

New climate projections for South Australia

Maps and key findings | 2022





Average temperature

Change in average daily maximum temperature - 2030 Medium Emissions (RCP4.5) *(Page 2)*

- In the near future, with medium emissions, average maximum temperature changes are fairly uniform across the state.
- Average daily maximum temperature changes are approximately 1.0 °C to 1.4 °C warmer than the 1986–2005 period.
- These rises are in addition to the approximately 0.7 °C rise that occurred prior to the 1986 – 2005 period.

Change in average daily maximum temperature - 2090 Medium Emissions (RCP4.5) *(Page 3)*

- In the far future, with medium emissions, average maximum temperature changes are greater in the north of the state than in the south.
- Average daily maximum temperature changes range from 1.7 °C in Mount Gambier to 2.7 °C in Pukatja.

Change in average daily maximum temperature - 2030 High Emissions (RCP 8.5) *(Page 4)*

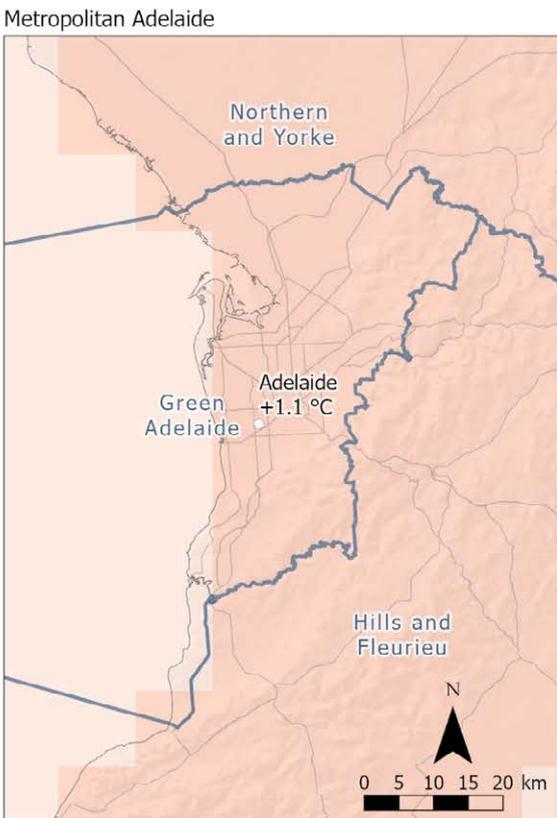
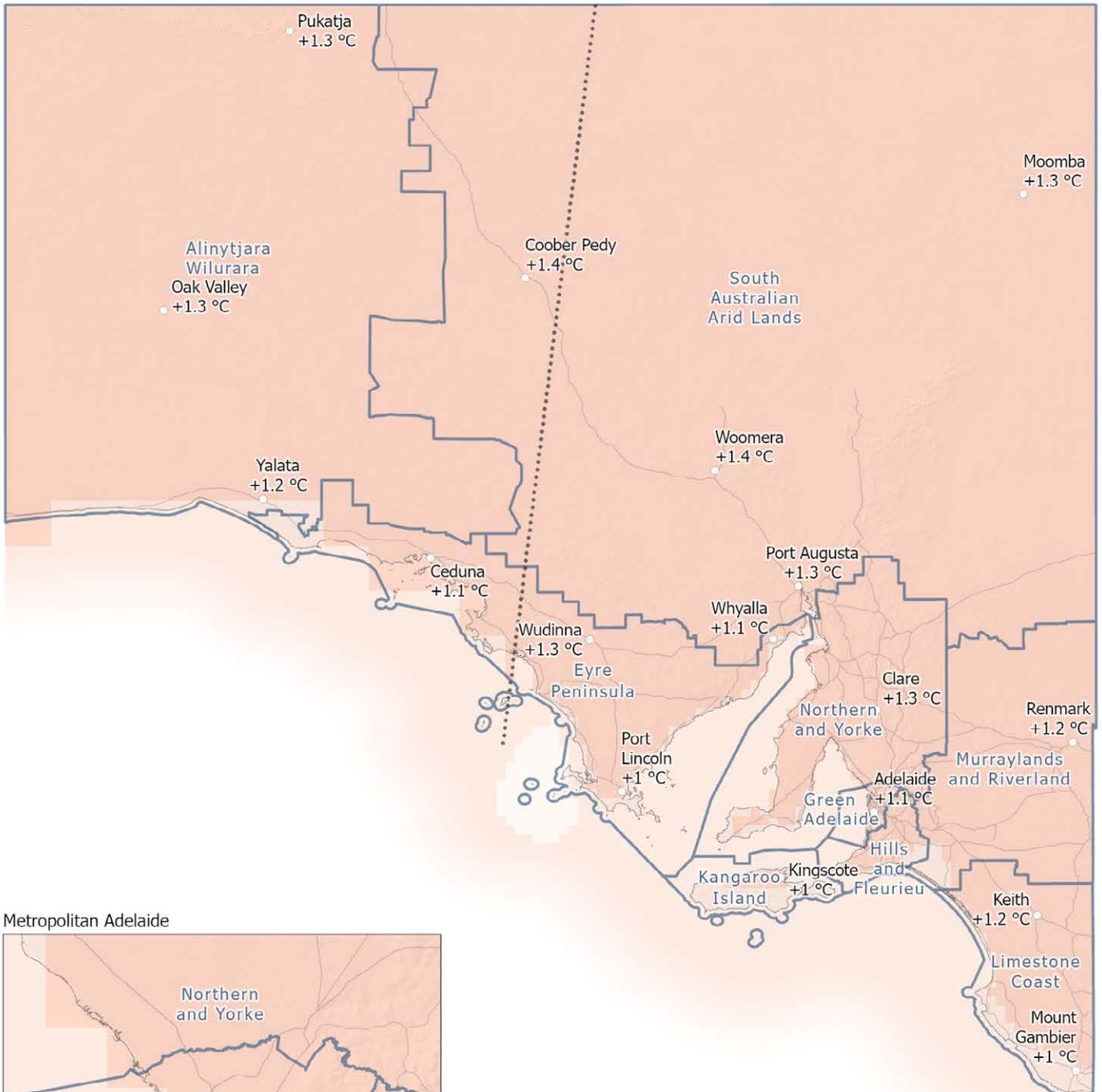
- In the near future, with high emissions, average maximum temperature changes are very similar to the medium emissions scenario, and fairly uniform across the state.
- Average daily maximum temperature changes are approximately 1.0 °C to 1.4 °C warmer than the 1986–2005 period.

Change in average daily maximum temperature - 2090 High Emissions (RCP 8.5) *(Page 5)*

- In the far future, with high emissions, average maximum temperature changes are distinctly higher than the medium emissions scenario.
- Average daily maximum temperature changes in near-coastal locations rise by 3.2 °C to 4.3 °C compared to the 1986–2005 period.
- Average daily maximum temperature changes in the north of the state rise by 4.6 °C to 5.2 °C compared to the 1986–2005 period.

Change in average daily maximum temperature (2020-2039)

Compared to 1986-2005 baseline | Medium emissions scenario (RCP 4.5)

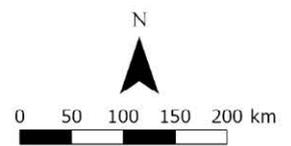


Change in average daily maximum temperature compared to 1986-2005 baseline (°C)

- 0.0 - 0.5
- 0.6 - 1.0
- 1.1 - 1.5
- 1.6 - 2.0
- 2.1 - 2.5
- 2.6 - 3.0
- 3.1 - 3.5
- 3.6 - 4.0
- 4.1 - 4.5
- 4.6 - 5.0
- 5.1 - 5.5

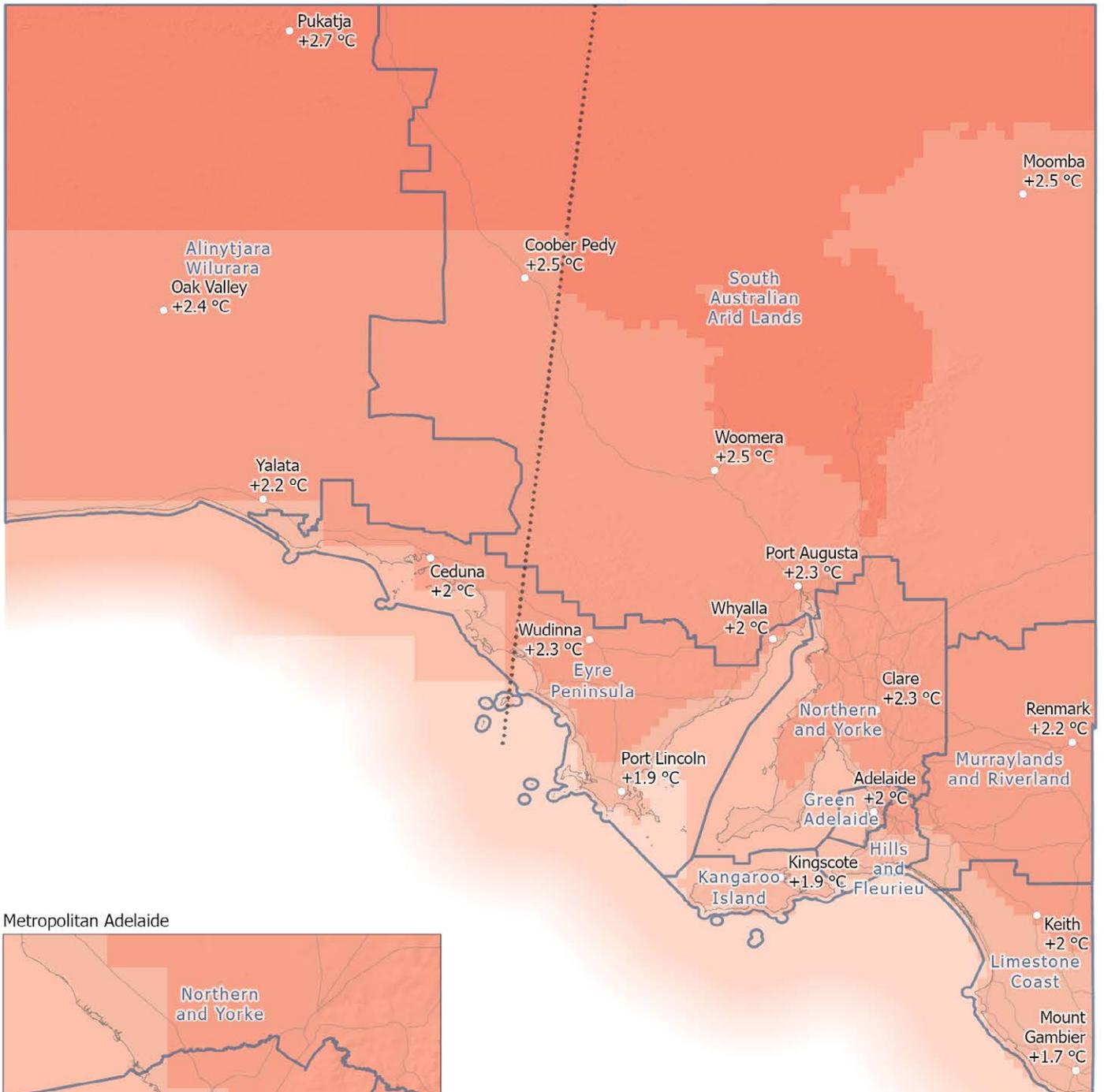
..... Boundary between 10km and 50km projections

□ Landscape SA regions

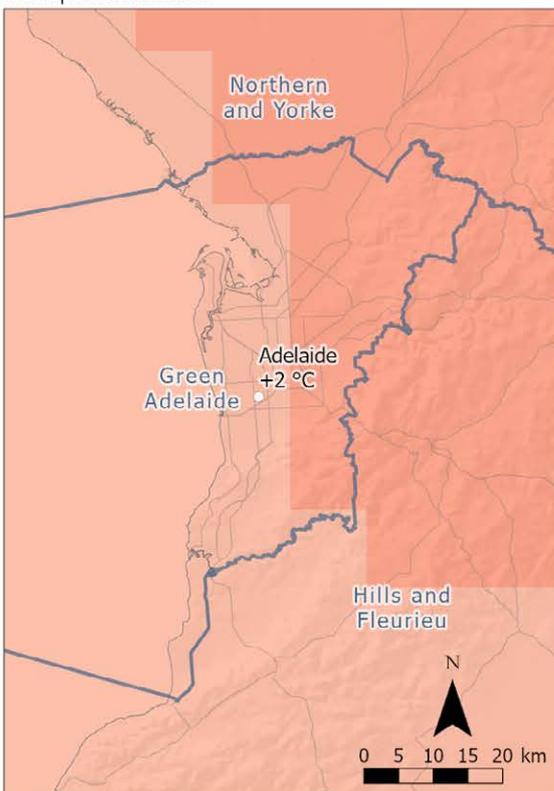


Change in average daily maximum temperature (2080-2099)

Compared to 1986-2005 baseline | Medium emissions scenario (RCP 4.5)



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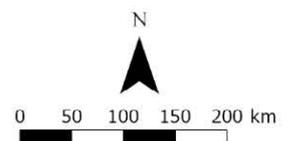


Change in average daily maximum temperature compared to 1986-2005 baseline (°C)

- 0.0 - 0.5
- 0.6 - 1.0
- 1.1 - 1.5
- 1.6 - 2.0
- 2.1 - 2.5
- 2.6 - 3.0
- 3.1 - 3.5
- 3.6 - 4.0
- 4.1 - 4.5
- 4.6 - 5.0
- 5.1 - 5.5

.... Boundary between 10km and 50km projections

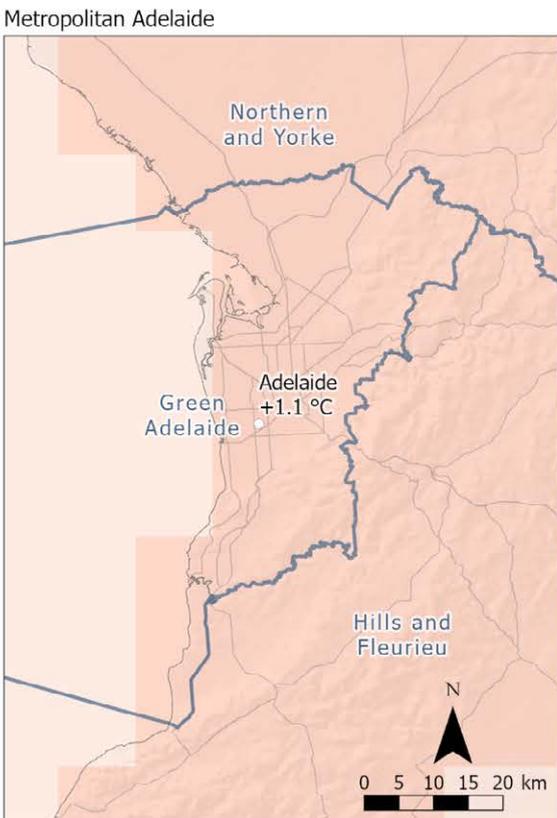
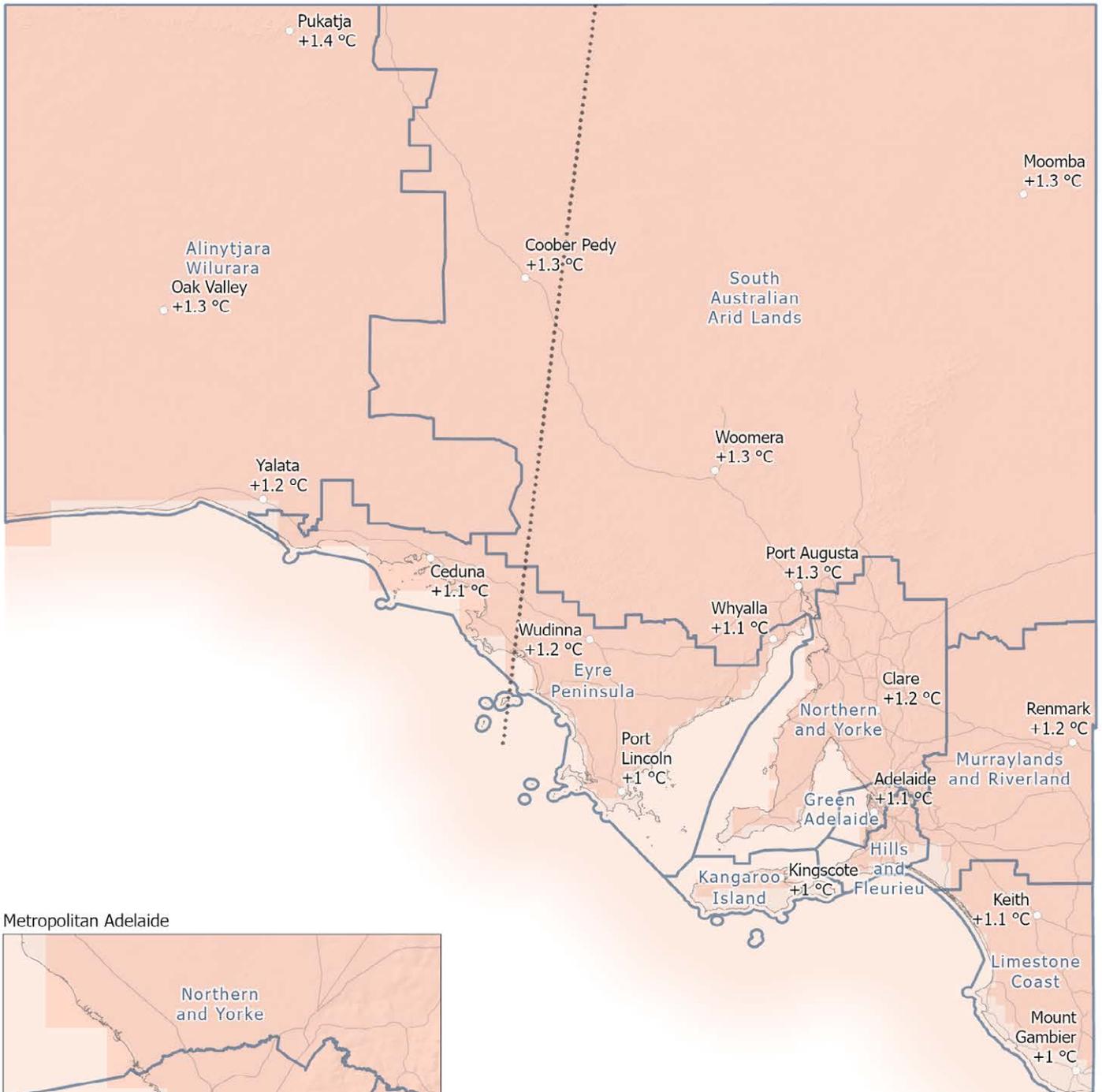
□ Landscape SA regions



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Change in average daily maximum temperature (2020-2039)

Compared to 1986-2005 baseline | High emissions scenario (RCP 8.5)

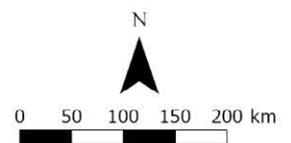


Change in average daily maximum temperature compared to 1986-2005 baseline (°C)

- 0.0 - 0.5
- 0.6 - 1.0
- 1.1 - 1.5
- 1.6 - 2.0
- 2.1 - 2.5
- 2.6 - 3.0
- 3.1 - 3.5
- 3.6 - 4.0
- 4.1 - 4.5
- 4.6 - 5.0
- 5.1 - 5.5

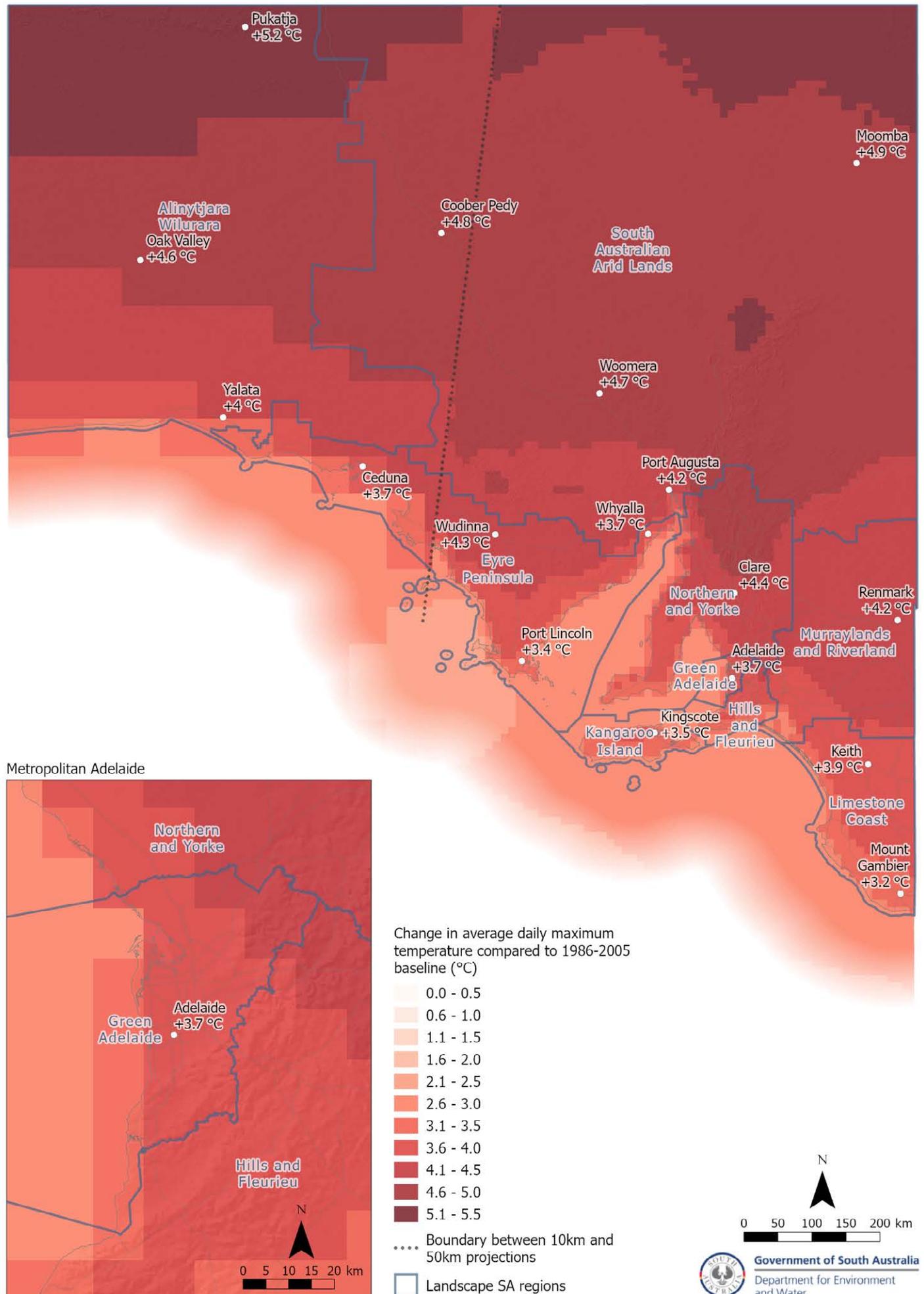
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□ Landscape SA regions



Change in average daily maximum temperature (2080-2099)

Compared to 1986-2005 baseline | High emissions scenario (RCP 8.5)





Days over 40 degrees

Change in average number of days per year 40 °C or above - 2030 Medium Emissions (RCP4.5) (Page 8)

- In the near future, with medium emissions, the population centres of the south of the state are projected to experience only moderate increase in the frequency of extreme hot days.
- Changes in frequency of extremely hot days would see population centres in the northern half of the state experience around 9 to 17 additional days per year over 40 °C.

Change in average number of days per year 40 °C or above - 2090 Medium Emissions (RCP4.5) (Page 8)

- In the far future, with medium emissions, there are severe increases in frequency of extreme hot days in the north of the state.
- Changes in frequency of extremely hot days would see increases of around 19 to 33 additional days per year over 40 °C in the north of the state.

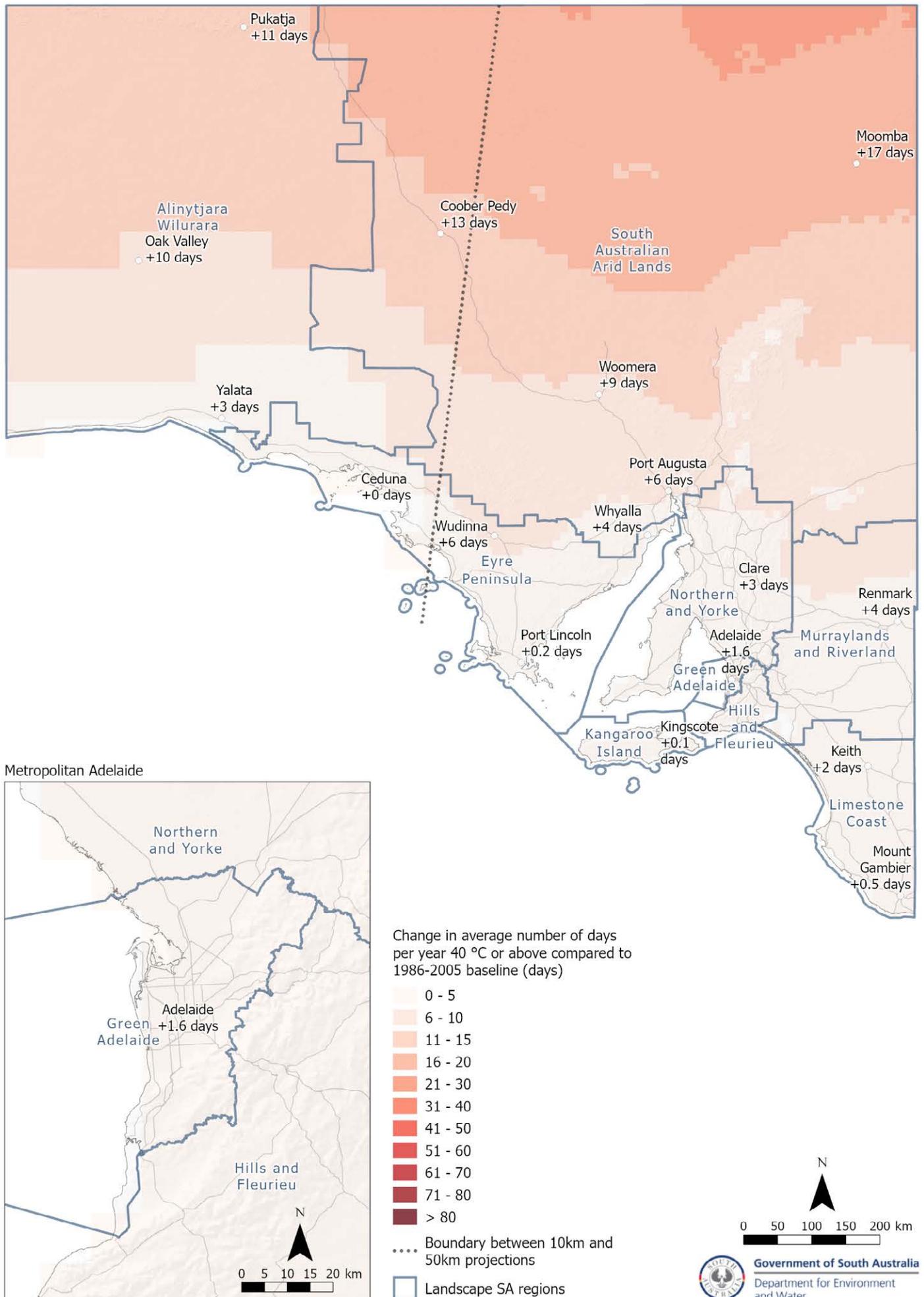
Change in average number of days per year 40 °C or above - 2030 High Emissions (RCP 8.5) (Page 10)

- In the near future, with high emissions, the changes in frequency in extremely hot days are similar to the medium emissions scenarios.
- Changes in frequency of extremely hot days would see moderate increases in the southern near-coastal regions.
- Changes in frequency of extremely hot days would see population centres in the northern half of the state experience 9 to 18 additional days per year over 40 °C.

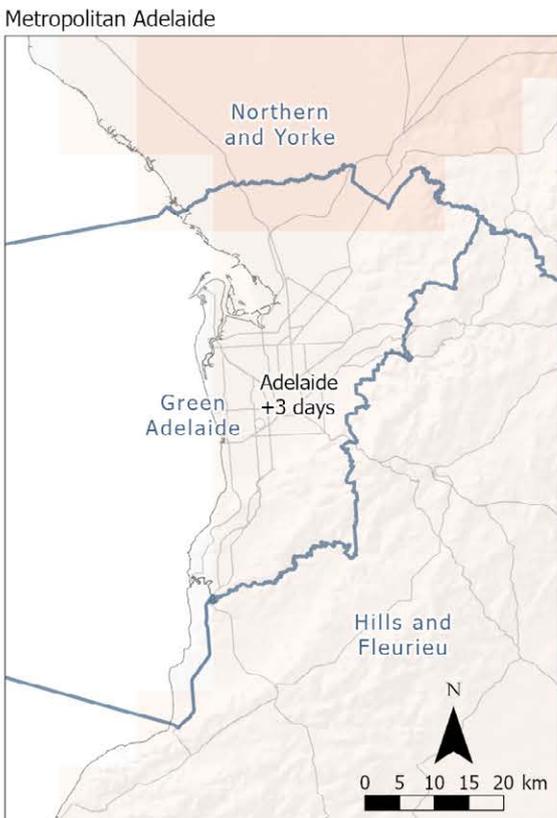
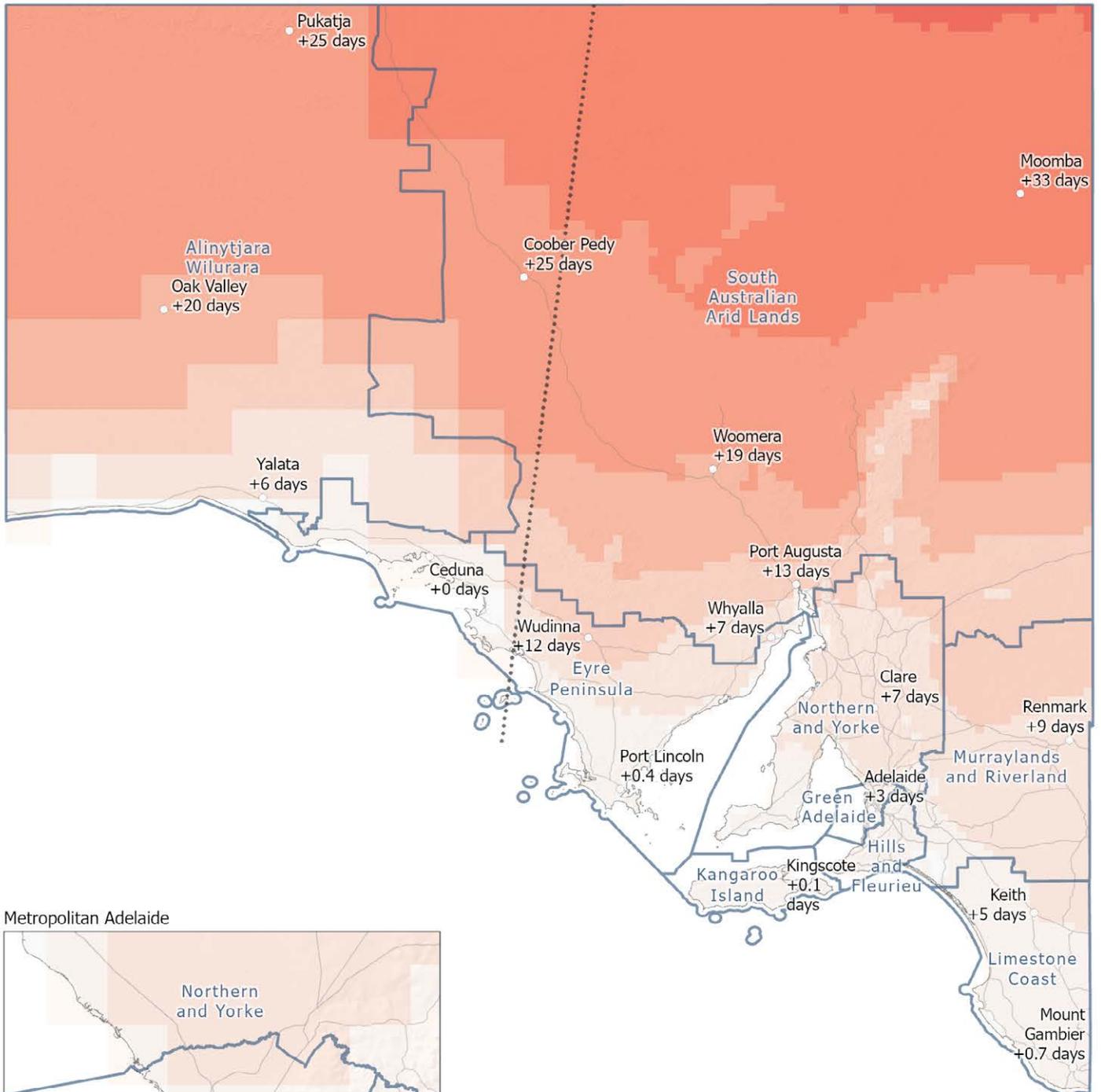
Change in average number of days per year 40 °C or above - 2090 High Emissions (RCP 8.5) (Page 11)

- In the far future, with high emissions, some of the population centres in the south are projected to experience severe increases in the frequency of extremely hot days.
- Changes in frequency of extremely hot days would see increases of around 40 to 80 additional days per year over 40 °C for much of the northern part of the state.
- Changes in frequency of extremely hot days would result in some locations, such as Moomba, experiencing days over 40 °C for up a quarter of every year.

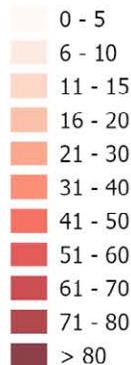
Change in average number of days per year 40 °C or above (2020-2039) Compared to 1986-2005 baseline | Medium emissions scenario (RCP 4.5)



Change in average number of days per year 40 °C or above (2080-2099) Compared to 1986-2005 baseline | Medium emissions scenario (RCP 4.5)

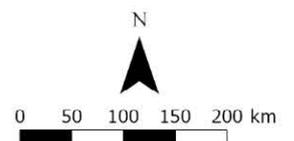


Change in average number of days per year 40 °C or above compared to 1986-2005 baseline (days)



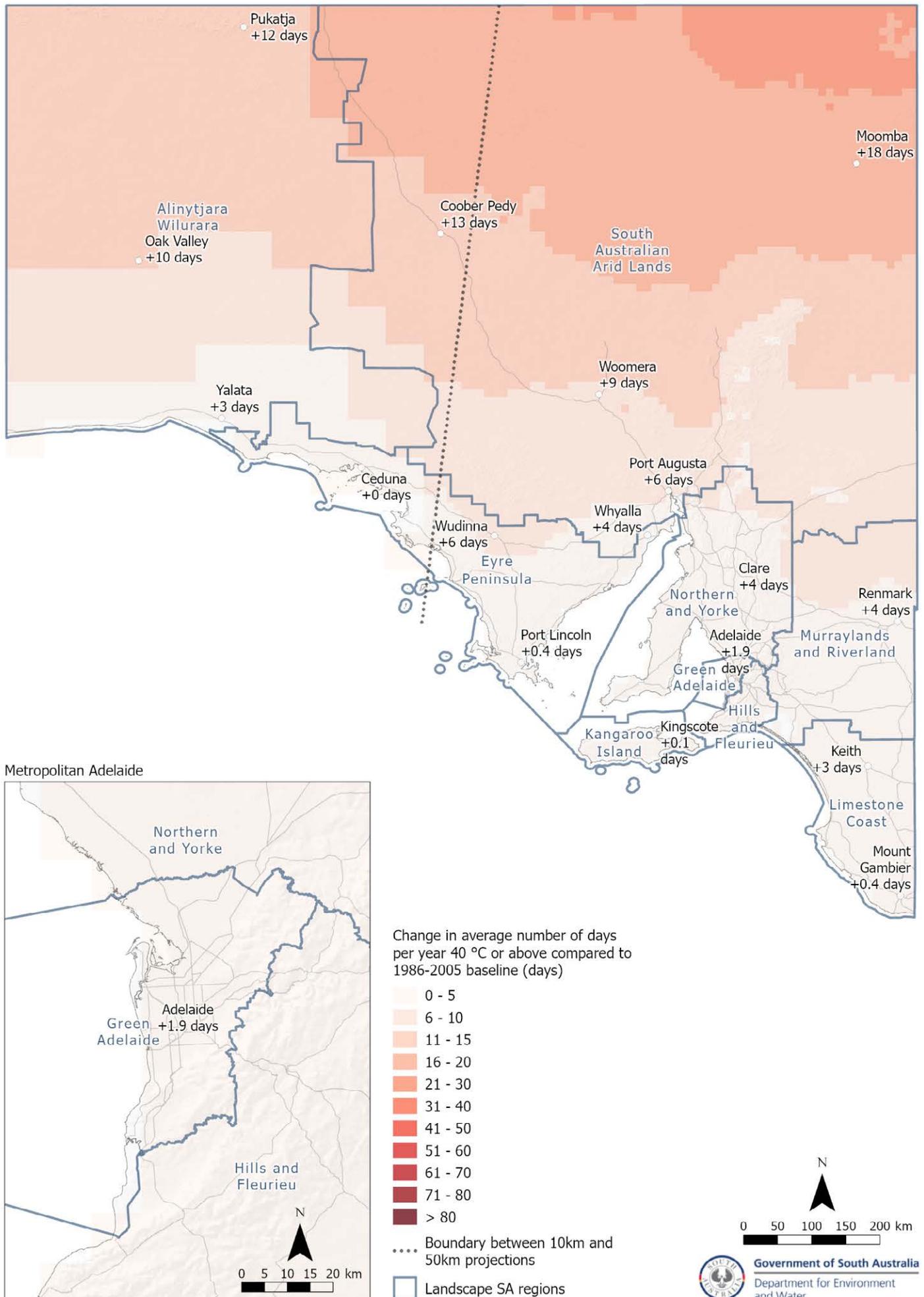
.... Boundary between 10km and 50km projections

□ Landscape SA regions



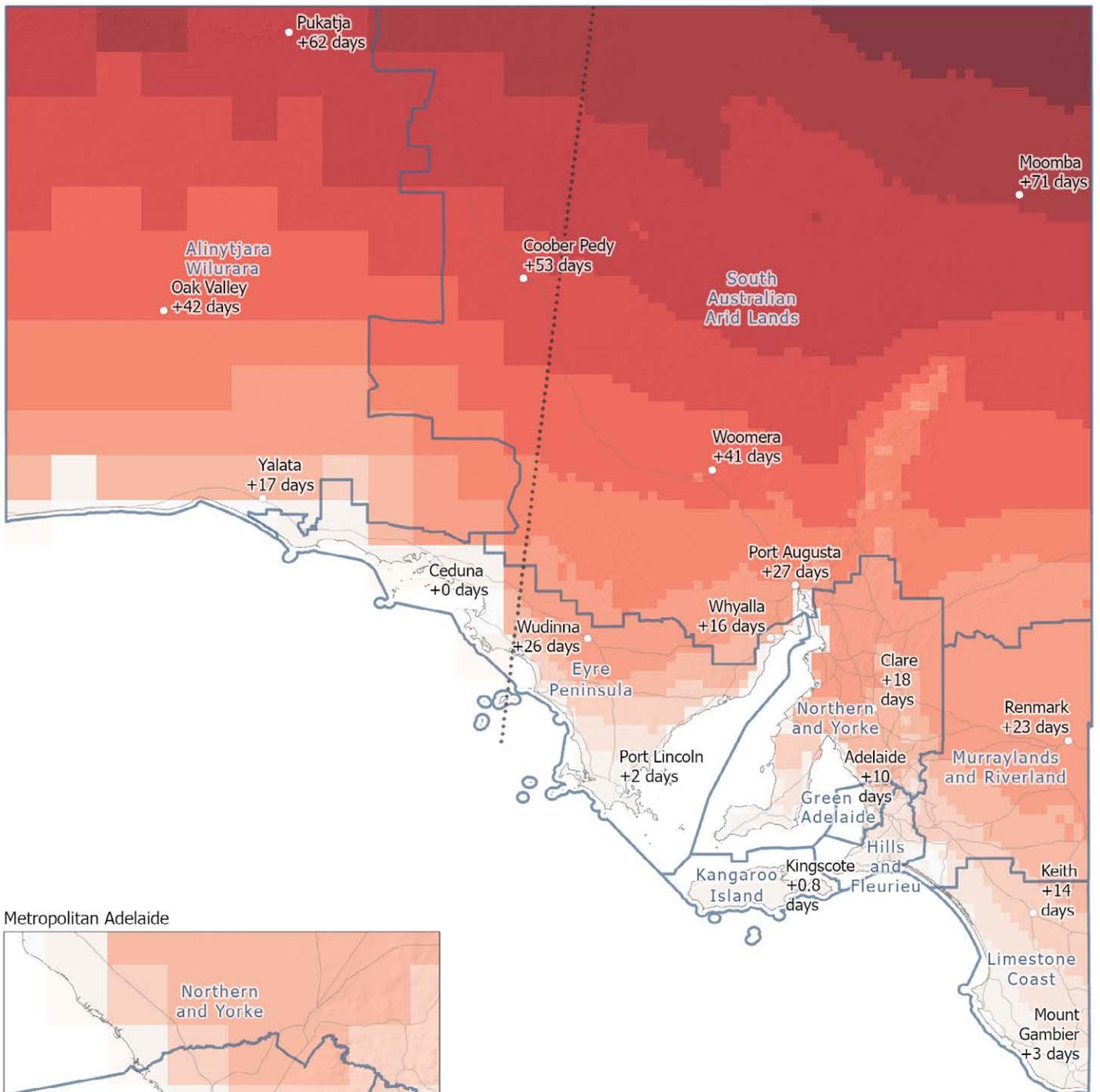
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Change in average number of days per year 40 °C or above (2020-2039) Compared to 1986-2005 baseline | High emissions scenario (RCP 8.5)

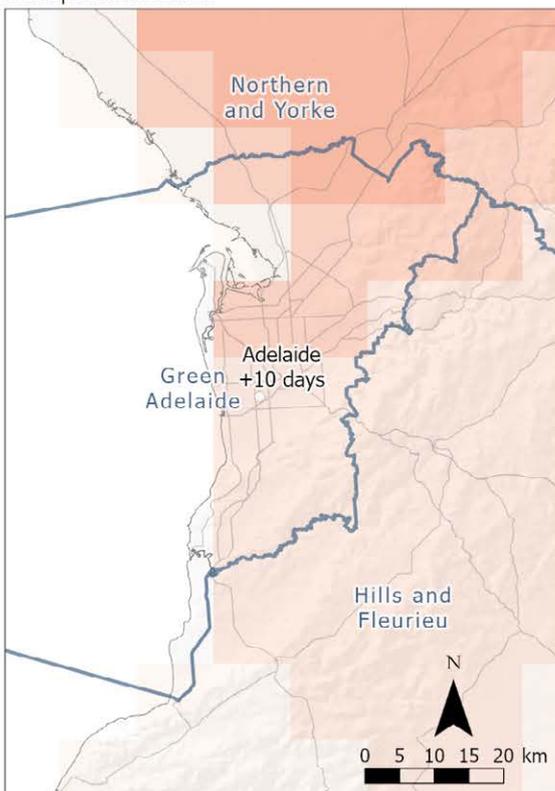


Change in average number of days per year 40 °C or above (2080-2099)

Compared to 1986-2005 baseline | High emissions scenario (RCP 8.5)



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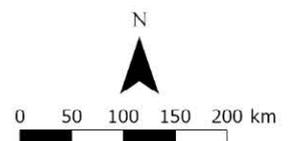


Change in average number of days per year 40 °C or above compared to 1986-2005 baseline (days)

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- > 80

.... Boundary between 10km and 50km projections

□ Landscape SA regions



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Average rainfall

Change in average rainfall - 2030 Medium Emissions (RCP4.5) *(Page 14)*

- In the near future, with medium emissions, average annual rainfall is projected to decline by 6% to 12% in the southern agricultural regions and central areas of the state.
- The far north is projected to have only minor declines in average annual rainfall.

Change in average rainfall - 2090 Medium Emissions (RCP4.5) *(Page 15)*

- In the far future, with medium emissions, average annual rainfall declines in the mid-north and north become significant, with declines of around 10% to 20%.

Change in average rainfall - 2030 High Emissions (RCP 8.5) *(Page 16)*

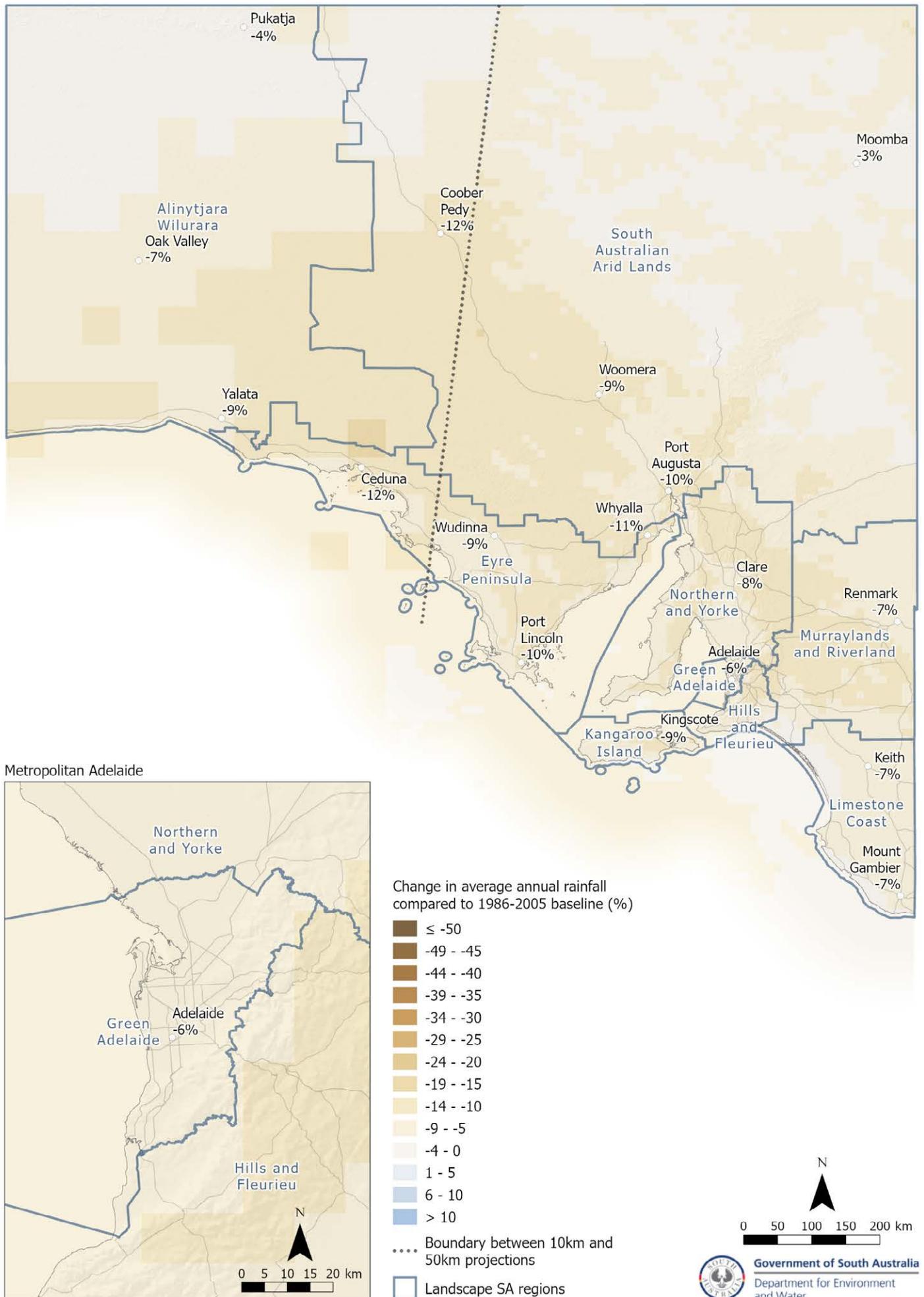
- In the near future, with high emissions, near-coastal population centres are projected to experience only minor changes in average annual rainfall.
- Moderate declines in average annual rainfall in mid-north and west of the state around 5% to 7%.

Change in average rainfall - 2090 High Emissions (RCP 8.5) *(Page 17)*

- In the far future, with high emissions, projected changes in average annual rainfall are more severe.
- Significant declines in average annual rainfall of around 20% to 30% in the southern agricultural regions.
- Significant declines in average annual rainfall of up to around 40% in the north east of the state.

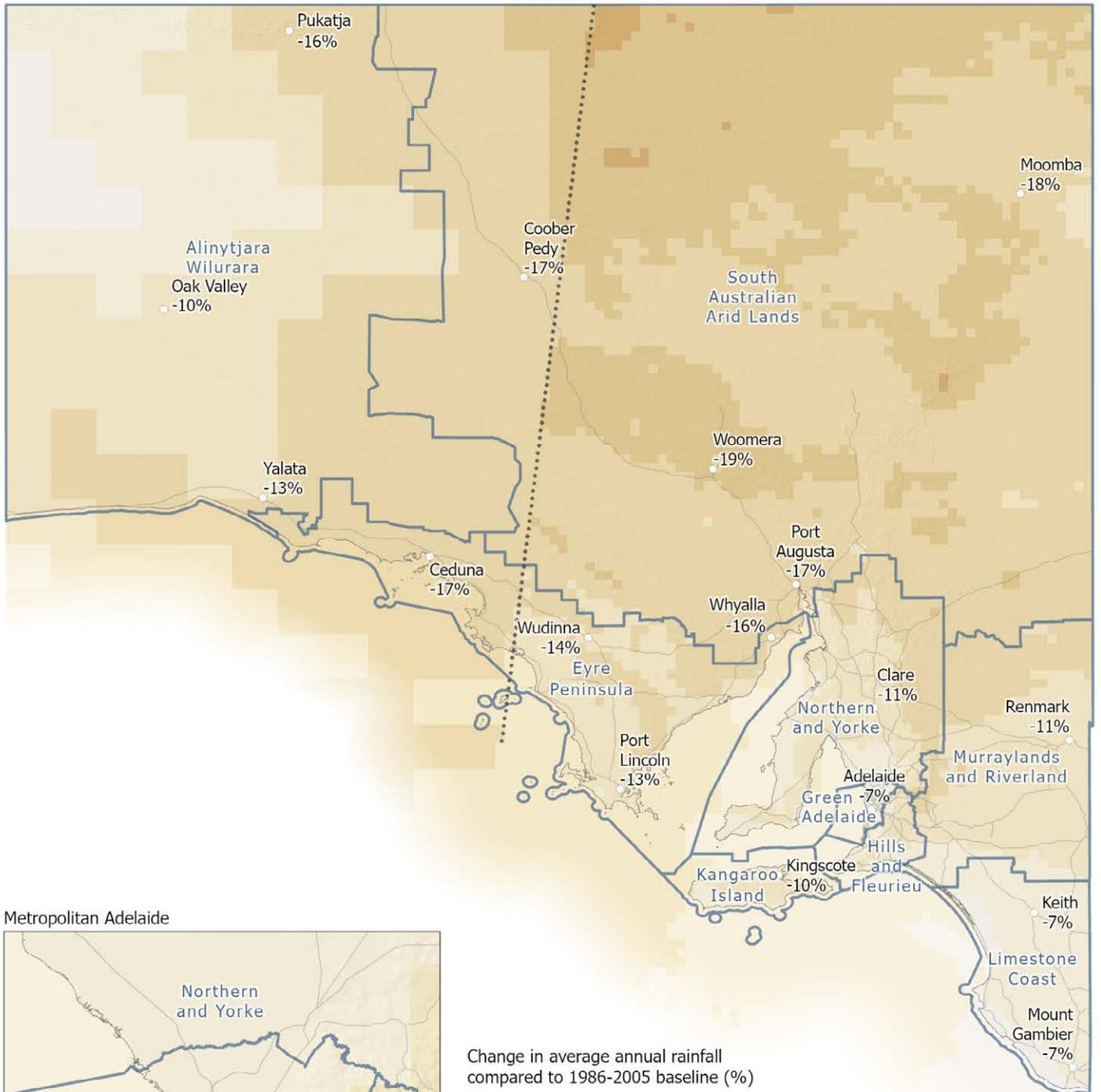
Change in average annual rainfall (2020-2039)

Compared to 1986-2005 baseline | Medium emissions scenario (RCP 4.5)

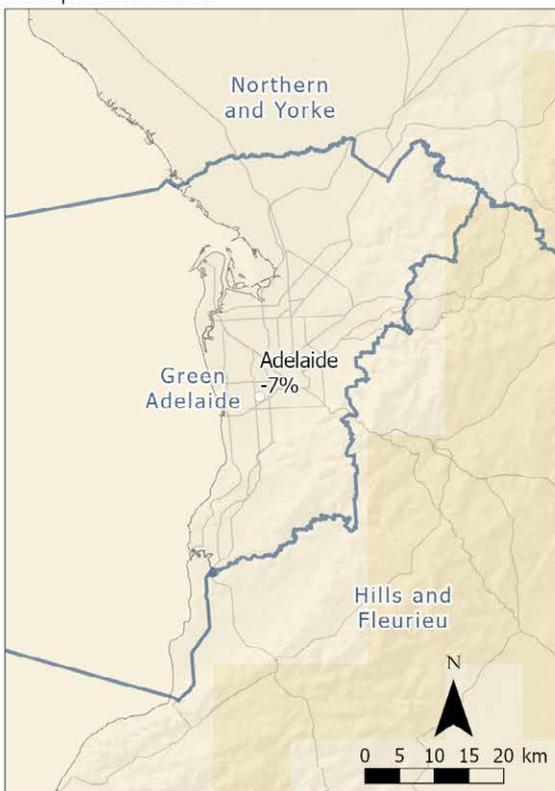


Change in average annual rainfall (2080-2099)

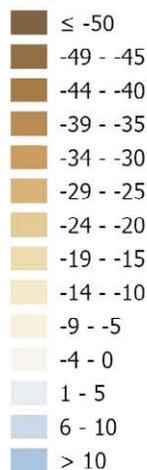
Compared to 1986-2005 baseline | Medium emissions scenario (RCP 4.5)



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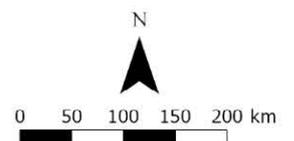


Change in average annual rainfall compared to 1986-2005 baseline (%)



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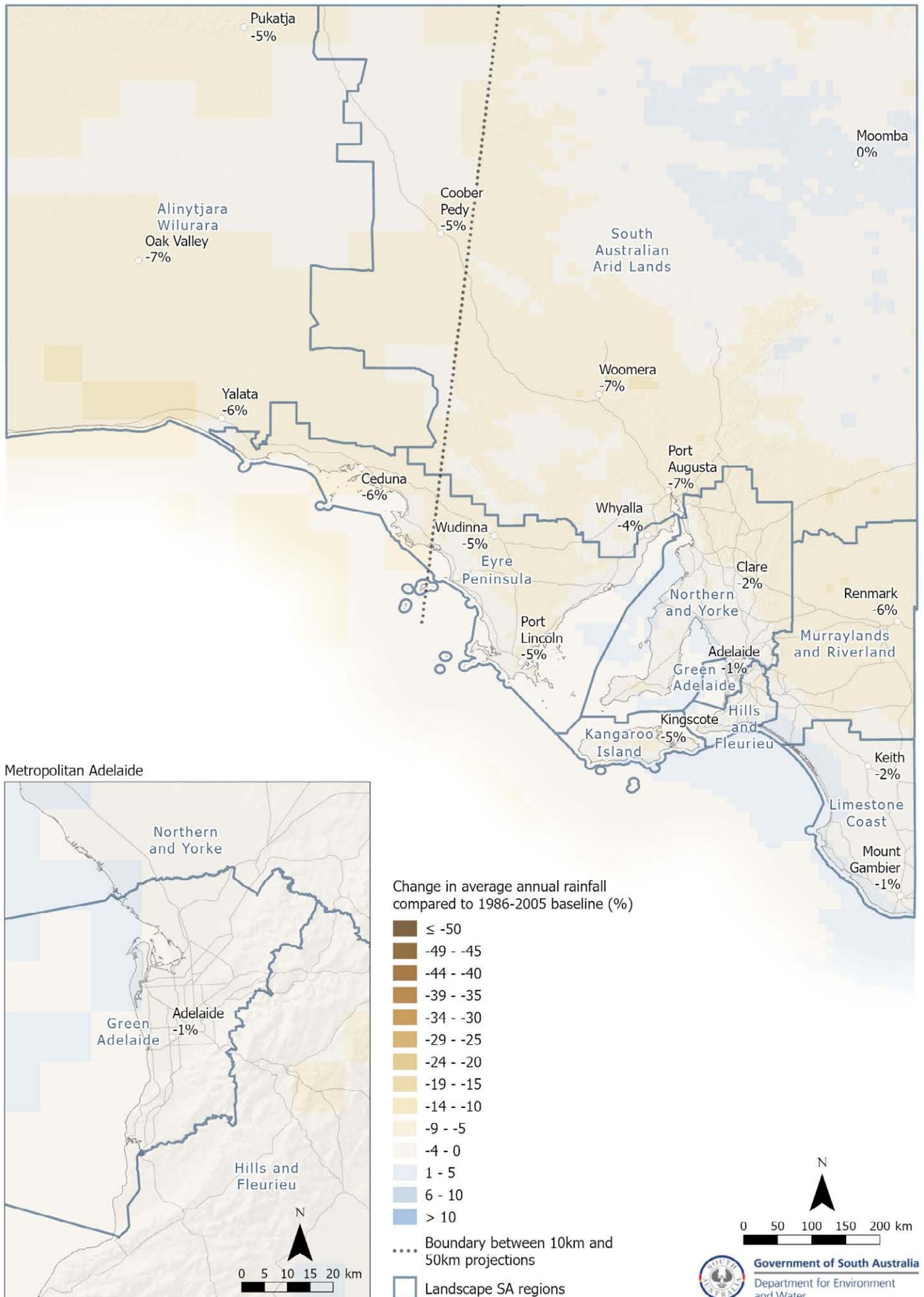
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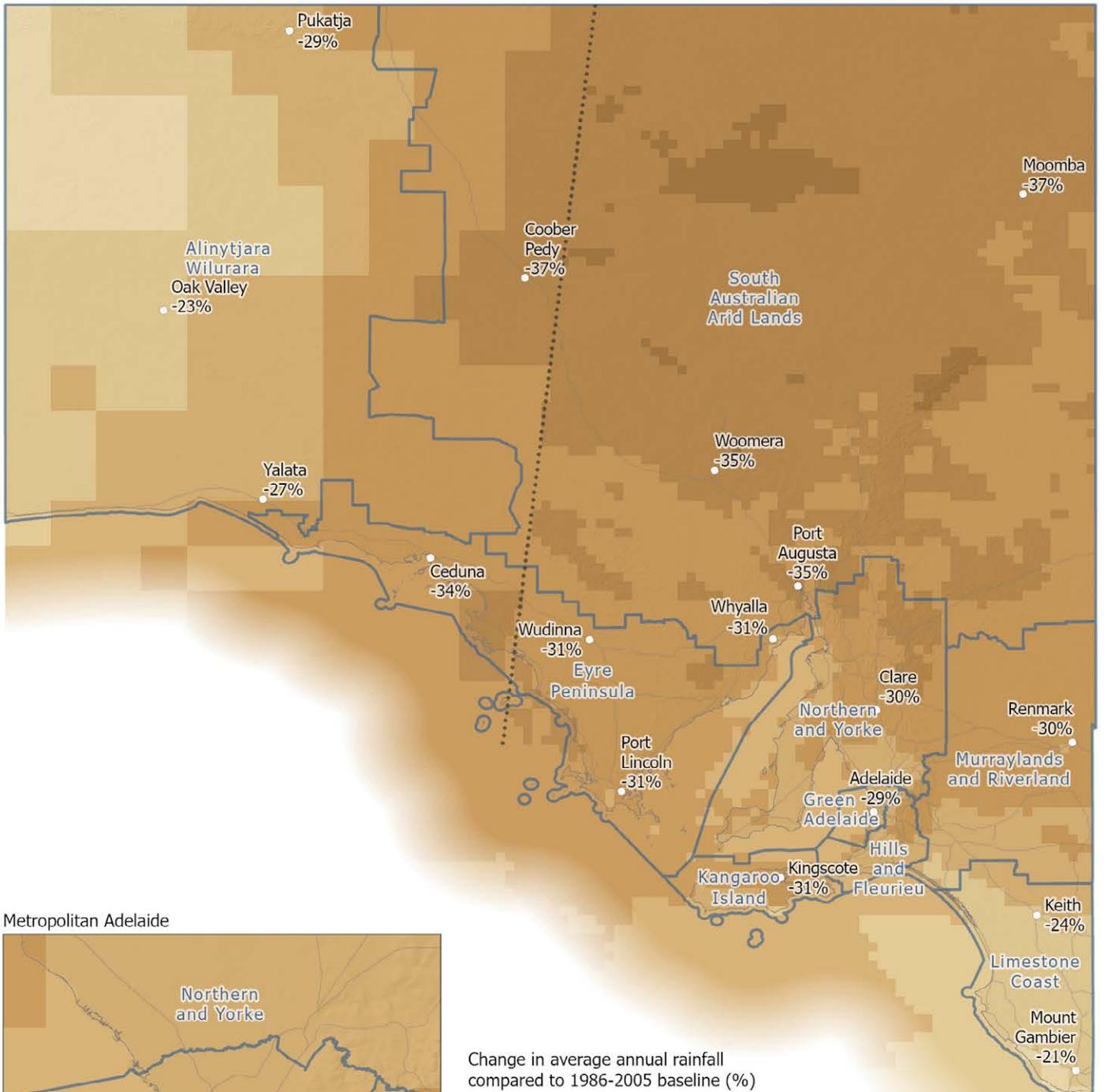
Change in average annual rainfall (2020-2039)

Compared to 1986-2005 baseline | High emissions scenario (RCP 8.5)

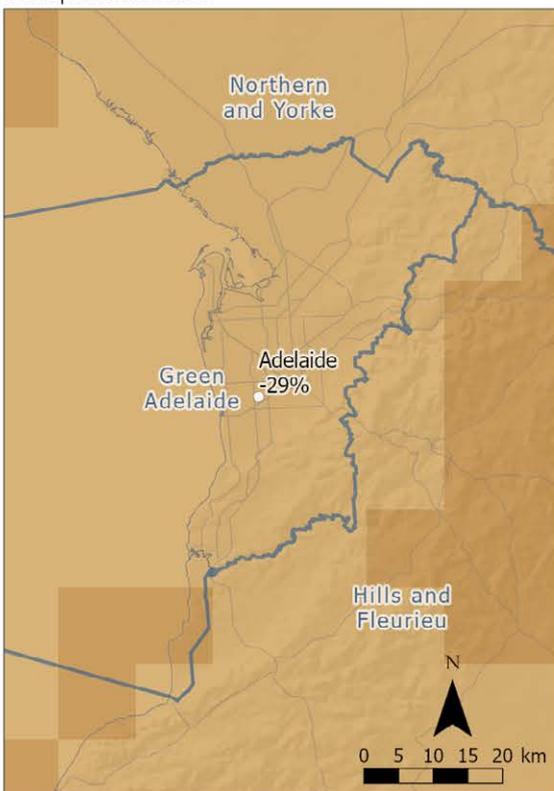


Change in average annual rainfall (2080-2099)

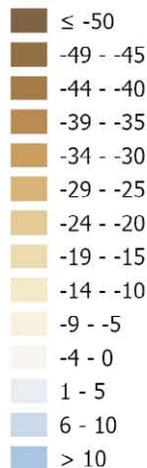
Compared to 1986-2005 baseline | High emissions scenario (RCP 8.5)



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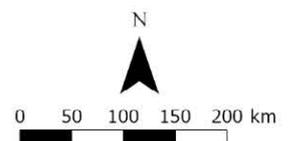


Change in average annual rainfall compared to 1986-2005 baseline (%)



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