

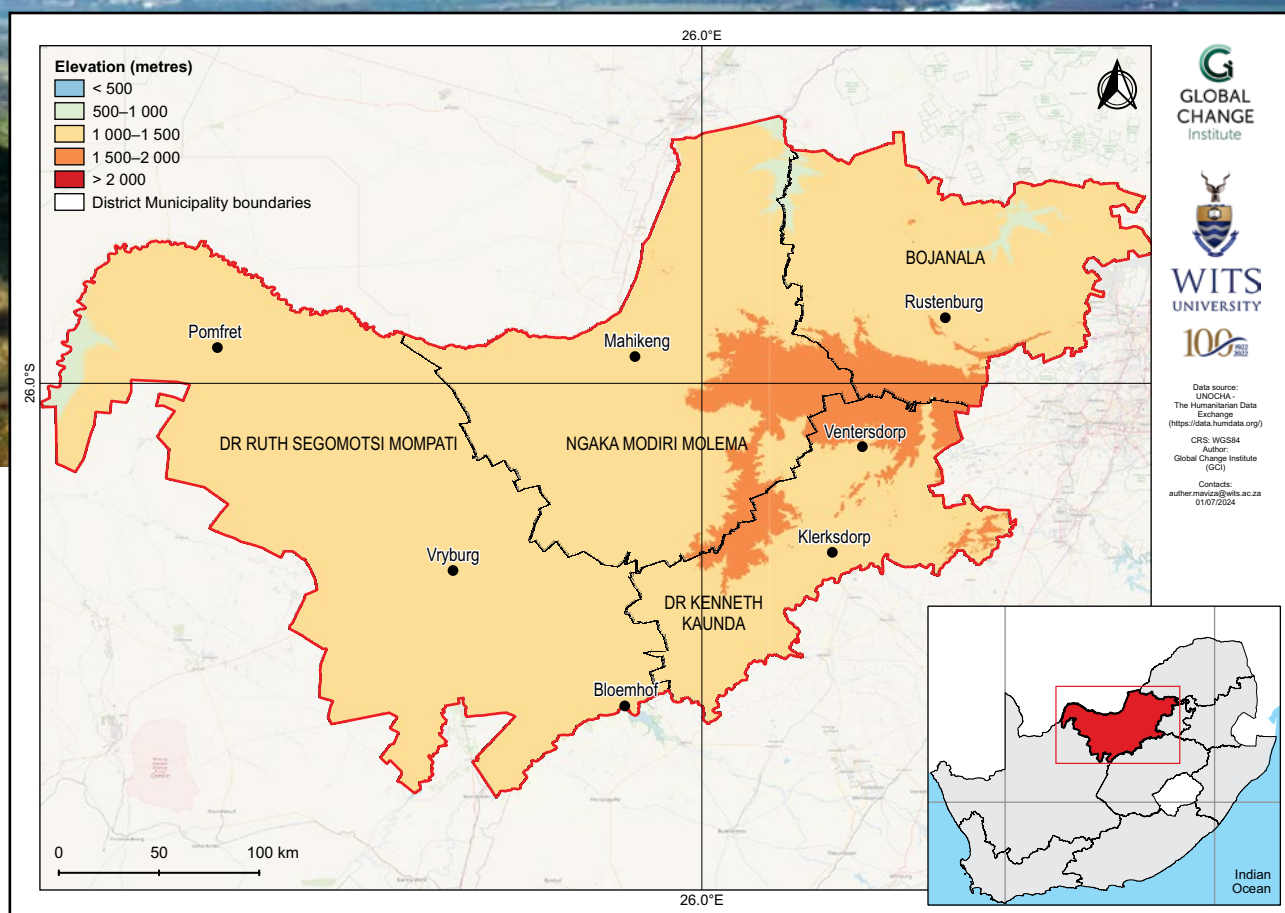
North West climate change fact sheet

South Africa

PROVINCIAL

Introduction

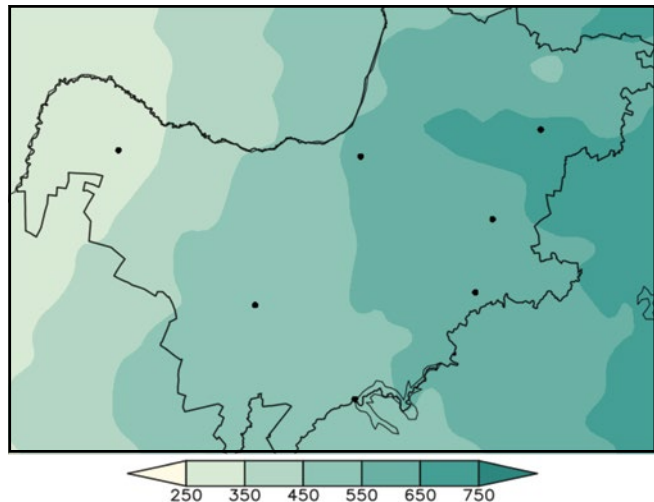
- This fact sheet is part of a series of provincial fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over the provinces of South Africa. They should be used together with the guidelines presented in the cover page.
- North West covers an area of approximately 104 882 km², with elevation ranging from 920 m above sea level in the flat savanna plains in the west to 1 800 m above sea level in the rolling hills and the Magaliesberg in the northeast.
- The province has a subtropical climate that exhibits pronounced dry-wet seasonality with the bulk of rainfall occurring in summer. The western parts are semi-arid while there is relatively high rainfall over the Magaliesberg in the east.



Observed climate: rainfall (1981–2000)

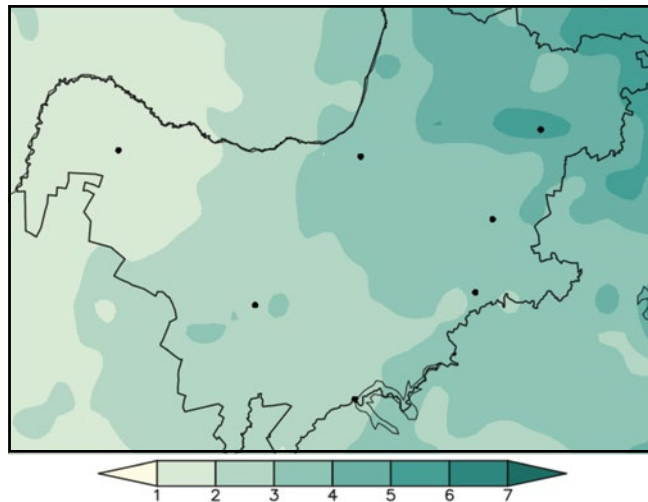
Mean annual rainfall

Mean annual rainfall ranges from 250 mm over the drier western plains to just over 650 mm in the eastern mountainous parts.



Extreme rainfall days

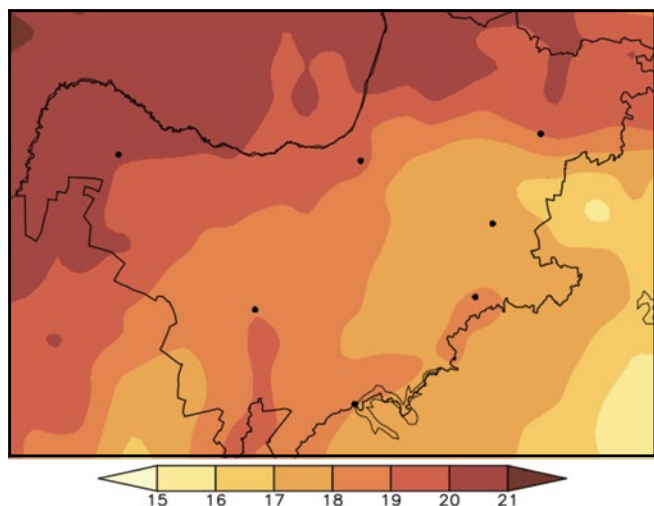
Observed annual average number of extreme rainfall days range from 1 day in the western plains of the province to 6 days in the northeastern mountainous parts.



Observed climate: temperature (1981–2000)

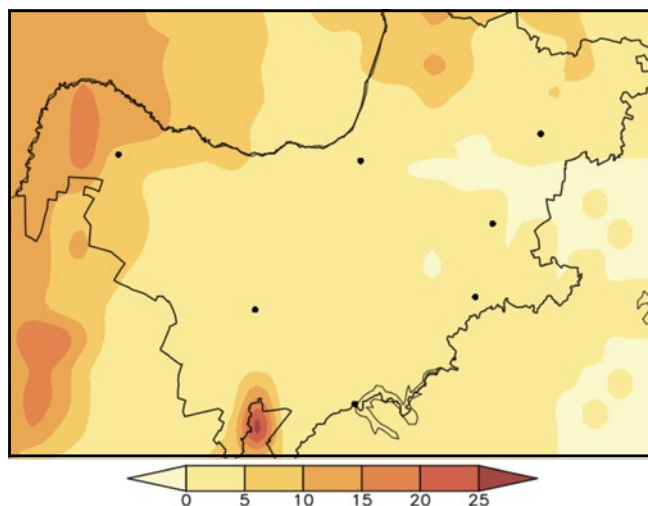
Mean annual temperature

Mean annual temperature increases from 15 °C in the eastern mountainous parts to higher than 20 °C over the flat northwestern plains.



Very hot days

Mean annual number of very hot days range from 0 days in the eastern mountainous parts to as many as 20 days over the northwestern plains.

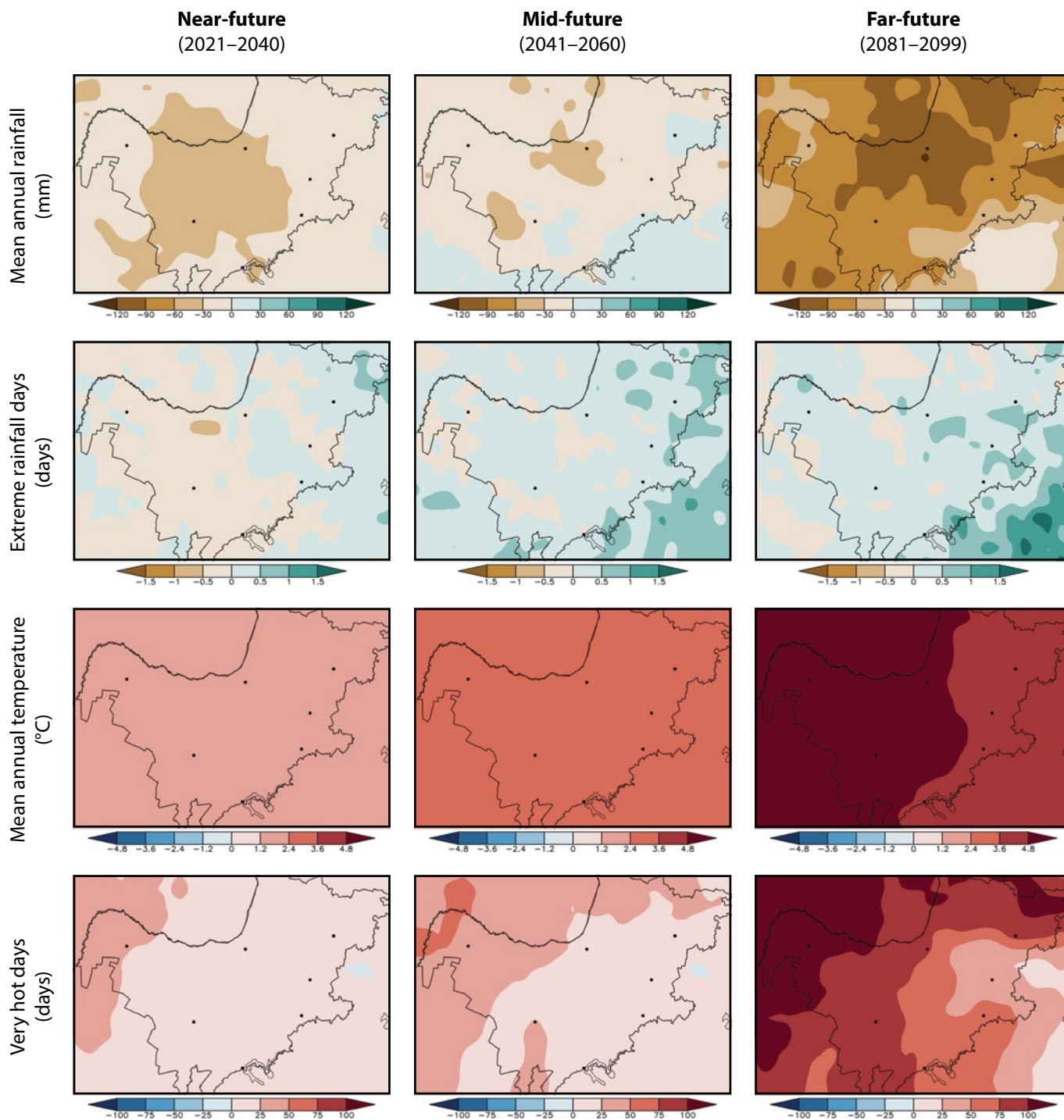


Observed climate trends (overview)

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

Projected future climate change (overview)

- *Low confidence* in the projected decrease in rainfall in the near-future but *high confidence* in projected rainfall decreases in the mid- and far-future.
- Projected increase in the frequency of extreme rainfall events (*high confidence*).
- Projected increase in mean annual temperature and warm extremes (*virtually certain*).
- Projected increase in agricultural and meteorological drought in the near-future (*low confidence*) and in the mid- and far-future (*high confidence*).



Projected future climate change (detailed)

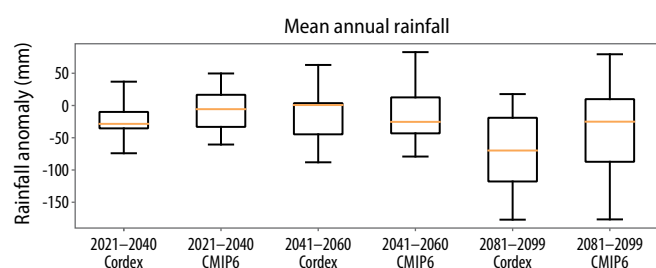
Near- and mid-future

- Projected decrease in rainfall in the near-future (*low confidence*) and mid-future (*likely*).
- Projected increase in extreme rainfall events in the near-future (*likely*) and mid-future (*very likely*).
- Projected increase in temperature and warm extremes (*virtually certain*), with higher increases over the western parts.
- Projected increase in meteorological and agricultural drought in the near-future (*low confidence*) and mid-future (*likely*).

Far-future

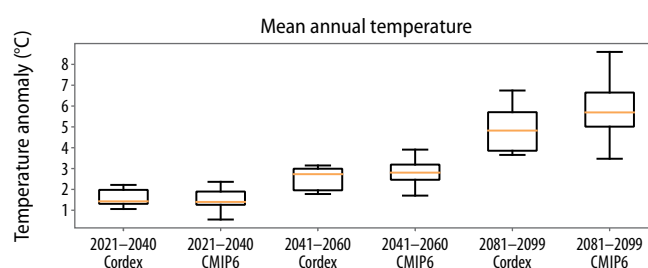
- Projected decrease in rainfall and corresponding increase in meteorological and agricultural drought (*very likely*).
- Projected general increase in extreme rainfall events (*very likely*).
- Projected increase in temperature and warm extremes (*virtually certain*), with drastic increases in the western parts.

Climate model projections: model agreement and uncertainties



Mean annual rainfall

- Averaged across the province, rainfall is projected to decrease in the near- and mid-future (*likely*).
- Rainfall decreases 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 future (*very likely*).



Mean annual temperature

- Temperature increases averaged across the province are *virtually certain* in the near-future and may be as high as 2.0 °C.
- Under low mitigation, further temperature increases are *virtually certain* and may approach 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*).

Citation:

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