



Final Cruise Report

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Project:	Western Boundary Current Time Series
Cruise dates:	14 FEBRUARY - 27 FEBRUARY 2015
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Working Area:	Atlantic Ocean, Florida Straits & East of the Bahamas
Itinerary:	Depart: San Juan, Puerto Rico
	Arrive: Fort Lauderdale, Florida

Brief description of scientific objectives and results: This report summarizes the February 14 - February 27, 2015 cruise on the UNOLS ship R/V Endeavor involving full-water-column CTD and lowered ADCP profiles, along with shipboard ADCP profiles, conducted within the Northwest Providence Channel, Florida Straits, and east of Abaco Island, Bahamas. At each station, a package consisting of a Seabird Electronics Model 9/11+ CTD O2 system, an RDI 150 kHz Workhorse Lowered Acoustic Doppler Current Profiler, a RDI 300 kHz Workhorse Lowered Acoustic Doppler Current Profiler, and up to 24 10-liter Niskin bottles, was lowered to the bottom. This report includes a description of the calibrations procedures and profiles of pressure, salinity (conductivity), temperature, and dissolved oxygen concentration. Water samples were also collected at various depths and analyzed for salinity and oxygen concentrations to aid with CTD calibration. A total of 53 CTD-O2/LADCP stations were occupied. PIES/CPIES telemetry was conducted at 6 sites. There were two successful recovery and deployments of PIES at sites B and D. An XBT fall rate test was conducted deploying 200 XBT's at two different heights while underway and while on station.

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Project Web Sites (with links to publications, real-time and final data):	http://www.aoml.noaa.gov/phod/wbts/ http://www.aoml.noaa.gov/phod/floridacurrent/ ftp://ftp.aoml.noaa.gov/phod/pub/WBTS/ http://www.rsmas.miami.edu/users/mocha/ http://www.noc.soton.ac.uk/rapidmoc/





NOAA Data Report, OAR AOML-51

**HYDROGRAPHIC MEASUREMENTS COLLECTED ABOARD THE UNOLS
SHIP R/V ENDEAVOR, 14 FEBRUARY - 27 FEBRUARY 2015: WESTERN
BOUNDARY TIME SERIES CRUISE EN551 (AB1502)**

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July 2015

noaa

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ATMOSPHERIC ADMINISTRATION

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Contents

Table of Contents	v
List of Figures	viii
List of Tables	ix
Abstract	x
1 Introduction	1
2 Cruise Narrative	5
3 Inverted Echo-Sounder Operations	7
3.1 Site E	7
3.2 Site D	7
3.3 Site C	8
3.4 Site B	8
3.5 Site A2	9
3.6 Site A	10
4 Standards and Pre-Cruise Calibrations	11
4.1 Conductivity	13
4.2 Temperature	14
4.3 Pressure	14
4.4 Dissolved Oxygen	15
4.5 Reference Temperature	18
4.6 Fluorometer	18
5 Data Acquisition	19
5.1 System Problems	19
5.2 Data Acquisition	20
5.3 Shipboard CTD Data Processing	25
5.4 CTD Calibration Procedures	27
5.4.1 Salinity Analysis	27
5.4.2 Oxygen Analysis	32
6 Post-Cruise Calibrations	36
6.1 CTD Data Processing	37
6.2 CTD Pressure	37
6.3 CTD Temperature	41
6.4 Conductivity	44
6.5 Dissolved Oxygen	53
7 Final CTD Data Presentation	63

8	Acknowledgements	80
9	References	81
A	Hydrographic - CTD Data	82
B	WOCE Summary File	191
C	WOCE Bottle Summary File	195

List of Figures

1	Abaco CTD station locations.	4
2	Bottle locations for 26.5°N Deep Western Boundary Current section east of Abaco Island.	21
3	Bottle locations for along the Northwest Providence Channel section.	22
4	Bottle locations for 26°N section in the Florida Straits.	23
5	Bottle locations for 27°N section in the Florida Straits.	24
6	Standard vial calibrations throughout the cruise.	29
7	Salinity residuals of the duplicate samples.	30
8	Oxygen residuals of the duplicate samples	34
9	Pressure differences vs. station number. Top panel are the pressures measured on deck before the cast (blue), at the end of the upcast (red) and their respective difference (green) for s/n 0363. Bottom panel are the near sea surface pressure values measured at the start of the downcast (blue), at the end of the upcast (red) and their respective difference (green) for s/n 0363.	39
10	Temperature differences (after corrections) between sensors by station number (top) and pressure (bottom). The green represents the surface data down to 1000 dbar. The blue represents data below 1000 dbar. The red solid line represents the median with the red dashed representing the standard deviation (same for top and bottom).	42
11	Temperature differences between the reference temperature at bottle stops and the secondary temperature sensor.	43
12	Conductivity (mS/cm) differences between sensors by station (top) and pressure (bottom). The red solid line represents the median with the red dashed representing the standard deviation.	45
13	Bottle and uncalibrated primary CTD salinity differences plotted against pressure. The green crosses represent all data points and the blue are the data points below 1000 dbar. The median was calculated using only the data below 1000 dbar.	46
14	Bottle and calibrated primary CTD salinity differences plotted vs. station.	47
15	Bottle and calibrated primary CTD salinity differences plotted vs. pressure.	48
16	Bottle and calibrated primary CTD salinity differences plotted vs. station below 1000 dbar.	49
17	Bottle and calibrated primary CTD salinity differences plotted vs. pressure below 1000 dbar.	50
18	Potential Temperature - Salinity diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.	51
19	Potential Temperature - Salinity diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.	52
20	Dissolved oxygen differences between sensors by station (top) and by pressure (bottom). Sensor changes at station 15 and 24. The red solid line represents the median with the red dashed representing the standard deviation.	55

21	Bottle and uncalibrated primary CTD oxygen differences plotted against station number. The green crosses represent all data points and the blue are the data points below 1000 dbar. The median was calculated using only the data below 1000 dbar.	56
22	Bottle and calibrated primary CTD oxygen differences plotted vs. station. .	57
23	Bottle and calibrated primary CTD oxygen differences plotted vs. pressure. .	58
24	Bottle and calibrated primary CTD oxygen differences plotted vs. station below 1000 dbar.	59
25	Bottle and calibrated primary CTD oxygen differences plotted vs. pressure below 1000 dbar.	60
26	Potential Temperature - Oxygen diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.	61
27	Potential Temperature - Oxygen diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.	62
28	Potential Temperature ($^{\circ}\text{C}$) section for the Abaco Section. Dashed vertical lines are the CTD station locations.	64
29	Salinity (PSS 78) section for the Abaco section. Dashed vertical lines are the CTD station locations.	65
30	Dissolved Oxygen (umol/kg) section for the Abaco Section. Dashed vertical lines are the CTD station locations.	66
31	Neutral density (kg/m^3) section for the Abaco Section. Dashed vertical lines are the CTD station locations.	67
32	Potential Temperature ($^{\circ}\text{C}$) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.	68
33	Salinity (PSS 78) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.	69
34	Dissolved Oxygen (umol/kg) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.	70
35	Neutral density (kg/m^3) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.	71
36	Potential Temperature ($^{\circ}\text{C}$) section for the Florida Current South section. Contour intervals are 1°C . Dashed vertical lines are the CTD station locations.	72
37	Salinity (PSS 78) section for the Florida Current South section. Contour intervals are 0.1. Dashed vertical lines are the CTD station locations.	73
38	Dissolved Oxygen (umol/kg) section for the Florida Current South section. Contour intervals are $\approx 20 \text{umol/kg}$. Dashed vertical lines are the CTD station locations.	74
39	Neutral density (kg/m^3) section for the Florida Current South section. Contour intervals are 0.1kg/m^3 . Dashed vertical lines are the CTD station locations.	75
40	Potential Temperature ($^{\circ}\text{C}$) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.	76
41	Salinity (PSS 78) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.	77

42	Dissolved Oxygen (<i>umol/kg</i>) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.	78
43	Neutral density (kg/m ³) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.	79

List of Tables

1	Cruise participants of R/V Endeavor Cruise AB1502, February 14–February 27, 2014.	2
2	Abaco Cruise – CTD Cast Summary	3
3	Inverted echo-sounder locations and operation.	7
4	Equipment used during AB1502	12
5	Pre-Cruise Calibration coefficients for the conductivity sensors.	13
6	Pre-Cruise Calibration coefficients for the temperature sensors.	14
7	Pre-Cruise Calibration coefficients for the pressure sensor.	15
8	Pre-Cruise Calibration coefficients for the dissolved oxygen sensors.	16
9	Nominal values for the batches of IAPSO standard seawater.	28
10	Duplicate salinity samples collected during the ABACO cruise.	31
11	Duplicate dissolved oxygen samples collected during the ABACO cruise (values in <i>umol/kg</i>).	35
12	Near surface Pressure values and scan number used to remove surface soak and on-deck values.	40
13	Abaco Cruise – WOCE Summary File	192
14	Florida Current Cruise – WOCE Bottle Summary File	196

Abstract

This report summarizes the February 14 - February 27, 2015 cruise on the UNOLS ship R/V Endeavor involving full-water-column CTD and lowered ADCP profiles, along with shipboard ADCP profiles, conducted within the Northwest Providence Channel, Florida Straits, and east of Abaco Island, Bahamas. At each station, a package consisting of a Seabird Electronics Model 9/11+ CTD O2 system, an RDI 150 kHz Workhorse Lowered Acoustic Doppler Current Profiler, a RDI 300 kHz Workhorse Lowered Acoustic Doppler Current Profiler, and up to 24 10-liter Niskin bottles, was lowered to the bottom. This report includes a description of the calibrations procedures and profiles of pressure, salinity (conductivity), temperature, and dissolved oxygen concentration. Water samples were also collected at various depths and analyzed for salinity and oxygen concentrations to aid with CTD calibration. A total of 53 CTD-O2/LADCP stations were occupied. PIES/CPIES telemetry was conducted at 6 sites. There were two successful recovery and deployments of PIES at sites B and D. An XBT fall rate test was conducted deploying 200 XBT's at two different heights while underway and while on station.

1 *Introduction*

The Abaco time series began in August 1984 when NOAA extended its Straits of Florida program to include measurements of western boundary current transports and water mass properties east of Abaco, the Bahamas. Since 1986, 44 hydrographic sections have been completed east of Abaco, most including direct velocity observations by Pegasus and/or Lowered Acoustic Doppler Current Profiler (LADCP). Transient tracer (CFC) measurements have been made on 8 of these sections. Current meter arrays were also maintained from April 1986 to April 1997. A new international program funded by the United Kingdom's Rapid Climate Change Program and the United States National Science Foundation began in March 2004 and is currently scheduled to end in 2021. Included in this program is a new deployment of current meter moorings along the Abaco section (the UK segment of the program continues with moorings across to the east edge of the Atlantic basin). Independently, the National Oceanic and Atmospheric Administration began a monitoring program in September 2004 utilizing inverted echo sounder moorings (some including bottom pressure measurements and near-bottom current meters) along the Abaco section. All of these programs are collaborating with scientific analysis and logistics including ship time.

The repeated hydrographic and tracer sampling at Abaco has established a high-resolution record of water mass properties in the Deep Western Boundary Current (DWBC) at 26°N, which for temperature and salinity can be reasonably constructed back to about 1985 (Vaughan and Molinari, 1997; Molinari et al., 1998). Events such as the intense convection period in the Labrador Sea and renewal of classical Labrador Sea Water in the 1980's are clearly reflected in the cooling and freshening of the DWBC waters off Abaco, and the arrival of a strong CFC pulse, approximately 10 years later (e.g. van Sebille et al., 2011). This program is unique in that it is not just a single time series site, but instead is a section from which transport can be directly calculated, of which very few are available in the ocean that approach a decade or more in length.

To achieve the goals of NOAA's strategic plan in terms of understanding the Atlantic Ocean's role in decadal and longer time scale climate variability, these continued time series observations at Abaco are seen as serving three main purposes:

1. Monitoring of the DWBC for watermass and transport signatures related to changes in the strengths and regions of high latitude water mass formation in the North Atlantic. Monitoring watermass properties in the DWBC at key locations is one part of an effort to track decadal changes in large-scale watermass properties.
2. Serving as a western boundary endpoint of a subtropical Meridional Overturning Circulation (MOC) heat flux monitoring system designed to measure the interior dynamic height difference across the Atlantic basin and the associated baroclinic heat transport.
3. Monitoring the intensity of the Antilles current as an index (together with the Florida Current) of inter-annual variability in the strength of the subtropical gyre. Variations in the strength of the subtropical gyre in relation to the North Atlantic Oscillation

(NAO) has been proposed as an important mechanism in the atmosphere-ocean feedback within coupled models (e.g. Latif and Barnett, 1996).

A hydrographic survey consisting of a repeat LADCP/CTD/rosette section in the western North Atlantic was carried out in February 2015 (Figure 1 and Table 2). The R/V Endeavor departed San Juan, Puerto Rico on 14 February 2015. A total of 53 LADCP/CTD/Rosette stations were occupied. Water samples (up to 24 for each station), LADCP, and CTD data were collected on each cast to within 10 m of the bottom. Salinity and dissolved oxygen samples were analyzed from the majority of bottles sampled on the rosette. The cruise ended in Ft. Lauderdale, FL on February 27, 2015.

Table 1: Cruise participants of R/V Endeavor Cruise AB1502, February 14–February 27, 2014.

Name	Responsibility	Affiliation	Nationality
Molly Baringer	Chief Scientist	NOAA/AOML	USA
James Hooper	CTD processing	UM/CIMAS	USA
Andrew Stefanick	Oxygen analysis, CTD operations	NOAA/AOML	USA
Francis Bringas	Salinity analysis LADCP processing	UM/CIMAS,	USA
Grant Rawson	Oxygen analysis LADCP processing	UM/CIMAS,	USA
Pedro Pena	Salinity analysis, IES operations	NOAA/AOML	USA
Miguel Figuerola Hernandez	CTD watch	Univ. Puerto Rico	USA
Jeremy Kravitz	CTD watch	Univ. Puerto Rico	USA

Table 2: Abaco Cruise – CTD Cast Summary

Station	Date	Time (GMT)	Latitude	Longitude	Depth
0	02/15/15	18:47:34	23.244N	68.117W	2021
1	02/16/15	18:05:21	26.536N	69.476W	5465
2	02/17/15	01:30:19	26.498N	69.982W	5596
3	02/17/15	08:21:05	26.517N	70.504W	5590
4	02/17/15	14:39:10	26.514N	71.001W	5588
5	02/17/15	21:02:09	26.501N	71.481W	5523
6	02/18/15	03:38:17	26.503N	71.984W	5376
7	02/18/15	09:50:17	26.484N	72.365W	5294
8	02/18/15	15:36:16	26.488N	72.759W	5208
9	02/18/15	22:58:51	26.469N	73.138W	5130
10	02/19/15	04:51:13	26.494N	73.512W	5044
11	02/19/15	10:09:53	26.478N	73.890W	4854
12	02/19/15	15:25:11	26.500N	74.258W	4606
13	02/19/15	20:41:25	26.495N	74.533W	4558
14	02/20/15	01:51:25	26.505N	74.821W	4627
15	02/20/15	07:51:12	26.527N	75.072W	4682
16	02/20/15	19:22:00	26.481N	75.275W	4678
17	02/21/15	00:03:26	26.510N	75.510W	4760
18	02/21/15	04:24:02	26.507N	75.706W	4766
19	02/21/15	13:43:54	26.518N	75.882W	4819
20	02/21/15	18:23:55	26.503N	76.088W	4875
21	02/21/15	23:14:52	26.501N	76.211W	4893
22	02/22/15	11:31:00	26.505N	76.344W	4917
23	02/22/15	15:46:20	26.495N	76.468W	4915
24	02/23/15	01:22:32	26.485N	76.551W	4912
25	02/23/15	05:35:00	26.496N	76.654W	4665
26	02/23/15	11:03:11	26.486N	76.739W	3828
27	02/23/15	13:57:49	26.519N	76.829W	1161
28	02/23/15	19:00:53	26.526N	76.893W	237
29	02/24/15	19:32:54	26.435N	78.657W	754
30	02/24/15	21:07:25	26.331N	78.710W	680
31	02/24/15	22:37:08	26.249N	78.760W	522
32	02/24/15	23:51:56	26.168N	78.798W	453
33	02/25/15	01:09:14	26.064N	78.849W	293
34	02/25/15	08:32:40	26.995N	79.198W	471
35	02/25/15	09:59:06	27.004N	79.282W	607
36	02/25/15	11:17:49	27.004N	79.383W	664
37	02/25/15	13:07:43	27.011N	79.497W	756
38	02/25/15	14:44:07	27.009N	79.614W	648
39	02/25/15	15:57:25	27.011N	79.681W	531
40	02/25/15	17:20:48	27.012N	79.777W	388
41	02/25/15	18:31:45	27.009N	79.862W	266
42	02/25/15	19:28:28	27.007N	79.930W	144
43	02/26/15	02:51:52	26.049N	80.064W	133
44	02/26/15	03:42:38	26.052N	79.998W	244
45	02/26/15	04:37:34	26.056N	79.930W	266
46	02/26/15	05:38:53	26.064N	79.848W	319
47	02/26/15	06:58:08	26.081N	79.756W	614
48	02/26/15	08:45:31	26.064N	79.662W	698
49	02/26/15	10:16:24	26.058N	79.557W	760
50	02/26/15	11:44:15	26.059N	79.471W	667
51	02/26/15	13:06:17	26.048N	79.388W	579
52	02/26/15	14:18:32	26.049N	79.307W	479
53	02/26/15	15:26:07	26.047N	79.231W	317

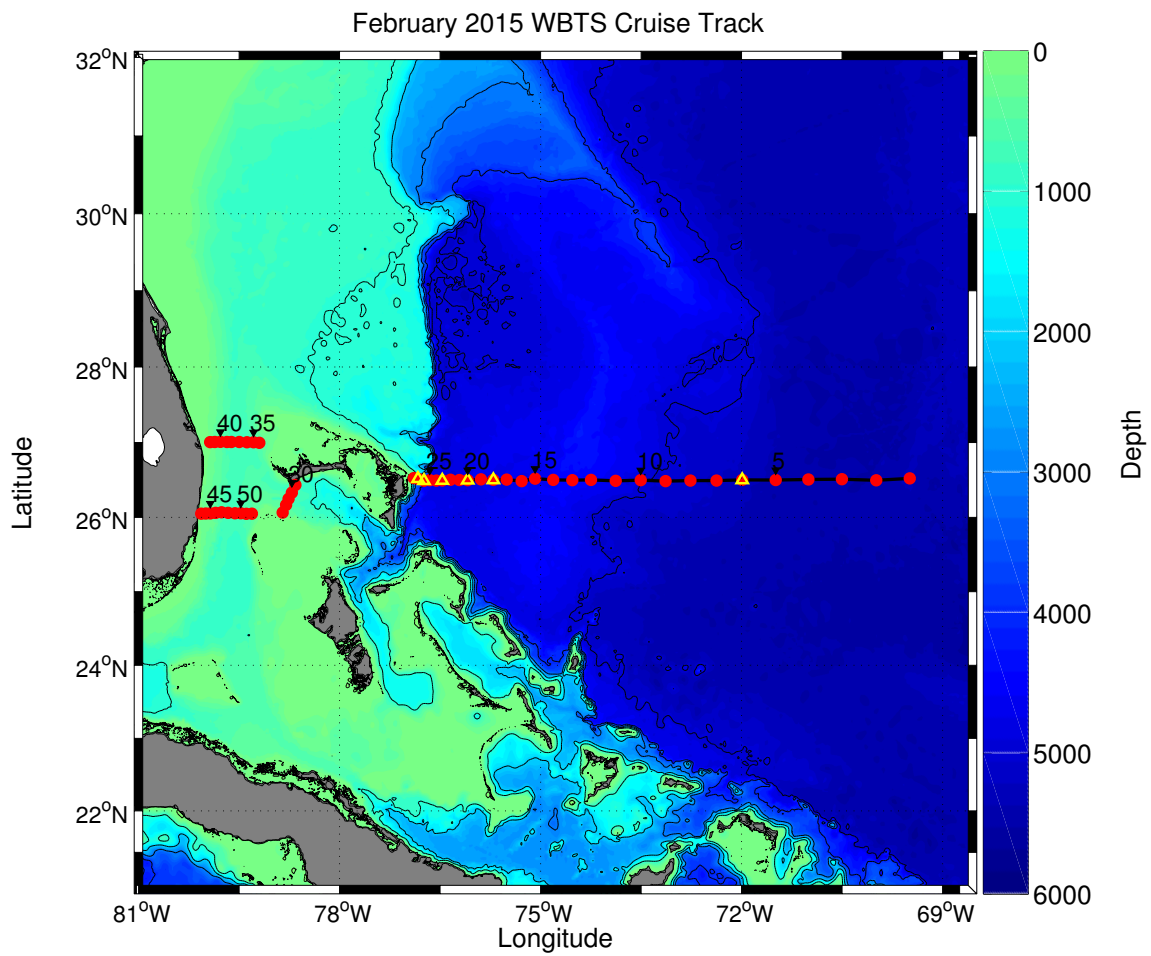


Figure 1: Abaco CTD station locations. The landmasses are shaded and the bathymetry is contoured at 1000 m intervals. The red dots are the CTD stations, the cyan squares are the mooring operations, and the yellow triangles are the IES operations.

2 *Cruise Narrative*

The general plan of operations for the cruise was to proceed from San Juan Puerto Rico to 69.5°W, performing one test CTD cast in route. We then began the CTD section along 26.5°N working from east to west. During the Abaco CTD section, acoustic communication with the NOAA PIES & CPIES moorings were also completed. Upon completion of the Abaco CTD section, we completed three short CTD sections in the Northwest Providence Channel, 27°N and 26°N in the Straits of Florida. After completing the 26°N CTD section, the ship transited to the 27°N section to complete a clean ADCP transect. The cruise followed historical station positions except that the recent mooring deployments placed tall subsurface moorings too close to the historical stations. For safety reasons and due in part to the lack of a dynamic positioning system on the Endeavor, a 1.5 nm watch circle was placed around the moorings. That moved the station locations for stations 3, 18 and 26 (70°30'W, 75°42.2'W and 76°44.6'W).

Departure from San Juan had been scheduled and was completed promptly at 9am February 14. Of note was the first 3-5 days of the cruise was plague with bad weather, 3-9 foot seas and up to 35 knots of sustained winds. During that time the operations of deploying and recovering the CTD were safe, but the CTD virtually always hit the side of the ship. By construction, the CTD is lifted off the deck with the winch and then extended outboard with a J-frame that tilts outward. The J-frame however is very short. There is barely a few feet clearance between the fully extended J-frame and the side of the ship with our CTD package. It is a given that the frame will hit the ship, and really just a matter of how severely. I would recommend that we consider attaching some cushioning to the frame to reduce vibration and impact. After station 8, the LADCP from UM had a beam failure (beam 3) and was removed. On station 15, the CTD was severely damaged on the side of the ship during both deployment and recovery; a large wave grabbed the CTD and jammed it on the railing of the ship, listing to the side, then lower on the ships hull. On recovery several substantial hits to the ship appeared to be sufficient to severe two of the bottom ring vertical supports. We then had to switch to the yellow frame used on PNE, which had unfortunately been placed on the 01 deck. With only about a 6 hour delay the frame was brought down to the main deck and the complete set of sensors were switched from the damaged pink frame to the yellow frame. AOML's two 150 kHz ADCPs both were tested and performed beautifully (swapped after station 23). On station 26, the secondary O2 appeared to have a near surface problem so the sensor and associated pump were swapped out. We cleared into Port Lucaya customs, however substantially more paperwork was required this year than previous years (\$75 to check in, \$75 to check out, and the \$25/per person exit fee was waived for a research cruise). IES operations include the deployment and recovery of two IES's (at sites B and D). Site A2 failed to communicate and attempts to recovery it were unsuccessful, Akk other IES related operations proceeded normally. The cruise was completed with a "clean" ADCP crossing of the 27°N section. Offloading proceeded on Friday February 27 after an uneventful docking at 8am.

Specific summaries of the various data collected include:

-
1. The autosal used was "71464", which functioned normally. Standard water vial 157 was used. Pump #D1009-389 was used until station 49 (developed a small leak).
 2. The Oxygen titrations were done using the AOML amperometric titration system number 3, probe #3, electrode #6p, pipette #2 and Wheaton dispenser number #4. No problems were reported. Detailed notes of the O₂ titrations were taken in a green notebook that proved very useful.
 3. On PNE there was an issue with the temperature in the water sample analysis room ("Special Purpose Lab") being erratic. They had placed paper towels in the overhead vents to control the temperature. We immediately set up dual T recording systems and monitored the temperature. It ranged from 24.5°C to about 21°C. When the room was warm or cold, generally opening and closing the door acclimated the temperature quickly. Most samples were analyzed with a room temperature around 22.5°C.
 4. LADCP measurements were taken using a BB 150 kHz ADCP down-looking (s/n 18144 stations 0-8, s/n 18145 stations 9-24 and s/n 21862 stations 24-53). The CTD frame was equipped with an upward looking 300 kHz ADCP (s/n 21584 stations 0-15 and SN 15329 on 16-53).
 5. A Wetlab fluorometer (s/n 2088) was interfaced on the CTD, but not processed. Raw fluorometry voltages were passed through the processing to 1 db averages.
 6. Five inverted echosounders were interrogated and the data was telemetered from all sites except A2 (see report below). PIES at site B and D were telemetered first then recovered and a new PIES deployed.

3 *Inverted Echo-Sounder Operations*

Two deployments or recoveries were done on this cruise; one at site B and one at site D. Telemetry at the six main mooring sites was conducted (see Table 3). This maintenance consisted of acoustic download of the last 15 months of data as well as recovery and redeployment of one instrument that had reached the end of its battery life. A summary of each of the telemetry session is provided below.

Table 3: Inverted echo-sounder locations and operation.

IES Site	Type	Latitude	Longitude	Date	Operation
A	PIES	026°30.938' N	076°50.036' W	3/29/14	Telemetry
A2	CPIES	026°30.062' N	076°44.775' W	3/27/14	Telemetry
B	PIES	026°29.480' N	076°28.160' W	3/27/14	Telemetry Recovered and Deployed
C	PIES	026°30.020' N	076°05.550' W	3/26/14	Telemetry
D	PIES	026°30.160' N	075°42.330' W	3/25/14	Telemetry Recovered and Deployed
E	PIES	026°30.0' N	071°59.998' W	3/23/14	Telemetry

3.1 *Site E*

Depth: 5233 m

Instrumentation: URI 6.2 PIES SN#301

Arrived at the site on 2/18/15 started the telemetry download at 2:21:58. We started telemetry in less than ideal conditions and as a consequence (we think) this session was very noisy. Usable data was streaming in via the DS7000 but the UDB deck unit was unable to reliably detect actual telemetry frequencies.

3.2 *Site D*

Depth: 4664 m

Instrumentation: URI 6.1e PIES SN#159

Arrived at the site and began telemetry at 3:21:43. The telemetry went well with both deck units. After stopping the telemetry at around yearday 55, we deployed PIES 322 at 7:02:20 and verified that it landed at 8:24. We then immediately issued the release command and immediately began to see the 4 sec ping on the knudsen display. At 8:43 we noticed that the release pings stopped showing up on the knudsen display and then we began to steam towards the site. After several minutes the pings began to faintly appear on the knudsen. At 10:10 we spotted a glow beneath the surface. We could see the glow for about 10 seconds

before the PIES actually surfaced. Once on the surface the ship began to make the pick up approach while keeping a light on it. When close enough one of the AB's used a boat hook to grab the recovery float and then used a clip to hook the PIES to the knuckle boom. The PIES was safely on deck at 10:29.

3.3 Site C

Depth: 4766 m

Instrumentation for telemetry: URI 6.2 PIES SN#281

First attempt: Telem command sent and data collected but very noisy. This first download was deemed unacceptable (data collected from yearday 53 2015 to yearday 15 of 2014). We sent a clear command but it was during the telemetry and not during an MSB. We thought it would continue to dump data until its deployment date.

Second attempt: We left the site (station number 20) and proceeded to station 21. We then returned in the hope that it would be able to start the telemetry again. We arrived back at site C at 02:13 GMT. No telemetry was still being done. We restarted telemetry at 02:26:06 GMT and it began at Yearday 340. We hoped it was from 2012, but it was from 2013. This does not follow the behavior that we had expected. We thought it should have reset with a new GMT day and we also thought it would not store and execute a clear command during telemetry unless it was during an MSB. We collected from yearday 340 2013 to 284 of 2012.

Third attempt: We restarted telemetry and finally collected from yearday 53 or 54 2015 to yearday 15 2014.

3.4 Site B

Depth: 4805 m

Instrumentation: URI 6.1e PIES SN#133

We arrived on site and immediately deployed PIES SN#323 on 2/22/15 at 14:10:05 GMT at location 26°29.47' N 76°28.18' W. It reached the bottom at 15:48 GMT. Verified it was at the bottom by doing slant ranges to it. We verified its decent rate was 0.8 m/sec using slant ranges. Soon after deployment we began the CTD cast. The CTD reached the bottom well before the PIES.

We then started telemetry on a down-converted C-PIES SN#133 on 2/22/15 at 17:30:22 GMT. We started to receive data at 17:33:48. Both deck units recorded the data at CTD station number 23. Data collected from yearday 55 2015 to yearday 43 of 2014.

We then sent a clear command 21:00:22 and again 21:01:54 to stop telemetry. We sent the release command at 21:13 GMT. It left the bottom at 21:32 (on Knudsen). It surfaced

at 22:46 GMT and onboard at 22:59. It was retrieved at 26 28.83N 76 28.18W.

3.5 *Site A2*

Depth: 3865 m

Instrumentation: URI 6.2 CPIES SN#274

First attempt: Arrival at A2 was approximately 08:00 GMT 2/23/2015. No sampling was observed. Telem commands issued repeatedly were all unsuccessful.

Second attempt:

- Came back just before 20:00. No sampling was observed.
- At 20:07 sent telem command 20 times from DS7000.
- After ten minutes, sent clear commands repeatedly for approximately 20:16 to 20:44. On the last few clear commands the instrument started to respond with a two ping response (which we could see on the Knudsen).
- Waited until 21:00 and heard no sampling again.
- Sent release command 20 times (starting approximately at 21:10). Towards the end of the series of release commands, the PIES started to provide a 2-ping response.
- Waited 10 minutes. No release mode signal etc.
- Started cycling through all release commands. Starting at about command number 17 we started repeating any release command number until we received some sort of response. When a 2-ping response was provided we incremented the release codes upwards.
- Took break at top of hour (22:00 GMT) ? still no sampling.
- Returned to sending release commands.
- Some release commands were sent as many as eleven times before receiving a 2-ping response (e.g. #50 and 53). This time through the cycle #47 (the supposed release code of the instrument) was responded to on the second attempt.
- At release code number #55 attempt number 5, the bridge called down with a sighting off the bow 3 nm away. Approaching the object it was discovered that it was likely a ling line with three buoys.
- Code #55 has not yet returned a clear command.
- We came back on sight and waited until 23:00. Again no sampling.

-
- At 23:02 GNT we ranged to the PIES (values below), moved the ship and ranged again two more times (values below).
 - Sent clear command and PIES successfully exited ranging mode. Verified on the Knudsen that the PIES stopped ranging.
 - Waited until 00:00 GMT. No sampling heard. Sent clear command and it responded. Sent range command and it responds to the range command. Should have been sampling, housekeeping etc., but instead was responding to us.
 - Sent clear command and left site at 00:30 GMT.

Ranged to PIES A2.

1. at 23:02:30 gmt and 26o 30.142N 76o 44.791W uncorrected range 3860 3860 3861 3878 3876 3875
2. at 23:15:20 gmt 26o 29.941N 76o 44.923W uncorrected range 3841 3851 3841
3. at 23:43:30 and 26o 30.091N 76o 44.295 uncorrected range 3982 3985

3.6 Site A

Depth: 1020 m

Instrumentation: URI 6.2 PIES SN#282

Starting up telemetry on UDB 56859 ? the UDB entered a reset loop. It was swapped out for UDP 47905. The DS7000 fell asleep around yearday 259. No one noticed until yearday 189. A single ping was sent and the telemetry resumed until at least yearday 60. The UDP has a complete record, but it's a bit noisy, but deemed very useable. Both boxes received an MSB, beginning the start of downloading successfully. Data was collected from year day 51 2015 to yearday 11 of 2014.

4 *Standards and Pre-Cruise Calibrations*

The CTD/O₂ system is a real-time data acquisition system with the data from a Sea-Bird Electronics, Inc. (SBE) 9plus underwater unit transmitted via a conducting cable to a SBE 11plus deck unit (V2). The serial data from the underwater unit is sent to the deck unit in RS-232 NRZ format. The deck unit decodes the serial data and sends it to a personal computer for display and storage in a disk file using Sea-Bird Seasave software (version 7.23.2).

The SBE 911plus system transmits data from primary and auxiliary sensors in the form of binary numbers equivalent to the frequency or voltage outputs from those sensors. These are referred to as the raw data. The SBE software performs the calculations required to convert raw data to engineering units.

The SBE 911plus system is electrically and mechanically compatible with the standard, unmodified carousel water sampler, also made by Sea-Bird Electronics, Inc. A modem and carousel interface allows the 911plus system to control the operations of the carousel directly without interrupting the flow of data from the CTD.

The SBE 9plus underwater unit is configured with dual standard modular temperature (SBE 3 plus) and conductivity (SBE 4) sensors, which are mounted near the lower end cap. The conductivity cell entrance is co-planar with the tip of the temperature sensor probe. The pressure sensor is mounted inside the underwater unit main housing. A centrifugal pump module flushes water through sensor tubing at a constant rate independent of the CTD's motion to improve dynamic performance. Dual dissolved oxygen sensors (SBE 43) are added to the pumped sensor configuration following the temperature-conductivity (TC) pair. A reference temperature sensor is mounted to the SBE 9plus. A list of sensors used during the cruise can be seen in Table 4.

Table 4: Equipment used during AB1502

Instrument	SN	Stations	Use	Pre-Cruise Calibration	Comment
Sea-Bird SBE 32 24-palce Carousel Water Sampler	32 - 0980	0-15			
Sea-Bird SBE 32 24-palce Carousel Water Sampler	32 - 0794	16-53			
Sea-Bird SBE9plus CTD	0363	0-53		09/07/10	
Paroscientific Digiquartz Pressure Sensor	95798	0-53		09/07/10	
Sea-Bird SBE3plus Temperature Sensor	2958	0-53	Primary	10/11/14	
Sea-Bird SBE3plus Temperature Sensor	5898	0-53	Secondary	04/14/14	
Sea-Bird SBE35 Reference Temperature Sensor	0083	0-53	only	08/21/14	
Sea-Bird SBE4C Conductivity Sensor	3860	0-53	Primary	10/15/14	
Sea-Bird SBE4C Conductivity Sensor	4223	0-53	Secondary	10/14/14	
Sea-Bird SBE43 Dissolved Oxygen Sensor	2942	0-53	Primary	08/02/14	
Sea-Bird SBE43 Dissolved Oxygen Sensor	2949	0-25	Secondary	08/02/14	
Sea-Bird SBE43 Dissolved Oxygen Sensor	2082	26-53	Secondary	08/02/14	
Sea-Bird SBE5T Pump	7741	0-53	Primary		
Sea-Bird SBE5T Pump	7738	0-25	Secondary		
Sea-Bird SBE5T Pump	7267	26-53	Secondary		
Simrad 807 Altimeter	980	0-53	Range - 280 m		2.928 scale
RDI LADCP - 150 kHz Broad Band (UM)	18144	0-8	Downward		
RDI LADCP - 150 kHz Broad Band (AOML)	18145	9-24	Downward		
RDI LADCP - 150 kHz Broad Band (AOML)	21862	25-53	Downward		
RDI LADCP - 300 kHz Workhorse (AOML)	21584	0-15 15	Upward		Left on Pink Frame
RDI LADCP - 300 kHz Workhorse (AOML)	15329	16-53	Upward		

4.1 Conductivity

The flow-through conductivity-sensing element is a glass tube (cell) with three platinum electrodes (Seabird model SBE 4). The resistance measured between the center electrode and the end electrode pair is determined by the cell geometry and the specific conductance of the fluid within the cell, and controls the output frequency of a Wein Bridge circuit. The sensor has a frequency output of approximately 3 to 12 kHz corresponding to conductivity from 0 to 7 Siemens/meter (0 to 70 mmho/cm). The SBE 4 has a typical accuracy/stability of $\pm 0.0003 \text{ S}\cdot\text{m}^{-1}/\text{month}$ and resolution of $0.00004 \text{ S}\cdot\text{m}^{-1}$ at 24 scans per second.

Three conductivity sensors were used during AB1502, serial numbers (s/n) 3860 and 4223. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington during October 2014. The coefficients shown in Table 5 were entered into Seasave using the configuration file.

Conductivity calibration certificates show an equation containing the appropriate pressure-dependent correction term to account for the effect of hydrostatic loading (pressure) on the conductivity cell:

$$C \text{ (Siemens/meter)} = \frac{(g + h * f^2 + i * f^3 + j * f^4)}{[10 * (1 + c_{t_{cor}} * t + c_{p_{cor}} * p)]}$$

where g , h , i , j , $c_{t_{cor}}$, and $c_{p_{cor}}$ are the calibrations coefficients shown above, f is the instrument frequency (kHz), t is the water temperature (degrees Celsius), and p is the water pressure (dbar). SEASAVE® automatically implements this equation.

Table 5: Pre-Cruise Calibration coefficients for the conductivity sensors.

s/n 3860	s/n 4223
October 15, 2014	October 14, 2014
$g = -1.03209641\text{e}+01$	$g = -9.92933236\text{e}+00$
$h = 1.48289601\text{e}+00$	$h = 1.37363619\text{e}+00$
$i = -6.12897590\text{e}-04$	$i = -2.22232817\text{e}-03$
$j = 1.27926748\text{e}-04$	$j = 2.15788617\text{e}-04$
$CP_{cor} = -9.5700\text{e}-08$	$CP_{cor} = -9.5700\text{e}-08$
$CT_{cor} = 3.2500\text{e}-06$	$CT_{cor} = 3.2500\text{e}-06$

4.2 Temperature

The temperature-sensing element is a glass-coated thermistor bead, pressure protected by a stainless steel tube. The sensor output frequency ranges from 5–13 kHz corresponding to temperatures from -5 to 35°C. The output frequency is inversely proportional to the square root of the thermistor resistance, which controls the output of a patented Wien Bridge circuit. The thermistor resistance is exponentially related to temperature. The SBE 3 thermometer has a typical accuracy/stability of $\pm 0.004^\circ\text{C}$ per year and resolution of 0.0003°C at 24 samples per second. The SBE 3 thermometer has a fast response time of 0.070 seconds.

Two temperature sensors (SBE 3plus) were used during AB1502, serial numbers (s/n) 2958 and 5898. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington during April and October 2014. The following coefficients (Table 6) were entered into SEASAVE® using the configuration file. SEASAVE® automatically implements the equation below and converts between ITS-90 and IPTS-68 temperature scales as desired. The Temperature (ITS-90) is computed from g , h , i , j and f_0 and f is the instrument frequency (kHz) coefficients as follows:

$$T (^{\circ}\text{C}) = \frac{1}{\left\{g + h * \left[\ln\left(\frac{f_0}{f}\right)\right] + i * \left[\ln^2\left(\frac{f_0}{f}\right)\right] + j * \left[\ln^3\left(\frac{f_0}{f}\right)\right]\right\}} - 273.15$$

Table 6: Pre-Cruise Calibration coefficients for the temperature sensors.

s/n 2958	s/n 5898
October 11, 2014	April 24, 2014
$g = 4.39511412\text{e-}03$	$g = 4.35081330\text{e-}03$
$h = 6.73503956\text{e-}04$	$h = 6.26294438\text{e-}04$
$i = 3.03877605\text{e-}05$	$i = 1.91859680\text{e-}05$
$j = 2.86315349\text{e-}06$	$j = 1.37230704\text{e-}06$
$f_0 = 1000.0$	$f_0 = 1000.0$

4.3 Pressure

The Paroscientific series 4000 Digiquartz high pressure transducer uses a quartz crystal resonator whose frequency of oscillation varies with pressure induced stress measuring changes in pressure as small as 0.01 parts per million with an absolute range of 0 to 10,000 psia (0 to 6885 dbar). Repeatability, hysteresis and pressure conformance are 0.002% of full-scale. The nominal pressure frequency (0 to full scale) is 34 to 38 kHz. The nominal temperature frequency is $172 \text{ kHz} \pm 50 \text{ ppm}/^\circ\text{C}$.

The pressure sensor utilized during AB1502 was s/n 0363. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington on October 2013 and

September 2010. The following coefficient (Table 7) were entered into SEASAVE® using the configuration file:

Pressure coefficients are first formulated into:

$$\begin{aligned} c &= c_1 + c_2 * U + c_3 * U^2 \\ d &= d_1 + d_2 * U \\ t_0 &= t_1 + t_2 * U + t_3 * U^2 + t_4 * U^3 + t_5 * U^4 \end{aligned}$$

where U is temperature in degrees Celsius. Pressure is computed according to:

$$P (psia) = c * \left(1 - \frac{t_0^2}{t}\right) * \left[1 - d * \left(1 - \frac{t_0^2}{t}\right)\right]$$

where t is pressure period (μs). SEASAVE® automatically implements this equation.

Table 7: Pre-Cruise Calibration coefficients for the pressure sensor.

s/n 0363
September 7, 2010
$c_1 = -4.698871e+04$
$c_2 = 6.928599e-01$
$c_3 = 1.264330e-02$
$d_1 = 3.832000e-02$
$d_2 = 0.000000e+00$
$t_1 = 2.996944e+01$
$t_2 = -1.348850e-04$
$t_3 = 3.953500e-06$
$t_4 = 2.102830e-09$
$t_5 = 0.000000e+00$
Slope = 0.99997597
Offset = -1.73781
AD590M = 1.14100e-02
AD590B = -8.42813e+00

4.4 Dissolved Oxygen

The SBE 43 dissolved oxygen sensor uses a membrane polarographic oxygen detector (MPOD). Oxygen sensors determine the dissolved oxygen concentration by counting the number of oxygen molecules per second (flux) that diffuse through a membrane. By knowing the flux of oxygen and the geometry of the diffusion path, the concentration of oxygen can be computed. The permeability of the membrane to oxygen is a function of temperature and ambient pressure. In order to minimize the errors in the oxygen measurement due to the temperature

differences between the water and the oxygen sensor, a temperature compensation is calculated using a temperature measured near the active surface of the sensor. The interface electronics output voltages proportional to the temperature-compensated oxygen current. Initial computation of dissolved oxygen in engineering units is done in the software. The range for dissolved oxygen is 120% of surface saturation in all natural waters, fresh and salt, and the nominal accuracy is 2% of saturation.

Under extreme pressure, changes can occur in gas permeable Teflon membranes that affect their permeability characteristics. Some of these changes (plasticization and amorphous/crystallinity ratios) have long time constants and depend on the sensor's time-pressure history. These slow processes result in hysteresis in long, deep casts. The hysteresis correction algorithm operates through the entire data profile and corrects the oxygen voltage values for changes in membrane permeability as pressure varies. At each measurement, the correction to the membrane permeability is calculated based on the current pressure and how long the sensor spent at previous pressures.

Sea-Bird has implemented an optional hysteresis correction for dissolved oxygen data. The correction algorithm requires a continuous time series of data, with no temporal data gaps (although a continuous time series is necessary, a constant sampling interval is not required). Prior to processing, do not remove any data from the downcast or upcast (if to be used), other than a surface soak at the beginning of the downcast.

Oxygen sensors 2942, 2949, and 2082 were used during AB1502. The following oxygen coefficients (Table 8) were entered into SEASAVE® using the configuration file:

Table 8: Pre-Cruise Calibration coefficients for the dissolved oxygen sensors.

s/n 2942	s/n 2949	s/n 2082
August 2, 2014	August 2, 2014	October 25, 2014
Soc = 0.4807	Soc = 0.4064	Soc = 0.4082
Voffset = -0.5265	Voffset = -0.5280	Voffset = -0.5346
Tau20 = 1.32	Tau20 = 1.62	Tau20 = 1.05
A = -3.1137e-03	A = -3.2697e-03	A = -4.1042e-03
B = 1.3898e-04	B = 1.8364e-04	B = 2.5412e-04
C = -2.5716e-06	C = -2.7042e-06	C = -3.9708e-06
E _{nominal} = 0.036	E _{nominal} = 0.036	E _{nominal} = 0.036

The use of these constants in linear equations of the form $I = mV + b$ and $T = kV + c$ yield sensor membrane current and temperature (with maximum error of about 0.5 °C) as a function of sensor output voltage.

Dissolved oxygen concentration is calculated according to:

$$O \text{ (ml/l)} = \left\{ Soc * \left(V + V_{offset} + tau(T, S) * \frac{\delta v}{\delta t} \right) + p1 * station \right\} \\ * (1.0 + A * T + B * T^2 + C * T^3) * OXSAT(T, S) * e^{E * \left(\frac{P}{K} \right)}$$

where Soc , V_{offset} , tau , A , B , C , E and $p1$ are the calibration coefficients shown above and V is the instrument voltage (V). T , S and P are the temperature, salinity and pressure measured by the CTD. K is the temperature in the absolute scale (K), $\delta v/\delta t$ is the oxygen voltage time derivative, $station$ is the station number, and $OXSAT$ is the oxygen saturation value calculated according to (Weiss, 1970):

$$OXSAT(\theta, S) = \exp \left\{ A_1 + A_2 * \left(\frac{100}{\theta} \right) + A_3 * \ln \left(\frac{\theta}{100} \right) + A_4 * \left(\frac{\theta}{100} \right) + S * \left[B_1 + B_2 * \left(\frac{\theta}{100} \right) + B_3 * \left(\frac{\theta}{100} \right)^2 \right] \right\}$$

where θ is the absolute temperature (K); and

$$\begin{aligned} A_1 &= -173.4292 & B_1 &= -0.033096 \\ A_2 &= 249.6339 & B_2 &= 0.014259 \\ A_3 &= 143.3483 & B_3 &= -0.00170 \\ A_4 &= -21.8492. \end{aligned}$$

SEASAVE® automatically implements this equation.

The hysteresis correction is calculated, using the oxygen voltages, with the following algorithm:

$$\begin{aligned} D &= 1 + H_1 * (e^{\left(\frac{P(i)}{H^2}\right)} - 1) \\ C &= e^{-1 * \left(\frac{Time(i) - Time(i - 1)}{H3}\right)} \\ O_V(i) &= O_{volt}(i) + V_{offset} \\ O_{newvolts}(i) &= a * \frac{a}{D} \\ O_{finalvolts}(i) &= O_{newvolts}(i) - V_{offset} \end{aligned}$$

Where:

i = indexing variable (must be a continuous time series to work; can be performed on bin averaged data), where $i = 1:end$ (end is largest data index point plus 1).

$P(i)$ = pressure (decibars) at index point i .

$Time(i)$ = time (seconds) from start of index point i .

$O_{volt}(i)$ = SBE 43 oxygen voltage output directly from sensor, with no calibration or hysteresis corrections, at index point i .

V_{offset} = correction for an electronic offset that is applied to voltage output of sensor. V_{offset} correction is always negative (see factory calibration sheet for this coefficient). V_{offset} is added to raw voltages prior to hysteresis correction. At end of hysteresis corrections, V_{offset} is removed prior to data conversion using SBE 43 calibration equation (see $O_{finalvolts}(i)$).

$O_V(i)$ = dissolved oxygen voltage value with V_{offset} correction (made prior to hysteresis correction) at index point i .

D and C are temporary variables used to simplify expression in processing loop.

$H1$ = amplitude of hysteresis correction function. Default = -0.033, range = -0.02 to -0.05 (varies from sensor to sensor).

$H2$ = function constant or curvature function for hysteresis. Default = 5000.

$H3$ = time constant for hysteresis (seconds). Default = 1450, range = 1200 to 2000 (varies from sensor to sensor).

$O_{newvolts}(i)$ = hysteresis-corrected oxygen value at index point i .

$O_{finalvolts}(i)$ = hysteresis-corrected oxygen value at index point i with V_{offset} removed.

This step is necessary prior to computing oxygen concentration using SBE 43 calibration equation.

4.5 Reference Temperature

The SBE 35RT is an accurate, ocean-range temperature sensor that is capable of measuring temperature in the ocean to depths of 6800 meters (22,300 ft). The SBE 35RT communicates via a standard RS-232 interface at 300 baud, 8 data bits, no parity. The SBE 35RT makes a temperature measurement each time a bottle fire confirmation is received, and stores the value in EEPROM. Each stored value contains the time and bottle position in addition to the temperature data, allowing comparison of the SBE 35RT record with CTD and water bottle data. Using one SBE 35RT eliminates the need for reversing thermometers, and provides higher accuracy temperature readings at lower cost. Calibration coefficients stored in EEPROM allow the SBE 35RT to transmit data in engineering units. When configured in a real-time system, the SBE 35RT can use the system modem channel for two-way communications; it is not necessary to change cable connections to communicate with and retrieve data from the SBE 35RT. (2015, February 12). Retrieved from http://www.seabird.com/sites/default/files/documents/35RT_013.pdf.

The sensor measurement ranges from -5 to 35°C. The SBE 35RT digital reversing thermometer has a typical accuracy/stability of $\pm 0.001^\circ\text{C}$ per year and resolution of 0.000025°C .

4.6 Fluorometer

The fluorometer is an optical sensor used to detect chlorophyll-a fluorescence. The fluorescence signal is an indicator of concentrations of chlorophyll and an active phytoplankton biomass. This allows for the tracking of the abundance and variability of biology in the water column. The fluorometer data collected is not processed, but raw voltages are passed through the Seabird Data Processing program. The raw voltages are not displayed here, but are available as part of the 1db pressure averaged data.

5 *Data Acquisition*

CTD/rosette casts were performed with a package consisting of a 24-place, 10-liter rosette frame (AOML's pink frame), a 24-place water sampler (SBE32) and 24, 10-liter Bullister-style bottles. This package was deployed on all stations/casts. Underwater electronic components consisted of a Sea-Bird Electronics (SBE) 9 plus CTD with dual pumps and the following sensors: dual temperature (SBE3), dual conductivity (SBE4), dual dissolved oxygen (SBE43), reference temperature (SBE35), a fluorometer, and a Simrad 807 altimeter. The other underwater electronic components consisted of two RDI LADCPs. A total of 41 CTD/rosette casts were made, usually to within 10 m of the bottom.

The CTD's supplied a standard Sea-Bird format data stream at a data rate of 24 frames/second. The SBE9 plus CTD was connected to the SBE32 24-place pylon providing for single-conductor sea cable operations. Power to the SBE9 plus CTD, SBE32 pylon, auxiliary sensors, and altimeter was provided through the sea cable from the SBE911plus deck unit in the computer lab. The rosette system was suspended from a UNOLS-standard three-conductor 0.322" electro-mechanical sea cable.

The CTD was mounted vertically attached to the bottom center of the rosette frame. All SBE4 conductivity and SBE3 temperature sensors and their respective pumps were mounted vertically as recommended by SBE, outboard of the CTD. The CTD was outfitted with dual pumps. Primary temperature, conductivity, and dissolved oxygen were plumbed on one pump circuit and secondary temperature, conductivity, and dissolved oxygen on the other. Pump exhausts were attached to outside corners of the CTD cage and directed downward. The altimeter was mounted on the inside of a support strut adjacent to the bottom frame ring. The LADCP's were vertically mounted inside the bottle rings with one 150 kHz pointing down, the other 300 kHz transducer pointing up. The R/V Atlantic Explorer's starboard A-frame CTD winch was used with the 24-place 10-liter rosette for all station/casts.

O-rings were changed as necessary and bottle maintenance was performed each day to insure proper closure and sealing. Valves were inspected for leaks and repaired or replaced as needed.

5.1 *System Problems*

- The pink frame was swapped out for the yellow frame after the recovery at station 15. Due to bad weather conditions, the pink frame hit the side of the ship on deployment and recovery and it was discovered that two of the welds between the bottom support ring had separated from the bottom vertical support bars holding the lead weights. All sensors were swapped, with the exception of the upward looking ADCP's on each frame.
- Large oxygen sensor differences were seen in the station 16 profile near the surface, but

returned to normal in stations 17-20. Large differences returned in 21-25. During the subsurface soak of station 26 the oxygen differences were over 100 $\mu\text{mol}/\text{kg}$ with the secondary showing low values less than 120 $\mu\text{mol}/\text{kg}$ at the surface. The package was brought back on deck and the secondary pump, 7738, was swapped out for 7267. This did not resolve the issue after another subsurface soak and the package was brought back on and the secondary oxygen sensor, 2949, was swapped out for 2082. This resolved the issue.

- A "wave-like" signal was seen in the temperature differences after swapping over to the yellow frame in stations 16-18. This is most likely due to turbulence produced by the positioning of the downward looking 150 kHz ADCP, which had to be mounted on the outside of the internal frame structure on the side of the primary sensors, instead of inside in the center of the frame. Both T/C sensor pairs were lowered approximately 1 inch before station 19 and this reduced the "wave-like" signal seen in the temperature differences.

5.2 *Data Acquisition*

The CTD data acquisition system consisted of an SBE-11plus (V2) deck unit and a networked generic PC workstation running Windows 7 located in the aft bridge. SBE Seasave software version 7.22.5 was used for data acquisition and to close bottles on the rosette.

The deck watch prepared the rosette typically after sampling the previous cast. All valves, vents, and lanyards were checked for proper orientation. The bottles were cocked and all hardware and connections rechecked. Fifteen minutes or so prior to station the Deck unit was powered on and an on-deck pre-cast pressure was obtained. Once on station, the syringes were removed from the CTD sensor intake ports. Tag lines were necessary for both deployments and recoveries during this cruise. As soon as it was in the water, the CTD deck unit was powered on and the data acquisition system started. As directed by the deck watch leader, the CTD was taken down to 10 m for 2 minutes to remove any air bubble from the sensor lines and to make sure the sensors were behaving appropriately. The CTD was brought back to just below the surface with the console operator hitting "Mark Scan" before beginning the descent. The profiling rate was no more than 30 m/min to 50 m, 45 m/min to 200 m, and no more than 60 m/min deeper than 200 m. Upon recover, the CTD deck unit was turned off just before recovery. The rosette was left on deck for sampling. The bottles and rosette were examined before samples were taken and anything unusual noted on the sample log.

The console watch monitored the progress of the deployment and quality of the CTD data through interactive graphics and operational displays. Additionally, the watch created a sample log for the deployment that would be later used to record the correspondence between rosette bottles and analytical samples taken. The altimeter channel, CTD pressure, wire-out and bathymetric depth were all monitored to determine the distance of the package

from the bottom, usually allowing a safe approach to within 20 m.

On the up cast, the winch operator was directed to stop at each bottle trip depth. The CTD console operator waited 30 seconds before tripping a bottle using a “point and click” graphical trip button and 5 seconds after to allow the reference temperature sensor to sample. The data acquisition system responded with trip confirmation messages and the corresponding CTD data in a rosette bottle trip window on the display. All tripping attempts were noted on the console log. The console watch then directed the winch operator to raise the package up to the next bottle trip location.

After the last bottle was tripped, the console watch directed the deck watch to bring the rosette on deck. Once on deck, the console watch terminated the data acquisition, turned off the deck unit, and assisted with rosette sampling.

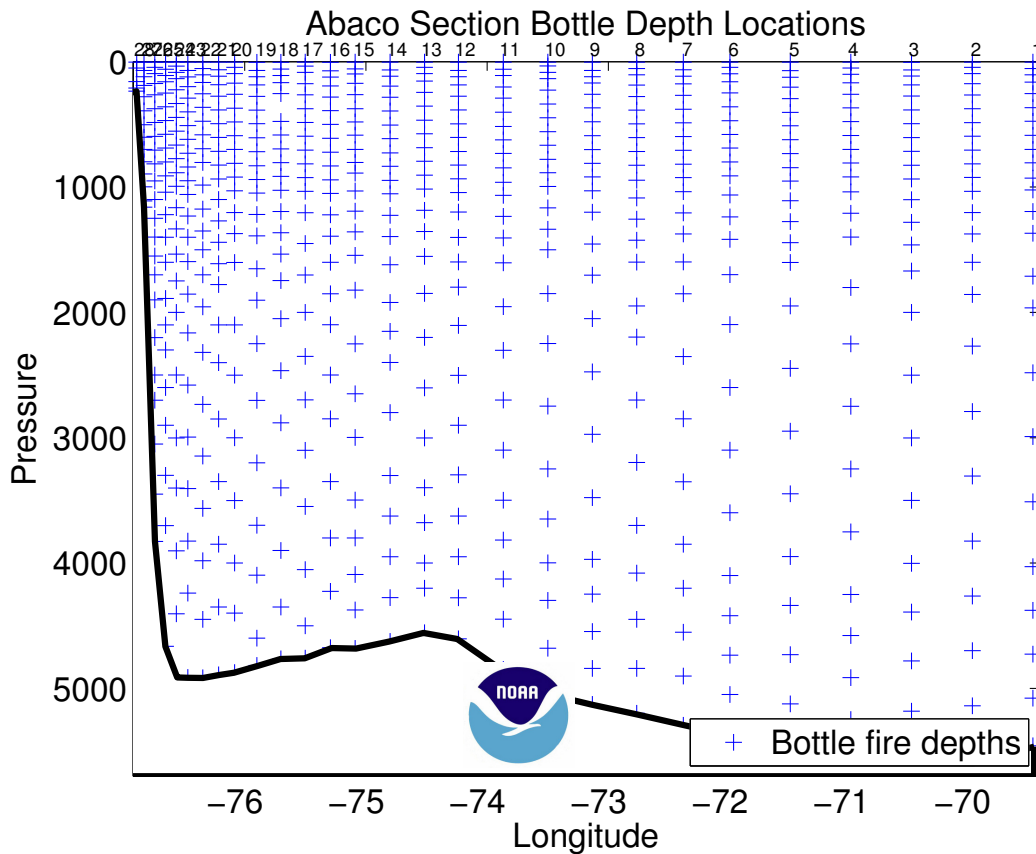


Figure 2: Bottle locations for 26.5°N Deep Western Boundary Current section east of Abaco Island.

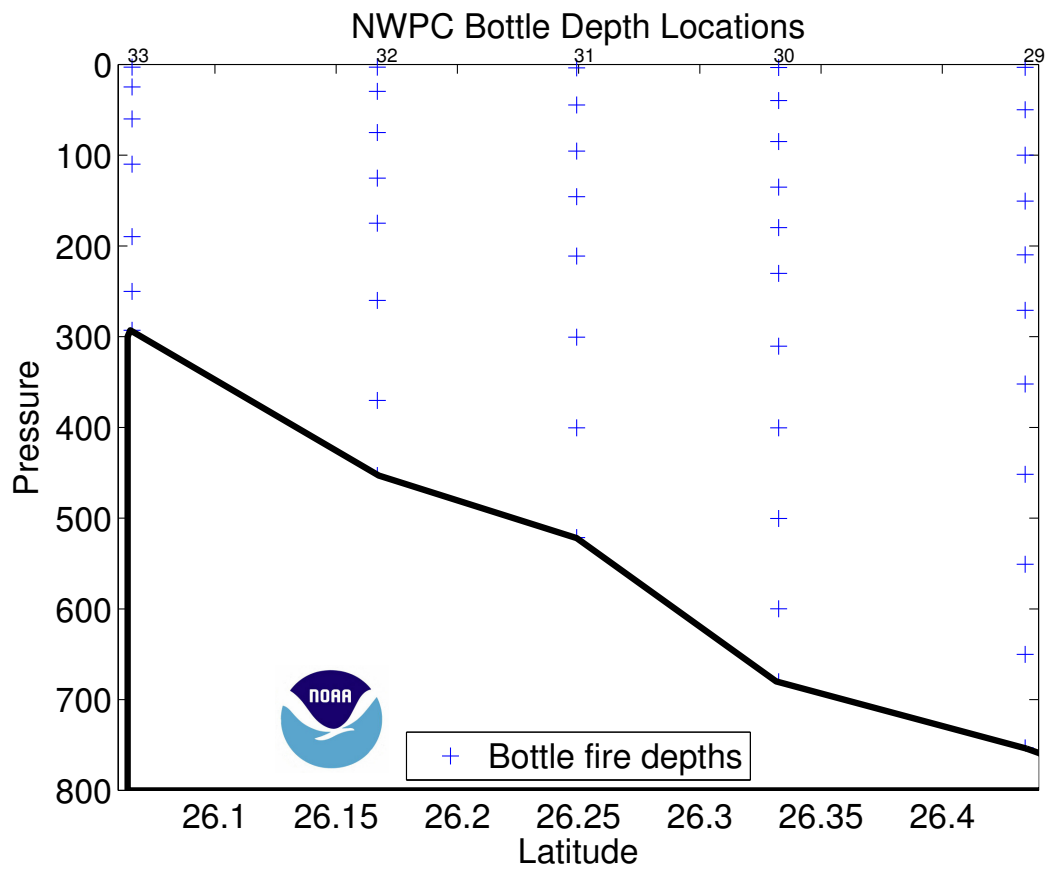


Figure 3: Bottle locations for along the Northwest Providence Channel section.

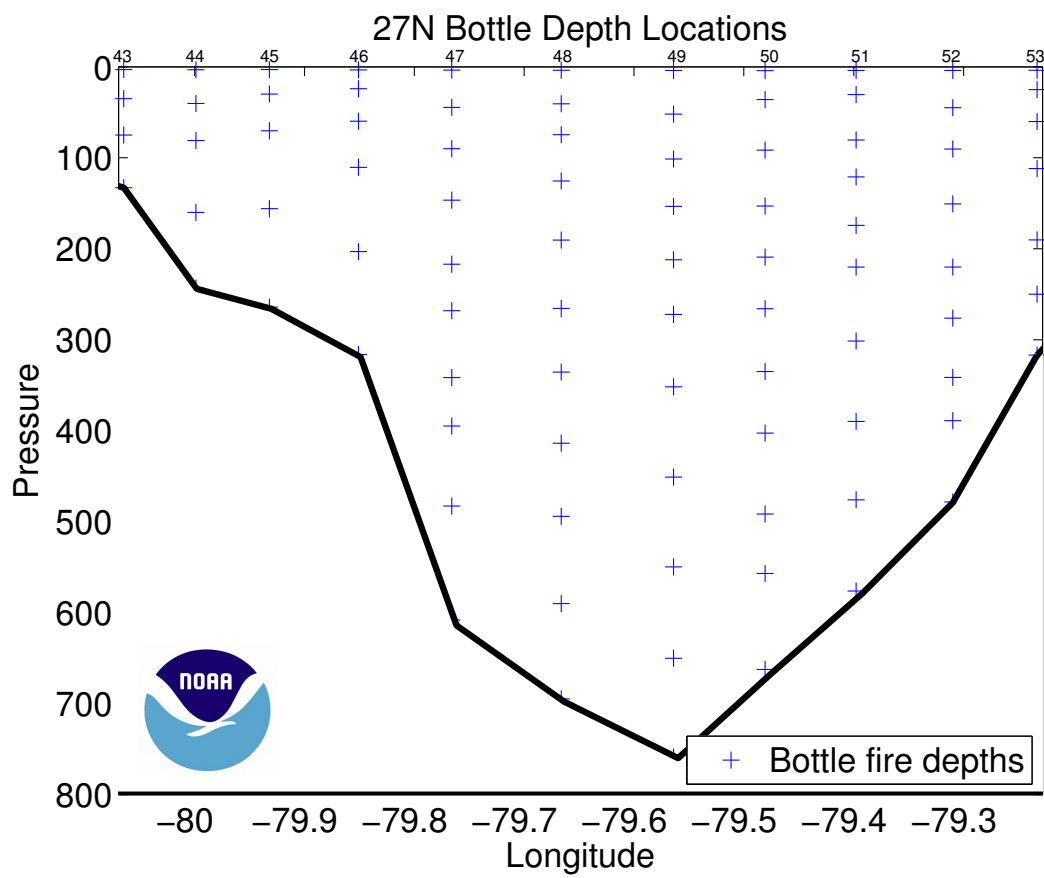


Figure 4: Bottle locations for 26°N section in the Florida Straits.

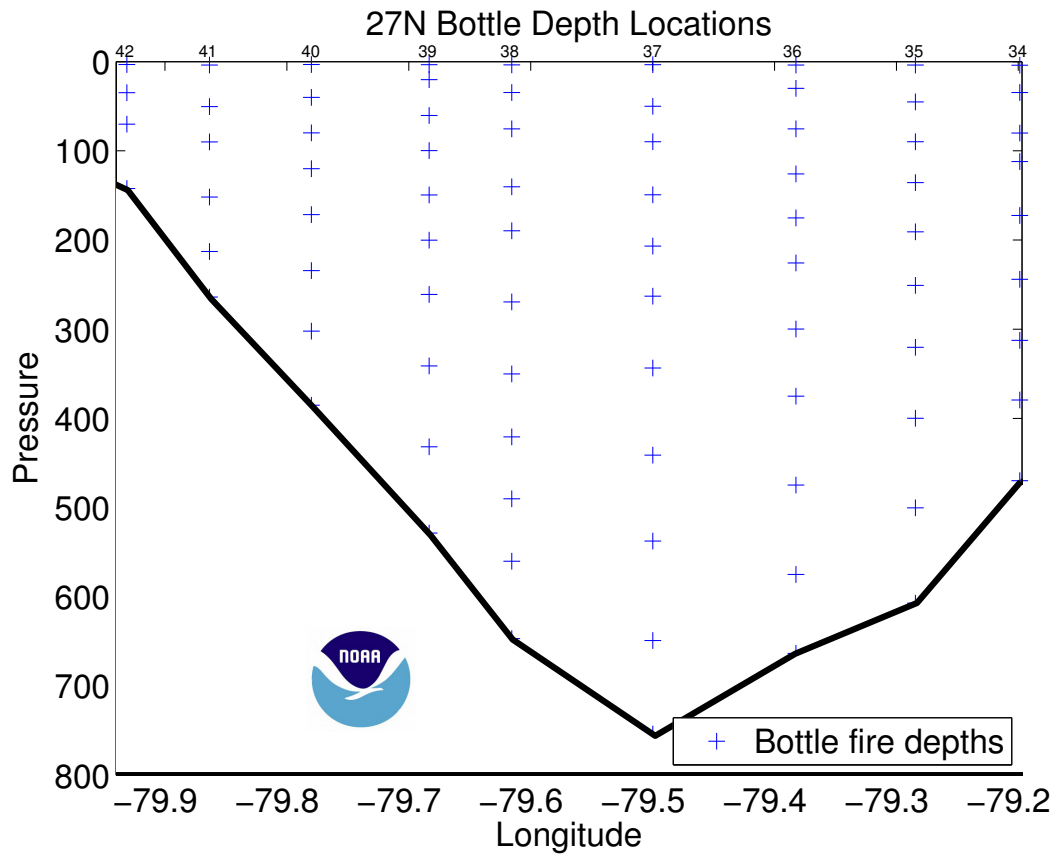


Figure 5: Bottle locations for 27°N section in the Florida Straits.

5.3 Shipboard CTD Data Processing

Shipboard CTD data processing was performed automatically at the end of each deployment using SEABIRD SBE Data Processing version 7.21k and AOML Matlab processing software. The raw CTD data and bottle trips acquired by SBE Seasave on the Windows 7 workstation were copied onto the CTD-PROC workstation, and processed to a 1-dbar series and a 1-second time series. Bottle trip values were extracted and a 1-decibar (dbar) down cast pressure series created.

Raw data are acquired from the instruments and are stored unmodified. The conversion module DATCNV uses the instrument configuration and pre-cruise factory calibration coefficients to create a converted engineering unit data file that is utilized by all SBEDataProc® post processing modules. Unless otherwise noted, all calibration parameters given are factory default values recommended by Sea Bird Electronics, Inc. The following is the SBEDataProc® processing module sequence and specifications for primary calibrated data (1 dbar averages) uses the following routines in order for reduction of CTD/O₂ data from this cruise:

1. DATCNV converts raw data into engineering units and creates a .ROS bottle file. Both down and up casts were processed for scan, elapsed time(s), depth, pressure, t0 ITS-90 C, t1 ITS-90 C, c0 S/cm, c1 S/cm, salinity (PSU), salinity 2 (PSU), oxygen voltage V, oxygen 2 voltage V, altimeter, optical sensor, oxygen umol/kg, oxygen 2 umol/kg, oxygen mll/l, oxygen 2 ml/l, oxygen dv/dt, oxygen dv/dt 2, latitude, and longitude. The scan range offset is 0 seconds and the scan range duration is 5.5 seconds. MARKSCAN was used to determine the number of scans acquired on deck and while priming the system to exclude these scans from processing.
2. ALIGNCTD aligns temperature, conductivity, and oxygen measurements in time relative to pressure to ensure that derived parameters are made using measurements from the same parcel of water. Primary and secondary conductivity are automatically advanced by 0.073 seconds and both oxygen are advanced by an additional 0.073 seconds.
3. BOTTLESUM creates a summary of the bottle data. Bottle position, date, and time were output automatically. Pressure, temperature, conductivity, salinity, oxygen voltage and preliminary oxygen values were averaged over a 5 second interval.
4. WILDEDIT computes the standard deviation of 100 point bins, and then makes two passes through the data. The first pass flags points that differ from the mean by more than 2 standard deviations. A new standard deviation is computed excluding the flagged points and the second pass marks bad values greater than 20 standard deviations from the mean. For this data set, data were kept within a distance of 100 of the mean (i.e., all data).

-
5. FILTER applies a low pass filter to pressure with a time constant of 0.15 seconds. In order to produce zero phase (no time shift), the filter is first run forward through the file and then run backwards through the file.
 6. CELLTM uses a recursive filter to remove conductivity cell thermal mass effects from measured conductivity. In areas with steep temperature gradients the thermal mass correction is on the order of 0.005 PSS-78. In other areas the correction is negligible. The value used for the thermal anomaly amplitude (alpha) was 0.03°C. The value used for the thermal anomaly time constant (1/beta) was 7.0°C.
 7. LOOPEDIT removes scans associated with pressure slowdowns and reversals. If the CTD velocity is less than 0.25 m/s or the pressure is not greater than the previous maximum scan, the scan is omitted.
 8. DERIVE uses 1 dbar averaged pressure, temperature, and conductivity to compute primary and secondary salinities. Oxygen voltage is used to calculate oxygen concentrations.
 9. BINAvg averages the data into 1 dbar bins. Each bin is centered on an integer pressure value, e.g., the 1 dbar bin averages scans where pressure is between 0.5 dbar and 1.5 dbar. There is no surface bin. The number of points averaged in each bin is included in the data file.
 10. STRIP removes the computed oxygen variable.
 11. TRANS converts the binary data file into ASCII format.
 12. SPLIT separates the cast into upcast and downcast values.

Package slowdowns and reversals owing to ship roll can move mixed water in tow to in front of the CTD sensors and create artificial density inversions and other artifacts. In addition to Seasoft module LOOPEDIT, a program computes values of density locally referenced between every 1 dbar of pressure to compute N^2 and linearly interpolates temperature, conductivity, and oxygen voltage over those records where N^2 is less than or equal to $-1 \times 10^{-5} \text{ s}^{-2}$. These data were retained but flagged as questionable in the final WOCE formatted files.

Final calibrations are applied to delooped data files. ITS-90 temperature, salinity, and oxygen are computed, and WOCE quality flags are created.

CTD data were examined at the completion of each deployment for clean corrected sensor response and any calibration shifts. As bottle salinity and oxygen results became available, they were used to refine shipboard conductivity and oxygen sensor calibrations.

A total of 53 casts were processed.

5.4 CTD Calibration Procedures

Laboratory calibrations of the CTD pressure, temperature, conductivity, and oxygen sensors were all performed at SBE. The calibration dates are listed in Table 4.

Secondary temperature, conductivity and dissolved oxygen (T2, C2 and DO2) sensors served as calibration checks for the reported primary sensors. During the cruise, it was determined that the primary sensors behaved more stably during the cruise.

In-situ salinity and dissolved O2 check samples collected during each cast were used to calibrate the conductivity and dissolved O2 sensors.

There were several sensor combinations (not including pump replacements) used during the cruise.

5.4.1 Salinity Analysis

A single Guildline Autosol, model 8400B (s/n 71464), located in salinity analysis room, was used for all salinity measurements. The autosol used was provided by AOML and last calibrated August 23, 2012. The salinometer readings were logged on a computer using Ocean Scientific International's logging hardware and software. The Autosol's water bath temperature was set to 24°C, which the Autosol is designed to automatically maintain. The laboratory's temperature is typically set and maintained to just below 24°C, to help further stabilize reading values and improve accuracy. The room temperature was monitored by a digital thermometer with serial output continuously logging on the salinity computer. The temperature was used to gauge when the Autosol room temperature was acceptable to run salts. Salinity analyses were performed after samples had equilibrated to laboratory temperature, usually at least 12 hours after collection. The salinometer was standardized for each group of samples analyzed (usually 2 casts and up to 52 samples) using two bottles of standard seawater: one at the beginning and end of each set of measurements. The salinometer output was logged to a computer file. The software prompted the analyst to flush the instrument's cell and change samples when appropriate. Prior to each run a sub-standard flush, approximately 200 ml, of the conductivity cell was conducted to flush out the DI water used in between runs. For each calibration standard, the salinometer cell was initially flushed 6 times before a set of conductivity ratio reading was taken. For each sample, the salinometer cell was initially flushed at least 3 times before a set of conductivity ratio readings were taken.

IAPSO Standard Seawater Batch P-157 was used to standardize all casts (Table 9).

Table 9: Nominal values for the batches of IAPSO standard seawater.

P-157
Use By: May 2017
K15: 0.99985
Salinity: 34.994

The salinity samples were collected in 200 ml Kimax high-alumina borosilicate bottles that had been rinsed at least three times with sample water prior to filling. The bottles were sealed with custom-made plastic insert thimbles and Nalgene screw caps. This assembly provides very low container dissolution and sample evaporation. Prior to sample collection, inserts were inspected for proper fit and loose inserts replaced to insure an airtight seal. Laboratory temperature was also monitored electronically throughout the cruise. PSS-78 salinity [UNES81] was calculated for each sample from the measured conductivity ratios. The offset between the initial standard seawater value and its reference value was applied to each sample. Then the difference (if any) between the initial and final vials of standard seawater was applied to each sample as a linear function of elapsed run time. The corrected salinity data was then incorporated into the cruise database. When duplicate measurements were deemed to have been collected and run properly, they were averaged and submitted with a quality flag of 6. On WBTS - AB1502, 770 salinity measurements were taken, including 59 duplicates, and approximately 48 vials of standard seawater (SSW) were used. Up to two duplicate samples drawn from most casts to determine total analytical precision.

The running standard calibration values are shown in Figure 6. Through the course of the 14 day cruise, the autosal standards changed by 0.0002 in conductivity ratio (about 0.004 in salinity). The precision of the salinity measurements during the cruise were estimated by using the duplicate samples. From the 68 duplicate samples (Table 10), which corresponds to 8.8% of the total samples collected during this cruise, the average residual for the duplicates was $9.28 \cdot 10^{-5}$ PSU with a standard deviation of 0.0012 PSU (Figure 6).

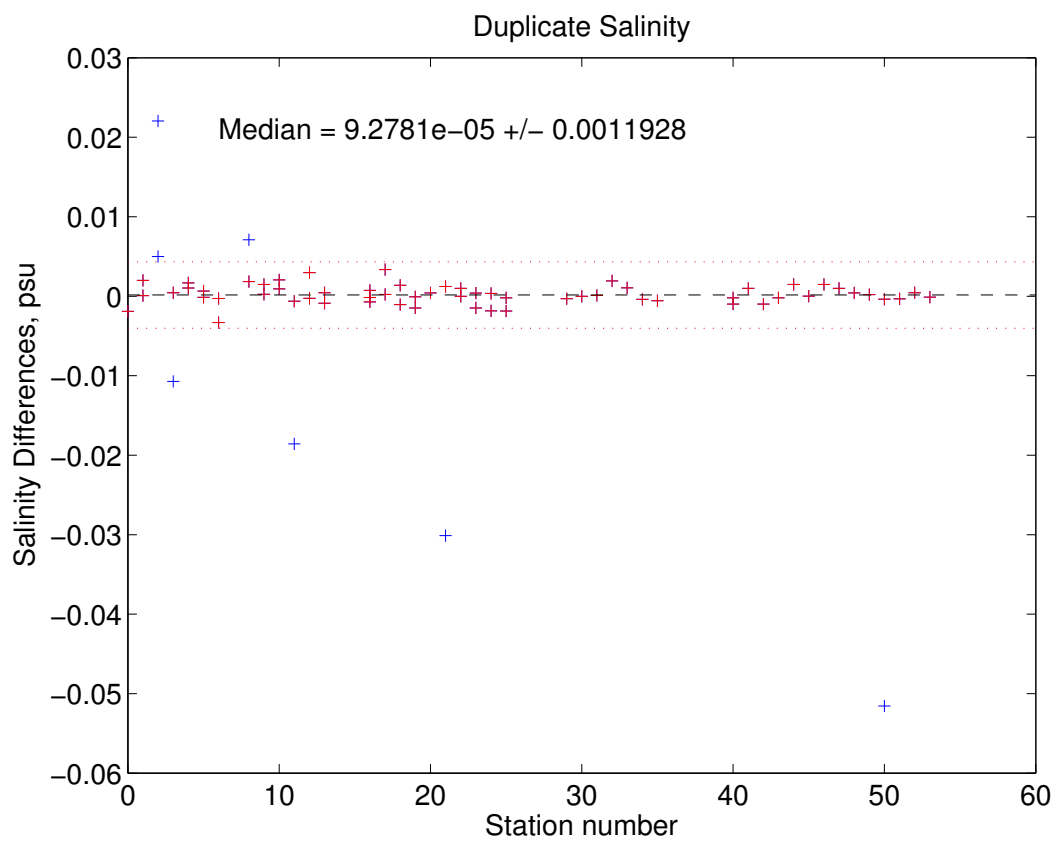


Figure 7: Salinity residuals of the duplicate samples.

Table 10: Duplicate salinity samples collected during the ABACO cruise.

Station	Niskin	Salinity1	Salinity2	Differences
0	5	34.977	34.975	0.002
1	4	34.890	34.890	-0.000
1	19	36.546	36.548	-0.002
2	6	34.915	34.937	-0.022
2	15	35.337	35.342	-0.005
3	3	34.889	34.878	0.011
3	18	36.320	36.321	-0.000
4	5	34.893	34.894	-0.002
4	16	35.636	35.638	-0.001
5	11	35.027	35.028	-0.001
5	14	35.105	35.105	0.000
6	3	34.887	34.884	0.003
6	19	36.532	36.532	0.000
8	1	34.865	34.872	-0.007
8	18	36.176	36.177	-0.002
9	10	34.986	34.988	-0.001
9	19	36.483	36.483	-0.000
10	2	34.883	34.884	-0.001
10	23	36.675	36.677	-0.002
11	3	34.893	34.892	0.001
11	22	36.691	36.672	0.019
12	4	34.897	34.900	-0.003
12	22	36.677	36.677	0.000
13	3	34.889	34.888	0.001
13	13	35.086	35.086	-0.000
16	4	34.902	34.903	-0.001
16	16	36.129	36.128	0.001
16	17	36.469	36.469	0.000
17	1	34.877	34.880	-0.003
17	16	35.301	35.301	-0.000
18	1	34.873	34.874	-0.001
18	21	36.664	36.663	0.001
19	2	34.883	34.882	0.001
19	24	36.704	36.704	0.000
20	20	36.594	36.594	-0.000
21	8	34.994	34.964	0.030
21	16	35.345	35.346	-0.001
22	4	34.903	34.903	0.000
22	20	36.607	36.608	-0.001
23	3	34.899	34.897	0.001
23	19	36.444	36.444	-0.000

24	15	35.202	35.202	-0.000
24	22	36.611	36.609	0.002
25	1	34.880	34.879	0.002
25	22	36.615	36.615	0.000
29	3	35.647	35.647	0.000
30	1	35.308	35.308	0.000
31	3	36.555	36.555	-0.000
32	1	36.366	36.368	-0.002
33	2	36.627	36.628	-0.001
34	1	36.013	36.012	0.000
35	3	36.207	36.206	0.001
40	5	36.442	36.442	0.000
41	1	35.272	35.272	-0.001
42	2	36.386	36.385	0.001
43	4	36.371	36.371	0.000
44	1	35.046	35.047	-0.001
45	5	36.319	36.319	-0.000
46	5	36.495	36.497	-0.001
47	3	34.958	34.959	-0.001
48	3	34.942	34.942	-0.000
49	10	36.254	36.254	-0.000
50	6	36.565	36.564	0.000
50	8	36.702	36.650	0.052
51	1	35.337	35.336	0.000
52	3	36.441	36.442	-0.000
53	5	36.354	36.354	0.000

5.4.2 Oxygen Analysis

Dissolved oxygen analyses were performed with an automated titrator using amperometric end-point detection (Langdon, 2010). Sample titration, data logging, and graphical display were performed with a PC running a LabView program written by Ulises Rivero of AOML. Thiosulfate (17.5g per 500 ml) was dispensed by a 2 ml Gilmont burette driven with a stepper motor controlled by the titrator. Tests in the lab were performed to confirm that the precision and accuracy of the volume dispensed were comparable or superior to the Dosimat 665. The whole-bottle titration technique of Carpenter (1965), with modifications by Culberson et al. (1991), was used. Four replicate 10 ml iodate standards were run every 3-4 days or at the initial fill of new Thiosulfate and once again after bottle has reached half volume, whichever came first. The reagent blank determined as the difference between V1 and V2, the volumes of Thiosulfate required to titrate 1ml aliquots of the iodate standard, was determined two times during the cruise at the beginning and middle. This method was found during pre-cruise testing to produce a more reproducible blank value than the value determined as the intercept of a standard curve.

Dissolved oxygen samples were drawn from Niskin bottles into calibrated 125-150ml iodine titration flasks using silicon tubing. Bottles were rinsed three times and filled from the bottom, overflowing three volumes while taking care not to entrain any bubbles. The CTD temperatures were used to calculate $\mu\text{mol}/\text{kg}$ concentrations. 1ml of MnCl_2 and 1ml of NaOH/NaI were added immediately after drawing the sample was concluded using a ThermoScientific REPIPET II. The flasks were then stoppered and shaken well. Deionized water (DIW) was added to the neck of each flask to create a water seal. The total number of oxygen samples collected from the rosette was 902 including the duplicate samples, two taken at random every cast. The samples were stored in the lab in plastic totes at room temperature for 1.5 hours before analysis. The data was incorporated into the cruise database shortly after analysis. Thiosulfate normality was calculated from the laboratory temperature for each sample run.

The dispenser used for the standard solution (SOCOREX Calibrex 520) and the burette were calibrated gravimetrically just before the cruise. Oxygen flask volumes were determined gravimetrically with degassed deionized water at AOML. The correction for buoyancy was applied.

The precision of the oxygen measurements during the cruise were estimated by using the duplicate samples. From the 75 duplicate samples (11), which corresponds to 8.3% of the total samples collected during this cruise, the average residual for the duplicates was 0.002 $\mu\text{mol}/\text{kg}$ with and standard deviation of 0.79 $\mu\text{mol}/\text{kg}$ (8).

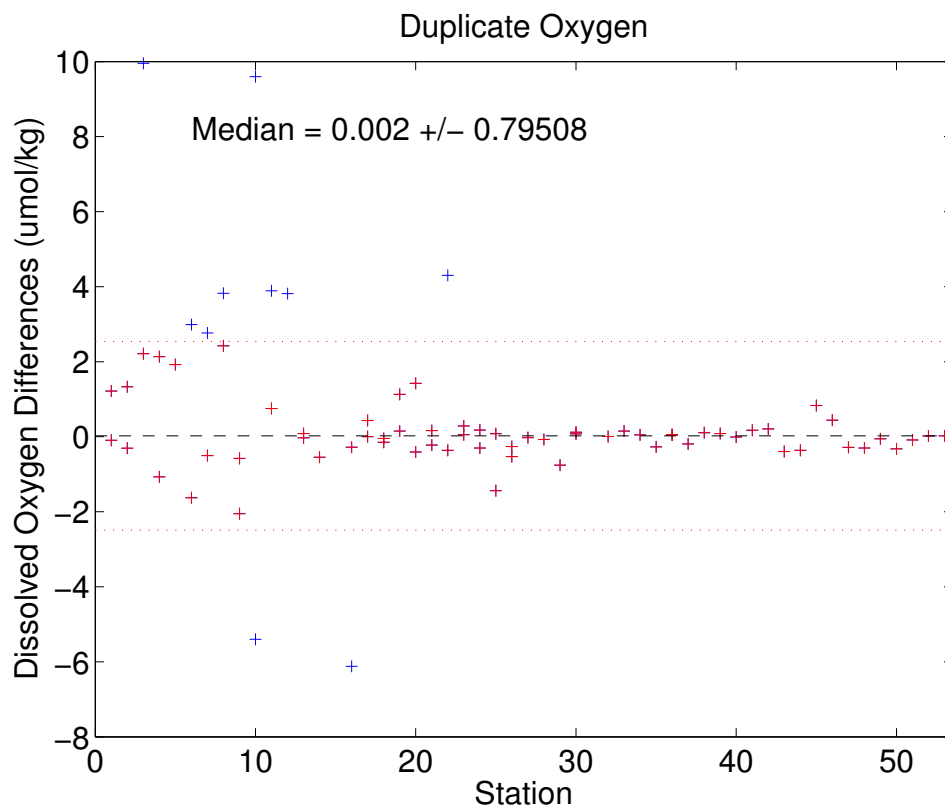


Figure 8: Oxygen residuals of the duplicate samples .

Table 11: Duplicate dissolved oxygen samples collected during the ABACO cruise (values in *umol/kg*).

Station	Niskin	Oxygen1	Oxygen2	Differences
1	8	271.4	272.6	-1.219
1	11	250.5	250.4	0.096
2	9	268.4	268.1	0.304
2	16	157.0	158.3	-1.333
3	8	262.1	272.1	-9.953
3	13	206.6	208.8	-2.214
4	7	275.1	277.3	-2.135
4	20	202.7	201.6	1.071
5	20	200.6	202.5	-1.924
6	13	209.9	208.2	1.626
6	21	194.7	197.7	-2.991
7	1	264.1	263.6	0.504
7	21	187.6	190.4	-2.766
8	14	170.3	174.1	-3.823
8	22	204.0	206.5	-2.422
9	7	279.1	277.1	2.053
9	19	202.0	201.4	0.578
10	4	276.2	285.8	-9.598
10	22	219.6	214.2	5.402
11	4	278.8	279.6	-0.752
11	23	214.2	218.1	-3.888
12	6	286.1	289.9	-3.817
13	13	200.3	200.3	-0.087
13	19	198.6	198.5	0.027
14	11	262.2	261.6	0.549
16	6	274.6	274.3	0.277
16	21	223.6	217.5	6.120
17	6	275.1	275.6	-0.430
17	18	167.8	167.8	-0.002
18	3	275.9	275.8	0.147
18	20	199.9	199.9	0.046
19	4	277.1	278.3	-1.131
19	22	191.9	192.1	-0.152
20	4	279.1	280.5	-1.423
20	19	193.4	193.0	0.405
21	6	273.4	273.6	-0.166
21	20	193.6	193.4	0.222
22	5	279.0	278.6	0.362
22	24	216.5	220.8	-4.303
23	4	278.9	279.0	-0.053
23	21	197.7	198.0	-0.287

24	3	277.0	276.7	0.299
24	20	192.7	192.9	-0.176
25	1	270.1	268.7	1.438
25	13	234.4	234.5	-0.079
26	2	278.1	277.9	0.261
26	14	207.9	207.4	0.528
27	6	142.2	142.2	0.024
28	3	198.1	198.0	0.073
29	5	193.5	192.7	0.758
30	9	212.2	212.3	-0.122
30	11	213.7	213.8	-0.075
32	7	214.4	214.4	-0.004
33	7	210.7	210.8	-0.150
34	2	193.5	193.6	-0.049
35	5	187.1	186.9	0.272
36	3	125.1	125.1	-0.057
36	10	208.4	208.4	-0.047
37	6	150.0	149.8	0.193
38	8	205.7	205.8	-0.106
39	4	137.2	137.2	-0.083
40	7	212.2	212.2	0.007
41	3	157.2	157.4	-0.172
42	3	217.7	217.9	-0.208
43	3	217.3	216.9	0.395
44	5	216.1	215.7	0.361
45	3	216.9	217.8	-0.830
46	1	123.4	123.9	-0.440
47	3	131.3	131.0	0.283
48	7	154.6	154.3	0.301
49	5	150.2	150.1	0.054
50	2	121.2	120.8	0.324
51	9	209.0	208.9	0.086
52	9	209.1	209.1	-0.019
53	2	182.1	182.1	-0.023

6 *Post-Cruise Calibrations*

Post cruise sensor calibrations were done at Sea-Bird Electronics, Inc. Secondary temperature, conductivity and dissolved oxygen sensors served as calibration checks for the reported primary sensors. In-situ salinity and dissolved oxygen samples collected during each cast were used to calibrate the conductivity and dissolved oxygen sensors. The digital reverse thermometer was used to monitor the temperature sensors for pressure dependencies or offsets.

Two sensor combinations were used during the cruise as listed in Table 4. Secondary TC pair T5898/C4223 was selected for final data reduction. Secondary conductivity post-calibration shows a drift since last calibration of -0.0006 PSU/month. Secondary temperature shows residual of -0.0007. The temperature residual is used to calculate the temperature offset since the last calibration and the conductivity drift is used as a check to the station drift coefficient we derive. No offset or drift correction was applied. Primary oxygen sensor, s/n 2942, was used for the final data reduction. In addition to the Seasave processing modules, a group of Matlab script files called AOML/CTDCAL Toolbox were used. These scripts were based on earlier work of different groups as well as in modern statistical tools. They cover all the steps of the CTD data processing from the preliminary comparisons between sensors or bottle samples to data reductions and final sensors calibrations.

6.1 CTD Data Processing

By using the post cruise sensors calibrations; time drifts were estimated for the temperature and conductivity sensors (for estimated time drifts see the appropriate sections below). The processing module sequence used at sea is done again to include the time drifts as well the pressure correction. After this step the following Matlab scripts based on PMEL programs are applied to the CTD data:

- FILL_SURFACE was used to copy the first good value of salinity, potential temperature, oxygen and oxygen current back to the surface. The program then calculated temperature and conductivity, and zeroed doc/dt of oxygen current for those records.
- DESPIKE1 removed spikes from primary oxygen current and oxygen temperature data, as well as removing spikes from the primary conductivity sensor. Data were linearly interpolated over de-spiked records. Conductivity was back calculated, and sigma-theta and potential temperature were recomputed for the interpolated records.
- DESPIKE2 removed spikes from secondary sensors in the same method as DESPIKE1.
- Package slowdown and reversals due to ship roll can move mixed water in tow in front of the CTD sensors. This mixture can create artificial density inversions and other artifacts. In addition to the SEASOFT module LOOPEDIT, DELOOP, computes values of density locally referenced between every 1 dbar of pressure to compute $N^2 = (-g/p) (dp/dz)$ and linearly interpolated measured parameters over those records where $N^2 \leq -1.0 \text{ e } -05 \text{ s}^{-2}$.

6.2 CTD Pressure

Pressure sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw pressure data during each cast. Residual pressure offsets (the difference between the first and last submerged pressures) were examined to check for calibration shifts (see Figure 9 and Table 12). Pressure sensor s/n 0363 was used during the cruise with an initial pressure

offset of 0.35 dbar applied from looking at previous cruise. On deck pressures before the start of each cast was recorded and is plotted in Figure 9. The on deck pressure before and after the cast was stable at 0.38 ± 0.065 dbar and 0.35 ± 0.15 dbar for s/n 0363. It is clear that a further pressure offset correction was needed before final calibration of the data is complete. This was accomplished by applying an offset of 0.36 dbar (s/n 0363) to the configuration files for a total offset of 0.71 dbar.

Near surface pressure values (which is taken as the near-surface pressure at the markscan and the last fired bottle pressure) showed larger variability, but no remarkable trends over the cruise (3.71 ± 0.60 dbar before and 3.50 ± 0.40 dbar after (s/n 0363)).

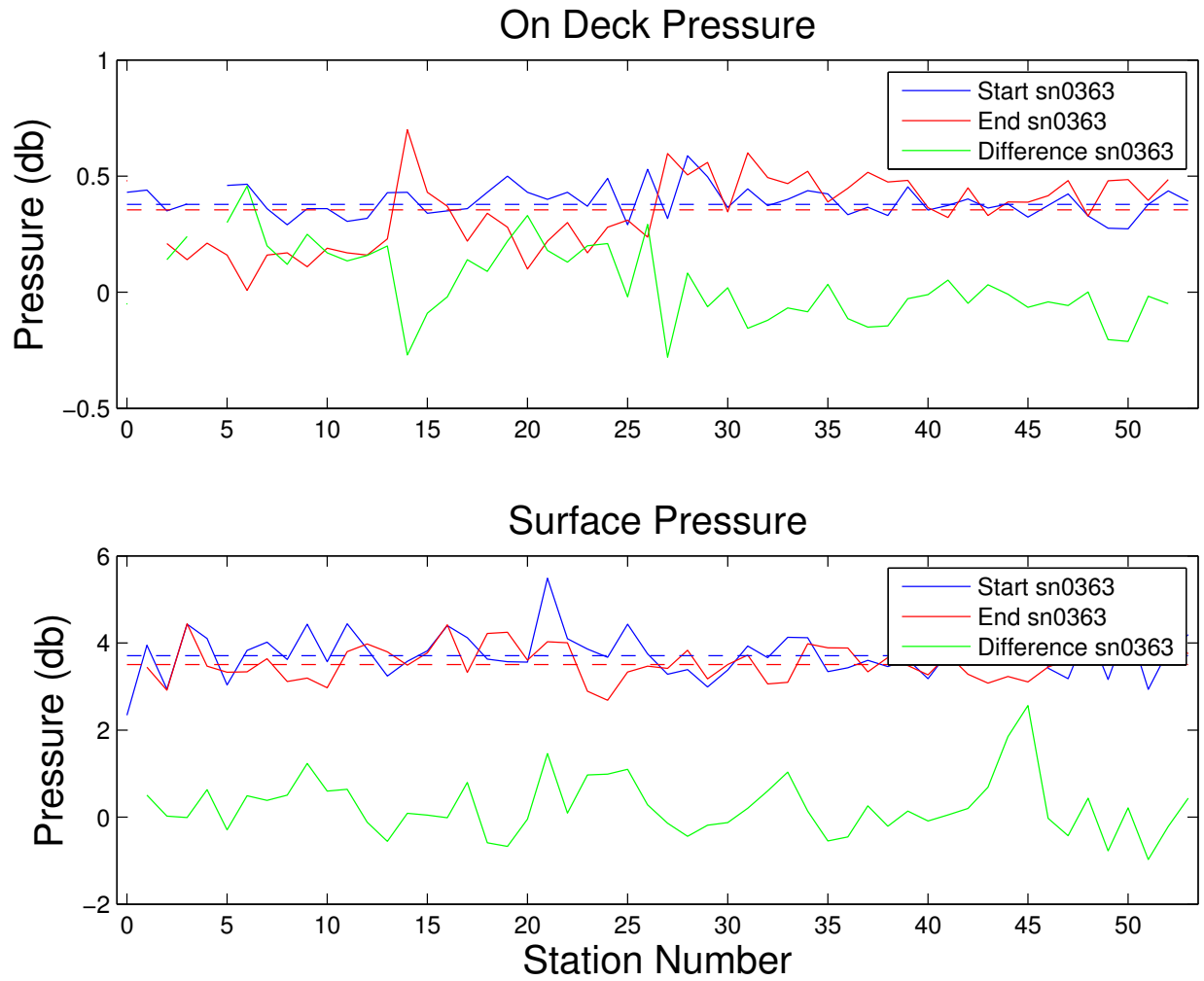


Figure 9: Pressure differences vs. station number. Top panel are the pressures measured on deck before the cast (blue), at the end of the upcast (red) and their respective difference (green) for s/n 0363. Bottom panel are the near sea surface pressure values measured at the start of the downcast (blue), at the end of the upcast (red) and their respective difference (green) for s/n 0363.

Table 12: Near surface Pressure values and scan number used to remove surface soak and on-deck values.

Station	Markscan	Deck Prs Start	Deck Prs End	Sfc Prs Start	Sfc Prs End
0	6407	0.4300	0.4800	2.3400	
1	4051	0.4400		3.9500	3.4440
2	3876	0.3500	0.2100	2.9400	2.9150
3	5341	0.3800	0.1400	4.4300	4.4400
4	4363		0.2109	4.1005	3.4690
5	4339	0.4598	0.1600	3.0362	3.3280
6	4249	0.4648	0.0084	3.8300	3.3380
7	4796	0.3600	0.1600	4.0200	3.6370
8	3916	0.2900	0.1700	3.6200	3.1150
9	5624	0.3600	0.1100	4.4300	3.1950
10	4159	0.3600	0.1900	3.5700	2.9700
11	4504	0.3050	0.1700	4.4400	3.8010
12	4540	0.3180	0.1600	3.8600	3.9770
13	3809	0.4290	0.2300	3.2400	3.7940
14	5473	0.4300	0.7000	3.5800	3.4910
15	4776	0.3400	0.4300	3.8200	3.7750
16	4169	0.3500	0.3700	4.4000	4.4160
17	3779	0.3600	0.2200	4.1200	3.3240
18	4025	0.4300	0.3400	3.6300	4.2200
19	4330	0.5000	0.2800	3.5700	4.2440
20	4267	0.4300	0.1000	3.5600	3.6070
21	4349	0.4000	0.2200	5.4900	4.0300
22	4441	0.4300	0.3000	4.0980	4.0060
23	3932	0.3700	0.1700	3.8600	2.8920
24	4171	0.4900	0.2800	3.6700	2.6850
25	4598	0.2900	0.3100	4.4300	3.3320
26	4931	0.5290	0.2370	3.7500	3.4690
27	4196	0.3170	0.5970	3.2800	3.4180
28	4010	0.5880	0.5050	3.3900	3.8310
29	3784	0.4970	0.5590	2.9900	3.1770
30	3830	0.3650	0.3456	3.3800	3.5030
31	4364	0.4450	0.6000	3.9300	3.7240
32	4516	0.3730	0.4940	3.6600	3.0570
33	3969	0.4000	0.4680	4.1300	3.0950
34	4128	0.4370	0.5210	4.1200	3.9820
35	4231	0.4230	0.3890	3.3400	3.8880
36	4201	0.3340	0.4480	3.4300	3.8850
37	4164	0.3660	0.5160	3.6000	3.3390
38	4185	0.3300	0.4748	3.4600	3.6680
39	4129	0.4541	0.4816	3.6200	3.4810
40	3768	0.3536	0.3639	3.1800	3.2680

41	3404	0.3740	0.3221	3.7800	3.7300
42	3780	0.4020	0.4493	3.4800	3.2800
43	3814	0.3626	0.3300	3.7600	3.0760
44	3733	0.3799	0.3883	5.0800	3.2320
45	3741	0.3232	0.3881	5.6700	3.1050
46	3827	0.3738	0.4155	3.4200	3.4470
47	3732	0.4235	0.4804	3.1800	3.6050
48	3763	0.3290	0.3280	4.3000	3.8640
49	4210	0.2760	0.4800	3.1600	3.9320
50	4061	0.2730	0.4850	4.4200	4.2080
51	4417	0.3784	0.3954	2.9360	3.9080
52	4282	0.4362	0.4854	3.8280	4.0420
53	4036	0.3924		4.1900	3.7550

6.3 CTD Temperature

Temperature sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw primary and secondary temperature data during each cast. Data accuracy, reproducibility and stability were examined by tabulating the difference between the two different temperature sensors over a range of pressures (bottle trip locations) for each cast. These comparisons are summarized in Figure 11, which shows a median temperature difference between the two sensors of 0.0002 °C and a standard deviation of 0.001 °C. The secondary sensor, s/n 5898, was used for all the final data values.

Following Seabird application note No. 31, a linear offset drift is applied, if necessary, between the pre-cruise calibration and the post-cruise calibration value. The corrected temperature and offset are computed according to:

$$T_{cor} = slope * T_{CTD} + offset$$

and

$$offset = b * (residual/n)$$

where T_{cor} is the corrected temperature, the slope is taken to be 1, T_{CTD} is the sensor temperature, b is number of days between pre-cruise calibration and the cast to be corrected, n is the number of days between pre- and post-cruise calibrations, and $residual$ is the residual from the post-calibration sheet (Sea-Bird Electronics, Inc., 2010).

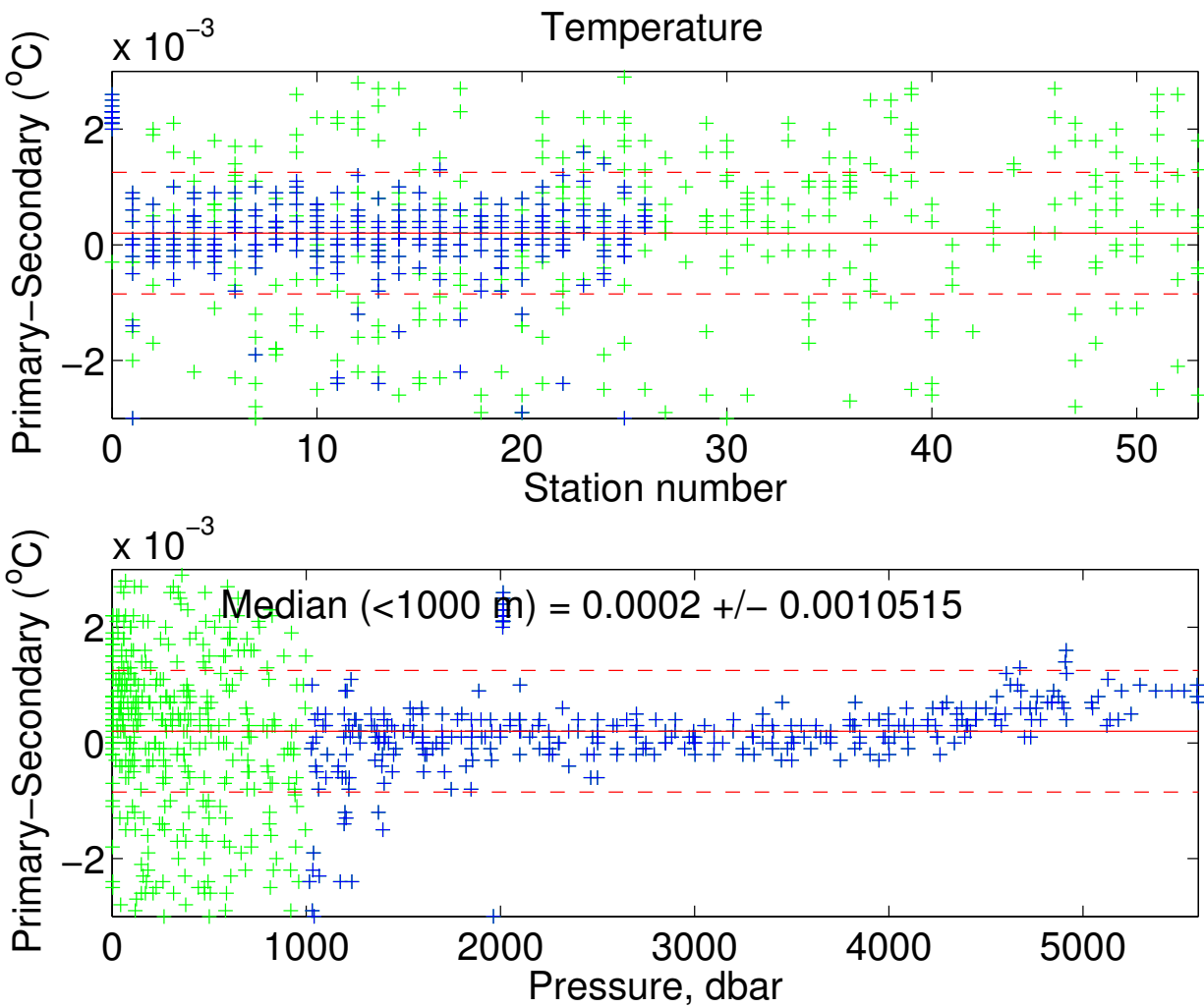


Figure 10: Temperature differences (after corrections) between sensors by station number (top) and pressure (bottom). The green represents the surface data down to 1000 dbar. The blue represents data below 1000 dbar. The red solid line represents the median with the red dashed representing the standard deviation (same for top and bottom).

A SBE 35RT reference temperature was used during the cruise as a check to monitor the behavior of the primary and secondary temperature sensors. This allows for corrections to be made if there is any significant pressure dependence or offset seen in the sensors throughout the cruise. Both sensors behaved well throughout the cruise and no corrections were necessary for final calibrations using the secondary temperature sensor.

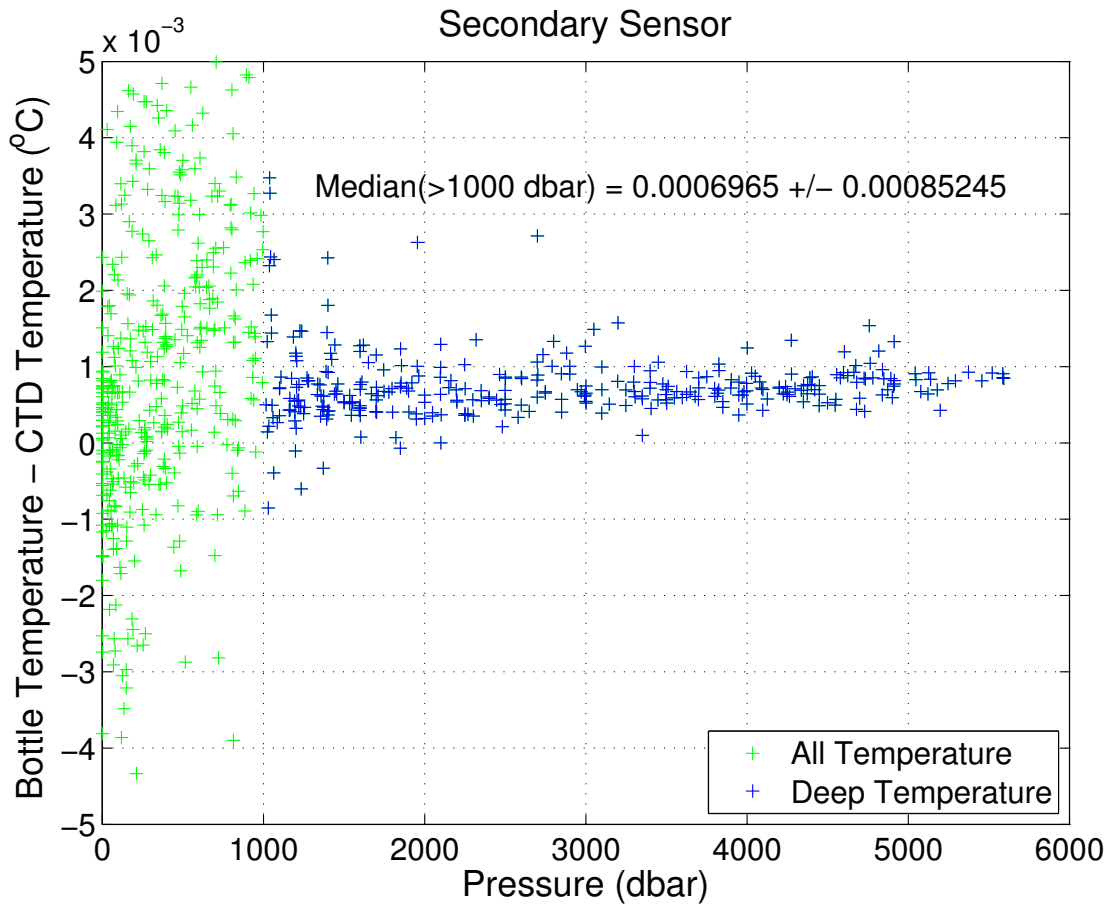


Figure 11: Temperature differences between the reference temperature at bottle stops and the secondary temperature sensor.

6.4 Conductivity

Conductivity sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw primary and secondary conductivities. Comparisons between the primary and secondary sensors and between each of the sensors to conductivity calculated from bottle salinities were used to derive conductivity corrections. Uncorrected C1-C2 are shown in Figure 12 to help identify sensor drift. Several conductivity sensors were used throughout the cruise. The sensors show a median difference of -0.0005 mS/cm and a standard deviation of 0.0007 mS/cm. Both sensors showed reasonable values for the residuals. The secondary sensor, s/n 4223, was used for all the final data values (Figure 13).

The AOML/CTDCAL Toolbox automatically applies a quality control to the data based on comparison with a normal distribution. After these procedures 686 data points (85.75 %) were used in the final calculations. In order to calibrate the CTD conductivity data against the sample conductivity we assume a constant additive correction (offset), multiplicative correction (slope), time drift correction (represented by station number) and where needed, a linear pressure-dependent term. A non-linear function is used to derive these coefficients and are applied to

$$C_{new} = [m * C_{CTD} + (p_1 * station) + b + pcor * P]$$

with

	s/n 3861	
	Stations 0-26	Stations 27-53
<i>m</i>	0.9999727	1.0000681
<i>p</i> ₁	-1.0718090e-05	0
<i>b</i>	0.0030081	-0.0029035
<i>pcor</i>	-5.1894891e-07	1.1122919e-06

where C_{bottle} is bottle conductivity (mS/cm), C_{CTD} is pre-cruise calibrated CTD conductivity (mS/cm), m is the conductivity slope, b is the offset (mS/cm), P is the pressure, $pcor$ is the pressure correction coefficient, $station$ is the station number and p_1 is the polynomial coefficient. The fit is also weighted in such way that the final solution is preferentially forced to fit the data below a specified depth, in this case 1000 dbar.

The coefficients estimated by the equation above were then applied to the CTD conductivities and the final results (Figure 13 to Figure 17) show a residual of $2.4 \cdot 10^{-5}$ psu ($-4.4 \cdot 10^{-5}$ psu for the data below 1000 dbar) and a standard deviation of 0.0016 psu (0.0009 psu for the data below 1000 dbar). Also 83.5% of the residuals for the data are within the confidence limits determined by the WOCE (± 0.002 psu) and this number increases to 97.3% if we consider only the data below 1000 dbar.

A final verification about the quality of the data was made by comparing the results of this cruise with some historical data (Figure 18 and Figure 19). Water mass properties are very stable, specially for deeper layers of the ocean, that way by comparing these values we can have a very good estimative of the quality of these data.

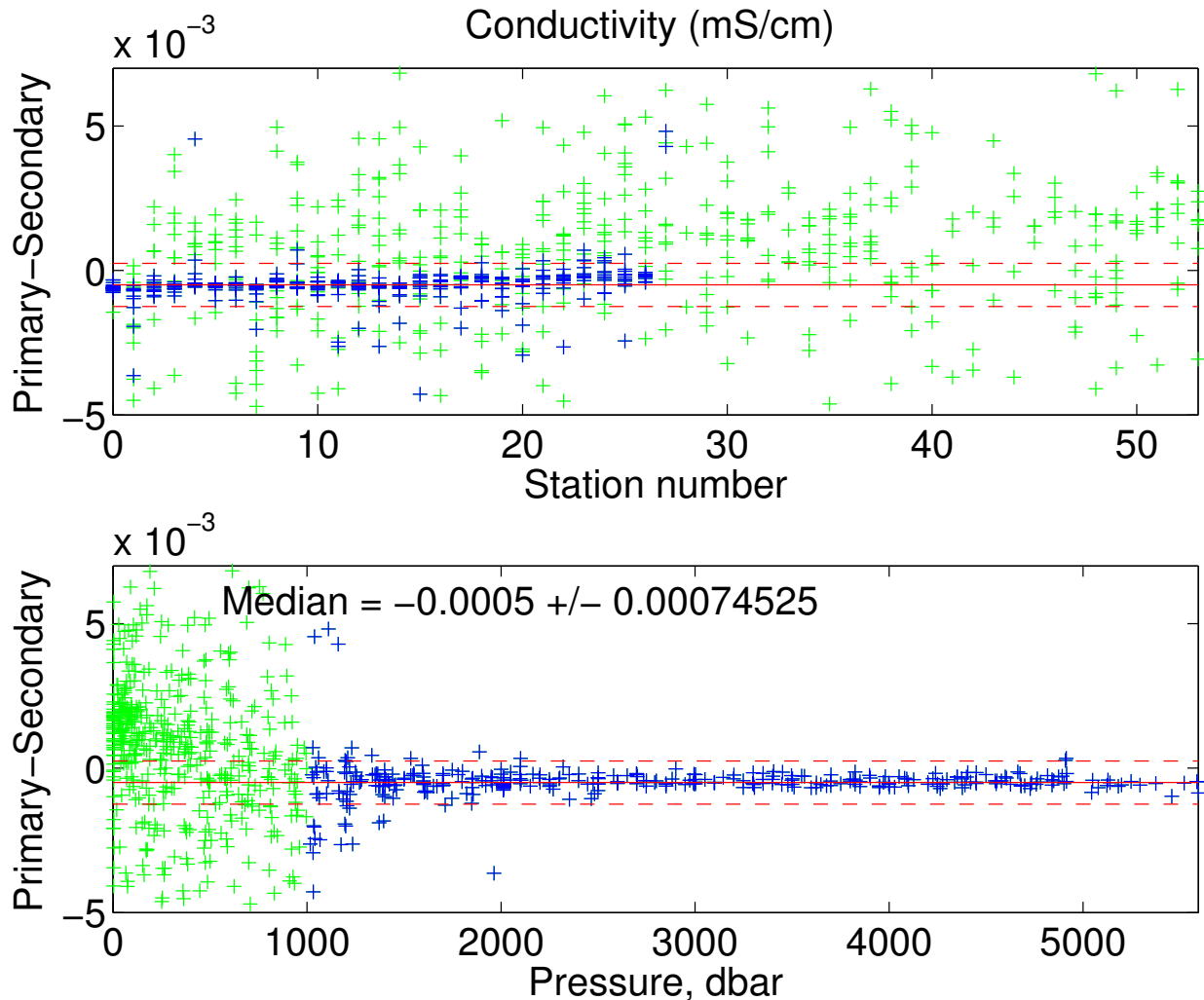


Figure 12: Conductivity (mS/cm) differences between sensors by station (top) and pressure (bottom). The red solid line represents the median with the red dashed representing the standard deviation.

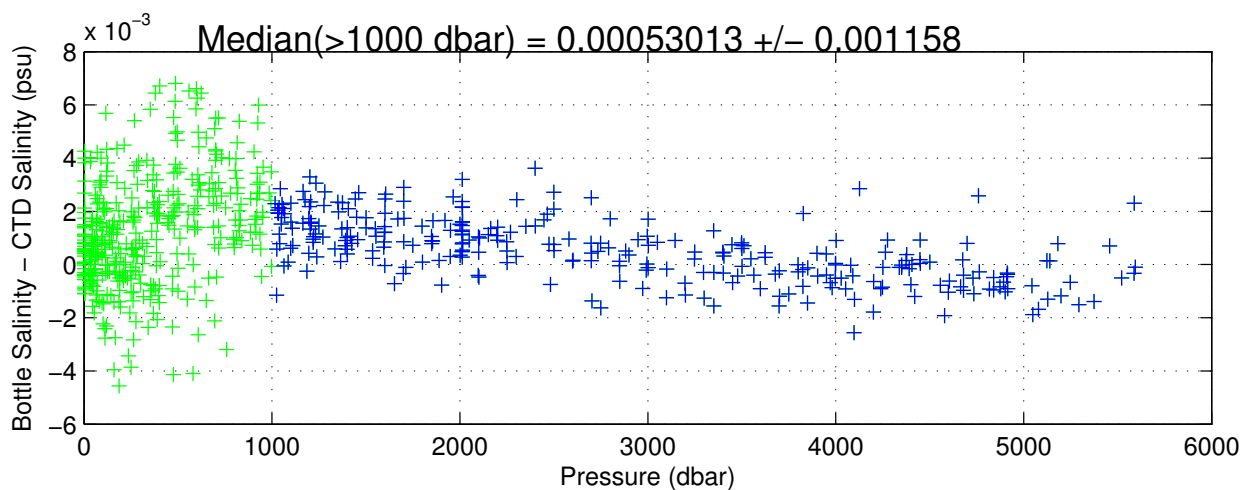
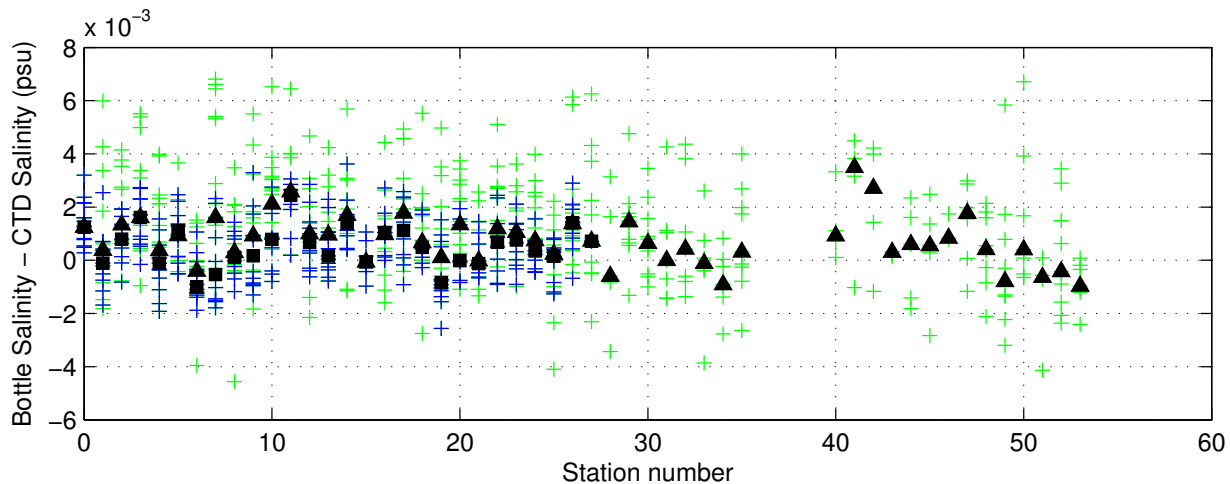


Figure 13: Bottle and uncalibrated primary CTD salinity differences plotted against pressure. The green crosses represent all data points and the blue are the data points below 1000 dbar. The median was calculated using only the data below 1000 dbar.

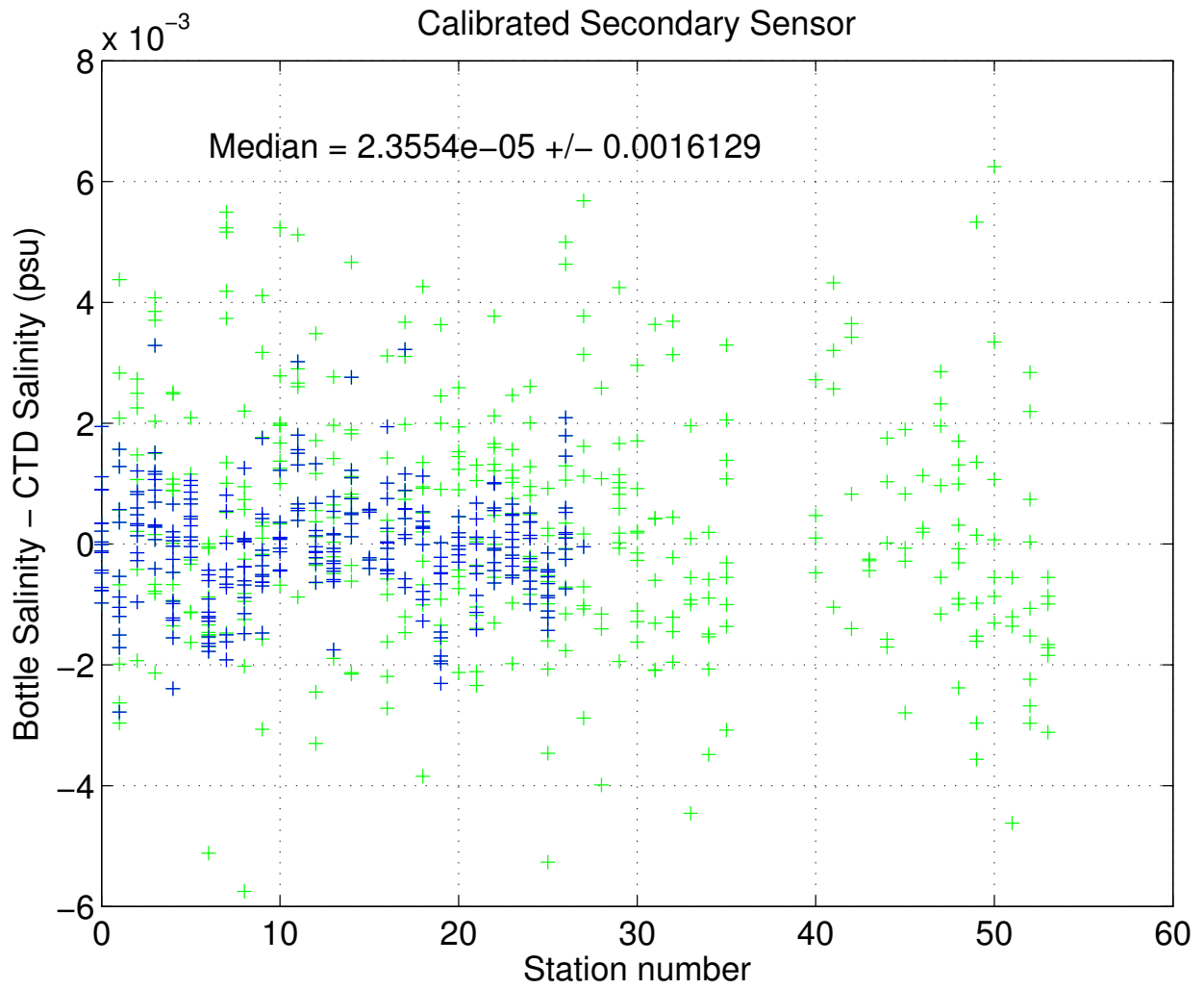


Figure 14: Bottle and calibrated primary CTD salinity differences plotted vs. station.

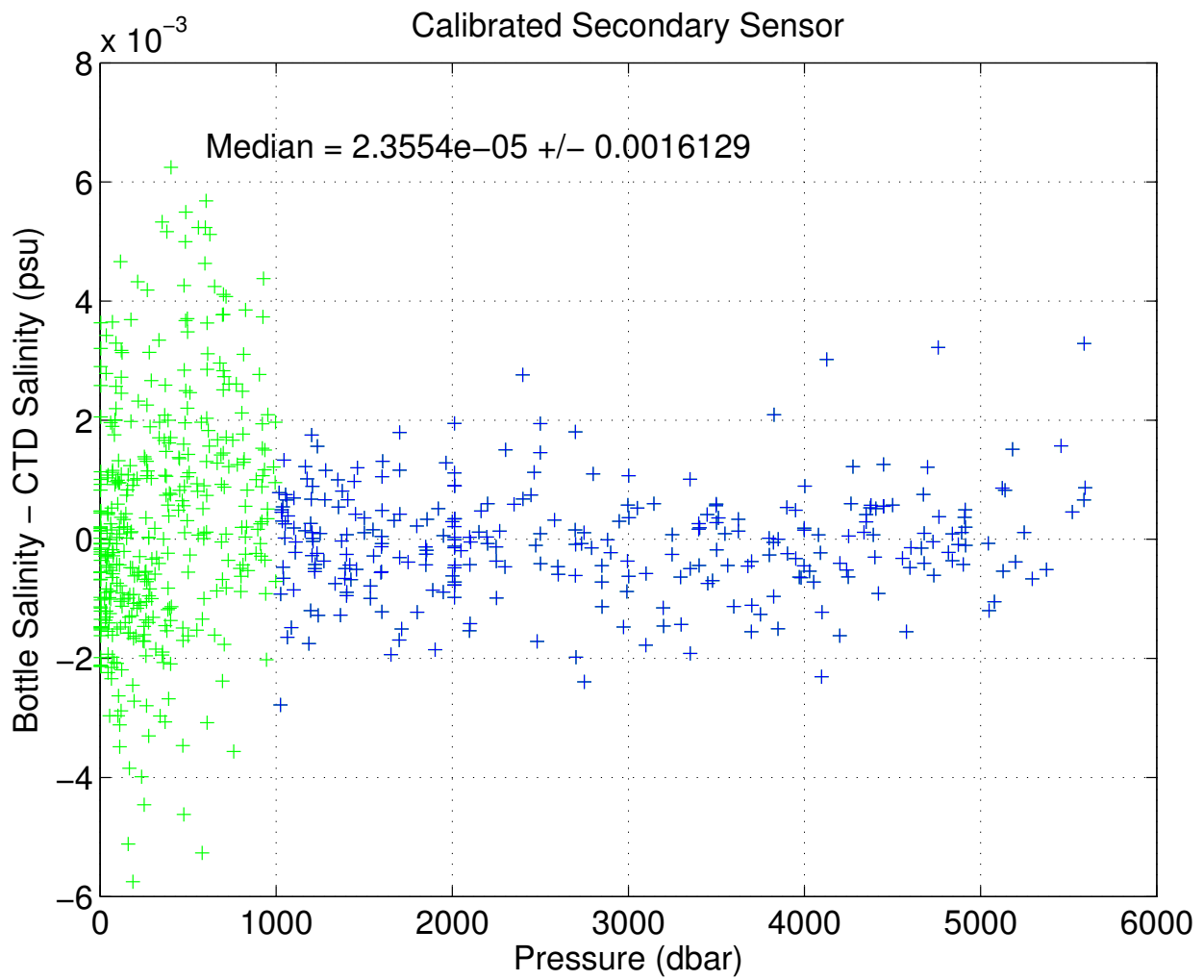


Figure 15: Bottle and calibrated primary CTD salinity differences plotted vs. pressure.

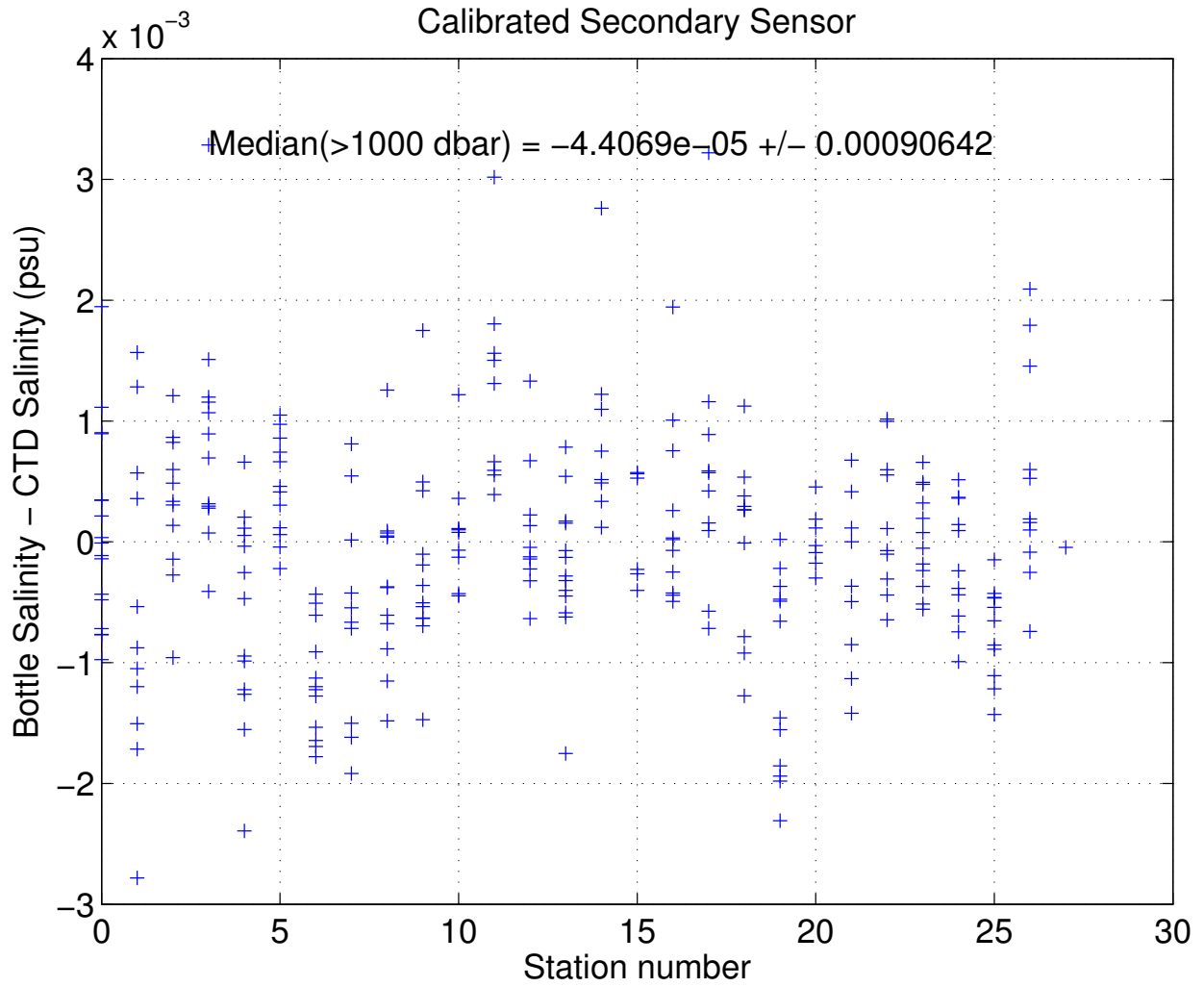


Figure 16: Bottle and calibrated primary CTD salinity differences plotted vs. station below 1000 dbar.

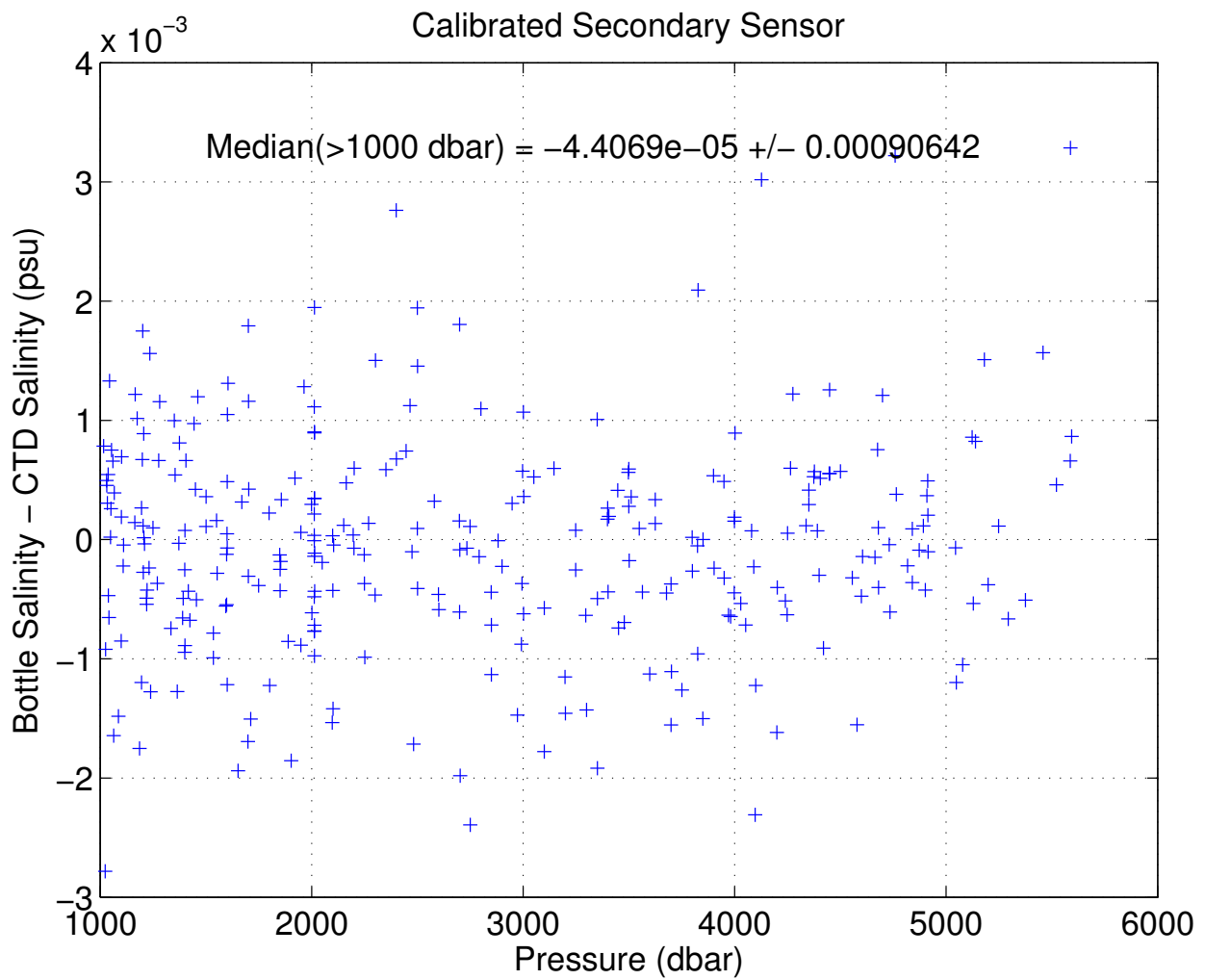


Figure 17: Bottle and calibrated primary CTD salinity differences plotted vs. pressure below 1000 dbar.

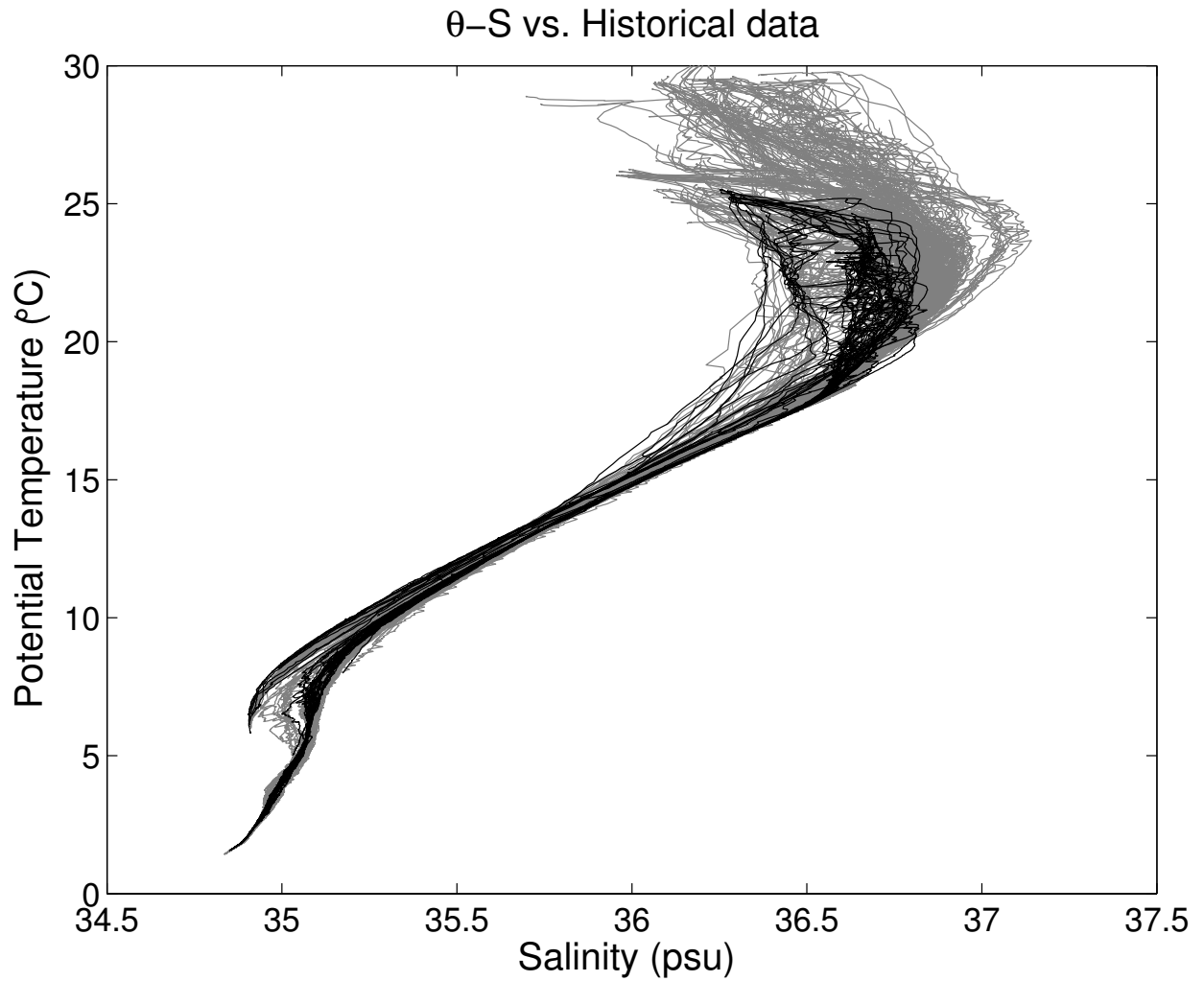


Figure 18: Potential Temperature - Salinity diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

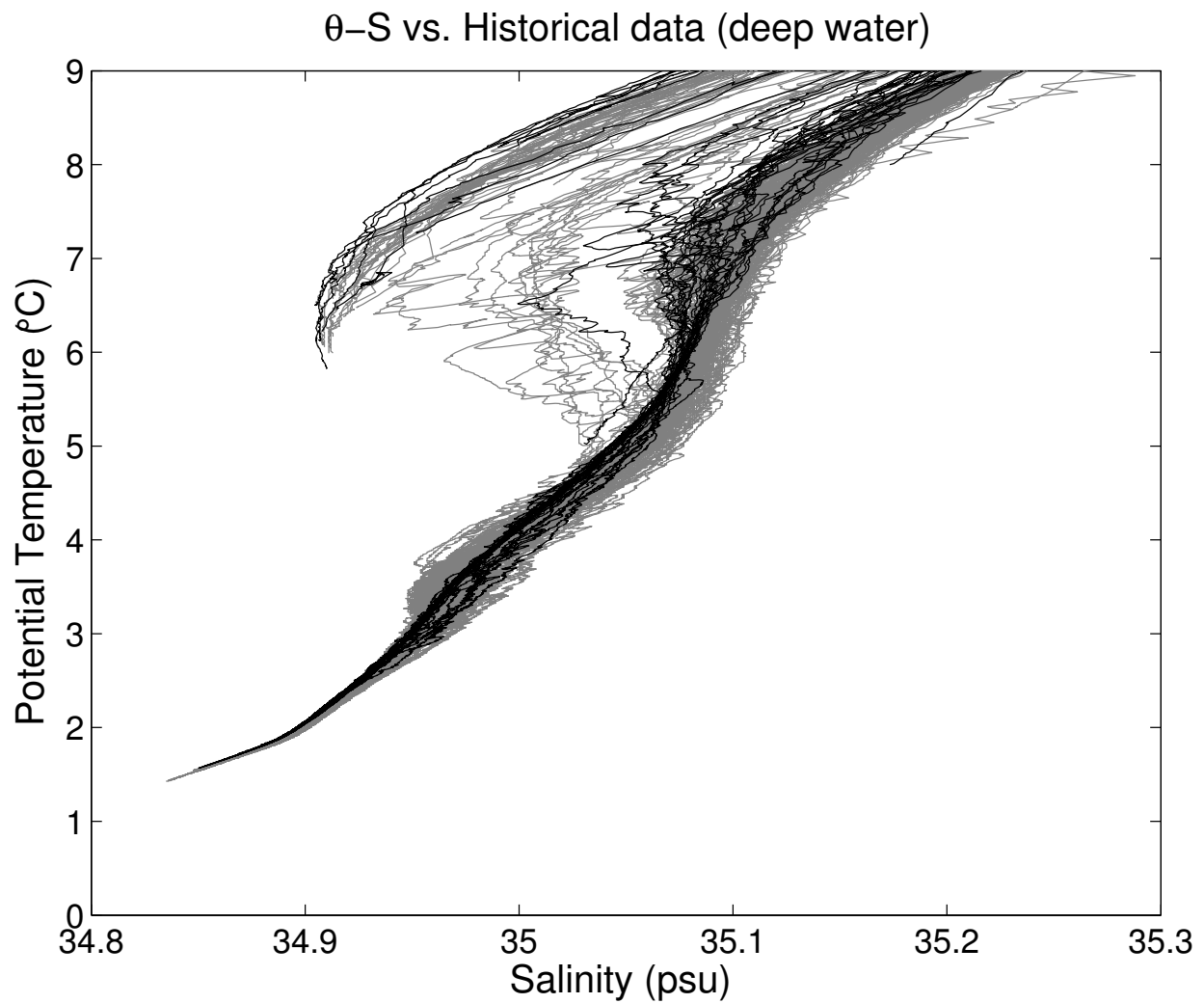


Figure 19: Potential Temperature - Salinity diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

6.5 Dissolved Oxygen

Three SBE43 dissolved O₂ (DO) sensors were used on this leg (Table 4). Due to a hysteresis problem with the oxygen sensors the DO sensors were calibrated to dissolved O₂ check samples by matching the up cast bottle trips to down cast CTD data along neutral density surfaces, calculating CTD dissolved O₂, and then minimizing the residuals using a non-linear least-squares fitting procedure.

The algorithm used for converting oxygen sensor current and probe temperature measurements as described, requires a non-linear least squares regression technique in order to determine the best fit coefficients of the model for oxygen sensor behavior to the water sample observations. A Matlab® sub-routine called `oxfit.m` from the AOML CTD/CAL TOOLBOX performs a non-linear least squares regression using the Gauss-Newton algorithm with Levenberg-Marquardt modifications for global convergence. This algorithm is independent of the first coefficients guess and demonstrates excellent convergence. This `oxfit.m` routine includes an optional time drift term (related with the station number), allowing all stations to be calibrated without breaking into discrete groupings. The Owens and Millard (1985) algorithm was modified as follows:

$$O \text{ (ml/l)} = \left\{ Soc * (V + V_{offset} + tau(T, S) * \frac{\delta v}{\delta t}) + p1 * station \right\} \\ * (1.0 + A * T + B * T^2 + C * T^3) * OXSAT(T, S) * e^{E * (\frac{P}{K})}$$

with

	S/N 2942		
	Stations 0-9	Stations 10-26	Stations 27-53
<i>Soc</i>	0.4432801	0.4432801	0.4432801
<i>V_{offset}</i>	-0.4773774	-0.4773774	-0.4773774
<i>tau</i>	0.56	0.56	0.56
<i>A</i>	-0.0087554	-0.0087554	-0.0087554
<i>B</i>	0.0005559	0.0005559	0.0005559
<i>C</i>	-0.0000104	-0.0000104	-0.0000104
<i>E</i>	0.0365120	0.0365120	0.0365120
<i>p1</i>	0.0002056	0.0002056	0.0002056

where *Soc*, *tau*, *V_{offset}*, *A*, *B*, *C*, *E* and *p1* are the calibration coefficients shown above and *V* is the instrument voltage (*V*). *T*, *S* and *P* are the temperature, salinity and pressure measured by the CTD. *K* is the temperature in the absolute scale, *station* is the station number, and *OXSAT* is the oxygen saturation.

A comparison between the primary and secondary sensors (Figure 20) was evaluated. There is a shift in the differences after station 26 which was due to swapping a bad sensor.

The sensors show a median difference of $-1.49 \text{ } \mu\text{mol}/\text{kg}$ and a standard deviation of $0.96 \text{ } \mu\text{mol}/\text{kg}$. The primary sensor was chosen (Figure 21) and the sensor shows a median difference of $20.46 \text{ } \mu\text{mol}/\text{kg}$ and a standard deviation of $3.44 \text{ } \mu\text{mol}/\text{kg}$ compare to the oxygen bottle data.

Stations from 28 and on correspond to the Florida Straits and Northwest Providence Channel (where bottom depths do not exceed 800 m). The coefficients for oxygen sensor, s/n 2691, were applied to all the stations. Also, analogous to the conductivity, AOML/CTDCAL Toolbox automatically applies a quality control to the data based on comparison with a normal distribution. After these procedures 714 data points (86.2%) were used in the final calculations.

By minimizing the differences between the oxygen samples and the CTD oxygen estimated from the equation described in this section, the new coefficients above were calculated and then applied to the CTD original data (Figure 22 to Figure 25). The residual is $-0.02 \text{ } \mu\text{mol}/\text{kg}$ ($-0.07 \text{ } \mu\text{mol}/\text{kg}$ for the data below 1000 dbar) and the standard deviation $1.33 \text{ } \mu\text{mol}/\text{kg}$ ($1.2 \text{ } \mu\text{mol}/\text{kg}$ for the data below 1000 dbar). Also 95.7% of the residuals for the data are within the confidence limits determined by the WOCE ($\pm 1\%$ of the dissolved oxygen measured) and this number increase to 96.6% if we consider only the data below 1000 dbar.

A final verification about the quality of the data, like in the salinity data, was made by comparing the results of this cruise with some historical data available at the location of the Abaco section and the other sections (Figure 26 & Figure 27). Again by investigating water mass properties, particularly for deeper layers of the ocean, we can have an estimative of the quality of these data.

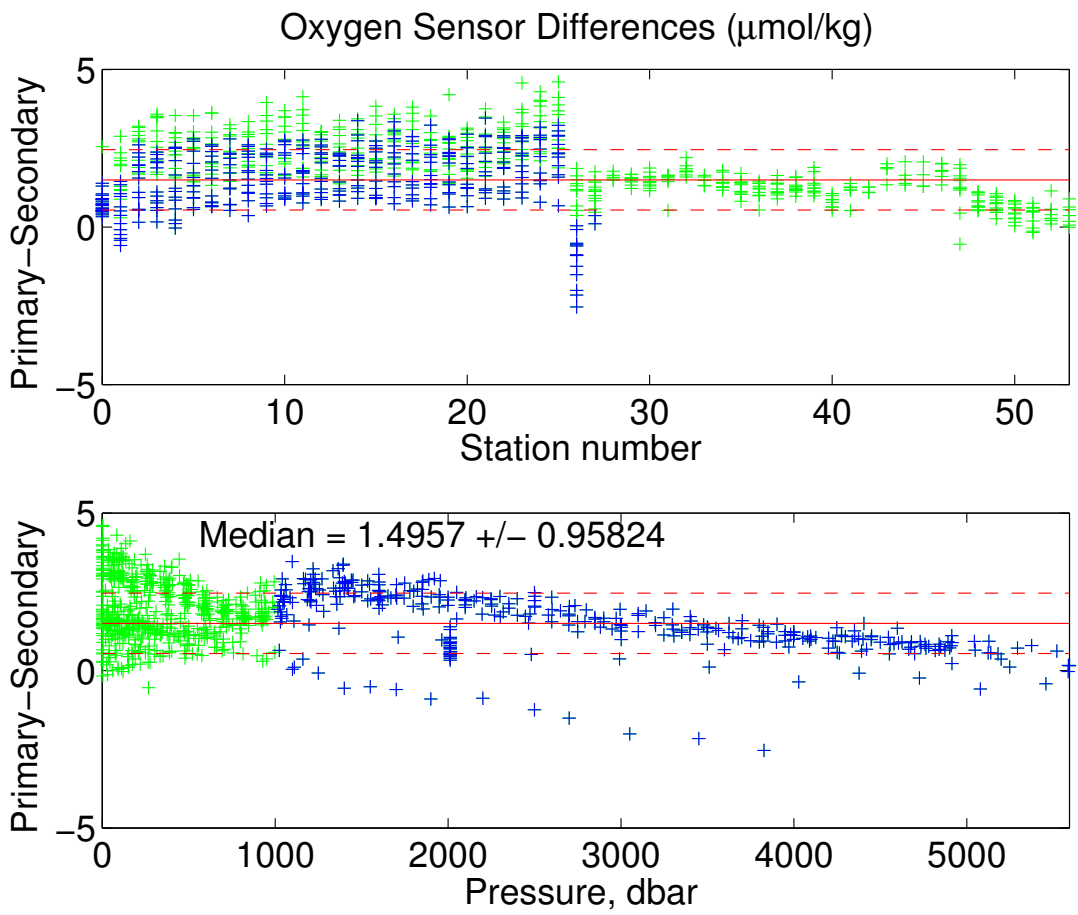


Figure 20: Dissolved oxygen differences between sensors by station (top) and by pressure (bottom). Sensor changes at station 15 and 24. The red solid line represents the median with the red dashed representing the standard deviation.

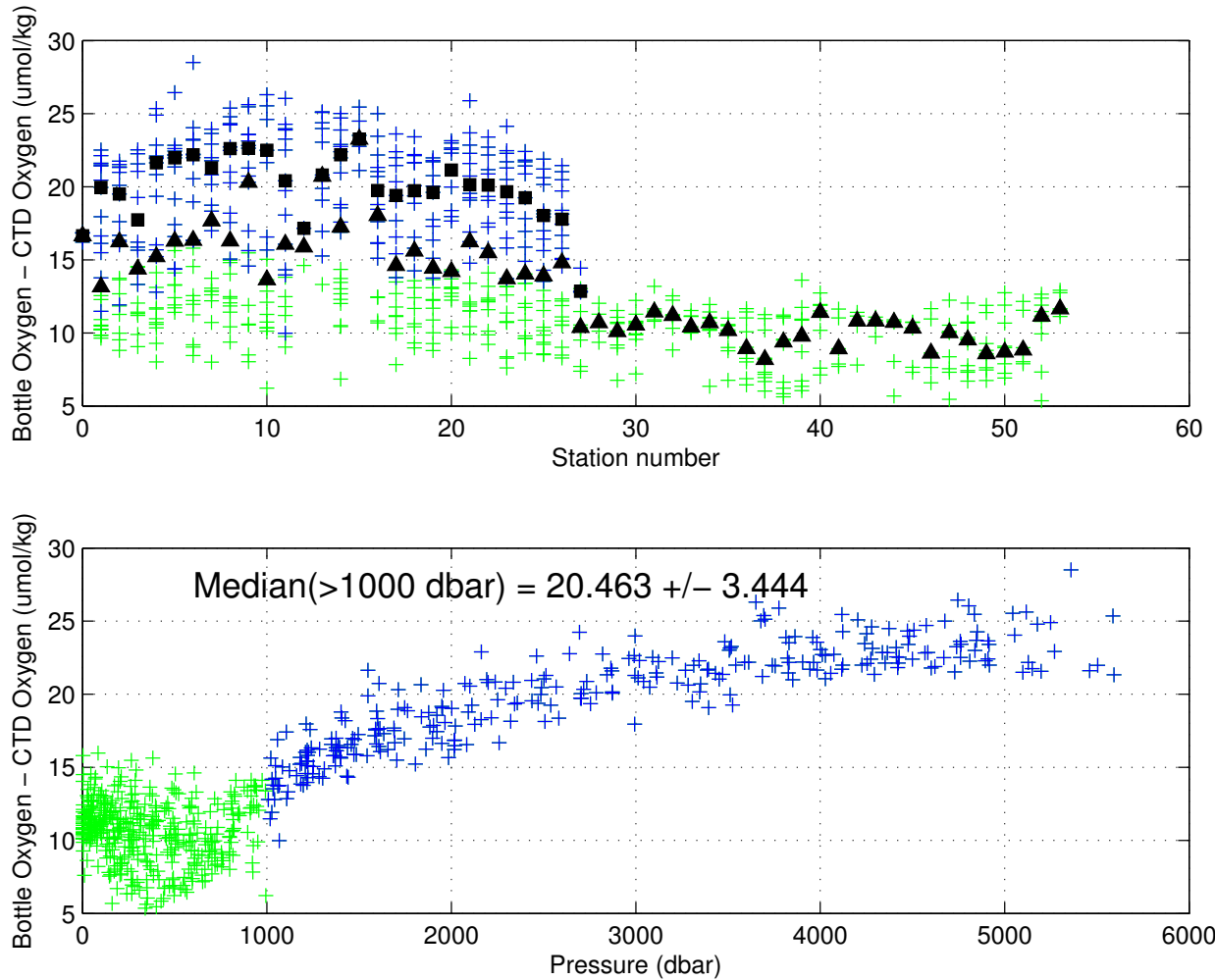


Figure 21: Bottle and uncalibrated primary CTD oxygen differences plotted against station number. The green crosses represent all data points and the blue are the data points below 1000 dbar. The median was calculated using only the data below 1000 dbar.

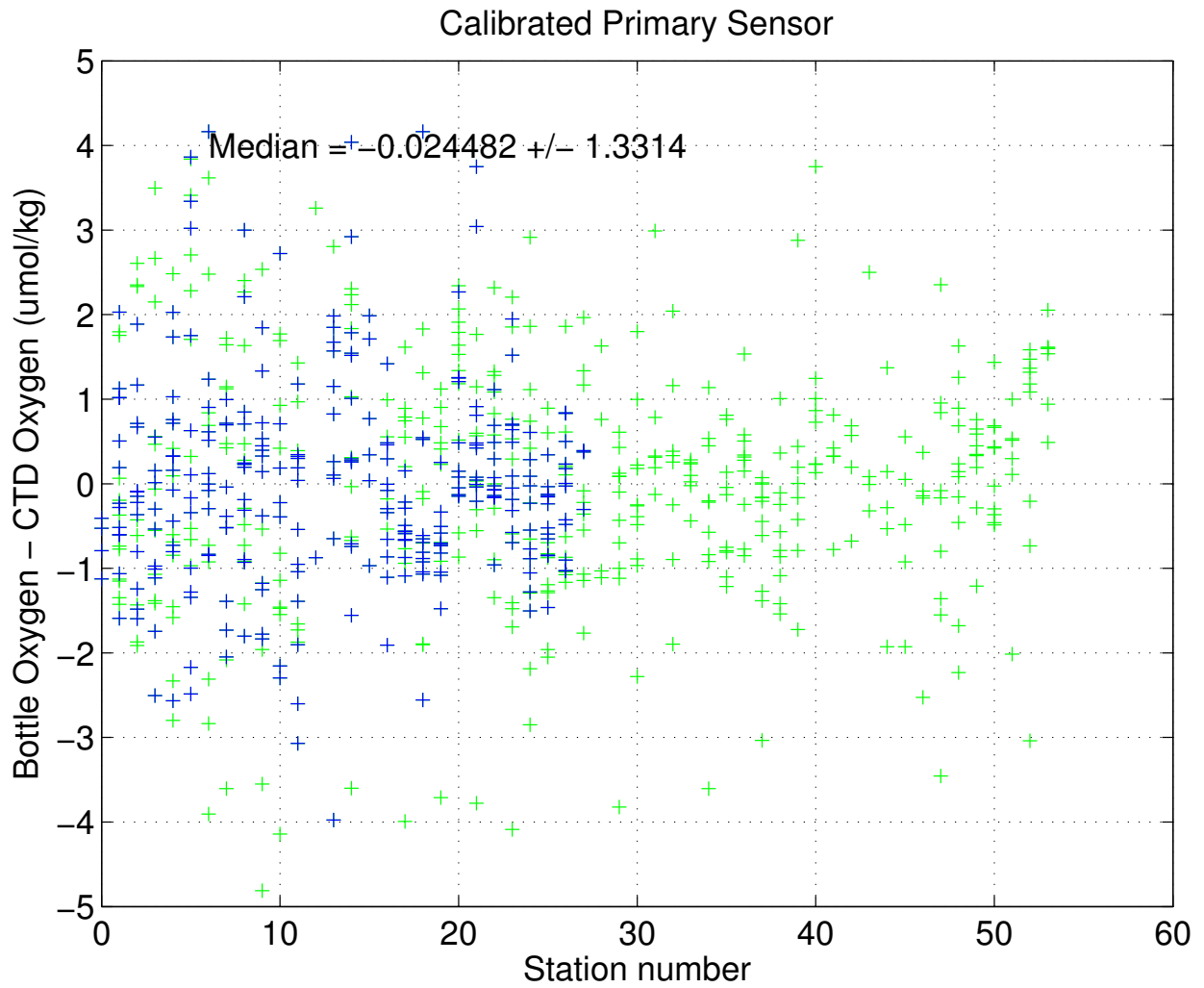


Figure 22: Bottle and calibrated primary CTD oxygen differences plotted vs. station.

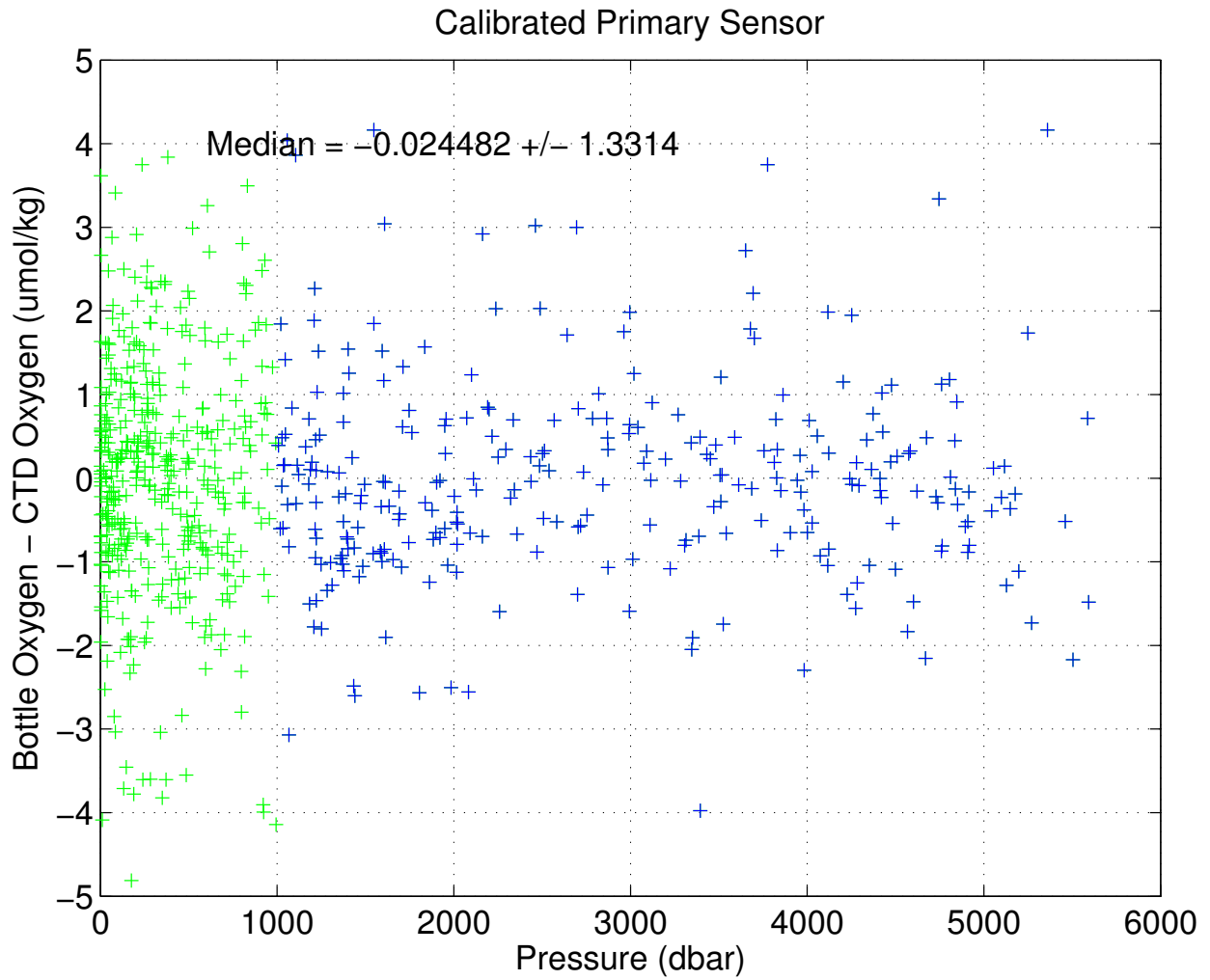


Figure 23: Bottle and calibrated primary CTD oxygen differences plotted vs. pressure.

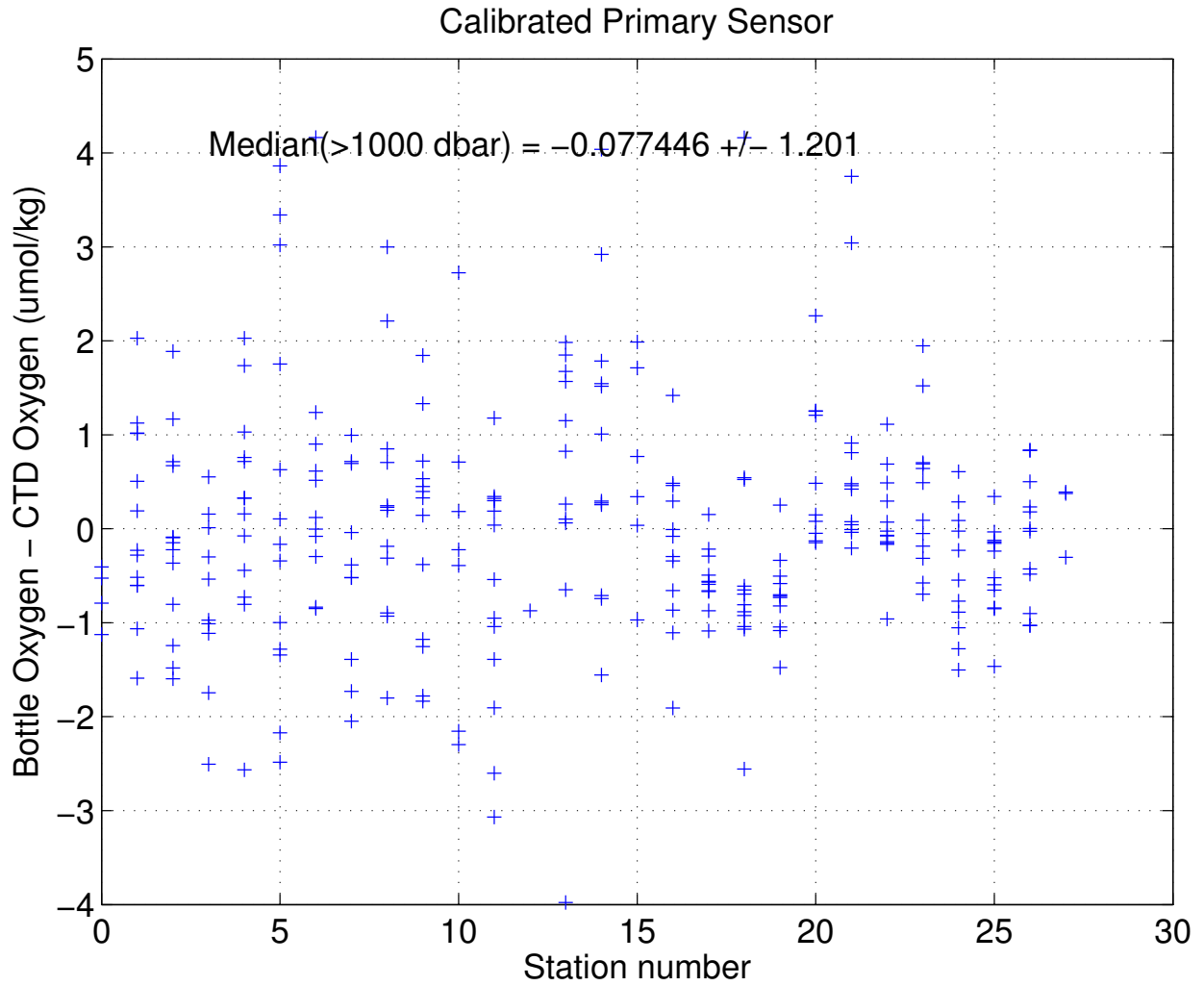


Figure 24: Bottle and calibrated primary CTD oxygen differences plotted vs. station below 1000 dbar.

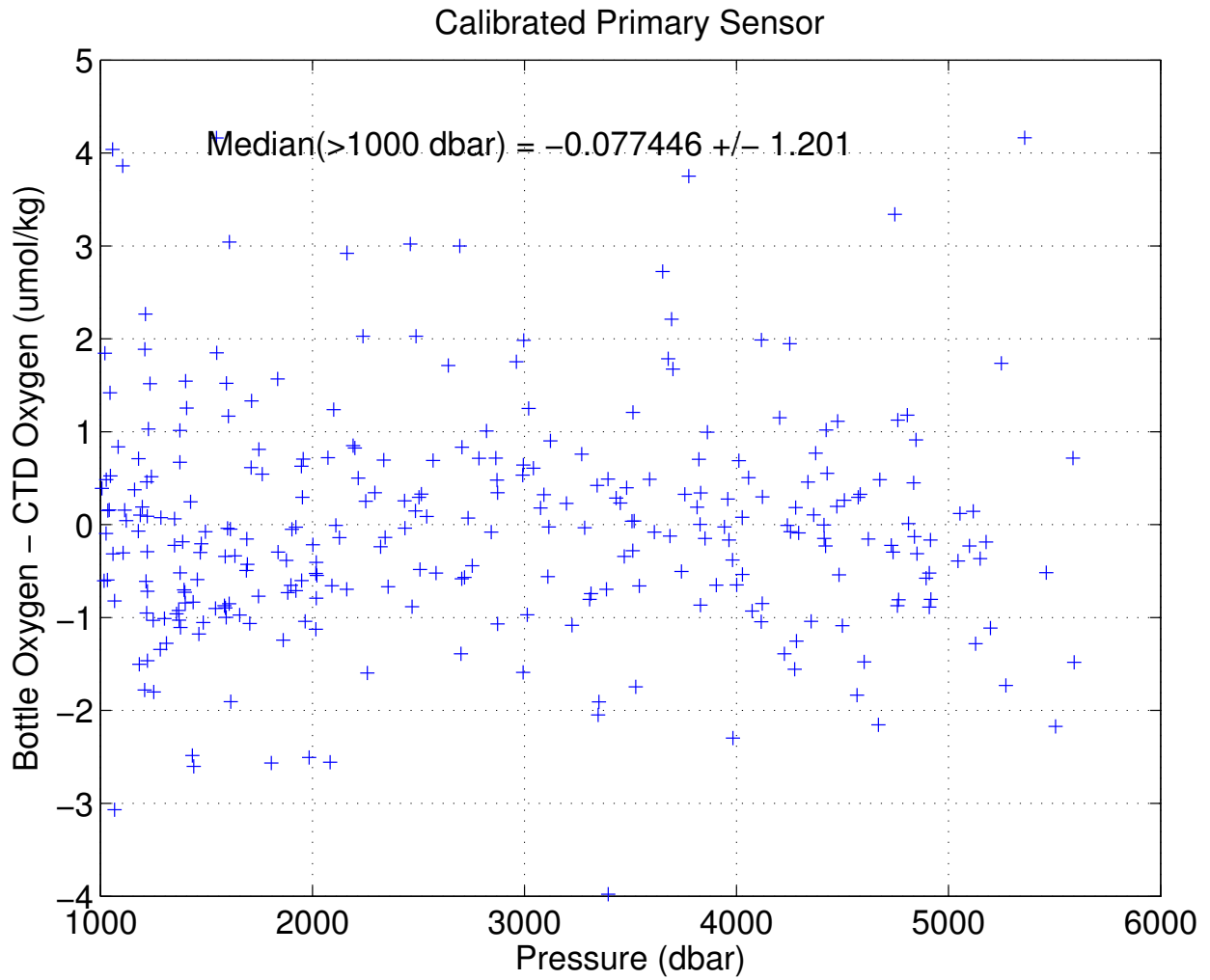


Figure 25: Bottle and calibrated primary CTD oxygen differences plotted vs. pressure below 1000 dbar.

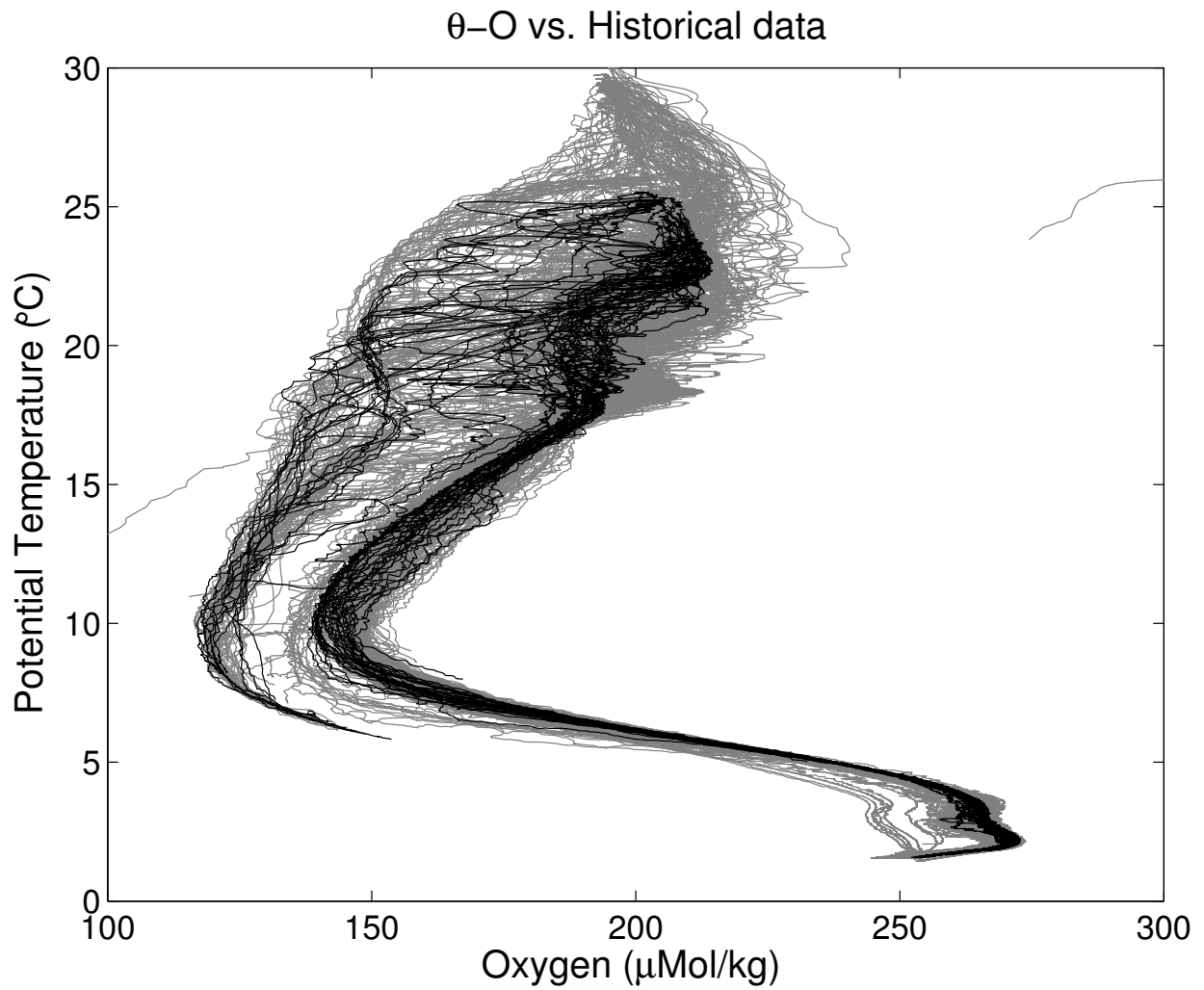


Figure 26: Potential Temperature - Oxygen diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

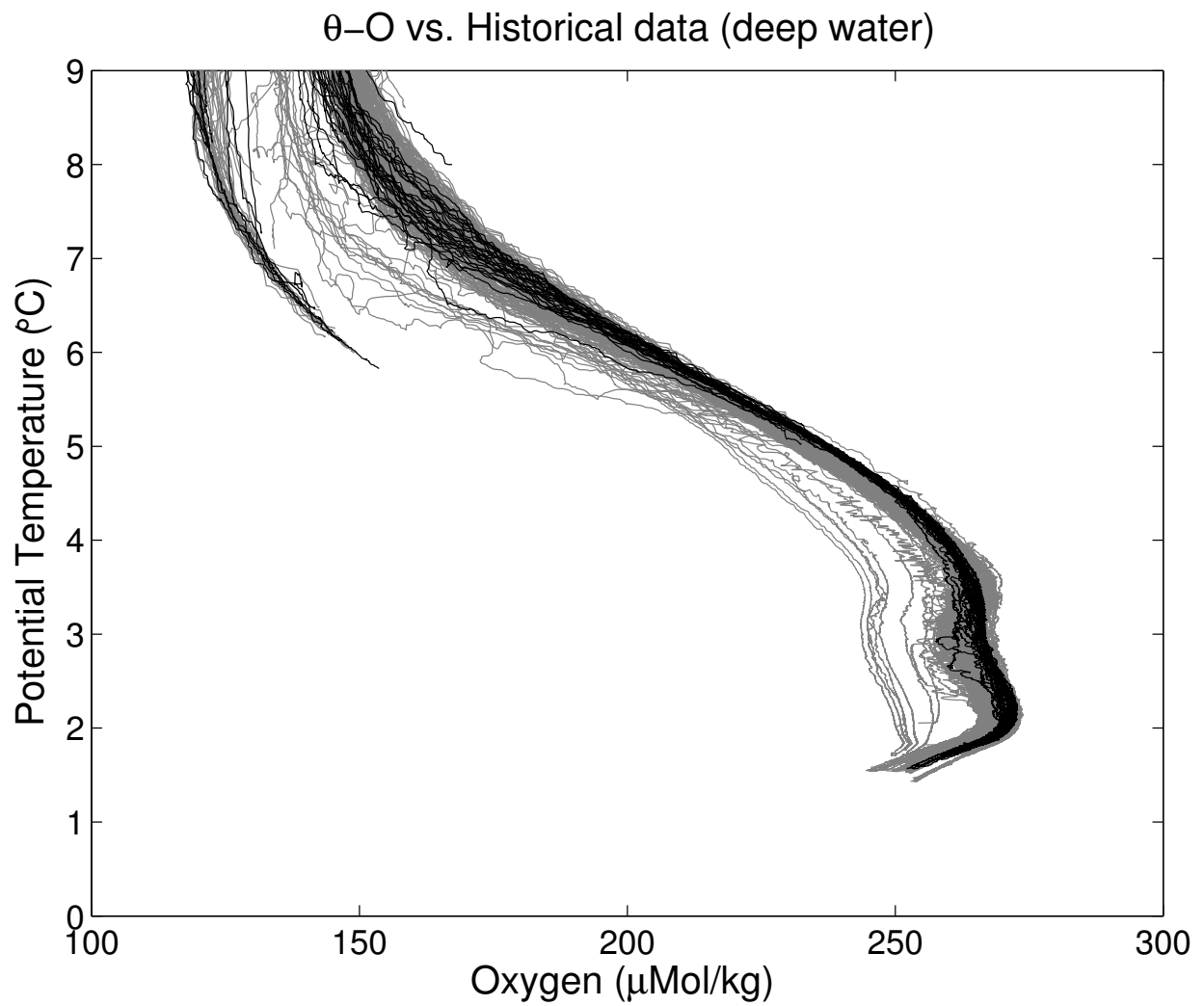


Figure 27: Potential Temperature - Oxygen diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

7 *Final CTD Data Presentation*

The final calibrated data files were used to produce the tables and station profile plots presented in Appendix A for each CTD station. The table on the top is in "standard depths" followed by the a table of the bottle trip depths. The corresponding profile plot is shown on the following page. Niskin bottle depths are presented on the right side of the profile plot. Bottle salinity and oxygen values are plotted as points in the three smaller plots.

Vertical sections of potential temperature, CTD salinity, neutral density, and CTD oxygen are contoured with pressure as the vertical axis and, for Abaco sections longitude as horizontal axis (Figure 28 to Figure 31). Nominal vertical exaggerations are 400:1 below 1000 dbar (lower panels) and 200:1 above 1000 dbar (upper panels). The Florida Current Section also uses longitude as the horizontal axis (Figure 32 to Figure 35). For the North-west Providence Channel Sections latitude is used as horizontal axis (Figure 40 to Figure 43).

Post-cruise calibrations were applied to CTD data associated with bottle data using Matlab sub-routines (`apply_calibration.m`). WOCE quality flags were appended to bottle data records. "Bad values" (WOCE quality control value = 4) were flagged if the bottle samples failed the initial quality control and were not used for the calibration (which meant they typically fell outside 2.57 standard deviations of the difference between samples and uncalibrated CTD values). A second pass is applied, using the value of 2.5 times the standard deviation of the difference between calibrated CTD values and bottle samples, where bottle values may be flagged as "bad values" or as questionable (WOCE quality control value = 3).

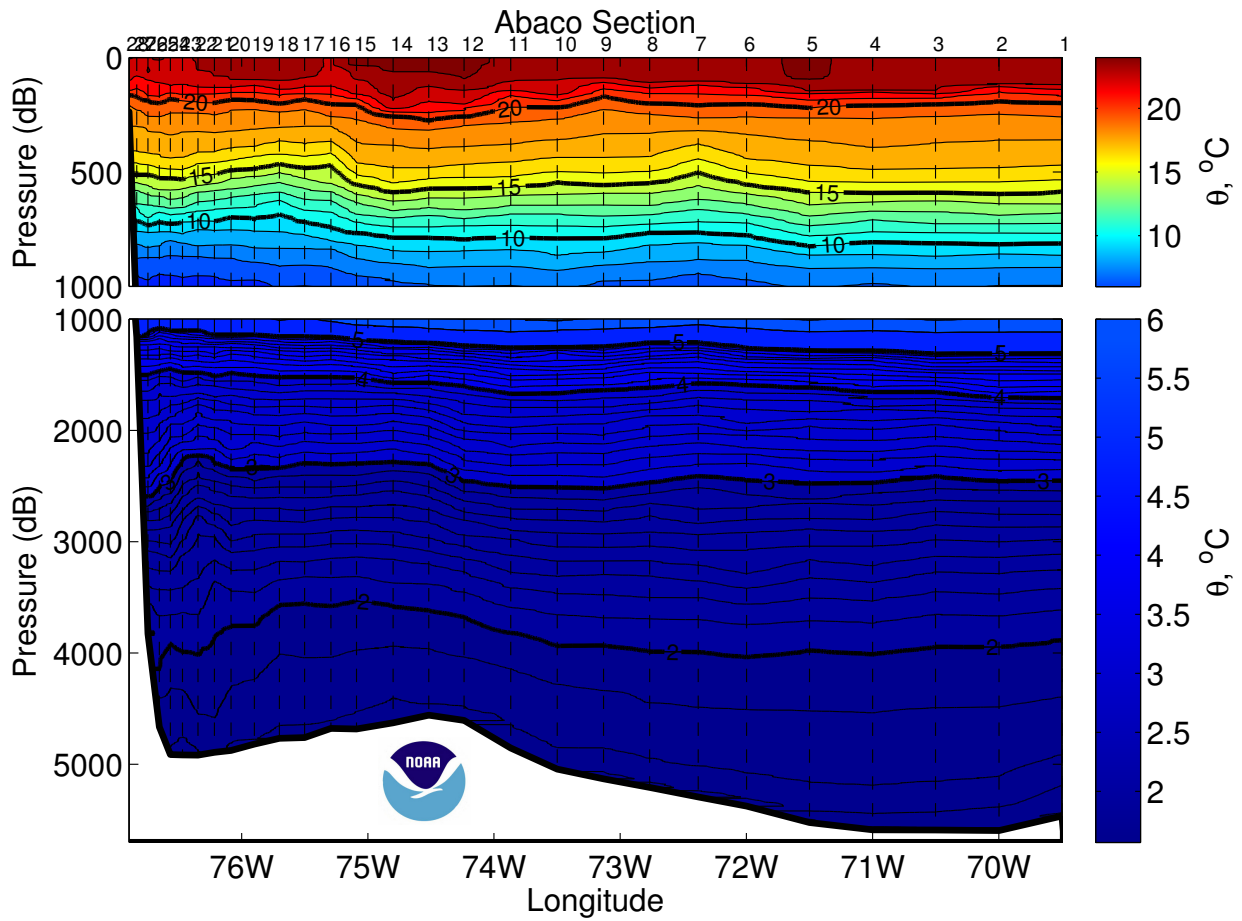


Figure 28: Potential Temperature (°C) section for the Abaco Section. Dashed vertical lines are the CTD station locations.

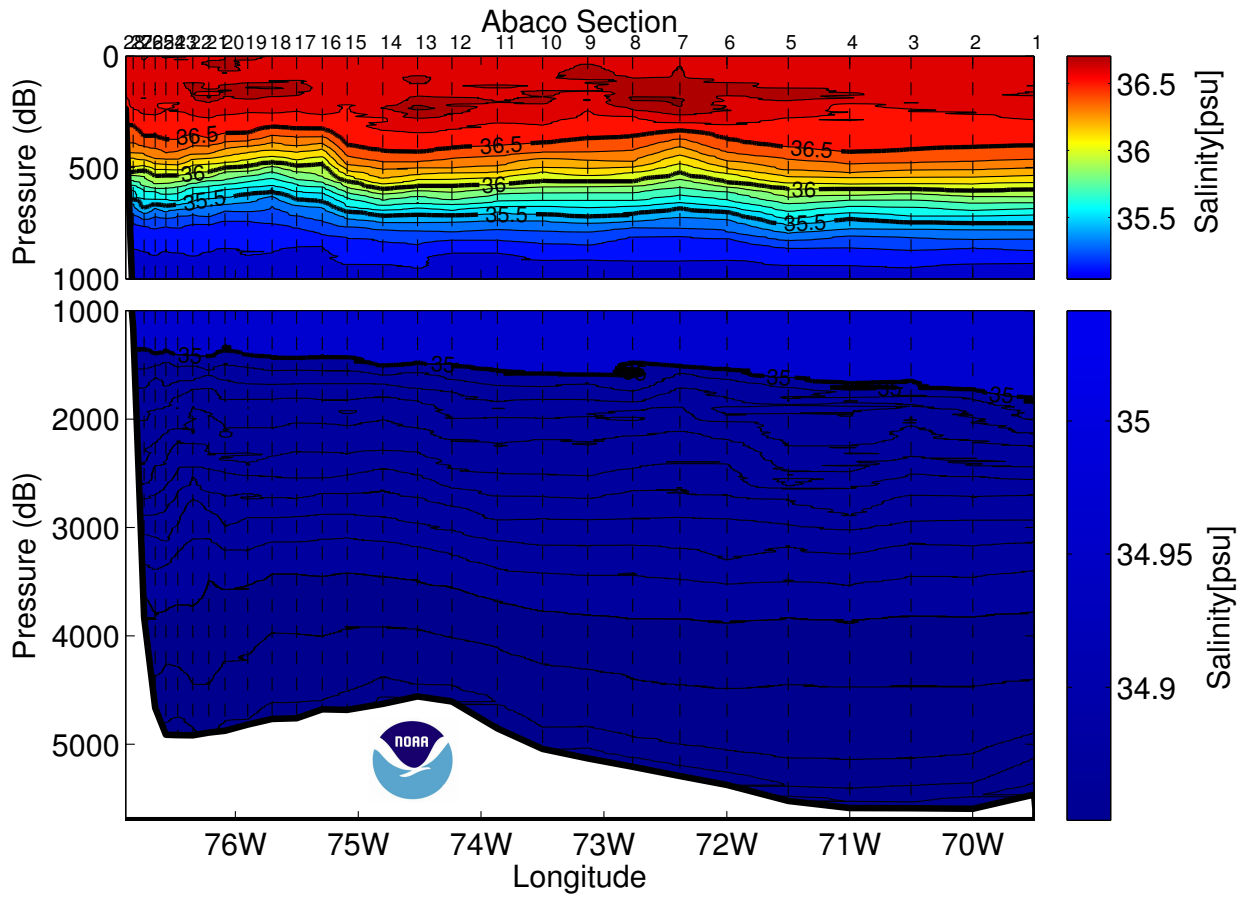


Figure 29: Salinity (PSS 78) section for the Abaco section. Dashed vertical lines are the CTD station locations.

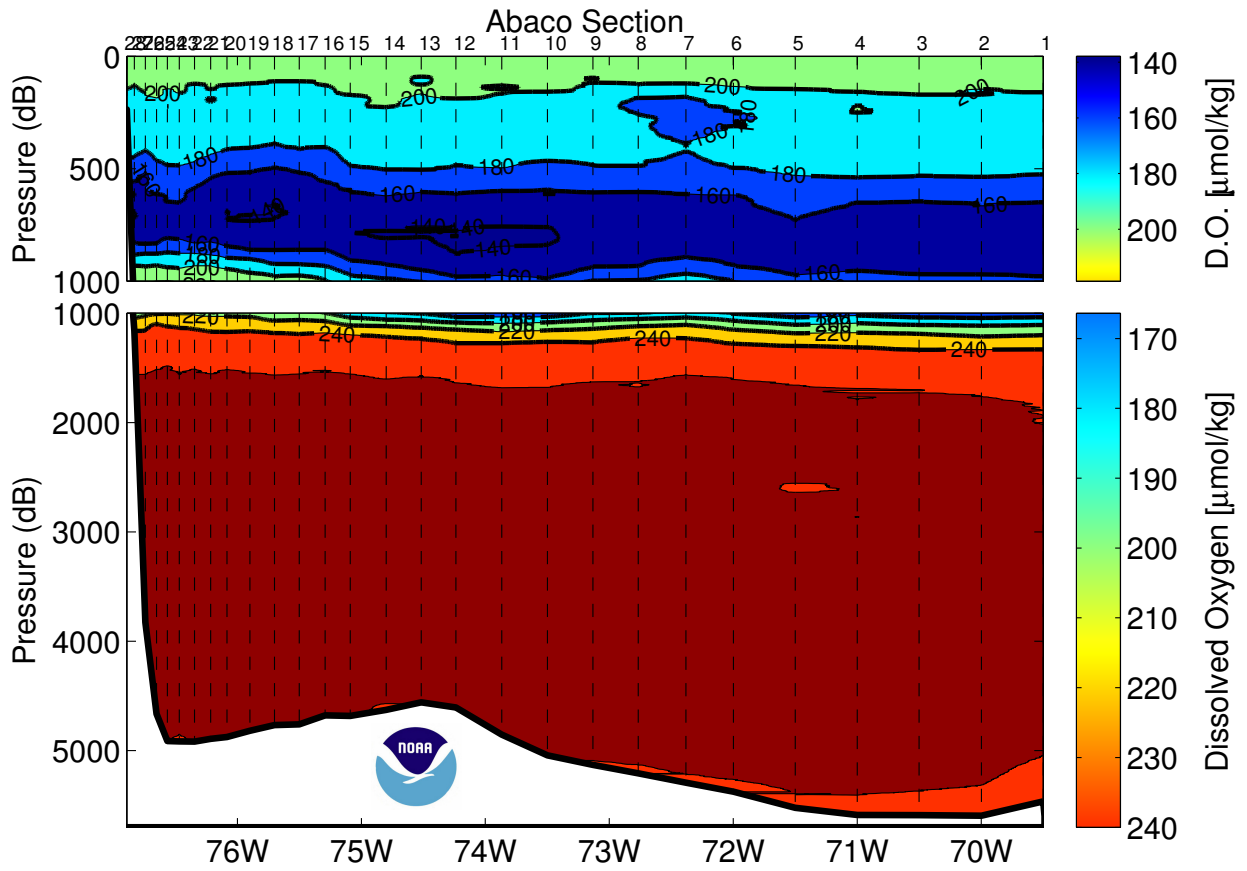


Figure 30: Dissolved Oxygen ($\mu\text{mol}/\text{kg}$) section for the Abaco Section. Dashed vertical lines are the CTD station locations.

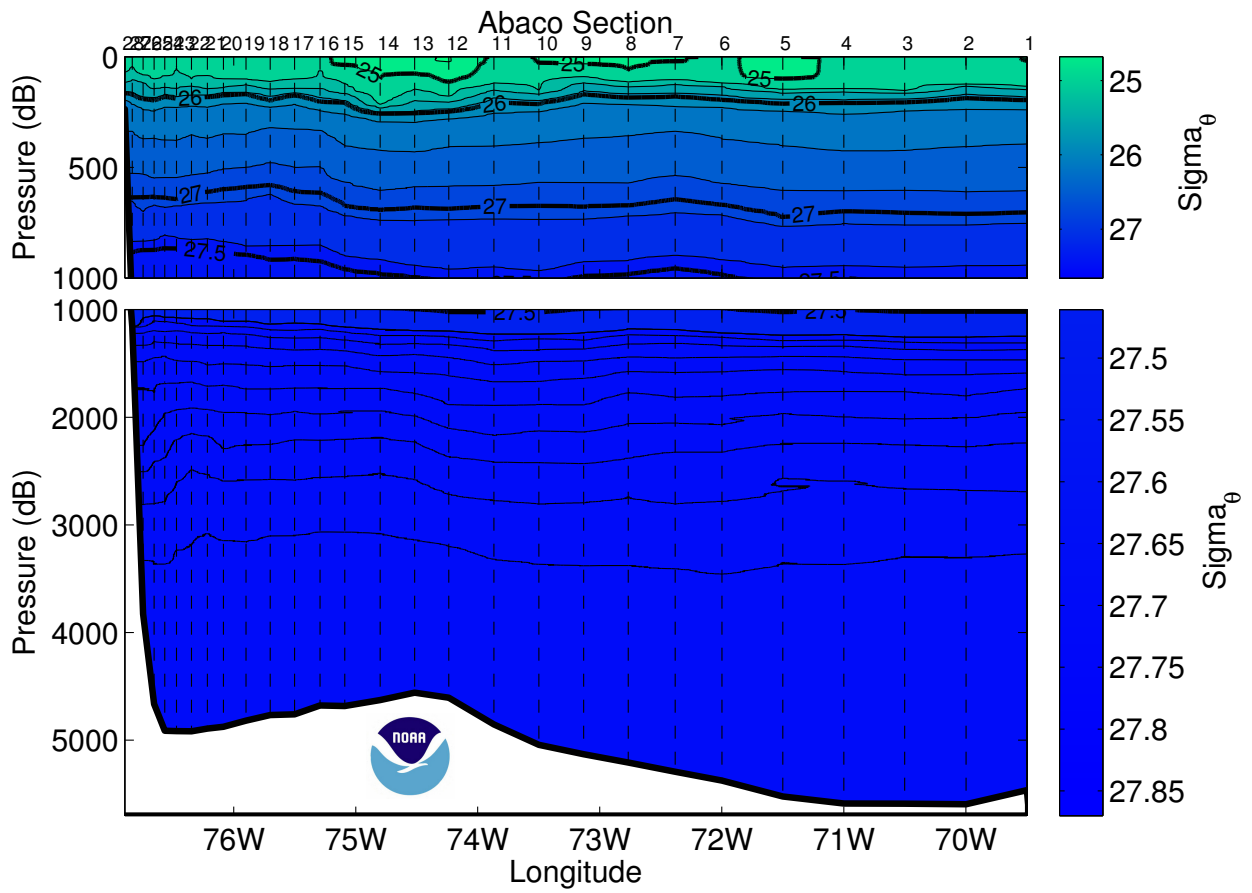


Figure 31: Neutral density (kg/m³) section for the Abaco Section. Dashed vertical lines are the CTD station locations.

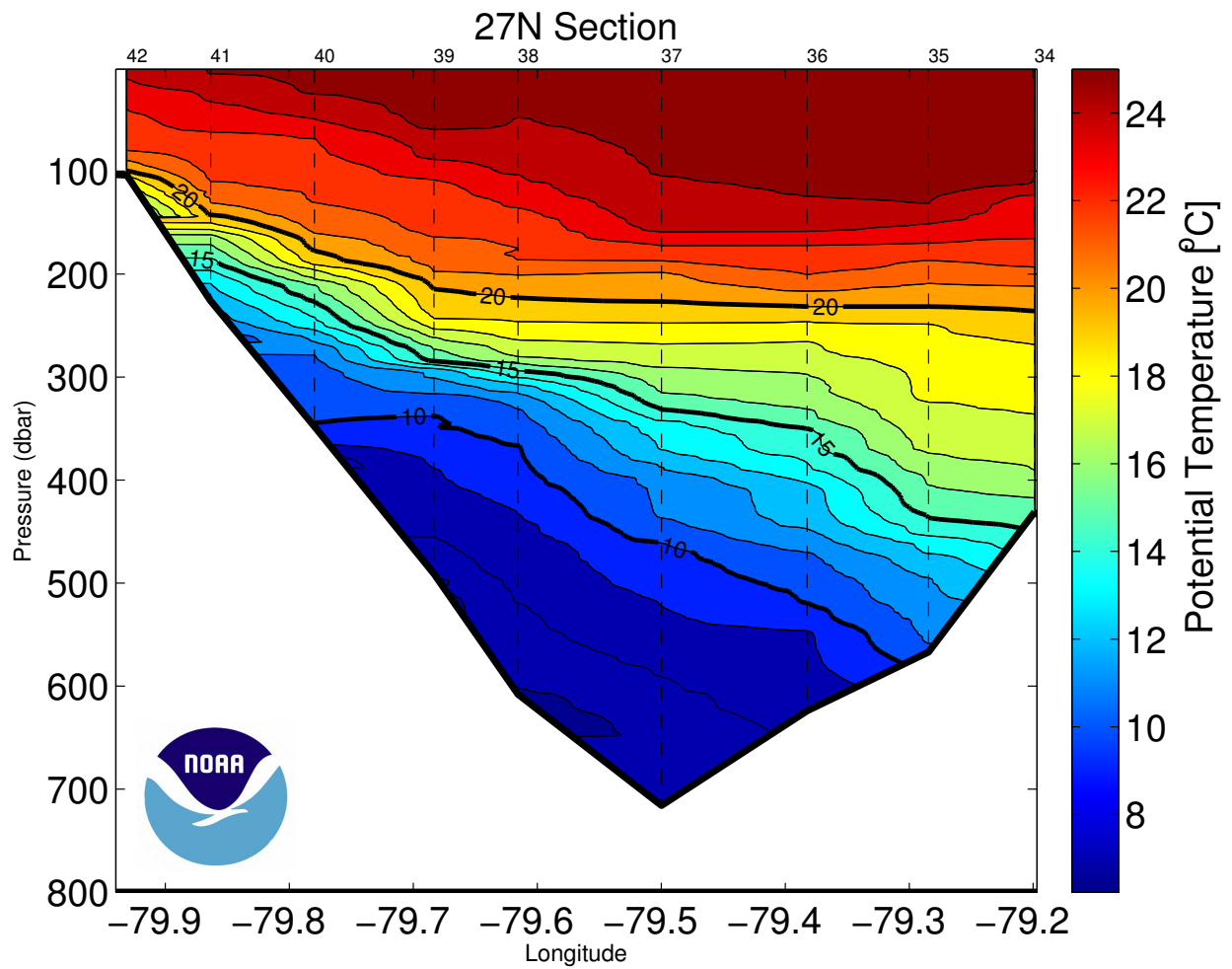


Figure 32: Potential Temperature ($^{\circ}\text{C}$) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.

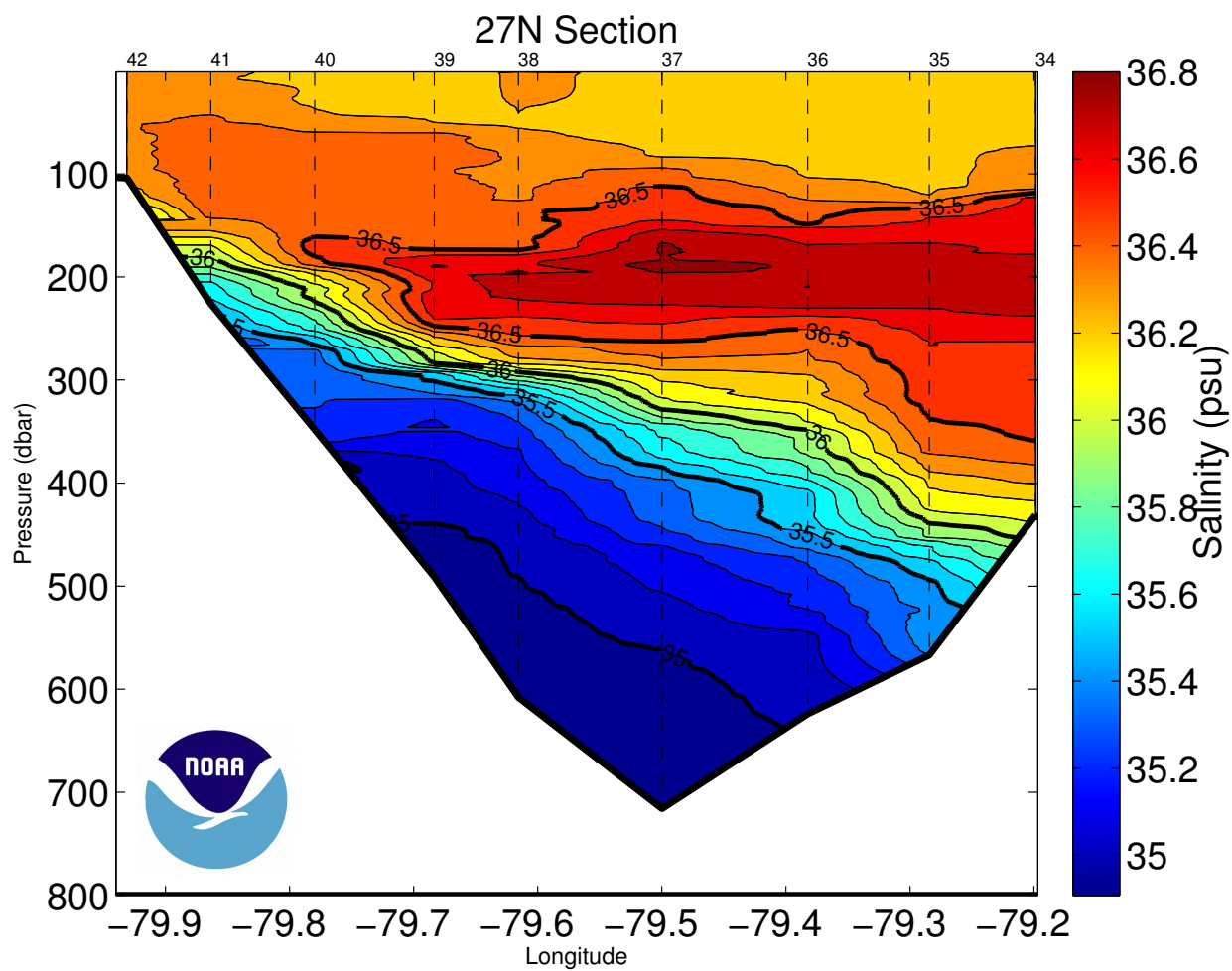


Figure 33: Salinity (PSS 78) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.

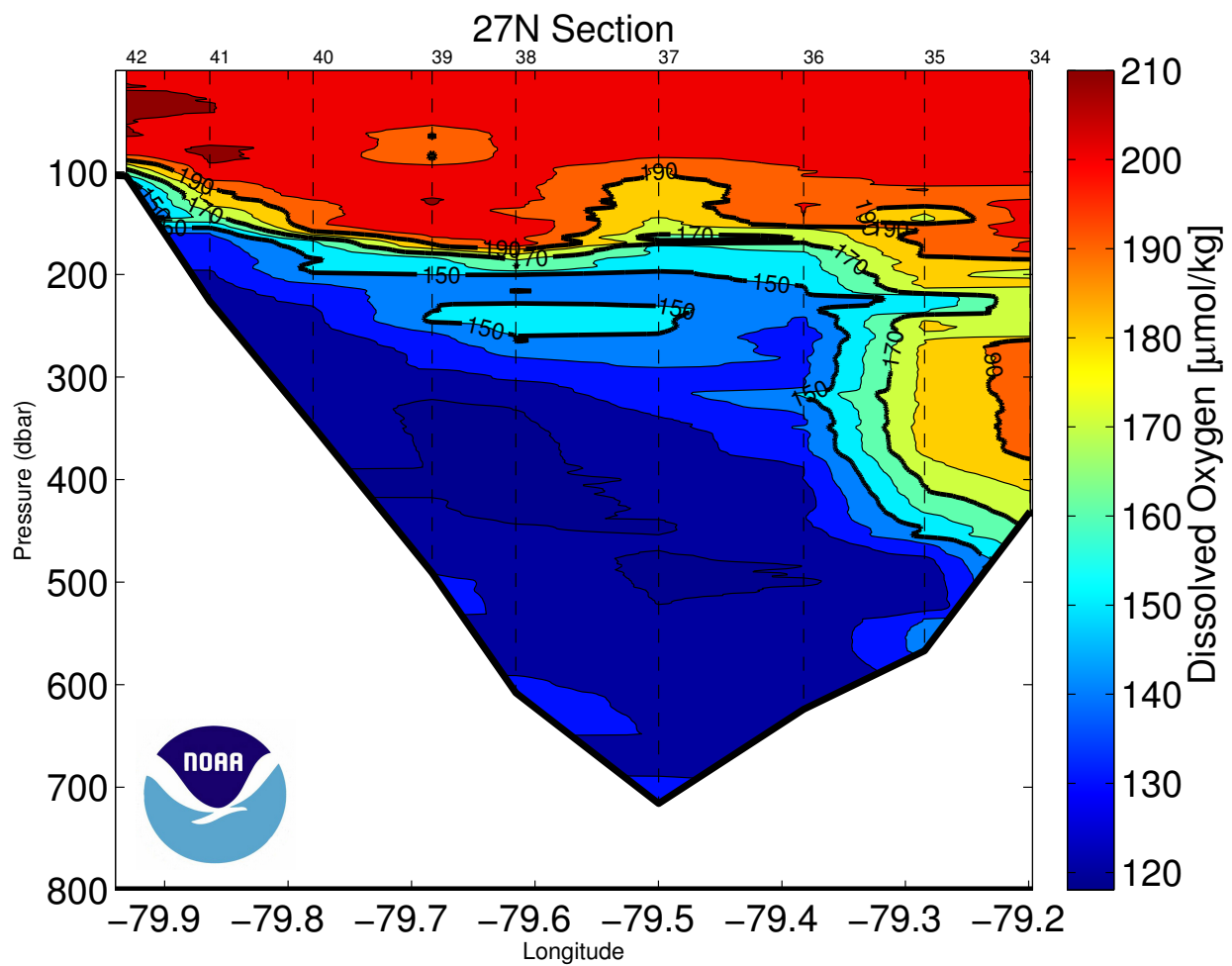


Figure 34: Dissolved Oxygen ($\mu\text{mol/kg}$) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.

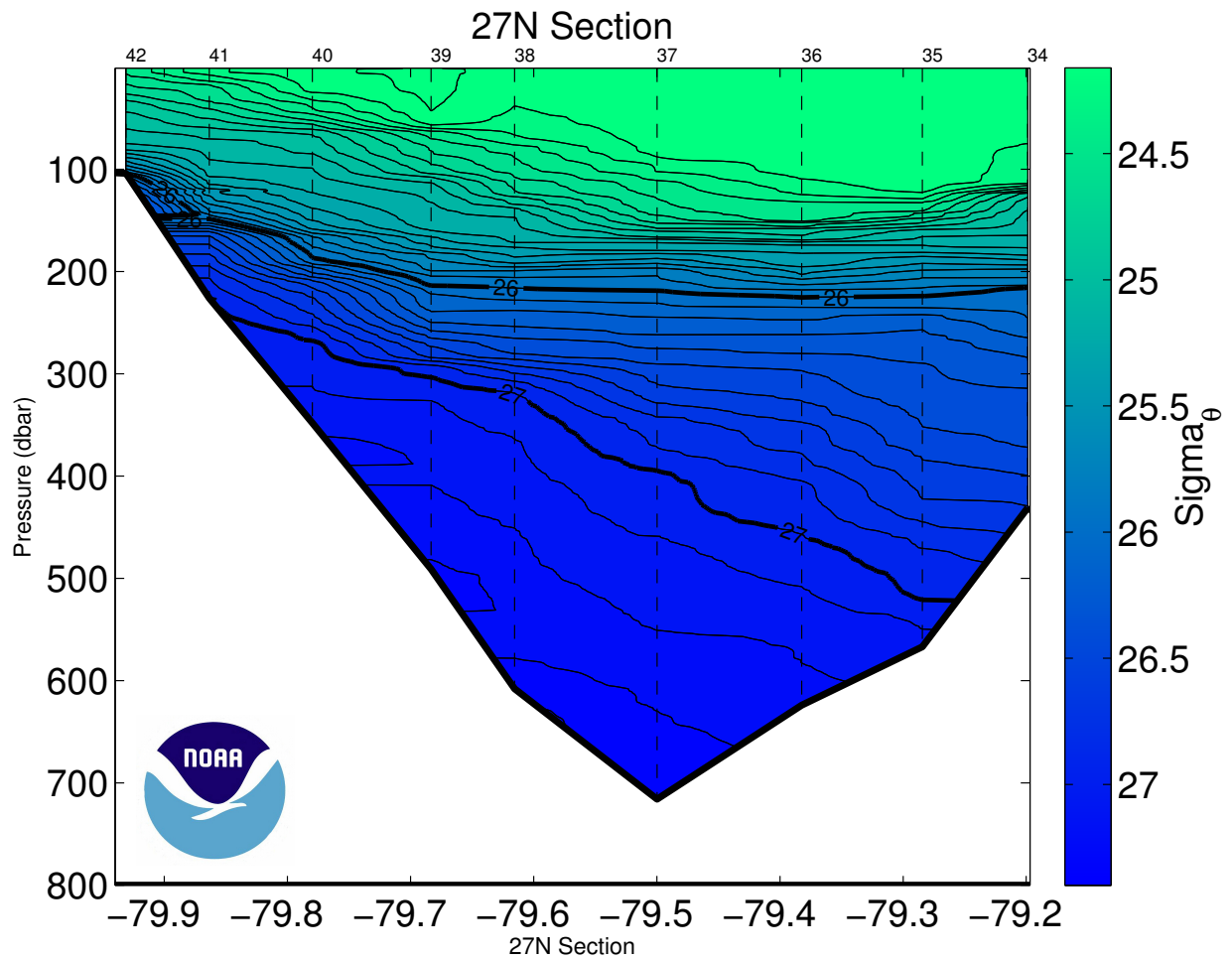


Figure 35: Neutral density (kg/m³) section for the Florida Current North section. Dashed vertical lines are the CTD station locations.

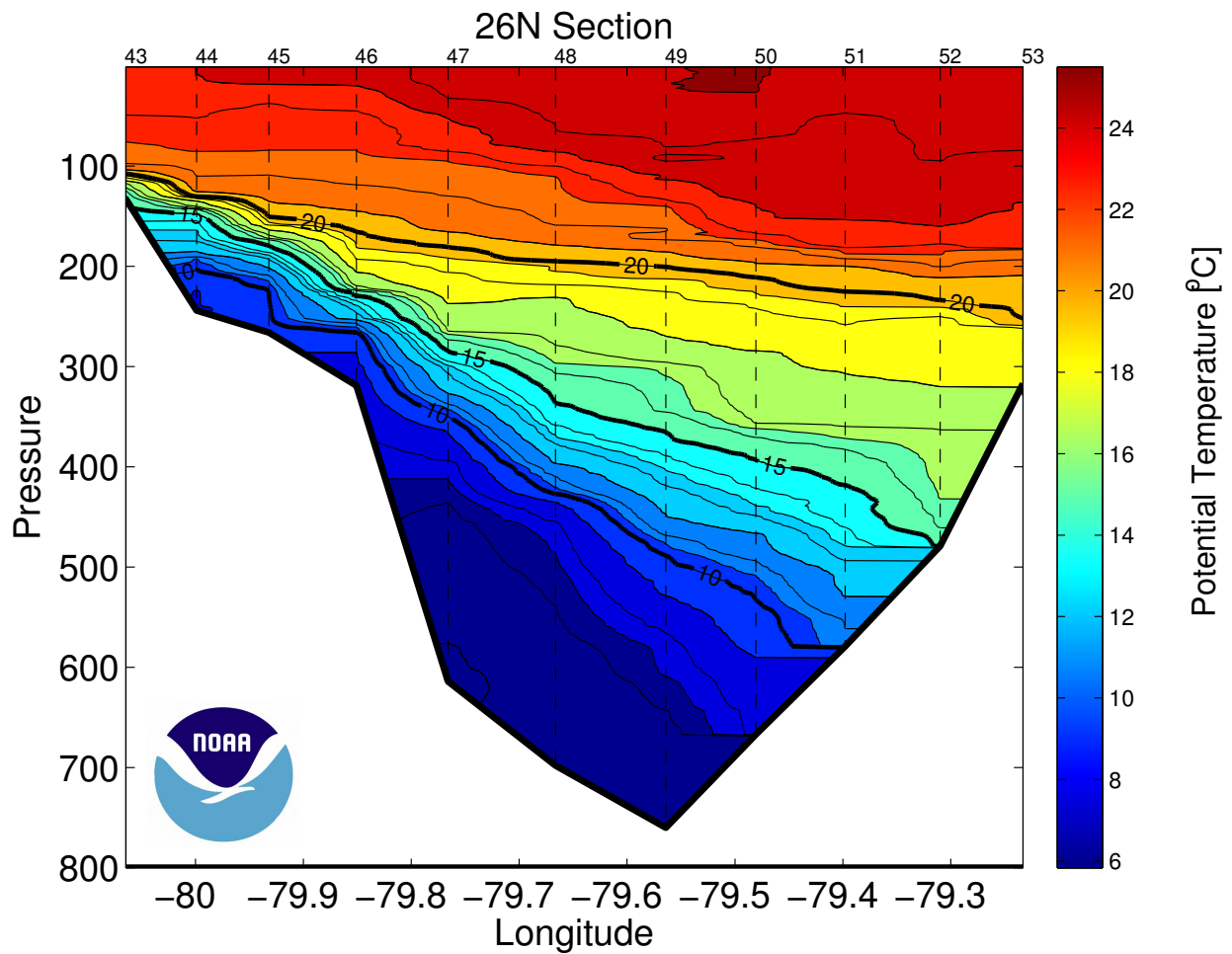


Figure 36: Potential Temperature (°C) section for the Florida Current South section. Contour intervals are 1°C. Dashed vertical lines are the CTD station locations.

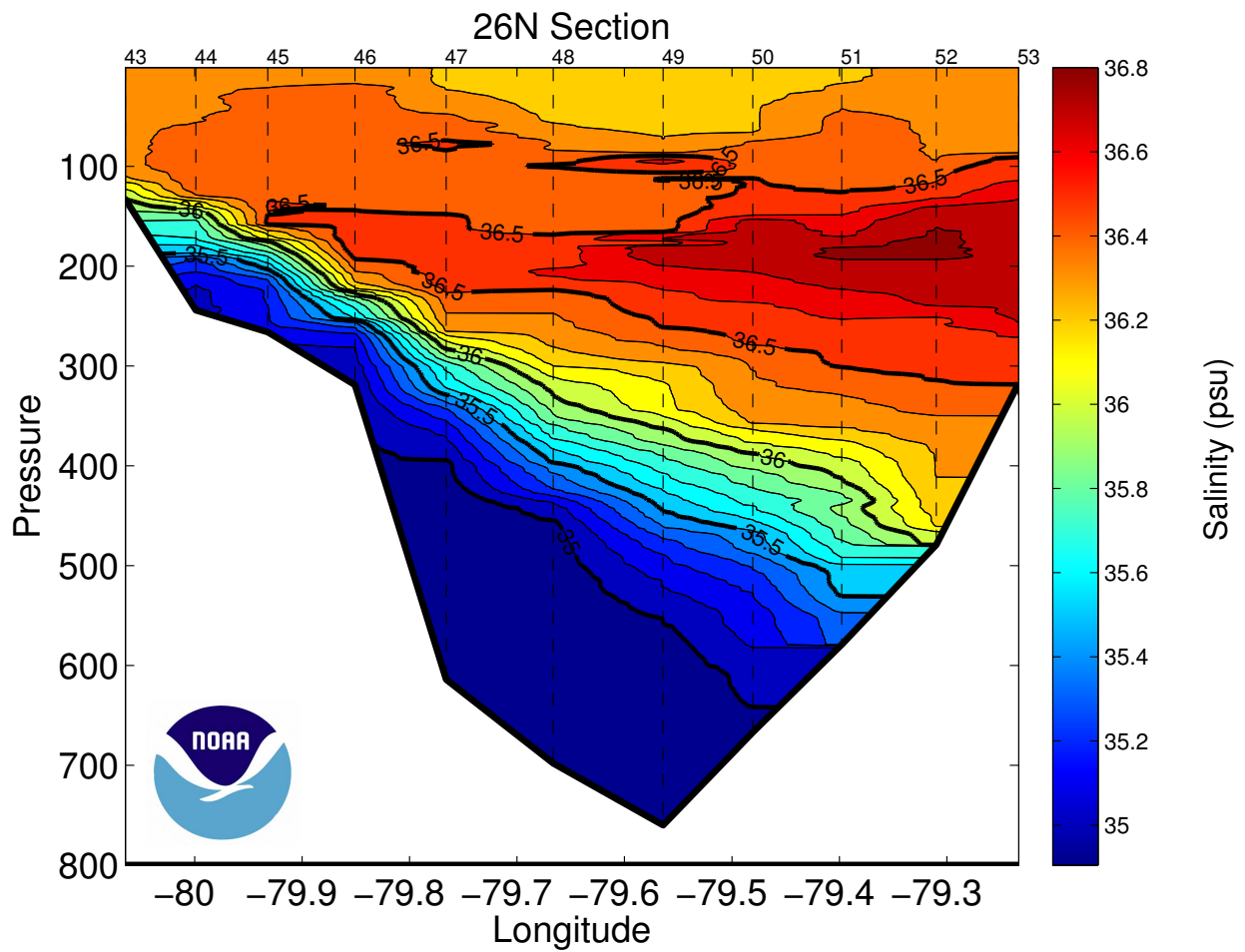


Figure 37: Salinity (PSS 78) section for the Florida Current South section. Contour intervals are 0.1. Dashed vertical lines are the CTD station locations.

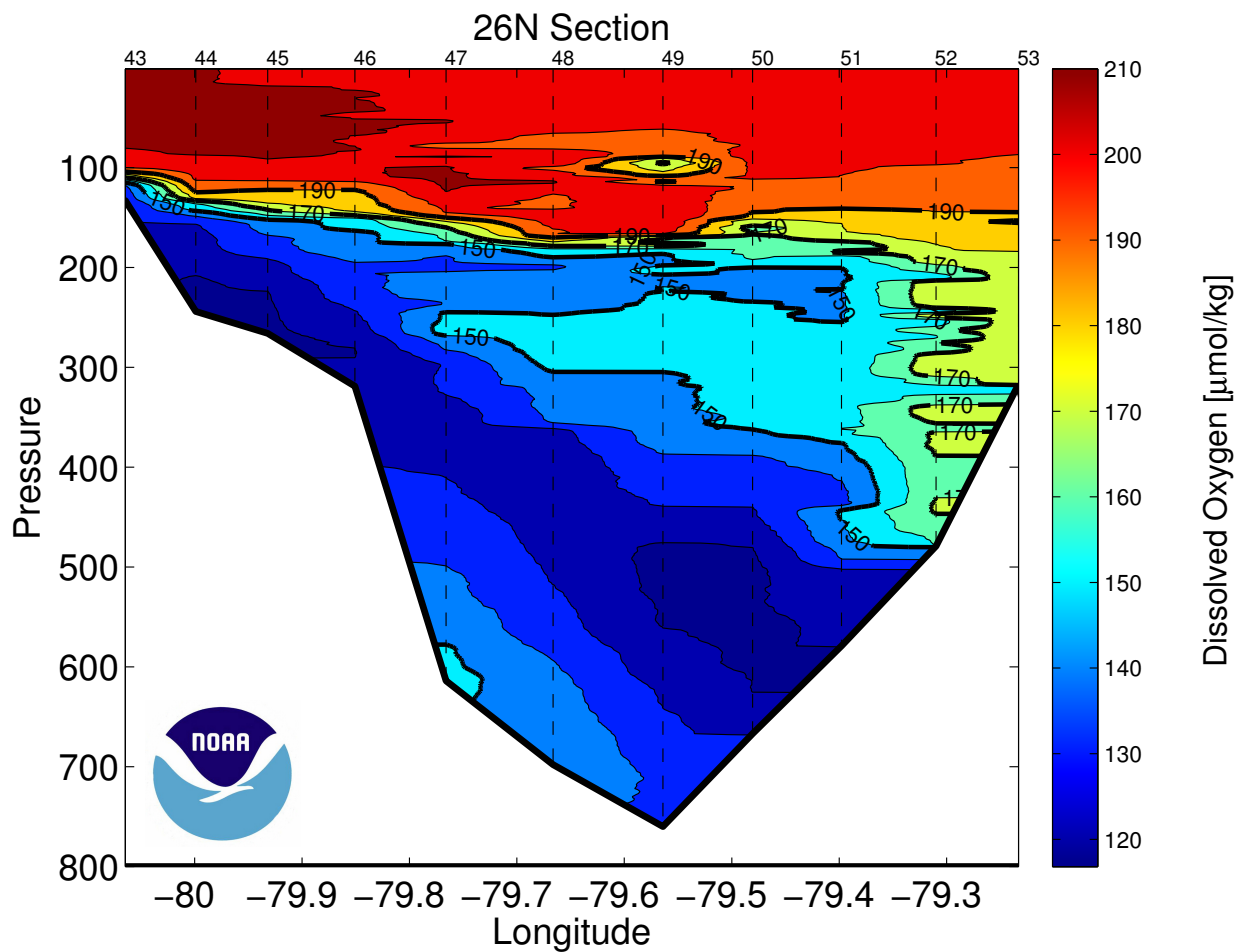


Figure 38: Dissolved Oxygen ($\mu\text{mol/kg}$) section for the Florida Current South section. Contour intervals are $\approx 20 \mu\text{mol/kg}$. Dashed vertical lines are the CTD station locations.

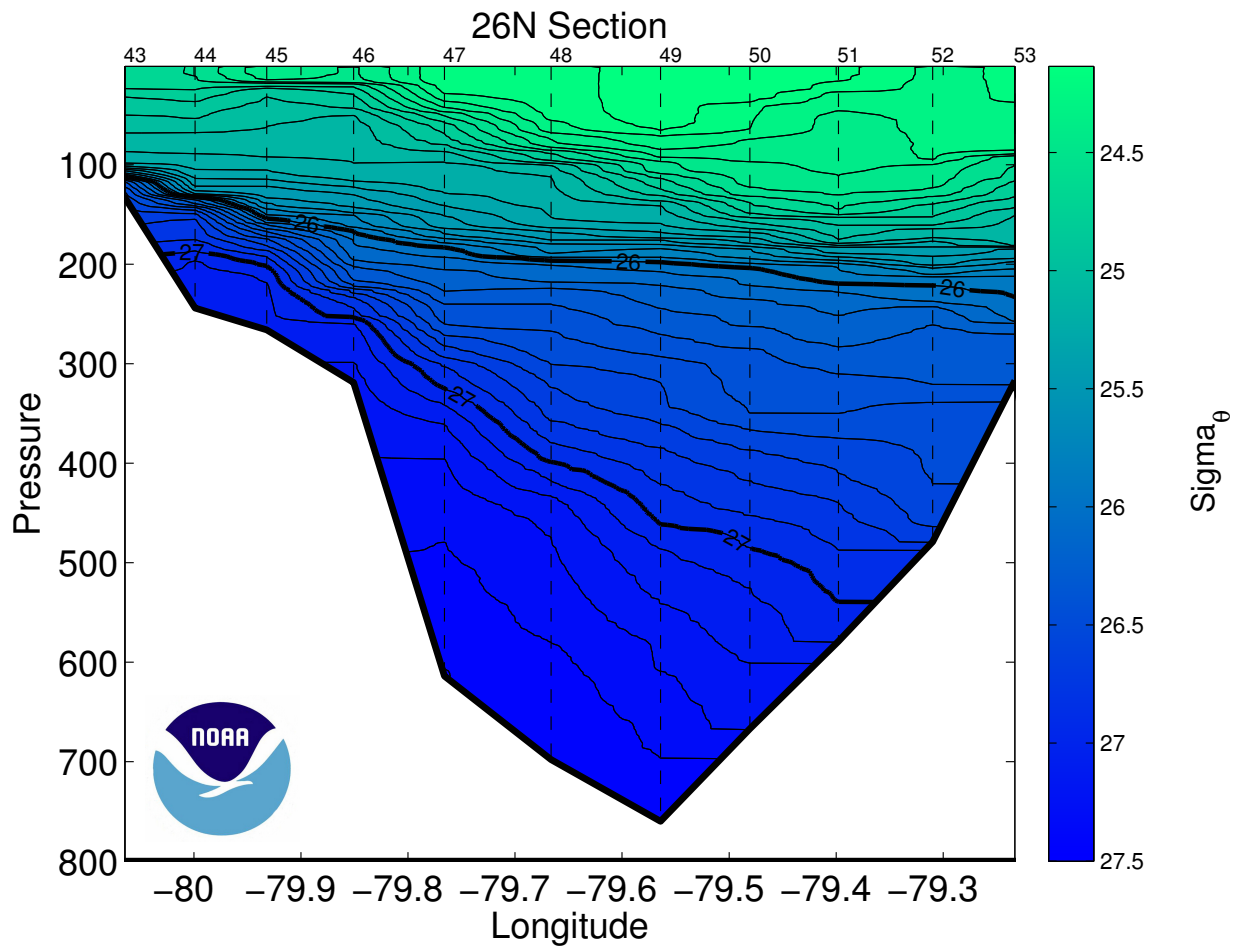


Figure 39: Neutral density (kg/m³) section for the Florida Current South section. Contour intervals are 0.1 kg/m³. Dashed vertical lines are the CTD station locations.

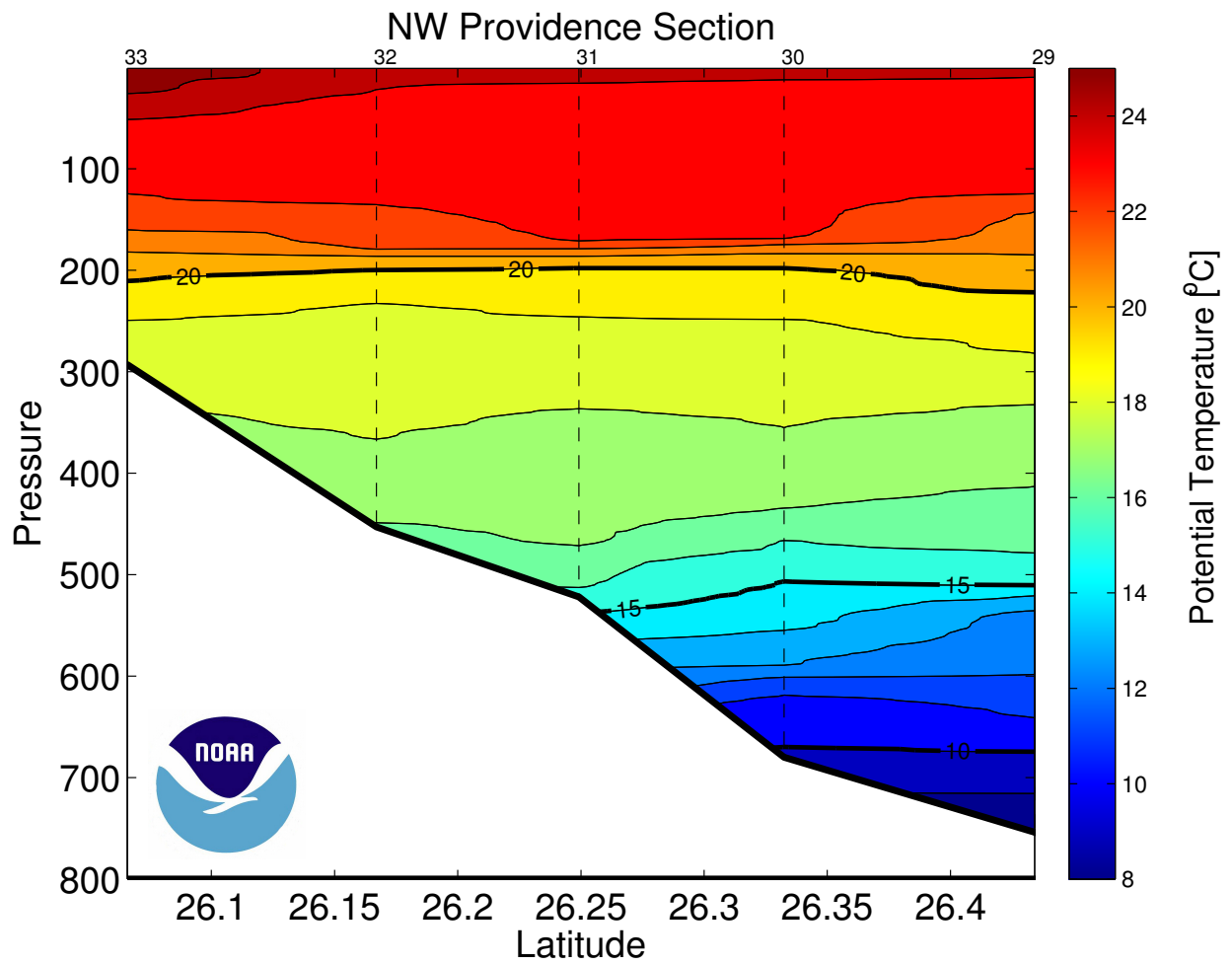


Figure 40: Potential Temperature ($^{\circ}\text{C}$) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

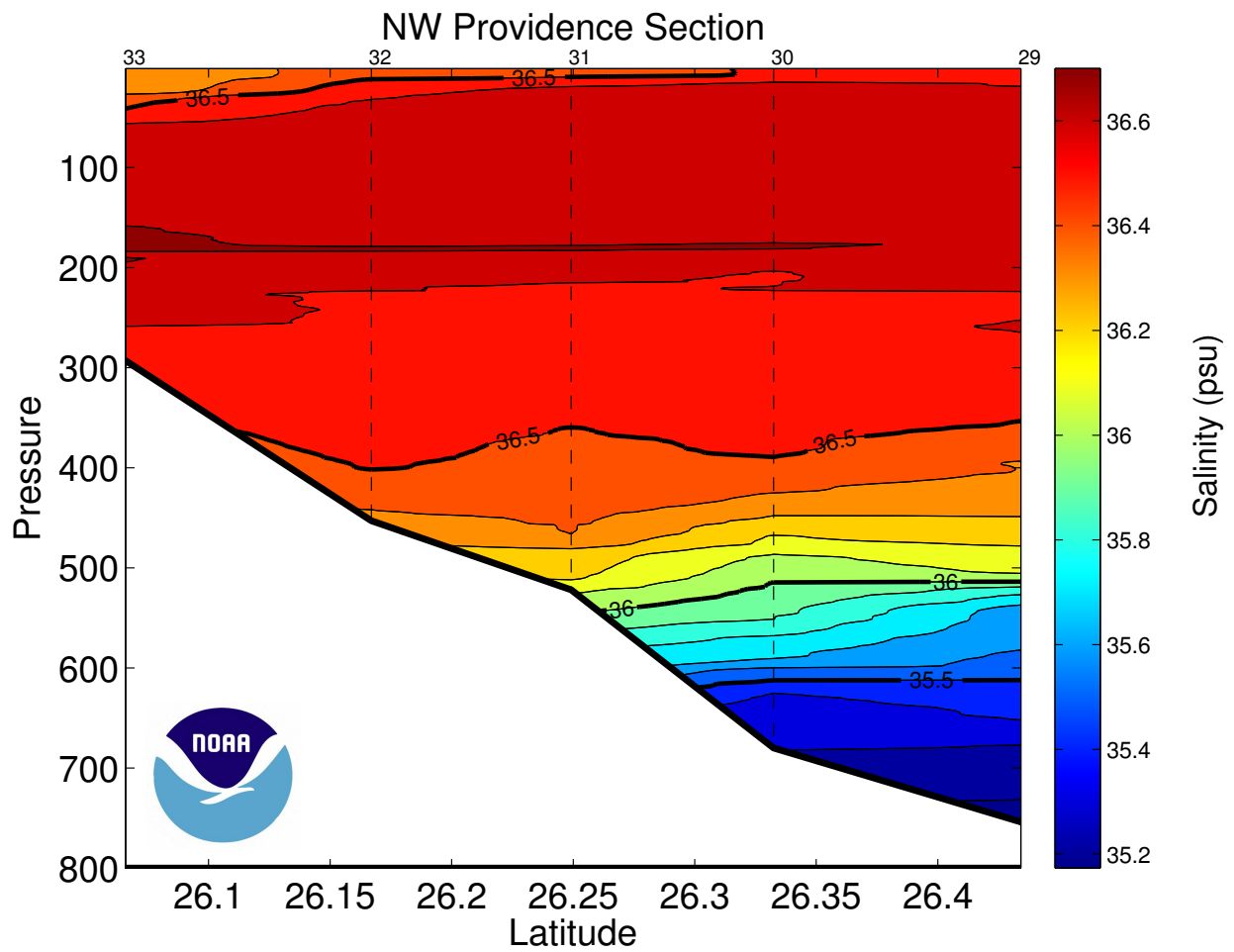


Figure 41: Salinity (PSS 78) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

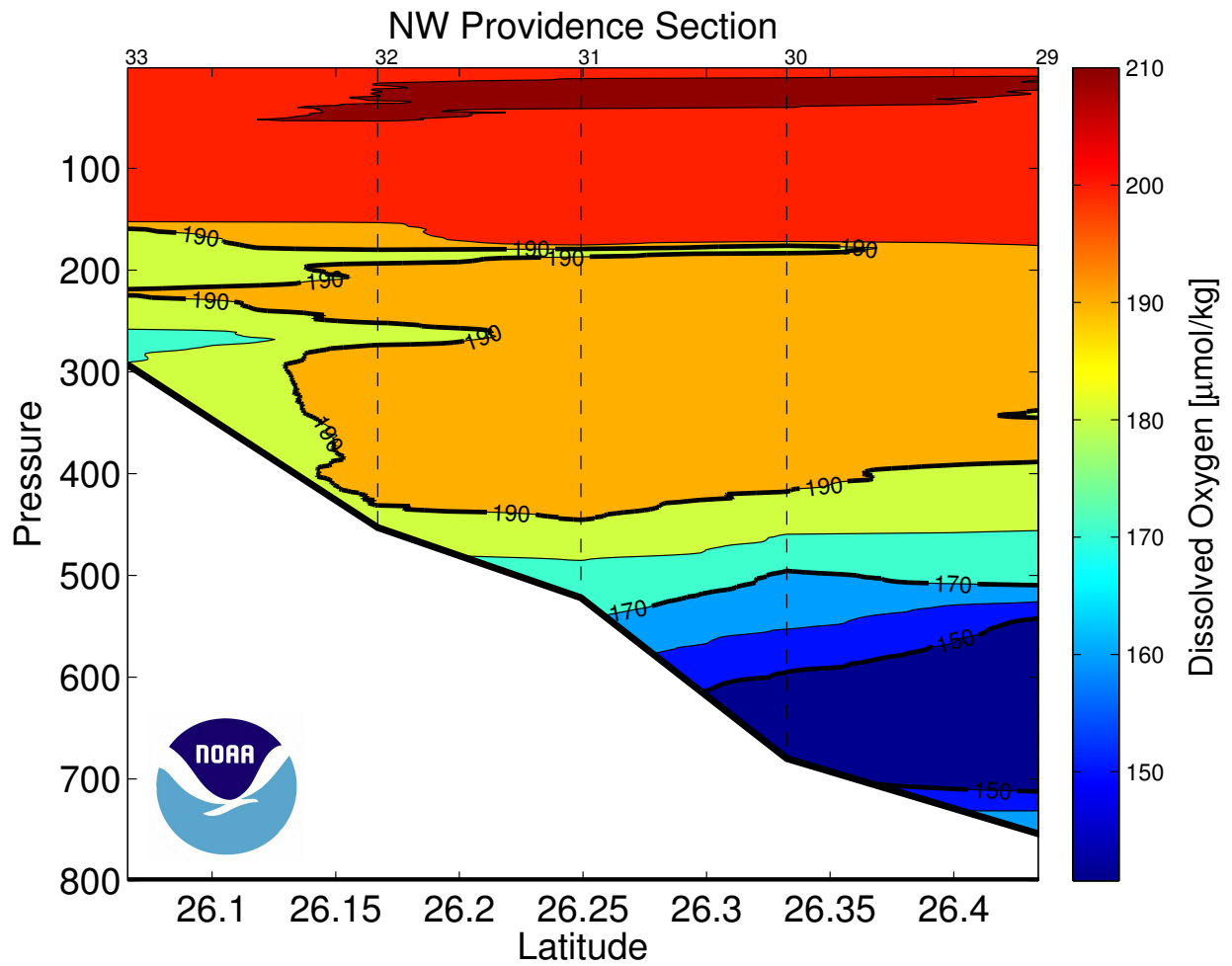


Figure 42: Dissolved Oxygen ($\mu\text{mol/kg}$) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

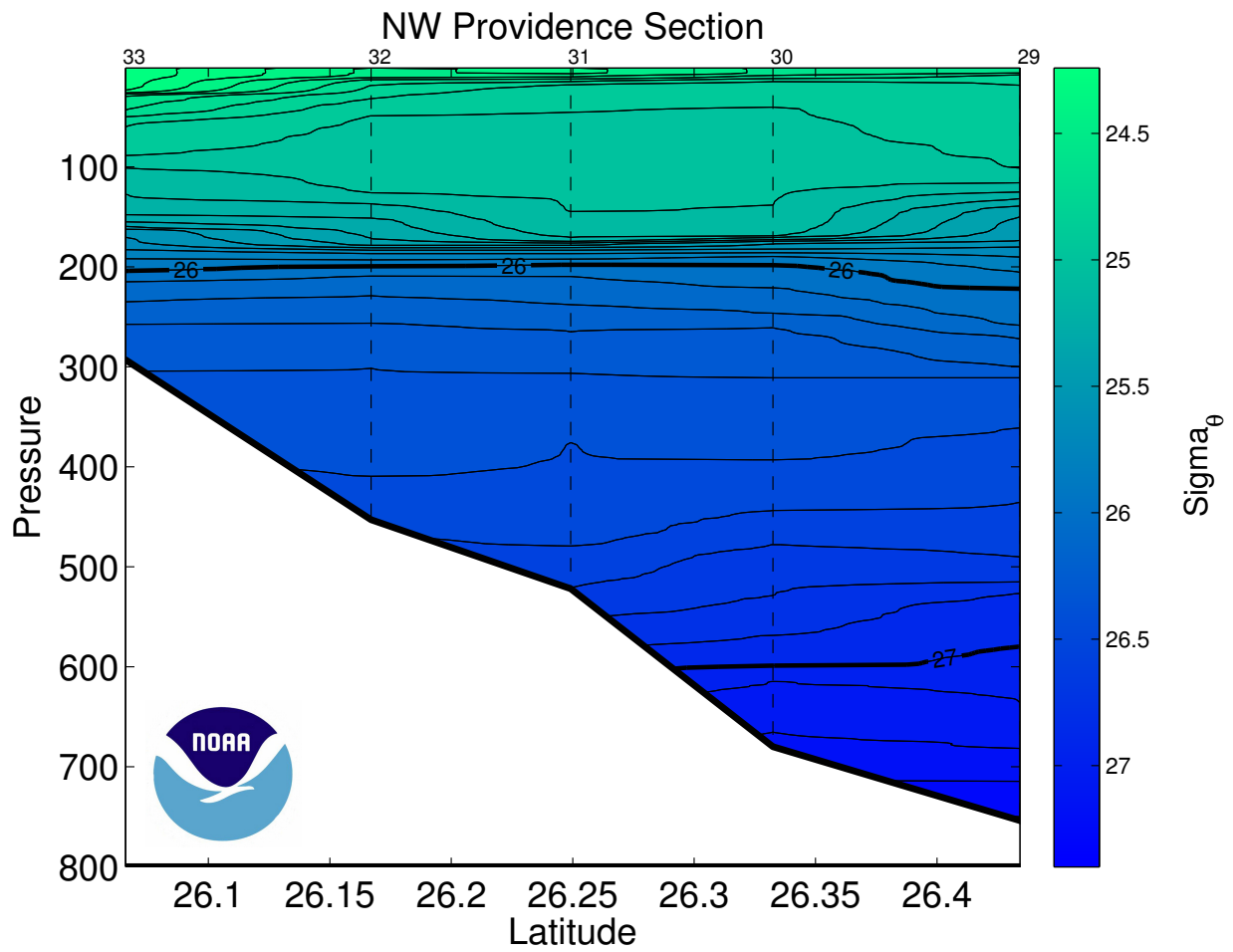


Figure 43: Neutral density (kg/m³) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

8 *Acknowledgements*

The successful completion of the cruise relied on dedicated assistance from many individuals on shore and on the UNOLS ship Endeavor. Funded investigators in the project and members of the Western Boundary Time Series, and the RAPID/MOC programs were instrumental in planning and executing the cruise. The participants in the cruise showed dedication and camaraderie during their 17 days at sea. Officers and crew of the Endeavor exhibited a high degree of professionalism and assistance to accomplish the mission and to make us feel at home during the voyage.

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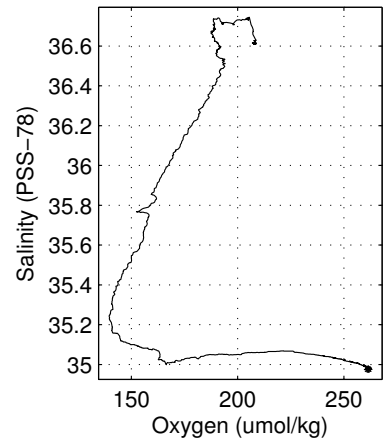
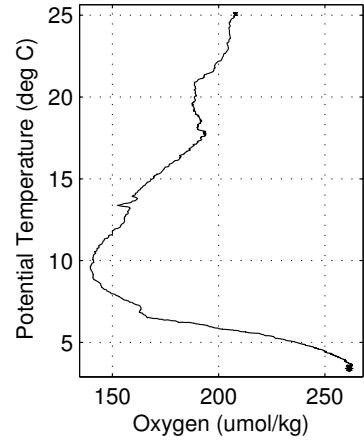
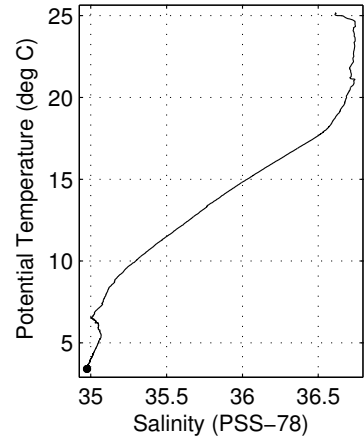
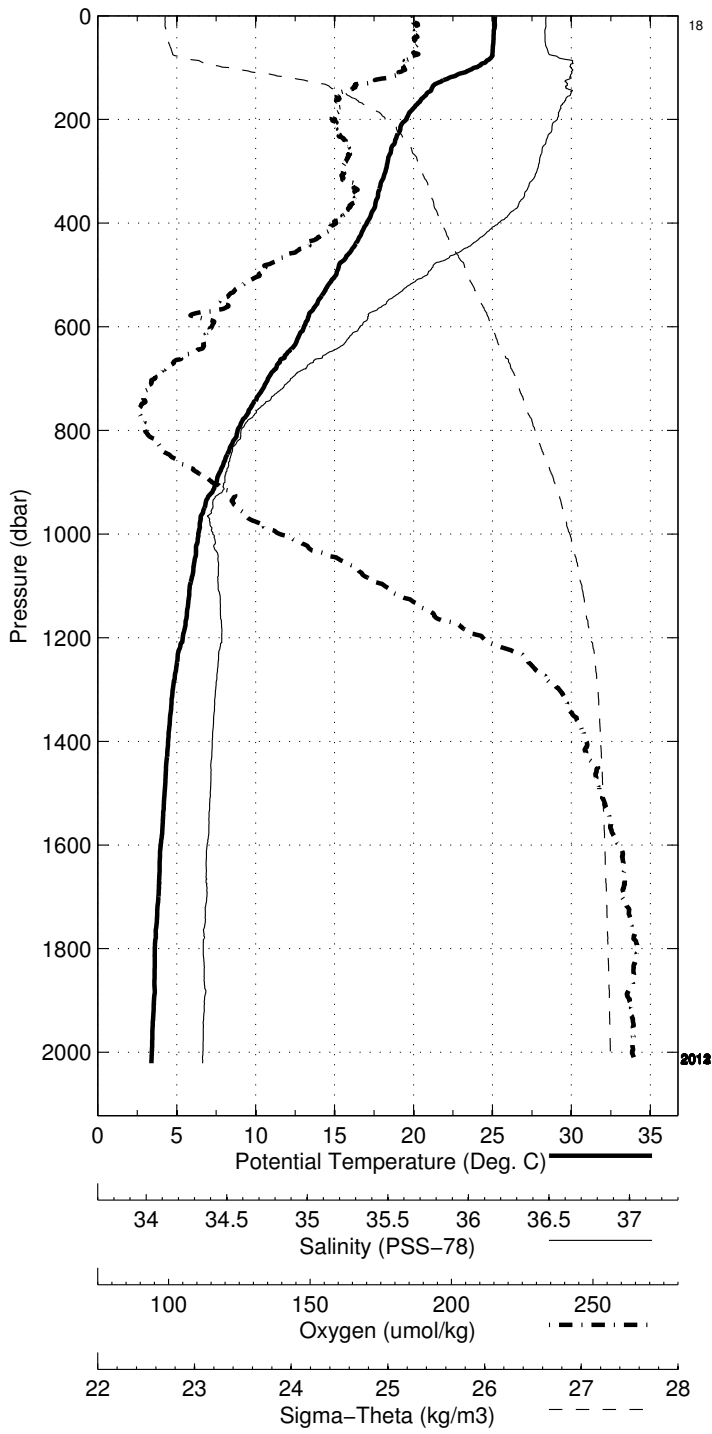
A Hydrographic - CTD Data

Abaco February 2015 R/V Endeavor
 CTD Station 0 (CTD000)
 Latitude 23.244N Longitude 68.110W
 15-Feb-2015 18:05Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.148	25.148	36.616	207.4	0.003	24.518
10	25.149	25.147	36.615	207.1	0.034	24.517
20	25.152	25.148	36.615	207.8	0.068	24.517
30	25.088	25.082	36.610	207.9	0.102	24.534
50	25.069	25.058	36.611	208.2	0.170	24.542
75	25.019	25.003	36.633	208.5	0.255	24.575
100	23.896	23.875	36.738	205.1	0.336	24.995
125	21.854	21.829	36.707	198.3	0.404	25.564
150	20.857	20.828	36.734	188.8	0.461	25.862
200	19.592	19.555	36.670	188.2	0.563	26.154
250	18.728	18.684	36.606	191.1	0.656	26.330
300	18.274	18.221	36.571	190.2	0.743	26.421
400	17.095	17.028	36.387	188.5	0.908	26.573
500	15.174	15.096	36.048	169.4	1.060	26.759
600	13.143	13.058	35.727	157.7	1.196	26.945
700	10.855	10.767	35.396	143.7	1.315	27.126
800	8.947	8.857	35.159	141.2	1.419	27.266
900	7.608	7.515	35.083	157.8	1.508	27.411
1000	6.456	6.361	35.024	174.6	1.584	27.525
1100	5.925	5.824	35.050	200.5	1.651	27.615
1200	5.490	5.383	35.067	224.7	1.711	27.683
1300	4.860	4.749	35.038	243.6	1.765	27.734
1400	4.570	4.453	35.022	250.4	1.815	27.755
1500	4.352	4.228	35.012	254.1	1.864	27.772
1750	3.875	3.733	34.988	261.2	1.981	27.804
2000	3.583	3.422	34.977	261.6	2.094	27.827

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
2014	1	3.565	3.403	34.975	261.0
2013	2	3.565	3.403	34.980	261.5
2014	3	3.565	3.402	34.975	261.8
2013	4	3.565	3.403	34.976	261.6
2013	5	3.565	3.403	34.976	<i>NaN</i>
2013	6	3.565	3.403	34.975	<i>NaN</i>
2012	7	3.567	3.404	34.974	<i>NaN</i>
2012	8	3.567	3.405	34.976	<i>NaN</i>
2013	9	3.567	3.405	34.974	<i>NaN</i>
2013	10	3.567	3.405	34.976	<i>NaN</i>
2012	11	3.567	3.405	34.975	<i>NaN</i>
2013	12	3.567	3.405	34.974	<i>NaN</i>
2012	13	3.567	3.405	34.976	<i>NaN</i>
2013	14	3.567	3.405	34.974	<i>NaN</i>
2012	15	3.567	3.405	34.975	<i>NaN</i>
2013	16	3.567	3.405	34.977	<i>NaN</i>
2013	17	3.567	3.405	34.974	<i>NaN</i>
2012	18	3.567	3.405	34.976	<i>NaN</i>
2012	19	3.567	3.405	34.975	<i>NaN</i>
2012	20	3.567	3.405	34.975	<i>NaN</i>
2012	21	3.567	3.405	34.978	<i>NaN</i>
2012	22	3.567	3.405	34.975	<i>NaN</i>
2012	23	3.567	3.405	34.975	<i>NaN</i>
19	24	25.038	25.050	-999.000	<i>NaN</i>

Abaco February 2015 R/V Endeavor
 CTD Station 0 (CTD000)
 Latitude 23.244 N Longitude 68.110 W
 15-Feb-2015 18:05 Z

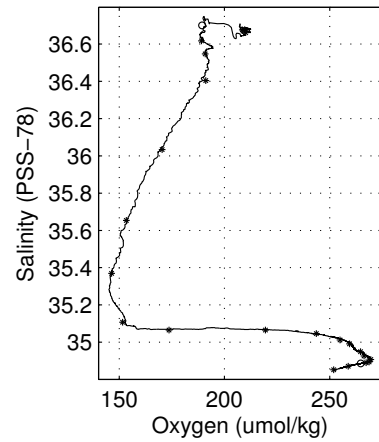
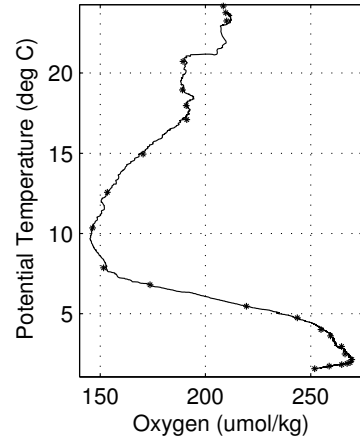
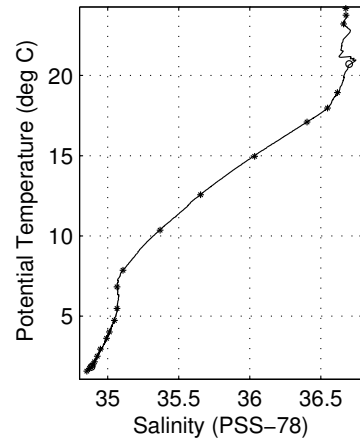
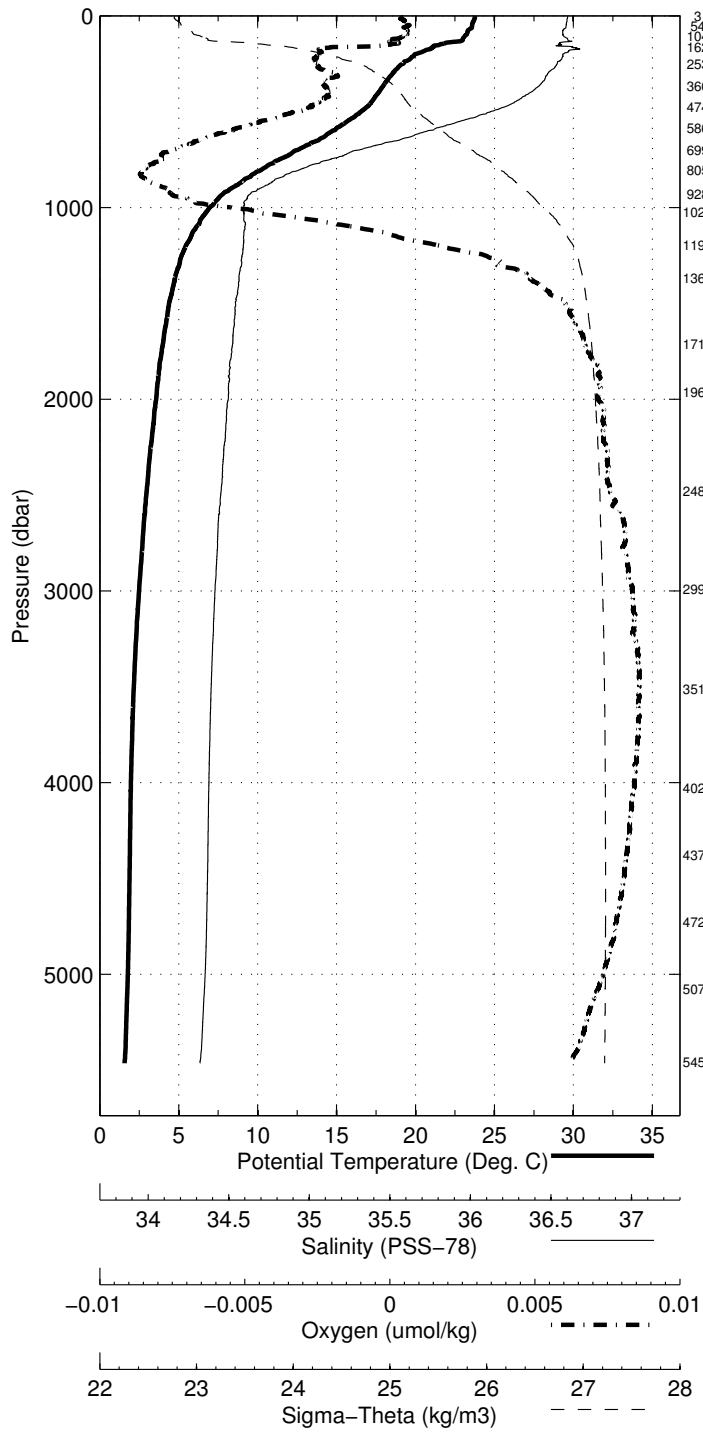


Abaco February 2015 R/V Endeavor
 CTD Station 1 (CTD001)
 Latitude 26.523N Longitude 69.490W
 16-Feb-2015 16:21Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.757	23.757	36.688	210.2	0.003	24.992
10	23.762	23.760	36.686	210.0	0.030	24.990
20	23.723	23.719	36.683	210.6	0.059	25.000
30	23.669	23.663	36.683	212.0	0.089	25.017
50	23.594	23.584	36.680	212.3	0.147	25.037
75	23.341	23.326	36.661	212.3	0.221	25.099
100	23.217	23.196	36.663	211.7	0.292	25.139
125	23.018	22.992	36.688	208.7	0.363	25.216
150	21.563	21.533	36.654	207.4	0.428	25.606
200	20.009	19.972	36.662	190.5	0.539	26.038
250	19.260	19.214	36.635	189.6	0.638	26.216
300	18.602	18.549	36.588	194.1	0.729	26.351
400	17.720	17.651	36.501	192.5	0.900	26.508
500	16.614	16.531	36.301	183.7	1.063	26.624
600	14.831	14.739	35.988	167.5	1.215	26.792
700	12.625	12.528	35.647	153.7	1.350	26.989
800	10.384	10.286	35.355	145.9	1.466	27.179
900	8.412	8.314	35.149	151.8	1.565	27.343
1000	7.070	6.970	35.070	168.1	1.649	27.478
1100	6.224	6.120	35.074	198.6	1.719	27.596
1200	5.551	5.444	35.067	220.2	1.781	27.676
1300	5.144	5.030	35.058	234.3	1.836	27.718
1400	4.802	4.682	35.044	244.7	1.888	27.747
1500	4.513	4.387	35.028	251.3	1.938	27.767
1750	4.066	3.922	35.009	257.2	2.058	27.802
2000	3.734	3.570	34.992	259.6	2.174	27.824
2500	3.146	2.944	34.954	263.1	2.397	27.854
3000	2.729	2.485	34.926	268.0	2.614	27.872
3500	2.444	2.153	34.907	269.7	2.827	27.885
4000	2.315	1.972	34.896	268.5	3.041	27.890
4500	2.281	1.881	34.888	266.0	3.264	27.892
5000	2.235	1.775	34.877	260.8	3.498	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5457	1	2.087	1.574	34.852	251.8
5078	2	2.210	1.741	34.871	258.8
4726	3	2.267	1.839	34.886	264.8
4377	4	2.285	1.899	34.890	267.3
4028	5	2.312	1.966	34.894	268.7
3511	6	2.447	2.155	34.907	269.5
2991	7	2.749	2.504	34.926	266.4
2482	8	3.144	2.944	34.949	264.6
1964	9	3.777	3.616	34.991	259.5
1711	10	4.161	4.019	35.012	254.9
1369	11	4.856	4.739	35.047	243.7
1195	12	5.586	5.479	35.065	219.5
1024	13	6.928	6.827	35.065	173.7
928	14	7.962	7.864	35.107	151.7
806	15	10.457	10.358	35.369	146.4
699	16	12.661	12.564	35.654	153.4
587	17	15.051	14.960	36.034	170.4
475	18	17.183	17.103	36.404	191.2
367	19	18.035	17.971	36.547	190.9
254	20	18.978	18.932	36.617	189.0
163	21	20.746	20.715	36.700	189.4
105	22	23.237	23.215	36.661	210.1
54	23	23.763	23.751	36.677	209.6
3	24	24.178	24.177	36.676	208.5

Abaco February 2015 R/V Endeavor
 CTD Station 1 (CTD001)
 Latitude 26.523 N Longitude 69.490 W
 16-Feb-2015 16:21 Z

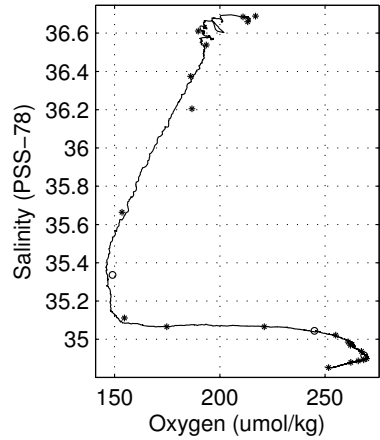
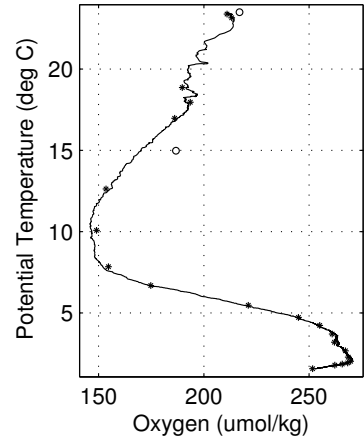
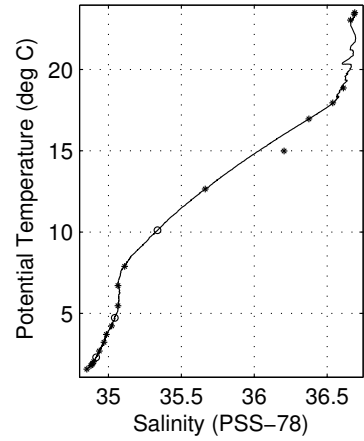
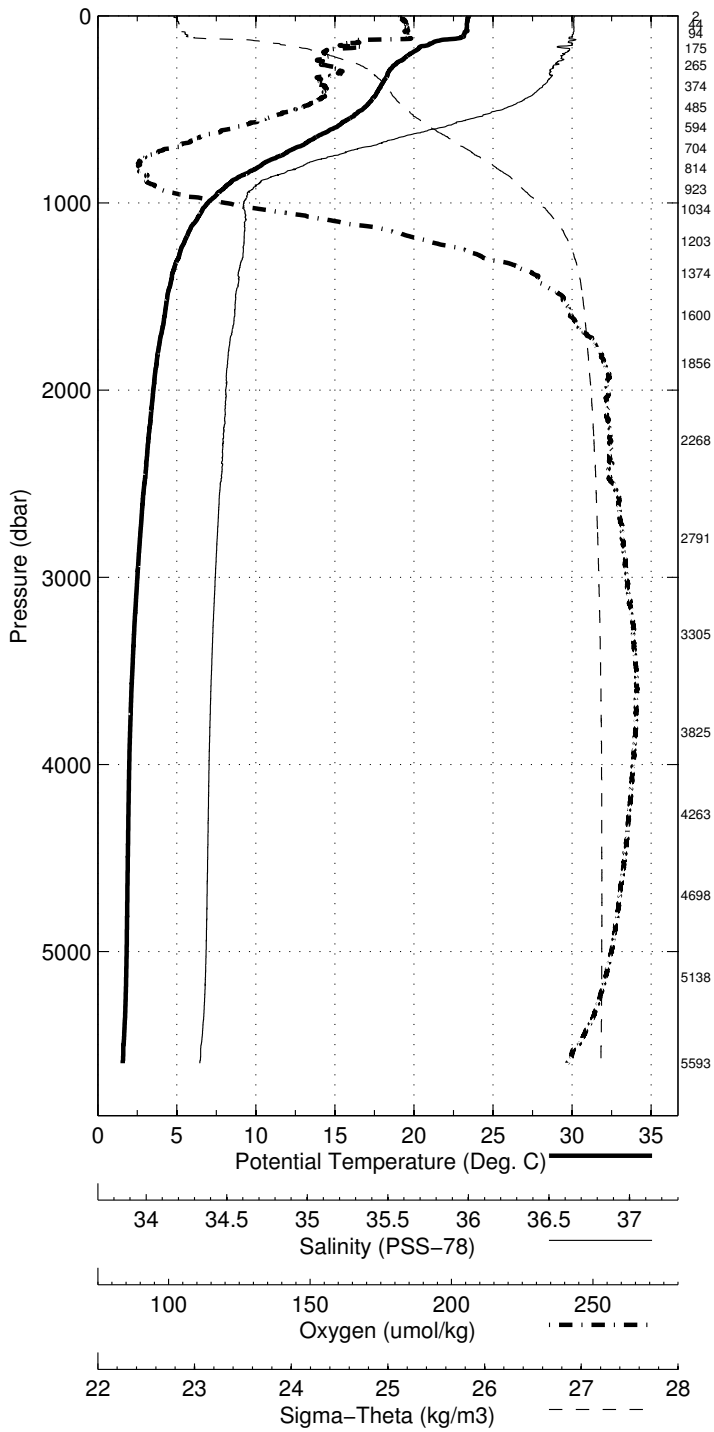


Abaco February 2015 R/V Endeavor
 CTD Station 2 (CTD002)
 Latitude 26.497N Longitude 69.990W
 16-Feb-2015 23:55Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.465	23.464	36.689	211.2	0.003	25.080
10	23.412	23.410	36.685	211.0	0.029	25.093
20	23.388	23.384	36.686	211.8	0.057	25.101
30	23.373	23.367	36.686	212.8	0.086	25.106
50	23.360	23.349	36.686	213.2	0.143	25.111
75	23.371	23.355	36.686	213.1	0.215	25.109
100	23.176	23.156	36.679	213.1	0.286	25.162
125	22.240	22.215	36.687	209.8	0.356	25.439
150	21.015	20.986	36.677	196.7	0.416	25.775
200	19.861	19.824	36.640	192.5	0.522	26.060
250	18.989	18.944	36.601	192.3	0.619	26.260
300	18.447	18.394	36.572	196.7	0.709	26.378
400	17.788	17.718	36.506	192.7	0.880	26.496
500	16.841	16.758	36.339	185.3	1.045	26.600
600	15.024	14.931	36.018	169.8	1.198	26.773
700	12.758	12.661	35.668	156.4	1.335	26.979
800	10.423	10.324	35.360	146.0	1.452	27.177
900	8.337	8.239	35.135	149.5	1.550	27.344
1000	7.059	6.960	35.069	167.7	1.634	27.479
1100	6.280	6.176	35.072	196.1	1.705	27.587
1200	5.621	5.513	35.069	217.6	1.766	27.668
1300	5.196	5.082	35.060	233.1	1.822	27.714
1400	4.807	4.687	35.044	245.4	1.875	27.746
1500	4.523	4.397	35.027	251.8	1.925	27.765
1750	4.043	3.899	34.998	259.8	2.046	27.795
2000	3.661	3.498	34.977	263.3	2.162	27.819
2500	3.139	2.936	34.951	264.5	2.386	27.852
3000	2.748	2.502	34.927	267.8	2.604	27.872
3500	2.476	2.184	34.909	270.2	2.818	27.884
4000	2.332	1.988	34.897	269.4	3.034	27.890
4500	2.299	1.898	34.890	267.2	3.257	27.891
5000	2.284	1.822	34.882	264.0	3.493	27.891
5500	2.142	1.621	34.858	255.5	3.738	27.887

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5593	1	2.108	1.576	34.852	251.7
5138	2	2.273	1.793	34.879	262.2
4698	3	2.292	1.867	34.888	265.8
4263	4	2.309	1.936	34.893	268.3
3825	5	2.361	2.037	34.899	269.7
3306	6	2.564	2.291	34.915	268.6
2791	7	2.910	2.683	34.937	267.3
2269	8	3.410	3.226	34.969	262.0
1856	9	3.863	3.711	34.986	261.0
1600	10	4.371	4.237	35.022	255.0
1374	11	4.849	4.731	35.044	244.9
1204	12	5.585	5.476	35.065	221.1
1034	13	6.814	6.712	35.065	174.8
924	14	7.995	7.897	35.111	154.7
814	15	10.221	10.121	35.337	149.0
705	16	12.751	12.653	35.664	153.5
594	17	15.085	14.993	36.205	186.7
486	18	17.050	16.968	36.375	186.1
375	19	18.019	17.954	36.538	193.6
265	20	18.911	18.863	36.611	189.8
175	21	20.603	20.753	-999.000	<i>NaN</i>
94	22	23.058	23.038	36.659	213.2
45	23	23.422	23.412	36.685	211.0
3	24	23.502	23.501	36.689	216.9

Abaco February 2015 R/V Endeavor
 CTD Station 2 (CTD002)
 Latitude 26.497 N Longitude 69.990 W
 16-Feb-2015 23:55 Z

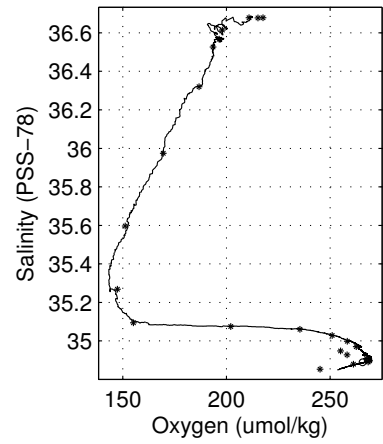
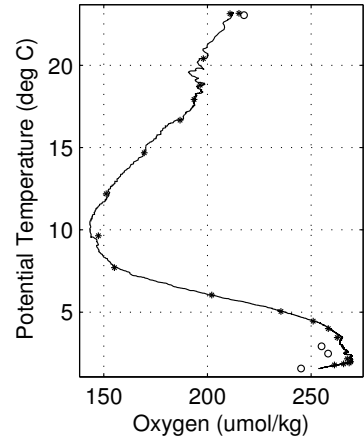
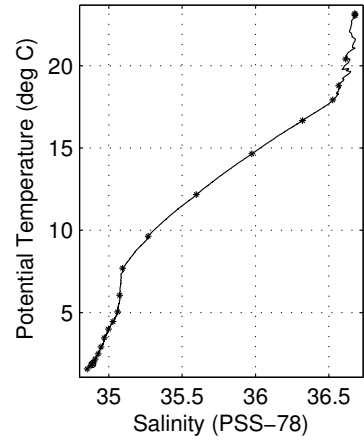
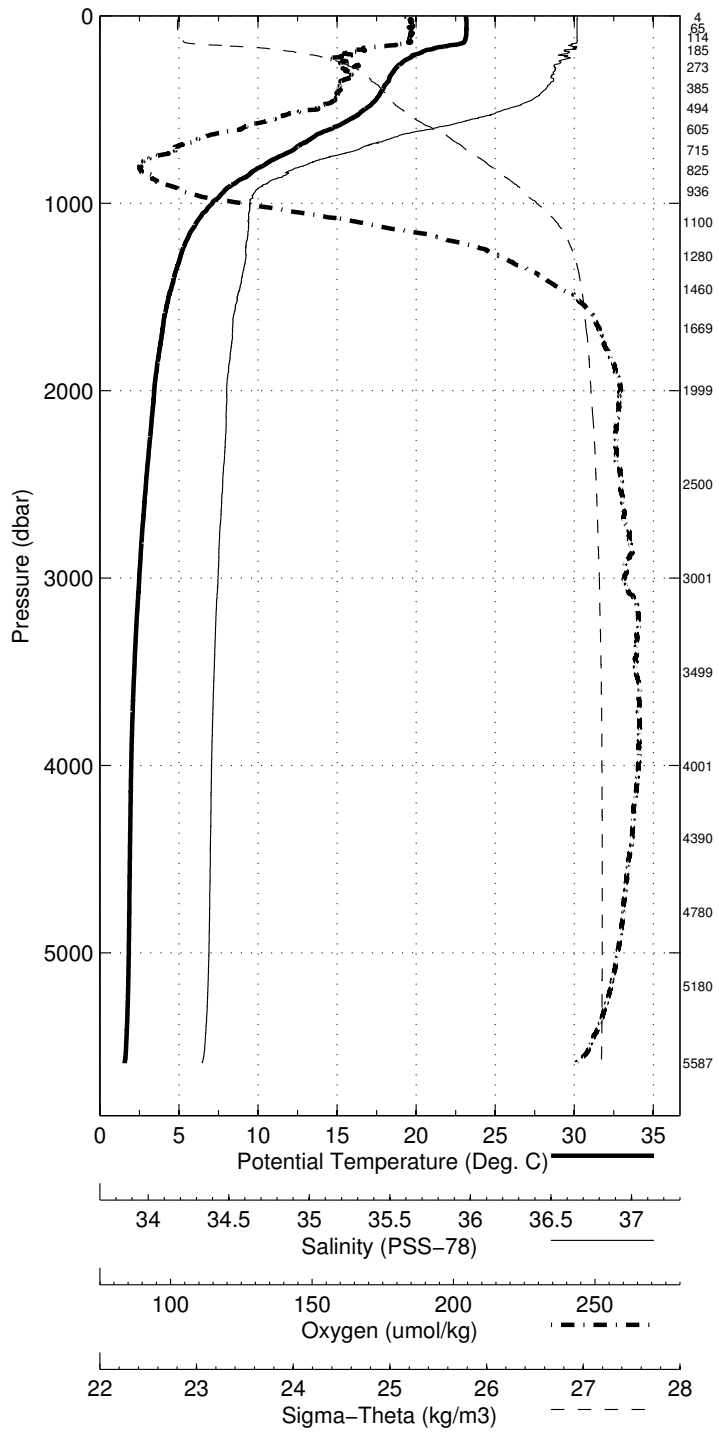


Abaco February 2015 R/V Endeavor
 CTD Station 3 (CTD003)
 Latitude 26.511N Longitude 70.502W
 17-Feb-2015 06:38Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.165	23.165	36.683	210.7	0.003	25.163
10	23.163	23.161	36.682	211.7	0.028	25.163
20	23.173	23.169	36.681	211.6	0.056	25.160
30	23.190	23.184	36.681	212.0	0.084	25.155
50	23.193	23.183	36.681	211.8	0.140	25.156
75	23.197	23.182	36.681	212.1	0.211	25.156
100	23.197	23.176	36.681	211.8	0.282	25.158
125	23.147	23.121	36.682	211.7	0.353	25.174
150	22.780	22.750	36.656	209.9	0.424	25.263
200	20.243	20.205	36.636	195.4	0.542	25.955
250	19.162	19.116	36.600	194.4	0.641	26.215
300	18.590	18.537	36.566	196.6	0.733	26.337
400	17.884	17.814	36.516	193.7	0.907	26.480
500	16.799	16.716	36.328	188.2	1.073	26.602
600	14.782	14.690	35.982	169.4	1.226	26.798
700	12.552	12.455	35.635	152.2	1.359	26.994
800	10.422	10.323	35.346	143.3	1.476	27.166
900	8.467	8.368	35.152	149.8	1.576	27.337
1000	7.214	7.113	35.084	169.3	1.660	27.469
1100	6.250	6.146	35.078	198.4	1.732	27.596
1200	5.586	5.478	35.068	222.0	1.793	27.672
1300	5.154	5.040	35.062	236.3	1.848	27.720
1400	4.796	4.676	35.043	245.8	1.900	27.747
1500	4.466	4.340	35.021	254.1	1.951	27.766
1750	3.975	3.832	34.995	260.7	2.070	27.799
2000	3.605	3.444	34.970	264.9	2.186	27.819
2500	3.118	2.916	34.950	265.3	2.408	27.853
3000	2.737	2.492	34.928	266.0	2.625	27.873
3500	2.466	2.174	34.909	268.8	2.838	27.884
4000	2.330	1.986	34.896	269.5	3.054	27.890
4500	2.300	1.899	34.890	267.1	3.278	27.892
5000	2.293	1.831	34.883	264.3	3.513	27.891
5500	2.185	1.662	34.863	257.3	3.759	27.888

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5587	1	2.101	1.569	34.854	245.1
5181	2	2.275	1.790	34.879	261.2
4780	3	2.298	1.862	34.889	265.6
4390	4	2.302	1.914	34.891	268.3
4001	5	2.327	1.983	34.897	269.0
3499	6	2.463	2.171	34.908	267.4
3001	7	2.733	2.488	34.928	258.2
2500	8	3.115	2.913	34.948	255.0
1999	9	3.627	3.465	34.970	262.5
1669	10	4.141	4.003	34.998	258.3
1461	11	4.575	4.452	35.029	251.0
1281	12	5.154	5.042	35.061	235.4
1101	13	6.148	6.045	35.075	202.1
936	14	7.789	7.691	35.095	155.1
825	15	9.744	9.646	35.268	147.4
715	16	12.265	12.168	35.597	151.1
605	17	14.739	14.646	35.975	169.5
495	18	16.753	16.670	36.320	186.8
385	19	17.986	17.919	36.526	193.5
273	20	18.837	18.788	36.567	196.5
185	21	20.443	20.408	36.615	198.0
115	22	23.066	23.043	36.678	217.6
66	23	23.149	23.136	36.679	210.9
4	24	23.157	23.156	36.677	215.2

Abaco February 2015 R/V Endeavor
 CTD Station 3 (CTD003)
 Latitude 26.511 N Longitude 70.502 W
 17-Feb-2015 06:38 Z

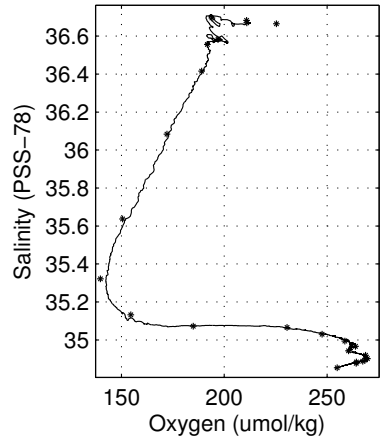
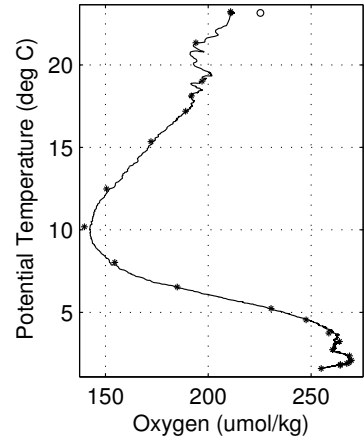
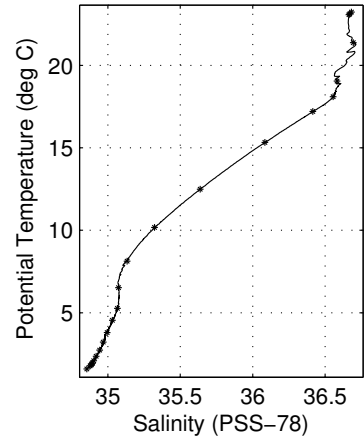
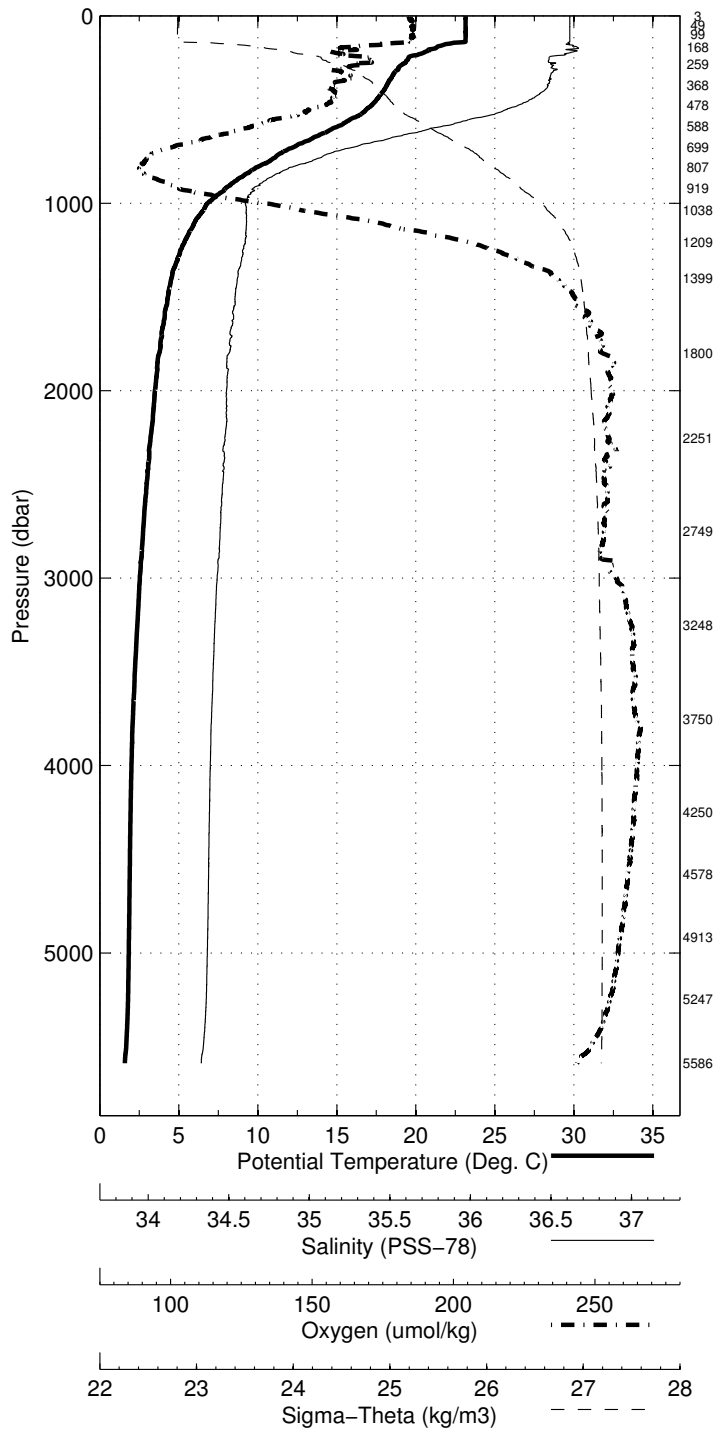


Abaco February 2015 R/V Endeavor
 CTD Station 4 (CTD004)
 Latitude 26.508N Longitude 71.003W
 17-Feb-2015 13:00Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.148	23.147	36.672	211.0	0.003	25.159
10	23.148	23.146	36.670	210.8	0.028	25.158
20	23.153	23.149	36.670	211.9	0.056	25.157
30	23.153	23.147	36.670	212.5	0.084	25.158
50	23.160	23.150	36.670	212.5	0.140	25.157
75	23.169	23.154	36.670	212.0	0.211	25.156
100	23.174	23.153	36.670	212.3	0.282	25.156
125	23.176	23.150	36.670	211.8	0.353	25.157
150	22.028	21.998	36.666	203.5	0.423	25.485
200	20.421	20.383	36.655	193.6	0.538	25.922
250	19.374	19.328	36.576	201.3	0.640	26.141
300	18.737	18.683	36.586	193.9	0.733	26.315
400	18.021	17.951	36.542	191.9	0.909	26.466
500	16.957	16.873	36.359	185.4	1.075	26.589
600	14.825	14.733	35.983	169.3	1.230	26.789
700	12.376	12.281	35.607	150.9	1.364	27.006
800	10.227	10.130	35.318	142.5	1.479	27.178
900	8.368	8.270	35.138	150.5	1.577	27.341
1000	6.906	6.807	35.070	173.5	1.660	27.501
1100	6.120	6.018	35.077	202.3	1.729	27.611
1200	5.495	5.388	35.070	224.9	1.789	27.684
1300	5.021	4.909	35.052	239.2	1.843	27.727
1400	4.655	4.536	35.032	248.6	1.894	27.754
1500	4.430	4.305	35.020	253.3	1.943	27.769
1750	3.972	3.829	34.992	260.6	2.063	27.798
2000	3.651	3.489	34.977	263.0	2.178	27.820
2500	3.163	2.960	34.958	261.2	2.402	27.855
3000	2.778	2.532	34.931	264.1	2.619	27.872
3500	2.510	2.217	34.911	268.7	2.835	27.883
4000	2.347	2.003	34.898	269.3	3.053	27.889
4500	2.304	1.903	34.890	267.6	3.277	27.891
5000	2.294	1.831	34.883	264.5	3.513	27.891
5500	2.190	1.667	34.863	257.6	3.759	27.888

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5587	1	2.123	1.591	34.854	254.9
5247	2	2.280	1.787	34.878	264.1
4914	3	2.297	1.845	34.884	264.3
4578	4	2.307	1.896	34.888	267.3
4250	5	2.321	1.948	34.893	268.4
3750	6	2.410	2.092	34.901	269.6
3248	7	2.635	2.366	34.919	268.7
2749	8	2.964	2.740	34.943	260.5
2251	9	3.409	3.227	34.967	263.8
1801	10	3.945	3.798	34.994	258.6
1400	11	4.666	4.548	35.030	247.5
1209	12	5.375	5.268	35.066	230.5
1038	13	6.627	6.527	35.073	184.9
919	14	8.229	8.130	35.132	154.6
808	15	10.274	10.176	35.322	139.8
699	16	12.591	12.495	35.637	150.6
589	17	15.425	15.332	36.084	172.2
478	18	17.288	17.207	36.415	189.0
368	19	18.166	18.101	36.556	191.8
260	20	19.090	19.043	36.583	197.0
168	21	21.403	21.370	36.695	194.0
100	22	23.088	23.068	36.665	225.3
50	23	23.126	23.116	36.670	210.9
3	24	23.233	23.233	36.682	210.9

Abaco February 2015 R/V Endeavor
 CTD Station 4 (CTD004)
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 17-Feb-2015 13:00 Z

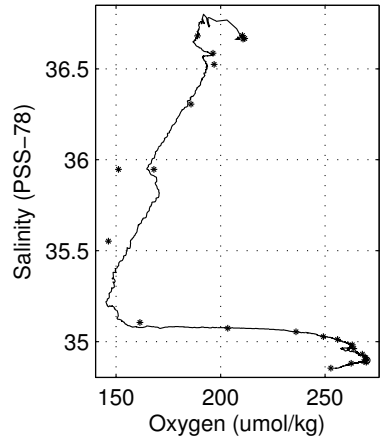
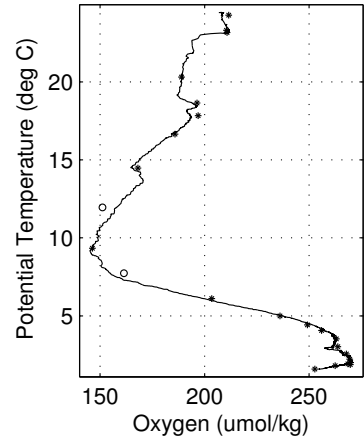
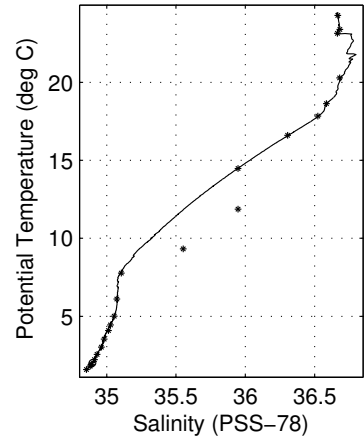
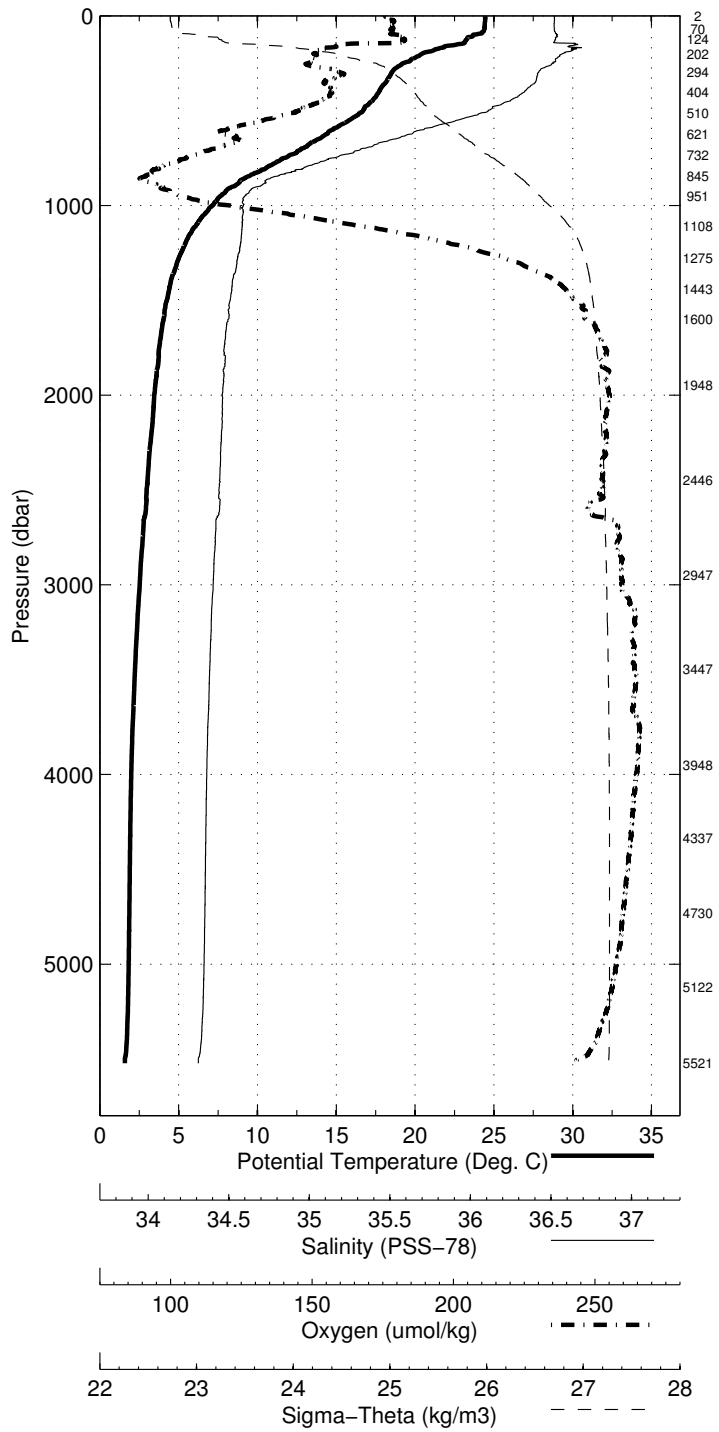


Abaco February 2015 R/V Endeavor
 CTD Station 5 (CTD005)
 Latitude 26.500N Longitude 71.490W
 17-Feb-2015 19:23Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.448	24.447	36.664	206.8	0.003	24.768
10	24.451	24.449	36.662	208.1	0.032	24.766
20	24.451	24.447	36.663	208.6	0.064	24.767
30	24.437	24.430	36.661	208.9	0.095	24.771
50	24.425	24.414	36.661	208.5	0.159	24.775
75	24.390	24.374	36.662	208.8	0.239	24.788
100	23.695	23.674	36.674	209.7	0.317	25.006
125	23.295	23.269	36.668	211.2	0.390	25.121
150	22.719	22.688	36.781	194.8	0.461	25.375
200	20.471	20.433	36.703	189.1	0.579	25.945
250	19.258	19.212	36.654	187.4	0.680	26.231
300	18.547	18.494	36.579	195.8	0.771	26.358
400	17.792	17.722	36.511	193.5	0.943	26.499
500	16.768	16.685	36.326	184.9	1.107	26.608
600	14.883	14.791	35.997	167.1	1.260	26.787
700	12.863	12.765	35.680	164.0	1.396	26.968
800	10.672	10.572	35.391	149.7	1.516	27.157
900	8.560	8.461	35.160	150.8	1.616	27.329
1000	7.259	7.158	35.083	168.0	1.701	27.462
1100	6.248	6.144	35.077	198.2	1.772	27.595
1200	5.540	5.432	35.069	223.0	1.833	27.678
1300	5.011	4.898	35.049	240.0	1.887	27.726
1400	4.622	4.504	35.027	250.0	1.938	27.753
1500	4.378	4.253	35.016	254.7	1.988	27.772
1750	3.905	3.763	34.985	262.1	2.106	27.799
2000	3.615	3.453	34.976	263.0	2.220	27.822
2500	3.168	2.965	34.958	261.6	2.443	27.855
3000	2.770	2.524	34.929	266.2	2.661	27.871
3500	2.498	2.205	34.910	269.9	2.877	27.883
4000	2.339	1.995	34.897	269.9	3.094	27.889
4500	2.303	1.902	34.890	267.7	3.318	27.891
5000	2.294	1.831	34.883	264.9	3.554	27.891
5500	2.114	1.593	34.854	255.4	3.799	27.886

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5521	1	2.116	1.593	34.854	252.7
5123	2	2.287	1.809	34.881	262.5
4730	3	2.304	1.874	34.887	269.7
4337	4	2.309	1.927	34.891	268.5
3948	5	2.348	2.010	34.897	269.9
3447	6	2.514	2.227	34.911	269.4
2948	7	2.801	2.560	34.931	267.9
2447	8	3.218	3.019	34.962	263.7
1949	9	3.699	3.540	34.982	263.0
1601	10	4.222	4.090	35.012	256.0
1443	11	4.570	4.449	35.027	249.2
1276	12	5.123	5.012	35.054	236.1
1108	13	6.211	6.107	35.073	203.4
952	14	7.867	7.767	35.105	161.4
846	15	9.423	9.324	35.553	146.3
733	16	11.963	11.864	35.947	151.2
622	17	14.563	14.468	35.947	168.1
510	18	16.681	16.596	36.306	185.9
405	19	17.904	17.834	36.524	196.9
294	20	18.687	18.634	36.585	196.4
203	21	20.322	20.283	36.681	188.9
125	22	23.163	23.137	36.664	210.7
71	23	23.408	23.393	36.683	210.5
3	24	24.290	24.289	36.667	211.6

Abaco February 2015 R/V Endeavor
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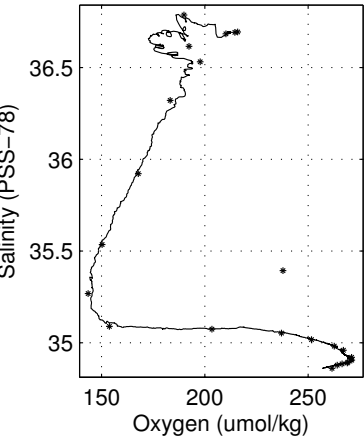
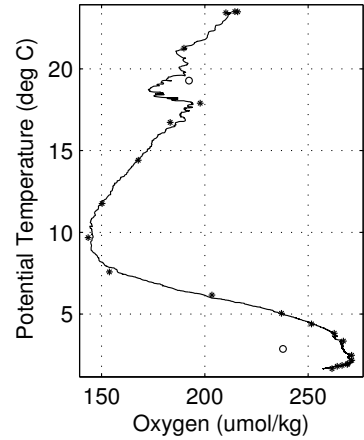
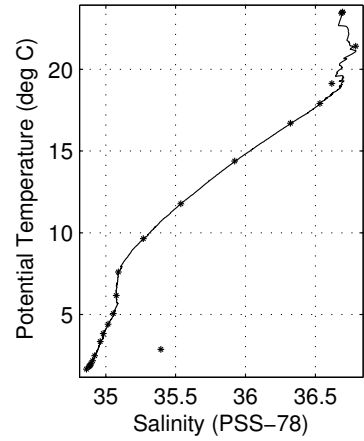
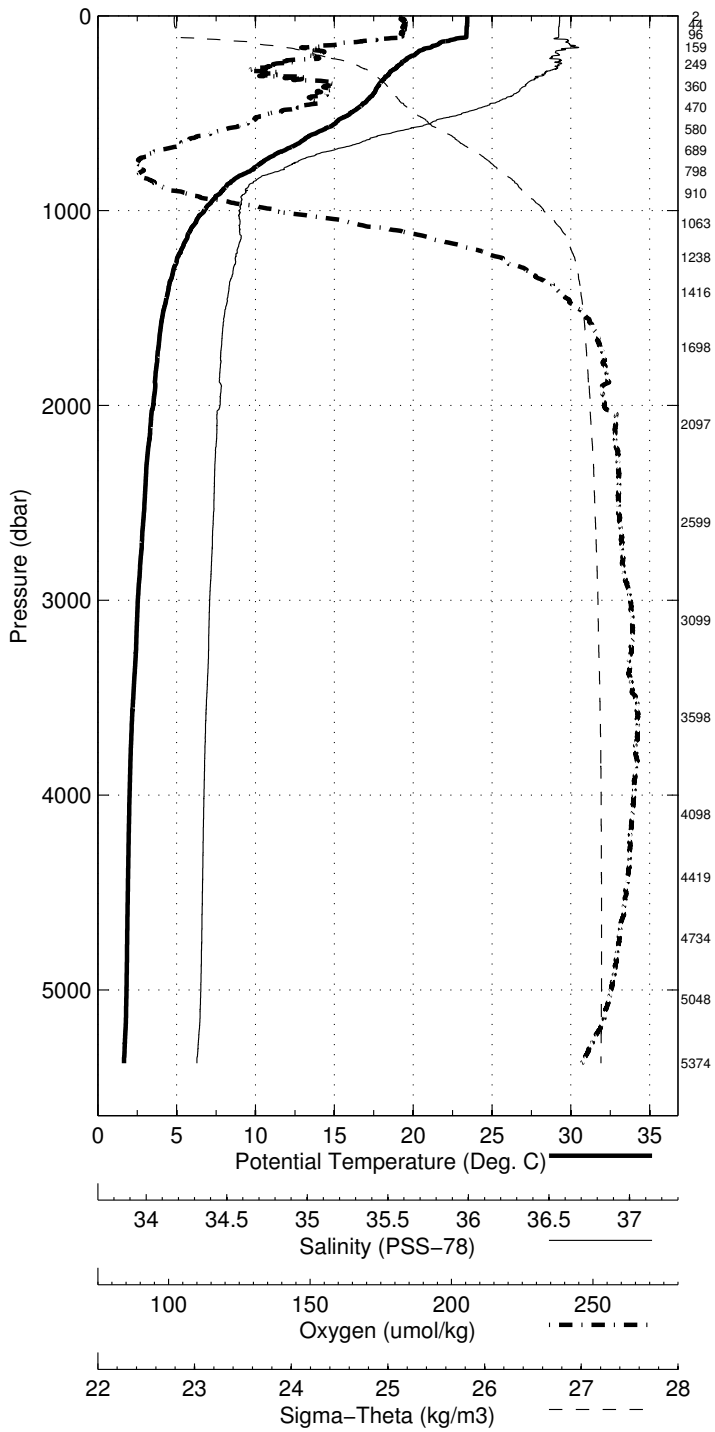


Abaco February 2015 R/V Endeavor
 CTD Station 6 (CTD006)
 Latitude 26.501N Longitude 71.991W
 18-Feb-2015 02:03Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.429	23.429	36.695	210.9	0.003	25.094
10	23.432	23.430	36.693	211.5	0.029	25.093
20	23.435	23.431	36.693	212.0	0.057	25.092
30	23.434	23.428	36.692	211.6	0.086	25.093
50	23.426	23.416	36.691	212.2	0.144	25.095
75	23.404	23.388	36.689	211.5	0.216	25.101
100	23.398	23.377	36.689	211.8	0.288	25.105
125	22.356	22.331	36.734	204.2	0.358	25.442
150	21.511	21.481	36.746	194.2	0.419	25.691
200	20.159	20.121	36.692	187.7	0.527	26.021
250	19.203	19.158	36.686	179.5	0.624	26.270
300	18.475	18.422	36.606	177.8	0.713	26.397
400	17.546	17.477	36.467	190.5	0.881	26.525
500	16.076	15.995	36.201	178.2	1.041	26.673
600	13.976	13.888	35.849	163.8	1.186	26.867
700	11.579	11.488	35.500	148.5	1.313	27.075
800	9.699	9.605	35.269	145.4	1.421	27.229
900	7.948	7.853	35.110	154.6	1.514	27.383
1000	6.847	6.749	35.074	179.6	1.593	27.512
1100	5.962	5.861	35.078	209.9	1.659	27.632
1200	5.399	5.293	35.066	230.0	1.717	27.693
1300	4.927	4.815	35.046	242.8	1.770	27.733
1400	4.610	4.492	35.024	250.4	1.821	27.753
1500	4.335	4.211	35.008	255.9	1.870	27.770
1750	3.919	3.776	34.982	262.9	1.989	27.795
2000	3.668	3.506	34.978	263.0	2.105	27.819
2500	3.164	2.961	34.948	266.5	2.330	27.847
3000	2.785	2.539	34.927	269.4	2.550	27.868
3500	2.542	2.249	34.911	270.7	2.770	27.881
4000	2.358	2.014	34.898	270.3	2.988	27.889
4500	2.304	1.902	34.890	268.4	3.213	27.891
5000	2.280	1.818	34.882	264.6	3.448	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5374	1	2.168	1.662	34.862	261.5
5048	2	2.275	1.807	34.879	264.1
4735	3	2.294	1.865	34.886	266.3
4420	4	2.315	1.923	34.890	268.9
4099	5	2.342	1.987	34.894	269.1
3598	6	2.475	2.172	34.905	271.1
3099	7	2.736	2.481	34.921	271.0
2600	8	3.083	2.870	35.393	237.8
2097	9	3.519	3.350	34.960	267.0
1698	10	3.977	3.838	34.982	262.6
1417	11	4.521	4.403	35.017	251.6
1238	12	5.167	5.059	35.053	237.0
1064	13	6.263	6.163	35.075	203.4
910	14	7.692	7.597	35.090	153.8
799	15	9.742	9.648	35.269	143.5
689	16	11.865	11.774	35.536	150.3
580	17	14.473	14.385	35.922	167.8
471	18	16.779	16.701	36.321	183.2
360	19	17.977	17.914	36.532	197.7
249	20	19.182	19.137	36.616	192.3
160	21	21.450	21.419	36.787	189.8
96	22	23.458	23.438	36.685	210.1
45	23	23.509	23.499	36.693	214.5
3	24	23.496	23.495	36.694	215.8

Abaco February 2015 R/V Endeavor
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 18-Feb-2015 02:03 Z

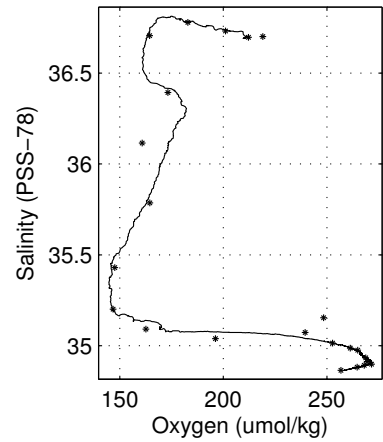
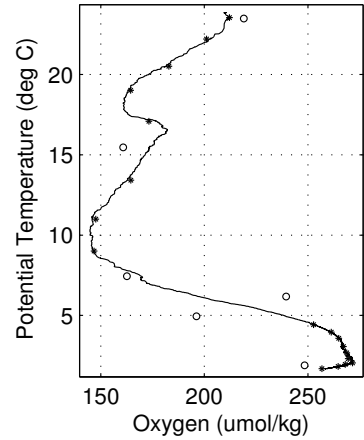
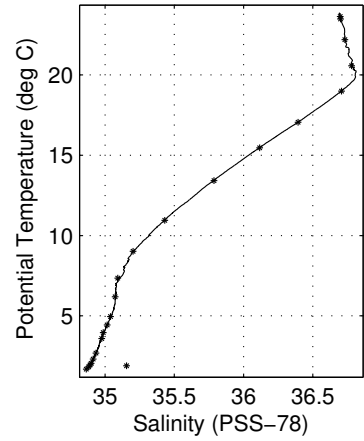
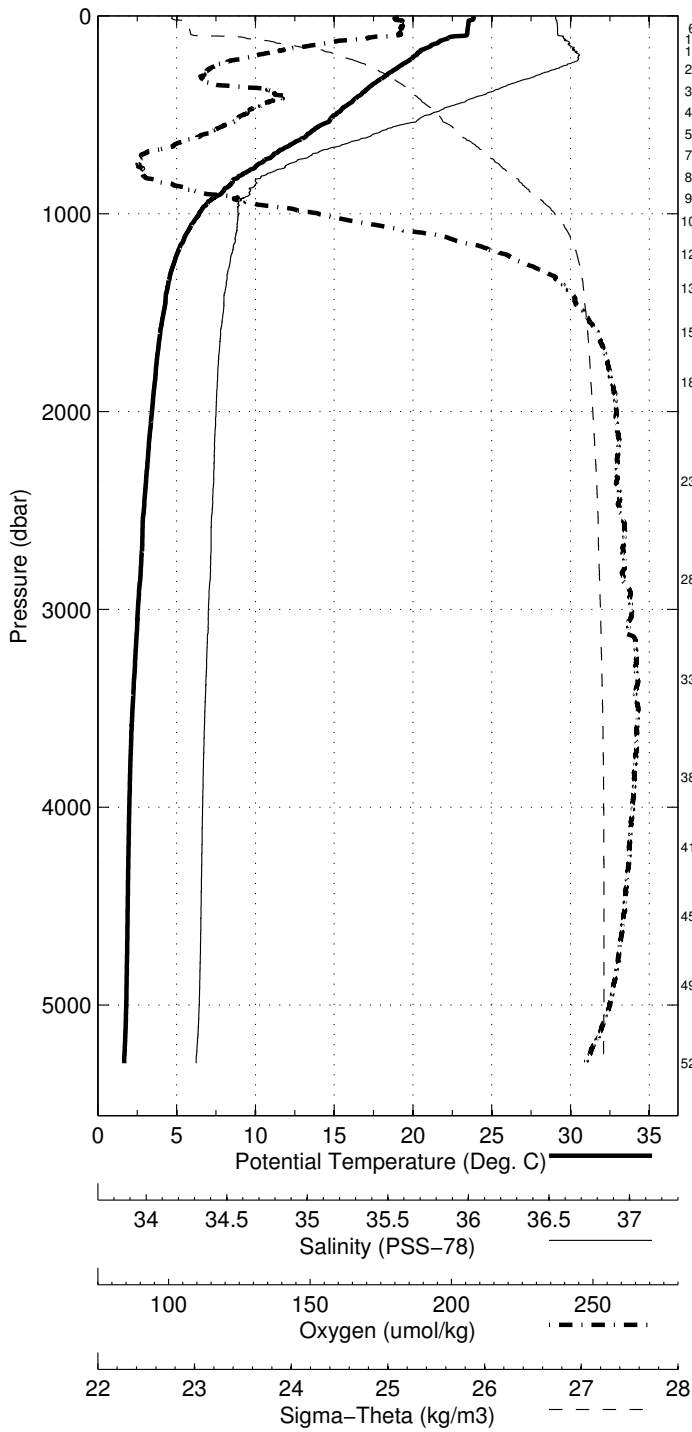


Abaco February 2015 R/V Endeavor
 CTD Station 7 (CTD007)
 Latitude 26.492N Longitude 72.373W
 18-Feb-2015 08:12Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.847	23.846	36.693	210.2	0.003	24.970
10	23.850	23.848	36.692	209.9	0.030	24.968
20	23.799	23.795	36.695	210.1	0.060	24.986
30	23.534	23.527	36.697	211.6	0.089	25.067
50	23.510	23.499	36.701	212.0	0.147	25.078
75	23.474	23.459	36.701	211.8	0.219	25.090
100	23.321	23.301	36.707	210.0	0.291	25.141
125	21.794	21.769	36.737	196.4	0.355	25.603
150	21.172	21.143	36.764	188.5	0.414	25.798
200	20.209	20.172	36.812	174.5	0.519	26.099
250	19.308	19.262	36.745	164.4	0.614	26.288
300	18.347	18.295	36.598	161.6	0.702	26.423
400	16.736	16.670	36.323	180.0	0.865	26.609
500	15.153	15.075	36.048	171.7	1.015	26.764
600	13.366	13.280	35.760	161.4	1.152	26.925
700	11.254	11.164	35.454	146.0	1.274	27.099
800	9.291	9.199	35.224	145.9	1.380	27.262
900	7.918	7.823	35.137	162.0	1.470	27.408
1000	6.519	6.424	35.078	190.5	1.544	27.559
1100	5.730	5.631	35.067	218.2	1.607	27.652
1200	5.149	5.045	35.047	236.9	1.663	27.707
1300	4.735	4.626	35.024	248.6	1.715	27.738
1400	4.469	4.353	35.010	254.4	1.765	27.756
1500	4.299	4.175	35.002	257.5	1.813	27.769
1750	3.878	3.736	34.978	263.9	1.932	27.796
2000	3.598	3.436	34.966	266.0	2.047	27.816
2500	3.119	2.917	34.946	266.9	2.271	27.850
3000	2.790	2.543	34.927	269.9	2.492	27.868
3500	2.495	2.202	34.909	271.5	2.709	27.882
4000	2.341	1.997	34.897	270.1	2.926	27.889
4500	2.296	1.895	34.889	268.1	3.150	27.891
5000	2.266	1.805	34.880	264.4	3.385	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5293	1	2.175	1.680	34.864	256.7
4901	2	2.274	1.825	34.882	264.6
4552	3	2.296	1.887	35.154	248.4
4200	4	2.315	1.949	34.892	268.0
3849	5	2.370	2.043	34.898	271.5
3351	6	2.594	2.316	34.913	269.4
2849	7	2.909	2.676	34.933	268.7
2352	8	3.266	6.837	-999.000	<i>NaN</i>
1851	9	3.737	3.588	34.975	264.9
1598	10	4.094	3.964	34.987	261.3
1374	11	4.548	4.433	35.014	252.7
1206	12	5.060	4.956	35.039	196.2
1037	13	6.287	6.189	35.073	239.5
924	14	7.448	7.354	35.091	162.6
817	15	9.118	9.025	35.201	146.8
707	16	11.032	10.942	35.430	147.6
597	17	13.502	13.415	35.786	164.5
487	18	15.540	15.463	36.116	160.8
379	19	17.119	17.055	36.393	173.2
268	20	19.041	18.993	36.707	164.4
177	21	20.608	20.574	36.780	182.9
116	22	22.217	22.194	36.732	201.0
65	23	23.500	23.486	36.701	219.0
3	24	23.640	23.639	36.698	212.1

Abaco February 2015 R/V Endeavor
 CTD Station 7 (CTD007)
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 18-Feb-2015 08:12 Z

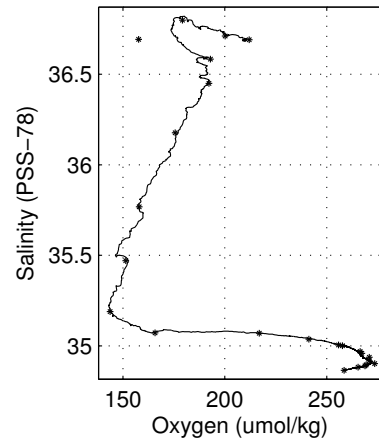
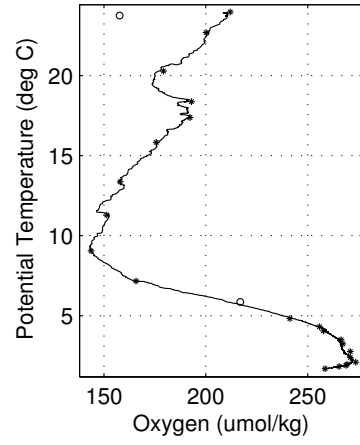
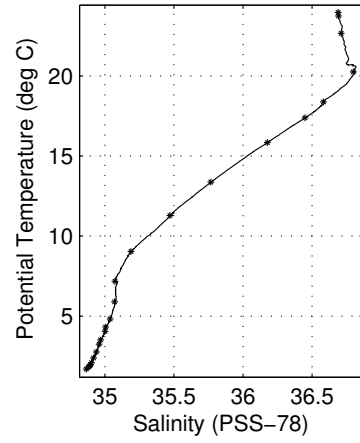
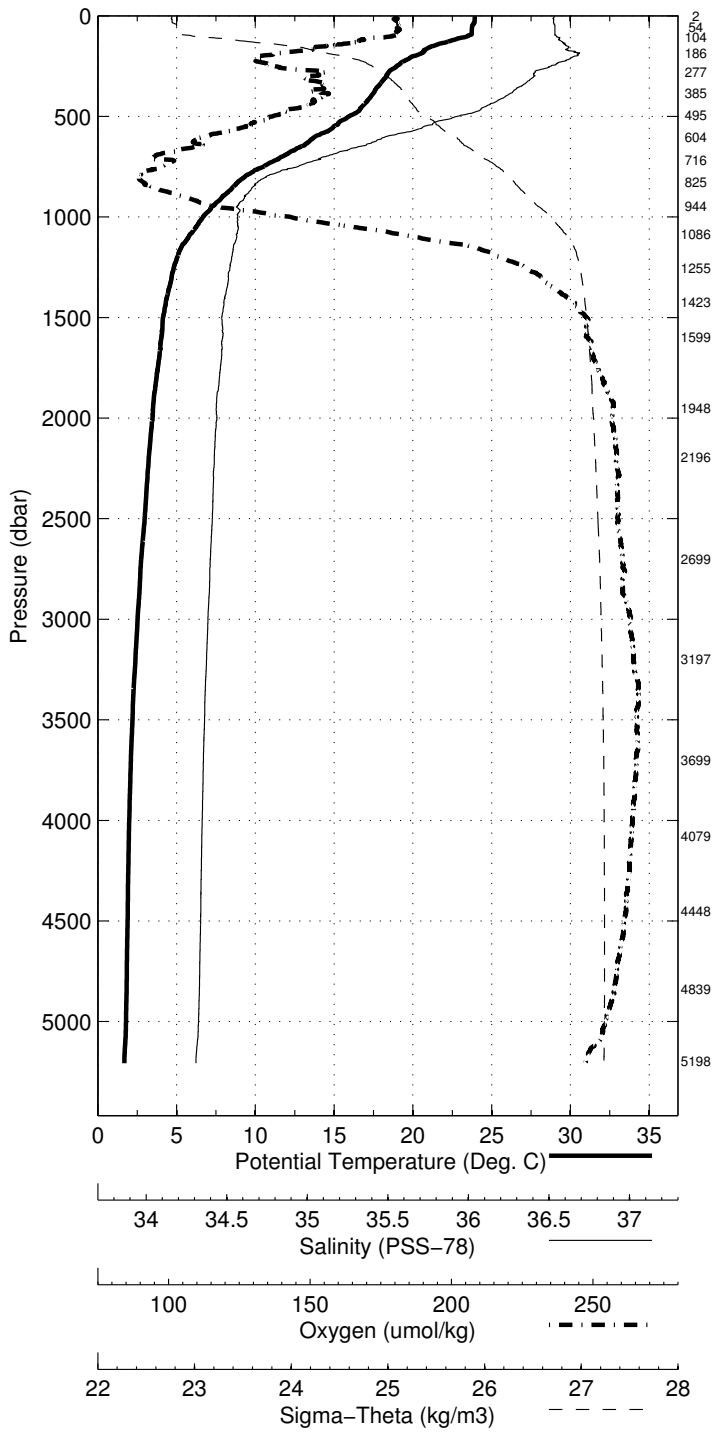


Abaco February 2015 R/V Endeavor
 CTD Station 8 (CTD008)
 Latitude 26.493N Longitude 72.763W
 18-Feb-2015 14:03Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.925	23.924	36.692	209.0	0.003	24.945
10	23.928	23.926	36.686	209.2	0.030	24.941
20	23.922	23.918	36.688	209.5	0.060	24.944
30	23.920	23.914	36.686	210.3	0.090	24.944
50	23.776	23.765	36.693	210.2	0.150	24.994
75	23.754	23.738	36.694	210.1	0.225	25.002
100	23.521	23.500	36.700	208.6	0.299	25.078
125	22.421	22.396	36.724	199.9	0.368	25.416
150	21.337	21.308	36.753	191.8	0.428	25.744
200	20.090	20.052	36.798	174.7	0.535	26.120
250	19.026	18.981	36.675	178.5	0.628	26.307
300	18.378	18.325	36.588	186.6	0.716	26.408
400	17.403	17.335	36.442	191.4	0.884	26.540
500	16.021	15.941	36.195	177.9	1.043	26.681
600	13.867	13.779	35.832	160.9	1.187	26.877
700	11.775	11.683	35.521	147.5	1.315	27.054
800	9.421	9.329	35.223	143.3	1.423	27.239
900	7.986	7.891	35.111	155.2	1.517	27.378
1000	6.793	6.696	35.078	182.5	1.596	27.522
1100	5.869	5.768	35.073	214.8	1.662	27.640
1200	5.141	5.037	35.047	236.6	1.718	27.708
1300	4.795	4.685	35.030	247.1	1.770	27.736
1400	4.491	4.375	35.010	253.8	1.820	27.754
1500	4.252	4.129	34.996	258.7	1.868	27.770
1750	3.953	3.810	34.989	261.6	1.987	27.798
2000	3.634	3.472	34.971	264.9	2.102	27.817
2500	3.174	2.971	34.948	266.7	2.329	27.846
3000	2.770	2.524	34.926	270.0	2.548	27.869
3500	2.493	2.201	34.909	271.4	2.764	27.882
4000	2.337	1.994	34.897	270.5	2.981	27.890
4500	2.290	1.890	34.889	268.5	3.204	27.891
5000	2.251	1.790	34.878	263.7	3.438	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5198	1	2.173	1.689	34.865	258.5
4840	2	2.269	1.828	34.882	265.4
4449	3	2.292	1.898	34.890	268.8
4079	4	2.327	1.975	34.895	269.3
3699	5	2.416	2.104	34.903	273.6
3197	6	2.658	2.394	34.918	270.9
2699	7	2.982	2.763	34.937	270.9
2196	8	3.424	3.247	34.958	267.3
1948	9	3.676	3.518	34.969	266.4
1599	10	4.192	4.060	35.001	257.8
1424	11	4.439	4.321	35.005	255.8
1256	12	4.929	4.822	35.037	241.3
1086	13	5.997	5.897	35.070	216.9
945	14	7.269	7.173	35.072	165.8
826	15	9.137	9.043	35.189	143.7
716	16	11.375	11.282	35.470	151.4
605	17	13.458	13.371	35.767	157.9
496	18	15.916	15.836	36.177	175.6
386	19	17.452	17.386	36.449	192.2
277	20	18.424	18.375	36.583	192.9
186	21	20.287	20.252	36.799	179.2
105	22	22.680	22.659	36.711	200.2
55	23	23.755	23.743	36.692	157.7
3	24	23.970	23.970	36.690	211.9

Abaco February 2015 R/V Endeavor
 CTD Station 8 (CTD008)
 Latitude 26.493 N Longitude 72.763 W
 18-Feb-2015 14:03 Z

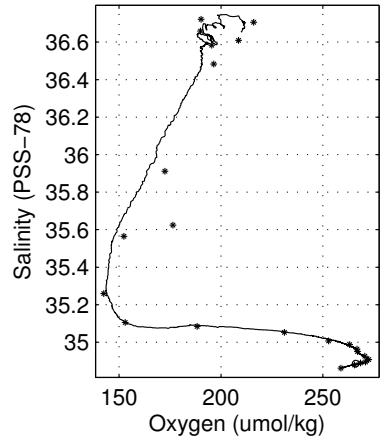
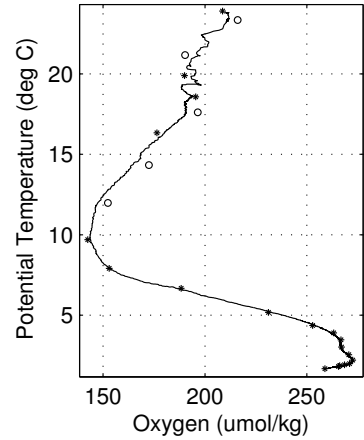
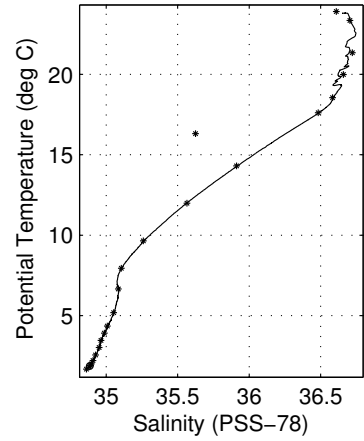
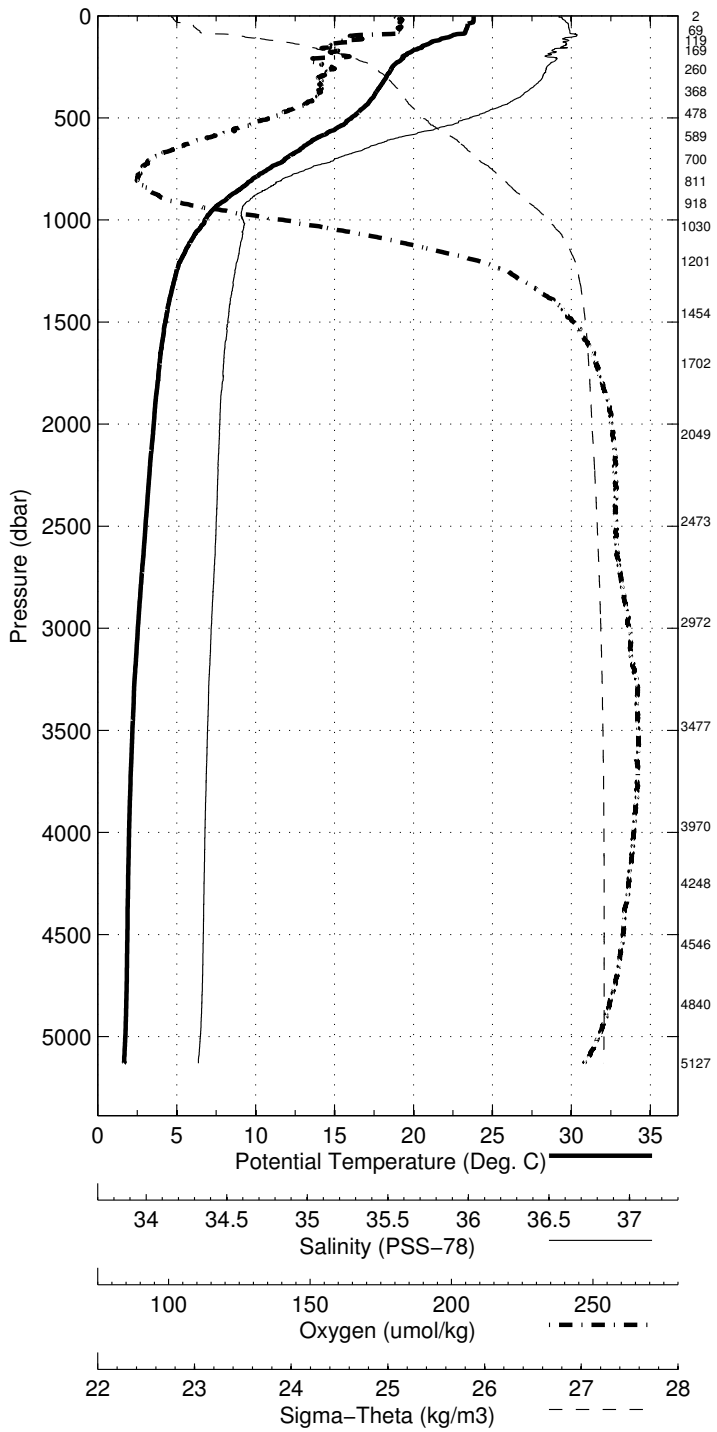


Abaco February 2015 R/V Endeavor
 CTD Station 9 (CTD009)
 Latitude 26.485N Longitude 73.134W
 18-Feb-2015 21:21Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.805	23.805	36.657	209.9	0.003	24.954
10	23.811	23.808	36.670	210.8	0.030	24.963
20	23.810	23.806	36.678	211.6	0.060	24.971
30	23.787	23.781	36.690	211.0	0.090	24.987
50	23.431	23.421	36.703	211.8	0.147	25.103
75	23.305	23.289	36.709	211.0	0.219	25.146
100	22.396	22.376	36.742	198.6	0.287	25.435
125	21.267	21.243	36.690	196.0	0.349	25.714
150	20.582	20.554	36.675	192.5	0.405	25.891
200	19.342	19.306	36.594	198.2	0.507	26.161
250	18.697	18.652	36.595	193.5	0.599	26.330
300	18.328	18.275	36.574	190.4	0.687	26.409
400	17.499	17.431	36.458	190.2	0.854	26.529
500	16.148	16.067	36.212	177.8	1.014	26.665
600	13.927	13.839	35.843	161.5	1.160	26.873
700	11.946	11.853	35.542	146.9	1.288	27.039
800	9.894	9.799	35.281	143.7	1.400	27.206
900	8.224	8.127	35.121	151.0	1.496	27.350
1000	6.888	6.790	35.085	181.1	1.577	27.515
1100	6.034	5.932	35.077	209.2	1.644	27.622
1200	5.345	5.239	35.056	231.2	1.703	27.692
1300	4.936	4.824	35.037	243.0	1.756	27.725
1400	4.630	4.512	35.020	250.7	1.807	27.747
1500	4.403	4.278	35.010	255.9	1.857	27.764
1750	3.989	3.846	34.985	262.3	1.978	27.790
2000	3.707	3.544	34.969	265.5	2.096	27.808
2500	3.226	3.022	34.951	266.5	2.326	27.844
3000	2.779	2.533	34.926	270.2	2.548	27.868
3500	2.481	2.189	34.908	272.3	2.764	27.883
4000	2.322	1.979	34.896	271.4	2.980	27.890
4500	2.273	1.872	34.887	268.5	3.203	27.892
5000	2.201	1.742	34.873	262.2	3.436	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5128	1	2.140	1.667	34.862	258.9
4840	2	2.246	1.805	34.879	265.5
4546	3	2.269	1.863	34.886	266.1
4248	4	2.288	1.917	34.890	268.5
3970	5	2.330	1.990	34.895	270.9
3477	6	2.494	2.204	34.908	272.6
2972	7	2.792	2.549	34.925	270.6
2474	8	3.218	3.017	34.950	267.0
2049	9	3.625	3.458	34.963	266.8
1702	10	4.048	3.909	34.987	263.2
1455	11	4.468	4.347	35.008	252.8
1201	12	5.287	5.182	35.052	231.2
1030	13	6.756	6.656	35.085	188.4
919	14	8.037	7.939	35.106	153.0
811	15	9.741	9.646	35.260	142.5
700	16	12.084	11.990	35.564	152.3
589	17	14.391	14.303	35.911	172.5
479	18	16.397	16.319	35.625	176.5
369	19	17.681	17.617	36.483	196.5
260	20	18.594	18.548	36.584	195.4
169	21	20.022	19.991	36.659	189.9
120	22	21.371	21.347	36.722	190.3
70	23	23.363	23.348	36.705	216.1
3	24	23.905	23.905	36.610	208.6

Abaco February 2015 R/V Endeavor
 CTD Station 9 (CTD009)
 Latitude 26.485 N Longitude 73.134 W
 18-Feb-2015 21:21 Z

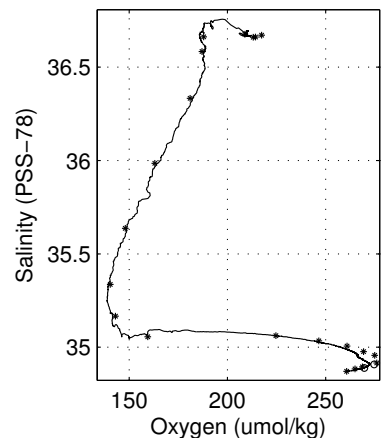
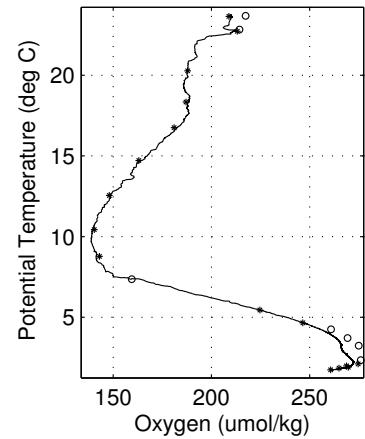
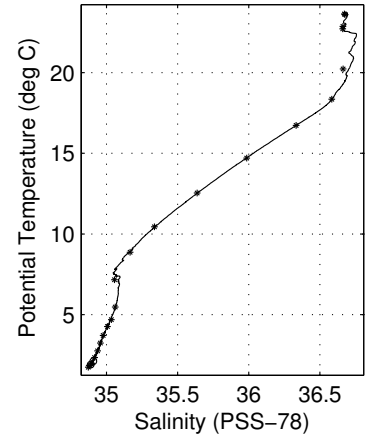
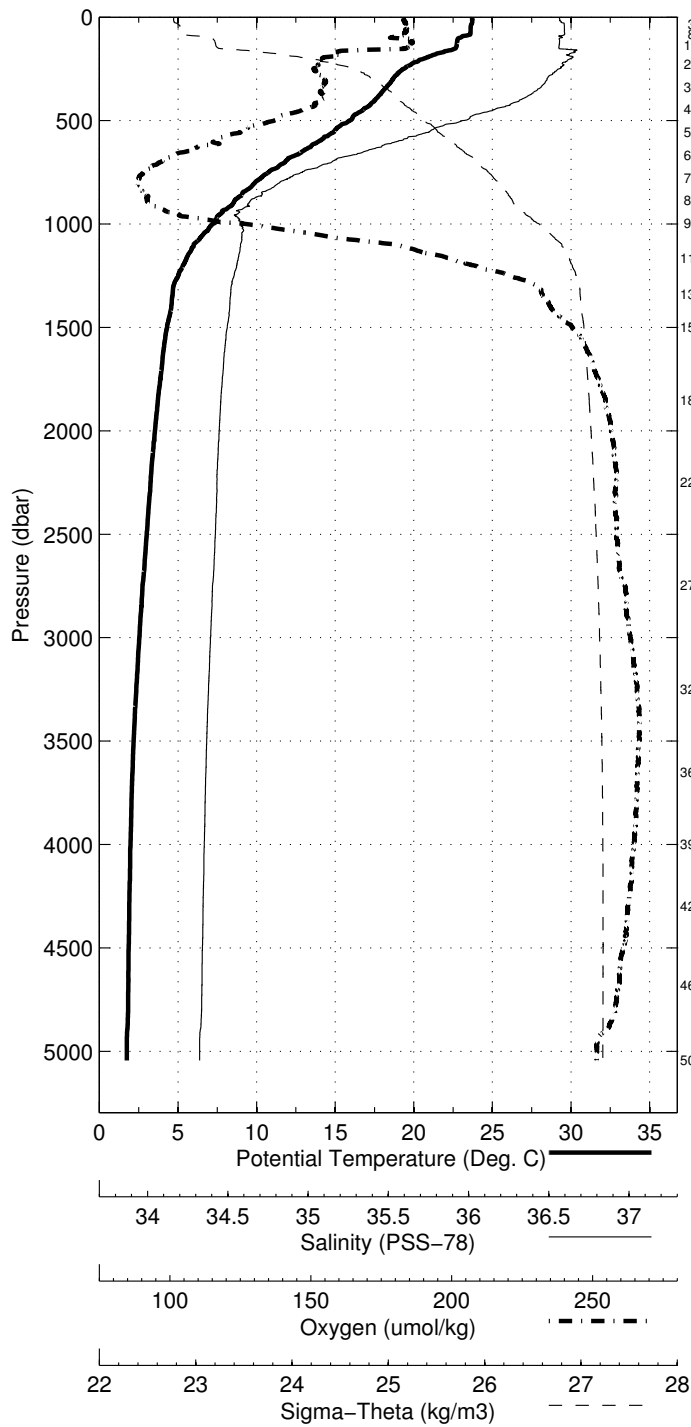


Abaco February 2015 R/V Endeavor
 CTD Station 10 (CTD010)
 Latitude 26.498N Longitude 73.505W
 19-Feb-2015 03:19Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.707	23.707	36.671	209.5	0.003	24.994
10	23.715	23.713	36.671	209.4	0.030	24.992
20	23.723	23.718	36.677	209.7	0.059	24.995
30	23.696	23.690	36.692	210.1	0.089	25.015
50	23.629	23.619	36.694	210.3	0.147	25.037
75	23.622	23.607	36.695	210.0	0.221	25.042
100	22.905	22.884	36.674	206.6	0.293	25.237
125	22.771	22.746	36.669	211.8	0.361	25.274
150	22.700	22.670	36.667	210.3	0.430	25.294
200	20.680	20.642	36.723	188.1	0.551	25.904
250	19.375	19.329	36.665	186.0	0.651	26.210
300	18.722	18.668	36.608	188.8	0.743	26.336
400	17.576	17.508	36.470	187.5	0.915	26.520
500	15.978	15.897	36.187	175.2	1.074	26.685
600	14.046	13.957	35.860	159.6	1.218	26.861
700	11.907	11.813	35.532	145.1	1.346	27.039
800	10.004	9.908	35.273	138.9	1.459	27.181
900	8.595	8.495	35.115	141.7	1.560	27.288
1000	7.289	7.188	35.086	167.7	1.647	27.460
1100	6.103	6.000	35.076	207.4	1.718	27.613
1200	5.411	5.305	35.057	228.3	1.778	27.684
1300	4.819	4.708	35.030	245.2	1.832	27.733
1400	4.689	4.570	35.022	248.8	1.883	27.742
1500	4.427	4.302	35.010	254.6	1.933	27.762
1750	4.021	3.877	34.985	261.4	2.054	27.787
2000	3.693	3.530	34.970	264.9	2.173	27.810
2500	3.213	3.009	34.951	266.4	2.402	27.845
3000	2.783	2.537	34.927	270.0	2.624	27.868
3500	2.466	2.174	34.907	272.3	2.840	27.883
4000	2.318	1.975	34.895	270.9	3.055	27.890
4500	2.259	1.859	34.886	268.2	3.278	27.892
5000	2.201	1.741	34.872	261.0	3.510	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
5044	1	2.203	1.738	34.871	260.6
4679	2	2.264	1.843	34.884	264.9
4297	3	2.280	1.903	34.889	269.6
3998	4	2.329	1.986	34.895	268.7
3648	5	2.414	2.108	34.907	274.6
3248	6	2.612	2.343	34.916	275.9
2748	7	2.981	2.757	34.938	278.4
2249	8	3.419	3.236	34.957	274.9
1850	9	3.857	3.706	34.976	269.3
1500	10	4.380	4.255	35.006	260.8
1337	11	4.798	4.684	35.034	246.5
1165	12	5.574	5.469	35.062	224.6
996	13	7.267	7.166	35.056	159.4
886	14	8.971	8.871	35.166	143.0
778	15	10.535	10.439	35.337	140.3
667	16	12.635	12.543	35.637	148.0
558	17	14.789	14.704	35.985	163.0
447	18	16.809	16.735	36.333	180.9
337	19	18.415	18.355	36.584	187.0
227	20	20.275	20.232	36.663	187.9
135	21	22.739	22.712	36.660	213.1
84	22	22.879	22.862	36.662	214.2
34	23	23.612	23.605	36.676	208.8
3	24	23.634	23.634	36.672	217.3

Abaco February 2015 R/V Endeavor
 CTD Station 10 (CTD010)
 Latitude 26.498 N Longitude 73.505 W
 19-Feb-2015 03:19 Z

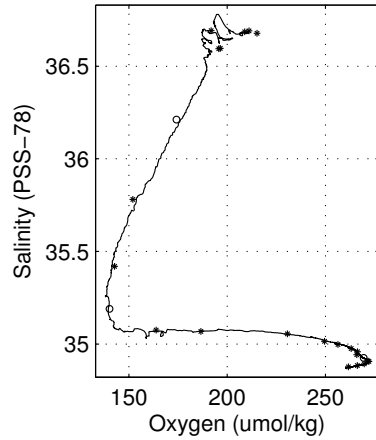
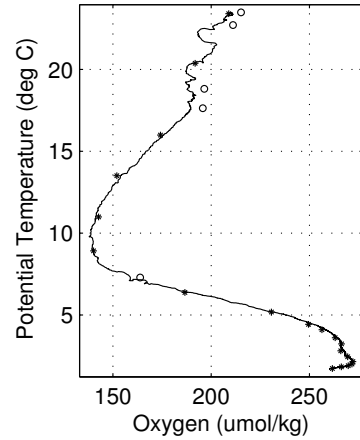
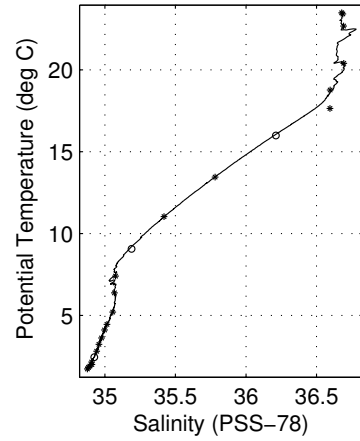
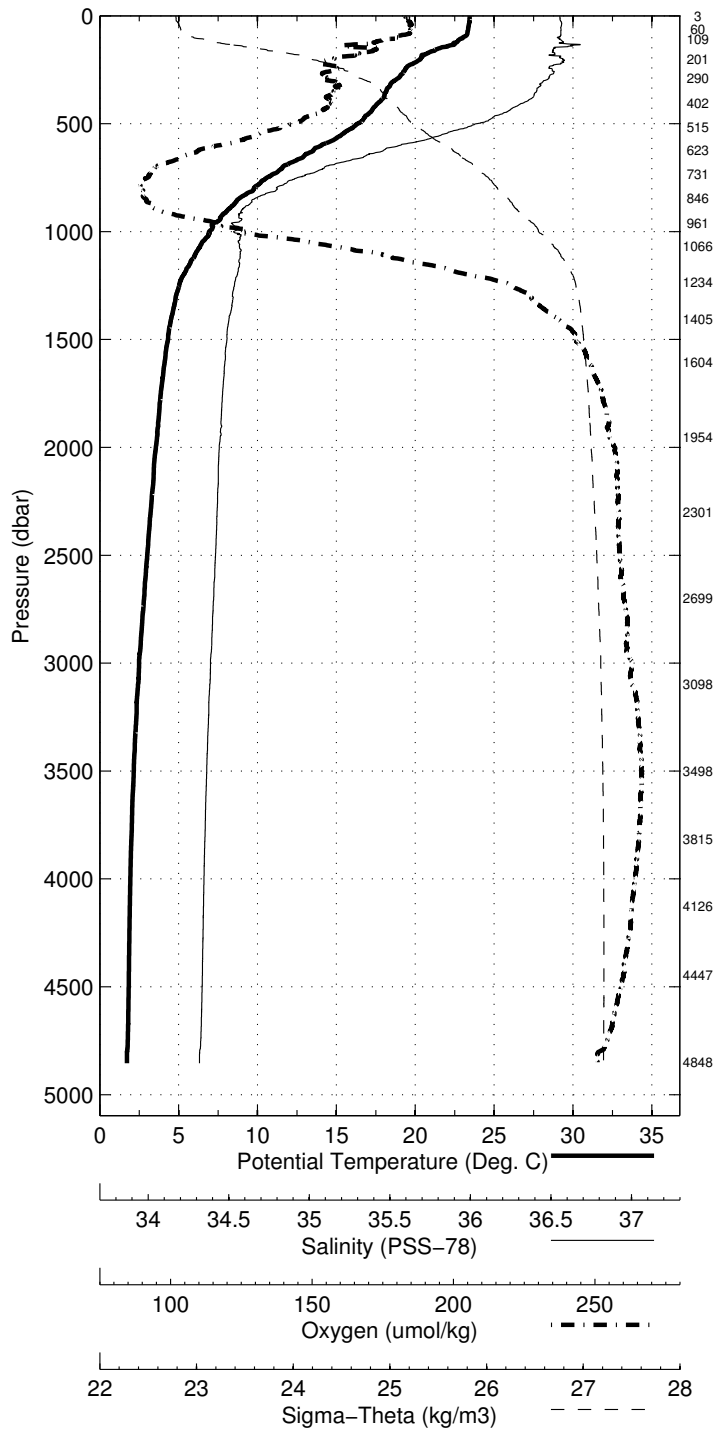


Abaco February 2015 R/V Endeavor
 CTD Station 11 (CTD011)
 Latitude 26.489N Longitude 73.879W
 19-Feb-2015 08:36Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.452	23.451	36.679	209.1	0.003	25.075
10	23.449	23.447	36.678	209.9	0.029	25.076
20	23.452	23.448	36.679	210.3	0.058	25.077
30	23.439	23.433	36.685	210.5	0.086	25.086
50	23.388	23.378	36.684	210.7	0.144	25.101
75	23.327	23.312	36.682	210.5	0.216	25.119
100	23.035	23.014	36.665	207.0	0.287	25.193
125	22.499	22.473	36.676	201.5	0.355	25.357
150	21.582	21.553	36.654	202.5	0.419	25.601
200	20.364	20.326	36.691	189.5	0.532	25.965
250	19.403	19.357	36.639	190.5	0.632	26.182
300	18.708	18.655	36.597	189.1	0.725	26.331
400	17.779	17.710	36.502	189.3	0.898	26.495
500	16.411	16.329	36.259	179.1	1.061	26.640
600	14.142	14.053	35.875	159.6	1.209	26.853
700	11.688	11.596	35.498	143.1	1.337	27.053
800	9.878	9.783	35.259	138.1	1.449	27.192
900	8.210	8.113	35.083	143.3	1.547	27.322
1000	7.030	6.931	35.041	166.6	1.631	27.461
1100	6.203	6.099	35.075	201.1	1.702	27.599
1200	5.412	5.306	35.059	226.5	1.762	27.686
1300	4.934	4.822	35.035	242.7	1.816	27.723
1400	4.649	4.531	35.019	249.5	1.868	27.744
1500	4.447	4.321	35.008	254.6	1.918	27.758
1750	4.014	3.871	34.986	261.5	2.040	27.789
2000	3.720	3.557	34.969	265.0	2.159	27.807
2500	3.210	3.006	34.950	266.3	2.389	27.845
3000	2.731	2.487	34.925	269.6	2.610	27.871
3500	2.444	2.153	34.906	272.0	2.823	27.884
4000	2.279	1.937	34.892	270.4	3.037	27.890
4500	2.232	1.833	34.883	266.6	3.257	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4848	1	2.164	1.725	34.876	261.7
4447	2	2.229	1.837	34.884	266.2
4126	3	2.262	1.906	34.893	269.8
3816	4	2.330	2.007	34.908	271.6
3499	5	2.441	2.150	34.906	272.1
3099	6	2.700	2.445	34.925	269.4
2699	7	3.031	2.810	34.942	265.9
2302	8	3.423	3.235	34.959	266.3
1954	9	3.782	3.622	34.976	263.1
1604	10	4.240	4.108	34.998	256.4
1406	11	4.574	4.456	35.015	249.5
1234	12	5.317	5.208	35.055	230.7
1066	13	6.475	6.373	35.068	186.6
961	14	7.503	7.404	35.075	163.9
846	15	9.155	9.059	35.190	140.2
732	16	11.125	11.032	35.420	142.8
623	17	13.539	13.449	35.781	152.0
516	18	16.070	15.987	36.212	174.2
403	19	17.706	17.637	36.594	195.7
291	20	18.816	18.764	36.596	196.5
202	21	20.431	20.393	36.692	191.9
110	22	22.695	22.672	36.691	211.1
61	23	23.418	23.405	36.686	208.9
3	24	23.475	23.475	36.678	215.2

Abaco February 2015 R/V Endeavor
 CTD Station 11 (CTD011)
 Latitude 26.489 N Longitude 73.879 W
 19-Feb-2015 08:36 Z

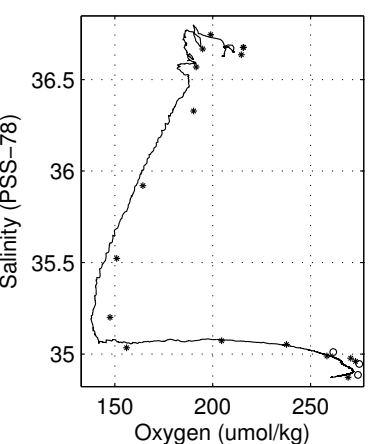
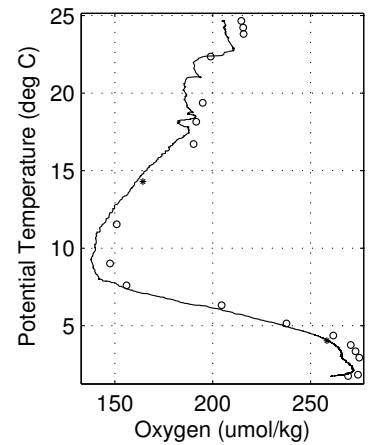
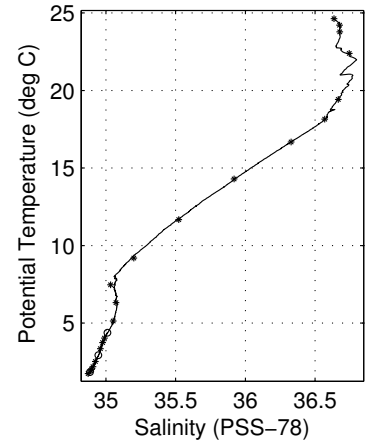
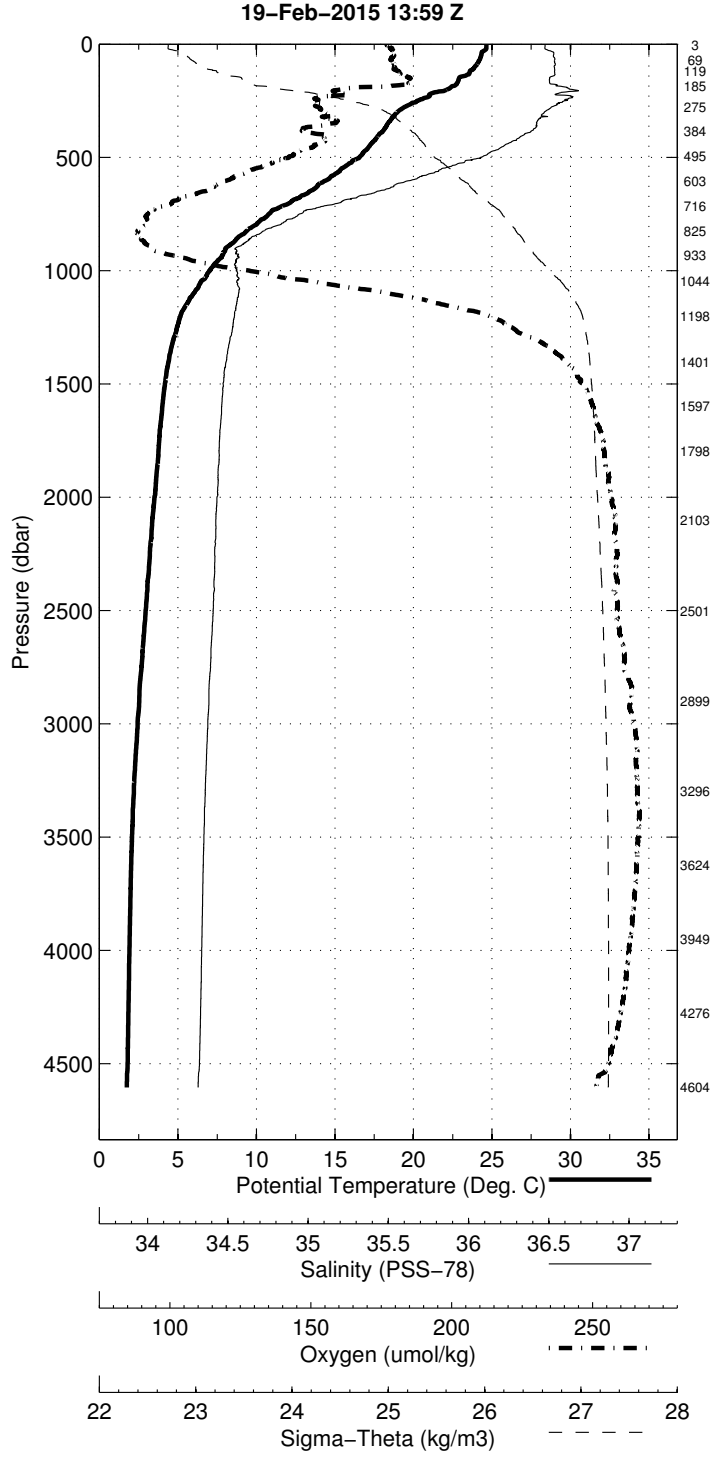


Abaco February 2015 R/V Endeavor
 CTD Station 12 (CTD012)
 Latitude 26.502N Longitude 74.247W
 19-Feb-2015 13:59Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.647	24.647	36.630	204.5	0.003	24.682
10	24.647	24.645	36.629	205.5	0.033	24.681
20	24.655	24.650	36.629	205.8	0.065	24.679
30	24.457	24.451	36.658	206.4	0.097	24.762
50	24.324	24.313	36.671	206.5	0.161	24.814
75	24.165	24.149	36.676	206.2	0.239	24.866
100	23.924	23.902	36.675	206.6	0.316	24.939
125	23.589	23.563	36.678	208.0	0.391	25.042
150	22.933	22.902	36.652	210.4	0.463	25.216
200	22.191	22.151	36.767	192.3	0.600	25.518
250	20.284	20.237	36.728	185.2	0.714	26.017
300	19.026	18.971	36.626	188.2	0.812	26.272
400	17.872	17.802	36.523	187.9	0.988	26.488
500	16.623	16.541	36.303	178.4	1.151	26.624
600	14.567	14.476	35.954	162.0	1.300	26.823
700	12.236	12.141	35.590	147.1	1.432	27.020
800	9.976	9.880	35.274	140.1	1.545	27.186
900	8.131	8.035	35.062	141.8	1.644	27.317
1000	7.115	7.015	35.066	167.9	1.730	27.469
1100	6.118	6.016	35.078	204.6	1.800	27.612
1200	5.265	5.160	35.056	232.0	1.858	27.701
1300	4.838	4.728	35.034	244.1	1.911	27.733
1400	4.522	4.405	35.014	252.2	1.961	27.754
1500	4.291	4.167	34.999	257.0	2.010	27.768
1750	3.949	3.807	34.980	262.4	2.129	27.790
2000	3.670	3.507	34.968	264.4	2.247	27.811
2500	3.143	2.941	34.948	266.1	2.474	27.849
3000	2.675	2.432	34.921	270.8	2.691	27.873
3500	2.362	2.073	34.902	271.7	2.900	27.887
4000	2.253	1.911	34.891	269.2	3.110	27.891
4500	2.195	1.797	34.879	263.7	3.329	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4604	1	2.159	1.750	34.872	269.2
4276	2	2.219	1.846	34.886	274.2
3950	3	2.258	1.922	34.891	279.4
3624	4	2.325	2.024	34.898	277.6
3296	5	2.454	2.184	34.907	280.0
2900	6	2.762	2.527	34.925	278.3
2502	7	3.139	2.936	34.946	274.9
2104	8	3.521	3.351	34.960	273.0
1798	9	3.897	3.751	34.977	270.5
1598	10	4.159	4.028	34.990	258.3
1401	11	4.497	4.380	35.011	261.6
1199	12	5.240	5.135	35.052	237.7
1044	13	6.417	6.317	35.073	204.6
934	14	7.568	7.472	35.034	156.0
825	15	9.283	9.188	35.200	147.5
716	16	11.762	11.668	35.523	150.9
604	17	14.389	14.298	35.920	164.3
496	18	16.765	16.682	36.328	190.3
385	19	18.219	18.151	36.569	191.5
276	20	19.475	19.425	36.667	194.9
185	21	22.422	22.384	36.746	199.0
119	22	23.801	23.776	36.677	215.7
69	23	24.224	24.210	36.676	215.6
4	24	24.634	24.633	36.636	214.6

Abaco February 2015 R/V Endeavor
 CTD Station 12 (CTD012)
 Latitude 26.502 N Longitude 74.247 W
 19-Feb-2015 13:59 Z

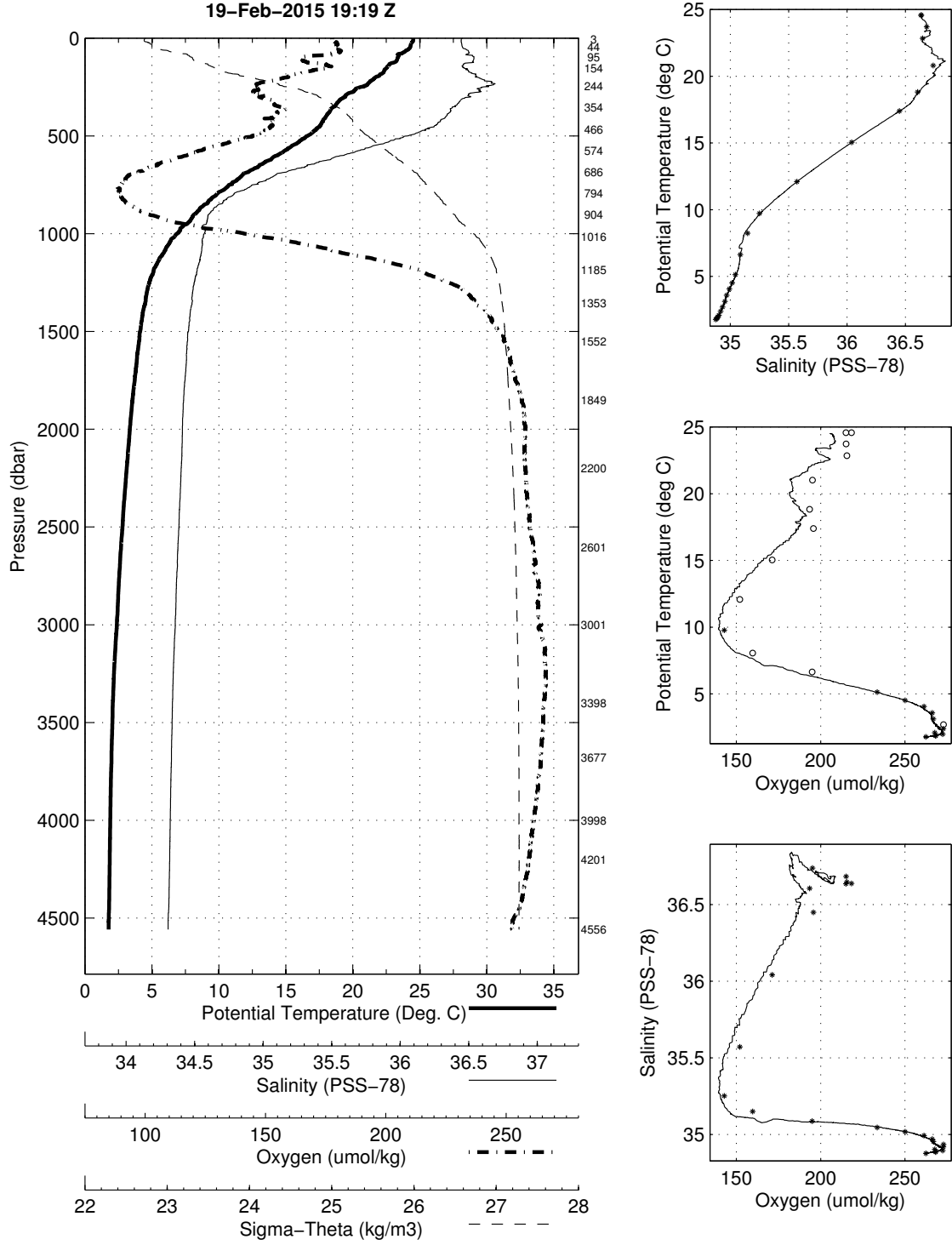


Abaco February 2015 R/V Endeavor
 CTD Station 13 (CTD013)
 Latitude 26.497N Longitude 74.526W
 19-Feb-2015 19:19Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.504	24.504	36.640	206.0	0.003	24.732
10	24.509	24.506	36.638	205.7	0.032	24.730
20	24.433	24.429	36.638	207.3	0.064	24.753
30	24.350	24.343	36.641	207.6	0.096	24.781
50	24.264	24.253	36.648	208.0	0.159	24.814
75	23.752	23.736	36.686	207.5	0.236	24.997
100	23.357	23.336	36.714	197.1	0.308	25.136
125	23.064	23.038	36.702	198.4	0.379	25.214
150	22.568	22.538	36.651	205.1	0.448	25.320
200	21.744	21.704	36.736	192.2	0.578	25.621
250	20.616	20.568	36.764	183.1	0.692	25.955
300	19.502	19.447	36.695	183.6	0.793	26.202
400	18.068	17.999	36.546	188.1	0.974	26.457
500	16.687	16.604	36.313	181.3	1.140	26.617
600	14.439	14.349	35.925	160.8	1.290	26.827
700	11.846	11.753	35.521	142.8	1.420	27.041
800	9.909	9.813	35.270	139.5	1.532	27.195
900	8.291	8.194	35.122	148.7	1.630	27.340
1000	6.984	6.885	35.093	178.8	1.713	27.508
1100	5.964	5.862	35.076	209.5	1.779	27.630
1200	5.197	5.093	35.048	234.6	1.836	27.702
1300	4.724	4.615	35.023	247.5	1.888	27.738
1400	4.446	4.330	35.009	254.2	1.937	27.758
1500	4.236	4.113	34.997	257.7	1.986	27.772
1750	3.858	3.716	34.977	262.8	2.104	27.798
2000	3.516	3.356	34.962	265.9	2.218	27.821
2500	3.005	2.805	34.941	267.4	2.436	27.856
3000	2.623	2.381	34.919	270.9	2.647	27.876
3500	2.339	2.050	34.900	271.6	2.853	27.888
4000	2.232	1.891	34.889	268.7	3.062	27.891
4500	2.175	1.778	34.877	262.4	3.281	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4556	1	2.181	1.777	34.876	262.4
4201	2	2.217	1.854	34.885	268.3
3999	3	2.234	1.893	34.889	268.0
3678	4	2.289	1.983	34.895	272.4
3399	5	2.367	2.089	34.902	267.7
3002	6	2.632	2.390	34.918	272.8
2602	7	2.911	2.703	34.934	272.8
2200	8	3.302	3.126	34.954	266.8
1849	9	3.732	3.583	34.969	266.2
1552	10	4.189	4.062	34.992	261.2
1354	11	4.624	4.510	35.017	250.0
1186	12	5.236	5.133	35.045	233.5
1016	13	6.725	6.626	35.086	194.9
904	14	8.330	8.232	35.149	159.6
795	15	9.822	9.728	35.251	142.8
686	16	12.188	12.095	35.571	152.0
575	17	15.137	15.047	36.041	171.3
466	18	17.474	17.394	36.449	195.7
354	19	18.885	18.821	36.605	193.5
244	20	20.853	20.806	36.738	195.2
154	21	22.866	22.835	36.647	215.5
95	22	23.726	23.706	36.683	215.0
45	23	24.578	24.568	36.637	218.3
3	24	24.575	24.575	36.635	215.0

Abaco February 2015 R/V Endeavor
 CTD Station 13 (CTD013)
 Latitude 26.497 N Longitude 74.526 W
 19-Feb-2015 19:19 Z

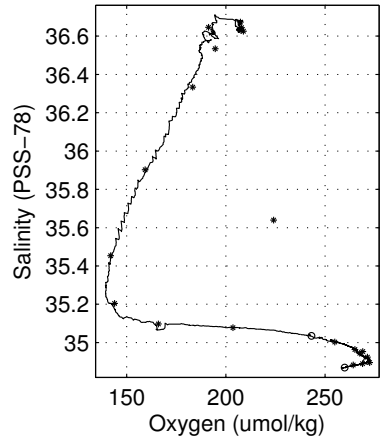
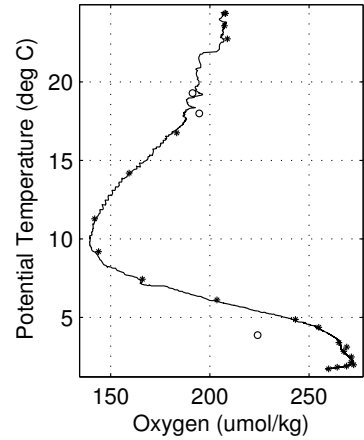
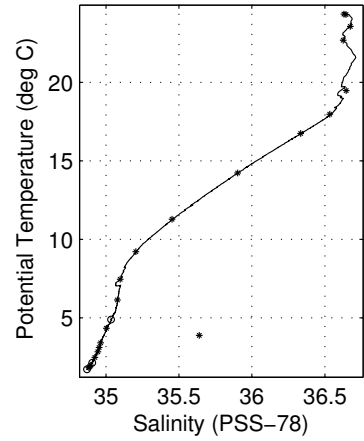
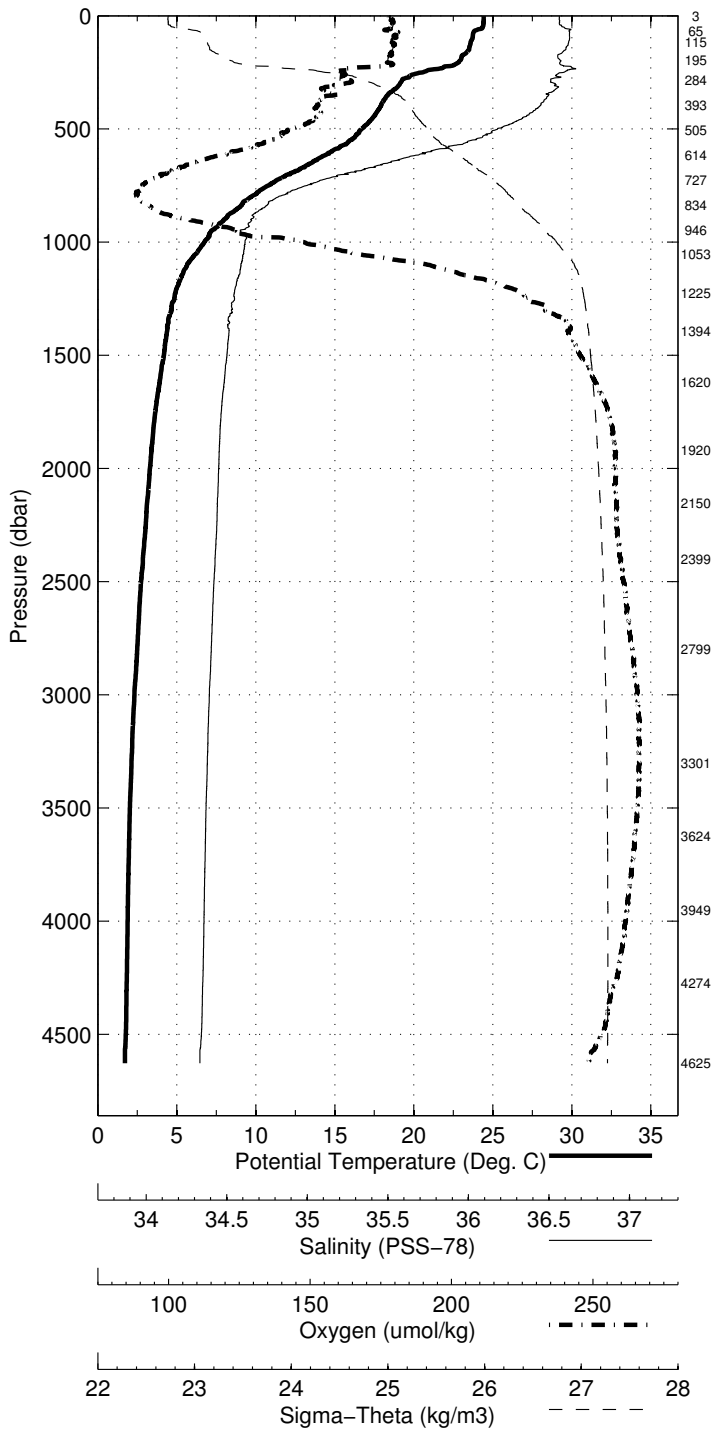


Abaco February 2015 R/V Endeavor
 CTD Station 14 (CTD014)
 Latitude 26.503N Longitude 74.811W
 20-Feb-2015 00:29Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.418	24.418	36.631	205.9	0.003	24.752
10	24.422	24.420	36.630	206.4	0.032	24.750
20	24.420	24.416	36.632	206.8	0.064	24.753
30	24.421	24.415	36.631	207.2	0.096	24.752
50	24.354	24.344	36.652	206.8	0.160	24.790
75	23.776	23.760	36.681	208.3	0.236	24.986
100	23.730	23.708	36.681	207.3	0.311	25.001
125	23.604	23.578	36.674	207.4	0.386	25.035
150	23.527	23.496	36.662	206.6	0.460	25.050
200	22.925	22.884	36.638	206.0	0.605	25.210
250	20.602	20.555	36.651	193.1	0.733	25.873
300	19.175	19.121	36.611	194.2	0.833	26.222
400	17.956	17.886	36.533	186.9	1.011	26.475
500	16.778	16.695	36.328	180.6	1.176	26.607
600	14.907	14.814	36.001	164.5	1.330	26.785
700	12.277	12.182	35.596	145.7	1.464	27.017
800	9.795	9.701	35.252	139.5	1.576	27.200
900	8.066	7.971	35.117	153.5	1.672	27.370
1000	6.853	6.755	35.090	183.6	1.751	27.524
1100	5.751	5.651	35.070	216.4	1.817	27.652
1200	5.116	5.012	35.042	237.6	1.872	27.708
1300	4.748	4.638	35.024	247.3	1.924	27.736
1400	4.491	4.375	35.011	253.2	1.974	27.755
1500	4.313	4.189	35.002	256.4	2.023	27.768
1750	3.776	3.635	34.974	264.0	2.140	27.803
2000	3.463	3.303	34.961	265.9	2.252	27.826
2500	2.936	2.737	34.938	267.8	2.468	27.859
3000	2.557	2.316	34.915	271.3	2.676	27.878
3500	2.317	2.029	34.899	271.7	2.881	27.888
4000	2.228	1.887	34.888	268.5	3.090	27.891
4500	2.167	1.770	34.876	262.2	3.308	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4625	1	2.123	1.713	34.870	259.8
4275	2	2.198	1.827	34.883	264.2
3949	3	2.233	1.898	34.890	268.9
3625	4	2.275	1.975	34.895	272.5
3302	5	2.400	2.131	34.906	271.1
2800	6	2.705	2.481	34.924	271.4
2399	7	3.027	2.836	34.945	267.5
2151	8	3.278	3.107	34.953	269.0
1921	9	3.554	3.401	34.964	265.0
1620	10	4.008	3.875	35.639	224.0
1395	11	4.441	4.325	35.003	254.8
1226	12	4.988	4.883	35.035	243.1
1053	13	6.239	6.140	35.078	203.5
946	14	7.546	7.448	35.097	166.0
835	15	9.302	9.206	35.204	143.9
727	16	11.373	11.278	35.453	141.9
614	17	14.321	14.229	35.902	159.3
505	18	16.831	16.747	36.334	183.3
393	19	18.039	17.971	36.534	194.6
284	20	19.530	19.478	36.646	191.3
195	21	22.720	22.680	36.626	208.8
115	22	23.586	23.562	36.673	207.3
66	23	24.334	24.320	36.644	207.9
3	24	24.346	24.345	36.630	207.6

Abaco February 2015 R/V Endeavor
 CTD Station 14 (CTD014)
 Latitude 26.503 N Longitude 74.811 W
 20-Feb-2015 00:29 Z

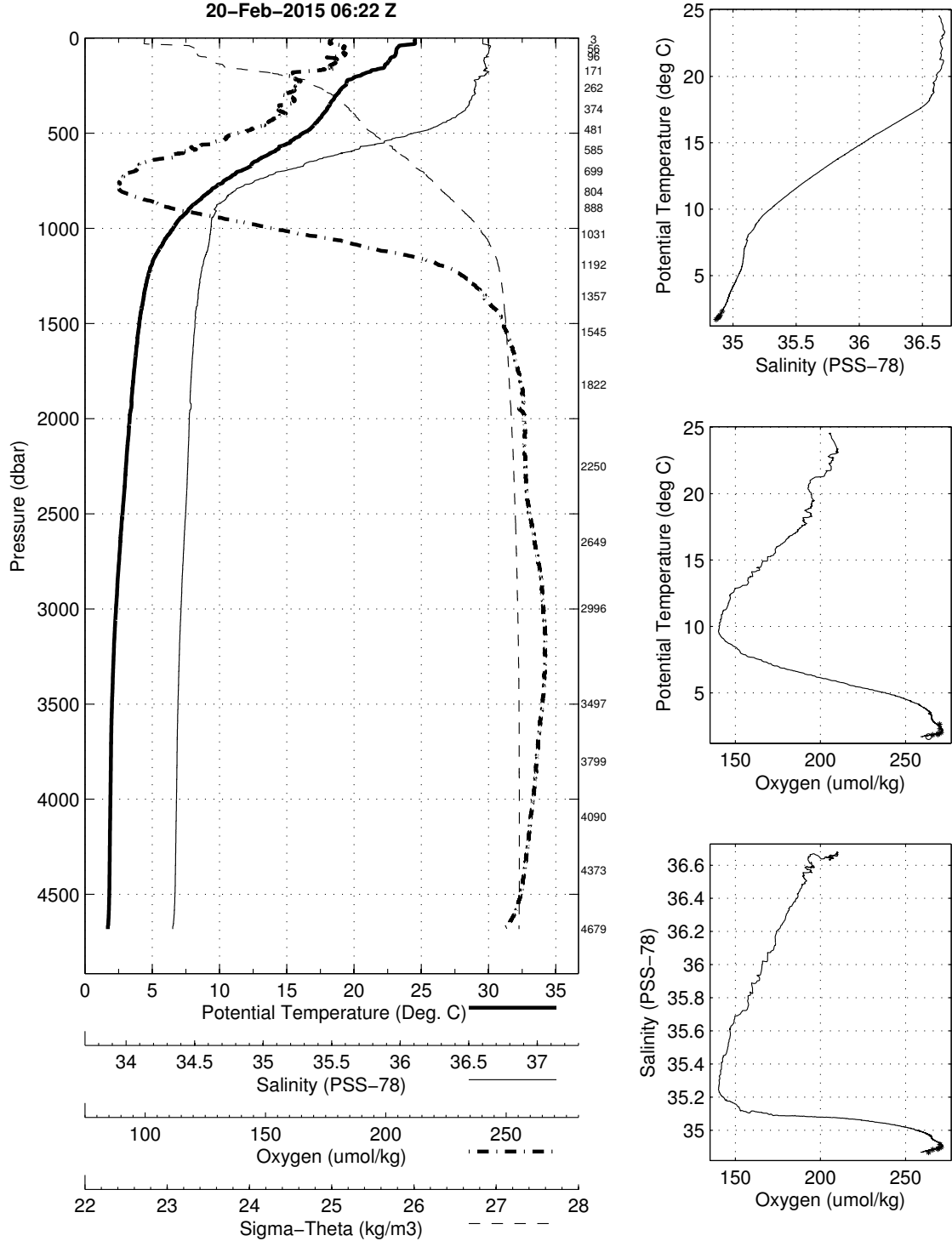


Abaco February 2015 R/V Endeavor
 CTD Station 15 (CTD015)
 Latitude 26.518N Longitude 75.082W
 20-Feb-2015 06:22Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.528	24.528	36.635	205.9	0.003	24.721
10	24.530	24.528	36.634	205.2	0.032	24.720
20	24.535	24.531	36.634	205.7	0.064	24.719
30	24.532	24.526	36.634	205.5	0.097	24.721
50	23.254	23.244	36.674	209.6	0.155	25.133
75	23.144	23.128	36.667	210.0	0.226	25.162
100	22.842	22.821	36.653	205.1	0.297	25.240
125	22.547	22.522	36.643	207.4	0.365	25.318
150	22.303	22.273	36.650	205.7	0.432	25.395
200	20.307	20.269	36.622	193.4	0.550	25.927
250	19.372	19.326	36.595	194.9	0.651	26.157
300	18.734	18.681	36.584	191.6	0.745	26.314
400	17.748	17.679	36.497	190.7	0.919	26.498
500	16.275	16.194	36.237	176.9	1.081	26.655
600	14.009	13.920	35.853	160.1	1.227	26.863
700	11.574	11.482	35.487	145.2	1.354	27.066
800	9.492	9.399	35.226	140.8	1.462	27.230
900	7.799	7.705	35.105	158.2	1.554	27.400
1000	6.631	6.534	35.085	188.1	1.630	27.549
1100	5.703	5.604	35.068	216.8	1.693	27.657
1200	5.003	4.900	35.037	240.9	1.748	27.716
1300	4.632	4.524	35.019	250.1	1.799	27.744
1400	4.394	4.278	35.007	254.8	1.847	27.762
1500	4.167	4.045	34.995	258.9	1.895	27.777
1750	3.791	3.650	34.975	263.3	2.011	27.802
2000	3.487	3.327	34.962	265.1	2.124	27.824
2500	2.995	2.795	34.941	266.8	2.342	27.857
3000	2.550	2.309	34.915	271.1	2.550	27.878
3500	2.299	2.012	34.898	270.8	2.754	27.889
4000	2.234	1.893	34.889	268.0	2.962	27.891
4500	2.208	1.810	34.880	264.1	3.181	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4680	1	2.123	1.706	34.867	263.5
4374	2	2.218	1.835	34.883	266.0
4090	3	2.226	1.875	34.887	269.1
3800	4	2.248	1.929	34.891	269.1
3497	5	2.301	2.014	34.898	270.9
2997	6	2.547	2.306	34.914	270.2
2649	7	2.852	6.853	-999.000	<i>NaN</i>
2251	8	3.218	6.662	-999.000	<i>NaN</i>
1822	9	3.702	6.522	-999.000	<i>NaN</i>
1545	10	4.041	6.447	-999.000	<i>NaN</i>
1357	11	4.461	6.572	-999.000	<i>NaN</i>
1193	12	5.055	6.894	-999.000	<i>NaN</i>
1032	13	6.345	7.887	-999.000	<i>NaN</i>
889	14	8.244	9.502	-999.000	<i>NaN</i>
804	15	9.715	10.801	-999.000	<i>NaN</i>
699	16	12.126	12.993	-999.000	<i>NaN</i>
585	17	14.567	15.228	-999.000	<i>NaN</i>
481	18	16.980	17.469	-999.000	<i>NaN</i>
375	19	18.036	18.400	-999.000	<i>NaN</i>
262	20	19.245	19.486	-999.000	<i>NaN</i>
172	21	21.751	21.888	-999.000	<i>NaN</i>
97	22	22.838	22.910	-999.000	<i>NaN</i>
57	23	23.379	23.420	-999.000	<i>NaN</i>
3	24	24.581	24.583	-999.000	<i>NaN</i>

Abaco February 2015 R/V Endeavor
 CTD Station 15 (CTD015)
 Latitude 26.518 N Longitude 75.082 W
 20-Feb-2015 06:22 Z

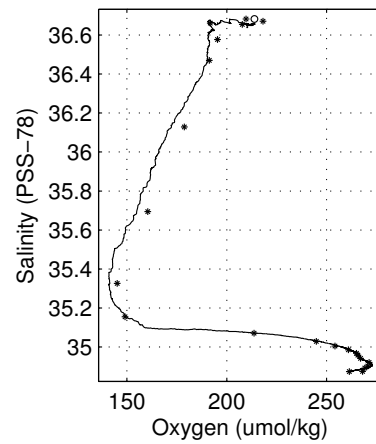
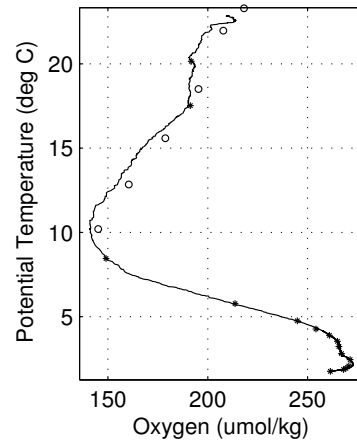
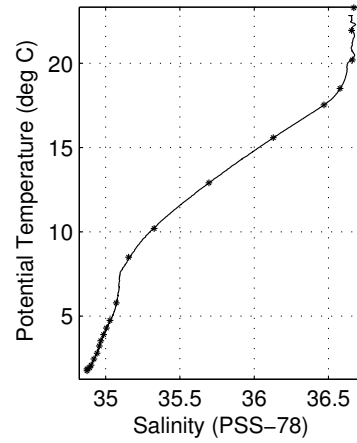
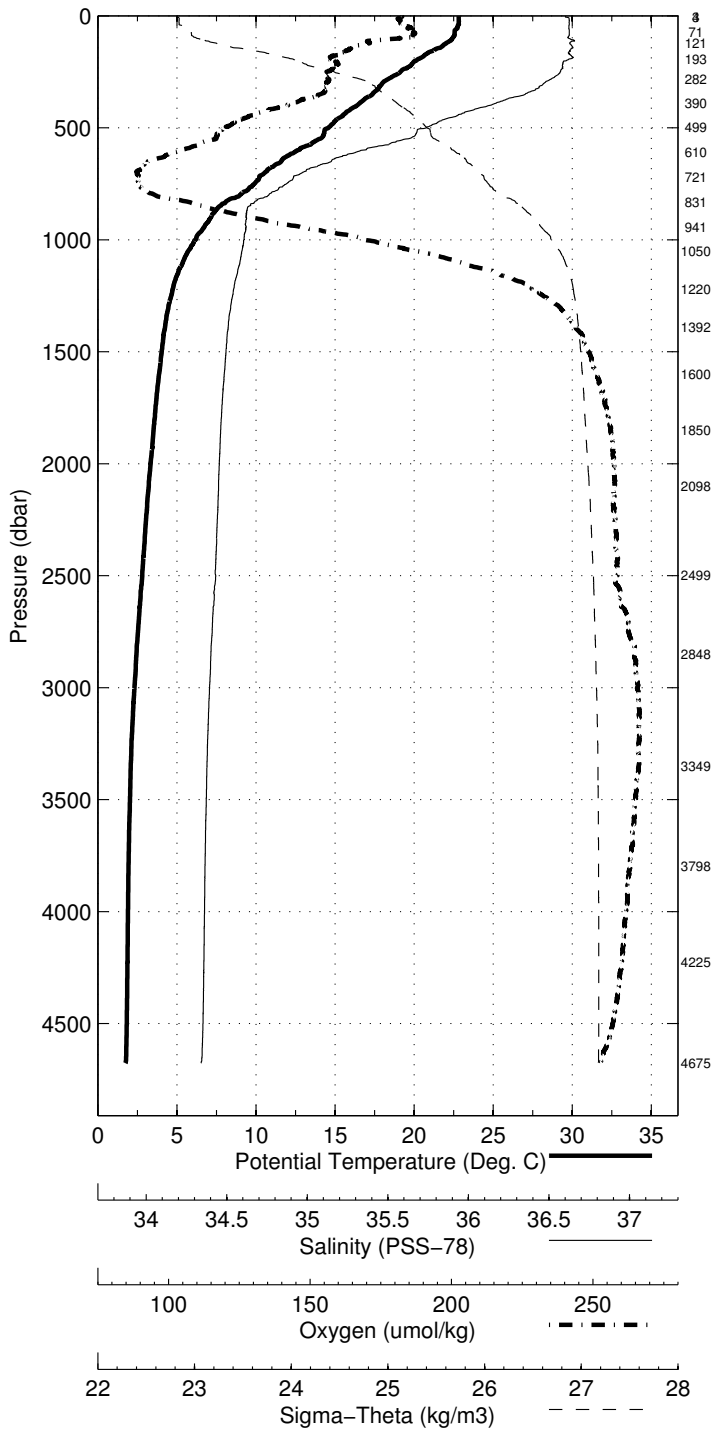


Abaco February 2015 R/V Endeavor
 CTD Station 16 (CTD016)
 Latitude 26.485N Longitude 75.283W
 20-Feb-2015 17:57Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	22.826	22.826	36.639	210.4	0.003	25.228
10	22.827	22.825	36.656	210.3	0.027	25.241
20	22.830	22.826	36.656	209.7	0.055	25.241
30	22.834	22.827	36.656	210.4	0.082	25.240
50	22.760	22.750	36.655	212.2	0.136	25.261
75	22.575	22.559	36.656	213.7	0.204	25.318
100	22.454	22.434	36.653	210.1	0.271	25.351
125	22.018	21.993	36.659	201.2	0.336	25.481
150	21.390	21.361	36.664	196.6	0.397	25.662
200	20.175	20.138	36.642	192.3	0.508	25.978
250	19.177	19.131	36.613	190.7	0.608	26.220
300	18.050	17.998	36.535	190.7	0.697	26.449
400	16.455	16.390	36.271	180.6	0.858	26.635
500	14.665	14.589	35.963	164.4	1.004	26.805
600	12.724	12.641	35.656	153.3	1.138	26.973
700	10.646	10.559	35.364	140.9	1.254	27.138
800	9.103	9.012	35.202	145.7	1.357	27.274
900	7.239	7.148	35.093	171.1	1.441	27.472
1000	6.249	6.155	35.082	200.7	1.511	27.598
1100	5.474	5.377	35.062	225.7	1.570	27.679
1200	4.903	4.801	35.035	243.1	1.623	27.726
1300	4.571	4.463	35.017	251.7	1.673	27.750
1400	4.341	4.226	35.005	256.3	1.721	27.766
1500	4.160	4.038	34.994	259.3	1.768	27.778
1750	3.790	3.649	34.974	264.1	1.884	27.802
2000	3.495	3.335	34.962	265.9	1.997	27.823
2500	3.013	2.813	34.945	266.7	2.215	27.858
3000	2.559	2.317	34.915	272.1	2.424	27.878
3500	2.320	2.032	34.899	271.8	2.628	27.888
4000	2.249	1.908	34.890	269.1	2.837	27.891
4500	2.229	1.830	34.883	265.7	3.057	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4675	1	2.176	1.758	34.874	261.4
4225	2	2.242	1.875	34.875	268.0
3799	3	2.258	1.939	34.892	269.1
3350	4	2.359	2.086	34.903	270.6
2849	5	2.684	2.456	34.921	271.3
2499	6	2.995	2.795	34.942	267.0
2099	7	3.400	3.232	34.958	265.7
1851	8	3.691	3.542	34.968	264.9
1600	9	4.033	3.903	34.986	260.9
1392	10	4.403	4.288	35.005	254.1
1221	11	4.852	4.749	35.029	244.9
1050	24	5.881	5.785	35.071	213.7
942	12	6.906	8.296	-999.000	<i>NaN</i>
831	13	8.586	8.494	35.155	149.1
722	14	10.284	10.196	35.326	145.1
611	15	12.989	12.903	35.695	160.5
499	16	15.664	15.584	36.128	178.8
391	17	17.596	17.530	36.469	191.2
282	18	18.553	18.503	36.577	195.4
193	19	20.230	20.194	36.661	191.7
122	20	21.970	21.946	36.655	207.7
72	21	23.309	23.294	36.670	218.1
4	22	23.412	23.411	36.682	209.7
4	23	23.403	23.402	36.682	213.8

Abaco February 2015 R/V Endeavor
 CTD Station 16 (CTD016)
 Latitude 26.485 N Longitude 75.283 W
 20-Feb-2015 17:57 Z

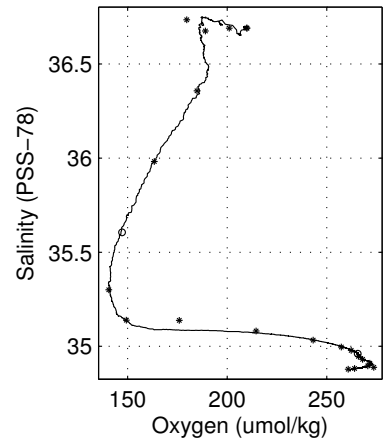
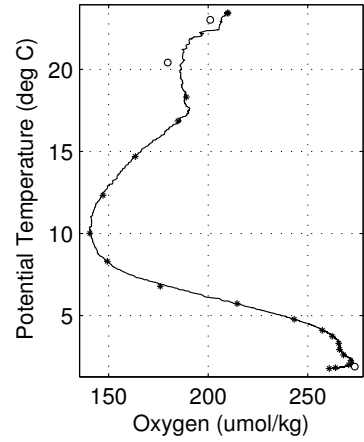
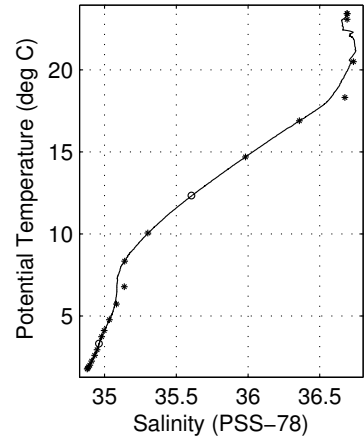
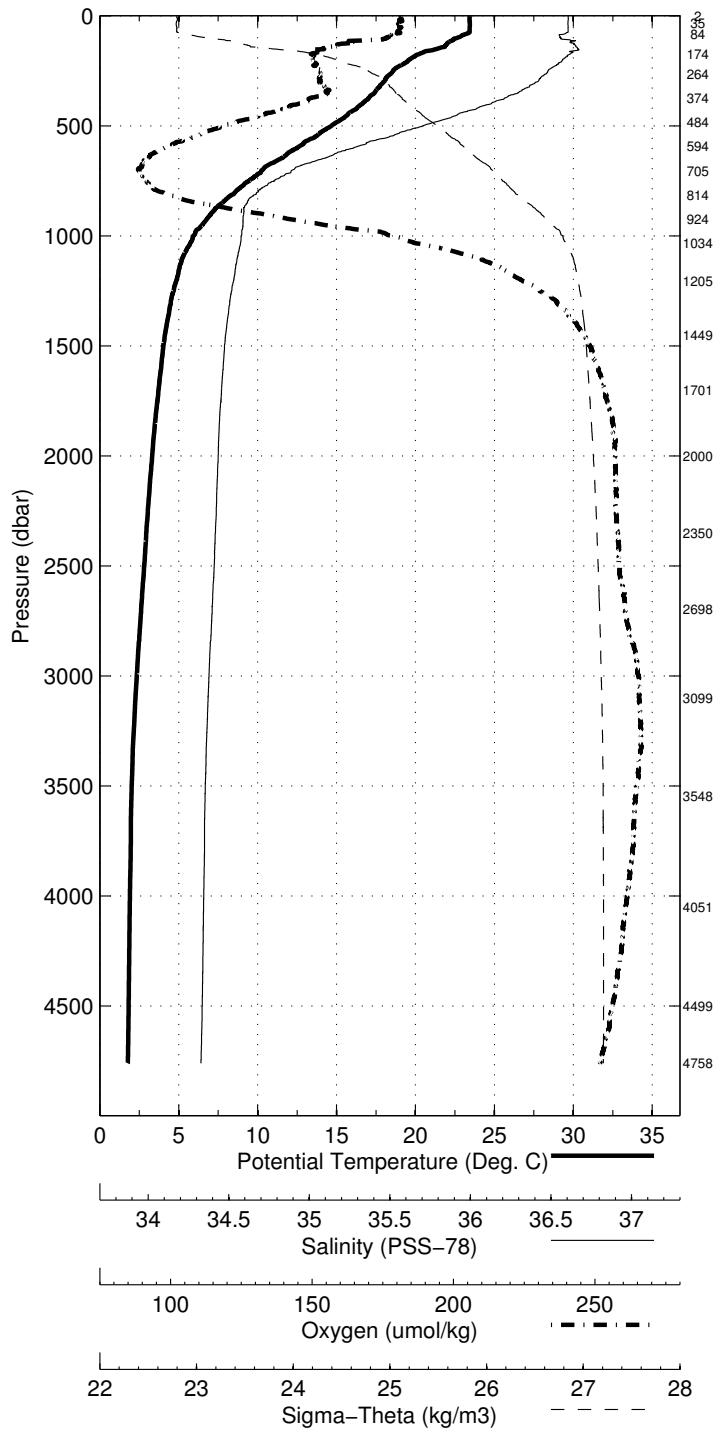


Abaco February 2015 R/V Endeavor
 CTD Station 17 (CTD017)
 Latitude 26.505N Longitude 75.505W
 20-Feb-2015 22:40Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.437	23.436	36.699	209.4	0.003	25.095
10	23.424	23.422	36.698	209.9	0.029	25.099
20	23.426	23.422	36.698	209.5	0.057	25.098
30	23.444	23.437	36.697	209.2	0.086	25.093
50	23.443	23.433	36.698	209.3	0.143	25.095
75	23.448	23.432	36.698	209.1	0.216	25.095
100	22.663	22.643	36.662	205.8	0.286	25.298
125	22.025	22.000	36.728	195.4	0.350	25.531
150	21.402	21.372	36.748	189.1	0.411	25.723
200	19.642	19.605	36.670	186.3	0.515	26.141
250	18.629	18.585	36.598	188.8	0.608	26.349
300	18.028	17.976	36.542	188.1	0.693	26.460
400	16.699	16.633	36.315	182.5	0.855	26.611
500	14.745	14.669	35.977	163.0	1.003	26.799
600	12.582	12.499	35.632	147.3	1.135	26.983
700	10.383	10.298	35.332	140.5	1.250	27.160
800	8.684	8.596	35.160	146.3	1.350	27.308
900	7.130	7.040	35.088	173.0	1.433	27.482
1000	6.008	5.916	35.076	207.1	1.500	27.623
1100	5.330	5.234	35.056	229.7	1.558	27.692
1200	4.965	4.862	35.040	241.0	1.610	27.723
1300	4.606	4.498	35.019	250.5	1.661	27.748
1400	4.360	4.245	35.005	255.6	1.709	27.764
1500	4.143	4.021	34.993	259.2	1.756	27.779
1750	3.788	3.648	34.976	263.6	1.872	27.803
2000	3.473	3.314	34.962	265.7	1.985	27.825
2500	3.013	2.813	34.942	266.9	2.202	27.856
3000	2.583	2.342	34.916	271.9	2.413	27.876
3500	2.305	2.018	34.898	271.5	2.618	27.888
4000	2.247	1.906	34.890	268.9	2.827	27.891
4500	2.224	1.825	34.882	265.1	3.047	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4759	1	2.204	1.774	34.879	260.7
4500	2	2.225	1.826	34.883	264.0
4052	3	2.244	1.897	34.888	273.6
3548	4	2.299	2.006	34.897	270.5
3099	5	2.500	2.250	34.910	271.6
2698	6	2.822	2.606	34.931	267.9
2351	7	3.130	2.942	34.947	265.9
2000	8	3.476	3.317	34.961	265.5
1701	9	3.877	3.740	34.978	262.3
1450	10	4.235	4.117	34.996	257.3
1205	11	4.879	4.777	35.033	243.1
1035	13	5.819	5.725	35.082	214.4
924	14	6.882	6.791	35.138	175.9
814	15	8.431	8.343	35.139	149.4
705	16	10.144	10.059	35.301	140.5
594	17	12.421	12.340	35.605	147.2
485	18	14.766	14.692	35.982	163.4
374	19	16.954	16.892	36.357	184.9
265	20	18.360	18.314	36.675	189.1
175	21	20.527	20.494	36.735	179.6
85	22	23.100	23.082	36.691	201.0
35	23	23.433	23.425	36.690	209.9
3	24	23.420	23.419	36.691	209.8

Abaco February 2015 R/V Endeavor
 CTD Station 17 (CTD017)
 Latitude 26.505 N Longitude 75.505 W
 20-Feb-2015 22:40 Z

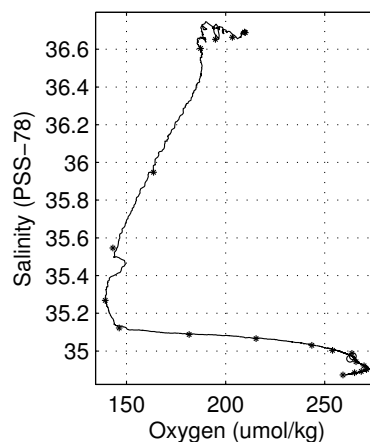
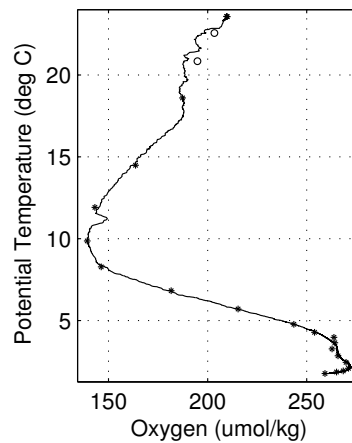
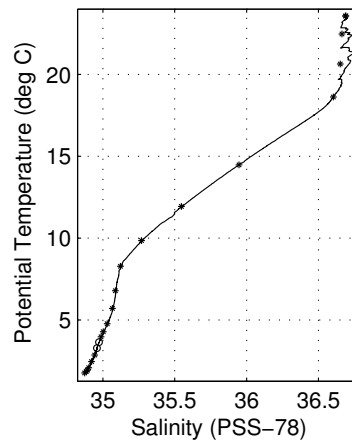
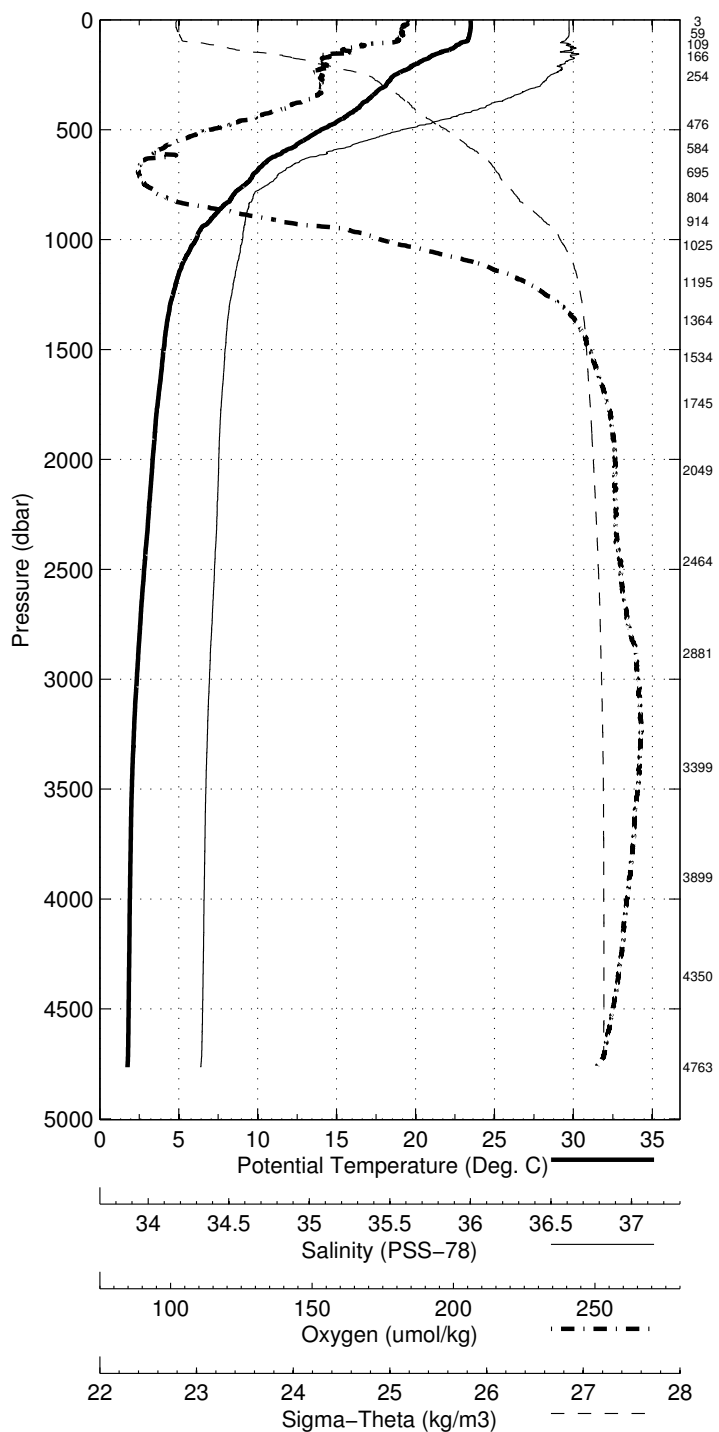


Abaco February 2015 R/V Endeavor
 CTD Station 18 (CTD018)
 Latitude 26.503N Longitude 75.704W
 21-Feb-2015 03:01Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.484	23.483	36.699	210.6	0.003	25.082
10	23.494	23.492	36.697	209.7	0.029	25.078
20	23.499	23.495	36.698	210.1	0.058	25.077
30	23.501	23.494	36.698	209.7	0.086	25.077
50	23.479	23.468	36.698	209.5	0.144	25.085
75	23.408	23.392	36.695	208.7	0.216	25.105
100	23.155	23.134	36.668	207.5	0.288	25.160
125	22.471	22.446	36.712	196.6	0.356	25.393
150	21.567	21.537	36.717	195.4	0.419	25.653
200	20.158	20.121	36.678	188.1	0.529	26.010
250	18.763	18.719	36.609	187.3	0.625	26.324
300	18.176	18.124	36.556	187.5	0.712	26.434
400	16.496	16.431	36.280	178.6	0.872	26.632
500	14.082	14.009	35.868	158.3	1.017	26.856
600	11.676	11.597	35.501	143.9	1.142	27.056
700	9.817	9.734	35.259	139.7	1.250	27.200
800	8.514	8.427	35.135	145.4	1.347	27.314
900	7.195	7.105	35.095	171.9	1.431	27.479
1000	6.182	6.089	35.080	203.5	1.498	27.604
1100	5.393	5.296	35.056	227.5	1.557	27.685
1200	4.901	4.799	35.033	242.7	1.610	27.725
1300	4.548	4.441	35.015	251.3	1.660	27.751
1400	4.329	4.215	35.003	256.0	1.708	27.766
1500	4.158	4.036	34.994	258.6	1.755	27.777
1750	3.802	3.661	34.975	263.4	1.871	27.801
2000	3.505	3.345	34.962	265.2	1.984	27.822
2500	3.006	2.806	34.941	266.8	2.204	27.856
3000	2.582	2.340	34.916	271.3	2.414	27.876
3500	2.316	2.028	34.899	271.3	2.619	27.888
4000	2.243	1.902	34.890	268.4	2.829	27.891
4500	2.223	1.825	34.882	264.7	3.048	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4764	1	2.185	1.755	34.873	259.2
4350	2	2.230	1.849	34.885	265.0
3899	3	2.253	1.923	34.891	268.4
3399	4	2.357	2.079	34.901	271.0
2881	5	2.683	2.451	34.921	269.9
2465	6	3.048	2.851	34.943	265.8
2049	7	3.435	3.272	34.959	262.8
1746	8	3.779	3.639	34.972	264.1
1535	9	4.093	3.968	34.988	263.7
1364	10	4.395	4.283	35.003	253.9
1195	11	4.875	4.774	35.031	243.5
1025	13	5.801	5.708	35.066	215.4
915	14	6.873	6.784	35.087	181.6
805	15	8.362	8.275	35.122	146.3
695	16	9.938	9.855	35.268	139.3
584	17	12.018	11.940	35.546	143.1
476	18	14.555	14.483	35.947	163.7
255	19	18.676	18.630	36.604	187.3
166	20	20.677	20.645	36.653	194.9
110	21	22.500	22.478	36.663	203.4
59	22	23.587	23.575	36.688	209.9
4	23	23.585	23.584	36.691	209.5

Abaco February 2015 R/V Endeavor
 CTD Station 18 (CTD018)
 Latitude 26.503 N Longitude 75.704 W
 21-Feb-2015 03:01 Z

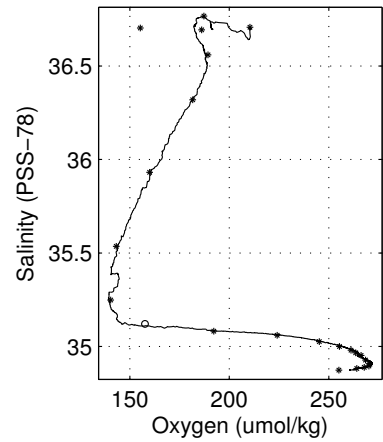
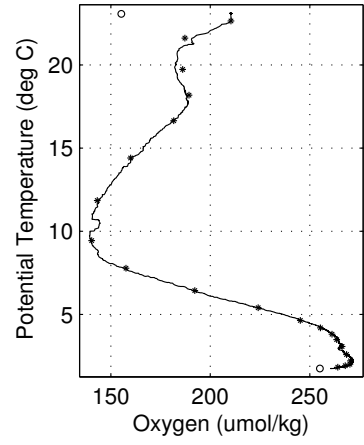
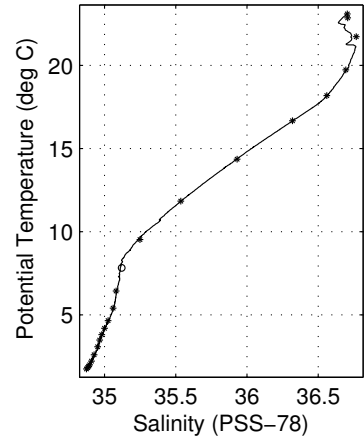
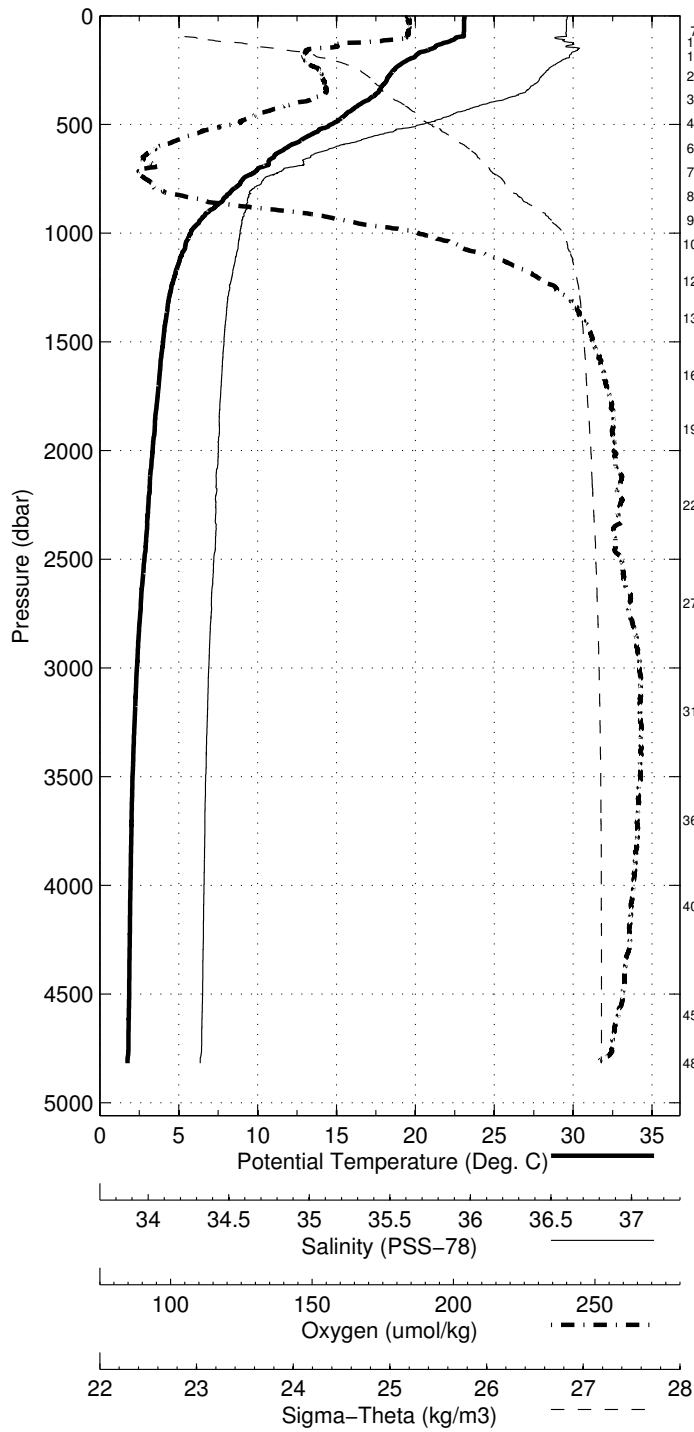


Abaco February 2015 R/V Endeavor
 CTD Station 19 (CTD019)
 Latitude 26.509N Longitude 75.890W
 21-Feb-2015 12:13Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.122	23.121	36.705	210.1	0.003	25.192
10	23.105	23.103	36.704	210.0	0.028	25.196
20	23.084	23.080	36.699	210.7	0.055	25.199
30	23.093	23.087	36.700	210.5	0.083	25.198
50	23.095	23.084	36.700	210.7	0.139	25.199
75	23.080	23.064	36.697	210.4	0.208	25.203
100	22.589	22.569	36.641	209.6	0.278	25.304
125	21.798	21.773	36.735	192.9	0.343	25.601
150	21.104	21.075	36.764	185.9	0.401	25.817
200	19.608	19.571	36.685	182.6	0.504	26.161
250	18.688	18.644	36.607	186.9	0.596	26.341
300	18.217	18.164	36.560	188.3	0.682	26.427
400	16.701	16.635	36.316	181.0	0.847	26.612
500	14.720	14.644	35.973	164.0	0.995	26.801
600	12.042	11.962	35.554	144.7	1.124	27.027
700	10.136	10.052	35.297	141.8	1.236	27.175
800	8.486	8.399	35.129	144.8	1.334	27.314
900	7.010	6.921	35.100	179.4	1.416	27.508
1000	5.857	5.767	35.074	212.9	1.481	27.641
1100	5.285	5.190	35.055	230.7	1.537	27.696
1200	4.832	4.730	35.032	244.2	1.588	27.732
1300	4.489	4.382	35.011	252.9	1.637	27.754
1400	4.300	4.186	35.002	256.4	1.685	27.768
1500	4.130	4.009	34.993	259.4	1.732	27.779
1750	3.809	3.668	34.976	263.2	1.847	27.801
2000	3.509	3.349	34.965	264.5	1.960	27.824
2500	3.027	2.827	34.942	266.7	2.179	27.855
3000	2.591	2.349	34.917	271.0	2.390	27.876
3500	2.359	2.070	34.901	271.4	2.597	27.887
4000	2.285	1.942	34.893	269.6	2.809	27.891
4500	2.257	1.857	34.886	266.8	3.030	27.892

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4817	1	2.192	1.756	34.873	255.1
4598	2	2.245	1.834	34.882	264.1
4097	3	2.272	1.919	34.888	267.8
3698	4	2.314	2.005	34.895	270.2
3200	5	2.481	2.221	34.908	270.5
2702	6	2.818	2.601	34.927	268.5
2249	7	3.267	3.086	34.952	266.3
1903	8	3.642	3.489	34.966	263.5
1652	9	3.952	3.819	34.980	261.1
1389	10	4.309	4.196	34.999	255.4
1219	11	4.753	4.651	35.025	245.3
1049	13	5.496	5.403	35.060	224.1
940	14	6.529	6.439	35.081	192.2
831	15	7.913	7.826	35.120	157.6
718	16	9.618	9.534	35.248	140.4
607	17	11.914	11.833	35.536	143.1
495	18	14.436	14.362	35.931	159.9
385	19	16.733	16.670	36.320	181.5
276	20	18.228	18.179	36.560	189.3
185	21	19.766	19.732	36.693	186.1
120	22	21.742	21.718	36.767	187.2
70	23	22.867	22.853	36.707	210.3
4	24	23.088	23.087	36.704	155.3

Abaco February 2015 R/V Endeavor
 CTD Station 19 (CTD019)
 Latitude 26.509 N Longitude 75.890 W
 21-Feb-2015 12:13 Z

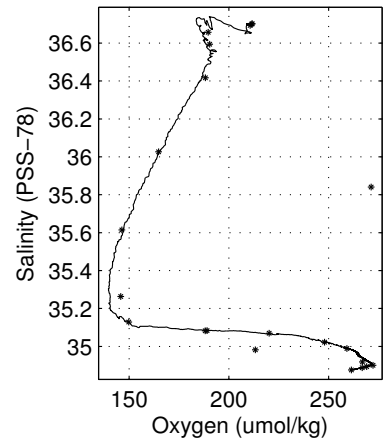
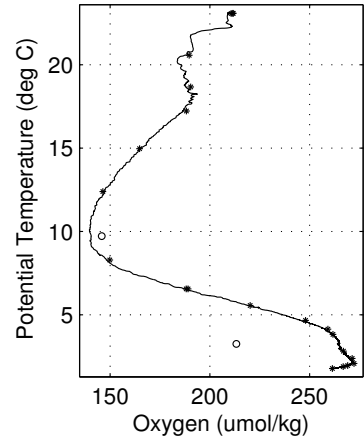
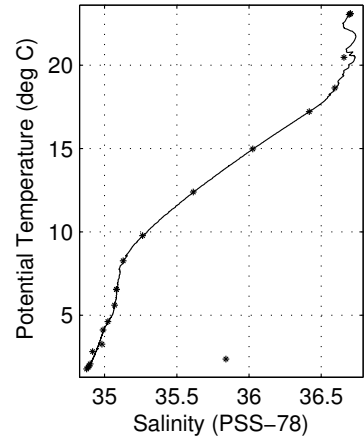
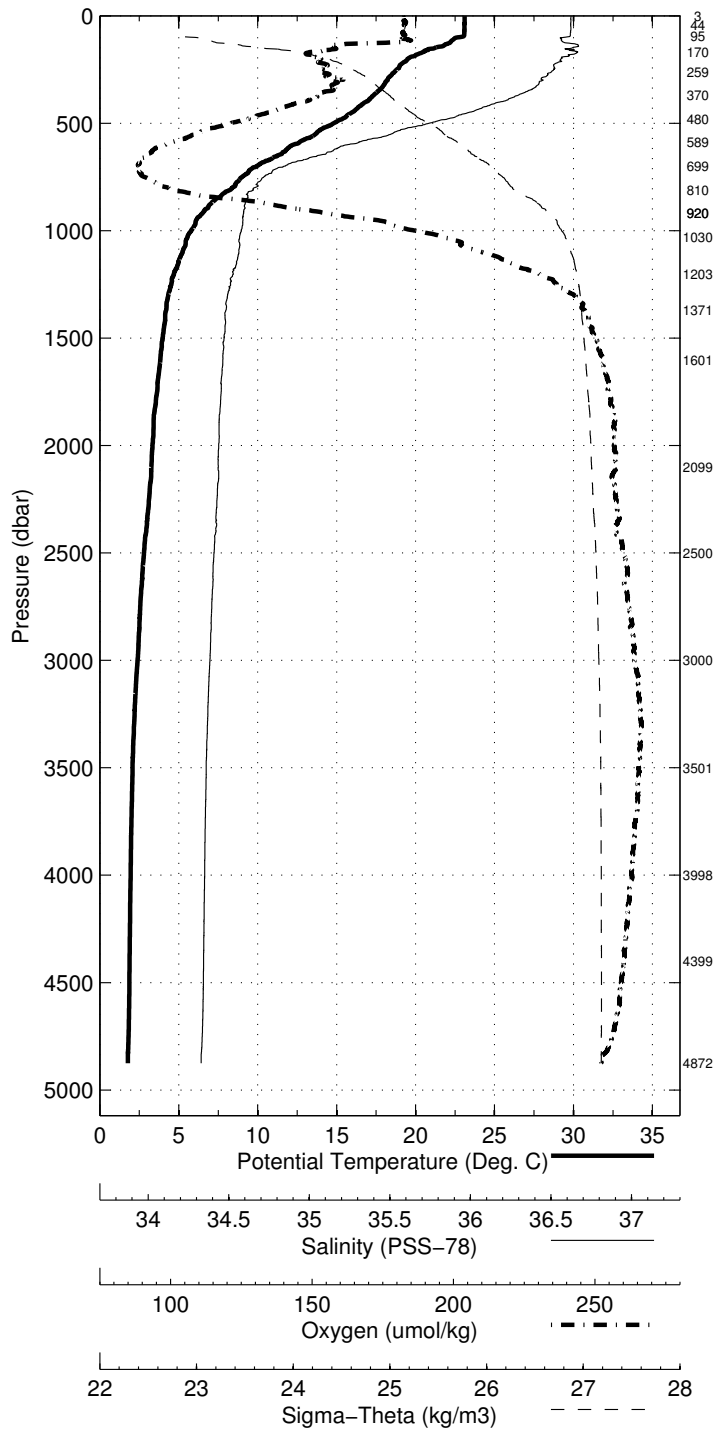


Abaco February 2015 R/V Endeavor
 CTD Station 20 (CTD020)
 Latitude 26.499N Longitude 76.088W
 21-Feb-2015 16:57Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.106	23.106	36.702	209.1	0.003	25.195
10	23.108	23.105	36.701	209.4	0.028	25.194
20	23.109	23.105	36.701	209.5	0.055	25.194
30	23.112	23.106	36.701	209.8	0.083	25.194
50	23.107	23.096	36.701	209.8	0.139	25.196
75	23.104	23.089	36.700	209.2	0.208	25.198
100	22.673	22.653	36.666	209.2	0.278	25.298
125	22.207	22.182	36.672	204.6	0.344	25.437
150	21.249	21.220	36.707	191.2	0.405	25.734
200	19.526	19.489	36.652	187.7	0.509	26.157
250	18.836	18.792	36.616	187.6	0.602	26.310
300	18.277	18.224	36.564	191.5	0.690	26.415
400	16.931	16.864	36.356	183.0	0.855	26.588
500	14.883	14.806	36.000	164.1	1.006	26.786
600	12.327	12.245	35.598	146.7	1.137	27.006
700	10.003	9.919	35.286	139.9	1.250	27.189
800	8.485	8.398	35.141	147.4	1.347	27.324
900	6.778	6.691	35.090	181.9	1.426	27.532
1000	5.887	5.796	35.074	212.3	1.490	27.637
1100	5.330	5.233	35.062	230.0	1.545	27.697
1200	4.811	4.709	35.034	244.9	1.597	27.736
1300	4.444	4.337	35.007	253.9	1.646	27.756
1400	4.252	4.138	34.994	257.8	1.693	27.767
1500	4.105	3.983	34.990	259.7	1.740	27.780
1750	3.769	3.628	34.975	263.1	1.855	27.805
2000	3.497	3.337	34.963	264.5	1.966	27.824
2500	2.992	2.793	34.940	266.6	2.186	27.856
3000	2.637	2.394	34.920	269.8	2.397	27.875
3500	2.363	2.074	34.901	271.0	2.605	27.886
4000	2.295	1.953	34.893	269.1	2.817	27.890
4500	2.271	1.870	34.887	266.3	3.039	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4873	1	2.222	1.778	34.876	261.3
4399	2	2.276	1.888	34.888	266.8
3999	3	2.292	1.950	34.893	269.1
3501	4	2.366	2.077	34.901	272.2
3000	5	2.619	2.373	35.840	271.3
2501	6	3.021	2.820	34.918	266.9
2100	7	3.433	3.264	34.982	213.3
1601	8	3.955	6.447	-999.000	<i>NaN</i>
1371	9	4.229	4.118	34.989	259.1
1203	10	4.721	4.621	35.023	247.9
1030	11	5.689	5.596	35.070	220.1
921	13	6.633	6.545	35.083	189.0
921	14	6.636	6.547	35.083	188.1
811	15	8.350	8.262	35.128	149.7
699	16	9.857	9.774	35.263	145.7
589	17	12.472	12.392	35.614	146.3
480	18	15.054	14.979	36.026	164.8
370	19	17.274	17.211	36.417	188.2
260	20	18.687	18.640	36.594	190.4
171	21	20.505	20.473	36.657	189.6
95	22	23.058	23.039	36.693	210.6
44	23	23.102	23.093	36.702	211.6
3	24	23.098	23.097	36.700	211.5

Abaco February 2015 R/V Endeavor
 CTD Station 20 (CTD020)
 Latitude 26.499 N Longitude 76.088 W
 21-Feb-2015 16:57 Z

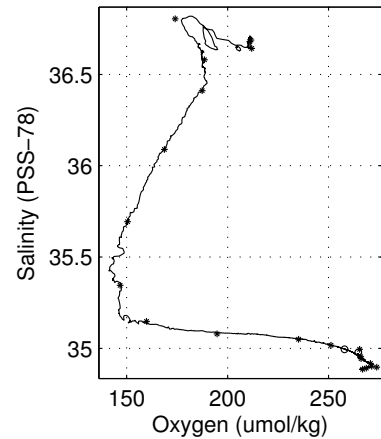
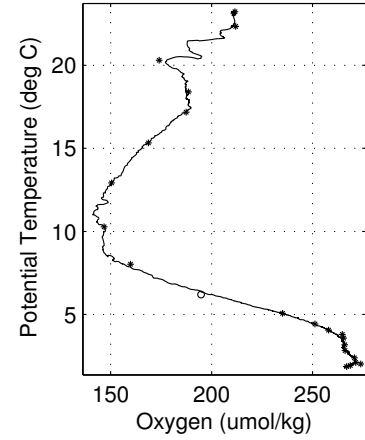
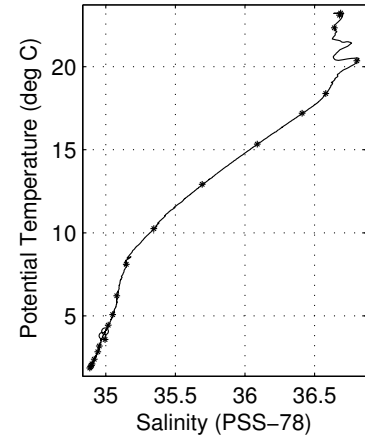
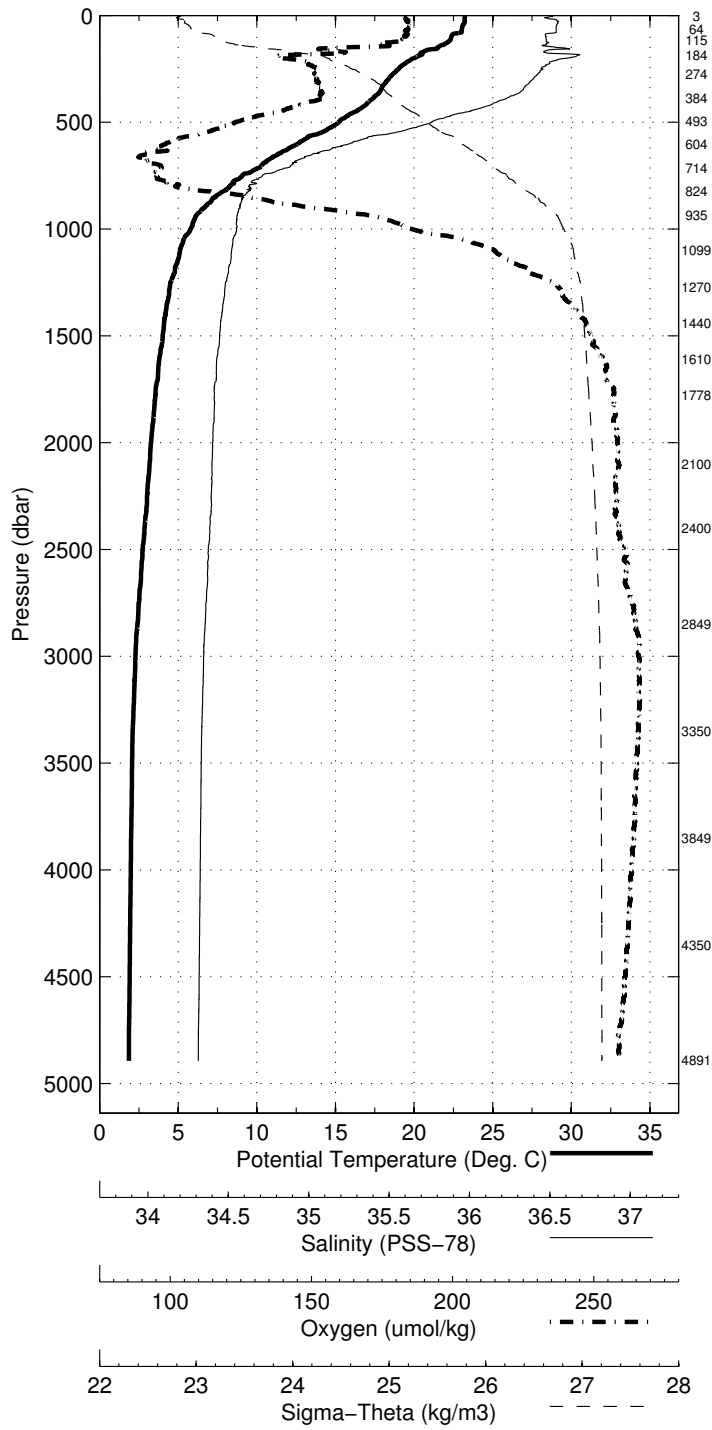


Abaco February 2015 R/V Endeavor
 CTD Station 21 (CTD021)
 Latitude 26.500N Longitude 76.211W
 21-Feb-2015 21:50Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.229	23.228	36.682	210.2	0.003	25.143
10	23.222	23.220	36.640	210.4	0.028	25.114
20	23.219	23.215	36.700	210.9	0.056	25.161
30	23.216	23.209	36.708	211.1	0.084	25.169
50	23.076	23.066	36.699	211.5	0.140	25.204
75	23.039	23.023	36.699	210.6	0.210	25.216
100	22.395	22.375	36.648	209.9	0.277	25.364
125	22.164	22.139	36.658	207.0	0.343	25.439
150	21.503	21.474	36.711	193.9	0.405	25.666
200	20.019	19.982	36.750	178.8	0.513	26.102
250	19.078	19.032	36.632	187.7	0.608	26.261
300	18.398	18.345	36.579	187.5	0.697	26.396
400	17.217	17.150	36.406	187.1	0.865	26.558
500	15.285	15.207	36.068	166.4	1.019	26.750
600	12.706	12.623	35.653	148.5	1.153	26.975
700	10.408	10.322	35.358	146.9	1.268	27.176
800	8.356	8.270	35.140	150.9	1.364	27.343
900	6.750	6.663	35.096	186.5	1.441	27.541
1000	5.876	5.785	35.080	212.2	1.503	27.644
1100	5.213	5.118	35.054	233.6	1.558	27.705
1200	4.883	4.782	35.038	243.0	1.609	27.731
1300	4.526	4.418	35.018	251.1	1.658	27.756
1400	4.296	4.182	35.004	255.8	1.706	27.770
1500	4.140	4.018	34.993	258.7	1.753	27.779
1750	3.703	3.563	34.966	264.4	1.868	27.804
2000	3.423	3.264	34.958	265.5	1.979	27.827
2500	2.936	2.738	34.936	267.8	2.195	27.858
3000	2.518	2.278	34.912	271.0	2.402	27.879
3500	2.351	2.063	34.900	270.6	2.607	27.887
4000	2.326	1.983	34.895	269.2	2.820	27.889
4500	2.309	1.908	34.889	267.5	3.045	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4892	1	2.311	1.862	34.885	266.8
4351	2	2.317	1.933	34.891	268.7
3850	3	2.345	2.018	34.897	273.8
3350	4	2.379	2.106	34.902	271.3
2850	5	2.617	2.390	34.917	270.7
2400	6	3.022	2.832	34.943	266.1
2100	7	3.351	3.184	34.954	265.9
1778	8	3.715	3.573	34.994	265.4
1611	9	3.926	3.797	34.977	264.7
1441	10	4.183	4.066	34.994	257.9
1270	11	4.543	4.438	35.017	251.1
1099	13	5.167	5.073	35.050	235.2
935	14	6.299	6.212	35.079	194.8
824	15	8.187	8.099	35.147	159.9
715	16	10.336	10.249	35.345	146.8
604	17	12.999	12.915	35.693	150.5
494	18	15.423	15.345	36.089	168.8
384	19	17.267	17.202	36.411	187.4
275	20	18.442	18.393	36.580	188.5
184	21	20.393	20.358	36.804	174.0
116	22	22.368	22.344	36.643	211.9
64	23	23.119	23.105	36.680	211.0
4	24	23.226	23.225	36.688	211.5

Abaco February 2015 R/V Endeavor
 CTD Station 21 (CTD021)
 Latitude 26.500 N Longitude 76.211 W
 21-Feb-2015 21:50 Z

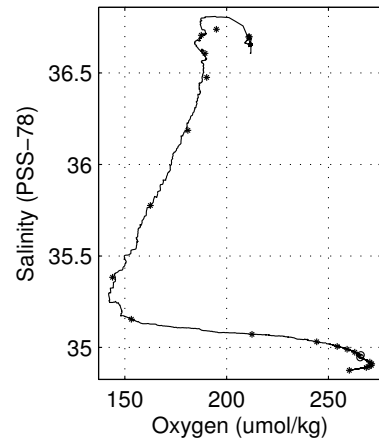
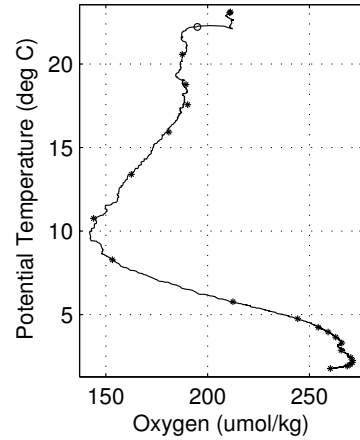
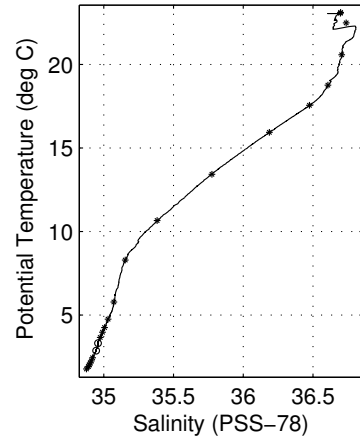
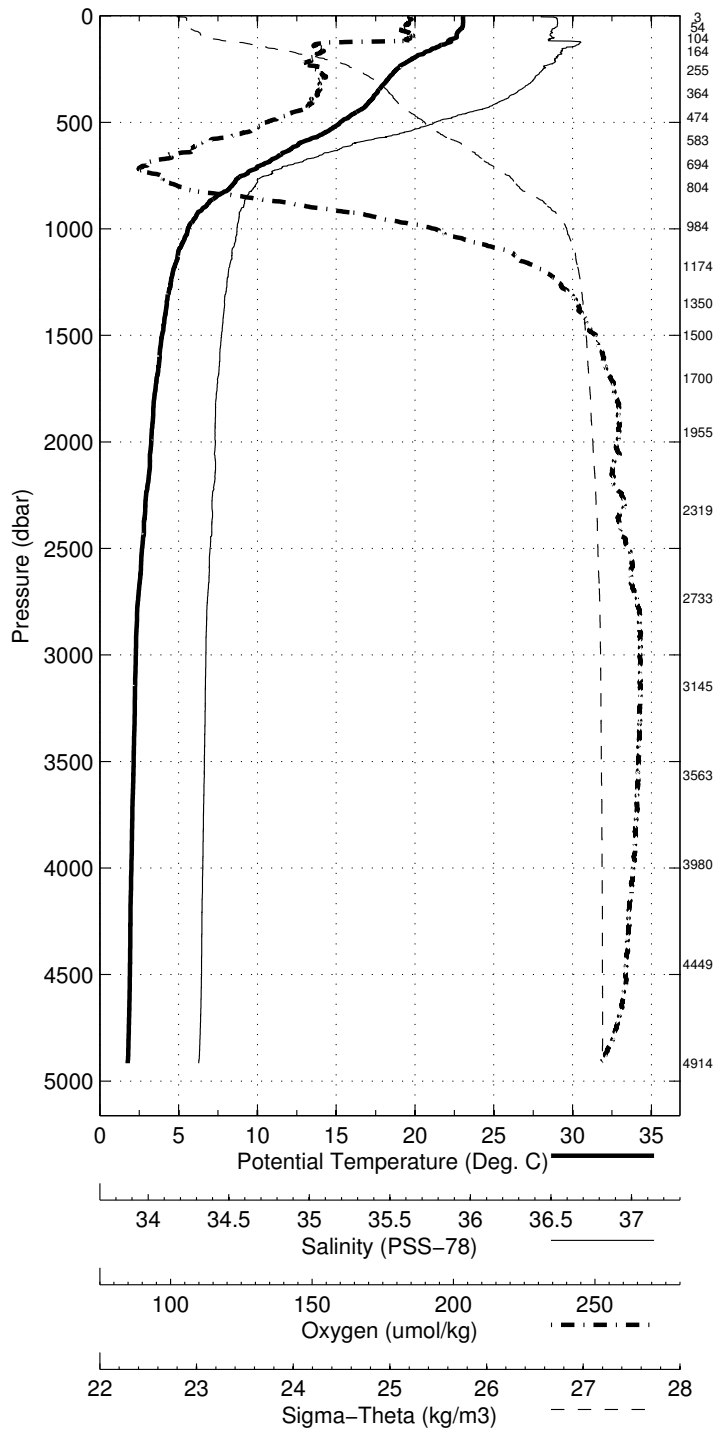


Abaco February 2015 R/V Endeavor
 CTD Station 22 (CTD022)
 Latitude 26.503N Longitude 76.344W
 22-Feb-2015 10:04Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.051	23.050	36.609	211.6	0.003	25.140
10	23.049	23.047	36.686	212.1	0.028	25.199
20	23.057	23.053	36.690	211.6	0.056	25.200
30	23.058	23.052	36.691	211.4	0.083	25.201
50	23.042	23.032	36.688	211.5	0.139	25.205
75	22.729	22.714	36.659	211.0	0.208	25.275
100	22.667	22.647	36.665	211.9	0.275	25.299
125	22.226	22.201	36.806	191.3	0.340	25.534
150	21.359	21.330	36.735	189.2	0.400	25.724
200	19.856	19.818	36.676	186.9	0.507	26.089
250	18.889	18.845	36.618	187.4	0.602	26.299
300	18.283	18.231	36.568	188.7	0.690	26.416
400	17.214	17.146	36.404	187.0	0.856	26.557
500	15.326	15.248	36.069	174.8	1.011	26.741
600	12.697	12.614	35.655	157.5	1.148	26.978
700	10.357	10.272	35.337	144.4	1.263	27.168
800	8.451	8.364	35.162	152.2	1.359	27.346
900	6.665	6.579	35.097	187.3	1.436	27.553
1000	5.676	5.587	35.069	218.3	1.498	27.659
1100	5.106	5.012	35.044	236.8	1.552	27.709
1200	4.742	4.642	35.026	246.7	1.603	27.737
1300	4.474	4.367	35.013	252.4	1.651	27.757
1400	4.271	4.157	35.002	256.2	1.699	27.771
1500	4.062	3.941	34.991	259.5	1.745	27.785
1750	3.675	3.536	34.968	264.4	1.859	27.809
2000	3.421	3.262	34.960	265.3	1.969	27.829
2500	2.875	2.677	34.933	267.9	2.182	27.861
3000	2.525	2.284	34.912	271.2	2.386	27.878
3500	2.437	2.146	34.904	270.8	2.595	27.883
4000	2.347	2.003	34.896	269.3	2.811	27.888
4500	2.312	1.910	34.890	267.4	3.036	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4915	1	2.223	1.774	34.875	260.3
4449	2	2.313	1.917	34.890	268.7
3981	3	2.347	2.006	34.895	270.0
3564	4	2.423	2.125	34.903	271.1
3145	5	2.504	2.249	34.910	271.3
2734	6	2.653	2.437	34.920	270.4
2320	7	3.050	2.867	34.945	265.6
1955	8	3.460	3.305	34.959	266.0
1700	9	3.791	3.655	34.974	262.9
1500	10	4.087	3.966	34.990	259.2
1350	11	4.353	4.243	35.005	254.4
1175	13	4.847	4.748	35.031	244.3
985	14	5.869	5.780	35.072	212.5
804	15	8.379	8.292	35.154	153.2
694	16	10.742	10.655	35.383	144.0
584	17	13.506	13.422	35.775	162.6
474	18	16.014	15.938	36.187	181.0
364	19	17.610	17.548	36.475	190.3
255	20	18.803	18.758	36.607	189.4
165	21	20.605	20.573	36.706	187.6
105	22	22.509	22.488	36.739	195.0
55	23	23.085	23.073	36.697	210.8
4	24	23.110	23.109	36.698	211.2

Abaco February 2015 R/V Endeavor
 CTD Station 22 (CTD022)
 Latitude 26.503 N Longitude 76.344 W
 22-Feb-2015 10:04 Z

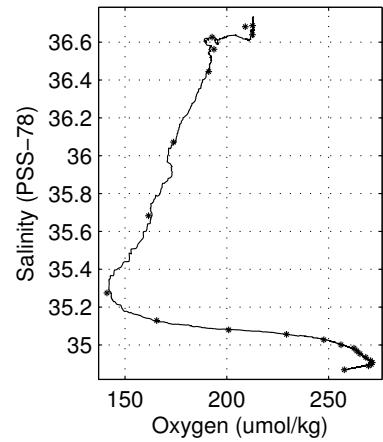
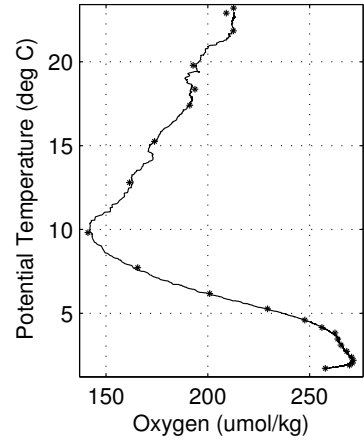
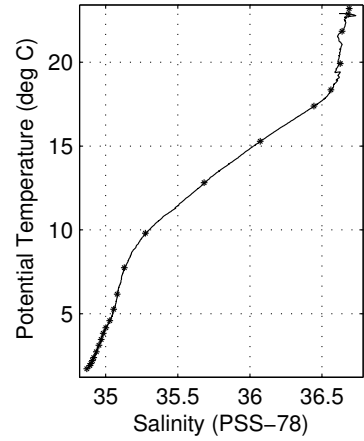
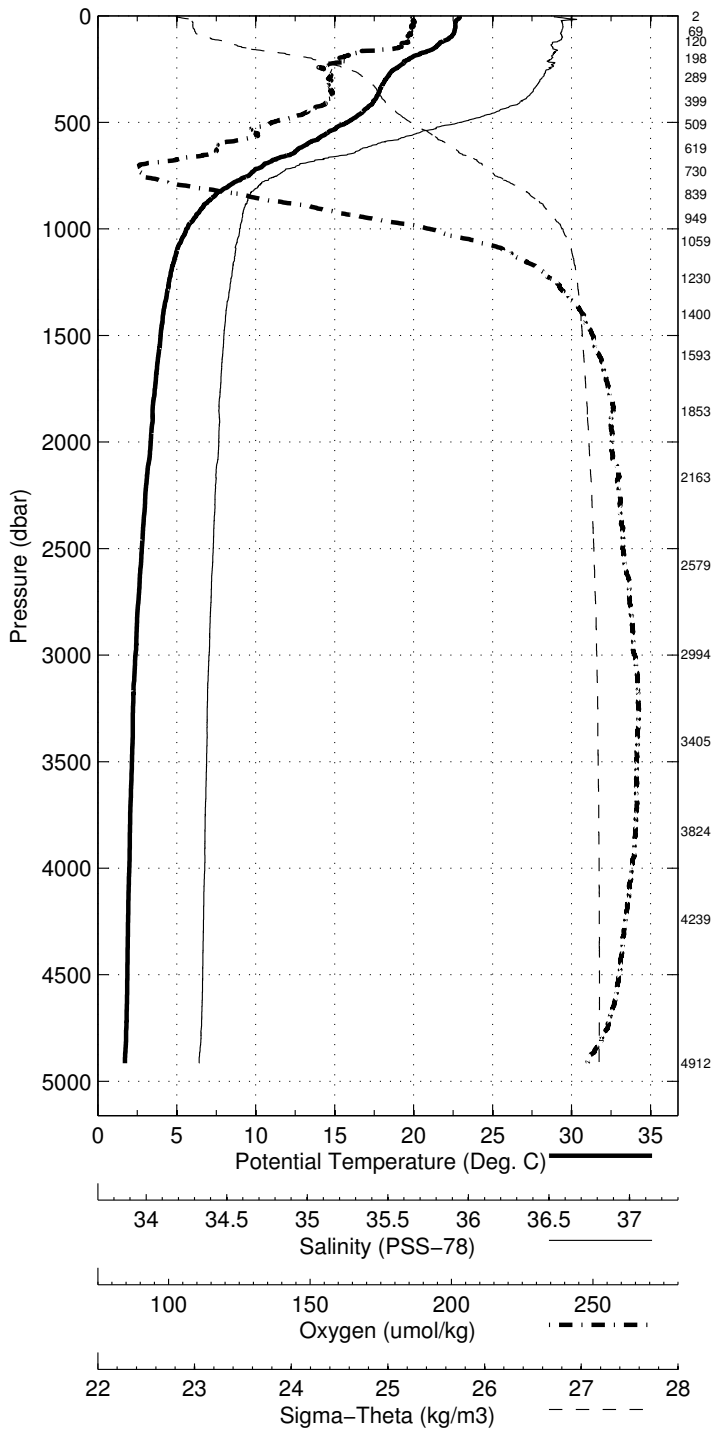


Abaco February 2015 R/V Endeavor
 CTD Station 23 (CTD023)
 Latitude 26.494N Longitude 76.468W
 22-Feb-2015 14:20Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	22.903	22.903	36.625	212.7	0.003	25.195
10	22.901	22.899	36.670	213.0	0.028	25.230
20	22.724	22.720	36.689	213.2	0.054	25.296
30	22.641	22.635	36.662	213.3	0.081	25.300
50	22.661	22.651	36.667	213.0	0.135	25.300
75	22.591	22.576	36.660	212.8	0.202	25.316
100	22.366	22.346	36.665	211.8	0.268	25.385
125	21.694	21.669	36.615	211.8	0.332	25.538
150	21.357	21.328	36.617	209.3	0.394	25.635
200	19.785	19.748	36.610	194.4	0.504	26.058
250	18.854	18.809	36.599	190.1	0.600	26.293
300	18.253	18.200	36.554	191.7	0.688	26.413
400	17.516	17.447	36.458	191.3	0.856	26.525
500	15.862	15.782	36.160	176.8	1.015	26.690
600	13.360	13.274	35.750	163.5	1.156	26.919
700	10.606	10.520	35.364	142.7	1.276	27.145
800	8.349	8.262	35.161	155.6	1.374	27.361
900	6.701	6.614	35.092	187.9	1.450	27.544
1000	5.692	5.603	35.070	217.3	1.512	27.658
1100	5.104	5.010	35.050	236.4	1.567	27.714
1200	4.738	4.638	35.032	246.5	1.617	27.742
1300	4.490	4.383	35.017	252.3	1.665	27.759
1400	4.256	4.142	35.001	256.8	1.712	27.772
1500	4.094	3.972	34.991	259.4	1.759	27.782
1750	3.751	3.611	34.974	263.3	1.874	27.805
2000	3.511	3.351	34.966	264.2	1.986	27.825
2500	2.985	2.785	34.939	267.1	2.203	27.856
3000	2.628	2.385	34.918	270.1	2.414	27.874
3500	2.453	2.161	34.906	270.5	2.625	27.883
4000	2.338	1.994	34.897	269.5	2.840	27.889
4500	2.269	1.869	34.886	266.0	3.063	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4913	1	2.170	1.722	34.869	257.7
4239	2	2.288	1.918	34.890	269.6
3824	3	2.362	2.038	34.898	271.0
3405	4	2.493	2.211	34.908	271.4
2994	5	2.638	2.395	34.918	270.6
2580	6	2.943	2.737	34.935	268.2
2164	7	3.302	3.129	34.954	265.4
1854	8	3.619	3.471	34.969	263.8
1594	9	3.971	3.842	34.983	262.5
1400	10	4.282	4.168	35.001	256.1
1231	11	4.700	4.598	35.028	247.6
1060	13	5.366	5.274	35.056	229.3
950	14	6.259	6.170	35.080	200.9
839	15	7.832	7.744	35.129	165.5
730	16	9.893	9.806	35.275	141.1
619	17	12.906	12.819	35.683	161.5
510	18	15.365	15.285	36.072	173.8
400	19	17.449	17.381	36.444	191.1
290	20	18.399	18.348	36.562	193.7
199	21	19.953	19.916	36.627	192.8
120	22	21.871	21.847	36.639	212.6
69	23	22.877	22.862	36.682	209.0
3	24	23.201	23.201	36.688	212.6

Abaco February 2015 R/V Endeavor
 CTD Station 23 (CTD023)
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 22-Feb-2015 14:20 Z

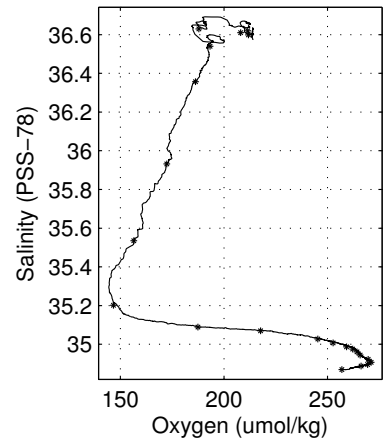
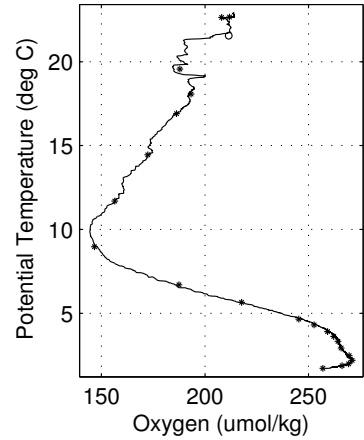
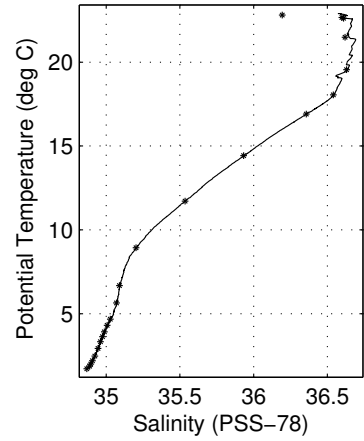
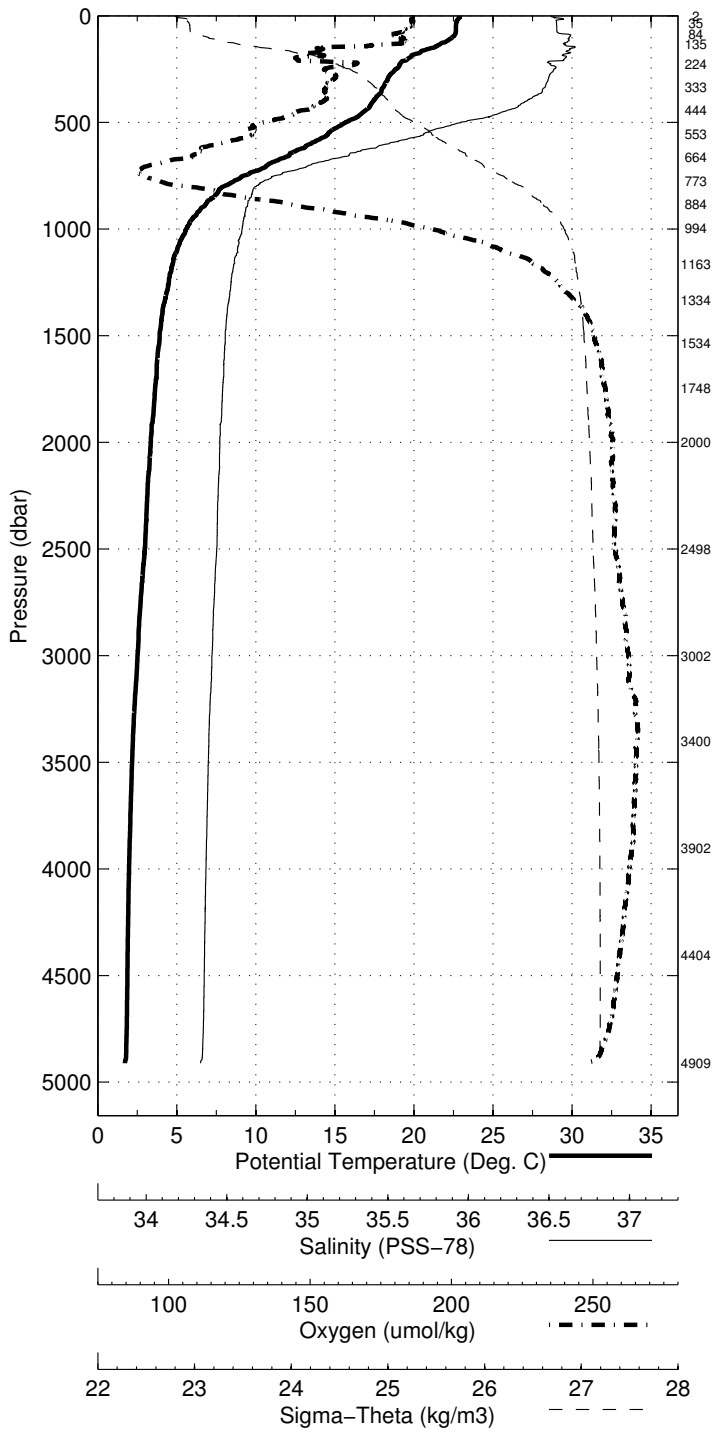


Abaco February 2015 R/V Endeavor
 CTD Station 24 (CTD024)
 Latitude 26.492N Longitude 76.556W
 22-Feb-2015 23:56Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	22.902	22.902	36.576	213.9	0.003	25.158
10	22.853	22.851	36.608	213.6	0.028	25.197
20	22.747	22.743	36.604	214.0	0.055	25.225
30	22.686	22.680	36.601	214.2	0.083	25.241
50	22.663	22.653	36.602	213.5	0.137	25.250
75	22.662	22.646	36.603	211.6	0.206	25.252
100	22.428	22.408	36.663	211.3	0.273	25.366
125	21.942	21.917	36.647	211.9	0.338	25.494
150	21.220	21.191	36.685	190.0	0.398	25.724
200	19.669	19.632	36.642	184.4	0.504	26.112
250	18.867	18.822	36.588	192.1	0.599	26.281
300	18.374	18.321	36.560	194.0	0.688	26.387
400	17.494	17.425	36.453	191.6	0.858	26.527
500	15.752	15.672	36.135	176.3	1.017	26.696
600	13.566	13.479	35.783	164.3	1.158	26.902
700	10.819	10.732	35.401	147.7	1.279	27.137
800	8.033	7.948	35.137	156.7	1.376	27.390
900	6.622	6.536	35.089	187.6	1.452	27.553
1000	5.683	5.594	35.070	219.1	1.513	27.660
1100	5.107	5.013	35.048	236.7	1.567	27.712
1200	4.726	4.626	35.025	247.6	1.617	27.738
1300	4.445	4.338	35.011	253.4	1.665	27.759
1400	4.191	4.078	34.997	257.9	1.712	27.776
1500	4.031	3.910	34.989	260.6	1.758	27.787
1750	3.759	3.618	34.976	262.9	1.871	27.806
2000	3.512	3.352	34.962	264.8	1.984	27.822
2500	3.171	2.968	34.947	265.5	2.207	27.846
3000	2.756	2.511	34.924	268.8	2.427	27.868
3500	2.458	2.166	34.906	270.7	2.641	27.883
4000	2.321	1.978	34.895	269.0	2.857	27.889
4500	2.272	1.871	34.886	265.9	3.080	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4909	1	2.168	1.722	34.869	256.9
4405	2	2.274	1.885	34.888	266.1
3903	3	2.330	1.998	34.896	269.3
3401	4	2.483	2.201	34.907	271.0
3002	5	2.729	2.484	34.922	269.6
2499	6	3.142	2.939	34.945	265.7
2000	7	3.497	3.336	34.961	264.2
1748	8	3.770	3.630	34.975	262.1
1535	9	4.053	3.929	34.987	259.2
1334	10	4.420	4.310	35.007	252.6
1164	11	4.780	4.683	35.028	245.3
994	13	5.741	5.651	35.069	217.7
885	14	6.764	6.678	35.089	187.4
773	15	9.019	8.932	35.202	146.7
665	16	11.809	11.721	35.535	156.4
554	17	14.515	14.432	35.932	172.4
444	18	16.983	16.909	36.357	186.2
334	19	18.109	18.050	36.540	193.3
224	20	19.594	19.553	36.630	187.9
135	21	21.509	21.483	36.619	211.4
84	22	22.637	22.619	36.610	208.1
35	23	22.668	22.661	36.598	211.8
2	24	22.805	22.804	36.194	113.3

Abaco February 2015 R/V Endeavor
 CTD Station 24 (CTD024)
 Latitude 26.492 N Longitude 76.556 W
 22-Feb-2015 23:56 Z

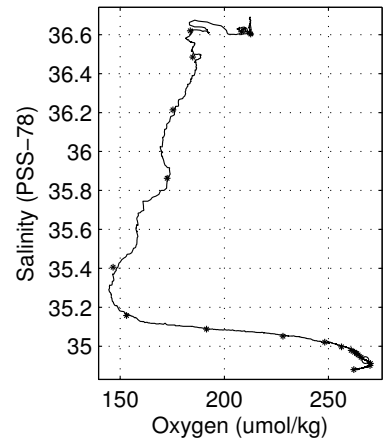
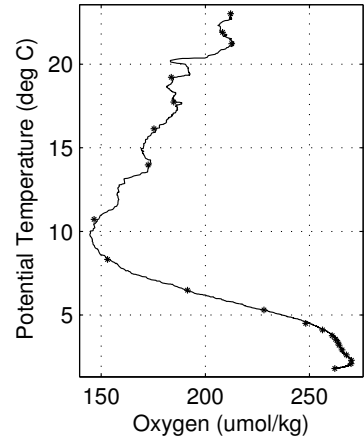
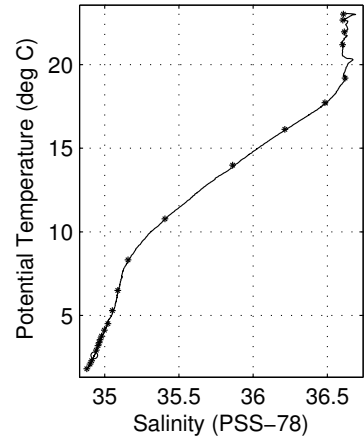
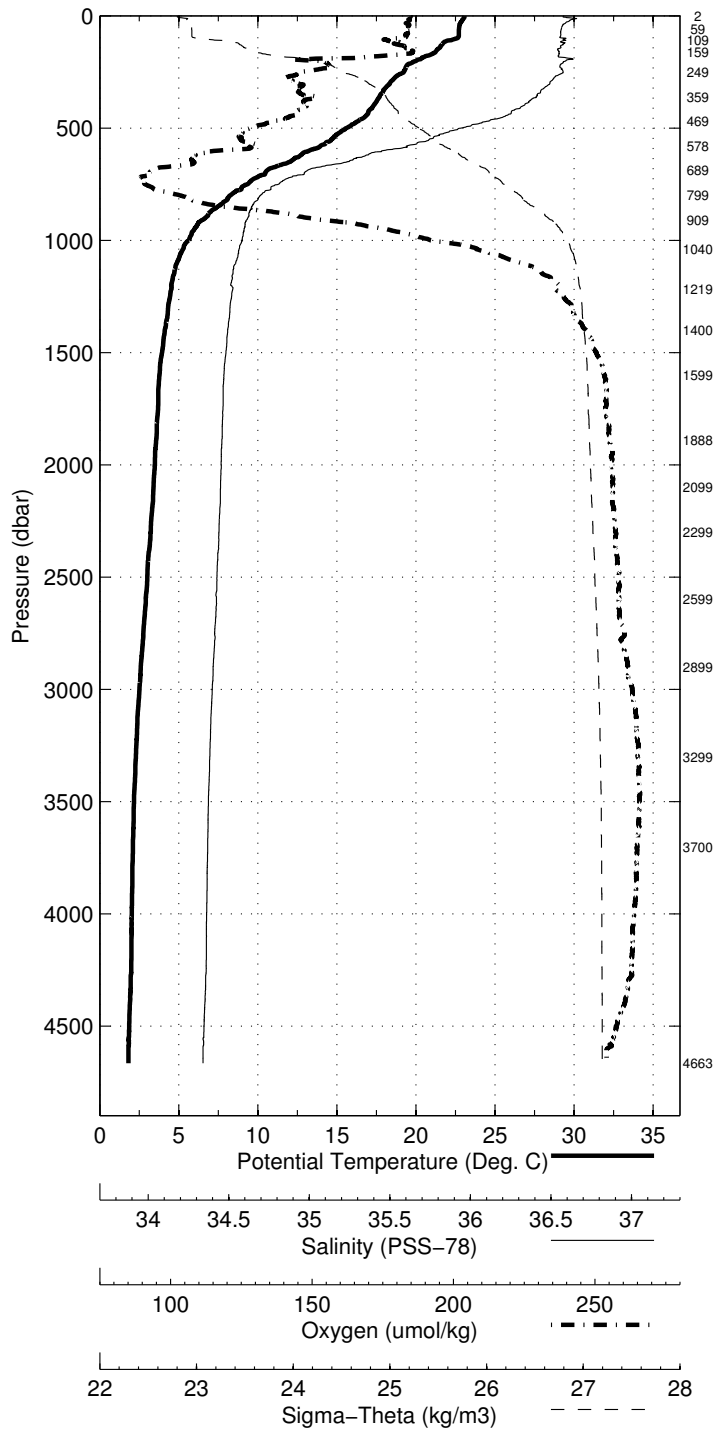


Abaco February 2015 R/V Endeavor
 CTD Station 25 (CTD025)
 Latitude 26.498N Longitude 76.654W
 23-Feb-2015 04:12Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.062	23.061	36.626	212.8	0.003	25.150
10	23.033	23.031	36.672	212.7	0.028	25.194
20	22.921	22.917	36.658	212.7	0.055	25.216
30	22.825	22.818	36.639	211.7	0.083	25.230
50	22.738	22.728	36.618	212.3	0.138	25.241
75	22.724	22.709	36.614	211.8	0.206	25.243
100	22.624	22.604	36.639	209.5	0.275	25.292
125	21.686	21.661	36.625	209.2	0.339	25.548
150	21.363	21.334	36.598	213.2	0.401	25.619
200	20.063	20.026	36.639	189.2	0.514	26.006
250	19.267	19.221	36.625	185.5	0.612	26.207
300	18.400	18.347	36.561	184.4	0.703	26.382
400	17.379	17.311	36.433	186.3	0.871	26.540
500	15.662	15.582	36.129	172.4	1.029	26.712
600	13.337	13.252	35.754	164.7	1.169	26.926
700	10.546	10.460	35.371	146.8	1.287	27.161
800	8.328	8.241	35.158	155.0	1.384	27.361
900	6.754	6.667	35.098	186.9	1.462	27.542
1000	5.731	5.641	35.071	217.9	1.523	27.654
1100	4.972	4.879	35.038	240.7	1.576	27.719
1200	4.615	4.516	35.014	250.3	1.625	27.741
1300	4.426	4.319	35.011	253.6	1.673	27.761
1400	4.226	4.112	34.999	257.1	1.720	27.774
1500	4.058	3.937	34.991	259.6	1.766	27.786
1750	3.828	3.687	34.977	261.9	1.880	27.800
2000	3.642	3.480	34.968	263.6	1.995	27.814
2500	3.207	3.003	34.947	265.3	2.224	27.843
3000	2.748	2.503	34.925	268.7	2.446	27.869
3500	2.451	2.160	34.906	270.5	2.660	27.883
4000	2.364	2.019	34.897	269.3	2.877	27.888
4500	2.258	1.858	34.885	264.7	3.102	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
4663	1	2.231	1.812	34.879	262.1
3701	2	2.411	2.099	34.901	269.9
3300	3	2.567	2.295	34.912	270.1
2900	4	2.857	2.620	34.929	267.7
2600	5	3.140	2.928	34.943	265.6
2299	6	3.389	3.202	34.955	264.2
2100	7	3.550	3.380	34.963	263.6
1889	8	3.710	3.557	34.969	262.5
1600	9	3.896	3.768	34.978	260.8
1401	10	4.233	4.119	34.997	256.2
1219	11	4.614	4.513	35.021	248.2
1041	13	5.383	5.292	35.051	228.2
910	14	6.583	6.496	35.087	191.4
800	15	8.414	8.327	35.157	153.1
689	16	10.867	10.781	35.406	146.6
579	17	14.078	13.992	35.863	172.6
469	18	16.202	16.126	36.214	175.4
360	19	17.783	17.721	36.485	184.8
250	20	19.247	19.202	36.620	183.6
160	21	21.219	21.188	36.604	212.7
110	22	21.987	21.965	36.615	208.2
60	23	22.680	22.668	36.605	-0.9
3	24	23.018	23.017	36.609	212.1

Abaco February 2015 R/V Endeavor
 CTD Station 25 (CTD025)
 Latitude 26.498 N Longitude 76.654 W
 23-Feb-2015 04:12 Z

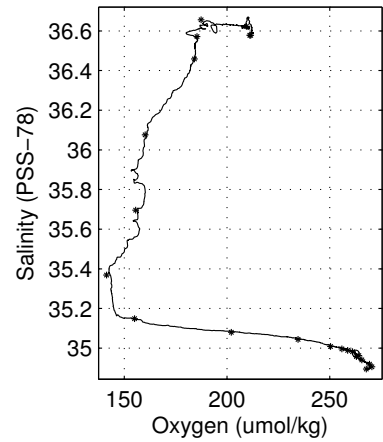
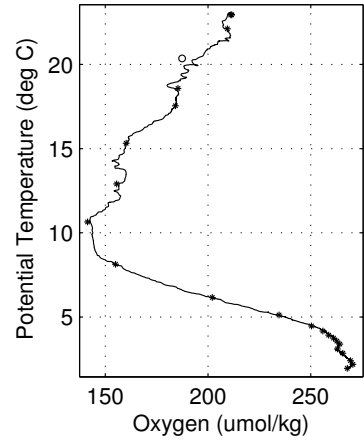
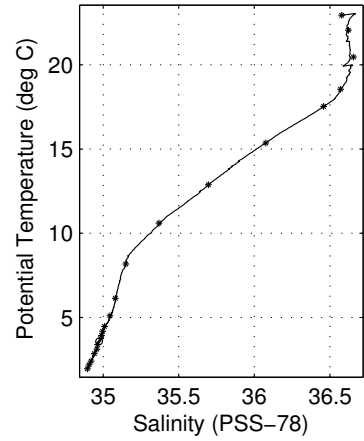
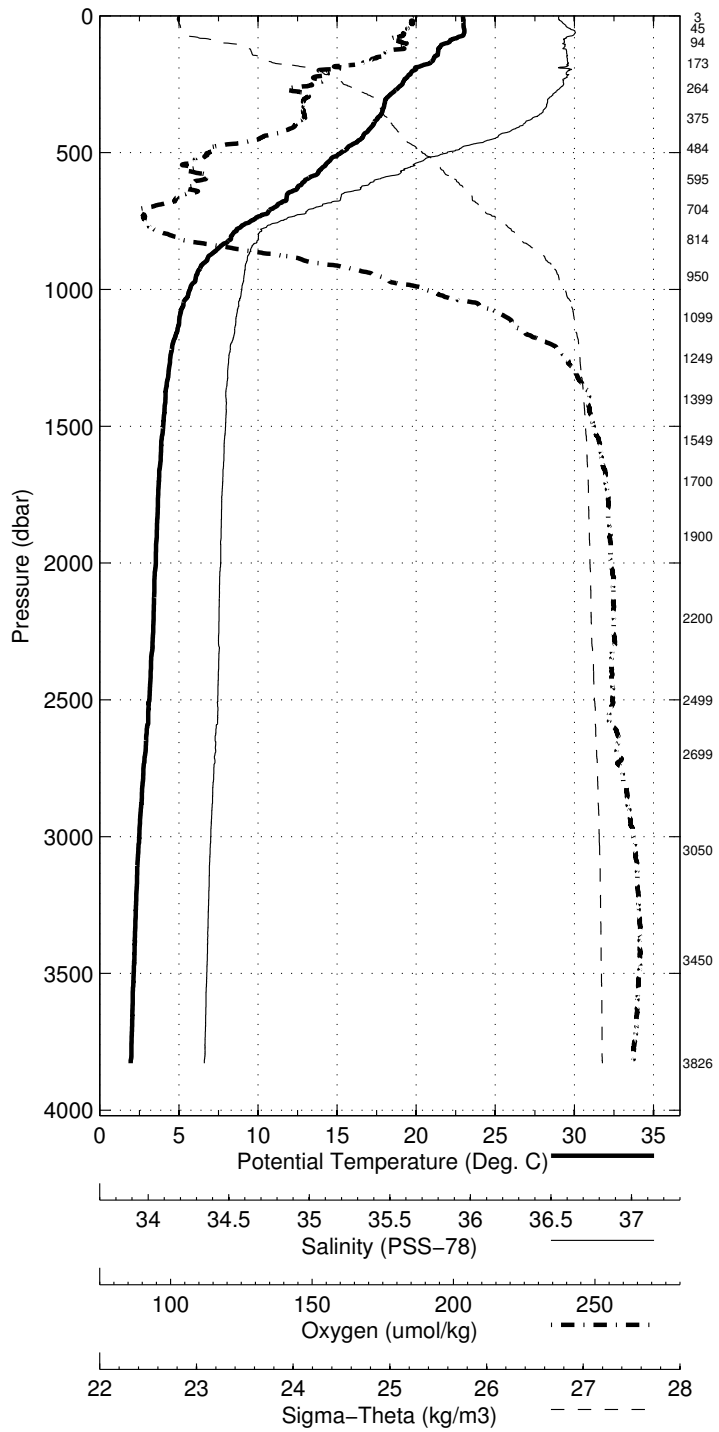


Abaco February 2015 R/V Endeavor
 CTD Station 26 (CTD026)
 Latitude 26.492N Longitude 76.740W
 23-Feb-2015 09:52Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	22.961	22.961	36.591	212.8	0.003	25.152
10	22.969	22.967	36.589	212.7	0.028	25.149
20	22.985	22.981	36.601	212.4	0.056	25.154
30	22.995	22.989	36.616	212.1	0.084	25.163
50	23.041	23.031	36.649	211.0	0.140	25.176
75	22.809	22.793	36.636	209.3	0.210	25.235
100	21.911	21.892	36.614	210.2	0.276	25.476
125	21.424	21.400	36.626	206.8	0.337	25.622
150	21.207	21.178	36.629	203.5	0.397	25.685
200	19.871	19.834	36.639	188.5	0.508	26.056
250	19.178	19.133	36.613	186.8	0.605	26.220
300	18.199	18.146	36.544	185.2	0.695	26.419
400	17.350	17.282	36.418	182.2	0.863	26.535
500	15.345	15.267	36.056	160.3	1.019	26.727
600	13.059	12.974	35.709	158.5	1.157	26.948
700	11.133	11.044	35.427	145.0	1.277	27.100
800	8.477	8.390	35.150	150.1	1.377	27.332
900	6.757	6.670	35.095	186.1	1.456	27.539
1000	5.790	5.700	35.072	215.5	1.518	27.648
1100	5.136	5.042	35.045	236.1	1.573	27.706
1200	4.699	4.599	35.019	247.5	1.624	27.736
1300	4.455	4.348	35.004	253.7	1.672	27.752
1400	4.262	4.148	34.997	257.2	1.720	27.768
1500	4.127	4.006	34.995	258.5	1.767	27.781
1750	3.832	3.690	34.977	262.0	1.882	27.800
2000	3.703	3.539	34.971	262.8	1.998	27.810
2500	3.340	3.134	34.957	263.2	2.232	27.839
3000	2.732	2.487	34.923	268.6	2.455	27.870
3500	2.427	2.137	34.904	270.1	2.668	27.884

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
3827	1	2.273	1.951	34.895	267.8
3450	2	2.470	2.184	34.906	270.5
3050	3	2.659	2.410	34.919	269.3
2700	4	3.069	2.848	34.941	265.6
2500	5	3.323	3.117	34.958	263.0
2200	6	3.576	3.396	34.963	264.1
1900	7	3.731	3.577	34.973	262.7
1700	8	3.885	3.747	34.982	261.1
1550	9	4.051	3.925	34.989	258.7
1399	10	4.295	4.180	34.996	255.9
1249	11	4.567	4.464	35.009	250.4
1100	13	5.196	5.101	35.044	234.6
950	14	6.231	6.142	35.080	202.1
815	15	8.262	8.175	35.149	155.0
705	16	10.687	10.600	35.369	141.4
595	17	12.963	12.880	35.696	155.6
485	18	15.437	15.361	36.076	160.2
375	19	17.592	17.527	36.459	184.2
264	20	18.597	18.550	36.571	185.4
174	21	20.496	20.463	36.656	187.4
95	22	22.083	22.064	36.623	209.4
45	23	22.957	22.948	36.578	211.1
3	24	22.953	22.952	36.578	211.6

Abaco February 2015 R/V Endeavor
 CTD Station 26 (CTD026)
 Latitude 26.492 N Longitude 76.740 W
 23-Feb-2015 09:52 Z

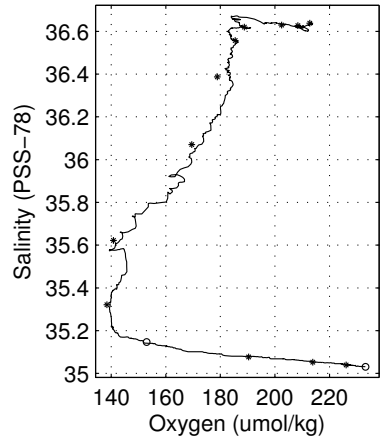
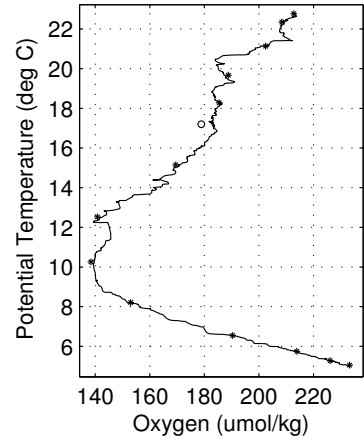
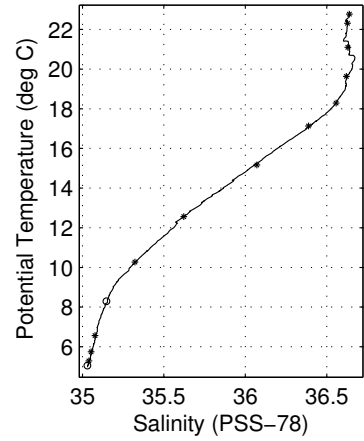
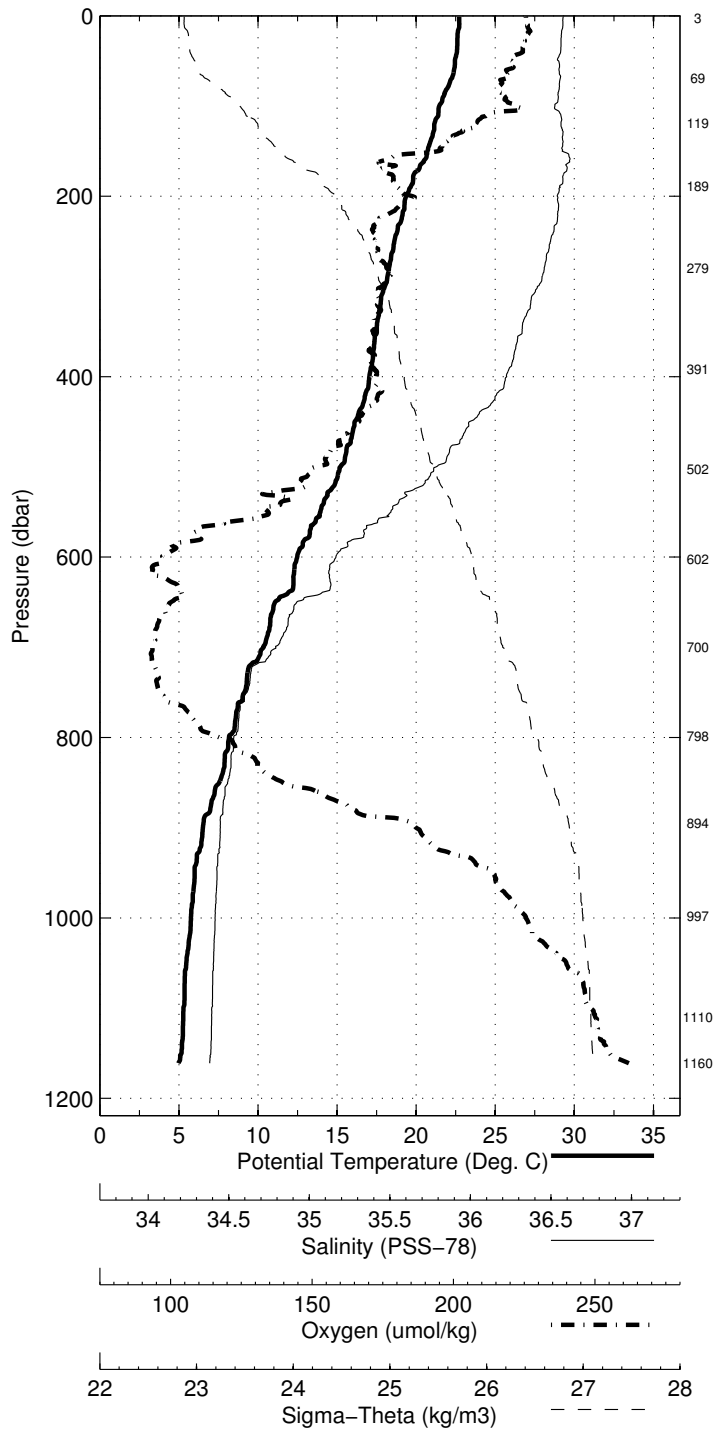


Abaco February 2015 R/V Endeavor
 CTD Station 27 (CTD027)
 Latitude 26.518N Longitude 76.830W
 23-Feb-2015 13:32Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	22.726	22.725	36.641	212.9	0.003	25.258
10	22.724	22.722	36.639	213.3	0.027	25.258
20	22.623	22.619	36.633	213.4	0.054	25.283
30	22.610	22.604	36.631	212.6	0.081	25.286
50	22.463	22.453	36.620	210.1	0.135	25.321
75	22.123	22.109	36.623	208.2	0.200	25.421
100	21.484	21.465	36.603	211.1	0.263	25.587
125	21.169	21.144	36.635	201.8	0.322	25.699
150	20.740	20.711	36.636	195.8	0.379	25.819
200	19.402	19.366	36.614	190.6	0.482	26.161
250	18.664	18.620	36.584	183.6	0.575	26.330
300	18.047	17.994	36.524	184.7	0.662	26.441
400	17.127	17.060	36.385	183.4	0.826	26.563
500	15.272	15.194	36.061	171.6	0.980	26.748
600	12.564	12.481	35.607	141.6	1.115	26.967
700	10.438	10.353	35.333	139.5	1.231	27.151
800	8.252	8.167	35.141	152.8	1.328	27.360
900	6.603	6.517	35.080	191.3	1.406	27.548
1000	5.851	5.761	35.056	212.9	1.469	27.627
1100	5.386	5.289	35.041	225.2	1.526	27.674

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
1160	1	5.148	5.048	35.031	233.2
1110	2	5.382	5.284	35.040	226.1
998	3	5.835	5.745	35.053	213.9
895	4	6.651	6.565	35.078	190.3
798	5	8.382	8.296	35.147	153.0
700	6	10.352	10.267	35.322	138.5
602	7	12.649	12.566	35.622	140.8
503	8	15.245	15.167	36.070	169.5
392	9	17.202	17.136	36.387	178.9
280	10	18.339	18.289	36.557	185.4
189	11	19.667	19.632	36.620	188.8
119	13	21.121	21.098	36.629	202.4
69	14	22.325	22.311	36.626	208.4
3	15	22.773	22.773	36.638	212.8

Abaco February 2015 R/V Endeavor
 CTD Station 27 (CTD027)
 Latitude 26.518 N Longitude 76.830 W
 23-Feb-2015 13:32 Z

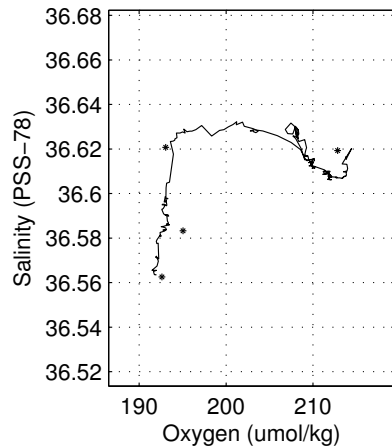
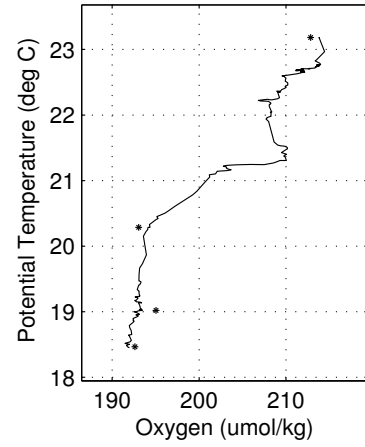
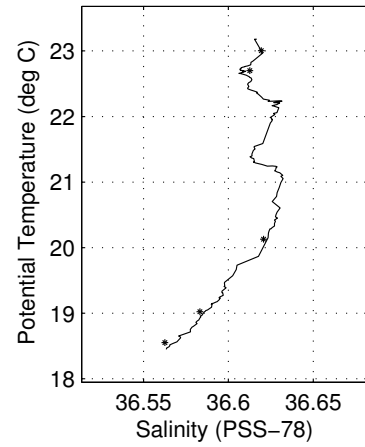
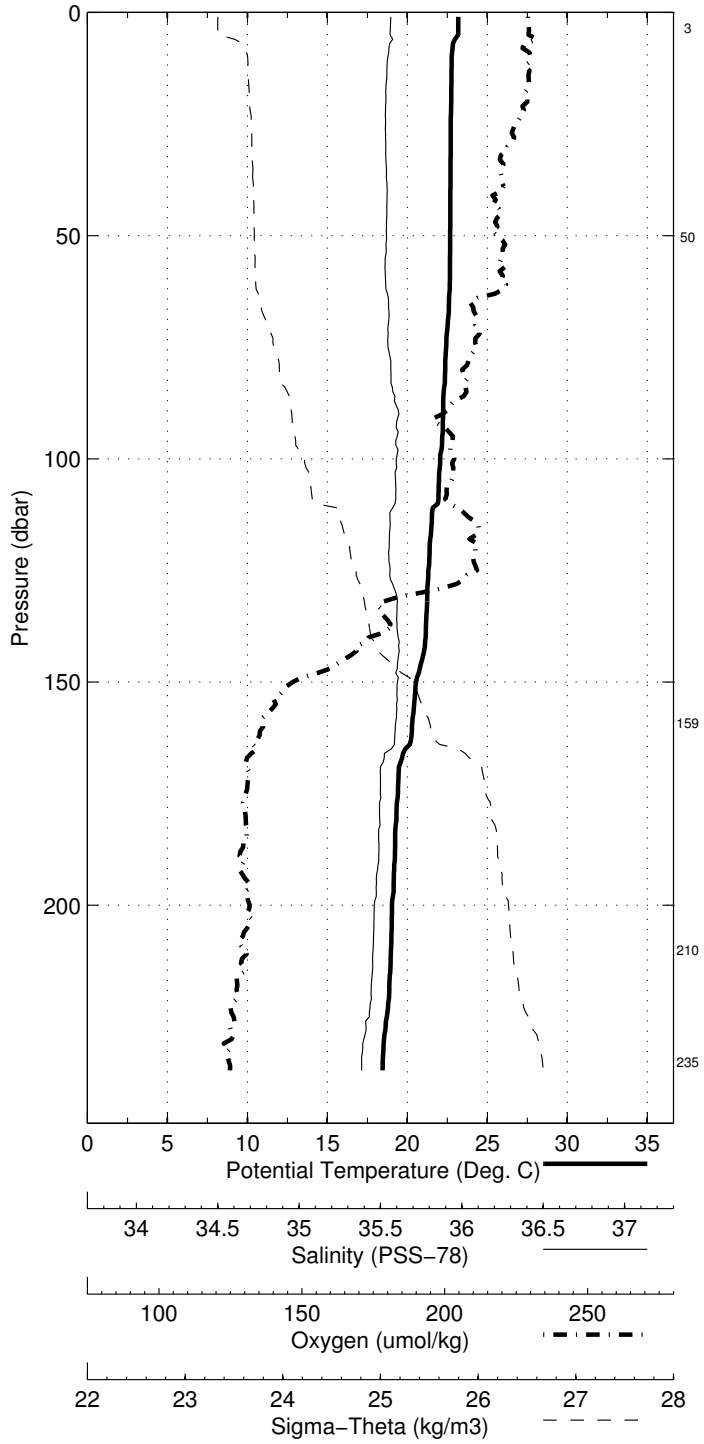


Abaco February 2015 R/V Endeavor
 CTD Station 28 (CTD028)
 Latitude 26.526N Longitude 76.892W
 23-Feb-2015 18:50Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.181	23.181	36.617	213.8	0.003	25.108
10	22.775	22.773	36.611	214.0	0.028	25.222
20	22.748	22.744	36.608	213.7	0.055	25.228
30	22.711	22.705	36.607	212.3	0.083	25.239
50	22.689	22.679	36.609	211.5	0.137	25.247
75	22.436	22.421	36.612	210.0	0.205	25.323
100	22.067	22.047	36.627	208.4	0.271	25.441
125	21.332	21.308	36.615	210.0	0.333	25.639
150	20.572	20.543	36.629	196.5	0.391	25.859
200	19.075	19.039	36.587	193.4	0.490	26.224

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
235	1	18.593	18.551	36.563	192.6
210	2	19.061	19.023	36.583	195.0
159	3	20.158	20.128	36.621	193.0
50	4	22.709	22.699	36.613	155.1
3	5	23.006	23.006	36.619	212.8

Abaco February 2015 R/V Endeavor
CTD Station 28 (CTD028)
Latitude 26.526 N Longitude 76.892 W
23-Feb-2015 18:50 Z

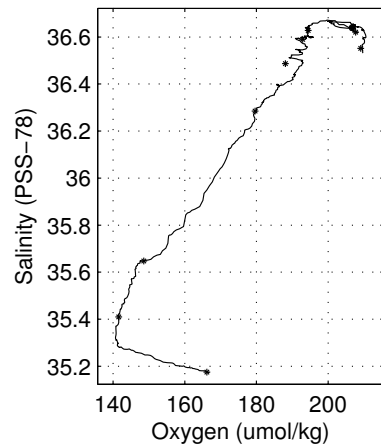
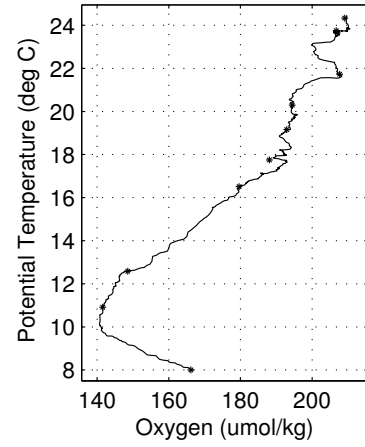
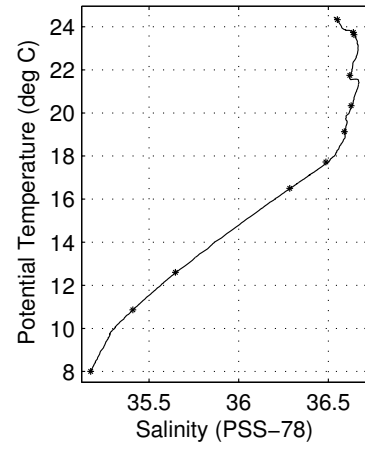
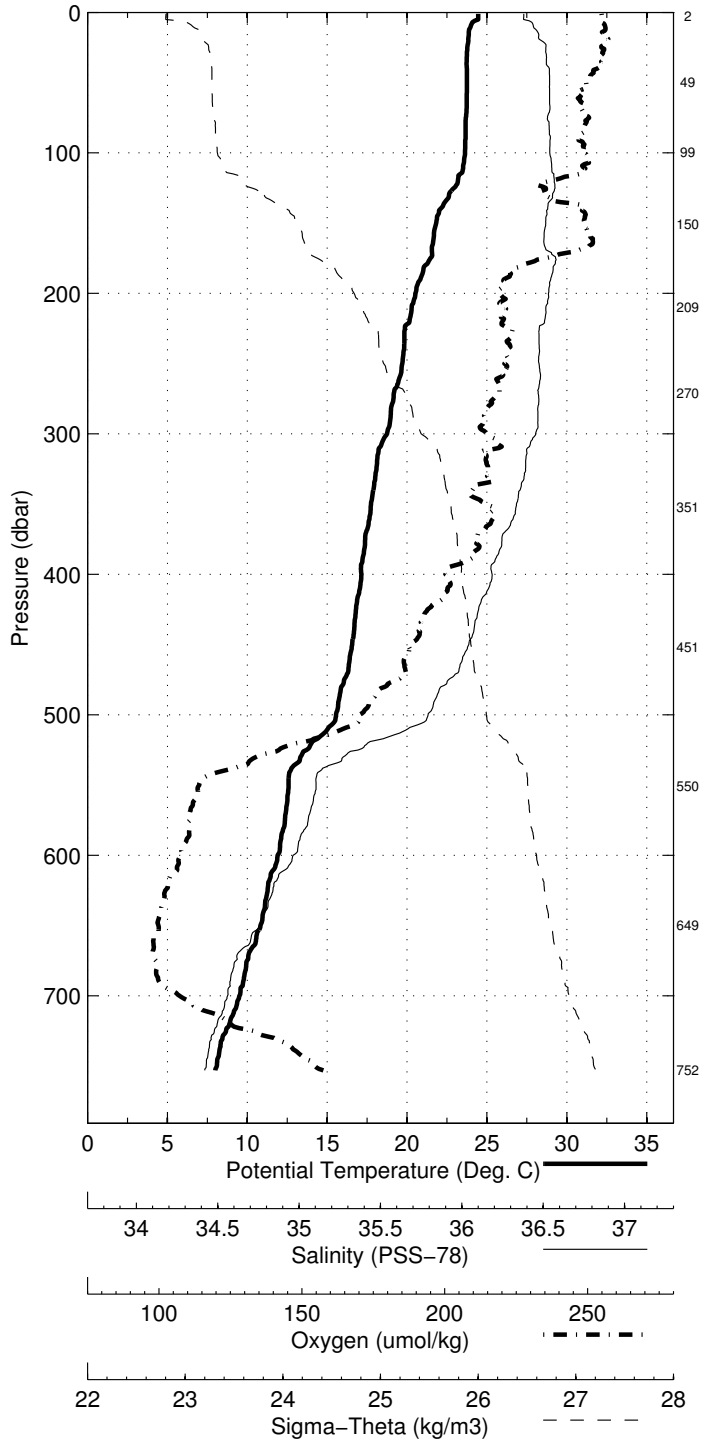


Abaco February 2015 R/V Endeavor
 CTD Station 29 (CTD029)
 Latitude 26.435N Longitude 78.659W
 24-Feb-2015 19:14Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.450	24.450	36.534	209.6	0.003	24.668
10	23.983	23.981	36.574	210.1	0.032	24.840
20	23.842	23.837	36.609	210.5	0.063	24.908
30	23.752	23.746	36.630	209.7	0.093	24.952
50	23.753	23.743	36.644	207.2	0.153	24.963
75	23.697	23.682	36.635	207.7	0.228	24.974
100	23.652	23.631	36.645	206.7	0.303	24.997
125	22.955	22.930	36.667	201.0	0.376	25.219
150	21.853	21.823	36.627	207.1	0.442	25.505
200	20.566	20.528	36.639	193.7	0.561	25.871
250	19.752	19.706	36.598	194.6	0.666	26.060
300	18.799	18.745	36.585	191.9	0.762	26.299
400	17.209	17.141	36.399	185.6	0.930	26.555
500	15.639	15.560	36.126	172.4	1.086	26.715
600	11.976	11.896	35.550	145.3	1.213	27.036
700	9.590	9.508	35.271	144.8	1.322	27.247

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
753	1	8.078	7.998	35.175	166.2
650	2	10.947	10.865	35.410	141.5
550	3	12.677	12.601	35.647	148.6
451	4	16.573	16.499	36.285	179.6
352	5	17.788	17.727	36.487	188.1
271	6	19.184	19.135	36.590	192.9
209	7	20.374	20.334	36.628	194.4
150	8	21.778	21.748	36.620	207.7
100	9	23.657	23.636	36.643	207.0
50	10	23.751	23.740	36.641	206.8
3	11	24.336	24.335	36.551	209.1

Abaco February 2015 R/V Endeavor
 CTD Station 29 (CTD029)
 Latitude 26.435 N Longitude 78.659 W
 24-Feb-2015 19:14 Z

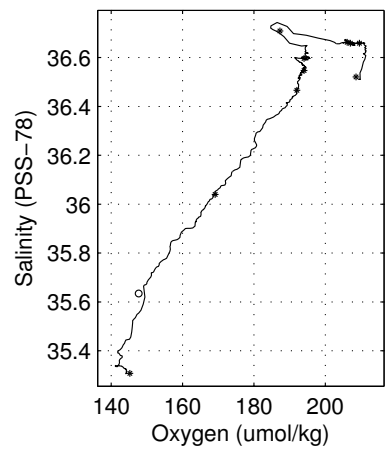
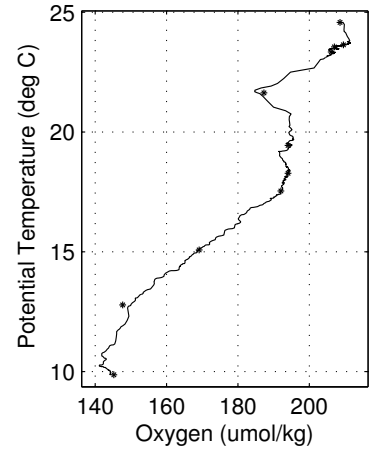
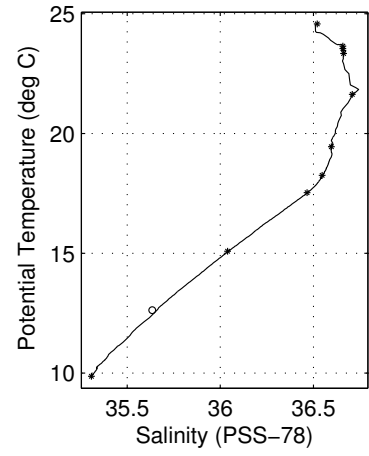
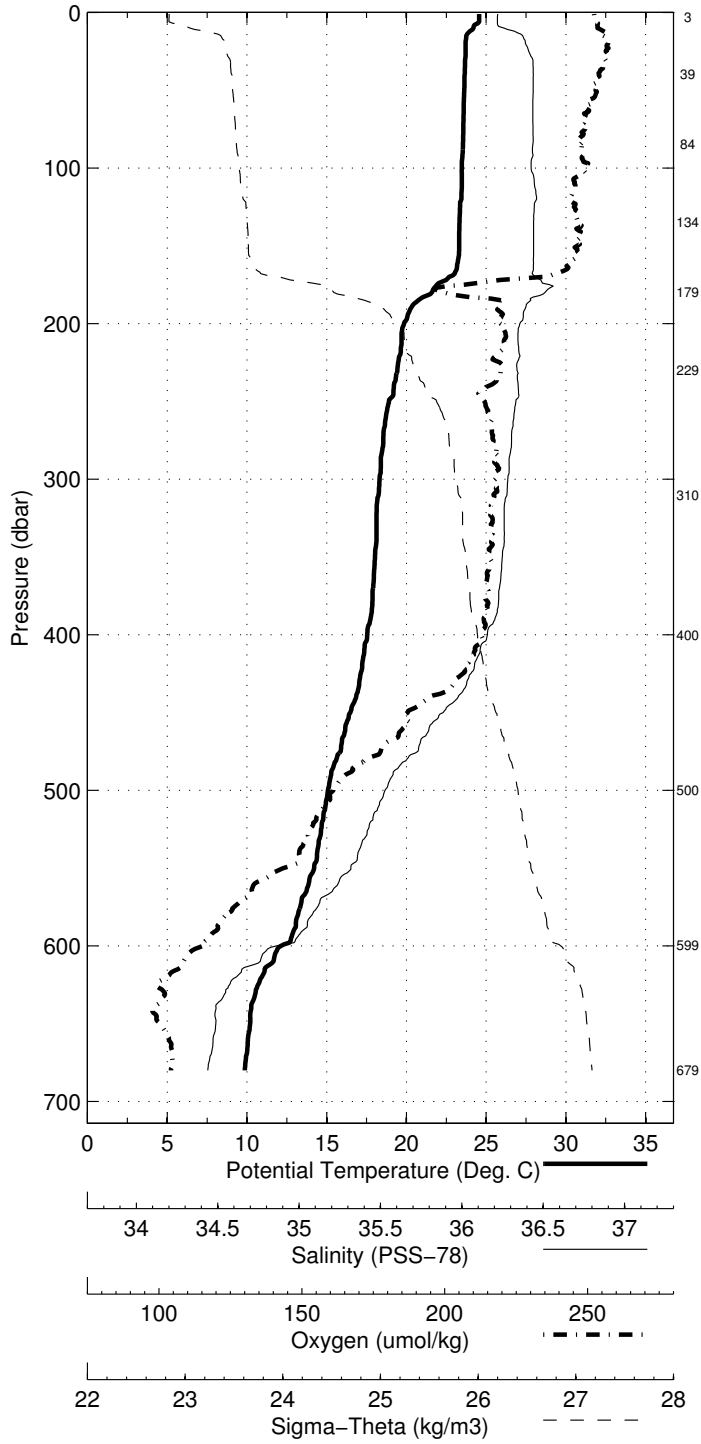


Abaco February 2015 R/V Endeavor
 CTD Station 30 (CTD030)
 Latitude 26.331N Longitude 78.712W
 24-Feb-2015 20:49Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.557	24.557	36.512	209.2	0.003	24.619
10	24.203	24.201	36.537	209.7	0.033	24.745
20	23.712	23.707	36.628	211.4	0.063	24.961
30	23.689	23.682	36.657	210.9	0.093	24.991
50	23.641	23.631	36.660	209.5	0.152	25.008
75	23.582	23.567	36.659	207.9	0.226	25.026
100	23.490	23.469	36.651	207.9	0.300	25.049
125	23.388	23.362	36.664	206.1	0.374	25.091
150	23.336	23.305	36.661	206.6	0.446	25.105
200	19.885	19.847	36.604	194.8	0.573	26.026
250	18.948	18.903	36.587	192.3	0.671	26.260
300	18.371	18.318	36.554	194.0	0.761	26.383
400	17.611	17.543	36.469	191.8	0.932	26.510
500	15.156	15.079	36.043	169.1	1.088	26.759
600	12.218	12.137	35.590	148.9	1.224	27.021

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
680	1	9.949	9.868	35.308	145.2
599	2	12.704	12.621	35.635	147.7
500	3	15.162	15.084	36.040	169.2
400	4	17.599	17.531	36.466	192.0
310	5	18.306	18.251	36.547	194.0
230	6	19.494	19.452	36.596	194.1
180	7	21.669	21.633	36.709	187.3
135	8	23.369	23.341	36.662	206.2
85	9	23.562	23.545	36.658	207.1
39	10	23.652	23.643	36.658	209.6
3	11	24.576	24.576	36.520	208.6

Abaco February 2015 R/V Endeavor
 CTD Station 30 (CTD030)
 Latitude 26.331 N Longitude 78.712 W
 24-Feb-2015 20:49 Z

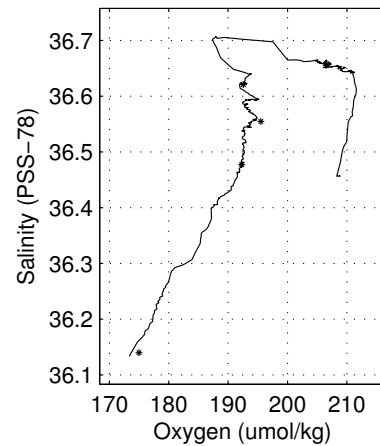
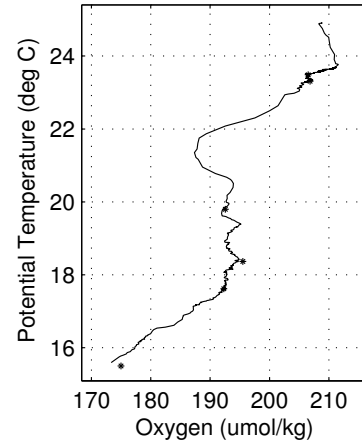
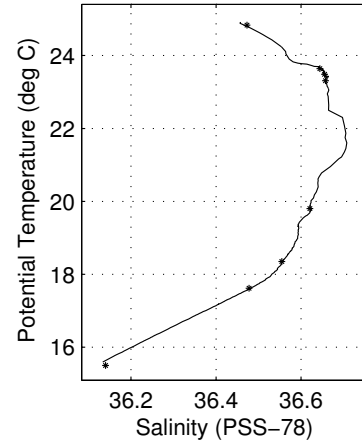
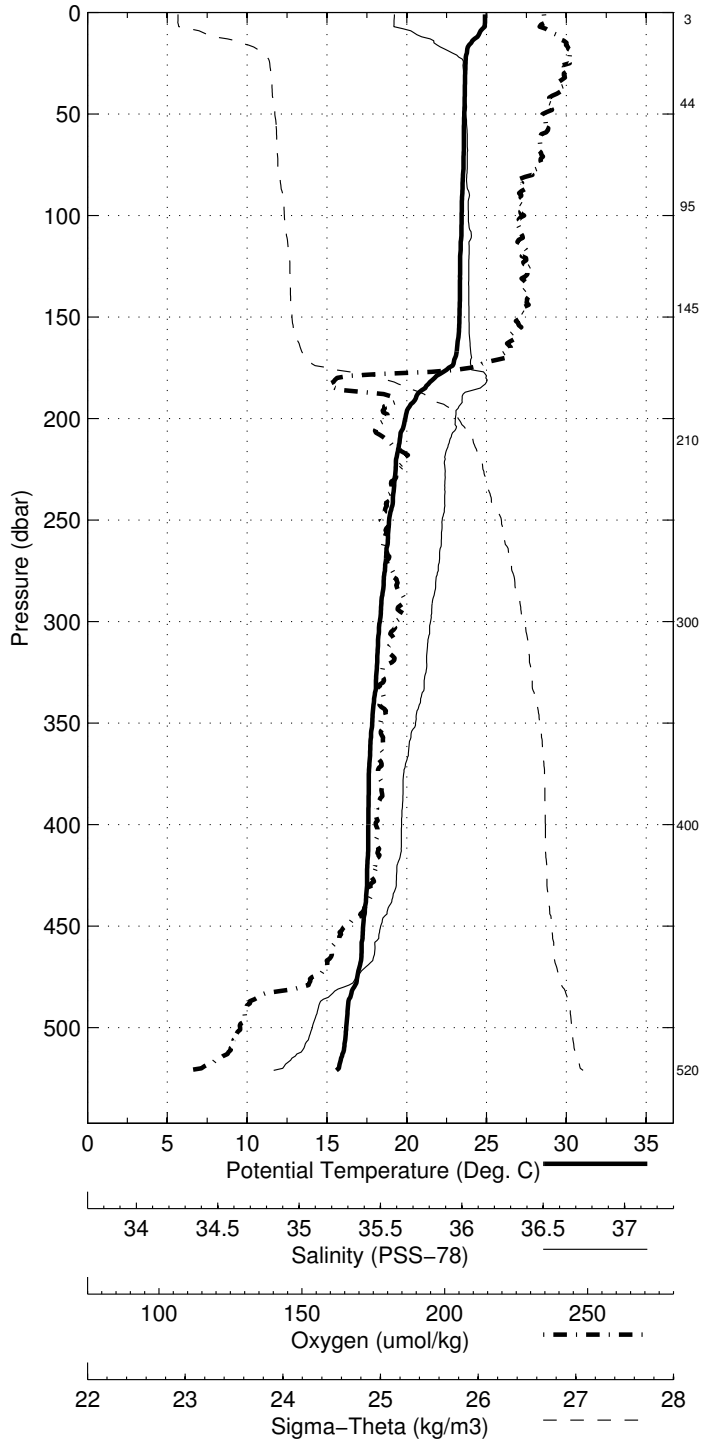


Abaco February 2015 R/V Endeavor
 CTD Station 31 (CTD031)
 Latitude 26.249N Longitude 78.762W
 24-Feb-2015 22:22Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.904	24.904	36.458	208.7	0.003	24.473
10	24.578	24.575	36.510	209.5	0.034	24.612
20	23.768	23.764	36.614	211.6	0.065	24.934
30	23.666	23.660	36.644	210.7	0.095	24.988
50	23.613	23.603	36.649	208.6	0.155	25.008
75	23.574	23.559	36.654	208.4	0.229	25.025
100	23.465	23.444	36.657	206.8	0.302	25.061
125	23.368	23.342	36.658	207.3	0.375	25.092
150	23.335	23.303	36.658	206.2	0.448	25.103
200	19.948	19.910	36.622	193.0	0.577	26.023
250	18.940	18.895	36.586	192.5	0.674	26.261
300	18.369	18.316	36.555	194.0	0.764	26.385
400	17.662	17.593	36.477	192.0	0.933	26.505
500	16.294	16.212	36.237	178.5	1.097	26.651

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
521	1	15.584	15.501	36.140	175.0
400	2	17.688	17.619	36.478	192.3
300	3	18.404	18.351	36.555	195.5
211	4	19.842	19.803	36.621	192.5
145	5	23.341	23.311	36.658	206.8
95	6	23.507	23.487	36.656	206.5
44	7	23.650	23.641	36.644	<i>NaN</i>
3	8	24.835	24.834	36.473	<i>NaN</i>

Abaco February 2015 R/V Endeavor
 CTD Station 31 (CTD031)
 Latitude 26.249 N Longitude 78.762 W
 24-Feb-2015 22:22 Z

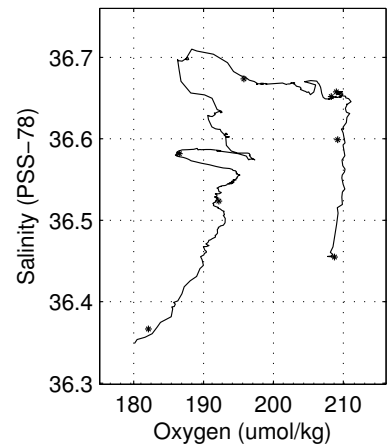
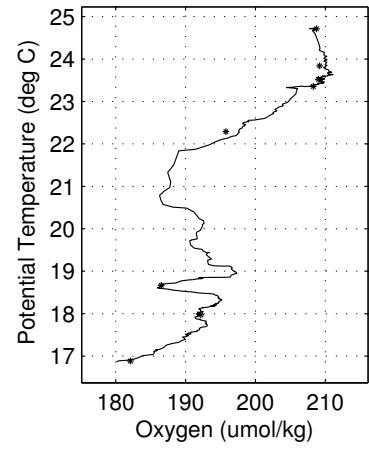
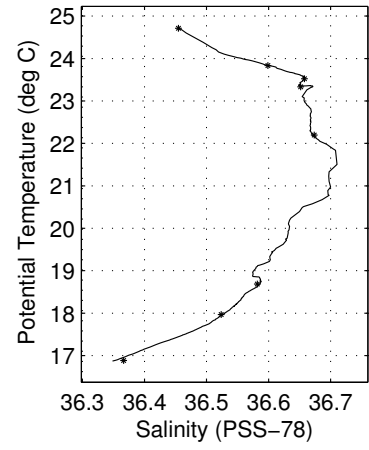
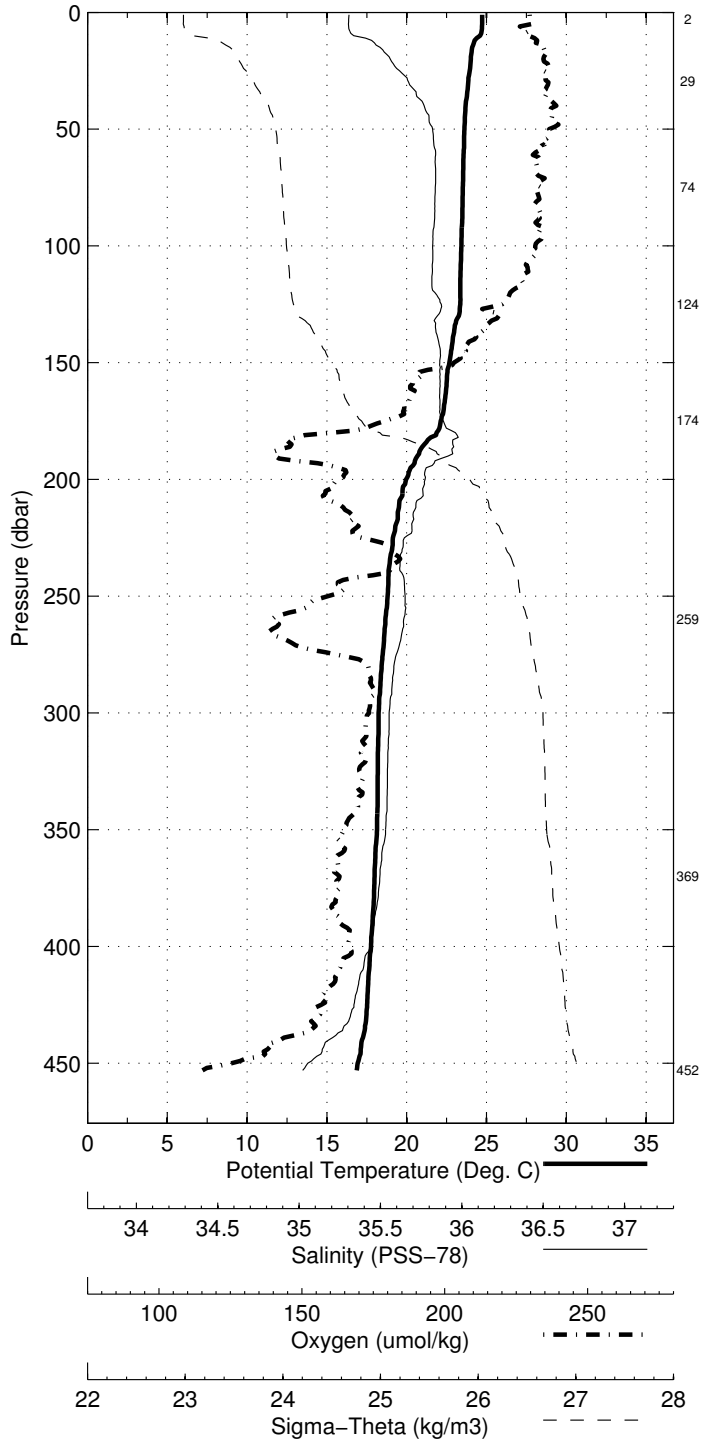


Abaco February 2015 R/V Endeavor
 CTD Station 32 (CTD032)
 Latitude 26.168N Longitude 78.799W
 24-Feb-2015 23:38Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.731	24.730	36.456	208.6	0.003	24.524
10	24.605	24.603	36.467	208.5	0.034	24.571
20	24.023	24.019	36.552	209.8	0.066	24.811
30	23.861	23.854	36.595	210.2	0.097	24.893
50	23.626	23.616	36.650	210.3	0.157	25.006
75	23.533	23.518	36.657	209.6	0.231	25.039
100	23.446	23.425	36.651	209.1	0.304	25.062
125	23.381	23.355	36.671	206.2	0.377	25.098
150	22.700	22.670	36.667	202.0	0.448	25.294
200	20.000	19.962	36.633	192.1	0.572	26.018
250	18.848	18.804	36.587	191.0	0.667	26.285
300	18.290	18.237	36.549	194.6	0.756	26.400
400	17.829	17.760	36.505	192.9	0.928	26.485

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
453	1	16.963	16.887	36.367	182.1
370	2	18.034	17.970	36.524	192.2
260	3	18.735	18.689	36.582	186.5
175	4	22.235	22.199	36.674	195.8
125	5	23.360	23.334	36.652	208.3
75	6	23.542	23.526	36.658	209.0
29	7	23.843	23.836	36.599	209.2
3	8	24.712	24.712	36.455	208.7

Abaco February 2015 R/V Endeavor
 CTD Station 32 (CTD032)
 Latitude 26.168 N Longitude 78.799 W
 24-Feb-2015 23:38 Z

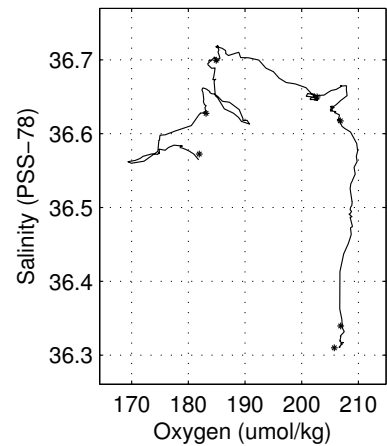
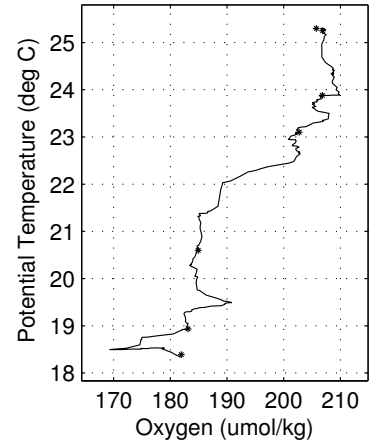
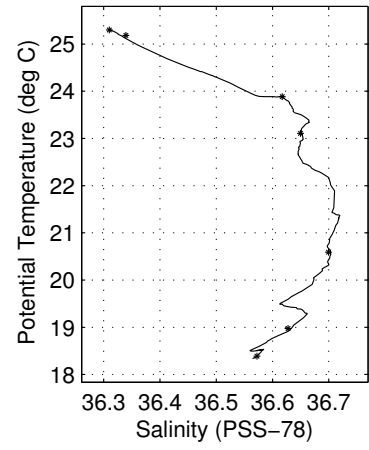
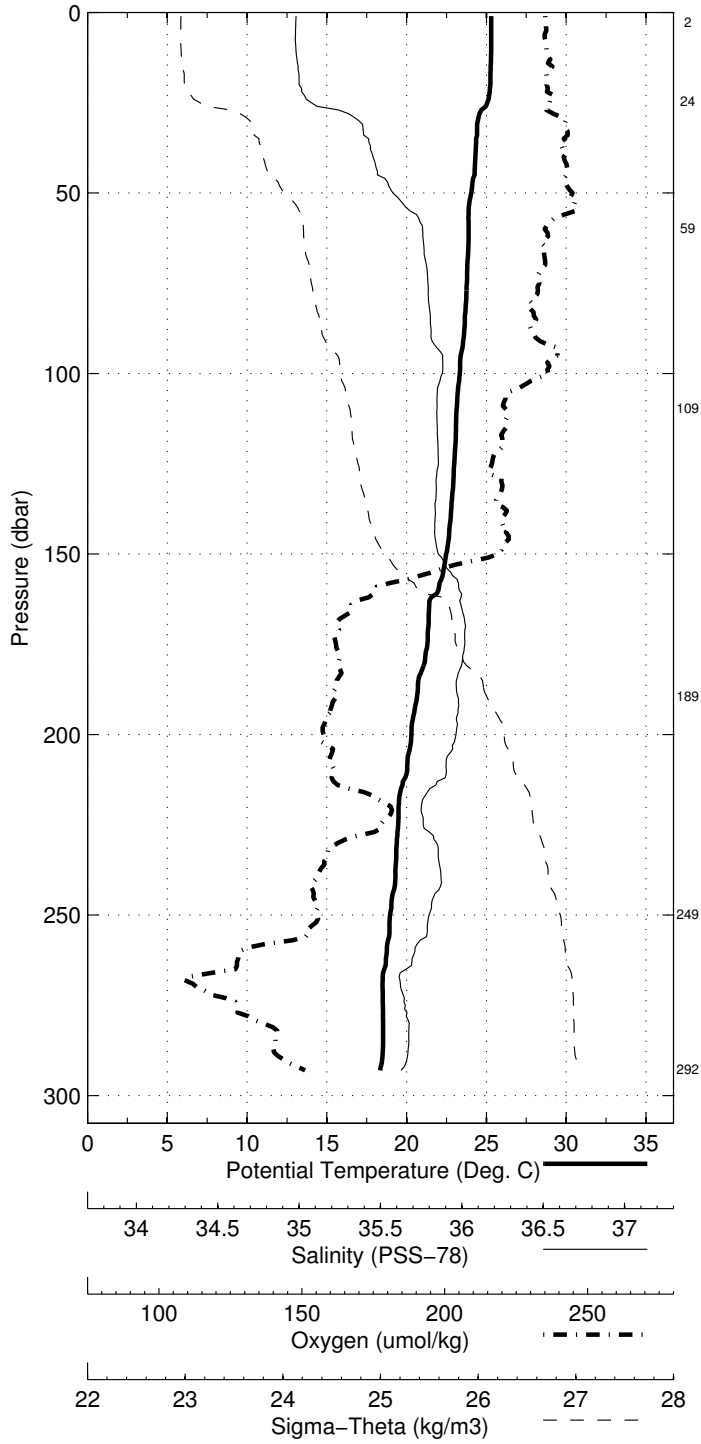


Abaco February 2015 R/V Endeavor
 CTD Station 33 (CTD033)
 Latitude 26.065N Longitude 78.850W
 25-Feb-2015 00:58Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.297	25.297	36.312	206.6	0.004	24.242
10	25.297	25.295	36.312	206.8	0.037	24.242
20	25.261	25.257	36.320	206.8	0.073	24.260
30	24.465	24.458	36.463	208.7	0.109	24.612
50	24.059	24.049	36.545	209.5	0.174	24.797
75	23.791	23.775	36.629	206.0	0.250	24.943
100	23.351	23.331	36.664	207.0	0.325	25.100
125	23.013	22.987	36.655	201.1	0.396	25.193
150	22.510	22.479	36.654	201.7	0.465	25.339
200	20.332	20.295	36.697	183.7	0.582	25.978
250	19.004	18.959	36.632	183.0	0.680	26.280

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
293	1	18.439	18.388	36.572	181.9
250	2	19.018	18.973	36.627	183.1
189	3	20.627	20.591	36.699	184.9
110	4	23.131	23.108	36.650	202.7
60	5	23.898	23.885	36.617	206.8
24	6	25.188	25.182	36.340	206.9
3	7	25.300	25.300	36.310	205.8

Abaco February 2015 R/V Endeavor
 CTD Station 33 (CTD033)
 Latitude 26.065 N Longitude 78.850 W
 25-Feb-2015 00:58 Z

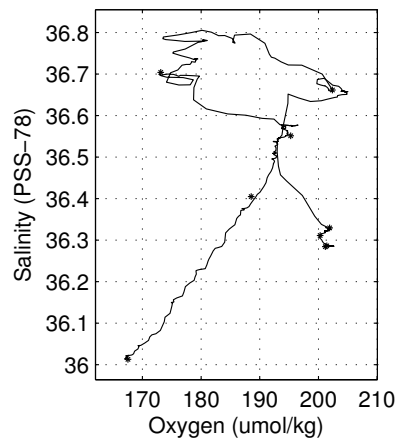
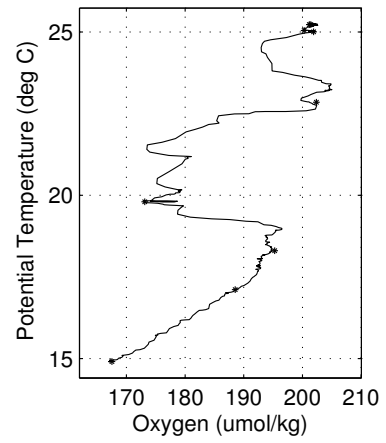
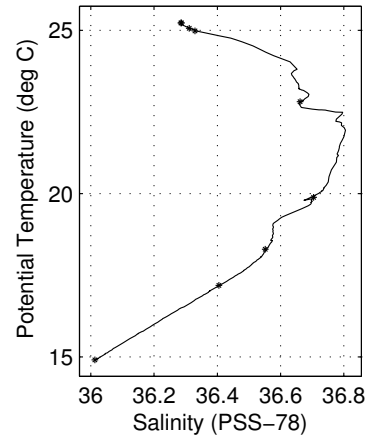
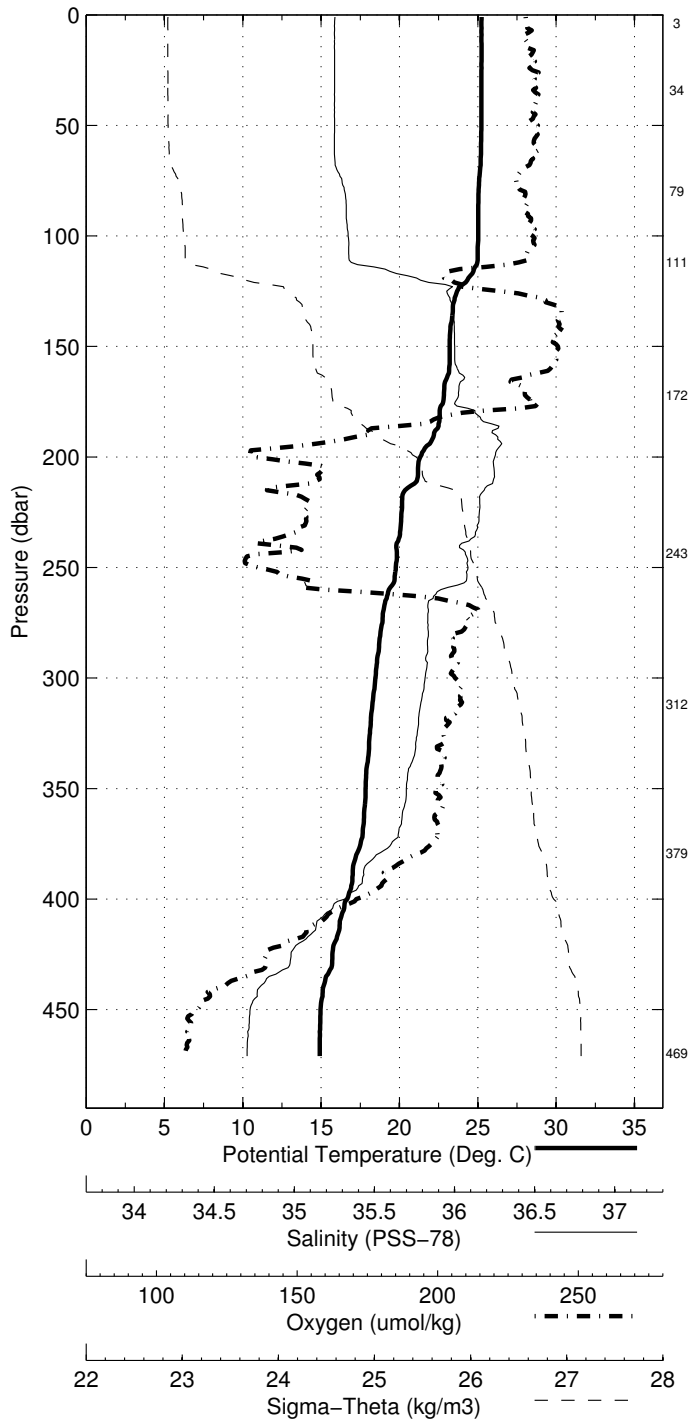


Abaco February 2015 R/V Endeavor
 CTD Station 34 (CTD034)
 Latitude 26.996N Longitude 79.198W
 25-Feb-2015 08:18Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.235	25.235	36.287	201.2	0.004	24.242
10	25.237	25.235	36.285	201.3	0.037	24.241
20	25.240	25.235	36.285	201.9	0.074	24.241
30	25.238	25.232	36.286	202.0	0.110	24.242
50	25.239	25.228	36.286	202.5	0.184	24.243
75	25.100	25.083	36.309	200.3	0.276	24.305
100	25.047	25.026	36.328	202.0	0.367	24.337
125	23.705	23.678	36.634	198.6	0.453	24.975
150	23.241	23.210	36.659	204.5	0.526	25.131
200	21.362	21.323	36.783	174.0	0.661	25.763
250	19.812	19.766	36.700	174.3	0.766	26.121
300	18.518	18.465	36.567	194.1	0.859	26.356
400	16.731	16.664	36.317	184.2	1.027	26.606

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
470	1	14.984	14.912	36.013	167.5
379	2	17.258	17.193	36.405	188.5
312	3	18.355	18.300	36.551	195.3
244	4	19.930	19.885	36.704	173.1
172	5	22.853	22.818	36.661	202.4
112	6	25.008	24.984	36.329	201.9
80	7	25.080	25.063	36.311	200.3
34	8	25.237	25.229	36.284	201.2
4	9	25.228	25.227	36.286	201.4

Abaco February 2015 R/V Endeavor
 CTD Station 34 (CTD034)
 Latitude 26.996 N Longitude 79.198 W
 25-Feb-2015 08:18 Z

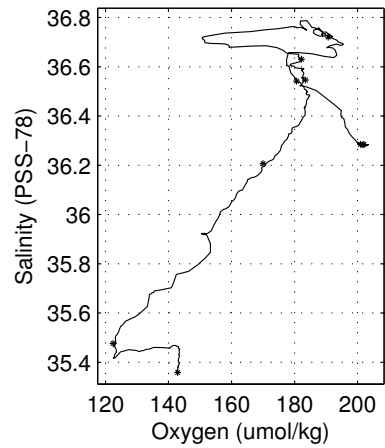
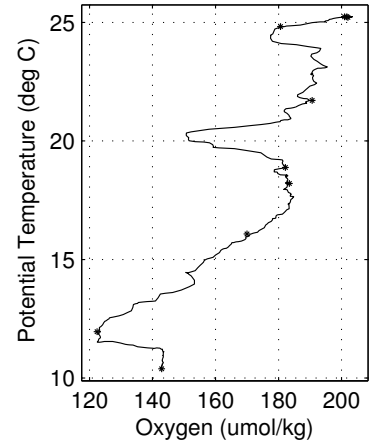
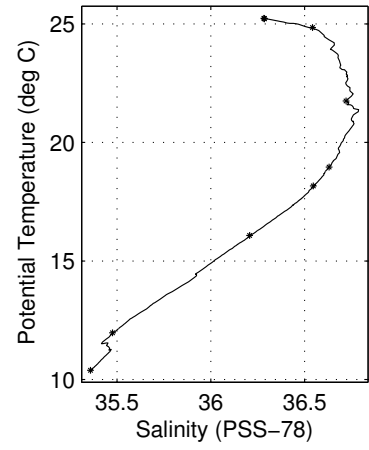
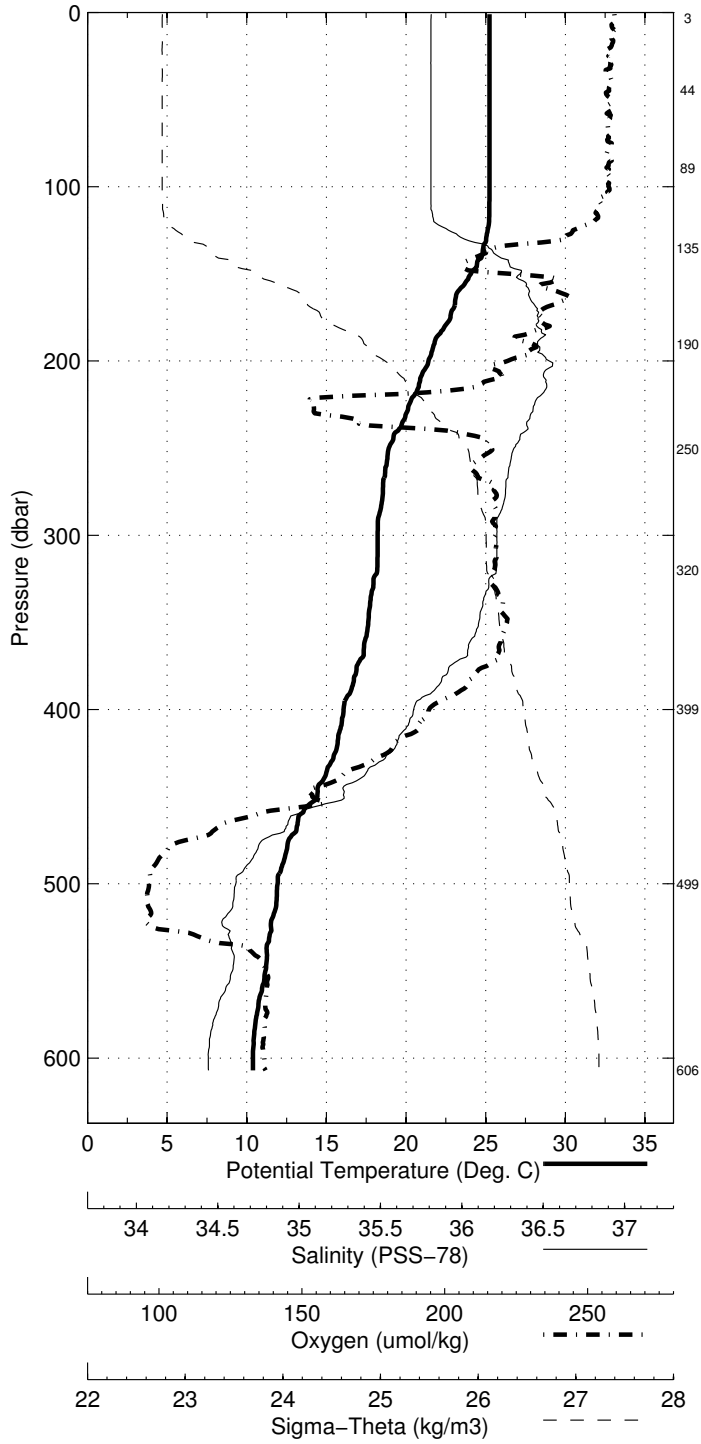


Abaco February 2015 R/V Endeavor
 CTD Station 35 (CTD035)
 Latitude 27.003N Longitude 79.283W
 25-Feb-2015 09:41Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.242	25.241	36.284	203.2	0.004	24.238
10	25.242	25.240	36.283	203.2	0.037	24.238
20	25.246	25.242	36.283	202.6	0.074	24.237
30	25.247	25.241	36.283	202.7	0.110	24.237
50	25.252	25.241	36.283	202.5	0.184	24.238
75	25.257	25.241	36.283	202.8	0.277	24.238
100	25.264	25.242	36.283	202.3	0.370	24.237
125	25.153	25.125	36.356	196.1	0.463	24.328
150	24.097	24.065	36.652	185.6	0.548	24.874
200	21.447	21.408	36.773	184.8	0.683	25.732
250	18.963	18.918	36.627	182.1	0.786	26.287
300	18.271	18.218	36.556	182.7	0.875	26.410
400	16.146	16.081	36.212	171.3	1.039	26.662
500	12.008	11.942	35.475	123.0	1.175	26.970
600	10.459	10.386	35.361	142.9	1.286	27.167

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
607	1	10.467	10.393	35.359	142.9
500	2	12.039	11.972	35.476	122.4
400	3	16.144	16.079	36.206	170.0
320	4	18.220	18.164	36.546	183.4
251	5	19.005	18.960	36.630	182.2
190	6	21.788	21.750	36.721	190.7
135	7	24.876	24.846	36.542	180.6
90	8	25.254	25.235	36.285	200.9
45	9	25.245	25.236	36.283	201.7
4	10	25.218	25.217	36.285	202.0

Abaco February 2015 R/V Endeavor
 CTD Station 35 (CTD035)
 Latitude 27.003 N Longitude 79.283 W
 25-Feb-2015 09:41 Z

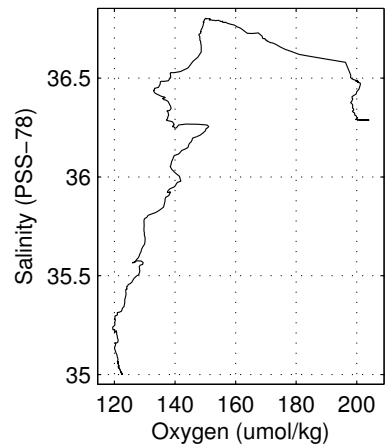
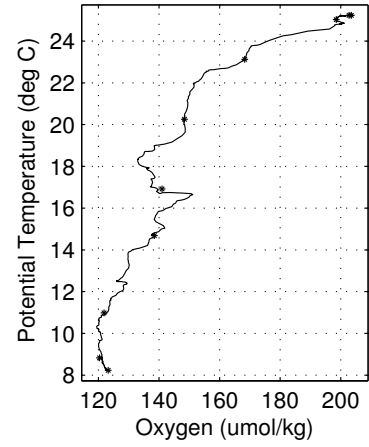
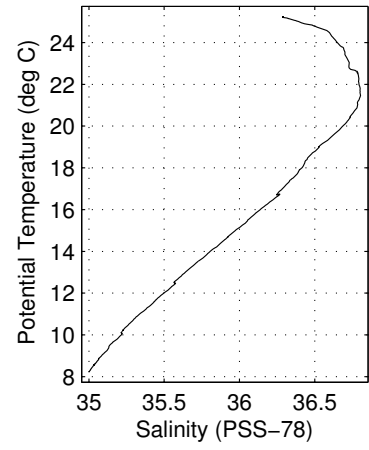
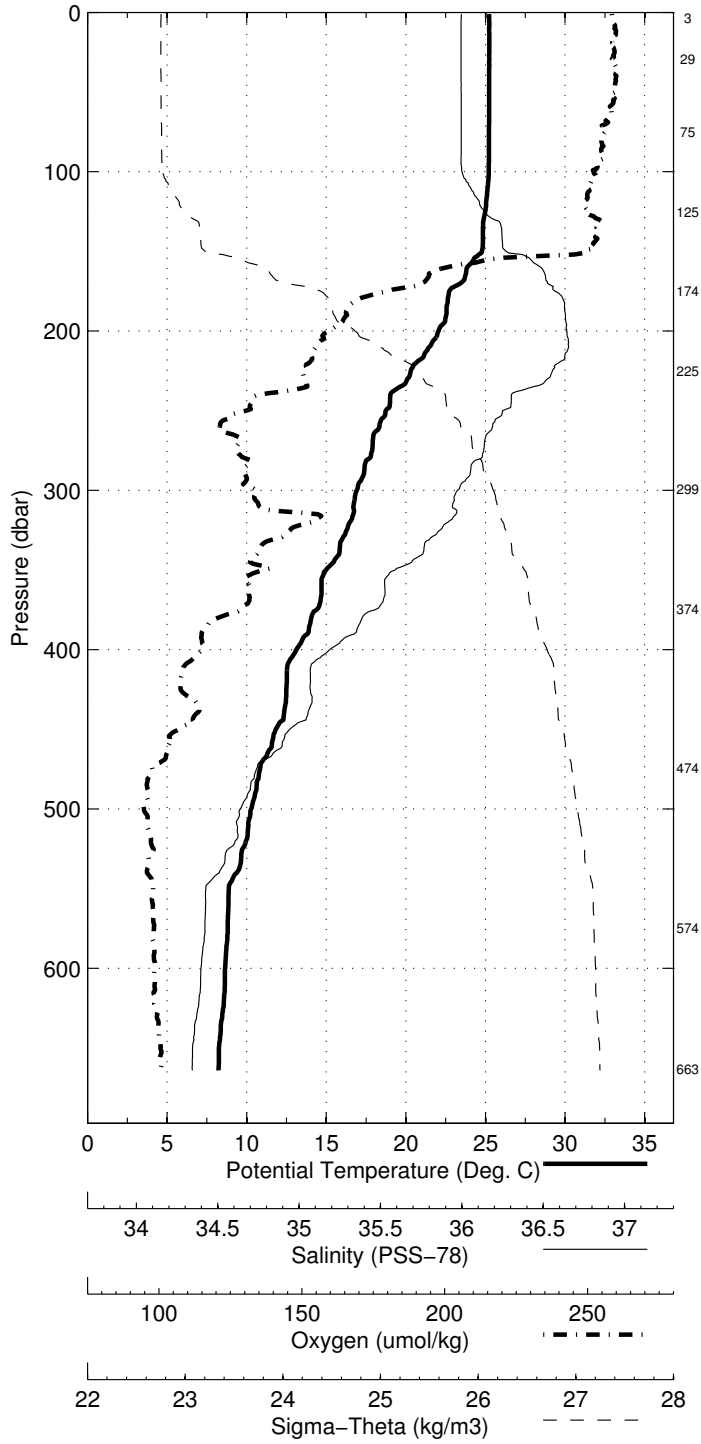


Abaco February 2015 R/V Endeavor
 CTD Station 36 (CTD036)
 Latitude 27.003N Longitude 79.383W
 25-Feb-2015 11:00Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.233	25.232	36.289	203.0	0.004	24.245
10	25.235	25.233	36.288	203.5	0.037	24.243
20	25.239	25.235	36.288	203.5	0.073	24.243
30	25.240	25.234	36.288	203.3	0.110	24.243
50	25.244	25.233	36.288	203.7	0.184	24.244
75	25.236	25.220	36.289	201.9	0.276	24.248
100	25.225	25.203	36.292	199.7	0.369	24.256
125	25.012	24.984	36.400	198.4	0.460	24.404
150	24.811	24.779	36.503	198.0	0.547	24.545
200	22.088	22.048	36.793	152.5	0.689	25.567
250	18.778	18.733	36.487	137.7	0.795	26.227
300	16.960	16.910	36.271	139.5	0.882	26.512
400	13.178	13.122	35.659	129.9	1.027	26.879
500	10.335	10.274	35.231	119.5	1.145	27.085
600	8.707	8.642	35.044	121.4	1.247	27.210

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
663	1	8.309	9.258	-999.000	<i>NaN</i>
575	2	8.885	9.695	-999.000	<i>NaN</i>
474	3	11.120	11.741	-999.000	<i>NaN</i>
375	4	14.674	15.101	-999.000	<i>NaN</i>
299	5	17.030	17.338	-999.000	<i>NaN</i>
225	6	20.314	20.510	-999.000	<i>NaN</i>
175	7	23.209	23.336	-999.000	<i>NaN</i>
125	8	25.036	25.116	-999.000	<i>NaN</i>
75	9	25.248	25.295	-999.000	<i>NaN</i>
29	10	25.242	25.261	-999.000	<i>NaN</i>
4	11	25.227	25.229	-999.000	<i>NaN</i>

Abaco February 2015 R/V Endeavor
 CTD Station 36 (CTD036)
 Latitude 27.003 N Longitude 79.383 W
 25-Feb-2015 11:00 Z

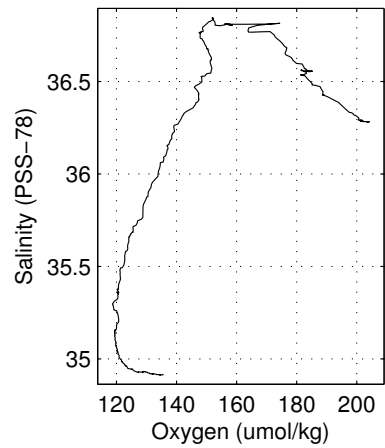
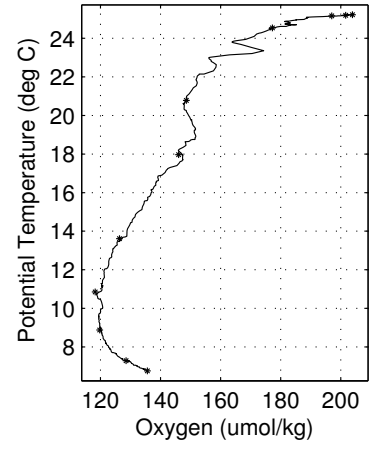
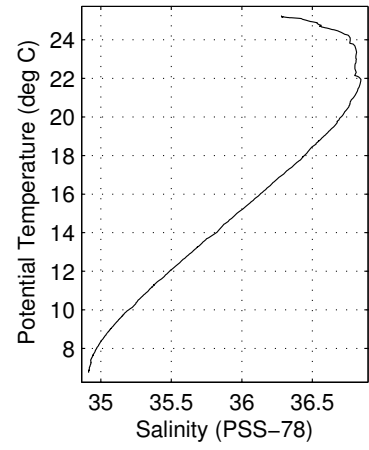
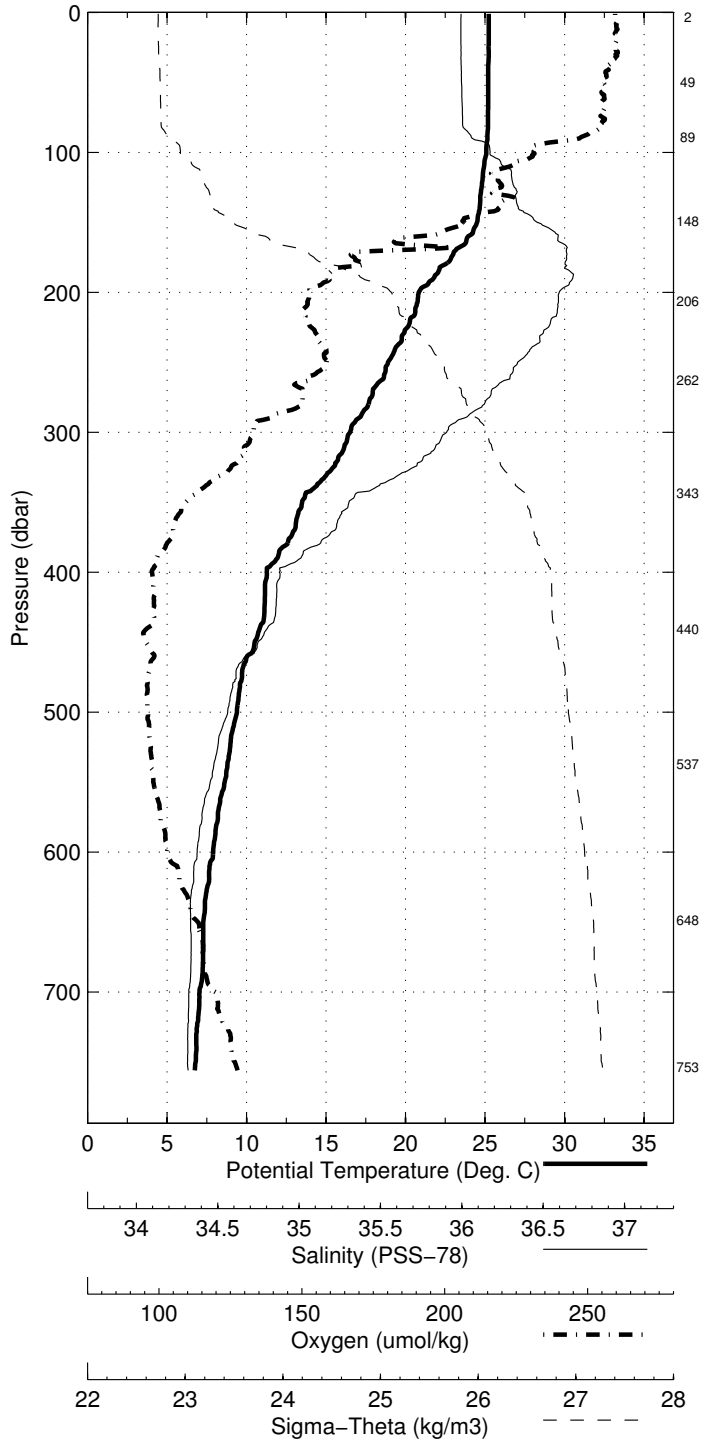


Abaco February 2015 R/V Endeavor
 CTD Station 37 (CTD037)
 Latitude 27.008N Longitude 79.498W
 25-Feb-2015 12:49Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.235	25.235	36.283	203.5	0.004	24.239
10	25.237	25.235	36.281	203.8	0.037	24.238
20	25.237	25.232	36.282	203.8	0.074	24.239
30	25.234	25.227	36.282	203.6	0.110	24.241
50	25.209	25.198	36.284	201.7	0.184	24.252
75	25.206	25.189	36.290	201.3	0.276	24.258
100	25.099	25.078	36.427	188.9	0.367	24.397
125	24.811	24.784	36.549	183.1	0.454	24.578
150	24.534	24.502	36.663	176.4	0.538	24.751
200	20.871	20.832	36.774	148.9	0.672	25.891
250	18.941	18.896	36.566	151.7	0.774	26.245
300	16.560	16.510	36.210	138.5	0.860	26.560
400	11.319	11.268	35.373	120.3	0.994	27.017
500	9.450	9.393	35.115	119.6	1.102	27.144
600	7.962	7.900	34.962	123.0	1.199	27.259
700	7.119	7.051	34.920	131.7	1.286	27.349

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
754	1	6.862	7.988	-999.000	<i>NaN</i>
649	2	7.360	8.320	-999.000	<i>NaN</i>
537	3	8.915	9.673	-999.000	<i>NaN</i>
441	4	10.917	11.500	-999.000	<i>NaN</i>
343	5	13.783	14.190	-999.000	<i>NaN</i>
263	6	18.158	18.413	-999.000	<i>NaN</i>
206	7	20.899	21.072	-999.000	<i>NaN</i>
149	8	24.550	24.649	-999.000	<i>NaN</i>
89	9	25.179	25.236	-999.000	<i>NaN</i>
50	10	25.209	25.241	-999.000	<i>NaN</i>
3	11	25.225	25.227	-999.000	<i>NaN</i>

Abaco February 2015 R/V Endeavor
 CTD Station 37 (CTD037)
 Latitude 27.008 N Longitude 79.498 W
 25-Feb-2015 12:49 Z

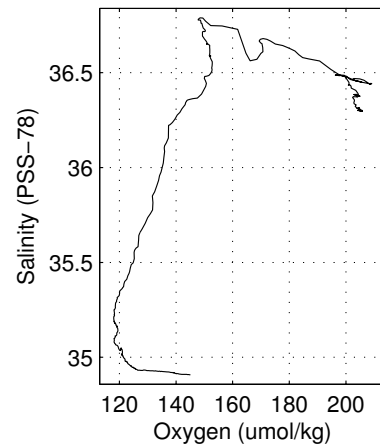
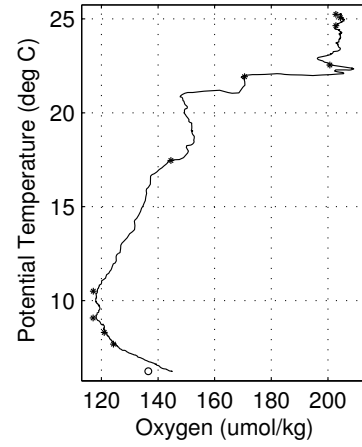
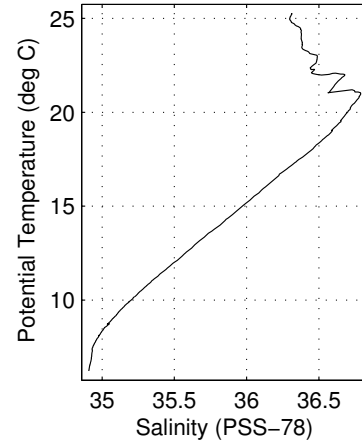
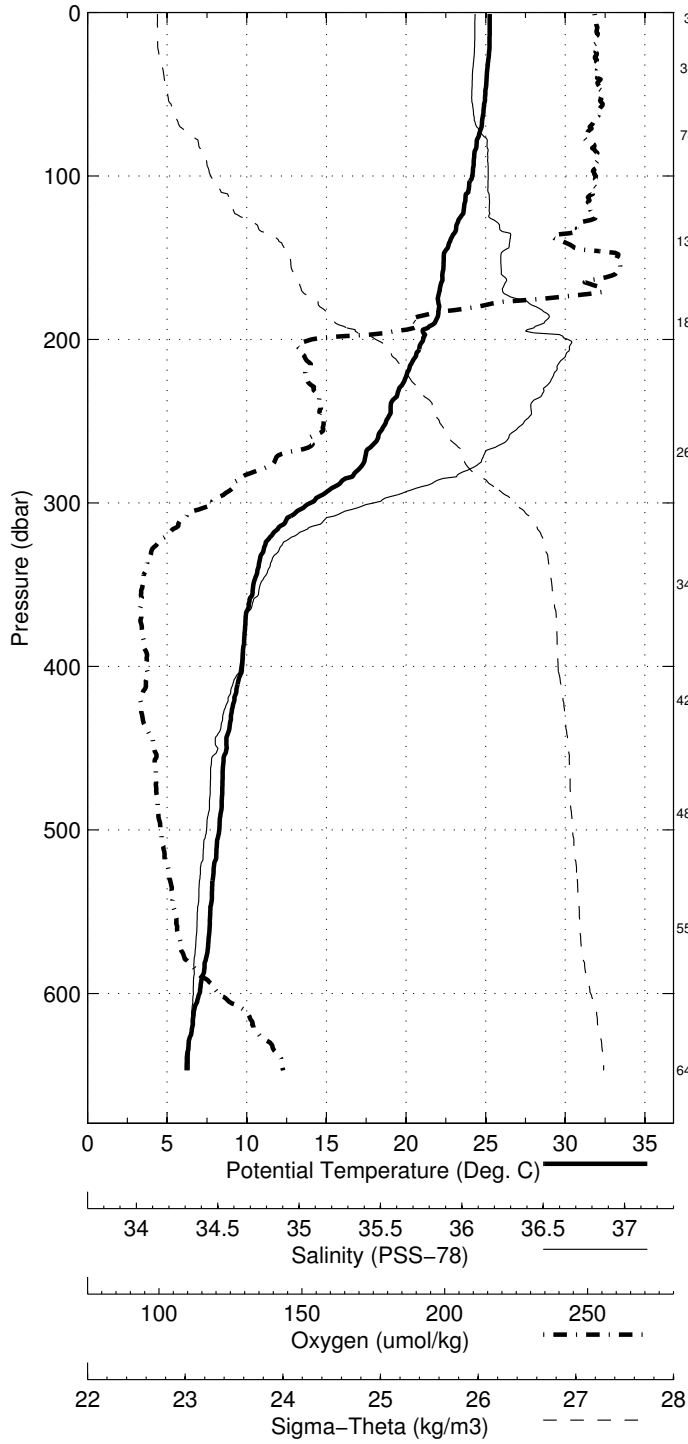


Abaco February 2015 R/V Endeavor
 CTD Station 38 (CTD038)
 Latitude 27.006N Longitude 79.615W
 25-Feb-2015 14:27Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.251	25.251	36.314	204.2	0.004	24.258
10	25.252	25.249	36.312	204.7	0.037	24.257
20	25.247	25.242	36.312	204.0	0.073	24.259
30	25.166	25.159	36.307	204.5	0.110	24.281
50	24.987	24.977	36.298	205.5	0.182	24.330
75	24.600	24.584	36.351	203.0	0.271	24.489
100	24.176	24.155	36.379	204.4	0.356	24.639
125	23.463	23.437	36.381	204.4	0.437	24.854
150	22.399	22.369	36.441	208.4	0.510	25.208
200	21.122	21.083	36.771	150.4	0.642	25.820
250	18.799	18.754	36.557	152.8	0.742	26.275
300	14.036	13.992	35.815	131.8	0.823	26.819
400	9.751	9.705	35.157	119.1	0.931	27.125
500	8.323	8.270	34.993	121.9	1.028	27.228
600	7.090	7.032	34.928	132.7	1.116	27.358

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
647	1	6.290	7.281	-999.000	<i>NaN</i>
560	2	7.731	8.553	-999.000	<i>NaN</i>
490	3	8.340	9.048	-999.000	<i>NaN</i>
420	4	9.146	9.740	-999.000	<i>NaN</i>
350	5	10.529	11.001	-999.000	<i>NaN</i>
269	6	17.578	17.847	-999.000	<i>NaN</i>
189	7	21.791	21.942	-999.000	<i>NaN</i>
140	8	22.667	22.773	-999.000	<i>NaN</i>
75	9	24.654	24.703	-999.000	<i>NaN</i>
34	10	25.078	25.100	-999.000	<i>NaN</i>
3	11	25.250	25.252	-999.000	<i>NaN</i>

Abaco February 2015 R/V Endeavor
 CTD Station 38 (CTD038)
 Latitude 27.006 N Longitude 79.615 W
 25-Feb-2015 14:27 Z

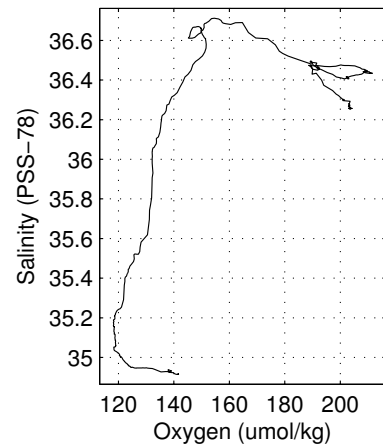
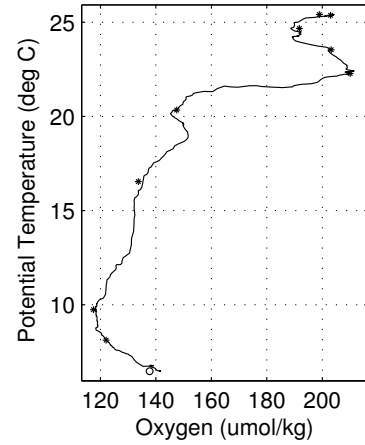
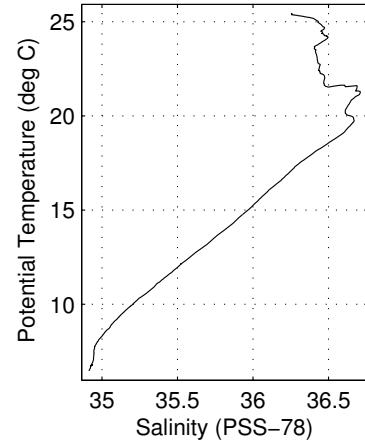
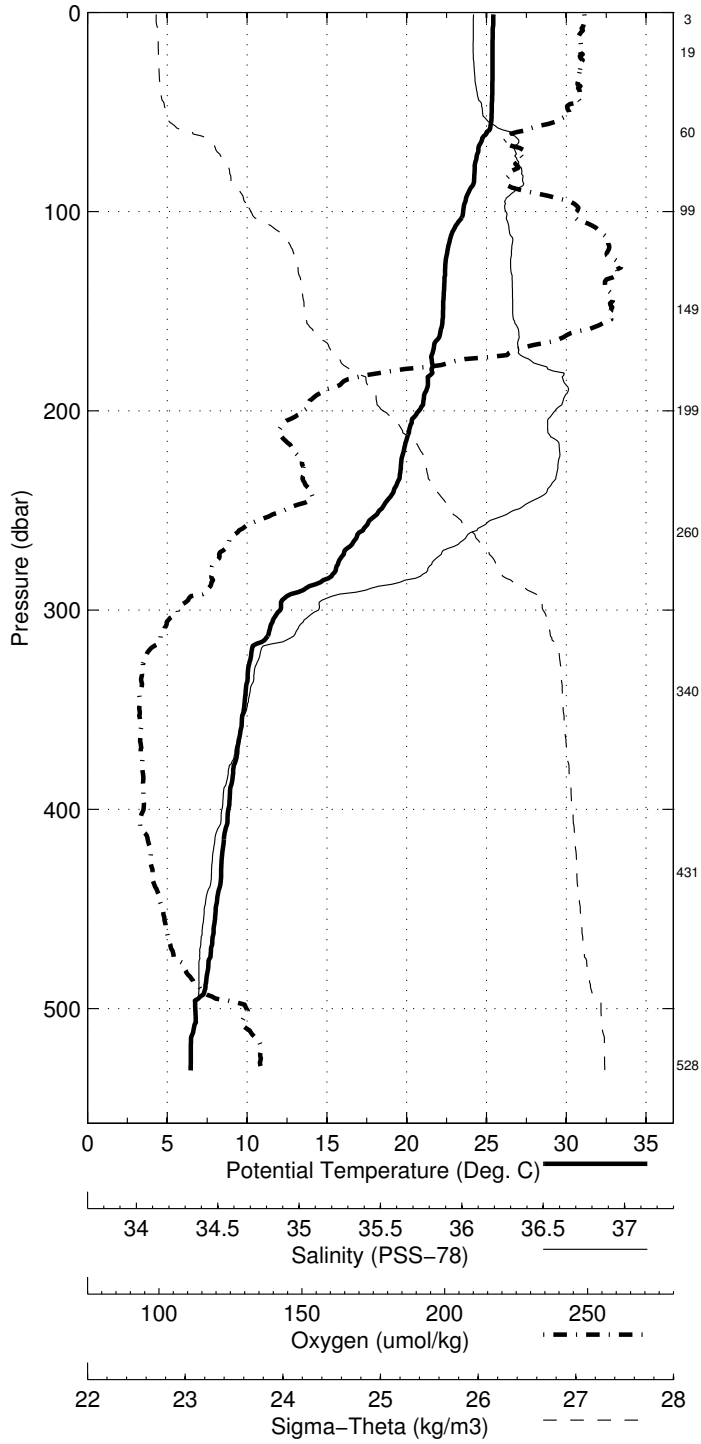


Abaco February 2015 R/V Endeavor
 CTD Station 39 (CTD039)
 Latitude 27.007N Longitude 79.682W
 25-Feb-2015 15:42Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.431	25.430	36.258	204.3	0.004	24.160
10	25.392	25.390	36.256	203.6	0.037	24.171
20	25.381	25.377	36.256	203.4	0.075	24.175
30	25.380	25.374	36.262	203.3	0.112	24.180
50	25.337	25.326	36.300	201.4	0.187	24.224
75	24.325	24.309	36.473	191.5	0.274	24.664
100	23.556	23.535	36.412	202.8	0.355	24.849
125	22.458	22.433	36.434	210.7	0.428	25.185
150	22.308	22.278	36.445	209.4	0.498	25.237
200	20.807	20.769	36.647	149.9	0.625	25.811
250	18.328	18.284	36.448	146.1	0.725	26.311
300	12.123	12.083	35.518	125.6	0.798	26.975
400	8.867	8.824	35.056	119.0	0.900	27.190
500	6.800	6.753	34.931	138.9	0.989	27.398

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
528	1	6.512	7.321	-999.000	<i>NaN</i>
431	2	8.171	8.800	-999.000	<i>NaN</i>
341	3	9.743	10.216	-999.000	<i>NaN</i>
261	4	16.606	16.879	-999.000	<i>NaN</i>
200	5	20.483	20.655	-999.000	<i>NaN</i>
149	6	22.302	22.417	-999.000	<i>NaN</i>
99	7	23.507	23.578	-999.000	<i>NaN</i>
60	8	24.761	24.801	-999.000	<i>NaN</i>
20	9	25.377	25.389	-999.000	<i>NaN</i>
3	10	25.412	25.414	-999.000	<i>NaN</i>

Abaco February 2015 R/V Endeavor
 CTD Station 39 (CTD039)
 Latitude 27.007 N Longitude 79.682 W
 25-Feb-2015 15:42 Z

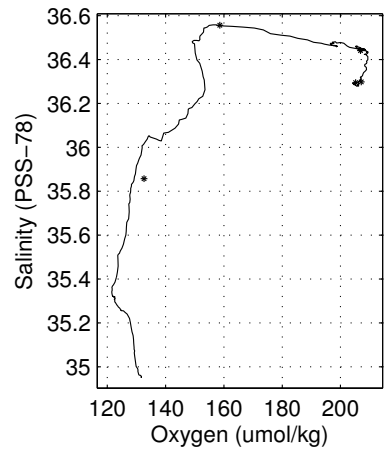
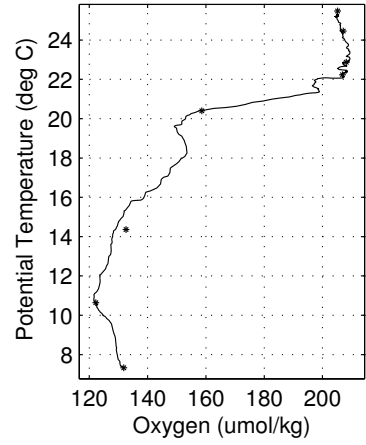
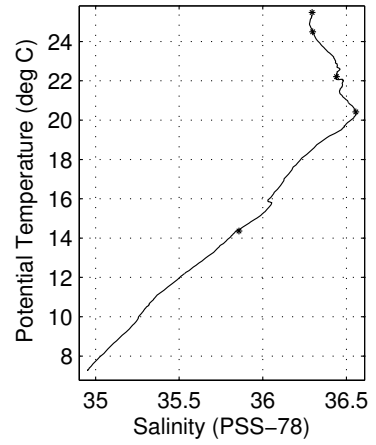
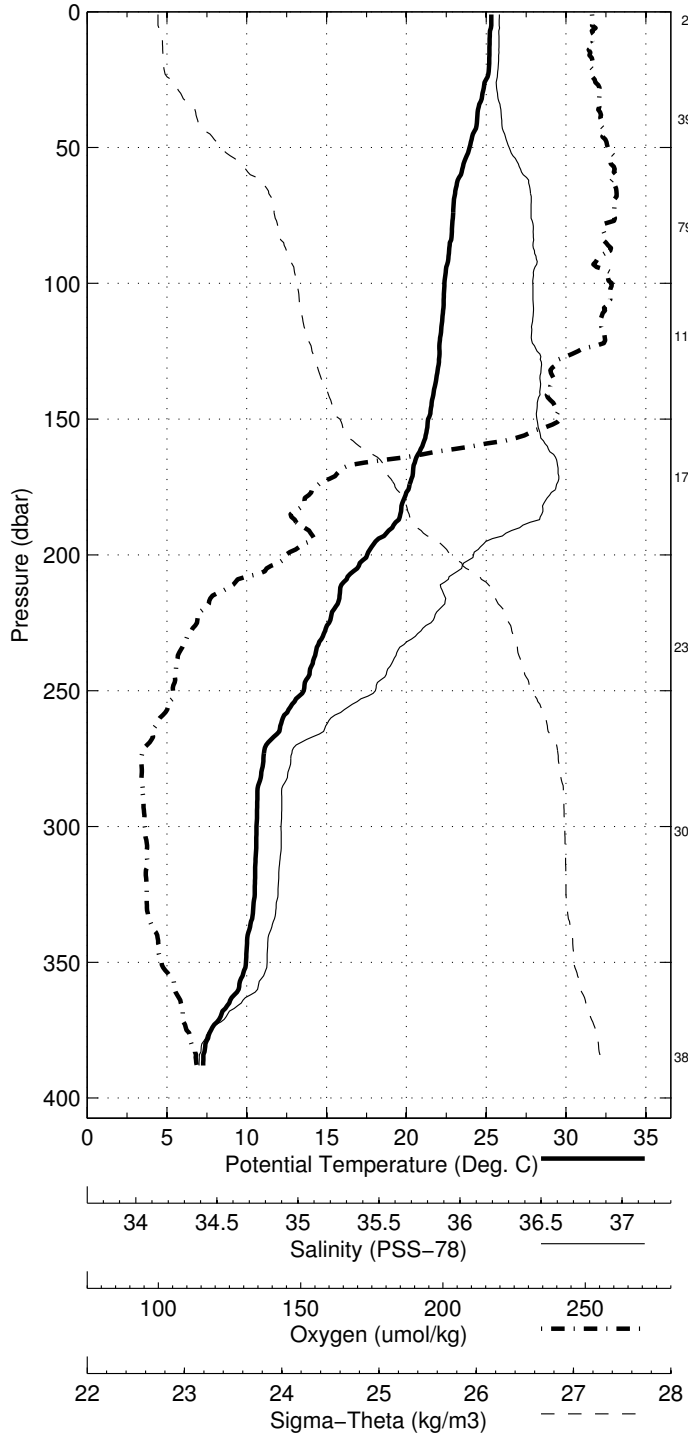


Abaco February 2015 R/V Endeavor
 CTD Station 40 (CTD040)
 Latitude 27.009N Longitude 79.778W
 25-Feb-2015 17:08Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.317	25.316	36.293	204.9	0.004	24.222
10	25.218	25.216	36.291	205.1	0.037	24.251
20	25.180	25.176	36.288	204.4	0.073	24.261
30	24.777	24.771	36.285	205.9	0.110	24.382
50	23.971	23.960	36.337	207.8	0.178	24.665
75	22.937	22.922	36.435	208.8	0.254	25.045
100	22.407	22.386	36.442	208.5	0.326	25.204
125	22.094	22.069	36.461	202.3	0.395	25.309
150	21.390	21.361	36.461	199.0	0.461	25.507
200	17.570	17.536	36.178	148.3	0.569	26.289
250	13.597	13.562	35.740	127.4	0.641	26.851
300	10.644	10.608	35.318	122.2	0.696	27.094

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
385	1	7.368	7.946	-999.000	<i>NaN</i>
302	2	10.672	11.078	-999.000	<i>NaN</i>
234	3	14.400	14.365	35.857	132.6
171	4	20.456	20.423	36.557	158.6
120	5	22.236	22.212	36.441	206.8
80	6	22.874	22.934	-999.000	<i>NaN</i>
40	7	24.502	24.493	36.298	207.1
3	8	25.476	25.475	36.295	205.2

Abaco February 2015 R/V Endeavor
 CTD Station 40 (CTD040)
 Latitude 27.009 N Longitude 79.778 W
 25-Feb-2015 17:08 Z

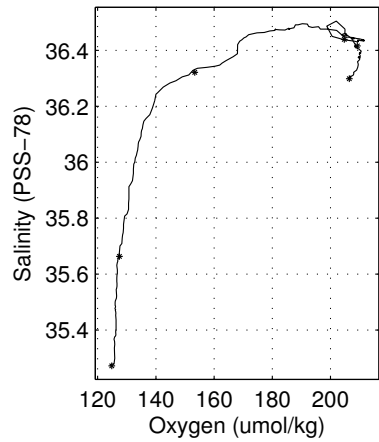
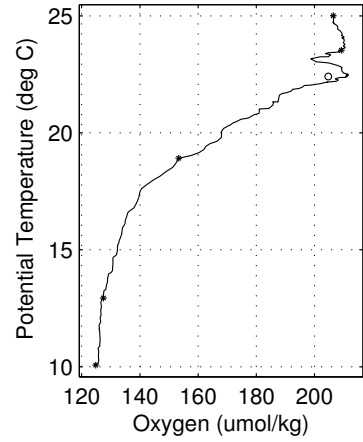
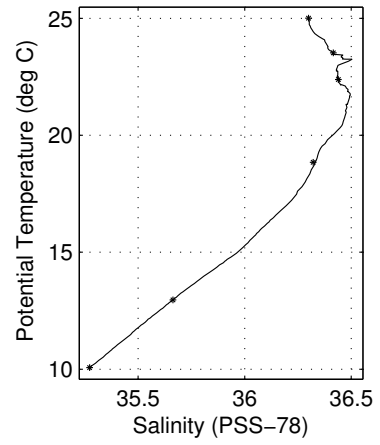
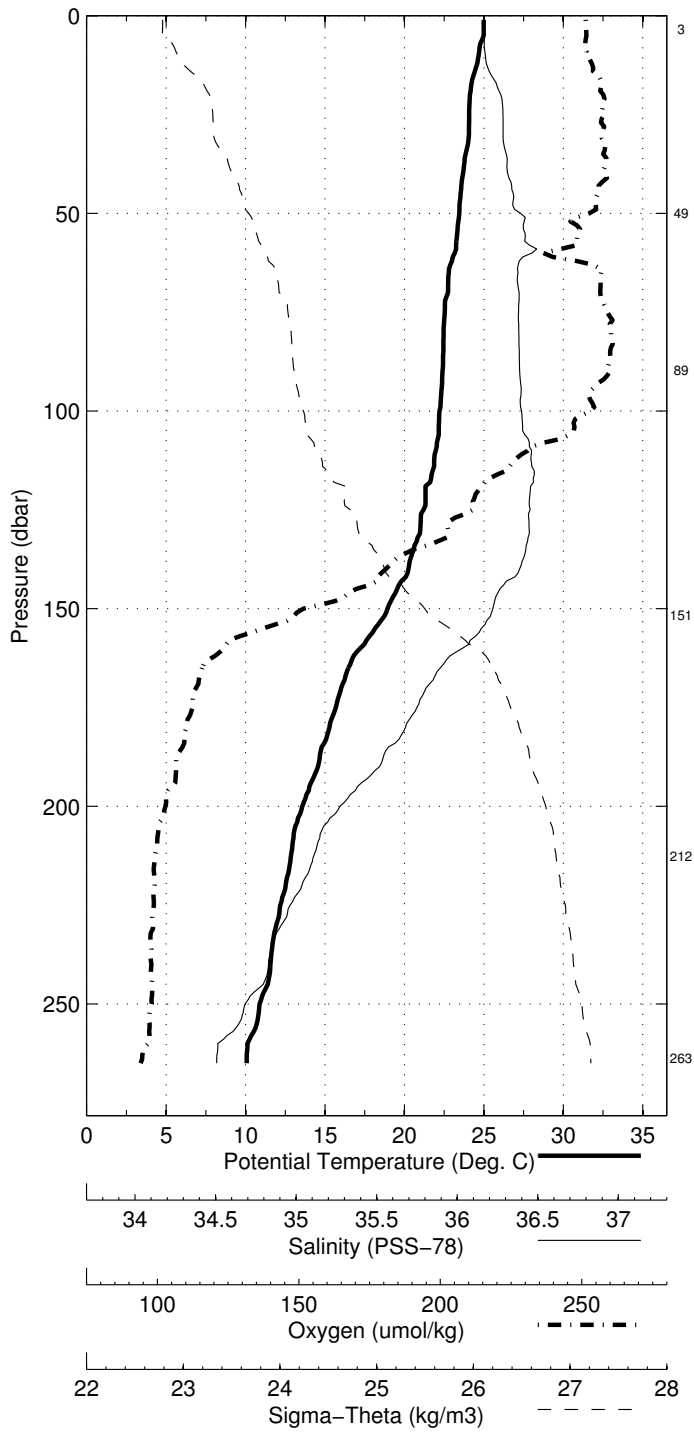


Abaco February 2015 R/V Endeavor
 CTD Station 41 (CTD041)
 Latitude 27.007N Longitude 79.862W
 25-Feb-2015 18:21Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.984	24.984	36.301	206.6	0.004	24.330
10	24.674	24.672	36.307	206.6	0.036	24.429
20	24.127	24.123	36.367	209.9	0.069	24.640
30	24.067	24.061	36.375	209.6	0.102	24.665
50	23.458	23.447	36.443	207.2	0.165	24.898
75	22.551	22.536	36.435	210.6	0.239	25.156
100	22.229	22.209	36.446	207.6	0.309	25.258
125	21.217	21.192	36.480	185.7	0.374	25.568
150	18.966	18.939	36.336	154.3	0.431	26.059
200	13.596	13.568	35.748	128.8	0.506	26.856
250	10.918	10.887	35.383	126.2	0.562	27.094

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
264	1	10.101	10.070	35.272	124.9
213	2	12.991	12.961	35.663	127.5
152	3	18.873	18.846	36.321	153.3
90	4	22.403	22.385	36.440	204.8
50	5	23.536	23.526	36.416	209.2
3	6	25.007	25.007	36.299	206.5

Abaco February 2015 R/V Endeavor
 CTD Station 41 (CTD041)
 Latitude 27.007 N Longitude 79.862 W
 25-Feb-2015 18:21 Z

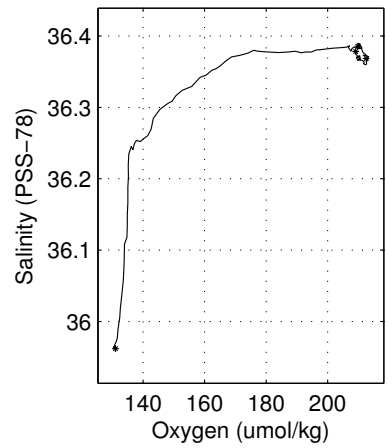
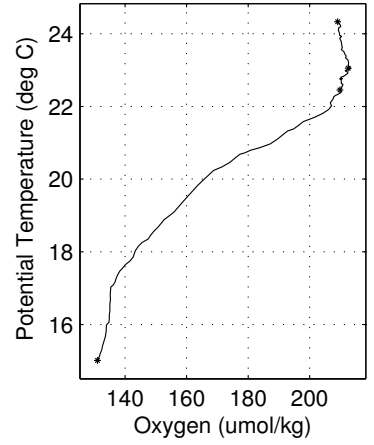
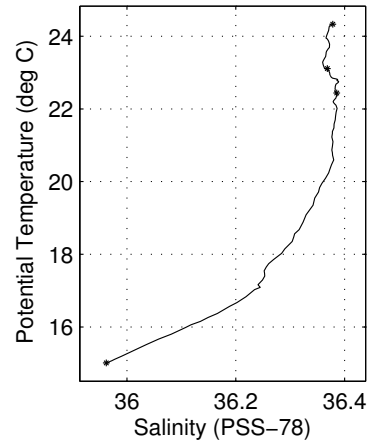
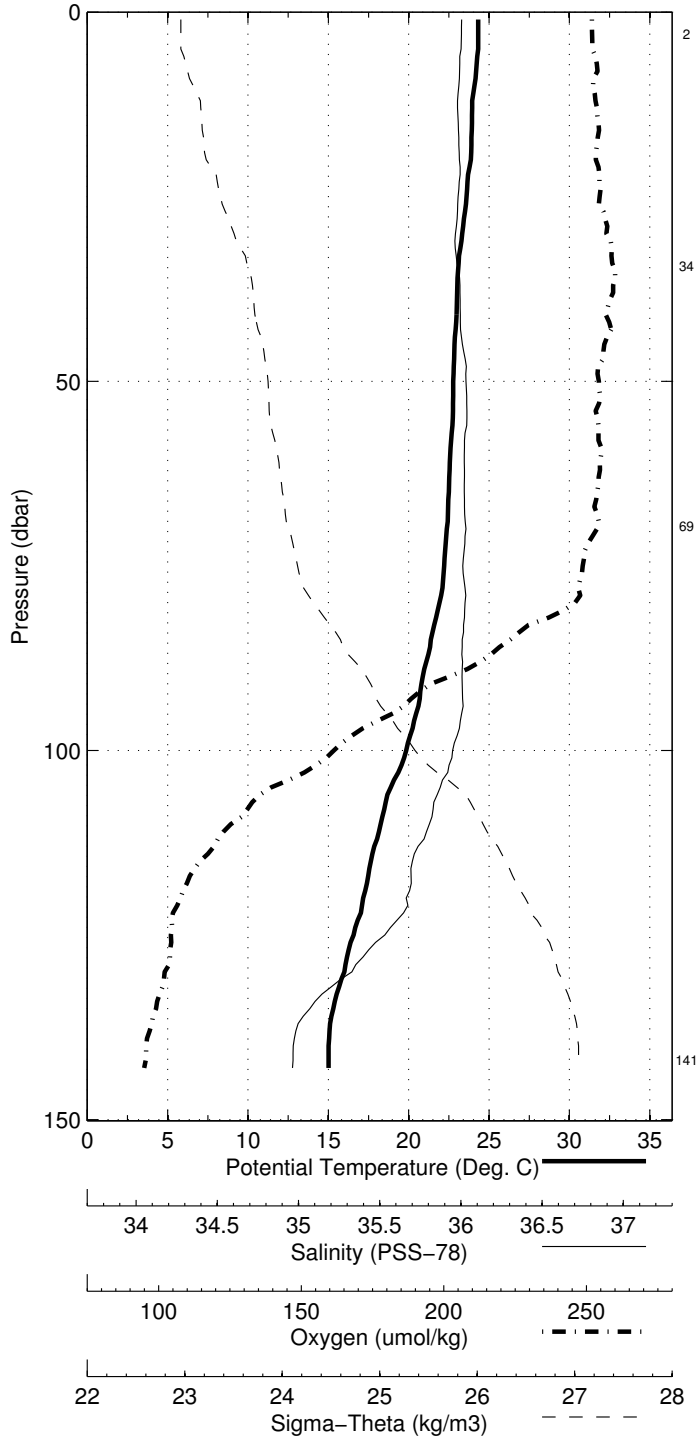


Abaco February 2015 R/V Endeavor
 CTD Station 42 (CTD042)
 Latitude 27.006N Longitude 79.931W
 25-Feb-2015 19:21Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.329	24.328	36.376	209.1	0.003	24.585
10	24.094	24.092	36.369	209.3	0.033	24.651
20	23.866	23.862	36.371	209.9	0.066	24.721
30	23.340	23.333	36.361	211.7	0.097	24.869
50	22.783	22.772	36.387	210.4	0.157	25.051
75	22.217	22.202	36.379	207.5	0.228	25.209
100	19.858	19.839	36.354	163.7	0.291	25.838
125	16.592	16.572	36.189	135.0	0.336	26.529

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
142	1	15.036	15.014	35.962	131.0
70	2	22.450	22.436	36.386	209.9
34	3	23.119	23.112	36.368	212.5
3	4	24.331	24.330	36.378	209.1

Abaco February 2015 R/V Endeavor
 CTD Station 42 (CTD042)
 Latitude 27.006 N Longitude 79.931 W
 25-Feb-2015 19:21 Z

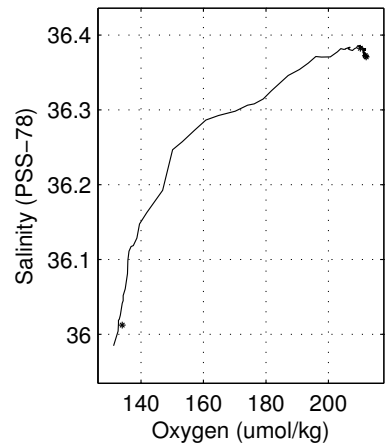
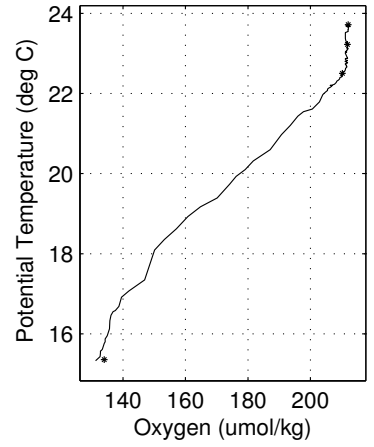
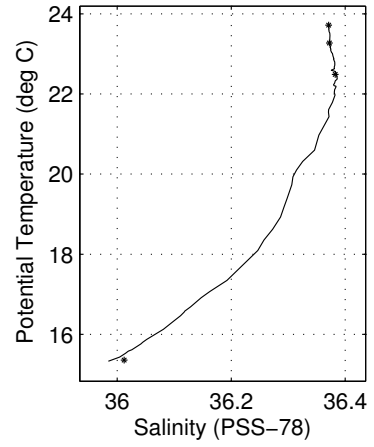
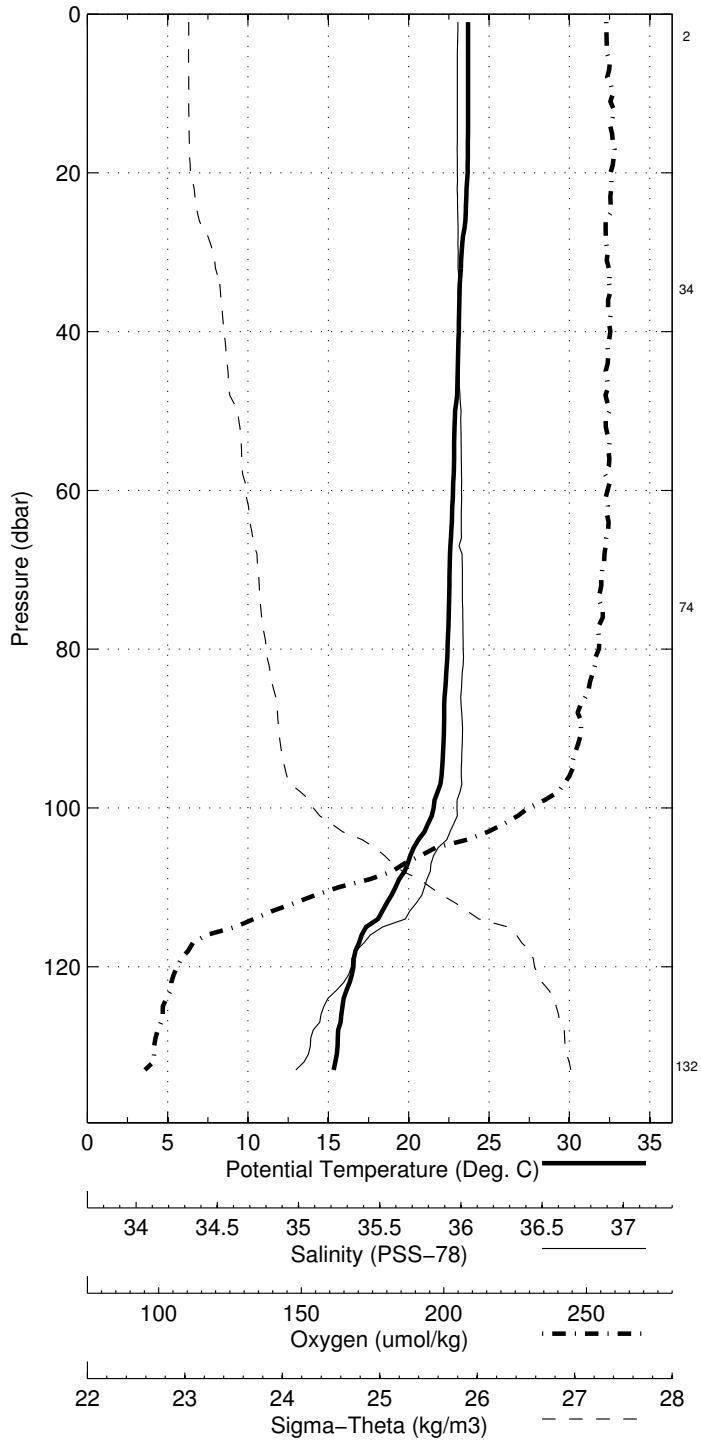


Abaco February 2015 R/V Endeavor
 CTD Station 43 (CTD043)
 Latitude 26.049N Longitude 80.064W
 26-Feb-2015 02:44Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	23.696	23.696	36.373	211.3	0.003	24.772
10	23.693	23.691	36.371	212.5	0.032	24.772
20	23.667	23.663	36.371	212.1	0.063	24.780
30	23.295	23.289	36.373	211.5	0.095	24.892
50	22.889	22.878	36.380	211.9	0.155	25.016
75	22.515	22.499	36.384	210.7	0.228	25.128
100	21.566	21.546	36.371	197.8	0.297	25.387
125	15.893	15.873	36.052	134.3	0.345	26.586

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
133	1	15.375	15.354	36.012	134.0
75	2	22.505	22.490	36.382	210.2
35	3	23.279	23.272	36.372	211.8
3	4	23.719	23.718	36.371	212.1

Abaco February 2015 R/V Endeavor
 CTD Station 43 (CTD043)
 Latitude 26.049 N Longitude 80.064 W
 26-Feb-2015 02:44 Z

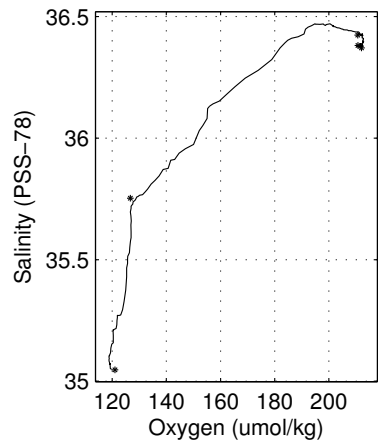
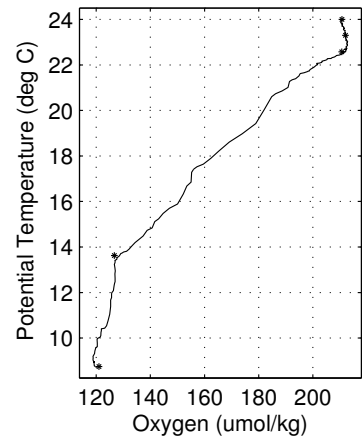
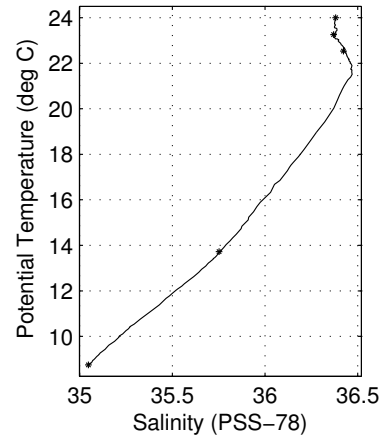
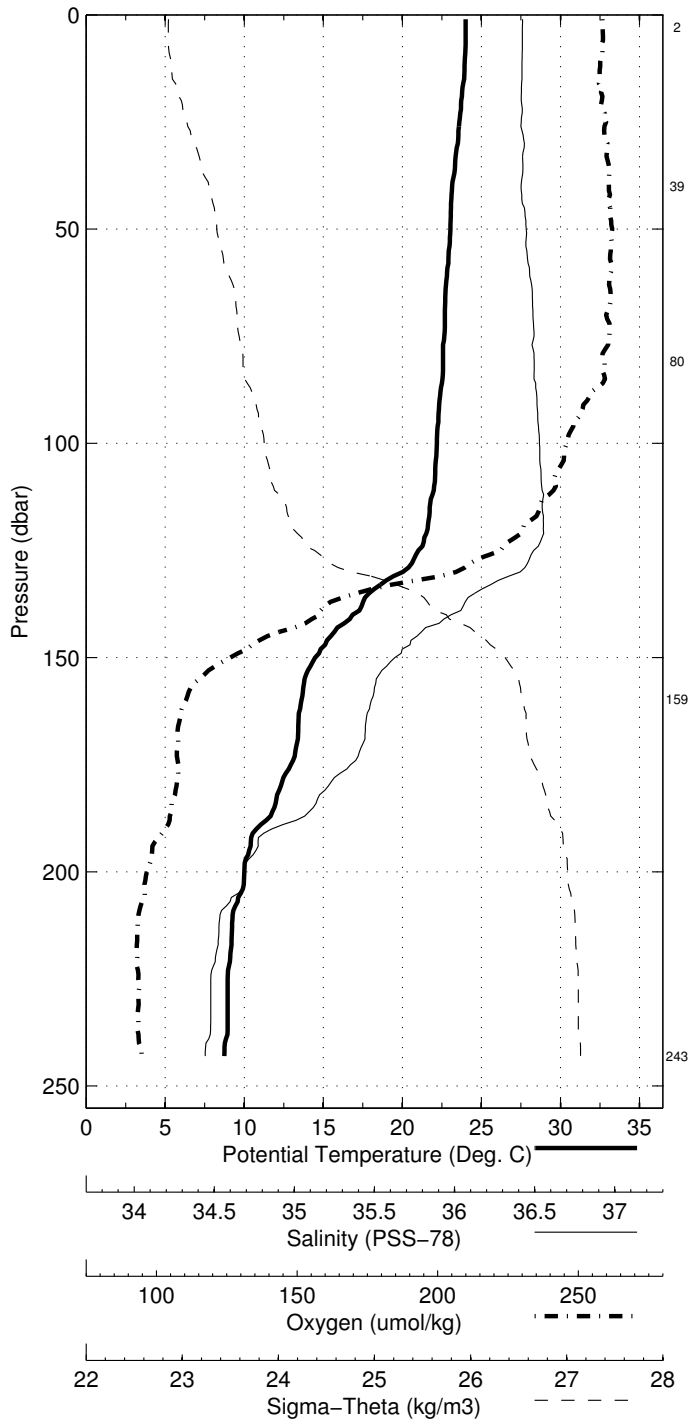


Abaco February 2015 R/V Endeavor
 CTD Station 44 (CTD044)
 Latitude 26.051N Longitude 79.998W
 26-Feb-2015 03:33Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.002	24.002	36.381	210.9	0.003	24.687
10	23.961	23.959	36.379	210.7	0.032	24.698
20	23.729	23.725	36.376	210.8	0.065	24.765
30	23.522	23.516	36.389	211.9	0.096	24.837
50	23.052	23.041	36.396	212.9	0.157	24.981
75	22.670	22.655	36.429	212.3	0.230	25.118
100	22.202	22.182	36.452	203.9	0.300	25.270
125	21.041	21.016	36.428	190.8	0.366	25.577
150	14.501	14.478	35.844	137.3	0.411	26.738
200	10.026	10.003	35.213	120.8	0.468	27.118

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
243	1	8.776	8.750	35.047	121.1
160	2	13.745	13.722	35.752	126.7
81	3	22.554	22.538	36.423	210.7
40	4	23.266	23.258	36.371	212.1
3	5	24.006	24.005	36.381	210.7

Abaco February 2015 R/V Endeavor
 CTD Station 44 (CTD044)
 Latitude 26.051 N Longitude 79.998 W
 26-Feb-2015 03:33 Z

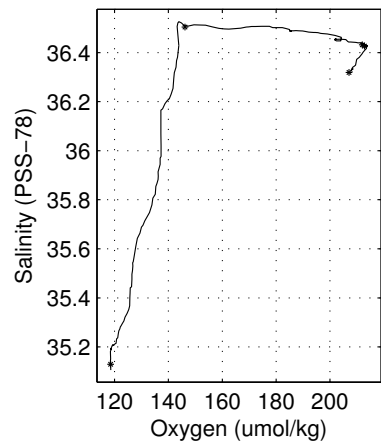
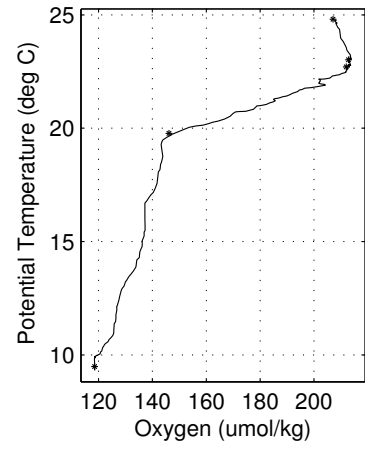
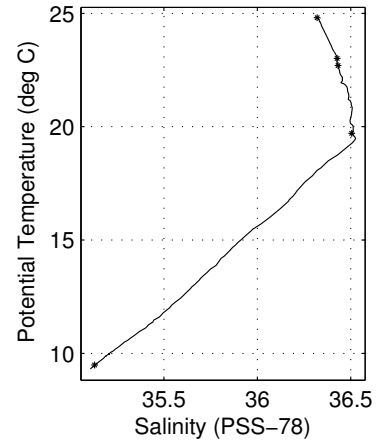
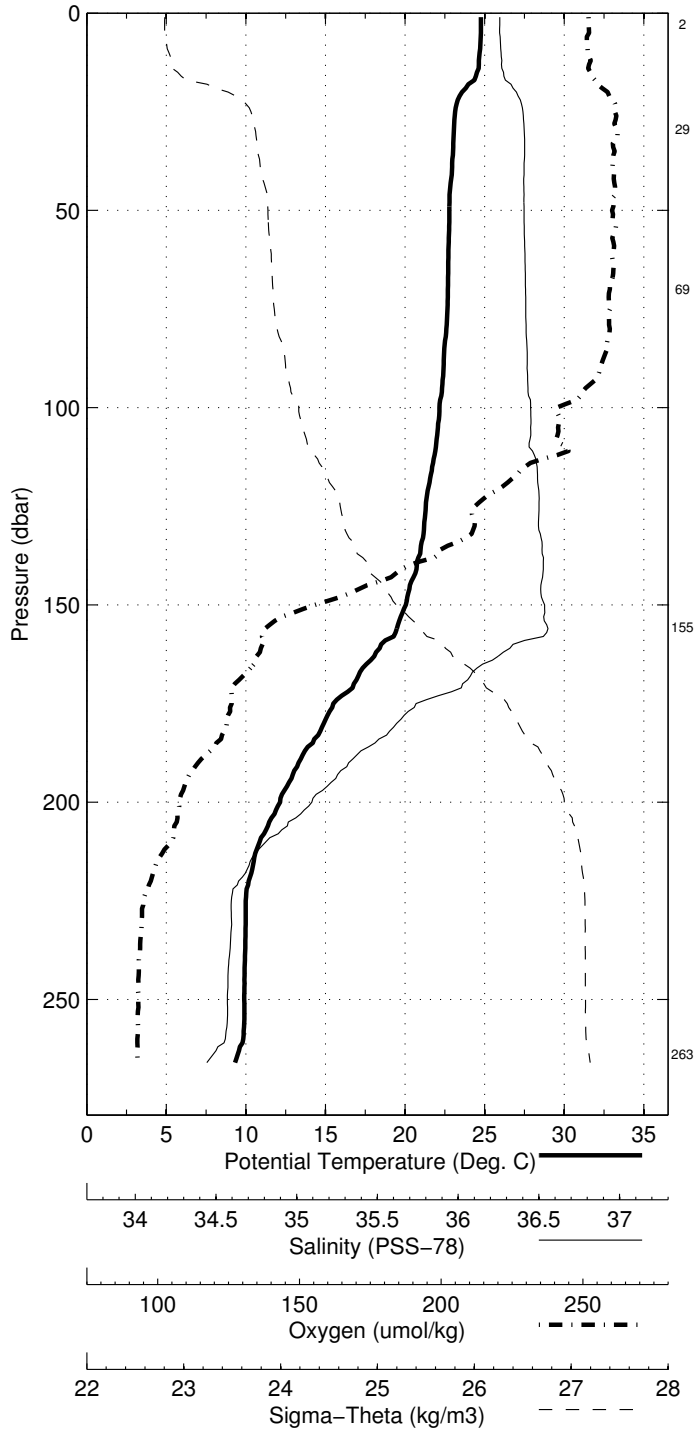


Abaco February 2015 R/V Endeavor
 CTD Station 45 (CTD045)
 Latitude 26.054N Longitude 79.930W
 26-Feb-2015 04:28Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.765	24.764	36.326	208.2	0.004	24.416
10	24.690	24.688	36.331	208.0	0.035	24.443
20	23.582	23.578	36.395	212.0	0.069	24.823
30	23.069	23.063	36.428	214.0	0.099	24.999
50	22.796	22.786	36.427	212.9	0.157	25.078
75	22.678	22.662	36.434	212.5	0.229	25.119
100	22.185	22.165	36.454	201.8	0.299	25.276
125	21.333	21.309	36.489	185.6	0.365	25.543
150	20.073	20.045	36.512	153.8	0.423	25.904
200	12.167	12.141	35.543	126.7	0.500	26.984
250	9.926	9.897	35.191	118.7	0.551	27.119

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
264	1	9.518	9.488	35.129	118.5
156	2	19.738	19.709	36.504	146.1
70	3	22.711	22.696	36.432	212.0
30	4	23.016	23.010	36.427	212.8
3	5	24.811	24.810	36.319	207.1

Abaco February 2015 R/V Endeavor
CTD Station 45 (CTD045)
Latitude 26.054 N Longitude 79.930 W
26-Feb-2015 04:28 Z

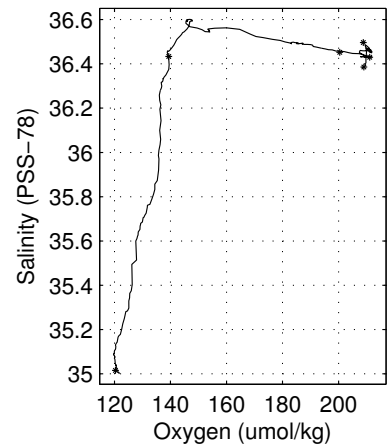
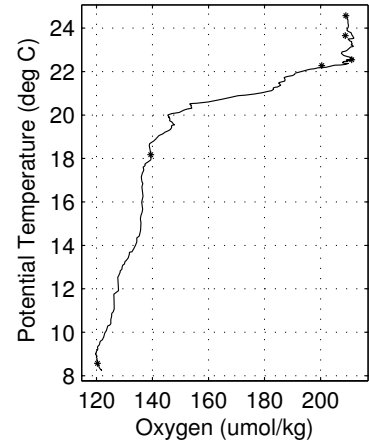
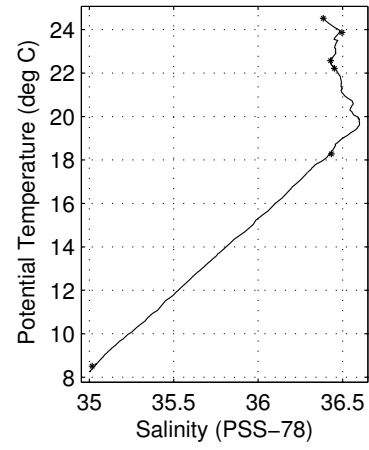
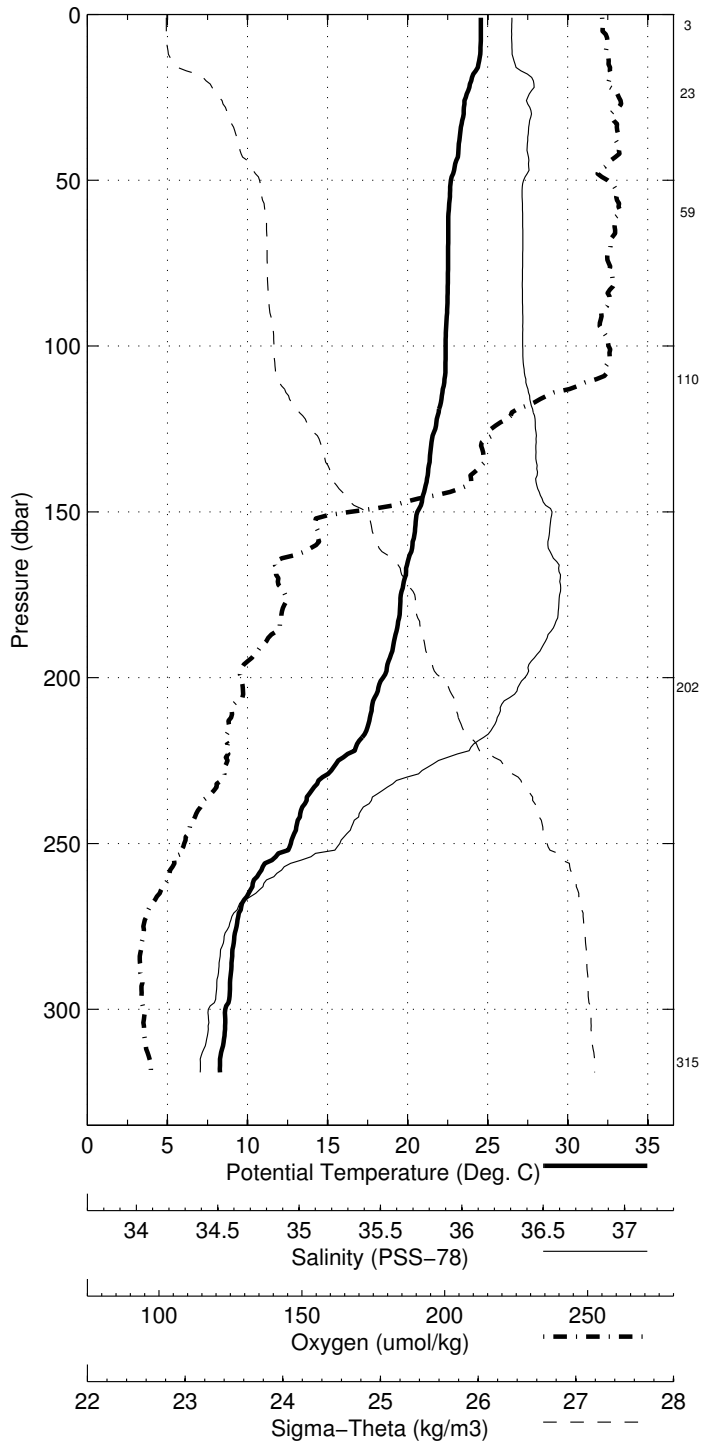


Abaco February 2015 R/V Endeavor
 CTD Station 46 (CTD046)
 Latitude 26.060N Longitude 79.849W
 26-Feb-2015 05:26Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	24.573	24.572	36.385	208.3	0.003	24.518
10	24.554	24.551	36.385	209.1	0.034	24.525
20	23.978	23.974	36.480	209.6	0.067	24.770
30	23.502	23.496	36.471	209.8	0.098	24.905
50	22.711	22.701	36.436	209.3	0.158	25.110
75	22.539	22.524	36.432	209.5	0.228	25.158
100	22.393	22.373	36.433	209.5	0.299	25.201
125	21.744	21.720	36.489	187.0	0.367	25.429
150	20.636	20.607	36.563	159.9	0.428	25.791
200	18.498	18.463	36.443	139.1	0.530	26.261
250	12.735	12.700	35.621	128.2	0.604	26.935
300	8.633	8.601	35.039	120.5	0.653	27.212

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
316	1	8.546	8.512	35.016	120.4
203	2	18.319	18.283	36.433	139.3
110	3	22.235	22.213	36.452	200.4
60	4	22.587	22.575	36.430	211.1
24	5	23.881	23.876	36.496	208.8
3	6	24.523	24.522	36.386	209.0

Abaco February 2015 R/V Endeavor
 CTD Station 46 (CTD046)
 Latitude 26.060 N Longitude 79.849 W
 26-Feb-2015 05:26 Z

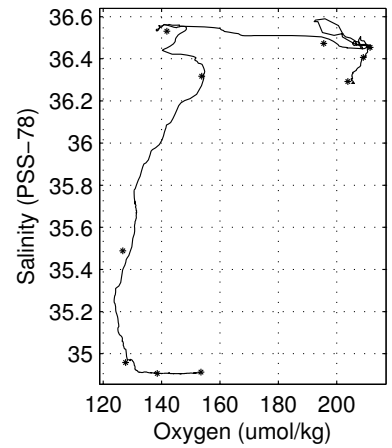
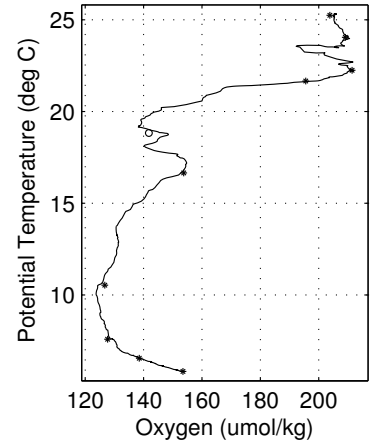
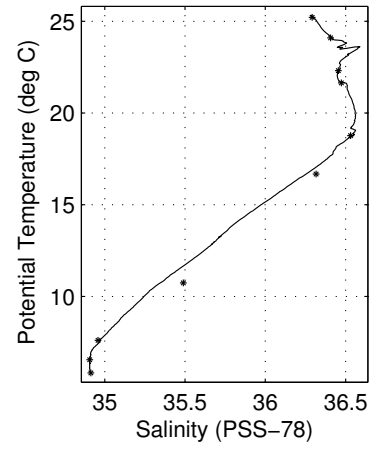
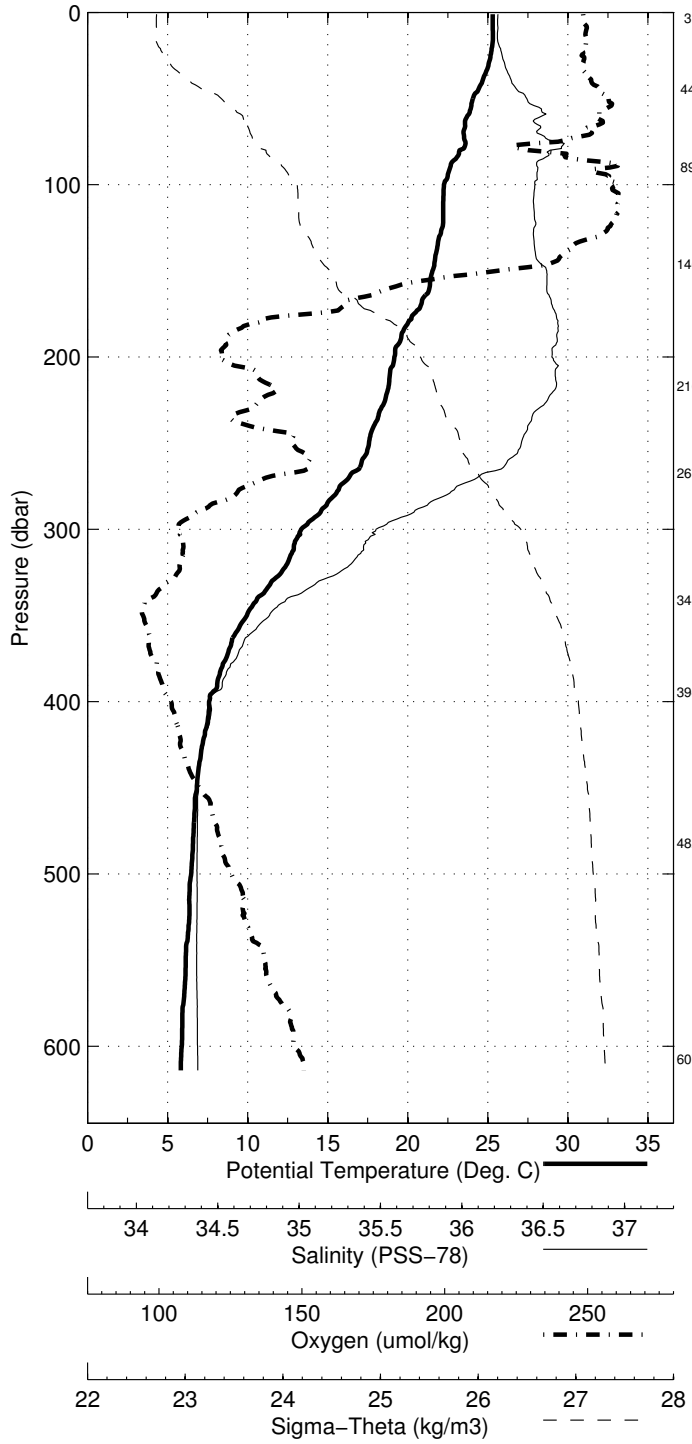


Abaco February 2015 R/V Endeavor
 CTD Station 47 (CTD047)
 Latitude 26.068N Longitude 79.762W
 26-Feb-2015 06:34Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.303	25.303	36.285	205.2	0.004	24.220
10	25.310	25.307	36.285	205.8	0.037	24.218
20	25.277	25.272	36.293	205.6	0.074	24.235
30	25.053	25.046	36.317	205.1	0.110	24.323
50	24.079	24.068	36.418	209.9	0.179	24.695
75	23.614	23.599	36.558	200.6	0.257	24.941
100	22.284	22.264	36.455	211.7	0.329	25.249
125	22.178	22.153	36.451	209.8	0.398	25.277
150	21.573	21.544	36.509	189.2	0.464	25.493
200	19.197	19.161	36.533	138.2	0.576	26.152
250	17.618	17.575	36.393	151.5	0.665	26.444
300	13.380	13.338	35.726	130.8	0.739	26.887
400	7.632	7.592	34.967	129.2	0.841	27.308
500	6.517	6.471	34.907	140.3	0.918	27.417
600	5.945	5.892	34.909	151.9	0.988	27.495

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
608	1	5.885	5.832	34.913	153.5
482	2	6.599	6.554	34.906	138.5
395	3	7.649	7.610	34.958	127.7
341	4	10.782	10.740	35.489	126.7
268	5	16.715	16.671	36.317	153.7
217	6	18.804	18.765	36.531	141.8
146	7	21.673	21.644	36.473	195.5
90	8	22.331	22.312	36.454	211.5
44	9	24.100	24.091	36.407	209.1
3	10	25.213	25.212	36.292	203.8

Abaco February 2015 R/V Endeavor
 CTD Station 47 (CTD047)
 Latitude 26.068 N Longitude 79.762 W
 26-Feb-2015 06:34 Z

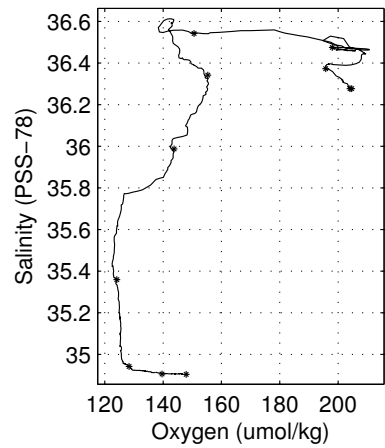
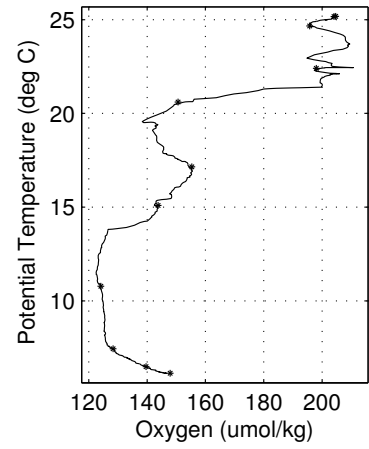
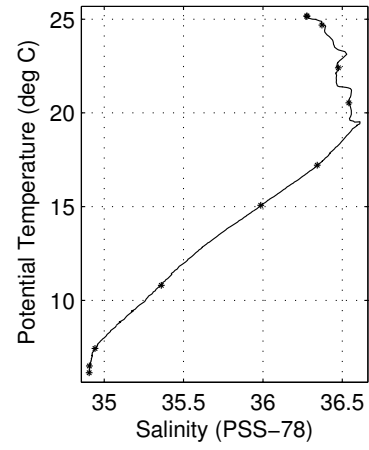
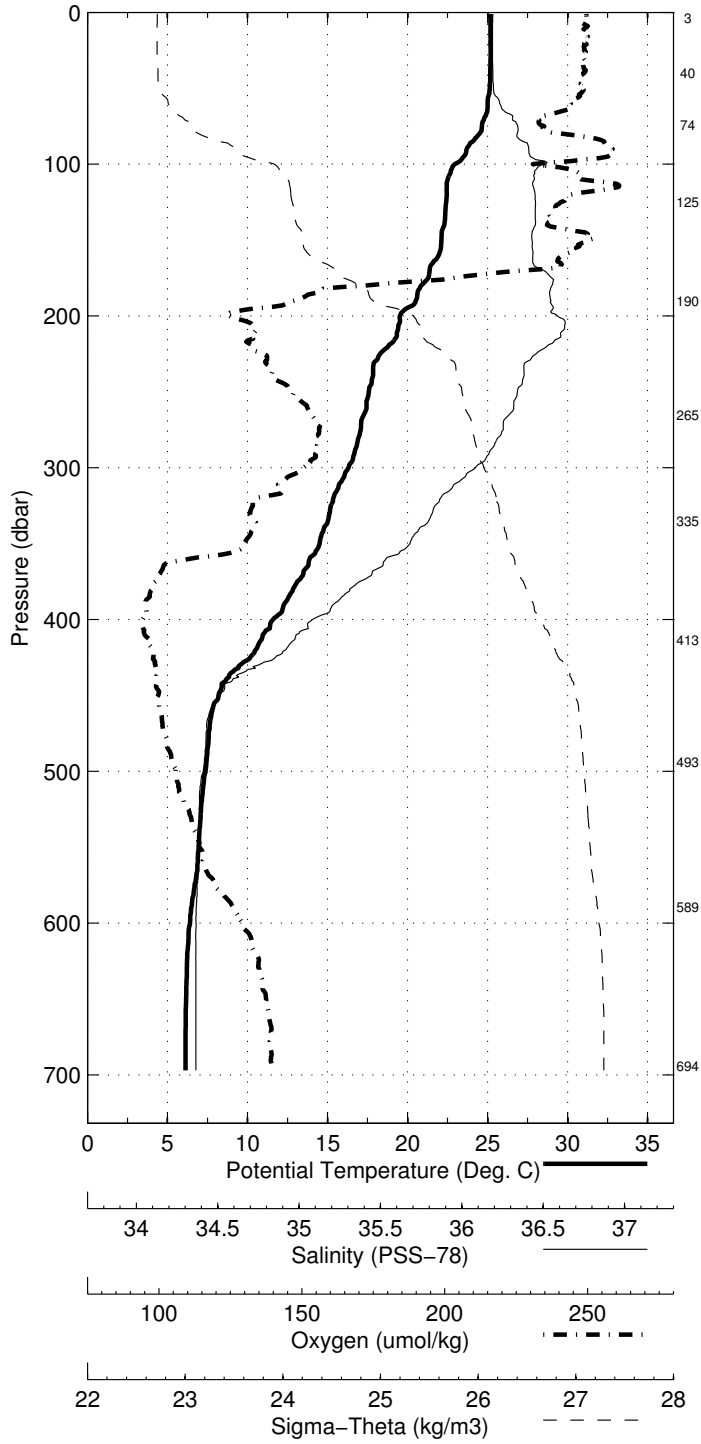


Abaco February 2015 R/V Endeavor
 CTD Station 48 (CTD048)
 Latitude 26.060N Longitude 79.663W
 26-Feb-2015 08:28Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.184	25.183	36.279	204.6	0.004	24.252
10	25.187	25.185	36.277	204.6	0.037	24.250
20	25.189	25.184	36.277	204.3	0.073	24.250
30	25.192	25.185	36.277	204.2	0.110	24.250
50	25.145	25.134	36.281	203.9	0.184	24.269
75	24.661	24.645	36.394	196.9	0.273	24.503
100	22.964	22.943	36.507	194.8	0.353	25.094
125	22.436	22.411	36.475	199.9	0.424	25.223
150	22.145	22.114	36.460	205.0	0.493	25.295
200	19.550	19.513	36.577	138.8	0.614	26.094
250	17.619	17.576	36.392	150.4	0.705	26.443
300	16.351	16.302	36.198	152.4	0.785	26.599
400	11.650	11.599	35.446	122.7	0.921	27.012
500	7.428	7.378	34.941	128.7	1.014	27.319
600	6.460	6.405	34.907	140.9	1.093	27.427

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
694	1	6.197	6.134	34.904	147.9
590	2	6.551	6.496	34.905	139.6
494	3	7.486	7.437	34.942	128.3
413	4	10.849	10.798	35.359	124.1
335	5	15.125	15.073	35.987	143.8
265	6	17.254	17.210	36.342	155.3
190	7	20.570	20.533	36.542	150.6
125	8	22.434	22.409	36.475	198.0
74	9	24.706	24.690	36.373	195.8
40	10	25.161	25.152	36.277	204.1
4	11	25.175	25.175	36.277	204.7

Abaco February 2015 R/V Endeavor
 CTD Station 48 (CTD048)
 Latitude 26.060 N Longitude 79.663 W
 26-Feb-2015 08:28 Z

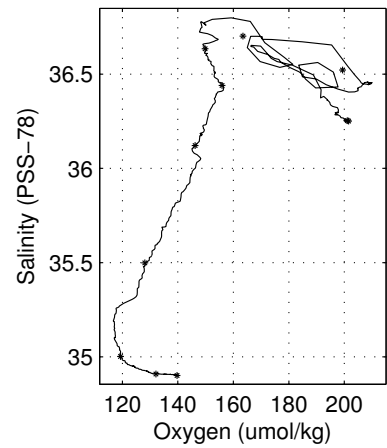
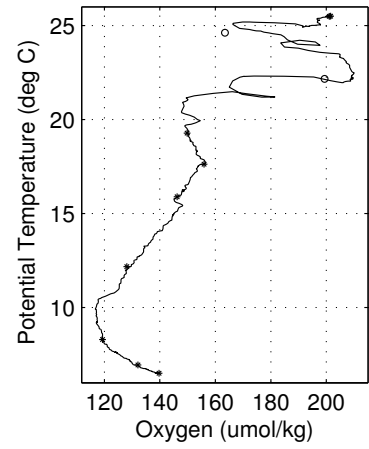
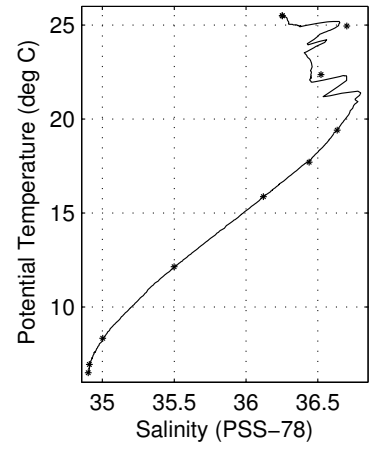
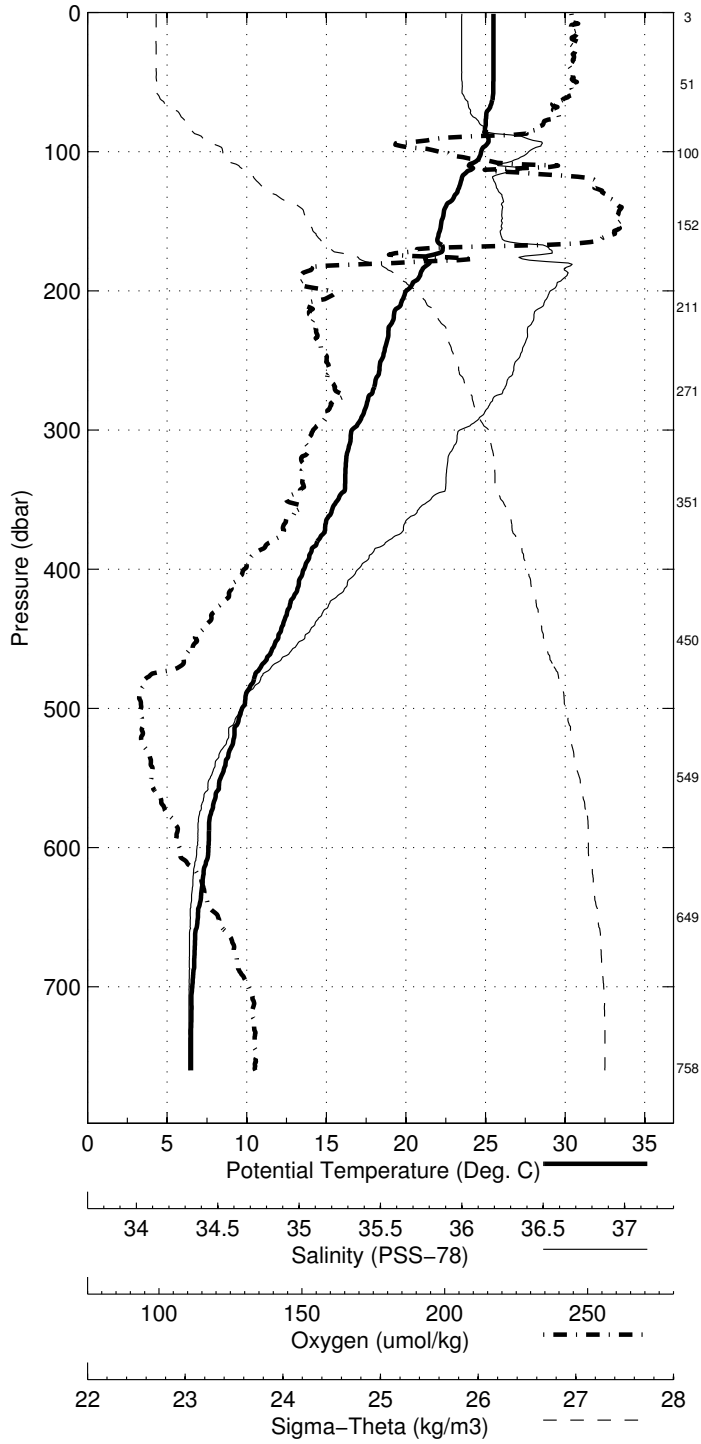


Abaco February 2015 R/V Endeavor
 CTD Station 49 (CTD049)
 Latitude 26.055N Longitude 79.560W
 26-Feb-2015 09:56Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.499	25.499	36.254	200.3	0.004	24.136
10	25.500	25.497	36.253	200.3	0.038	24.135
20	25.503	25.499	36.253	200.9	0.076	24.135
30	25.505	25.498	36.253	200.6	0.113	24.135
50	25.495	25.484	36.256	201.4	0.189	24.142
75	25.057	25.041	36.310	197.9	0.283	24.319
100	24.748	24.726	36.584	174.7	0.370	24.623
125	23.386	23.360	36.424	204.9	0.451	24.909
150	22.262	22.232	36.449	209.7	0.523	25.254
200	20.041	20.003	36.691	153.6	0.646	26.052
250	18.486	18.442	36.525	153.0	0.740	26.330
300	16.653	16.603	36.243	150.4	0.824	26.564
400	13.650	13.593	35.742	137.0	0.971	26.846
500	9.762	9.704	35.161	117.1	1.090	27.128
600	7.653	7.592	34.946	124.5	1.185	27.292
700	6.643	6.577	34.906	137.8	1.267	27.403

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
758	1	6.576	6.505	34.901	139.7
650	2	7.012	6.949	34.909	132.1
549	3	8.401	8.343	35.002	119.3
451	4	12.207	12.147	35.499	128.1
351	5	15.930	15.874	36.121	146.2
272	6	17.751	17.705	36.440	155.9
212	7	19.452	19.413	36.635	149.8
153	8	22.401	22.370	36.522	199.4
101	9	24.980	24.958	36.702	163.4
52	10	25.501	25.489	36.254	201.1
4	11	25.502	25.501	36.251	201.6

Abaco February 2015 R/V Endeavor
 CTD Station 49 (CTD049)
 Latitude 26.055 N Longitude 79.560 W
 26-Feb-2015 09:56 Z

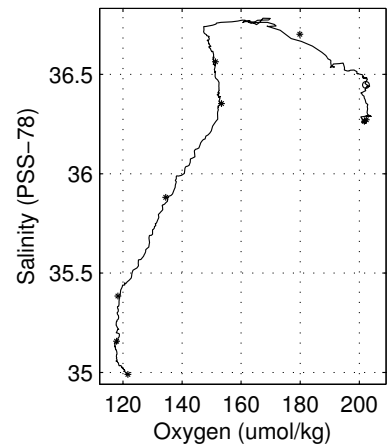
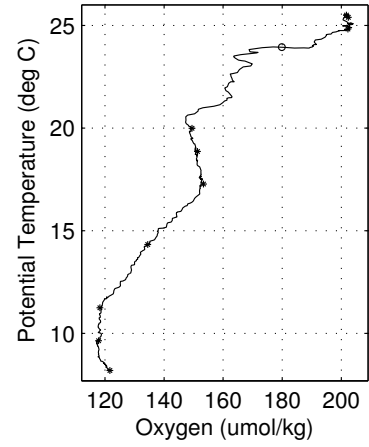
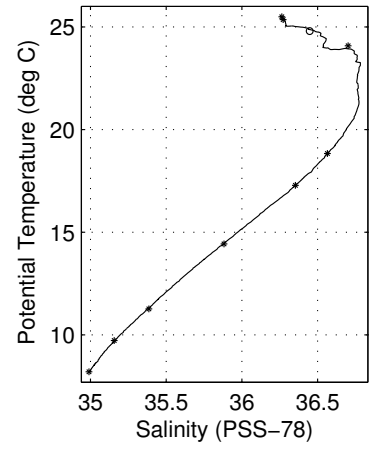
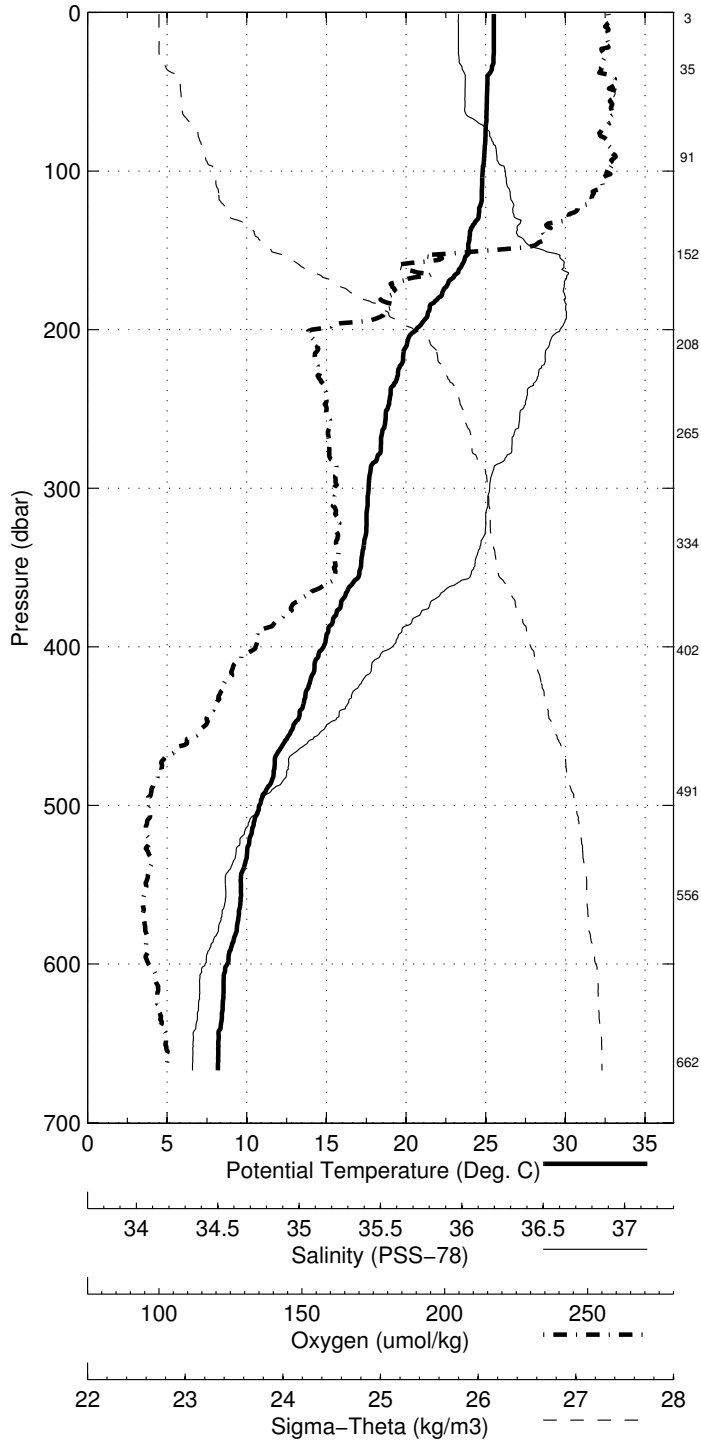


Abaco February 2015 R/V Endeavor
 CTD Station 50 (CTD050)
 Latitude 26.055N Longitude 79.475W
 26-Feb-2015 11:26Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.508	25.508	36.259	202.2	0.004	24.137
10	25.509	25.507	36.258	202.1	0.038	24.136
20	25.510	25.505	36.258	201.4	0.076	24.137
30	25.494	25.488	36.262	201.2	0.113	24.145
50	25.100	25.089	36.289	204.0	0.187	24.289
75	25.005	24.988	36.405	200.8	0.278	24.407
100	24.832	24.811	36.480	201.3	0.365	24.518
125	24.610	24.583	36.518	196.4	0.451	24.616
150	23.969	23.937	36.666	180.4	0.531	24.922
200	20.673	20.635	36.742	148.0	0.661	25.920
250	18.880	18.835	36.565	150.7	0.759	26.261
300	17.698	17.646	36.407	152.1	0.847	26.438
400	14.878	14.817	35.943	137.7	1.007	26.740
500	10.842	10.780	35.307	118.4	1.135	27.055
600	8.841	8.775	35.051	118.2	1.240	27.194

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
662	1	8.268	8.198	34.990	121.7
556	2	9.784	9.719	35.157	117.8
491	3	11.322	11.259	35.385	118.3
402	4	14.493	14.433	35.882	134.5
335	5	17.337	17.280	36.353	153.3
265	6	18.887	18.839	36.564	151.3
209	7	20.067	20.251	-999.000	<i>NaN</i>
153	8	24.119	24.087	36.702	179.9
91	9	24.821	24.802	36.447	202.2
36	10	25.373	25.365	36.272	202.4
4	11	25.502	25.501	36.264	201.7

Abaco February 2015 R/V Endeavor
 CTD Station 50 (CTD050)
 Latitude 26.055 N Longitude 79.475 W
 26-Feb-2015 11:26 Z

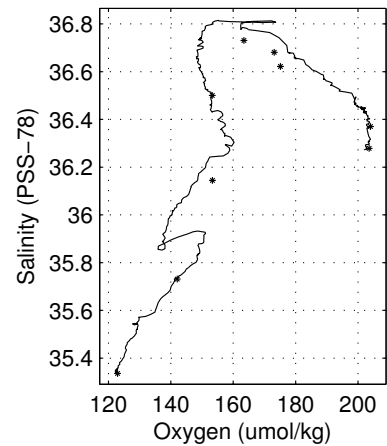
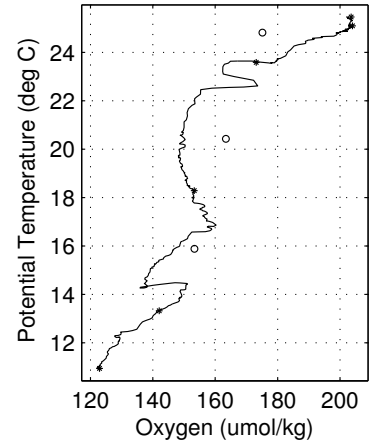
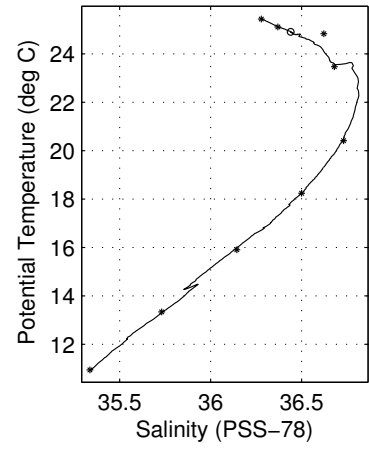
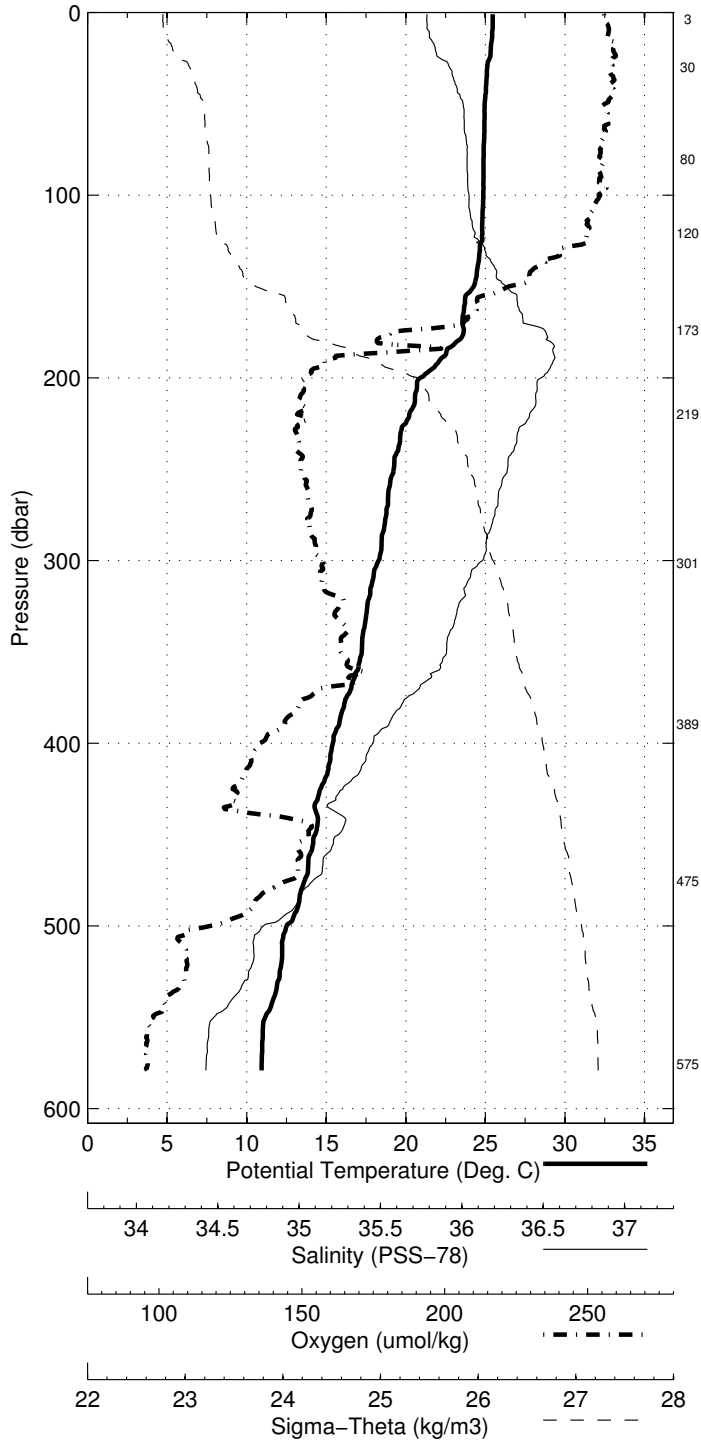


Abaco February 2015 R/V Endeavor
 CTD Station 51 (CTD051)
 Latitude 26.049N Longitude 79.392W
 26-Feb-2015 12:48Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.464	25.464	36.274	201.9	0.004	24.162
10	25.441	25.439	36.282	202.7	0.037	24.176
20	25.346	25.341	36.309	203.5	0.075	24.226
30	25.129	25.122	36.370	203.2	0.111	24.339
50	24.966	24.956	36.427	202.0	0.182	24.434
75	24.904	24.888	36.444	201.2	0.270	24.467
100	24.890	24.869	36.452	201.2	0.357	24.479
125	24.840	24.813	36.494	199.3	0.444	24.528
150	24.299	24.267	36.607	185.3	0.527	24.779
200	20.942	20.904	36.755	150.0	0.667	25.857
250	19.285	19.239	36.614	149.3	0.769	26.193
300	18.346	18.293	36.509	153.0	0.861	26.355
400	15.480	15.417	36.044	142.1	1.024	26.684
500	12.581	12.513	35.583	133.5	1.161	26.942

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
576	1	11.019	10.947	35.337	122.9
476	2	13.411	13.343	35.731	142.0
389	3	15.968	15.906	36.144	153.3
301	4	18.297	18.244	36.500	153.3
220	5	20.453	20.411	36.731	163.4
174	6	23.507	23.471	36.681	173.1
121	7	24.857	24.831	36.622	175.1
80	8	24.928	24.910	36.440	48.5
30	9	25.118	25.111	36.370	204.0
4	10	25.440	25.440	36.279	203.6

Abaco February 2015 R/V Endeavor
CTD Station 51 (CTD051)
Latitude 26.049 N Longitude 79.392 W
26-Feb-2015 12:48 Z

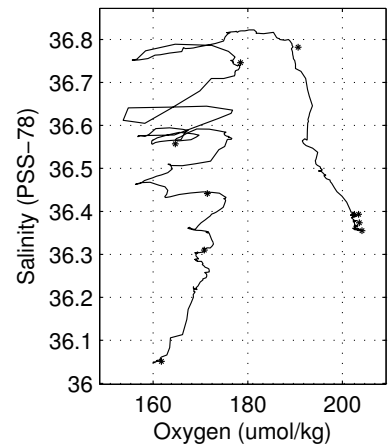
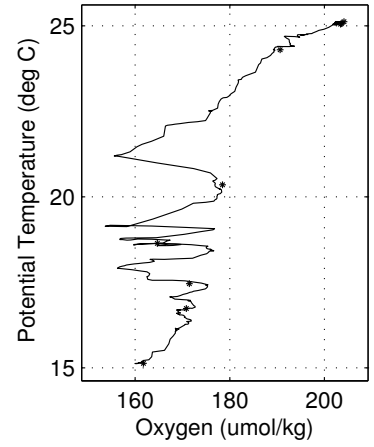
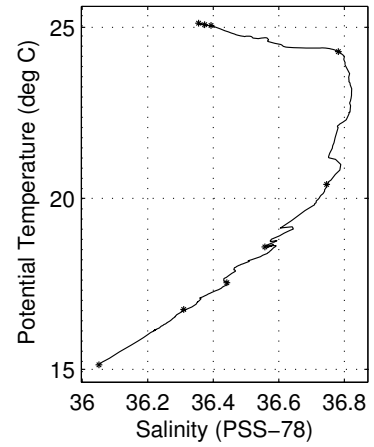
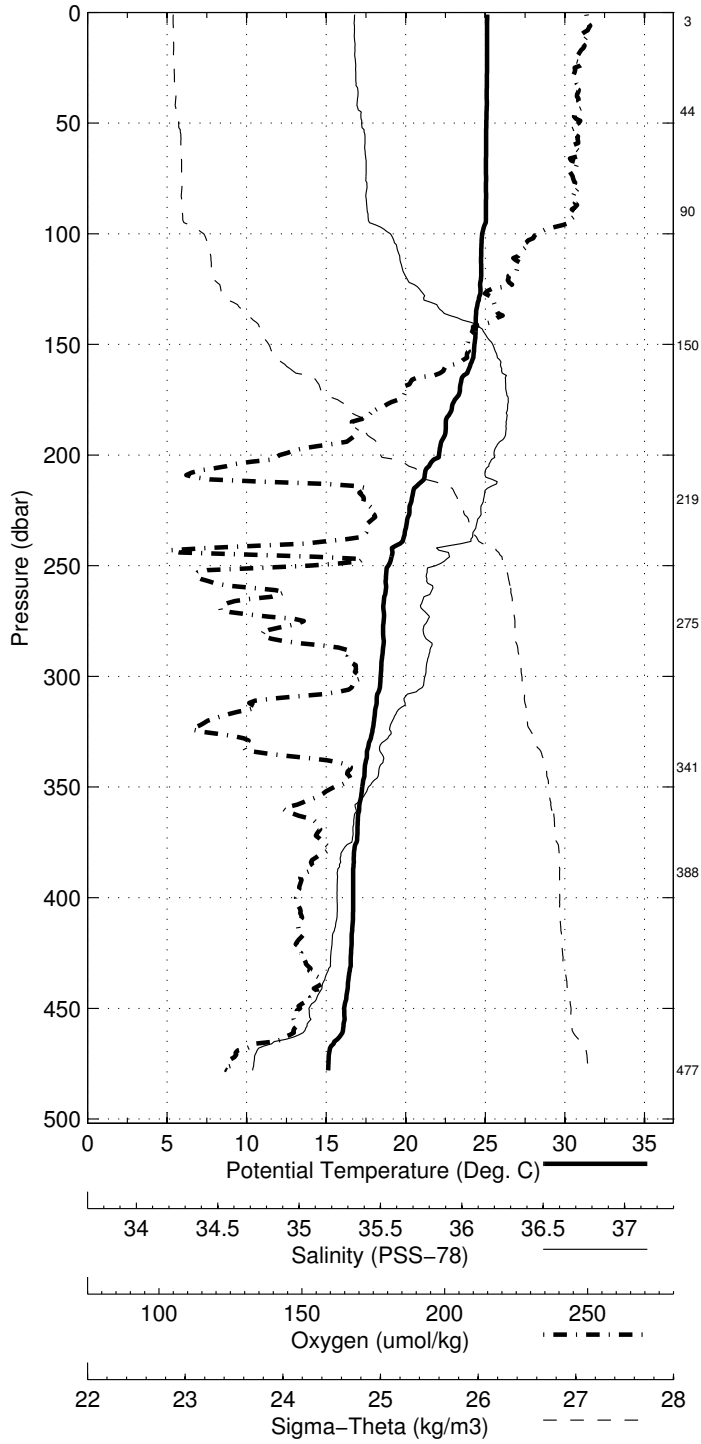


Abaco February 2015 R/V Endeavor
 CTD Station 52 (CTD052)
 Latitude 26.049N Longitude 79.308W
 26-Feb-2015 14:03Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.117	25.117	36.357	203.7	0.004	24.331
10	25.117	25.115	36.356	203.1	0.036	24.331
20	25.116	25.112	36.357	202.6	0.072	24.333
30	25.111	25.104	36.361	202.5	0.108	24.338
50	25.078	25.067	36.378	202.8	0.179	24.363
75	25.063	25.046	36.391	202.1	0.269	24.379
100	24.824	24.802	36.465	197.7	0.358	24.510
125	24.723	24.696	36.553	192.3	0.443	24.608
150	24.354	24.322	36.775	189.3	0.524	24.889
200	22.135	22.095	36.779	166.8	0.663	25.543
250	18.952	18.907	36.602	170.4	0.768	26.270
300	18.479	18.426	36.570	176.6	0.857	26.368
400	16.758	16.691	36.304	168.8	1.022	26.589

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
478	1	15.203	15.129	36.051	161.7
389	2	16.818	16.753	36.310	170.8
341	3	17.589	17.531	36.441	171.5
276	4	18.626	18.577	36.557	164.7
220	5	20.450	20.408	36.746	178.4
150	6	24.323	24.291	36.782	190.6
90	7	25.079	25.059	36.393	203.4
45	8	25.087	25.077	36.374	203.6
4	9	25.123	25.122	36.355	204.1

Abaco February 2015 R/V Endeavor
 CTD Station 52 (CTD052)
 Latitude 26.049 N Longitude 79.308 W
 26-Feb-2015 14:03 Z

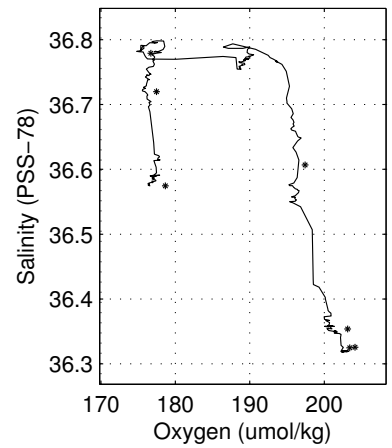
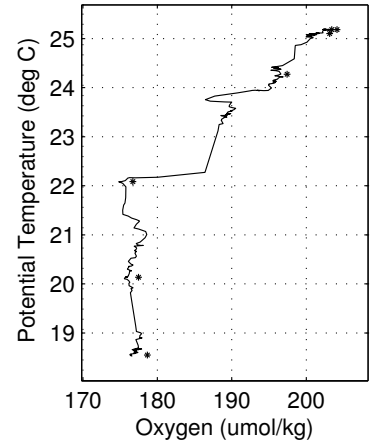
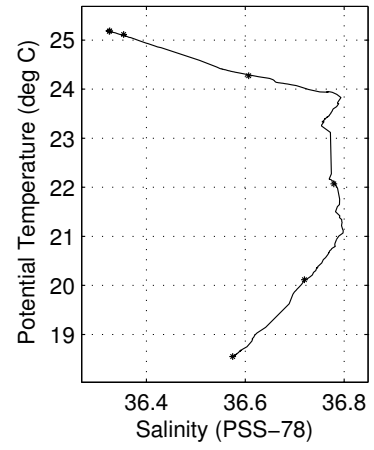
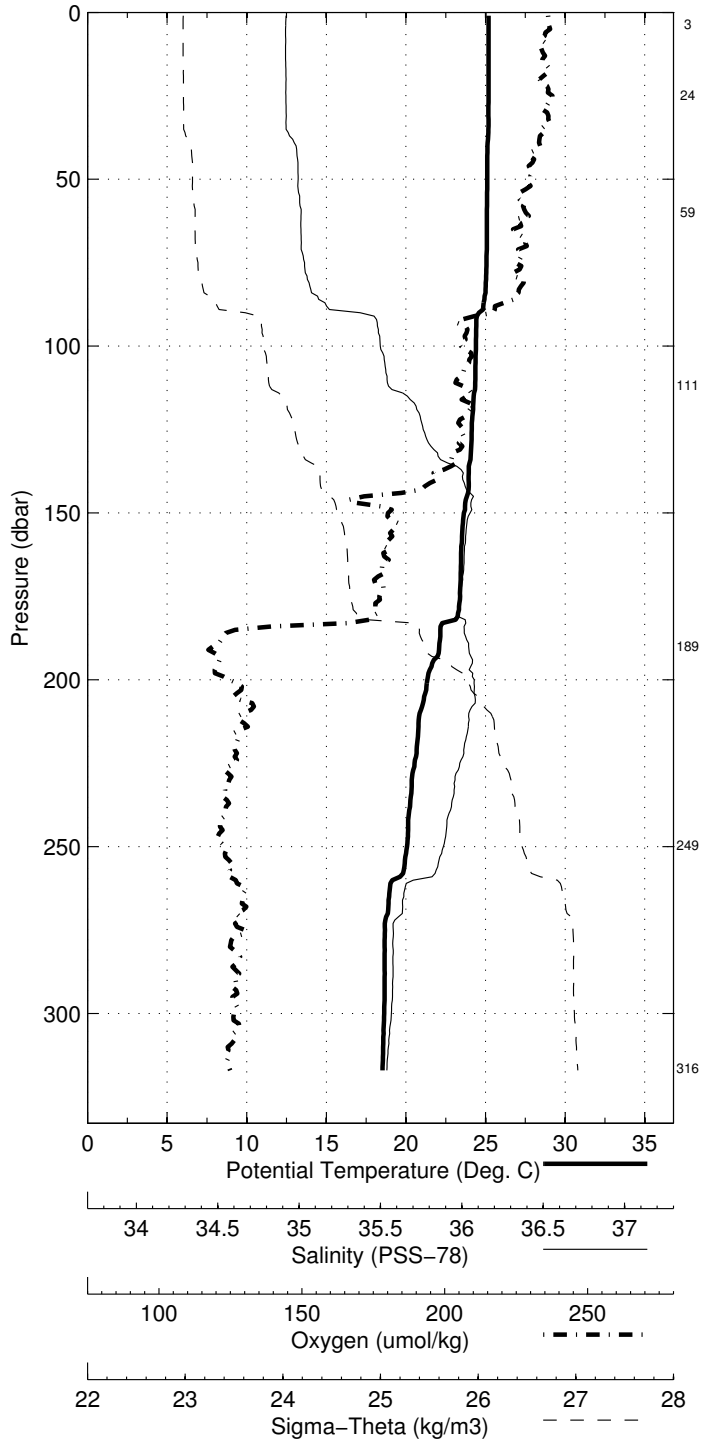


Abaco February 2015 R/V Endeavor
 CTD Station 53 (CTD053)
 Latitude 26.048N Longitude 79.232W
 26-Feb-2015 15:15Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$	DynHt $\text{m}^2\cdot\text{s}^{-2}$	SigT $\text{kg}\cdot\text{m}^{-3}$
1	25.189	25.189	36.320	202.9	0.004	24.281
10	25.190	25.188	36.319	202.3	0.036	24.281
20	25.188	25.184	36.320	202.2	0.073	24.283
30	25.189	25.183	36.320	202.9	0.109	24.283
50	25.115	25.104	36.351	201.5	0.182	24.330
75	25.069	25.053	36.367	200.2	0.272	24.359
100	24.420	24.399	36.558	195.7	0.358	24.702
125	24.159	24.132	36.666	196.0	0.438	24.864
150	23.676	23.645	36.785	189.7	0.514	25.099
200	21.382	21.343	36.795	176.6	0.650	25.767
250	20.113	20.066	36.717	176.1	0.757	26.055
300	18.686	18.633	36.586	176.9	0.850	26.328

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu\text{mol}\cdot\text{kg}^{-1}$
316	1	18.608	18.552	36.574	178.7
249	2	20.164	20.117	36.720	177.5
190	3	22.110	22.072	36.779	176.7
112	4	24.298	24.274	36.607	197.4
60	5	25.129	25.116	36.354	203.2
25	6	25.186	25.181	36.325	203.4
3	7	25.187	25.186	36.325	204.1

Abaco February 2015 R/V Endeavor
 CTD Station 53 (CTD053)
 Latitude 26.048 N Longitude 79.232 W
 26-Feb-2015 15:15 Z



B WOCE Summary File

WBTSEN	AB1502	42	1	ROS	02/25/2015	19:35	EN	27.010N	79.929W	GPS	132	10	129	133	4	1,2
WBTSEN	AB1502	43	1	ROS	02/26/2015	02:44	BE	26.050N	80.065W	GPS						
WBTSEN	AB1502	43	1	ROS	02/26/2015	02:50	BO	26.049N	80.064W	GPS						
WBTSEN	AB1502	43	1	ROS	02/26/2015	02:59	EN	26.049N	80.064W	GPS						
WBTSEN	AB1502	44	1	ROS	02/26/2015	03:33	BE	26.050N	79.999W	GPS						
WBTSEN	AB1502	44	1	ROS	02/26/2015	03:41	BO	26.051N	79.998W	GPS	241	10	240	243	5	1,2
WBTSEN	AB1502	44	1	ROS	02/26/2015	03:53	EN	26.053N	79.996W	GPS						
WBTSEN	AB1502	45	1	ROS	02/26/2015	04:28	BE	26.052N	79.932W	GPS						
WBTSEN	AB1502	45	1	ROS	02/26/2015	04:36	BO	26.055N	79.930W	GPS	262	12	269	266	5	1,2
WBTSEN	AB1502	45	1	ROS	02/26/2015	04:48	EN	26.061N	79.927W	GPS						
WBTSEN	AB1502	46	1	ROS	02/26/2015	05:27	BE	26.057N	79.850W	GPS						
WBTSEN	AB1502	46	1	ROS	02/26/2015	05:37	BO	26.063N	79.848W	GPS	314	14	323	319	6	1,2
WBTSEN	AB1502	46	1	ROS	02/26/2015	05:50	EN	26.071N	79.846W	GPS						
WBTSEN	AB1502	47	1	ROS	02/26/2015	06:34	BE	26.058N	79.766W	GPS						
WBTSEN	AB1502	47	1	ROS	02/26/2015	06:56	BO	26.080N	79.757W	GPS	603	19	947	614	10	1,2
WBTSEN	AB1502	47	1	ROS	02/26/2015	07:24	EN	26.105N	79.750W	GPS						
WBTSEN	AB1502	48	1	ROS	02/26/2015	08:28	BE	26.055N	79.666W	GPS						
WBTSEN	AB1502	48	1	ROS	02/26/2015	08:44	BO	26.064N	79.662W	GPS	689	13	711	697	11	1,2
WBTSEN	AB1502	48	1	ROS	02/26/2015	09:08	EN	26.076N	79.657W	GPS						
WBTSEN	AB1502	49	1	ROS	02/26/2015	09:57	BE	26.053N	79.564W	GPS						
WBTSEN	AB1502	49	1	ROS	02/26/2015	10:15	BO	26.057N	79.557W	GPS	752	12	796	760	11	1,2
WBTSEN	AB1502	49	1	ROS	02/26/2015	10:42	EN	26.063N	79.548W	GPS						
WBTSEN	AB1502	50	1	ROS	02/26/2015	11:26	BE	26.050N	79.480W	GPS						
WBTSEN	AB1502	50	1	ROS	02/26/2015	11:42	BO	26.058N	79.472W	GPS	657	15	740	667	11	1,2
WBTSEN	AB1502	50	1	ROS	02/26/2015	12:07	EN	26.070N	79.460W	GPS						
WBTSEN	AB1502	51	1	ROS	02/26/2015	12:48	BE	26.049N	79.397W	GPS						
WBTSEN	AB1502	51	1	ROS	02/26/2015	13:04	BO	26.048N	79.389W	GPS	571	14	692	579	10	1,2
WBTSEN	AB1502	51	1	ROS	02/26/2015	13:28	EN	26.049N	79.382W	GPS						
WBTSEN	AB1502	52	1	ROS	02/26/2015	14:03	BE	26.049N	79.309W	GPS						
WBTSEN	AB1502	52	1	ROS	02/26/2015	14:17	BO	26.049N	79.307W	GPS	474	8	478	478	9	1,2
WBTSEN	AB1502	52	1	ROS	02/26/2015	14:35	EN	26.051N	79.302W	GPS						
WBTSEN	AB1502	53	1	ROS	02/26/2015	15:15	BE	26.049N	79.233W	GPS						
WBTSEN	AB1502	53	1	ROS	02/26/2015	15:24	BO	26.047N	79.232W	GPS	314	9	313	317	7	1,2
WBTSEN	AB1502	53	1	ROS	02/26/2015	15:39	EN	26.046N	79.230W	GPS						

Note:Parameter 1 - salinity sampled, Parameter 2 - oxygen sampled

C WOCE Bottle Summary File

Table with 32 columns and 14 rows. Columns include identifiers (AB1502, WB1502) and numerical values. The values are consistently -999.0000 across all entries.

WTBSEN	AB1502	46	1	15	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	16	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	17	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	18	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	19	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	20	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	21	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	22	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	23	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	46	1	24	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	1	2	20150226	26,082N	79,756W	603	608	5,883	34,910	2	34,913	2	153,6	2	153,5	2	153,5	2
WTBSEN	AB1502	47	1	2	2	20150226	26,100N	79,755W	479	326	4,821	34,905	2	34,906	2	138,5	2	138,5	2	138,5	2
WTBSEN	AB1502	47	1	3	2	20150226	26,089N	79,754W	392	395	7,651	34,960	6	34,958	6	129,1	2	129,1	2	129,1	2
WTBSEN	AB1502	47	1	4	2	20150226	26,093N	79,754W	339	341	10,784	35,360	4	35,489	4	124,4	2	124,4	2	127,7	6
WTBSEN	AB1502	47	1	5	2	20150226	26,096N	79,752W	266	268	16,822	36,267	4	36,317	4	151,7	2	151,7	2	151,7	2
WTBSEN	AB1502	47	1	6	2	20150226	26,098N	79,752W	215	217	18,807	36,531	2	36,531	2	0,0	2	0,0	2	141,8	4
WTBSEN	AB1502	47	1	7	2	20150226	26,100N	79,751W	145	146	21,681	36,480	2	36,473	4	199,0	2	199,0	2	195,5	2
WTBSEN	AB1502	47	1	8	2	20150226	26,102N	79,751W	89	90	22,337	36,454	2	36,454	2	210,6	2	210,6	2	211,5	2
WTBSEN	AB1502	47	1	9	2	20150226	26,104N	79,750W	44	44	24,103	36,414	2	36,407	4	209,9	2	209,9	2	209,1	2
WTBSEN	AB1502	47	1	10	2	20150226	26,106N	79,750W	3	3	25,212	36,293	2	36,292	2	205,1	2	205,1	2	203,8	2
WTBSEN	AB1502	47	1	11	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	12	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	13	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	14	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	15	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	16	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	17	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	18	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	19	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	20	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	21	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	22	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	23	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	47	1	24	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	1	2	20150226	26,063N	79,662W	689	694	6,195	34,907	2	34,904	2	146,3	2	146,3	2	147,9	2
WTBSEN	AB1502	48	1	2	2	20150226	26,066N	79,661W	585	590	6,550	34,907	2	34,902	2	139,6	2	139,6	2	139,6	2
WTBSEN	AB1502	48	1	3	2	20150226	26,067N	79,660W	490	494	7,486	34,942	6	34,942	6	128,3	2	128,3	2	128,3	2
WTBSEN	AB1502	48	1	4	2	20150226	26,068N	79,660W	410	413	10,864	35,359	4	35,359	4	124,1	2	124,1	2	124,1	2
WTBSEN	AB1502	48	1	5	2	20150226	26,069N	79,659W	333	335	15,127	35,985	2	35,987	2	143,8	2	143,8	2	143,8	2
WTBSEN	AB1502	48	1	6	2	20150226	26,070N	79,659W	263	265	17,255	36,341	2	36,342	2	154,3	2	154,3	2	155,3	2
WTBSEN	AB1502	48	1	7	2	20150226	26,072N	79,659W	189	190	20,565	36,541	2	36,542	2	150,6	2	150,6	2	150,6	6
WTBSEN	AB1502	48	1	8	2	20150226	26,073N	79,658W	124	125	22,434	36,476	2	36,475	2	198,0	2	198,0	2	198,0	2
WTBSEN	AB1502	48	1	9	2	20150226	26,074N	79,657W	74	74	24,713	36,381	2	36,373	4	204,1	2	204,1	2	204,1	2
WTBSEN	AB1502	48	1	10	2	20150226	26,075N	79,657W	40	40	25,161	36,277	2	36,277	2	196,0	2	196,0	2	204,1	2
WTBSEN	AB1502	48	1	11	2	20150226	26,076N	79,657W	3	4	25,174	36,277	2	36,277	2	203,9	2	203,9	2	204,7	2
WTBSEN	AB1502	48	1	12	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	13	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	14	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	15	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	16	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	17	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	18	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	19	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	20	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	21	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	22	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	23	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	48	1	24	2	-999,000	-999,000N	-999,000W	-999	-999	-999,000	-999,000	9	-999,000	9	-999,000	9	-999,000	9	-999,000	9
WTBSEN	AB1502	49	1	1	2	20150226	26,058N	79,557W	752	758	6,574	34,905	2	34,901	2	139,7	2	139,7	2	139,7	2
WTBSEN	AB1502	49	1	2	2	20150226	26,058N	79,556W	644	650	7,011	34,911	2	34,909	2	131,8	2	131,8	2	132,1	2
WTBSEN	AB1502	49	1	3	2	20150226	26,059N	79,555W	545	549	8,033	35,004	2	35,002	2	119,3	2	119,3	2	119,3	2
WTBSEN	AB1502	49	1	4	2	20150226	26,059N	79,554W	447	451	12,207	35,499	2	35							

WBTSEN	AB1502	49	1	1	9	2	20150226	1036	26.062N	79.550W	100	101	24.979	36.705	2	36.702	2	0.0	163.4	4
WBTSEN	AB1502	49	1	10	10	2	20150226	1038	26.063N	79.549W	51	52	25.500	36.254	6	36.254	2	200.5	201.1	2
WBTSEN	AB1502	49	1	11	11	2	20150226	1041	26.063N	79.548W	4	4	25.501	36.251	2	36.251	2	200.8	201.6	2
WBTSEN	AB1502	49	1	12	12	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	13	13	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	14	14	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	15	15	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	16	16	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	17	17	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	18	18	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	19	19	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	20	20	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	21	21	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	22	22	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	23	23	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	49	1	24	24	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	1	1	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	2	2	2	20150226	1144	26.059N	79.471W	657	662	8.264	34.991	2	34.990	2	121.7	121.7	2
WBTSEN	AB1502	50	1	3	3	2	20150226	1147	26.061N	79.470W	552	556	9.785	35.157	2	35.157	2	117.9	117.8	2
WBTSEN	AB1502	50	1	4	4	2	20150226	1149	26.061N	79.469W	487	491	11.326	35.373	2	35.373	4	118.5	118.3	2
WBTSEN	AB1502	50	1	5	5	2	20150226	1151	26.063N	79.467W	399	402	14.508	35.882	2	35.882	2	134.6	134.5	2
WBTSEN	AB1502	50	1	6	6	2	20150226	1153	26.064N	79.466W	332	335	17.337	36.350	2	36.353	2	152.9	153.3	2
WBTSEN	AB1502	50	1	7	7	2	20150226	1156	26.065N	79.465W	264	265	18.892	36.563	2	36.564	6	150.6	151.3	2
WBTSEN	AB1502	50	1	8	8	2	20150226	1200	26.066N	79.464W	207	209	20.096	36.691	2	36.691	9	148.9	149.5	2
WBTSEN	AB1502	50	1	9	9	2	20150226	1203	26.068N	79.463W	152	153	24.118	36.702	4	36.702	4	179.9	179.9	4
WBTSEN	AB1502	50	1	10	10	2	20150226	1205	26.069N	79.461W	91	91	24.821	36.447	3	36.447	3	202.6	202.2	2
WBTSEN	AB1502	50	1	11	11	2	20150226	1206	26.070N	79.460W	35	36	26.384	36.274	2	36.272	2	201.0	202.4	2
WBTSEN	AB1502	50	1	12	12	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	25.011	36.265	2	36.264	2	201.0	201.7	2
WBTSEN	AB1502	50	1	13	13	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	14	14	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	15	15	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	16	16	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	17	17	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	18	18	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	19	19	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	20	20	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	21	21	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	22	22	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	23	23	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	50	1	24	24	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	1	1	2	20150226	1306	26.048N	79.388W	571	576	11.024	35.342	4	35.337	4	122.4	122.9	2
WBTSEN	AB1502	51	1	2	2	2	20150226	1308	26.048N	79.387W	472	476	13.413	35.736	2	35.731	2	141.9	142.0	2
WBTSEN	AB1502	51	1	3	3	2	20150226	1311	26.048N	79.385W	387	389	15.966	36.128	2	36.144	4	153.3	153.3	4
WBTSEN	AB1502	51	1	4	4	2	20150226	1315	26.048N	79.384W	299	301	18.294	36.493	2	36.500	4	153.0	153.3	2
WBTSEN	AB1502	51	1	5	5	2	20150226	1317	26.048N	79.384W	218	220	20.464	36.731	2	36.731	2	163.4	163.4	4
WBTSEN	AB1502	51	1	6	6	2	20150226	1319	26.048N	79.383W	173	174	23.506	36.709	2	36.681	4	175.1	173.1	2
WBTSEN	AB1502	51	1	7	7	2	20150226	1322	26.048N	79.383W	120	121	24.856	36.461	2	36.622	4	175.1	175.1	4
WBTSEN	AB1502	51	1	8	8	2	20150226	1326	26.049N	79.382W	80	80	24.927	36.441	2	36.440	3	142.0	142.0	4
WBTSEN	AB1502	51	1	9	9	2	20150226	1327	26.049N	79.382W	30	30	25.440	36.280	2	36.370	2	203.0	204.0	6
WBTSEN	AB1502	51	1	10	10	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	202.6	203.6	2
WBTSEN	AB1502	51	1	11	11	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	12	12	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	13	13	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	14	14	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	15	15	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	16	16	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	17	17	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	18	18	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	19	19	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	20	20	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	21	21	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	22	22	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	23	23	2	-999.000	-999.000	-999.000N	-999.000W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.000	-999.000	9
WBTSEN	AB1502	51	1	24	24	2	-													

