SYSTEMATIC INVESTIGATION OF CHANGES IN DAILY RAINFALL AND ITS EXTREMES FROM 1958 TO 2013 ACROSS AUSTRALIA

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Aim

- Investigate changes in frequency of wet days and magnitude of daily rainfall across Australia
- Magnitude changes investigated by quantifying changes in every part of the probability distribution between two long periods

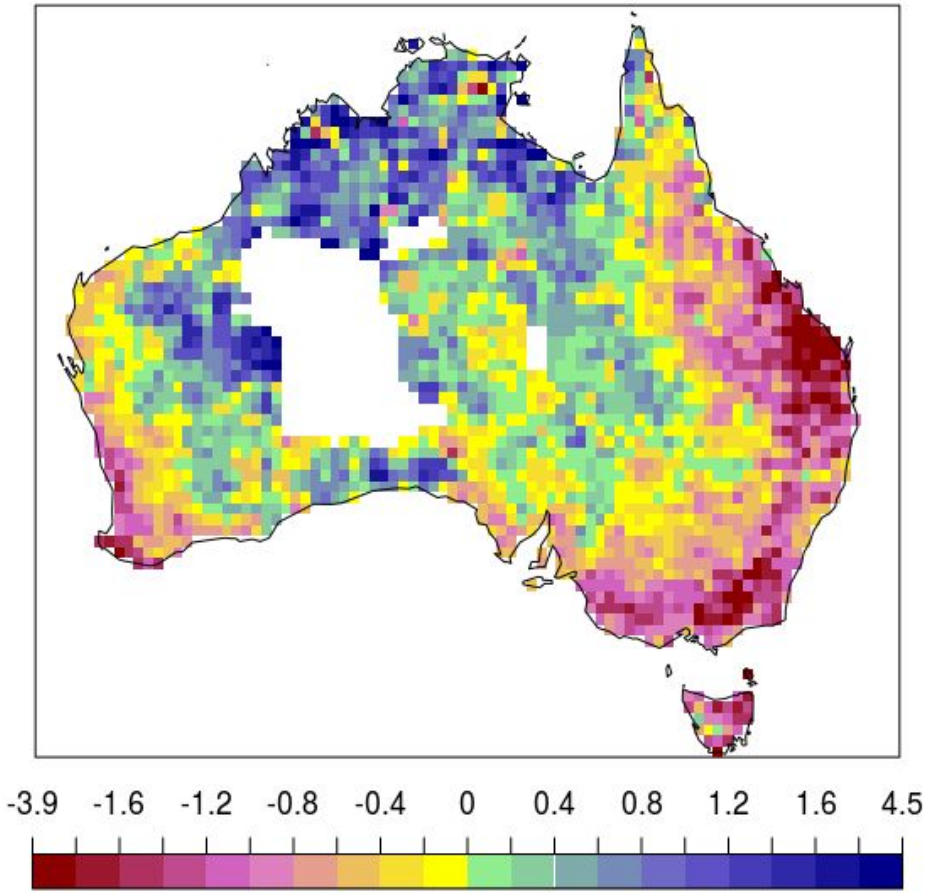
Data and Methods

- AWAP
- Two GHCN-Daily interpolated datasets
  - Natural Neighbour (NATN)
  - Barnes Objective Analysis (BRNS)
  - Long term stations only
- Two periods: 1958-1985 and 1986-2013
- 0.5 degree gridded resolution

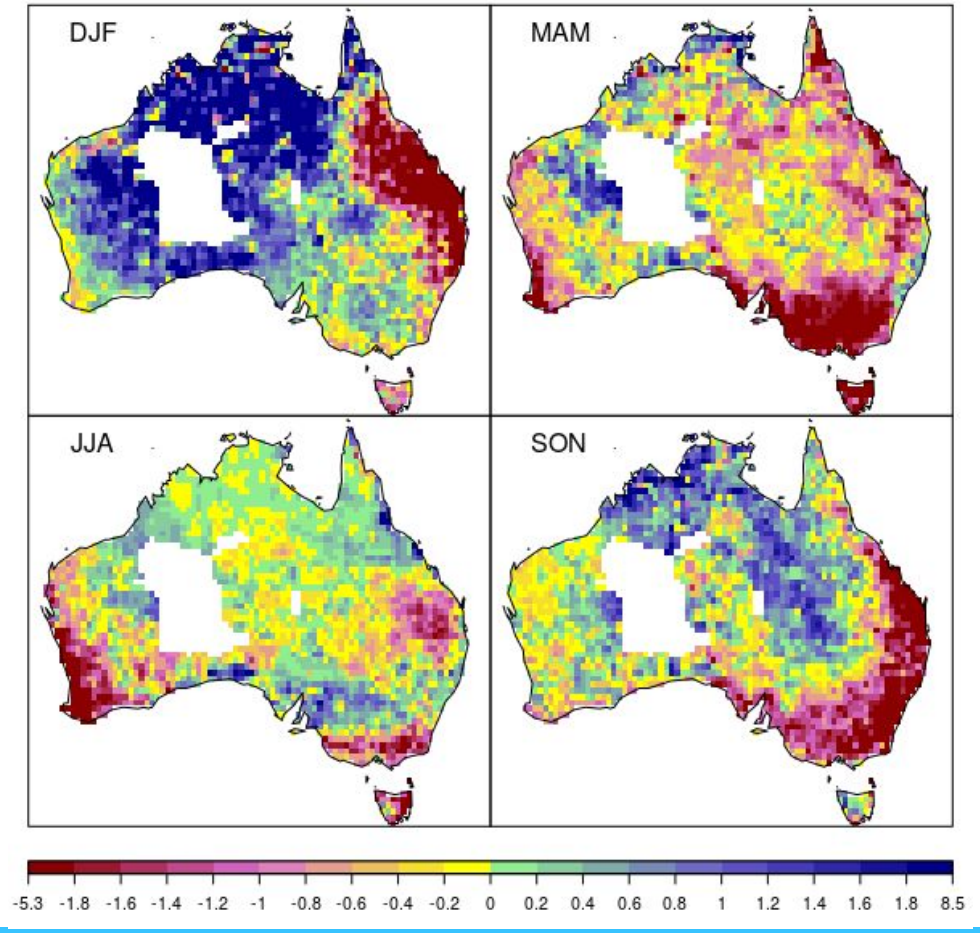
Study Statistics

- Quantile Ratios (QR): Quantiles are calculated on the time series for each period at each grid cell across Australia. The ratio of values of like quantiles is calculated
- Difference in the number of wet days as a percentage of total number of days between the two periods 1958-85 and 1986-2013
- Ratio of number of grid cells with QR > 1 to those with QR < 1

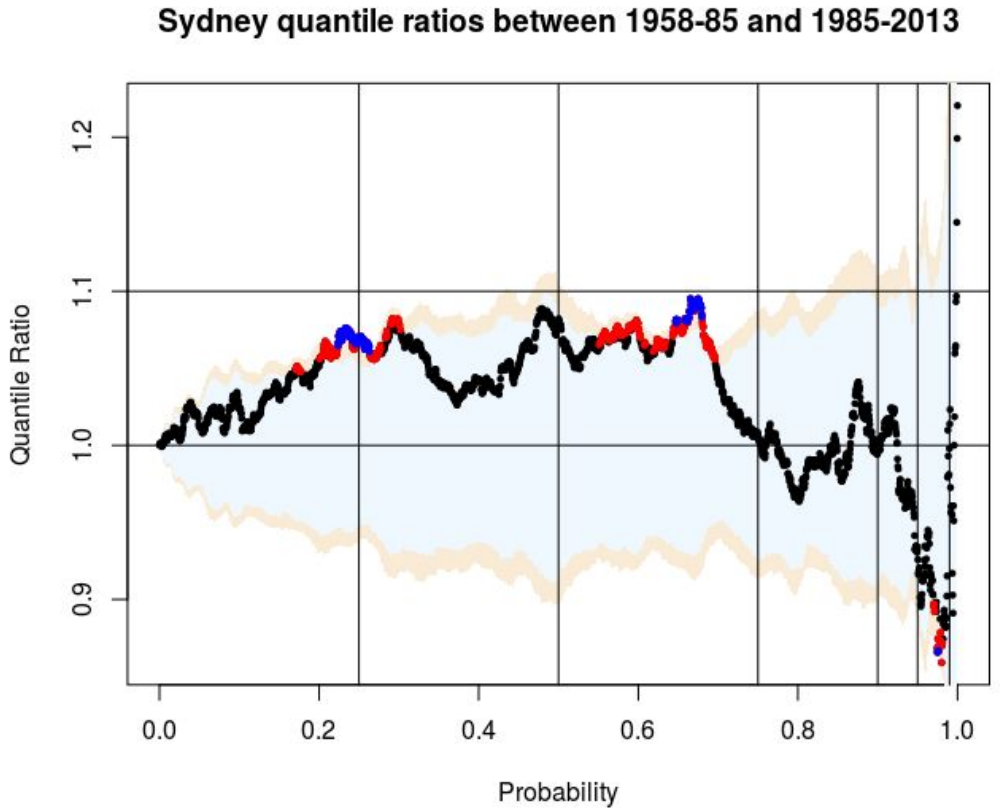
Difference in % of wet days in the two periods



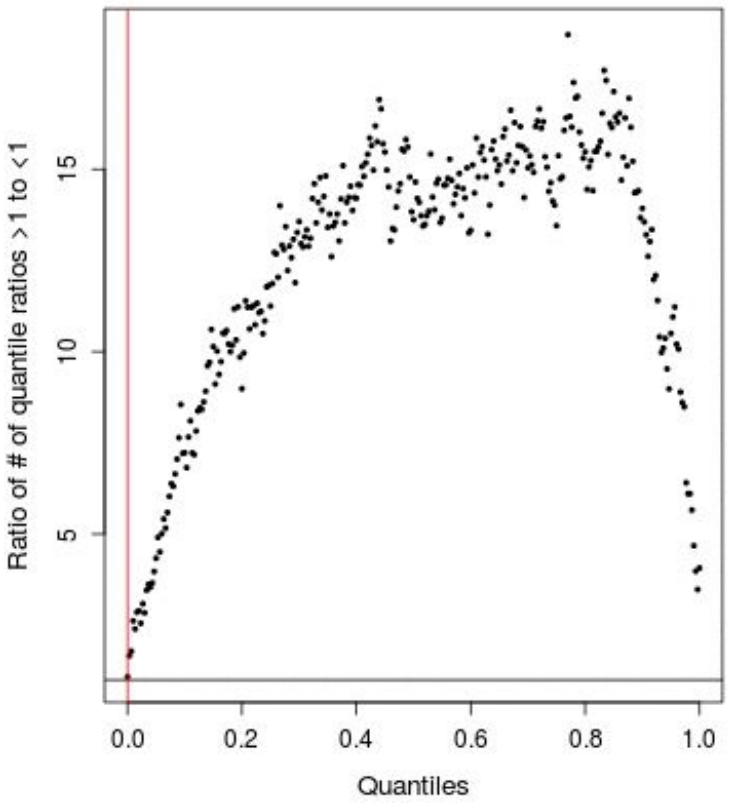
Seasonal differences in number of wet days

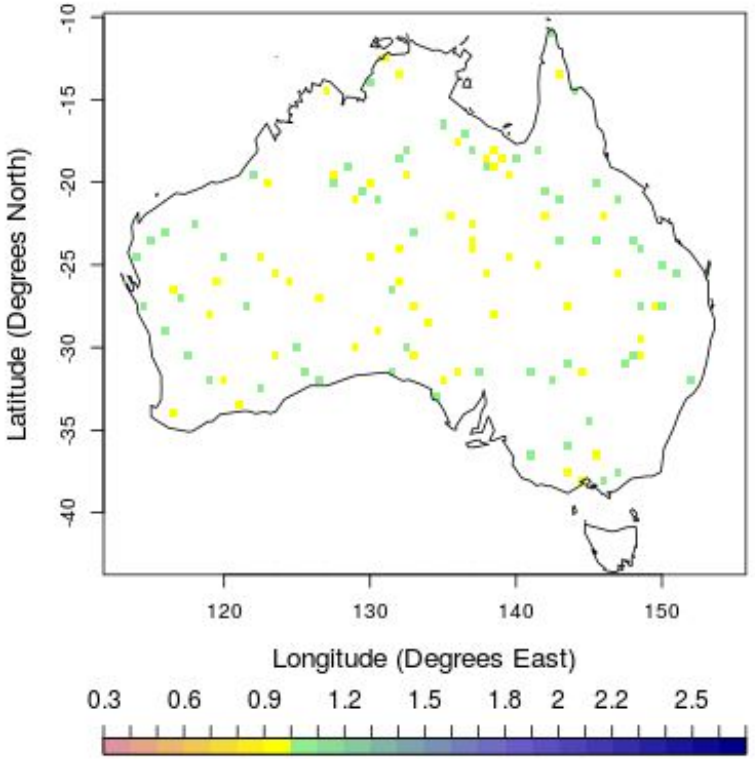


Significant Quantile Ratios

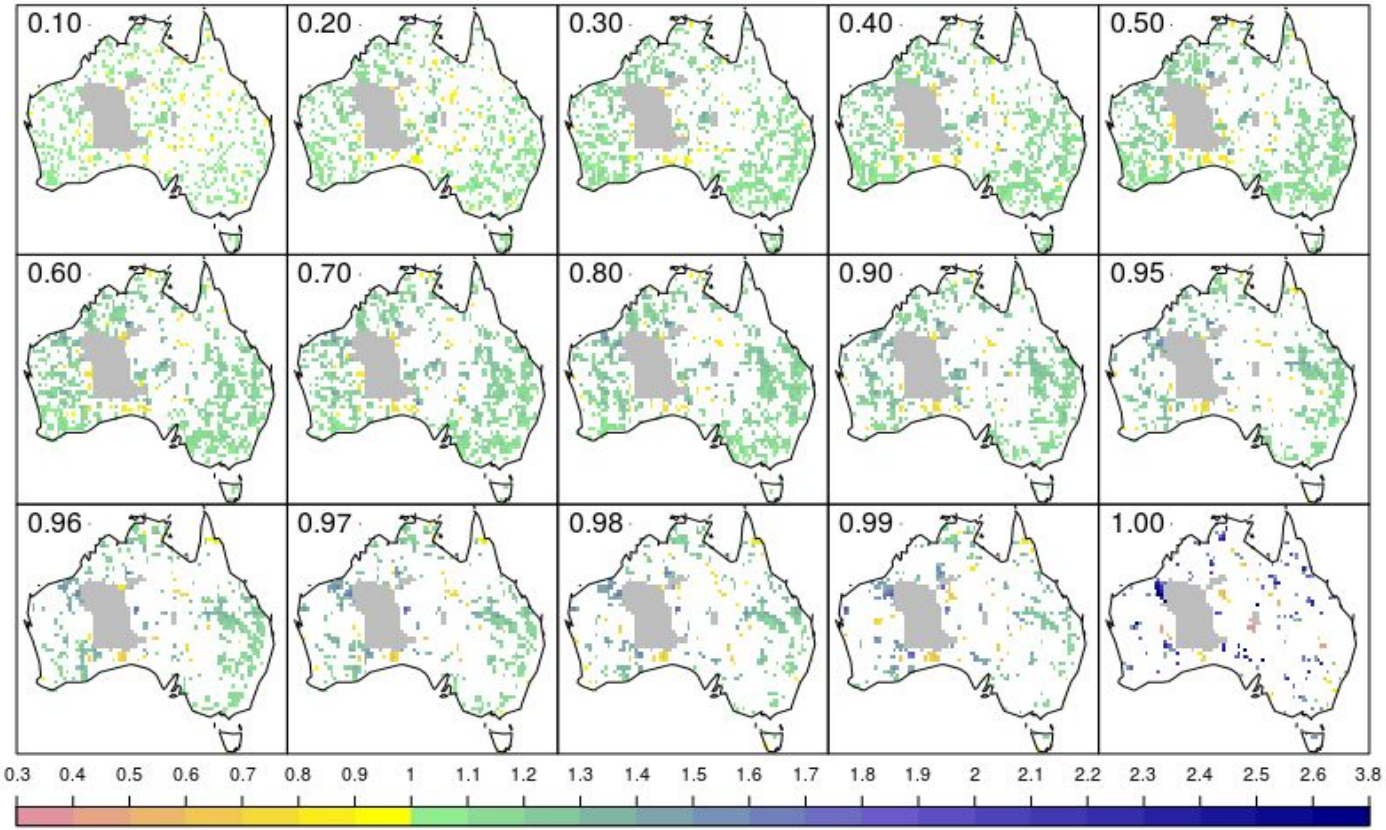


Quantile ratios of significant grid cells cycling over all quantiles

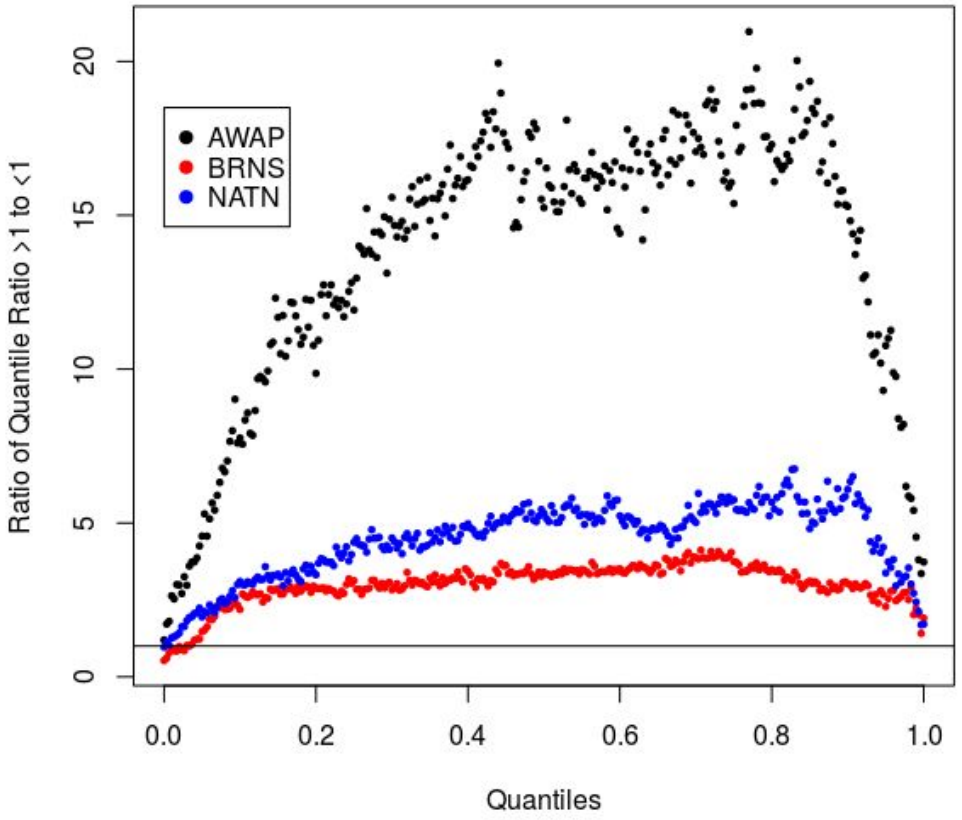




Quantile ratios of select quantiles



Comparison between different gridding methods



Conclusions

- More rainy days in central northern Aus and fewer on the east coast and in south eastern and south western Australia
- Across Australia, every part of the distribution is getting wetter!

Thank you for listening :)

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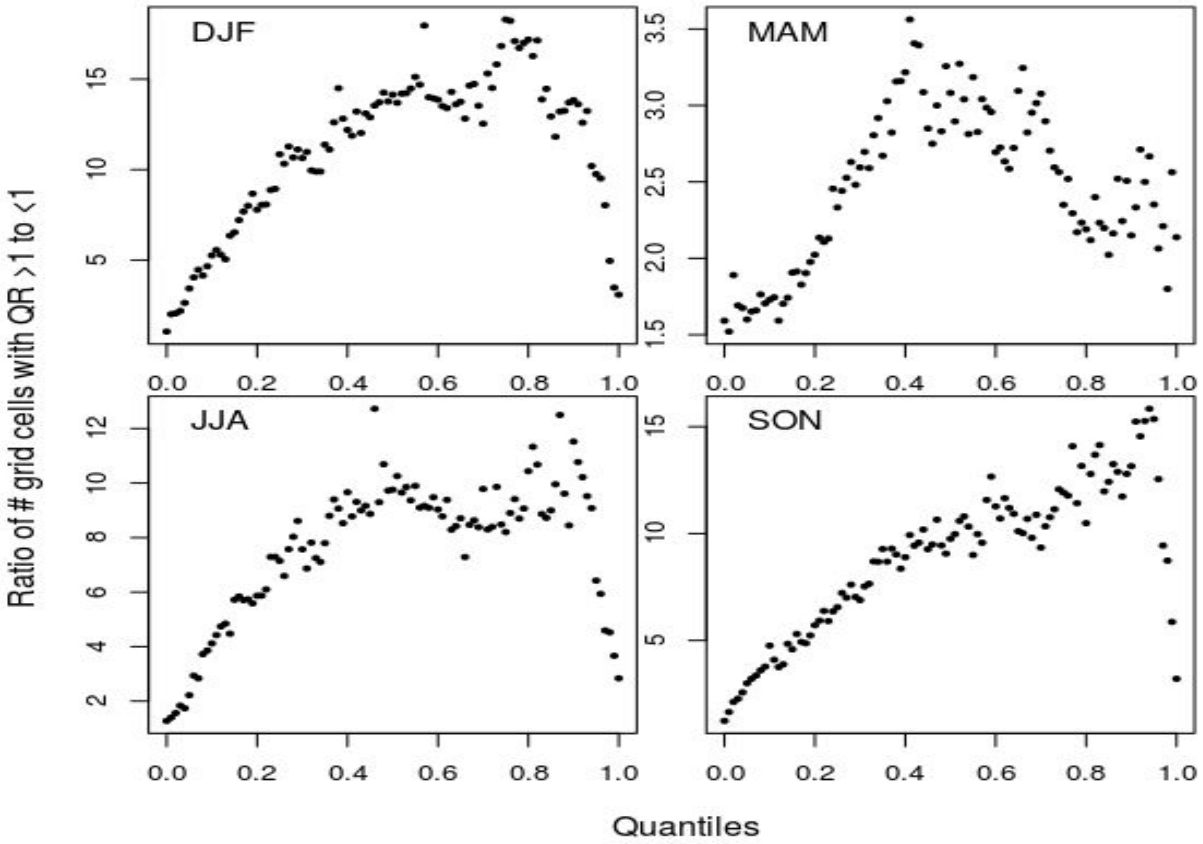
Seasonal Results



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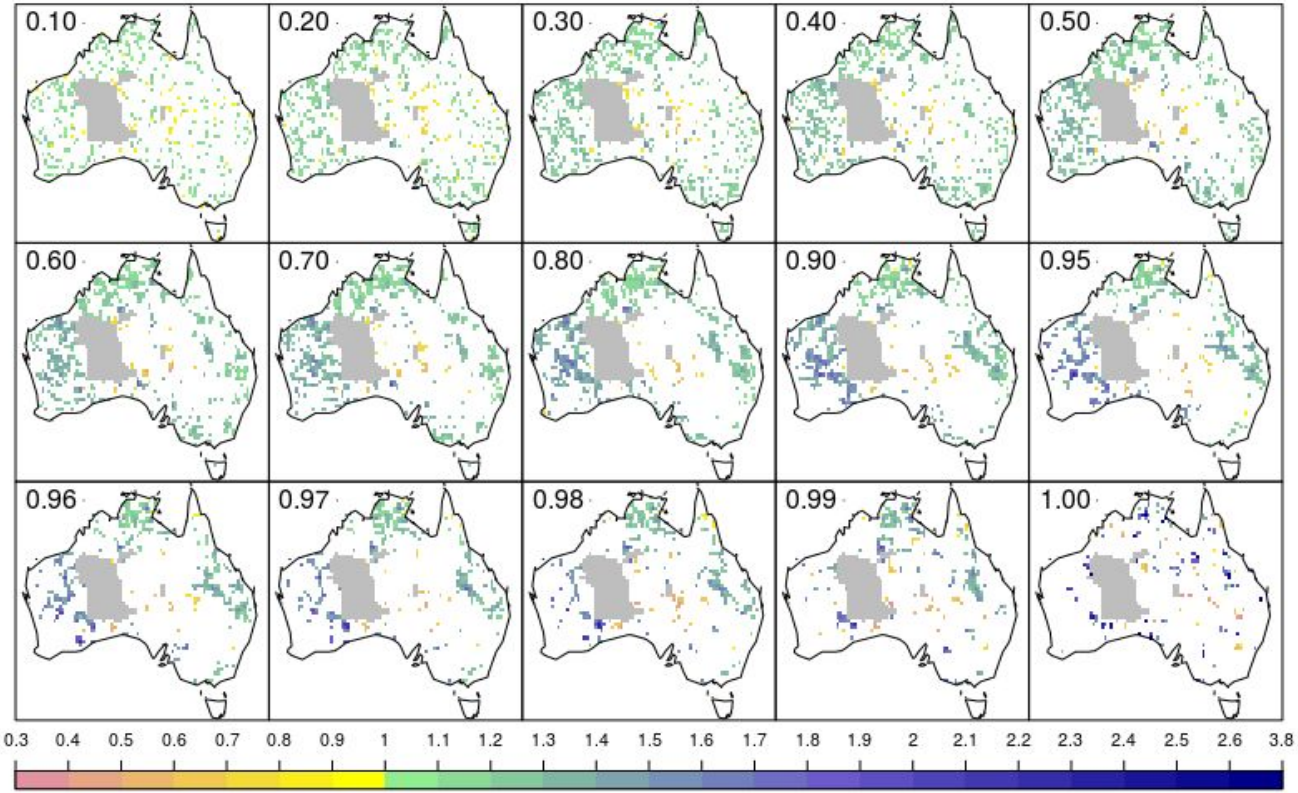
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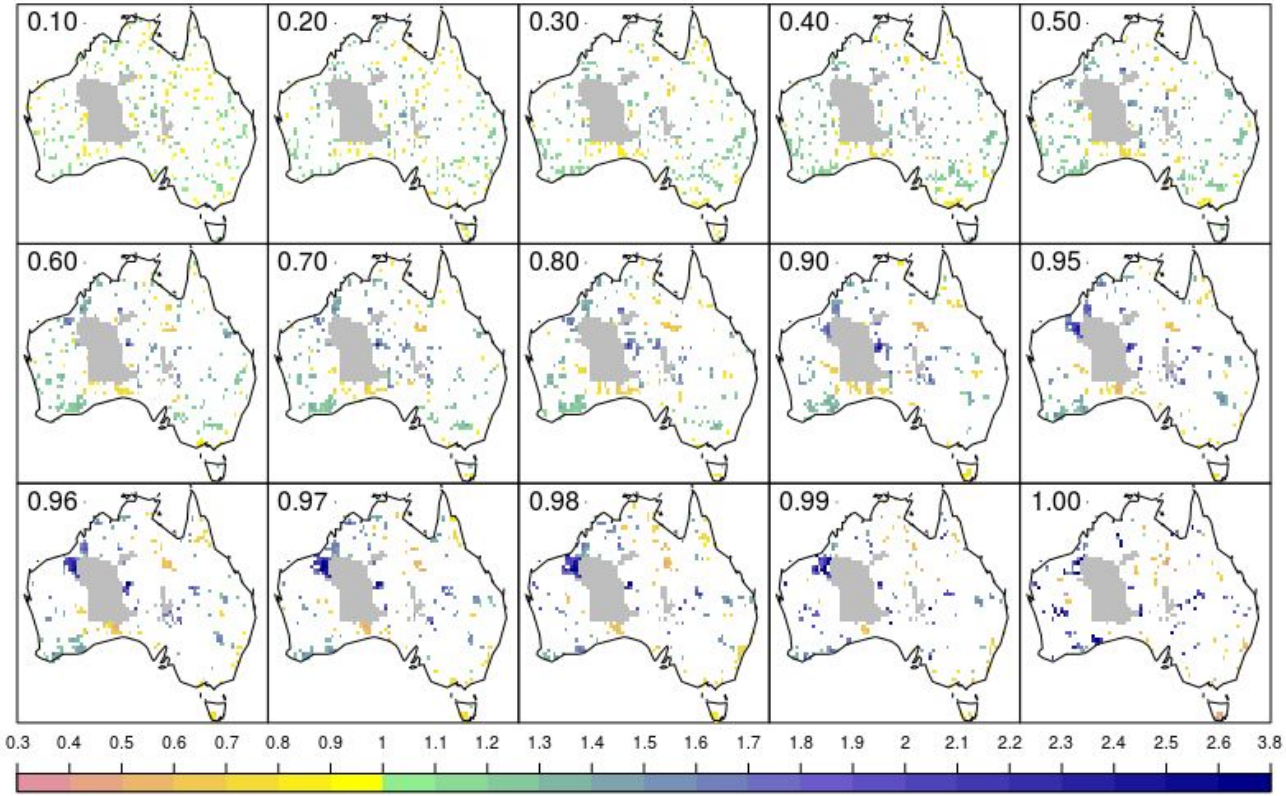
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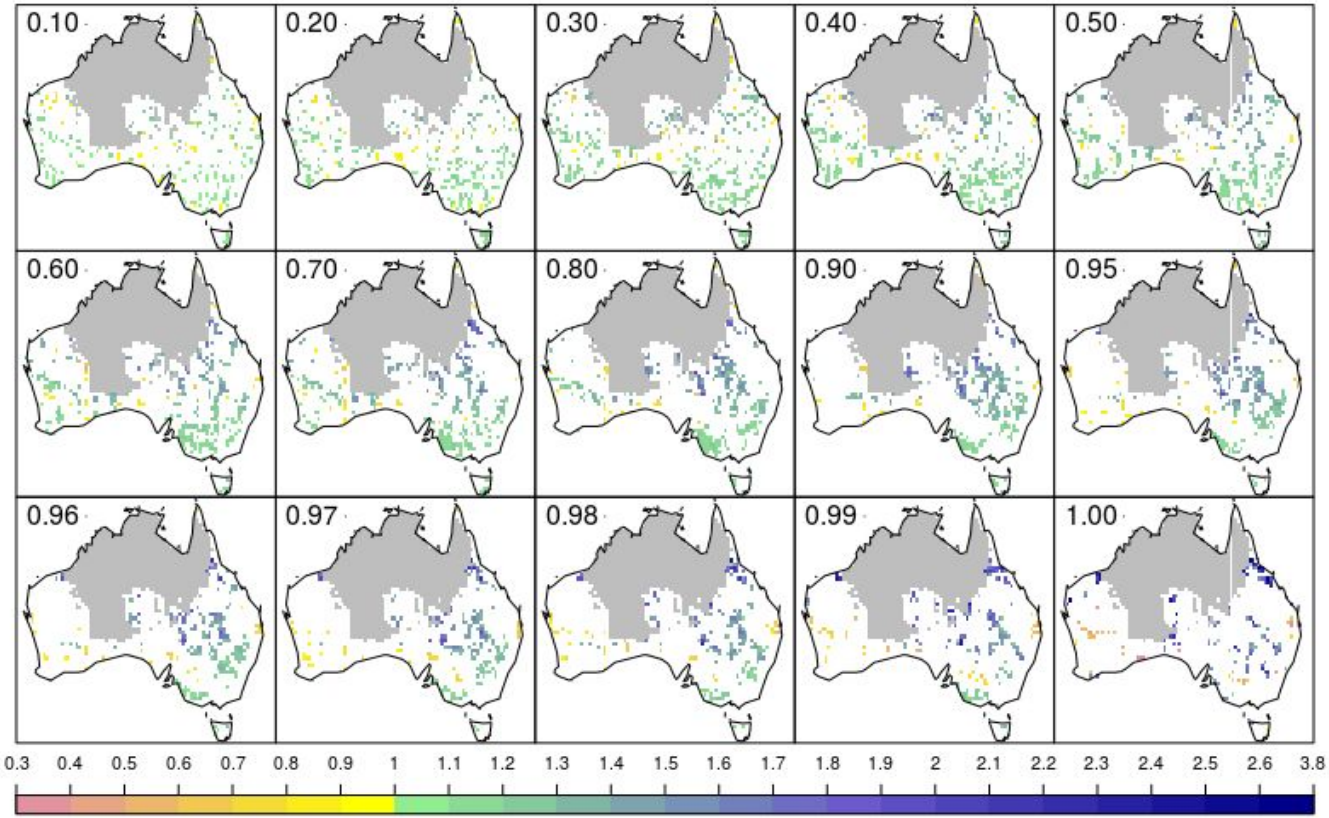
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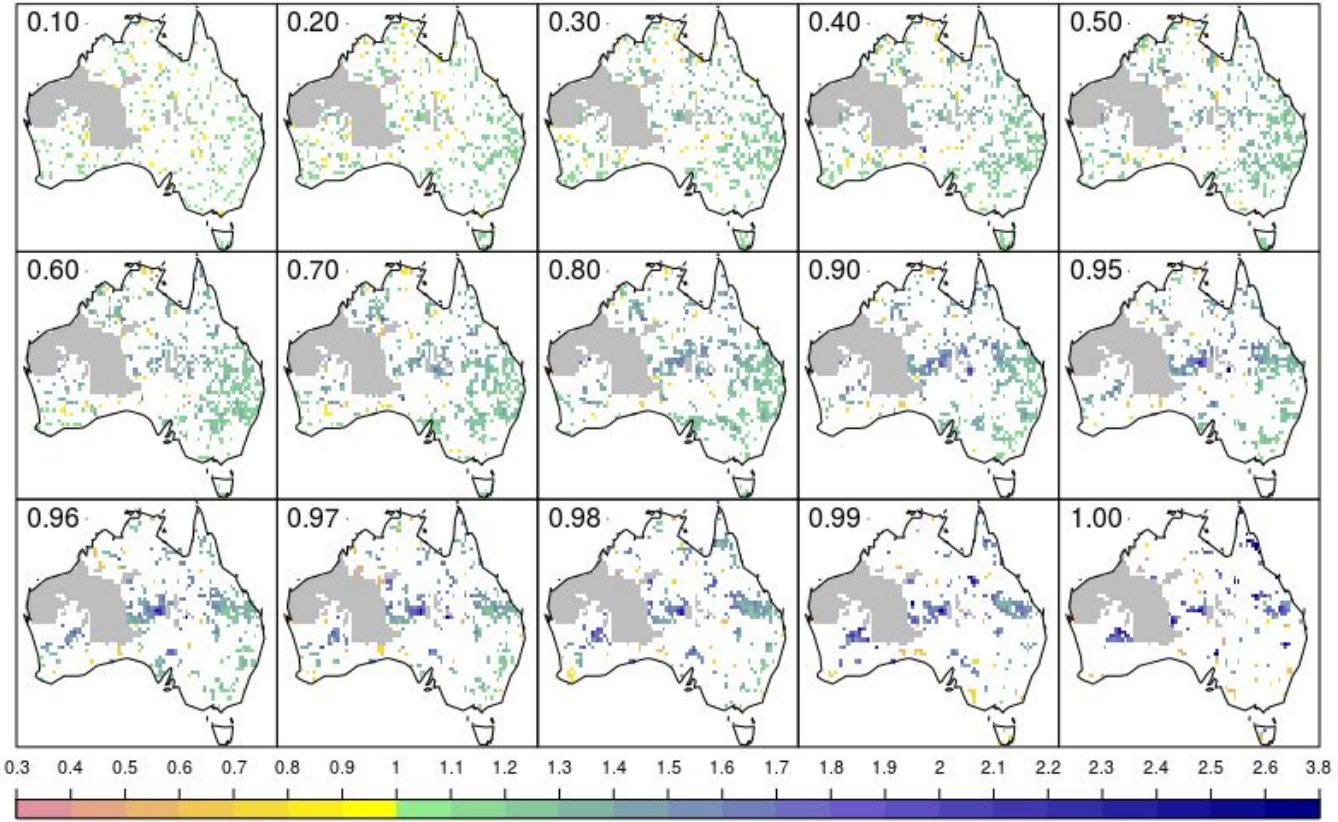
SON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