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Phosphorus concentrations in the Cuyahoga River watershed linked to anthropogenic inputs

College of Sciences and Health Professions

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Abstract

Twenty-four water samples were taken from twelve sites throughout the Cuyahoga watershed from upstream to downstream within two separate occasions. Twelve samples were taken on May 25th, 2016 with no prior precipitation and the conditions were calm, and twelve samples were taken on July 14, 2016 when high precipitation had occurred and water conditions were much more diverse. Using the Automated Discrete Analyzer, the concentrations of phosphorus could be analyzed and differentiated between Total Phosphorus and Soluble Reactive Phosphorus. In comparison to the Environmental Protection Agency whose target concentrations for rivers is .05ppm, in both cases of the experiment the hypothesis has been conclusive with maximum concentrations of .14ppm on May 25th and .20ppm in July 14. Although phosphorus levels were lower in May than July, the results were conclusive and consistent with an increase of phosphorus from source points to downstream. SRP is more of an interest because of the properties in which allows the utilization by Cyanobacteria and other types of algae. Excessive growth can lead to issues such as increased dead zones, raising levels of biological oxygen demand and diminishing water quality overall.