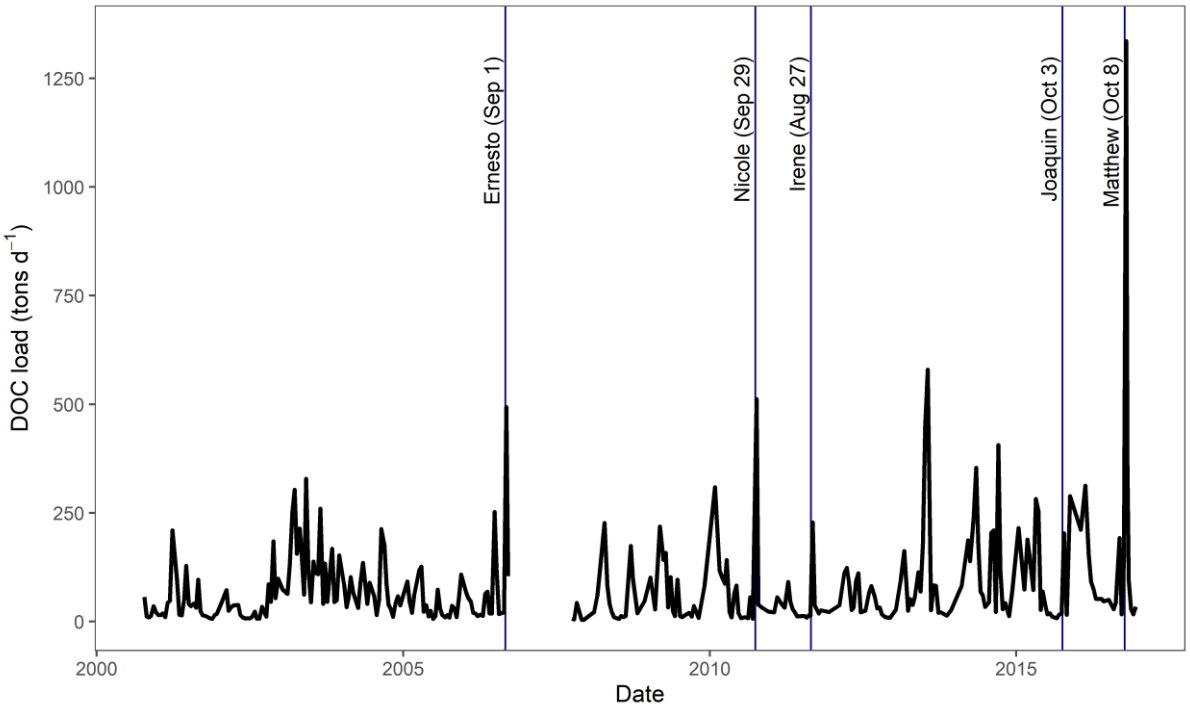
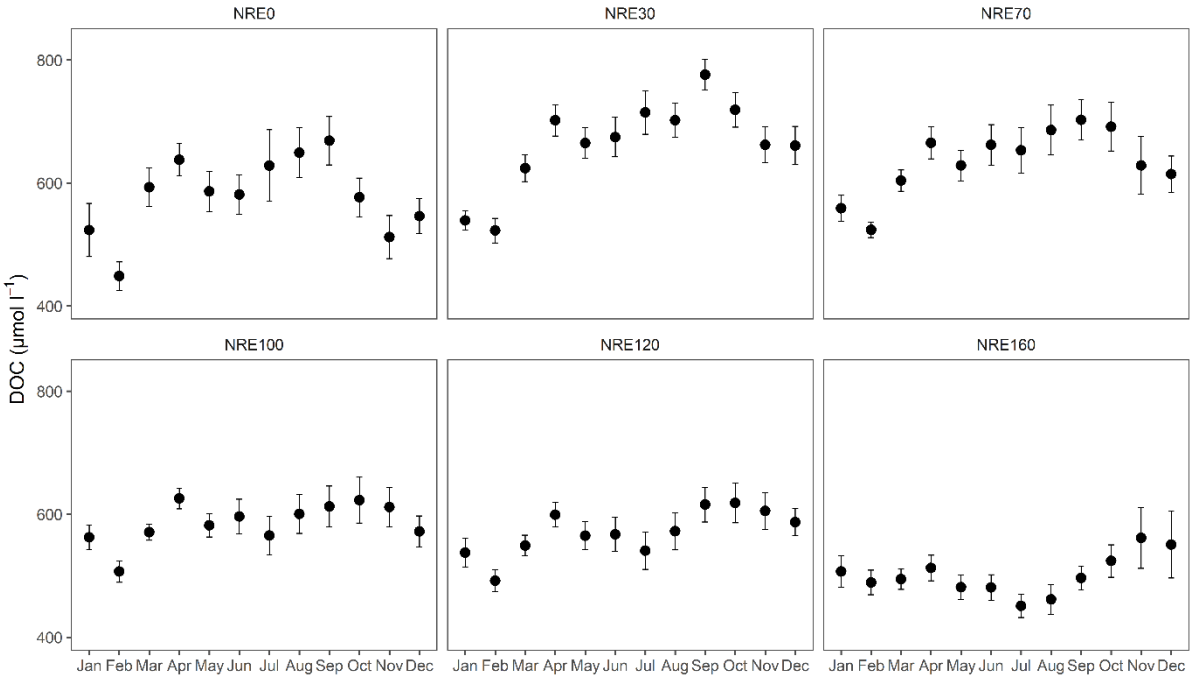
Supplementary material

Supplementary table 1. DOC concentration and salinity at Neuse River Estuary sampling stations during the study period 1999–2017. Mean value, range and number of observations are given.

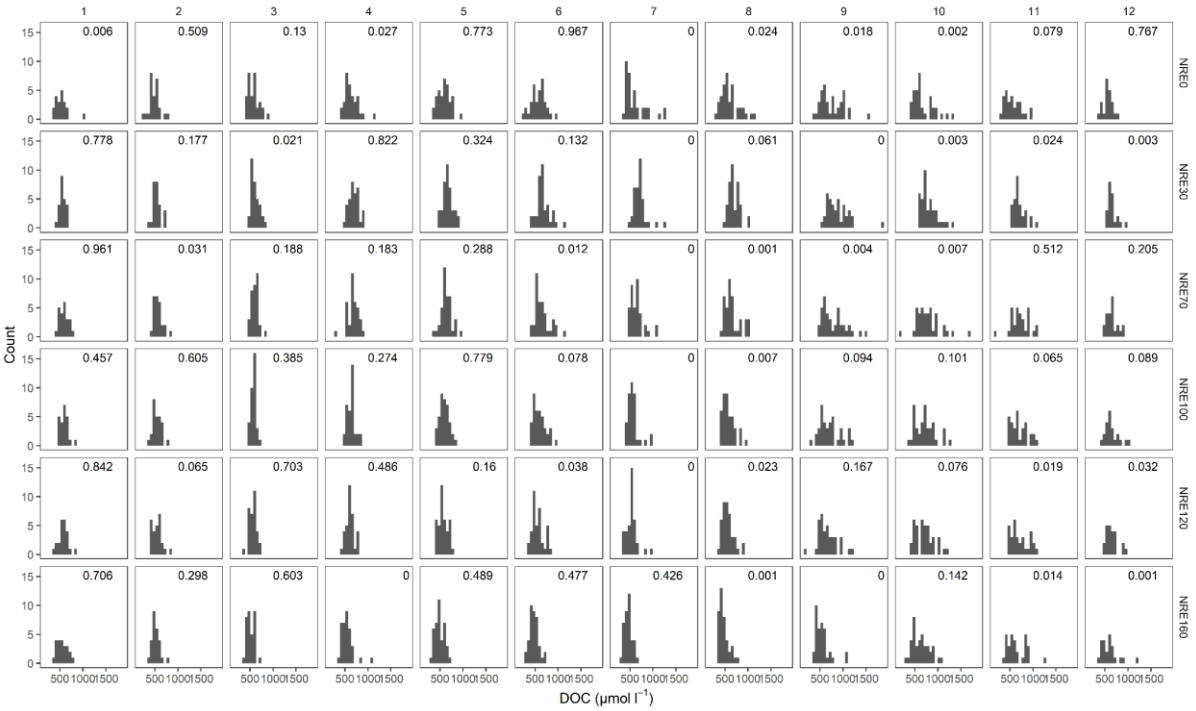
Station	**DOC (µmol l^{-1})**	**Salinity**	***n***
NRE0	604 (214–1543)	0.1 (0.0–1.0)	383
NRE30	693 (388–1841)	1.8 (0.0–12.1)	406
NRE70	671 (188–1700)	5.8 (0.0–19.7)	407
NRE100	623 (310–1287)	8.2 (0.0–21.4)	406
NRE120	603 (198–1218)	9.2 (0.0–22.0)	405
NRE160	532 (282–1262)	12.8 (0.2–24.4)	403



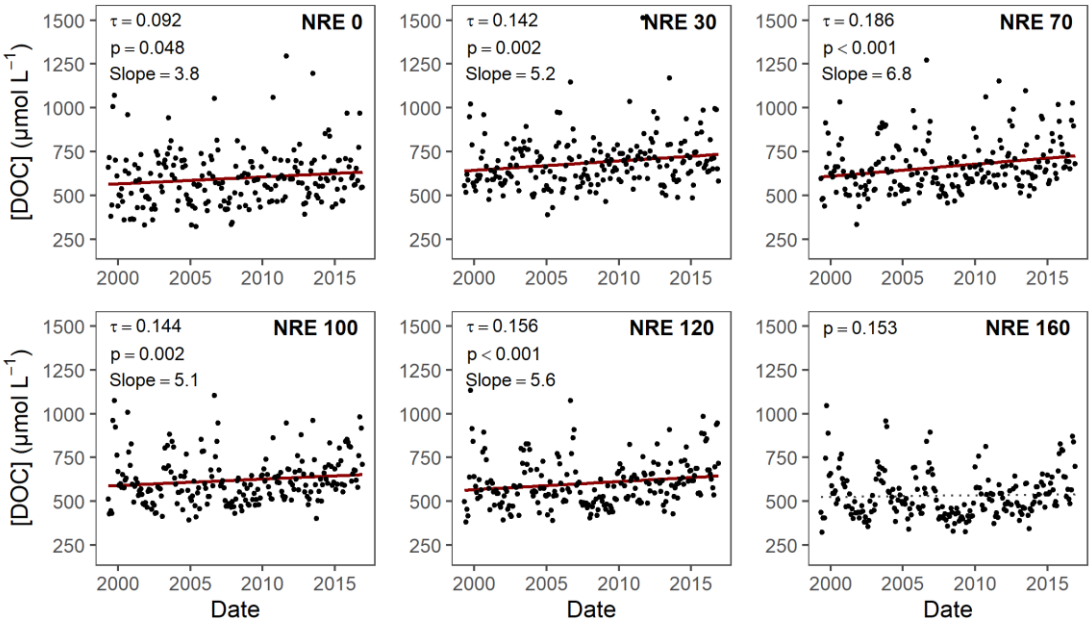
Supplementary Figure 1. Time series of dissolved organic carbon (DOC) loading in freshwater end-member of Neuse River Estuary (NRE 0) from October 2000 to December 2017, with wet TCs (*sensu* Paerl et al. 2018) indicated with vertical lines.



Supplementary Figure 2. Monthly average DOC concentration in Neuse River Estuary sampling stations from 1999 to 2017 used for baseline concentrations in the segmented regression analysis. Storm years (n = 6) are excluded from the baseline calculation. Error bars indicate 1 standard error of mean.

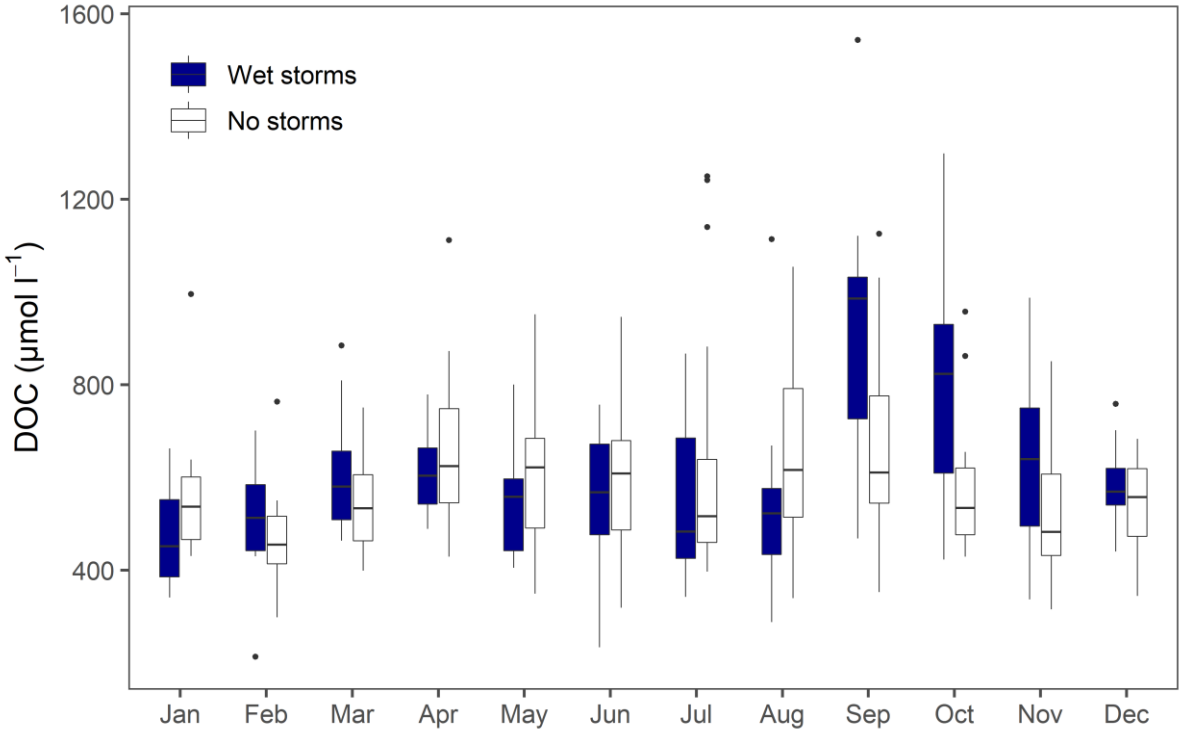


Supplementary Figure 3. Frequency distribution of DOC observations for each month and station in the dataset. The result of a Shapiro-Wilk normality test for each group is given (values greater than 0.05 indicate observations with normal distribution).



Supplementary Figure 4. Monthly means of DOC concentration in the Neuse River Estuary 1999–2017. Solid red line shows significant linear trend and dashed black line non-significant trend. Kendall rank correlation

coefficient (τ) and significance (p) are given, slope value indicates the annual increase in DOC concentration with the observed monotonic trend.



Supplementary Figure 5. Observations of dissolved organic carbon (DOC) concentration at the freshwater end-member of the Neuse River Estuary (NRE 0) grouped by months. Data ranges from 1999 to 2017, with wet hurricanes (*sensu* Paerl et al., 2018) indicated by blue shading.