CRUISE REPORT

C249

SCIENTIFIC ACTIVITIES

Woods Hole MA -Bequia-St. Croix USVI

October 12-November 19, 2012

SSV Corwith Cramer

SEA Semester®

S·E·A

Sea Education Association
Woods Hole, Massachusetts

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Lea, Charles E., 2012. Final report for S.E.A. cruise C249. Sea Education Association, Woods Hole, MA 02543. www.sea.edu.

To obtain unpublished data, contact the Chief Scientist or SEA data archivist:

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Sea Education Association
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Data Description

This cruise report provides a record of data collected aboard the SSV *Corwith Cramer* during Cruise C249 (U.S. State Department Cruise F2013-066). The cruise track of C249 (Figure 1, Table 1) was a passage from Woods Hole to Bequia, and ending in St. Croix USVI. Aspects of the western North Atlantic as recorded on C249 including currents, temperature, salinity, chlorophyll, are displayed in Figures 2-9. The cruise participants are listed in Table 2. Student projects aboard C249 are listed in Table 3.

During the six week voyage we collected samples or data at 47 discrete oceanographic stations (Appendix A), and 47 surface stations (Appendix B). Chemical properties of seawater with depth are contained in Appendix C. The CTD and Secchi disc information is listed in Appendix D and the profiles are illustrated in Appendix E. Lists of biological net samples are contained in Appendix F.

Figure 1. Midnight and noon positions on SSV *Corwith Cramer* cruise 249

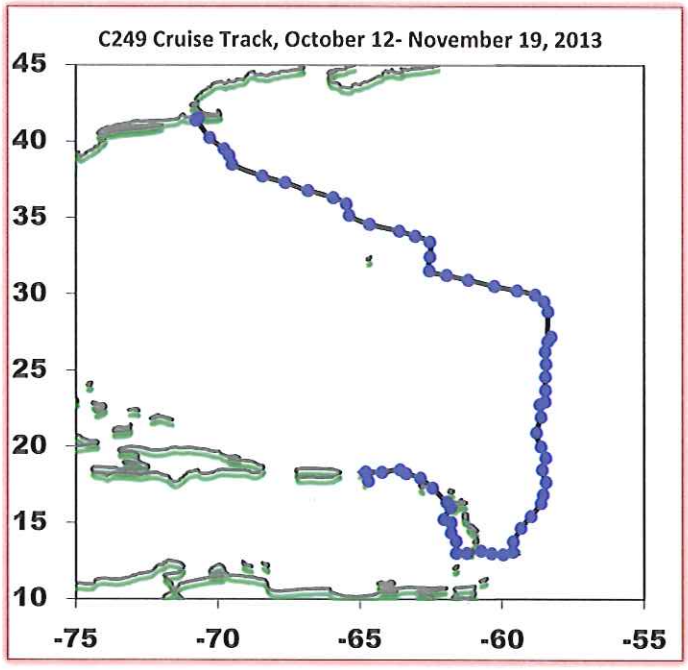


Figure 2. CTDs of C249. Red enclosed stations are used for cross sectional depictions.

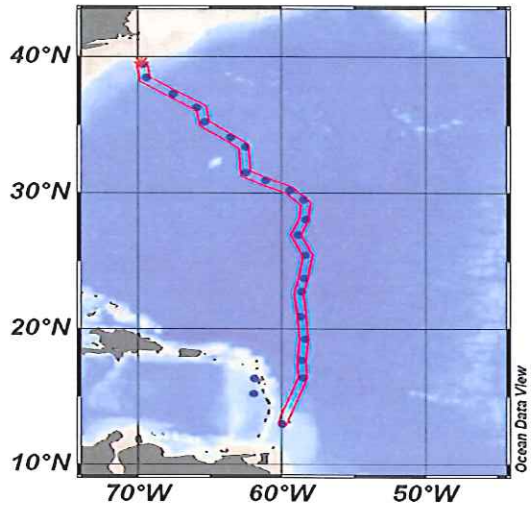


Figure 3. CTD Temperature Cross Section on C249 from the Gulf of Maine to 12°N.

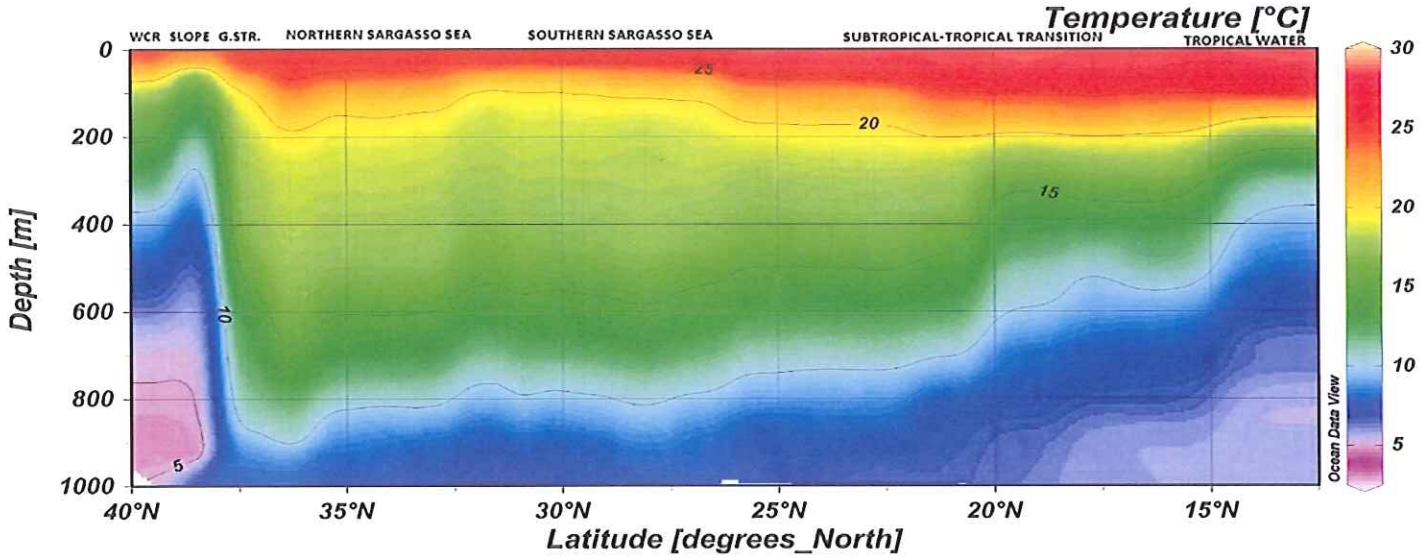


Figure 4. CTD Salinity Cross Section on C249 from the Gulf of Maine to 12°N

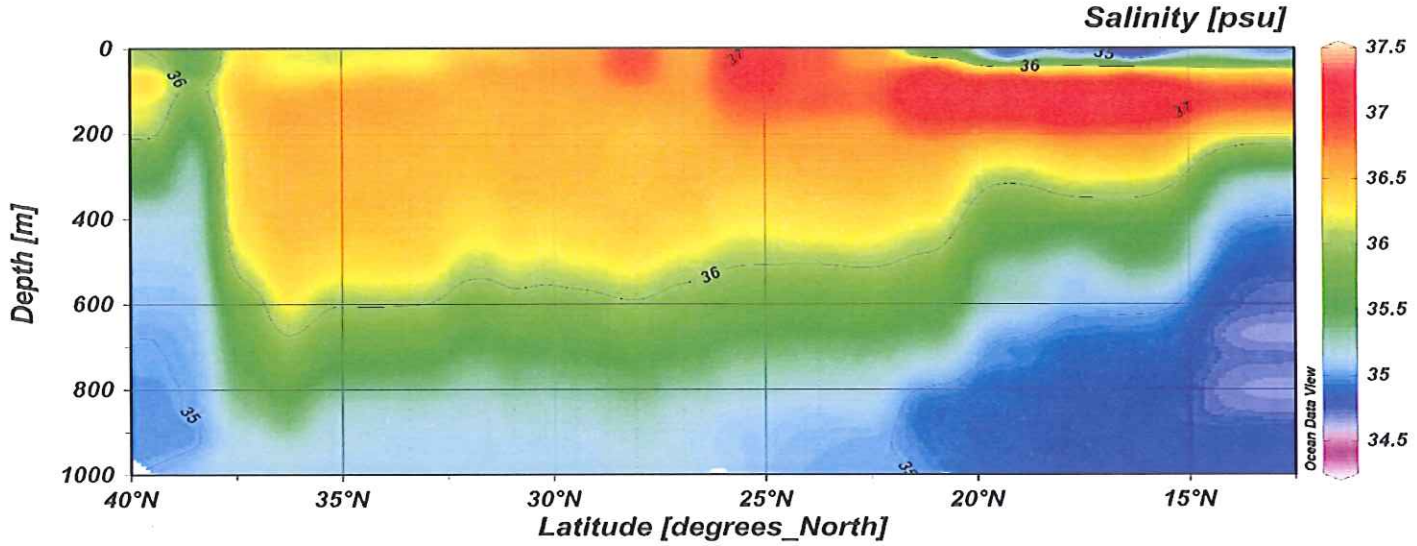


Figure 5. Density along the C249 Cruise Track from the Gulf of Maine to 12°N

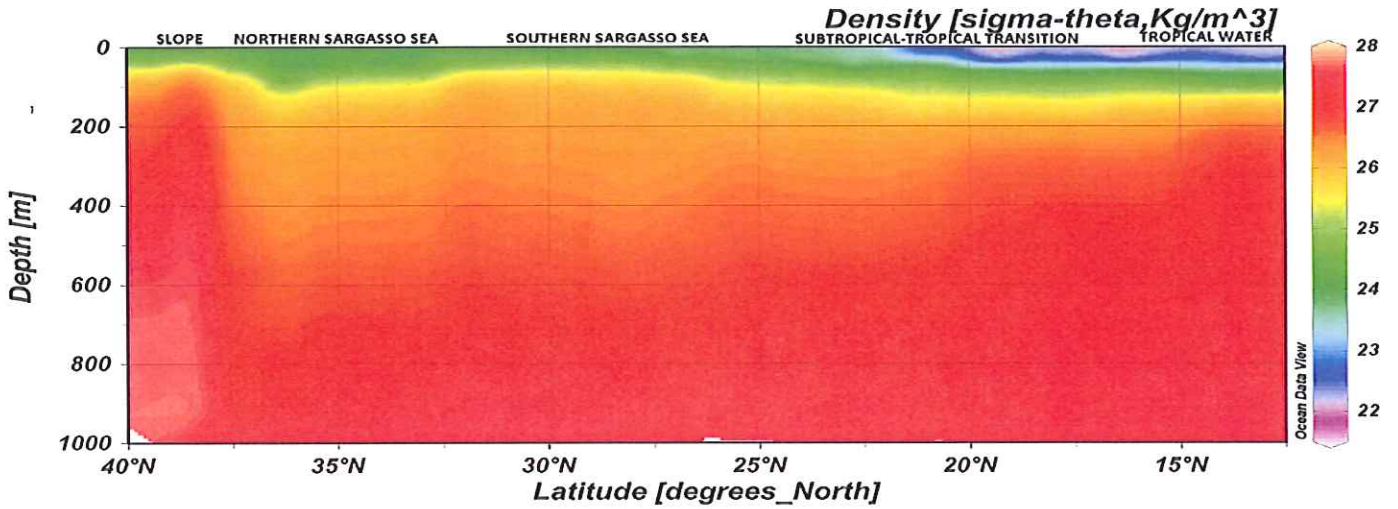


Figure 6. *In situ* Dissolved Oxygen on C249 from the Gulf of Maine to 12°N

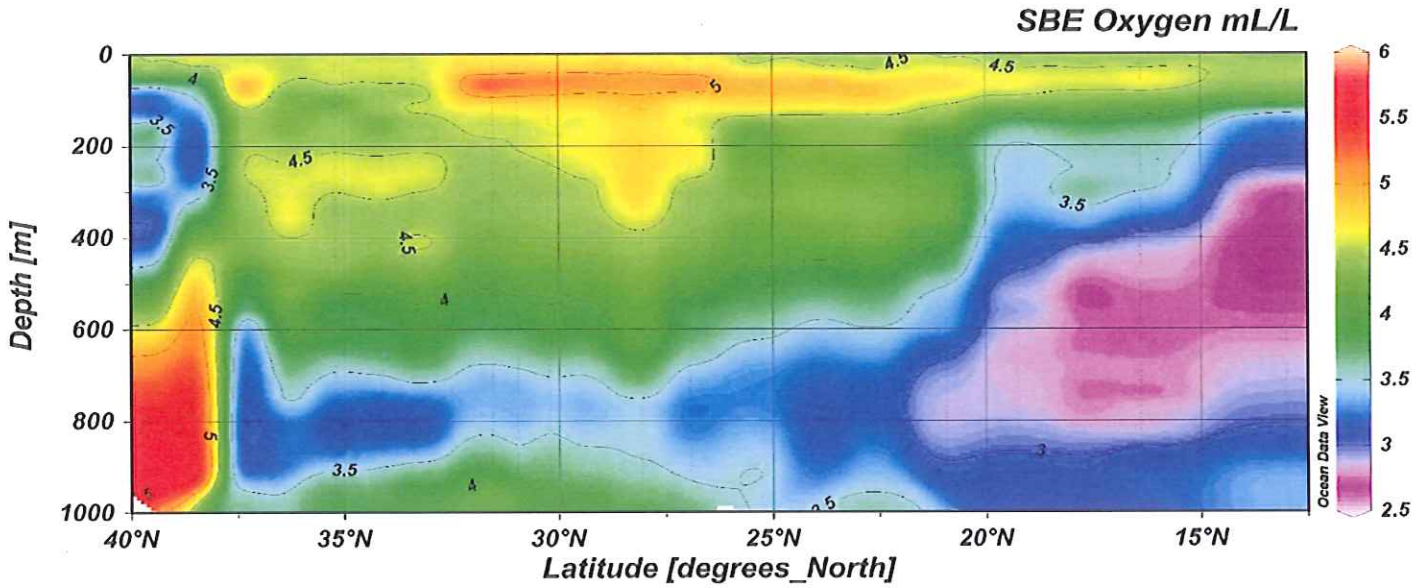


Figure 7. Saturation (%) of Dissolved Oxygen on C249 from the Gulf of Maine to 12°N

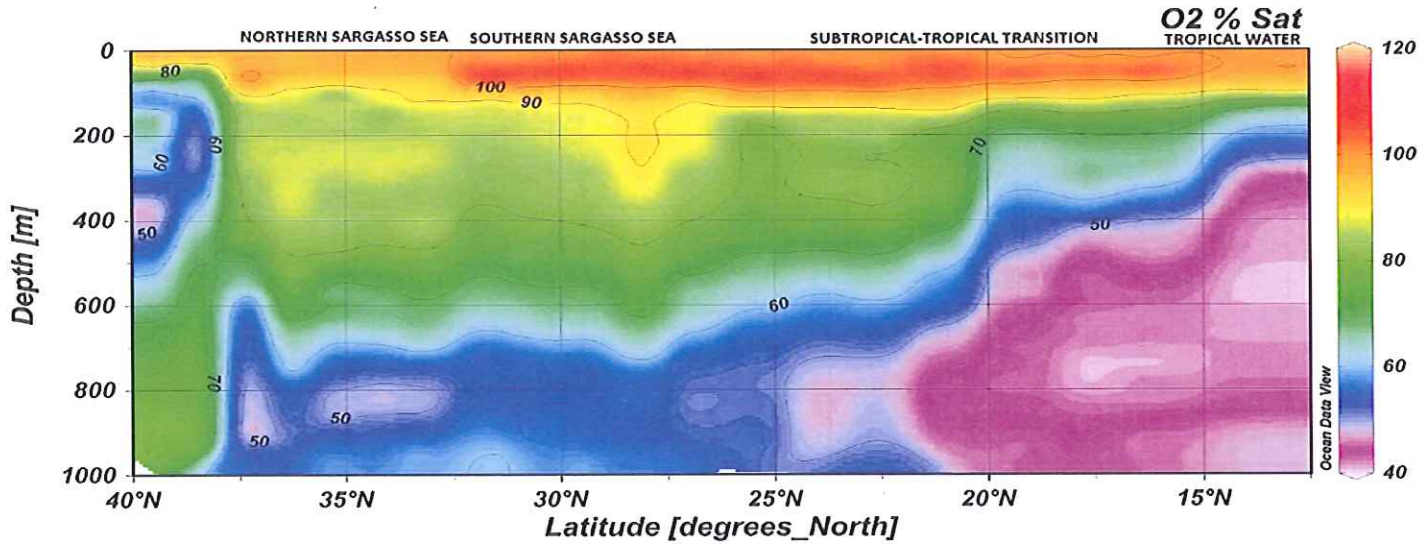


Figure 8. *In situ* Chlorophyll *a* Fluorescence on C249 from the Gulf of Maine to 12°N.

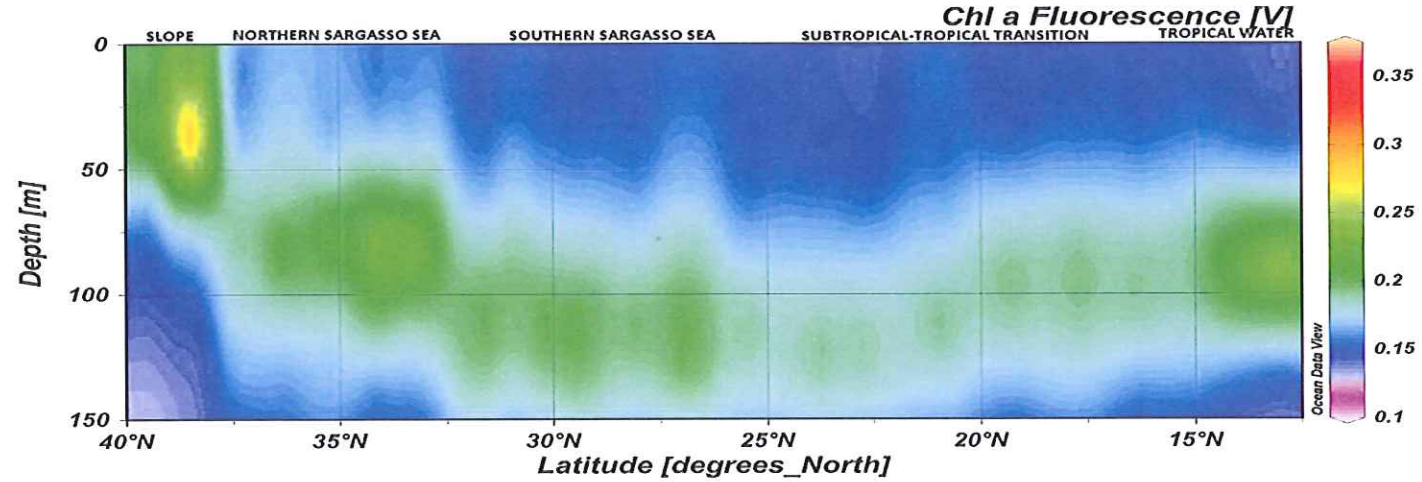


Figure 9. Surface-pump Measurements from the Gulf of Maine to 11°N and to Bequia

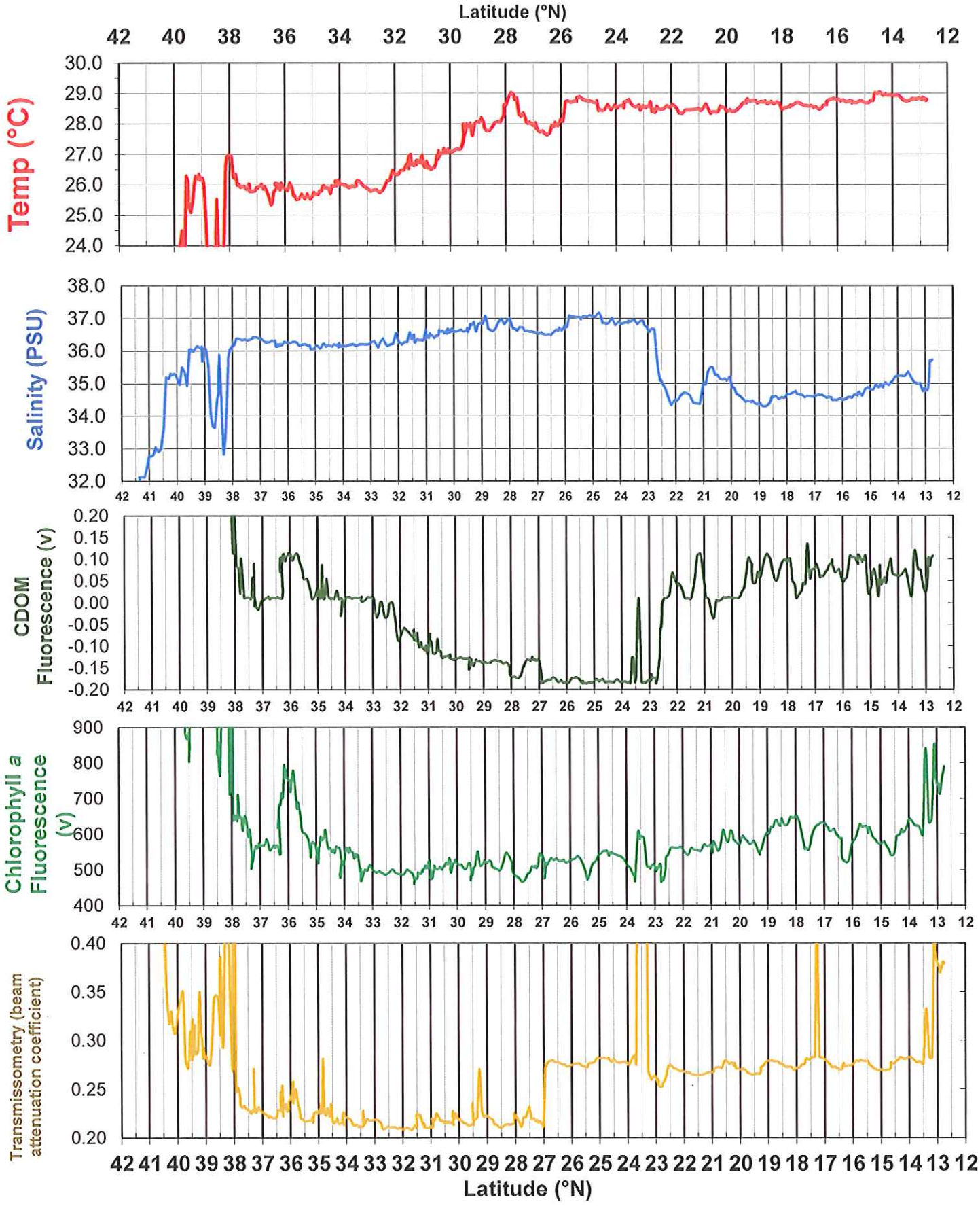


Figure 10. ADCP derived current magnitude and direction.

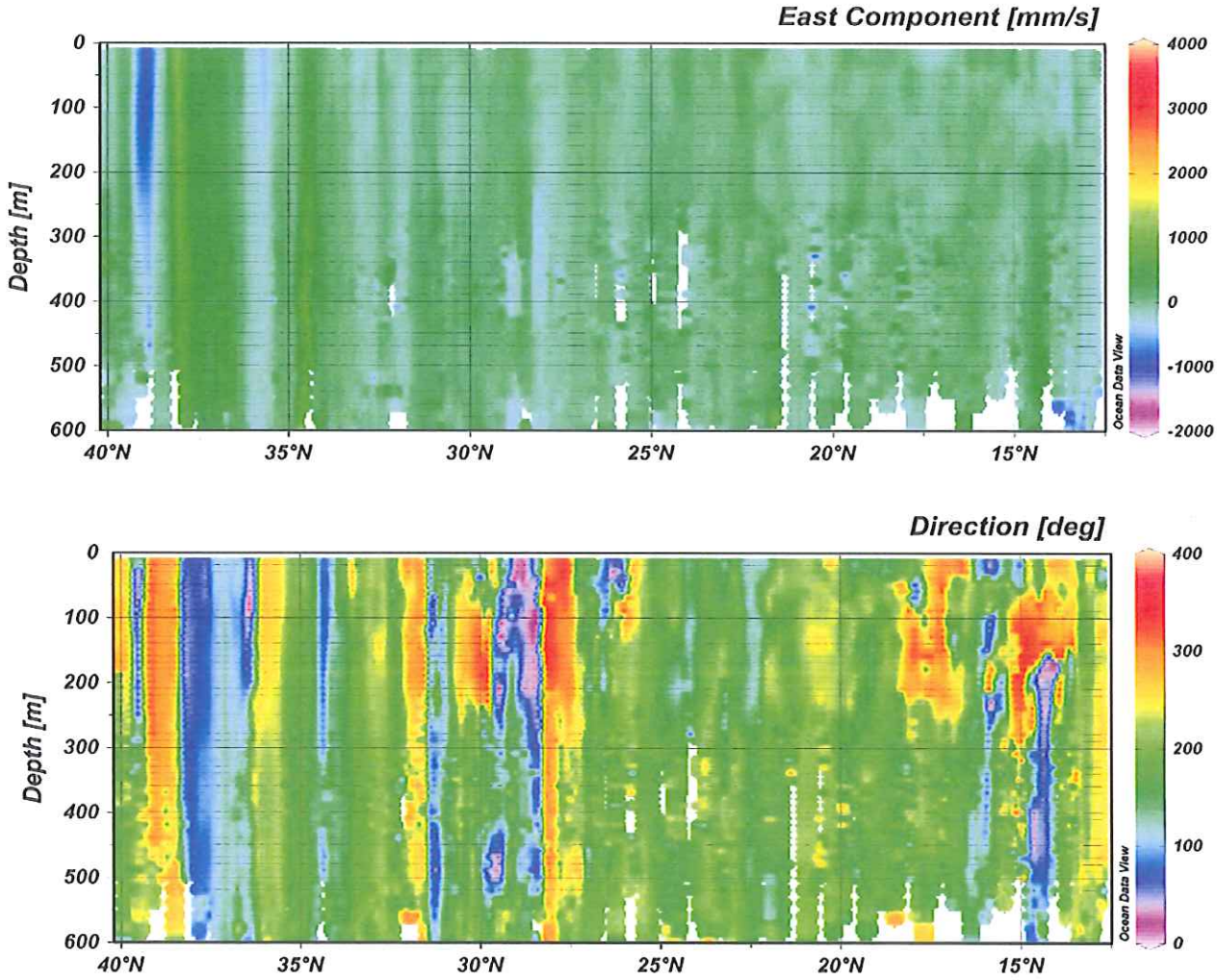


Figure 11. ADCP Surface current direction and magnitude.

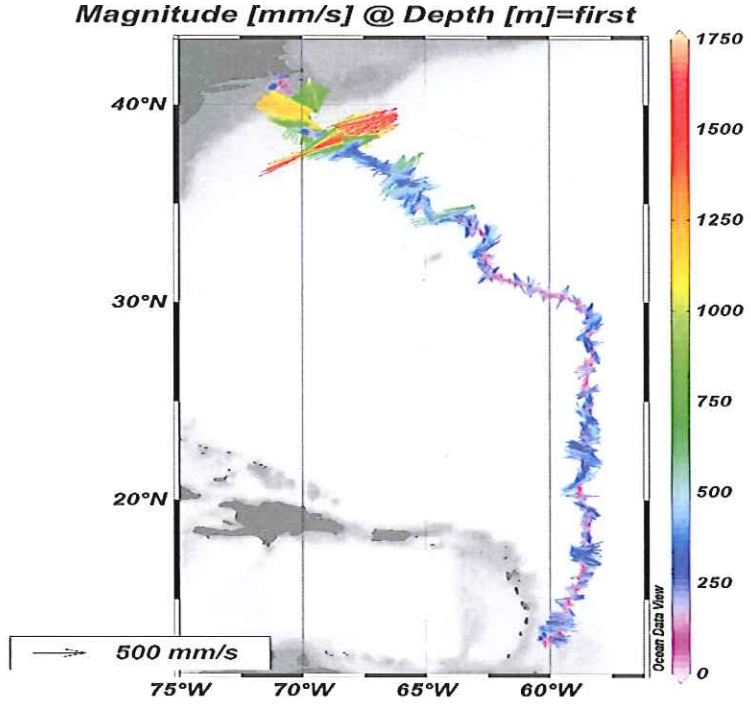


TABLE 1.
C249 Midnight and Noon Positions

DATE 2013	TIME (local)	LAT.	LONG.	COMMENTS
12-Oct	1200	41°31.4' N	70°40.5' W	Alongside, Woods Hole Ma
13-Oct	0000	41°31.4' N	70°40.5' W	Alongside, Woods Hole Ma
	1200	41°26.9' N	70°45.7' W	Alongside, Woods Hole Ma
14-Oct	0000	41°21.5' N	70°46.9' W	
	1200	41°26.9' N	70°45.7' W	
15-Oct	0000	40°13.9' N	70°16.8' W	
	1200	39°30.1' N	69°46.6' W	
16-Oct	0000	39°4.3' N	69°36.1' W	
	1200	38°29.5' N	69°29.5' W	
17-Oct	0000	37°42.9' N	68°26.1' W	
	1200	37°17.4' N	67°37.2' W	
18-Oct	0000	36°46.4' N	66°49.2' W	
	1200	36°19.2' N	65°56.3' W	
19-Oct	0000	35°54.8' N	65°28.7' W	
	1200	35°10.0' N	65°22.8' W	
20-Oct	0000	34°34.2' N	64°39.3' W	
	1200	34°7.9' N	63°36.9' W	
21-Oct	0000	33°47.9' N	63°2.9' W	
	1200	33°25.3' N	62°32.0' W	
22-Oct	0000	32°27.9' N	62°32.2' W	
	1200	31°32.3' N	62°33.7' W	
23-Oct	0000	31°13.9' N	61°57.3' W	
	1200	30°55.8' N	61°11.5' W	
24-Oct	0000	30°31.7' N	60°16.4' W	
	1200	30°13.7' N	59°28.1' W	
25-Oct	0000	29°58.3' N	58°49.6' W	
	1200	29°31.4' N	58°30.9' W	
26-Oct	0000	28°52.3' N	58°22.9' W	
	1200	28°3.7' N	58°23.3' W	
27-Oct	0000	27°12.7' N	58°16.4' W	
	1200	26°56.0' N	58°23.9' W	
28-Oct	0000	26°14.9' N	58°28.9' W	
	1200	25°25.6' N	58°26.8' W	
29-Oct	0000	24°35.5' N	58°28.2' W	
	1200	23°43.2' N	58°28.5' W	
30-Oct	0000	22°57.3' N	58°29.0' W	
	1200	22°46.3' N	58°40.8' W	
31-Oct	0000	21°57.8' N	58°37.8' W	
	1200	20°55.3' N	58°47.3' W	
1-Nov	0000	20°0.0' N	58°37.7' W	
	1200	19°16.6' N	58°27.7' W	
2-Nov	0000	18°30.1' N	58°35.2' W	
	1200	17°41.2' N	58°27.2' W	
3-Nov	0000	16°51.6' N	58°33.4' W	
	1200	16°17.3' N	58°38.1' W	
4-Nov	0000	15°26.8' N	58°59.0' W	
	1200	14°39.7' N	59°20.0' W	

5-Nov	0000	13°47.2' N	59°36.1' W	
	1200	13°6.1' N	59°37.9' W	Alongside, Bridgetown Barbados
6-Nov	0000	12°55.9' N	59°57.9' W	
	1200	12°59.1' N	60°22.5' W	
7-Nov	0000	13°9.6' N	60°44.2' W	
	1200	13°0.5' N	61°14.6' W	Anchored, Bequia
8-Nov	0000	13°0.5' N	61°14.6' W	Anchored, Bequia
	1200	13°0.5' N	61°14.6' W	Anchored, Bequia
9-Nov	0000	13°0.5' N	61°14.6' W	Anchored, Bequia
	1200	13°0.5' N	61°14.6' W	Anchored, Bequia
10-Nov	0000	13°0.5' N	61°14.6' W	Anchored, Bequia
	1200	13°0.5' N	61°14.6' W	Anchored, Bequia
11-Nov	0000	13°0.5' N	61°14.6' W	Anchored, Bequia
	1200	13°0.9' N	61°37.2' W	
12-Nov	0000	13°48.3' N	61°37.2' W	
	1200	14°20.6' N	61°48.0' W	
13-Nov	0000	15°1.4' N	61°47.9' W	
	1200	15°13.8' N	62°3.4' W	
14-Nov	0000	15°59.9' N	61°49.2' W	
	1200	16°21.5' N	61°57.5' W	
15-Nov	0000	17°16.6' N	62°27.1' W	
	1200	17°55.5' N	62°52.5' W	Anchored, Anse de Colombier St. Barthelemy
16-Nov	0000	18°13.8' N	63°22.7' W	
	1200	18°28.7' N	63°35.8' W	
17-Nov	0000	18°18.6' N	64°14.0' W	
	1200	18°20.5' N	64°48.1' W	Anchored, Cruz Bay St. John USVI
18-Nov	0000	18°20.5' N	64°48.1' W	Anchored, Francis Bay St. John USVI
	1200	18°20.5' N	64°48.1' W	Anchored, Francis Bay St. John USVI
19-Nov	0000	18°13.1' N	64°45.9' W	
	1200	17°44.8' N	64°41.9' W	Alongside, Christiensted St. Croix USVI

Table 2. Ship's Complement for SSV *Corwith Cramer* Cruise C249.

Nautical Staff	
Jason Quilter	Captain, Leg I
Colleen Allard	Captain, Leg II
	Chief Mate, Leg I
Sarah Herard	Chief Mate, Leg II
	2nd Mate, Leg I
Liz Maloney	2nd Mate, Leg II
Ryan Loftus	3rd Mate
Mickey Caracas	Chief Engineer
Trevor Kauffman	Assistant Engineer
Jamie Leonard	Steward
Scientific Staff	
Chuck Lea	Chief Scientist
Maia Theophanis	First Assistant Scientist
Laura Hansen	Second Assistant Scientist
Kelsey Lane	Third Assistant Scientist
Deck Hands	
Laura Page	
Morgan Turner	

Visitors:

Mark Charran	Observer Trinidad & Tobago, Leg I
Sarah Morin	USCG, Leg II

Students:

Freeland Ackert	Landing School of Boatbuilding
Emily Bishop	Univ. of Rhode Island
Miles Cooper	Colorado College
Jamie Davidow	Colorado College
Sage DeLuna	Oregon State Univ.
Keven Dooley	Colorado College
Nicholas Glendenning	Mt. Wachusett Com. College
Hope Goodrich	Oberlin College
Serena Lundgren	Lawrence Univ.
Ashley Mackie-Donnelly	Eckerd College
Farley Miller	Eckerd College
Patrick Mooney	Univ. of N. Carolina, Chapel Hill
Zoe Psarouthakis	Lawrence Univ.
William Reisinger	Colgate University
Lina Rosenberg	Lawrence Univ.
Marc Rosenfield	Chapman Univ.
E. Hewson Shepherd	Boston Univ.
Daniel Zeller	Bowdoin College

Table 3. Student Projects Aboard C249.

Title	Author(s)
An Examination of both Vertical and Latitudinal Distribution of Chlorophyll along the Atlantic Basin: Trends in the Deep Chlorophyll Maximum and Surface Concentrations.	Farley Miller
Plastic marine debris composition and distribution in the North Sargasso Sea	Hewson Shepherd
The Correlation Between Temperature and Salinity on Pteropod Distribution	Jamie Davidow, Patrick Mooney
Methods for determining the abundance of monofilament line fragments in the North Atlantic Ocean and the potential impacts on zooplankton	Sage DeLuna
Investigating *Sargassum*'s distribution pattern: a pelagic seaweed's relation to plastic and epifauna in the North Atlantic	Emily Bishop, Ashley Mackie-Donnelly
The Lateral Distribution of Myctophid Species	Zoe Psarouthakis, Will Reisinger

Distribution of Trichodesmium Colonies and Free-Floating Trichomes in the Sargasso Sea and Western Tropical North Atlantic	Keven Dooley and Marc Rosenfield
Salinity as an Indicator of *Halobates micans* in the Atlantic Ocean along Cruise C-249	Hope Goodrich and Lina Rosenberg
Distribution of Leptocephali in the North Western Atlantic: How does size provide insights to spawning?	Serena Lundgren and Miles Cooper
Locating and Estimating the Magnitude of the North Atlantic Recirculation Front	Freeland Ackert, Daniel Zeller, Nicholas Glendenning

Data and Sampling Appendices

APPENDIX A:
STATION INFORMATION SUMMARY OF C249

STATION C249	DATE	TIME (Local)	LAT. (°N)	LONG. (°W)	GENERAL LOCALE	EQUIPMENT	Surface Station
C249-001	15-Oct-13	0006	40°13.9'	N°70.16'	Continental Shelf	Neuston Net	SS-003
C249-002	15-Oct-13	1000	39°28.7'	N°69.46'	Slope Water	Secchi Disc	HC-002 #13
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Niskin bottles	
						Neuston Net	
C249-003	16-Oct-13	1005	38°29.7'	N°69.27'	Slope Water	Secchi Disc	SS-006
						Meter net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-004	16-Oct-13	0006	37°48.0'	N°68.26'	Gulf Stream	Neuston Net	SS-007
C249-005	17-Oct-13	0955	37°16.6'	N°67.38'	N. Sargasso Sea	Secchi Disc	SS-008
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-006	18-Oct-13	0031	36°45.4'	N°66.47'	N. Sargasso Sea	Neuston Net	SS-009
C249-007	18-Oct-13	0957	36°16.1'	N°65.58'	N. Sargasso Sea	Secchi Disc	SS-010
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-008	18-Oct-13	2058	36°3.2'	N°65.31'	N. Sargasso Sea	Meter net	
C249-009	19-Oct-13	0004	35°54.8'	N°65.28'	N. Sargasso Sea	Neuston Net	SS-011
C249-010	19-Oct-13	0937	35°13.5'	N°65.24'	N. Sargasso Sea	Secchi Disc	SS-012
						Meter net	

						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-011	19-Oct-13	0002	34°33.9'	N°64.39'	N. Sargasso Sea	Neuston Net	SS-013
C249-012	20-Oct-13	0952	34°5.9'	N°63.37'	N. Sargasso Sea	Secchi Disc	HC-012 #13
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Niskin Bottles	
						Neuston Net	
C249-013	21-Oct-13	0003	33°47.8'	N°63.2'	N. Sargasso Sea	Neuston Net	SS-014
C249-014	21-Oct-13	1000	33°24.3'	N°62.33'	N. Sargasso Sea	Secchi Disc	SS-015
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-015	21-Oct-13	2044	32°44.2'	N°62.31'	N. Sargasso Sea	Meter nets	
C239-016	21-Oct-13	2359	32°28.0'	N°62.32'	N. Sargasso Sea	Neuston Net	SS-016
C249-017	22-Oct-13	1000	31°30.7'	N°62.32'	S. Sargasso Sea	Secchi Disc	SS-017
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-018	23-Oct-13	0009	31°13.8'	N°61.57'	S. Sargasso Sea	Neuston Net	SS-018
C249-019	23-Oct-13	0959	30°55.8'	N°61.11'	S. Sargasso Sea	Secchi Disc	SS-019
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-020	23-Oct-13	2359	30°31.7'	N°60.16'	S. Sargasso Sea	Neuston Net	SS-020
C249-021	24-Oct-13	0959	30°12.0'	N°59.29'	S. Sargasso Sea	Secchi Disc	SS-021
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-022	24-Oct-13	2038	30°3.1'	N°58.54'	S. Sargasso Sea	Meter Nets	
C249-023	25-Oct-13	0008	29°58.6'	N°58.49'	S. Sargasso Sea	Neuston Net	SS-022
C249-024	25-Oct-13	0943	29°29.1'	N°58.31'	S. Sargasso Sea	Secchi Disc	Btl. #13
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Niskin Bottles	
						Neuston Net	
C249-025	26-Oct-13	0107	28°48.0'	N°58.23'	S. Sargasso Sea	Neuston Net	SS-023
C249-026	26-Oct-13	0959	28°3.4'	N°58.23'	S. Sargasso Sea	Secchi Disc	SS-024
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-027	27-Oct-13	0000	27°12.7'	N°58.16'	S. Sargasso Sea	Neuston Net	SS-025

C249-028	27-Oct-13	1007	26°54.5'	N°58.22'	S. Sargasso Sea	Secchi Disc	SS-026
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-029	28-Oct-13	0007	26°14.9'	N°58.28'	S. Sargasso Sea	Neuston Net	SS-027
C249-030	28-Oct-13	1011	25°25.7'	N°58.24'	S. Sargasso Sea	Secchi Disc	SS-028
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-031	29-Oct-13	0011	24°35.6'	N°58.28'	S. Sargasso Sea	Neuston Net	SS-029
C249-032	29-Oct-13	0955	23°43.2'	N°58.28'	Transition Zone	Secchi Disc	Btl. #13
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Niskin Bottles	
						Neuston Net	
C249-033	29-Oct-13	2038	23°9.9'	N°58.31'	Transition Zone	Meter nets	
C249-034	30-Oct-13	0003	22°56.8'	N°58.28'	Transition Zone	Neuston Net	SS-030
C249-035	30-Oct-13	1001	22°46.4'	N°58.40'	Transition Zone	Secchi Disc	SS-031
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-036	31-Oct-13	0001	21°57.8'	N°58.37'	Transition Zone	Neuston Net	SS-032
C249-037	31-Oct-13	0942	20°46.4'	N°58.10'	Transition Zone	Secchi Disc	037-HC #13
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Niskin Bottles	
						Neuston Net	
C249-038	1-Nov-13	0037	19°57.7'	N°58.37'	Transition Zone	Neuston Net	SS-033
C249-039	1-Nov-13	0957	19°16.8'	N°58.25'	Transition Zone	Secchi Disc	SS-034
						Meter net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-040	2-Nov-13	0002	18°30.0'	N°58.36'	Transition Zone	Neuston Net	SS-035
C249-041	2-Nov-13	0947	17°42.2'	N°58.24'	Transition Zone	Secchi Disc	SS-036
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Niskin Bottles	
						Neuston Net	
C249-042	3-Nov-13	0009	16°51.2'	N°58.33'	Transition Zone	Neuston Net	SS-037
C249-043	3-Nov-13	0808	16°23.1'	N°58.35'	Tropics	Secchi Disc	043-HC #13
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	

						Niskin Bottles	
						Neuston Net	
C249-044	4-Nov-13	0055	15°27.9'	59°0.1'	Tropics	Neuston Net	SS-038
C249-045	4-Nov-13	1000	14°40.3'	59°18.6'	Tropics	Secchi Disc	SS-039
						Meter net	
						Phytoplankton net	
						CTD-Chlor.Fluor.-O_2	
						Neuston Net	
C249-046	5-Nov-13	0006	13°47.2'	59°36.1'	Tropics	Neuston Net	SS-040
C249-047	5-Nov-13	2113	13°0.6'	59°50.8'	Tropics	Meter net	
C249-048	6-Nov-13	0017	12°55.6'	59°58.4'	Tropics	Neuston Net	SS-041

APPENDIX B

SURFACE STATION INFORMATION C249

Station	Date	Time	Log	Latitude	Longitude	Temp.	Salinity	Chlor. *in vivo* Fluor	Chloro-phyll *a*	CDOM *in vivo* Fluor	SiO_2	PO_4
Collection	**2012**	**(local)**	**(nm)**	**N**	**W**	**(°C)**	**(PSU)**	**(V)**	**(µg/l)**	**(V)**	**(µM)**	**(µM)**
SS-001	14-Oct-13	1142	-	41°18.7' N	70°55.3' W	16.9	32.15	2078.2	1.529	211.7	-	0.82
SS-002	14-Oct-13	2131	50.1	40°26.5' N	70°24.8' W	22.1	35.36	1774.0	0.472	109.1	-	0.18
SS-003	15-Oct-13	0020	63.0	40°13.5' N	70°16.6' W	23.1	35.27	1129.1	0.167	109.5	-	0.14
SS-004	15-Oct-13	0442	86.8	35°50.4' N	70°3.4' W	23.2	35.16	2333.8	0.591	117.9	-	0.16
HC-002 #13	15-Oct-13	1213	114.0	39°30.1' N	69°46.8' W	25.8	36.05	831.3	0.191	99.6	-	0.31
SS-005	16-Oct-13	0020	164.4	39°3.6' N	69°35.6' W	26.1	35.93	1202.2	0.447	95.6	-	0.19
SS-006	16-Oct-13	1205	203.9	38°29.9' N	69°35.6' W	24.5	35.43	849.6	0.276	103.9	-	0.10
SS-007	17-Oct-13	0011	260.3	37°48.0' N	68°26.2' W	26.3	36.37	684.4	0.098	88.2	-	0.10
SS-008	17-Oct-13	1222	302.1	37°17.8' N	67°37.0' W	26.0	36.39	492.9	0.231	85.0	-	0.20
SS-009	18-Oct-13	0039	335.7	36°45.6' N	66°47.2' W	25.9	36.28	587.1	0.066	85.4	-	0.12
SS-010	18-Oct-13	1247	379.7	36°20.8' N	65°55.7' W	26.0	36.20	626.4	0.122	88.8	-	0.04
SS-011	19-Oct-13	0010	406.6	35°55.1' N	65°28.6' W	25.8	36.24	737.4	0.140	88.8	-	0.15
SS-012	19-Oct-13	1204	433.5	35°9.7' N	65°22.7' W	25.5	35.94	583.5	0.064	85.8	-	0.10
SS-013	20-Oct-13	0010	465.9	34°34.4' N	64°39.5' W	25.9	36.15	563.4	0.111	85.3	-	0.19
HC-012 #13	20-Oct-13	1205	507.7	34°8.0' N	63°36.9' W	26.1	36.16	477.3	0.066	83.8	-	0.17
SS-014	21-Oct-13	0016	533.2	33°48.1' N	63°3.0' W	26.0	36.17	555.2	0.063	85.6	-	0.17
SS-015	21-Oct-13	1201	561.4	33°25.3' N	62°32.1' W	26.1	36.20	463.3	0.089	85.2	-	0.29
SS-016	22-Oct-13	0007	604.4	32°27.7' N	62°32.2' W	25.8	36.23	485.2	0.039	84.6	-	0.23
SS-017	22-Oct-13	1200	657.9	31°32.3' N	62°33.8' W	26.8	36.46	466.8	0.020	81.6	-	0.22
SS-018	23-Oct-13	0013	694.1	31°13.9' N	61°57.4' W	26.8	37.33	508.8	0.065	80.9	-	0.20
SS-019	23-Oct-13	1213	734.8	30°58.2' N	61°11.8' W	26.6	36.46	480.4	0.024	81.5	-	0.15
SS-020	24-Oct-13	0015	782.2	30°32.0' N	60°16.7' W	26.6	36.62	505.8	0.028	80.2	-	0.23
SS-021	24-Oct-13	1215	823.4	30°14.25' N	58°28.0' W	27.1	36.53	529.6	0.384	80.0	-	0.40
SS-022	25-Oct-13	0014	858.5	29°58.7' N	58°49.9' W	27.1	36.61	511.8	0.162	79.6	-	0.16
024-HC #13	25-Oct-13	1156	892.3	29°31.3' N	58°30.9' W	27.9	36.69	468.6	0.018	79.1	-	0.18
SS-023	26-Oct-13	0125	939.3	28°48.0' N	58°22.7' W	28.0	36.87	505.5	0.015	79.3	-	0.18
SS-024	26-Oct-13	1154	974.8	28°3.9' N	58°23.3' W	28.5	36.93	476.6	0.073	77.3	-	0.25
SS-025	27-Oct-13	0011	1020.0	27°12.6' N	58°16.5' W	28.0	36.59	516.3	0.012	79.8	-	0.25
SS-026	27-Oct-13	1219	1036.3	26°55.9' N	58°23.8' W	28.0	36.56	469.2	0.059	77.3	-	0.21
SS-027	28-Oct-13	0014	1088.1	26°14.7' N	58°28.8' W	27.9	36.62	519.0	0.004	77.7	-	0.23
SS-028	28-Oct-13	1214	1125.2	25°25.2' N	58°27.1' W	28.8	37.03	479.8	0.061	77.4	-	0.21
SS-029	29-Oct-13	0029	1169.1	24°35.2' N	58°29.1' W	28.4	36.85	550.1	0.197	77.4	-	0.24
032-HC #13	29-Oct-13	1153	1214.5	23°42.5' N	58°30.9' W	28.7	36.92	467.2	0.010	77.4	-	0.10
SS-030	30-Oct-13	0014	1254.0	22°56.6' N	58°28.9' W	28.4	36.53	530.4	0.019	79.3	-	0.21
SS-031	30-Oct-13	1214	1264.1	22°46.2' N	58°41.2' W	28.7	36.65	460.9	0.006	77.5	-	0.20
SS-032	31-Oct-13	0008	1310.7	21°57.5' N	58°38.0' W	28.6	34.47	546.8	0.035	86.6	-	0.37
037-HC #13	31-Oct-13	1100	1361.6	20°56.3' N	58°45.2' W	28.5	34.97	567.0	0.202	85.2	-	0.07
SS-033	1-Nov-13	0053	1418.2	19°57.4' N	58°37.5' W	28.4	34.89	580.0	0.029	85.5	-	0.17
SS-034	1-Nov-13	1153	1457.7	19°16.7' N	58°27.4' W	28.8	34.46	554.2	0.059	87.3	15.6	0.10

SS-035	2-Nov-13	0006	1500.9	18°30.0' N	58°35.3' W	28.7	34.59	647.7	0.209	87.8	15.5	0.19
SS-036	2-Nov-13	1202	1545.3	17°41.1' N	58°27.3' W	28.6	34.76	560.3	0.071	85.4	17.2	0.21
SS-037	3-Nov-13	0013	1595.5	16°51.1' N	58°33.9' W	28.5	34.65	624.9	0.080	87.7	13.8	0.58
043-HC #13	3-Nov-13	1014	1624.2	16°22.5' N	58°37.5' W	28.7	34.50	534.8	0.074	88.6	16.8	0.04
SS-038	3-Nov-13	0121	HB	15°27.2' N	59°0.7' W	28.7	34.67	611.4	0.052	89.4	20.4	-
SS-039	4-Nov-13	1206	1726.2	14°39.8' N	59°19.8' W	28.9	34.29	543.5	0.088	86.2	20.2	-
SS-040	5-Nov-13	0016	1774.7	13°46.8' N	59°36.3' W	28.9	35.22	619.9	0.075	87.6	19.8	-
SS-041	6-Nov-13	0030	1833.7	12°55.3' N	59°58.8' W	28.9	34.84	709.9	0.081	89.2	20.4	-
SS-042	6-Nov-13	1151	1865.4	12°59.2' N	60°22.2' W	29.0	34.91	684.0	0.096	86.0	22.5	-
SS-043	7-Nov-13	0040	1897.7	13°8.4' N	60°45.1' W	28.9	34.92	748.3	-	86.5	16.8	-

(*indicates value was below detectable limits)

APPENDIX C

C249 HYDROCAST DATA. Dash (-) indicates no value.

STATION	BOT-TLE	DEPTH	TEMP.	SAL.	DENSITY	O_2	PO_4	NO_3	CHLOR.	CHLOR.
C249		(m)	(°C)	(PSU)	(σt)	probe (ml/l)	(µg/l)	(µg/l)	(µg/l)	(volts)
002	13	0	25.8	36.05	23.9	4.5	0.311	0.584	0.191	0.166
Warm Core Ring-Slope Water	12	10	25.6	36.01	23.9	4.5	0.135	0.156	0.201	0.171
39°28.9' N	11	25	25.0	36.15	24.2	4.5	0.151	0.230	0.312	0.216
69°44.6' W	10	36	24.4	36.12	24.4	4.6	0.156	0.377	0.541	0.259
Secchi depth 21m	9	55	21.9	36.49	25.4	4.1	-	-	-	0.166
Secchi 1%= 56m	8	74	20.0	36.58	26.0	3.2	0.389	4.465	0.019	0.148
	7	98	18.4	36.49	26.3	3.0	0.446	7.727	0.000	0.139
	6	149	16.6	36.27	26.6	3.9	-	-	-	0.126
	5	199	15.9	36.17	26.7	3.7	0.783	9.145	-	-
	4	298	12.6	35.63	27.0	3.3	1.554	18.859	-	-
	3	497	7.6	35.11	27.4	3.7	1.710	18.646	-	-
	2	745	5.0	34.99	27.7	5.3	1.435	17.157	-	-
	1	887	4.6	34.97	27.7	5.6	1.420	-	-	-
012	13	0	26.1	36.14	23.9	4.6	0.166	1.551	0.066	0.149
Northern Sargasso Sea	12	24	25.8	36.23	24.0	4.6	0.140	0.196	0.037	0.153
34°6.7' N	11	49	25.6	36.37	24.2	4.5	0.171	0.096	0.126	0.180
63°37.5' W	10	60	24.8	36.50	24.5	4.5	0.140	0.068	0.240	0.202
Secchi depth 26m	9	70	24.0	36.61	24.9	4.6	0.151	0.119	0.490	0.246
Secchi 1%= 70m	8	79	23.1	36.66	25.2	4.3	0.213	0.970	0.485	0.270
	7	99	22.0	36.66	25.5	4.3	0.197	1.696	0.231	0.224
	6	124	21.0	36.67	25.8	4.5	0.176	1.733	0.044	0.168
	5	199	19.2	36.60	26.2	4.5	0.213	2.260	-	0.144
	4	348	18.1	36.55	26.4	4.3	0.389	6.943	-	-
	3	496	16.9	36.36	26.6	4.1	0.492	8.508	-	-
	2	744	11.9	35.53	27.0	3.2	0.845	15.457	-	-
	1	894	8.3	35.14	27.3	3.5	1.554	14.179	-	-
024	13	0	27.9	36.69	23.8	4.5	0.176	0.176	0.018	0.167
Southern Sargasso Sea	12	25	27.3	36.58	23.8	4.5	0.130	0.062	0.008	0.142
29°29.8' N	11	50	23.0	36.71	25.2	5.3	0.088	0.000	0.050	0.156
58°31.3' W	10	69	21.6	36.68	25.6	5.2	0.073	0.000	0.114	0.172

Secchi depth 32m	9	90	20.6	36.67	25.9	5.0		0.000	-	0.187
Secchi 1%=86m	8	99	20.0	36.65	26.0	4.8	0.130	0.556	0.287	0.204
	7	124	19.3	36.62	26.2	4.6	0.073	1.619	0.252	0.215
	6	149	18.9	36.59	26.3	4.5	0.114	2.873	0.144	0.173
	5	198	18.5	36.55	26.3	4.7	0.140	5.417	-	0.137
	4	347	17.7	36.50	26.5	4.4	0.249	13.613	-	-
	3	497	16.2	36.25	26.7	4.1	0.824	15.881	-	-
	2	744	11.0	35.46	27.1	3.3	1.373	15.881	-	-
	1	894	8.1	35.17	27.4	3.6	1.544	-	-	-
037	13	0	28.3	34.94	22.2	4.4	0.073	0.252	0.202	0.158
Subtropical to	11	25	29.1	36.0	22.8	4.5	0.088	0.363	0.042	0.160
Tropical Transition	12	50	27.7	37.0	24.0	4.8	0.042	0.000	0.073	0.152
20°56.6' N	10	75	25.7	37.1	24.8	4.9	0.026	0.000	0.177	0.171
58°44.5' W	9	89	25.1	37.2	25.0	5.0	0.000	0.000	0.265	0.174
Secchi depth [illegible]m	8	99	24.9	37.3	25.1	4.9	0.031	0.054	0.332	0.179
Secchi 1%= 73m	7	124	23.7	37.2	25.4	4.6	0.151	0.139	0.214	0.199
	6	148	22.6	37.1	25.7	4.4	0.130	0.181	0.136	0.165
	5	198	20.3	36.9	26.1	3.9	0.140	1.946	-	0.141
	4	348	17.4	36.5	26.6	4.3	0.337	5.919	-	-
	3	496	14.6	36.0	26.8	3.5	0.928	13.514	-	-
	2	743	9.2	35.2	27.2	2.9	0.917	13.159	-	-
	1	893	6.9	34.9	27.4	3.0	2.186	13.612	-	-
043	13	0	28.5	34.48	21.8	4.4	0.327	0.930	0.074	0.138
Tropical	12	19	28.5	34.48	21.8	4.4	0.156	0.782	0.074	0.143
16°23.2' N	11	39	28.8	35.27	22.3	4.6	0.223	0.952	0.102	0.155
58°33.4' W	10	60	27.4	37.07	24.1	4.8	0.130	1.673	0.234	0.169
Secchi depth 31m	9	80	25.8	37.15	24.7	4.6	0.145	2.926	0.391	0.191
Secchi 1%= 83m	8	99	25.1	37.19	25.0	4.3	0.156	2.699	0.368	0.200
	7	125	23.7	37.21	25.4	4.1	0.171	17.969	0.126	0.174
	6	148	22.2	37.19	25.8	3.7	0.161	40.584	0.008	0.141
	5	199	19.5	36.81	26.3	3.6	0.264	6.268	-	0.133
	4	249	18.0	36.56	26.5	3.5	0.451	8.168	-	-
	3	497	11.6	35.52	27.1	2.8	1.440	13.824	-	-
	2	743	7.1	34.89	27.3	2.7	2.217	21.482	-	-
	1	894	5.7	34.77	27.4	3.1	1.746	18.008	-	-

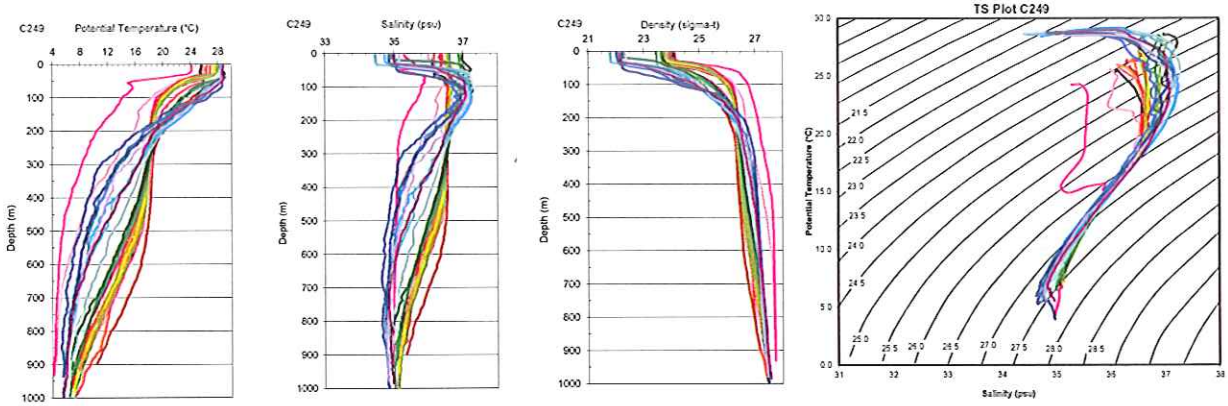
APPENDIX D

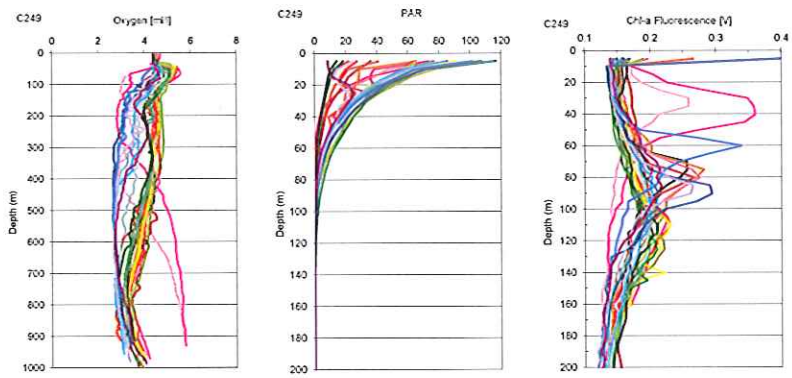
C249 CTD AND SECCHI DISC STATION SUMMARY

STATION C249	DATE	LAT. (°N)	LONG. (°W)	CAST DEPTH (m)	GENERAL LOCATION	Secchi Depth (m)	SD 1% Depth (m)
002	10/15/12	39°28.7' N	69°44.3' W	895	Slope/Warm Core Ring	21	56
003	10/16/12	38°29.7' N	69°27.0' W	930	Slope	21	56
005	10/17/12	37°16.6' N	67°38.8' W	990	N. Sargasso Sea	28	75
007	10/18/12	36°12.5' N	65°56.8' W	895	N. Sargasso Sea	25	67
010	10/19/12	35°12.6' N	65°24.2' W	975	N. Sargasso Sea	36	97
012	10/20/12	34°5.9' N	63°36.9' W	915	N. Sargasso Sea	26	70
014	10/21/12	33°24.8' N	62°32.9' W	930	N. Sargasso Sea	26	70
017	10/22/12	31°31.7' N	62°33.2' W	970	S. Sargasso Sea	36	97
019	10/23/12	30°55.8' N	61°11.5' W	920	S. Sargasso Sea	32	86
021	10/24/12	30°12.8' N	59°28.8' W	945	S. Sargasso Sea	31	83
024	10/25/12	29°29.8' N	58°31.3' W	980	S. Sargasso Sea	32	86
026	10/26/12	28°3.6' N	58°23.1' W	1000	S. Sargasso Sea	45	121
028	10/27/12	26°55.2' N	58°22.9' W	910	S. Sargasso Sea	25	67
030	10/28/12	25°25.7' N	58°25.2' W	915	S. Sargasso Sea	31	83
032	10/29/12	23°43.2' N	58°28.5' W	930	Subtrop.-Trop. Transition	29	78
035	10/30/12	22°46.3' N	58°40.8' W	995	Subtrop.-Trop. Transition	34	91
037	10/31/12	20°56.6' N	58°44.5' W	915	Subtrop.-Trop. Transition	*27*	*73*
039	11/1/12	19°16.8' N	58°25.6' W	940	Subtrop.-Trop. Transition	26	70
041	11/2/12	17°42.2' N	58°24.1' W	955	Subtrop.-Trop. Transition	31	83
043	11/3/12	16°23.2' N	58°33.4' W	935	Tropical Water	31	83
045	11/4/12	14°40.3' N	59°18.4' W	920	Tropical Water	34	91
049	11/6/12	12°59.9' N	60°19.0' W	935	Tropical Water	33	89

APPENDIX F. C245 CTD STATION PROFILES

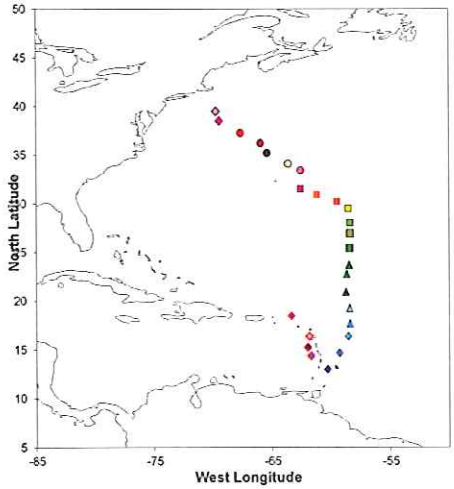
All C249 CTD Stations





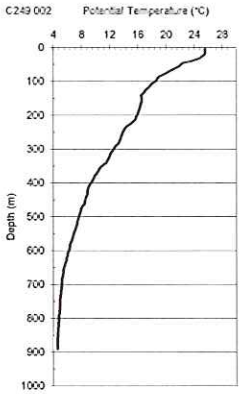
CTD Station	Latitude	Longitude
C249 002	39°28.7' N	69°44.3' W
C249 003	38°29.7' N	69°27.0' W
C249 005	37°16.6' N	67°38.8' W
C249 007	36°12.5' N	65°56.8' W
C249 010	35°12.6' N	65°24.2' W
C249 012	34°05.9' N	63°35.9' W
C249 014	33°24.8' N	62°32.9' W
C249 017	31°31.7' N	62°33.2' W
C249 019	30°55.8' N	61°11.5' W
C249 021	30°12.8' N	59°28.8' W
C249 024	29°29.8' N	58°31.3' W
C249 026	28°3.6' N	58°23.1' W
C249 028	26°55.2' N	58°22.9' W
C249 030	25°25.7' N	58°25.2' W
C249 032	23°43.2' N	58°28.5' W
C249 035	22°46.3' N	58°40.8' W
C249 037	20°56.6' N	58°44.5' W
C249 039	19°16.8' N	58°25.6' W
C249 041	17°42.2' N	58°24.1' W
C249 043	16°23.2' N	58°33.4' W
C249 045	14°40.3' N	59°18.4' W
C249 049	12°59.9' N	60°19.0' W
C249 052	14°23.2' N	61°43.2' W
C249 054	15°15.5' N	61°59.7' W
C249 056	16°23.0' N	61°53.1' W
C249 059	18°30.1' N	63°22.7' W

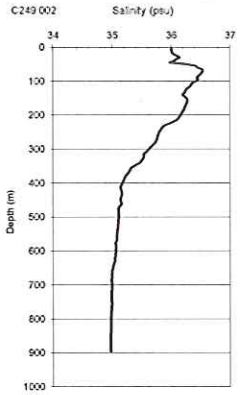
C249 CTD Station Locations

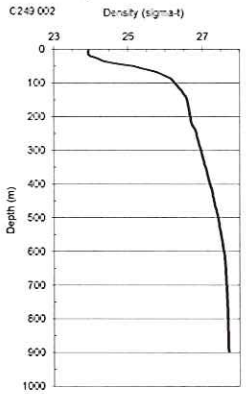


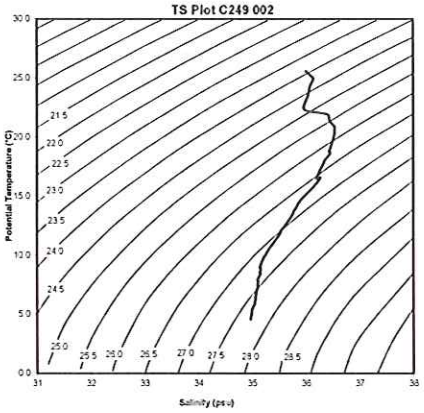
APPENDIX F. C249 CTD STATION PROFILES

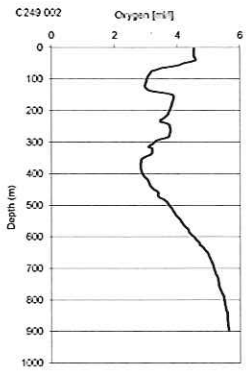
CTD 002 Slope-Warm Core Ring 39°28.7' N 69°44.3' W

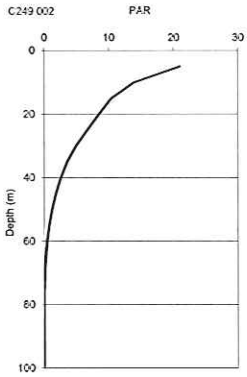


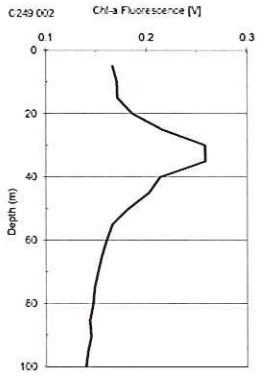




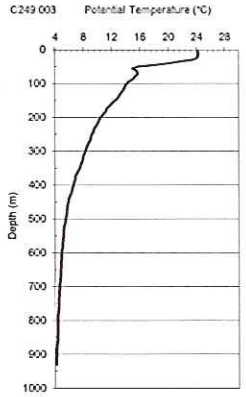


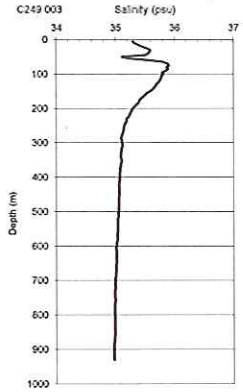


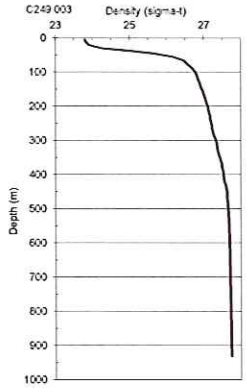


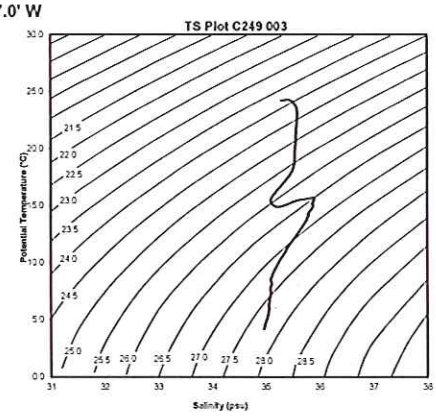


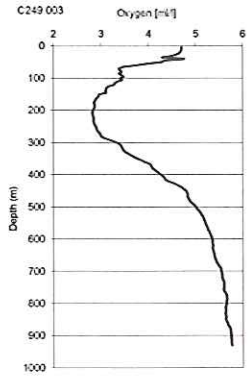
CTD 003 Slope Water 38°29.7' N 69°27.0' W

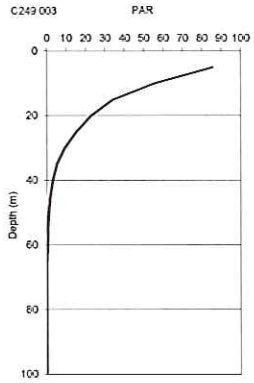


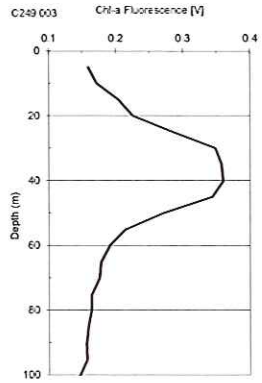


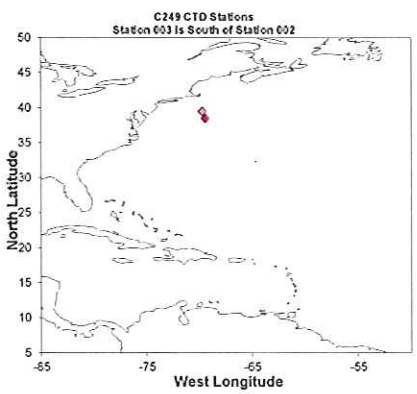






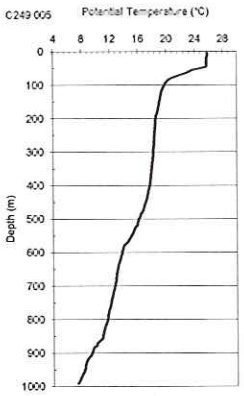


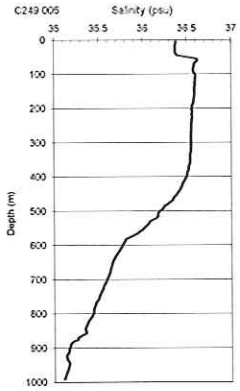


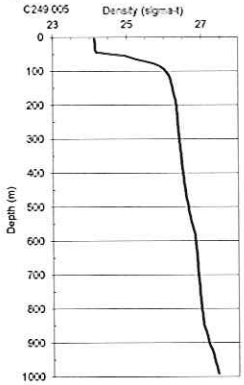


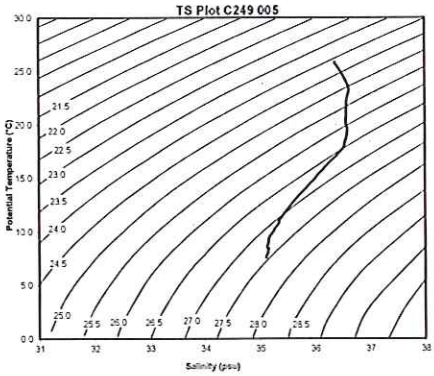
APPENDIX F. C249 CTD STATION PROFILES

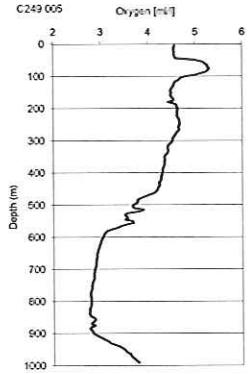
CTD 005 Northern Sargasso Sea 37°16.6' N 67°38.8' W

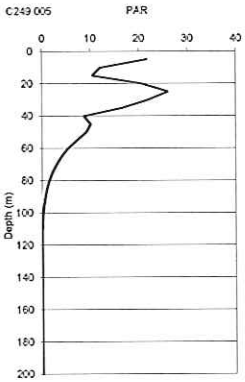


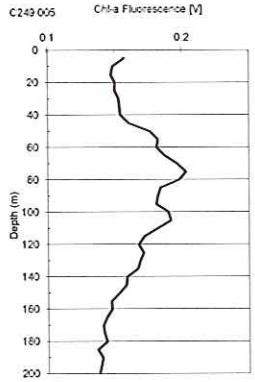




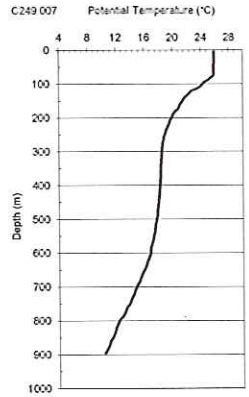


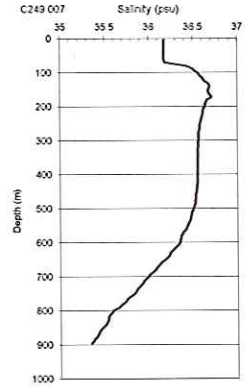


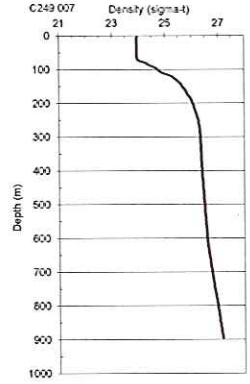


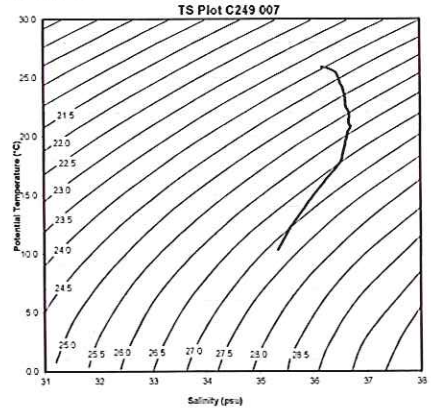


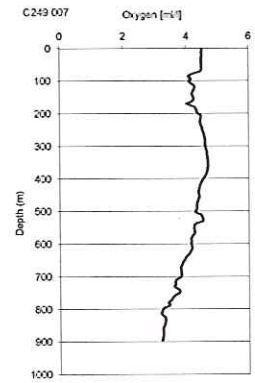
CTD 007 Northern Sargasso Sea 36°12.5' N 65°56.8' W

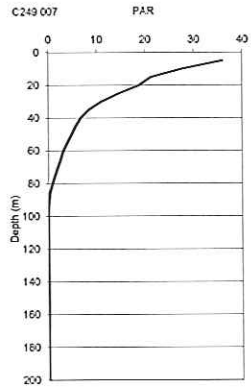


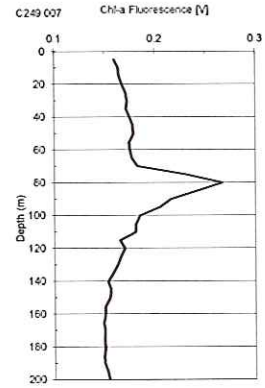


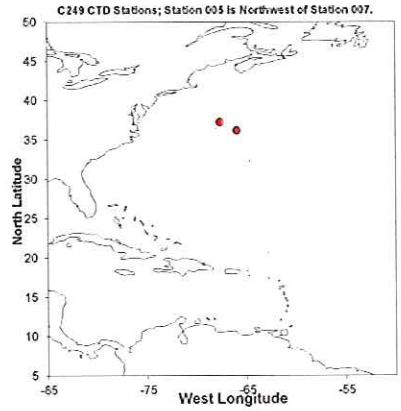






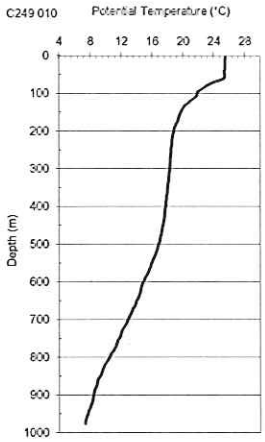


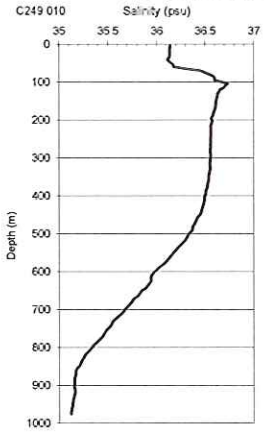


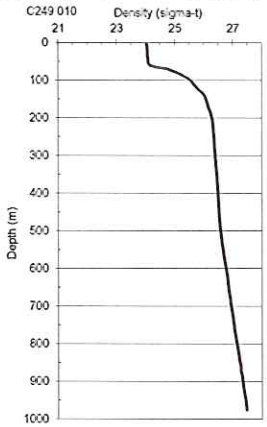


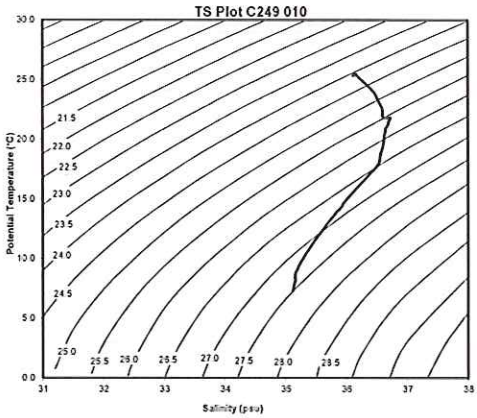
APPENDIX F. C249 CTD STATION PROFILES

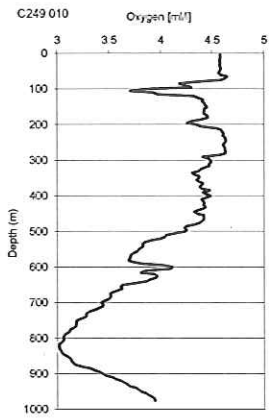
CTD 010 Northern Sargasso Sea 35°12.6' N 65°24.2' W

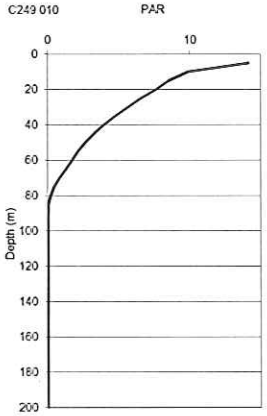


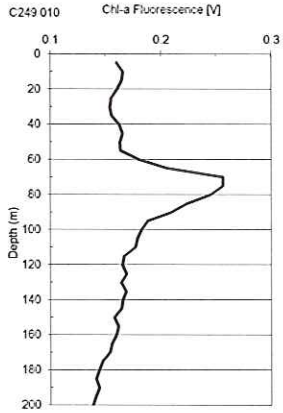




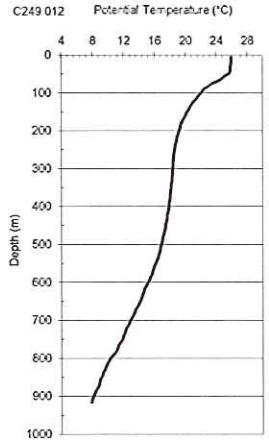


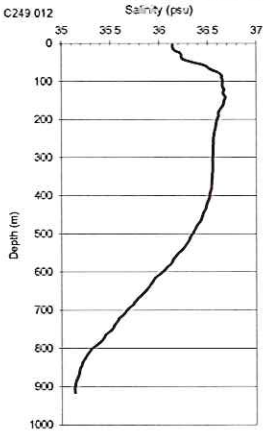


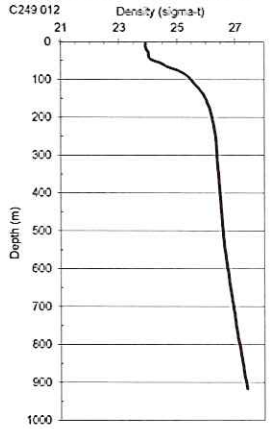


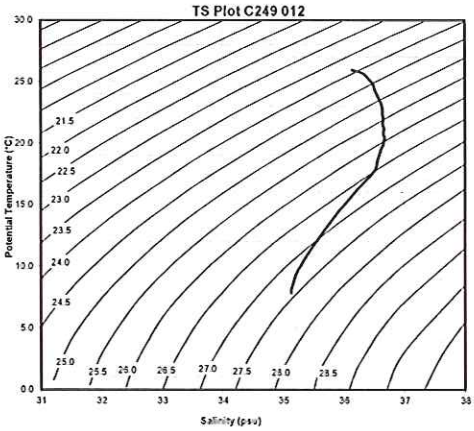


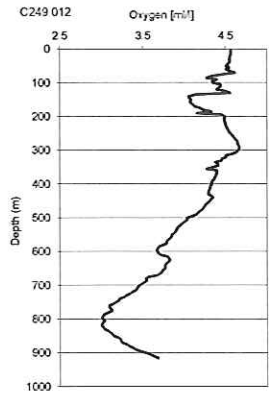
CTD 012 Northern Sargasso Sea 34°5.9' N 63°36.9' W

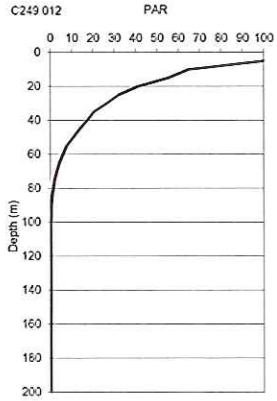


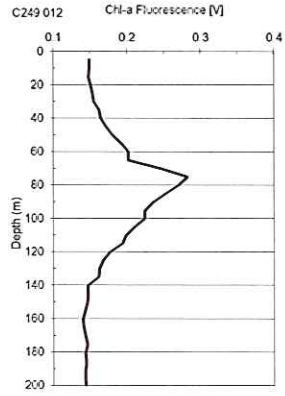


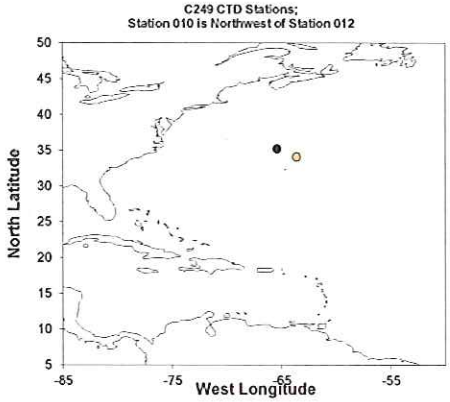






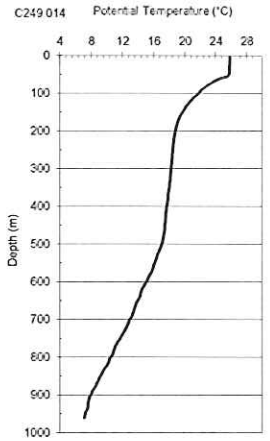


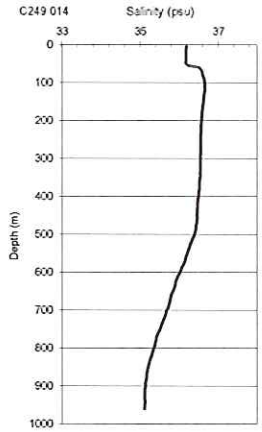


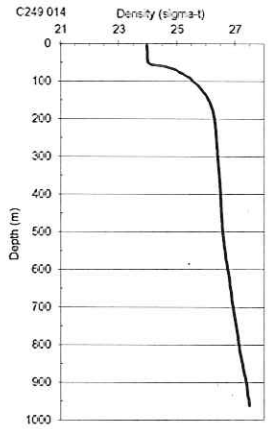


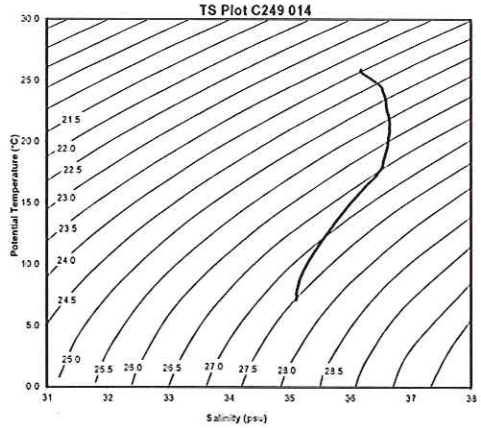
APPENDIX F. C249 CTD STATION PROFILES

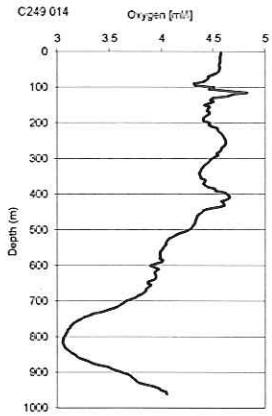
CTD 014 Northern Sargasso Sea 33°24.8' N 62°32.9' W

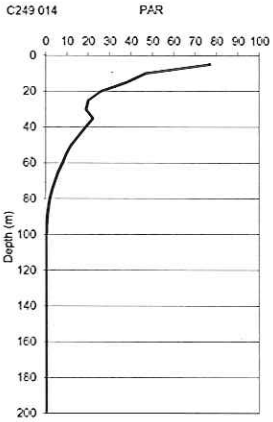


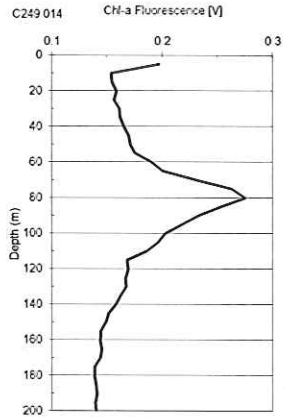




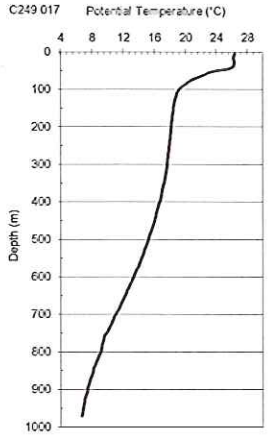


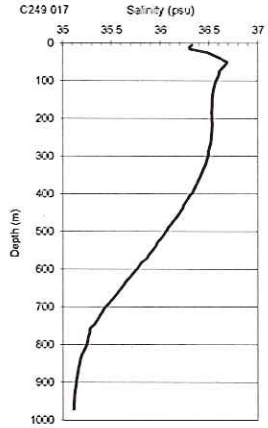


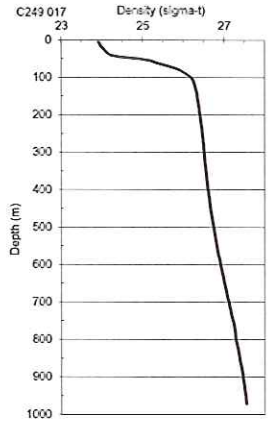


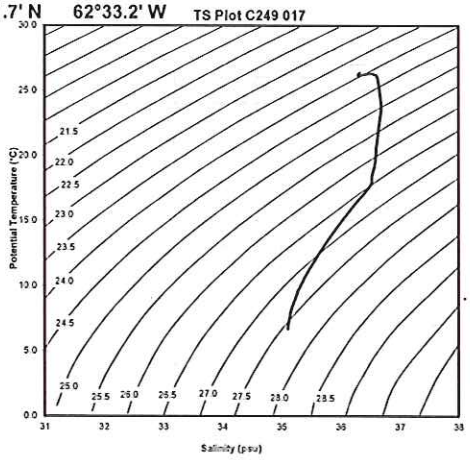


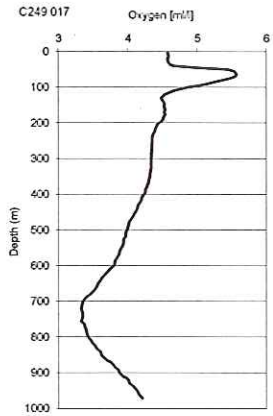
CTD 017 Southern Sargasso Sea 31°31.7' N 62°33.2' W

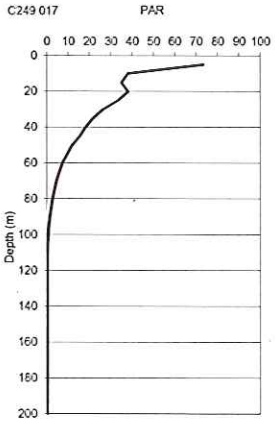


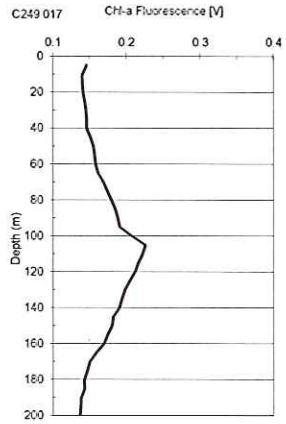


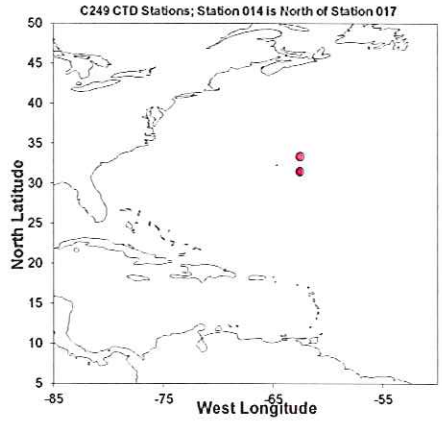






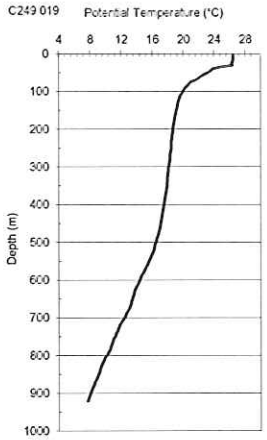


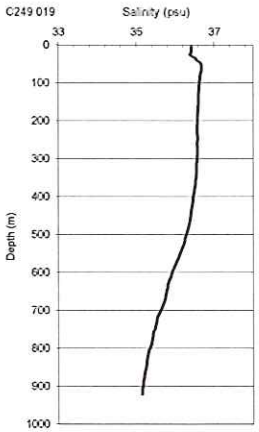


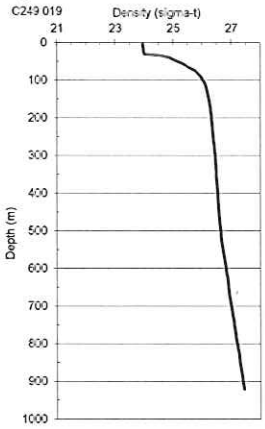


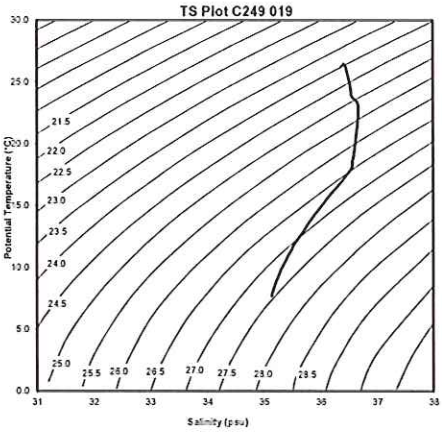
APPENDIX F. C249 CTD STATION PROFILES

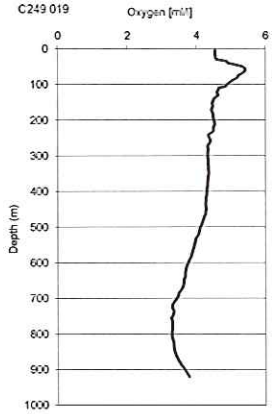
CTD 019 Southern Sargasso Sea 30°55.8' N 61°57.3' W

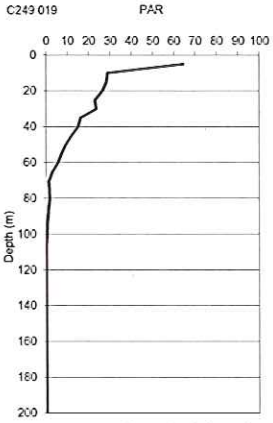


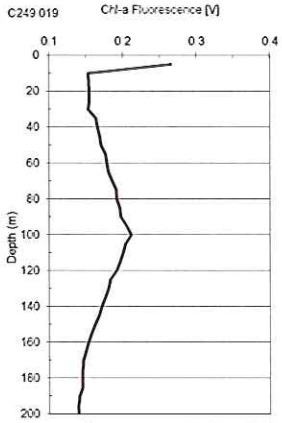




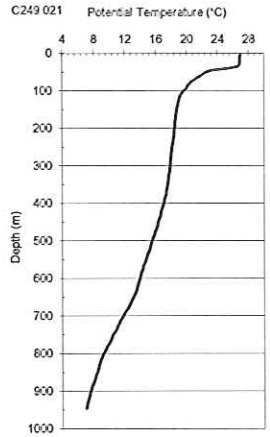


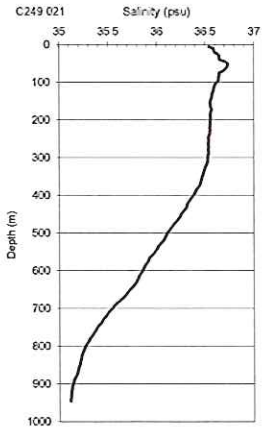


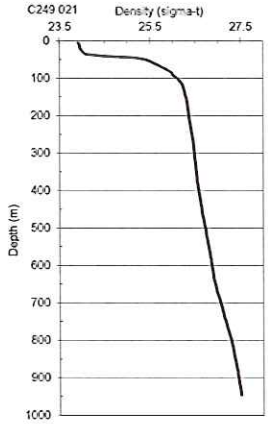


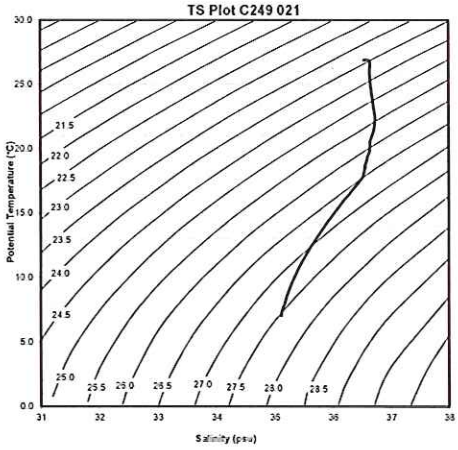


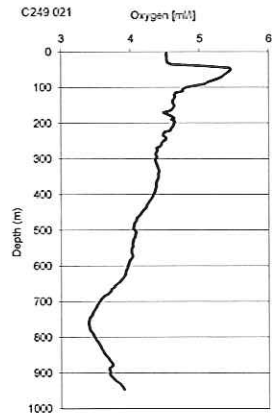
CTD 021 Southern Sargasso Sea 30°12.8' N 59°28.8' W

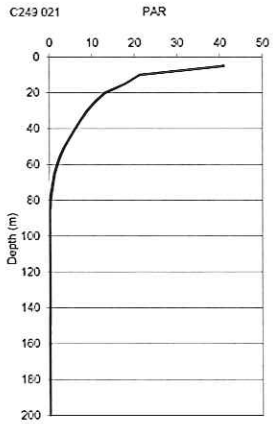


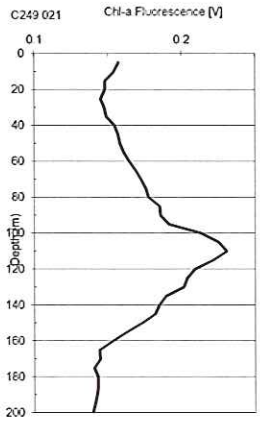


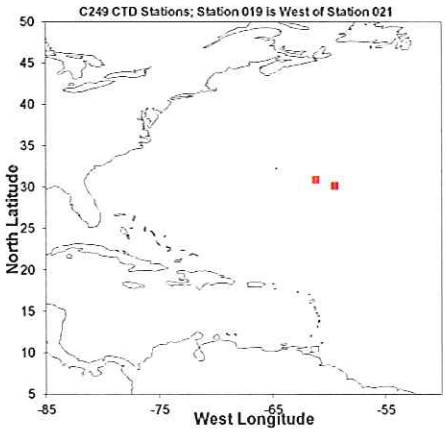






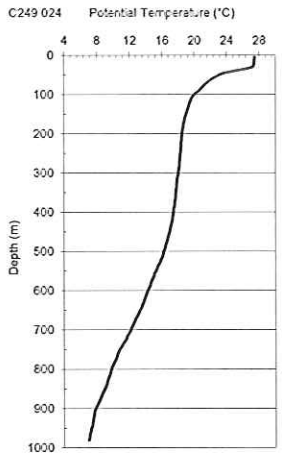


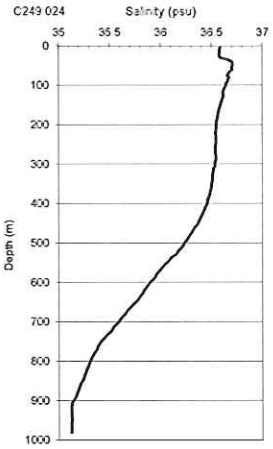


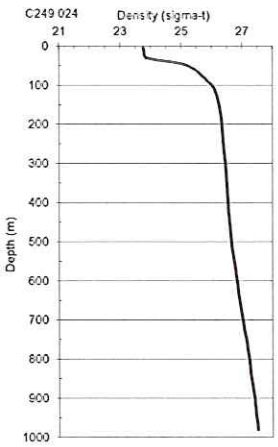


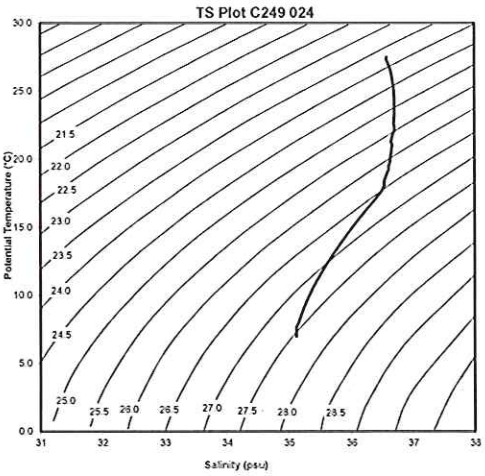
APPENDIX F. C249 CTD STATION PROFILES

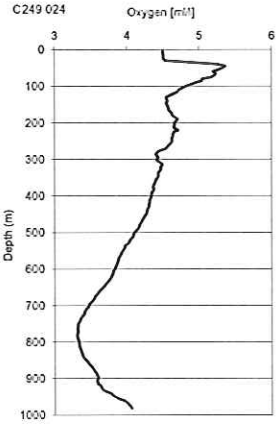
CTD 024 Southern Sargasso Sea 29°29.8' N 58°31.3' W

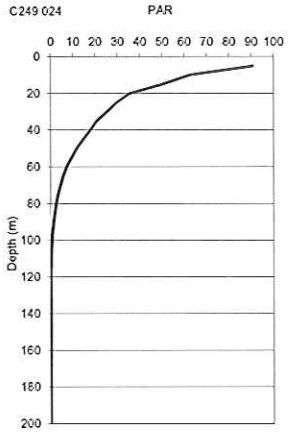


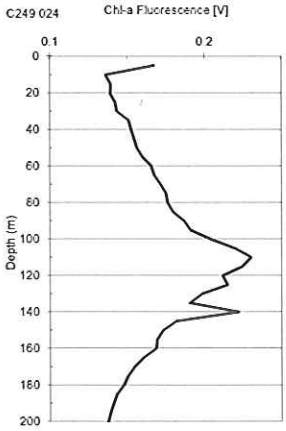




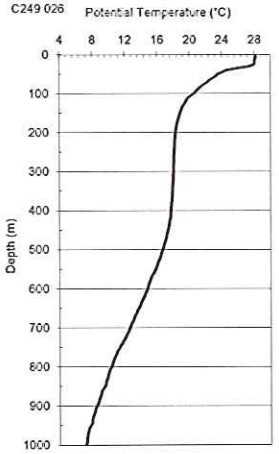


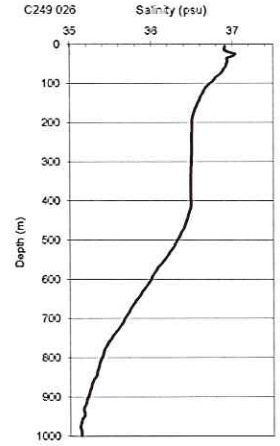


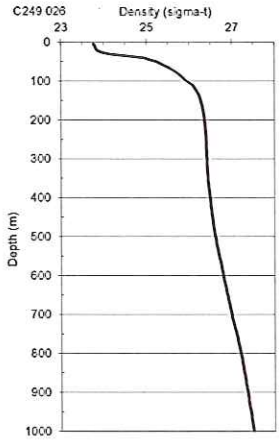


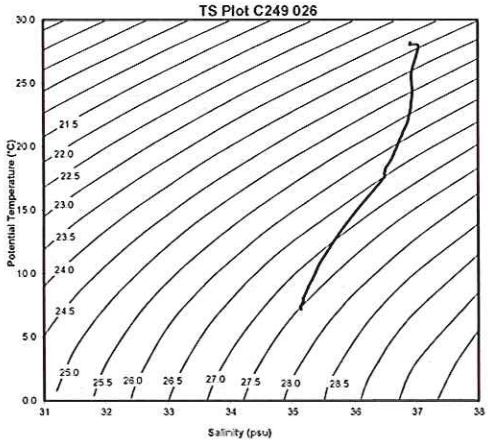


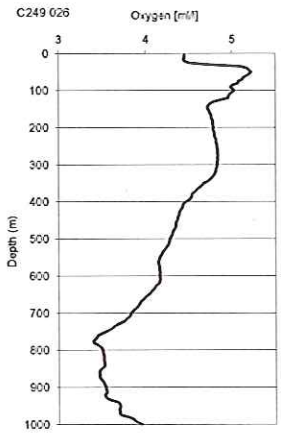
CTD 026 Southern Sargasso Sea 28°3.6' N 58°23.1' W

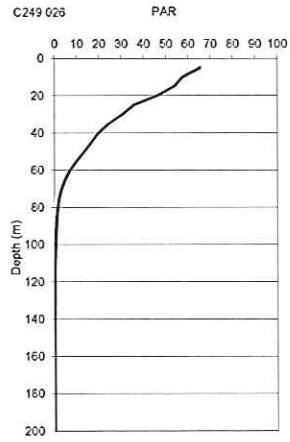


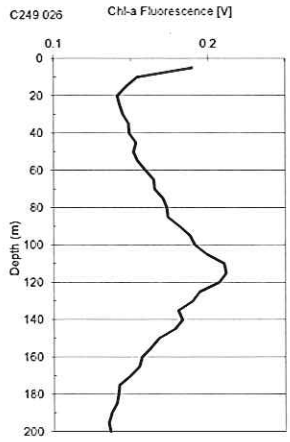


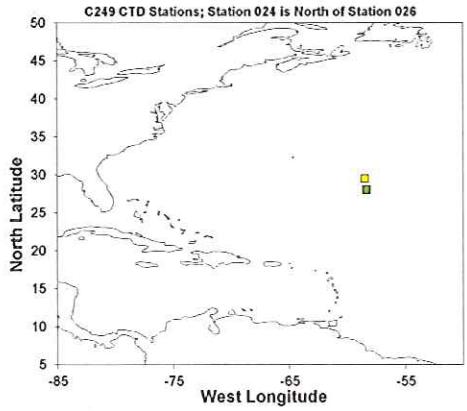






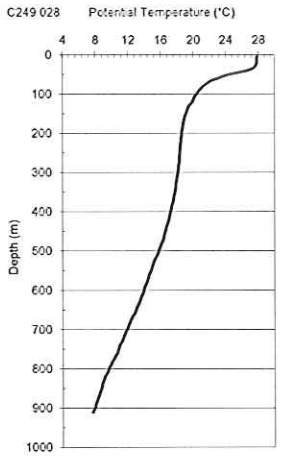


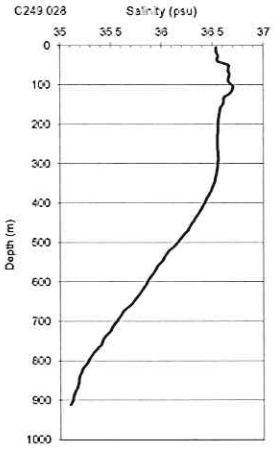


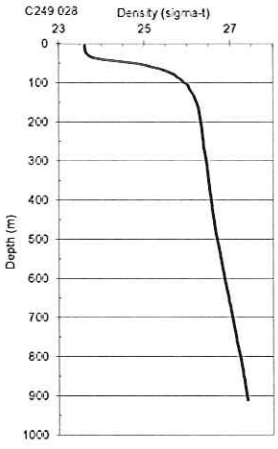


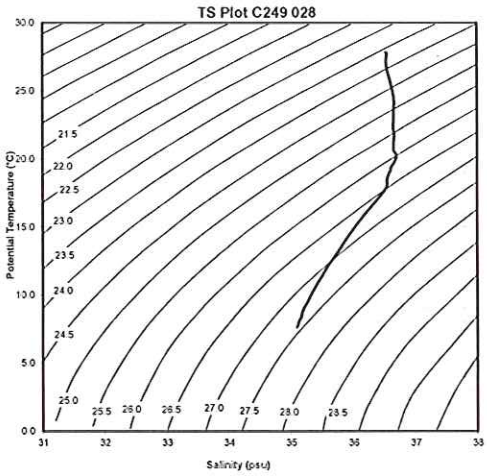
APPENDIX F. C249 CTD STATION PROFILES

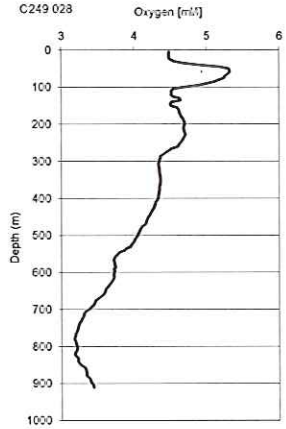
CTD 028 Southern Sargasso Sea 26°55.2' N 58°22.9' W

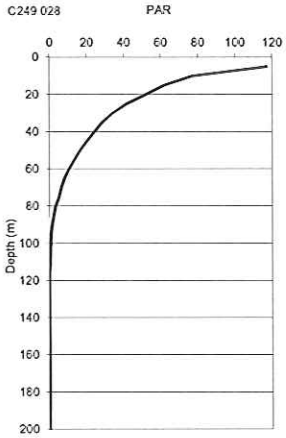


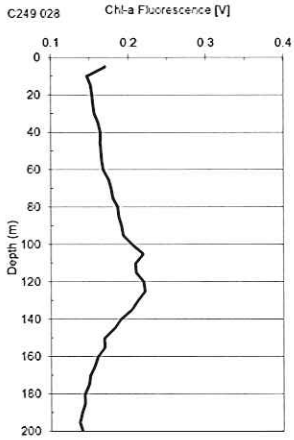




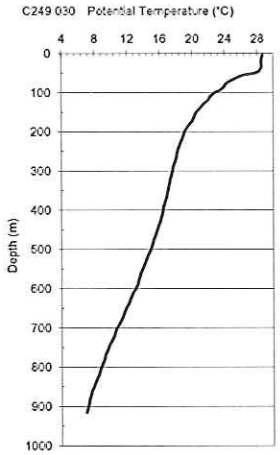


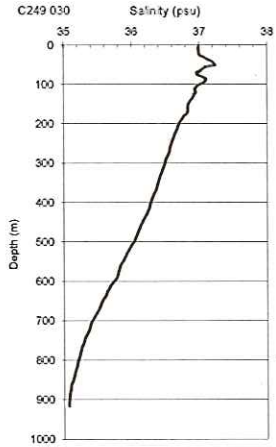


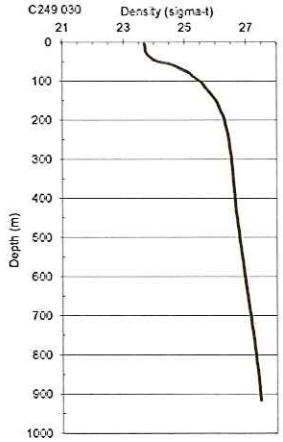


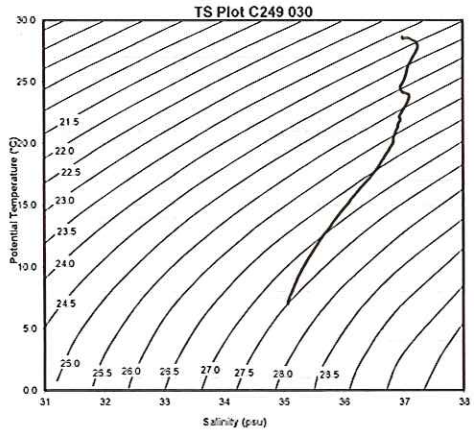


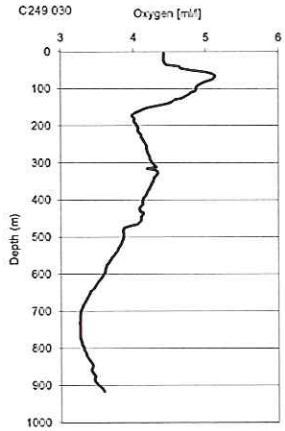
CTD 030 Southern Sargasso Sea 25°25.7' N 58°25.2' W

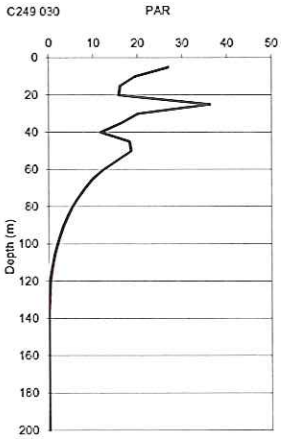


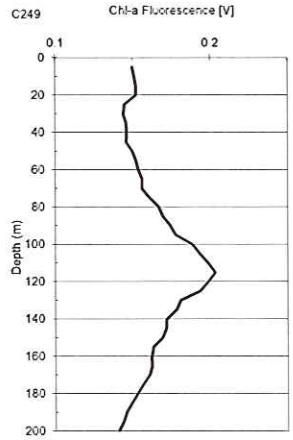


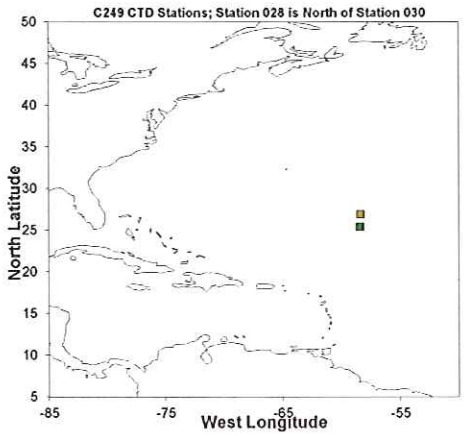






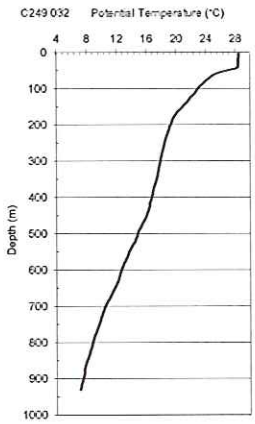


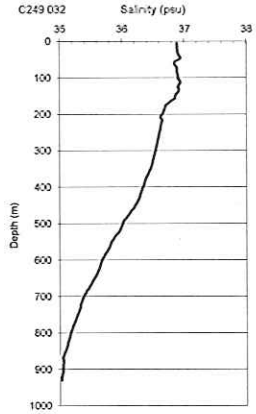


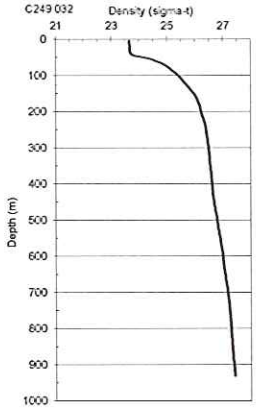


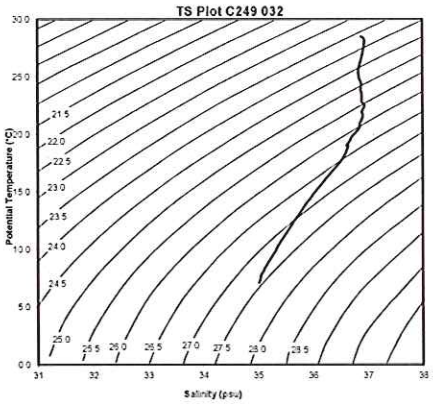
APPENDIX F. C249 CTD STATION PROFILES

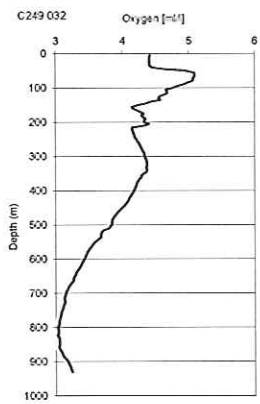
CTD 032 Subtropical-Tropical Transition Zone 23°43.2' N 58°28.5' W

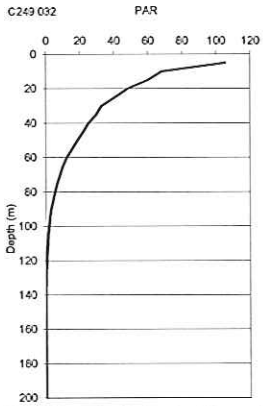


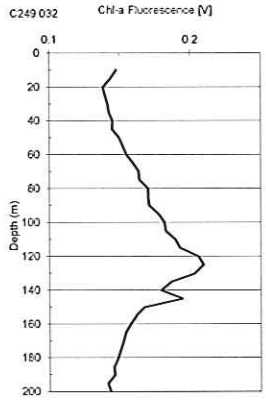




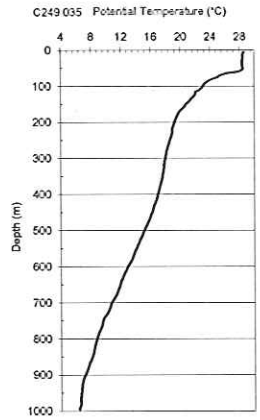


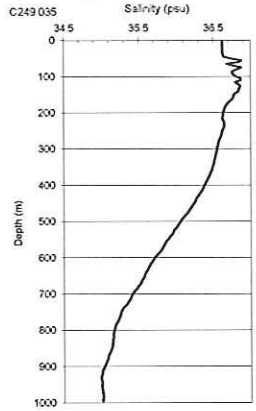


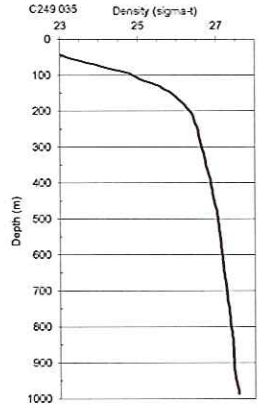


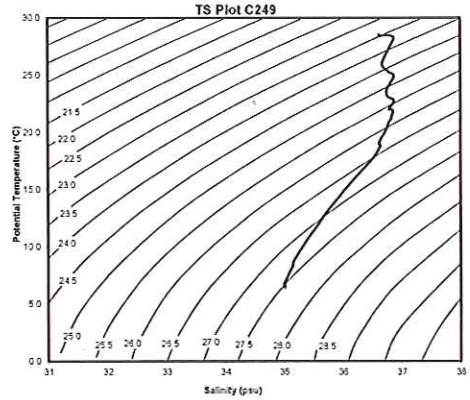


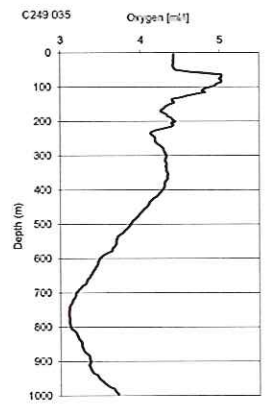
CTD 035 Subtropical-Tropical Transition Zone 22°46.3' N 58°40.8' W

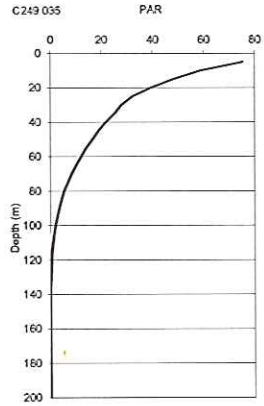


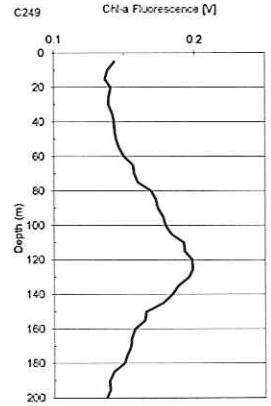


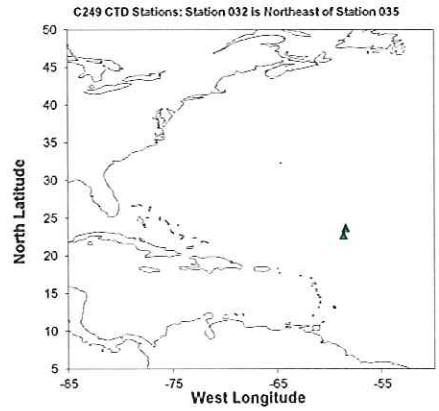






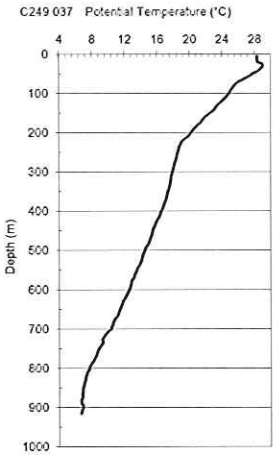


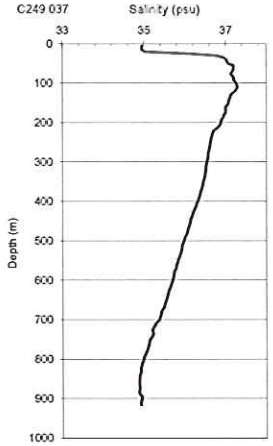


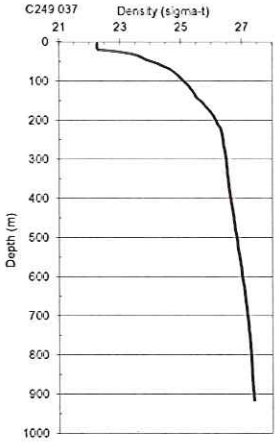


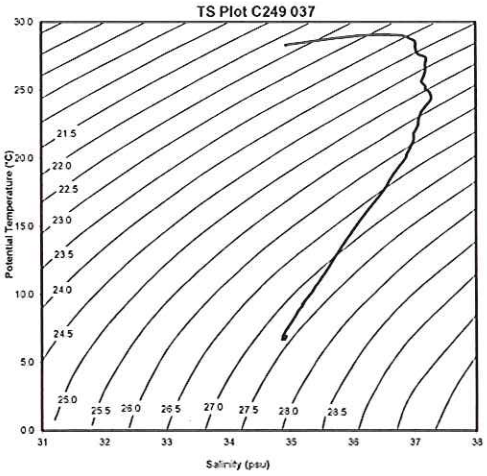
APPENDIX F. C249 CTD STATION PROFILES

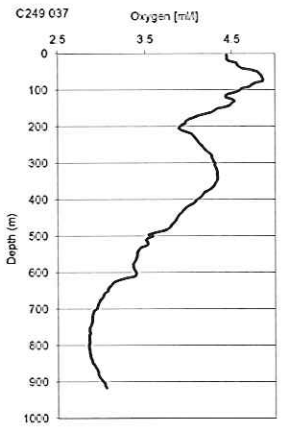
CTD 037 Subtropical-Tropical Transition Zone 20°56.6' N 58°44.5' W

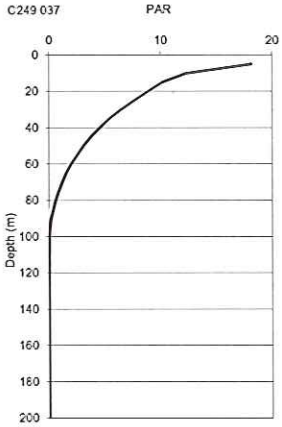


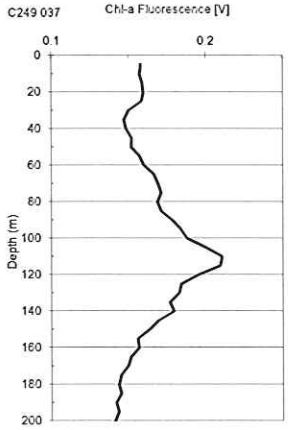




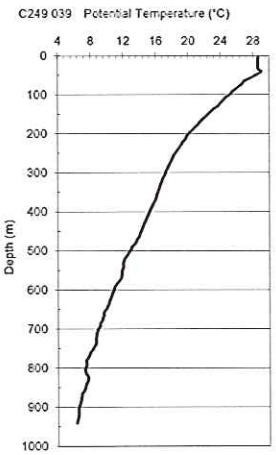


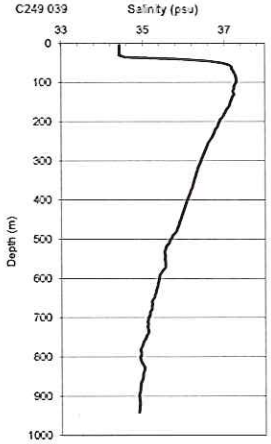


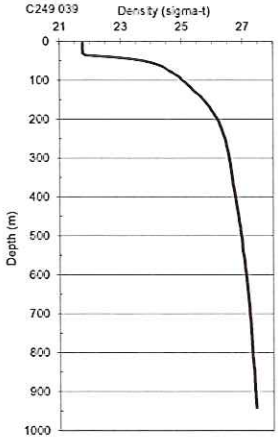


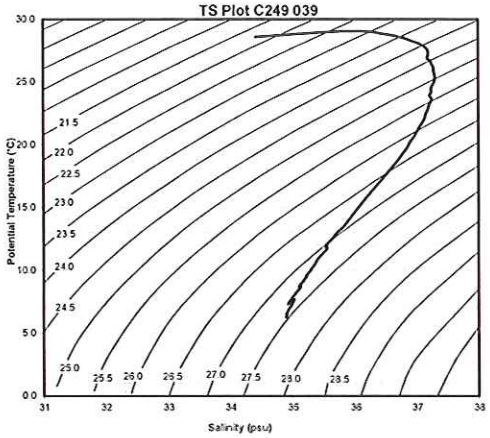


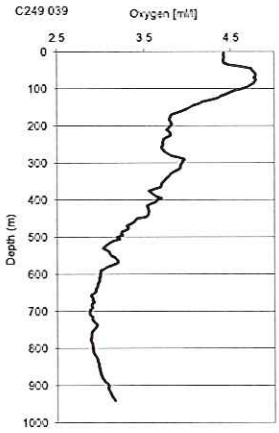
CTD 039 Subtropical-TropicalTransition Zone 19°16.8' N 58°25.6' W

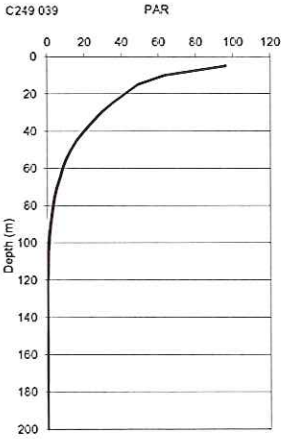


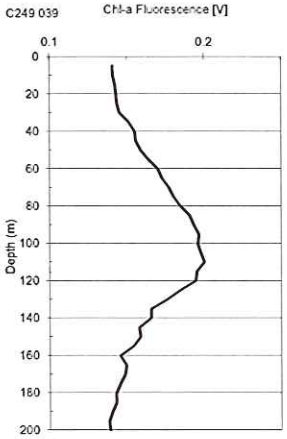


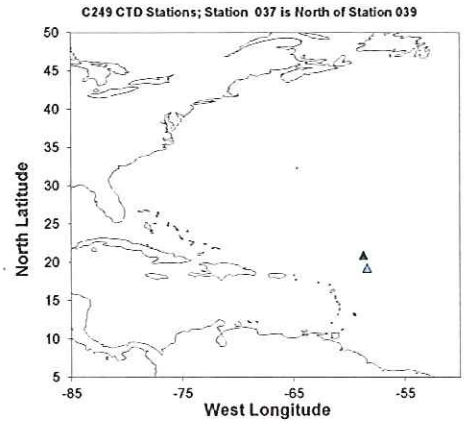






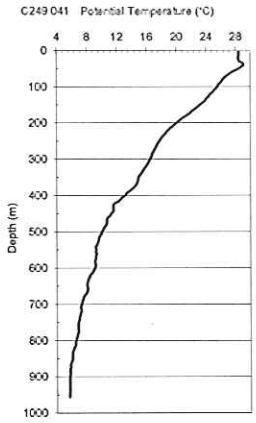


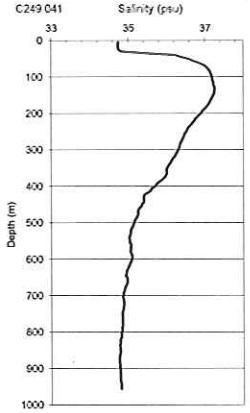


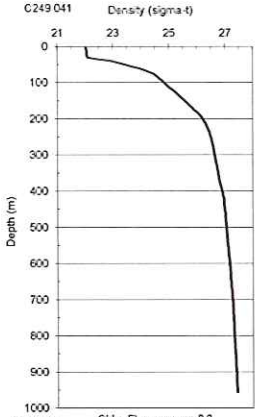


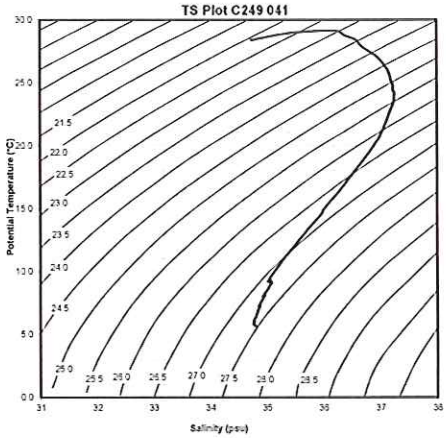
APPENDIX F. C249 CTD STATION PROFILES

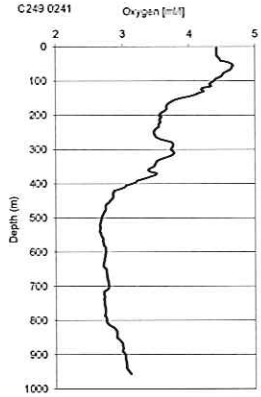
CTD 041 Subtropical-Tropical Transition Zone 17°42.2' N 58°24.1' W

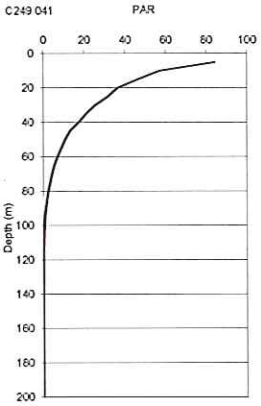


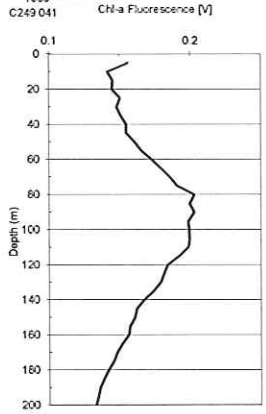




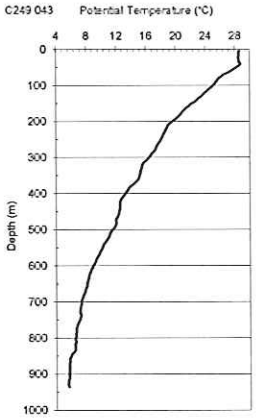


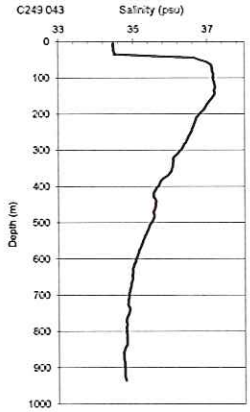


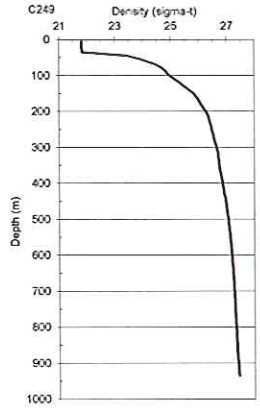


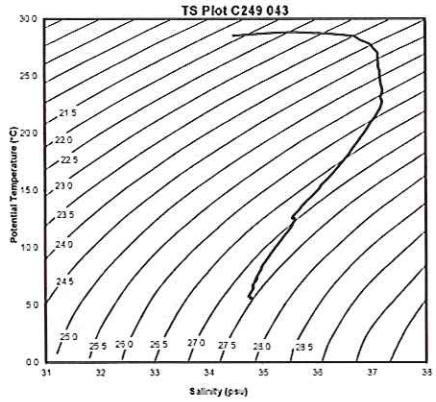


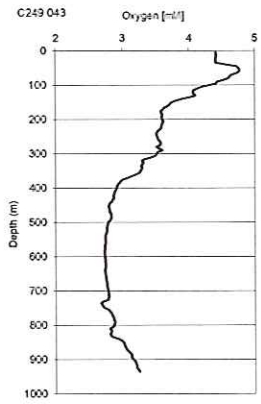
CTD 043 Tropical Water 16°23.2' N 58°33.4' W

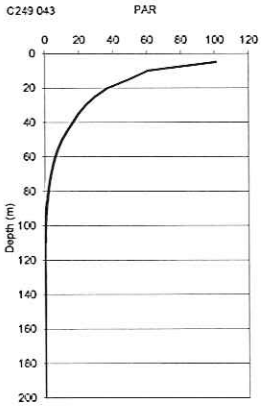


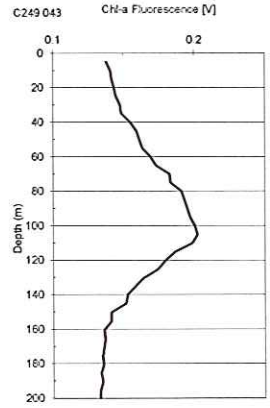


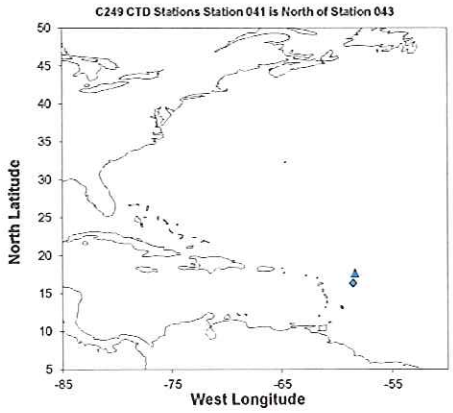






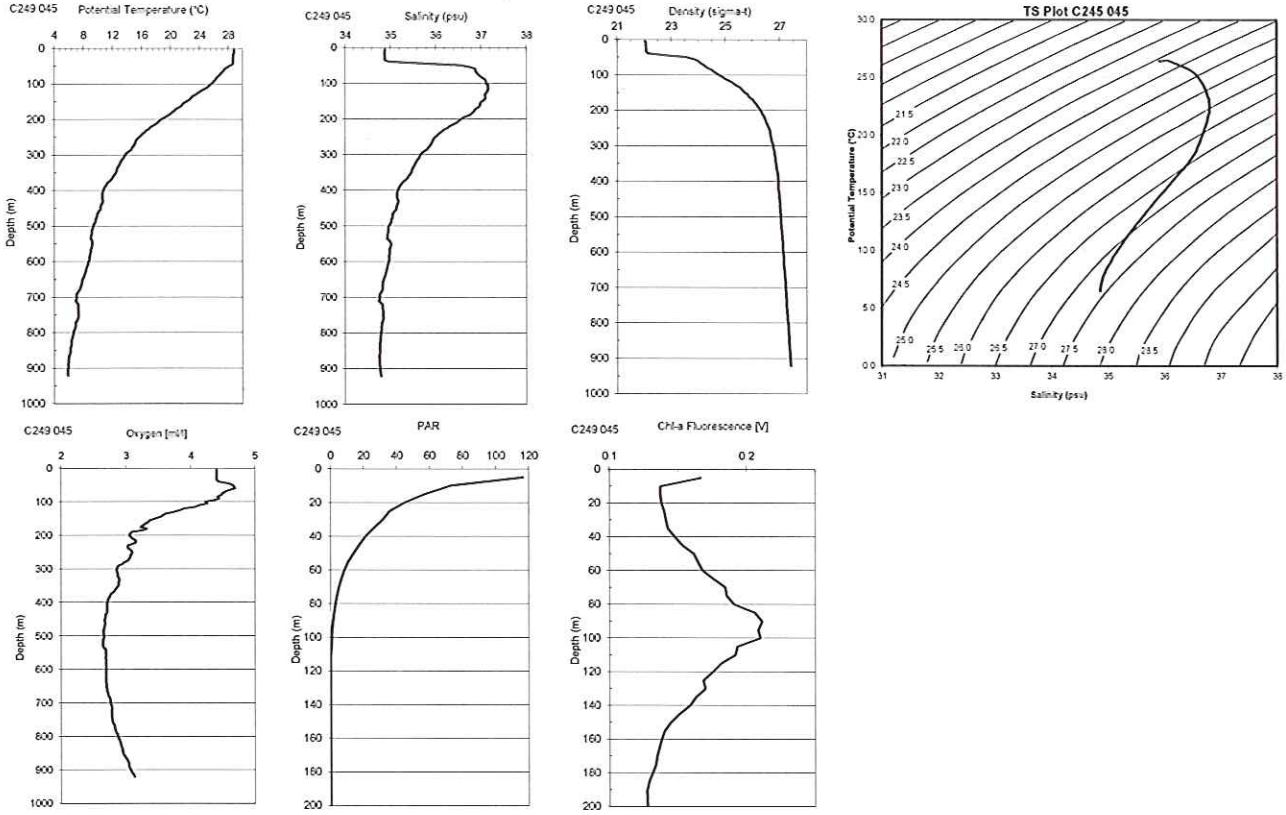




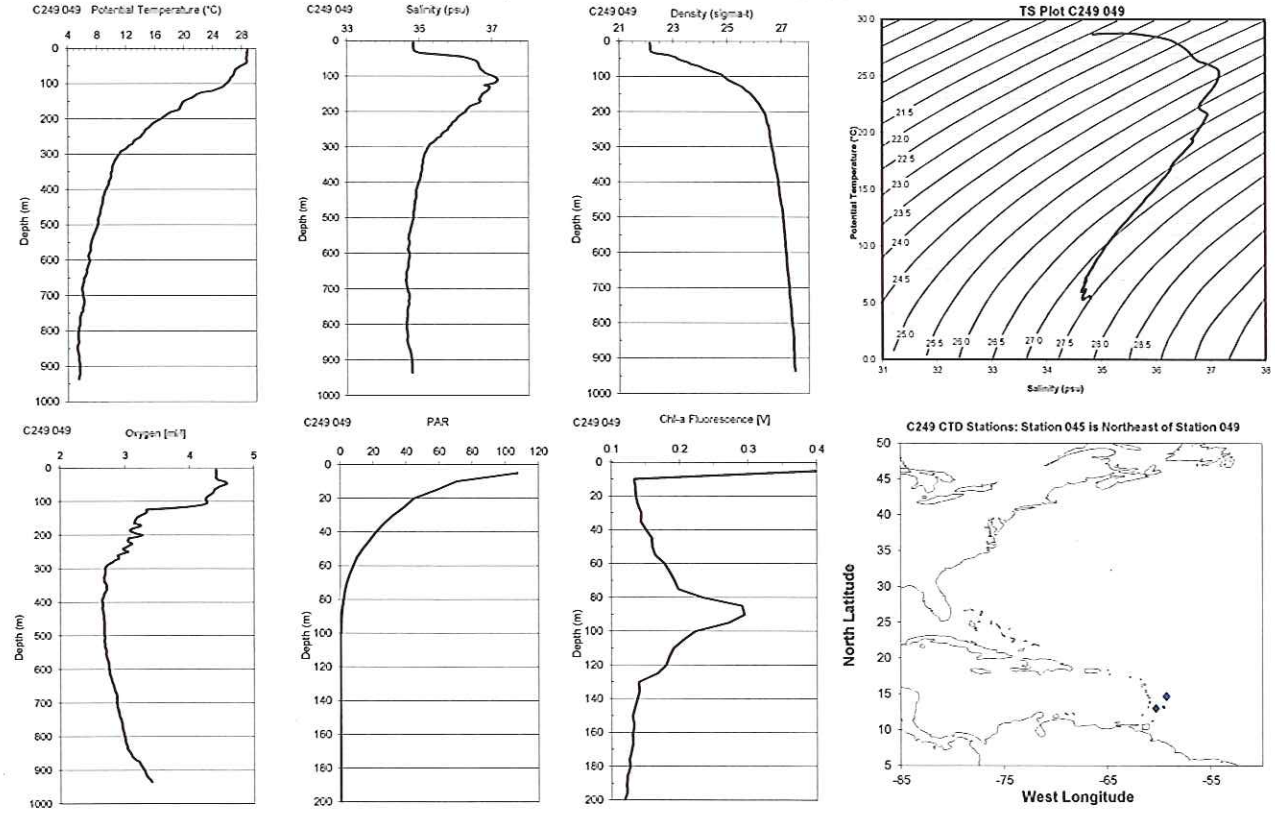


APPENDIX F. C249 CTD STATION PROFILES

CTD 045 Tropical Water 14°40.3' N 59°18.4' W

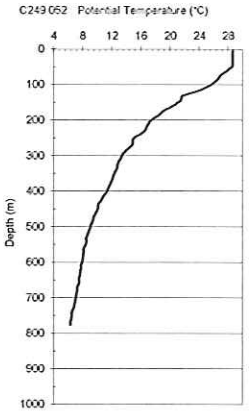


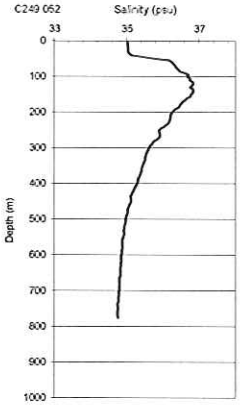
CTD 049 Tropical Water 12°59.9' N 60°19.0' W

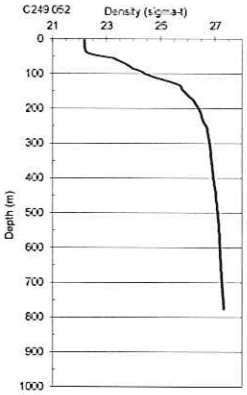


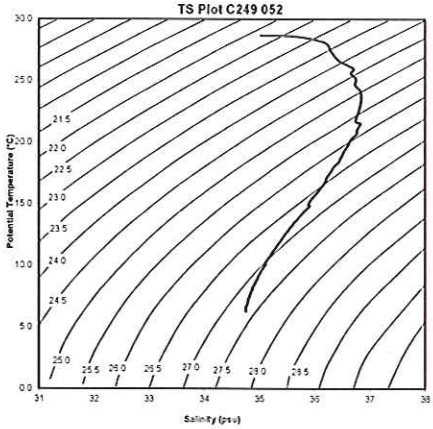
APPENDIX F. C249 CTD STATION PROFILES

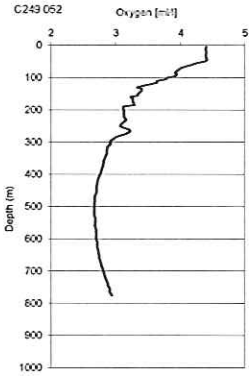
CTD 052 Tropical Water - West of The Lesser Antilles 14°23.2' N 61°43.2' W

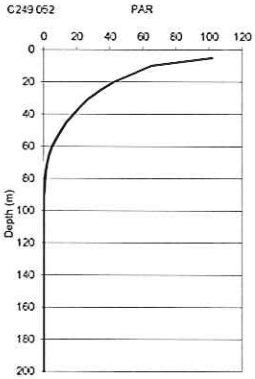


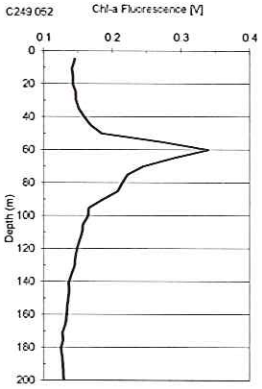




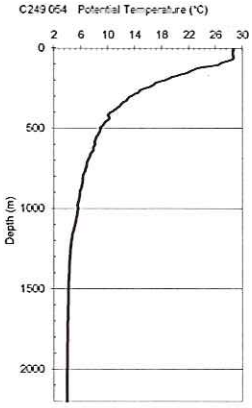


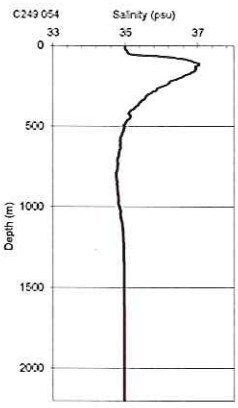


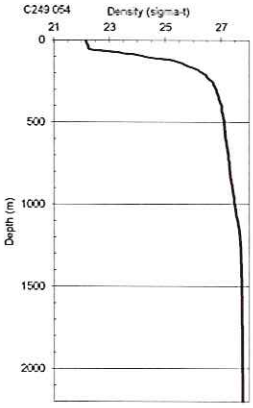


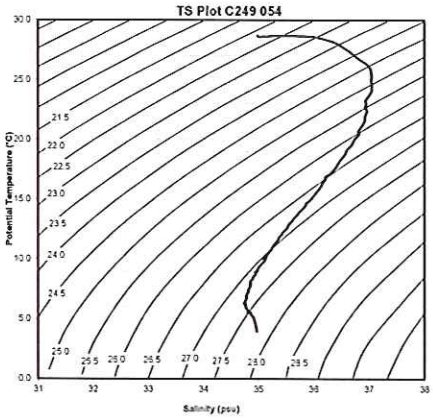


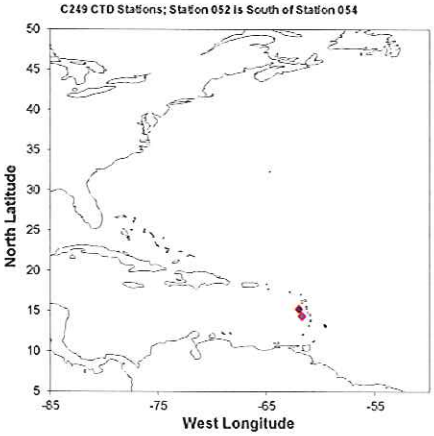
CTD 054 Tropical Water - West of the Lesser Antilles 15°15.5' N 61°59.7' W





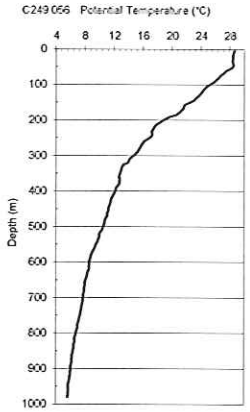


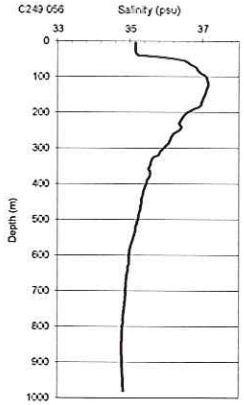


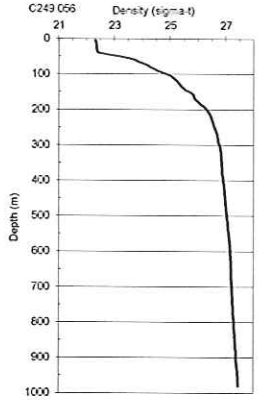


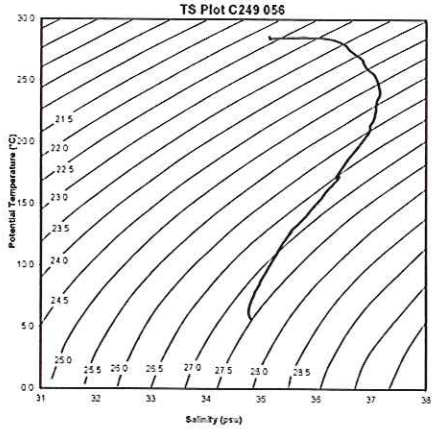
APPENDIX F. C249 CTD STATION PROFILES

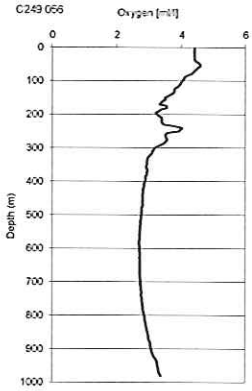
CTD 056 Tropical Water West of the Lesser Antilles 16°23.0' N 61°53.1' W

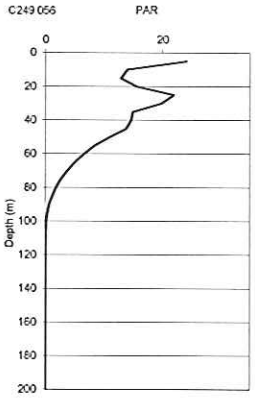


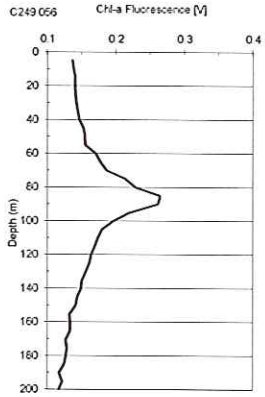




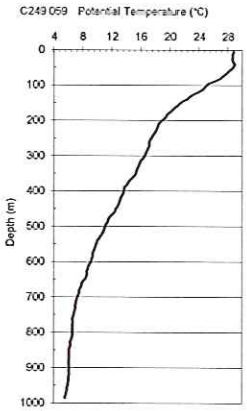


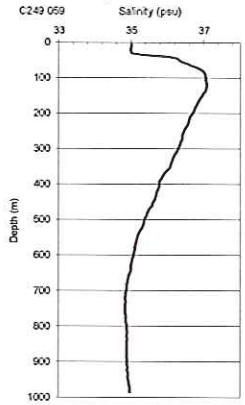


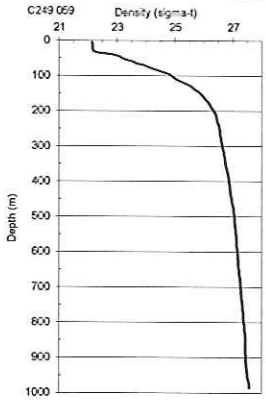


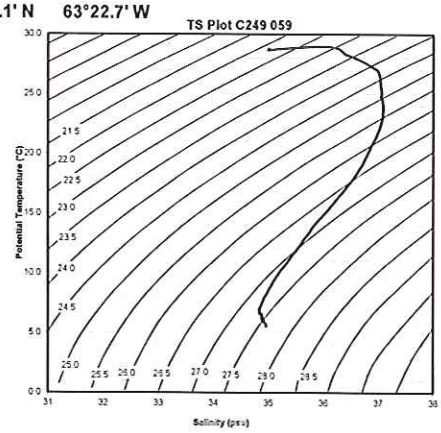


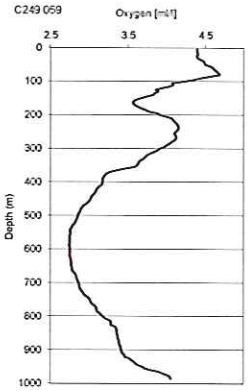
CTD 059 Tropical Water West of the Lesser Antilles 18°30.1' N 63°22.7' W

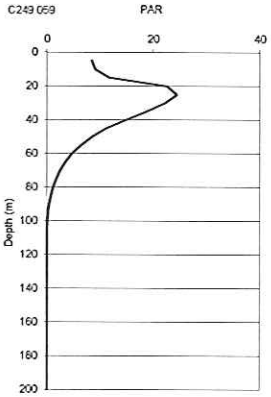


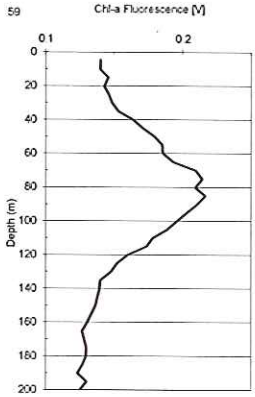


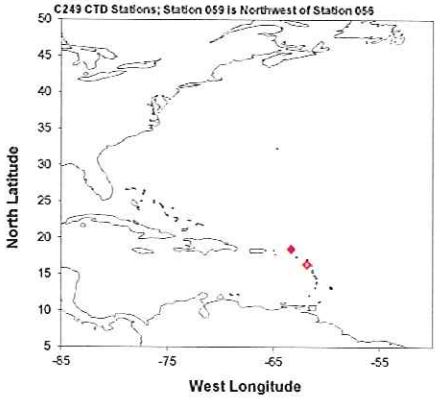












APPENDIX F C249 NET COLLECTIONS
C249 NEUSTON NET COLLECTIONS

STATION	DATE	TIME	LOG	LAT.	LONG.	GENERAL LOCALE	SURF. TEMP.	SURF.SAL.	SURF. CHLOR.	TOW DIST.	ZOOP. VOL	ZOOP. BIO-MASS	PLASTIC		TAR	*SARGASSUM*		PHYLLO-SOMA	LEPTO-CEPHALI	*HALO-BATES*
C249	2013	(local)	(nm)	(°N)	(°W)		(°C)	(v)	(PSU)	(m)	(ml)	ml/100m²	(Pellets)	(Pieces)	(pieces)	*natans* (g)	*fluitans* (g)			
001	15-Oct-13	0006	63.0	40°13.9' N	70°16.7' W	Shelf	23.0	35.29	1162.3	1863.6	50.1	0.0269	0	1	0	1000.5	2.0	0	0	0
002	15-Oct-13	1201	114.0	39°30.1' N	69°46.6' W	Slope Water / WC eddy	25.8	36.04	831.1	809.7	9.0	0.0111	0	1	0	4.5	0.0	0	0	0
003	16-Oct-13	1207	203.3	38°30.0' N	69°29.5' W	Slope Water	24.5	35.41	876.4	606.5	41.0	0.0676	0	0	0	1.0	0.0	0	0	0
004	17-Oct-13	0006	260.3	37°48.0' N	68°26.2' W	Gulf Stream	26.3	36.37	713.4	1884.8	4.0	0.0021	0	0	0	40.0	0.0	0	0	1
005	17-Oct-13	1215	302.1	37°17.8' N	67°37.1' W	N. Sargasso Sea	26.0	36.37	488.9	1783.7	4.0	0.0022	0	12	0	80.0	0.0	0	0	2
006	18-Oct-13	0031	335.7	36°45.4' N	66°47.1' W	N. Sargasso Sea	25.9	36.27	572.4	1497.5	4.0	0.0027	0	23	0	3032.0	0.0	0	10	4
007	18-Oct-13	1238	377.7	36°20.4' N	65°55.6' W	N. Sargasso Sea	26.1	36.20	608.0	2356.3	8.0	0.0034	0	5	0	215.0	370.0	0	0	0
009	19-Oct-13	0004	406.1	35°54.8' N	65°28.7' W	N. Sargasso Sea	25.8	36.24	727.4	1693.8	6.0	0.0035	0	3	0	20.0	17.0	0	5	6
010	19-Oct-13	1153	433.4	35°10.1' N	65°22.7' W	N. Sargasso Sea	25.7	36.12	592.0	2447.9	11.0	0.0045	0	46	0	194.0	929.0	0	0	0
011	20-Oct-13	0002	465.5	34°34.2' N	64°39.3' W	N. Sargasso Sea	25.9	36.15	560.0	1401.2	11.0	0.0079	0	3	0	120.0	25.0	0	3	10
012	20-Oct-13	1158	507.7	34°7.9' N	63°36.9' W	N. Sargasso Sea	26.1	36.16	482.7	1305.4	3.0	0.0023	0	5	0	0.0	18.0	0	0	0
013	21-Oct-13	0003	533.2	33°47.8' N	63°2.8' W	N. Sargasso Sea	25.9	36.17	547.3	1259.4	5.5	0.0044	1	3	0	10.0	70.0	0	2	2
014	21-Oct-13	1153	561.1	33°25.2' N	62°32.0' W	N. Sargasso Sea	26.1	36.20	466.5	809.5	4.0	0.0049	0	31	0	405.0	2.0	0	0	2
016	21-Oct-13	2359	603.5	32°28.0' N	62°32.2' W	N. Sargasso Sea	25.8	36.23	481.6	1845.9	7.0	0.0038	0	50	0	160.0	180.0	0	3	2
017	22-Oct-13	1200	657.9	31°32.3' N	62°33.8' W	S. Sargasso Sea	26.7	36.36	460.8	1686.1	11.0	0.0065	0	753	0	65.0	120.0	0	0	1
018	23-Oct-13	0009	694.0	31°13.8' N	61°57.3' W	S. Sargasso Sea	26.8	36.32	497.1	1764.7	9.0	0.0051	1	56	0	12.5	2.0	0	10	19
019	23-Oct-13	1156	734.8	30°57.8' N	61°11.4' W	S. Sargasso Sea	26.6	36.45	480.8	1462.4	1.8	0.0012	1	31	1	5.0	0.5	0	0	3
020	24-Oct-13	0000	782.2	30°31.7' N	60°16.4' W	S. Sargasso Sea	26.6	36.64	508.0	1452.1	4.0	0.0028	2	32	1	30.0	40.0	0	0	19
021	24-Oct-13	1209	823.4	30°14.0' N	59°28.1' W	S. Sargasso Sea	27.1	36.50	529.9	1476.6	4.0	0.0027	0	32	0	0.5	1.0	0	0	3
023	25-Oct-13	0008	858.5	29°58.6' N	58°49.8' W	S. Sargasso Sea	27.1	36.60	513.0	1805.2	6.5	0.0036	2	37	0	0.0	2.0	0	1	16
024	25-Oct-13	1144	892.2	29°30.9' N	58°30.0' W	S. Sargasso Sea	27.8	36.69	472.8	1994.1	3.0	0.0015	0	100	0	10.0	10.0	0	0	3
025	26-Oct-13	0107	939.0	28°48.0' N	58°23.7' W	S. Sargasso Sea	28.0	36.87	505.5	1007.1	3.0	0.0030	0	336	4	0.0	451.0	0	0	2
026	26-Oct-13	1151	974.8	28°3.9' N	58°23.3' W	S. Sargasso Sea	28.5	36.93	489.0	1578.1	13.0	0.0082	0	1507	0	0.0	78.0	0	0	0
027	27-Oct-13	0000	1019.8	27°12.7' N	58°16.4' W	S. Sargasso Sea	28.0	36.59	509.5	950.4	5.0	0.0053	0	93	0	0.0	130.0	0	0	0
028	27-Oct-13	1214	1036.2	26°56.0' N	58°24.6' W	S. Sargasso Sea	28.0	36.56	470.3	1825.7	4.0	0.0022	0	47	0	25.0	110.0	0	0	0
029	28-Oct-13	0007	1088.0	26°14.9' N	58°28.9' W	S. Sargasso Sea	27.9	36.62	521.1	1074.5	5.0	0.0047	1	57	0	1.0	39.0	0	0	4
030	28-Oct-13	1211	1125.2	25°25.2' N	58°27.0' W	S. Sargasso Sea	28.8	37.03	479.9	1380.9	2.4	0.0017	0	9	0	0.0	0.0	0	0	0
031	29-Oct-13	0011	1169.1	24°35.6' N	58°28.7' W	S. Sargasso Sea	28.5	36.86	546.6	1881.6	7.5	0.0040	0	15	0	0.0	151.0	0	0	4
032	29-Oct-13	1144	1214.5	23°42.7' N	58°30.6' W	Transition Zone	28.7	36.91	460.9	1686.4	1.0	0.0006	0	66	0	0.0	80.0	0	0	1
034	30-Oct-13	0003	1253.9	22°56.8' N	58°28.9' W	Transition Zone	28.5	36.59	498.2	497.0	2.5	0.0050	0	1	0	0.0	0.0	0	0	0
035	30-Oct-13	1211	1264.1	22°46.2' N	58°41.2' W	Transition Zone	28.7	36.60	457.9	1219.4	3.0	0.0025	0	260	0	22.0	55.0	0	0	0
036	31-Oct-13	0000	1310.3	21°57.8' N	58°37.8' W	Transition Zone	28.6	34.50	548.8	2208.7	4.0	0.0018	1	18	0	0.0	30.0	2	0	25
037	31-Oct-13	1144	1362.0	20°55.7' N	58°46.5' W	Transition Zone	28.4	34.97	585.8	2939.3	1.5	0.0005	1	2	0	0.0	50.0	0	0	7
038	1-Nov-13	0037	1417.6	19°57.7' N	58°37.0' W	Transition Zone	28.4	34.88	577.8	1966.3	17.0	0.0086	0	1	0	0.0	0.0	0	0	37
039	1-Nov-13	1143	1467.4	19°16.8' N	58°27.1' W	Transition Zone	28.8	34.45	557.8	1582.6	1.0	0.0006	0	1	0	0.0	0.0	0	0	43
040	2-Nov-13	0002	1500.9	18°30.2' N	58°35.2' W	Transition Zone	28.6	34.58	642.5	1581.6	6.7	0.0042	0	1	0	0.0	0.0	3	0	13
041	2-Nov-13	1155	1545.3	17°41.3' N	58°27.1' W	Transition Zone	28.6	34.77	569.0	2384.1	1.0	0.0004	0	0	0	0.0	0.0	0	0	13
042	3-Nov-13	0009	1595.5	16°51.2' N	58°33.8' W	Transition Zone	28.5	34.65	621.0	2010.3	8.0	0.0040	0	3	0	0.0	0.0	2	0	24
043	3-Nov-13	1013	1624.2	16°22.6' N	58°37.5' W	Tropics	28.7	34.50	532.8	1803.6	0.8	0.0004	0	0	0	0.0	0.0	0	0	10
044	4-Nov-13	0055	HB	15°27.4' N	59°0.1' W	Tropics	28.7	34.64	621.9	2200.4	7.8	0.0035	0	0	0	0.0	0.0	0	0	57
045	4-Nov-13	1202	1726.2	14°39.7' N	59°20.0' W	Tropics	28.9	34.90	542.5	1642.1	1.0	0.0006	0	12	0	0.0	0.0	0	0	14
046	5-Nov-13	0006	1774.4	13°47.2' N	59°36.1' W	Tropics	28.9	35.22	619.2	1735.3	22.0	0.0127	0	2	0	0.0	0.0	0	1	24
048	6-Nov-13	0017	1833.2	12°55.6' N	59°58.4' W	Tropics	28.8	34.83	713.8	1843.6	22.0	0.0119	0	0	0	0.0	0.0	0	0	21
049	6-Nov-13	1137	1865.2	12°59.5' N	60°21.7' W	Tropics	29.0	34.89	NA	2222.3	10.5	0.0047	0	0	0	0.0	0.0	0	0	6
050	7-Nov-13	0028	1897.2	13°8.7' N	60°44.8' W	Tropics	28.9	34.91	748.3	1678.1	25.0	0.0149	0	0	0	0.0	0.0	1	3	16

APPENDIX F (cont.) C249 NET COLLECTIONS
C249 METER NET AND 2-METER NET COLLECTIONS

COLLECTION C249	DATE	TIME (local)	LOG (NM)	LAT. (°N)	LONG. (°W)	GENERAL LOCALE	NET TYPE	TOW TYPE	MESH SIZE (μ)	DEPTH (m)	TOW VOL. (m^3)	ZOOP. VOL. (ml)	ZOOPL. DEN. (ml/100m^3)
002-MN	10/15/13	11:32	114.4	39°29.8' N	69°46.1' W	Slope Water	meter net	vertical	200	0-50	286	-	-
003-MN	10/16/13	11:30	202.6	38°30.2' N	69°29.1' W	Slope Water	meter net	vertical	200	0-50	283	-	-
005-MNA	10/17/13	10:06	302.1	37°16.6' N	67°38.7' W	N. Sargasso Sea	meter net	vertical	200	0-50	83	-	-
005-MNB	10/17/13	10:14	302.1	37°16.7' N	67°38.6' W	N. Sargasso Sea	meter net	vertical	200	0-50	342	-	-
007-MNA	10/18/13	10:09	377	36°16.6' N	65°58.2' W	N. Sargasso Sea	meter net	vertical	200	0-50	108	-	-
007-MNB	10/18/13	10:17	377	36°16.8' N	65°58.1' W	N. Sargasso Sea	meter net	vertical	200	0-50	258	-	-
008-MN	10/18/13	20:58	397.5	36°3.7' N	65°31.4' W	N. Sargasso Sea	meter net	stepped oblique	333	0-100	1345	35	2.60
010-MNA	10/19/13	9:53	431.4	35°13.2' N	65°24.2' W	N. Sargasso Sea	meter net	vertical	200	0-50	72	-	-
010-MNB	10/19/13	9:58	431.5	35°13.1' N	65°24.2' W	N. Sargasso Sea	meter net	vertical	200	0-50	191	-	-
012-MNA	10/20/13	10:07	507.2	34°6.1' N	63°37.8' W	N. Sargasso Sea	meter net	vertical	200	0-50	111	-	-
012-MNB	10/20/13	10:12	507.2	34°6.2' N	63°37.7' W	N. Sargasso Sea	meter net	vertical	200	0-50	379	-	-
014-MNA	10/21/13	10:15	561.4	33°24.5' N	62°33.4' W	N. Sargasso Sea	meter net	vertical	200	0-50	90	-	-
014-MNB	10/21/13	10:19	561.4	33°24.5' N	62°33.3' W	N. Sargasso Sea	meter net	vertical	200	0-50	252	-	-
015-2MN	10/21/13	20:44	591.6	32°44.2' N	62°31.5' W	N. Sargasso Sea	2 meter net	stepped oblique	1000	0-113	2963	37	1.25
015-MN	10/21/13	20:46	591.6	32°44.2' N	62°31.5' W	N. Sargasso Sea	meter net	stepped oblique	333	0-100	1280	42	3.28
017-MNA	10/22/13	10:10	657.5	31°30.7' N	62°32.9' W	S. Sargasso	meter net	vertical	200	0-50	73	-	-
017-MNB	10/22/13	10:17	657.5	31°30.9' N	62°32.9' W	S. Sargasso	meter net	vertical	200	0-50	239	-	-
019-MNA	10/23/13	10:14	734.5	30°56.1' N	61°11.6' W	S. Sargasso	meter net	vertical	200	0-50	85	-	-
019-MNB	10/23/13	10:21	734.5	30°56.2' N	61°11.6' W	S. Sargasso	meter net	vertical	200	0-50	234	-	-
021-MNA	10/24/13	10:10	823.1	30°12.2' N	59°28.1' W	S. Sargasso	meter net	vertical	200	0-50	95	-	-
021-MNB	10/24/13	10:21	823.1	30°12.3' N	59°29.0' W	S. Sargasso	meter net	vertical	200	0-78	360	-	-
022-2MN	10/24/13	20:38	849.8	30°3.1' N	58°54.9' W	S. Sargasso	2 meter net	stepped oblique	1000	0-82	4568	64	1.40
022-MN	10/24/13	20:42	849.8	30°3.0' N	58°54.9' W	S. Sargasso	meter net	stepped oblique	333	0-70	1284	39	3.04
024-MNA	10/25/13	9:55	892	29°29.3' N	58°31.6' W	S. Sargasso	meter net	vertical	200	0-50	89	-	-
024-MNB	10/25/13	10:02	892.2	29°29.5' N	58°31.5' W	S. Sargasso	meter net	vertical	200	0-50	243	-	-
026-MNA	10/26/13	10:15	974.4	28°3.5' N	58°23.0' W	S. Sargasso	meter net	vertical	200	0-50	82	-	-
026-MNB	10/26/13	10:21	974.4	28°3.5' N	58°23.0' W	S. Sargasso	meter net	vertical	200	0-50	169	-	-
028-MNA	10/27/13	10:19	1034.6	26°54.6' N	58°22.4' W	S. Sargasso	meter net	vertical	200	0-50	127	-	-
028-MNA	10/27/13	10:28	1034.7	26°54.8' N	58°22.6' W	S. Sargasso	meter net	vertical	200	0-50	246	-	-
030-MNA	10/28/13	10:13	1125.1	25°25.7' N	58°24.4' W	S. Sargasso	meter net	vertical	200	0-50	128	-	-
030-MNB	10/28/13	10:22	1125.1	25°25.7' N	58°24.7' W	S. Sargasso	meter net	vertical	200	0-50	213	-	-
032-MNA	10/29/13	10:09	1214.4	23°43.2' N	58°28.7' W	Transition Zone	meter net	vertical	200	0-50	115	-	-
032-MNB	10/29/13	10:15	1214.4	23°43.1' N	58°28.9' W	Transition Zone	meter net	vertical	200	0-50	224	-	-
033-2MN	10/29/13	20:38	1241.6	23°9.9' N	58°31.1' W	Transition Zone	2 meter net	stepped oblique	1000	130	3664	31	0.85
033-MN	10/29/13	20:42	1241.6	23°9.9' N	58°31.1' W	Transition Zone	meter net	stepped oblique	333	120	1084	17	1.57
035-MNA	10/30/13	10:24	1263.8	22°46.4' N	58°40.3' W	Transition Zone	meter net	vertical	200	0-50	98	-	-
035-MNB	10/30/13	10:31	1263.8	22°46.4' N	58°40.3' W	Transition Zone	meter net	vertical	200	0-50	208	-	-
037-MNA	10/31/13	9:52	1361.6	20°57.0' N	58°43.6' W	Transition Zone	meter net	vertical	200	0-50	108	-	-
037-MNB	10/31/13	10:00	1361.6	20°56.9' N	58°43.8' W	Transition Zone	meter net	vertical	200	0-50	267	-	-
039-MNA	11/1/13	10:05	1456.9	19°16.8' N	58°25.7' W	Transition Zone	meter net	vertical	200	0-50	104	-	-
039-MNB	11/1/13	10:12	1456.8	19°16.8' N	58°25.8' W	Transition Zone	meter net	vertical	200	0-50	280	-	-
041-MNA	11/2/13	10:00	1544.5	17°42.1' N	58°24.2' W	Transition Zone	meter net	vertical	200	0-50	107	-	-
041-MNB	11/2/13	10:07	1544.6	17°42.1' N	58°24.4' W	Transition Zone	meter net	vertical	200	0-50	260	-	-
043-MNA	11/3/13	8:08	1623.7	16°23.1' N	58°35.4' W	Tropics	meter net	vertical	200	0-50	110	-	-
043-MNB	11/3/13	8:15	1623.7	16°23.1' N	58°35.5' W	Tropics	meter net	vertical	200	0-50	223	-	-
045-MNA	11/4/13	10:14	1726.1	14°40.3' N	59°18.6' W	Tropics	meter net	vertical	200	0-50	91	-	-
045-MNB	11/4/13	10:19	1726	14°40.3' N	59°18.7' W	Tropics	meter net	vertical	200	0-50	213	-	-
047-MN	11/5/13	21:13	1825.3	13°0.6' N	59°50.8' W	Tropics	meter net	stepped oblique	333	0-80	1411	95	6.73

C249 PHYTOPLANKTON NET COLLECTIONS

STATION C249	DATE	TIME (local)	LOG (NM)	LAT. (°N)	LONG. (°W)	GENERAL LOCALE	SURF.TEMP. °C	SURF.SALINITY PSU	CHLOR. *In situ* fluor. (volts)
005	10/17/13	10:31	302.1	37°16.8' N	67°38.4' W	N. Sargasso Sea	25.9	36.38	533.2
007	10/18/13	11:09	377	36°18.2' N	65°56.9' W	N. Sargasso Sea	26.0	36.19	657.8
010	10/19/13	10:11	431.5	35°12.9' N	65°24.2' W	N. Sargasso Sea	25.6	36.16	526.6
012	10/20/13	10:28	507.3	34°6.5' N	63°37.6' W	N. Sargasso Sea	26.1	36.14	484.3
014	10/21/13	10:30	561.3	33°24.7' N	62°33.1' W	N. Sargasso Sea	26	36.20	502.3
017	10/22/13	10:30	657.5	31°31.0' N	62°32.9' W	S. Sargasso	26.7	36.39	469.4
019	10/23/13	10:31	734.5	30°56.4' N	61°11.6' W	S. Sargasso	26.6	36.45	494.8
021	10/24/13	10:38	823.1	30°12.6' N	59°28.9' W	S. Sargasso	27.1	36.70	530.1
024	10/25/13	10:22	892.1	29°29.7' N	58°31.4' W	S. Sargasso	27.6	36.59	493.4
026	10/26/13	10:33	974.4	28°3.5' N	58°23.1' W	S. Sargasso	28.4	36.94	526.8
028	10/27/13	10:40	1034.7	26°55.0' N	58°22.7' W	S. Sargasso	27.9	36.50	481.0
030	10/28/13	10:31	1125.1	25°25.7' N	58°24.8' W	S. Sargasso	28.8	36.99	483.0
032	10/29/13	10:26	1214.5	23°43.0' N	58°29.1' W	Transition Zone	28.6	36.82	481.3
035	10/30/13	10:16	1263.7	22°46.4' N	58°40.2' W	Transition Zone	28.6	36.70	462.4
037	10/31/13	10:13	1361.6	20°56.8' N	58°44.1' W	Transition Zone	28.4	34.97	563.7
041	11/2/13	10:19	1544.4	17°42.1' N	58°24.7' W	Transition Zone	28.6	34.73	558.2
043	11/3/13	8:27	1623.7	16°23.7' N	58°35.7' W	Tropics	28.7	34.57	557.2
045	11/4/13	10:30	1726.1	14°40.3' N	59°18.8' W	Tropics	28.9	34.80	547.7