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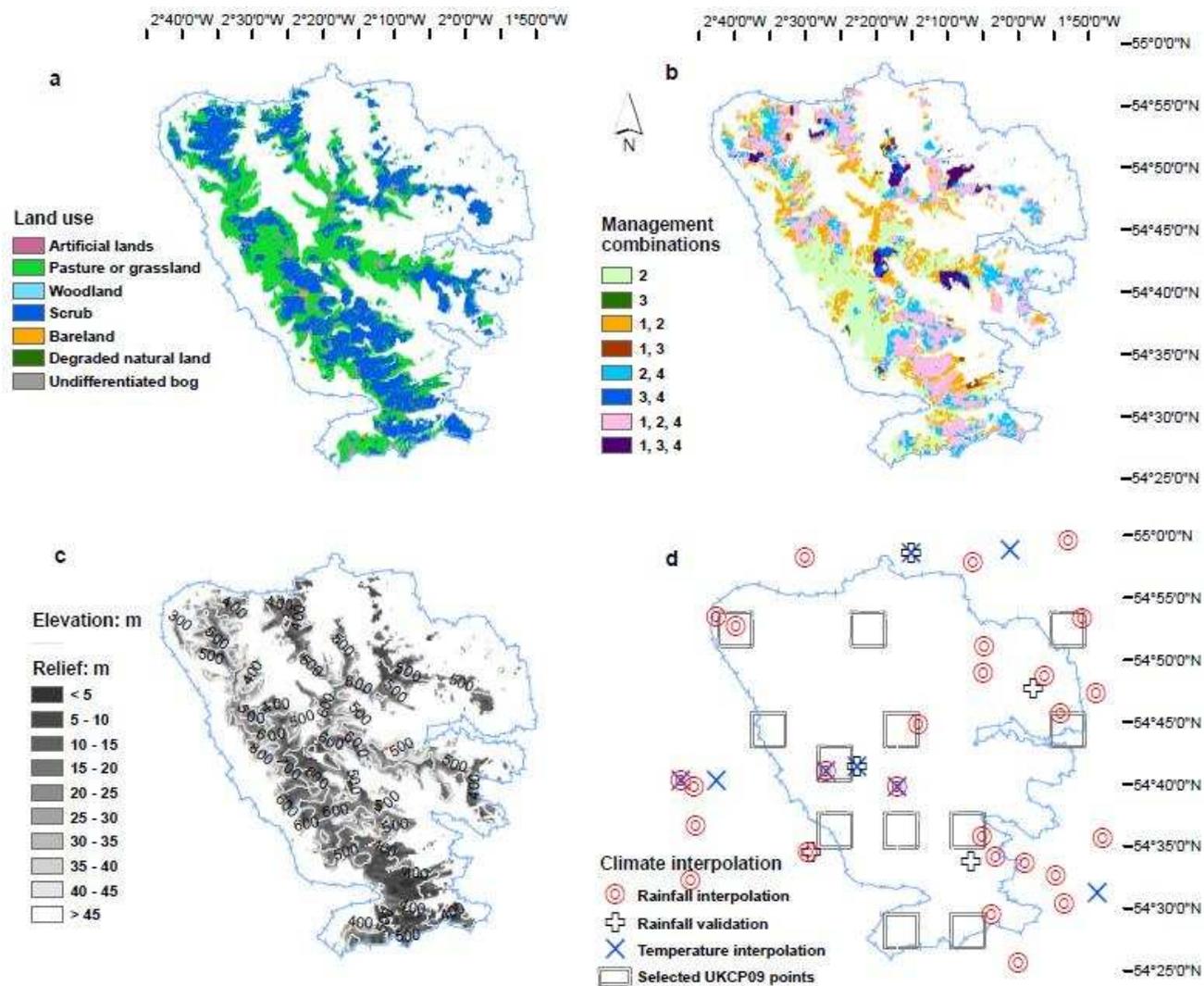
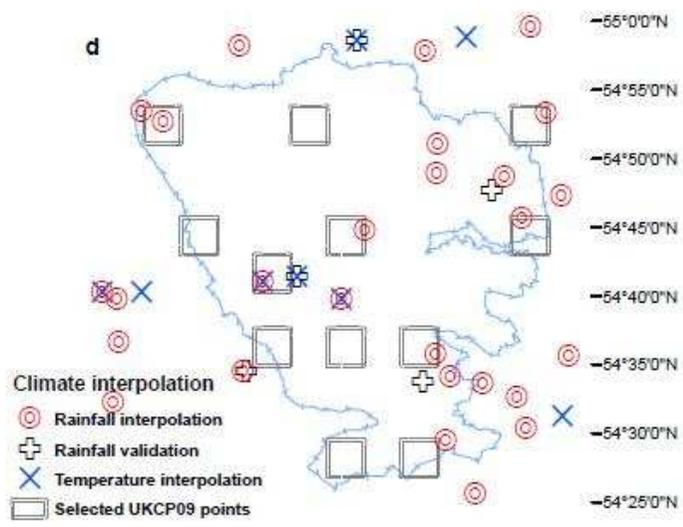
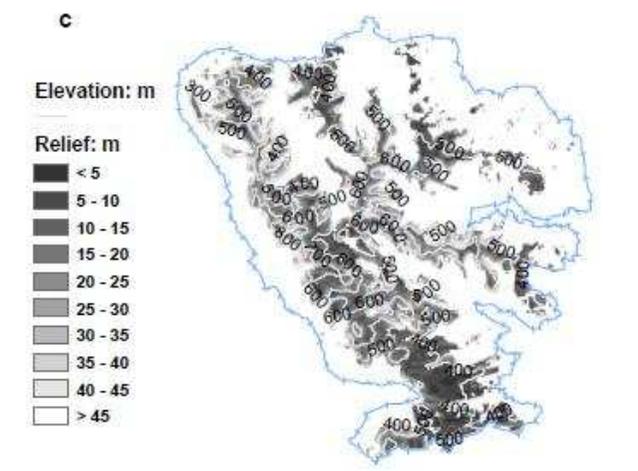
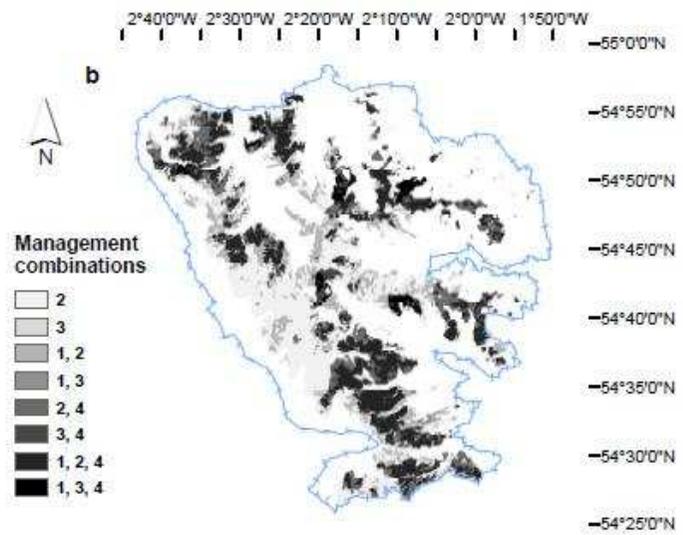
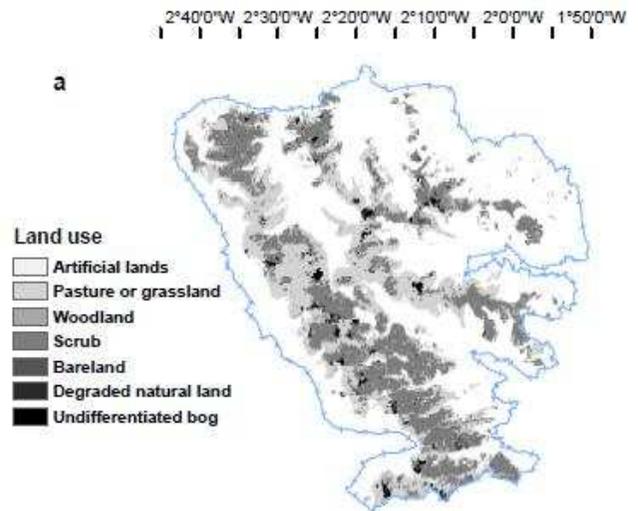


Figure 1 Maps of the study site (North Pennines), including land cover for blanket peatlands (a); management combinations within blanket peatlands (b), each code represents a management option: 1 = artificial drainage; 2 = light grazing; 3 = overgrazing; 4 = managed burning; local relief (c); points selected for climate interpolation (d).



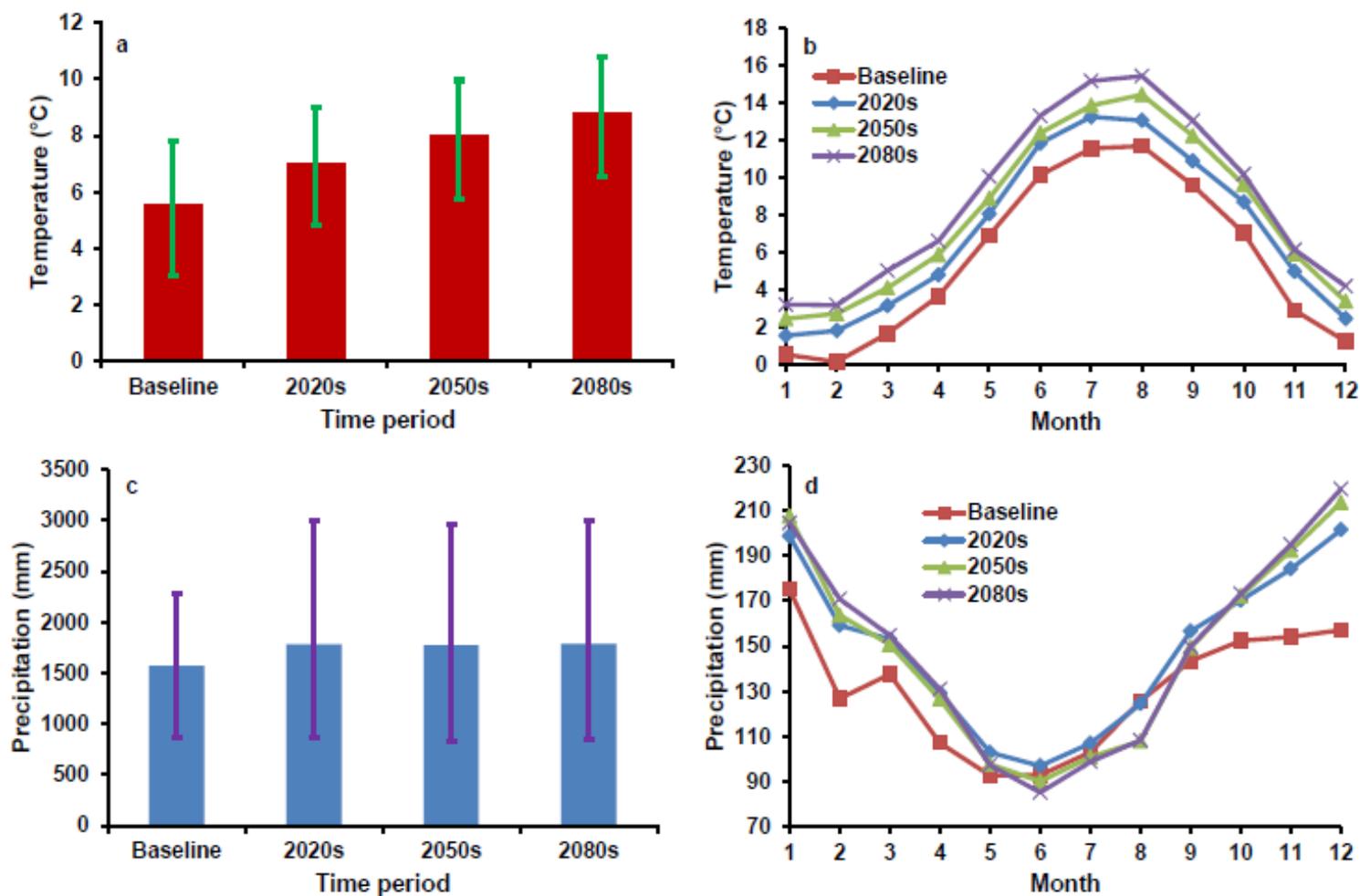


Figure 2 Change of mean annual and monthly temperature (a and b) and precipitation (c and d) for the North Pennines blanket peatlands evaluated based on the MIDAS baseline (1961-1990) climate records and future (2020s, 2050s and 2080s) climate projections derived from MIDAS baseline data and UKCP09 projections. Error bars show the range of mean annual temperature and precipitation. Month 1-12 corresponds to January - December.

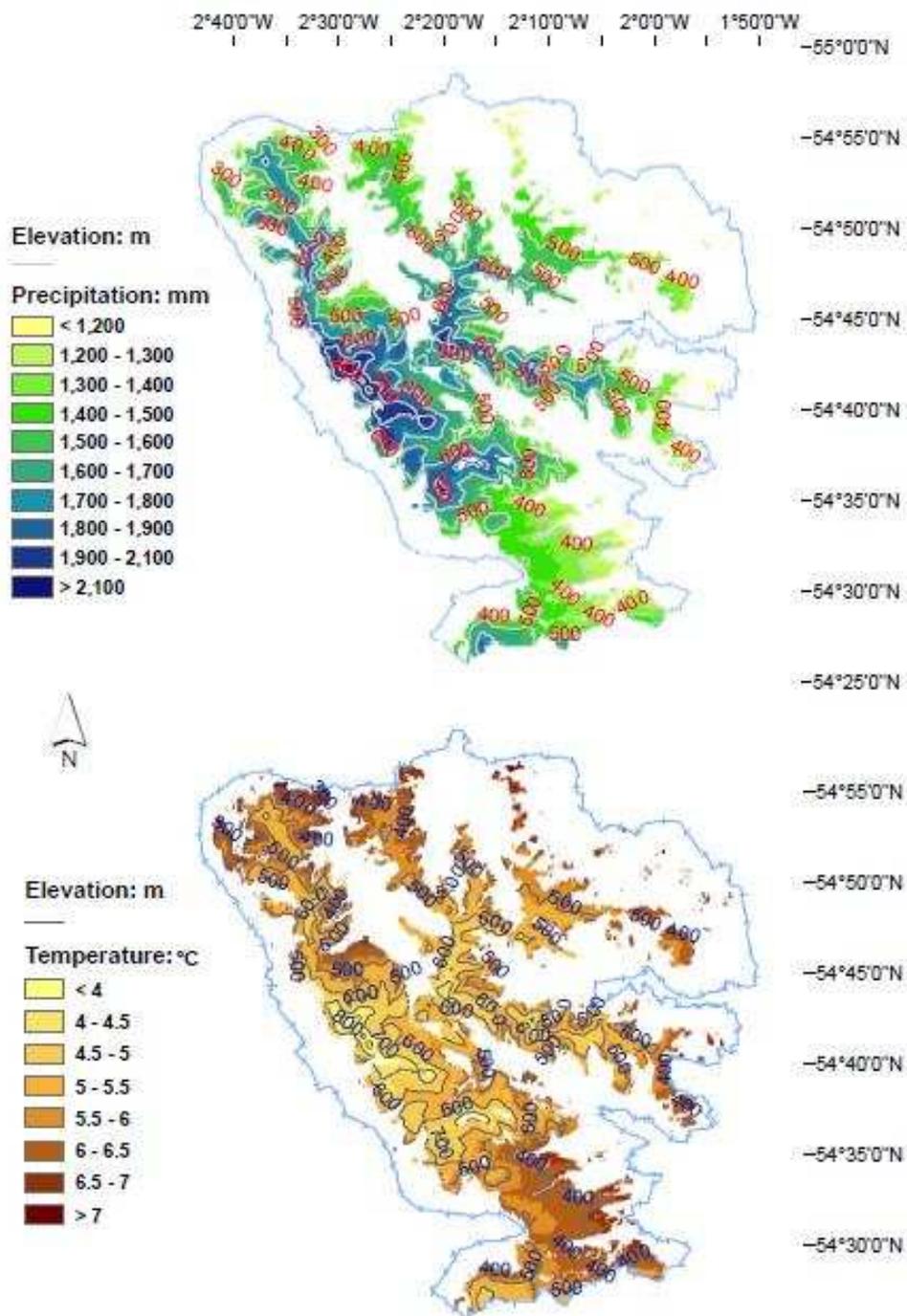
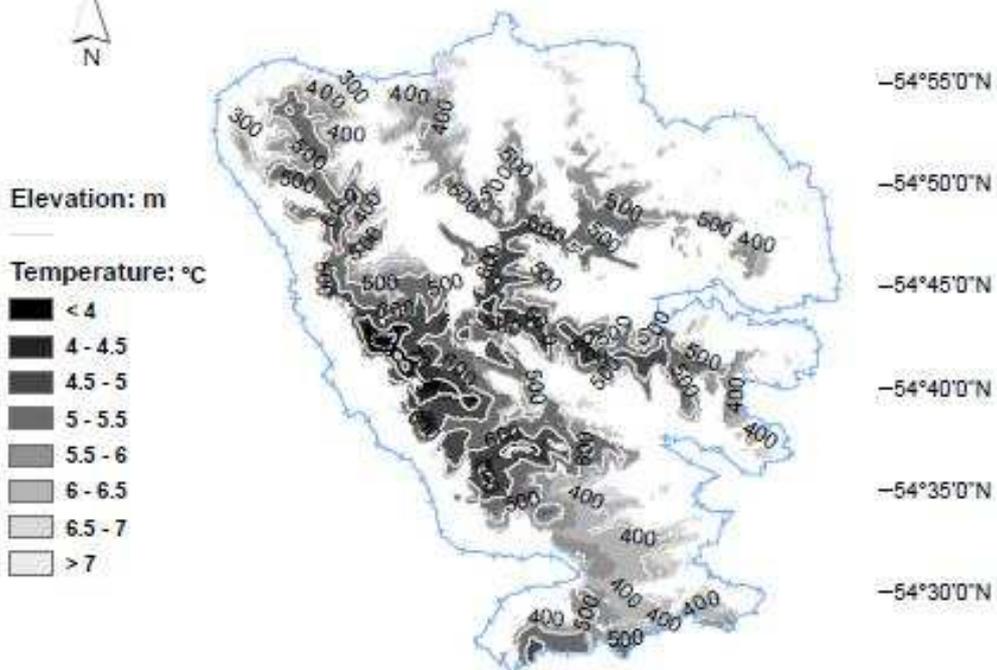
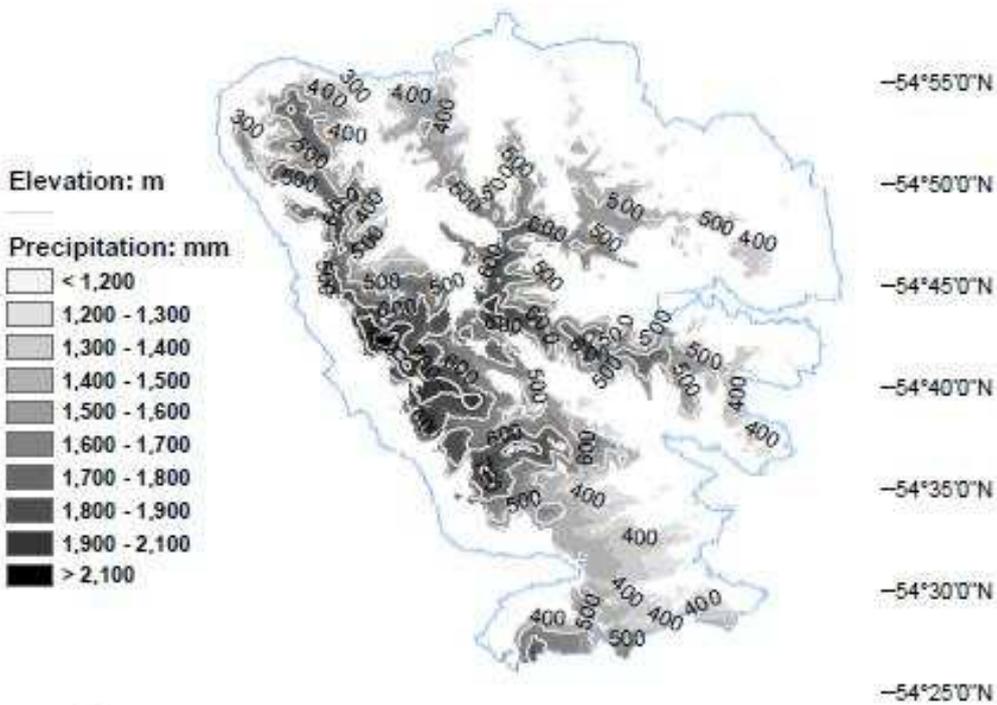


Figure 3 Mean annual precipitation temperature derived from the MIDAS baseline (1961-1990) records and elevation of North Pennines blanket peatlands.

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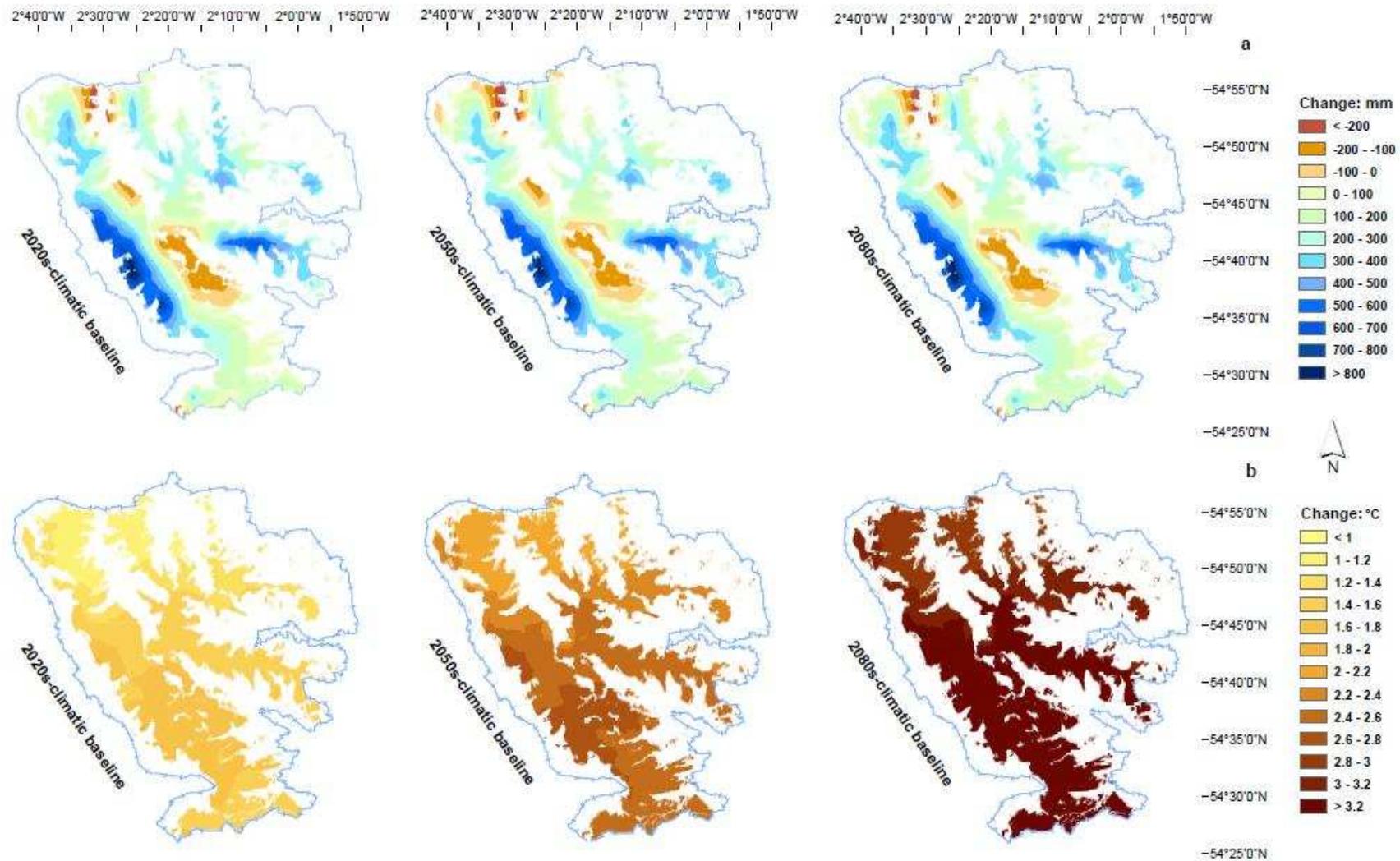


Figure 4 Spatial patterns of changes in mean annual precipitation (a) and temperature (b) for the North Pennines blanket based on the MIDAS baseline (1961-1990) climate records and future (2020s, 2050s and 2080s) climate projections derived from MIDAS baseline data and UKCP09 projections.

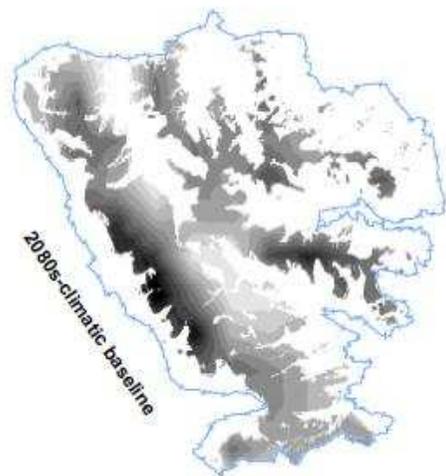
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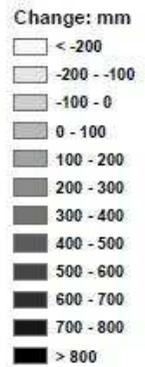
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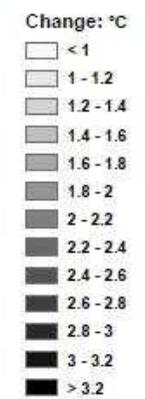
a



-54°55'0"N
-54°50'0"N
-54°45'0"N
-54°40'0"N
-54°35'0"N
-54°30'0"N
-54°25'0"N



b



-54°55'0"N
-54°50'0"N
-54°45'0"N
-54°40'0"N
-54°35'0"N
-54°30'0"N
-54°25'0"N

2°40'0"W 2°30'0"W 2°20'0"W 2°10'0"W 2°0'0"W 1°50'0"W



2°40'0"W 2°30'0"W 2°20'0"W 2°10'0"W 2°0'0"W 1°50'0"W



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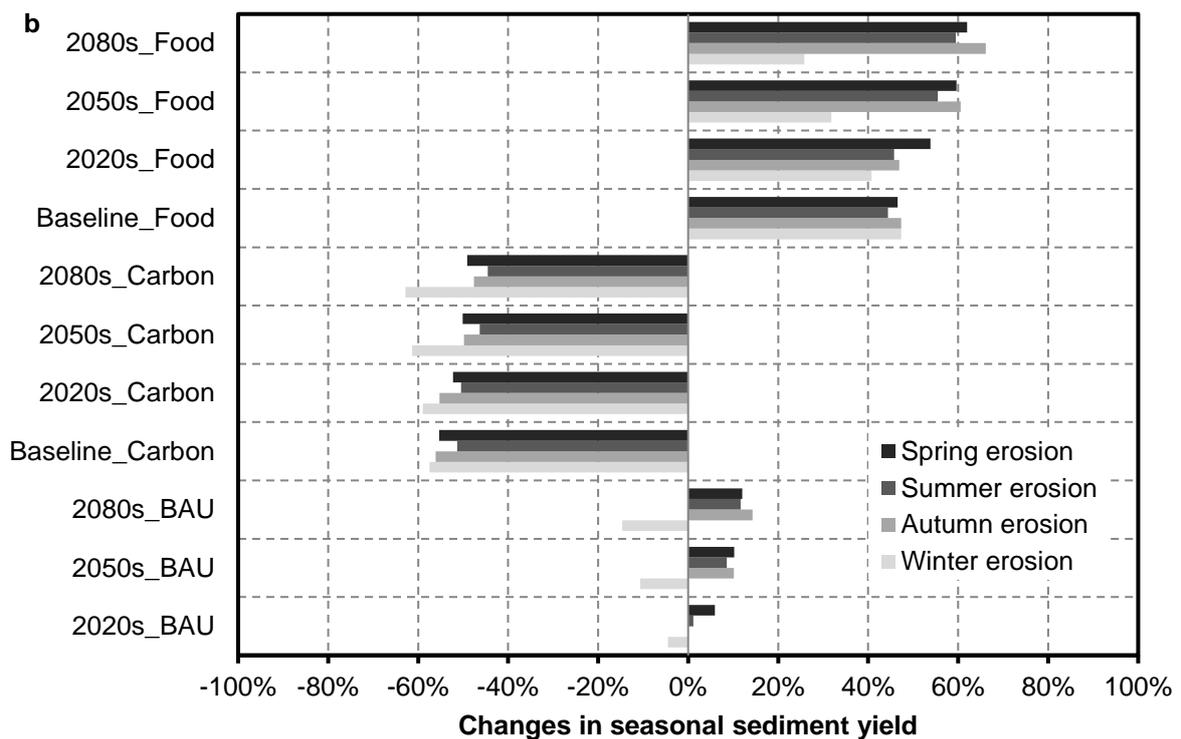
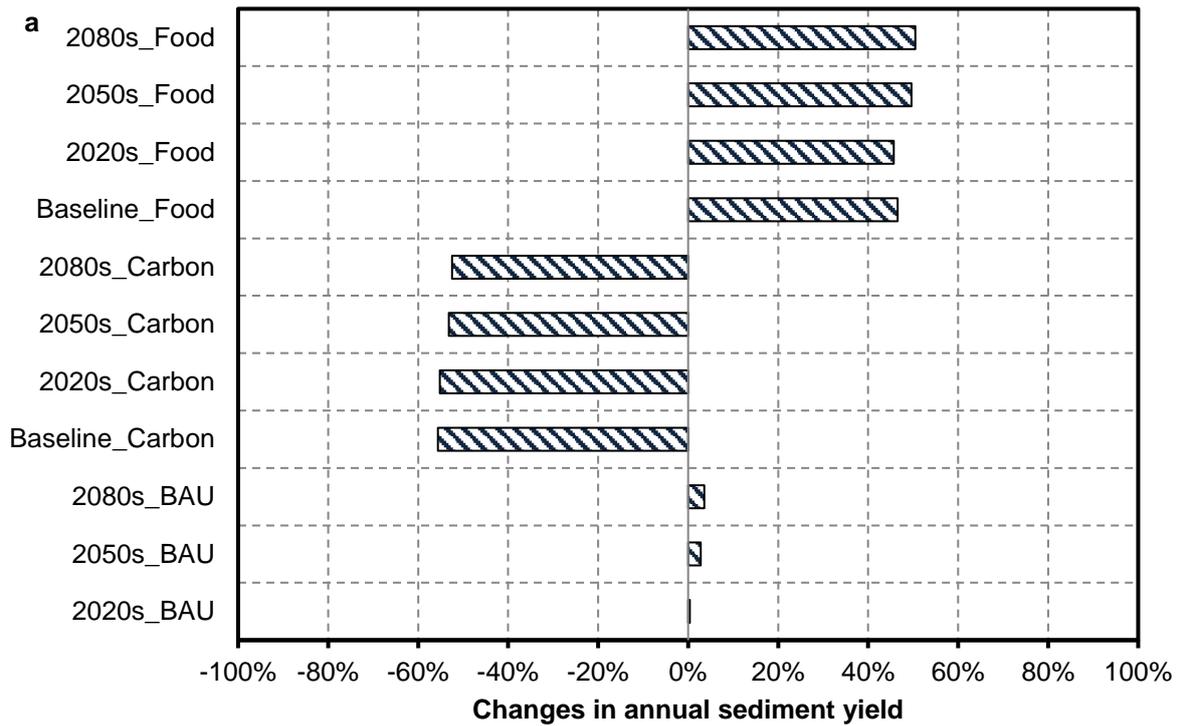


Figure 5 Predicted response of mean annual (a) and seasonal (b) sediment yield for the North Pennines blanket peatlands. 'Baseline', '2020s', '2050s' and '2080s' represent the climate condition of 1961-1990, 2010-2039, 2040-2069 and 2070-2099, while 'BAU', 'Carbon' and 'Food' represent land management conditions of Business-As-Usual, carbon storage and food security.

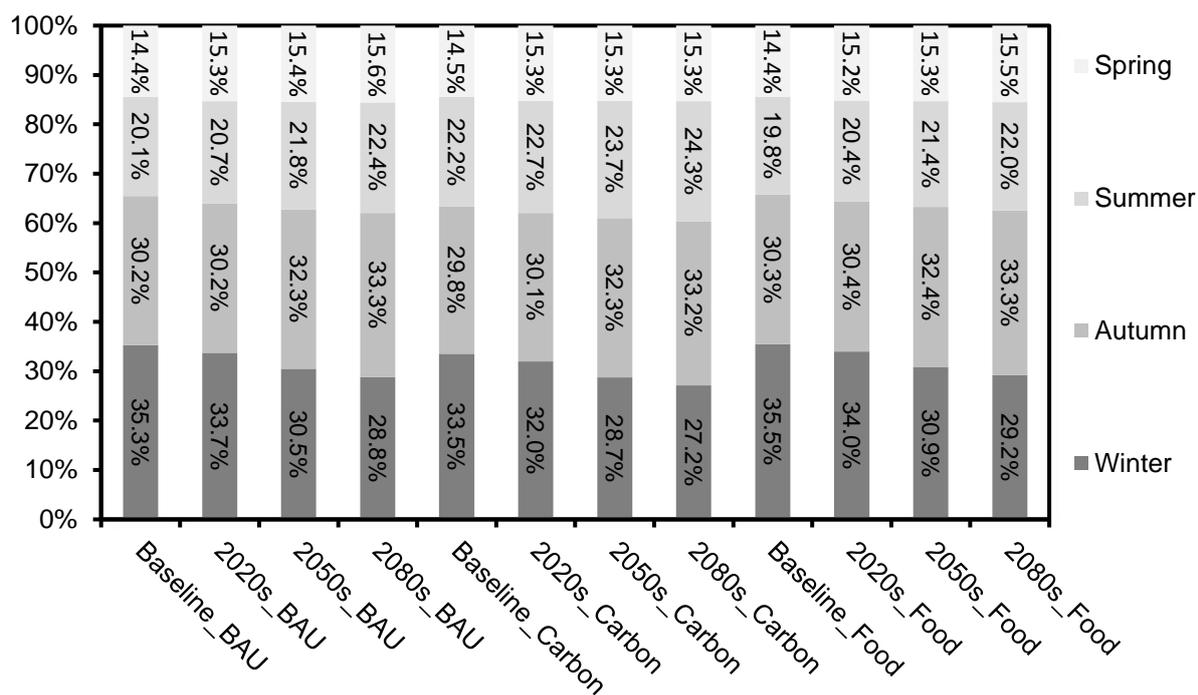
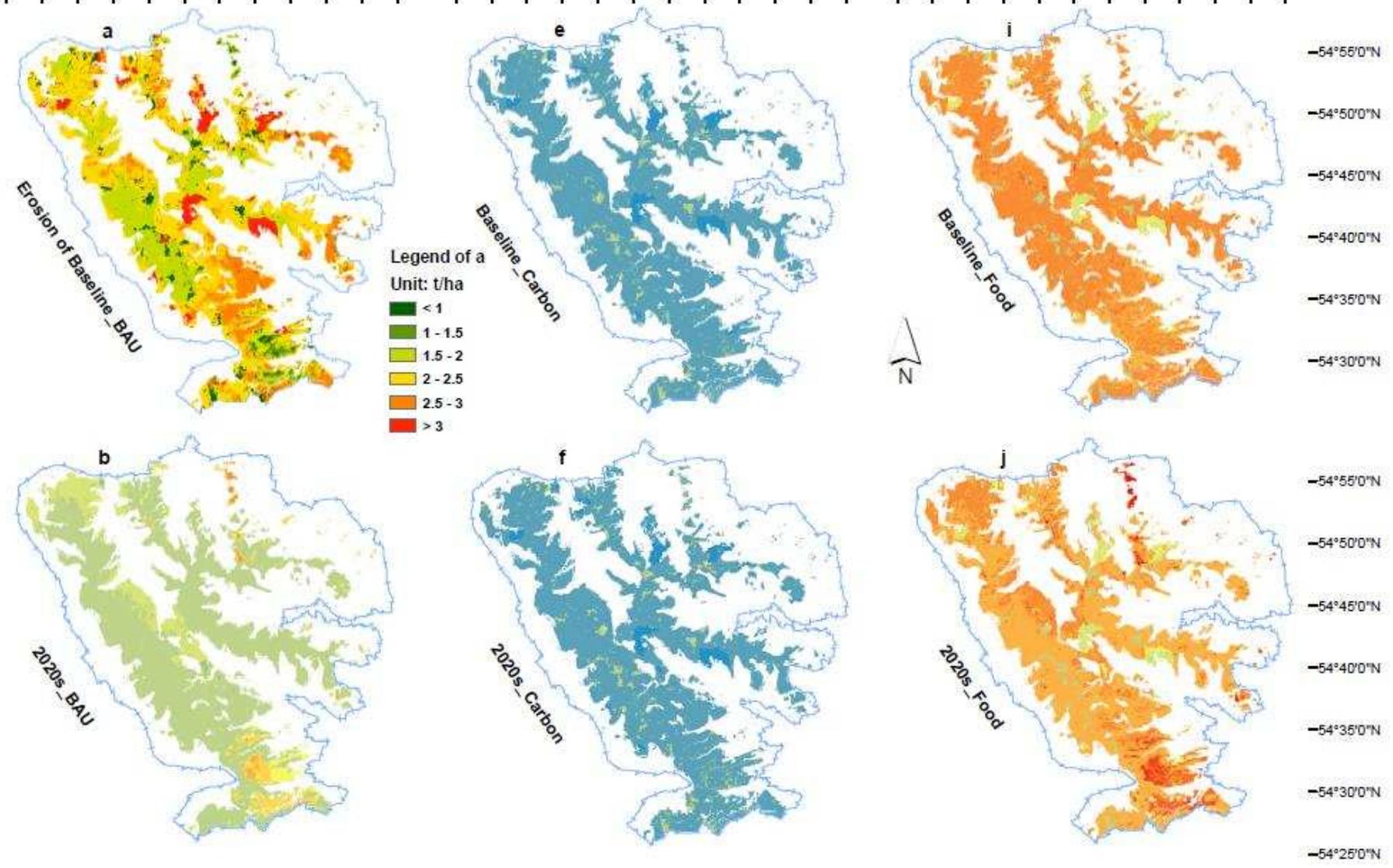


Figure 6 Predicted seasonal distribution of erosion averaged over the whole blanket peat-covered area of the North Pennines. ‘Baseline’, ‘2020s’, ‘2050s’ and ‘2080s’ represent the climate condition of 1961-1990, 2010-2039, 2040-2069 and 2070-2099, while ‘BAU’, ‘Carbon’ and ‘Food’ represent land management conditions of Business-As-Usual, carbon storage and food security.

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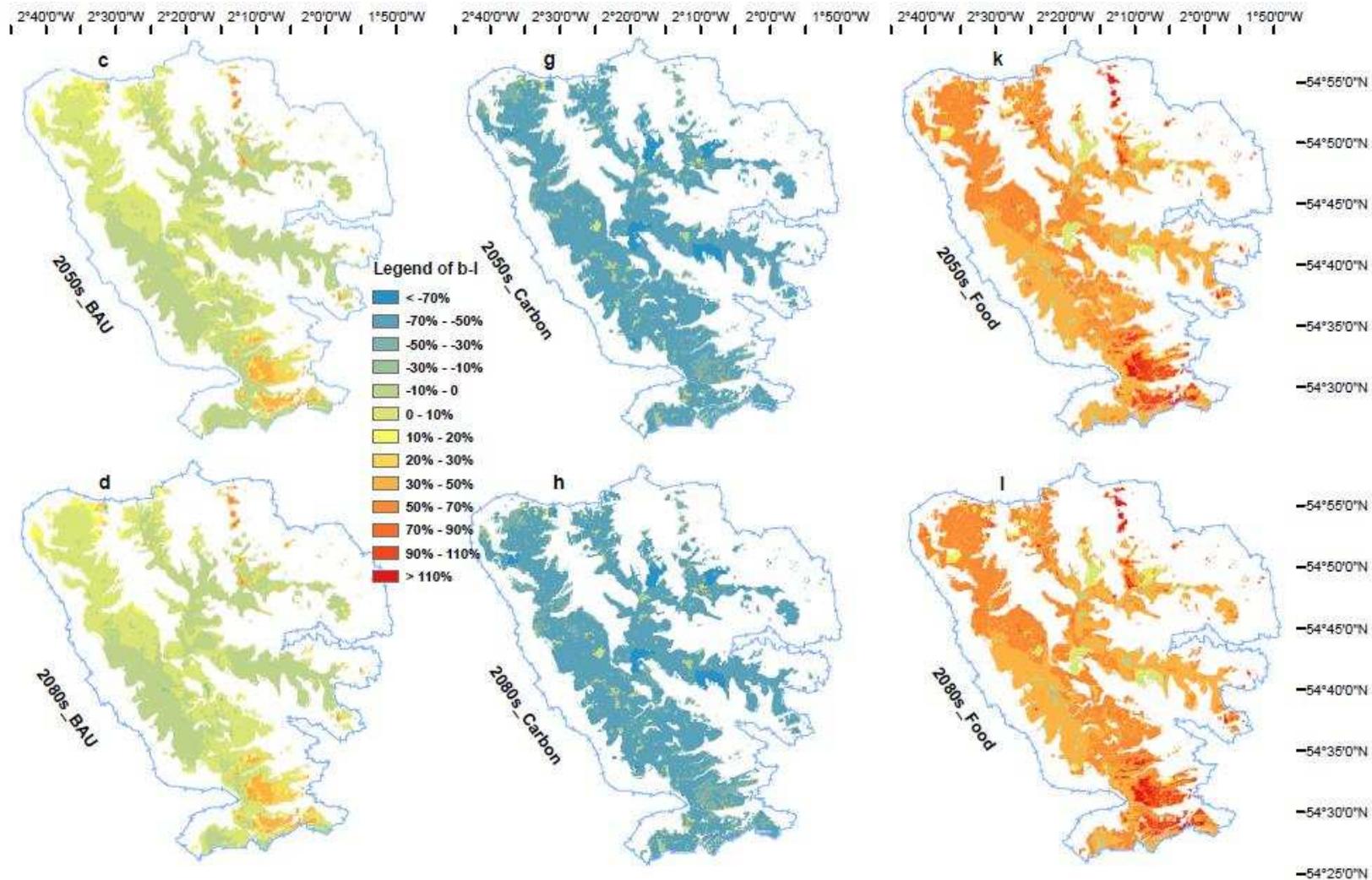
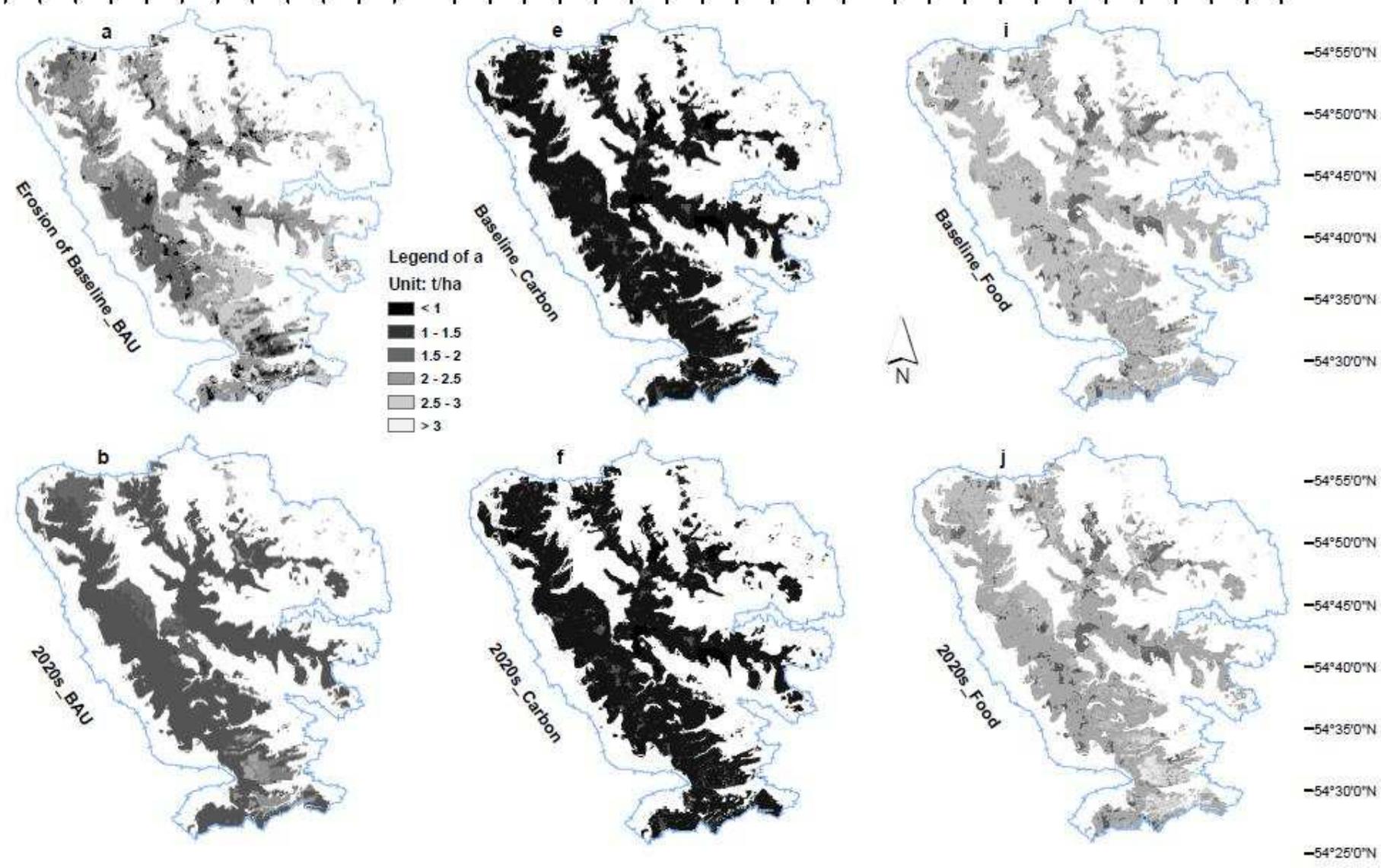
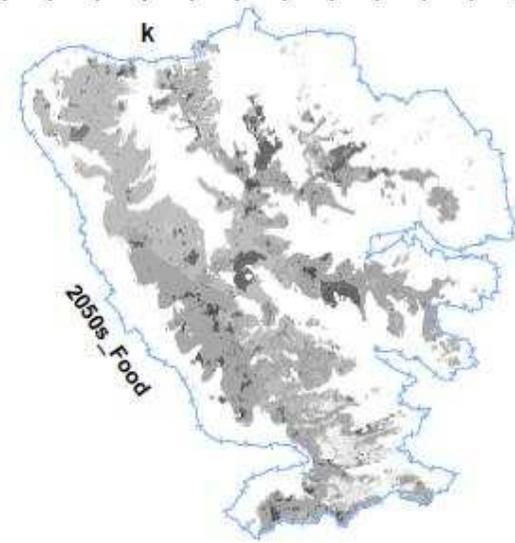
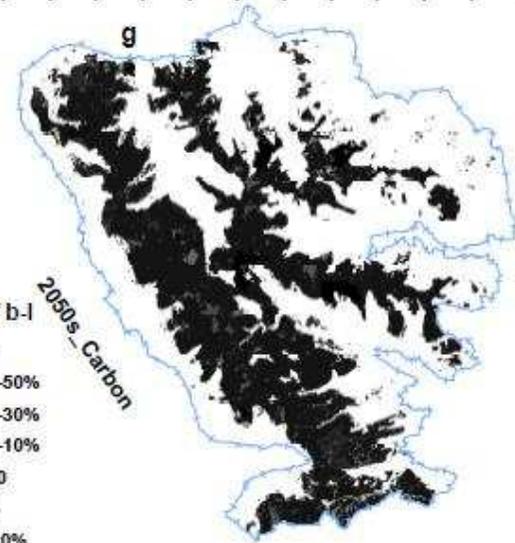
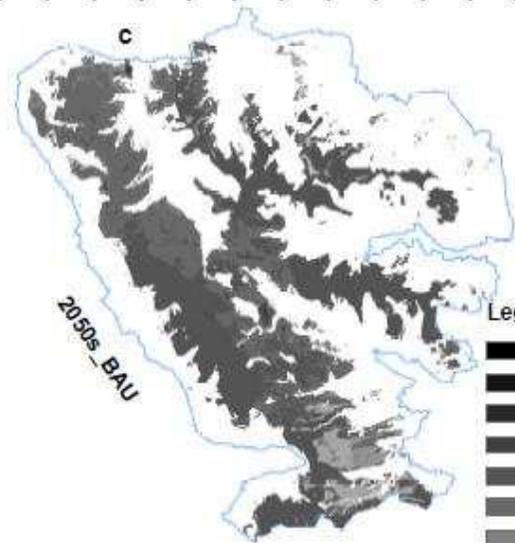


Figure 7 Predicted mean annual erosion under the 'Baseline_BAU' scenario (a) and changes of mean annual erosion from the 'Baseline_BAU' scenario for other scenarios (b-l). 'Baseline', '2020s', '2050s' and '2080s' represent the climate condition of 1961-1990, 2010-2039, 2040-2069 and 2070-2099, while 'BAU', 'Carbon' and 'Food' represent management conditions of Business-As-Usual, carbon storage and food security.

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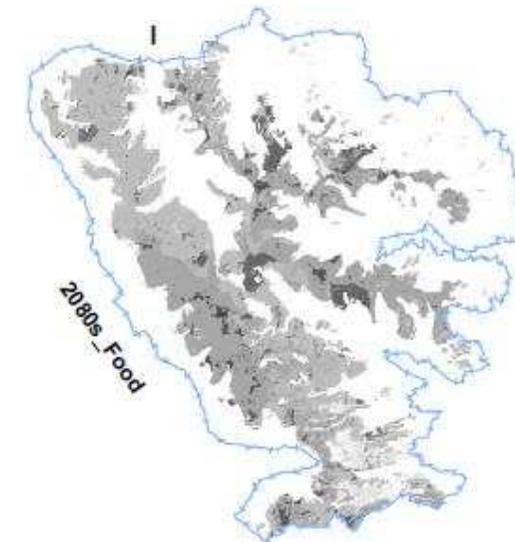
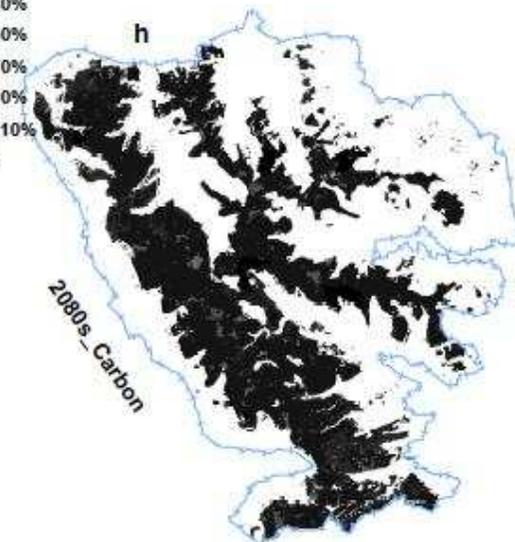
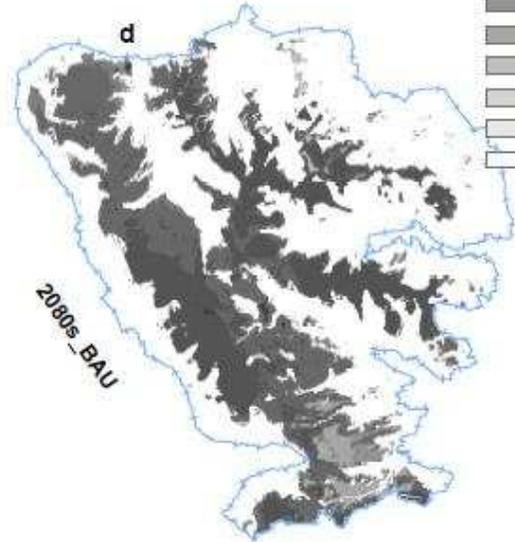
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-54°55'0"N
-54°50'0"N
-54°45'0"N
-54°40'0"N
-54°35'0"N
-54°30'0"N

Legend of b-l

- < -70%
- -70% - -50%
- -50% - -30%
- -30% - -10%
- -10% - 0
- 0 - 10%
- 10% - 20%
- 20% - 30%
- 30% - 50%
- 50% - 70%
- 70% - 90%
- 90% - 110%
- > 110%



-54°55'0"N
-54°50'0"N
-54°45'0"N
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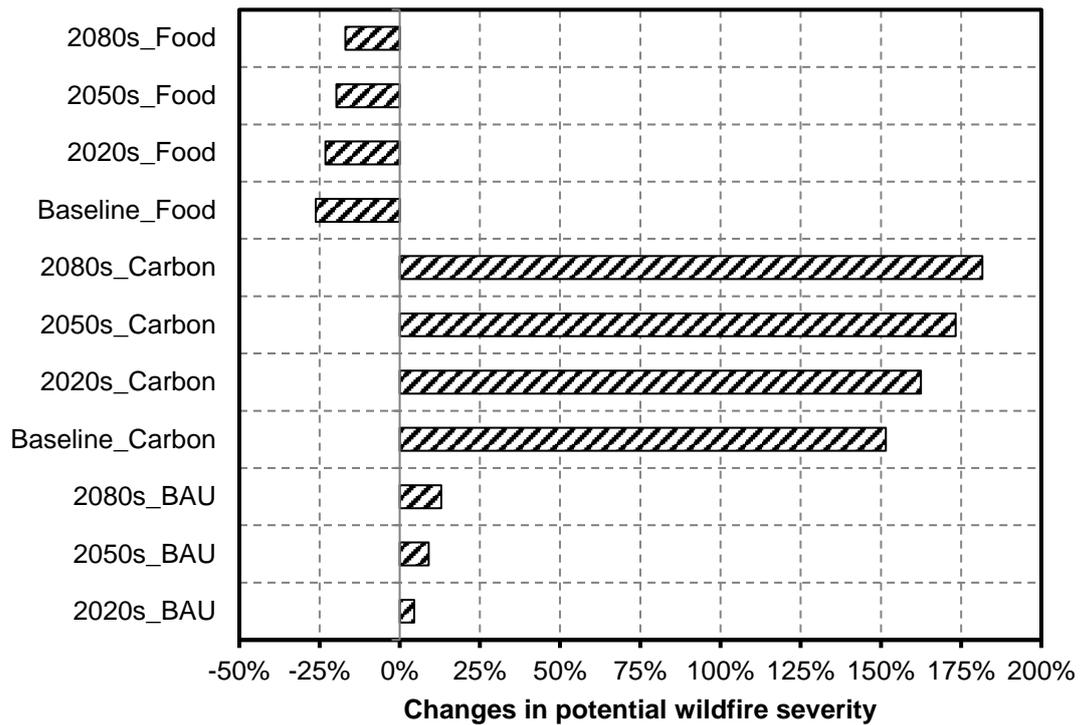


Figure 8 Predicted response of mean annual potential wildfire severity in blanket peatlands of the North Pennines to environmental change. 'Baseline', '2020s', '2050s' and '2080s' represent the climate condition of 1961-1990, 2010-2039, 2040-2069 and 2070-2099, while 'BAU', 'Carbon' and 'Food' represent land management conditions of Business-As-Usual, carbon storage and food security