What are nutrients?

The most commonly referred to nutrients are nitrates (NO_3) and phosphates (PO_4). These nutrients stimulate plant growth. When nutrients are available in excess, the result can be eutrophication. The sources of excess nitrates and phosphates are typically classed as diffuse and point sources. Diffuse sources include run off from residential, industrial and agricultural areas. Point sources typically refer to piped discharges. Understandably, diffuse sources of nutrients are more difficult to trace and control. However, some point source discharges can be sporadic, hidden and historical, meaning their location can also be difficult to identify.

Waste excreted by aquatic fauna and dead aquatic plants and organisms are natural sources of nutrients. These activities create ammonia. Some bacteria in the water change this ammonia to produce nitrite which is then converted by other bacteria to nitrate. Nitrates are an oxidized form of nitrogen and are formed by combining oxygen and nitrogen. Phosphate is the only fraction of phosphorus available to organisms. Whilst the catchment can be a key source of phosphorus, many algal blooms can be triggered by releases of phosphate from the sediment that has accumulated over a long period of time in response to changes in water chemistry.