The Effects of Forest Fires on Stream Invertebrates and Water Quality at Two Different Sites in New Mexico

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Forest fires are quite common during drought season, we see the signs that warn us of the danger, but we hardly take into consideration what happens to microorganisms. Based off of experiments done the past two years, chemicals from wood ash have been found to be toxic to aquatic life by changing the quality of the water. These results were observed after examining the effects of forest fires on stream samples from the Lincoln National Forest (LNF) in New Mexico. Further testing was done on a second location in the Gila National Forest (GNF) in order to further support previous findings. The sample sites differ in that the LNF experienced a fire 4 years ago, while the GNF was exposed 6 months ago. The stream samples from both locations were exposed to constant smoke and ash for 7 hours, while deaths and water quality tests of pH, total alkalinity, dissolved oxygen, temperature, and turbidity were recorded every hour. After analyzing the data, there were indicators of a recent fire in the GNF. In comparison to the LNF, the GNF had a lower alkalinity level, higher turbidity, and a difference in color of species. There was evidence of death caused by ash in the stream invertebrates of both locations; however, there were less deaths in the GNF. In general, stream invertebrates are said to have a vast impact on aquatic ecology. It is important to limit human actions that can cause forest fires in order to allow the ecosystem to thrive.

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