



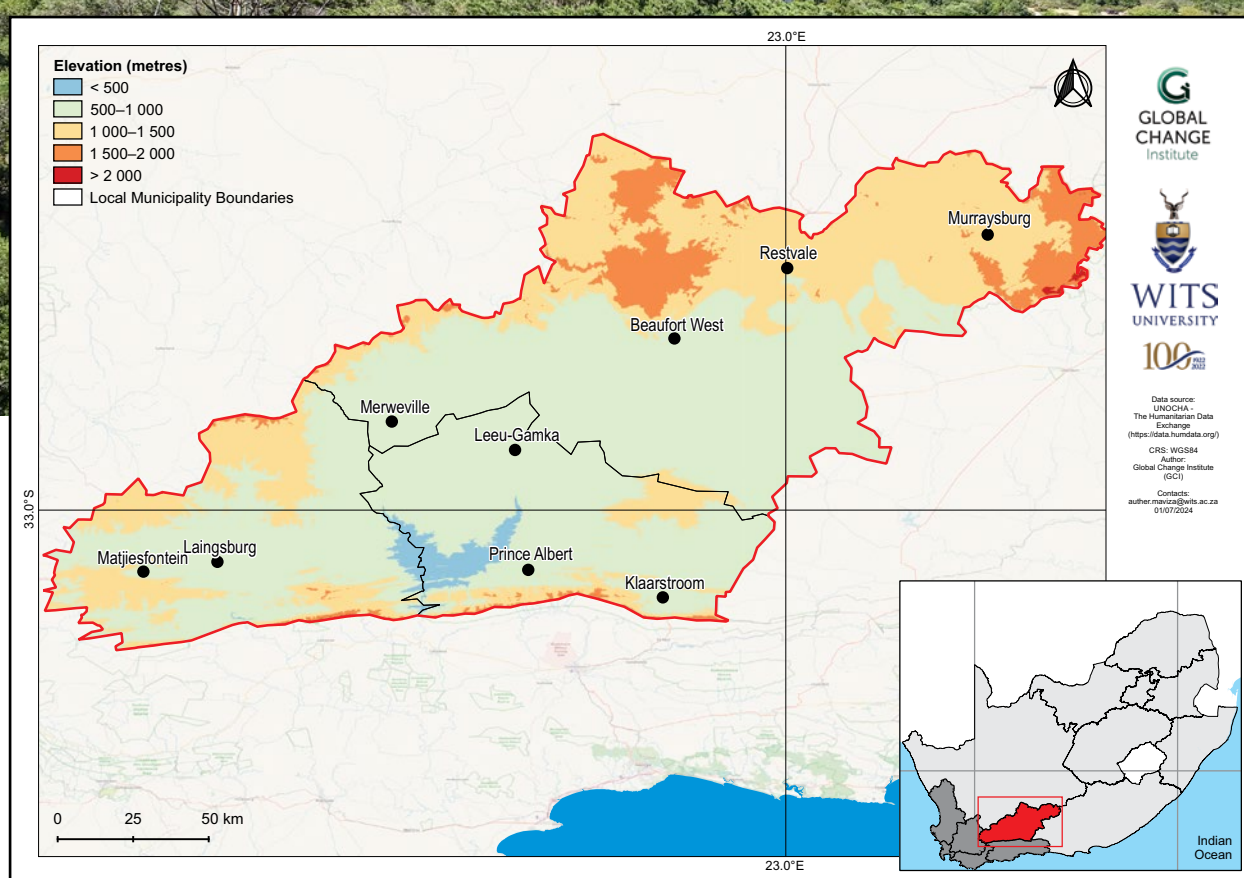
Central Karoo District Municipality climate change fact sheet

Western Cape, South Africa

MUNICIPAL

Introduction

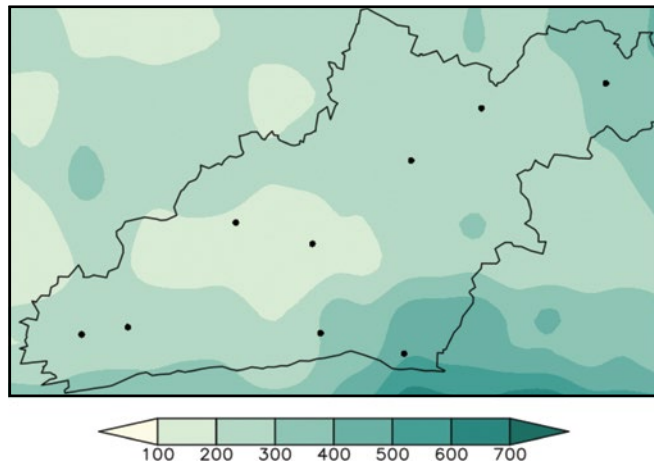
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- The Central Karoo District Municipality is the largest district in the Western Cape and covers an area of 38 854 km², with an elevation ranging from 800 m to 2 325 m above sea level in the Nuweveld Mountains to the north.
- The district experiences an arid to semi-arid climate characterised by hot summers and cold winters. The dry climate and low humidity have resulted in semi-desert landscapes in the district.



Observed climate: rainfall (1981–2000)

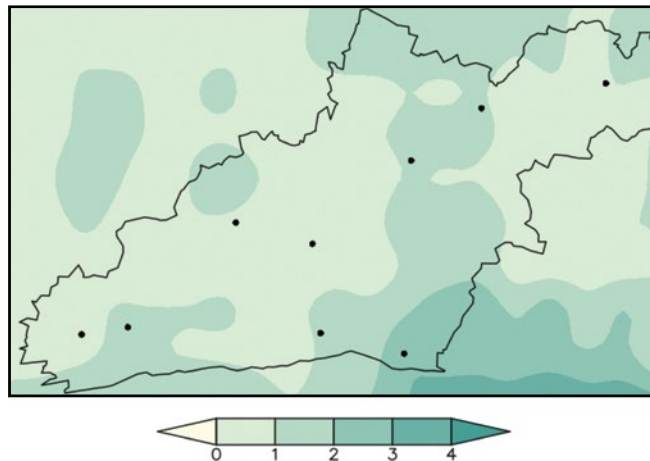
Mean annual rainfall

Mean annual rainfall ranges from 100 mm over the central region in the southwest to 500 mm over the southern border region.



Extreme rainfall days

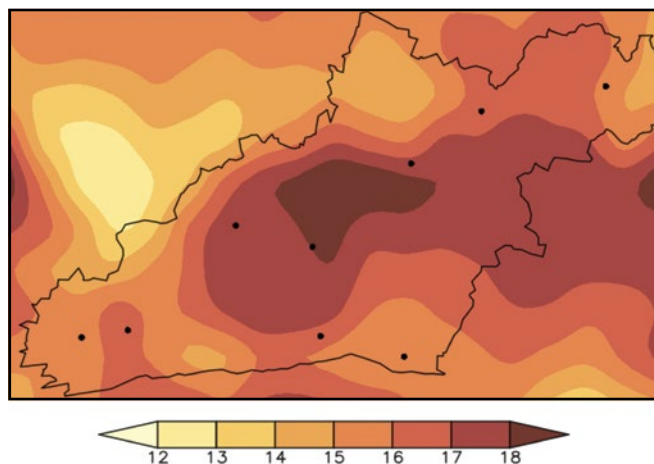
Observed mean annual number of extreme rainfall days range from less than 1 day over most of the district to 3 days along the southern border region.



Observed climate: temperature (1981–2000)

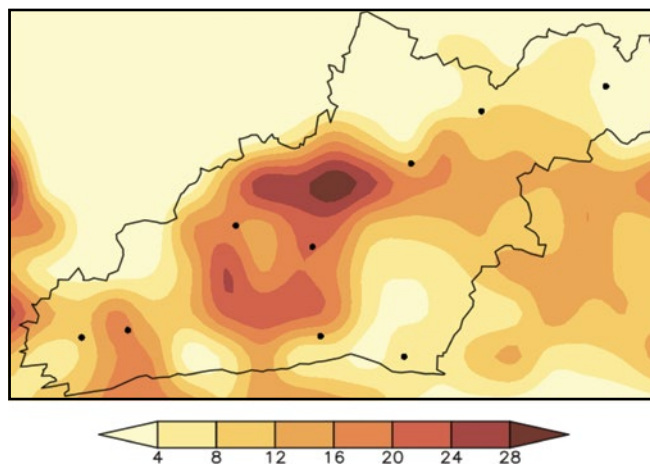
Mean annual temperature

Mean annual temperature ranges from 13 °C over the northwestern border parts to 18 °C in the interior.



Very hot days

Mean annual number of very hot days range from less than 4 days over the northern and southern borders to 28 days or more in the interior.

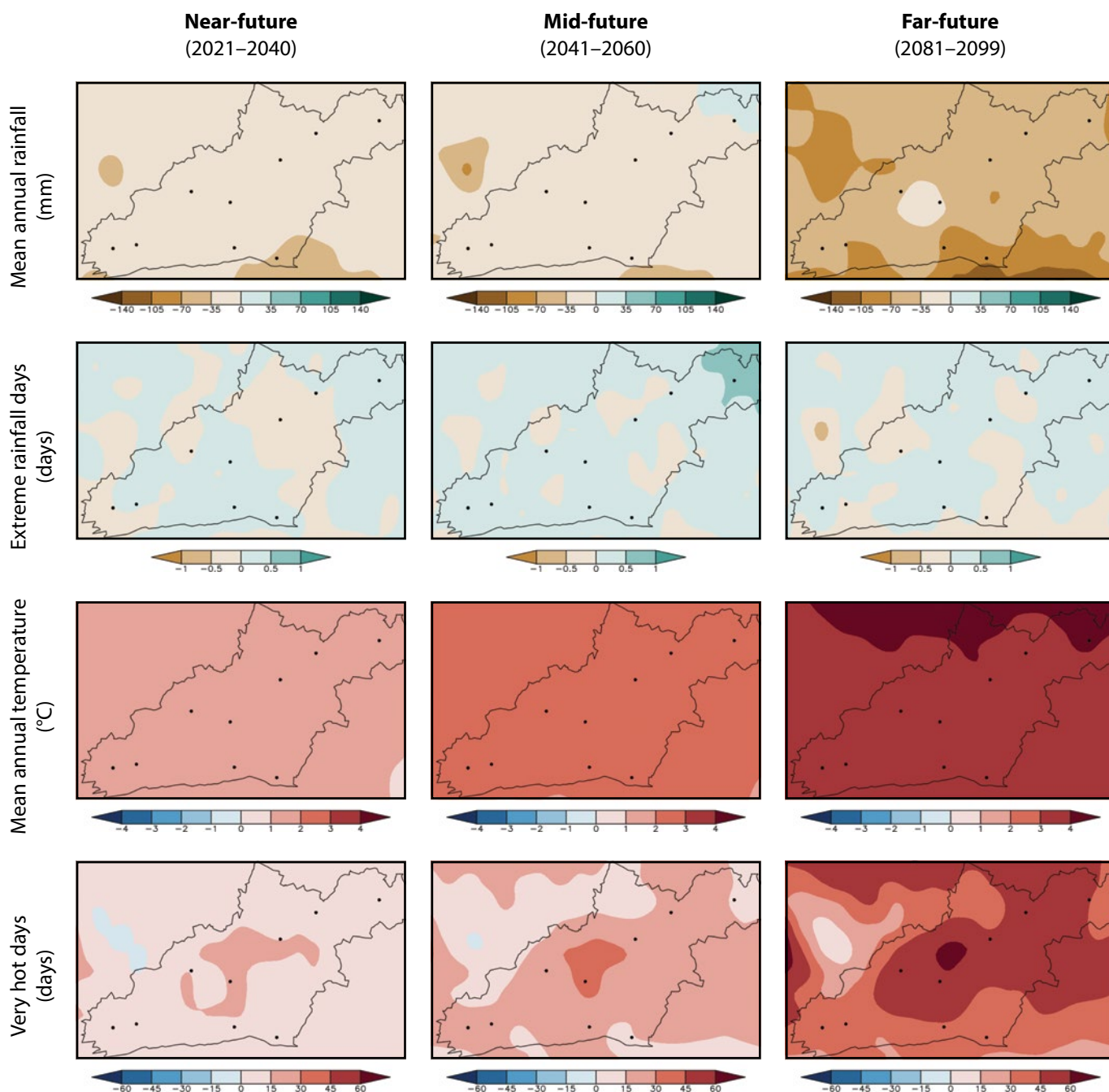


Observed climate trends (overview)

- Observed decrease in mean annual rainfall (*low confidence*).
- Observed increase in the frequency of extreme rainfall events (*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 into the future (*high confidence*).
- Projected increase in the frequency of extreme rainfall events (*low 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*)

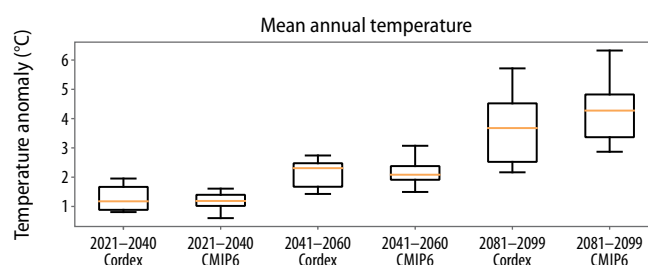
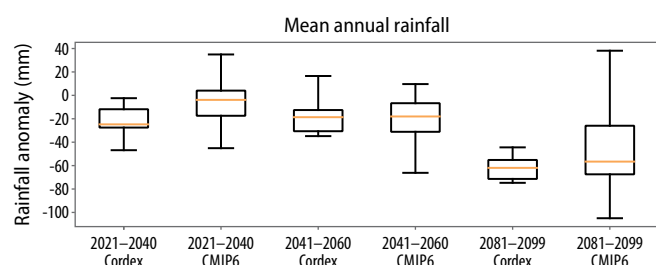
Near- and mid-future

- Projected decrease in rainfall over the entire district (*likely*).
- Projected increase in extreme rainfall events (*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*) and corresponding increase in agricultural and meteorological drought (*very likely*).
- Projected increase in extreme rainfall events (*medium confidence*).
- Projected increase in temperature and warm extremes (*virtually certain*), with an associated decrease in cold extremes (*very likely*).

Climate model projections: model agreement and uncertainties



Mean annual rainfall

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

Mean annual temperature

- Temperature increases averaged across the district 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 approach 1.5 °C in the mid-future and 5.0 °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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