



Thresholds as a measure of extremes

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Temperature Thresholds

- Frequently reported
- Relatable

Queensland

Queensland heat records for March broken as state's south-east soars above 40C

Gatton, Beaudesert and Archerfield among towns with record-breaking maximum temperatures for the month

Highs of 40C or more in the state's south-east were recorded for the first time in March, with the town of Gatton reaching 40C on Monday and 41.1C on Tuesday, about 11 degrees above its average maximum temperature for the month.

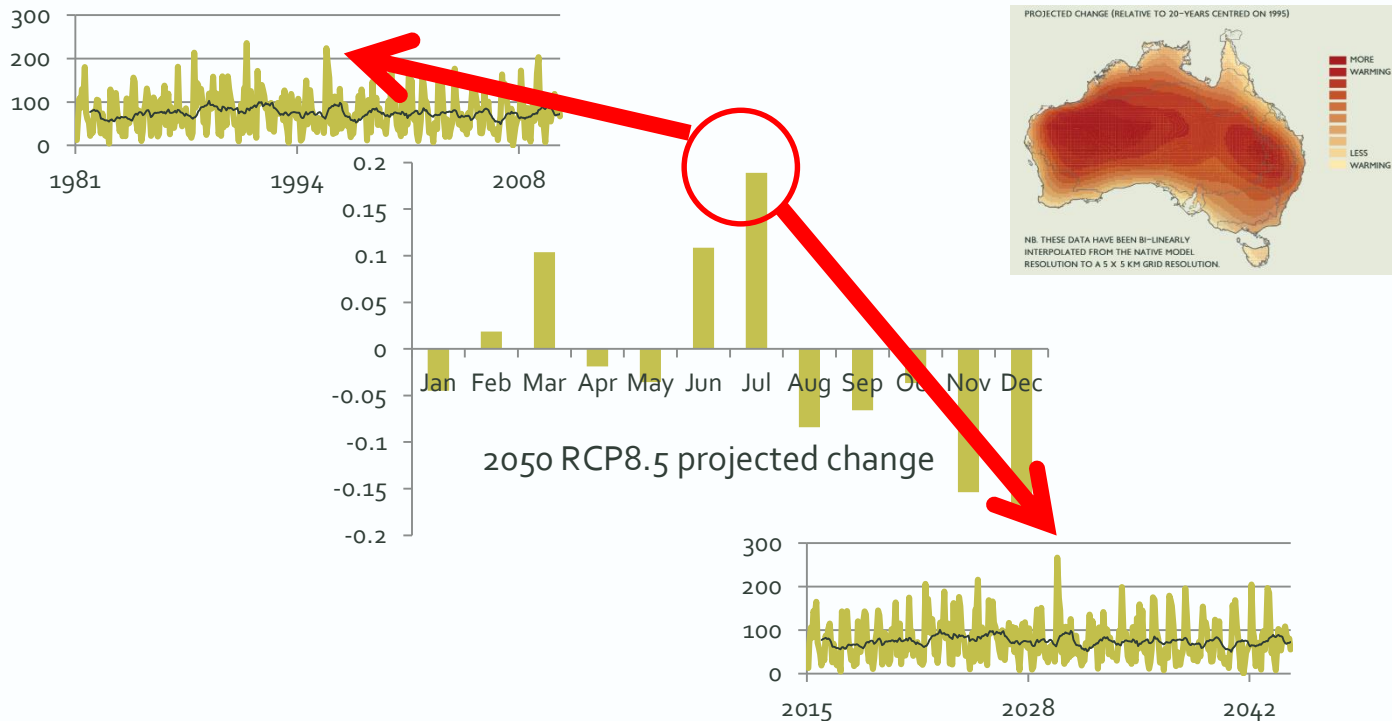
around 30C overnight.

Melbourne heatwave: city expecting 44C as Victoria faces hottest day since Black Saturday

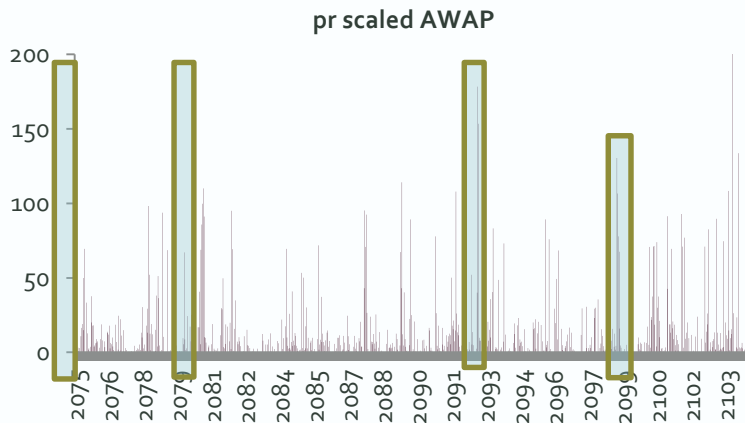
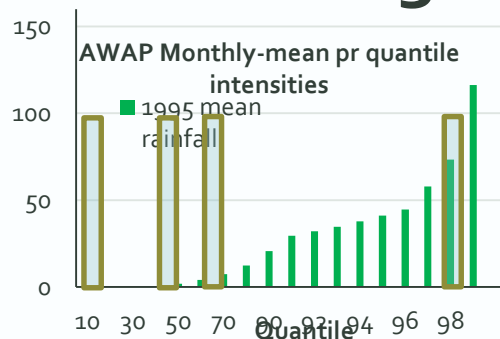
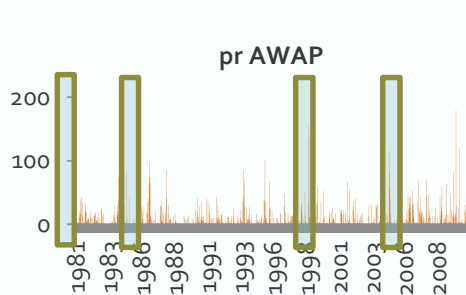
A Bureau of meteorology says the heatwave in Queensland is partly due to an inland surface trough pulling hot air from the interior of the continent further east. Photograph: Tracey Nearn/AAP

Multiple **Queensland** heat records have been broken for March, with some areas recording temperatures of more than 10 degrees above their average maximum.

Methods: Mean Delta Change (time-series)



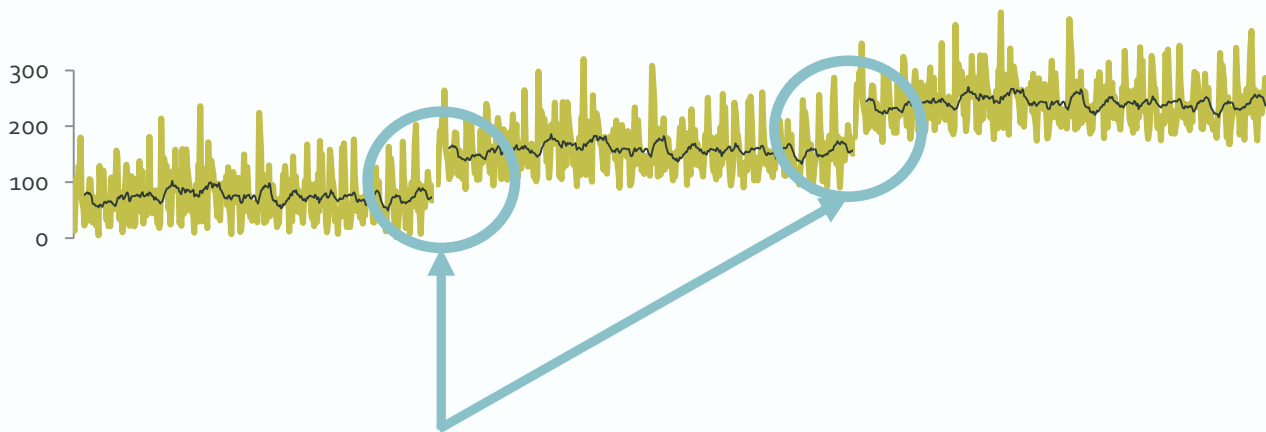
Methods: Quantile Delta Change (time-series)



Quantile	Change ratio
Percentile 10	-1.0025
Percentile 20	0.0661
Percentile 30	-0.0850
Percentile 40	-0.0859
Percentile 50	-0.0537
Percentile 60	-0.1446
Percentile 70	-0.1378
Percentile 80	-0.1179
Percentile 90	-0.0700
Percentile 91	0.0084
Percentile 92	0.1410
Percentile 93	0.1864
Percentile 94	0.3394
Percentile 95	0.6722
Percentile 96	0.6175
Percentile 97	0.3931
Percentile 98	0.3305
Percentile 99	0.1222

-20° -10° 0° 10° 20° 30° 40° 50°

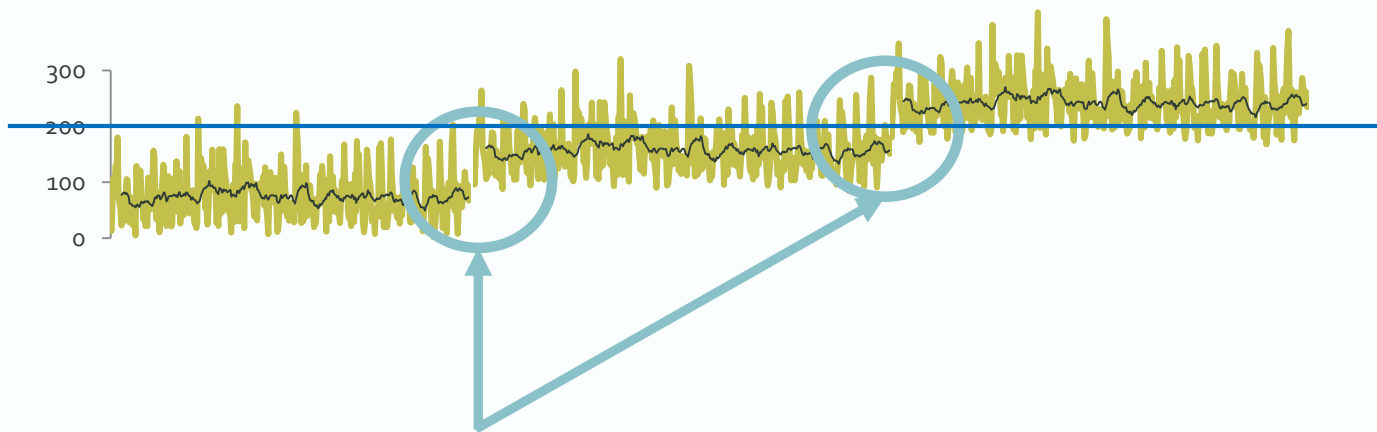
Result



- Plausible future 'weather- like' daily time-series
- Data representative of the **mean climate state** of a given future.
- Datasets are **discontinuous**.



Result

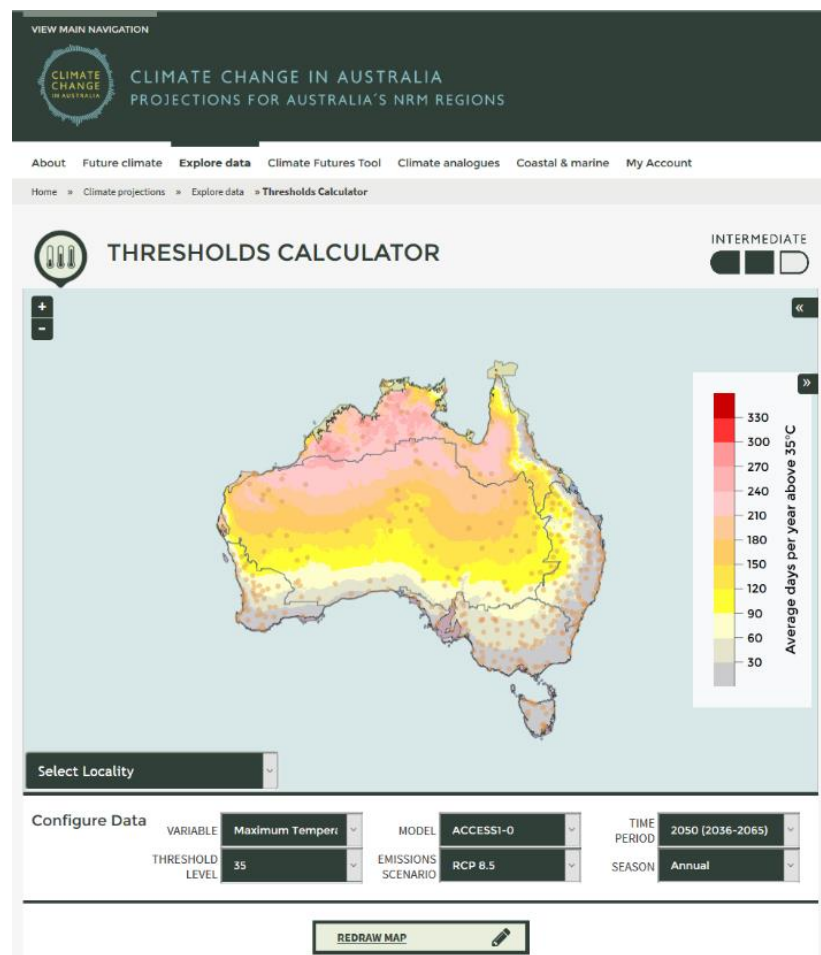


- Plausible future 'weather- like' daily time-series
- Data representative of the **mean climate state** of a given future.
- Datasets are **discontinuous**.
- Can be queried for thresholds



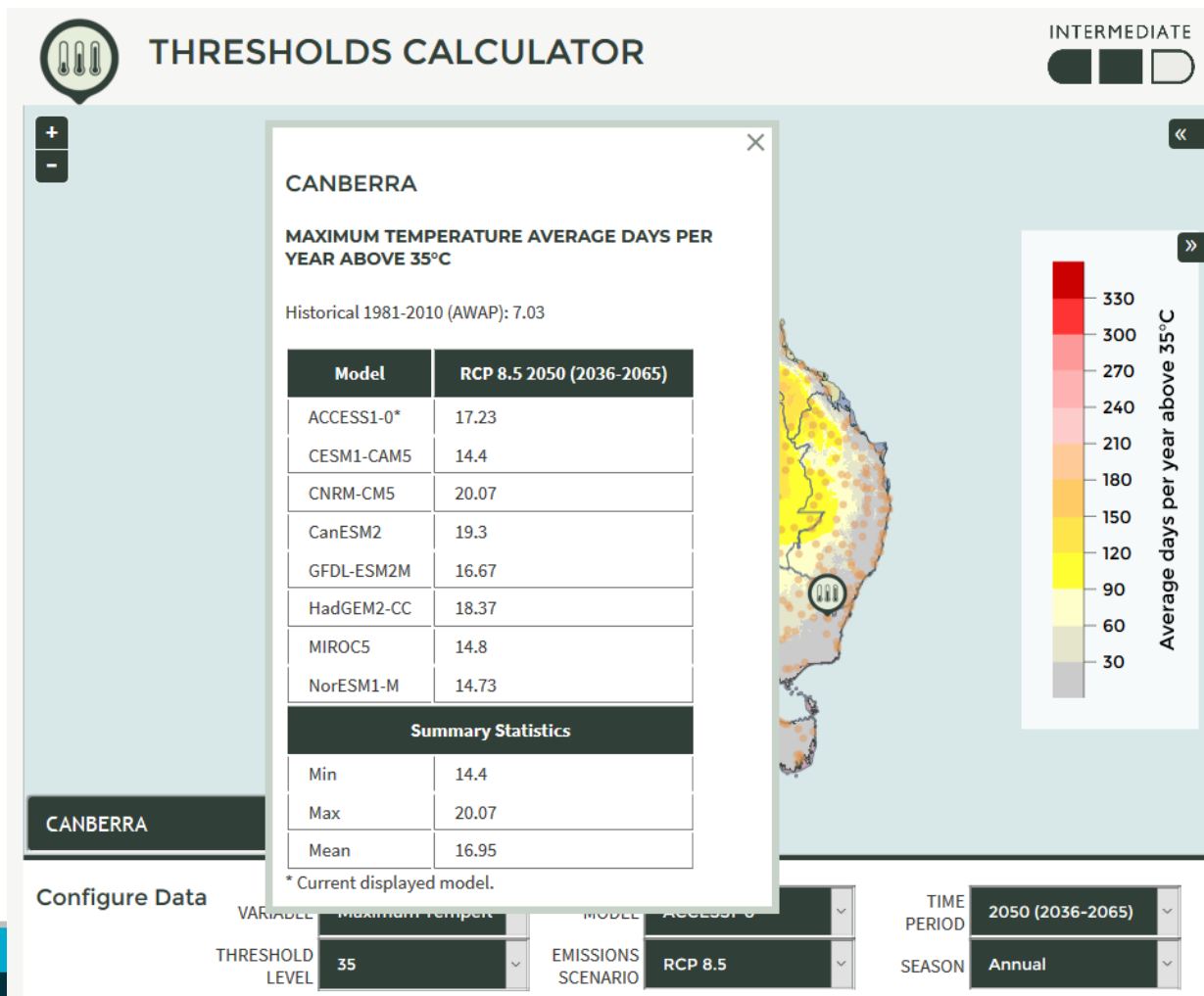
Thresholds Calculator

- Gridded (5 km) results for Australia
- Interactive
- Max temps > 30 to 45°C (1° steps)
- Min temps > 20 to 30°C (1° steps)
- Min temps < 0 to 18°C (2° steps)
- Rainfall very wet days (99.9th pc)
- Rainfall dry years (10th pc)



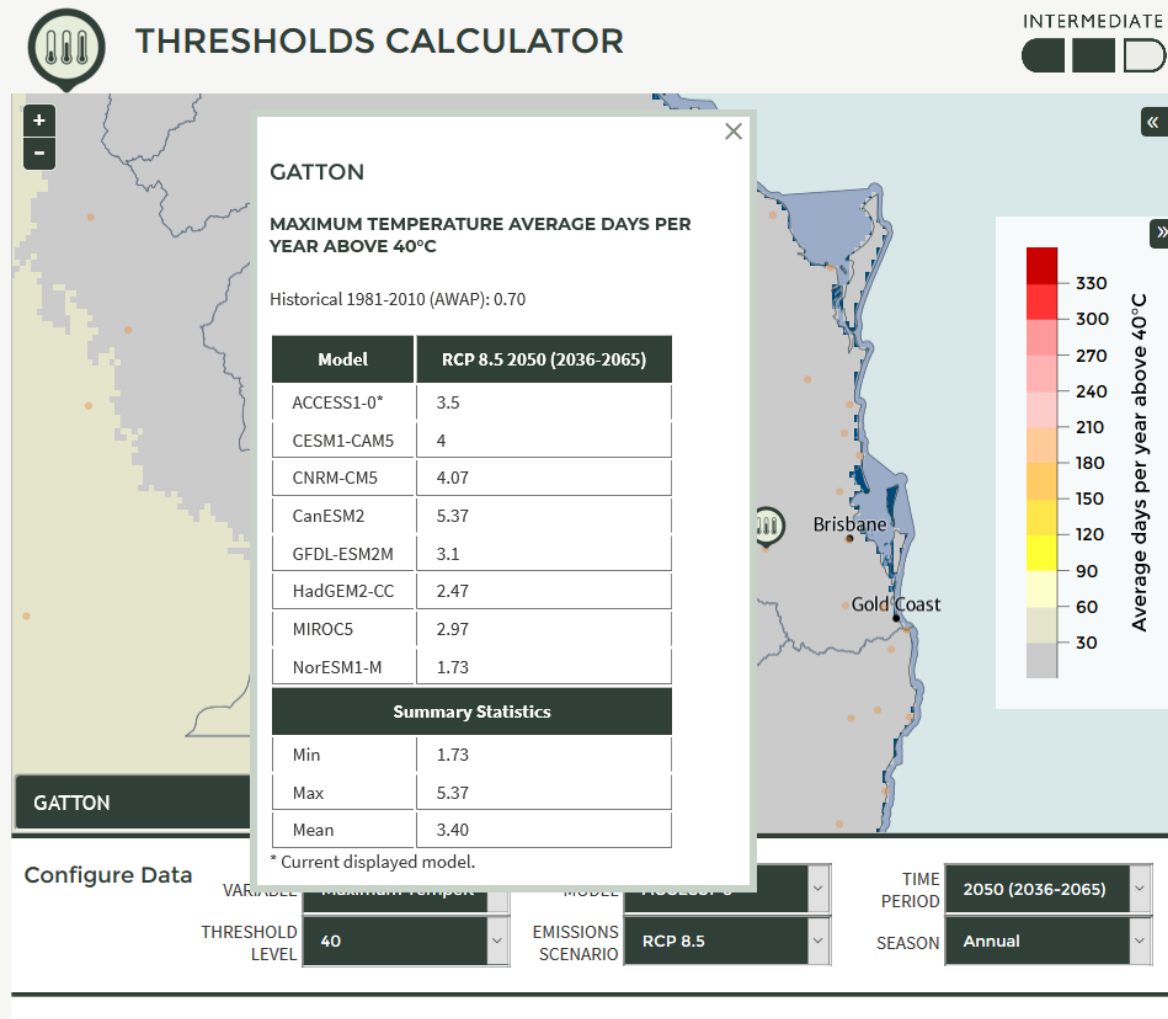
Examples

- Hot days
- Ave days/yr above e.g. 35°C



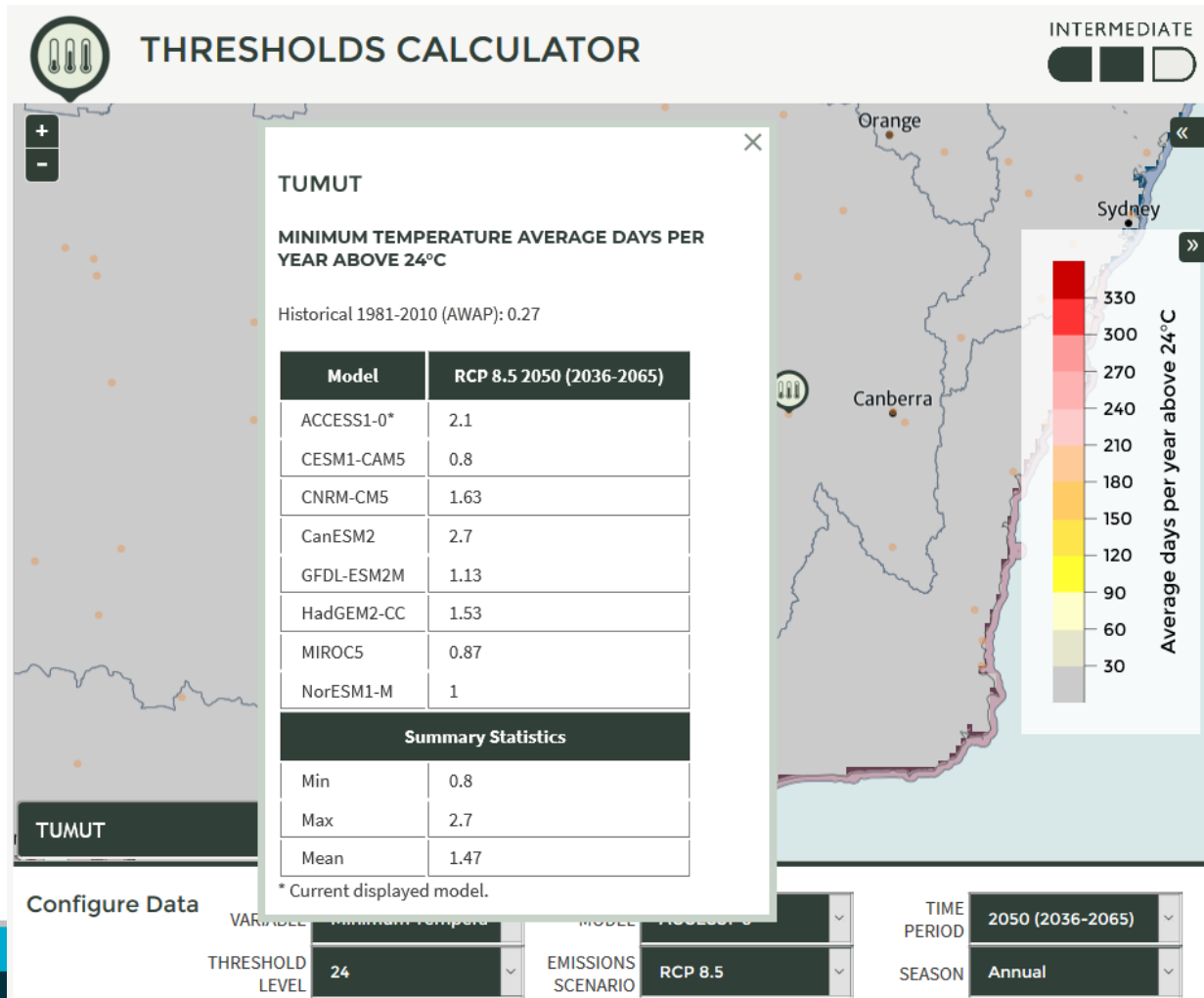
Examples

- Very hot days
- Ave days/yr above e.g. 40°C



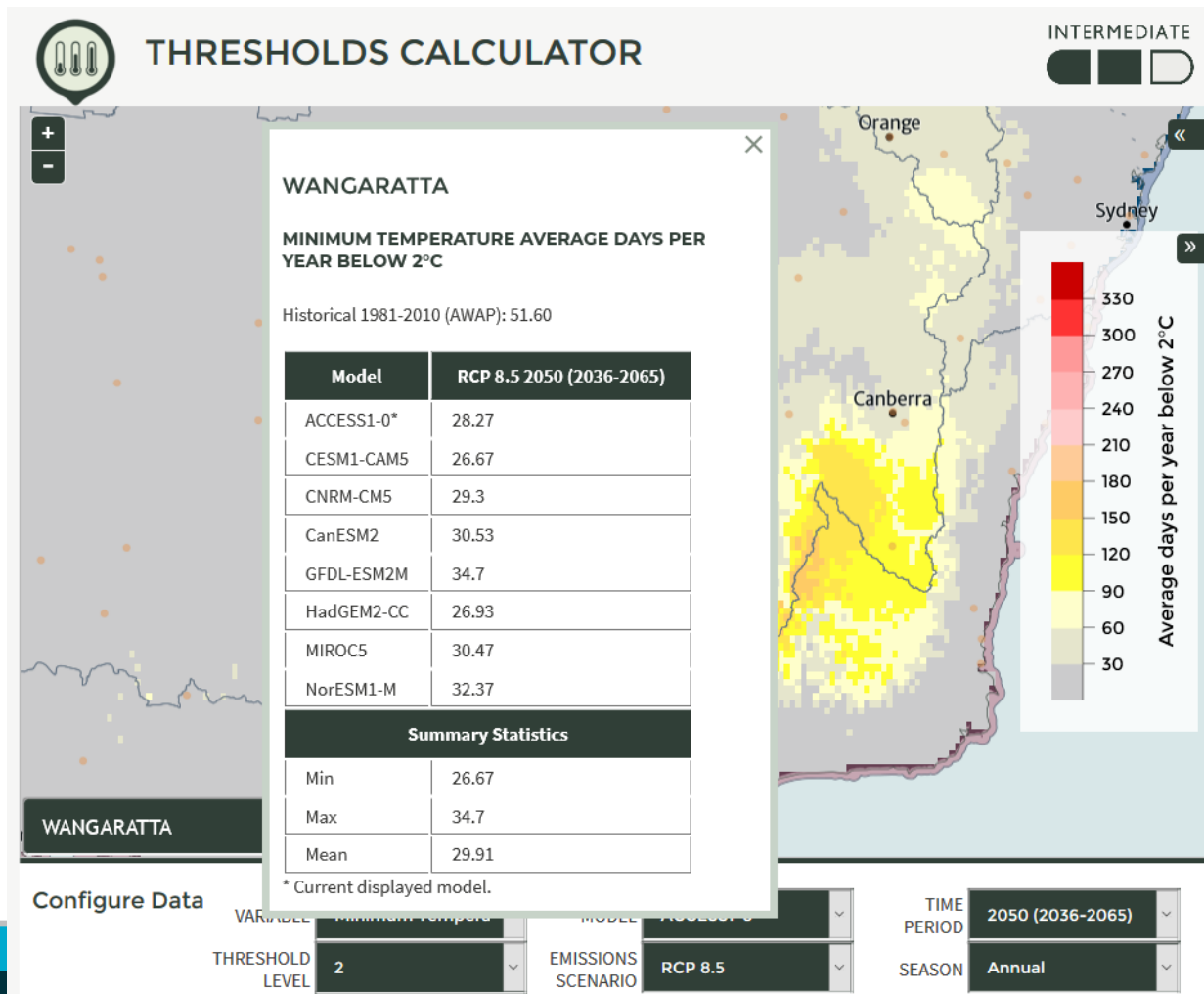
Examples

- Warm minima ('overnight')
- Ave days/yr with min temp above e.g. 24°C



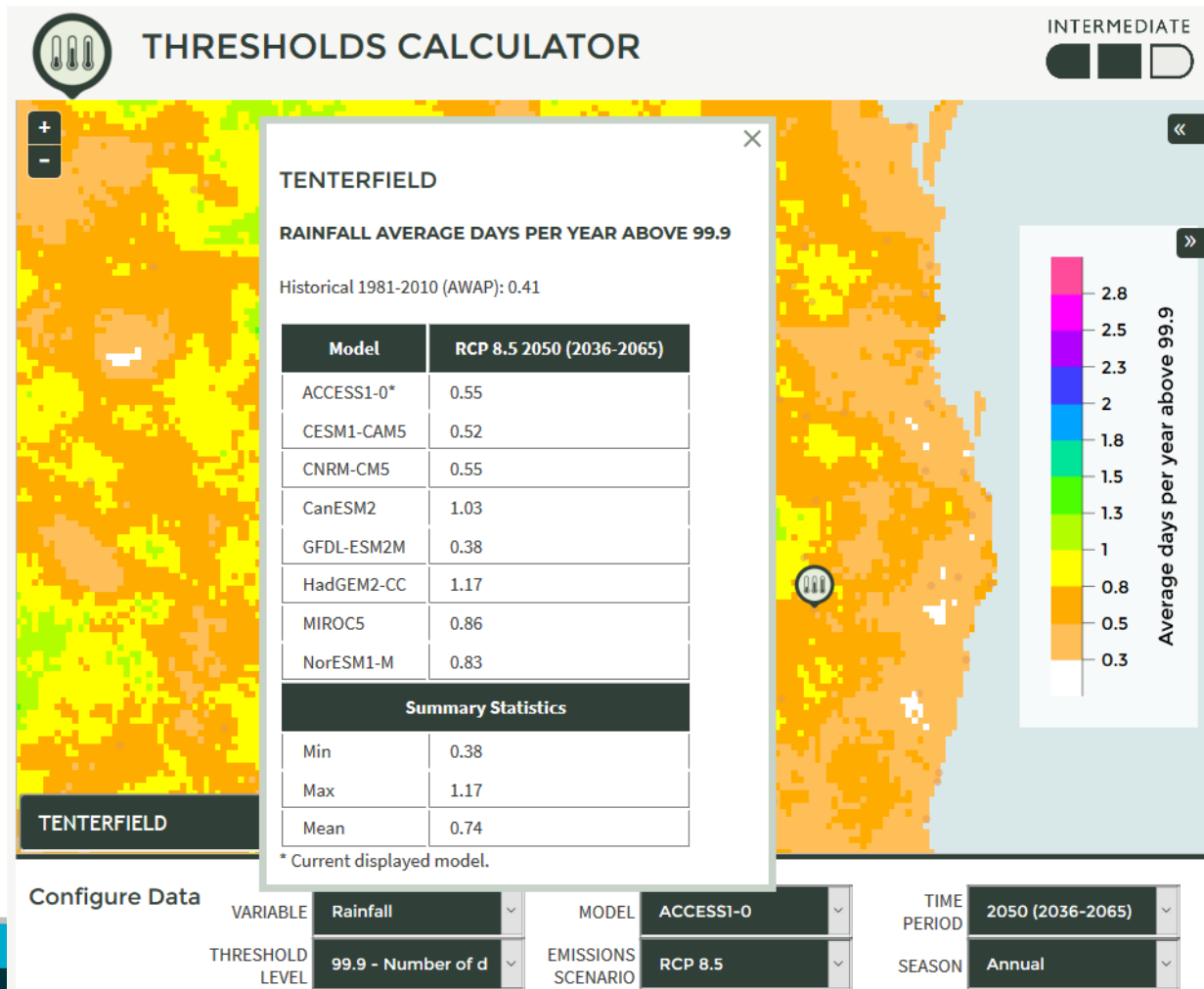
Examples

- Cold minima ('overnight')
- Ave days/yr with min temp below e.g. 2°C



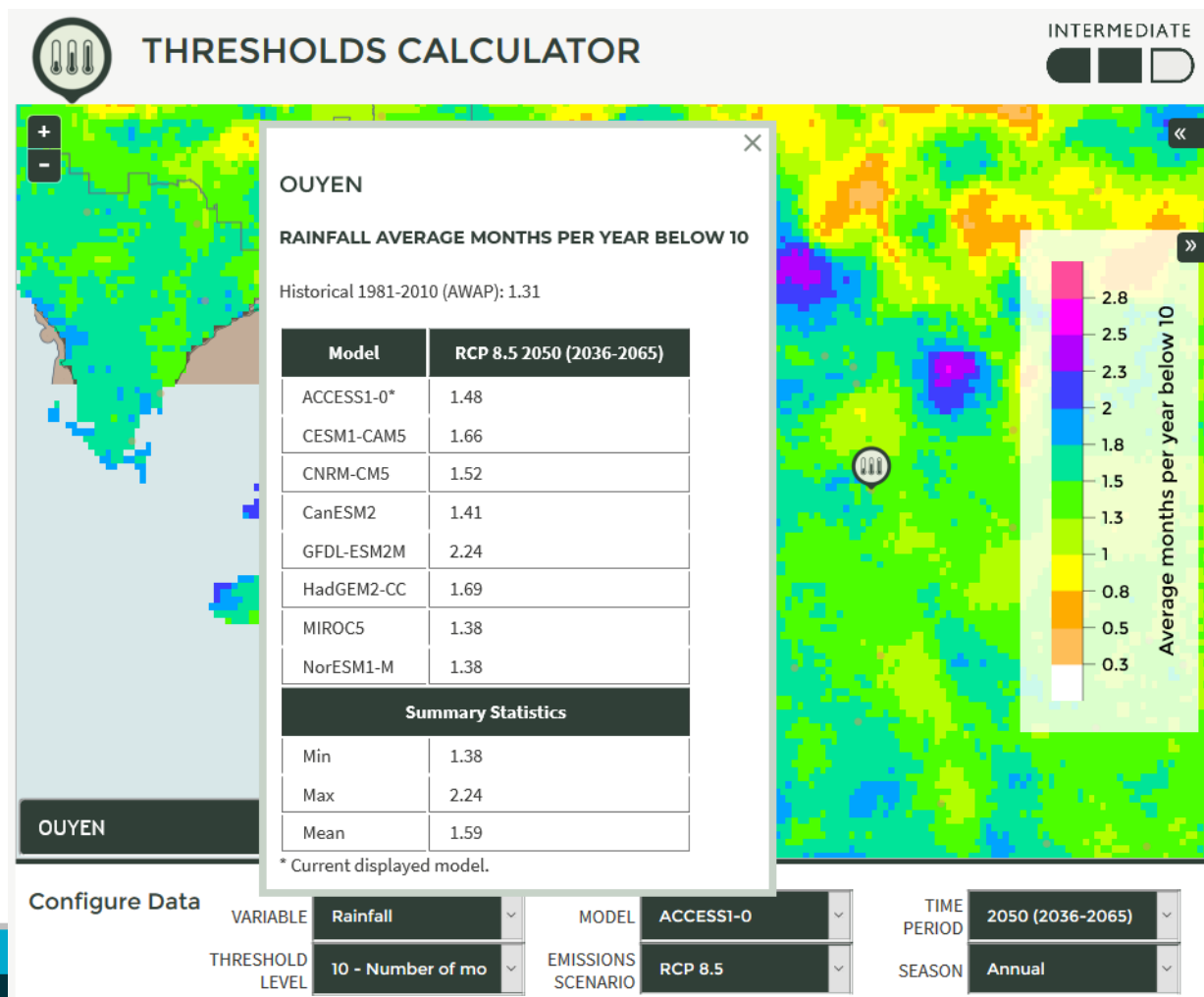
Examples

- Very wet days
- Ave days/yr above 99.9th percentile



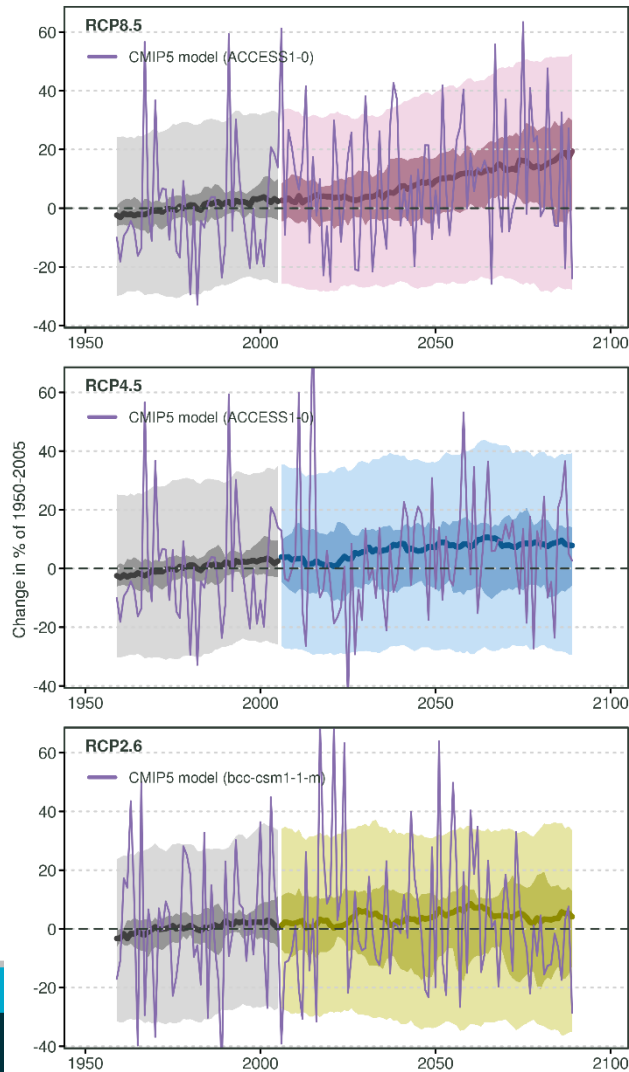
Examples

- Dry years
- Ave months/yr falling in 10th percentile



Remember

- Plausible realisations
- Range of results
- Year-to-year variability means some years there will be more, some years less than the average



Thank you

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