AQUATIC BIOMONITORING - HYDROLOGY

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1. INTRODUCTION

A description of the flow regime of a river includes the magnitude and variability (over various time scales) of flows that occur and that impact on the riverine biota through the physical characteristics of the channel (in terms of the cross-sectional shape, longitudinal slope, substrate material and bed roughness, etc.). Together, the flow regime and the channel physical characteristics determine the hydraulic flow characteristics of any specific river reach which in turn determines the nature of the available habitat. The recent history of available habitat will also partly determine what biotic assemblages are found in a river during a specific biomonitoring site visit. It is therefore evident that relationships between flow and biota are based on highly complex, time dependent processes which are difficult to define even when a great deal of information about the flow regime and the biota are available. In most biomonitoring studies, there will not be a great deal of information and defining relationships will never be a straightforward task.

Any attempt to provide guidelines on the generation and use of hydrological information in biomonitoring studies must necessarily be based on a multi-disciplinary understanding of the mechanisms of the links between biotic response, hydraulic conditions and hydrological variation.