GOMECC-3 weekly summary report. Week 3

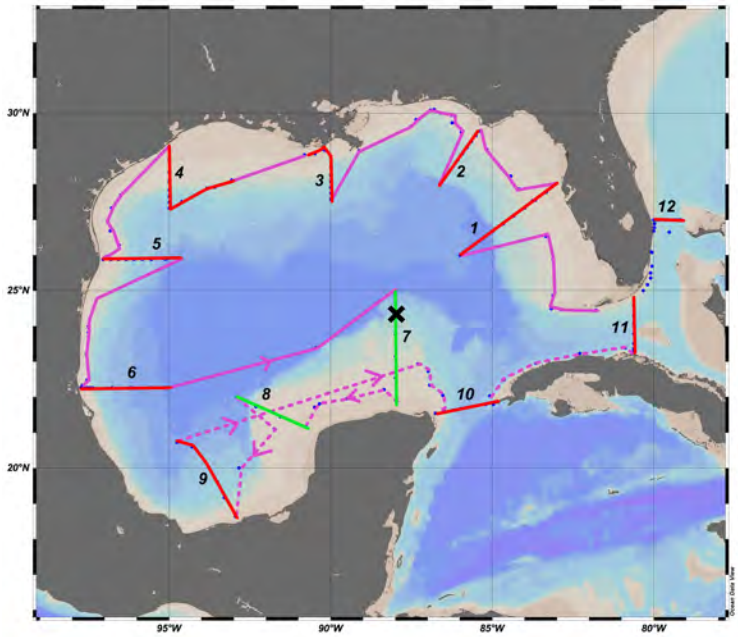
Ahoy land dwellers!

Another week gone and a fair number of stations is now under our belt. We completed the US section of our cruise and entered Mexican waters on Wednesday, August 2nd, after taking samples just outside of the Padre Islands National Park as part of our collaboration with the National Parks Service. We are now covering all new land (or rather, ocean) as far as the GOMECC cruises go.
We completed the first line in Mexican waters and were halfway through the next one when the first weather reports started coming in talking about a potential cyclone. While we were at first hopeful that the system would dissipate, by Sunday it became clear that the system was not going anywhere and that Tropical Storm Franklin was determined to pay us a visit as we sailed through the Bay of Campeche. We are a welcoming bunch here on the GOMECC-3 cruise, but we draw the line at hurricane-force winds, so we decided to hightail it out of there and head straight for the Yucatan peninsula, initially forfeiting our Campeche line. Franklin is in for a surprise when he finally arrives at the Bay of Campeche only to find that we are not there!

Probability of tropical-storm-force winds as ***Tropical Storm Franklin*** *goes through the Bay of Campeche. http://www.nhc.noaa.gov/*

After playing with scenarios A, B, C, D, and who's counting anyway, we came up with a plan that will allow us to get enough coverage of the Bay of Campeche, despite having had to give up our plan to take surface samples all along the coast. See attached map below for our new sampling strategy, which includes a shortened

Yucatan line (line 7 on the map) and a new, short line 8. The ship will have to criss-cross along the Yucatan platform, but we think we can get it done with no overall loss of time.

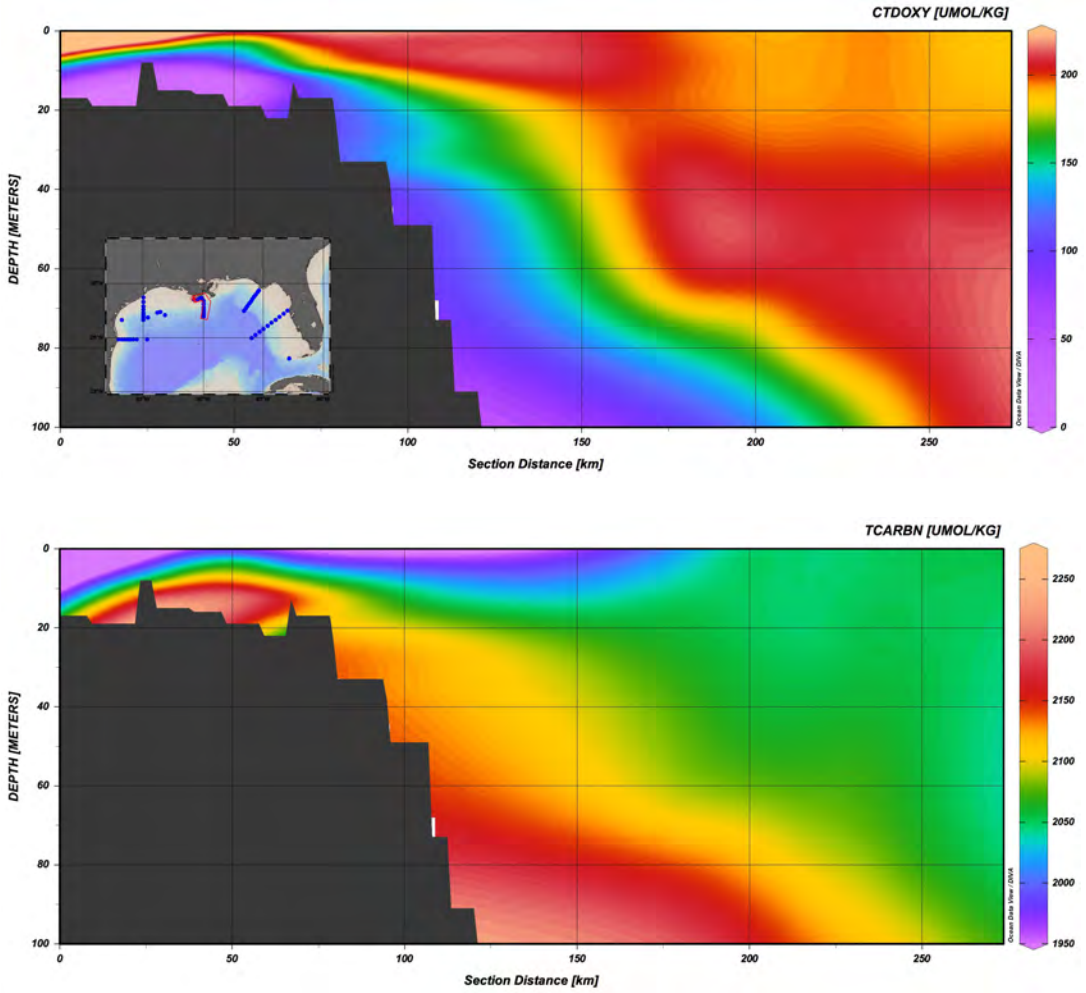


New GOMECC-3 cruise track. Lines in red were in our original plan. Lines in green are new/modified. The X marks our position as of the typing of this report.

Despite the distraction caused by Franklin, we have continued the data collection, increasing our surface underway sampling frequency to one sample every 2 hours, to compensate for the increased transit speed. Our equipment continues to work with no major issues and our scientists on board are by now well-oiled sampling and analyzing machines. They are tireless!

High spirits among the GOMECC-3 scientists (from right to left, Katelyn, Gabriela, Ellen, Alain, Joletta and Leah) during a 3am sampling of a deep station.

We are now starting to look at data from completed lines. Of course the one that has generated the most excitement so far has been the Louisiana line, with its "dead zone" of low oxygen values. We are still waiting to get all the data for this line but the data shows that the hypoxic layer was clearly detectable in 3 of our stations. High DIC values were measured at the same stations and depths.



Hypoxic values of O_2 were measured in the coastal stations of the Louisiana line. The lowest values, of about 11 µmol/kg, coincided with high Dissolved Inorganic Carbon values of close to 2260 µmol/kg

Don't forget to check out our blog for a lot more detail about what we're doing on this cruise: https://gomecc3.wordpress.com/

Onwards!

Leticia and Denis
Chief-scientists GOMECC-3