

Merriam Webster defines a watershed as: the area of land that includes a particular river or lake and all the rivers, streams, etc., that flow into it. In accordance with that definition other lakes and rivers flow into a watershed, allowing for pollution and other harmful substances to flow into it. That is known as an unhealthy watershed, one that does not sustain a lot of life and has pollutants flowing through it. A healthy watershed would have many greens and plants around it up to the bank with fish, birds, amphibians, and bugs. A healthy watershed supports a lot of life and is the home to many different animals. The Bronx River located in northeastern New York is approximately 24 miles long and drains an area of 38.4 square miles. The Bronx River is not a healthy watershed. It is full of pollutants and harmful bacteria that could kill you if ingested.

The Bronx River does not support a lot of life. There is hardly any life in the Bronx river besides some macroinvertebrates. Instead of seeing the amphibians and fish you should see, there is more Dorito wrappers and empty Bud Light cans. The Bronx River is full of macroinvertebrates which are invertebrates that can be caught in a 500- μ m net or sieve. These species can range anywhere from very pollution sensitive to very pollution tolerant. Based on what macroinvertebrates are in the river, can help conclude how polluted the Bronx River is. Scuds are a very common macroinvertebrate, they can live in somewhat polluted waters because they breathe dissolved oxygen in the water, typically they are found in relatively healthy waters. The scud population had decreased severely from the summer. In the summer of 2016 there were counts of over 120 scuds. By October 5 2016 their numbers had decreased by about $\frac{2}{3}$. This shows that the water was getting too polluted for the scuds tolerance, and is killing a large percent of their population.

pH and conductivity also indicate the health of the watershed. A healthy watershed should have a conductivity ranging from 150 to 500 μ S/cm to support diverse aquatic life. The Bronx River's conductivity ranges from eight-hundred to over one-thousand two hundred. This amount of conductivity is dangerous and very harmful to living organisms. It cannot support many macroinvertebrates. Pure water has a pH of seven, seven is neutral and has no acidity; anything less than a seven on the pH scale is acidic and anything more than seven is a base. The Bronx River ranges from a 5.5 to under a 7. The Bronx river has the same acidity as human urine. Allowing the question, "is there large quantities of human urine in the Bronx River?", to arise. A 5.5 pH scale rating is way too acidic to support most life, making the Bronx River very unhealthy, limiting the life it can sustain.

Phosphate enters waterways through human and animal waste. These phosphates become detrimental when they over fertilize aquatic plants and cause stepped up eutrophication. Eutrophication is the natural aging process of a body of water such as a bay or lake. The plants die more quickly than they can be decomposed. This dead plant matter builds up and together with sediment entering the water, fills in the bed of the bay or lake making it more shallow. The Bronx River is a very shallow river its deepest point is only a weak 45 feet deep.

Showing the toll the high phosphate levels is having on the river. The Bronx River had unhealthy amounts of nitrate and phosphate which hurt the watershed and prevent it from supporting large quantities of life.

Although the Bronx River is not a healthy watershed it is slowly recovering and getting better. It was used as a waste spillage site for a awhile, but now White Plains, Mt. Vernon, and Greensborough have signed a deal to not dump in the Bronx River anymore. There was even a federal grant to clean it up. Slowly but surely the Bronx River is getting better and returning to its original state. All we can do now is do our part to keep it clean and hope for the best.

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