**PAESTA Podcast Series – You Asked We Answered!**

**Episode 14 – What can we do to help stop water pollution?**

Matthew Gallo, undergraduate student, Penn State Brandywine

Hello, my name is Matt Gallo and today I am going to talk to you about water pollution and how we can stop it.

Over the years we have discovered many different impacts to the environment. We have seen things that have impacted the air, wildlife, and our topic today, water. Within the last year we have heard about polluted Water Michigan. CNN Eliot McLaughlin wrote about 5 main things that people may not know about the crises [1].

* 1 was that they declared a state of emergency
* 2 was the issue know that it is in presidential debates.
* 3 was celebrates stepping in to help.
* 4 was the worry of the long term impacts
* And 5 was the blame game.

The issue grew the first couple of weeks but has died down for a little bit. It is a tough situation for anyone involved. This issue brings up more than just the issue in Flint. This issue should open the eyes of everyone and help them realize how serious water pollution is. An article written on Washington Post talked about how serious the Flint crisis is. Article states, “A group of Virginia Tech researchers who sampled the water in 271 Flint homes last summer found some contained lead levels high enough to meet the EPA's definition of ‘toxic waste’”[2]. Imagine drinking toxic waste. Water can be polluted in many different ways, such as light and noise. Yes, light and noise. In an article written by Kate Wheeling of Science Magazine, she talks about the impact light may have on wildlife that lives in water. She touches on a study done by Thomas Davies from the University of Exeter in the United Kingdom that looks into what dangers light may have on wildlife in water. They state that, “Light from harbors, ships, and offshore structures such as oil rigs may be disrupting the lives of marine worms, barnacles, and corals, preventing their wayfaring larvae from finding suitable habitats in which to settle down” [3]. In this short article called Standard Ship Noise May Interfere with Orcas Communication by Virginia Morell, she suggest that the noises that ships make are making it harder for Orcas to communicate with each other [4]. Both of these article goes to show that it is not only material things that are impacting the water. Having said that, there is still much to be said about the way we as people affect water. An article by Chris Woodford gives an introduction on what water pollution ism what it is in different forms, how we know water is polluted, and the cause and effects of it. He states, “Thus, water pollution is all about *quantities*: how much of a polluting substance is released and how big a volume of water it is released into” [5]. So what does this mean? This means that a person can put a small amount of toxins into a large body of water and it may not have any immediate impact, but over time if we as people keep doing that, then our waters will be completely toxic.

Article was written by Tim Friend, for the National Geographic. Friend talked about the chemical spill in Charleston, West Virginia where 300,000 residents went without running tap water. Lakes and ponds all over the area were polluted by this chemical spill and while locals could not drink tap water, residents waited for water that was coming from Pennsylvania [6]. This helps proves it also hurts living conditions. Article written by Lian Sun called, Risk Identification of water pollution sources in Water Source Areas of Middle Route of the South to North Diversion Project. They talk about the dangers of the water sources caused by humans who work around those areas [7]. We drive around and see trees and other things being knocked down. It is important for everyone to understand we, as people, need to be careful about what we want to build because it can really impact our eco and water system. So what is being done about this? Someone has to pay for all the bad things that we do to our waters, right? Well, Charles Duhigg wrote an article called Water and Sewer System Would be Costly where he mainly discussed the expenses of fixing a pipe that ruptured in the cold. Homes near the pipe that ruptured were also destroyed. George Hawkins, the new head of District of Columbia Water and Sewer Authority at the time, spoke out about the issue stating, “water rates for the average resident went up about 17 percent, to about $60 a month per household. Over the coming six years, that rate would rise above $100.” This would allow the city to replace the damaged pipes fairly quickly [8]. It comes down to if people want to help the cause, then they have to pay for it later. This article is about the Water Pollution Control Act in 1948 written by Ann Power. They talk about the issue that came about at the state and federal levels about polluted waters. However, even after the Act was passed, it still had trouble being effective. According to the article, “Congress changed the act six times before completely rewriting it in the 1972 Federal Water Pollution Control Act Amendments” Today it is known as Clean Water Act [9]. As a person who cares about how we treat our water, it is good to hear that over time we have recognized the issue and have taken some right steps in trying to solve it. My hope is that legislators and the general population continue to try to further solve this issue. An article found on National Geographic website talks about how the advancement of technology has helped science detect more water pollutants recently. They state that 70% of industrial waste are dumped untreated into waters. [10]. Again, as someone who cares about our waters, this is something that is not pleasant to hear. Like I had just said, I hope that we continue to address this issue not only for ourselves, but for generation to come.

(This audio file was recorded by Matt Gallo, undergraduate student at Penn State Brandywine, in April 2016)

**Works Cited**

[1]McLaughlin, E. (2016, January 21). Flint’s water crisis: 5 things to know. Retrieved February 22, 2016, from <http://www.cnn.com/2016/01/18/us/flint-michigan-water-crisis-five-things/index.html>

[2]Ingraham, C. (2016, January 15). This is how toxic Flint’s water really is. Retrieved February 8, 2016, from <https://www.washingtonpost.com/news/wonk/wp/2016/01/15/this-is-how-toxic-flints-water-really-is>

[3]Wheeling, K. (2015, April 28). Artificial light may alter underwater ecosystems. Retrieved March 3, 2016, from <http://www.sciencemag.org/news/2015/04/artificial-light-may-alter-underwater-ecosystems>

[4]Morell, V. (2016, February 1). Standard ship noise may interfere with orca communication. Retrieved February 8, 2016, from <http://www.sciencemag.org/news/2016/02/standard-ship-noise-may-interfere-orca-communication>

[5]Woodford, C. (2015, June 29). Water pollution: An introduction to causes, effects, solutions. Retrieved February 22, 2016, from http://www.explainthatstuff.com/waterpollution.html

[6]Friend, T. (2014, February 17). Water in America: Is It Safe to Drink? Retrieved January 26, 2016, from <http://news.nationalgeographic.com/news/2014/02/140217-drinking-water-safety-west-virginia-chemical-spill-science/>

[7]Sun, L., Xu, M., Jia, J., & Li, C. (2016). Risk Identification of Water Pollution Sources in Water Source Areas of Middle Route of the South-to-North Water Diversion Project. *International Journal of Environmental Science and Development*, *7*(8), 576–580. [http://doi.org/http://dx.doi.org/10.18178/ijesd.2016.7.8.842](http://doi.org/http%3A/dx.doi.org/10.18178/ijesd.2016.7.8.842)

[8]Duhigg, C. (2010, March 14). Saving U.S. Water and Sewer Systems Would Be Costly. *The New York Times*. Retrieved from http://www.nytimes.com/2010/03/15/us/15water.html

[9]Powers, A. (2004). Federal Water Pollution Control Act (1948). In B. K. Landsberg (Ed.), *Major Acts of Congress* (Vol. 2, pp. 81–85). New York: Macmillan Reference USA. Retrieved from <http://go.galegroup.com/ps/i.do?id=GALE%7CCX3407400129&v=2.1&u=psucic&it=r&p=GVRL&sw=w&asid=49bb5ba163fd71f15b96b98afbde8b01>

[10]Society, N. G. (2016). National Geographic Freshwater 101: Pollution. Retrieved February 15, 2016, from <http://environment.nationalgeographic.com/environment/freshwater/pollution/>