

Limestone Run IBI 2004

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The research conducted at Limestone Run is just a part of a larger study performed by the students at Milton Area High School. Milton Area High School has been awarded grant money from the Pennsylvania Growing Greener Program coordinated by Pennsylvania's Department of Environmental Protection (DEP). Growing Greener has currently invested \$23,920 into Milton Area High School's outdoor education class, taught by Michael Yeager. This grant money was set out to help identify and map out problems located along Limestone Run. After finding these trouble spots, the students were to design and implement necessary changes over a ten year span. A main focus of their restoration involved the planting of new riparian buffers in areas by overgrazing. Other aspects of their study included looking at sediment deposition, bank erosion, and channelization. One reason that the high school wants to do this study is to help bring back trout populations that were once prevalent along the stream.

Lycoming College's Clean Water Institute (CWI) has been assisting the high school students in their quest to monitor the stream. Lycoming College has been appointed to help instruct and demonstrate different forms of testing for stream health. Over the last two years CWI has been assisting in fish population estimates using capture and release techniques. Electrofishing has been carried out along 5 strategically located sampling sites on Limestone Run. These fish shocking trips have been used to determine stream quality. The stream quality assessment using fish shocking follows the protocols outlined in the EPA's Rapid Bioassessment Protocols for Use in Streams and Rivers (<http://www.epa.gov/owow/monitoring/rbp/ch08main.html>). These protocols can use either fish or Benthic Macroinvertebrates for water quality assessments.

Electrofishing is population sampling technique designed off of a catch, mark and release program. Two passes of 100 meters in length were conducted. Each run was set up with one person running the shocker and two to five people, depending on size of the stream in that location, with nets catching fish. After each pass the fish were then weighed and identified. If a fish had abnormalities, like parasitic black spots on their scales, they would be noted. These identifications will then be used in determining the score for the IBI fish index as described below. Population estimates were done using the statistical program "Fish Map".

Results of three sites sampled in 2004 still indicate the stream condition is in the "fair-poor" range. This condition is the same as the 2003 sampling along two sites. Last years data can be found on the website <http://www.lycoming.edu/biology/cwi/reports.htm#limestone>. This year's sampling sites were located a few miles upstream from the previous years testing. Condition was concluded by adding up the

individual score for each of the IBI metrics. The score we achieved overall was 38 while the ranges of score are as follows: Excellent: 58-60, Good-Excellent: 53-57, Good: 48-52, Fair-Good: 45-47, Fair: 40-44, Poor-Fair: 35-39, Poor: 28-34, Very Poor-Poor: 23-27, Very Poor: 12-22, No Fish: <12. When you look at each testing site individually all scores are considerably lower than the grand total. Data for each site individually can be found as Table 4 and the overall total can be found as Table 5. The total score is two points higher than the previous year. This could lead us to believe that the riparian planting and the other improvements they have been making are on their way in the right direction. Hopefully within the next few years their efforts will prove to be successful. They are well on their way to having trout back into their streams.

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