WebTable 1. Example definitions of hydrologic connectivity. Structural connectivity uses the spatial relationships between landscape units to infer potential water movement. Functional connectivity quantifies actual water movement across the landscape. SW: surface water. GW: groundwater. Required level of spatial detail refers to the size and shape of the spatial units that comprise the model and within which model equations are calculated. This level of spatial detail ranges from low (eg spatially lumped model) to high (ie a fully distributed model).

Definition of hydrologic connectivity	*Associated measurement & modeling decisions*			
	Target connectivity type	*Assumed dominant flow type(s)*	*Required level of spatial detail*	*References*
Physical coupling between discrete units of the landscape: notably, upland and riparian zones	Structural	SW	Low to high	Stieglitz *et al*. 2003; Lane *et al*. 2004; Bracken *et al*. 2007
Degree to which water moves through a system	Functional	SW and/or GW	Low to high	Pringle 2003; Tetzlaff *et al*. 2007
Large-scale hydrological behavior arising from the concurrent activation of small-scale flow generation processes	Functional	SW and/or GW	High	Bracken *et al*. 2013
Condition by which disparate regions in upland and riparian zones are linked via lateral subsurface water flow	Structural, Functional	GW	Medium to high	Hornberger *et al*. 1994; Creed and Band 1998; Vidon and Hill 2004; Ocampo *et al*. 2006; Jencso *et al*. 2009

Definition of hydrologic connectivity	*Associated measurement & modeling decisions*			
	Target connectivity type	*Assumed dominant flow type(s)*	*Required level of spatial detail*	*References*
Hydrologically relevant spatial patterns of watershed properties that facilitate water flow and transport	Structural, Functional	SW and/or GW	Medium to high	Western *et al*. 2001; James and Roulet 2007; Antoine *et al*. 2009; Ali and Roy 2010
Condition by which spatially contiguous features concentrate flow and reduce travel times	Structural, Functional	SW and/or GW	High	Knudby and Carrera 2005

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