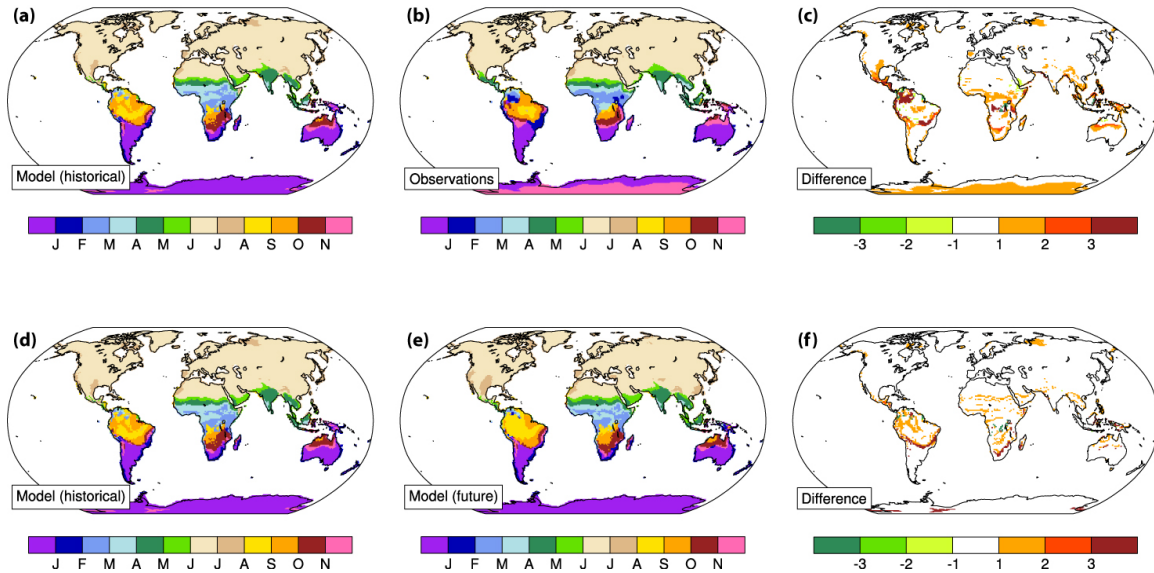


1 **Supplementary Material**

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6 Fig. S1 Central month of climatologically warmest 3-month period during 1920-2014 at a
7 given location in (a) CESM LE and (b) observations. (c) The difference between (a) and (b)
8 can be interpreted as model bias in units of months. (d) Same as (a). (e) as in (a) but for
9 2061-2080. (f) The difference between (d) and (e) indicates a change in seasonality with
10 global warming. The reference period for the climatology is the quadratically detrended 3-
11 month running mean time series from 1920 to 2014. Observations are Berkeley Earth
12 Surface Temperature data set (BEST; Rohde et al. (2013)). For the model, the reference
13 period has been extracted from all ensemble members of the CESM LE, quadratically
14 detrended, and then concatenated before calculating the climatology. The procedure for the
15 future climatology is analogous, but uses the time period 2061-2080