

## STUDY OF WATER QUALITY USING NON-INVASIVE METHODS THROUGH FISH SCALES

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Fish fauna is used to assess water quality less than macroinvertebrates, because fish have a much higher mobility than macroinvertebrates, especially when it comes to feeding and breeding, but also because fish are much more difficult to collect, especially in deep rivers. However, there are many authors who argue that the study of fish fauna, in addition to being a rapid analytical method that provides preliminary results, shows a variety of other benefits, such as: the fish are good indicators for the long-term effects (relative longevity, 3-10 years), they are easily identified in the field, present in all aquatic habitats (even in very heavily polluted waters), fish fauna forms stable populations with low seasonal fluctuations, environmental requirements. The goal of our study was to find non-invasive methods for analysis of fish fauna. In addition to the study of heavy metals in fish scales, the analyses of soil and water in which they live were done. The bio-concentration factor was calculated for two of heavy metals that have high concentration. The photoluminescence spectra of fish scales were recorded in order to find the relationship between the luminescence centres of metals and FTIR data.

Keywords: fish morphology, fish scale, heavy metals, FTIR, photoluminescence, bioconcentration