

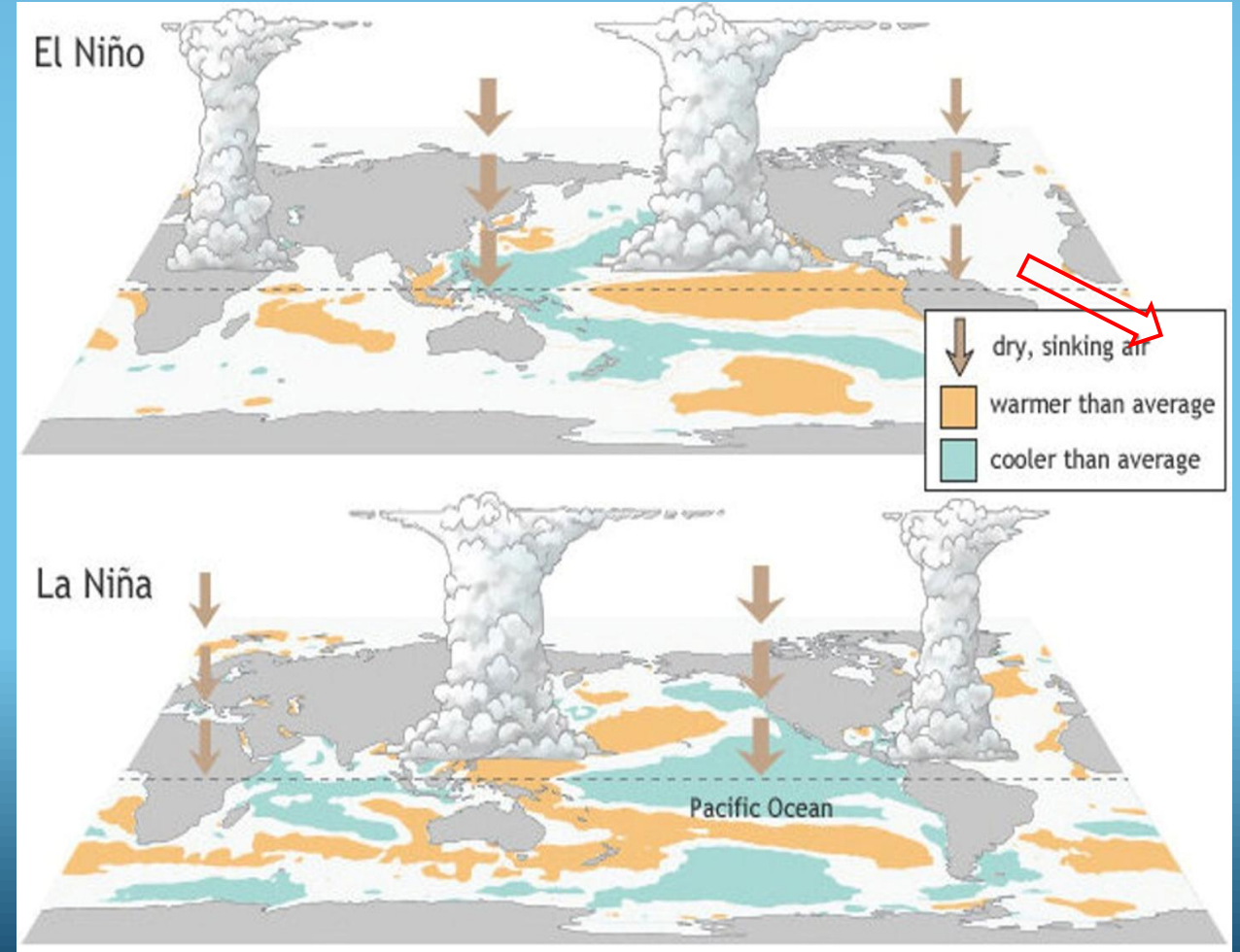
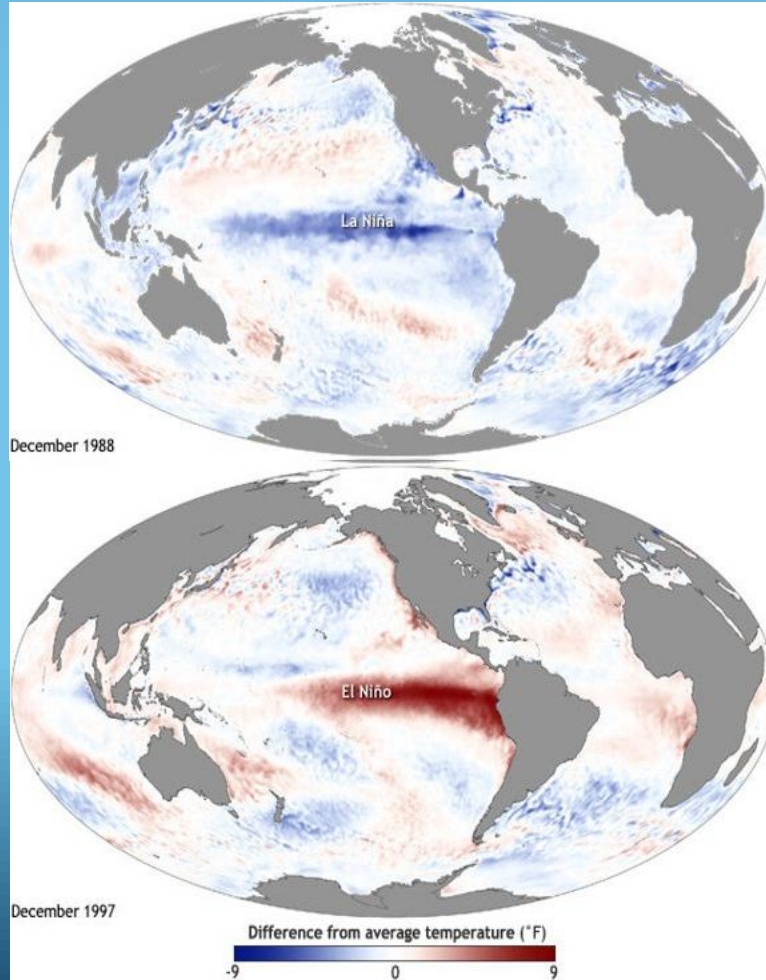
ENSO REPORT ON El Niño and Climate-Related Shocks

Professor Neville Sweijd
School for Climate Studies
University of Stellenbosch



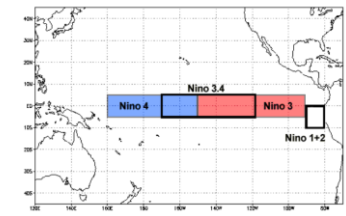
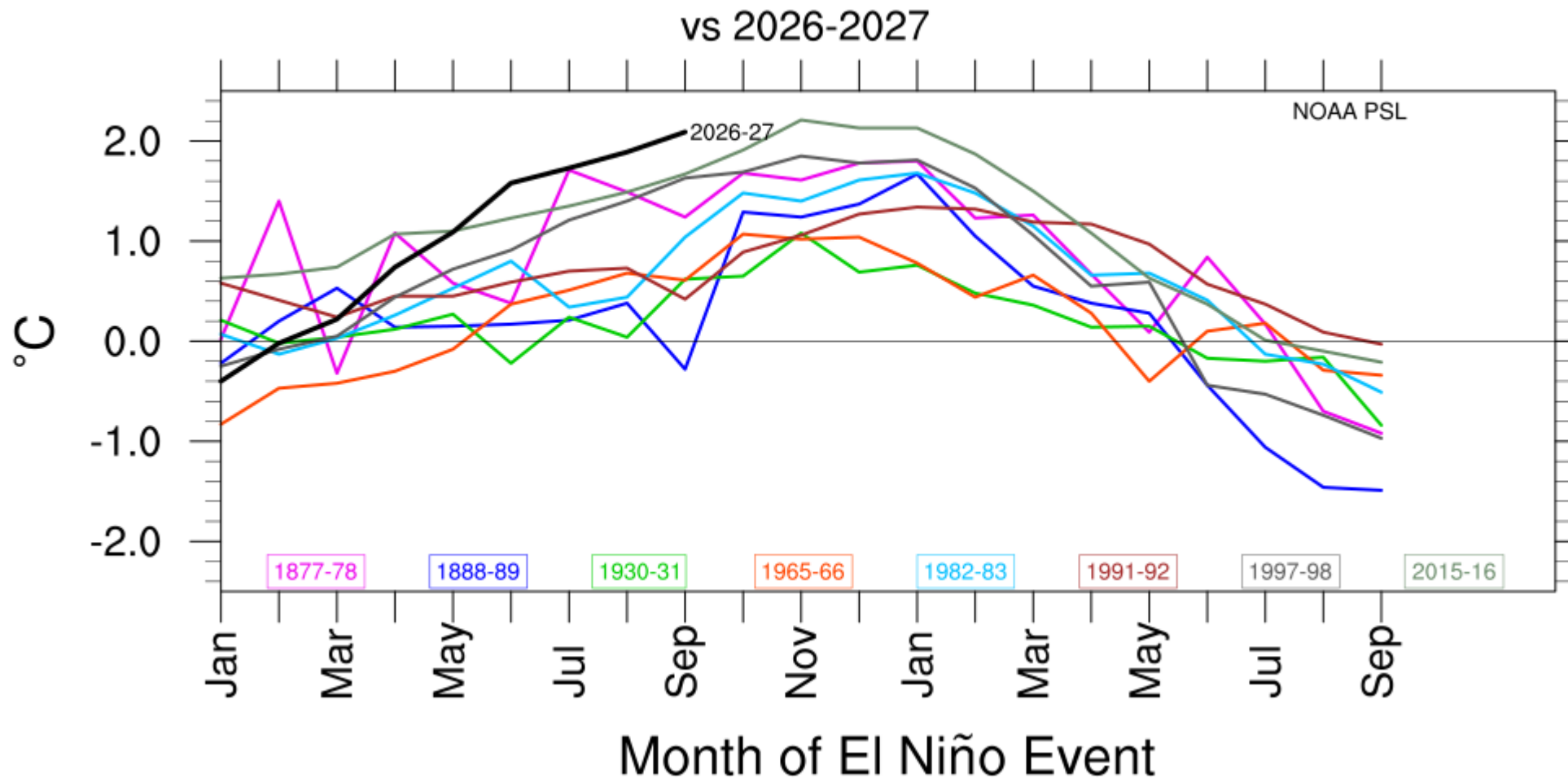
1. What is El Niño (ENSO)
2. What is special about this 2026/2027 El Niño
3. The Impact of ENSO in Southern Africa
4. Climate variability and ENSO in the Eastern Cape.
5. What is the current status going into the summer season.
6. What to expect this summer.
7. What should you do?

1. What is El Niño (ENSO)



2. What is special about this 2026/2027 El Niño

Niño 3.4 (NOAA ERSSTv6) for the top 9 El Niño events (since 1870)






**INTERNATIONAL DAY FOR
DISASTER RISK REDUCTION**
 THEME: RESILIENCE STARTS AT HOME




DATE
 13 October 2026


VENUE
 Keiskammahoek
 Springbok Hall
 Amathole Local Municipality


TIME
 08h00 – 15h30


HOST
 Amathole District Municipality
 Disaster Management Centre

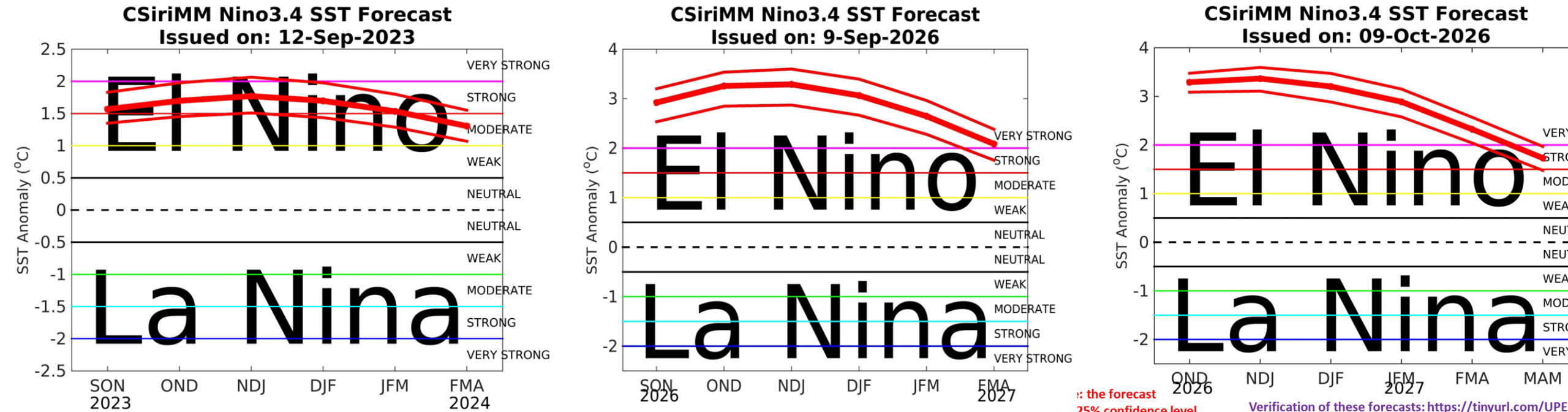


University of Fort Hare
Together in Excellence



Stellenbosch
 UNIVERSITY
 IYUNIVESITHI
 UNIVERSITEIT

2. What is special about this 2026/2027 El Niño



∴ the forecast
25% confidence level

Verification of these forecasts: <https://tinyurl.com/UPE>

Seasonal forecasts
 presented by:



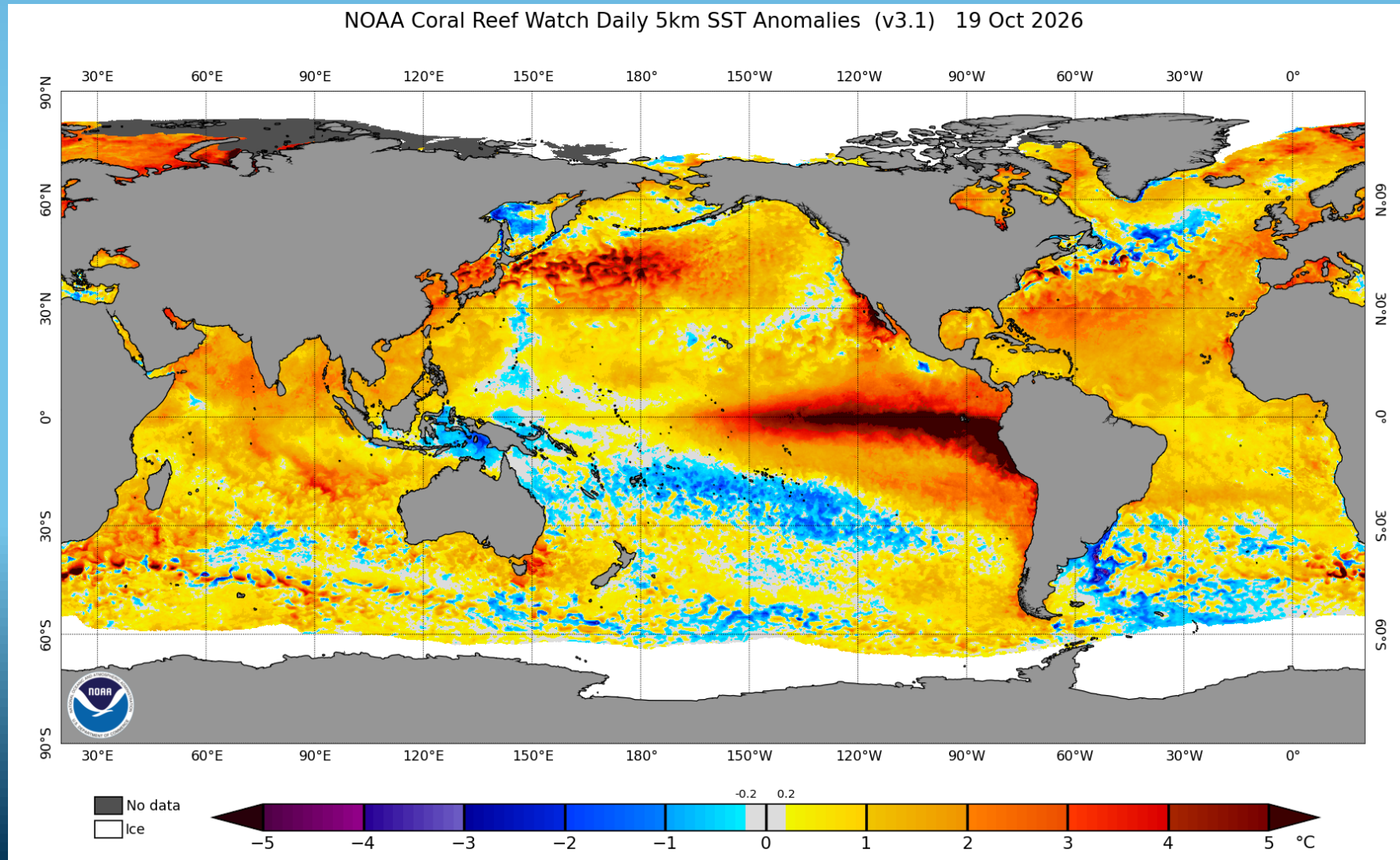
**Seasonal
Forecast
Worx**

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

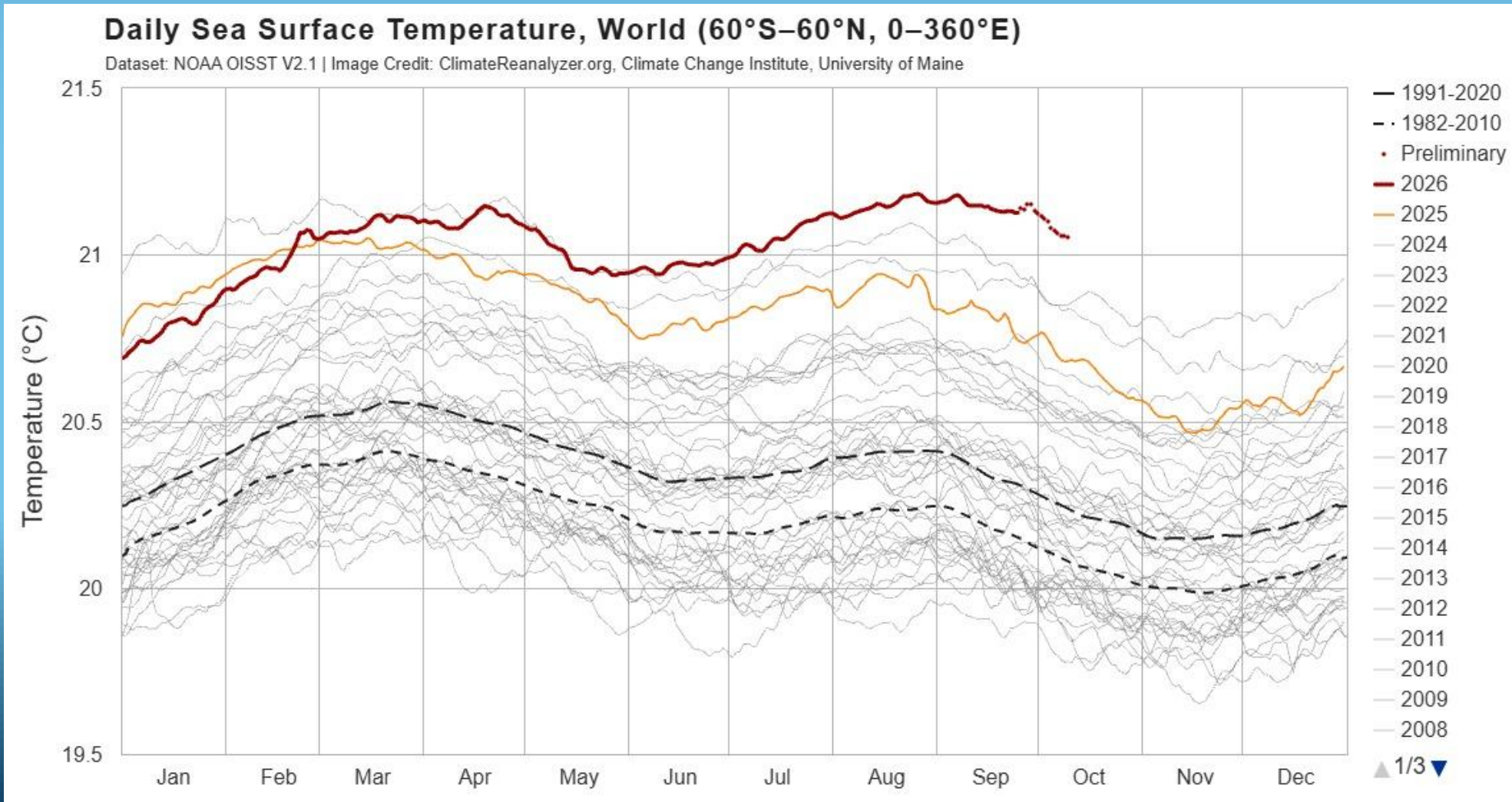
Seasonal Climate Forecasts

Latest Update: 9 October 2026

2. What is special about this 2026/2027 El Niño



2. What is special about this 2026/2027 El Niño






INTERNATIONAL DAY FOR DISASTER RISK REDUCTION

THEME: RESILIENCE STARTS AT HOME




DATE
13 October 2026


VENUE
Keiskammahoek
Springbok Hall
Amathole Local Municipality


TIME
08h00 – 15h30


HOST
Amathole District Municipality
Disaster Management Centre

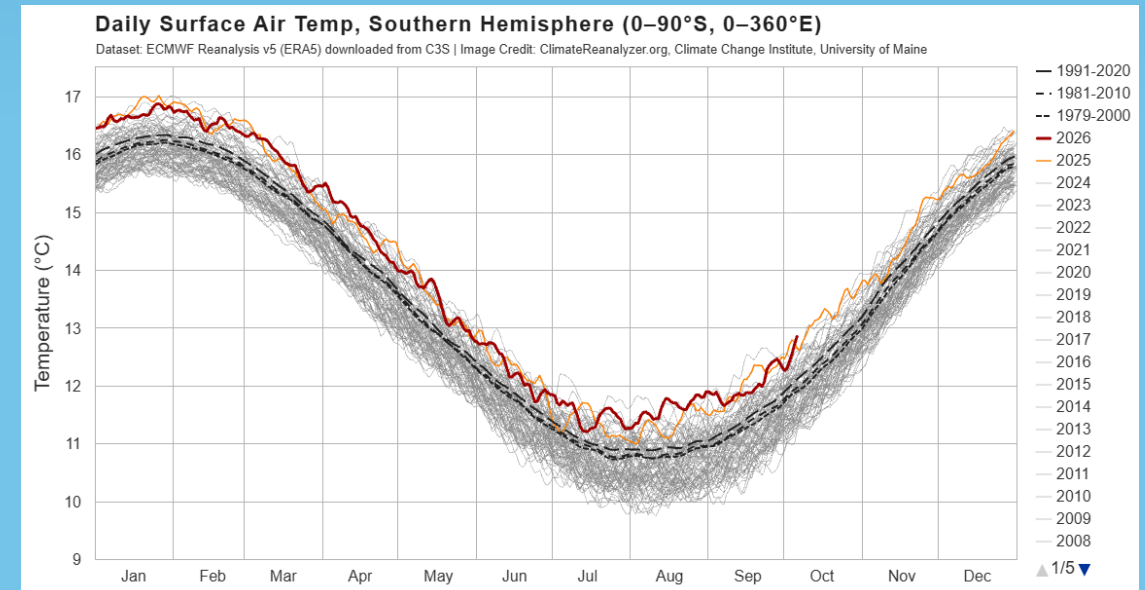
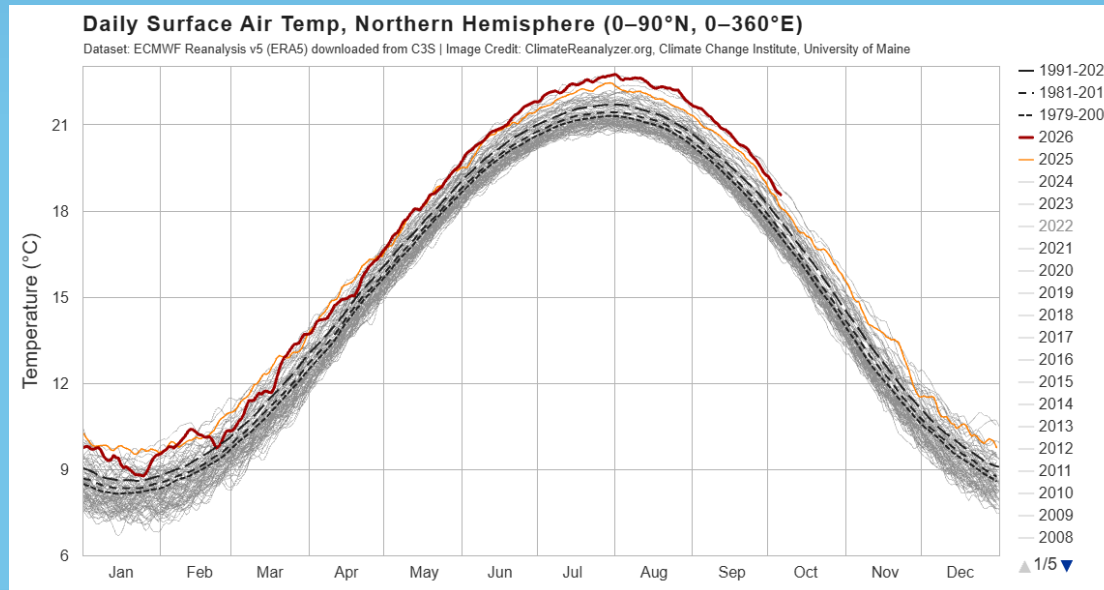


University of Fort Hare
Together in Excellence



Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

2. What is special about this 2026/2027 El Niño




Climate

[Solutions](#)
[Weather](#)

[Watch](#)
[Listen](#)

The US just had its hottest summer on record, beating the Dust Bowl era

7 HR AGO

By  **Andrew Freedman**


[Sign in](#)

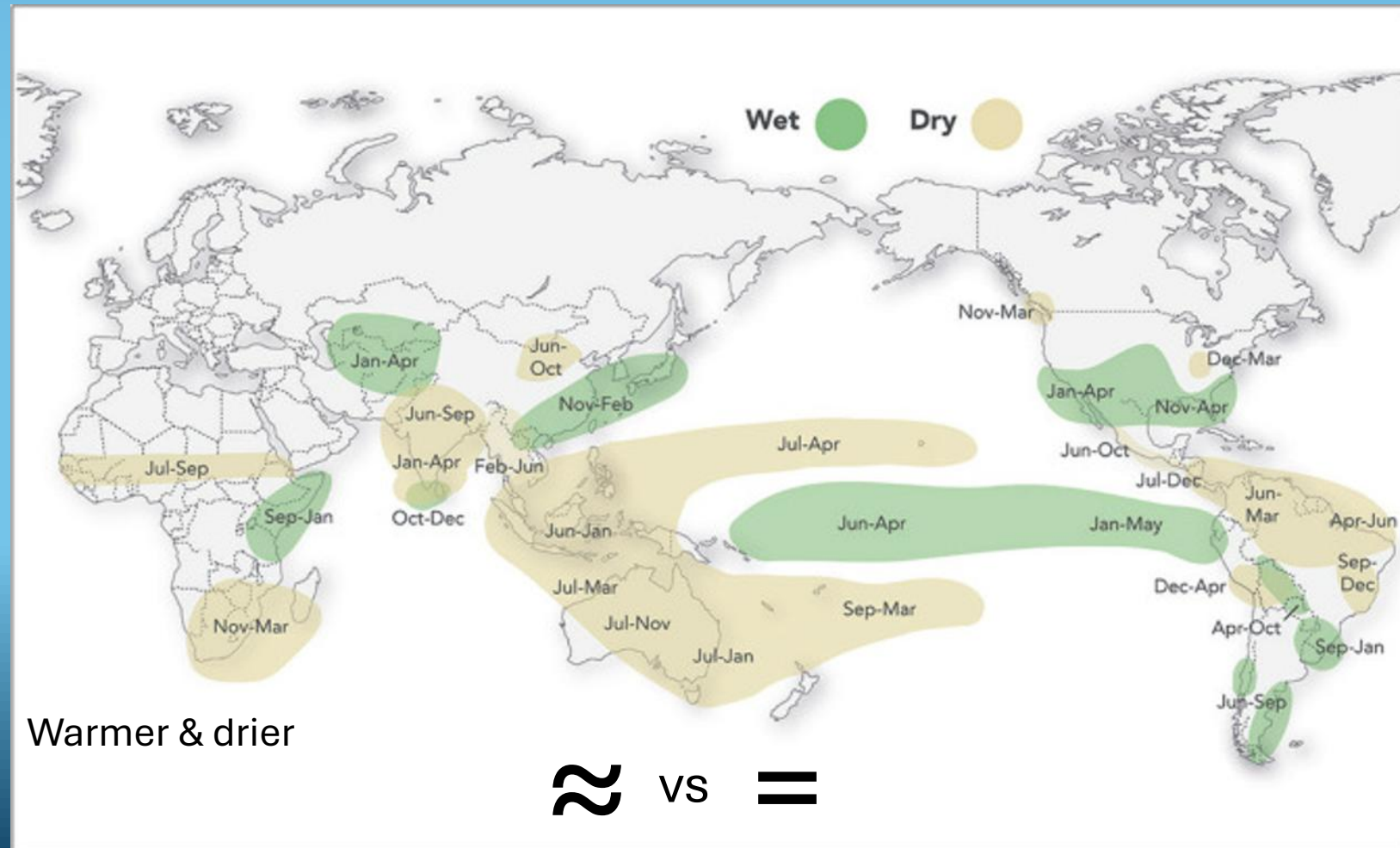
[Home](#)
[News](#)
[Sport](#)
[Business](#)
[Technology](#)

WEATHER

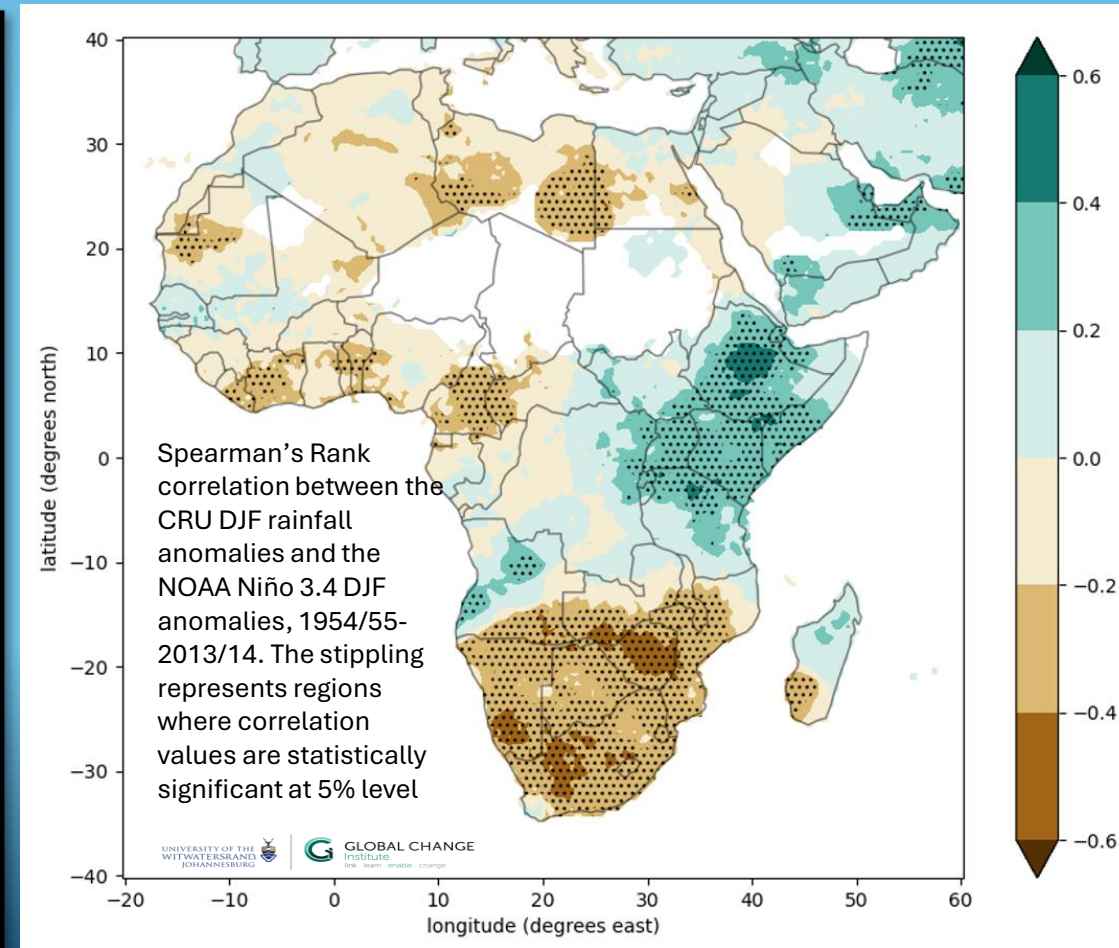
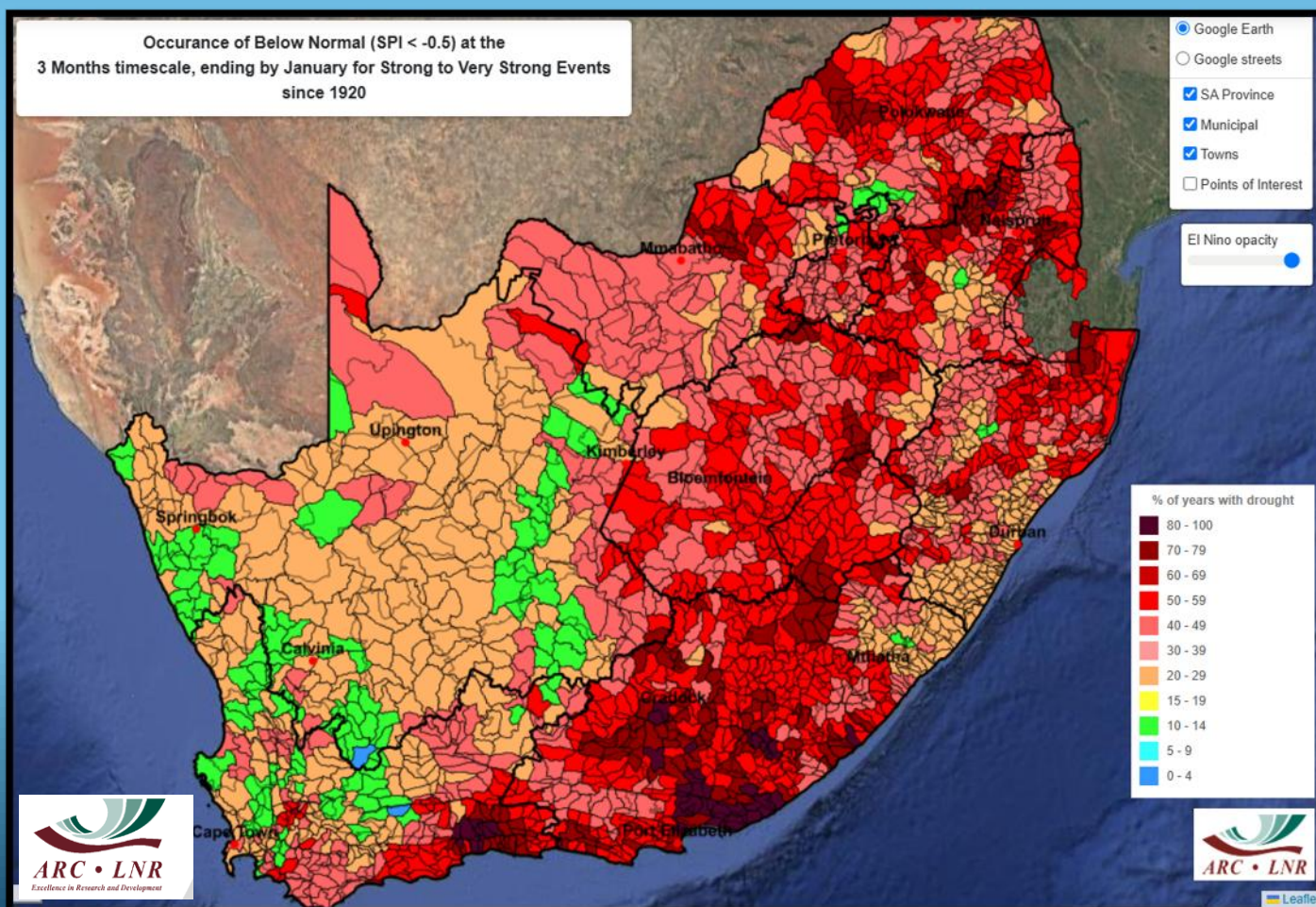
[Home](#)
[Weather Warnings](#)
[Flood Warnings](#)
[Monthly Outlook](#)
[Coast and Sea](#)
[Help](#)

Summer 2026 was UK's hottest on record, Met Office says

3. The Impact of ENSO in Southern Africa

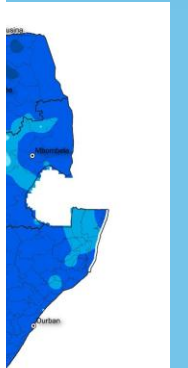
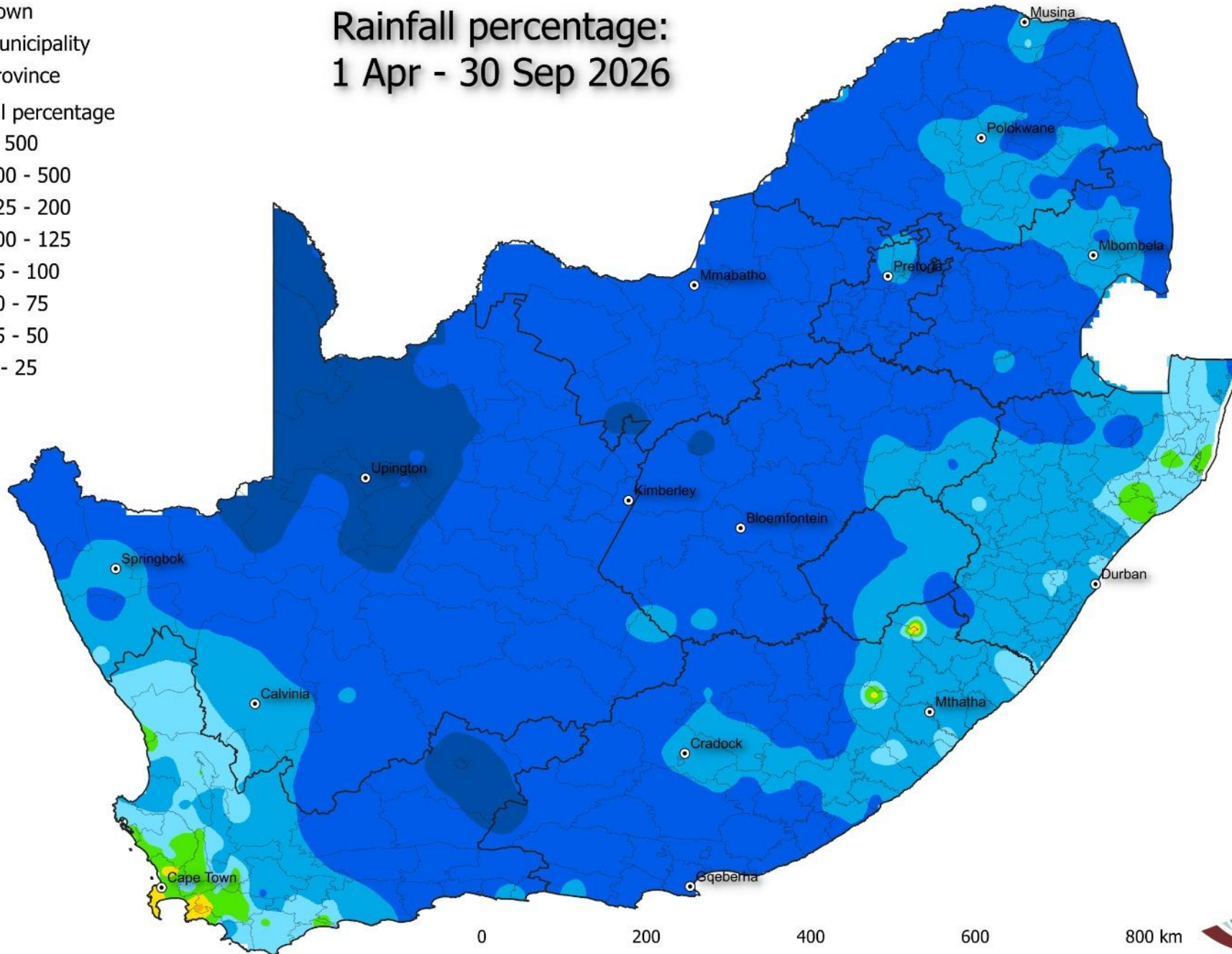


3. The Impact of ENSO in Southern Africa

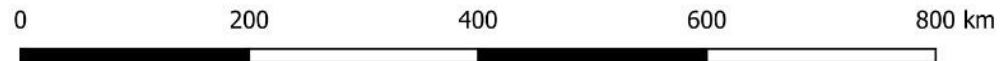


- Town
- Municipality
- Province
- Rainfall percentage
- > 500
- 200 - 500
- 125 - 200
- 100 - 125
- 75 - 100
- 50 - 75
- 25 - 50
- 0 - 25

Rainfall percentage: 1 Apr - 30 Sep 2026



Dr Johan



3. The Impact of ENSO in Southern Africa

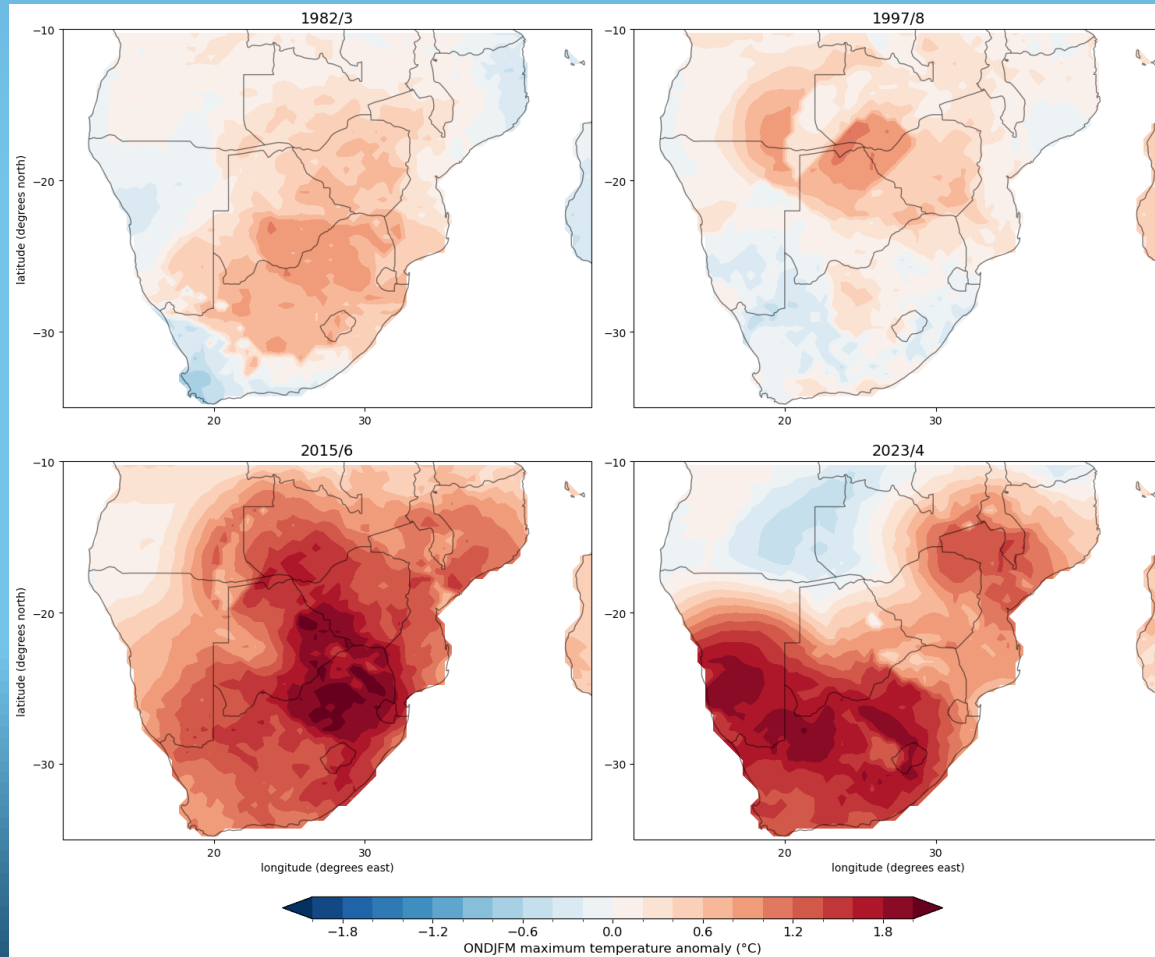
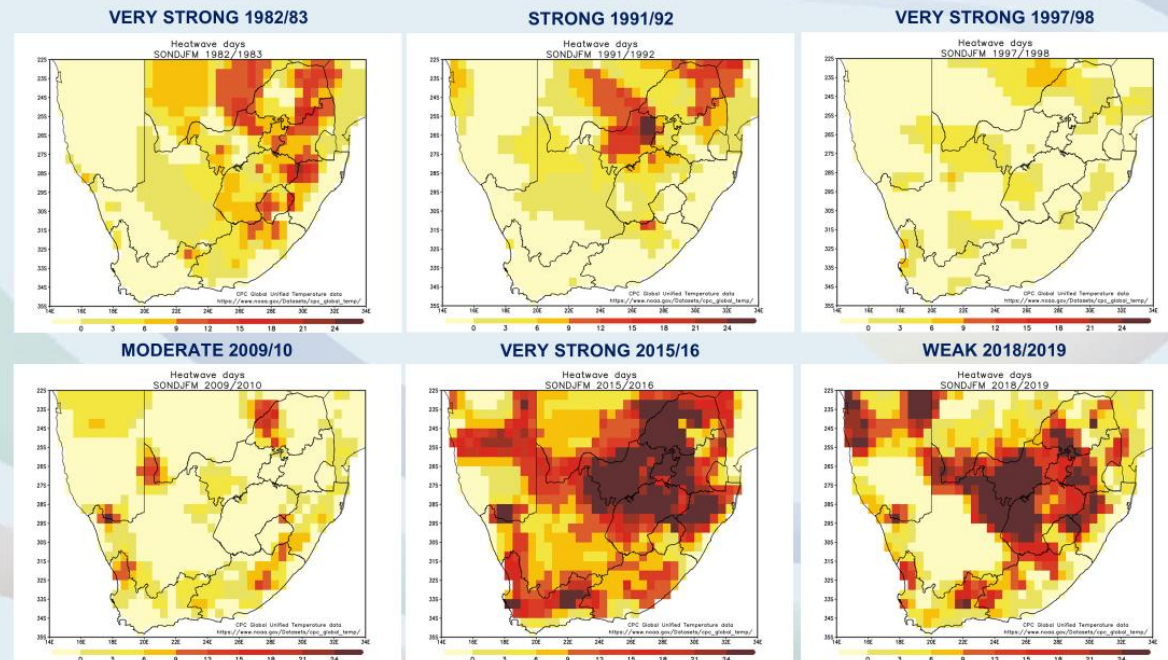


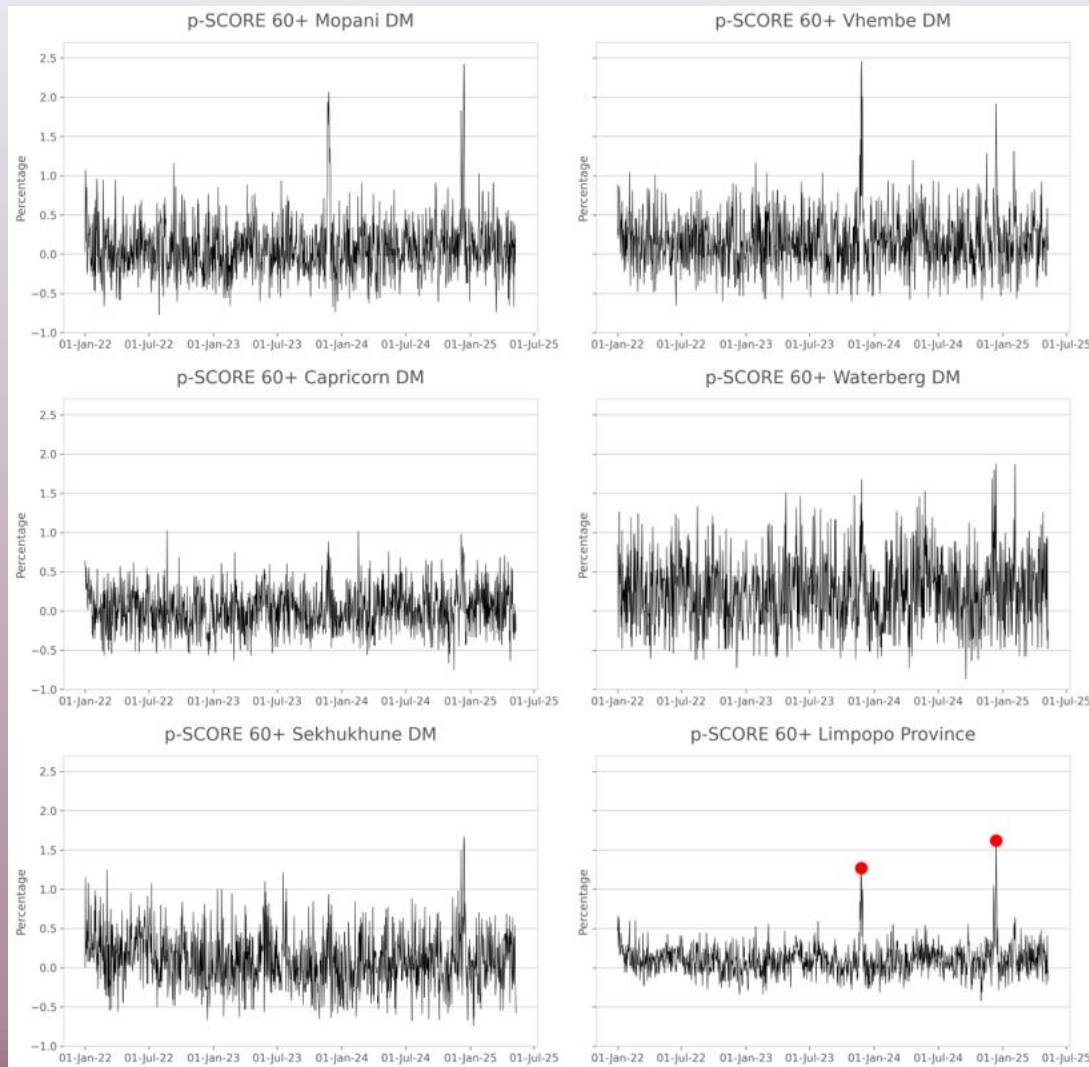
Figure: Observed maximum temperature anomalies (°C) during the summer half-year in southern Africa for different El Niño events.

3. The Impact of ENSO in Southern Africa

Heat wave days during selected El Niño Events



From Christien Engelbrecht



Excess Deaths from January 2022- July 2025

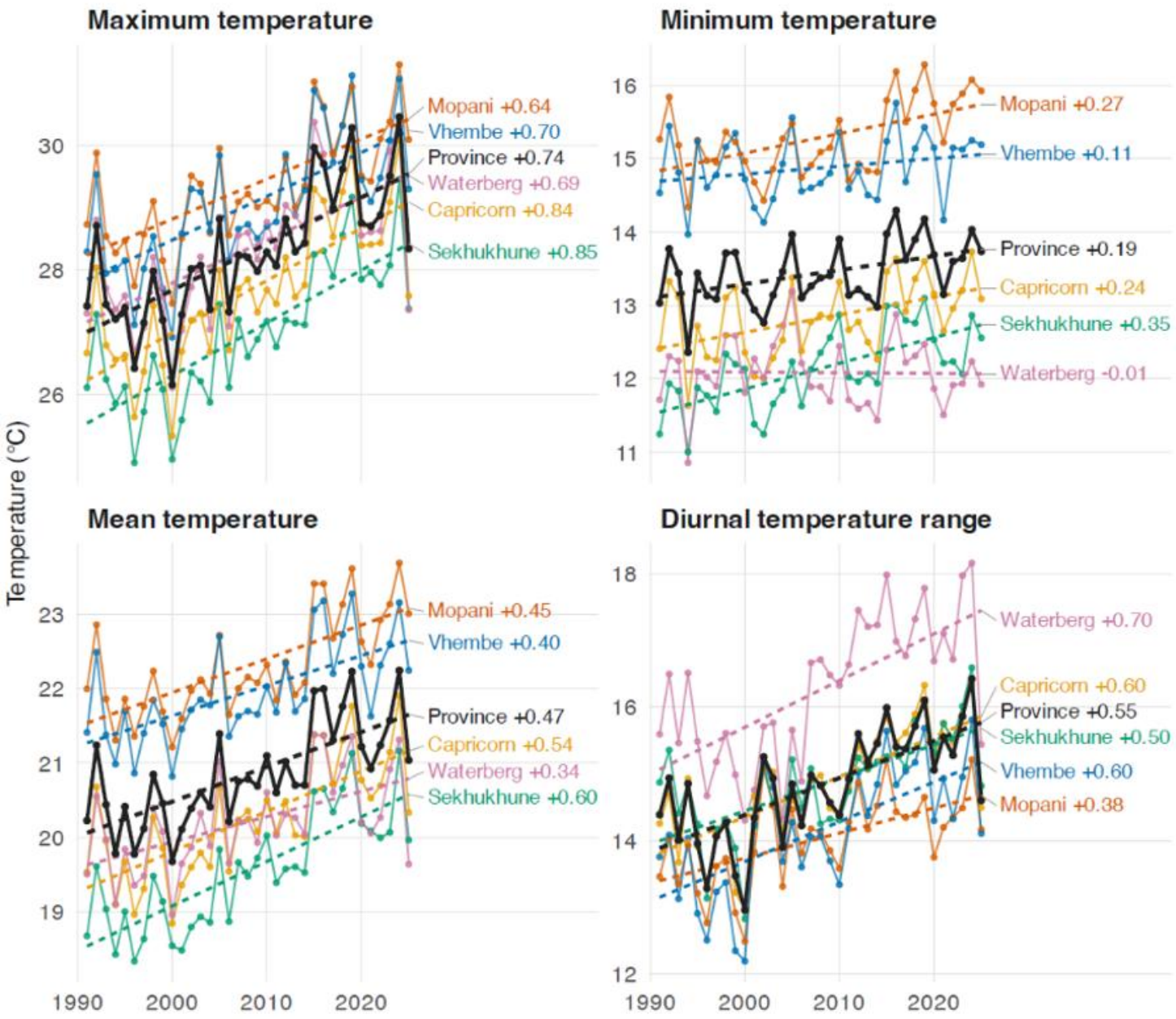
**SAMRC Burden of disease Unit
observed surges in excess deaths.**

**Observed in more than one
province.**

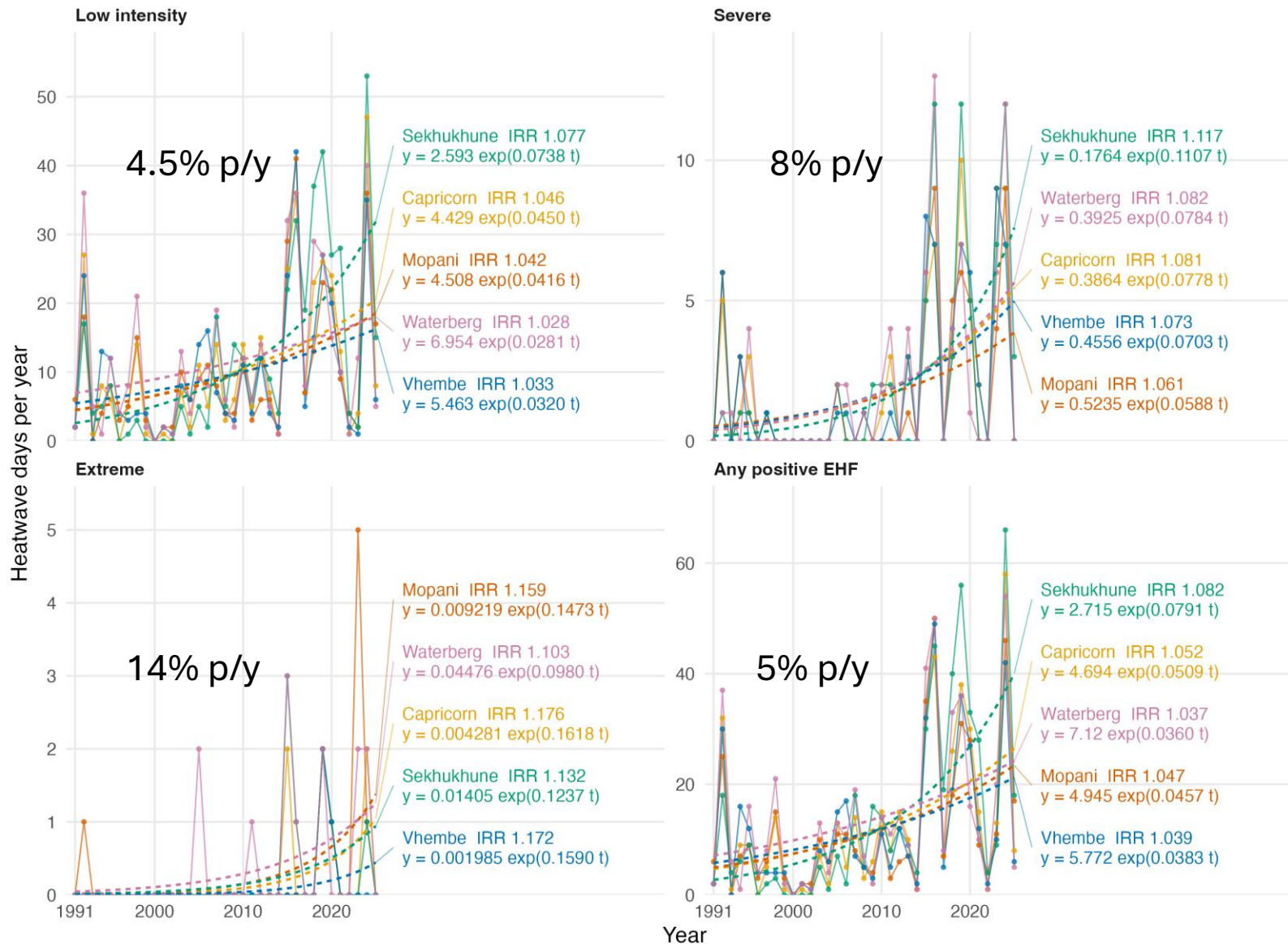
**Excess death are normally seasonal
with peak in winter (flu).**

**Bigger anomalies in the >60years
ages.**

The question emerging is: Can we model the relationship between heat incidence and mortality well enough to predict/forecast heat-related mortality risk at population level?

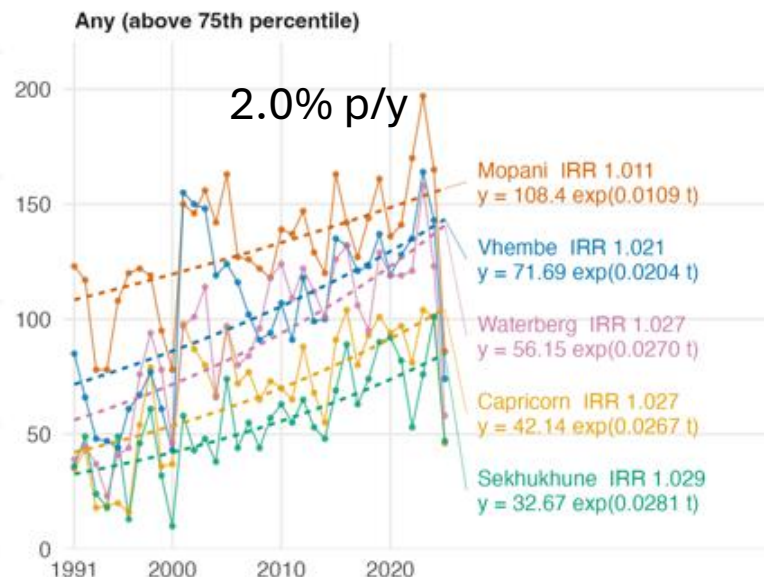
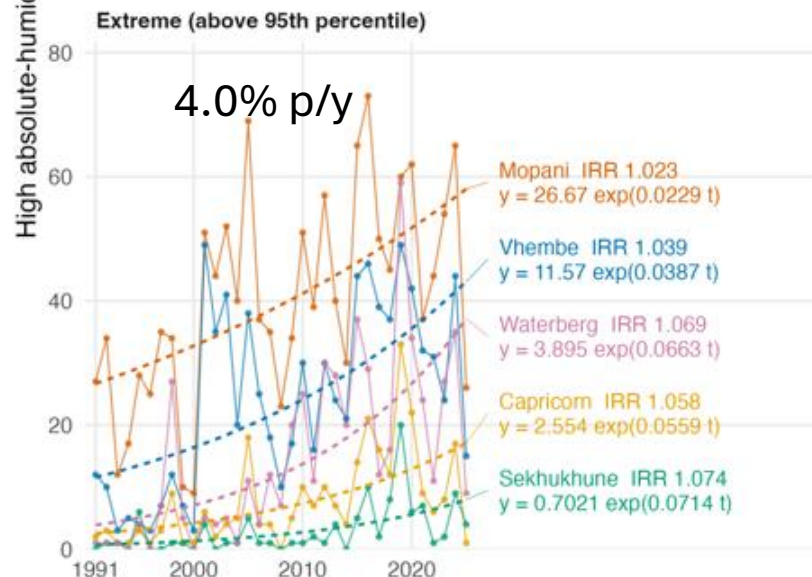
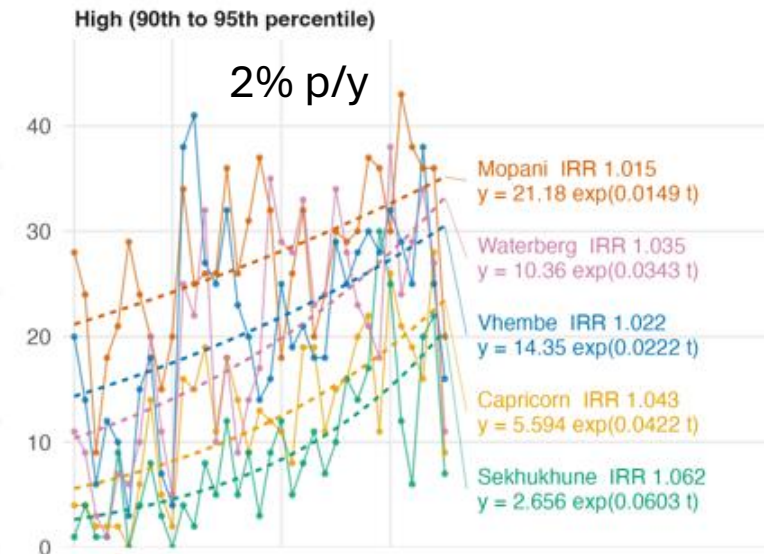
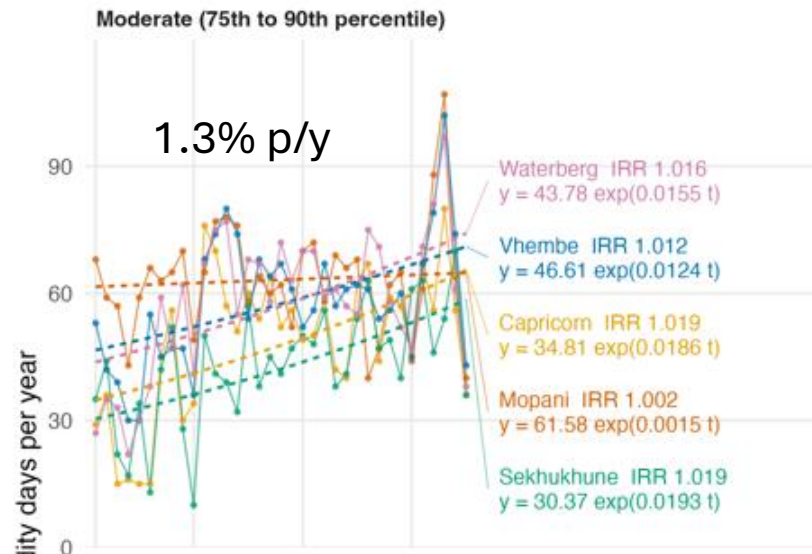


Its getting hotter in Limpopo
 (annual average temps).



Fitted mean count $y = a \exp(b t)$, where $t = \text{year} - 1991$; IRR = $\exp(b)$. 2025 includes January to July.

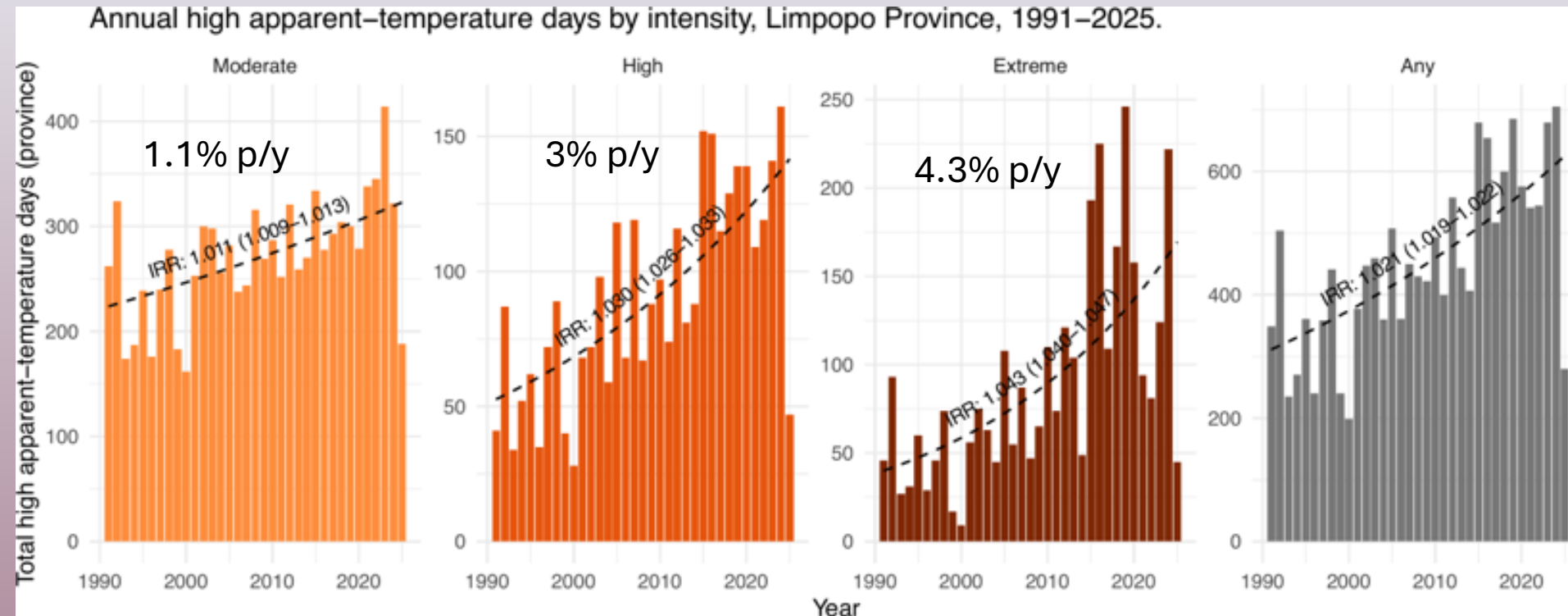
Exposure to heat is increasing In Limpopo. The distribution of EHF and rate of change.



Year

Fitted mean count $y = a \exp(b t)$, where $t = \text{year} - 1991$; $\text{IRR} = \exp(b)$. 2025 includes January to July.

Its getting more humid in Limpopo: The distribution of AH and rate of change.



The exposure to humidity is increasing in Limpopo: distribution of AT and rate of change.

FOR EHF EACH SEVERITY UNIT ASSOCIATION

FOR AT, A CHANGE IN IQR

Outcome and model	RR (95% CI)	ϕ
All ages, EHF-only	1.191 (1.168–1.214)	1.162
All ages, AT-only	1.074 (1.061–1.088)	1.203
All ages, Joint EHF	1.153 (1.129–1.177)	1.163
All ages, Joint AT	1.039 (1.025–1.052)	1.163
All ages, Joint EHF (AH-adjusted)	1.159 (1.135–1.183)	1.150
All ages, Joint AT (AH-adjusted)	1.053 (1.039–1.068)	1.150
All ages, AT-only (AH-adjusted)	1.087 (1.073–1.101)	1.192
Ages ≥ 60 , EHF-only	1.268 (1.238–1.298)	1.141
Ages ≥ 60 , AT-only	1.110 (1.093–1.128)	1.191
Ages ≥ 60 , Joint EHF	1.222 (1.192–1.252)	1.139
Ages ≥ 60 , Joint AT	1.056 (1.038–1.073)	1.139
Ages ≥ 60 , Joint EHF (AH-adjusted)	1.224 (1.194–1.256)	1.130
Ages ≥ 60 , Joint AT (AH-adjusted)	1.071 (1.052–1.090)	1.130
Ages ≥ 60 , AT-only (AH-adjusted)	1.121 (1.102–1.140)	1.181

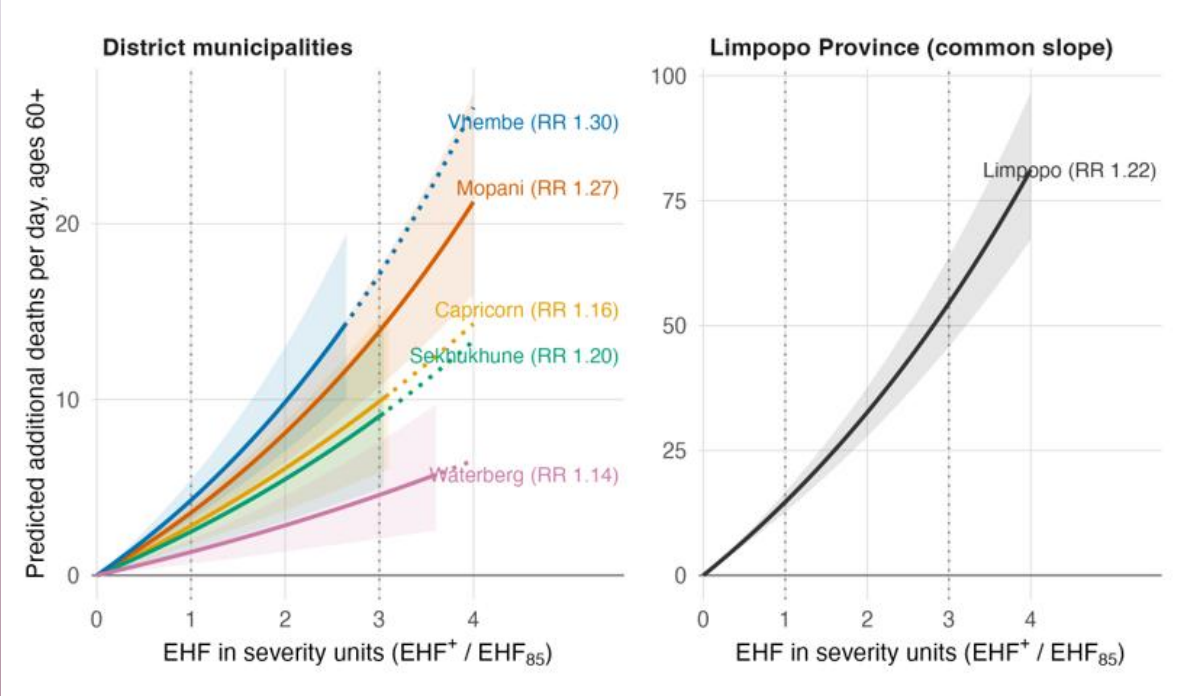
The models show that EHF severity is associated 19% (27%) increase in deaths (for >60yrs).

Smaller effect of AT.

For heatwave categories:

Outcome and contrast	RR (95% CI)	φ
All ages, Heatwave day (EHF > 0)	1.151 (1.120–1.183)	1.204
All ages, Low-intensity day	1.047 (1.015–1.080)	1.160
All ages, Severe day	1.403 (1.339–1.469)	1.160
All ages, Extreme day	1.830 (1.652–2.027)	1.160
Ages ≥60, Heatwave day (EHF > 0)	1.240 (1.198–1.285)	1.187
Ages ≥60, Low-intensity day	1.096 (1.053–1.141)	1.142
Ages ≥60, Severe day	1.576 (1.488–1.669)	1.142
Ages ≥60, Extreme day	2.242 (1.984–2.532)	1.142

District E	HF RR (95% CI)	AT RR (95% CI)
All ages		
Capricorn	1.093 (1.046–1.143)	1.043 (1.014–1.072)
Mopani	1.204 (1.163–1.246)	1.037 (1.012–1.063)
Sekhukhune	1.121 (1.059–1.188)	1.023 (0.987–1.061)
Vhembe	1.231 (1.169–1.296)	1.041 (1.015–1.068)
Waterberg	1.092 (1.036–1.151)	1.038 (1.000–1.077)
Ages ≥60		
Capricorn	1.163 (1.102–1.228)	1.043 (1.006–1.081)
Mopani	1.273 (1.221–1.327)	1.056 (1.023–1.090)
Sekhukhune	1.200 (1.117–1.288)	1.027 (0.980–1.077)
Vhembe	1.305 (1.226–1.388)	1.064 (1.030–1.099)
Waterberg	1.141 (1.069–1.217)	1.079 (1.028–1.132)



Proposed Impact Based Warming Metric (Limpopo)

Level	Definition	Alert content	Alert days per district per year	PPV	False-alarm ratio
Watch	$EHF > 0$	Heat-health watch; monitor persistence and forecast severity. District-scale forecast.	24	0.30	0.70
Warning	$EHF \geq 1 \times EHF_{85}$	Heat-health warning; health-sector messaging and protection of the elderly. District-scale forecast.	6	0.61	0.39
Extreme	$EHF \geq 3 \times EHF_{85}$	Extreme heat danger alert for all ages, especially the elderly. District-scale forecast.	0.8	0.92	0.08
Emergency	$EHF \geq 3 \times EHF_{85}$ on two consecutive days	Extreme heat emergency; targeted district response.	0.4	1.00	0.00



6. What to expect this summer.



6. What you should do.

- Prepare for extreme weather (heat waves).
- Anticipate rainfall deficit and its implications on the following season.
- Don't exclude rainfall or thunderstorms (less rain ≠ no rain!).
- Anticipate a higher than normal demand for water supply.
- Watch the weather forecasts carefully and heed advice.
- Get every department, division, church, farm, sports club, business, enterprise and household to ask the question – what would they do to cope with a dry hot season and heatwaves.