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Mudslide Effect On Macroinvertebrate Diversity

The purpose of this project was to find the effects of the August 6, 2007 mudslide that occurred on the Frying Pan River. Specifically the effects the disturbance caused on the macroinvertebrate populations below the disturbance compared to above the disturbance. Samples of macroinvertebrates were taken from sites above and below the mudslide disturbance. Within each site, there were four sub-sites where samples were collected. These sub-sites were kept constant throughout the procedure. The samples were sorted into orders while throwing out detritus. Each order was sorted into species. The numbers of individuals were counted. The Shannon-Weaver diversity index was used to determine diversity above and below the disturbance. The frequency of each species was calculated. The difference in diversity above and below the disturbance was very small. A normal Rocky Mountain stream is between three and four on the diversity index. The samples above and below the disturbance were both between these numbers. In the frequencies, there was a large change between the sites above and below the disturbance. Some species did increase in frequency below the disturbance. The results show that the caddisflies and mayflies were most affected by the mudslide. This is important because they are the orders that will disappear the fastest when sediment impedes on the rivers. Fish in the Frying Pan River depend on these insects as a food source so large decreases in the insects suggest that the fish could also see a decrease in individuals.