

Characterising stream nutrient resource: the potential of *in situ* fluorescence in ecological assessment

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Stream phytobenthos represents a temporal sensitive indicator for water quality conditions within river ecosystems. Significant improvements have been achieved in characterising the temporal dynamics in water quality parameters through *in situ* environment monitoring. This has allowed for high resolution real time interpretation of conditions impacting the water quality and ecological structure of streams. However, monitoring of ecological components *ex situ* at temporal insensitive resolutions makes relating high resolution environmental parameters to instream ecological processes difficult. Here we present assessments of *in situ* fluorometry, using the BenthosTorch, for the investigation of temporal variability in phytobenthos, and in particular diatom, chlorophyll-*a* from streams within the Upper Bann and Colebrooke Catchments Northern Ireland. We also present guiding criteria on *in situ* fluorometry as well the current limitations, and the potential of this technique to provide an additional temporal-spatial sensitive ecological assessment to catchment monitoring strategies for aquatic ecosystems.