**Setting nutrient thresholds to achieve good ecological status in surface waters**

Martyn Kelly, Geoff Phillips, Heliana Teixeira, Sandra Poi­kane, Fuensanata Salas (Bowburn Consultancy)

Member States of the European Union currently use a wide range of nutrient criteria to support good ecological status in surface waters. National thresholds are set using a number of approaches; however, those countries that used expert judgement had significantly higher thresh­olds than those that used data-driven approaches. In or­der to facilitate the development of robust thresholds, the European Commission supported research into ap­propriate statistical approaches to setting nutrient thresh­olds and a summary of that work will be presented in this talk. In brief, regression-based approaches are the pre­ferred approach but the relationship between pressure and biological response is often too weak for this to yield thresholds that are robust enough to drive management actions. Where nutrients are one of a number of pres­sures influencing the biota, then conventional regression leads to underestimates of thresholds and, potentially, very stringent regulatory regimes. In such cases, quantile regression can be employed, but this yields non-precau­tionary targets. Significant uncertainty remains even after accounting for significant co-variables and, therefore, the process of setting nutrient thresholds cannot be divorced from the management regimes that will enforce these targets. More esoteric statistical approaches have also been advocated and whilst these might have applications, those concerned with the development of environmental standards which could potentially affect utility bills and the profitability of businesses also need to ensure that the reasoning.