Summary of Two Mile Run Sampling
(Sites above and below an abandoned mine drainage treatment system)
Report by: Christy Hensler (Lycoming College)

Site ID: Middle Branch Above MBI RLD
Date: 10-24-07 ** It is important to note that variations in some of the indices reported can be a result of seasonal changes (insects burrowing into substrate during winter months, frozen ground)

The sample had a total of thirty eight organisms that spanned nine taxa. In this sample there were four scrapers, one filterer, and twenty five were shredders. The Shannon-Weiner index was used to determine species diversity in each of the samples. The higher the value in this index means there is less probability that the next individual chosen from the sample will be the same as the last one chosen. A lower value means the probability of encountering the same species is great. The Shannon-Weiner species diversity index for this site is 2.34. This value is one of the highest out of all of the sites which means it has higher species richness and evenness. The number of scrapers in a stream indicates stream health. The Scraper/Filterer ratio is 2.50 which is high compared to the other sites. The Percent of Shredders is 67%. The EPT/Chironomidae ratio (value=7.00) and EPT Taxa (value=4) values also indicate stream health. The values here are high compared to the values from the sites taken from the below sites. The percent of dominant taxa is 50% which means one type of individual makes up half of the sample (Nemouridae: Nemoura sp.). Although the Hilsenhoff biotic index was designed to indicate levels of organic pollution, it is also used to indicate "stress" in streams caused by other factors (with low values signifying low organic pollution/stress, and higher values signifying higher amounts of organic pollution/stress). The Hilsenhoff biotic index of this sample is 2.21 which means there is no apparent organic pollution and low stress.

Site ID: Middle Branch Below MB2
Date 10-24-07 ** It is important to note that variations in some of the indices reported can be a result of seasonal changes (insects burrowing into substrate during winter months, frozen ground)

This sample taken below the treatment system had only one organism in it (Tipulidae: Tipula sp). This dipteran is considered to be a shredder. The Shannon-Weiner diversity could not be performed due to lack of organisms. Needless to say, the stream is ranked very poor in all other indicators of water quality. The Hilsenhoff biotic index of this sample is 4.00 which indicates slight organic pollution and mild stress.

Side ID: Middle Branch Above

Date: 1-10-08 ** It is important to note that variations in some of the indices reported can be a result of seasonal changes (insects burrowing into substrate during winter months, frozen ground)

The site had a total of fifty one organisms from ten taxa. In this sample one was a scraper, three were filterers, and twelve were shredders. The Shannon-Weiner diversity index is 3.01 which is the highest out of all the samples. Although species diversity is high, the percent of shredders is only 25%, and the Scraper/Filterer ratio is also low with a value of .50. The EPT/Chironomidae ratio is 2.94 and the EPT taxa is 7. The sample here may differ so greatly from the other sample taken at the above site due to the time of year of the sample. More samples are needed to make a definitive statement about water quality. The Hilsenhoff biotic index of this sample is 3.96 which indicates slight organic pollution and mild stress.

Site ID: Middle Branch Below
Date: 1-10-08 ** It is important to note that variations in some of the indices reported can be a result of seasonal changes (insects burrowing into substrate during winter months, frozen ground)

The site had a total of six organisms from three taxa. There were two filterers, two shredders, and no scrapers. The Shannon-Wiener diversity index is 1.58 which is low due to few numbers of organisms. The percent of shredders (value=43%) and the EPT/Chironomidae ratio (value=5) which is relatively high. The dominant taxon makes up 33% of the sample. The number of EPT taxa is 2. The lack of organisms indicates poor water quality. The Hilsenhoff biotic index of this sample is 5.00 which means there is some organic pollution and the aquatic community may be stressed.

Side ID: Middle Branch Below
Date: 3-11-08 ** It is important to note that variations in some of the indices reported can be a result of seasonal changes (insects burrowing into substrate during winter months, frozen ground)

The site had three individuals from two taxa. All organisms are classified as shredders. The Shannon-Wiener diversity index is 0.92 which indicates there is very low species diversity. Values that indicate stream health worsened such as the EPT/Chironomidae ratio (value=2), EPT taxa (value=1), and the percent of dominant taxa went up to 67%. The lack of organisms indicates poor water quality. The Hilsenhoff biotic index of this sample is 3.00 which indicates there is no apparent organic pollution and low stress.