

Macroinvertebrate Surveys of Duck Creek  
2009 – 2013  
Duck Creek Watershed Assembly  
Muskegon Conservation District

The accompanying charts summarize the findings from twice-yearly surveys of the benthic macroinvertebrate community in Duck Creek, Muskegon County, over the past four years.

For a summary of the watershed's characteristics, refer to the Watershed Management Plan archived at the Duck Creek wikispaces site ([duckcreekwatershedassembly.wikispaces.com](http://duckcreekwatershedassembly.wikispaces.com)).

The charts show the values of a Stream Quality Index (SQI) for various dates and sampling sites. The SQI is a semi-quantitative method of assessing in-stream conditions using observed diversity and abundance of organisms, rated according to the scheme MiCorps/DEQ applies in Volunteer Stream Monitoring Programs. More details about the methods, as well as the archived data resulting from their application, are accessible at [micorps.net](http://micorps.net).

The data in the charts exhibit the following characteristics, among others.

- a) Four of the six sites (#s 1, 3,4, and 7) show unchanged or slightly improved conditions
- b) The other two sites show trends towards slight (#6) or marked (#2) declines in overall stream quality
- c) Most of the time, most of the sites fall into the “Fair” classification according to the MiCorps rating system, with only sites #4 and #7 approaching a “Good” rating consistently

A more detailed examination of the data tabulated at [micorps.net](http://micorps.net) suggests that the relatively low quality ratings for Duck Creek do not arise from a preponderance of pollution-tolerant organisms. Instead, a lack of habitat diversity and richness, coupled with the small size of the stream, are more likely causes. For example, the poorest-rated sites often are dominated by very pollution-sensitive organisms, such as case-building caddis flies.

Small stream size restricts the number and types of available habitats in the 300-foot reaches covered by the sampling protocol, even if all the habitats and the water are of the highest quality. Restricted habitat means restricted abundance and diversity in the benthic macroinvertebrate community. The larger the stream, the greater the abundance if not the diversity of various habitats.

Nonetheless, the declines in SQI at site #2, and to a lesser extent at site #6, are matters of concern that deserve more detailed investigation.

The dataset summarized here resulted from the efforts of many volunteers---you know who you are!---over several years. It testifies to their diligence and skill.

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