

July 31st | 2010

Ryan Chouest daily data transmission and report

Period covered: 1021hrs 07/30/2010 - 1144hrs 07/31/2010

187.90 - Nautical miles covered

Vessel science party:

Andrew Ross (Andrew.Ross@csiro.au), David Fuentes(David.Fuentes@csiro.au), Emma Crooke (Emma.Crooke@csiro.au), Asrar Talukder (Asrar.Talukder@csiro.au), Tosin Majekodunmi (Tosin.Majekodunmi@bp.com), Curtis Walker (cwalker@entrix.com), Quinn Guidrey (quinn.guidrey@cctechol.com), Jen Carlson (jen.carlson@cctechol.com), Kelly Bates (kelly.bates@cctechol.com), Jay Ridgeway (Jay.Ridgeway@cctechol.com), Mathew Baham (Mathew.Baham@cctechol.com), Joseph Watson (Joseph.Watson@cctechol.com)

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

Cruise notes:

The *Ryan Chouest* vessel completed the 8 x 8 nautical mile survey pattern in the Green Canyon area and headed, along a northeast track (Figure 1), to another planned 8 x 8 nautical mile survey location to investigate possible seeps by combining results from the echo sounder and hydrocarbon sensor array.

Science results and preliminary interpretation:

Fluorometry results

Although the fluorometry measurements from the Chelsea and Trios sensors show minimal but constant responses for the track travelled (Figure 2 & 4), a relative rescaling (taking the highest and lowest values of sensor voltage) of the fluorometer response for the for the 8 x 8 nautical mile survey show variability within minimal to low levels across the majority of the survey box with elevated levels in the northeast quadrant of the grid (Figure 3 & 5). These elevated levels appear to correlate reasonably with the two possible seep sites to the north east of the survey box. The Contros sensor indicates mid levels of inferred hydrocarbons (Figure 6). As with the Chelsea and Trios, a relative rescaling (taking the highest and lowest values of sensor voltage Figure 7), once again shows elevated levels trending to the northeast quadrant of the grid.

Surface Observations

Dolphins and whale sharks were spotted at locations marked in Figure 1. Sparse but widespread distribution of sargassum was observed.

EK-60 Echosounder results

There were 22 echo sounder contacts for the period over the travelled track in Figure 1. Of which 12 are tentatively classified as seep or seep like features. A selection of these features are included in this report in Figures 9-13.

Planned route for cruise 11:

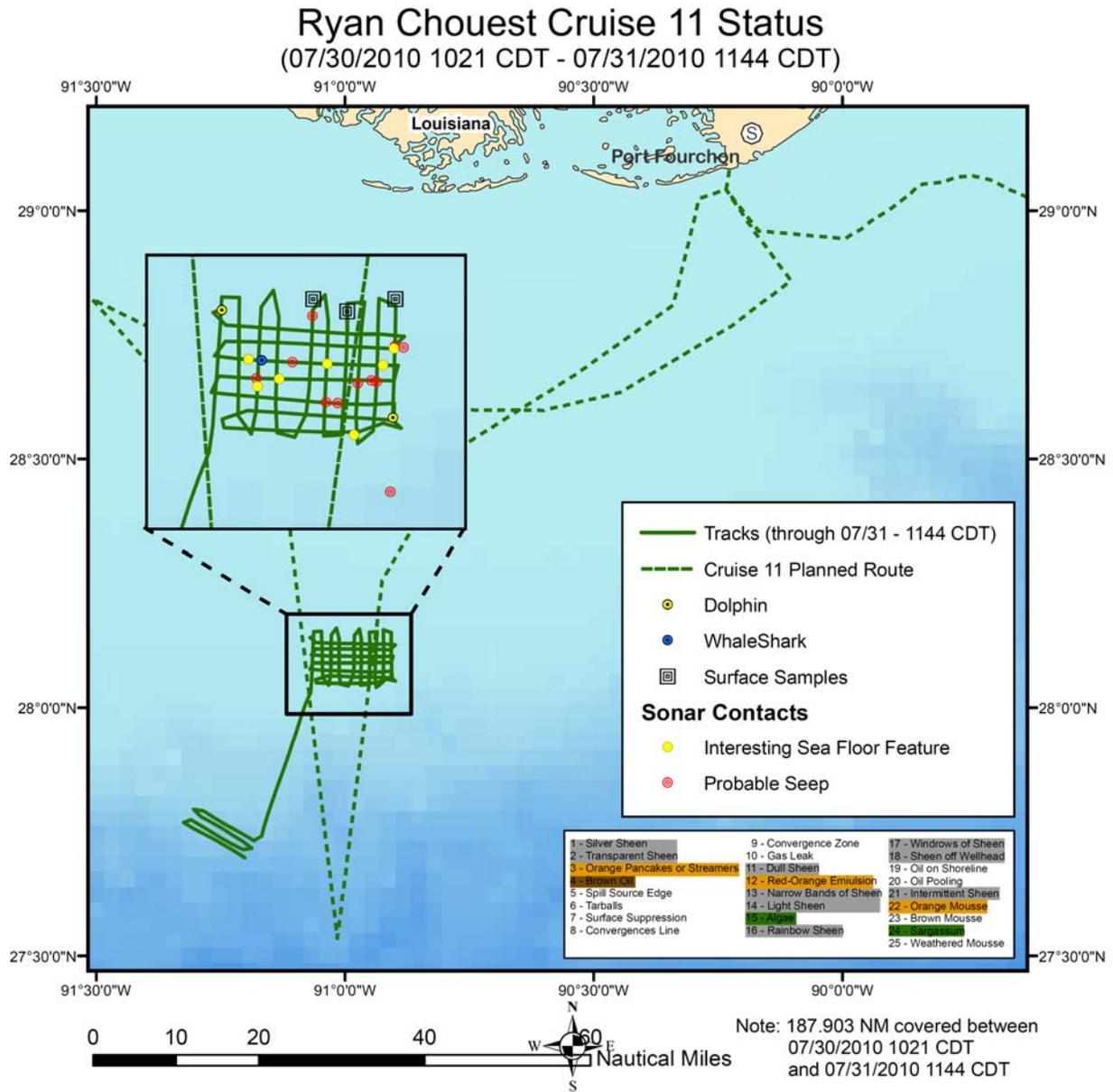


Figure 1: Planned route for cruise 11 versus the actual route plotted between 07/30 – 07/31.

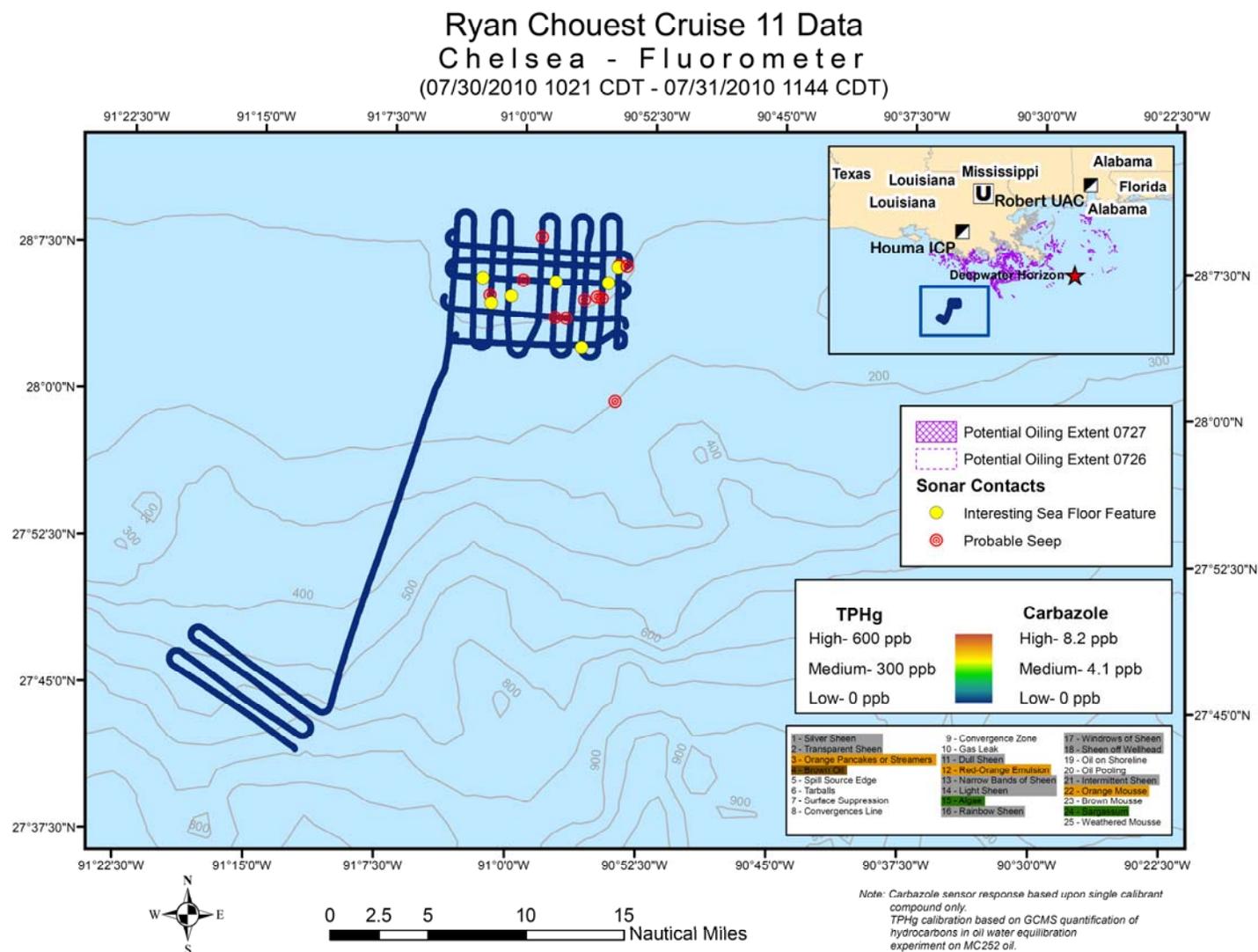


Figure 2. Chelsea fluorometer results plotted with location on cruise track 11. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

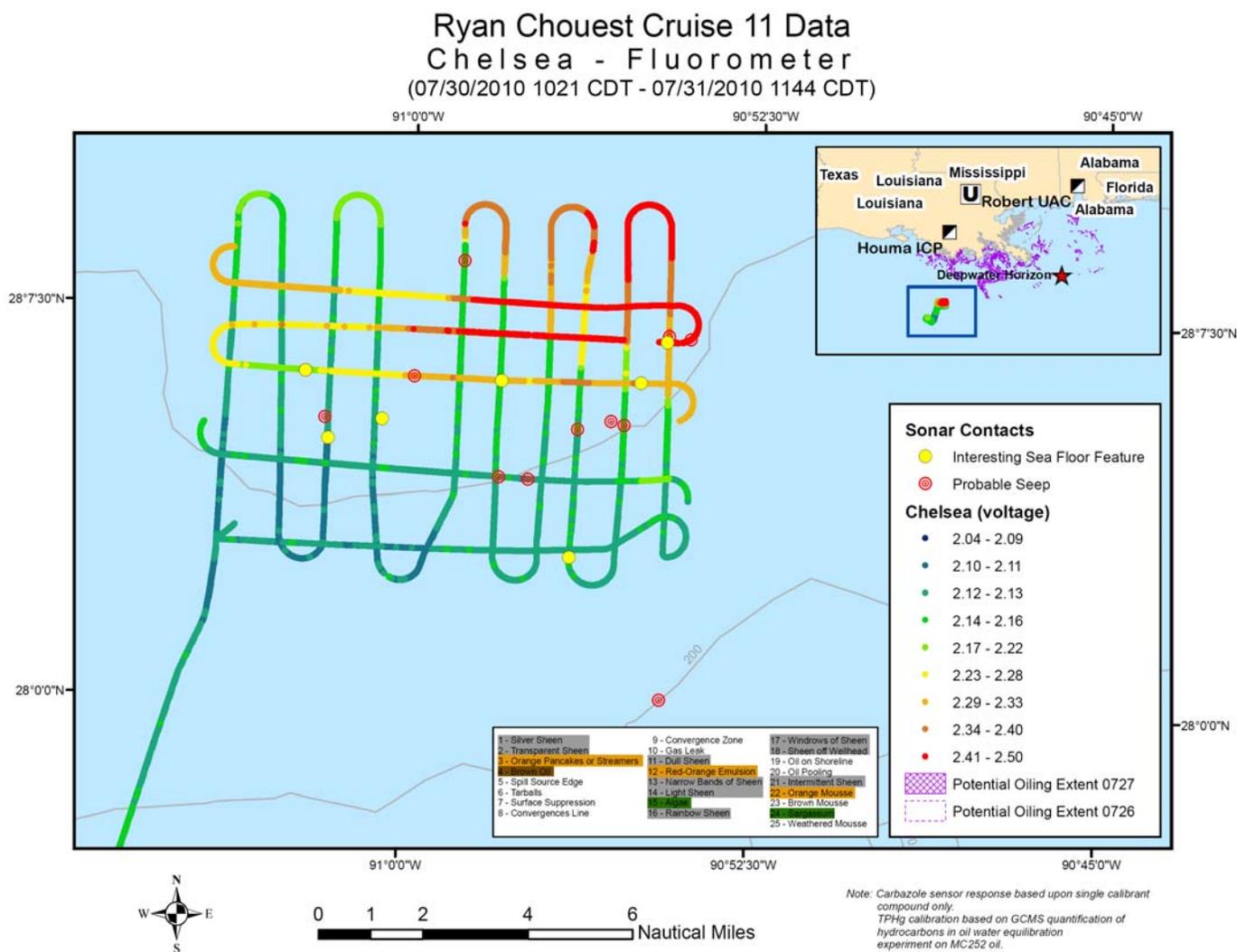


Figure 3. Chelsea fluorometer results, within 8 x 8 nautical mile grid survey, plotted with location on cruise track 11. The figure scaling is relative based on the highest and lowest fluorometer responses made during the period. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

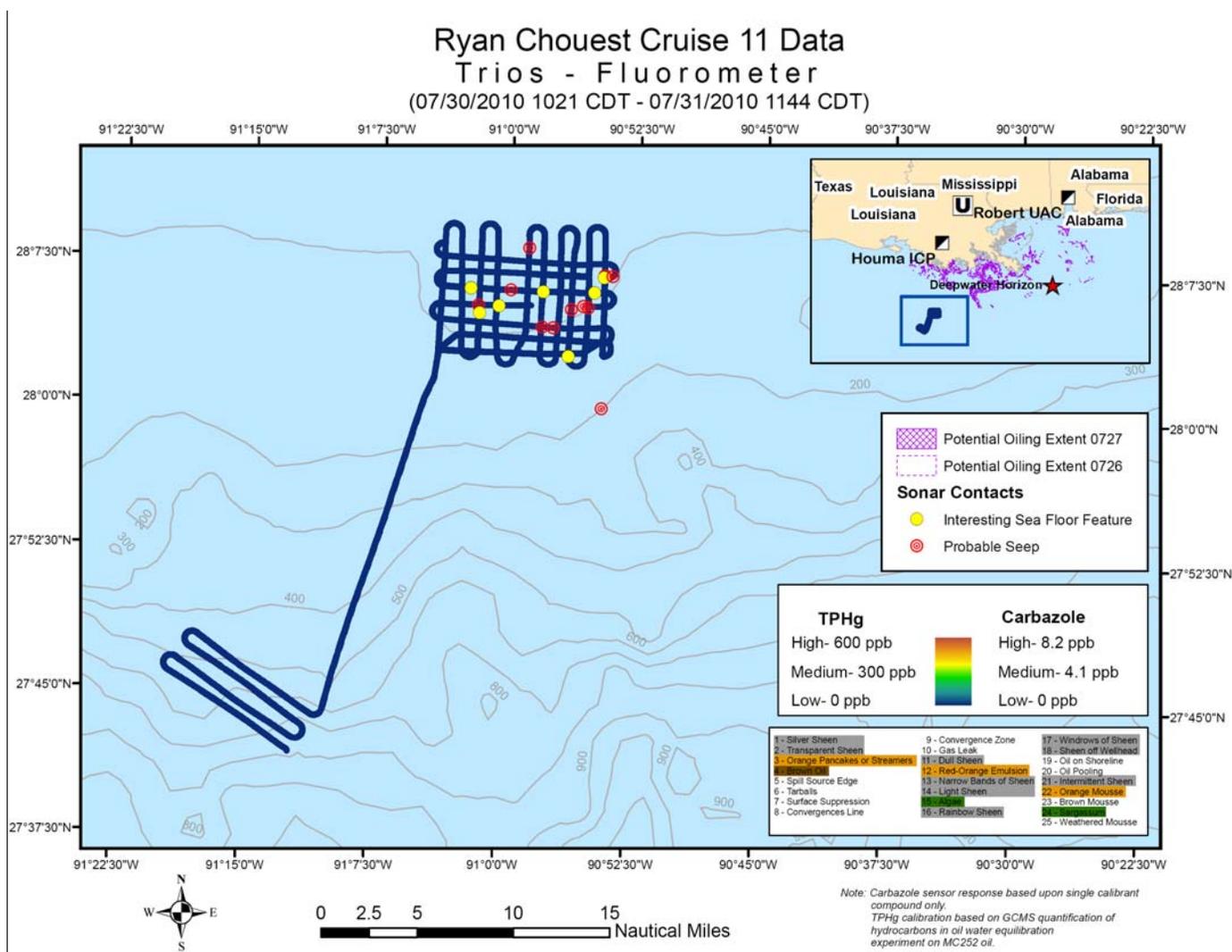


Figure 4. Trios fluorometer results plotted with location on cruise track 11. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

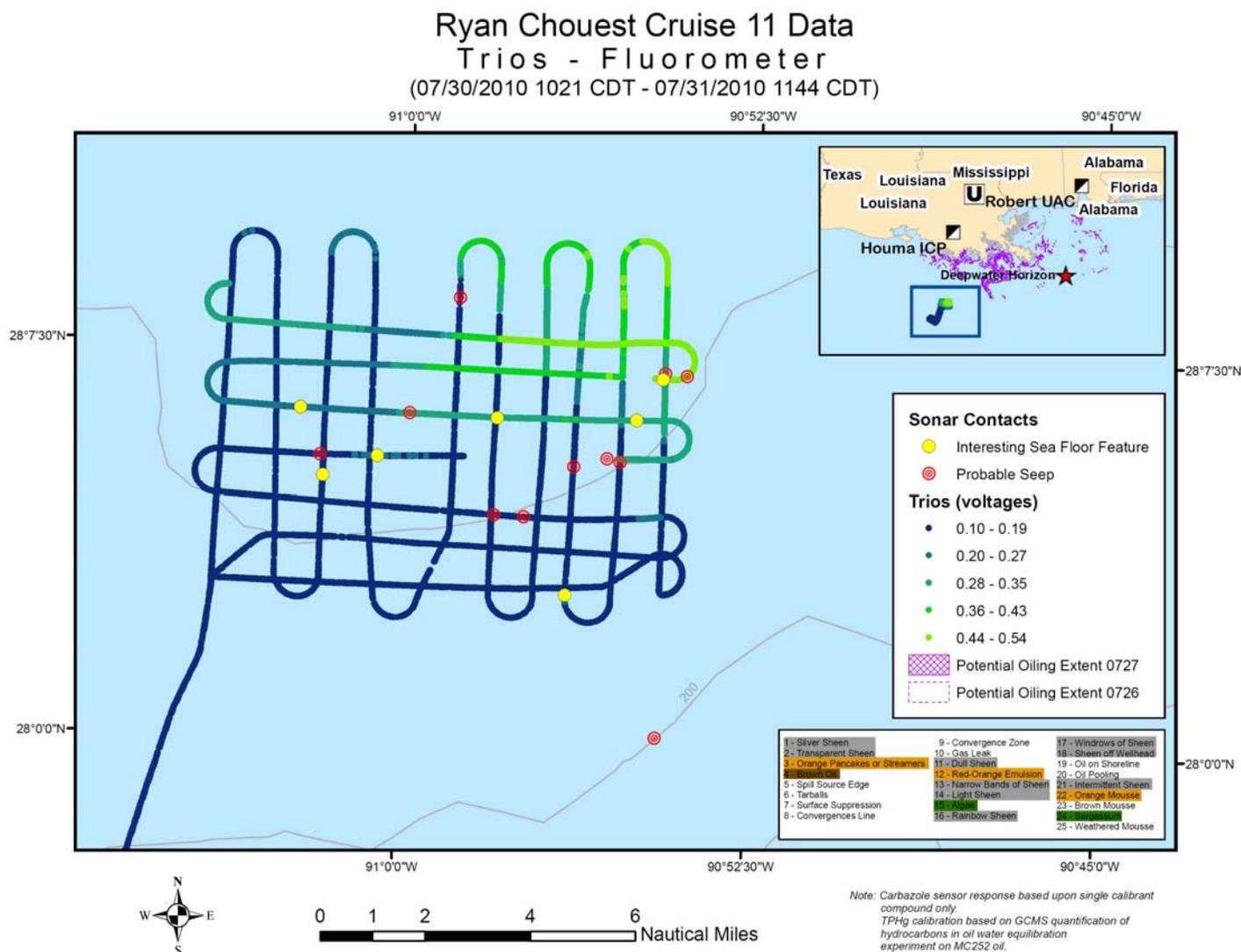


Figure 5. Trios fluorometer results, within 8 x 8 nautical mile grid survey, plotted with location on cruise track 11. The figure scaling is relative based on the highest and lowest fluorometer responses made during the period. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

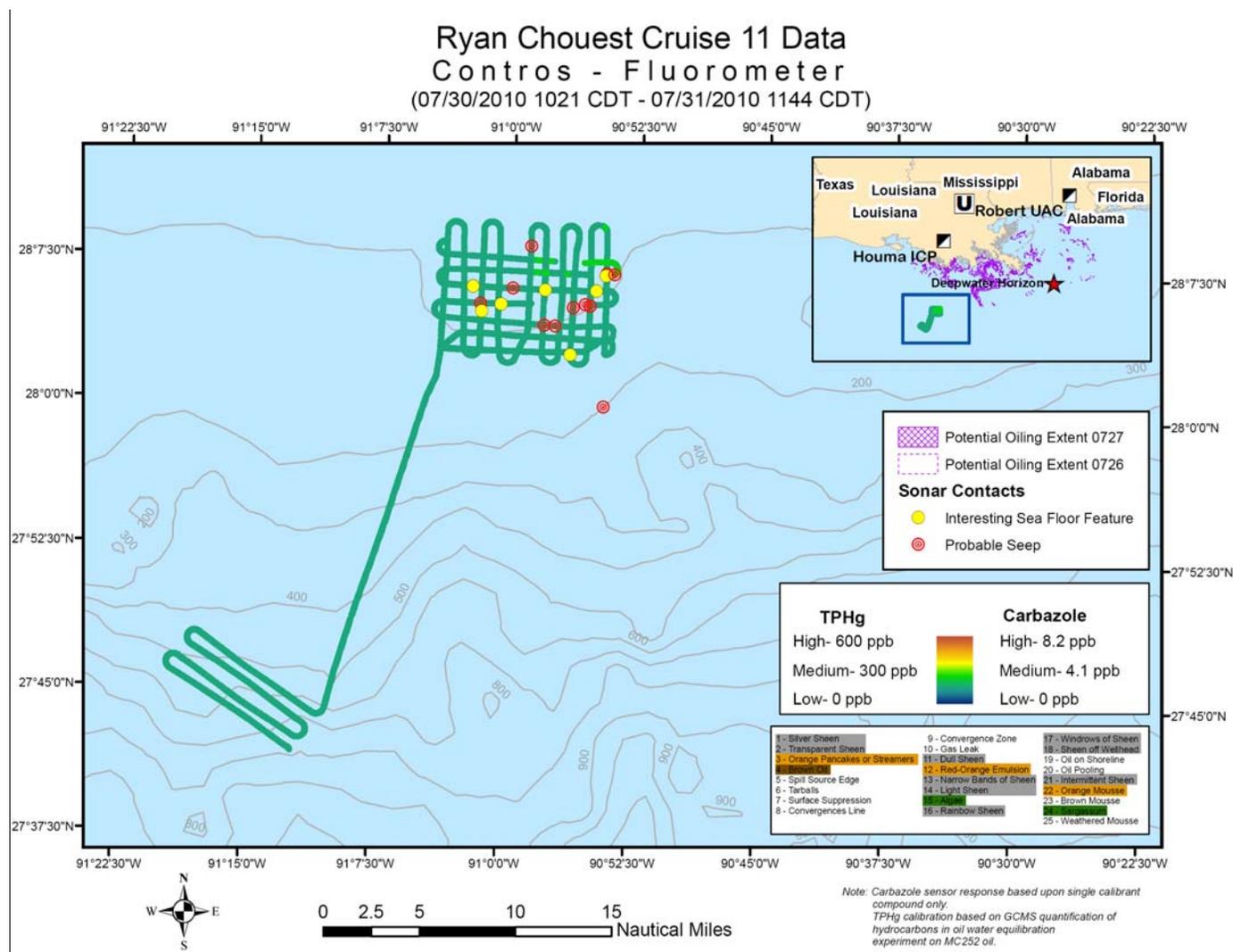


Figure 6. Contros fluorometer results plotted with location on cruise track 11. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

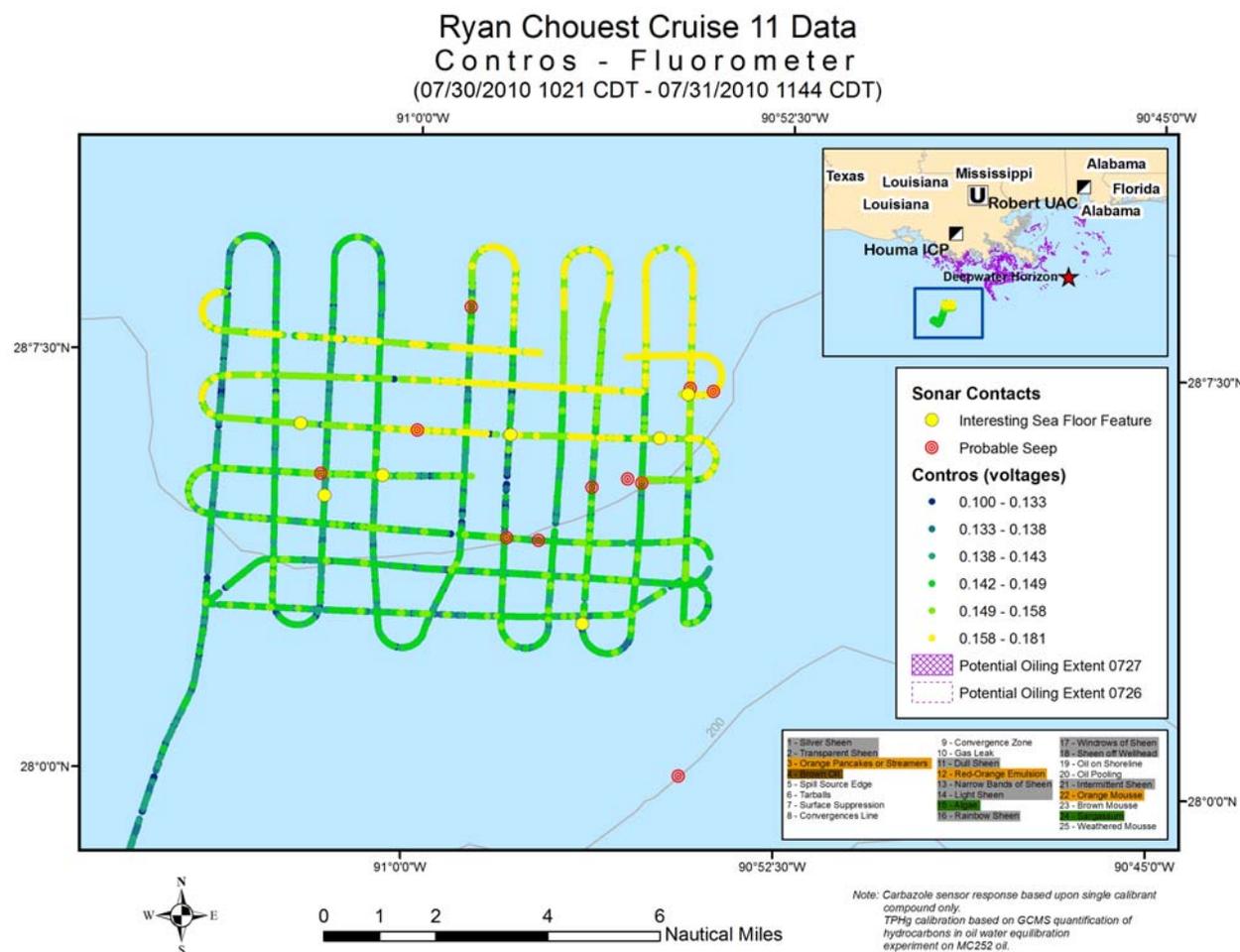


Figure 7. Contros fluorometer results, within 8 x 8 nautical mile grid survey, plotted with location on cruise track 11. The figure scaling is relative based on the highest and lowest fluorometer responses made during the period. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

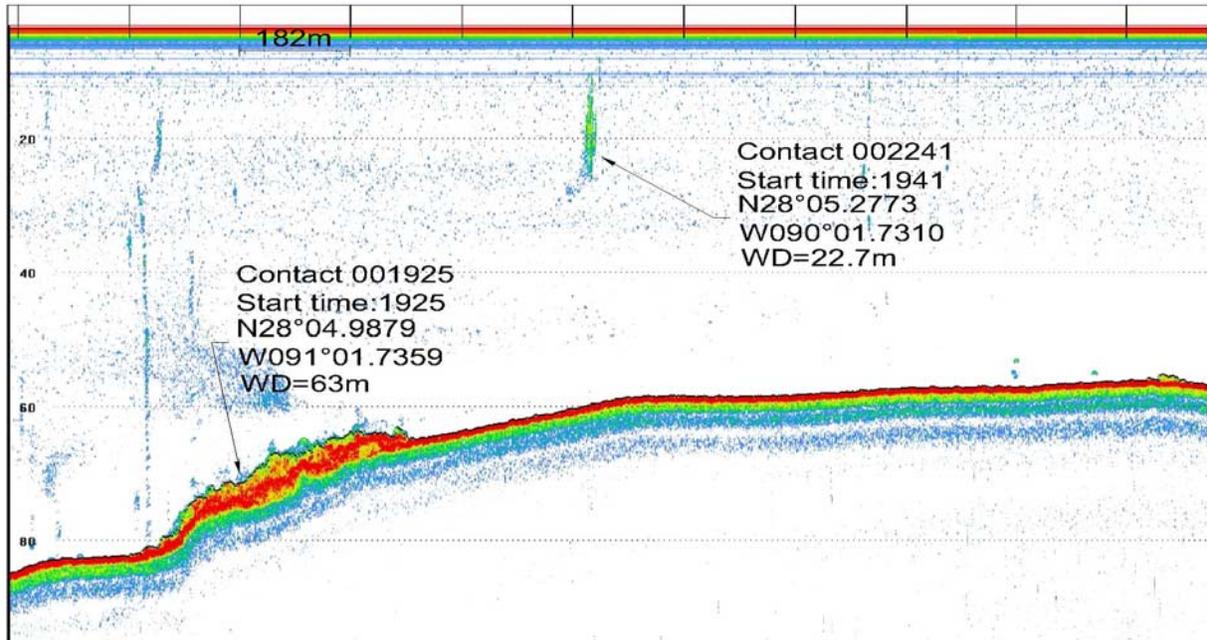


Figure 8. Contact_073010_001925. Description: Possible seep, slump feature. Time (CDT): 07/30/2010 2128 hrs. Location: 28° 04.9879N; 91° 01.7359W. Depth displayed: 54.09m to 80.09m.

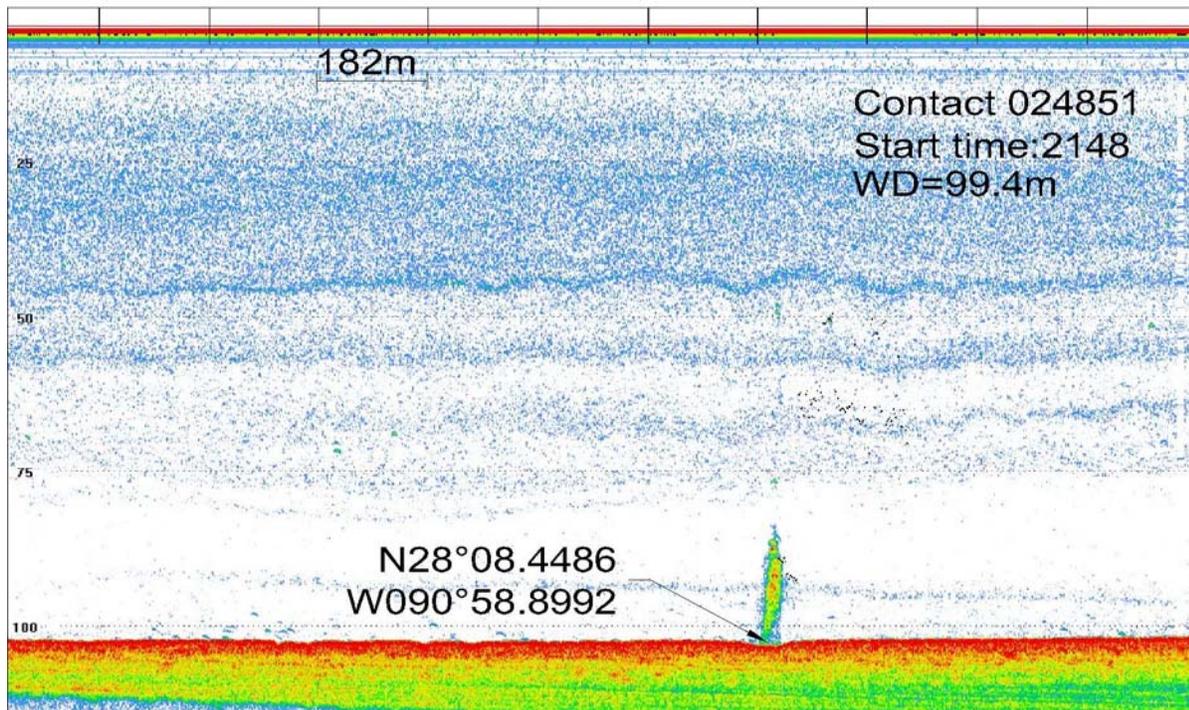


Figure 9. Contact_0729010_024851. Description: Possible seep from seafloor towards the surface. Time (CDT): 07/30/2010 2128 hrs Location: 28° 08.4486N; 90° 58.8992W Depth displayed: 82.52m to 99.40m.

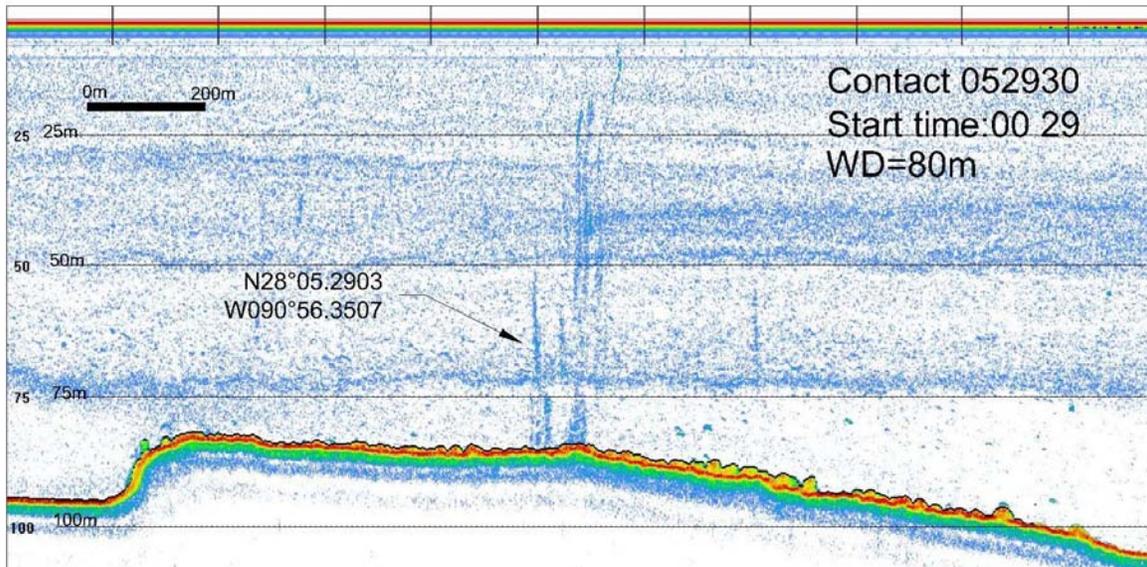


Figure 10. Contact_0731010_052930. Description: Possible seep from seafloor towards the surface. Time (CDT): 07/30/2010 0029 hrs, Location: 28° 05.2903N; 90° 56.3507W Depth displayed: 2.77m to 81.20m.

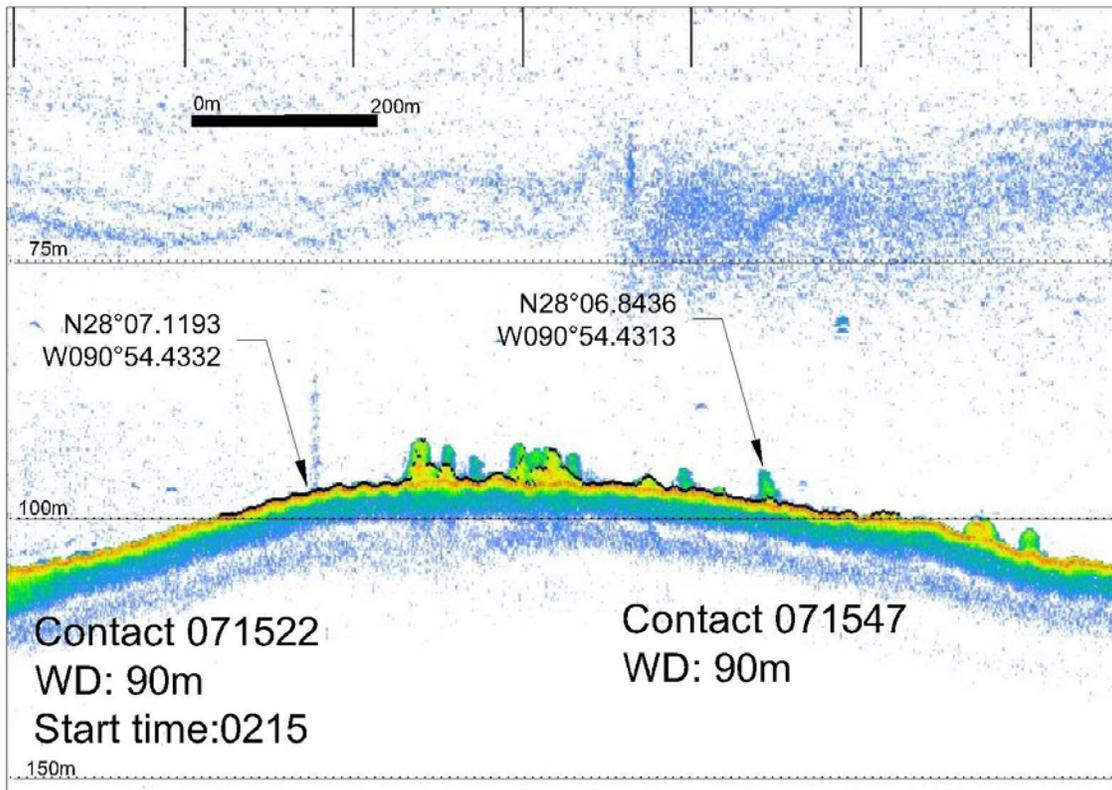


Figure 11. Contact_0731010_071547. Description: Possible abandoned rig? Time (CDT): 07/30/2010 0215 hrs. Location: 28° 06.8436N; 90° 54.4313W. Depth displayed: 90.67m to 93.42m.

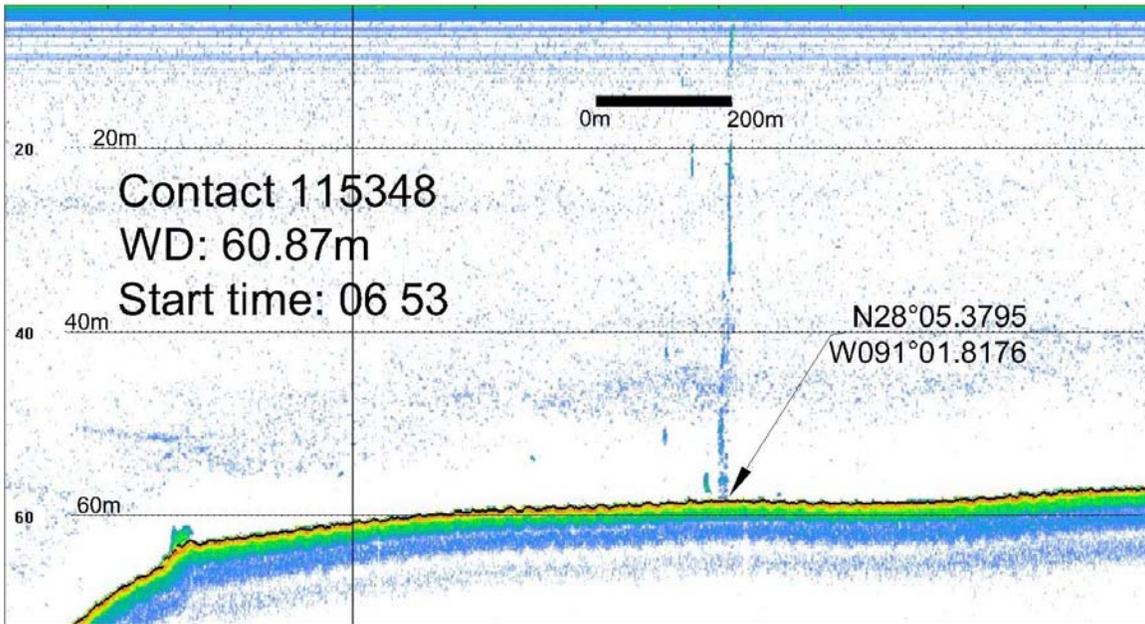


Figure 12. Contact_0731010_115348. Description: Possible seep from seafloor to surface. Time (CDT): 07/30/2010 0653 hrs. Location: 28° 05.3795N; 91° 01.8176W Depth displayed: Surface to 57.91m.

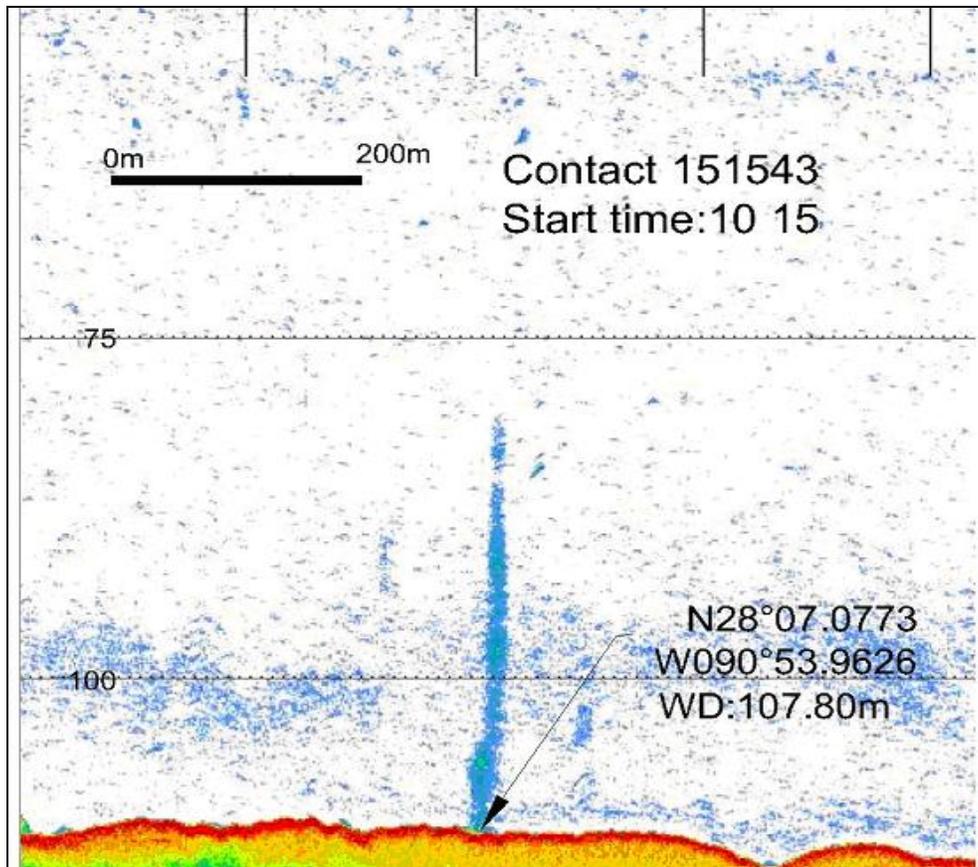


Figure 13. Contact_0731010_151543 Description: Possible seep from seafloor. Time (CDT): 07/31/2010 1015 hrs Location: 28° 07.0773N; 90° 53.9626W Depth displayed: 77.22 to 107.47m

Science Operations:

Fluorometer measurements were logged for the majority of the period and observations of sea-surface conditions were made throughout. The EK-60 echo sounder is continuously collecting data to evaluate the seabed and water column for possible seeps. A small number of GCMS samples were analysed.

Problems/operational issues:

The GCMS continues to have minor problems with the level of air in the mass spectrometer. We continue to work on troubleshooting the problem.

Planned activities for next 24 hours:

The *Ryan Chouest* will continue survey, at a higher spatial frequency, in part of the 8 x 8 nautical mile survey area and vertical casts will be made over the most promising possible seep areas. The vessel will then move to the planned coastal transect heading east along the gulf coastlines of Louisiana, Mississippi, Alabama and west Florida (Figure 1).

Selected Photos:

No photographs were taken over the cruise period.

Full Crew List:

William A. Smith	MASTER	Brian Corley	Mate
Craig Lyons	ENG	Patrick Cousin	A/B
Mark Harmon	A/B	Arthur Triggs	O/S
Elijah Benjamin	O/S	Patric Anderson	QMED
Kile Blunt	OS/Cook	Roderick Baker	OS/Cook
Tosin Majekodunmi	BP	Curtis Walker	Entrix
Andrew Ross	CSIRO	David Fuentes	CSIRO
Emma Crooke	CSIRO	Asrar Talukder	CSIRO
Quinn Guidrey	C&C	Kelly Bates	C&C
Jen Carlson	C&C	Mathew Baham	C&C
Joseph Watson	C&C	Jay Ridgeway	C&C
Josh Chauffe	C-Port	Larry Luke	C-Port