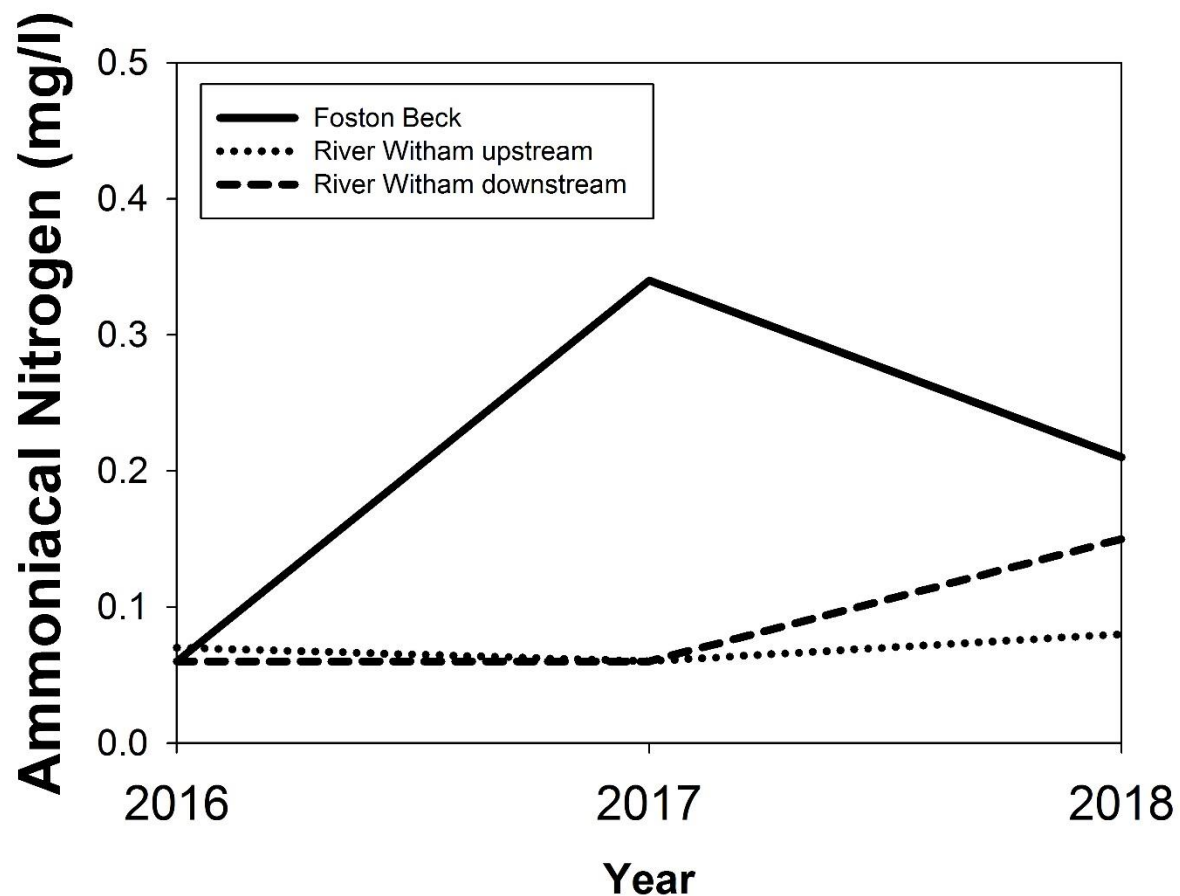
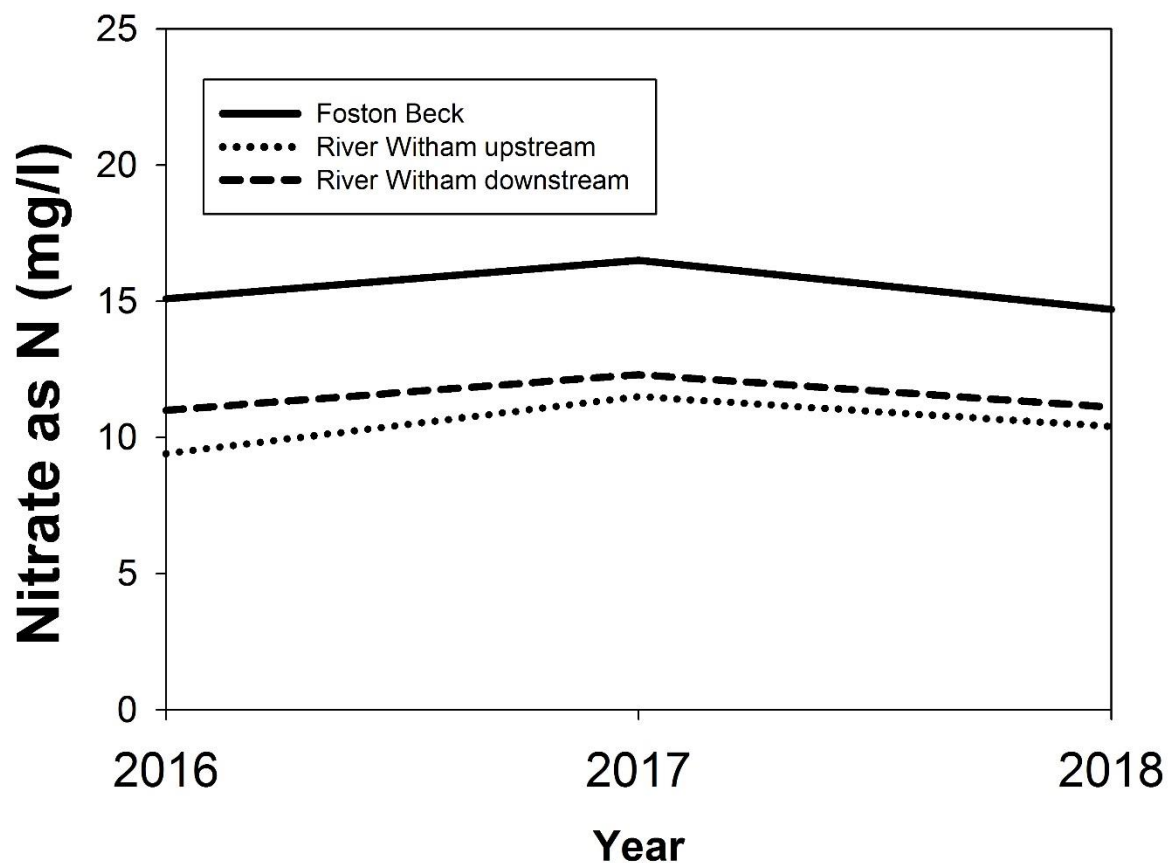


Ammoniacal nitrogen ($\text{NH}_3\text{-N}$) is a measure of the amount of ammonia, a toxic pollutant often found in waste products, such as sewage, liquid manure and other liquid organic waste that can be toxic to aquatic life; elevated quantities in waterways are primarily from direct discharges of pollutants such as untreated effluent.



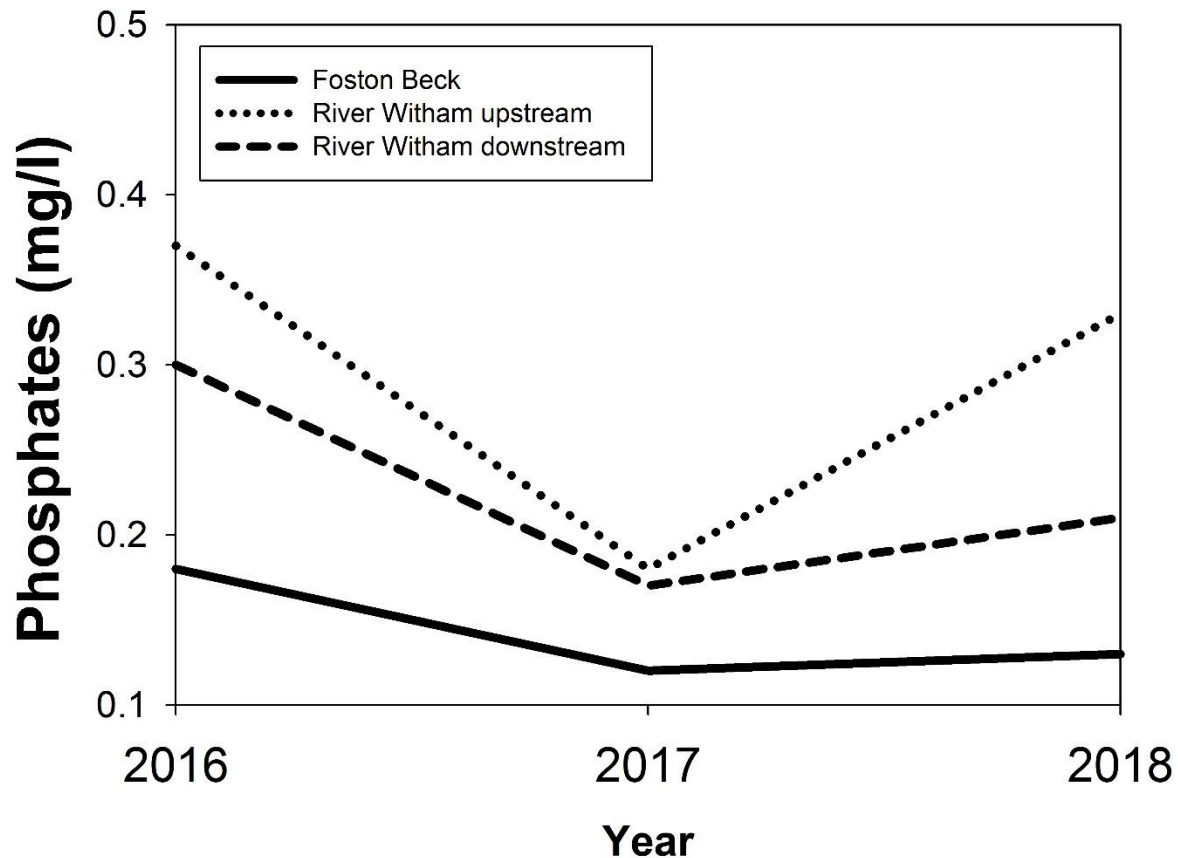
Ammoniacal nitrogen levels are low in the River Witham both upstream and downstream of the Beck but were high in 2017 and 2018 in the Foston Beck in comparison to 2016, this may suggest a new source of ammoniacal nitrogen input into the drainage since January 2016 and may be a cause for concern warranting ongoing monitoring.

Nitrate as nitrogen ($\text{NO}_3\text{-N}$) is an important water quality metric used to indicate water pollution. Low levels of naturally occurring nitrate can be normal, but excess amounts can pollute groundwater. Common sources of nitrate in groundwater include fertilizers, livestock waste, and human waste associated with septic and municipal wastewater systems.



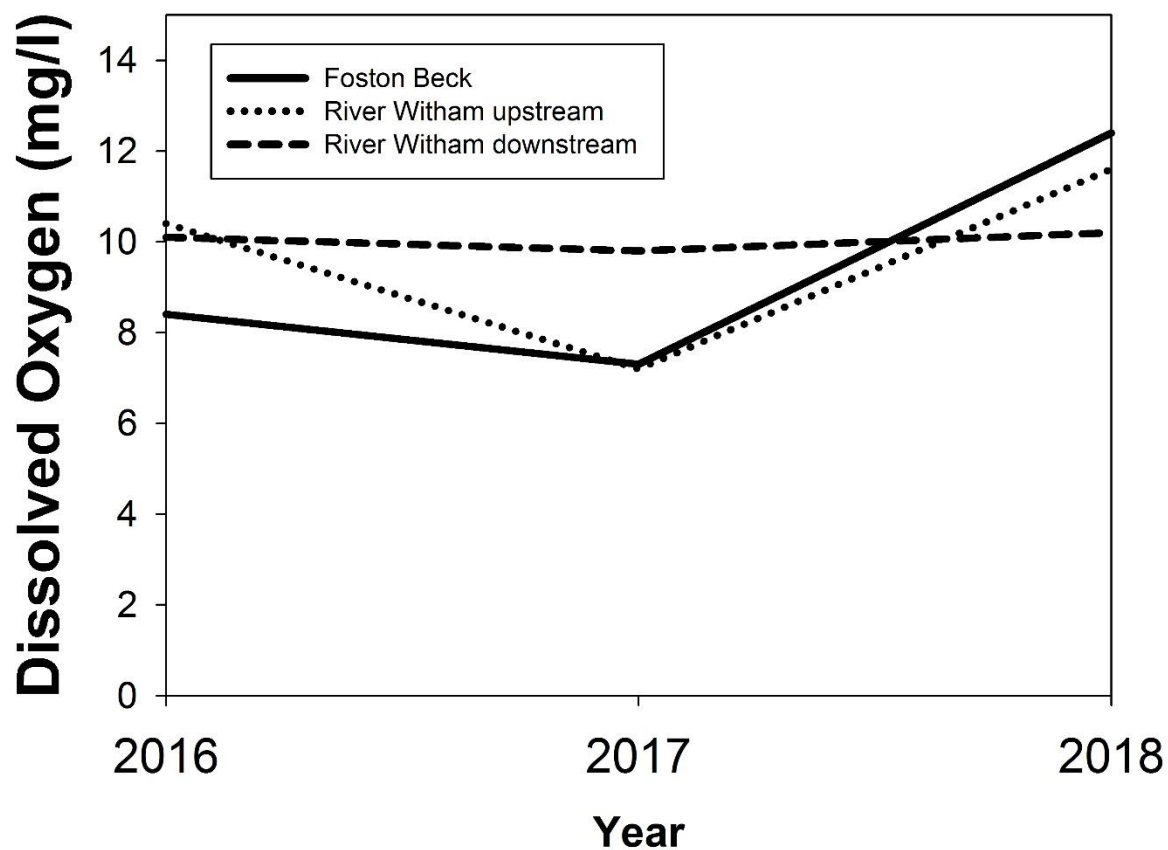
Nitrate levels are higher in the Beck than in river and lower upstream of the Beck than downstream suggesting that the Beck is the source of raised nitrate levels. Values have not significantly changed in the three years of survey.

Phosphates, as P, phosphates enter waterways from human and animal waste, phosphorus rich bedrock, laundry, cleaning, industrial effluents, and fertilizer runoff. These phosphates become detrimental when they over-fertilize aquatic plants causing eutrophication.



Phosphate levels have oscillated in a similar pattern between all three sites between years but have generally been much lower in the Foston Beck than in the River Witham.

Dissolved oxygen is oxygen that is dissolved in water. The oxygen dissolves by diffusion from the surrounding air by aeration of water that has been stirred up by rapids or weirs and as a waste product of photosynthesis by aquatic plants. Bacterial blooms may lead to reduction of dissolved oxygen as can overfertilization of water plants by run-off from agricultural land containing phosphates and nitrates.



Dissolved oxygen levels have remained high in the river and comparable between the three sites, levels are currently healthy.