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Supplement of

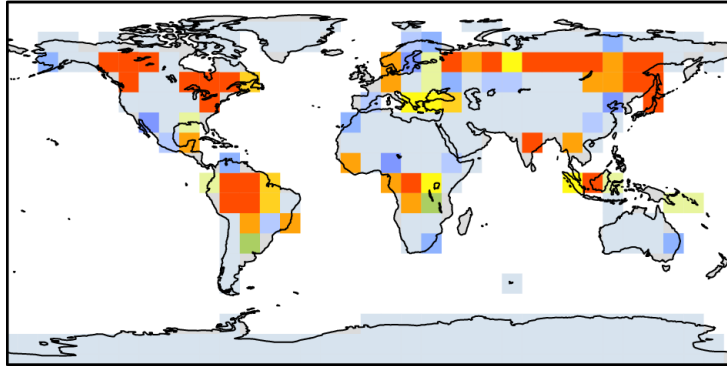
Evaluating uncertainty in estimates of soil moisture memory with a reverse ensemble approach

Dave MacLeod et al.

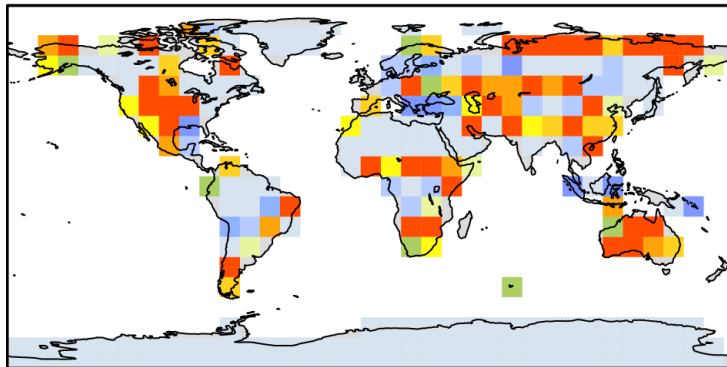
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Fraction high vegetation



Fraction low vegetation



Fraction no vegetation

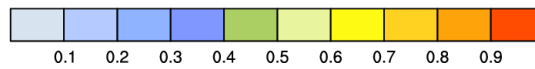
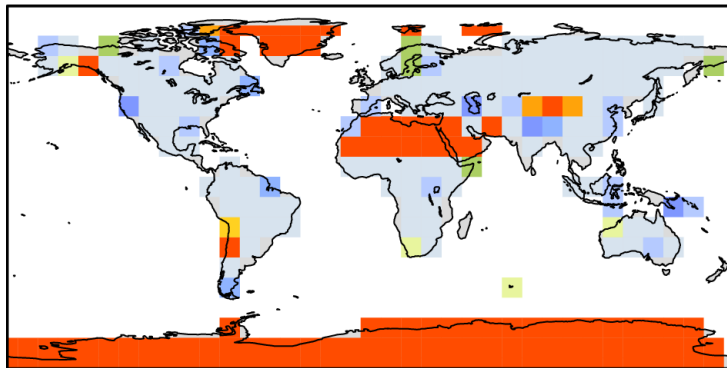


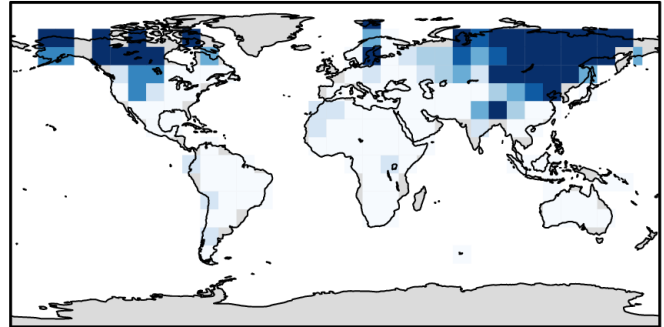
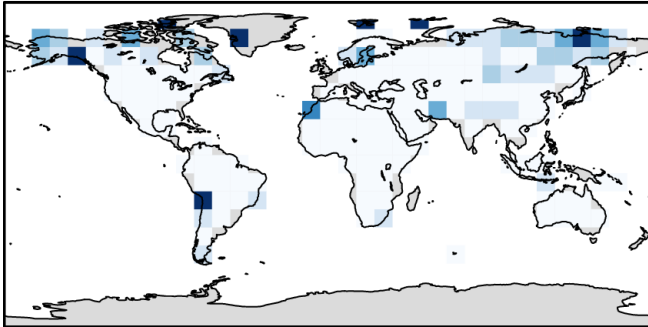
Figure 1. Fraction of each gridpoint covered by high, low and no vegetation.

May start

November start

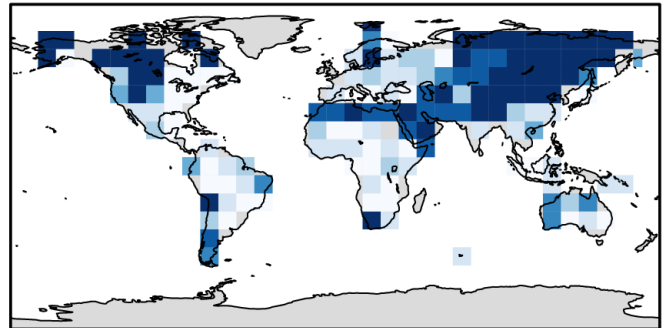
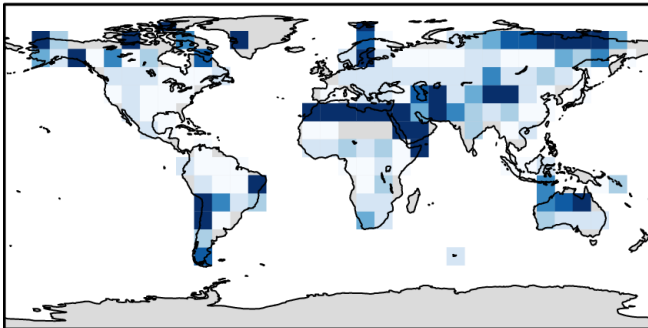
Level 1

Level 1



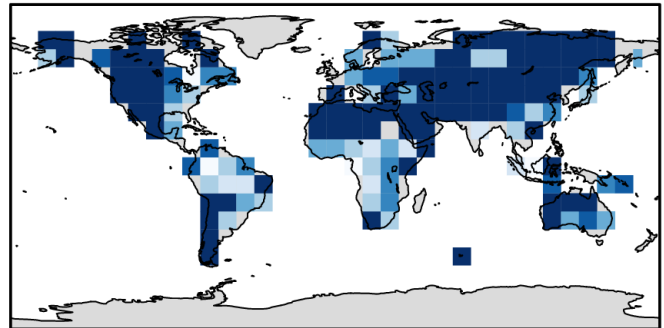
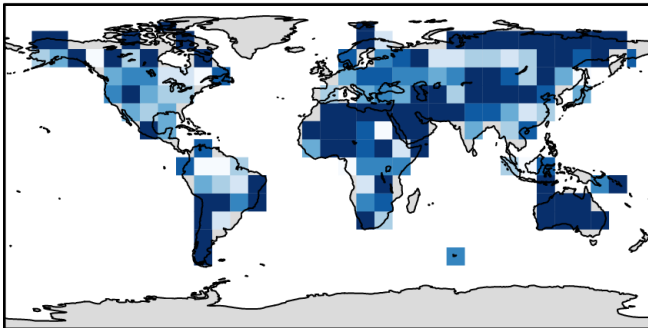
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Level 3

Level 3



Lead time when $\sigma < \sigma_0/e$ [days]



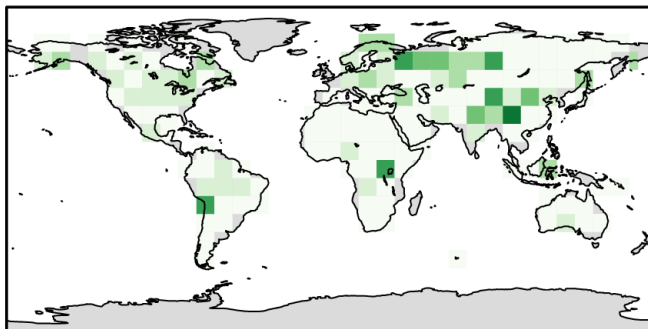
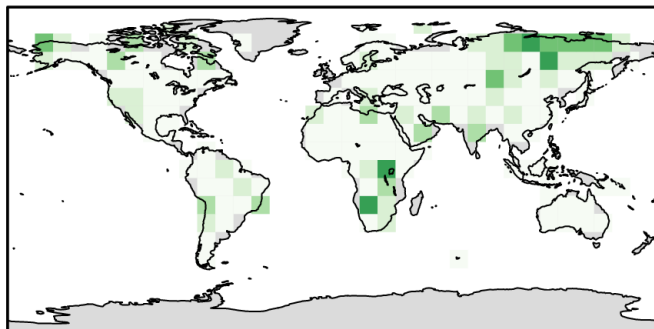
Figure 2. Average date of memory loss in the top model soil level, estimated from HTESSEL (default parameter set), for May (left) and November (right) start dates. Grey areas are masked regions of climatologically low soil moisture.

May start

November start

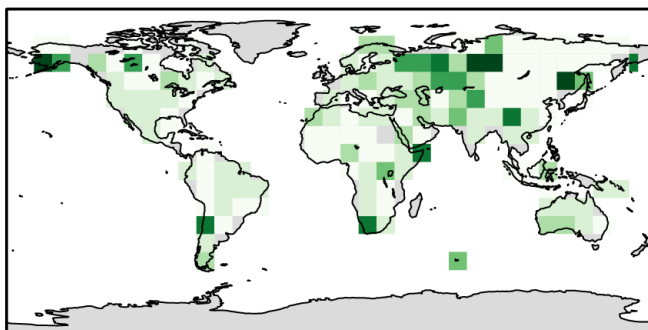
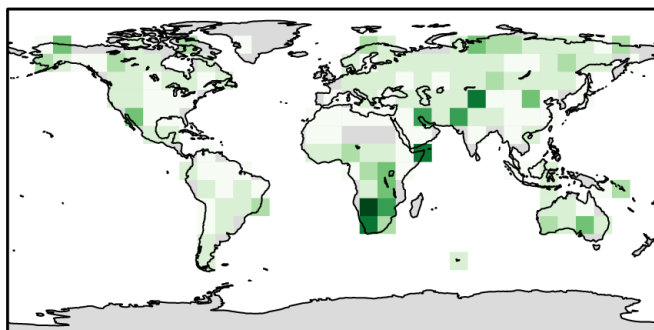
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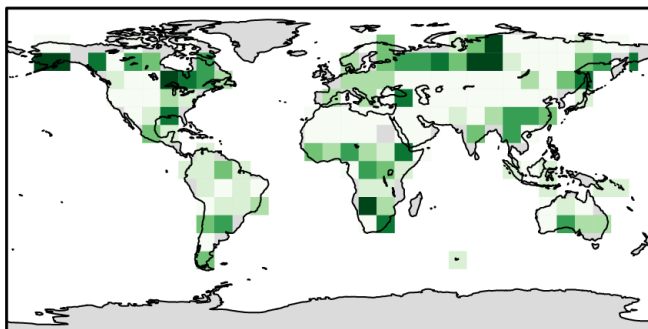
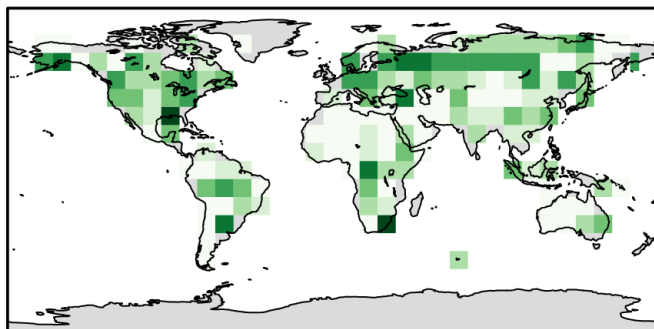
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Level 3

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Standard deviation of average memory loss date over parameters [days]



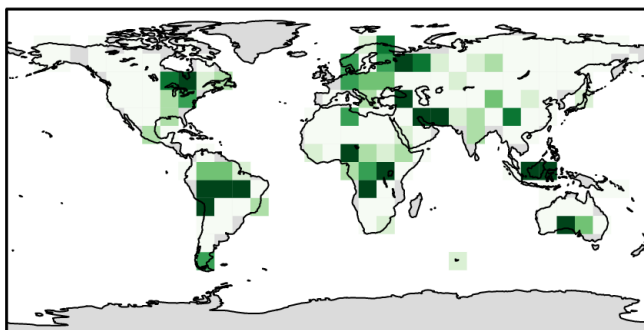
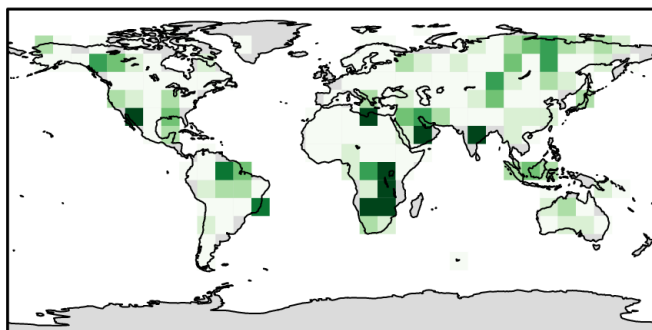
Figure 3. Standard deviation in the date of memory loss across hydraulic parameters, estimated from HTESSSEL, for May (left) and November (right) start dates.

May start

November start

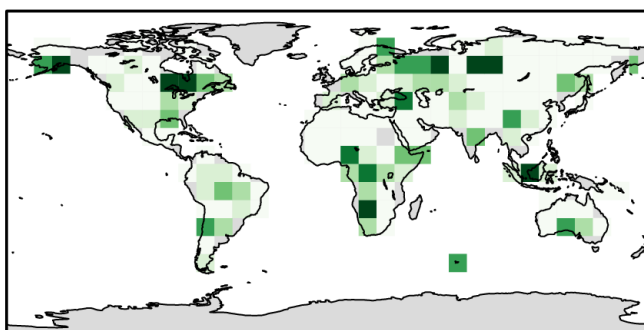
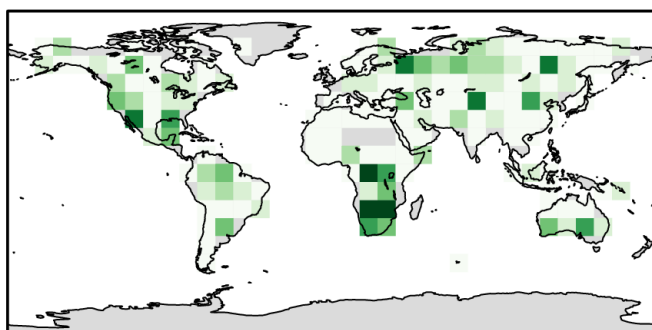
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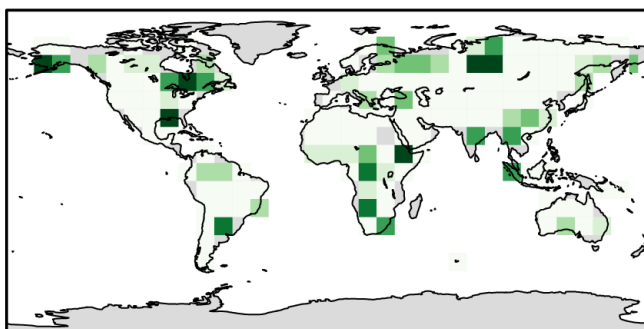
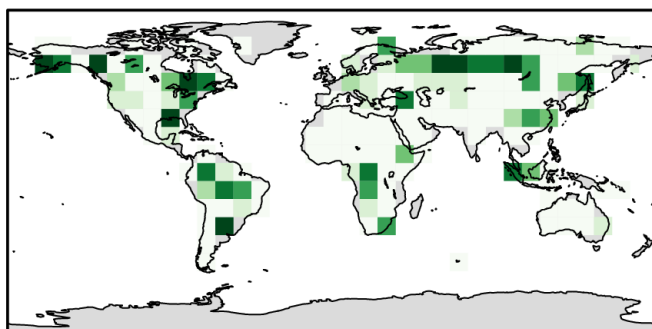
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Sensitivity (standard deviation as a percentage of memory loss date) [%]



Figure 4. Sensitivity of memory to hydraulic parameters (standard deviation of memory loss across hydraulic parameters as a percentage of the memory loss), estimated from HTESSSEL, for May (left) and November (right) start dates.