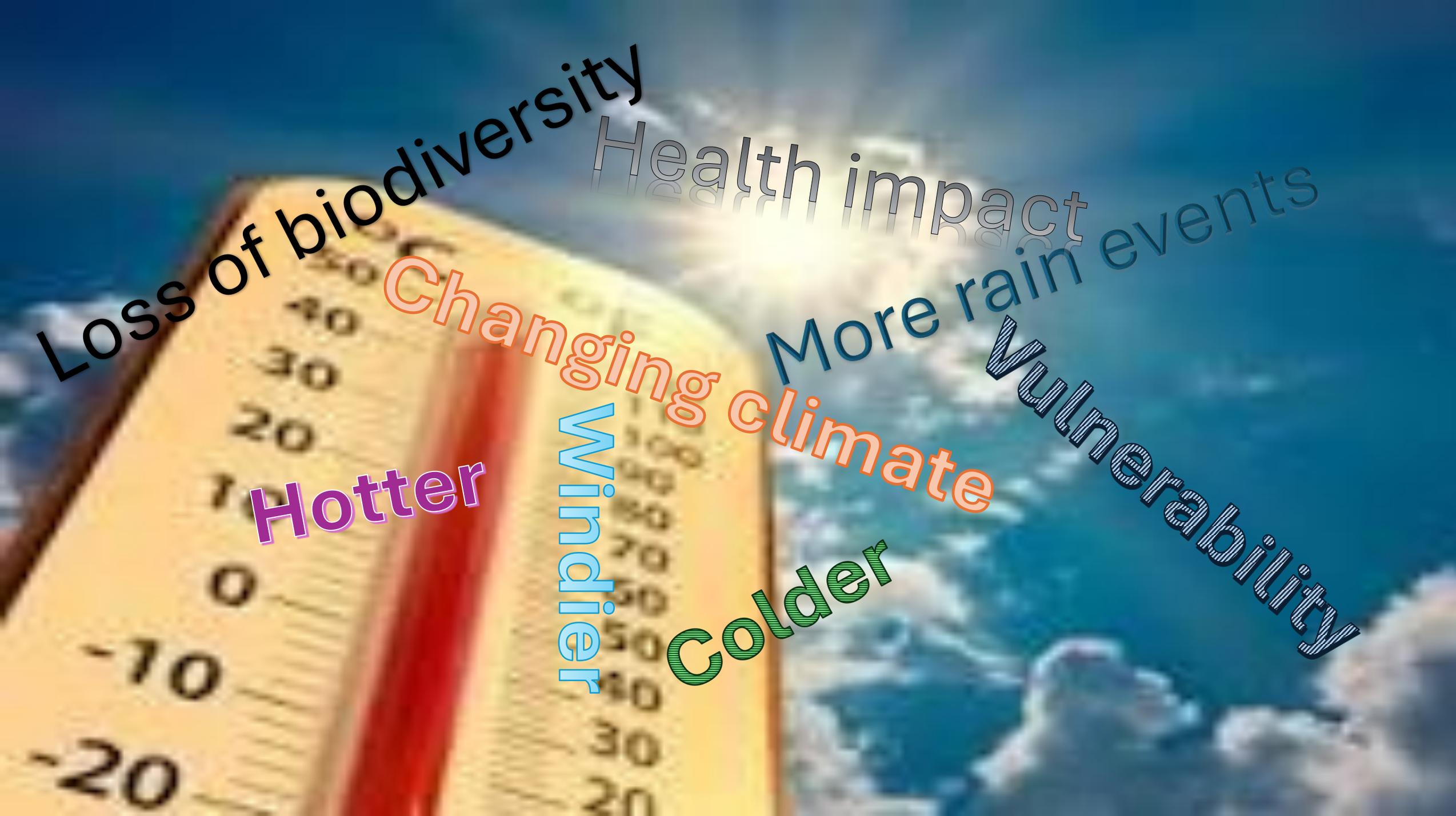


# Healing Country

What stories  
do the data  
tell us?





Loss of biodiversity

Health impact

More rain events

Changing climate

Vulnerability

Hotter

Windier

Colder

# AusEnHealth

AusEnHealth is Australia's first national digital environmental health decision support platform.

This open-source resource is designed to enable policy makers, health managers, and researchers identify vulnerable populations, predict future disease burden, and plan for a changing climate in a coordinated, timely manner.



8

Collaborating  
Organisations



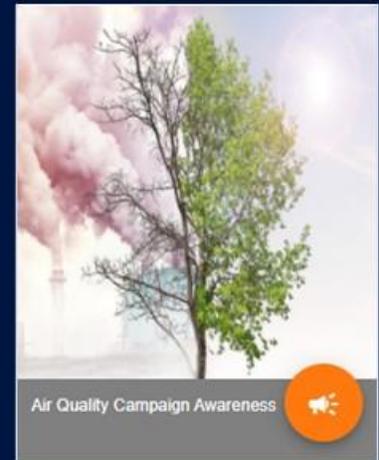
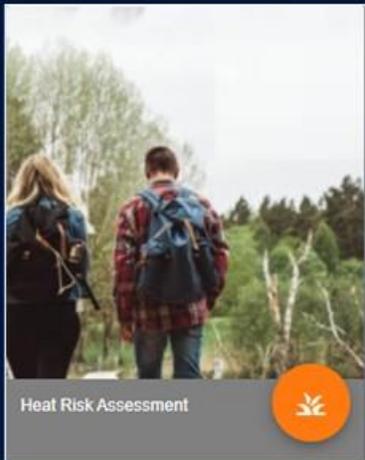
183

Environmental  
Health  
Variables



12

Vulnerability  
Indices



# Heat Risk Assessment SA3 level Go to SA2 Level

Filter By: Year

Year: 2020

Filter Download Data

Heat Factor Cold Factor

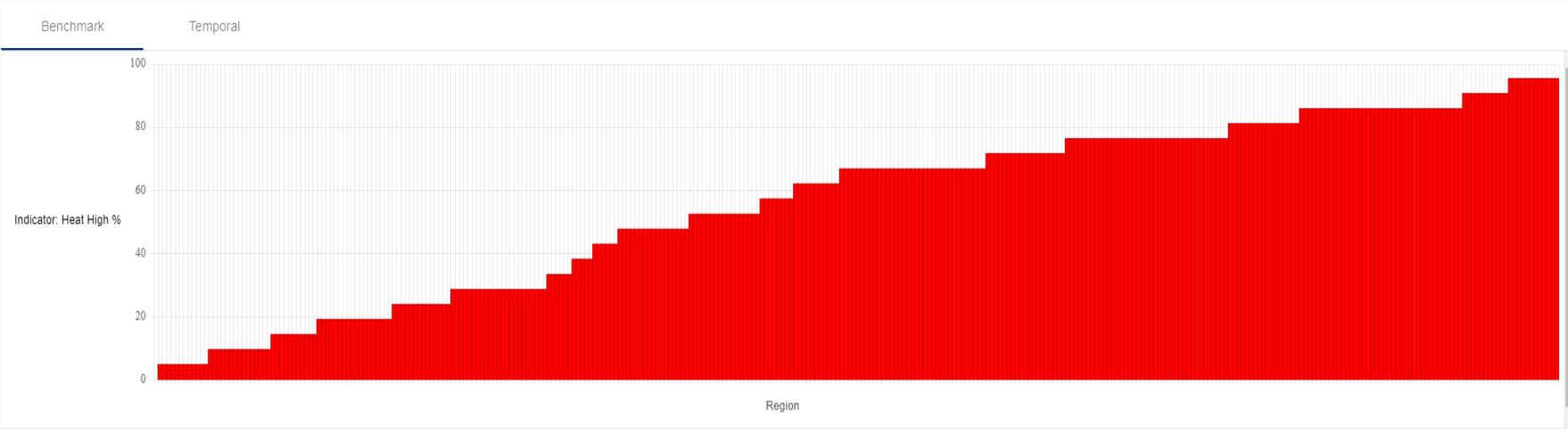
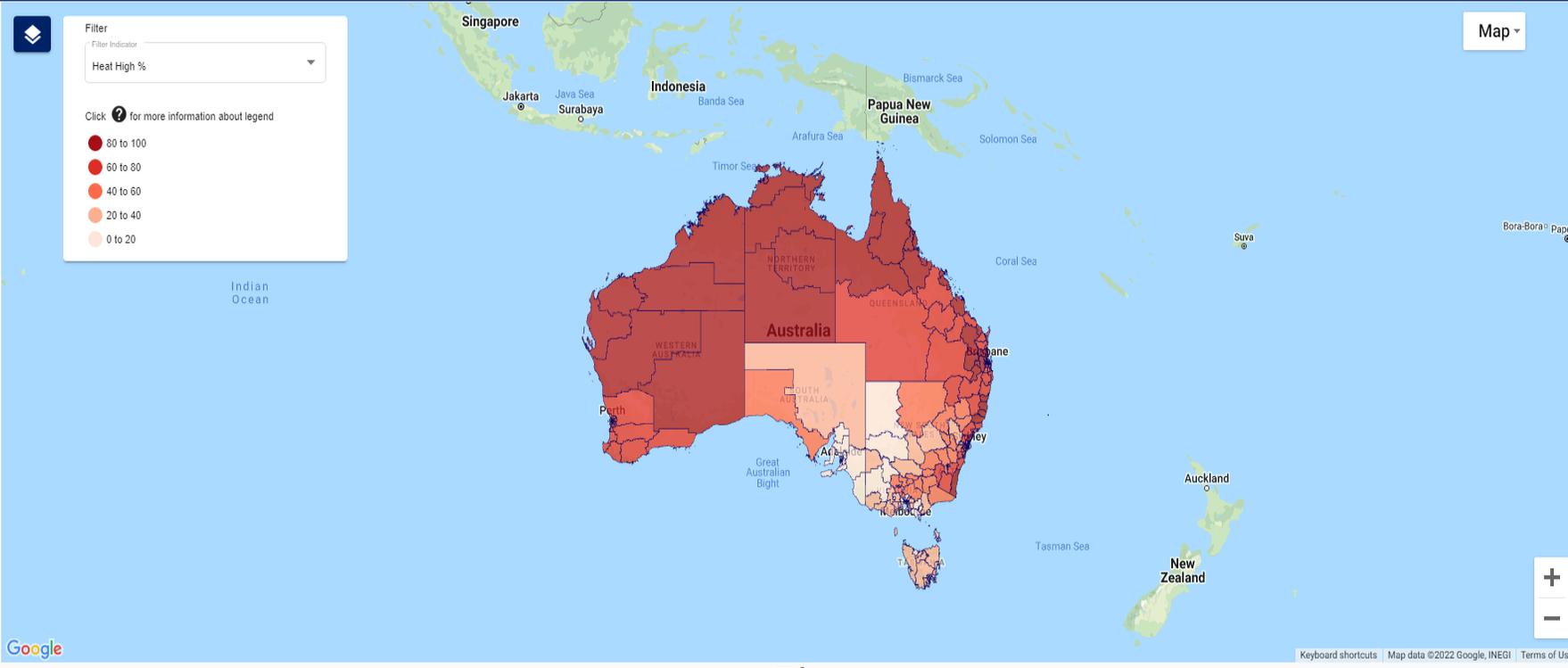
Please click ⓘ on the columns for more functionality

Region	Spatial %	Historical Daily %	Heat Factor %
Queanbeyan	45.67	49.7	78.27
Snowy Mountains	65.07	64.58	92.56
South Coast	81.79	78.27	30.95
Goulburn - Mulwaree	33.13	42.86	88.1
Young - Yass	38.21	42.56	77.38
Gosford	59.4	53.57	49.4
Wyong	65.07	50.6	47.62
Bathurst	43.28	44.35	80.06
Lachlan Valley	29.85	21.43	81.85
Lithgow - Mudgee	29.85	30.65	76.19
Orange	31.34	33.04	90.48
Clarence Valley	65.07	65.77	25.3
Coffs Harbour	81.79	67.26	25.89
Bourke - Cobar - Coonamble	33.13	34.52	87.2
Broken Hill and Far West	11.64	8.04	83.33
Dubbo	31.34	29.76	89.58
Lower Hunter	48.96	52.38	65.48
Maitland	59.4	50.3	59.82
Port Stephens	33.13	35.42	51.79
Upper Hunter	33.13	31.55	55.65
Dapto - Port Kembla	59.4	60.42	48.21
Illawarra Catchment Reserve	48.96	48.51	62.2
Kiama - Shellharbour	59.4	63.1	49.11
Wollongong	59.4	52.98	50
Great Lakes	48.96	47.32	38.39

Filter: Heat High %

Click ? for more information about legend

- 80 to 100
- 60 to 80
- 40 to 60
- 20 to 40
- 0 to 20



# Heat Risk Assessment SA3 level [Go to SA2 Level](#)

Filter By

Year

1

Heat Factor  Cold Factor

Please click + on the columns for more functionality

Region	Spatial %	Historical Daily %	Heat Factor %
Queanbeyan	45.67	49.7	78.27
Snowy Mountains	65.07	64.58	92.56
South Coast	81.79	78.27	30.95
Goulburn - Mulwaree	33.13	42.86	88.1
Young - Yass	38.21	42.56	77.38
Gosford	59.4	53.57	49.4
Wyong	65.07	50.6	47.62
Bathurst	43.28	44.35	80.06
Lachlan Valley	29.85	21.43	81.85
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Dubbo	31.34	29.76	89.58
Lower Hunter	48.96	52.38	65.48
Maitland	59.4	50.3	59.82
Port Stephens	33.13	35.42	51.79
Upper Hunter	33.13	31.55	55.65
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Kiama - Shellharbour	59.4	63.1	49.11
Wollongong	59.4	52.98	50
Great Lakes	48.96	47.32	38.39

Filter

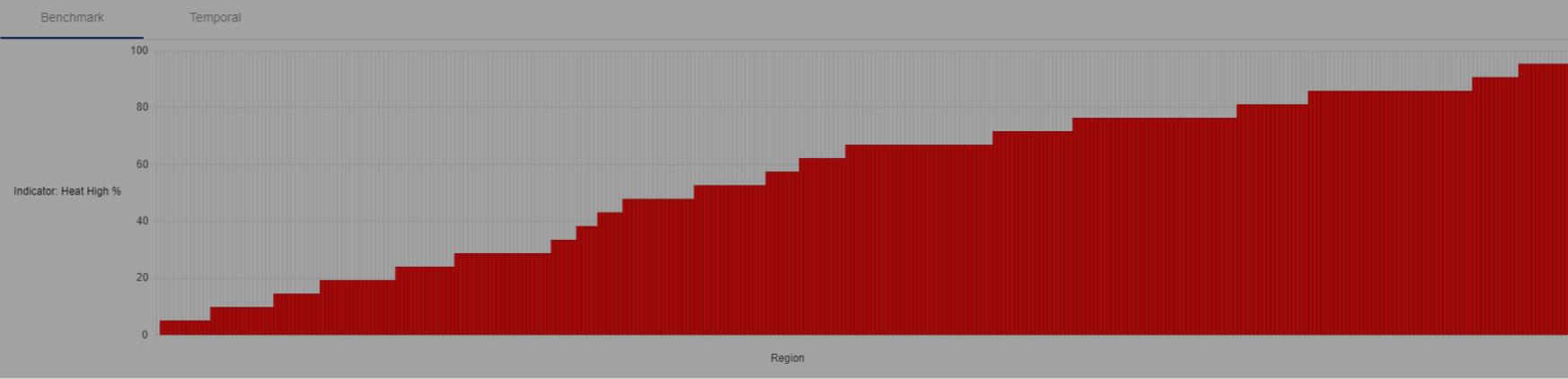
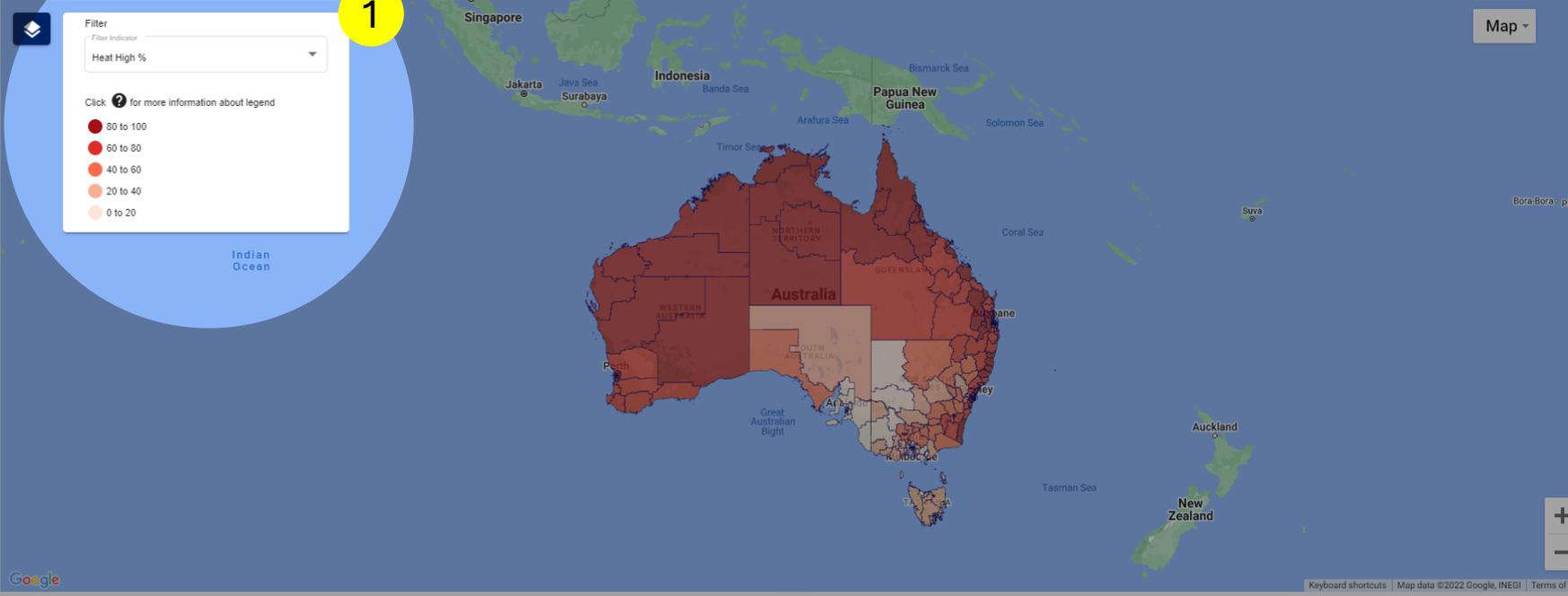
Filter Indicator

Heat High %

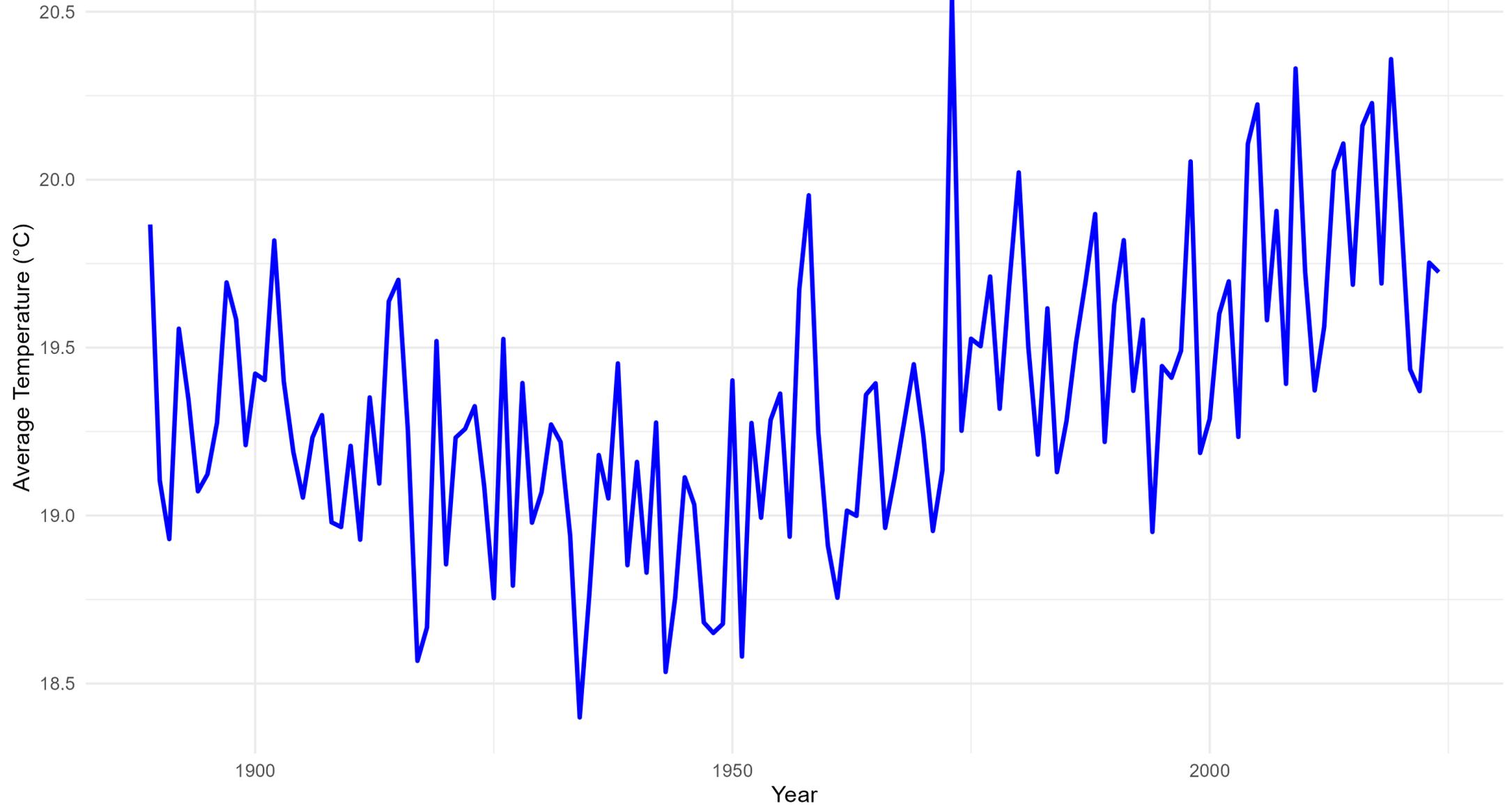
Click ? for more information about legend

- 80 to 100
- 60 to 80
- 40 to 60
- 20 to 40
- 0 to 20

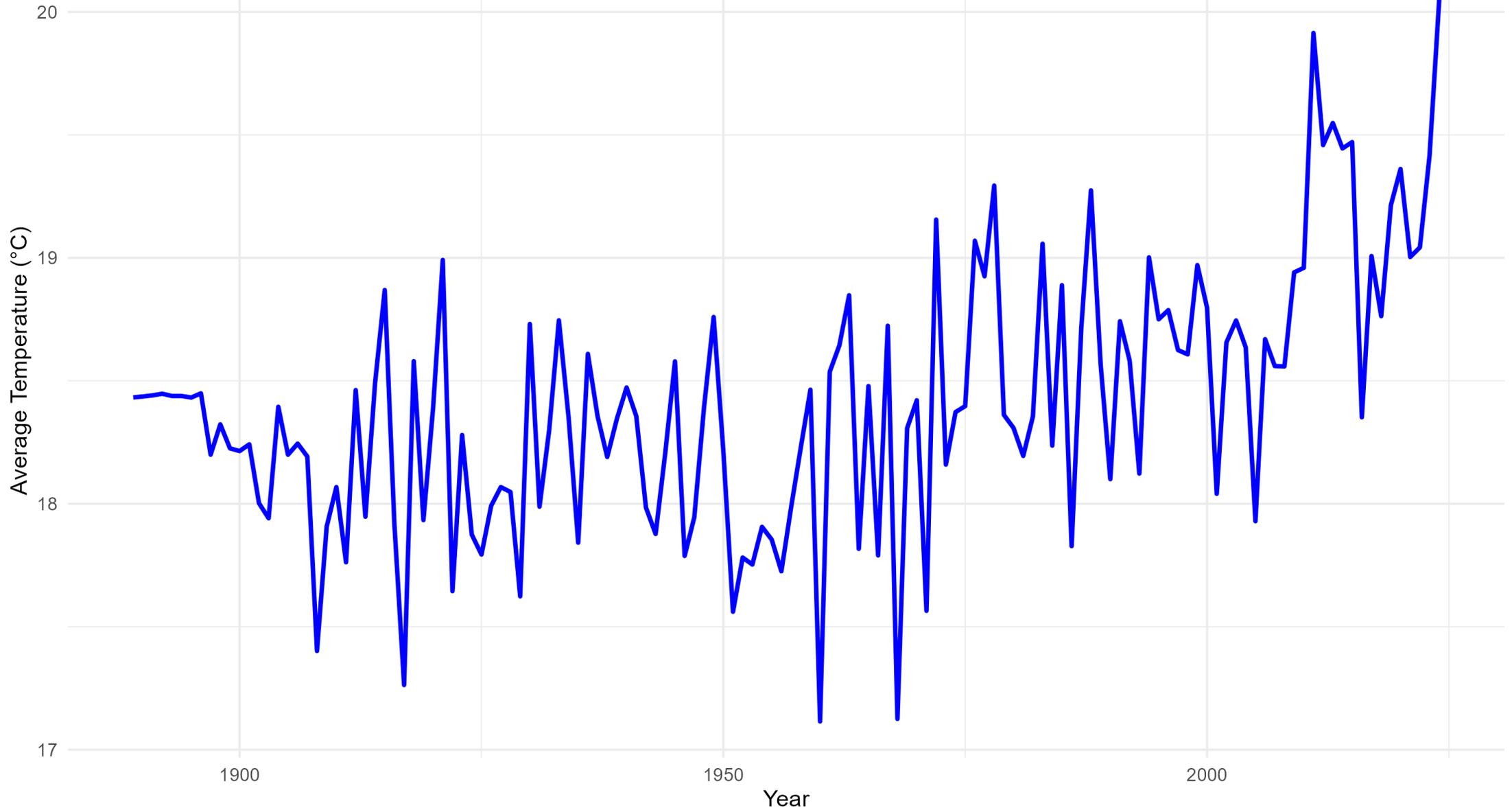
1



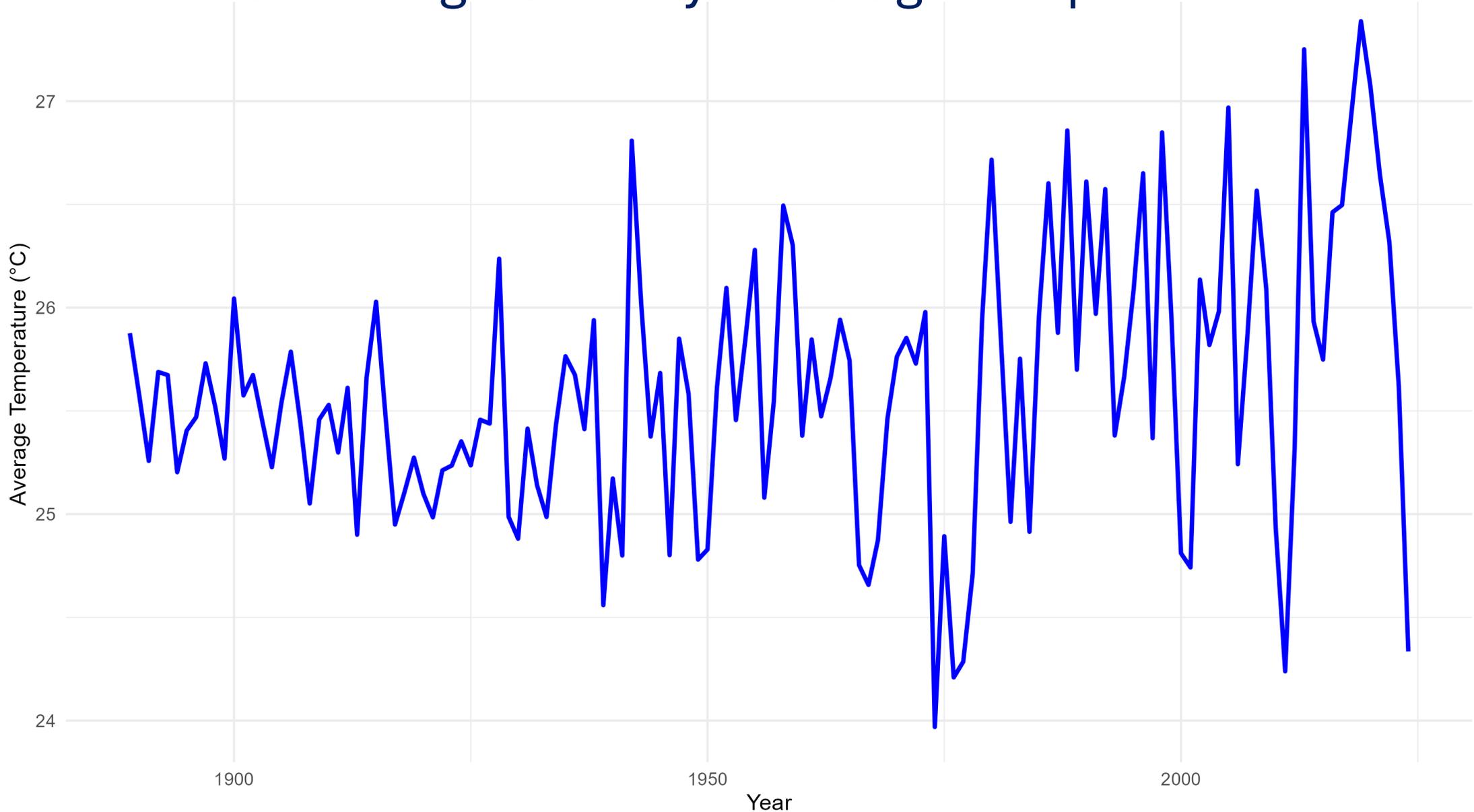
# Bundjalung Country – Average Temperature



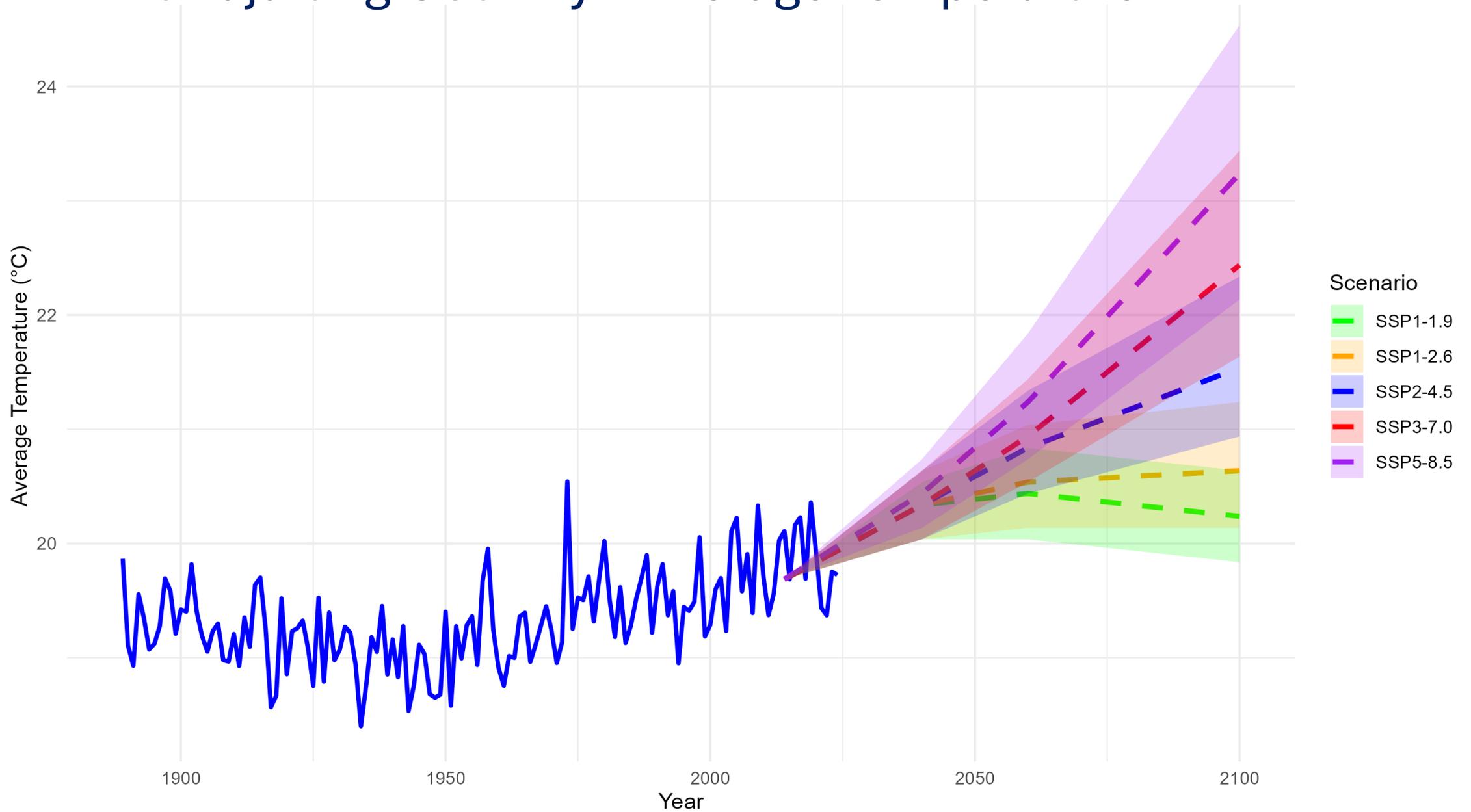
# Whadjuk Noongar Country – Average Temperature



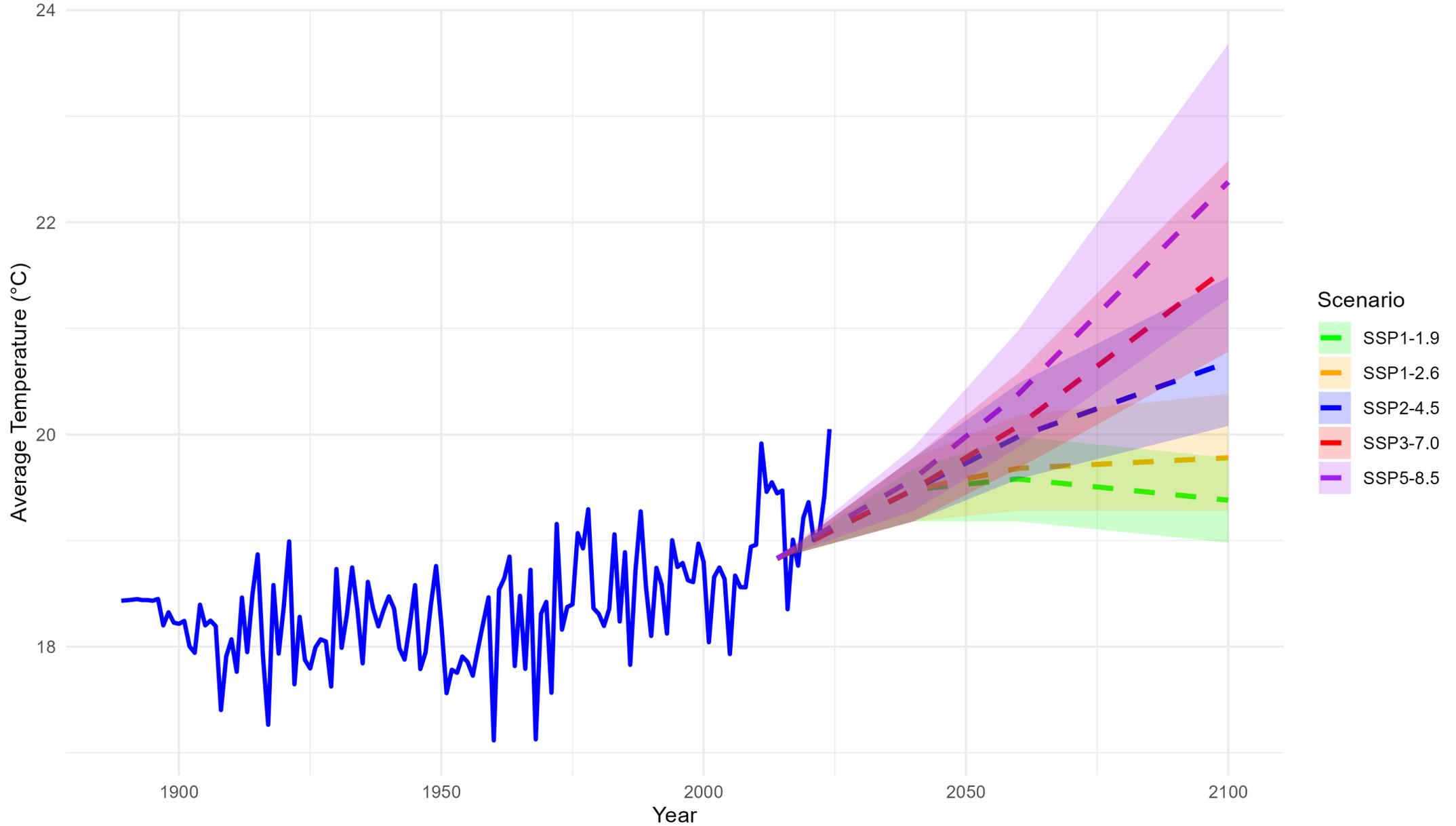
# Warumungu Country – Average Temperature



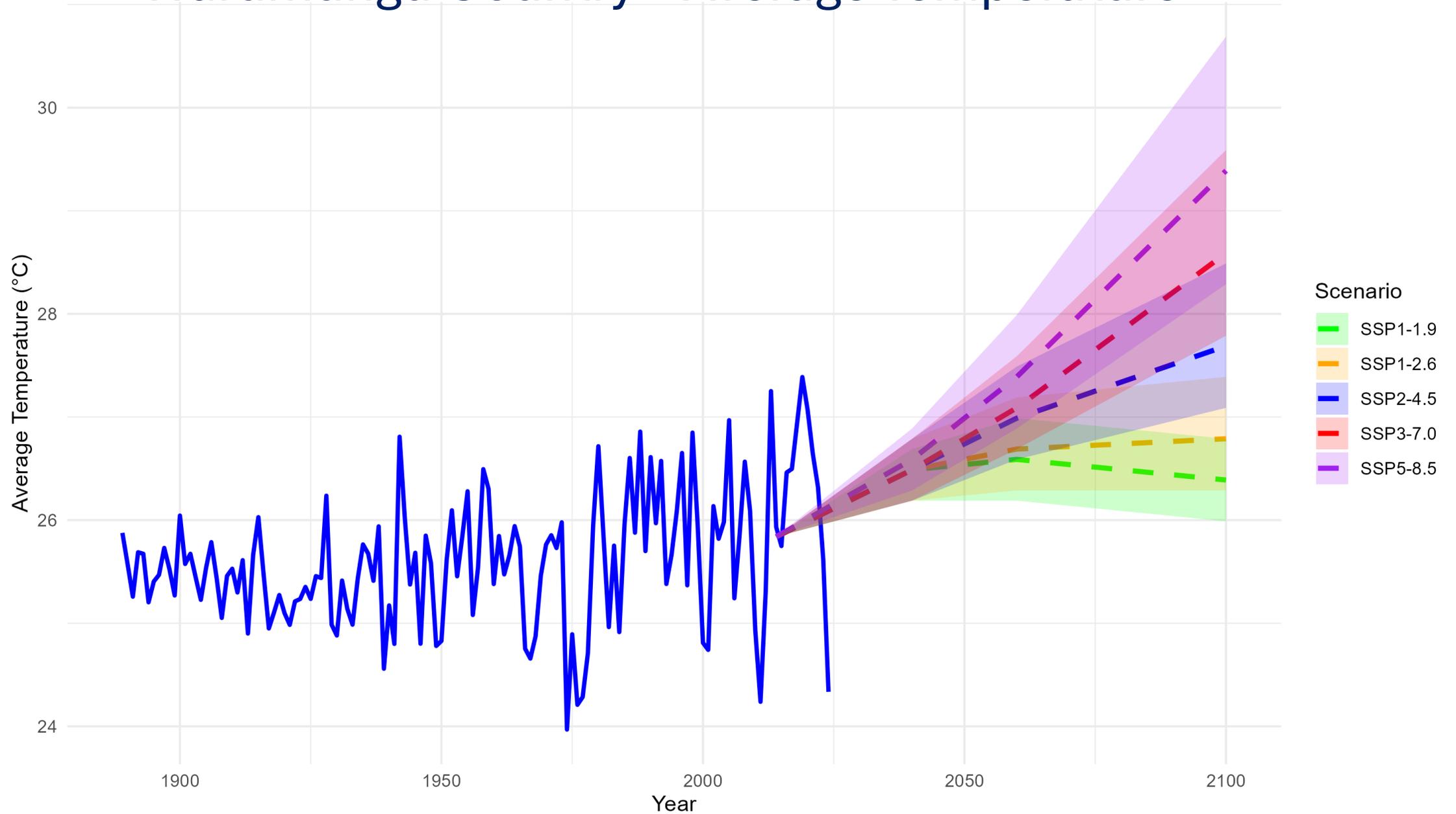
# Bundjalung Country – Average Temperature



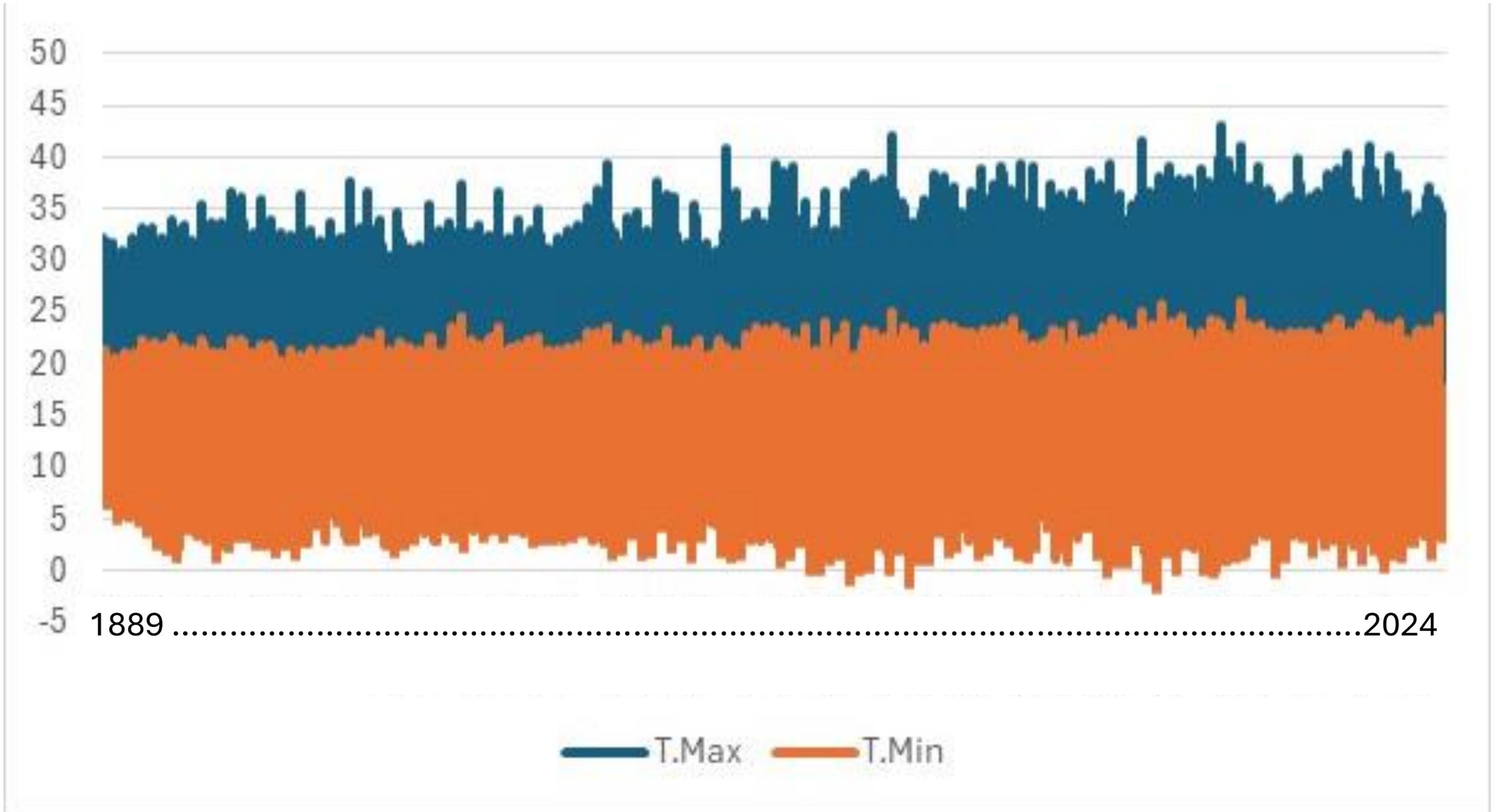
# Whadjuk Noongar Country – Average Temperature



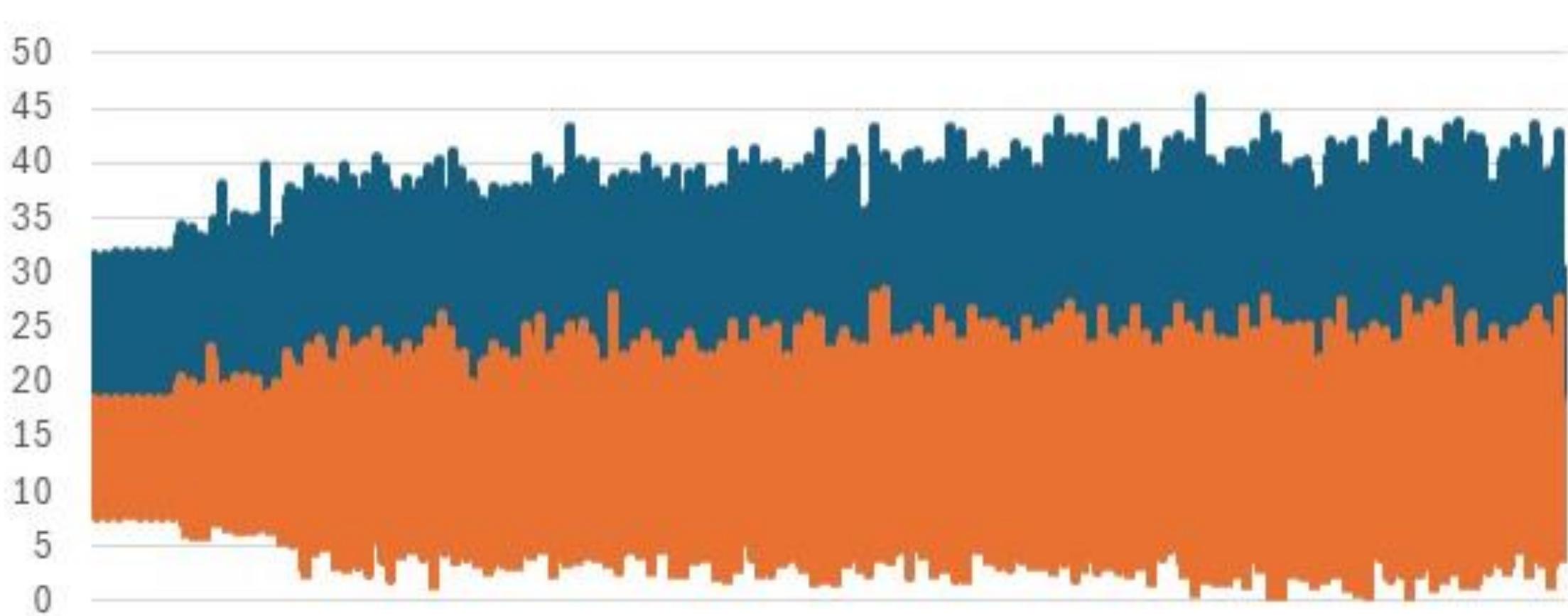
# Warumungu Country – Average Temperature



# Bundjalung Country – Min & Max Temperature



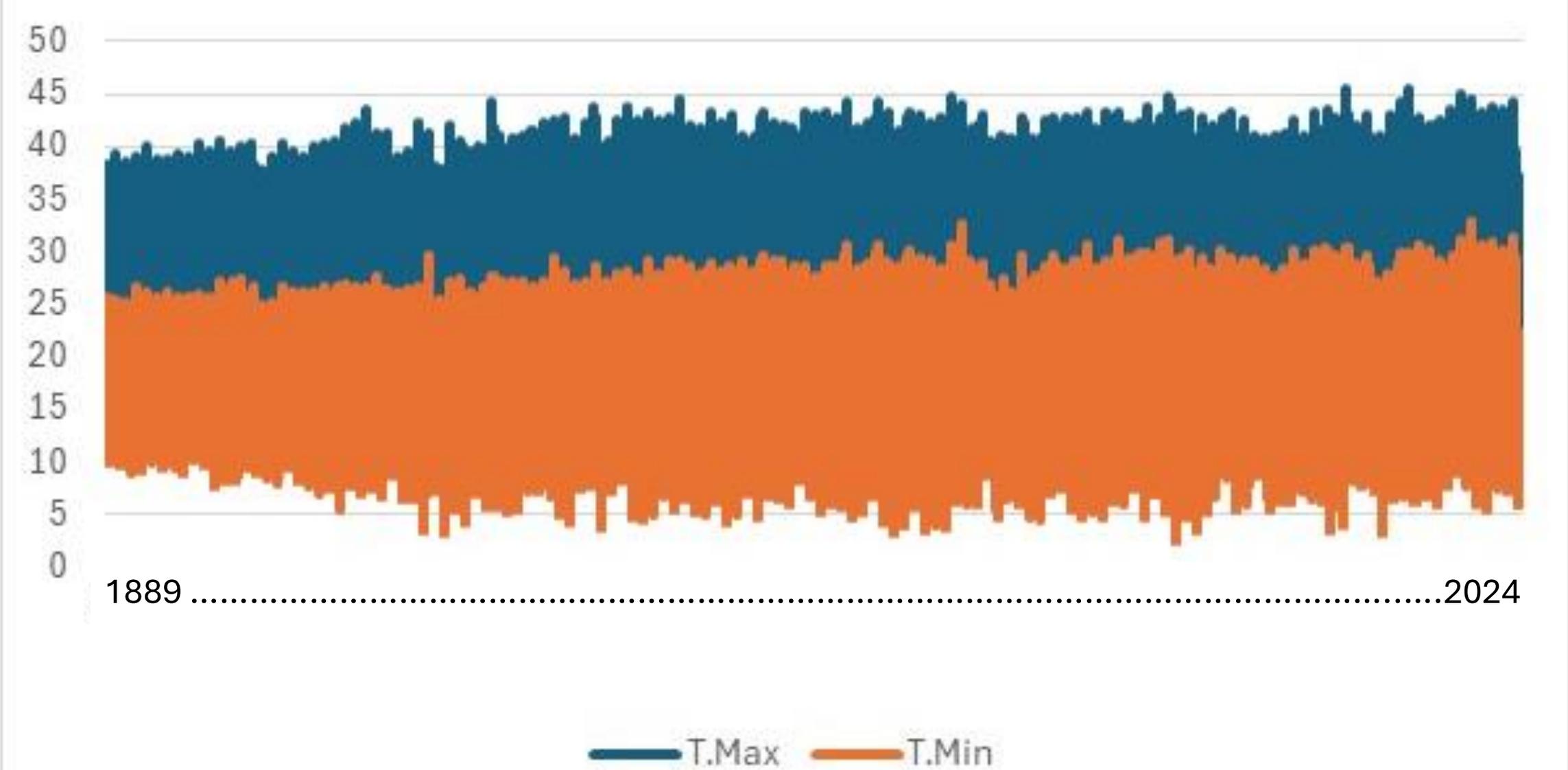
# Whadjuk Noongar Country – Min & Max Temperature



1889 .....2024

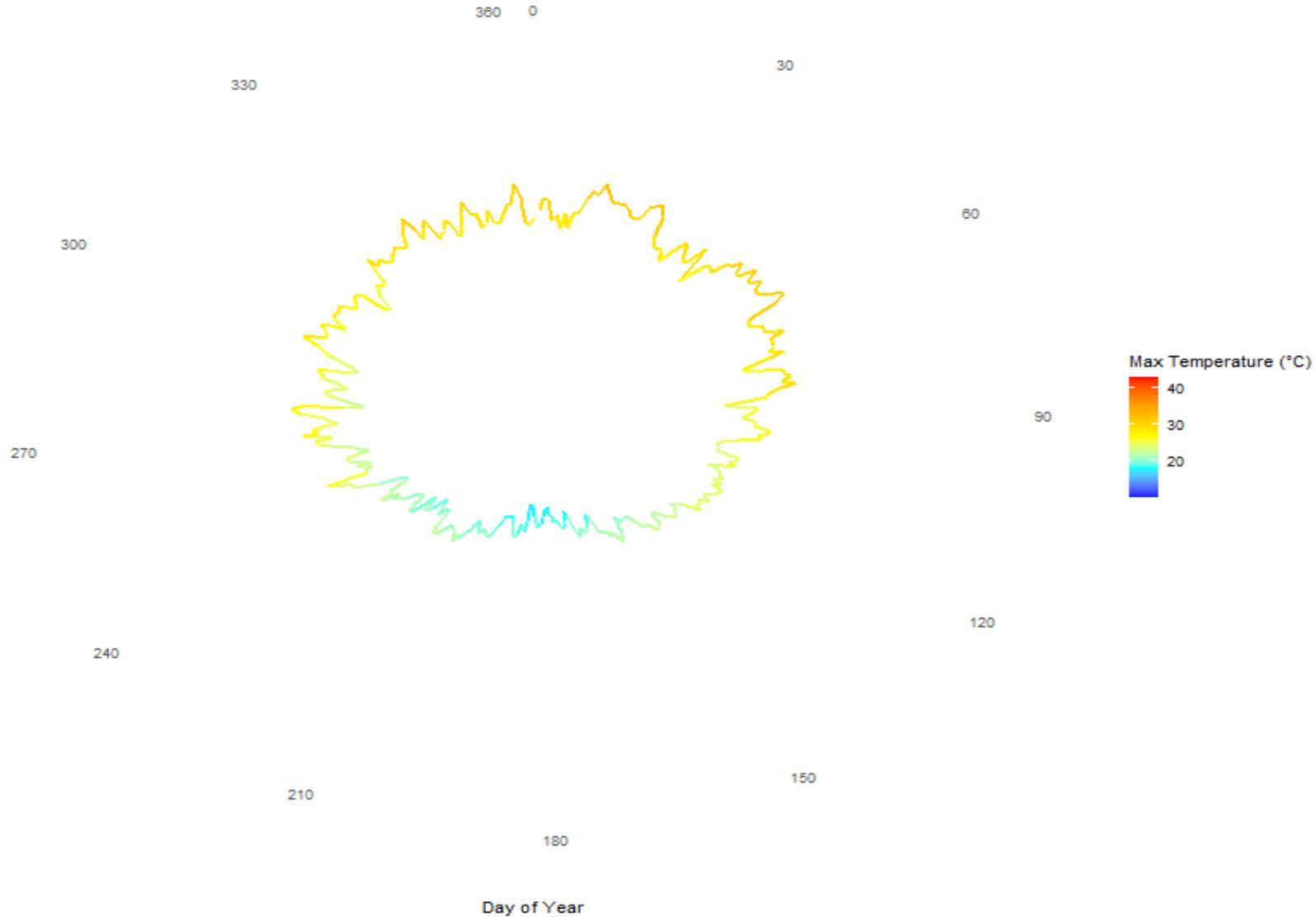
T.Max T.Min

# Warumungu Country – Min & Max Temperatures



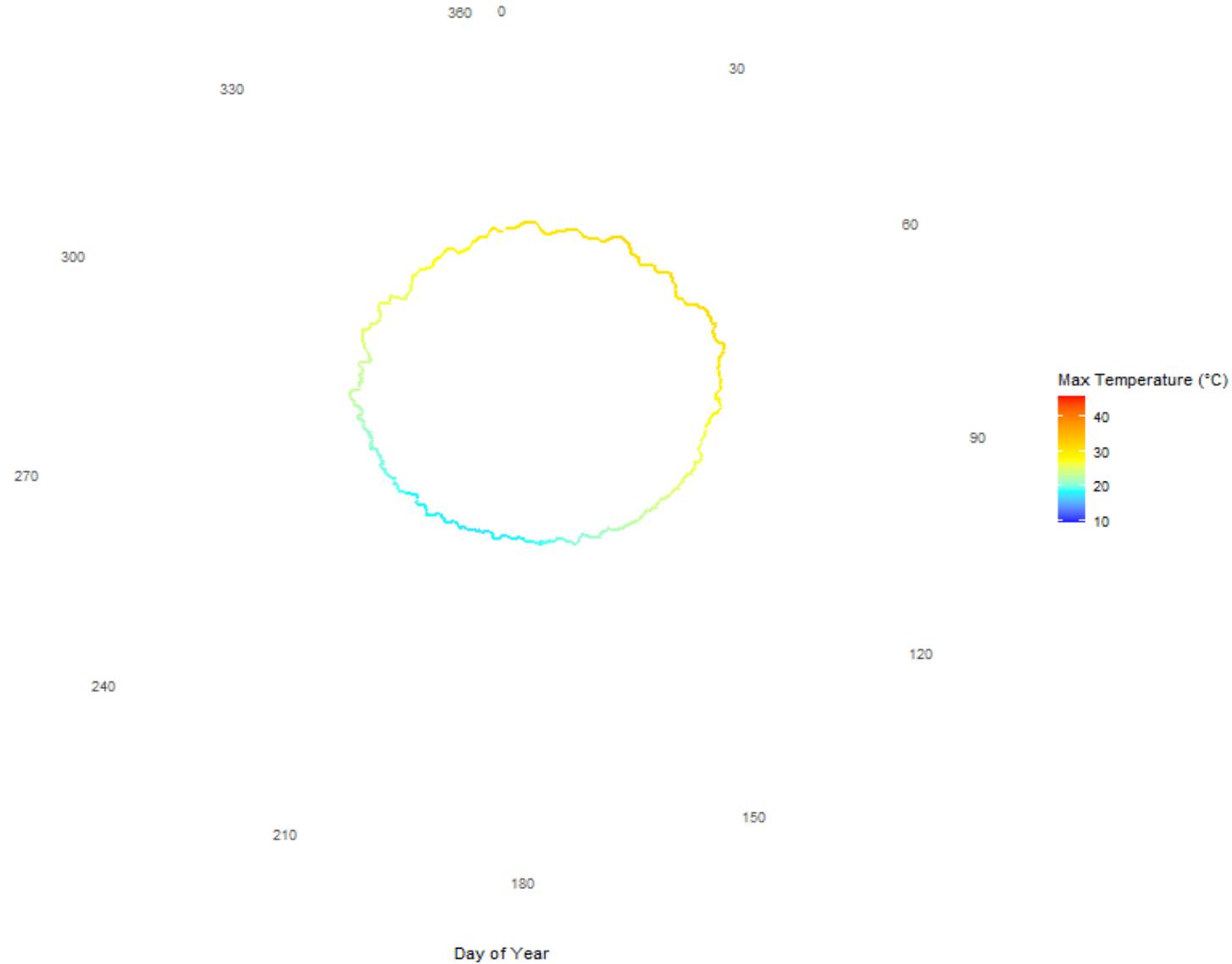
# Bundjalung Country – Max. daily temperature

Year: 1889



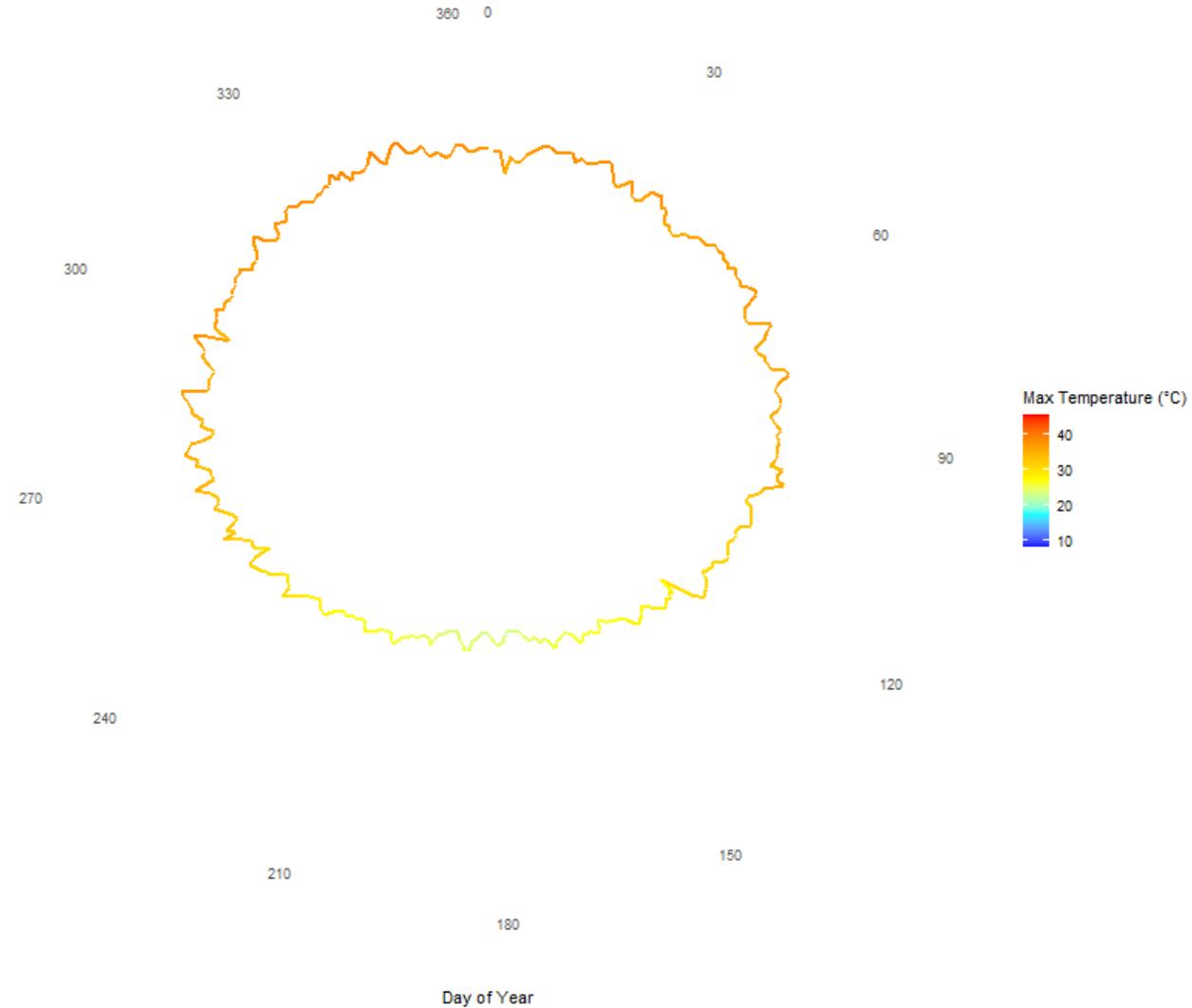
# Warumungu Country – Max daily temperature

Year: 1889

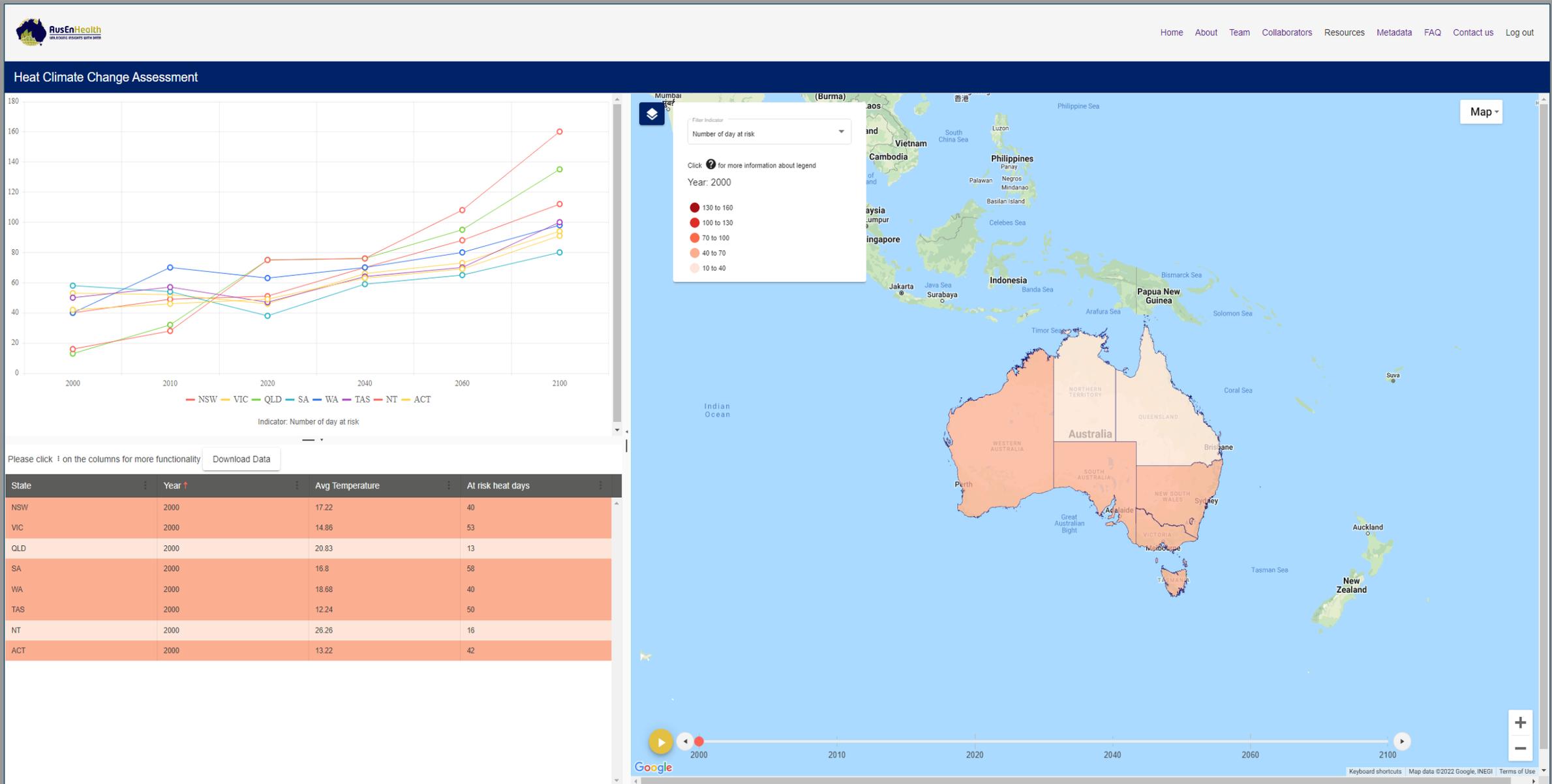


# Whadjuk Noongar Country – Max daily temperature

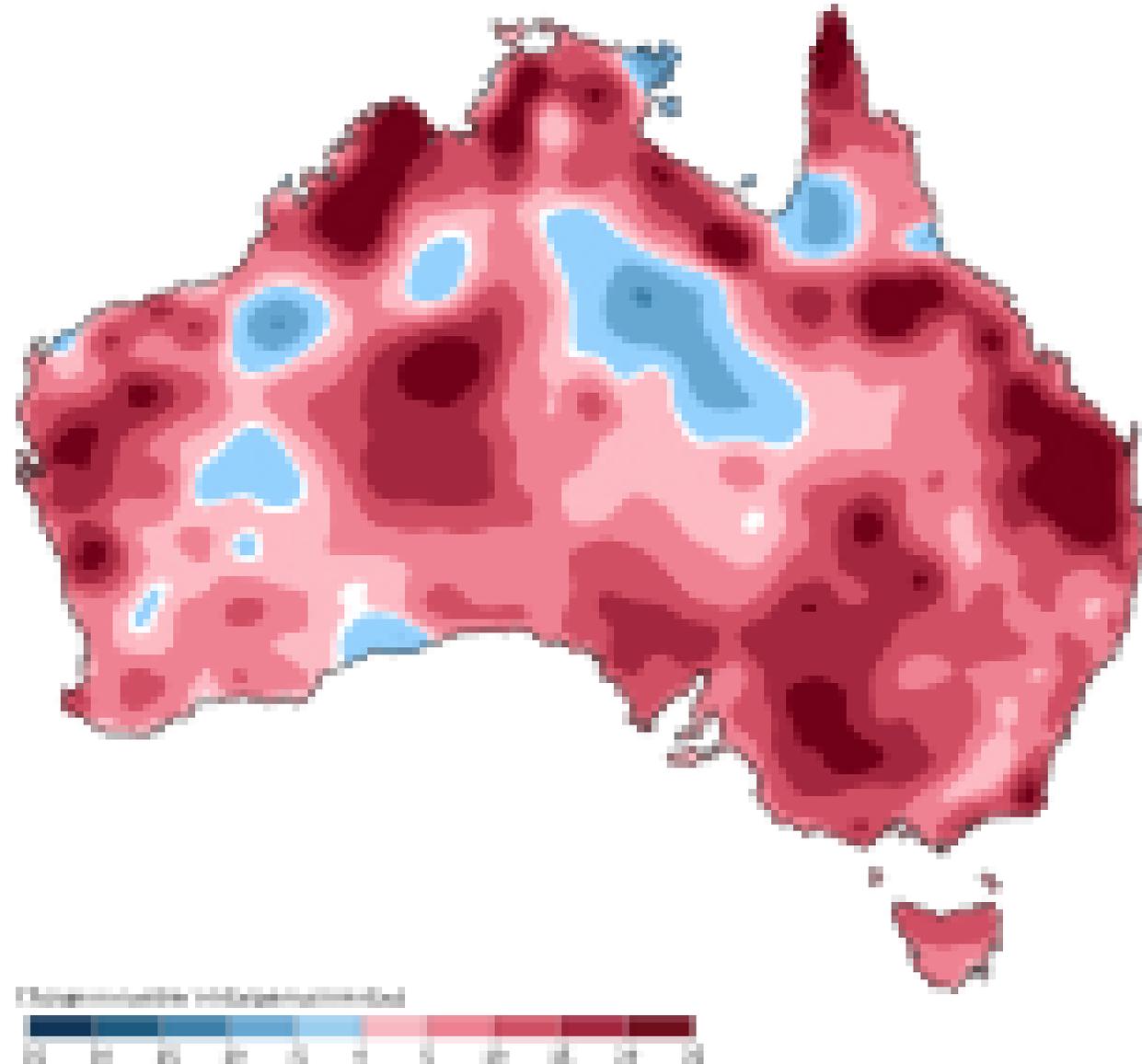
Year: 1889



# Heat indicators: e.g. number of days at risk (by State/Territory)

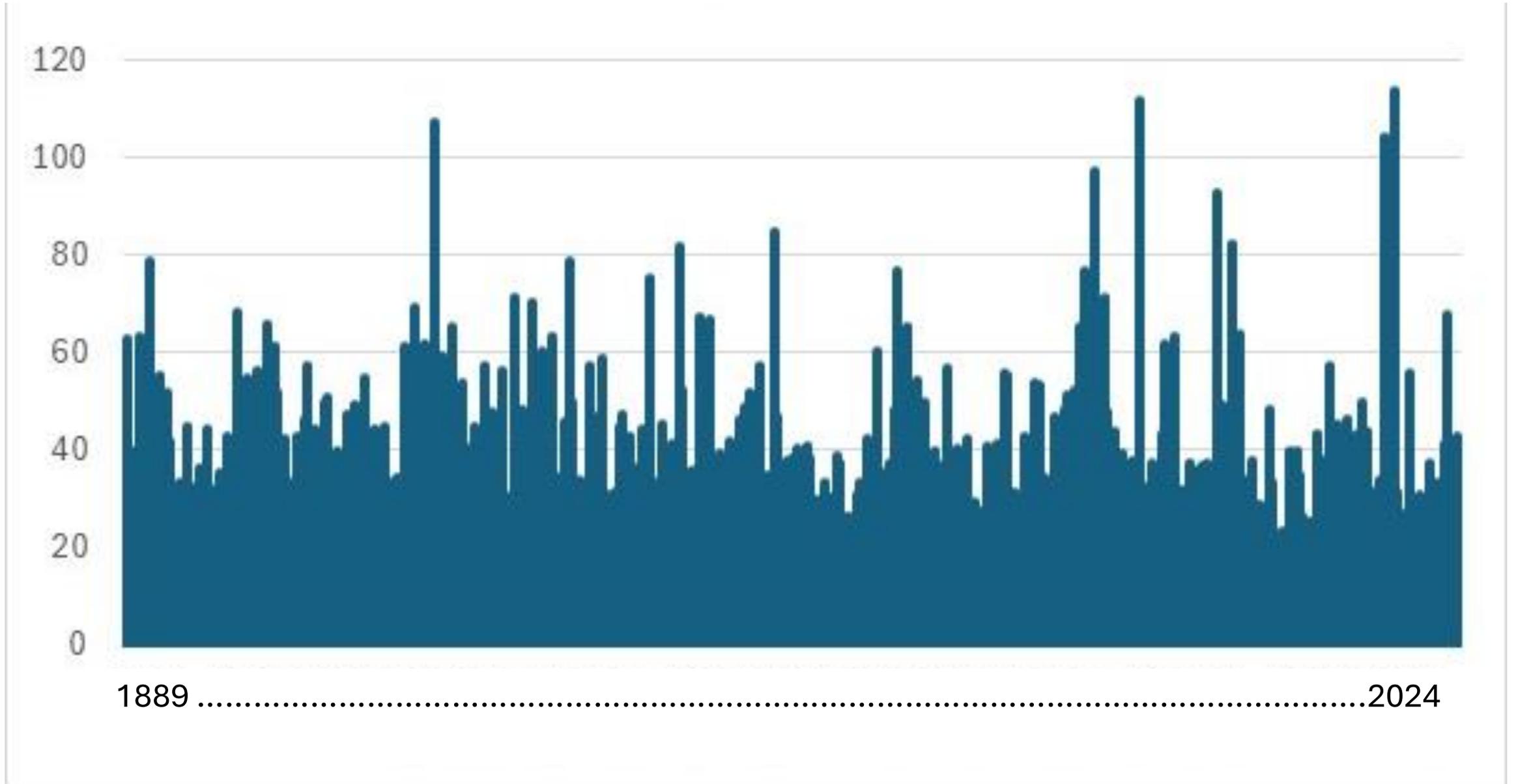


# Changes in the number of dangerous fire days

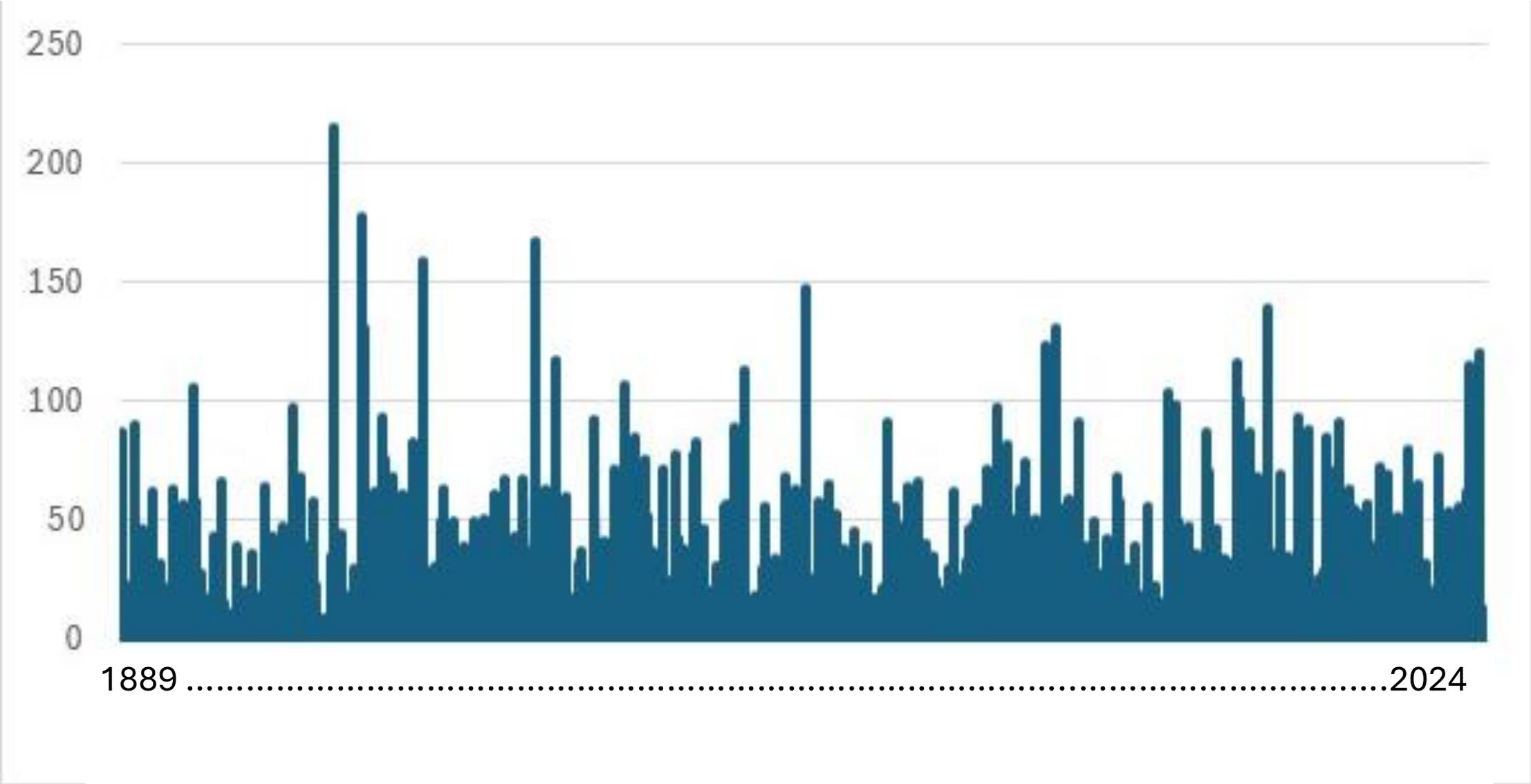




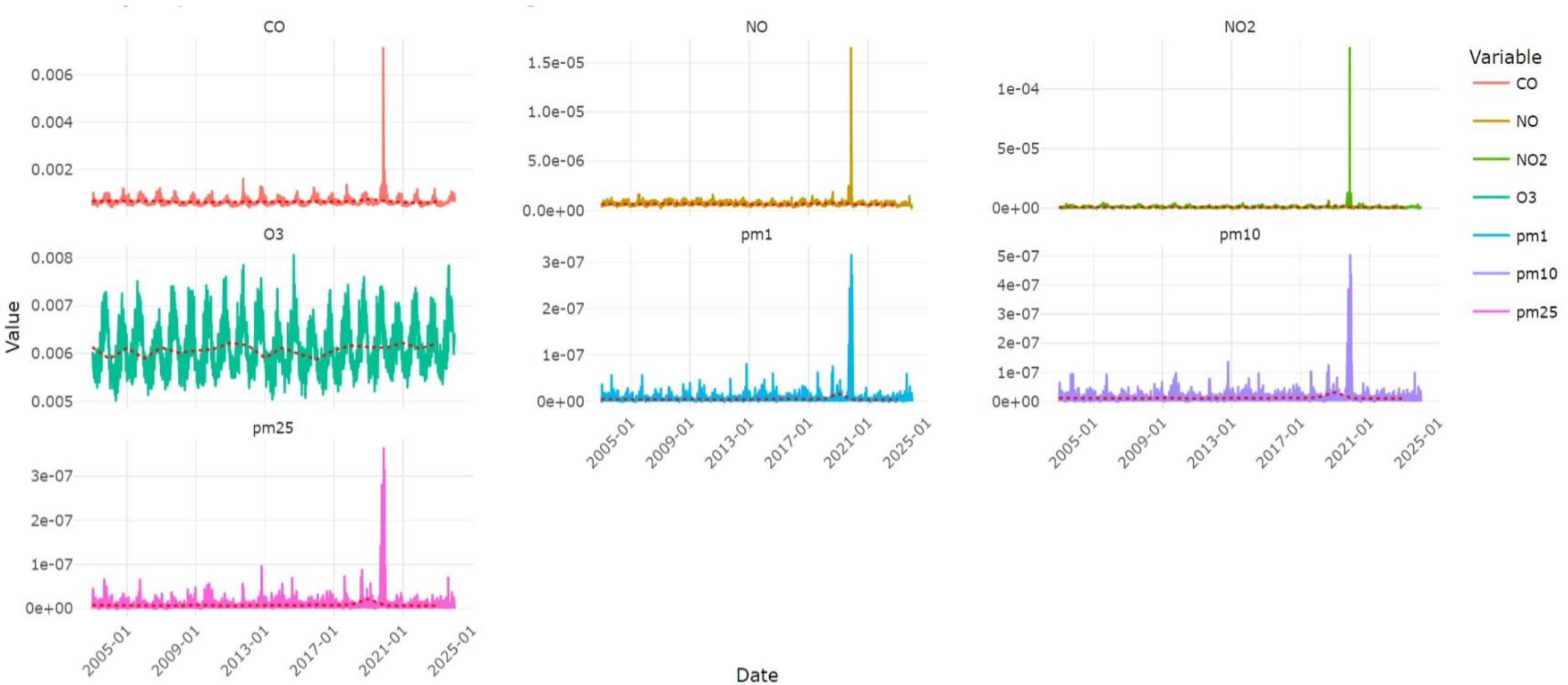
# Whadjuk Noongar Country – Daily rainfall



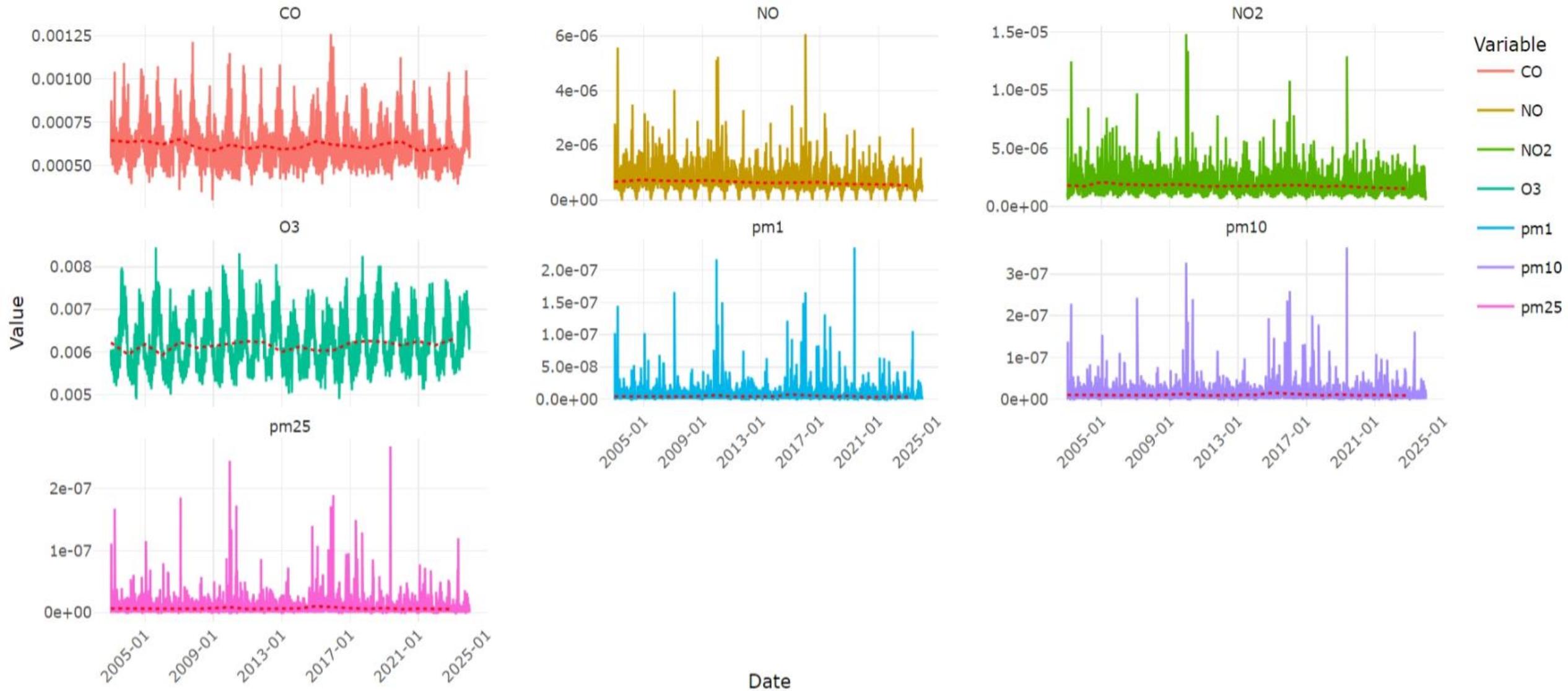
# Warumungu Country – Daily rainfall



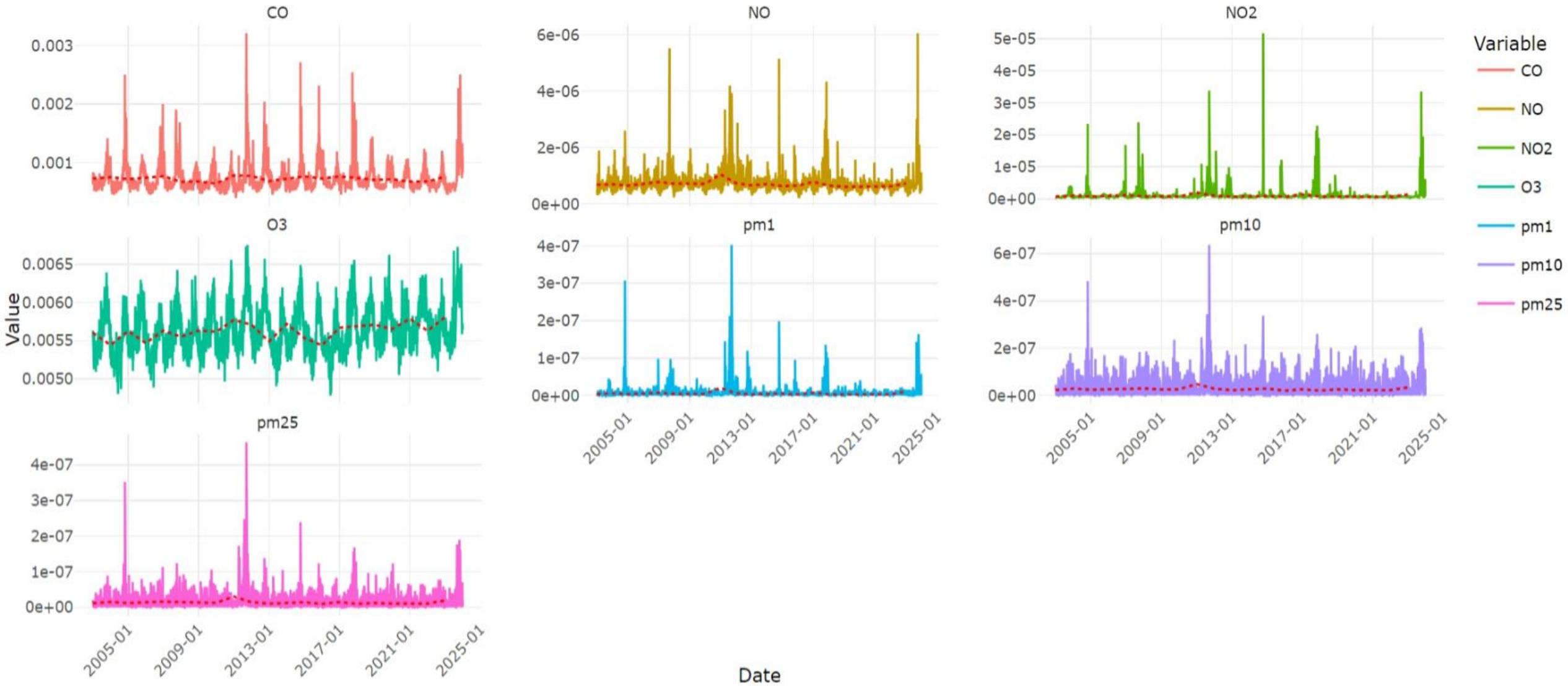
# Bundjalung Country – Air quality



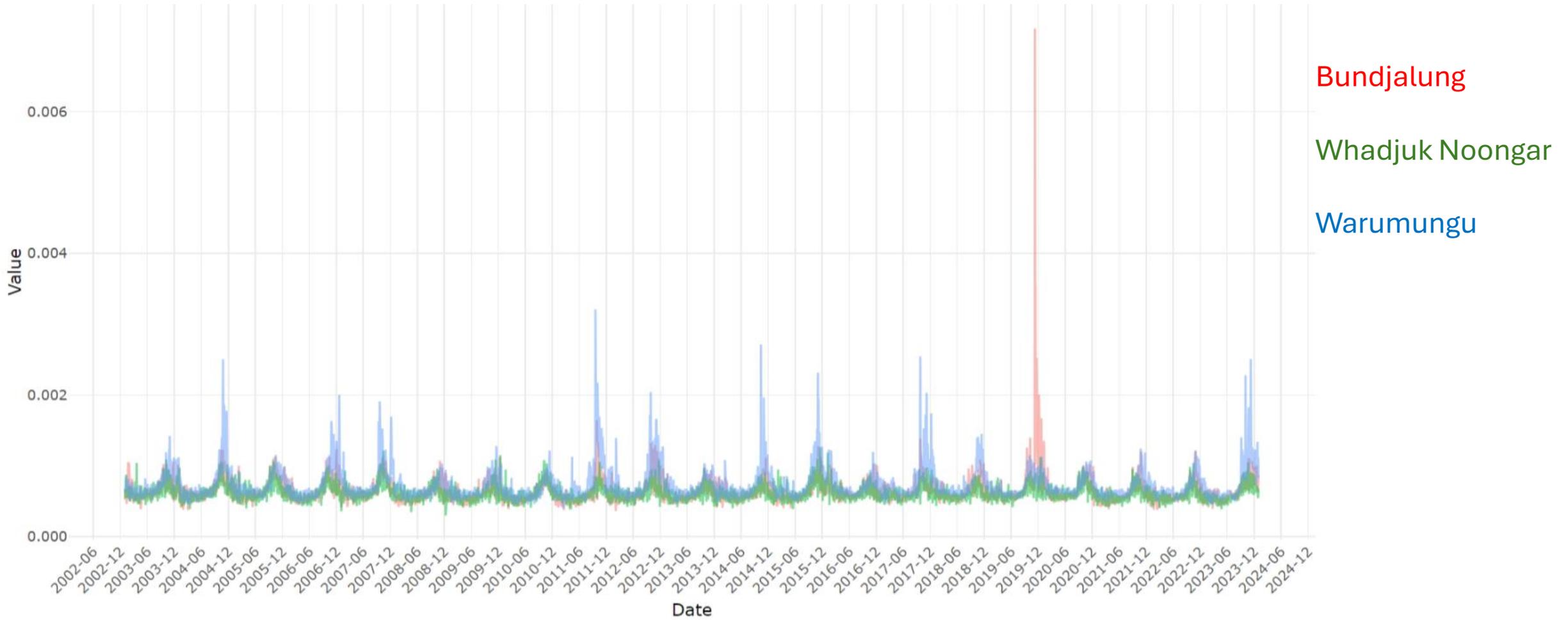
# Whadjuk Noongar Country – Air quality



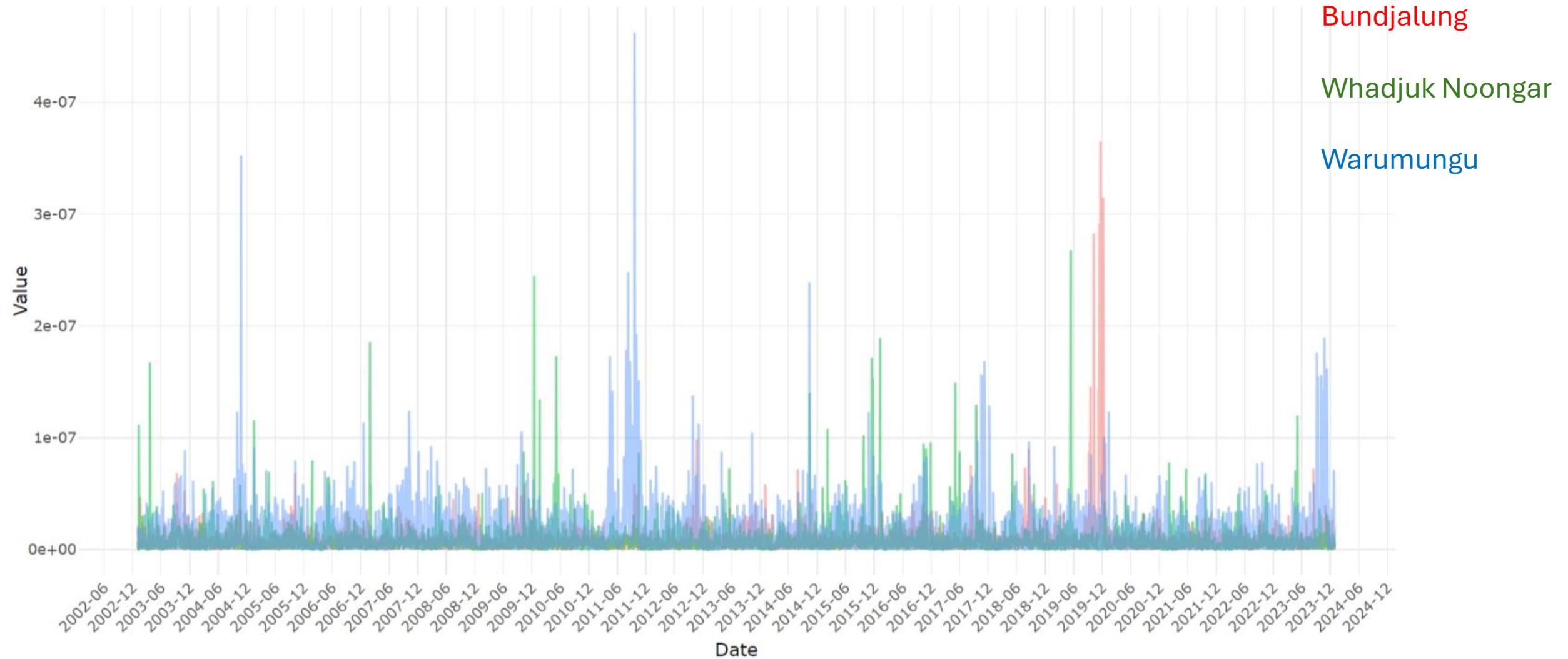
# Warumungu Country – Air quality



# All three sites – Comparison of air quality (CO)



# All three sites – Comparison of air quality (PM2.5)



# Combining data – Vulnerability Index

**AusEnHealth**  
THE SCIENTIFIC RESOURCES HUB

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## Heat Risk Assessment SA3 level

Go to SA2 Level

Filter By: Year 2020

Filter

Download Data

Heat Factor Cold Factor

Please click on the columns for more functionality

Region	Spatial %	Historical Daily %	Heat Vulnerability Index
Queanbeyan	45.67	49.7	78.2
Snowy Mountains	65.07	64.58	92.5
South Coast	81.79	78.27	30.9
Goulburn - Murrumbidgee	33.13	42.85	88.2
Young - Yass	38.21	42.55	77.3
Gosford	59.4	53.57	49.4
Wyong	65.07	50.6	47.6
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Lachlan Valley	29.85	21.43	81.8
Lithgow - Mudgee	29.85	30.65	76.1
Orange	31.34	33.04	90.1
Clarence Valley	65.07	65.77	25.3
Coffs Harbour	81.79	67.26	25.8
Bourke - Cobar - Coonamble	33.13	34.52	87.2
Broken Hill and Far West	11.64	8.04	83.3
Dubbo	31.34	29.75	89.1
Lower Hunter	48.96	52.38	65.4
Maitland	59.4	50.3	59.8
Port Stephens	33.13	35.42	51.7
Upper Hunter	33.13	31.55	55.1
Dapto - Port Kembla	59.4	60.42	48.2
Illawarra Catchment Reserve	48.96	48.51	62.2
Kiama - Shellharbour	59.4	63.1	49.11
Wollongong	59.4	52.98	50
Great Lakes	48.96	47.32	38.39

You can get the metadata information from [metadata information](#)

### Heat High %

Historically ranked average temperature, with heat high (%). Otherwise referred to as heat high percent. This parameter is derived from average temperature by comparing each region to its own historical values. A region value of 0 means that region is the coldest in its history. Likewise, a region value of 1 means that region is the hottest in its history.

### Cold High %

Historically ranked average temperature, with cold high (%). Otherwise referred to as cold high percent. This parameter is derived from average temperature by comparing each region to its own historical values. A region value of 0 means that region is the hottest in its history. Likewise, a region value of 1 means that region is the coldest in its history.

### Heat Vulnerability Index

This parameter is derived by averaging the spatial rankings the relevant exposure, sensitivity, and adaptive capacity sub-indices.

### Heat Exposure Index

Exposure sub-index for heat vulnerability index. The parameter is derived by averaging the spatial rankings of all relevant exposure parameters for a given spatial and temporal resolution. In this calculation, the included parameters are weighted based on their correlation with all-cause mortality.

### Heat Sensitivity Index

Sensitivity sub-index for heat vulnerability index. The parameter is derived by averaging the spatial rankings of all relevant sensitivity parameters for a given spatial and temporal resolution. In this calculation, the included parameters are weighted based on their correlation with all-cause mortality.

### Heat Adaptive Index

Adaptive capacity sub-index for heat vulnerability index. The parameter is derived by averaging the spatial rankings of all relevant adaptive parameters for a given spatial and temporal resolution. In this calculation, the included parameters are weighted based on their correlation with all-cause mortality.

### Cold Vulnerability Index

This parameter is derived by averaging the spatial rankings the relevant exposure, sensitivity, and adaptive capacity sub-indices.

### Cold Exposure Index

Exposure sub-index for cold vulnerability index. The parameter is derived by averaging the spatial rankings of all relevant exposure parameters for a given spatial and temporal resolution. In this calculation, the included parameters are weighted based on their correlation with all-cause mortality.

### Cold Sensitivity Index

OK

# Whadjuk Noongar - Heat Vulnerability Index



Heat Risk Assessment SA3 level [Go to SA2 Level](#)

Search  
Perth City, WA, Australia

Filter By  
Year

Heat Factor Cold Factor

Please click on the columns for more functionality

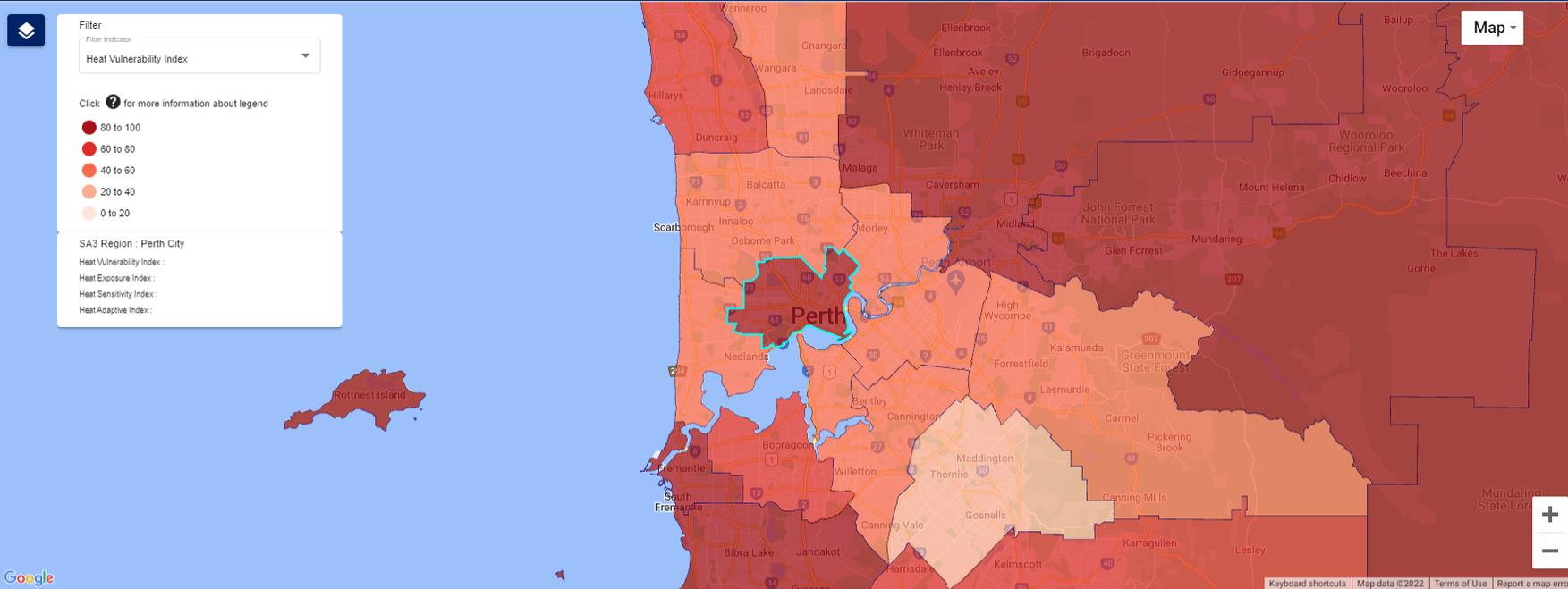
Region	Spatial %	Historical Daily %	Heat Factor %
Perth City	93.13	97.92	64.88
Bayswater - Bassendean	95.82	98.21	61.61
Mundaring	95.82	94.94	66.96
Swan	95.82	97.62	61.01
Joondalup	93.13	99.7	49.7
Stirling	93.13	99.11	58.63
Wanneroo	93.13	99.4	50.6
Armadale	95.82	92.56	65.77
Belmont - Victoria Park	95.82	96.43	63.69
Canning	95.82	95.24	63.99
Gosnells	95.82	93.45	64.29
Kalamunda	95.82	94.64	66.37
Serpentine - Jarrahdale	95.82	91.96	61.31
South Perth	93.13	96.73	59.82
Cockburn	91.34	94.35	63.1
Fremantle	89.25	96.13	42.56
Kwinana	91.34	91.67	57.74
Melville	91.34	95.83	60.12
Rockingham	91.34	93.15	55.65
Albany	99.1	94.05	70.24
Wheat Belt - North	99.1	91.07	58.93
Wheat Belt - South	99.1	91.37	61.9
Kimberley	80.3	88.1	11.31
East Pilbara	89.25	90.77	41.37
West Pilbara	86.87	86.01	62.2

Filter  
Indicator  
Heat Vulnerability Index

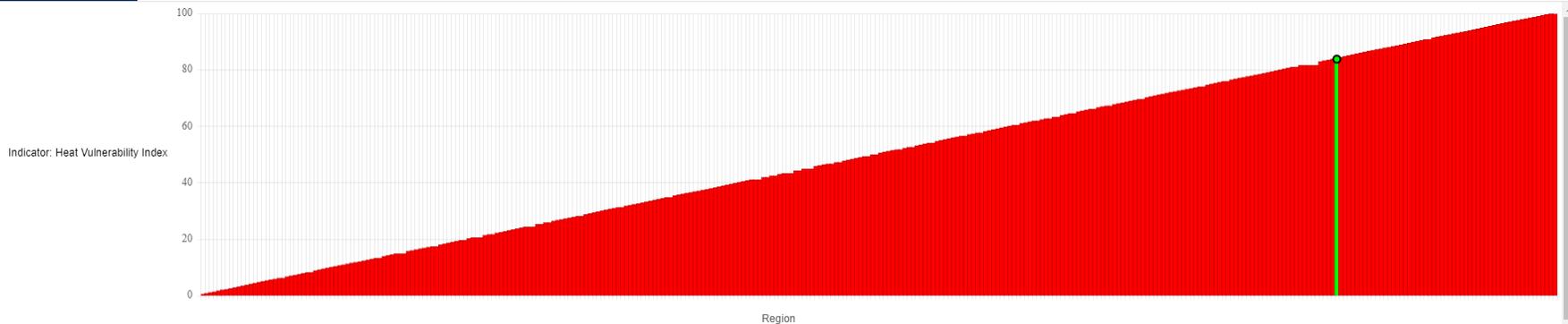
Click for more information about legend

- 80 to 100
- 60 to 80
- 40 to 60
- 20 to 40
- 0 to 20

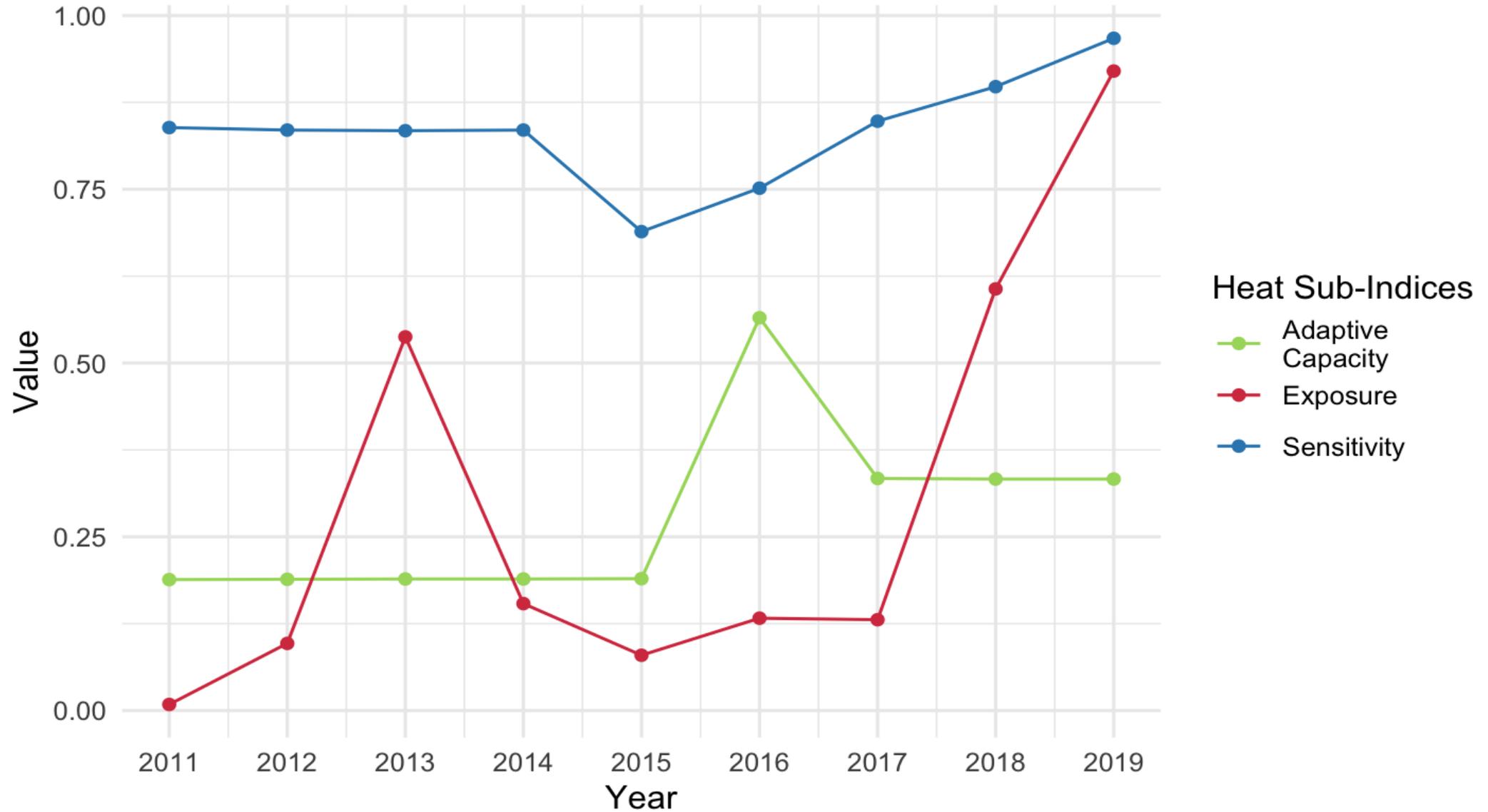
SA3 Region : Perth City  
 Heat Vulnerability Index :  
 Heat Exposure Index :  
 Heat Sensitivity Index :  
 Heat Adaptive Index :



Benchmark Temporal



# Warumungu Country – Heat Vulnerability Index



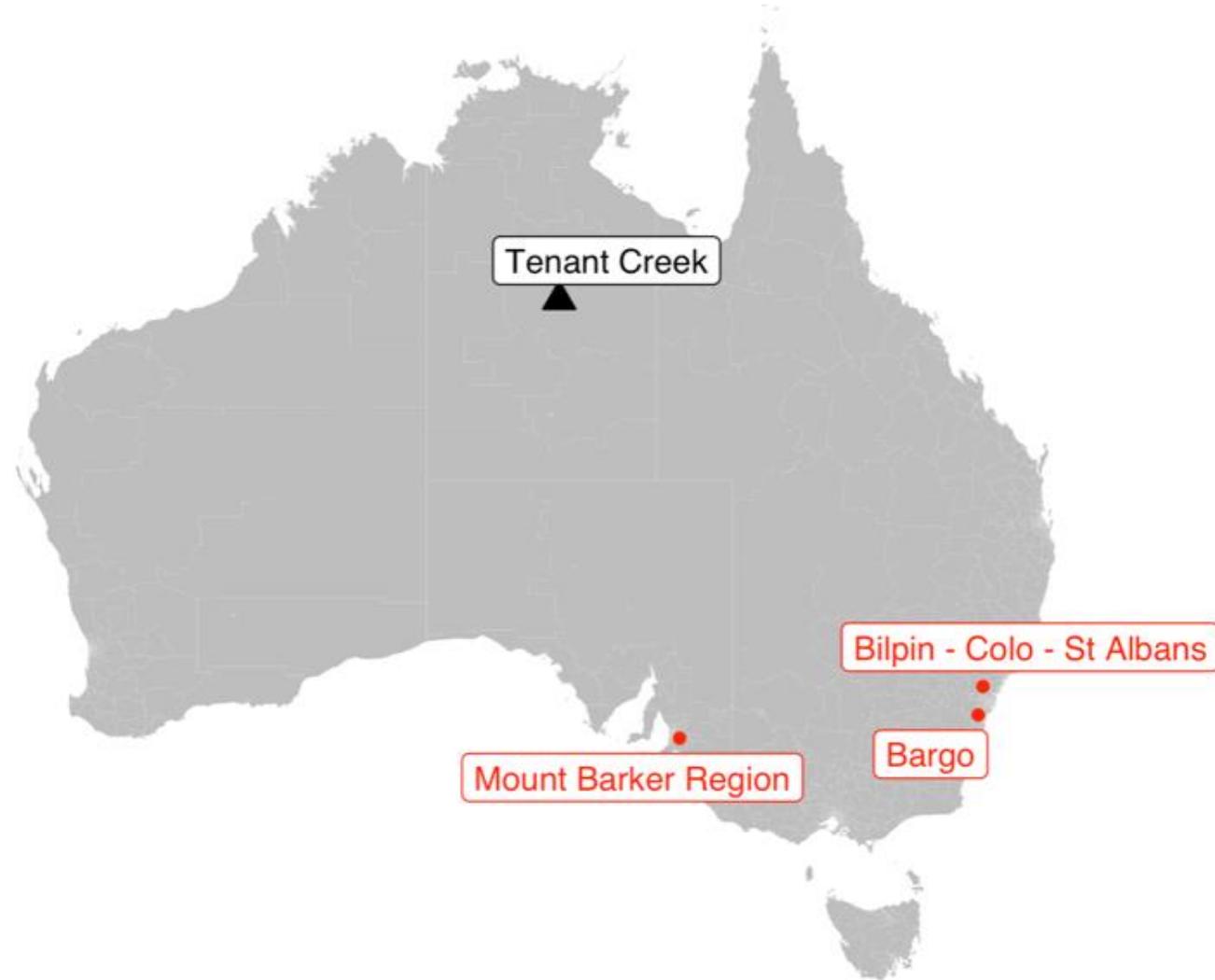
# Bundjalung Country – “which areas are like me?”



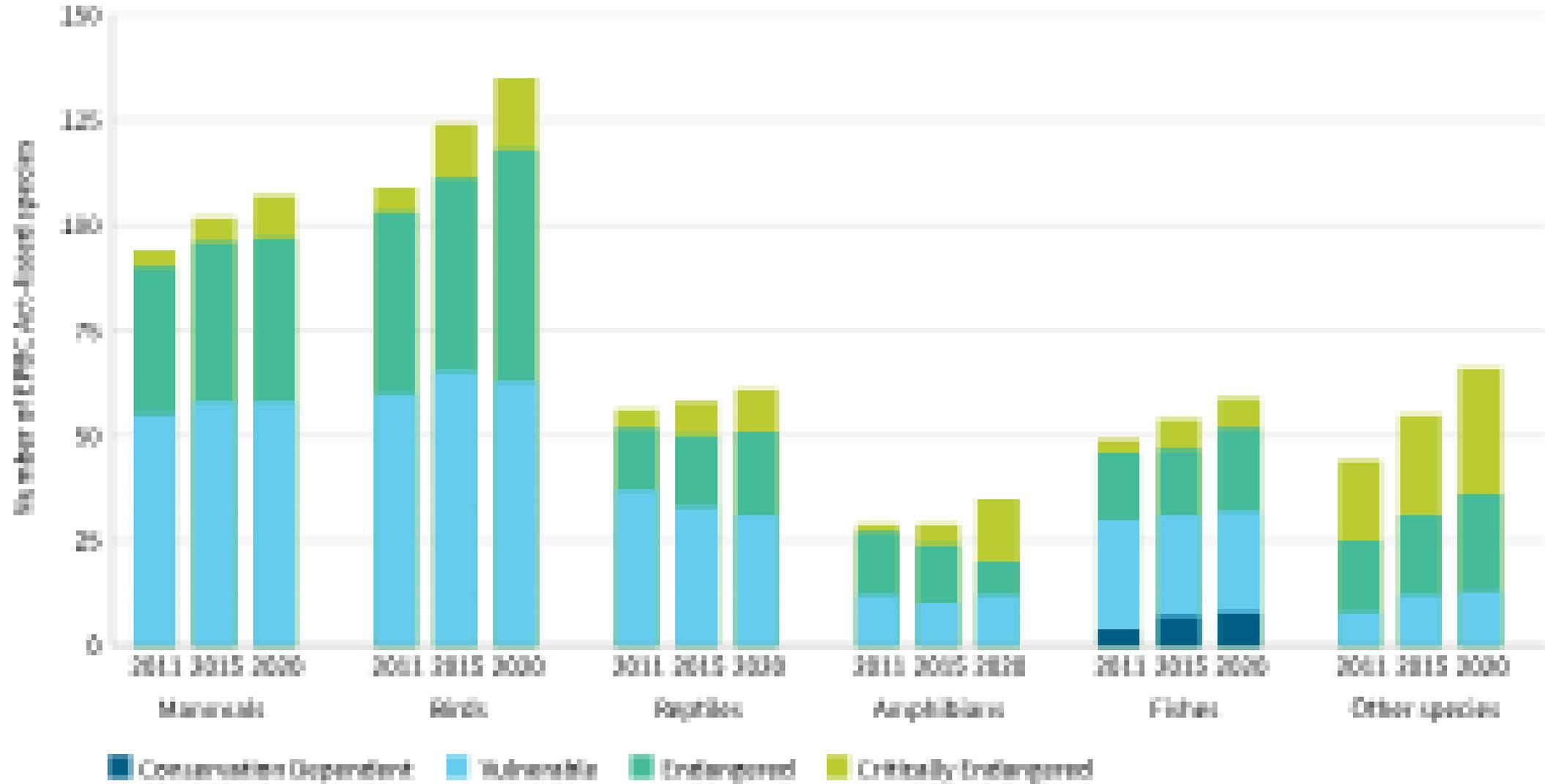
# Whadjuk Noongar – “which areas are like me?”



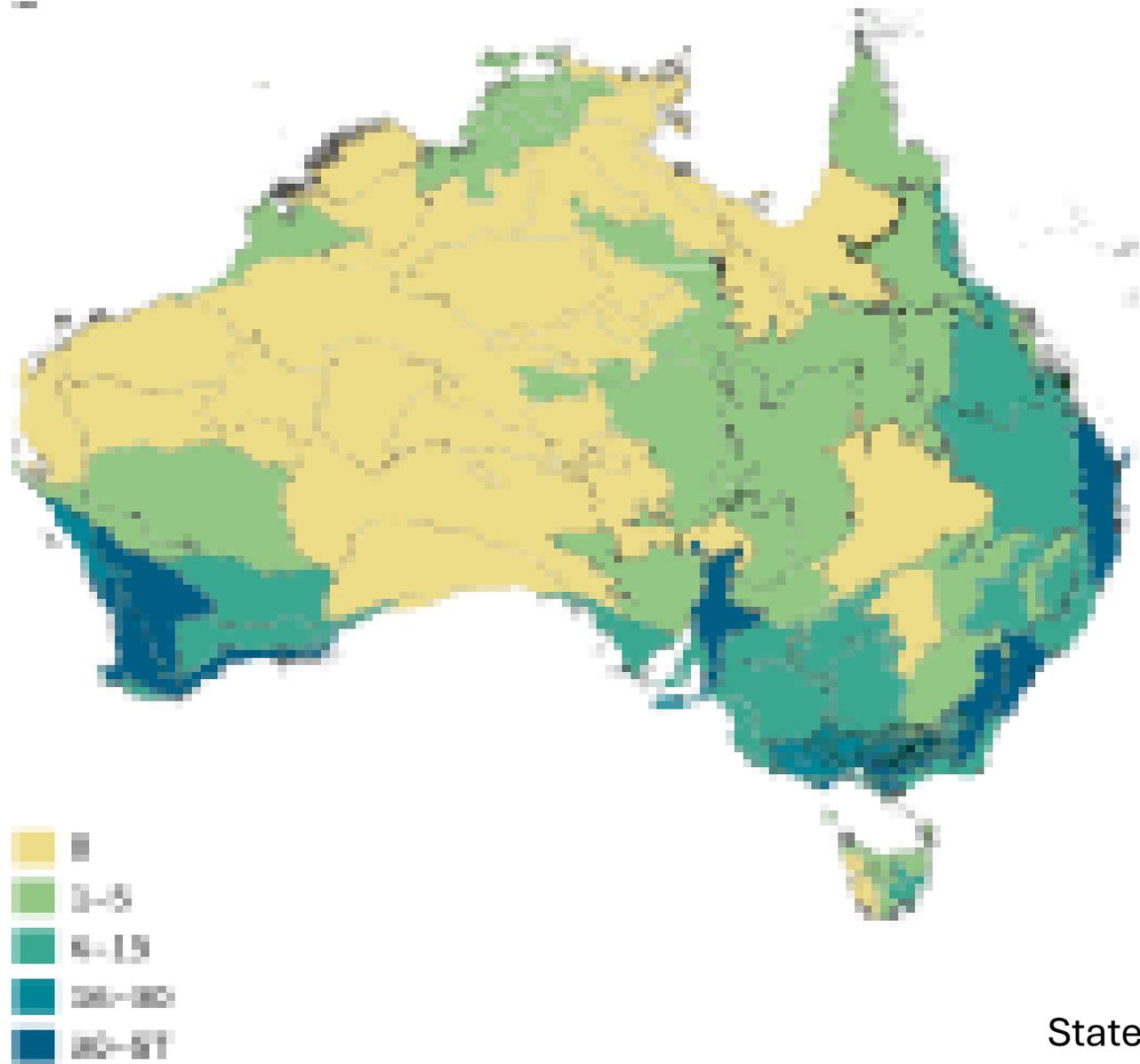
# Warumungu Country – “which areas are like me?”



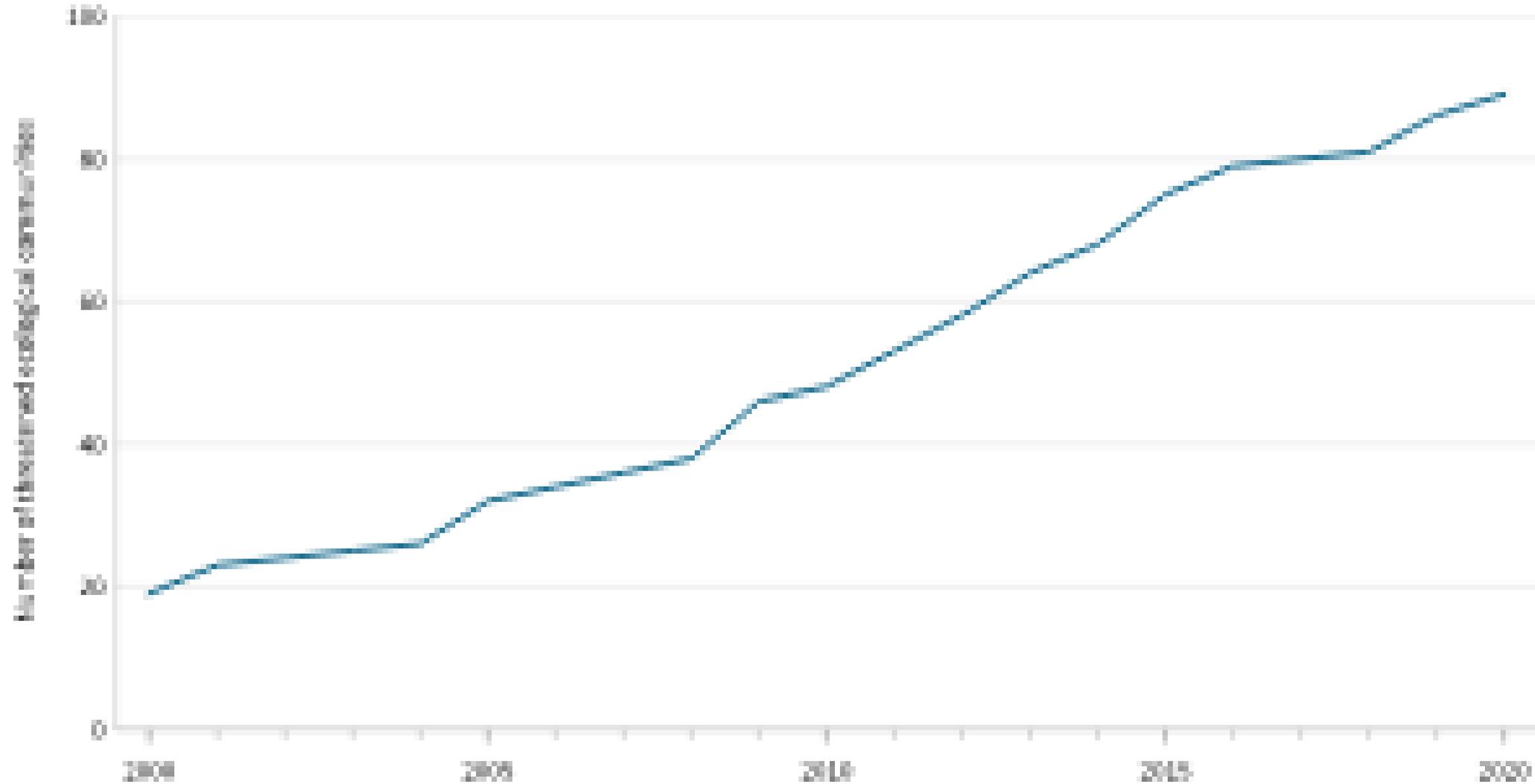
# Biodiversity trends (national)



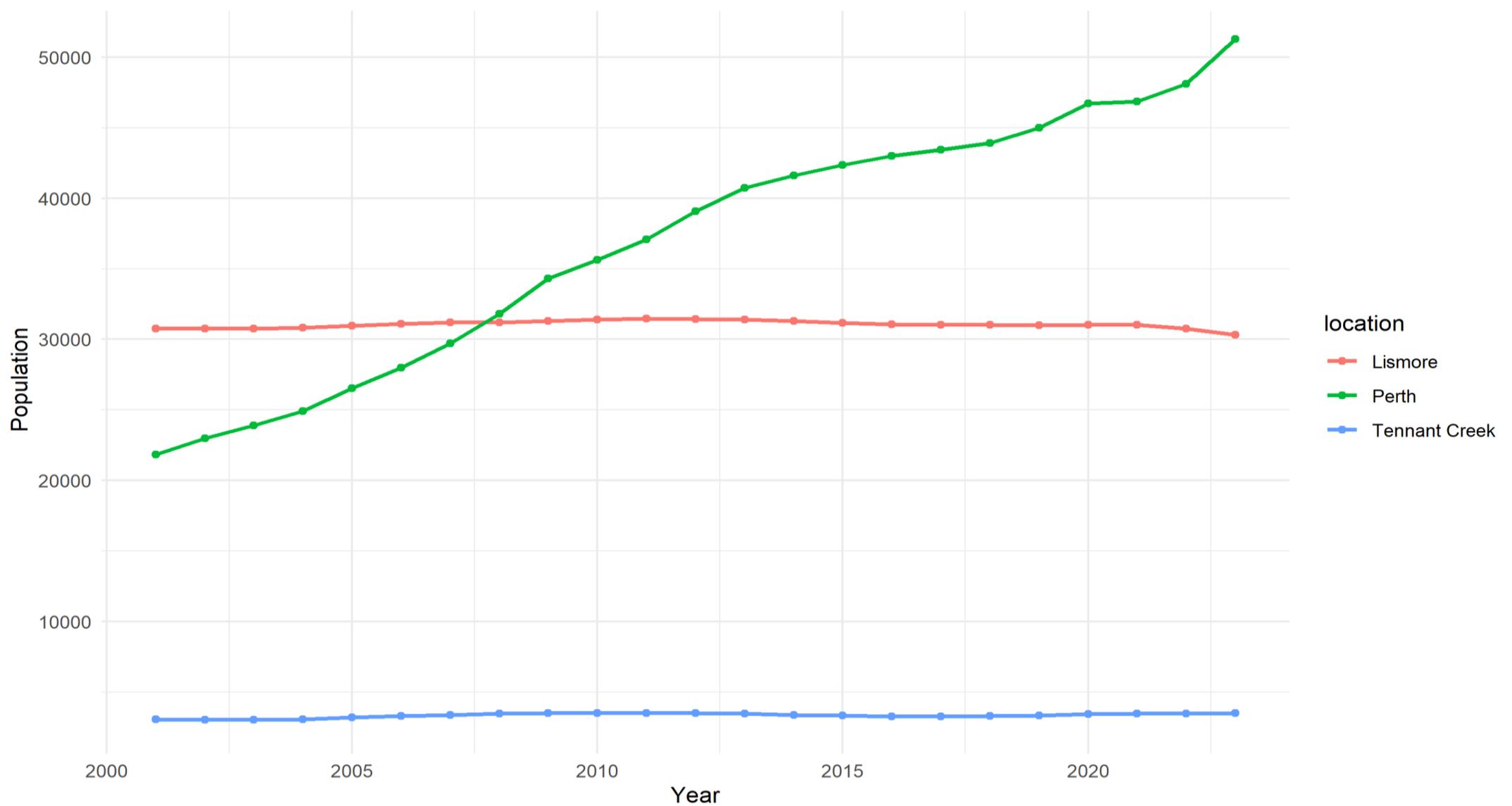
# Number of declining species



# Trend in total number of threatened species (national)



# Other data – e.g., ABS: population trends



# Other Data: virtual reality (VR)



# Other Data: citizen science



# Other Data: networks



# Healing Country

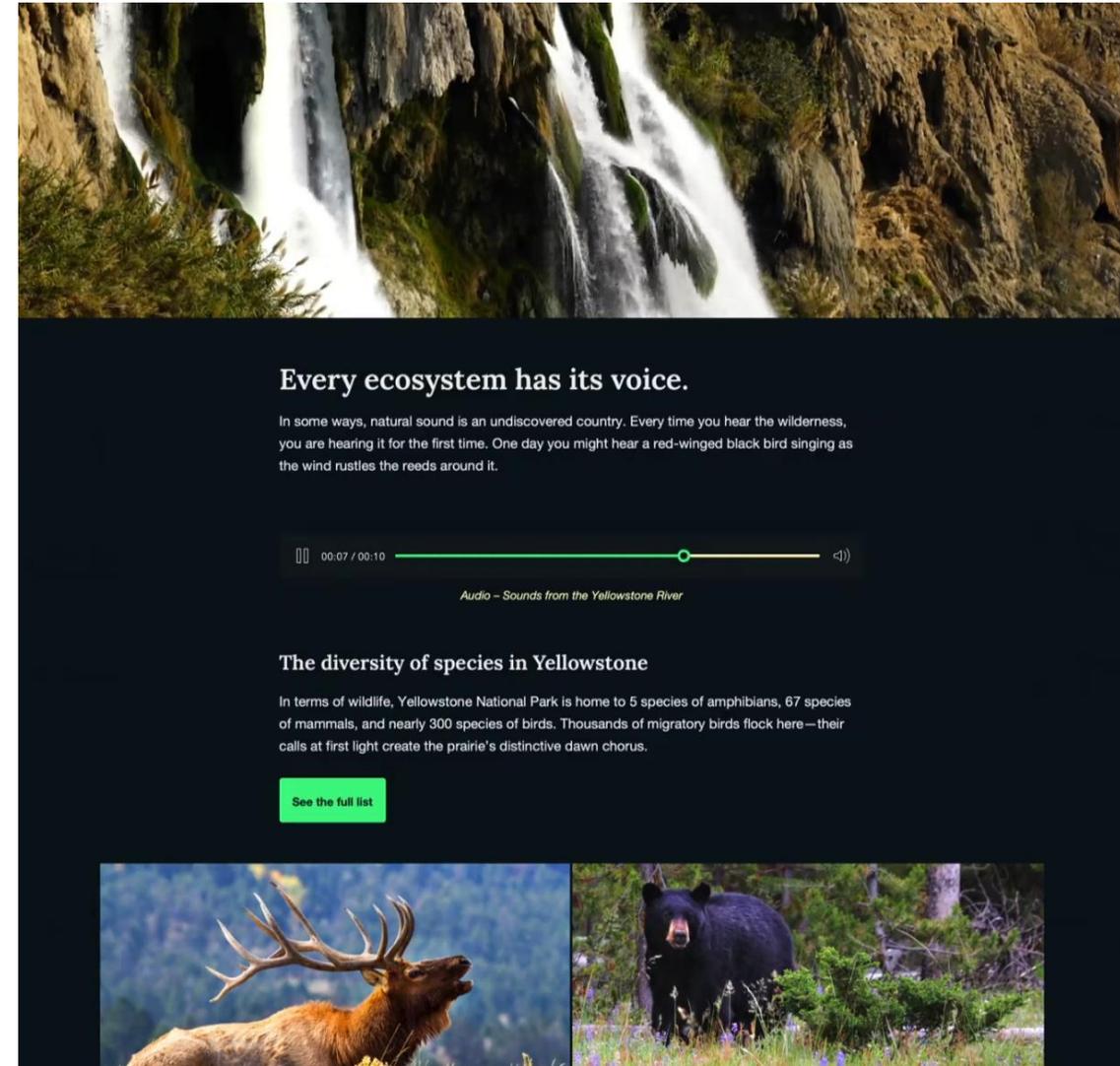
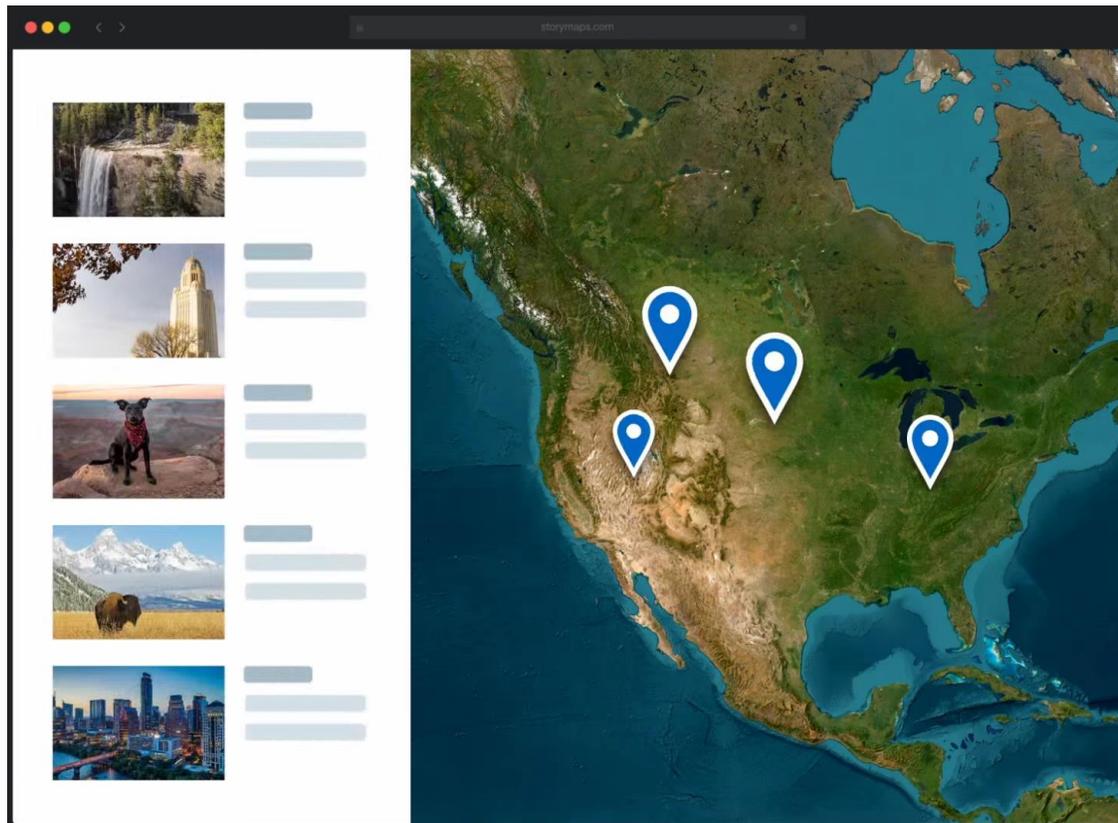


Combining  
the stories



# Example: Esri story maps

<https://storymaps.com/>



# Many ways

<https://shorthand.com/the-craft/how-to-tell-stories-with-maps/index.html>

<https://flourish.studio/visualisations/scrollytelling/>

