

## Supplementary

Table S1. Sampling site location and depth information. - = intermediate sites as predicted in Georgian et al. 2020

Site Id	Site Name	longitude	latitude	Depth (m)
1	DC673	-87.3015	28.3124	2222
2	-	-88.1365	28.2794	2143
3	MC344	-88.1695	28.6335	1853
4	MC297	-88.3423	28.6799	1571
5	-	-88.2808	27.8141	2219
6	MC294	-88.4765	28.6722	1371
7	-	-88.5503	28.2196	1708
8	-	-89.1350	27.6003	1622
9	-	-89.9449	27.2348	1936
10	-	-90.3286	27.0269	1885
11	GC852	-91.1651	27.1106	1410
12	-	-91.2405	26.9883	1967
13	-	-91.4224	27.1544	1915
14	-	-91.6654	26.9647	1918
15	-	-92.4495	26.7302	1667
16	-	-92.8585	26.5331	1637
17	KC405	-93.4833	26.5706	1700

Figure S1. Near-bottom current speed (m/s) averaged over 30 days in February 2015 (color shading) and corresponding sea surface height anomaly (m) contours at 0.17m, 0.4m and 0.6m (black contours) in the Gulf of Mexico. Regions shallower than 200m are not shown. The red solid and dash boxes indicate model domain and our region of interest, respectively.

