
HX25710002.019	CTD65 End	HE2	4/10/02	17:42	60.17985	146.6131	194		Royer
HX25710002.020	CalVET Net Tow Start	HE2	4/10/02	17:48	60.18028	146.6156	194		Hopcroft
HX25710002.021	CTD66 Start	HE3	4/10/02	18:17	60.13042	146.6111	115	Bottle #4 did not fire	Royer
HX25710002.022	CTD66 End	HE3	4/10/02	18:27	60.13122	146.6142	115	computer locked up.	Royer
HX25710002.023	CTD67 Start	HE3	4/10/02	18:32	60.13148	146.6167	115	recast of CTD #66	Royer
HX25710002.024	CTD67 End	HE3	4/10/02	18:40	60.13233	146.6184	115		Royer
HX25710002.025	CTD68 Start	HE4	4/10/02	19:05	60.08052	146.6077	116		Royer
HX25710002.026	CTD68 End	HE4	4/10/02	19:15	60.08047	146.6096	116		Royer
HX25710002.027	CalVET Net Tow Start	HE4	4/10/02	19:19	60.08042	146.6094	116		Hopcroft
HX25710002.028	CTD69 Start	HE6.5	4/10/02	19:54	60.05235	146.7374	125		Royer
HX25710002.029	CTD69 End	HE6.5	4/10/02	20:03	60.05332	146.7367	125		Royer
HX25710002.030	CalVET Net Tow Start	HE6.5	4/10/02	20:16	60.05268	146.7347	125		Hopcroft
HX25710002.031	CTD70 Start	HE8	4/10/02	21:02	60.09407	146.9611	150		Royer

HX25710002.032	CTD70 End	HE8	4/10/02	21:14	60.0948	146.9593	150		Royer
HX25710002.033	CTD71 Start	HE8	4/10/02	21:21	60.09533	146.9596	152	computer locked up at 40m depth	Royer
HX25710002.034	CTD71 End	HE8	4/10/02	21:45	60.09722	146.9619	152		Royer
HX25710002.035	CTD72 Start	HE8	4/10/02	21:50	60.09762	146.9625	152	recast of #71	Royer
HX25710002.036	CTD72 End	HE8	4/10/02	22:18	60.0933	146.9624	152	computer locked up again	Royer
HX25710002.037	CTD73 Start	HE8	4/10/02	22:18	60.09333	146.9625	152	Recast of 72 et al.	Royer
HX25710002.038	CTD73 End	HE8	4/10/02	22:30	60.0938	146.9655	152		Royer
HX25710002.039	CTD74 Start	HE9	4/10/02	22:53	60.11002	147.0515	279		Royer
HX25710002.040	CTD74 End	HE9	4/10/02	23:13	60.10913	147.0569	279		Royer
HX25710002.041	CTD75 Start	HE10	4/10/02	23:35	60.12948	147.1344	218		Royer
HX25710002.042	CTD75 End	HE10	4/10/02	23:50	60.12623	147.1383	218		Royer
HX25710002.043	CalVET Net Tow Start	HE10	4/10/02	23:57	60.12432	147.14	218		Hopcroft
HX25710102.001	CTD76 Start	HE11	4/11/02	0:16	60.143	147.1917	177		Royer
HX25710102.002	CTD76 End	HE11	4/11/02	0:28	60.14288	147.1928	177		Royer
HX25710102.003	CTD77 Start	AHC2	4/11/02	1:30	59.99938	147.0753	183		Royer
HX25710102.004	CTD77 End	AHC2	4/11/02	1:43	60.00012	147.0771	183		Royer
HX25710102.005	CTD78 Start	AHC3	4/11/02	2:22	59.89957	147.0779	202		Royer
HX25710102.006	CTD78 End	AHC3	4/11/02	2:38	59.89625	147.0776	202		Royer
HX25710102.007	CTD79 Start	AHC4	4/11/02	3:15	59.8008	147.0787	205		Royer
HX25710102.008	CTD79 End	AHC4	4/11/02	3:32	59.80157	147.0849	205		Royer
HX25710102.009	MOCNESS Start	HE10	4/11/02	5:50	60.12753	147.13	217		Coyle
HX25710102.010	MOCNESS End	HE10	4/11/02	6:27	60.12082	147.0959	217		Coyle
HX25710102.011	MOCNESS Start	HE6.5	4/11/02	7:43	60.0547	146.7369	125		Coyle
HX25710102.012	MOCNESS End	HE6.5	4/11/02	8:20	60.07388	146.7152	122		Coyle
HX25710102.013	MOCNESS Start	HE4	4/11/02	8:54	60.08517	146.6042	117		Coyle
HX25710102.014	MOCNESS End	HE4	4/11/02	9:28	60.1043	146.5856	116		Coyle
HX25710102.015	MOCNESS Start	HE2	4/11/02	10:12	60.18312	146.6124	207		Coyle
HX25710102.016	MOCNESS End	HE2	4/11/02	10:47	60.20337	146.632	176		Coyle
HX25710102.017	CTD80 Start	PWS2	4/11/02	16:21	60.53528	147.8035	740		Royer
HX25710102.018	CTD80 End	PWS2	4/11/02	17:00	60.5363	147.799	740		Royer
HX25710202.001	CTD81 Start	NI1	4/12/02	0:35	60.77465	147.5271	513		Royer
HX25710202.002	CTD81 End	NI1	4/12/02	1:04	60.77223	147.5268	513		Royer
HX25710202.003	CTD82 Start	PWS4	4/12/02	2:00	60.73882	147.653	630		Royer
HX25710202.004	CTD82 End	PWS4	4/12/02	2:12	60.73882	147.653	630		Royer
HX25710202.005	CTD83 Start	PWS3	4/12/02	2:46	60.65363	147.6781	758		Royer
HX25710202.006	CTD83 End	PWS3	4/12/02	3:27	60.6478	147.677	758		Royer
HX25710202.007	MOCNESS Start	PWS2	4/12/02	4:19	60.53033	147.782	664		Coyle
HX25710202.008	MOCNESS End	PWS2	4/12/02	5:48	60.58337	147.8342	269	Bottom shoaled at end of cast.	Coyle
HX25710202.009	MOCNESS Start	PWS2	4/12/02	6:38	60.53115	147.7988	726		Coyle
HX25710202.010	MOCNESS End	PWS2	4/12/02	7:14	60.54852	147.8206	726		Coyle
HX25710202.011	MOCNESS Start	PWS1	4/12/02	9:05	60.3809	147.9126	189		Coyle
HX25710202.012	MOCNESS End	PWS1	4/12/02	9:39	60.39815	147.9303	367		Coyle
HX25710202.013	MOCNESS Start	KIP2	4/12/02	10:49	60.2773	147.9747	594		
HX25710202.014	MOCNESS End	KIP2	4/12/02	11:23	60.29492	147.9832	558		

HX25710202.015	CTD84 Start	PWS2	4/12/02	14:38	60.53473	147.8049	740	#1 water for Hopcroft	Hopcroft
HX25710202.016	CTD84 End	PWS2	4/12/02	14:42	60.53395	147.8049	740		Hopcroft
HX25710202.017	CTD85 Start	PWS2	4/12/02	14:53	60.53155	147.8041	740	#2 water for Hopcroft	Hopcroft
HX25710202.018	CTD85 End	PWS2	4/12/02	14:56	60.53093	147.804	740		Hopcroft
HX25710202.019	CTD86 Start	PWS2	4/12/02	15:06	60.52895	147.8033	740	#3 water for Hopcroft	Hopcroft
HX25710202.020	CTD86 End	PWS2	4/12/02	15:11	60.52923	147.8043	740		Hopcroft
HX25710202.021	CTD87 Start	PWS2	4/12/02	15:17	60.53539	147.805	740	#4 Water for Hopcroft	Hopcroft
HX25710202.022	CTD87 End	PWS2	4/12/02	15:19	60.53497	147.805	740		Hopcroft
HX25710202.023	CTD88 Start	PWS2	4/12/02	15:28	60.53332	147.8047	740	# 5 Water for Hopcroft	Hopcroft
HX25710202.024	CTD88 End	PWS2	4/12/02	15:30	60.53295	147.8047	740		Hopcroft
HX25710202.025	Ring Net Start	PWS2	4/12/02	15:39	60.53253	147.8015	740		Hopcroft
HX25710202.026	Ring Net Start	PWS2	4/12/02	15:52	60.53215	147.8011	740		Hopcroft
HX25710202.027	Ring Net Start	PWS2	4/12/02	16:07	60.52953	147.7993	740		Hopcroft
HX25710202.028	CTD89 Start	PWS2	4/12/02	16:26	60.53388	147.8054	740		Royer
HX25710202.029	CTD89 End	PWS2	4/12/02	17:02	60.53045	147.8006	740		Royer
HX25710202.030	CalVET Net Tow Start	PWS2	4/12/02	17:05	60.5304	147.8024	740		Hopcroft
HX25710202.031	CTD90 Start	KIP2	4/12/02	18:47	60.27858	147.9891	560	PRODS	Royer
HX25710202.032	CTD90 End	KIP2	4/12/02	18:55	60.27728	147.9899	560	bottle #8 did not trip	Royer
HX25710202.033	CTD91 Start	KIP2	4/12/02	19:05	60.27768	147.9875	560	recast	Royer
HX25710202.034	CTD91 End	KIP2	4/12/02	19:09	60.2774	147.9887	560	bottles #8 &#9 did not trip	Royer
HX25710202.035	CTD92 Start	KIP2	4/12/02	19:15	60.27685	147.9901	560	recast	Royer
HX25710202.036	CTD92 End	KIP2	4/12/02	19:20	60.27628	147.9912	560		Royer
HX25710202.037	CalVET Net Tow Start	KIP2	4/12/02	19:24	60.27745	147.9891	560		Hopcroft
HX25710202.038	CTD93 Start	KIP2	4/12/02	19:51	60.27603	147.989	576		Royer
HX25710202.039	CTD93 END	KIP2	4/12/02	20:30	60.27603	147.989	576		Royer
HX25710202.040	CTD94 Start	PWS1	4/12/02	21:16	60.37848	147.9361	358		Royer
HX25710202.041	CTD94 End	PWS1	4/12/02	21:38	60.37677	147.9364	358		Royer
HX25710202.042	CalVET Net Tow Start	PWS1	4/12/02	21:42	60.37555	147.9381	358		Hopcroft
HX25710202.043	CTD95 Start	HB1	4/12/02	23:57	60.19228	147.7021	246		Royer
HX25710302.001	CTD95 End	HB1	4/13/02	0:28	60.18165	147.6578	246		Royer
HX25710302.002	CTD96 Start	HB2	4/13/02	0:35	60.17905	147.6423	177		Royer
HX25710302.003	CTD96 End	HB2	4/13/02	0:49	60.17485	147.6462	177		Royer
HX25710302.004	CalVET Net Tow Start	HB2	4/13/02	0:54	60.1736	147.6476	177		Pinchuk
HX25710302.005	CTD97 Start	HB3	4/13/02	1:17	60.16483	147.5753	86		Royer
HX25710302.006	CTD97 End	HB3	4/13/02	1:24	60.16362	147.577	86		Royer
HX25710302.007	CTD98 Start	HB4	4/13/02	1:48	60.14712	147.5018	108		Royer
HX25710302.008	CTD98 End	HB4	4/13/02	1:56	60.14606	147.503	108		Royer
HX25710302.009	CTD99 Start	MS1	4/13/02	3:32	59.95412	147.9302	164		Royer
HX25710302.010	CTD99 End	MS1	4/13/02	3:44	59.95183	147.9377	164		Royer
HX25710302.011	CTD100 Start	MS2	4/13/02	3:59	59.94407	147.8977	189		Royer
HX25710302.012	CTD100 End	MS2	4/13/02	4:12	59.94103	147.9018	189		Royer
HX25710302.013	CalVET Net Tow Start	MS2	4/13/02	4:18	59.93938	147.9032	189		Hopcroft
HX25710302.014	CTD101 Start	MS3	4/13/02	4:34	59.93215	147.8575	168		Royer
HX25710302.015	CTD101 End	MS3	4/13/02	4:46	59.92975	147.8598	168		Royer
HX25710302.016	CTD102 Start	MS4	4/13/02	5:00	59.92063	147.8297	110		Royer

HX25710302.017	CTD102 End	MS4	4/13/02	5:09	59.9188	147.8314	110			Royer
HX25710302.018	CTD103 Start	AHC5	4/13/02	15:42	59.69892	147.0768	209			Royer
HX25710302.019	CTD103 End	AHC5	4/13/02	15:59	59.6956	147.084	209			Royer
HX25710302.020	CTD104 Start	AHC8	4/13/02	18:46	59.39975	147.0764	204			Royer
HX25710302.021	CTD104 End	AHC6	4/13/02	16:53	59.59897	147.0733	206			Royer
HX25710302.022	CTD105 Start	AHC7	4/13/02	17:34	59.49949	147.0731	221	noise in upper layer		Royer
HX25710302.023	CTD105 End	AHC7	4/13/02	17:47	59.49778	147.0775	221			Royer
HX25710302.024	CTD106 Start	AHC7	4/13/02	17:49	59.49775	147.0782	221	recast CTD105		Royer
HX25710302.025	CTD106 End	AHC7	4/13/02	18:05	59.4971	147.0842	221			Royer
HX25710302.026	CTD107 Start	AHC8	4/13/02	18:47	59.39958	147.077	204			Royer
HX25710302.027	CTD107 End	AHC8	4/13/02	19:03	59.39855	147.0805	204			Royer
HX25710302.028	CTD108 Start	AHC9	4/13/02	19:43	59.29932	147.0744	196			Royer
HX25710302.029	CTD108 End	AHC9	4/13/02	20:01	59.299	147.0695	196			Royer
HX25710302.030	CTD109 Start	AHC10	4/13/02	21:00	59.18298	147.074	688			Royer
HX25710302.031	CTD109 End	AHC10	4/13/02	21:44	59.18077	147.0707	688			Royer
HX25710302.032	CTD110 Start	AHC11	4/13/02	22:42	59.06573	147.0737	2042			Royer
HX25710302.033	CTD110 End	AHC11	4/13/02	23:15	59.06573	147.0737	2042			Royer
HX25710402.001	CTD111 Start	CCSE6	4/14/02	1:15	59.23348	147.1557	201			Royer
HX25710402.002	CTD111 End	CCSE6	4/14/02	1:27	59.23272	147.1541	201			Royer
HX25710402.003	CTD112 Start	CCSE5	4/14/02	2:37	59.37337	147.352	130			Royer
HX25710402.004	CTD112 End	CCSE5	4/14/02	2:45	59.3718	147.3528	130			Royer
HX25710402.005	CTD113 Start	CCSE4	4/14/02	3:32	59.4732	147.4769	118			Royer
HX25710402.006	CTD113 End	CCSE4	4/14/02	3:39	59.47185	147.4783	118			Royer
HX25710402.007	CTD114 Start	CCSE3	4/14/02	4:25	59.57127	147.6095	113			Royer
HX25710402.008	CTD114 End	CCSE3	4/14/02	4:32	59.57055	147.6118	113			Royer
HX25710402.009	CTD115 Start	CCSE2	4/14/02	5:15	59.6672	147.7286	114			Royer
HX25710402.010	CTD115 End	CCSE2	4/14/02	5:22	59.66745	147.7307	114			Royer
HX25710402.011	CTD116 Start	CCSE1	4/14/02	5:56	59.74228	147.8155	65			Royer
HX25710402.012	CTD116 End	CCSE1	4/14/02	6:00	59.74267	147.8163	65			Royer
HX25710402.013	Ring Net Start	GAK1	4/14/02	11:06	59.8453	149.4663	276			Hopcroft
HX25710402.014	Ring Net End	GAK1	4/14/02	11:10	59.84426	149.4649	276			Hopcroft
HX25710402.015	CTD117 Start	GAK1	4/14/02	11:15	59.84295	149.4627	276			Royer
HX25710402.016	CTD117 End	GAK1	4/14/02	11:29	59.83852	149.4599	276			Royer
HX25710402.017	MOCNESS Start	GAK1	4/14/02	11:52	59.84772	149.4614	276			Pinchuk
HX25710402.018	MOCNESS End	GAK1	4/14/02	12:02	59.8517	149.4612	276			Pinchuk
HX25710402.019	CTD118 Start	RES2.5	4/14/02	14:12	60.02457	149.3586	296			Royer
HX25710402.020	CTD118 End	RES2.5	4/14/02	14:26	60.02258	149.3557	296			Royer