Climate Change Impacts on Fire Activity in the US

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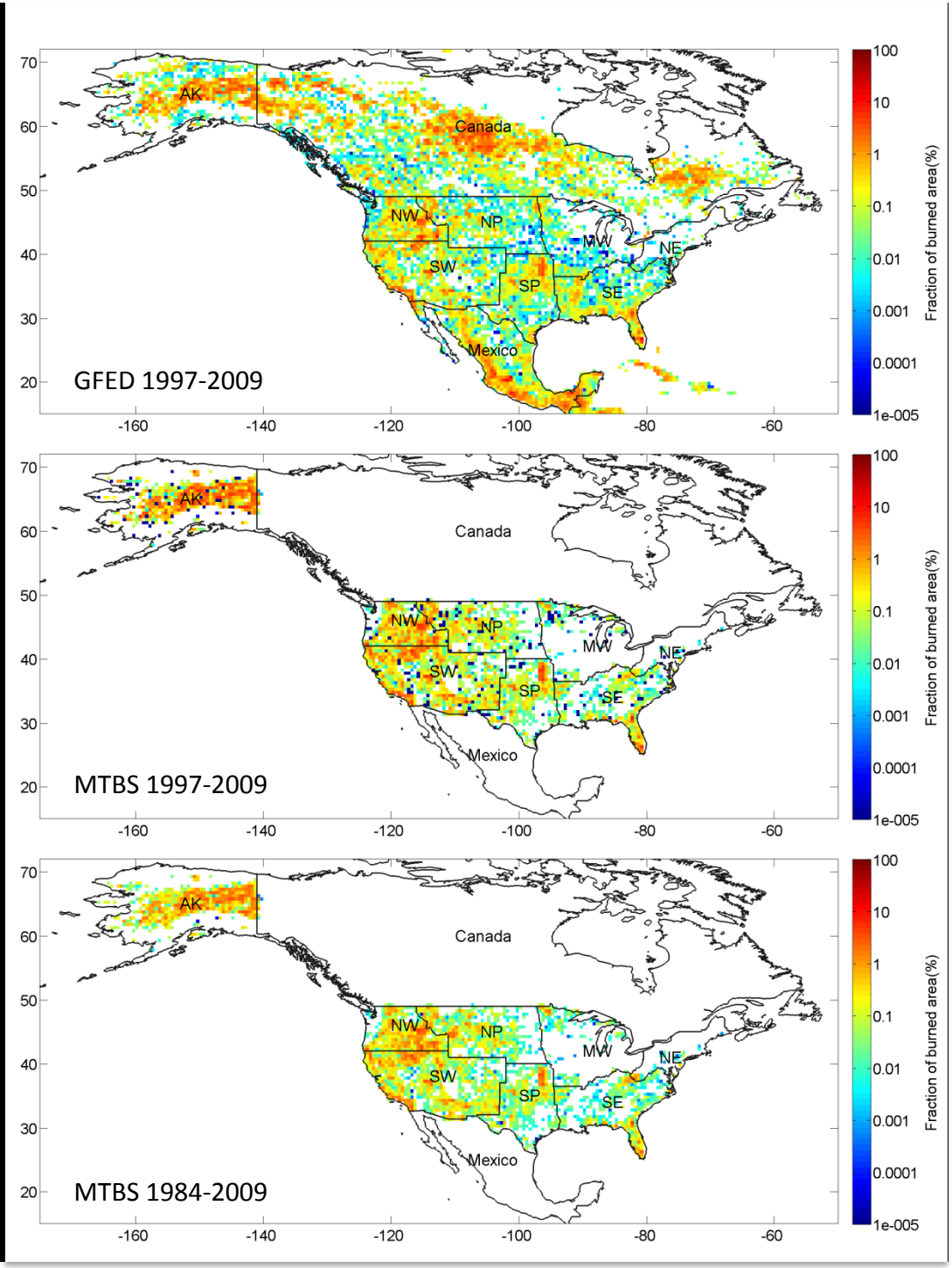
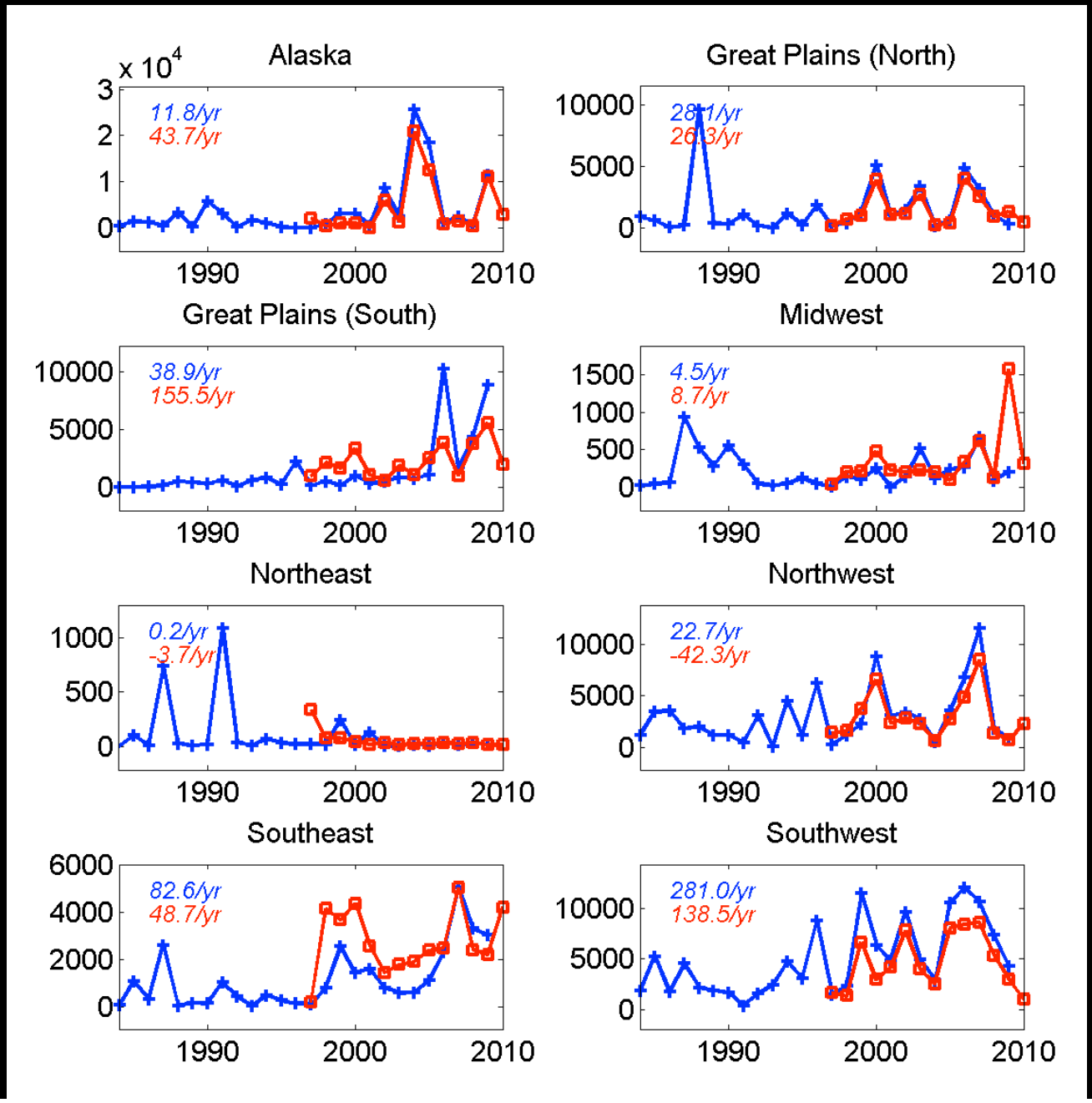
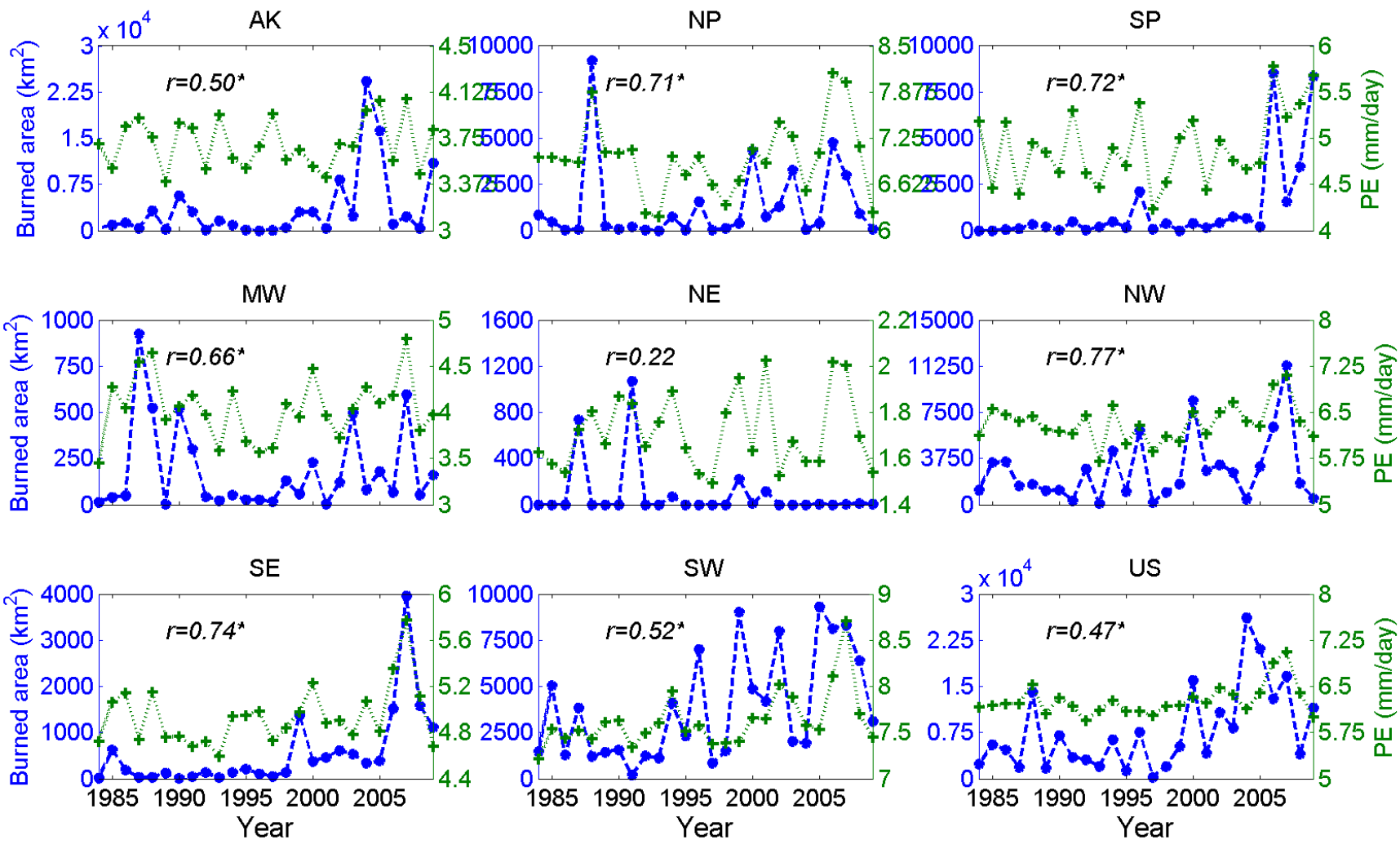


Burned Area Time Series from MTBS and GFED

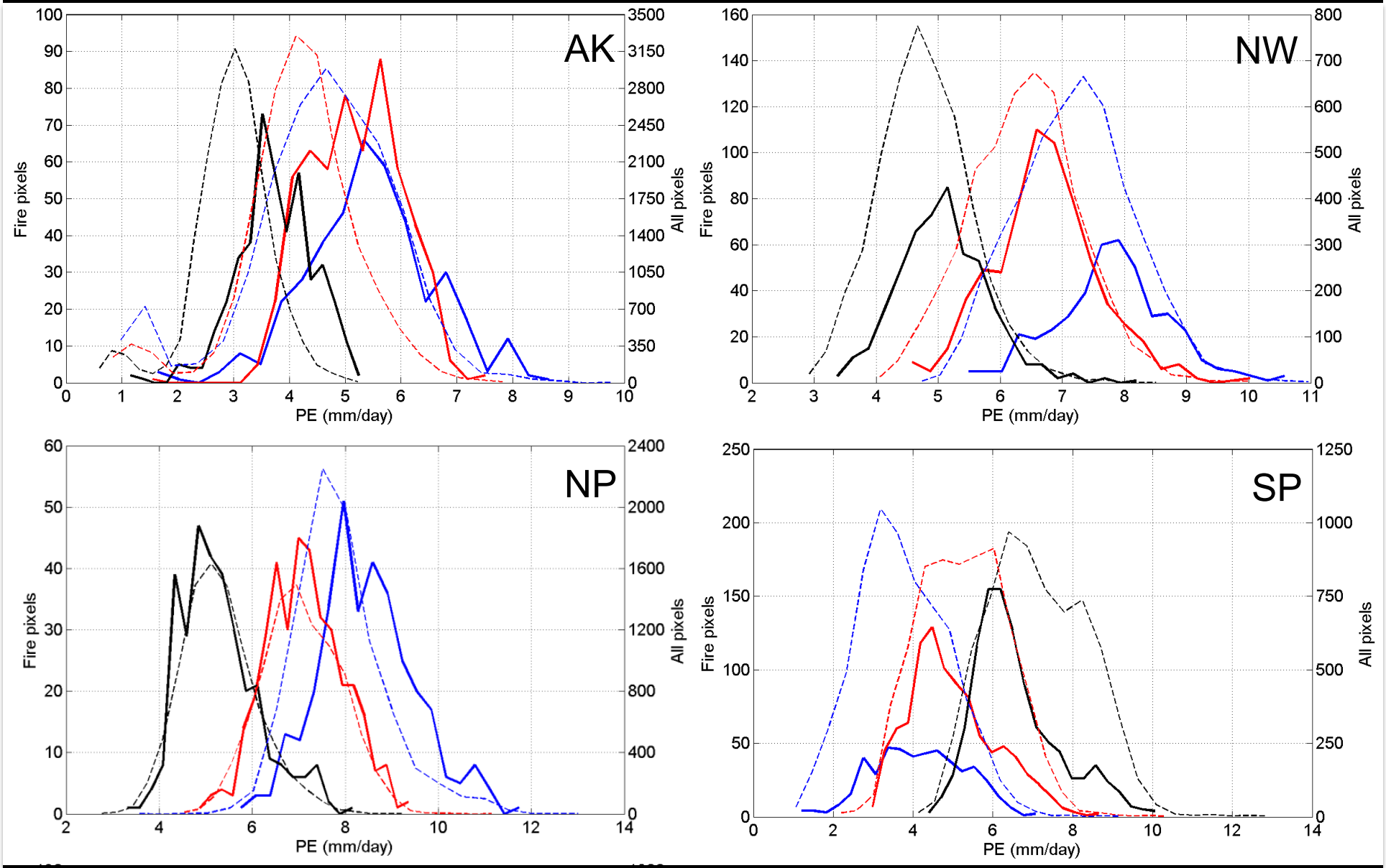


Morton et al., 2012

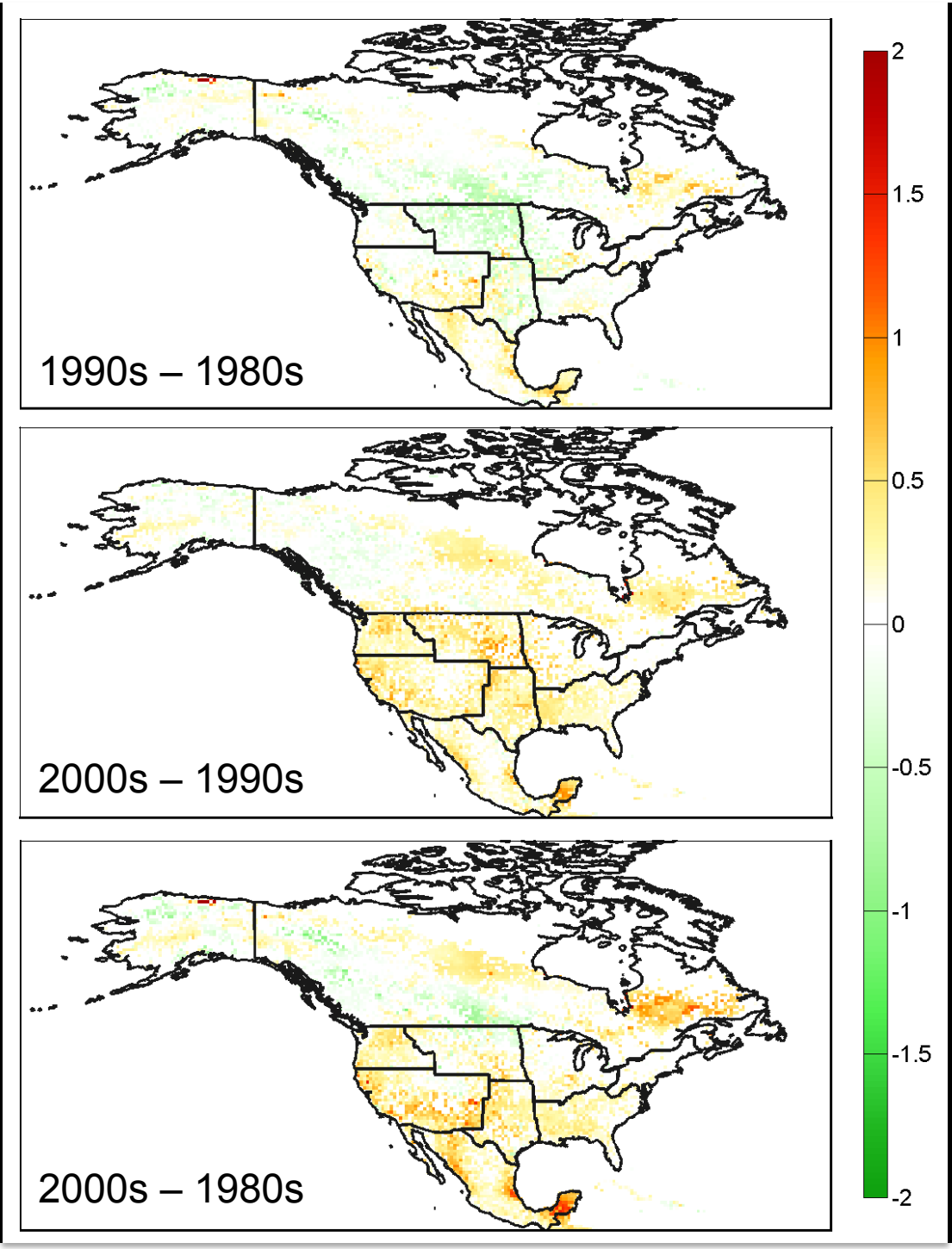
Interannual variability in US Burned Area is strongly correlated with potential evaporation (PE) during the fire season:



Detailed analyses of fire-climate interactions possible with satellite burned area and reanalysis climate data:



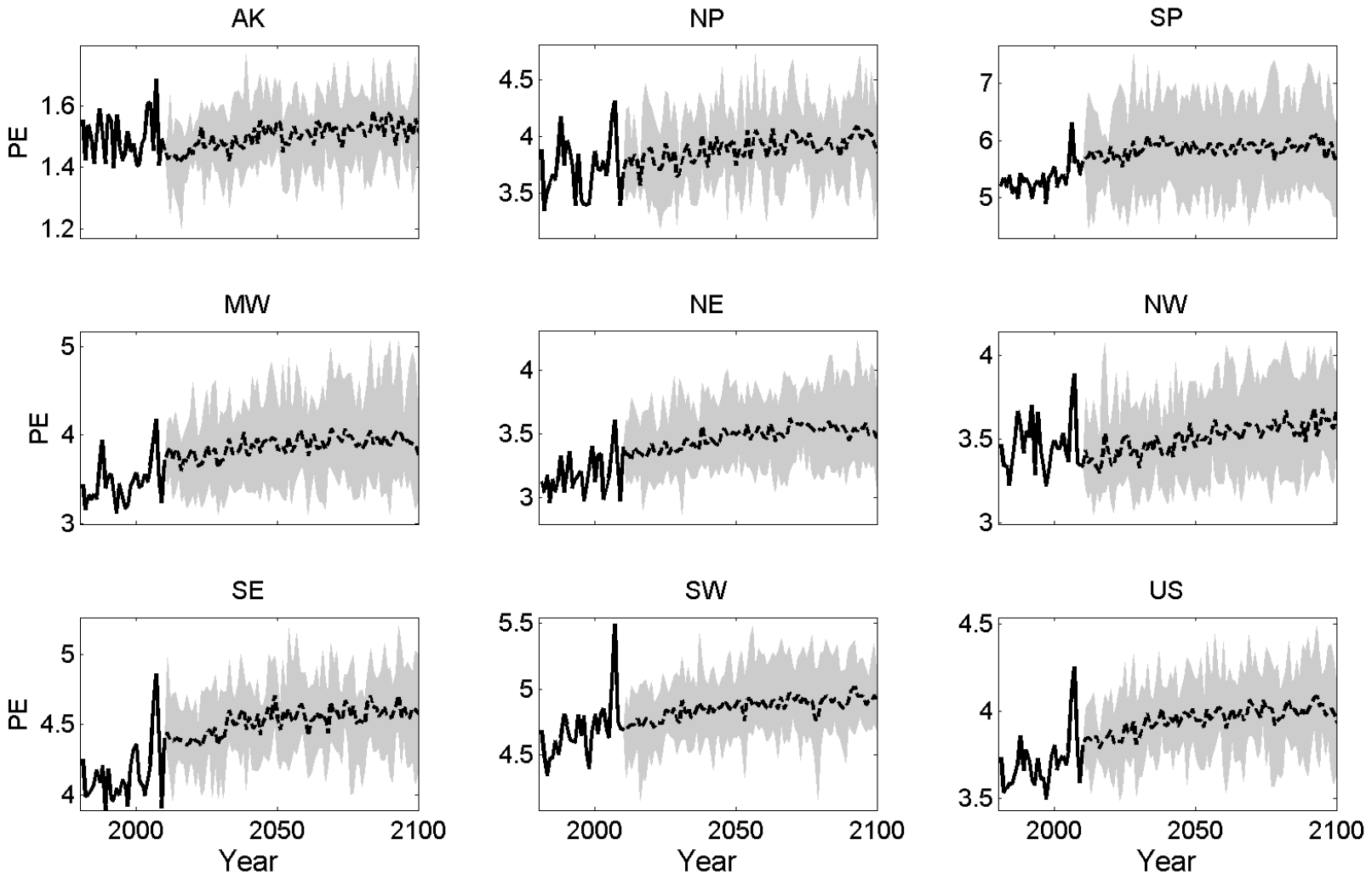
Blue, Black, and Red lines show the 1st, 2nd, and 3rd months of the fire season. Morton et al., 2012



Morton et al., 2012

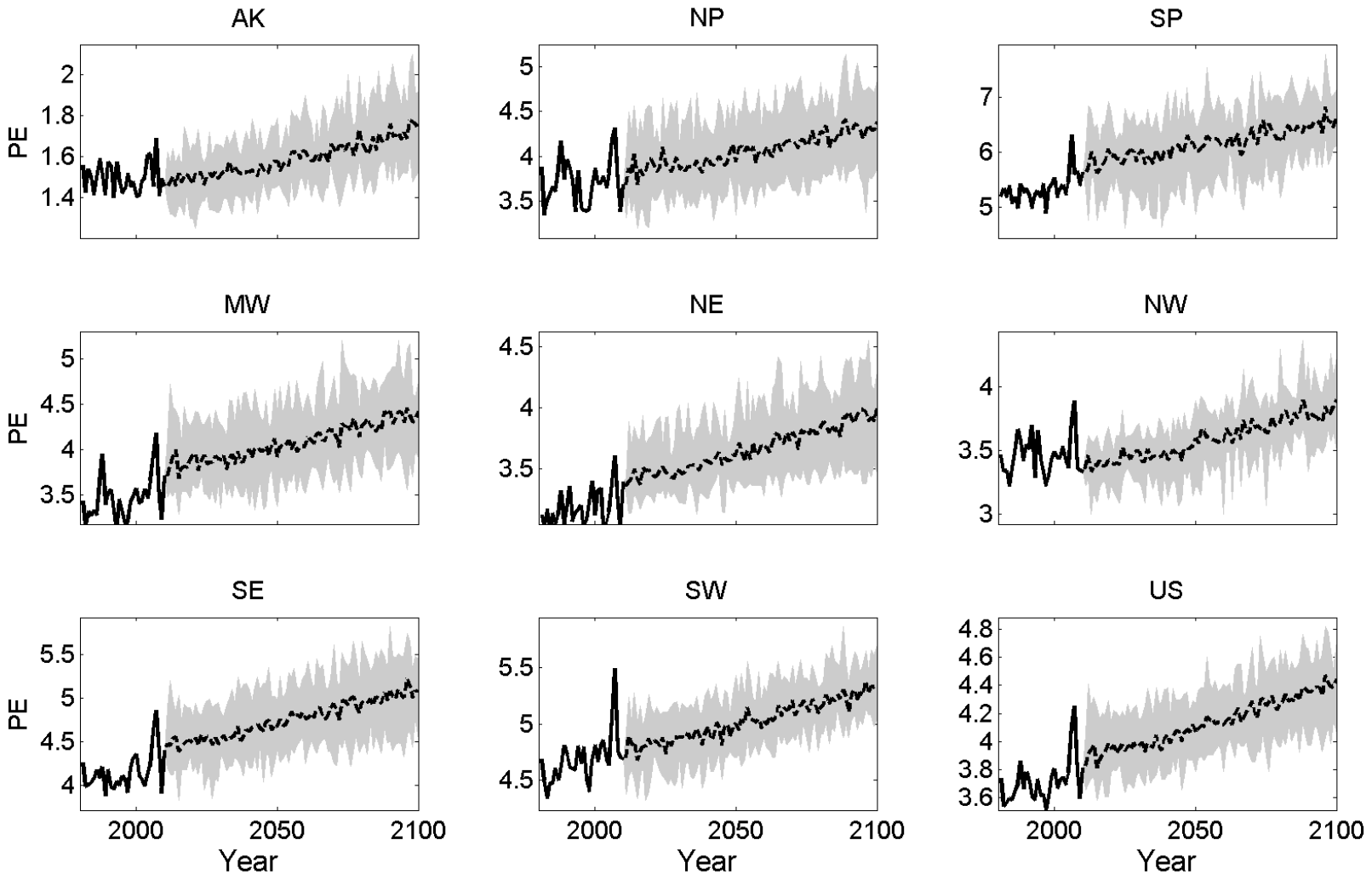
North American Regional Reanalysis (NARR, 1981-2010), CMIP5 (2010-2100) Annual PE

Scenario: RCP 4.5

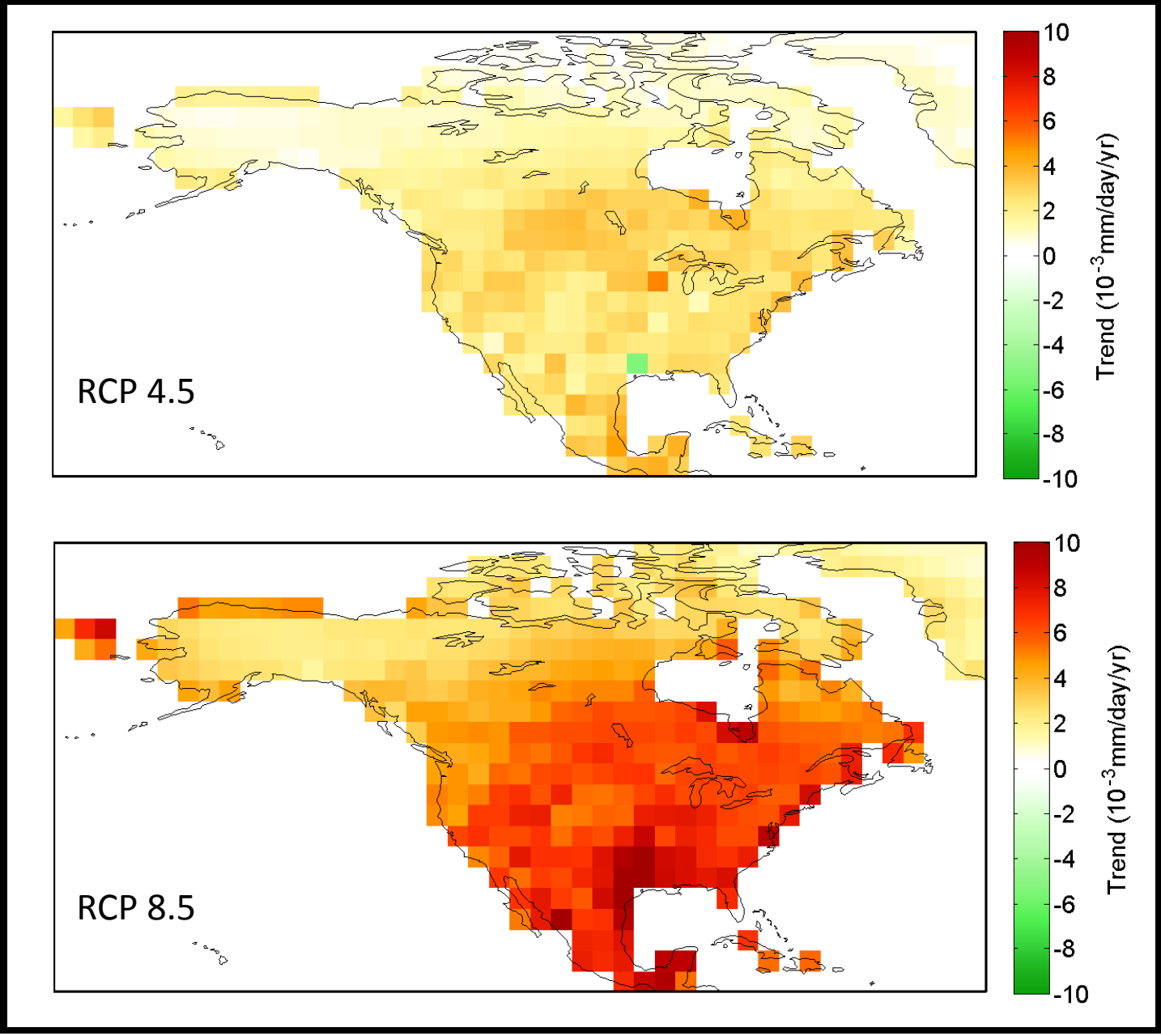


North American Regional Reanalysis (NARR, 1981-2010), CMIP5 (2010-2100) Annual PE

Scenario: RCP 8.5

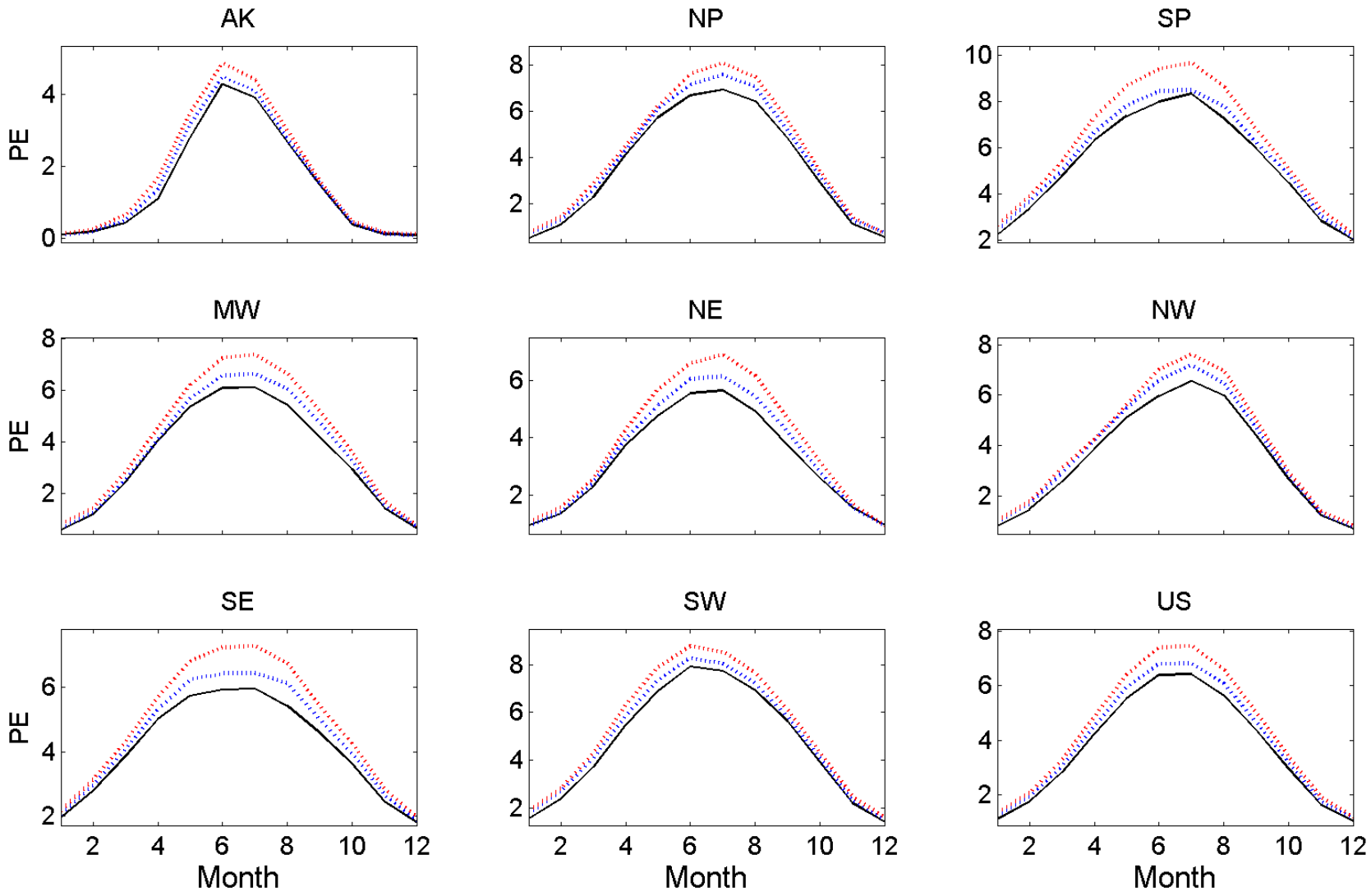


Multi-model trend in annual potential evaporation (PE) 2010-2100

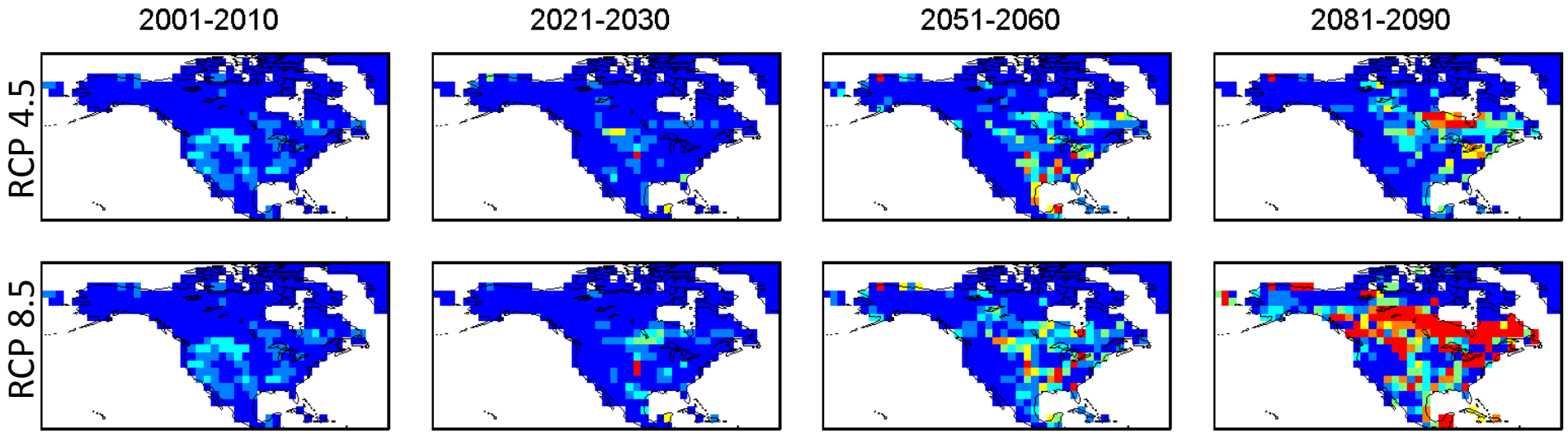


Shift of average seasonal PE (bias corrected) for 2091-2100

Black: NARR (1991-2000), Blue: RCP4.5, Red: RCP8.5



HadGEM2-ES



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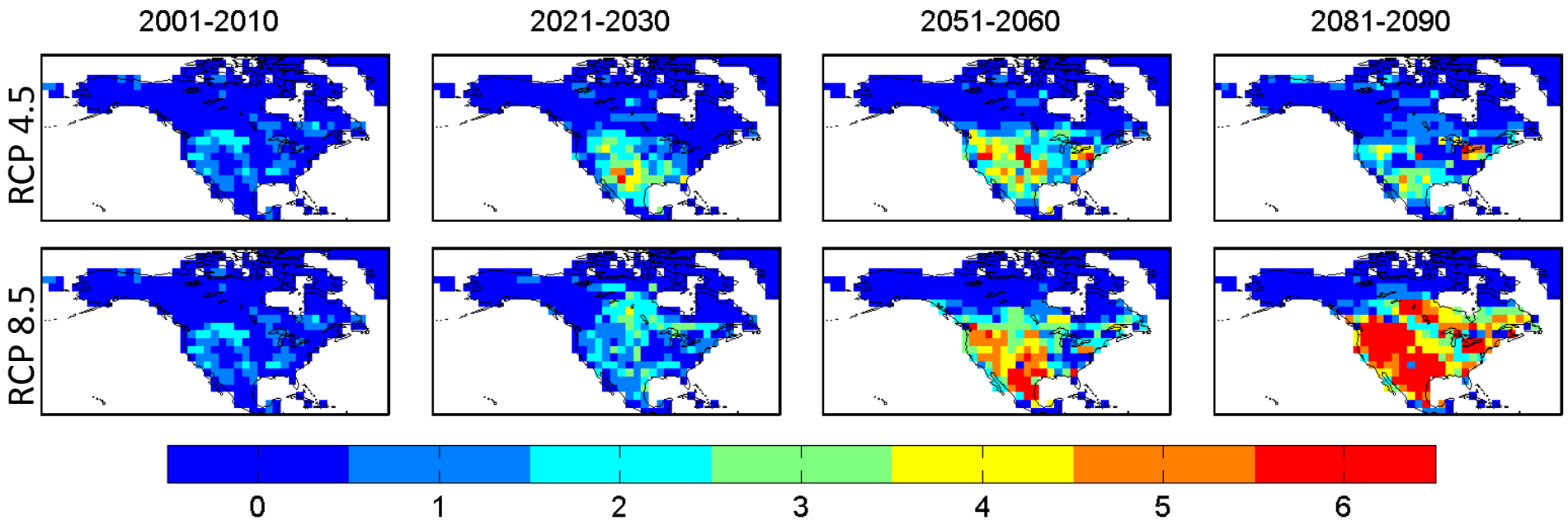

Next Steps

- AGU presentation: projecting US fire risk
- NASA/AGU Press Event
- Analyses at finer temporal, spatial scales
- Links to fire forecasting using SST

References & Links

- Morton DC, Collatz GJ, Wang D, Randerson JT, Giglio L, Chen Y. (2012). Satellite-based assessment of climate controls on US Burned Area. *Biogeosciences Discussion*, 9: 7853-7892, doi:10.5194/bgd-9-7853-2012. http://www.biogeosciences-discuss.net/9/7853/2012/bgd-9-7853-2012.html
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