



Catchment management of groundwater nitrate risk from agricultural diffuse pollution

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Groundwater nitrate pollution is not only an environmental issue but also an economic and human health problem. Groundwater pollution prevention at catchment scale is more important and feasible than remediation of the polluted groundwater. This paper presents a D-DRASTIC method for risk assessment of groundwater nitrate pollution from agricultural diffuse sources, to support the decision making for more efficient and effective prevention practices of groundwater nitrate pollution at catchment scale. This method overcomes the drawbacks of the DRASTIC method by introducing risk concept and nitrate dynamic nature. With the advantages of consideration of pollutant hazard, applicability at catchment scale and transferability to other areas, the D-DRASTIC method is helpful for the implementation of the EU Water Framework Directive in the groundwater pollution management field. The D-DRASTIC approach was applied in the Upper Bann Catchment, Northern Ireland as a case study. Whilst using nitrate as an indicator, D-DRASTIC is also suitable for any soluble pollutant from diffuse sources in the groundwater pollution risk assessment.