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Supplementary Table S1. General definitions and equations for metrics describing nutrient uptake in streams developed from nutrient spiraling models. See Stream Solute Workshop (1990) and Doyle et al. (2003) for more detailed explanations.

Metric	Symbol	Unit	Equation	Description
Uptake length	S_w	m^{-1}	$S_w = -1/k$	Average distance nutrient atom travels before removal from water column
Uptake flux	U	$\mu g\ m^{-2}\ h^{-1}$	$U = QC/w^* S_w$	Rate of nutrient loss from water column per area of stream bed
Uptake velocity	v_f	$m^{-1}\ h^{-1}$	$v_f = U/C$	Rate of movement of nutrient atom from water column to stream bed

References

Doyle M.W., Stanley E.H. & Harbor J.M. 2003. Hydrogeomorphic controls on phosphorus retention in streams. *Water Resources Research 36*, article no. 1147, doi. 10.1029/2003WR002038.

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