



**goulburn broken  
greenhouse alliance**

# **Goulburn Broken Greenhouse Alliance**

**presentation to**

## **Victorian Senate Inquiry**

**Bronwyn Chapman, GBGA Executive Officer**

**13 February 2020**

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# What is Goulburn Broken Greenhouse Alliance

Regional group of councils and agencies working collaboratively on climate change mitigation and adaptation since 2009



[www.gbga.com.au](http://www.gbga.com.au)



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## How we work

### The GBGA Mission:

In partnership, raise the awareness and capacity of the region to respond to a changing climate.

### The GBGA Values:

Leadership

Collaboration

Transparency

Accountability

Sustainable Action



### Organisation

Auspiced by a GBGA member

Formed by 4 year MOU between auspice body and members (formed 2009)

Financed by member councils and agencies

Committee of Councillor & officer representatives

Formal governance and financial processes

Action framework in 4 year strategic cycle



## GBGA project achievements

Local  
Government  
Sustainability  
**Training project**

Climate Smart **Agricultural**  
Development project 2016  
Australian Planning  
Award 2017

NECMA Project  
Embedding Climate Change  
in **Agriculture** 2019

2009-  
2011

2013

2015

2017

2019

Seven Councils,  
GBCMA  
Goulburn Broken  
region - local  
government climate  
change **adaptation  
plan**

Watts Working Better –  
**region energy efficient**  
street light project  
2014 -16

Premiers Sustainability  
Award 2015 for  
WWB Project

Building the Case  
for Electric  
Vehicles in  
regional council  
fleets project.

Business Case  
for LED main  
road streetlights  
  
'Charging the  
Regions' EV  
charge station  
business case

In development  
  
Urban cooling  
and green  
infrastructure  
  
Climate issues  
in Council policy



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## **To initiate programs and projects that respond to climate warming, GBGA and members have developed:**

### UNDERSTANDING OF CLIMATE WARMING IMPACTS SPECIFIC TO THE REGION

- Goulburn Broken catchment – GBGA lead (Climate Smart Agriculture Development project 2016)
- North East catchment – NECMA lead (Embedding Climate Adaptation in Agriculture project 2019)

### DEVELOPING TOOLS TO ASSIST ADAPTATION IN SPECIFIC SECTORS

- Agriculture – assist producer decisions - with mapping of climate data and potential adaptive crops
- Local Economy – climate data that indicates future impact on council green assets, infrastructure and tourism (north east area)

### JOINT KNOWLEDGE & CAPACITY FOR ACTION THROUGH THE GBGA

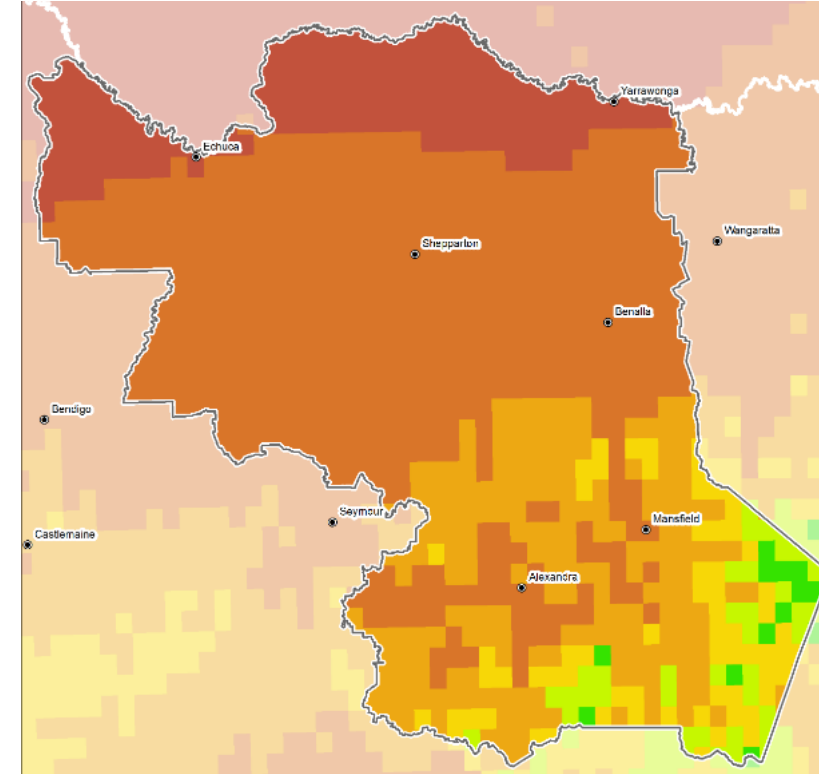
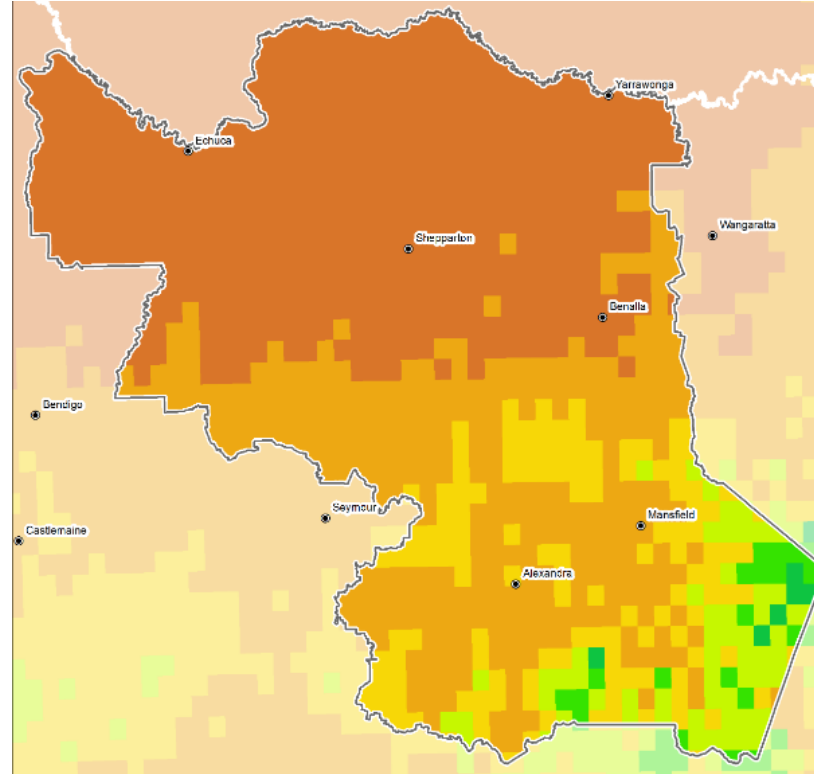
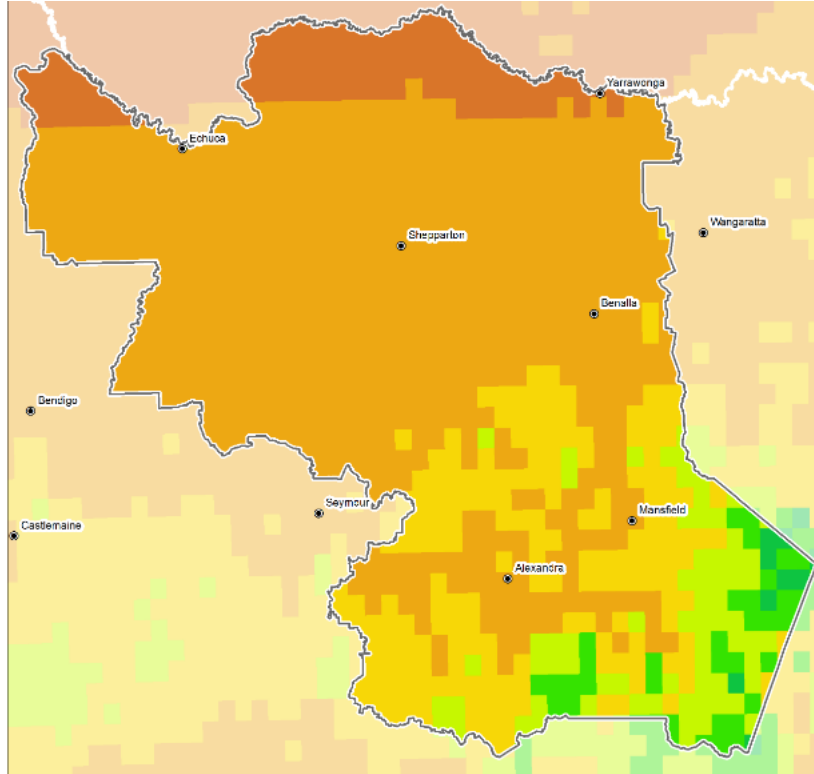
- Network of information and skill sharing between members and from other Alliances, transferring projects
- Collaborating in annual conference of Victorian Alliances
- Joint projects in mitigation and adaptation

# Goulburn Broken Catchment - "Climate Smart Agricultural Development"

AVERAGE TEMP 1997-2010

2030

2050

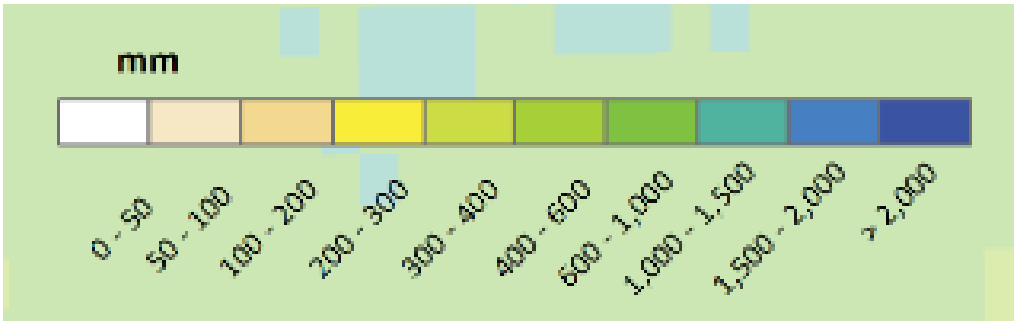
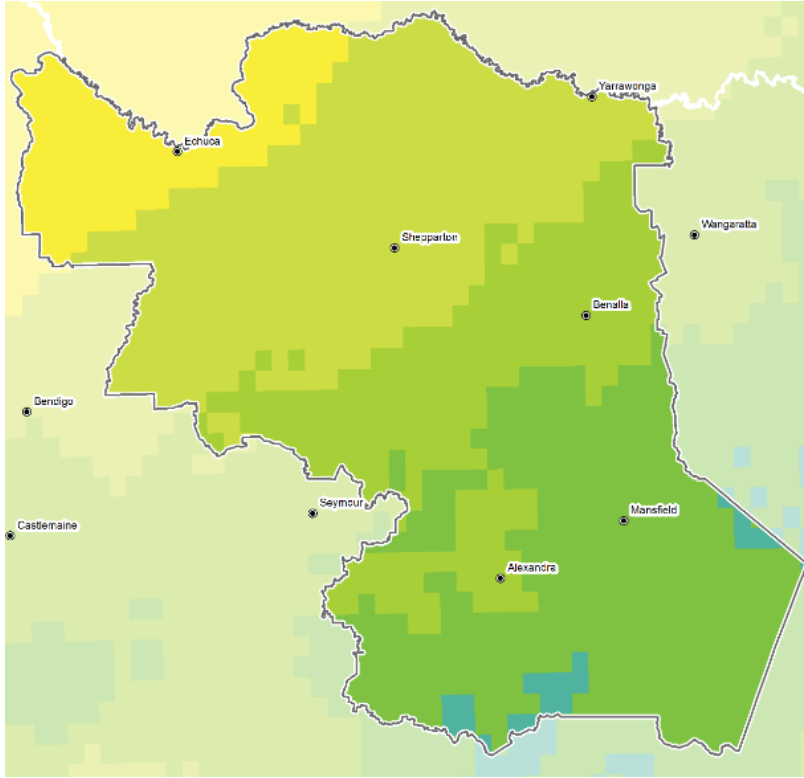
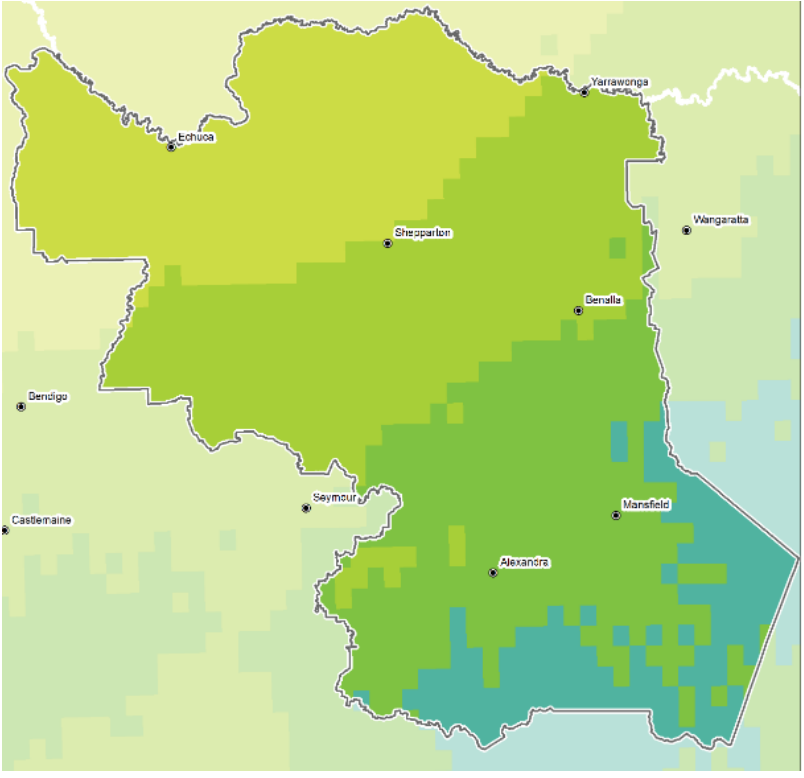
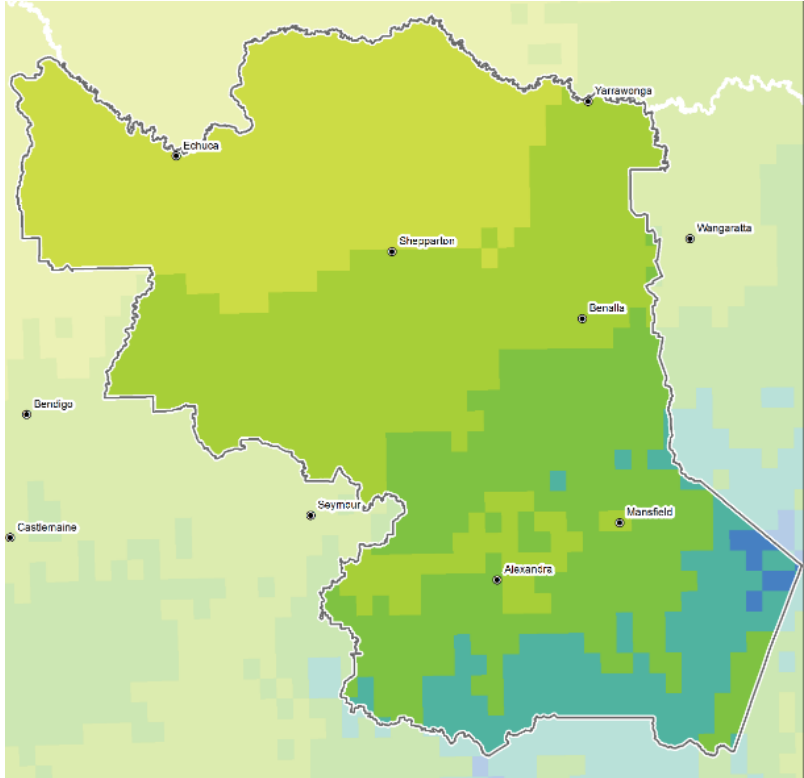


# Goulburn Broken Catchment - "Climate Smart Agricultural Development"

AVERAGE RAINFALL 1997-2010

2030

2050

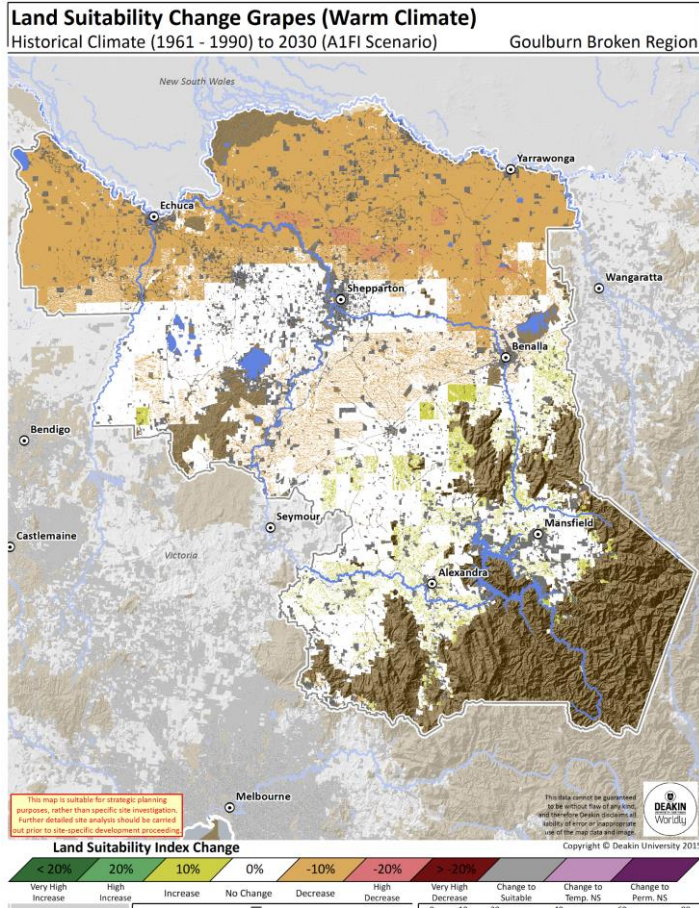




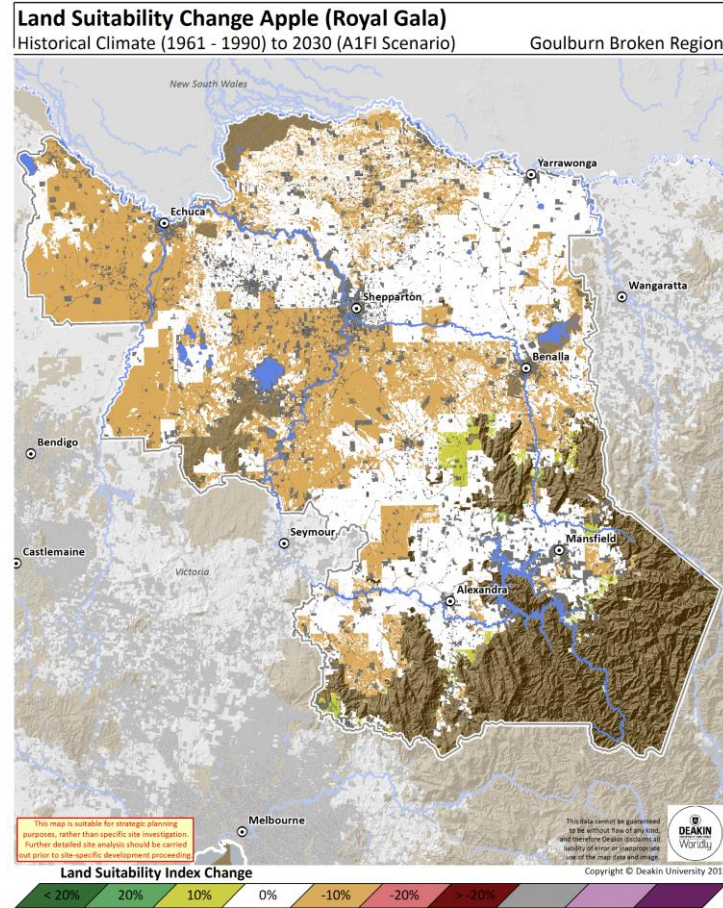
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# Applying climate information to sectors

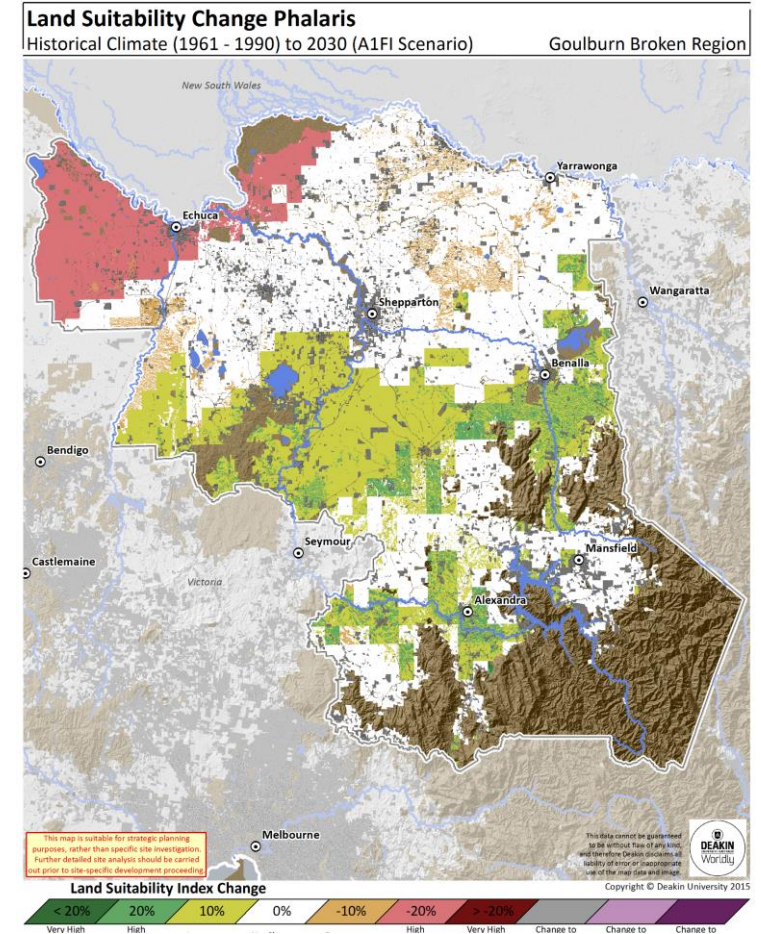
## Information to protect region's economic and social base



Grape - change at 2030



Royal Gala - change at 2030



Phalaris- change at 2030

Goulburn Broken region

Mapping shows issues and opportunities (2016)



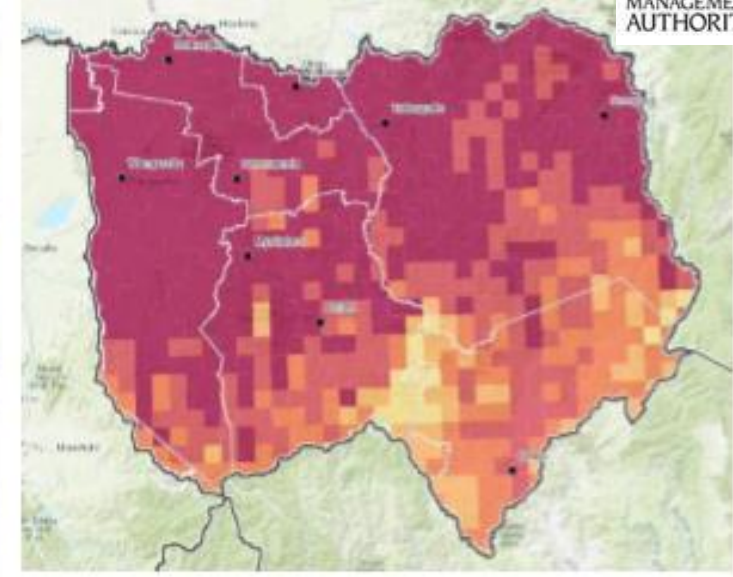
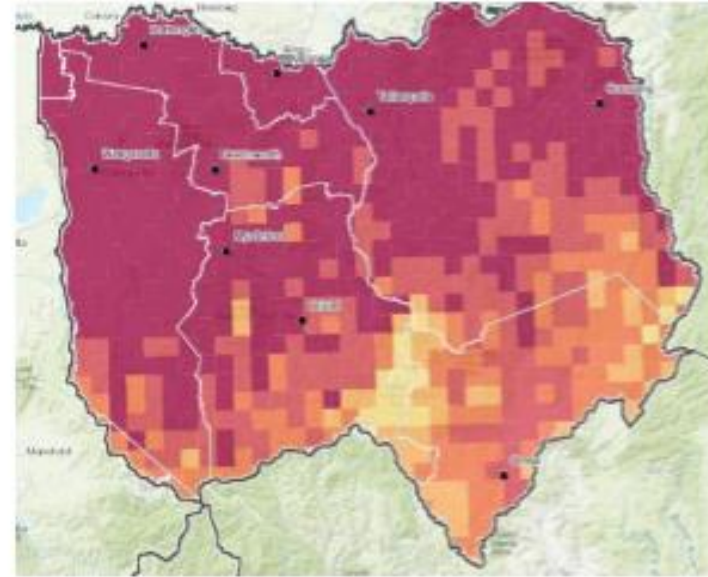
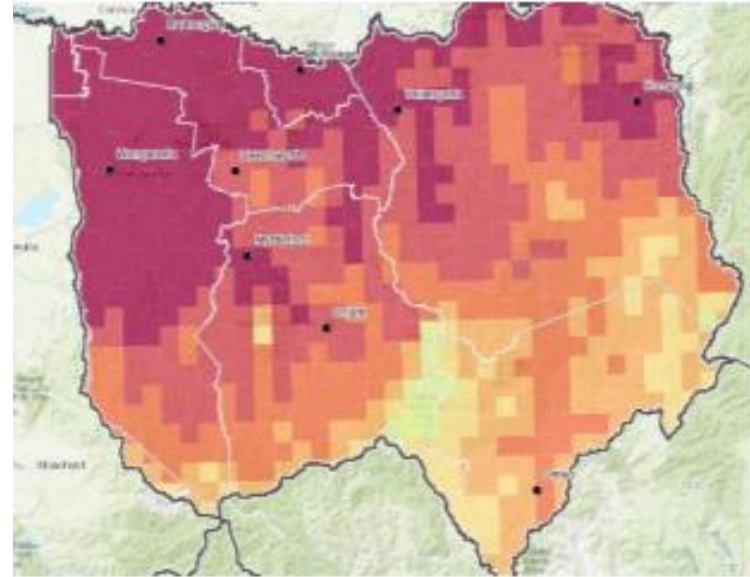
# North East Catchment Historic 1986-2005

# Jan Maximum Temperature (mean) 2030

# 2050



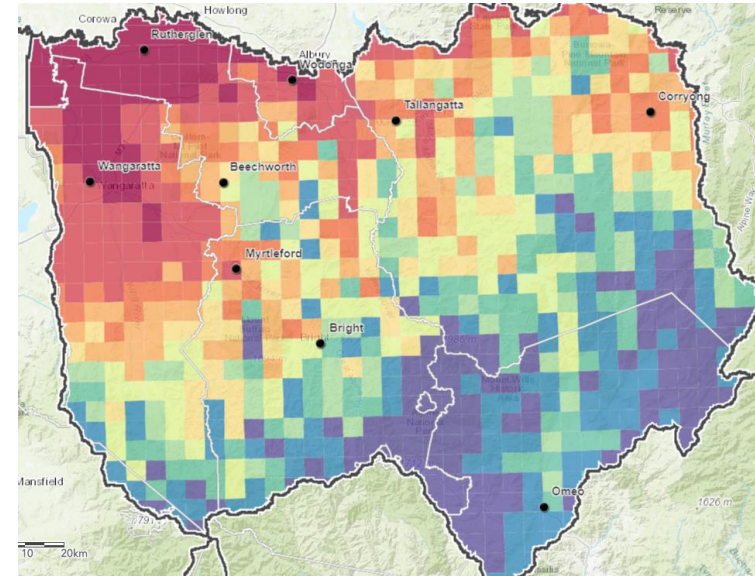
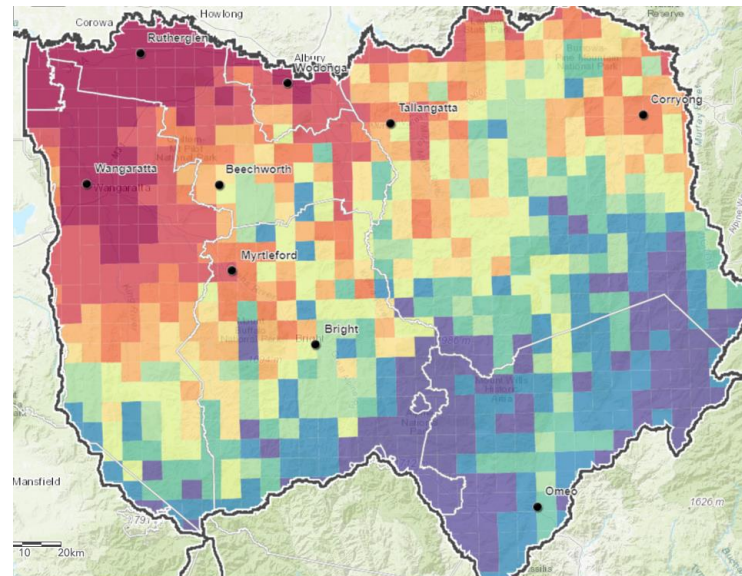
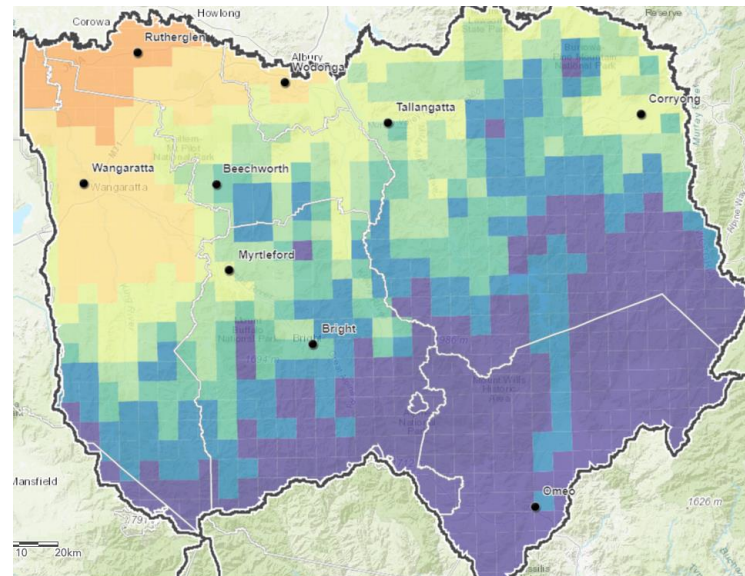
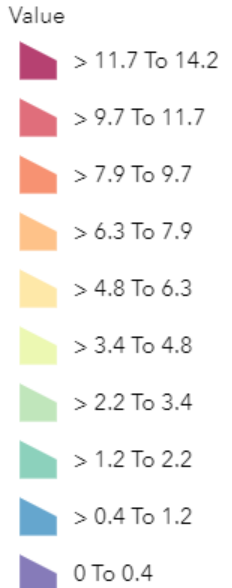
NORTH EAST  
CATCHMENT  
MANAGEMENT  
AUTHORITY



# Jan Days Over 35 Historic

# 2030

# 2050



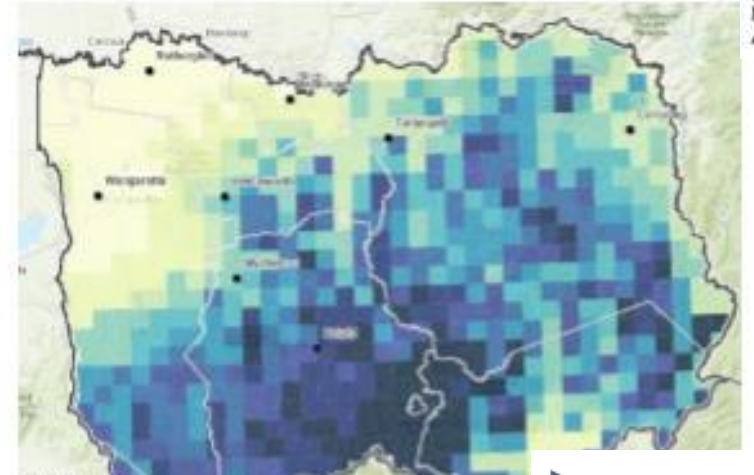
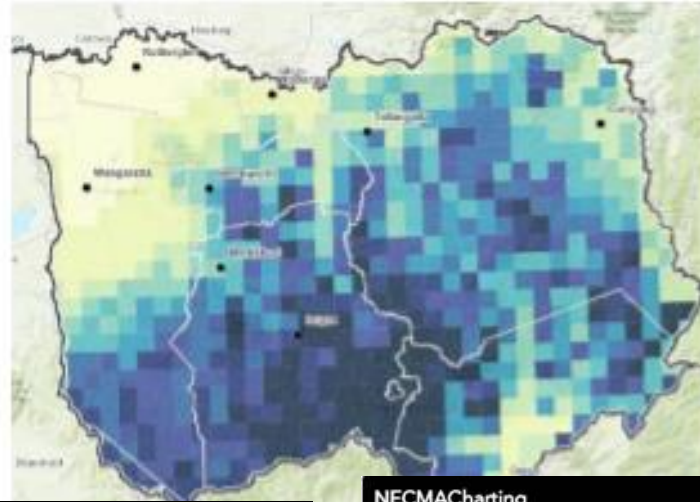
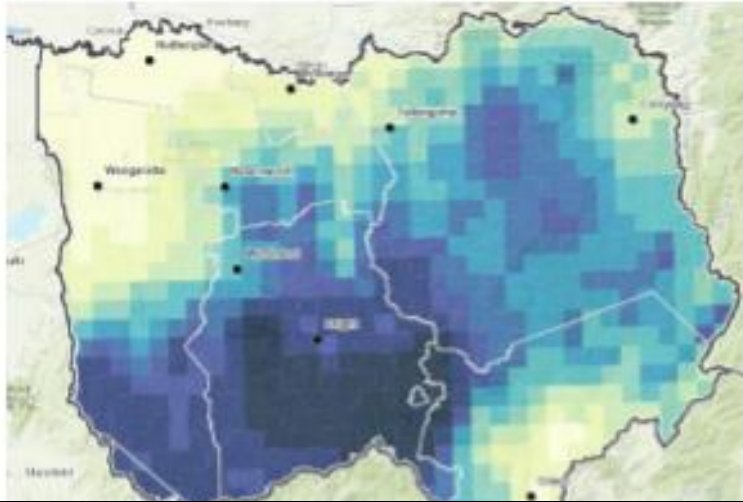
# North East Catchment 1986-2005

# Total Annual Rainfall 2030

# 2050



NORTH EAST  
CATCHMENT  
MANAGEMENT  
AUTHORITY



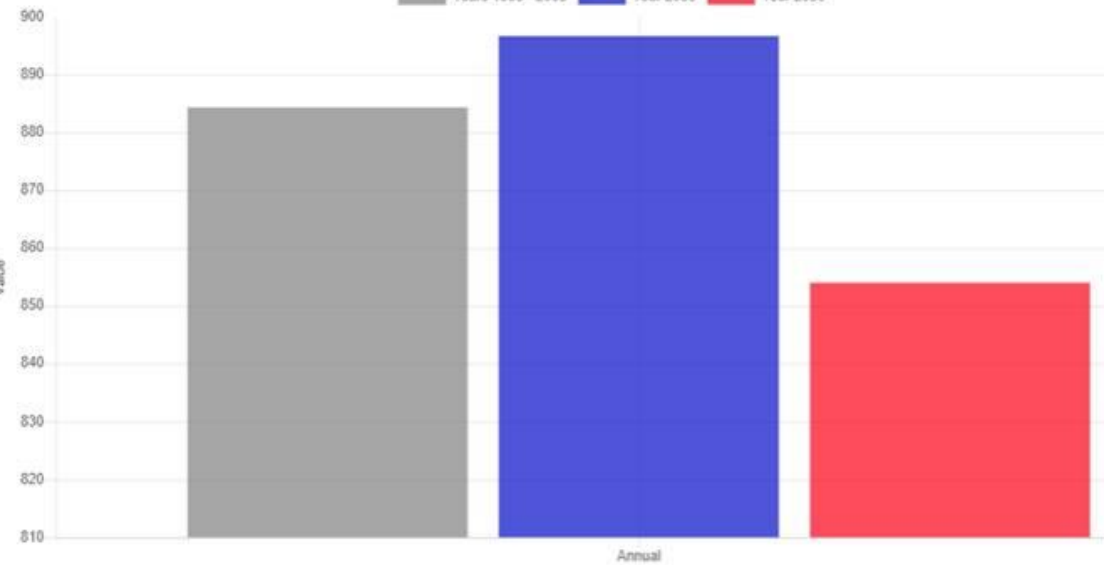
NECMCharting

NECMCharting

X

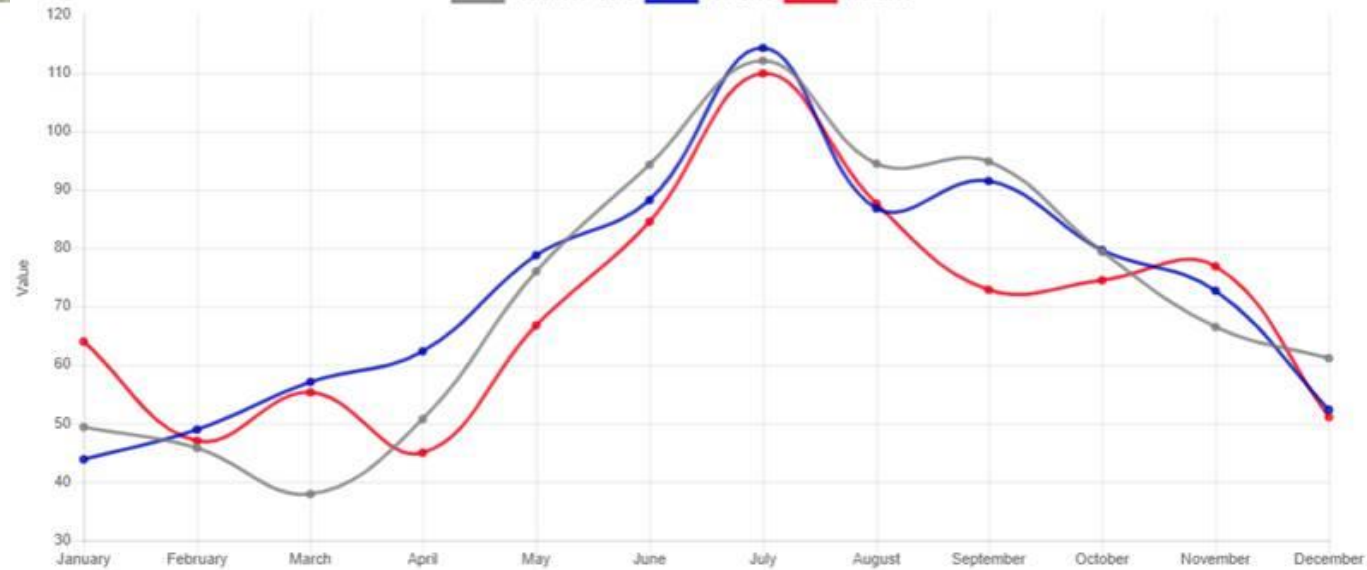
Total Rainfall (mm) - annual

Years 1986 - 2005    Year 2030    Year 2050



Total Rainfall (mm) - monthly

Years 1986 - 2005    Year 2030    Year 2050



# Applying climate information to sectors

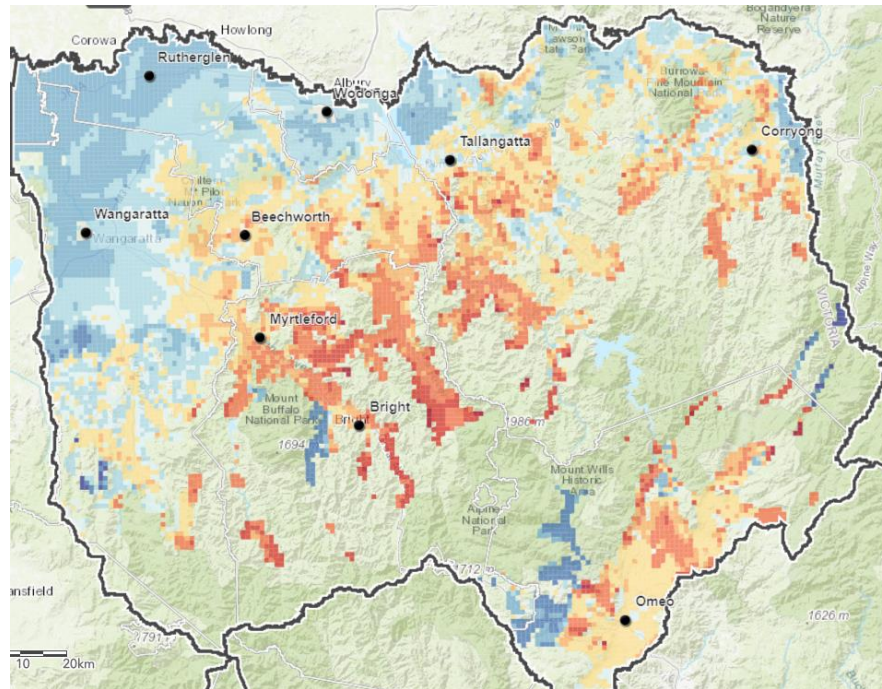
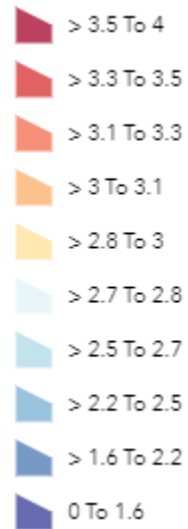
Information to protect region's economic and social base



NORTH EAST  
CATCHMENT  
MANAGEMENT  
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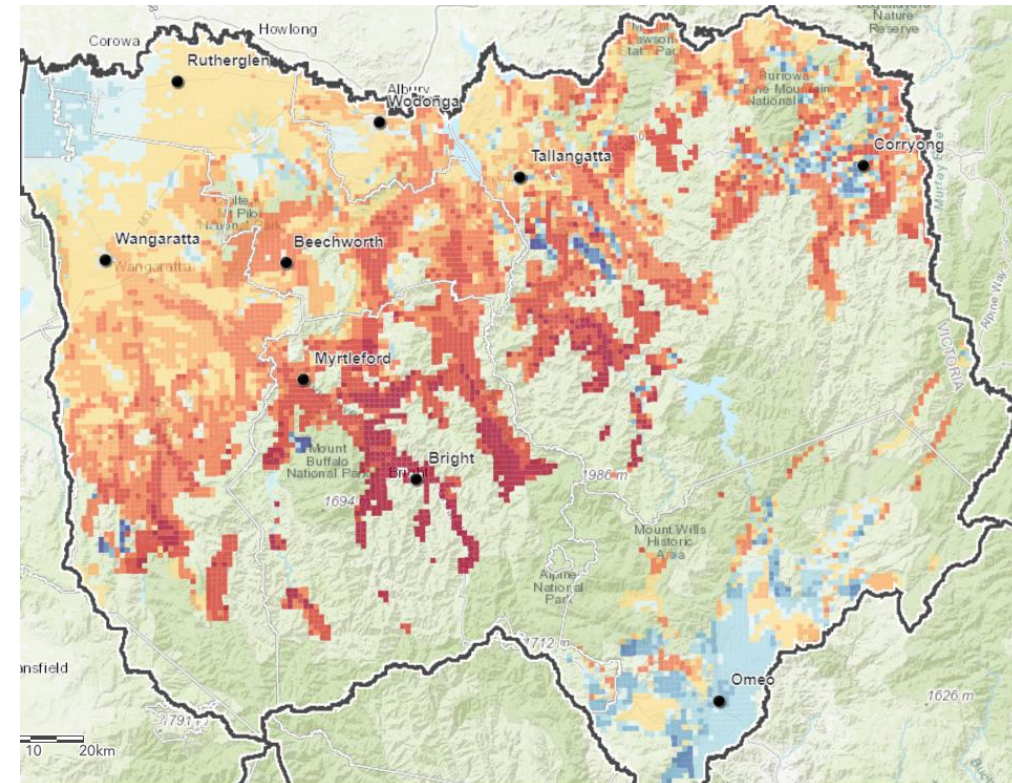
Water Balance Cropping Horticulture Viticulture Dairy Beef/Sheep Forestry

CANOLA t/Ha



1985-2001

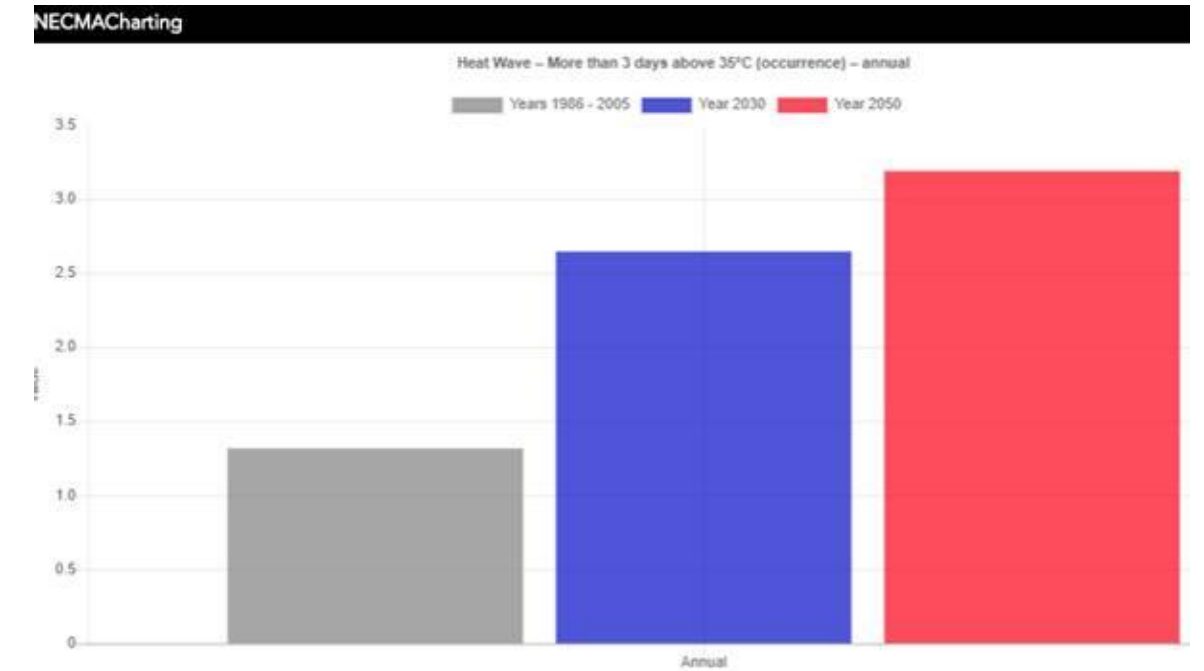
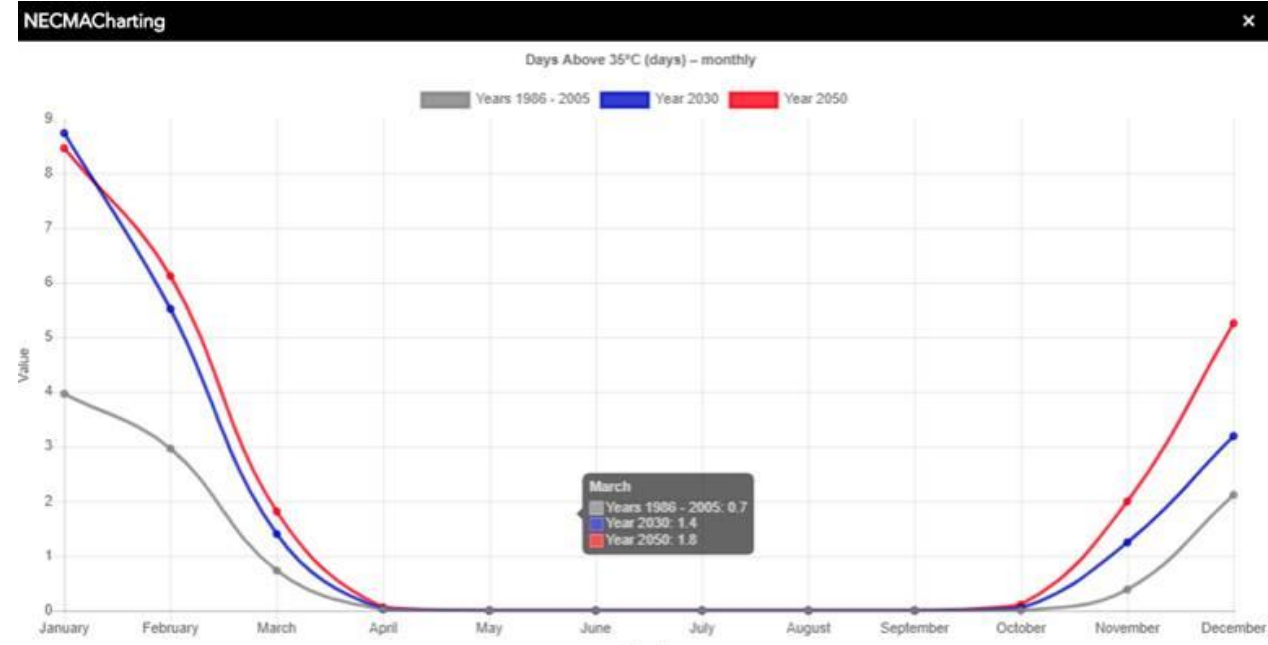
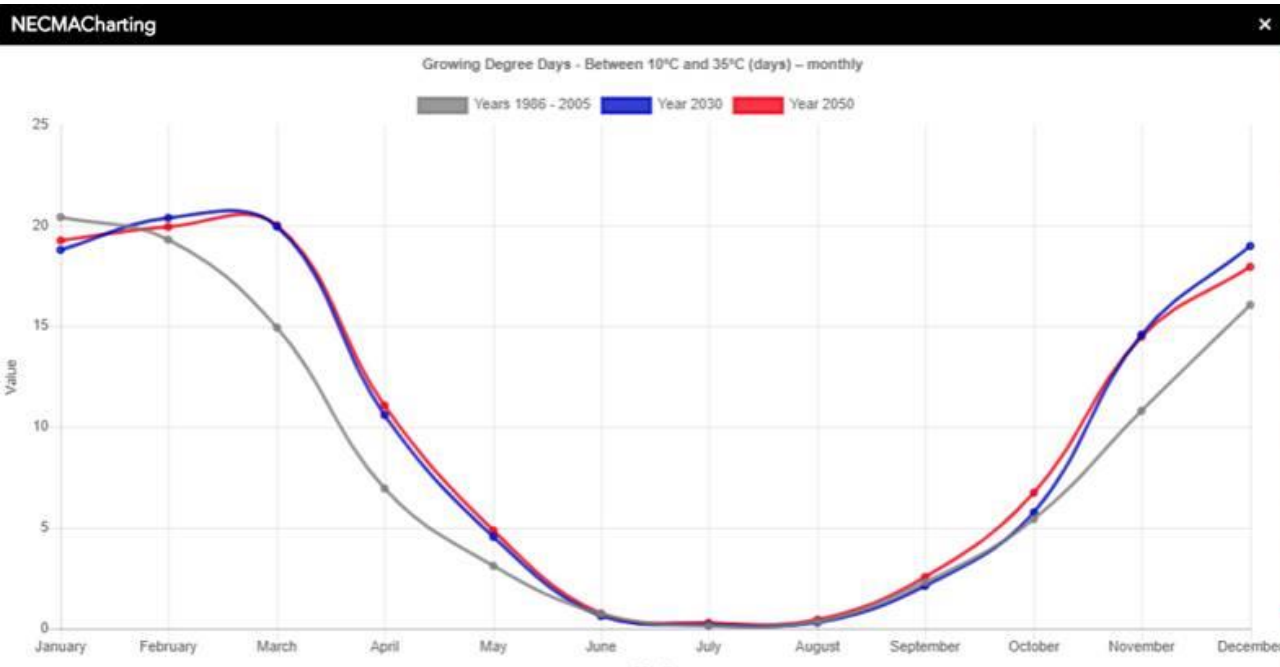
2030



North East region (2019)  
Mapping and data shows issues and opportunities

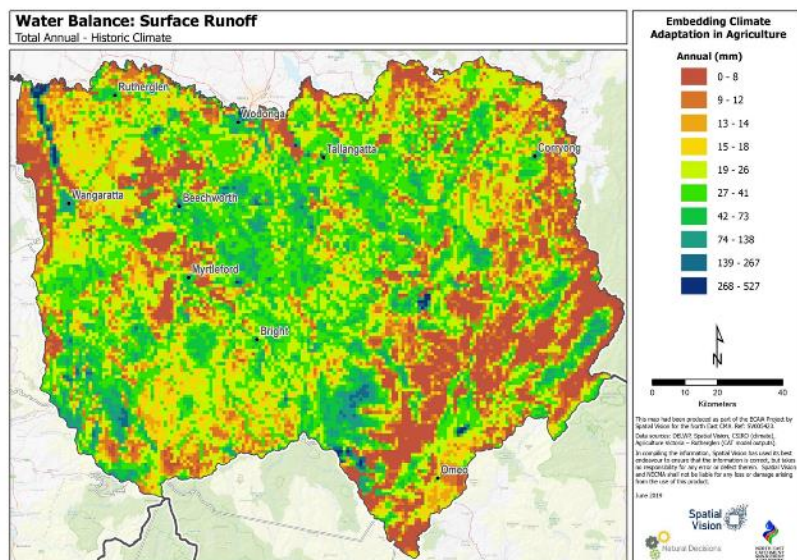
# Relevant climate information

(eg everton upper)

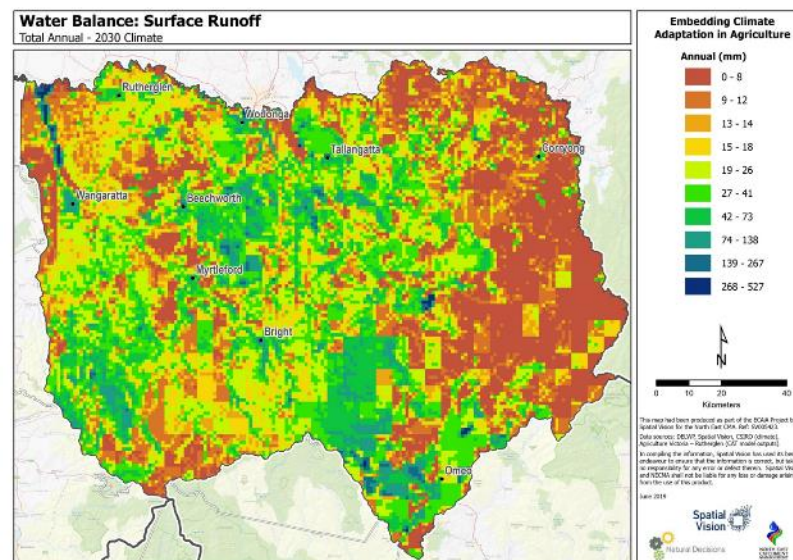


NORTH EAST  
CATCHMENT  
MANAGEMENT  
AUTHORITY

# North East Catchment Surface Runoff 1986-2005



# 2030



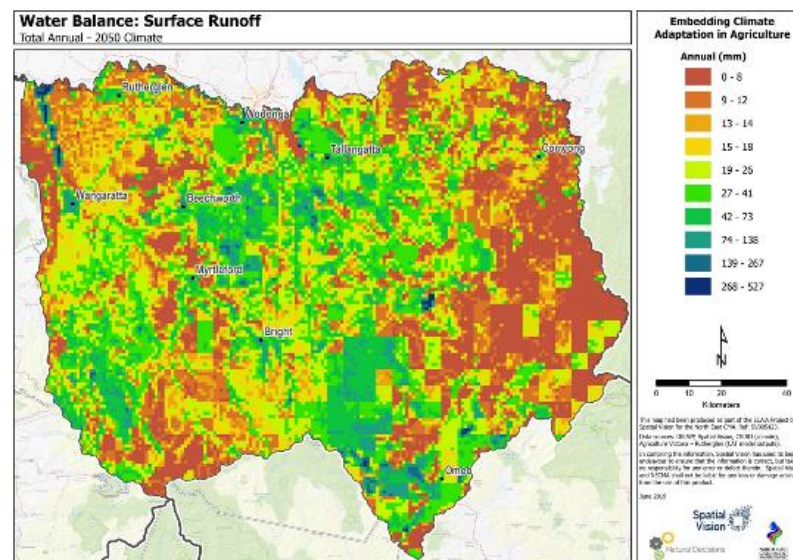
## NORTH EAST VICTORIA RUNOFF

North East catchments contribute 39% of Murray Darling Basin water yield.

Climate modelling shows decrease in streamflow in order of –

- 20% reduction by 2030
- 30% reduction by 2050

# 2050





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## **WHAT IS NEEDED ? (INFORMATION FOR AGRICULTURE AND OTHER SECTORS)**

### **SUPPORT CLIMATE TRANSITION PLANNING, COORDINATION AND SUPPORT**

- State agencies need to build on a regional presence - support regional planning and implementation by DELWP (Hume), GBGA and CMAs – already strongly connected in the regions and relevant
- Continue funding for ongoing work by BOM and CSIRO to apply recent climate data to the regions and produce region-scale projections for all regions
- Fund further work by BOM and CSIRO to understand the risk and impacts of extreme events- peak storms, heatwave

### **PRIORITISE REGIONAL SUPPORT FOR ADAPTATION FOR AGRICULTURE through CMAs and Landcare**

- NECMA and GBCMA show CMAs can be the coordinator and conduit for BOM, CSIRO and Dept Ag to connect to Landcare and producer groups with a regional focus.
- Extend the NECMA Embedding Agriculture Adaptation project approach to Goulburn Broken (and other) regions, fund CMAs in this work.
- Provide assistance to councils to understand the implications of this data (eg BOM) for other uses eg public assets and tourism



## GBGA project achievements

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Government  
Sustainability  
**Training project**

Climate Smart **Agricultural**  
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‘Charging the  
Regions’ EV  
charge station  
business case

In development

Urban cooling  
and green  
infrastructure

Climate issues  
in Council policy



To initiate programs and projects that respond to climate warming, GBGA and members have developed:

JOINT MITIGATION/ADAPTATION PROJECTS TO LEVERAGE AND INCREASE VALUE – (1) GBGA

WITHIN  
GBGA

- Upgrading residential streetlights to LEDs (GBGA project)
- Upgrading main road streetlights to LEDs (GBGA project in planning)
- Sharing energy data to identify and plan improvement (GBGA website)
- Green asset planning for cooler towns and urban biodiversity (GBGA in planning)

JOINT MITIGATION/ADAPTATION PROJECTS TO LEVERAGE AND INCREASE VALUE – (2) WITH OTHER ALLIANCES

ALLIANCE  
PARTNERSHIP

- Procurement of renewable energy – 48 councils. Five Victorian Alliances
- Study of implementation of a statewide EV charge station network (with CVGA, 54 councils)
- Significant opportunity to upscale projects and gain from capacity of Melbourne councils

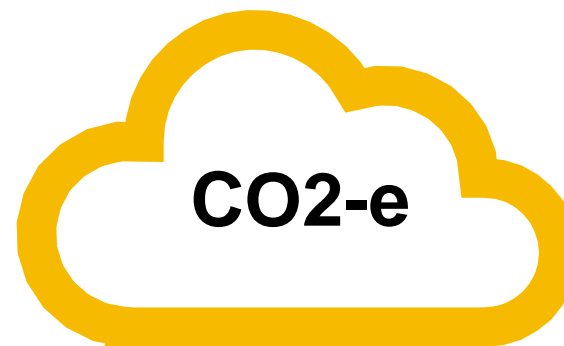
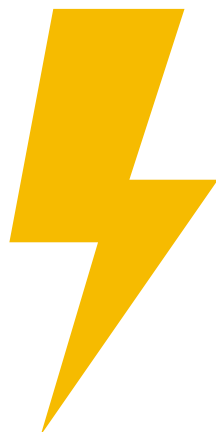




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## **GBGA Significant Regional Project**

**8 councils     \$4.7m project**



**12661  
street lights**

**33% street  
light power**

**4500 t/yr**

**5-6 years  
payback**

**20 year savings**

**3433 MW  
≈ 35 GWh**

**90,000 t  
51000 cars**

**31% before/after**



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## **GBGA Main Road LED lighting Upgrade**

**\$**

**\$**

**payback**



**Council  
2020 lights**

**\$ 2.34m cost  
\$10.72m saved**

**Region  
5-6 years**

**VicRoads Share  
1,779 lights**

**\$0.85m cost  
\$4.42m saved**

**Councils  
vary 4-8yr**

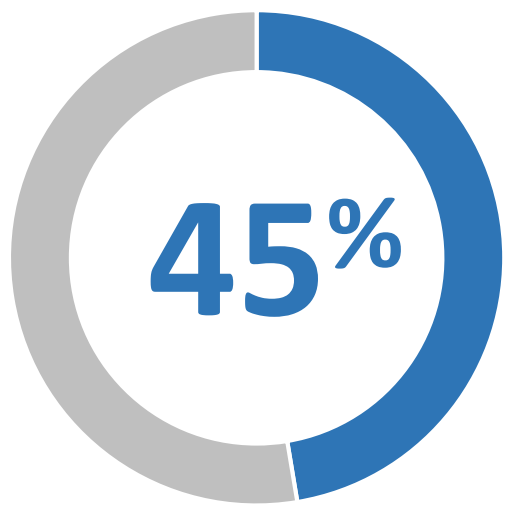
**Region  
34,000 t  
(20 yrs)**

**VicRoads partnership and  
contribution is essential !**



# Victorian Alliances PPA project

## 48 councils purchasing renewable power



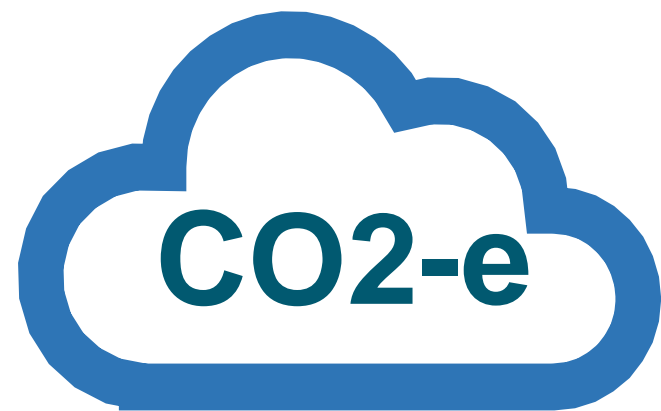
Vic Council  
annual demand



250 GWh



47,000  
homes



270,000t



# Sustainable Transport in the regions

## Charging The Regions - State EV Infrastructure

- Business Case (GBGA and CVGA)
- Regions risk stagnant growth in EV future (I-V)
- Planning statewide smart EV charge station network
- 43 regional councils, 11 metro councils



## Hydrogen Fuel

Hume Renewable Energy Roadmap identified Shepparton as viable hydrogen centre for truck and plant

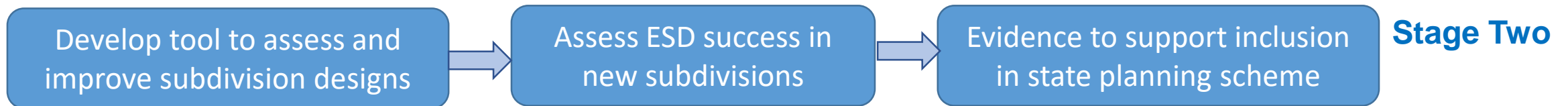
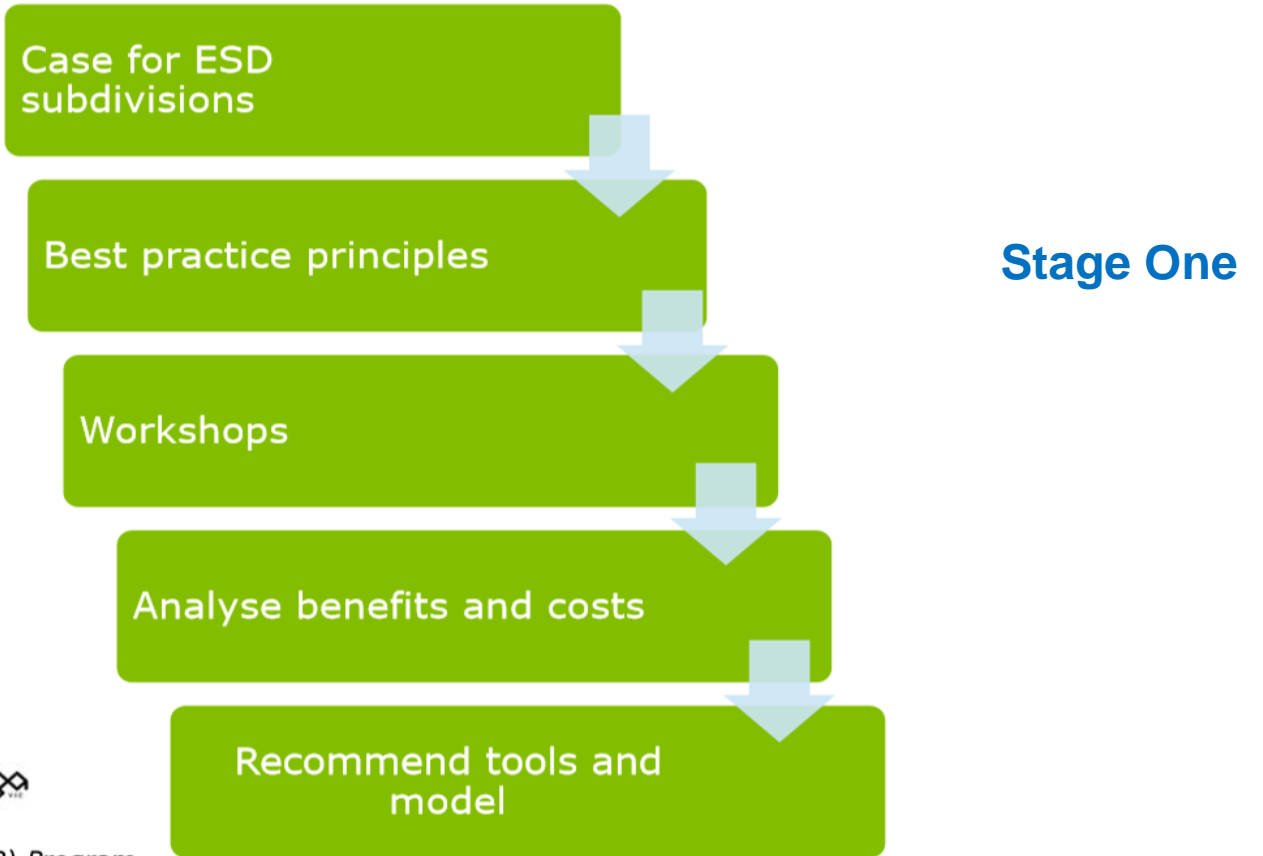
# ESD Subdivisions in Regional Victoria

## Project overview

1. Define 'best practice' ESD with respect to urban land subdivision and determine how it should be measured
2. Establish how 'best practice' ESD subdivisions are feasible in regional Victoria
3. Recommend a suite of tools and a model for collaborative implementation, with transferability across the State.



Funded by: Collaborative Council - Sustainability Fund Partnerships (CCSFP) Program





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## WHAT HOLDS US BACK? Members face constraints to address climate impacts

Low Priority of Climate Issues in Strategic Planning (eg Council Plans and other plans)

- Rural/regional councils have less capacity to meet growing community expectation including climate action
- The integral risk of climate warming to council services is becoming understood – but it is swamped by other priorities

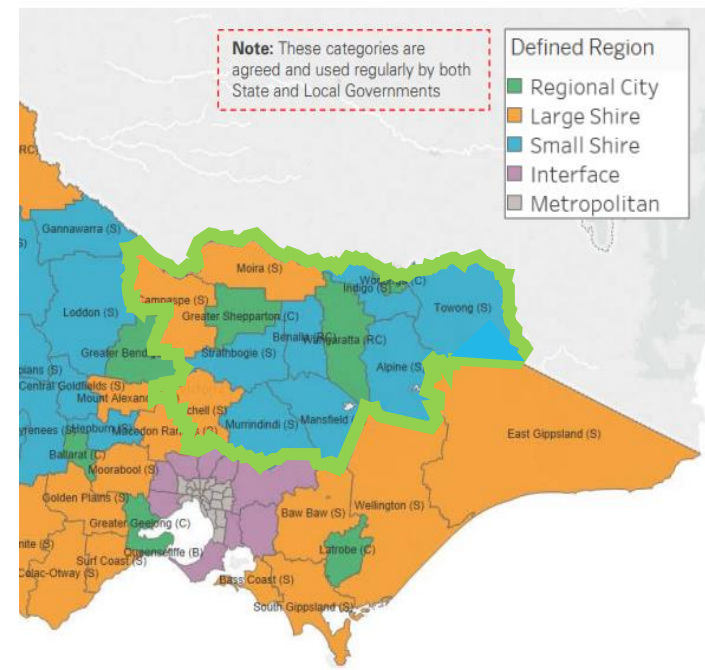
Gaps in Regional Planning

- Some regionally based programs moved to state level – loss of local connection

Capacity

- Extreme events have widespread and deeper impact on rural/regional communities, councils and agencies
  - Difficulty affording and attracting/retaining specialist staff
  - Time and \$\$ poor to skill up Councillors and staff in climate risk
  - Consultant studies are needed but competes with \$\$ for core services
- Eg 6 smallest councils have 3.5 sustainability staff working across many areas

Source KPMG “Rural & Regional Councils Sustainability Reform Program” and local information





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## WHAT IS NEEDED ? (Council and Community)

PRIORITY in INVESTMENT BY THE STATE to increase Capacity and Action by Rural/Regional Councils

- Support rural/regional councils in Climate Governance - to accelerate understanding of climate risk, and embed planning and action in all strategies, programs and services – to counter the capacity deficit these councils face
- Accelerate MAV project for Councillor training module in climate change and environment;  
Accelerate release of DELWP Climate Roles and Responsibilities project
- Provide an ongoing resource like the planning ‘flying squad’ to support councils to develop strategy and initiatives
- Assist councils to understand the implications of this data and prepare adaptation action
- Development Planning – link planning requirements and sustainable building standards; State pressure at federal level for faster reform of Australian Building Code

APPROPRIATELY INVEST IN COMMUNITY ENERGY AND ADAPTATION PROJECTS

- Local communities have shown their willingness to contribute to climate action – provide funding to sustain community action, rather than truncate it. Rural communities produce practical, value-for-money projects.
- Councils are well connected to their communities and can mobilise community action through facilitation and coordination. The Landcare facilitator role is a model for roles that could be funded at sub regional level.
- Support the mature community energy movements in the regions (Distributed Renewable Energy)



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# Goulburn Broken Greenhouse Alliance

**Our communities actively responding to climate change to help build a positive future.**



[www.gbga.com.au](http://www.gbga.com.au)

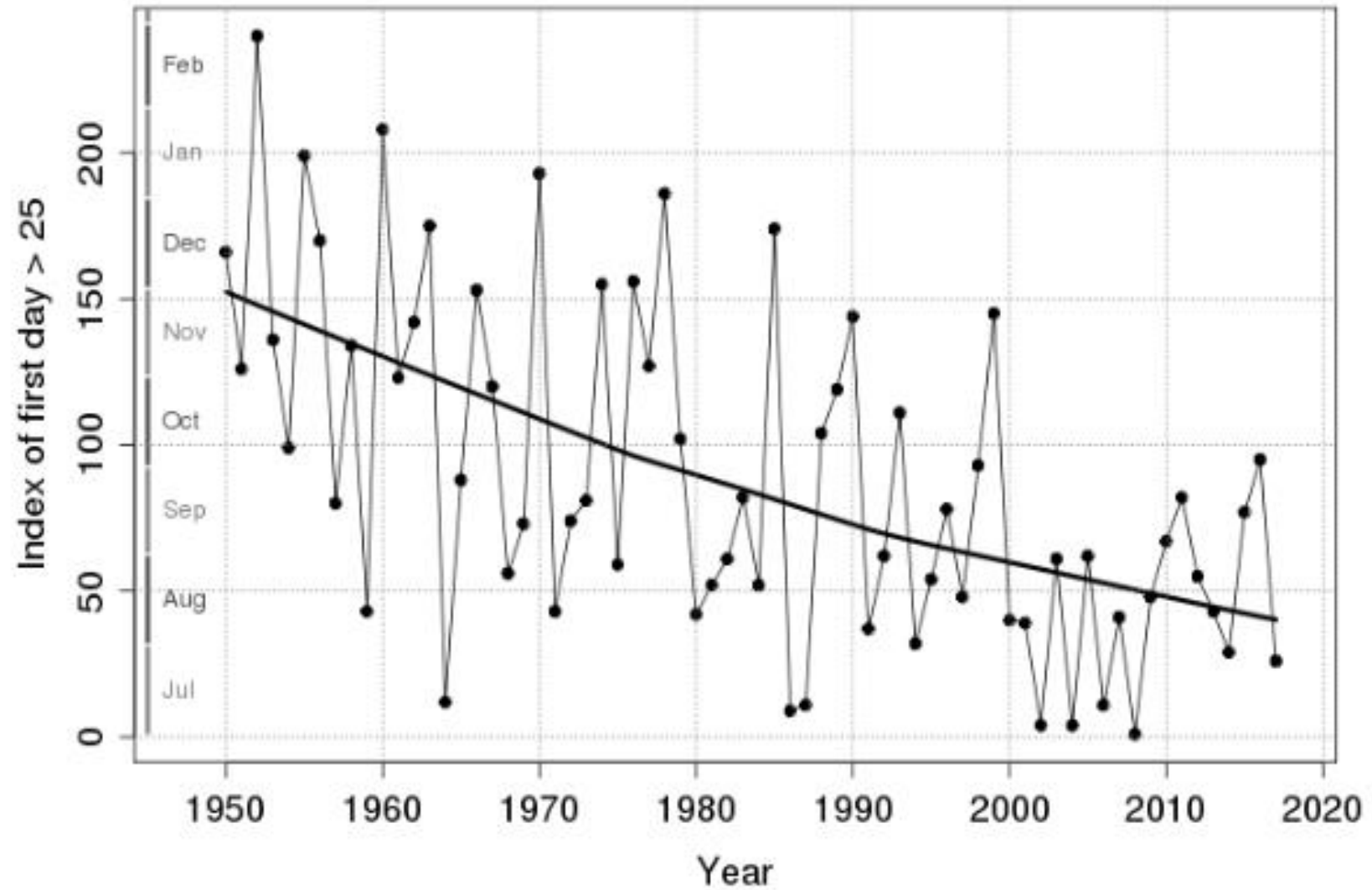
[eo@gbga.com.au](mailto:eo@gbga.com.au)



End of presentation



# Australia's changing climate



Earliest day with south-coastal NSW daily FFDI > 25

# FFDI Forest Fire Danger Index

(FFDI) which was defined in the late 1960s to quantify the risk of bushfires.

It takes into account temperature, relative humidity, wind speed and an estimate of fuel state (based on daily rainfall and the time elapsed since the last rain)

FFDI of 25 is level at which fire danger rating is VERY HIGH

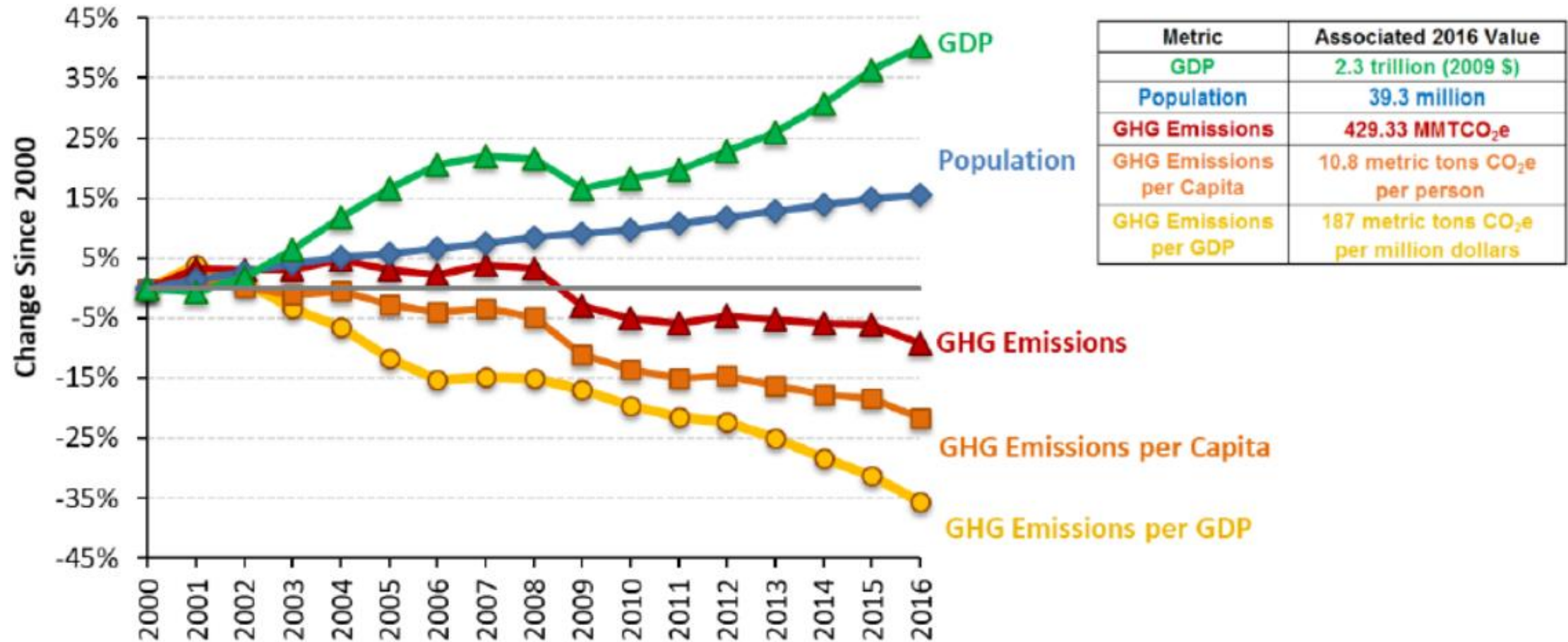
FFDI of 50 is level at which fire danger rating is EXTREME

**Table 1: Percent changes in the number of days with very high and extreme fire weather – 2020 and 2050, relative to 1990**

	2020		2050	
	Low global warming (0.4°C)	High global warming (1.0°C)	Low global warming (0.7°C)	High global warming (2.9°C)
Very high	+2 – 13%	+10 – 30%	+5 – 23%	+20 – 100%
Extreme	+5 – 25%	+15 – 65%	+10 – 50%	+100 – 300%

# California - emissions story since 2000

Figure 1a. Change in California GDP, Population, and GHG Emissions Since 2000



Source: 2018 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2016