

# **Ryan Chouest daily data transmission and report**

***Period covered: 0228 hrs 07/11/2010-1000 hrs 07/13/2010***

***253.83 –Cumulative nautical miles covered***

## **Vessel science party:**

Xiubin Qi ([Xiubin.Qi@csiro.au](mailto:Xiubin.Qi@csiro.au)) Stephane Armand ([Stephane.Armand@csiro.au](mailto:Stephane.Armand@csiro.au)) Andy Revill ([Andy.Revill@csiro.au](mailto:Andy.Revill@csiro.au)) Charlotte Stalvies ([Charlotte.Stalvies@csiro.au](mailto:Charlotte.Stalvies@csiro.au)) Tosin Majekodunmi ([Tosin.Majekodunmi@bp.com](mailto:Tosin.Majekodunmi@bp.com)) Curtis Walker ([cwalker@entrix.com](mailto:cwalker@entrix.com)) Michael Griffin ([Griffinmi09@students.ecu.edu](mailto:Griffinmi09@students.ecu.edu))

## **Contact details:**

1 337 761 9830 – Sat phone  
1 337-761-9830 – Broadband phone ship office 1  
1 337-761-9827 – Broadband phone ship office 2  
1 337-761-9826 -Broadband phone ship bridge

## **Objective:**

To investigate on the Poly Aromatic Hydrocarbon distribution along the Florida coast.

## **Cruise notes:**

The Ryan Chouest cruised along the coast of Alabama and Florida, turning around off Panama City and back to the port at Theodore. The shallow, underway pump ran and vertical cast deployed at four locations (Figure 1). Additionally, A CTD apparatus from C&C was attached to the vertical cast pump to help detect conductivity, temperature and depth at locations where vertical casts were deployed (Photo 1). The CSIRO crew encountered a problem with the pulley and cable (Photo 2), led to abandoning plans for two more deployment of the vertical cast.

## **Science results and preliminary interpretation:**

### Fluorometry results

The Chelsea sensor records minimal levels of inferred Poly Aromatic Hydrocarbons (PAH) for the track covered (Figure 2). Also, the Trios sensor reads minimal PAH levels except for a short segment of the track covered that show low levels (Figure 3). The Contros sensor readings, displayed in Figure 4, generally show low concentration levels of PAH with medium levels over a short segment, same as the Trios.

Surface Observations Dolphins spotted at 1320 hrs on (07/11)and 0048 hrs on (07/12), 26°58'N and 84°32'W, sea weed within convergence at 0012 hrs on (07/12) in Figure 1. During the latter part of the cruise, no significant surface observations were made.

### Vertical casts fluorometry results

During this transect, a total of four vertical casts have been deployed, with three vertical casts in coastal waters of Florida and one vertical cast in the red snapper fishery area, south of Port Theodore (Table 1).

Fluorometry results of the casts are shown in figure 5A -figure 5D. Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump. The vertical profile in figure 5A-5C all show close to baseline level of sensor response along the water column. Figure 5D shows minor increase in sensor response and reduced conductivity close to sea surface.

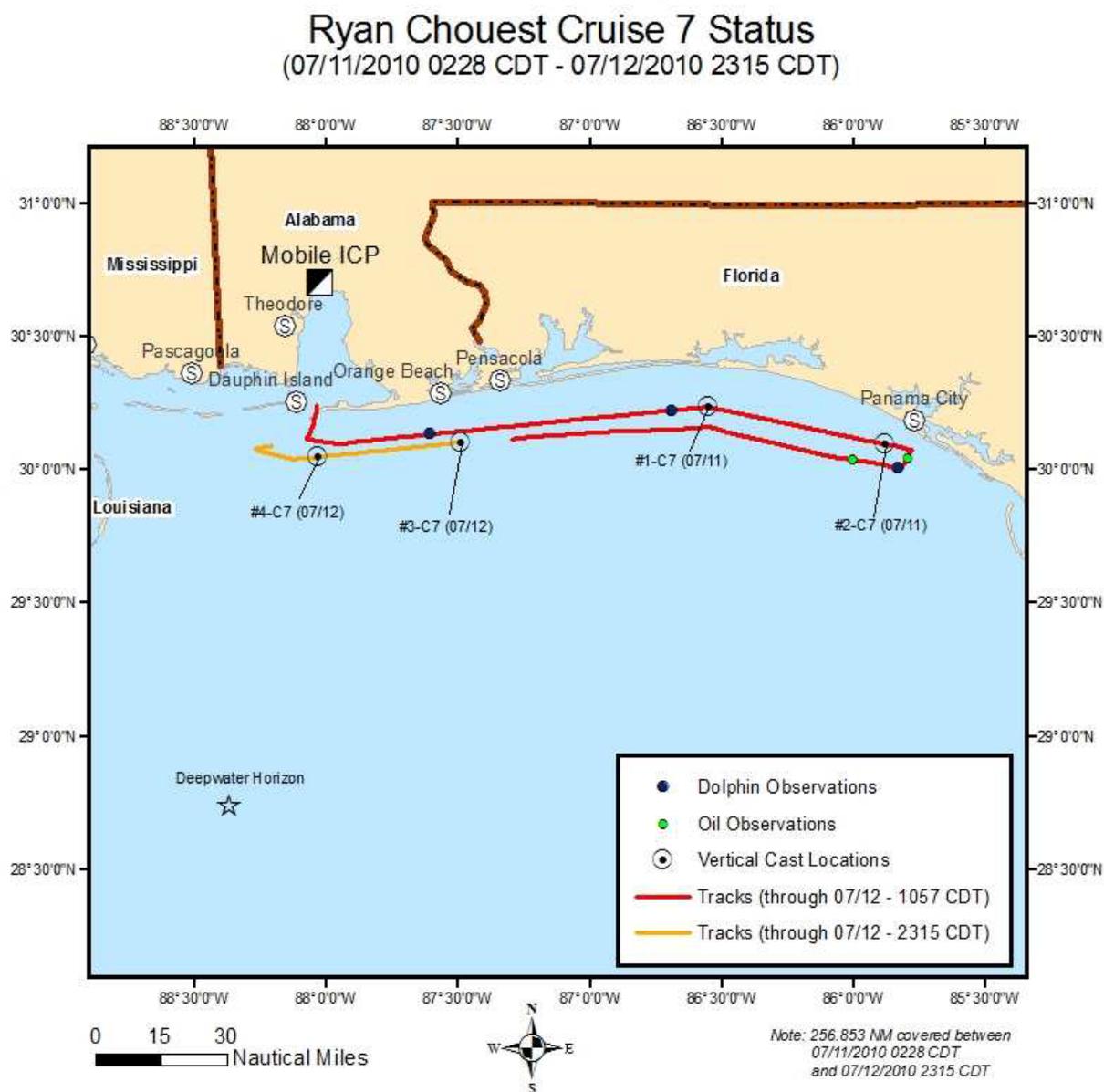


Figure 1. Course plotted for Cruise 7. The bull's-eye represents vertical cast locations together with vertical cast number, cruise number and record date.

Ryan Chouest Cruise 7 Data  
 Chelsea - Fluorometer  
 (07/11/2010 0228 CDT - 07/12/2010 2315 CDT)

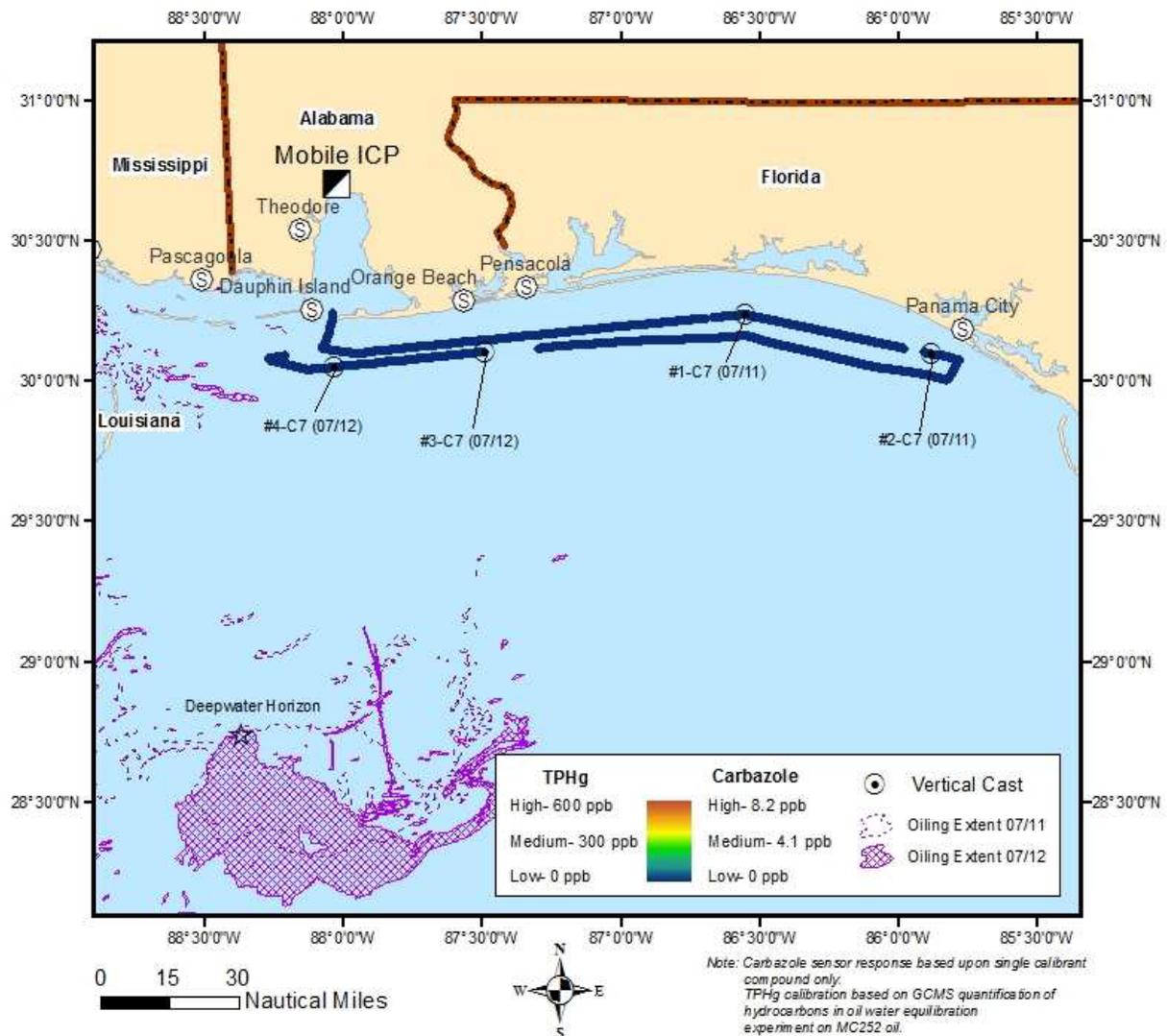


Figure 2. Chelsea fluorometer results plotted with location on cruise 7 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

# Ryan Chouest Cruise 7 Data Trios - Fluorometer (07/11/2010 0228 CDT - 07/12/2010 2315 CDT)

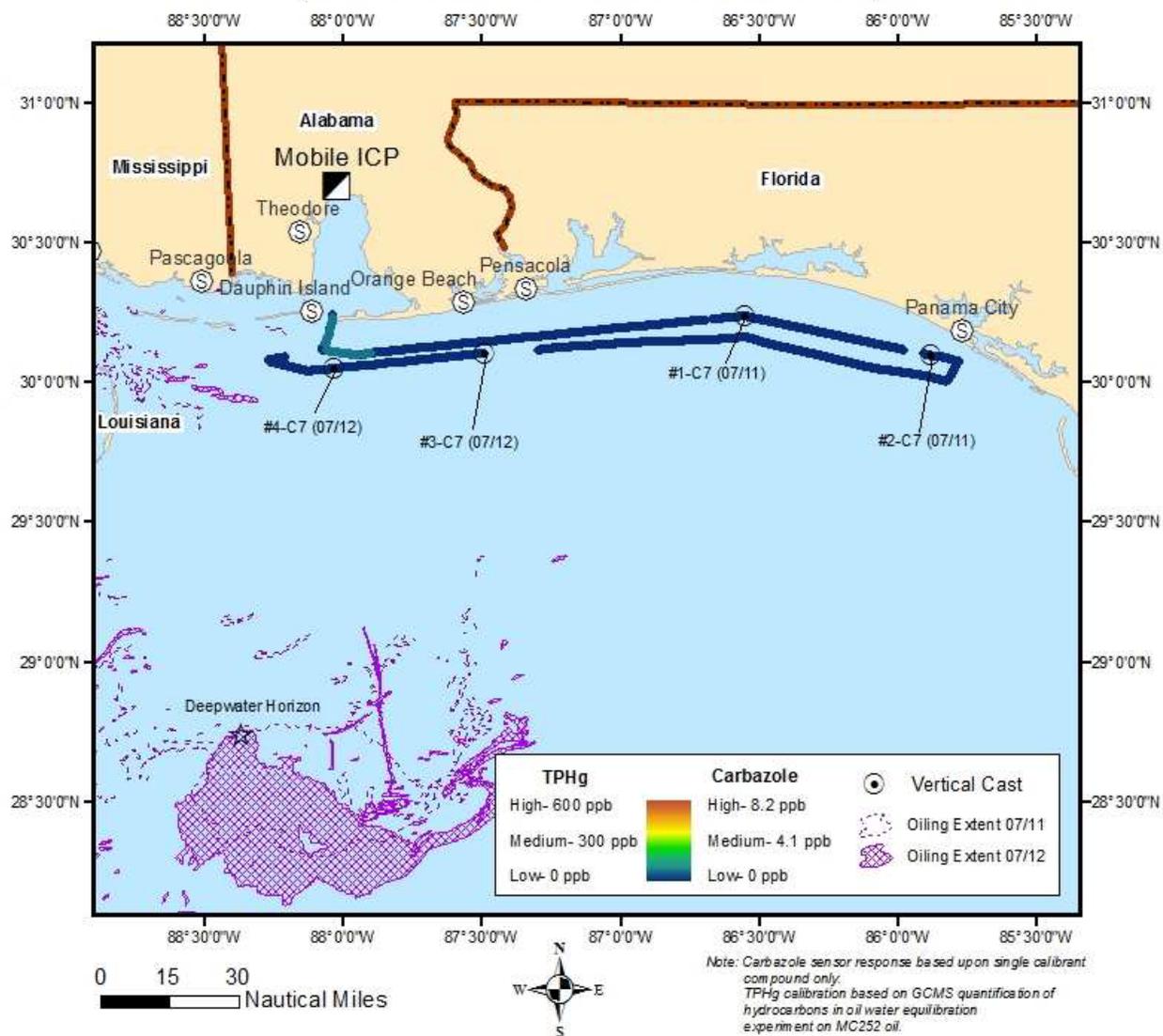


Figure 3. Trios fluorometer results plotted with location on cruise 7 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

**Ryan Chouest Cruise 7 Data**  
**Contros - Fluorometer**  
 (07/11/2010 0228 CDT - 07/12/2010 2315 CDT)

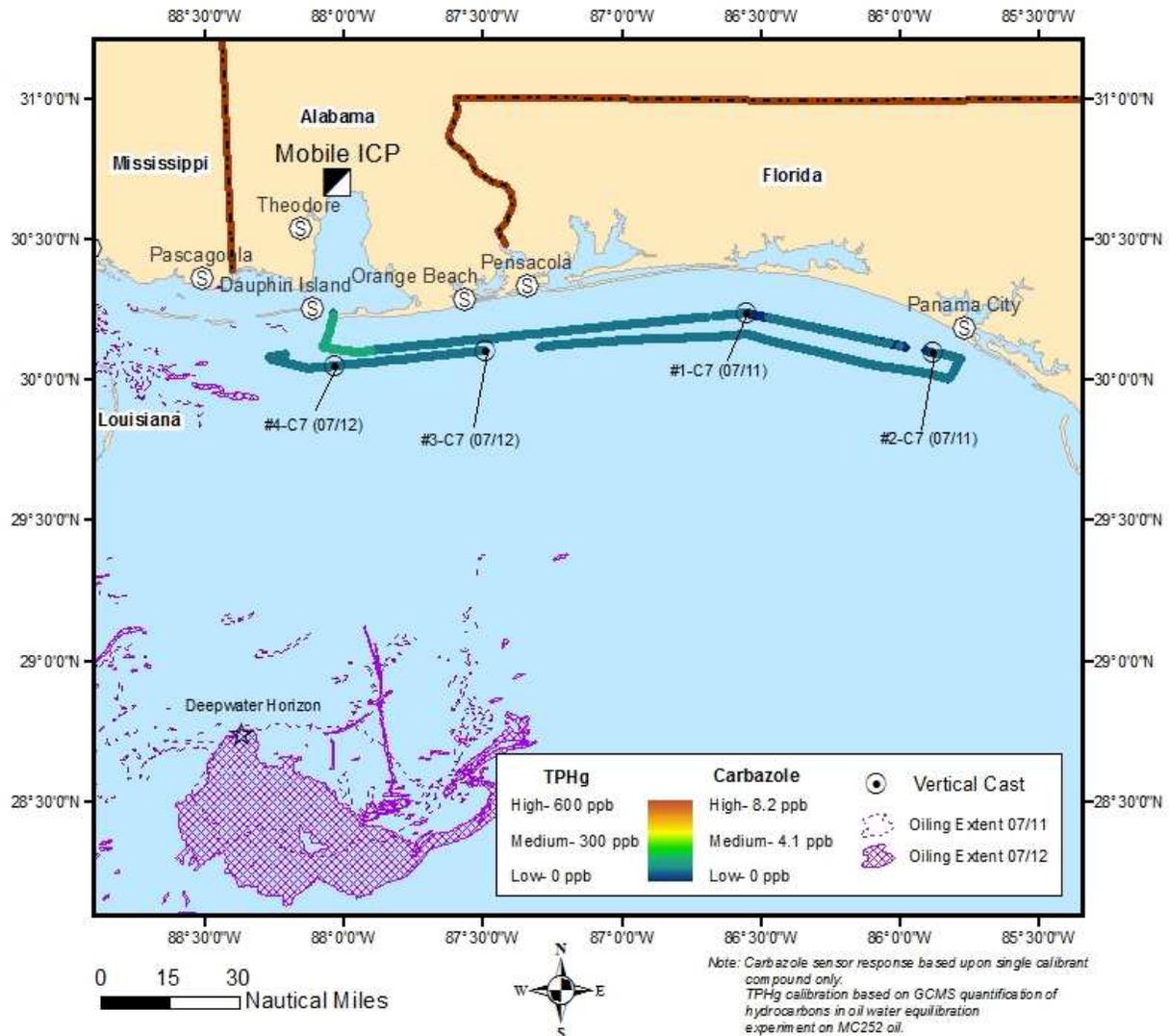
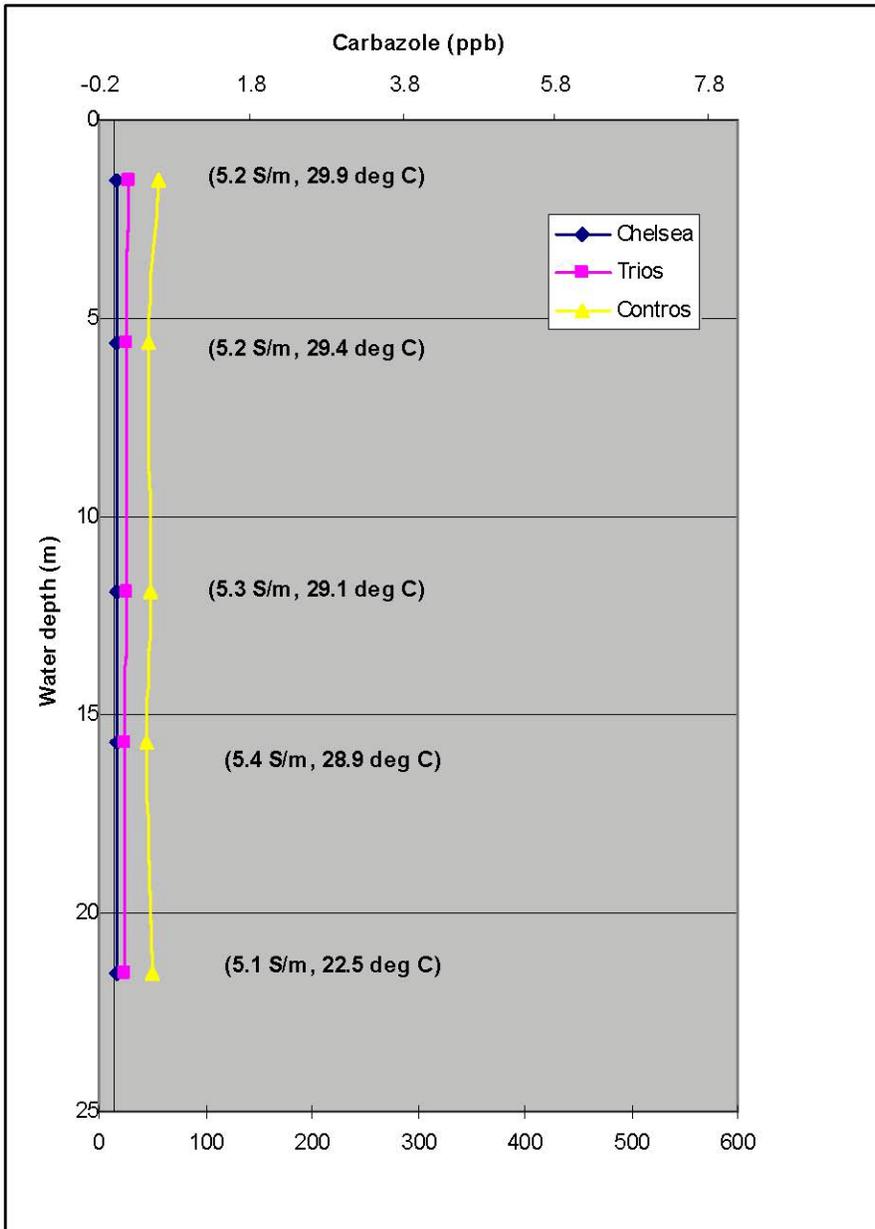


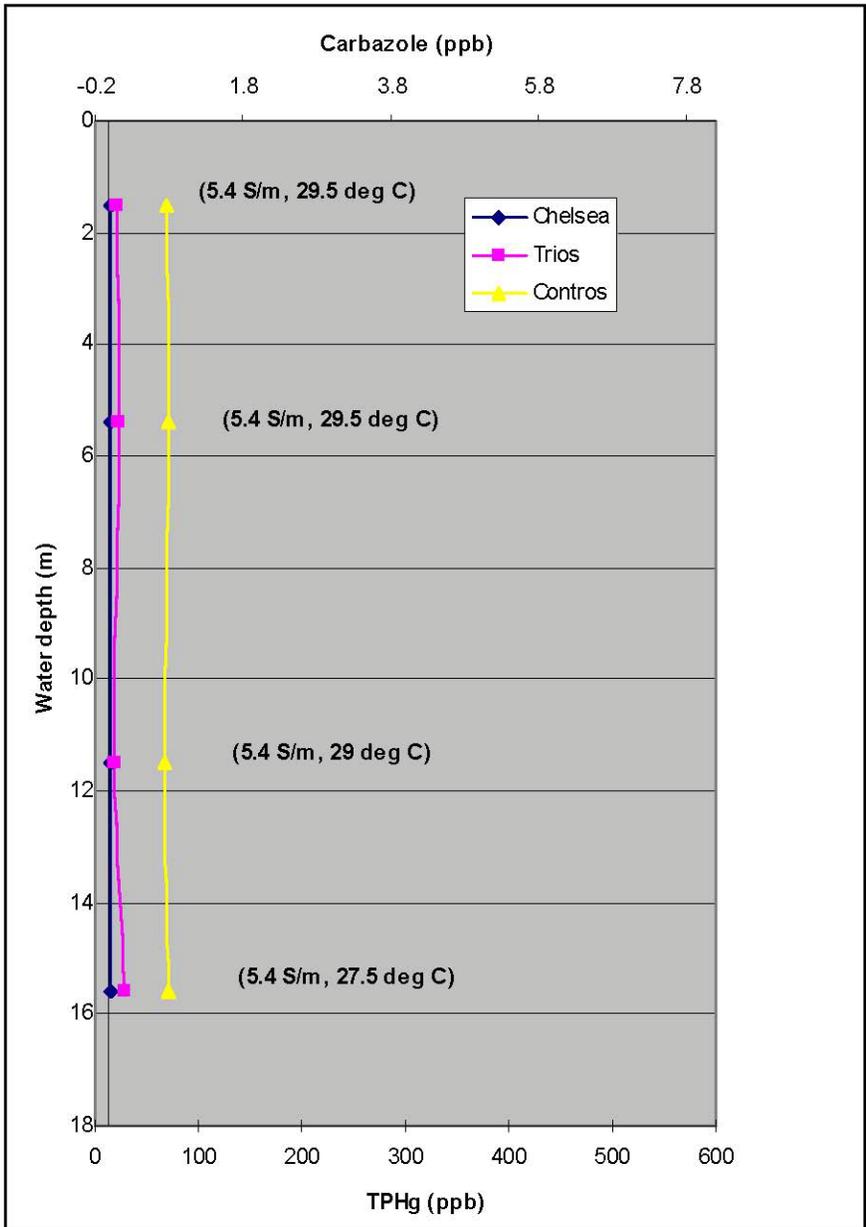
Figure 4. Contros fluorometer results plotted with location on cruise 7 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Table 1. Summary of the vertical casts conducted in cruise 7

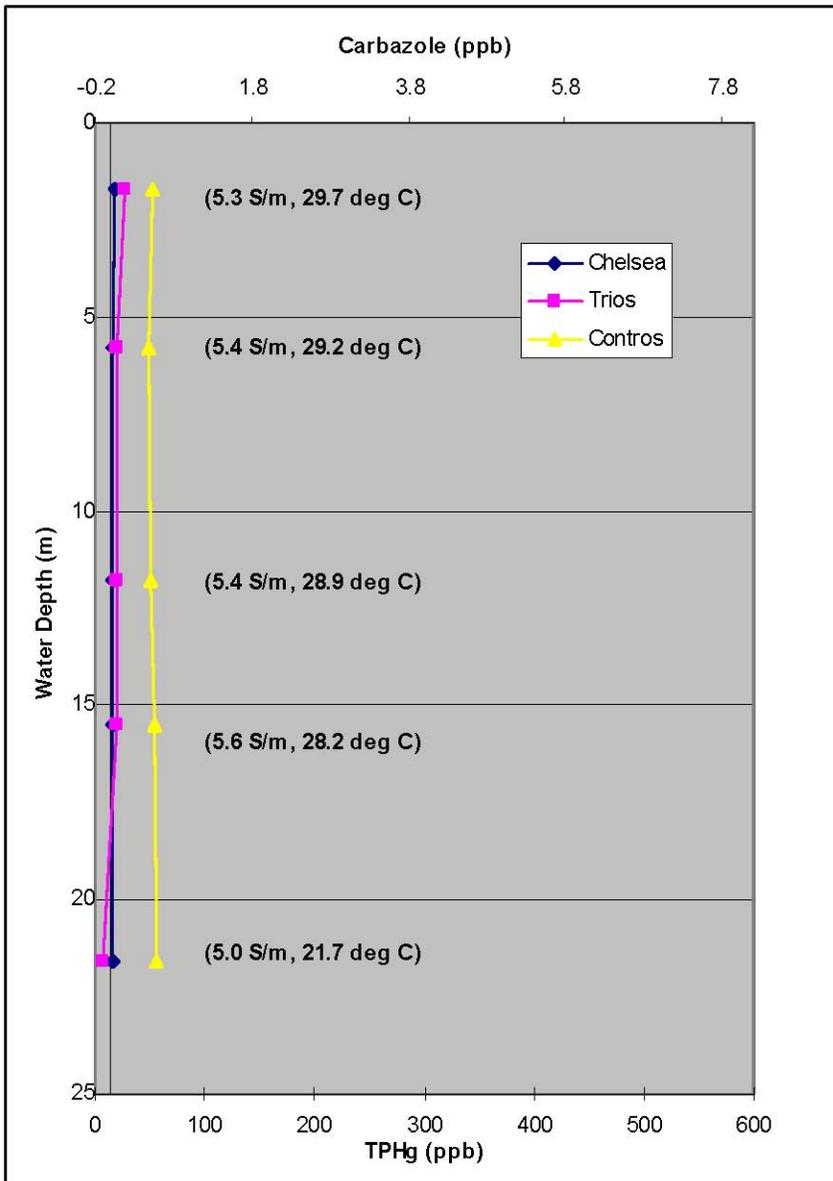
Cast number/ Cruise number	Date	Location
Cast #1/Cruise 7	2010/07/11	N 30 14.1113 W 086 32.9206
Cast #2/Cruise 7	2010/07/11	N 30 05.6488 W 085 52.7188
Cast #3/Cruise 7	2010/07/12	N 30 06.0188 W 087 29.2770
Cast #4/Cruise 7	2010/07/12	N 30 02.8430 W 088 01.8456



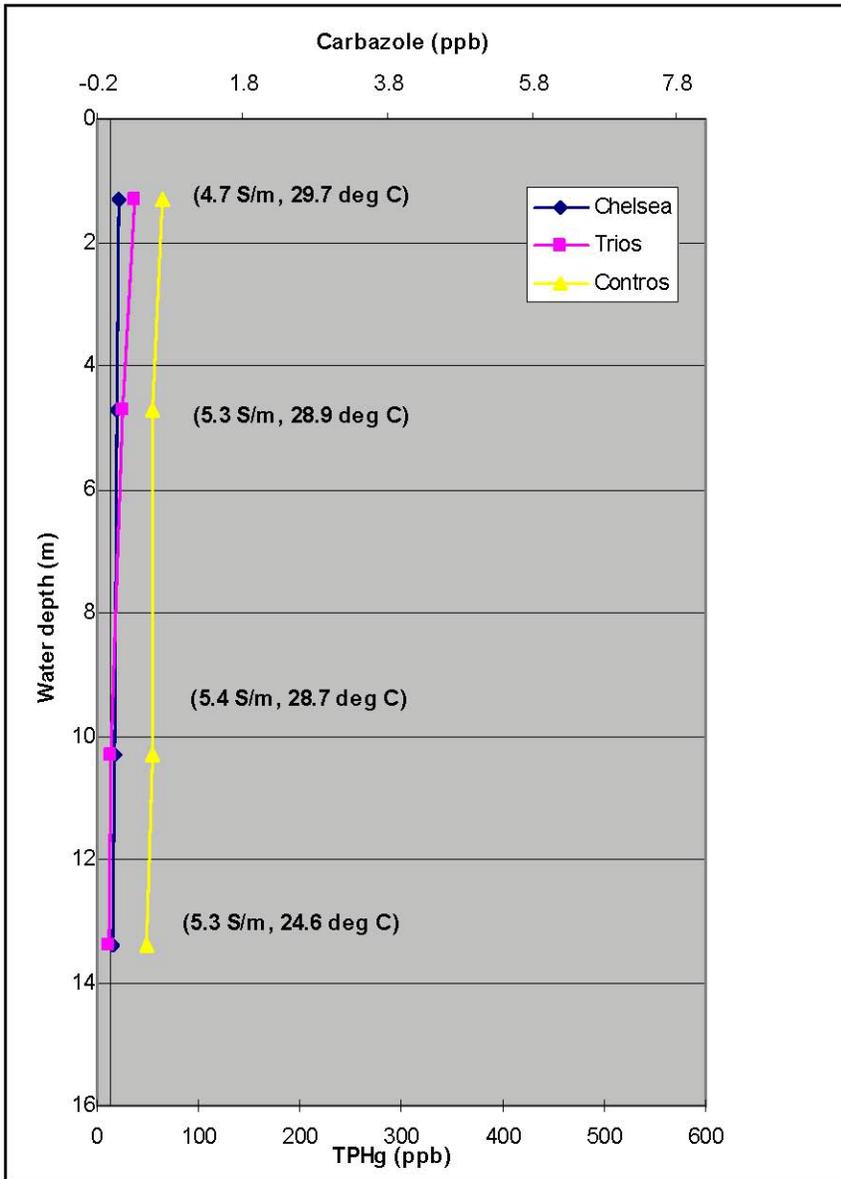
**Figure 5A** Fluorometer response vs. water depth for vertical cast # 1 / Cruise 7 conducted on 2010/07/11 at N 30 14.1113 W 086 32.9206. (Conductivity and temperature values at each sampling depth, as indicated indicated in the graph, are from the CTD unit attached to the vertical cast pump.)



**Figure 5B** Fluorometer response vs. water depth for vertical cast # 2 / Cruise 7 conducted on 2010/07/11 at N 30 05.6488 W 085 52.7188. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)



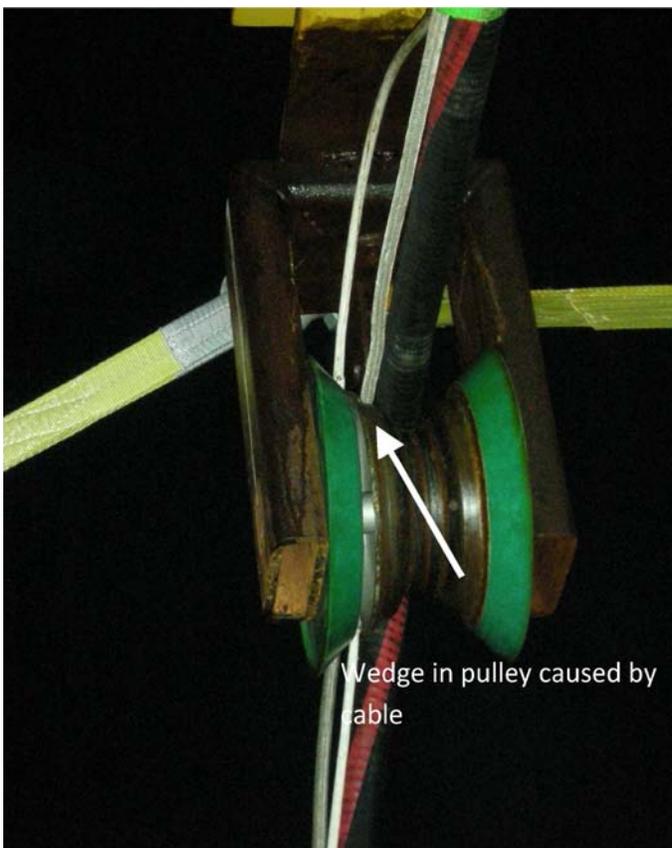
**Figure 5C** Fluorometer response vs. water depth for vertical cast # 3 / Cruise 7 conducted on 2010/07/12 at N 30 06.0188, W 087 29.2770. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)



**Figure 5D** Fluorometer response vs. water depth for vertical cast # 4 / Cruise 7 conducted on 2010/07/12 at N 30 02.8430, W 088 01.8456. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)



**Photo 1.** A Sea Bird 19 CTD attached to the vertical cast pump.



**Photo 2.** Wedge created by cable between outer plastic rim and metal roller in pulley apparatus.

**Problems/operational issues:**

On 07/12, the vertical cast from water got entangled with the underway pump. During the process of retrieval, it was discovered that the cable coupled to the hose connecting the vertical cast got wedged between the plastic edge and metal roller of the pulley component attached to the crane (Photo 1). The BP representative and CSIRO crew decided to abandon the plan to deploy two more vertical casts within the red snapper study area over concerns of a recurrence of the problem.

**Planned activities for next 24 hours:**

The Ryan Chouest will head back to Theodore due to the crane incident. A new pulley completely made out of metal has been recommended by Robert Thompson, the engineer on board. Crew changes will also be occurring. Additionally, we expect arrival the STRATOS personnel aiming to troubleshoot persistent internet issues.