

Assessment of impact of heavy metals on the communities and morphological deformities of Chironomidae larvae in the River Damodar (India, West Bengal)

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Abstract – The investigation included the effect of heavy metals (Pb, Zn, Cu, Hg and Cd) on the composition of chironomid community and the incidence of larval deformities in the river Damodar flowing through the major industrial areas and a reference station. Ordination and cluster analysis indicated differences between the polluted areas and the reference site in the community structure. Diversity and population of species appeared to decrease in polluted sites but the dominant species of the reference site were found tolerant of heavy metal emitted by the industries. Ordination analysis (DCA) showed that the changes in Pb content could have played the most important role in causing changes in the community structure. Percentage of deformity correlated positively with the concentration of heavy metals which was higher with an increasing Pb content.

Key words: assessment, chironomidae larvae, communities, heavy metals, morphological deformities, river, water pollution.