

Figure 1: Time series of total precipitation, salinity, pH, and phosphate for Bangs Lake, Grand Bay reserve. Vertical green bars indicate a heavy rain event in April 2005 and hurricane Isaac in August 2012. Salinity and pH include a loess smooth to reduce variability.

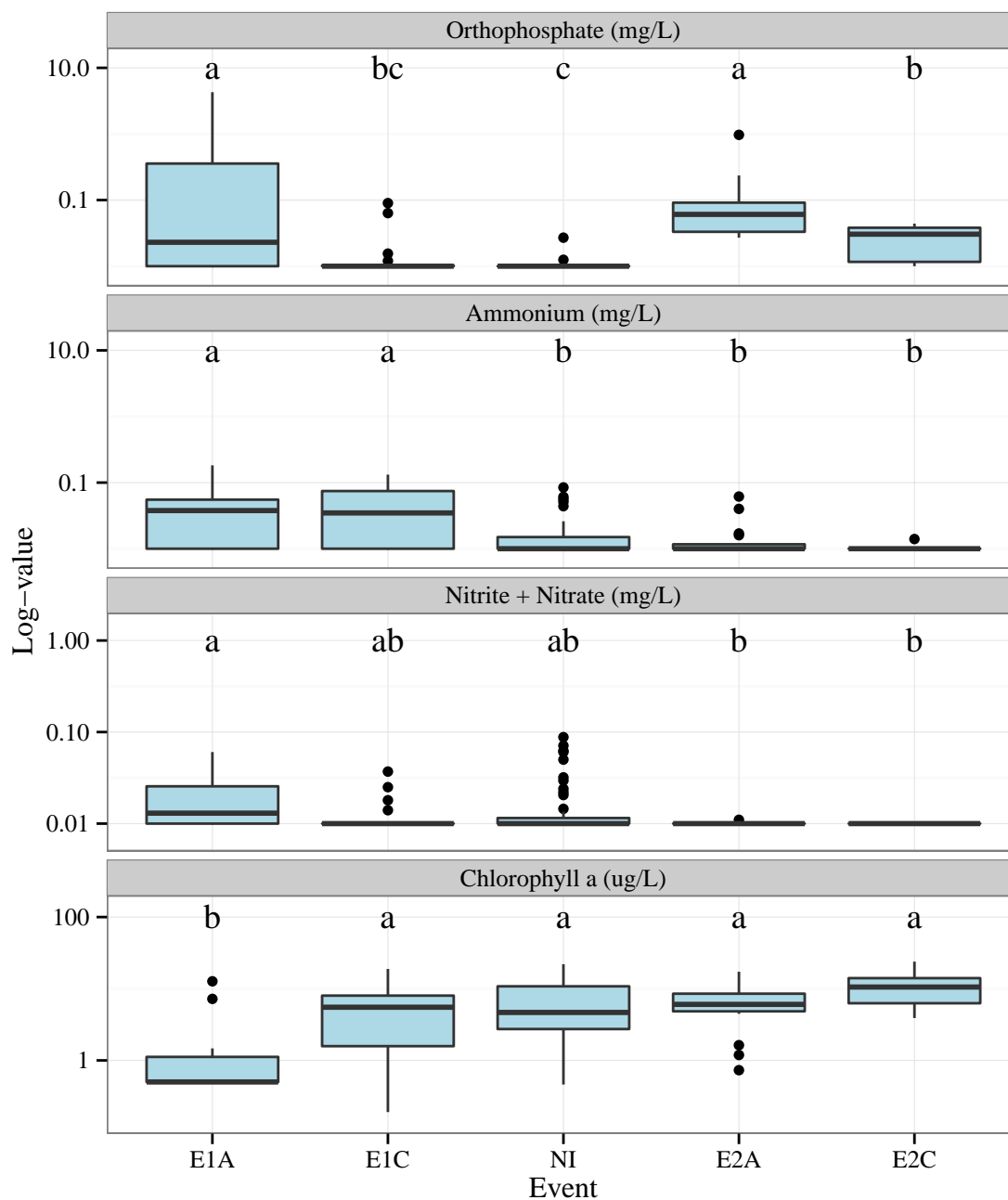


Figure 2: Boxplot summaries of nutrient data at Bangs Lake, Grand Bay grouped by events. Letters indicate events for each nutrient with significantly different observations based on Tukey multiple comparison analysis. Boxes represent the interquartile range (IQR, 25th to 75th percentile) with the median as the middle horizontal line. Outliers are present beyond whiskers (1.5·IQR). E1A: event 1 acute, E1C: event 1 chronic, NI: non-impact, E2A: event 2 acute, E2C: event 2 chronic.

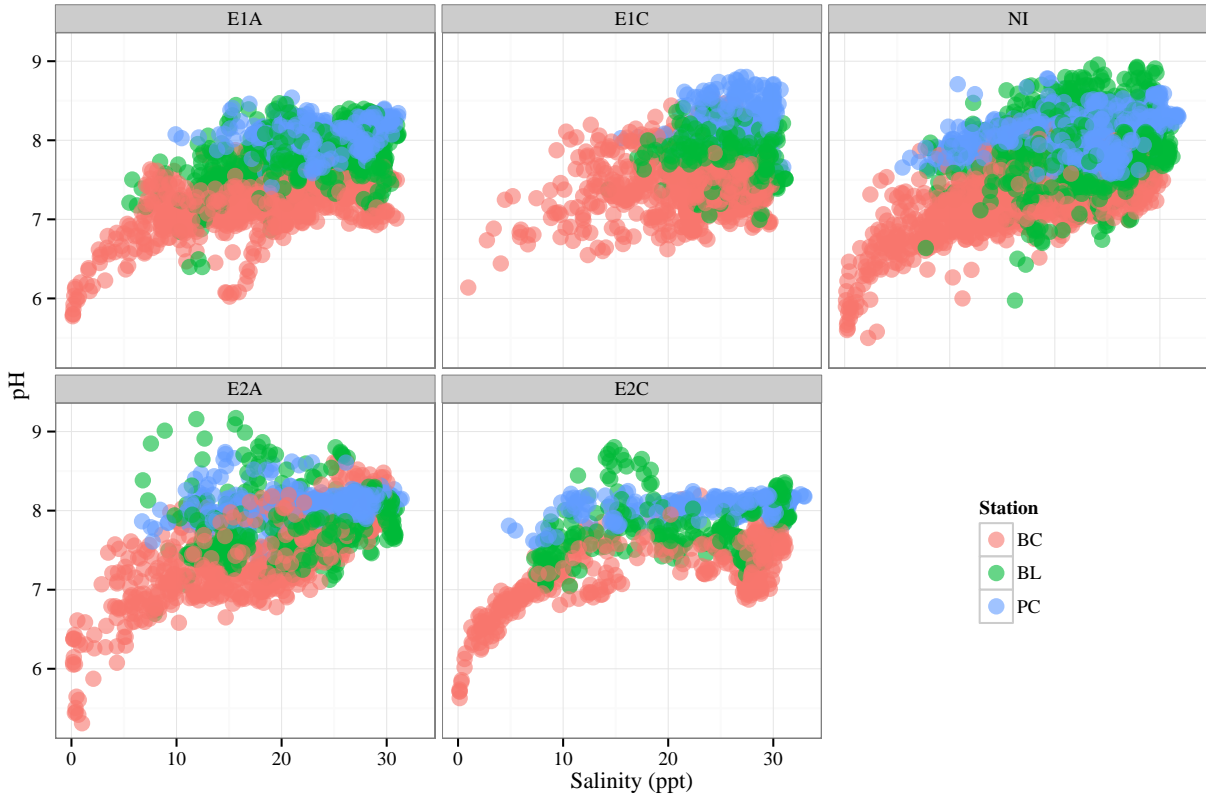


Figure 3: Scatterplots of pH versus salinity for each of the time frames, grouped by station. Observations are daily averages from the continuous time series. E1A: event 1 acute, E1C: event 1 chronic, NI: non-impact, E2A: event 2 acute, E2C: event 2 chronic.

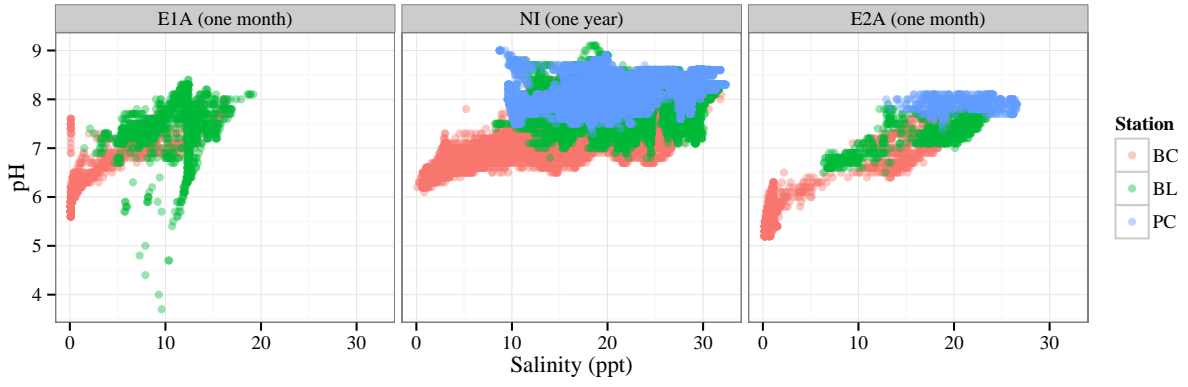


Figure 4: Scatterplots of pH versus salinity for one month following the two acute exposure events (E1A, E2A) and 2010 during the non-impact (NI) time frame. Values are thirty-minute observations at each station. E1A: event 1 acute, NI: non-impact, E2A: event 2 acute.

Table 1: Results of cross-correlation analyses comparing water quality time series between sites at Grand Bay during the two acute event periods. Values for pH and salinity (ppt) are the lags in the compared time series between sites at which the maximum correlation was observed. Negative lags indicate observations were leading at the first site relative to the second, whereas positive lags indicate observations lagged at the first site relative to the second. One lag is thirty minutes.

Site comparisons	First acute event (E1A)		Second acute event (E2A)	
	Lag	Correlation	Lag	Correlation
pH				
BC - PC	1	0.25	1	0.40
BL - BC	-1	0.58	0	0.54
BL - PC	0	0.57	1	0.54
Salinity				
BC - PC	1	0.47	40	0.70
BL - BC	0	0.86	0	0.92
BL - PC	5	0.73	40	0.87

BC: Bayou Cumbest, BL: Bangs Lake, PC: Point aux Chenes

Table 2: Results of cross-correlation analyses comparing nutrient time series between sites at Grand Bay during the two acute event periods. Values are the lags for each nutrient variable in the compared time series between sites at which the maximum correlation was observed. Negative lags indicate observations were leading at the first site relative to the second, whereas positive lags indicate observations lagged at the first site relative to the second. One lag is one month.

Site comparisons	First acute event (E1A)		Second acute event (E2A)	
	Lag	Correlation	Lag	Correlation
Chlorophyll a				
BC - PC	0	0.63	-1	0.52
BL - BC	0	0.49	1	0.49
BL - PC	0	0.92	0	0.87
Ammonium				
BC - PC	0	0.99	-4	0.38
BL - BC	0	0.96	2	0.57
BL - PC	0	0.89	0	0.71
Nitrite + Nitrate				
BC - PC	0	0.70	6	0.94
BL - BC	0	0.81	0	0.11
BL - PC	-3	0.55	-5	0.98
Orthophosphate				
BC - PC	-6	0.60	1	0.78
BL - BC	0	0.62	-1	0.79
BL - PC	-6	0.49	0	0.82

BC: Bayou Cumbest, BL: Bangs Lake, PC: Point aux Chenes