

DETECTING TOXIN CONTAMINATION IN STREAMS: COMBINING DIFFERENT FORMS OF DIATOM VALVE MALFORMATION AND CHANGES IN DIATOM BIOLOGICAL TRAITS FOR A SCREENING METHOD

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Ongoing work on the development of new metric using benthic diatoms to assess heavy metal or pesticide pollution in Swedish streams and lakes gave the preliminary result that the amount of amount of diatom valve malformations cannot be used as the only tool separating impacted from non-impacted sites. Instead, new focus was placed on the strength and the character of the malformations (like different forms of deformed valve outlines or changes in striation patterns) and on diatom biological traits as alternative bioindicators to detect disturbances of a natural environment. Diatom biological traits have earlier been defined as life-forms (for example benthic, mobile, tube forming), size classes and ecological guilds (living in the same kind of environment, for example prostrate, high-profile). Indeed, a combination of changes of the amount, strength and form of diatom valve malformation and a change in the biological traits gave the best assessment of heavy metal or pesticide pollution in Swedish streams.