Yantzge river pollution assignment

In February 2008, the Chinese State Environmental Protection Agency declared that water quality is worsening in many branches of the Yangtze River that drain into the reservoir. Additionally, the quality of water behind the reservoir is only minimally improving. This can be attributed to the slowing of the natural flow of the river due to the dam and reservoir. The reduced flow inhibits the rivers ability to flush out pollutants naturally (Bradsher, 2008). Even before construction began on the 3 Gorges Dam the Yangtze River was already suffering from extreme pollution but the addition of the dam has increased pollution levels.

One reason is the use of commercial fertilizers, another is sewage from passenger boats that tour the river and reservoir (Yangtze Pollution Irreversible) and finally and possibly most serious is the increased greenhouse gas emissions from decaying vegetation. Farming has long been a fruitful endeavor along the Yangtze River due to its frequent flooding. The flooding deposits nutrient rich silt from the river onto farmland. Since the reservoir is intended to limit flooding, the farmland that is still available will have to utilize commercial fertilizers for their crops.

These fertilizers often contain cancer-causing nitrates that will runoff into surface water and will also be absorbed into ground water (Min). Another cause of pollution comes from the passenger boats touring the area. Tourism was a promoted benefit of the dam but it comes at a price since the tour boats release sewage into the water (Min) and that is a primary pollutant of the reservoir. Fertilizers and sewage are common pollutants but the third pollutant comes as a surprise since most people believe hydroelectricity to be clean energy and that is certainly not the case.

A major problem with hydroelectric dams in general is that they are not the clean energy that everyone believes them to be. They produce significant amounts of greenhouse gas emissions. The pollution is created when the reservoirs are initially flooded. The plant matter living in the newly filled reservoir decays and releases carbon into the air. The plants then settle to the bottom of the reservoir and as they decay without oxygen methane is produced and remains underwater. This methane is then released into the air as the water passes through the turbines.

Unfortunately, the pollution problem does not evaporate after the initial creation of the reservoir. Pollution continues to develop in this manner due to plant life regrowing in flooded regions during the dry seasons. When the water level rises, the cycle begins again. In essence, hydroelectric plants convert atmospheric carbon dioxide into methane gas and methane gas is 21 times stronger than carbon dioxide (Graham-Rowe). Scientists are still unsure of the exact damage caused by man-made reservoirs and hydroelectric plants but the issue is beginning to gain prominence in the scientific and political communities (Graham-Rowe).

The problem is serious enough that Philip Fearnside from Brazil’s National Institute for Research in the Amazon in Manaus stated that in 1990 the greenhouse effect of emissions from the Curua-Una dam in Para, Brazil, was more than three-and-a-half times what would have been produced by generating the same amount of electricity from oil (Graham-Rowe). That this will be a huge problem for the 3 Gorges Dam is obvious. The size of the reservoir is to be 412 miles long. In comparison the Curua-Una dam is 102 km in length (Gunkel, Lange, Walde, Rosa).

It should be noted that the Curua-Una is near the equator and will naturally produce more greenhouse gas emissions than dams in colder climates due to vegetation growing more readily in the area. Pollution has long been the challenge of mankind and as scientists study and learn more of the ways that man has created pollution and the problems that it causes, mankind will have to reevaluate its needs. For now, China with its burgeoning population has to provide means of generating enough electricity for its people.

Unfortunately, as scientists have learned many of the effects of pollution are not realized for years, so at best mankind will have to continue to look for genuine clean energy to support its needs. Works Cited Bradsher, Keith. China Notes Pollution at Three Gorges Dam. New York Times. February 20, 2008. October 20, 2008. http://www. nytimes. com/2008/02/20/world/asia/20briefs-china. html. Graham-Rowe, Duncan. Hydroelectric power’s dirty secret revealed. New Scientist. February 23, 2005. http://www. energybulletin. net/node/4500. Gunkel, G. , Lange, U. , Walde, D. and Rosa, J. W.

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