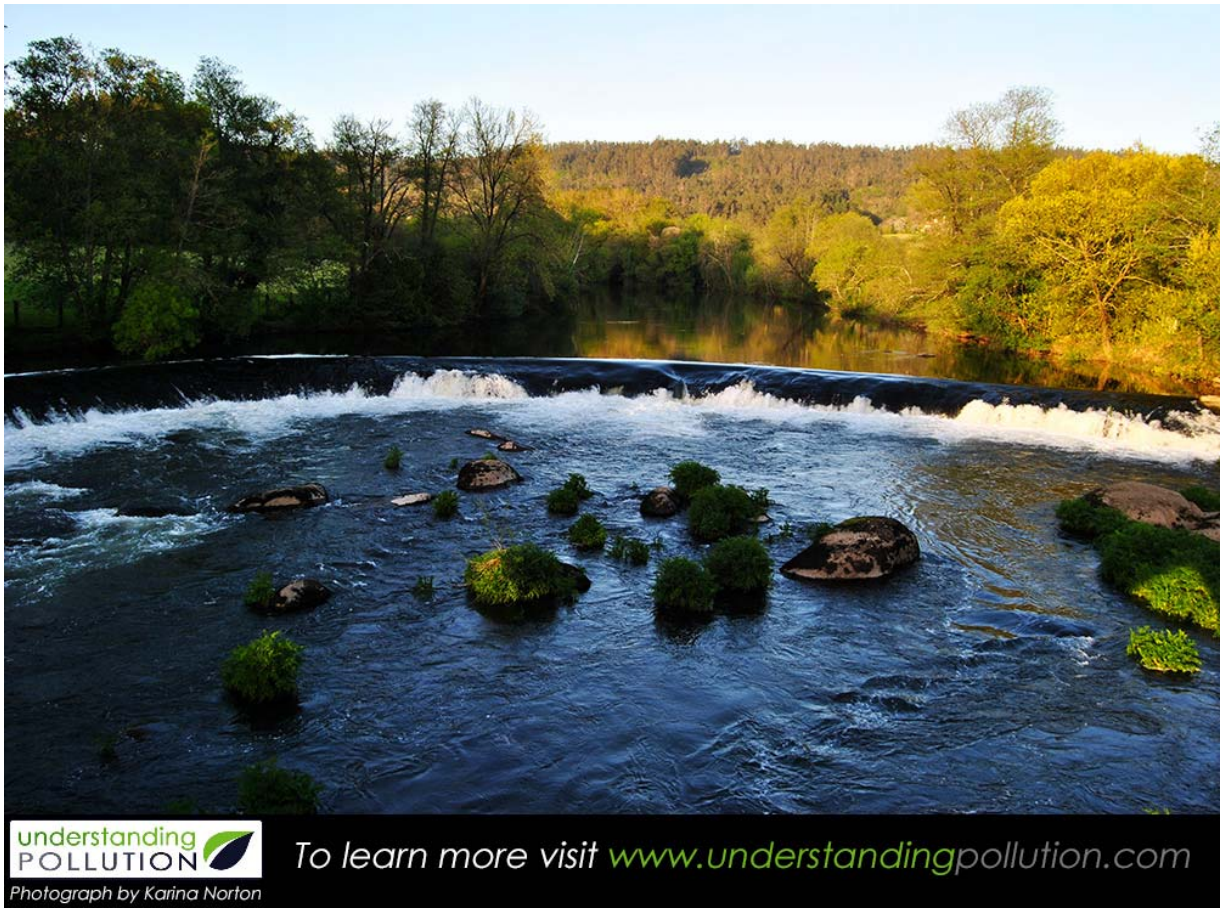
Understanding Pollution: The Benefits of Water Power

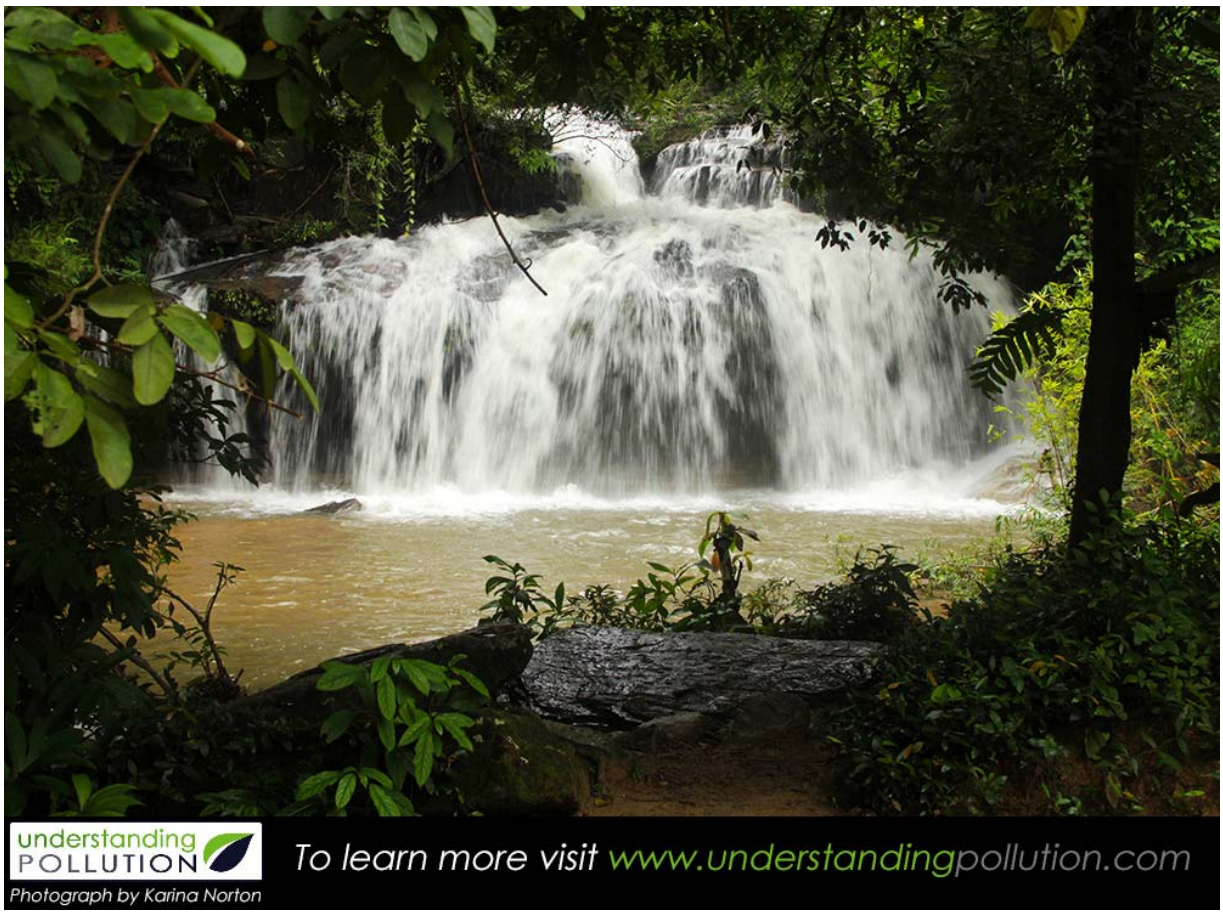
Water is the most precious resource on the planet, but it doesn't just sustain our lives; it can also give us power. That's right, water, of which 71% of the planet is covered[i], can be a source of electric power. In fact, water was one of the earliest sources of power in use by civilization. If we truly needed another reason to worry about our world's water supply, I think the fact that it keeps the lights on should definitely be considered. Water power, or hydroelectric power as it's called today, is one of the oldest forms of power generation in the world, it is a sustainable form of power, and it is an economically beneficial form of power.



The water mill is the earliest form of water based power generation in the world. It was first created in the first century B.C., and by the 19th century it is estimated that there were over 20,000 mills in Europe alone.[ii] How water mills work is very simple. The flow of water turns a large water wheel which is connected to a wooden or metal shaft. As the water turns the wheel, the shaft is moved and powers whatever machinery it is connected to.[iii] Water mills have been used to grind grain, and power timber cutting saws in the 1800s, and the first hydroelectric power plant was created at Niagara Falls in 1879.[iv] In the 2000 plus years since the invention of the water mill, there has been no reason to change how the water mill works, and in fact that is basically how hydroelectric power plants function. Water runs through a turbine forcing it to turn, and as the turbine turns the shaft connected to the turbine is moved which, you guessed it, generates electrical

power.[v] Today, just as in the past, people recognize the simplistic beauty of hydroelectric power, and it accounts for roughly 1/5 of the world's entire electricity production.[vi] Hydroelectric power truly fits the old adage that "if it isn't broke, don't fix it." For something that is so simple, so common, and so useful you would think that more people would be aware of its existence as a viable source of alternate energy.

Aside from the availability of water to power hydroelectric plants, there are a host of other benefits associated with it. The first major advantage of hydroelectric power is that it is renewable. As mentioned earlier, 71% of the earth's surface is covered by water, and all you need is water and a turbine in the right place to create power. As long as there is water, there could be power if the right infrastructure was created, and in fact some of that infrastructure already exists. 65.9% of renewable energy production in the United States is from hydroelectric plants.[vii] All told, it accounts for 7% of all electricity generation in the United States, and 20% worldwide.[viii] Something unique about this type of power generation is that the amount of power created can be varied simply by changing the speed at which water is run through the turbine.[ix] Oh, and how could I forget the two biggest benefits of hydroelectric? Number one is that it doesn't use fossil fuels which means there is no greenhouse gas emission. Number two, there is no pollution created whatsoever from the use of this form of electricity generation![x]



There are also economic benefits, other than cheaper electricity, that come from hydroelectric power. First, the industry currently employs 300,000 people, and it is estimated that it could employ 1.4 million people by 2025 if the industry continues to expand.[xi] Remember that most of the dams and hydroelectric power stations in the country were built in 1930 under the New Deal.[xii] Perhaps it's time to upgrade and expand that infrastructure. Another benefit is that hydroelectric power plants, which are normally in dams, double as a water supply! Then, there's the fact that the construction of a Dam is a massive undertaking in terms of money, workers, and supplies, and that the construction of a dam generally leads to other development projects in the region.[xiii]

Ultimately, hydroelectric power is just one more way that mankind could advance its needs for power and water both in a responsible way. It is both a sustainable and renewable form of energy production that does not adversely affect the environment. It has the potential to put people back to work in a way that will both boost the economy, and give a boost to the environment. No one denies that the developed, and developing nations of the world need electric power if we are to continue to advance as a society and a species. That does not mean that we should strip mine our planet for fossil fuels to burn to supply that need. There are alternatives, and they are alternatives that are not ridiculously expensive in the long run. Throughout history man has recognized the power of water, but now that we truly need that power we're not going to fully utilize it? Let's take a page from the history books, and put the water that we need to survive to work. It will secure both our electric future, and our future need for clean, clear drinking water.

About the Author

Dominick Principe is a graduate of Rowan University with dual Bachelor Degrees in Elementary Education and Writing Arts. He is a prolific reader who devours any book put before him, and feels that life is one great long book without an end. He fills his hours constantly exploring new information, and seeking to educate himself in the ways of the world. He puts all of that knowledge and his passion for learning to good use teaching English as a second language to students of all ages. When his nose isn't buried in a book, or in class teaching, then he can generally be found typing away at his computer working on some random piece of writing that he was inspired to do.

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[ii] "History and Tchnology Fo Watermills." *History and Tchnology Fo Watermills*. Web. 19 Nov. 2014. <http://www.jesmonddeneoldmill.org.uk/mill/technology.html>.

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