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Are maps of nitrate reduction in groundwater altered by climate and land use changes?

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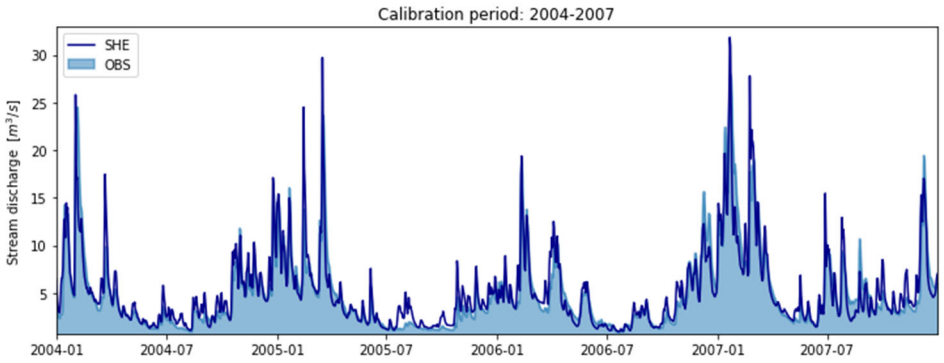
Supplementary material



	RMSE	Water balance
Vali1	1.5 m^3/s	6.45%
Cali	1.54 m^3/s	2.99%
Vali2	1.18 m^3/s	10.58%

Figure S1: Left - Hydrograph of the main discharge station for observed and simulated flow at the outlet (Kratholm) during the calibration period. Right – Table of performance during the calibration (2004-2007), the validation period 1 (2000-2003) and validation period 2 (2008-2009). Figure modified from Karlsson et al. (2016).

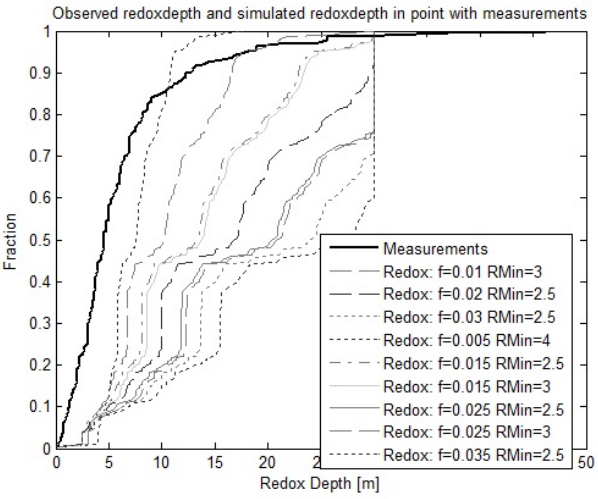


Figure S2: The distribution of observed redox depth (measurements) and simulated redox depth at the location of the measurements using different combinations of f and RMin.

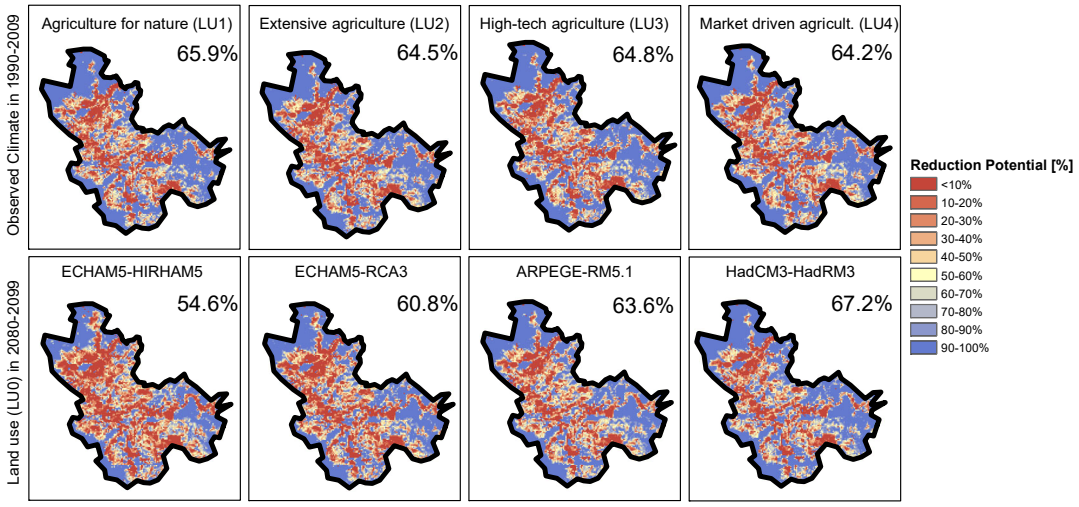


Figure S3: Nitrate reduction potential maps for four land use scenarios (LU1-4) in the observational period (top row) and four climate scenarios (LU0) for the future climate (bottom row), showing the fraction of the added nitrate that is reduced for each grid. In the top row observed climate is used, changing only the land use (scenarios 2-5). In the bottom row the present land use (LU0) is used, while using future climate projected by the four climate models (scenarios 26, 31, 36 and 41).

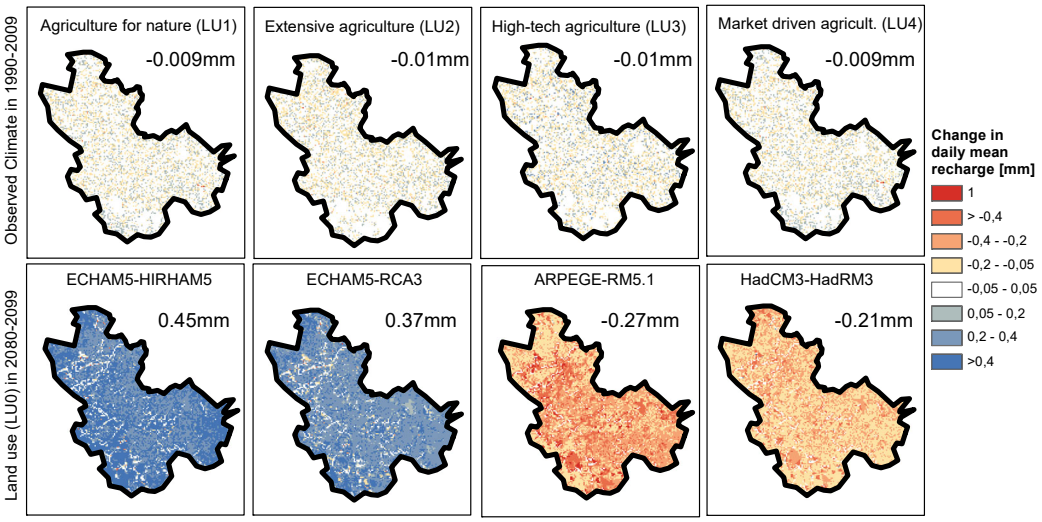


Figure S4: Changes in daily recharge from baseline (LU0) to the four land use scenarios (LU1-4) in the observational period (top row) and the change for four climate scenarios (LU0) from reference to future period (bottom row).

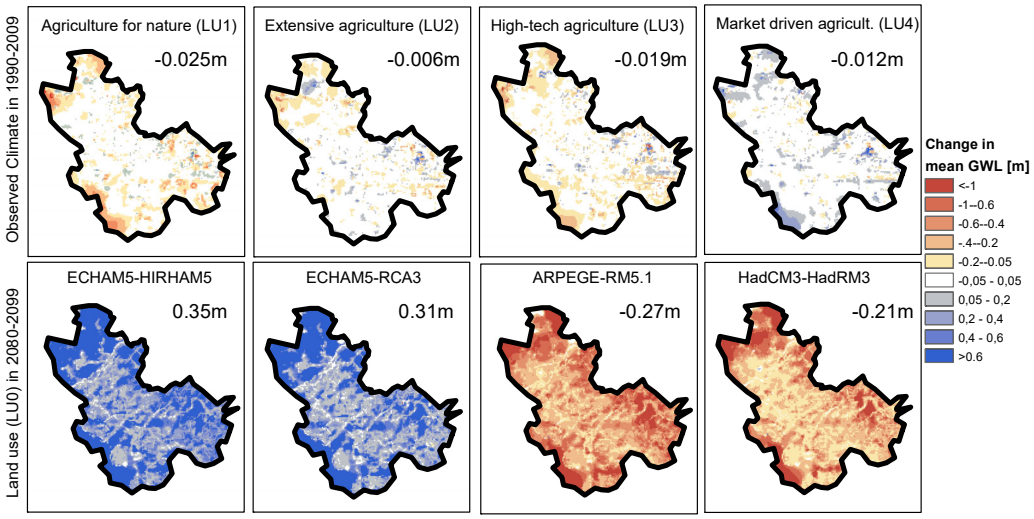


Figure S5: Changes in groundwater level from the upper saturated layer. Changes are reported as change from (LU0) to LU1-4 with observational climate for the top row and from RCM reference period to RCM future period for the bottom row. Figure modified from Karlsson et al. (2016).