

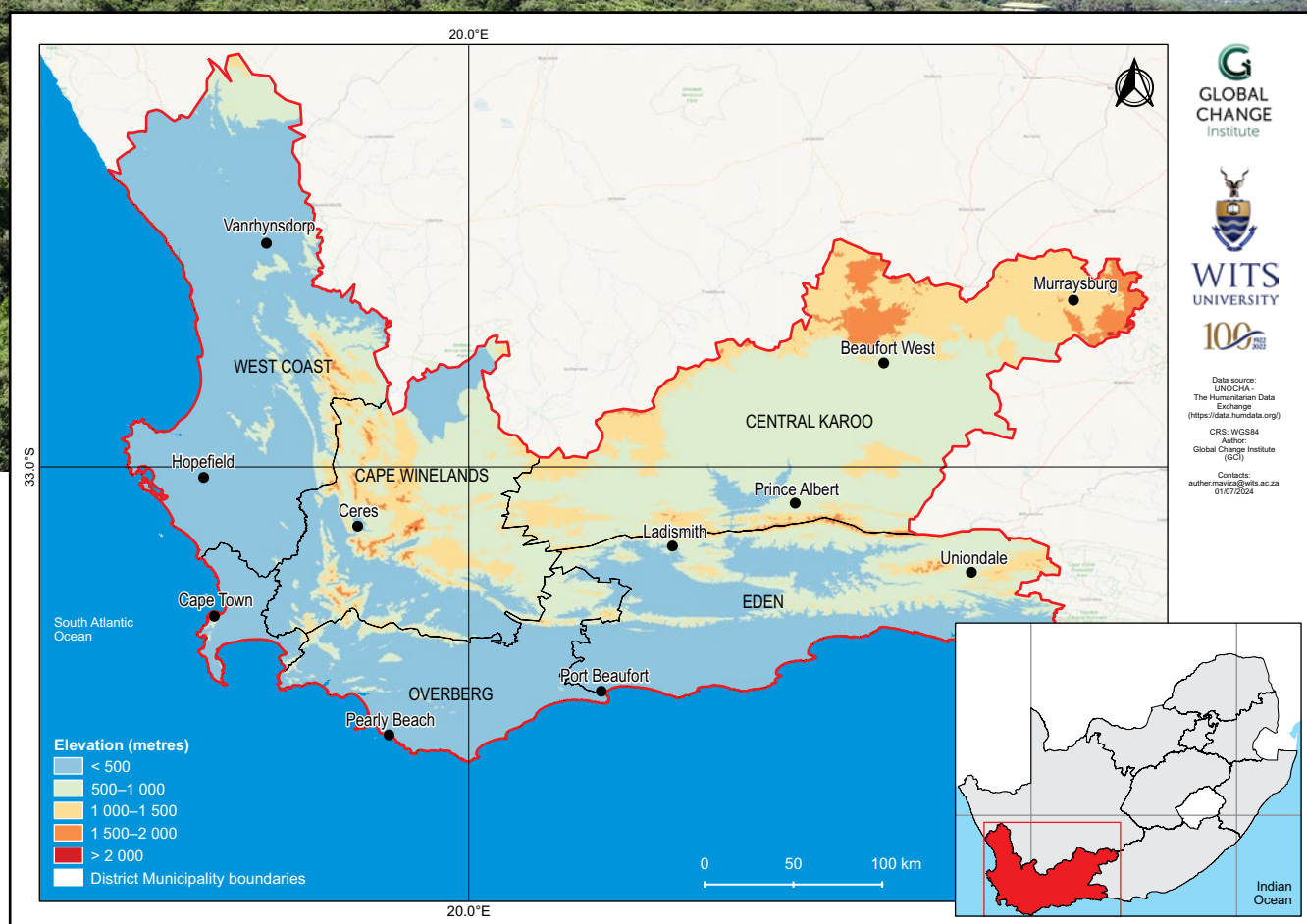
Western Cape climate change fact sheet

South Africa

PROVINCIAL

Introduction

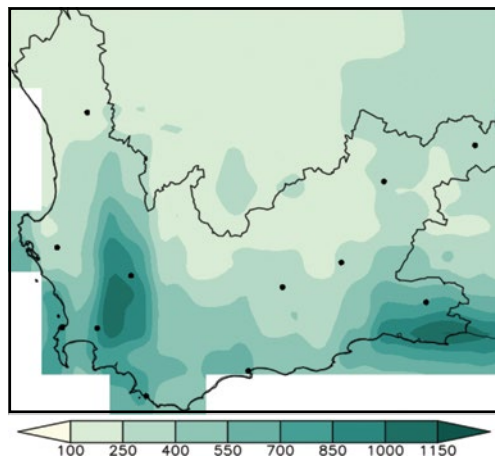
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- The Western Cape covers an area of approximately 129 462 km², with elevation ranging from sea level along the coastline, to just over 2 000 m above sea level in the peaks of the Cape Fold Mountains.
- The province exhibits a Mediterranean climate characterised by cool, wet winters and warm, dry summers. In the Karoo in the northern part of the province the climate is semi-arid, with hot summers and cold winters.



Observed climate: rainfall (1981–2000)

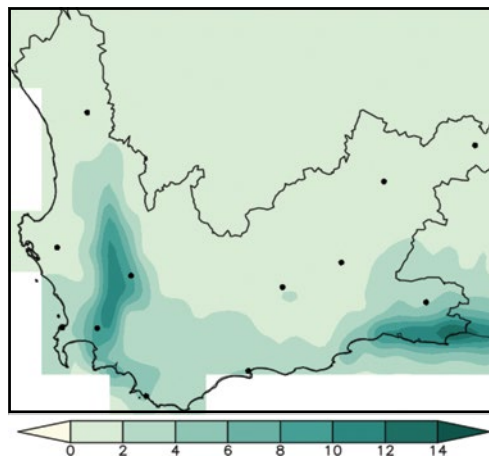
Mean annual rainfall

Mean annual rainfall ranges from less than 250 mm over the Karoo in the north, to more than 1 100 mm over the Cape Fold Mountains.



Extreme rainfall days

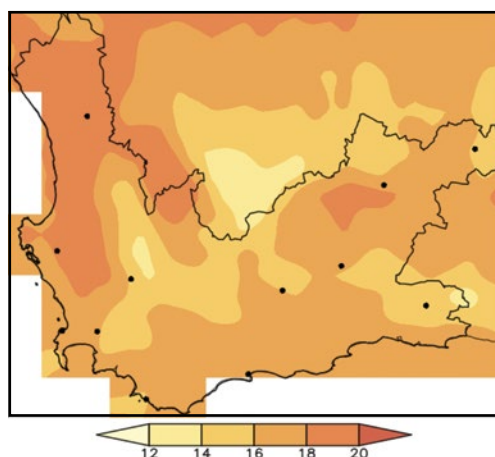
The observed mean annual number of extreme rainfall days range from less than 1 day over the Karoo to more than 10 days over the Cape Fold Mountains and coastal areas in the east.



Observed climate: temperature (1981–2000)

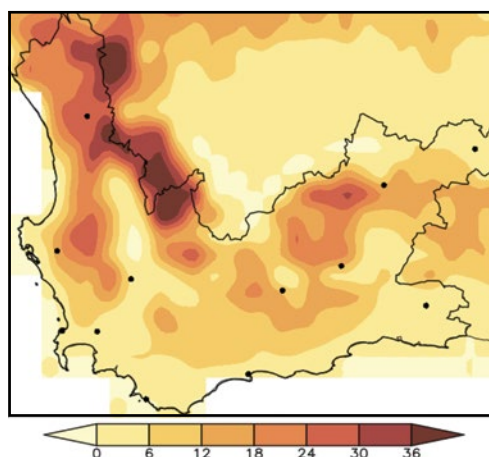
Mean annual temperature

Mean annual temperature ranges from about 14 °C in the high-altitude Cape Fold Mountains to more than 20 °C over the western interior.



Very hot days

The mean annual number of very hot days range from less than 1 day over the high-altitude Cape Fold Mountains to more than 20 days over the Karoo and western interior parts.

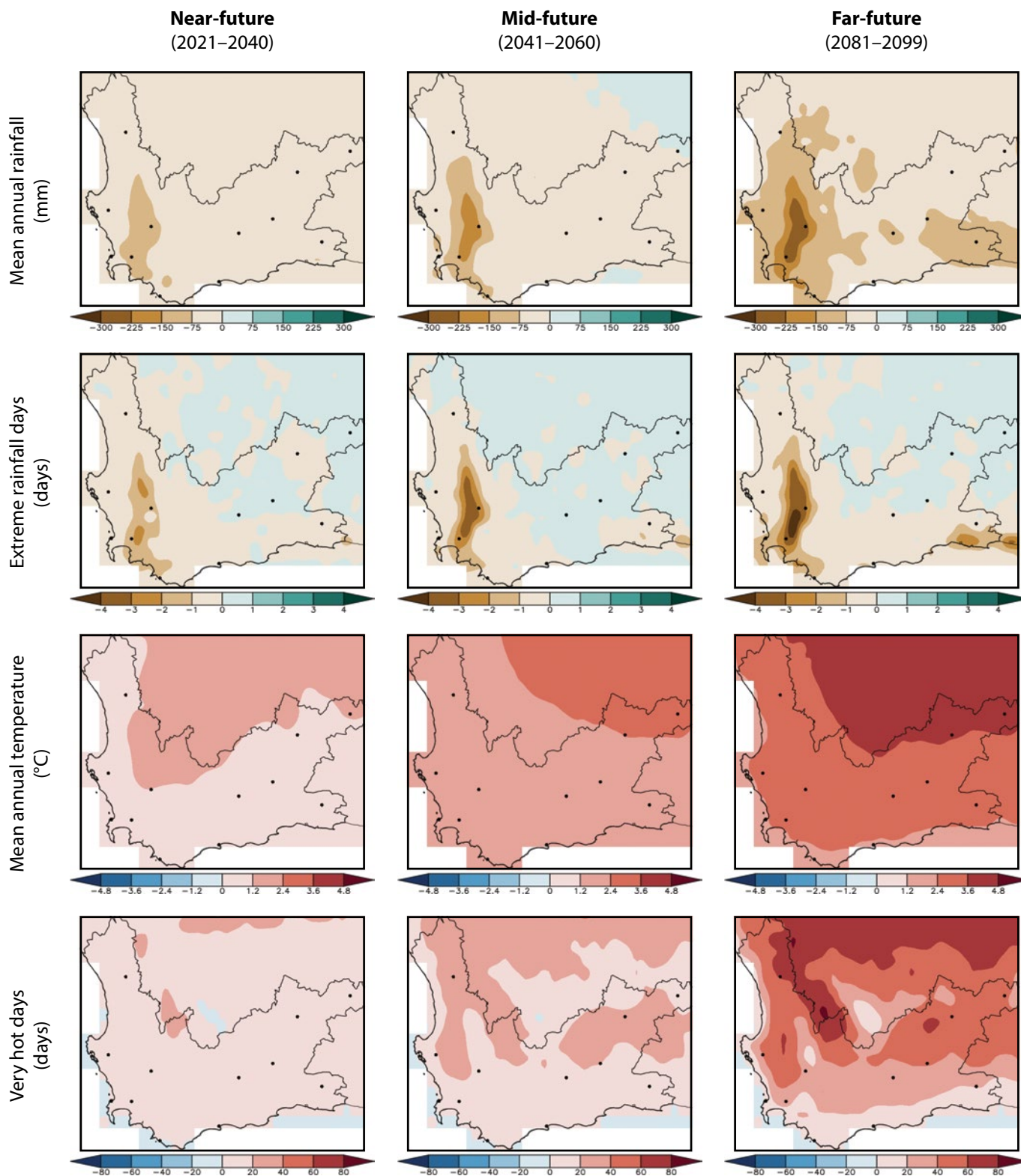


Observed climate trends (overview)

- Observed decrease in mean annual rainfall (*low confidence*).
- Observed increase in the frequency of extreme rainfall events over the Karoo (*medium confidence*).
- Observed increase in mean annual temperature and warm extremes (*virtually certain*); decrease in cold extremes (*high confidence*).
- Observed increase in meteorological and agricultural drought (*low confidence*).

Projected future climate change (overview)

- Projected decrease in mean annual rainfall (*high confidence*).
- Projected decrease in the frequency of extreme rainfall events over the Cape Fold Mountains (*high confidence*).
- Projected increase in mean annual temperature and warm extremes (*virtually certain*); decrease in cold extremes (*high confidence*).
- Projected increase in agricultural and meteorological drought (*high confidence*).



Projected future climate change (detailed)

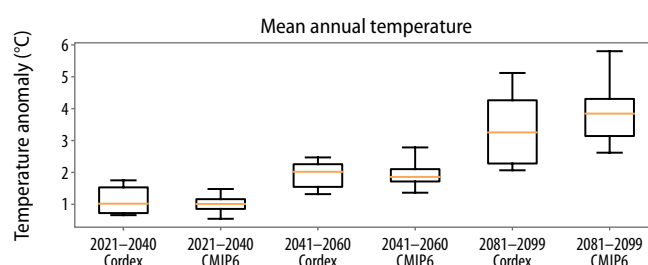
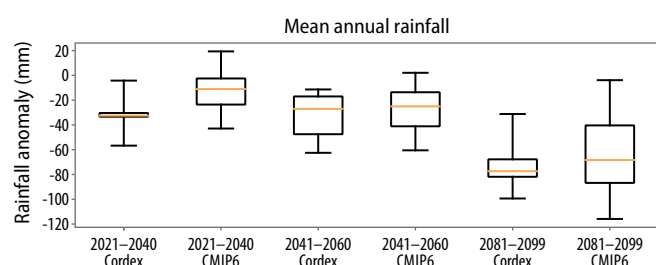
Near- and mid-future

- Projected decrease in rainfall (*likely*).
- Projected decrease in extreme rainfall events over the Cape Fold Mountains (*likely*), but with an increase over the Karoo (*medium confidence*).
- Projected increase in temperature and warm extremes (*virtually certain*), with an associated decrease in cold extremes (*likely*).
- Projected increase in agricultural and meteorological drought (*likely*).

Far-future

- Projected decrease in rainfall (*very likely*).
- Projected decrease in extreme rainfall over most of the Cape Fold Mountains (*likely*), but with an increase over the Karoo (*medium confidence*).
- Projected increase in temperature and warm extremes (*virtually certain*), with an associated decrease in cold extremes (*very likely*).
- Projected increase in agricultural and meteorological drought (*very likely*).

Climate model projections: model agreement and uncertainties



Mean annual rainfall

- Averaged across the province, rainfall decreases are projected for the near- and mid-future (*likely*).
- Under low mitigation scenarios, further rainfall decreases are *very likely* in the province in the far-future.
- Partially in response to *virtually certain* temperature increases, agricultural drought is to occur more frequently in the near- to mid-future (*likely*) and far-future (*very likely*).

Mean annual temperature

- Temperature increases averaged across the province in the near-future are *virtually certain* and may be as high as 2.0 °C.
- Under low mitigation, further temperature increases are *virtually certain* and may be as high as 3.0 °C in the mid-future and 6.0 °C in the far-future.
- Increases in average temperature will be accompanied by increases in warm temperature extremes such as heatwaves and high fire danger days (*virtually certain*) and a decrease in cold extremes (*high confidence*).

Citation:

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