

Spatiotemporal variability in specific discharge within a boreal landscape

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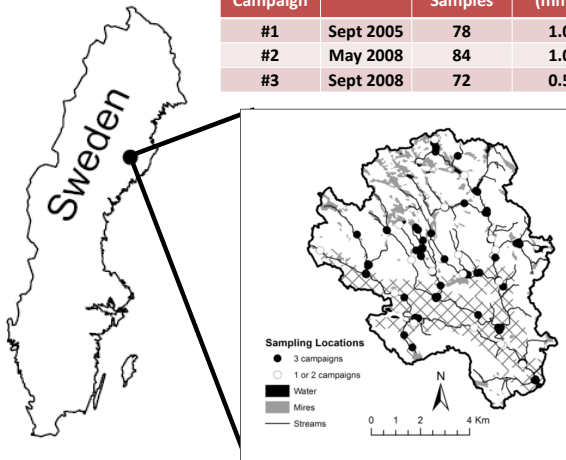
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1. Introduction and Study Area

Specific discharge was measured in three synoptic sampling campaigns during stable-flow conditions within the Krycklan catchment study area in northern Sweden.

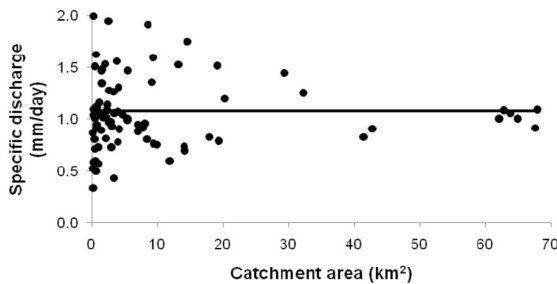
Synoptic Campaign	Date	Number of Samples	Avg Spec Q (mm/d)
#1	Sept 2005	78	1.01
#2	May 2008	84	1.08
#3	Sept 2008	72	0.56



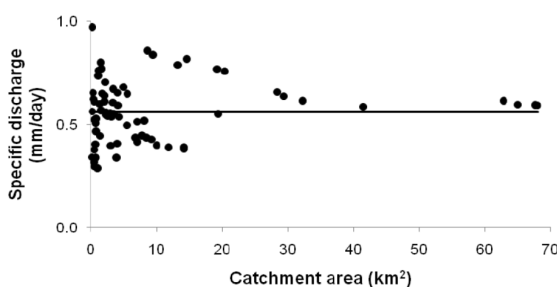
2. Specific Discharge Variations

There was considerable variability in specific discharge across this landscape (e.g., the ratio of IQR to median ranged from 37% to 43%) that increased for smaller catchments.

May 2008 (wet)

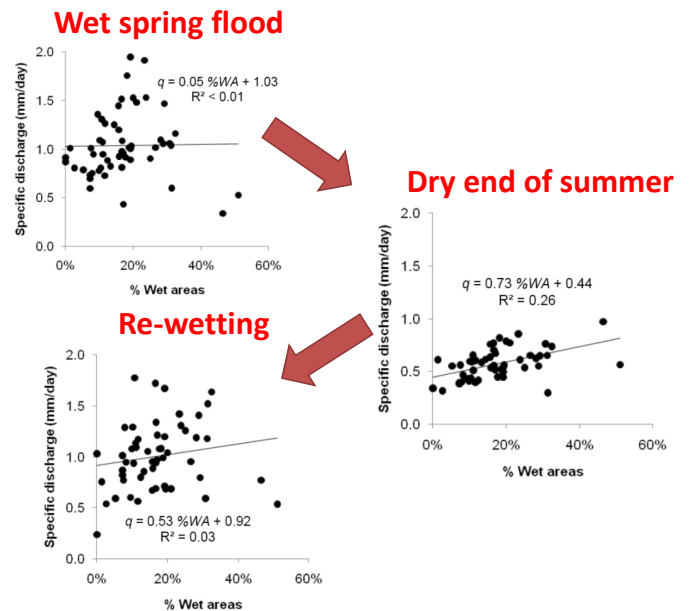


September 2008 (dry)



3. Large Scale Hysteresis

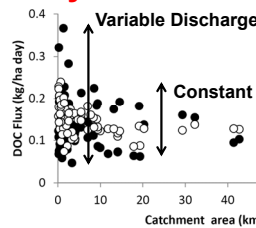
Percentage wet area (i.e., wetlands, mires, and lakes) related to the specific discharge during the drier September 2008 sampling. These results indicate the ability of forests to 'dry out' parts of the catchment over the summer months while wetlands 'keep wet' other parts in this boreal landscape.



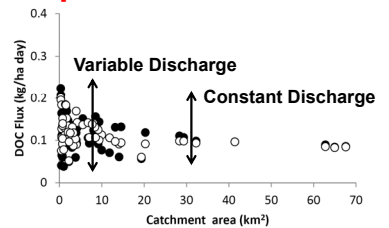
4. DOC Export Impact

Absolute difference in DOC export between variable and constant specific discharge was 28% for the May 2008 sampling and 20% for the September 2008 sampling.

May 2008



September 2008



Full details on this work available in:

Lyon, S.W., M. Nathanson, A. Spans, T. Grabs, H. Laudon, J. Temnerud, K. Bishop, and J. Seibert (2012), Specific discharge variability in a boreal landscape, *Water Resources Research*, 48, 8, doi:10.1029/2011WR011073.