

Reframing groundwater vulnerability assessment for a better understanding between decision makers and hydrogeologists

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Abstract Management of water resource systems includes adequate decisions about groundwater resource protection. Groundwater vulnerability maps can greatly help for these decisions. In the vulnerability assessment, physical attributes are often mixed with conventional priorities implicitly embedded in the applied methods. Results from one or another method can consequently be very dissimilar and decision makers are losing confidence in these tools. A methodology is proposed to reframe the groundwater vulnerability assessment in a Pressure–State–Impact causal chain that is familiar to decision makers. The physically-based analysis is clearly separated from the agreement aspects induced by local societal, environmental or political priorities. An example is given and perspectives of generalisation are evoked.

Keywords groundwater vulnerability; sensitivity; contaminant migration; risk assessment; groundwater protection