CRUISE REPORT
C200

Scientific data collected aboard
SSV *Corwith Cramer*

Woods Hole, MA – Sable Island, Canada – Halifax, Nova Scotia – Woods Hole, MA

6 July, 2005 – 2 August, 2005

"And the fog rolled in" Photo by Jeffrey M. Schell

Sea Education Association
Woods Hole, Massachusetts

Contact Information:
Dr. Jeffrey M. Schell
Sea Education Association
P.O. Box 6
Woods Hole, MA
02543

508-540-3954 (phone)
800-552-3633 (phone)
508-457-4673 (fax)
www.sea.edu

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Table 1. C200 Ship's crew and student participants

Nautical Staff		
	Elizabeth Doxsee	Captain
	Dutch Keel	Chief Mate
	Scott Chappuis	2nd Mate
	Lizzy Grubin	3rd Mate
	James Erard	Engineer
	Laura Morrissey	Steward
	John O'Keefe	Deckhand-Bosun
	Megan Matsutani	Deckhand
	Chris Cusson	Deckhand
	Kathryn Lindsey	Deckhand
Scientific Staff		
	Jeff Schell	Chief Scientist
	Charlie Soucheray	1st Scientist
	Annie Keel	2nd Scientist
	Megan Carney	3rd Scientist
Maritime Studies Staff		
	Matthew McKenzie	Maritime Studies professor
Students		
	A Watch	
	Vicky Perez	University of Pennsylvania
	Brooks Hopple	Colgate University
	Emily Smith	Rhodes College
	Grant Humphries	Memorial University of Newfoundland
	Natasha Woodall	University of New Mexico
	B Watch	
	Amy Leek	Goucher College
	Tristan Law	University of New Hampshire
	Liz Chennell	Beloit College
	Deena Anderson	Vanderbilt University
	Andrew Collins	The Citadel
	C Watch	
	Abby Gray	Hobart and Williams Smith Colleges
	Mikkel Bjornson	Alaska Pacific University
	Winnie Cheng	Skidmore College
	Leah Christian	Southwestern University
	Lars Gaalaas	St. Olaf College
Visiting Scholars		
	Dr. Joyce Chaplain	Harvard University
	Hilary Moors	Dalhousie University
	Dr. Jason Francis	Rice University

Data Description

This cruise report provides a record of data collected during C200 aboard the *SSV Corwith Cramer* from Woods Hole, MA, USA to Sable Island, Canada, continuing on to Halifax, Nova Scotia, Canada and returning to Woods Hole (Figure 1). We collected samples or data with 98 individual deployments from 37 discrete stations (Table 2) along our cruise track. In addition we continuously sampled water depth, sub-bottom profiles and Acoustic Doppler Current Profiles (ADCP) along with flow-through sea surface temperature, salinity and *in vivo* fluorescence. This report summarizes physical, chemical and biological characteristics at the sea surface (Table 3, Figure 2) and at depth (Tables 4 and 5, Figure 3a) along our cruise track. A complete oceanographic survey of two submarine canyons (Hydrographer's canyon south of Georges bank and The Gully, east of Sable Island) were completed. Bathymetry and surface currents for each seamount are available on request. Temperature, salinity and fluorescence profiles are presented (Figures 3b and 3c). Large scale hydrography is summarized by contour plots of temperature, salinity and fluorescence (Figure 4); whereas large scale current patterns are summarized by contour plots of current direction, magnitude and echo amplitude (Figure 5). In addition, the distribution and density of zooplankton at the sea surface (Table 6) and at depth (Figures 7 and 8) are presented. Sediment samples were sieved and grain size percentage of each fraction was determined (Figure 9).

Additional CTD, bathymetry (CHIRP), current (ADCP) and biological data are not reported here but are available on request through Sea Education Association (SEA) and the Chief Scientist. The information in this report is not intended to represent final interpretation of the data and should not be excerpted or cited without written permission from SEA. Unpublished data can be made available by arrangement with the SEA archivist by contacting: Erik R. Zettler, Science Coordinator Sea Education Association, P.O. Box 6, Woods Hole, MA 02543, U.S.A. 508-540-3954 x29 fax 508-457-4673 email: ezettler@sea.edu website: www.sea.edu

As part of SEA's educational program, undergraduates conducted student-designed oceanographic research during the cruise. Project topics included physical, chemical, biological and geological oceanography (Table 10). Student research efforts culminated in a written report and public presentation to the ship's company. These papers are available on request from SEA.

Jeff Schell
Chief Scientist
C200

Figure 1. Final cruise track for C200 based on hourly (local time) positions.

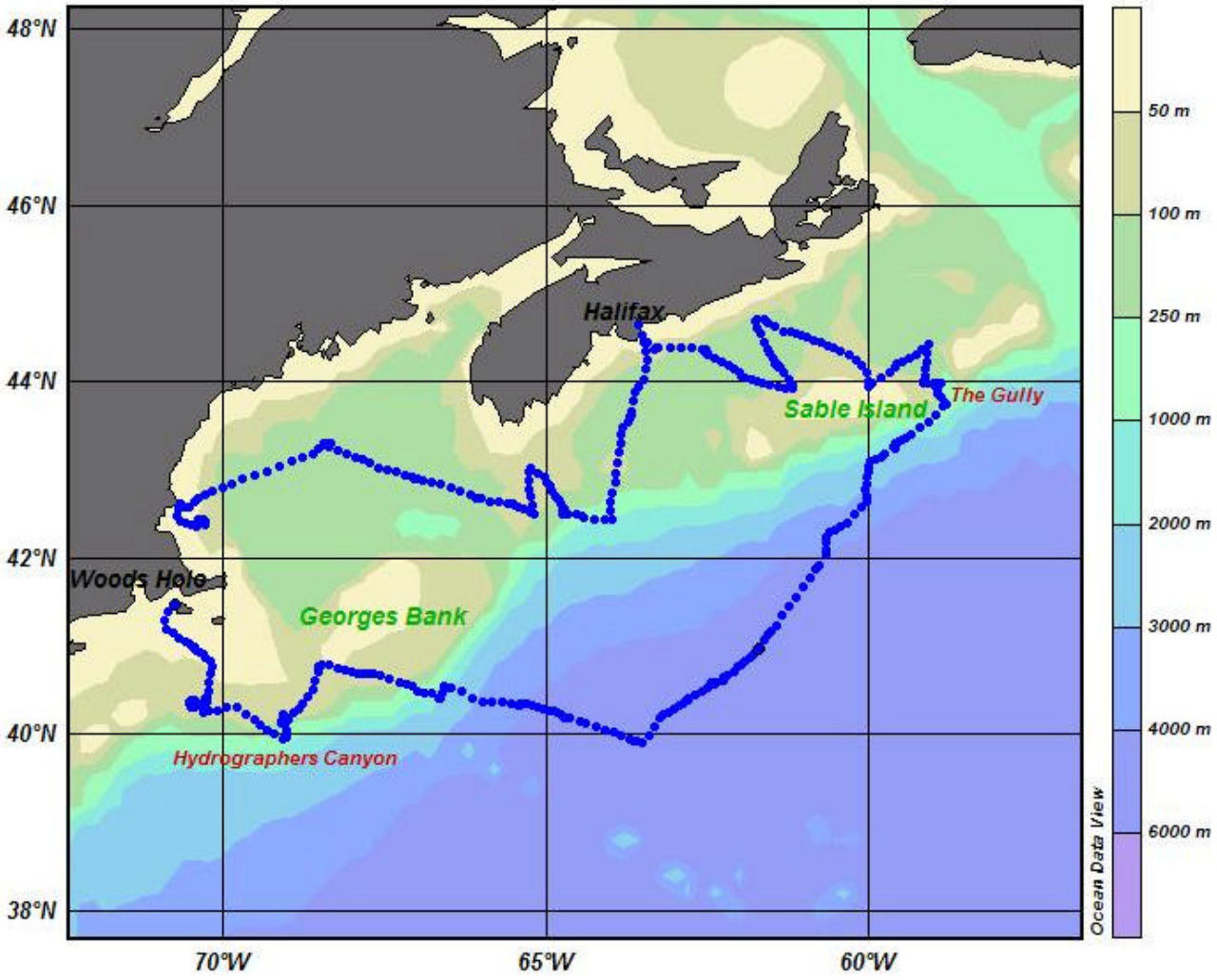

Table 2. Station summary of oceanographic sampling for C200.

Station # (C200-)	Date (2005)	Time (local +10 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
001	7-Jul	13:53	10	41.47	-70.75	Tarpaulin Cove	SG
001	8-Jul	14:53	10	41.47	-70.75	Tarpaulin Cove	HC
002	8-Jul	00:58	47	40.97	-70.45	West of Nantucket Shoals	MN
002	8-Jul	00:58	47	40.97	-70.45	West of Nantucket Shoals	NT
003	8-Jul	11:47	98	40.31	-70.26	South of Nantucket Shoals	CTD
003	8-Jul	11:47	98	40.31	-70.26	South of Nantucket Shoals	HC
003	8-Jul	11:47	98	40.31	-70.26	South of Nantucket Shoals	PN
003	8-Jul	11:47	98	40.31	-70.26	South of Nantucket Shoals	TT
003	8-Jul	14:34	98	40.26	-70.31	South of Nantucket Shoals	NT
004	8-Jul	22:00	140	40.31	-70.50	South of Shipping Lanes	TT
005	9-Jul	02:08	145	40.37	-70.44	South of Shipping Lanes	NT
006	9-Jul	16:47	235	40.02	-69.01	Hydrographer's Canyon	PN
006	9-Jul	17:04	235	40.02	-69.01	Hydrographer's Canyon	CTD
007	9-Jul	20:15	247	40.21	-69.08	Hydrographer's Canyon	PN
007	9-Jul	20:33	247	40.22	-69.08	Hydrographer's Canyon	CTD
008	9-Jul	00:28	252	40.14	-69.09	Hydrographer's Canyon	SG
008	9-Jul	23:57	252	40.13	-69.10	Hydrographer's Canyon	HC
008	10-Jul	00:01	252	40.13	-69.10	Hydrographer's Canyon	CTD
009	10-Jul	02:21	258	40.15	-69.04	Hydrographer's Canyon	SG
009	10-Jul	02:44	258	40.16	-69.03	Hydrographer's Canyon	CTD
009	10-Jul	02:44	258	40.15	-69.03	Hydrographer's Canyon	HC
010	10-Jul	03:40	258	40.16	-69.01	Hydrographer's Canyon	CTD
010	10-Jul	03:40	258	40.16	-69.01	Hydrographer's Canyon	HC
010	10-Jul	03:40	258	40.16	-69.01	Hydrographer's Canyon	SG
011	10-Jul	12:10	304	40.70	-68.52	George's Bank	HC
011	10-Jul	12:10	304	40.70	-68.52	George's Bank	PN
011	10-Jul	12:28	304	40.71	-68.52	George's Bank	SG
011	10-Jul	12:52	304	40.72	-68.52	Georges Bank	CTD
011	10-Jul	13:56	304	42.15	-68.52	George's Bank	MN
011	10-Jul	14:00	304	40.76	-68.51	Georges Bank	NT
012	11-Jul	10:38	394	40.45	-66.61	SE of Georges Bank	NT
012	11-Jul	10:38	394	40.45	-66.61	SE of Georges Bank	TT
013	11-Jul	21:58	441	40.33	-65.42	Slope Water	NT
013	11-Jul	21:30	441	40.33	-65.42	Slope Water	MN
014	12-Jul	09:10	476	40.20	-64.73	Slope Water	CTD
014	12-Jul	09:10	476	40.20	-64.73	Slope Water	PN
014	12-Jul	09:20	476	40.20	-64.73	Slope Water	HC
014	12-Jul	11:40	476	40.18	-64.70	Slope Water	NT
014	12-Jul	11:45	477	40.19	-64.71	Slope Water	MN
015	12-Jul	10:08	550	39.92	-63.62	Slope Water	NT
015	12-Jul	21:39	549	39.92	-63.62	Slope Water	MN
016	13-Jul	09:30	598	40.38	-62.82	Slope Water	HC
016	13-Jul	09:36	598	40.39	-62.80	Slope Water	PN
016	13-Jul	11:00	598	40.38	-62.82	Slope Water	CTD
017	14-Jul	08:42	696	41.13	-61.57	Slope Water	HC
017	14-Jul	08:42	696	41.13	-61.57	Slope Water	PN

017	14-Jul	08:57	696	41.13	-61.57	Slope Water	CTD
017	14-Jul	10:58	696	41.13	-61.57	Slope Water	NT
017	14-Jul	10:22	696	41.13	-61.57	Slope Water	MN
018	14-Jul	21:48	765	42.04	-60.66	Slope Water	NT
018	14-Jul	21:17	765	42.04	-60.66	Slope Water	MN
019	14-Jul	09:00	816	42.65	-60.03	Slope Water	PN
019	15-Jul	09:36	816	42.65	-60.04	Slope Water	CTD
019	15-Jul	09:36	816	42.65	-60.04	Slope Water	HC
020	16-Jul	08:45	912	43.76	-58.82	Gully	CTD
020	16-Jul	08:45	912	43.76	-58.82	Gully	PN
021	16-Jul	11:45	924	43.87	-58.94	Gully	CTD
021	16-Jul	13:20	925	43.87	-58.93	Gully	MN
021	16-Jul	13:45	925	43.87	-58.92	Gully	NT
022	16-Jul	17:34	931	43.97	-58.99	Gully	CTD
022	16-Jul	18:14	931	43.97	-58.99	Gully	PN
023	16-Jul	19:53	935	43.96	-58.90	Gully	HC
023	16-Jul	19:53	935	43.96	-58.90	Gully	SG
023	16-Jul	20:17	935	43.97	-58.89	Gully	CTD
024	16-Jul	22:55	947	43.98	-59.09	Gully	HC
024	16-Jul	22:55	947	43.98	-59.09	Gully	SG
024	16-Jul	23:05	947	43.98	-59.09	Gully	CTD
025	17-Jul	01:05	947	43.99	-59.16	Gully	SG
025	17-Jul	01:05	947	43.87	-59.16	Gully	HC
026	18-Jul	07:45	1029	43.95	-60.01	off Sable Island	HC
026	18-Jul	07:45	1029	43.95	-60.01	off Sable Island	SG
027	19-Jul	09:18	1129	44.67	-61.57	Shelf	HC
027	19-Jul	09:25	1130	44.67	-61.57	Shelf	NT
027	19-Jul	10:23	1130	44.69	-61.61	Shelf	PN
027	19-Jul	10:42	1130	44.70	-61.61	Shelf	CTD
027	19-Jul	09:18	1129	44.67	-61.57	Shelf	MN
028	19-Jul	21:26	1178	44.18	-61.41	The Cow Pen	NT
028	19-Jul	21:14	1177	44.18	-61.41	The Cow Pen	MN
029	20-Jul	11:14	1238	44.08	-61.99	Shelf, SE of Emerald Basin	MN
029	20-Jul	11:19	1238	44.08	-61.99	Shelf, SE of Emerald Basin	NT
030	20-Jul	16:30	1261	44.31	-62.50	Emerald Basin	HC
031	20-Jul	17:30	1261	44.36	-62.52	Emerald Basin	PN
034	26-Jul	18:14	1612	42.60	-65.49	Browns Bank	MN
034	26-Jul	18:16	1612	42.60	-65.49	Browns Bank	NT
035	31-Jul	21:02	2032	41.41	-71.16	Buzzards Bay	NT
036	1-Aug	00:39	2042	41.38	-71.20	Buzzards Bay	NT
037	1-Aug	04:39	2043	41.36	-71.23	Buzzards Bay	NT

Duplicate station numbers refer to different oceanographic equipment that was either deployed concurrently in the same location or was deployed sequentially in the same General Location but different latitude and longitude. Abbreviations for type of oceanographic equipment deployed: NT – neuston tow, PN – phytoplankton net, MN – meter net (either 1 or 2 m diameter), TT – tucker trawl, CTD – conductivity, temperature and depth profiler, HC – hydrocast with 12 Niskin bottles, and SG – shipek grab.

Table 3. Surface station data for C200.

Station # (C200-)	Date (2005)	Local Time (+10 GMT)	Log (nm)	Temp/ Salinity (^{o}C) / (ppt)	PO_4 (µM)	NO_3 (µM)	SiO_2 (µM)	Chl-*a* (5.0/0.45 um) (µg/l)	Lat (dec Deg)	Lon (dec Deg)
SS-001	8-Jul	16:10	108	22.3/34.1	0.237	-0.443	11.138	/0.064	40.28	-70.30
SS-002	9-Jul	18:04	135	17.5/32.8	0.436	-0.605	10.021	0.205/0.034	40.03	-69.00
SS-003	9-Jul	21:00	247	18.5/33.2	0.377	-0.777	3.279	0.072/0.040	40.22	-69.00
SS-004	10-Jul	21:45	304	11.7/32.2	0.610	-0.564	10.240	0.575/0.071	40.72	-68.52
SS-005	16-Jul	08:45	912	19.0/33.4	0.337	-0.851	6.678	0.044/0.013	43.75	-58.82
SS-006	16-Jul	18:12	931	16.2/31.9	0.436	-0.719	4.826	0.089/0.009	43.97	-58.98
SS-007	20-Jul	23:35	1257	17.0/31.2	0.443	-0.699	6.564	0.032/0.014	44.35	-62.52
SS-008	21-Jul	07:00	1298	16.2/30.7	0.463	-0.757	9.524	0.047/0.019	44.37	-63.30

Temperature and salinity and were determined using a continuous salinity/temperature flow-thru data logger. Phosphate (PO_4), nitrate (NO_3) and silicate (SiO_2) levels were measured by colorimetric analysis with and Ocean Optics Chem2000 digital spectrophotometer and chlorophyll-a (Chl-a) concentrations were determined with a Turner Designs Model 10-AU Fluorometer following methods outlined in Parsons, Maita and Lalli (1984; *A Manual of Chemical and Biological Methods for Seawater Analysis*, Pergamon Press). Water samples for chlorophyll-a were passed through 5.0 and 0.45 µm filters respectively. If no value is given then no sample was collected.

Figure 2. Surface plots of temperature, salinity and fluorescence for C200.

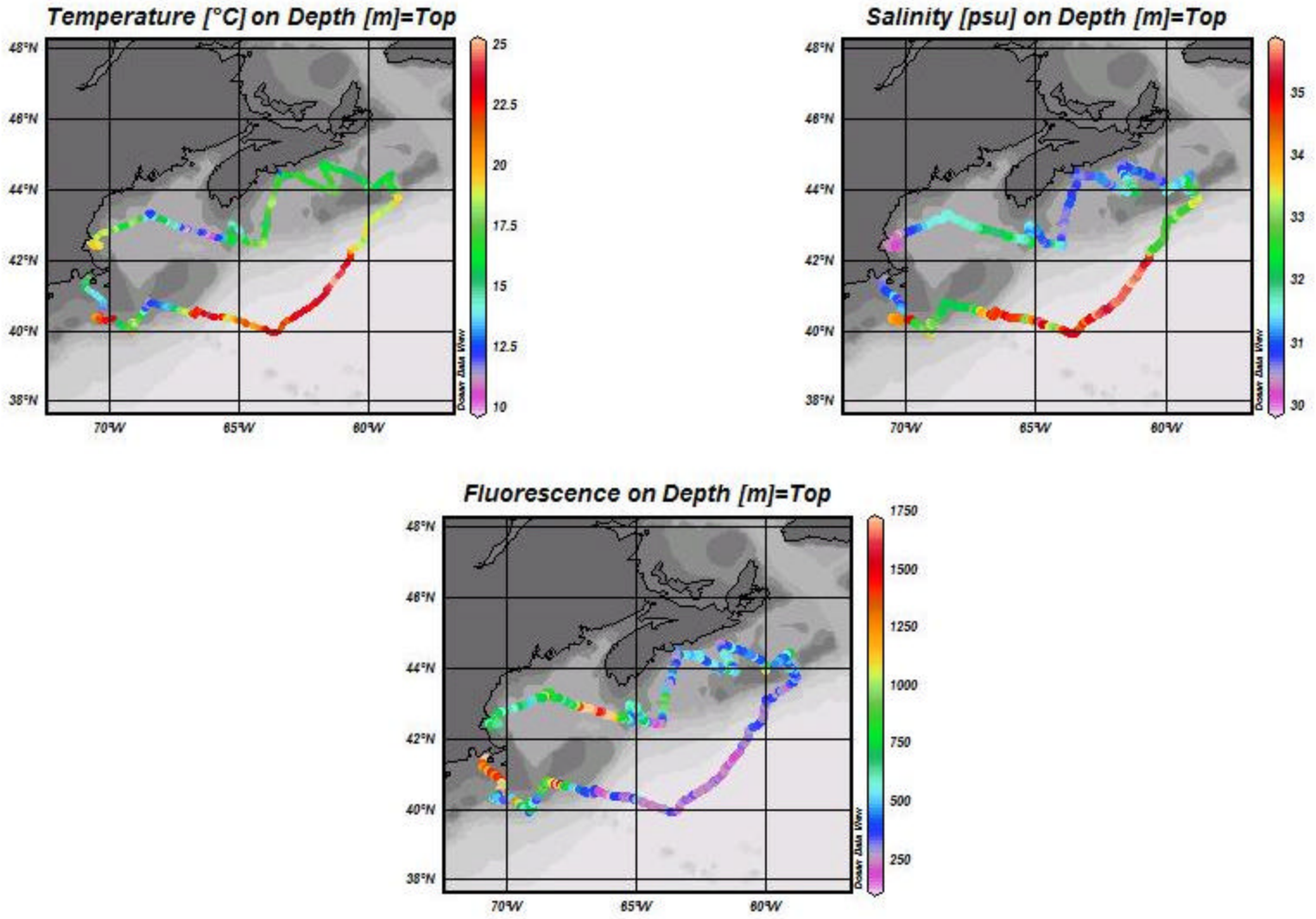

Table 4. CTD station data for C200.

Station # (C200-)	Date (2005)	Local Time (+10 GMT)	Log (nm)	Cast Depth (m)	Locale
003	8-Jul	11:47	98	86	Shelf-South of Nantucket Shoals
006	9-Jul	17:04	235	700	Hydrographer's Canyon
007	9-Jul	20:33	247	152	Hydrographer's Canyon
008	10-Jul	0:01	252	133	Hydrographer's Canyon
009	10-Jul	2:44	258	142	Hydrographer's Canyon
010	10-Jul	3:40	258	125	Hydrographer's Canyon
011	10-Jul	12:52	304	56	Georges Bank
014	12-Jul	9:10	476	4575	Slope Water
016	13-Jul	11:00	598	327	Slope Water
017	14-Jul	8:57	696	353	Slope Water
019	15-Jul	9:36	816	348	Slope Water
020	16-Jul	8:45	912	1900	Gully
021	16-Jul	11:45	924	1700	Gully
022	16-Jul	17:34	931	1300	Gully
023	16-Jul	20:17	935	180	Gully
024	16-Jul	23:05	947	160	Gully
027	19-Jul	10:42	1130	143	Shelf

Table 5. Hydrocast station data for C200.

Station # (C200-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	NO_3 (µM)	0.45 µm Chl-*a* (µg/l)
001*	1	5	18.0	30.7			0.450	ND	
003	13	0	22.3	34.1	23.6				0.002
003	12	5	22.6	34.4	23.6	5.64			0.062
003	11	10	22.5	34.4	23.6	5.58			0.039
003	10	15	22.5	34.4	24.6	8.52			0.040
003	9	20	19.7	34.7	24.7	5.42			0.098
003	8	25	18.0	34.3	25.1	6.34			0.102
003	7	30	16.8	34.4	25.4	6.75			0.246
003	6	35	16.5	34.7	26.5	6.61			0.251
003	5	40	13.5	35.2	25.7	6.61			0.212
003	4	45	9.9	33.3	25.7	6.46			0.180
003	3	50	10.2	33.4	25.7	6.61			0.135
003	2	60	10.5	33.7	25.9	6.28			0.046
003	1	70	9.8	33.7	26.0	5.74			0.043
008*	2	123	14.1	35.4			0.823	9.468	
009*	2	132	14.2	34.4			1.209	15.212	
009*	1	137	15.2	36.1			6.545	15.380	
010*	1	132	15.2	35.6			1.369	12.810	
011*	1	52	9.8	32.8			0.610	0.381	
014*	13	0	21.3	35.0			0.163	ND	0.044
014	12	21	17.7	35.1	25.4	6.20			0.159
014	11	39	16.4	35.7	26.2	5.38			0.094
014	10	60	15.2	35.8	26.5	4.86			0.020
014	9	80	14.5	35.7	26.7	4.98			0.010
014	8	99	14.1	35.7	26.7	5.05			0.007
014	7	119	13.7	35.7	26.8	5.08			0.005
014	6	140	13.4	35.7	26.9	5.48			0.004
014	5	159	13.1	35.7	26.9	5.66			0.004
014	4	180	12.9	35.6	26.9	5.52			0.003
014	3	197	12.8	35.6	26.9	5.70			0.004
014	2	249	12.3	35.5	27.0	5.52			0.004
014	1	298	11.4	35.5	27.1	4.18			0.003
016*	13	0	22.8	34.9			0.157	ND	0.007

Station # (C200-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	NO_3 (µM)	0.45 µm Chl-*a* (µg/l)
016	12	20	20.6	35.5	25.0	6.31			0.064
016	11	40	15.8	35.1	25.9	6.40			0.155
016	10	60	15.3	35.5	26.3	5.42			0.111
016	9	80	13.5	35.3	26.6	5.22			0.052
016	8	99	13.0	35.4	26.7	4.90			0.013
016	7	120	13.1	35.5	26.8	4.68			0.004
016	6	140	12.7	35.5	26.9	4.66			0.005
016	5	159	12.4	35.5	26.9	4.93			0.004
016	4	179	12.2	35.5	26.9	5.32			0.003
016	3	199	12.1	35.5	27.0	5.20			0.002
016	2	249	11.4	35.4	27.1	4.31			0.003
016	1	298	10.0	35.3	27.2	3.70			0.003
017*	13	0	23.7	35.6			0.163	ND	0.015
017	12	20	23.5	35.6	24.3	2.20			0.033
017	11	40	19.7	35.7	25.4	2.49			0.038
017	10	60	15.6	35.2	26.0	2.60			0.083
017	9	80	15.0	35.4	26.3	2.37			0.028
017	8	100	14.8	35.7	26.5	1.89			0.010
017	7	120	13.9	35.6	26.7	1.78			0.006
017	6	140	13.0	35.5	26.8	4.63			0.004
017	5	160	12.9	35.5	26.8	5.26			0.002
017	4	180	12.9	35.6	26.9	4.26			0.002
017	3	200	12.8	35.6	26.9	4.24			0.003
017	2	250	11.5	35.5	27.1	3.73			0.001
017	1	300	10.1	35.3	27.2	3.73			0.001
019*	13	0	18.4	33.9			0.430	ND	0.015
019	12	20	12.2	33.2	25.1	7.12			0.074
019	11	39	7.8	33.4	26.1	6.98			0.300
019	10	59	6.9	33.8	26.5	6.64			0.035
019	9	80	7.1	34.1	26.7	6.19			0.010
019	8	99	7.4	34.3	26.8	5.82			0.008
019	7	120	7.5	34.6	27.0	5.18			0.003
019	6	139	7.9	34.7	27.1	4.78			0.004
019	5	159	7.8	34.8	27.2	4.75			0.003
019	4	178	7.6	34.9	27.2	4.51			0.003

Station # (C200-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	NO_3 (µM)	0.45 µm Chl-*a* (µg/l)
019	3	199	7.4	34.9	27.3	4.50			0.003
023*	2	170	12.7	35.3			1.223	11.599	
023*	1	175	12.4	35.5			1.329	11.954	
024*	2	150	11.1	35.2			1.249	11.473	
024*	1	155	11.5	35.2			1.362	11.202	
025*	2	40	9.6	32.6			0.750	ND	
025*	1	45	9.5	32.8			1.003		
026*	1	10	15.5	32.2			0.423		
027*	13	0	15.4	30.5			0.490	ND	
027	12	10	15.3	31.0	22.6	3.44			
027	11	20	7.9	32.1	24.7	7.52			
027	10	30	7.2	32.1	25.0	6.88			
027	9	40	3.1	31.9	25.3	6.92			
027	8	50	3.5	32.2	25.7	4.87			
027	7	60	3.5	32.4	25.7	7.06			
027	6	69	2.6	32.5	25.8	4.92			
027	5	79	2.2	32.5	26.0	3.03			
027	4	90	2.8	32.7	26.1	6.46			
027	3	99	3.2	32.8	26.2	3.43			
027	2	110	3.3	32.9	26.2	3.61			
027	1	115	4.7	32.9	26.3	5.82			
030*	2	115	11.7	35.2			2.155	15.630	
030*	1	120	11.9	35.6			2.029	15.108	

Water samples were collected in 2.5 liter Niskin bottles deployed on a self-contained carousel system with a SBE-019Plus CTD sensor (Seabird Instruments, Inc.). Dissolved oxygen (O_2) concentrations were determined chemically by Winkler titration. Phosphate (PO_4) and nitrate (NO_3) levels were measured by colorimetric analysis with an Ocean Optics Chem2000 digital spectrophotometer and chlorophyll-a (Chl-a) concentrations were determined with a Turner Designs Model 10-AU Fluorometer following methods outlined in Parsons, Maita and Lalli (1984; *A Manual of Chemical and Biological Methods for Seawater Analysis*, Pergamon Press). Chlorophyll-*a* samples were sequentially filtered through 8.0 and 0.45 µm filters. Blank indicates that an analysis was not performed for that sample. Asterisk stations were temperature and salinity measurements were taken with a YSI T-S probe. ND refers to values below our detection limits.

Figure 3a. Temperature, salinity and fluorescence profiles as well as T-S diagrams for C200. Oceanographic regions where CTD profiles were collected are denoted by color: Red – New England shelf, Blue – George's Bank, Green – Scotian shelf, Black – slope waters. Red squares denote areas where CTD transects were conducted along and across respective submarine canyons, see figures (3b and 3c) below.

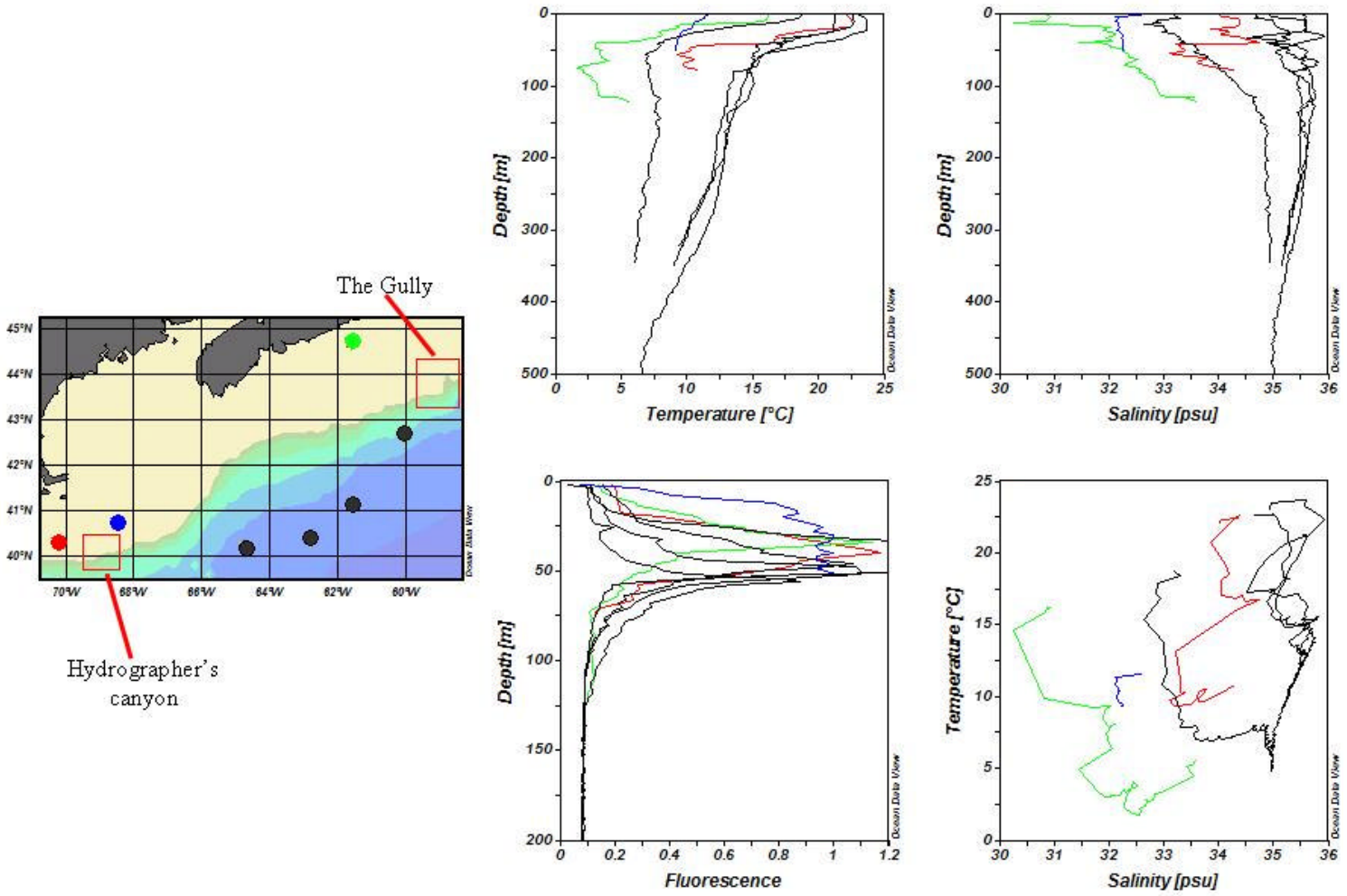

Figure 3b. Temperature, salinity and fluorescence profiles as well as T-S diagrams for C200 – Hydrographer's Canyon. Oceanographic regions where CTD profiles were collected are denoted by color: Blue – New England shelf waters, Red and Green – evidence of slope waters intruding along southwest edge of canyon.

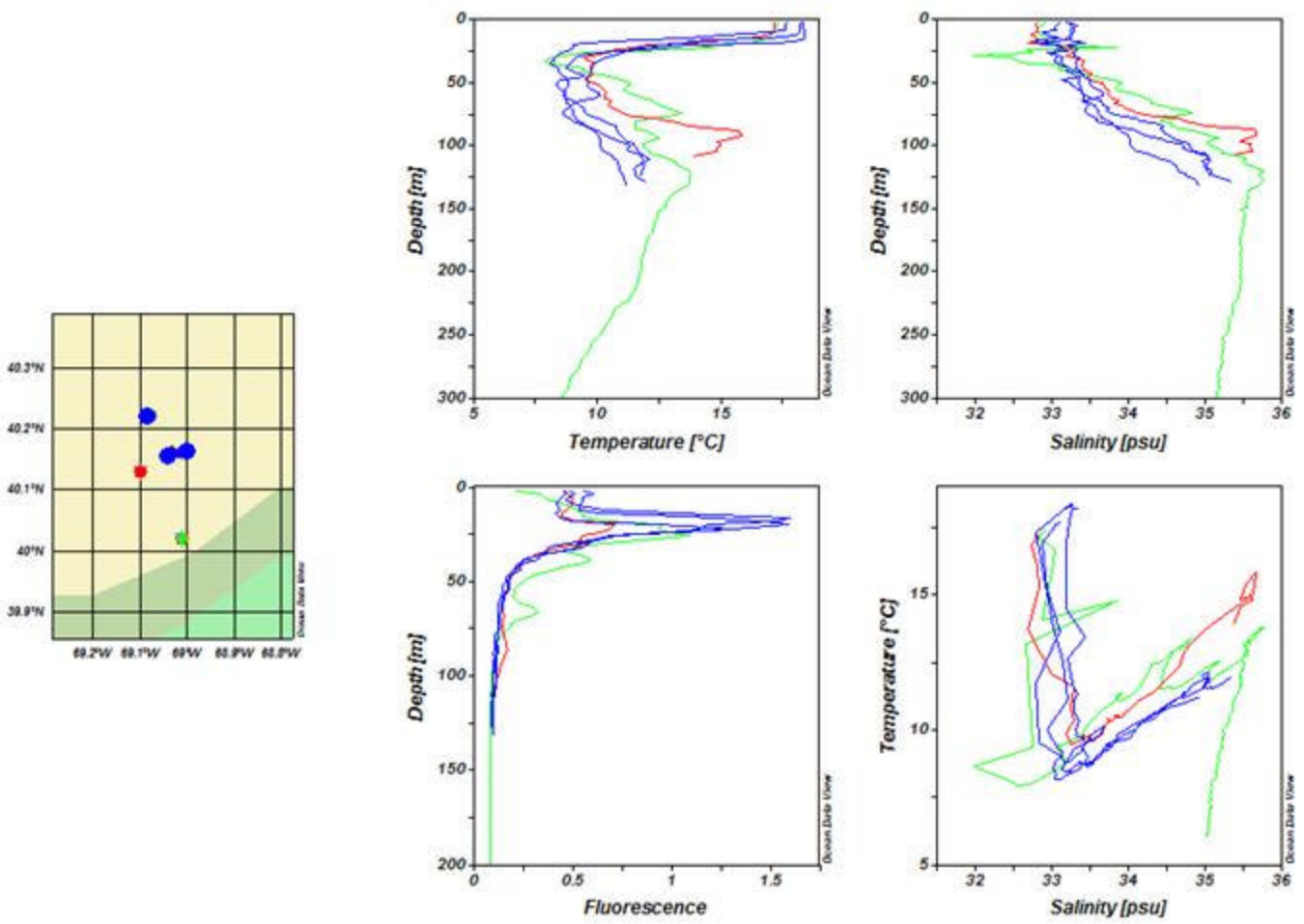

Figure 3c. Temperature, salinity and fluorescence profiles as well as T-S diagrams for C200 – The Gully. Oceanographic regions where CTD profiles were collected are denoted by color: Blue – Scotian shelf waters, Red and Green – evidence of slope waters intruding along central and east edge of canyon.

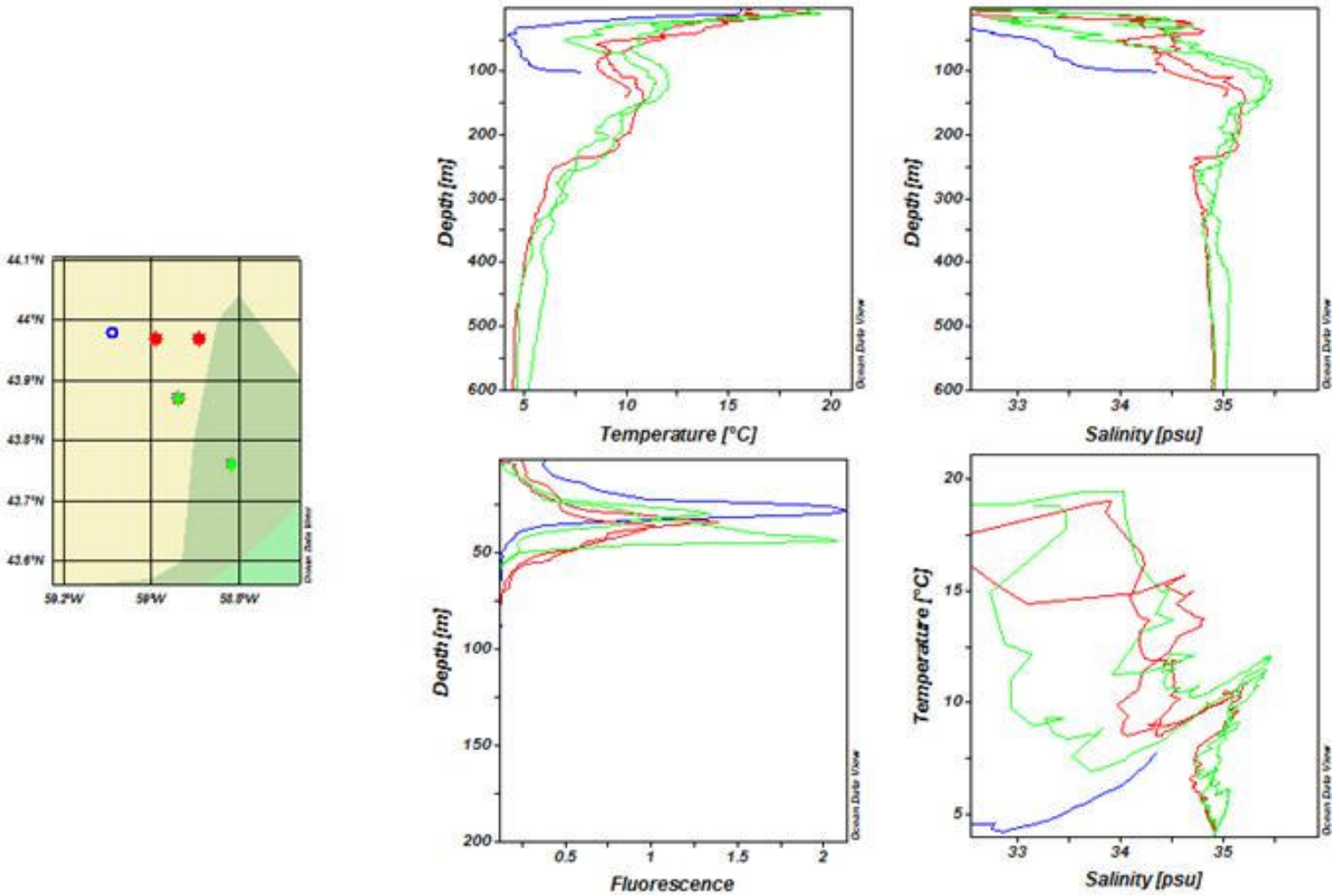

Figure 4. Temperature, salinity and fluorescence cross-sections for C200. Vertical black lines denote location and depth of CTD stations.

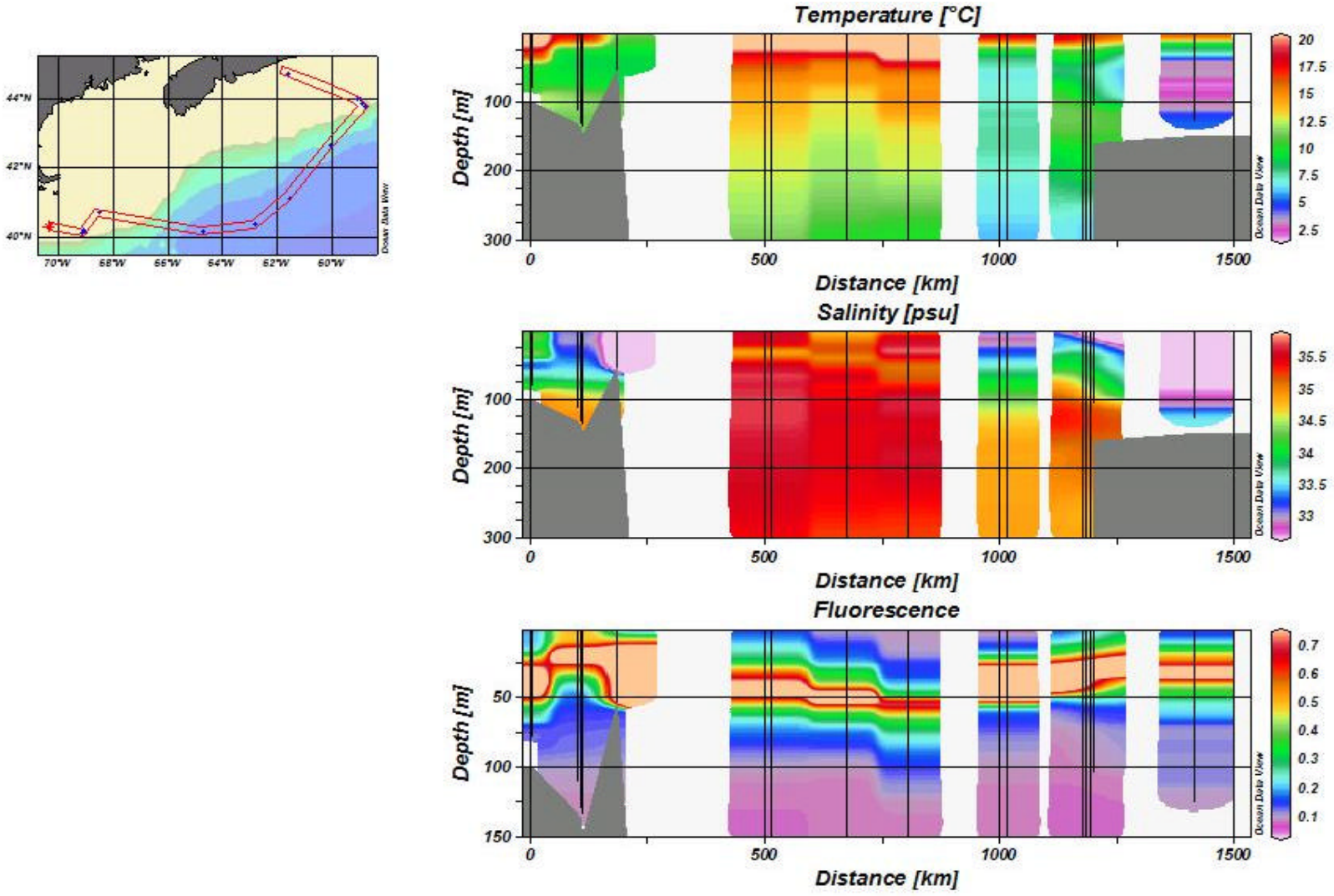

Figure 5. Current direction, magnitude and echo amplitude cross-section plots for C200.

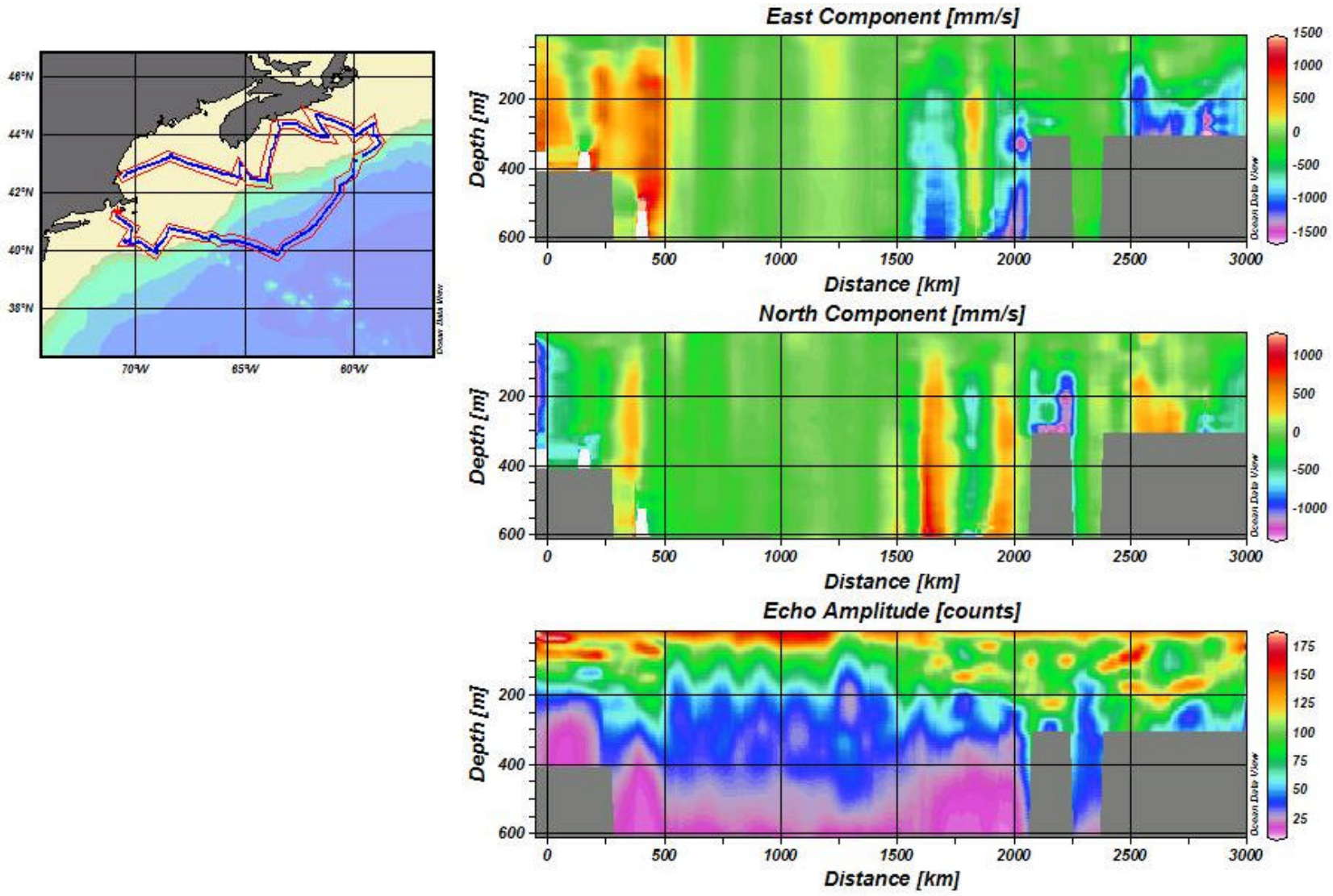

Table 6. Neuston station data for C200.

Station # (C200-)	Date (2005)	Local Time (+10 GMT)	Tow Area (m^2)	Temp (°C)	Salinity (ppt)	Zooplankton (ml/m^2)	Sargassum spp. (g)	Myctophids (#)	Plastic (#)	Tar
002	8-Jul	00:58	1852	13.7	31.4	0.165	0	0	1	0
003	8-Jul	14:34	1147	22.3	34.1	0.002	0	0	0	0
005	9-Jul	02:08	2571	20.4	33.8	0.003	210	0	0	0
011	10-Jul	14:00	1852	11.7	32.1	0.024	0	0	3	0
012	11-Jul	10:38	3123	22.6	34.7	0.004	1300	0	3	0
013	11-Jul	21:58	1125	19.2	32.9	0.050	620	6	0	0
014	12-Jul	11:40	1852	21.3	35.0	0.002	0	0	0	0
015	12-Jul	10:08	1852	22.6	34.9	0.019	0	38	0	0
017	14-Jul	10:58	2117	23.8	35.6	0.005	640	0	2	1
018	14-Jul	21:48	556	22.9	35.5	0.022	0	17	0	0
021	16-Jul	13:45	1852	19.3	33.2	0.001	0	0	0	0
027	19-Jul	09:25	1852	15.3	30.6	0.013	0	0	0	0
028	19-Jul	21:26	1574	17.3	31.8	0.020	0	0	0	0
029	20-Jul	11:19	1852	17.4	31.5	0.002	0	0	0	0
034	26-Jul	18:16	1111	14.9	31.7	0.017	0	0	0	0
035	31-Jul	21:02	1438	20.1	30.7	0.104	0	0	32	0
036	1-Aug	00:39	1016	20.1	30.8	0.004	0	0	0	0
037	1-Aug	04:39	3203	19.9	30.8	0.012	0	0	0	0

Tow area was derived from estimating tow distance in meters using a taffrail log. The net opening was 1.0 m wide by 0.5 m tall with a net mesh of 333 µm. Zooplankton density is recorded as wet volume displacement per tow area (ml/m^2). Samples were sorted for lantern fish (Family Myctophidae) and recorded as number caught per tow. Floating plastic was sorted from the nets contents, counted and recorded as numbers collected per tow. Floating tar was sorted from the nets and recorded as present or absent. Samples were sorted for phyllosoma, spiny lobster larvae, *Halobates* and leptocephali, eel larvae; but none were found. American lobster larvae (*Homarus americanus*), crab larvae and pteropods were also sorted from samples; their numbers are available upon request.

Table 7. Meter net station data for C200.

Station # (C200-)	Date (2005)	Local Time (+10 GMT)	Tow Depth (m)	Tow Volume (m^3)	Zooplankton (ml/m^3)	Myctophids (#)
002	8-Jul	00:58	16	1294	0.626	0
011	10-Jul	13:56	20	739	0.230	0
013A	11-Jul	21:30	500	2475	0.068	0
013B	11-Jul	21:30	28.6	474	0.463	0
014A	12-Jul	11:45	525	2046	0.028	0
014B	12-Jul	11:45	25	1313	0.026	0
015A	12-Jul	21:39	300	2548	0.038	0
015B	12-Jul	21:39	25	1130	0.319	8
017A	14-Jul	10:22	400	2828	0.034	0
017B	14-Jul	10:22	25	222	0.135	0
018A	14-Jul	21:17	400	508	0.065	0
018B	14-Jul	21:17	25	517	0.085	0
021	16-Jul	13:20	325	4824	0.008	0
027A	19-Jul	09:18	60	658	0.223	0
027B	19-Jul	09:18	20	991	0.311	0
028A	19-Jul	21:14	54	1600	0.525	0
028B	19-Jul	21:20	20	324	2.156	0
029	20-Jul	11:14	20	1278	0.595	0
034	26-Jul	18:14	20	1870	0.070	0

Tow depth was based on average depth derived from an attached minilogger that recorded depth and temperature. Tow distance in meters was determined using an attached flow meter. The net opening was 1.0 m diameter with a net mesh of 333 µm. Zooplankton density is recorded as wet volume displacement per tow volume (ml/m^2). Samples were sorted for lantern fish (Family Myctophidae) and recorded as number caught per tow. Samples were sorted for phyllosoma, spiny lobster larvae, *Halobates* and leptocephali, eel larvae; but none were found. American lobster larvae (*Homarus americanus*), crab larvae and pteropods were also sorted from samples; their numbers are available upon request.

Table 8. Tucker trawl station data for C200.

Station # (C200-)	Date (2005)	Local Time (+10 GMT)	Tow Depth (m)	Tow Volume (m^3)	Zooplankton (ml/m^3)	Notes
003A	8-Jul	11:47				Not processed
003B	8-Jul	11:47	40	2156	0.091	towed from 40-0m
003C	8-Jul	11:47				Did not open
004A	8-Jul	22:00				Not processed
004B	8-Jul	22:00	40	4809	0.272	Towed from 40-0m
004C	8-Jul	22:00				Did not open
012A	11-Jul	10:38				Not processed
012B	11-Jul	10:38	350	6514	0.014	Towed from 350-0m
012C	11-Jul	10:38				Did not open

Net A was towed open during the deployment down to the deepest depth then closed. This net was not processed. Net B was triggered open once the deepest depth was reached and towed open until retrieved since net C never triggered open. Tow depth was based on average tow depth of the second net (B) derived from an attached minilogger that recorded depth and temperature. Tow distance in meters was determined using a taffrail logThe net opening was 1.0 m^2 with a net mesh of 333 µm. Zooplankton density is recorded as wet volume displacement per tow volume (ml/m^3). Samples were sorted for lantern fish (Family Myctophidae), phyllosoma (spiny lobster larvae), *Halobates* and leptocephali (eel larvae); but none were found. American lobster larvae (*Homarus americanus*), crab larvae and pteropods were also sorted from samples; their numbers are available upon request.

Table 9. Shipek grab station data for C200.

Station (C200-)	Date (2005)	Depth (m)	%4000 µm	%2000 µm	%1000 µm	%500 µm	%250 µm	%125 µm	%63 µm	%<63 µm (est)
001	7-Jul	9	0	1	1	15	54	16	2	11
008	9-Jul	134	0	0	1	66	10	2	1	21
009	10-Jul	166	56	7	3	17	5	4	1	8
010	10-Jul	258	1	1	1	22	25	30	14	7
011	10-Jul	303.5	0	1	0	94	3	0	0	1
023	16-Jul	180	0	0	1	40	31	11	1	16
024	16-Jul	160	0	0	0	2	40	27	12	19
025	16-Jul	50	1	1	2	78	14	4	1	0
026	18-Jul	14	0	0	1	61	20	9	0	8

Table 7. Student research topics for C200.

	Research Team I: Diel Vertical Migration
Deena Anderson	The Effect of pigment on the vertical migration of pteropods
Brooks Hopple	A comparison of diel vertical migration of zooplankton in the shelf, and slope of the Northwestern Atlantic
Amy Leek and Andrew Collins	Spination and the migratory patterns of crab larvae
	Research Team II: Regional Comparison of Surface Characteristics
Liz Chennell, Tristan Law and Victoria Pérez	Water masses, currents, and their relationship to the distribution of *Homarus Americanus* larvae in the North West Atlantic Ocean
Grant Humphries, Emily Smith and Natasha Woodall	*Myctophids:* Boundary separation and prey relationships with respect to horizontal and vertical distribution in the Northwestern Atlantic
Winnie Cheng	North Atlantic horizontal phytoplankton distribution in response to hydrography and nutrient levels
	Research Team III: Geologic Studies
Leah Christian	Current flow and upwelling in the Gully and Hydrographer's Canyon
Mikkel Bjornson	Optimal environmental characteristics for suspension and deposit feeders in the northeast Atlantic benthos
	Research Team II: Regional Comparison of Vertical Characteristics
Abby Gray and Lars Gaalaas	Analysis of chlorophyll-a and bacterial vertical profiles relative to the pycnocline in the Northwestern Atlantic