EXPORTS North Atlantic Context Situational Awareness

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Tomorrow (Saturday 22 May): Mostly cloudy, trace rain. N winds dropping to 15 knots at midday but backing to E and increasing again to 25 knots in the afternoon. Seas 3 m increasing to 3.5 m later in the day, primarily N swell from the storm with a 1 m W component that should make things stay choppy.

Outlook: This weekend's low pressure system will stay far enough north to keep the highest winds out of the study area for once. Forecast conditions still look good for the week. Model trends are in agreement until Wednesday. NHC is monitoring the transition of a tropical depression near Bermuda that could cause trouble at the end of the cruise (see 48hr forecast map). *Sunday 23 May*: Low pressure system will pass from west to east, north of the study area. Cloudy, rain. Overnight wind may increase to 30 knots again, with gusts to 40 knots. Seas building to 5m. *Monday 24 May*: Cloudy, periods of sun, wind dropping below 15 knots, seas returning to 3 m. *Tuesday 25 May*: Cloudy. NW winds less than 15 knots, seas falling to below 2m. *Wednesday 26 May*: Partly sunny, chance light rain. SW winds 10-15 knots increasing overnight and veering N, seas < 2 m. *Thursday 27 May*: Cloudy, N winds dropping from 25 to 15 knots.

Oceanography Summary: Después de la tormenta viene la calma! Back at home (Puerto Rico), we experienced cat 4 winds back in 1998 (I was not there for Maria), but with a mixture of feelings, we saw the sun come out and people gathered to clean debris that may have been flown from miles away into our yard. After the storm on Wednesday/Thursday, our asset map looks like a dispersion experiment, all our assets are spread out everywhere! Lagrangian float has been zigzagging and inertial circles patterns. And, yes the sun came up and we had a descent ocean color image over our region. Similar to the previous storm, we see a decrease in the ocean color surface expression right over A2 (see zoomed globChl and dailyChl), which could be due to mixing and deepening of the mixed layer and we may see a return to high chlorophyll patches and filaments in a day or two. Sea surface temperatures continue the same (12-13C) among all assets and imagery. Not much changes at the PAP station in the past 2-3 days. Gliders are seeing the mixed layer around 100m. James Cooks is seeing something similar and starting to see some stratification. Fluorescence values from the gliders appear to be lower, however scattering remained around the same values, suggesting chl values are now driven by physiology and not necessarily biomass, while phytoplankton may be going through tough times after the storm (senescence stage). So stay tuned for more updates!

Eddy tracking: It is still quite challenging to place the eddy center. Lots of inertial motions as a result of the storm, and the Lagrangian float has likely also spent considerable time within the mixed layer, making it difficult to use as a point of reference for the eddy center location (although should still be the point of reference for the Process Ship!). As of now, we are staying with our previous eddy center result from before the storm, and hope that in a day or two everything will calm down and we will have an updated estimate. Likely we will be shifting southward by 3-8 km. One other thing to note is

that the strongest currents appear to have shifted from the western to the eastern side of the eddy. This result is mostly from AVISO, so it is unclear whether or not this is just an artifact of satellite altimetry tracks.

Weather Forecast Details:

Date	Wind (kn) / Dir	Tair (C)	SWH (m)	Clouds (%)	Precip (“)	Confidence
Sa 22 May	15-25 N-W	12	3-3.5	85	T	medium
Su 23 May	25-30 NW	12	3.5-5.5	80	0.1-0.2"	medium
M 24 May	20-15 NW	13	5-3	95	0.1-0.2"	medium
Tu 25 May	15 W	13	3-2	100	0	high
W 26 May	15-20 SW-N	13	2.5	70	0.2-0.4"	medium

Satellite Imagery and other info:
EXPORTS NA Platform positions and data: https://iop.apl.washington.edu/exports2021/

Links to the imagery (if on Discovery or Cook pls use rsync): TBD
Eddy tracking image: /context_images/eddytracking/2021_05_21_gamma.png
Composite of past Chl: /context_images/chl/2021_05_20_globChl.png
globChl + currents: /context_images/chl/2021_05_20_globChlcurrents.png
Daily chl: /context_images/chl/2021_05_20_dailyChl.png
Daily rrs: /context_images/rrs/2021_05_20_rrs.png
SST (microwave): /context_images/sst/2021_05_21_mwSST.png
SST L2:/context_images/sst/2021_05_20_l2SST.png
Sea Level/Currents: /context_images/sla/2021_05_21_sla.png
Weather: /context_images/weather/2021_05_21_meteogram.png
Forecast map: /context_images/weather/2021_05_21_48hrsfc.gif
Mooring: /context_images/pap/2021_05_21_PAP.png

IOP APL links:
Eddy tracking image:
https://iop.apl.washington.edu/exports2021/context_images/eddytracking/2021_05_21_gamma.png
Composite of past Chl: https://iop.apl.washington.edu/exports2021/context_images/chl/2021_05_20_globChl.png
globChl + currents: https://iop.apl.washington.edu/exports2021/context_images/chl/2021_05_20_globChlcurrents.jpg
Daily chl (L2): https://iop.apl.washington.edu/exports2021/context_images/chl/2021_05_20_dailyChl.png
Daily rrs (L2): https://iop.apl.washington.edu/exports2021/context_images/rrs/2021_05_20_rrs.png
SST (microwave): https://iop.apl.washington.edu/exports2021/context_images/sst/2021_05_21_mwSST.png

SST L2: https://iop.apl.washington.edu/exports2021/context_images/sst/2021_05_20_l2SST.png
Sea Level/Currents: https://iop.apl.washington.edu/exports2021/context_images/sla/2021_05_21_sla.png
Weather: https://iop.apl.washington.edu/exports2021/context_images/weather/2021_05_21_meteogram.png
Forecast map: https://iop.apl.washington.edu/exports2021/context_images/weather/2021_05_21_48hrsfc.gif
Mooring: https://iop.apl.washington.edu/exports2021/context_images/pap/2021_05_21_PAP.png