

I have read the reports relating to the proposed revision of the P standards for classification of rivers under the WFD and as an expert working on the biogeochemical cycling of C, N and P in UK river systems for over 25 years, I offer these observations:

1. There has never been any convincing case presented, nor any convincing data demonstrating that P is the key nutrient limiting the productivity, nor the health of river systems. Linking P chemistry to the response of a limited selection of the biota tells us nothing about whole ecosystem health. Macrophytes, for example, acquire their nutrient resource from sedimentary porewaters where P concentrations may be high, access to atmospheric or water column N will be limited, and flow velocities may be key to controlling the species composition and relative abundance. The basic premise of the classification of ecological status in rivers based on P standards is fundamentally flawed and scientifically indefensible. Until this is addressed openly, there will continue to be mismatches between P standards and expressed ecology in UK rivers, undermining scientific credibility of the WFD process, public confidence and stakeholder engagement in the process, and misleading efforts and substantial investment in point source and diffuse source mitigation measures.
2. A more holistic approach is required, which builds on current science understanding of the impact of multiple stressors on whole system ecology if mitigation and management is to be properly targeted and effective, and public and private sector investment in these measures is to be properly and effectively deployed.
3. As a minimum, UK needs to fall in line with the rest of Europe and derive meaningful N standards for UK waters.

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