

ANALYSIS OF FRESHWATER SAND-DWELLING CHIRONOMID LARVAE IN DISTURBED AND RELATIVELY UNDISTURBED BLACKWATER STREAMS

Robert C. Fitch and David C. Beckett
Department of Biological Sciences
University of Southern Mississippi
P.O. Box 5018 Southern Station
Hattiesburg MS, 39406-5018
Phone: (601) 296-0973
E-mail: Robert.Fitch@usm.edu

Freshwater sand-dwelling chironomid larvae were studied in the summer of 2002 in six blackwater streams in Southern Mississippi. Three of the streams were in relatively undisturbed habitats and the other three streams were in disturbed habitats affected by either non-point source pollution, point source pollution, or both. Sand core samples were taken randomly within three sites per stream (five samples per site; fifteen samples total per stream), and chironomid larvae were identified to the lowest possible taxon. *Rheosmittia* sp. composed 20 - 80% of the larval chironomid population in the undisturbed streams, whereas the three disturbed streams had three different dominant taxa (i.e., *Polypedilum scalaenum* group, *Tanytarsus* sp. P, and *Dicrotendipes* sp.) and low percentages of *Rheosmittia* sp. Taxon richness, total number of chironomids, and species diversities were variable among the streams. However, polar ordination based on percentage similarity showed that the three disturbed streams clustered together, whereas the three relatively undisturbed streams formed a cluster distant from that of the disturbed streams. This study indicates that *Rheosmittia* dominates sandy substrates in blackwater streams that are relatively unpolluted. Furthermore, freshwater sand-dwelling chironomids can serve as indicators of ecological disturbance.