



Australian  
National  
University



**climate extremes**  
ARC centre of excellence

# Implications of future climate trajectories on wildfire risk

PROFESSOR NERILIE ABRAM

Research School of Earth Sciences



@dr\_nerilie

@ANUEarthScience

*France-Australia Bushfire Science Workshop*

# Future climate assessment

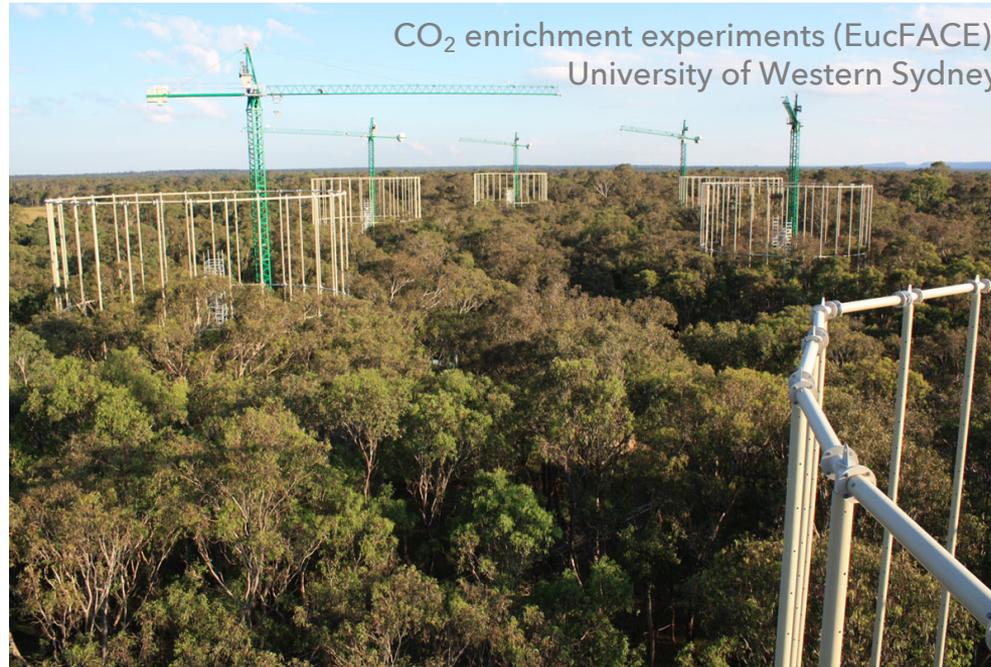
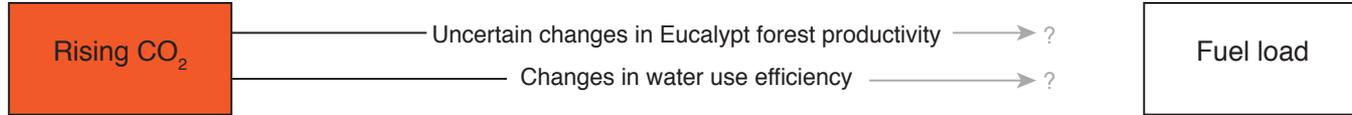


-  *High Confidence / Virtually Certain*
-  *Medium Confidence*
-  *Low Confidence*

## Climate changes in southeast Australia

## Key Processes

## Forest fire switches



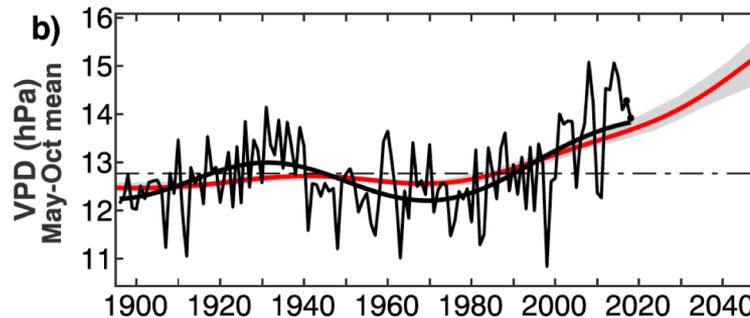
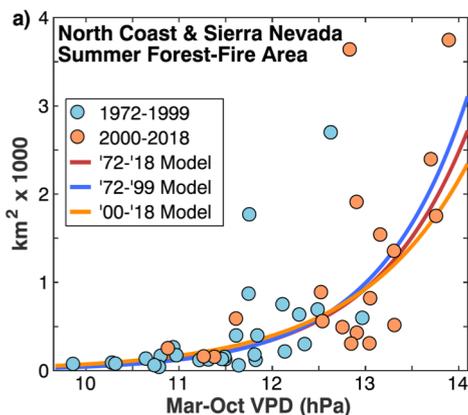
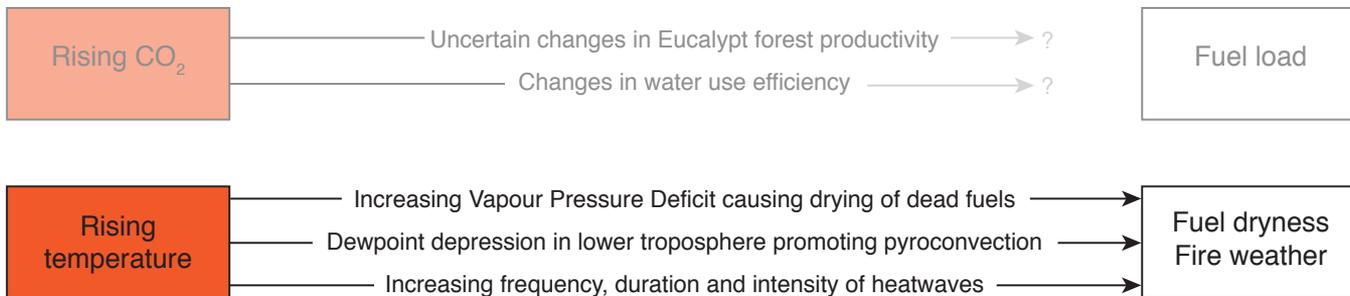
Jiang et al., (2020), *Nature*

-  High Confidence / Virtually Certain
-  Medium Confidence
-  Low Confidence

## Climate changes in southeast Australia

## Key Processes

## Forest fire switches



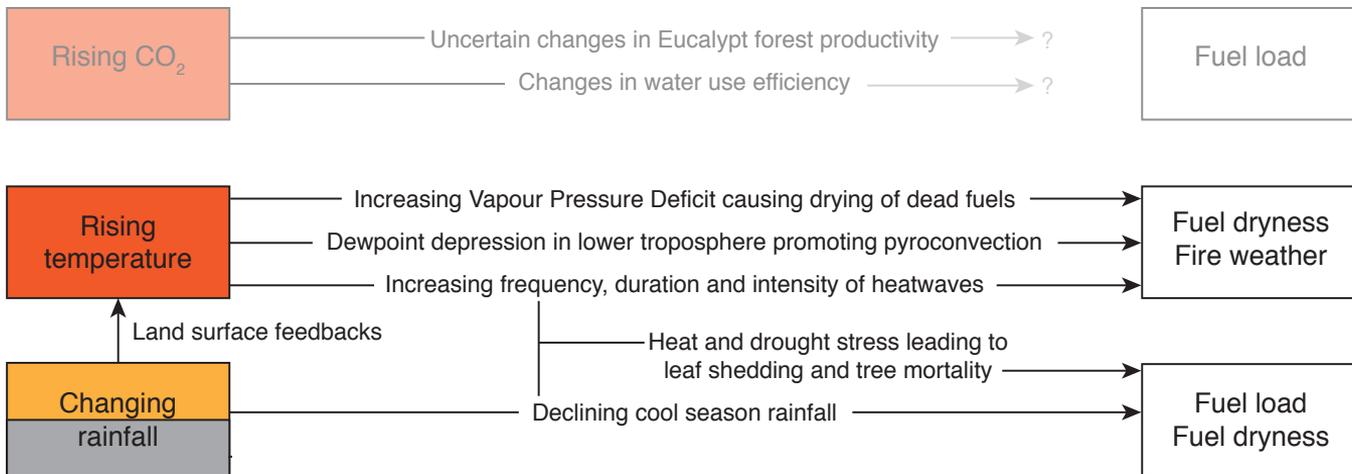
Williams et al., (2019), *Earth's Future*

- High Confidence / Virtually Certain
- Medium Confidence
- Low Confidence

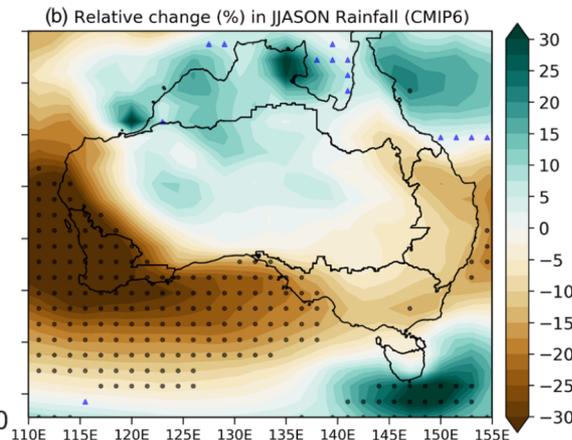
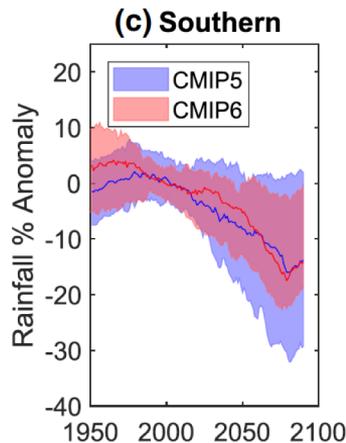
# Climate changes in southeast Australia

## Key Processes

## Forest fire switches



- High Confidence / Virtually Certain
- Medium Confidence
- Low Confidence

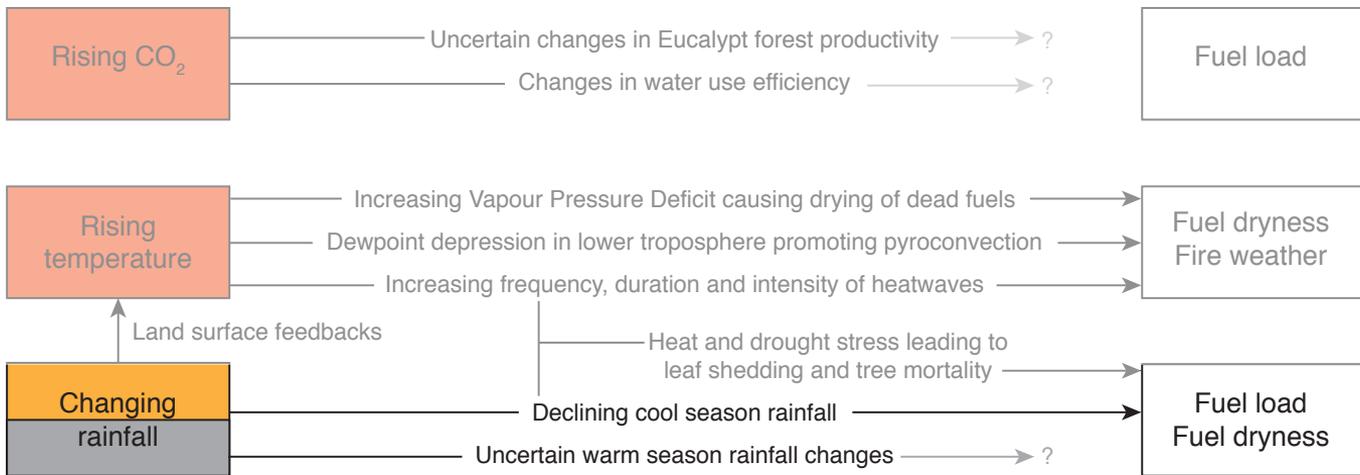


Groose et al., (2020), *Earth's Future*

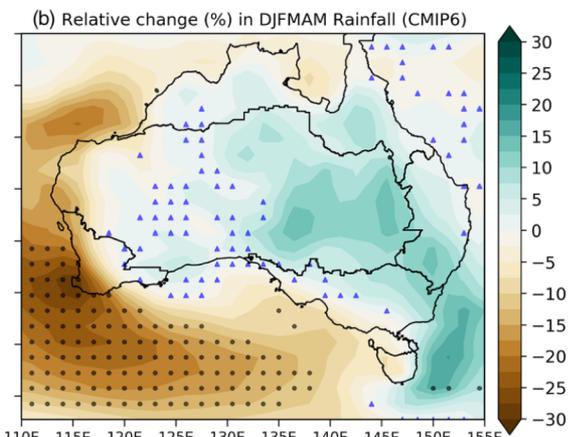
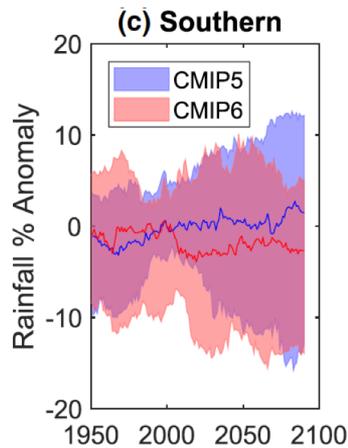
# Climate changes in southeast Australia

## Key Processes

## Forest fire switches



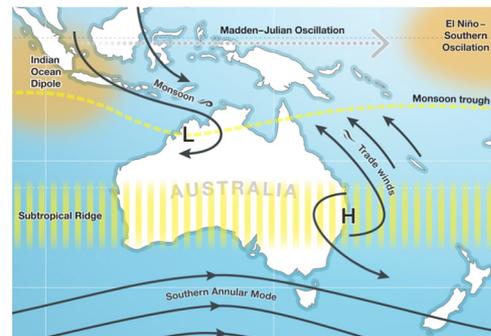
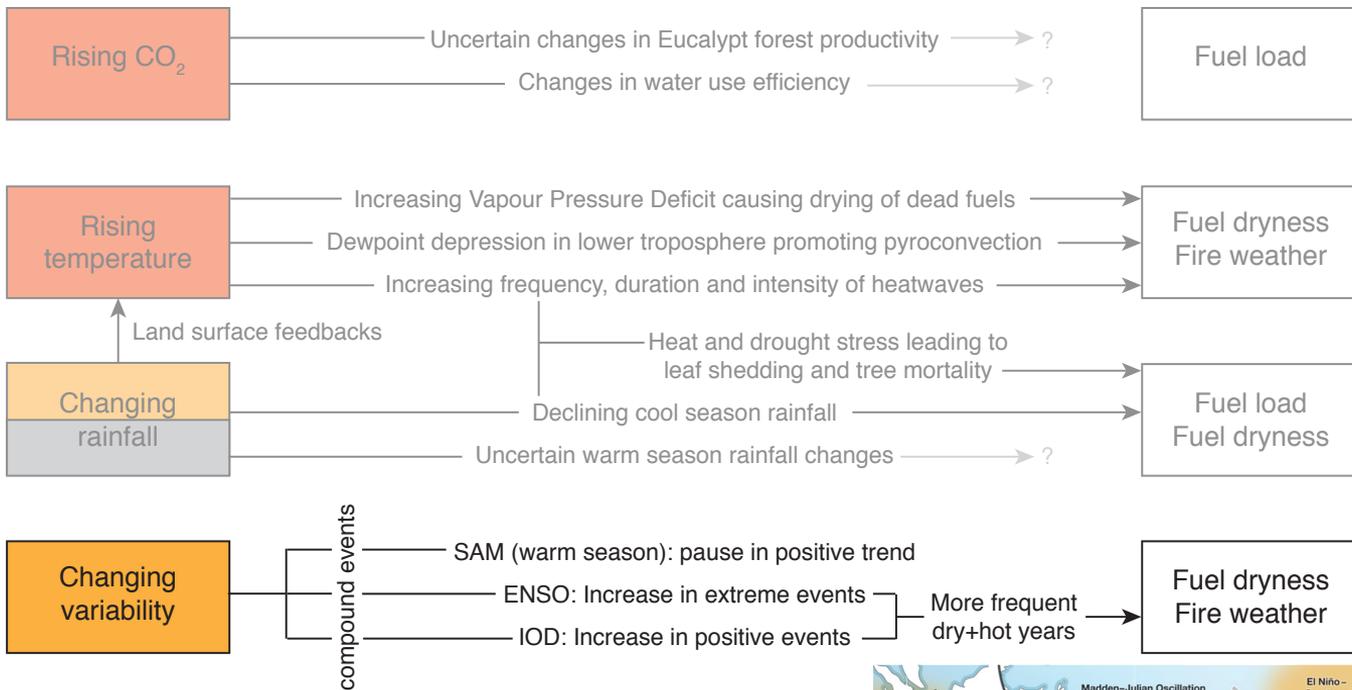
- High Confidence / Virtually Certain
- Medium Confidence
- Low Confidence



# Climate changes in southeast Australia

## Key Processes

## Forest fire switches

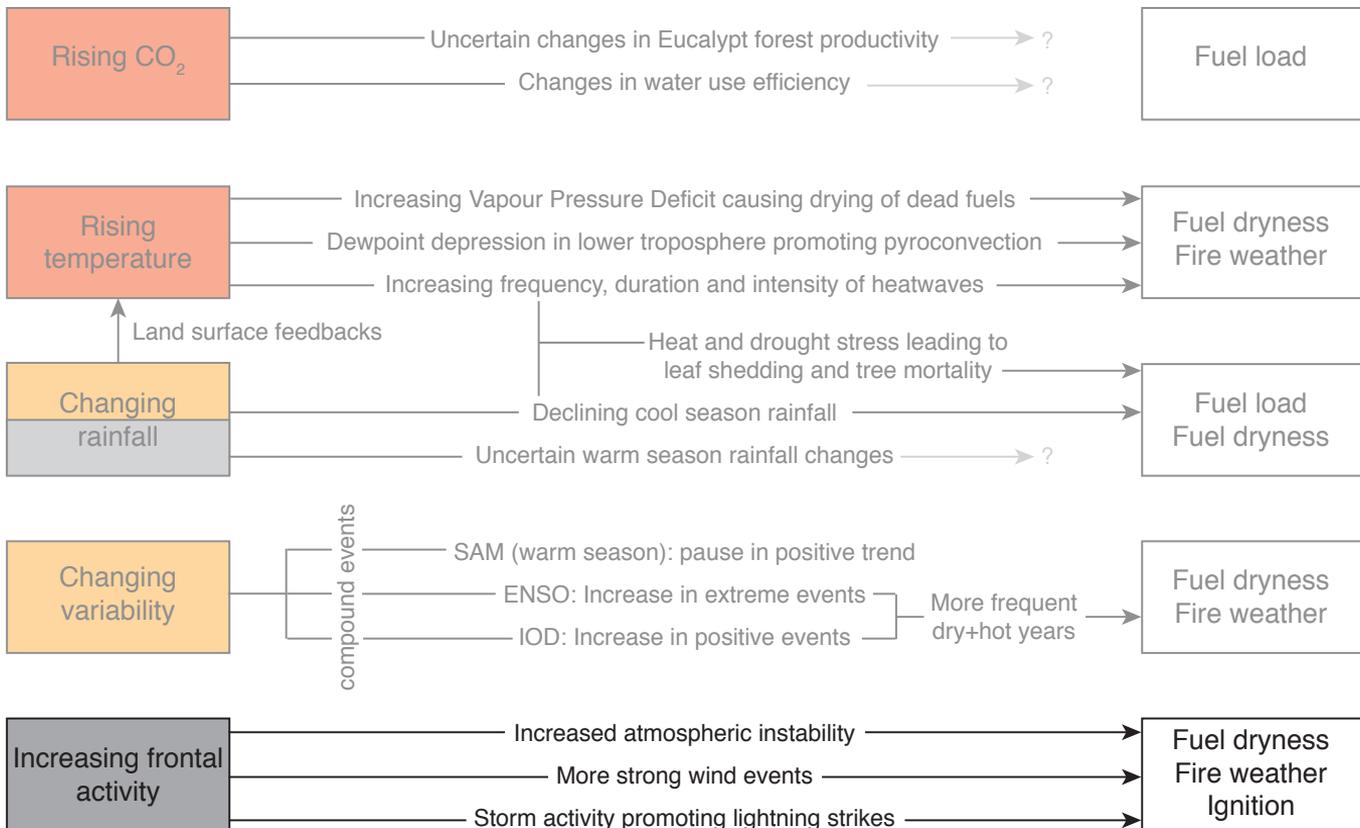


- High Confidence / Virtually Certain
- Medium Confidence
- Low Confidence

# Climate changes in southeast Australia

## Key Processes

## Forest fire switches



■ High Confidence / Virtually Certain

■ Medium Confidence

■ Low Confidence

## Climate changes in southeast Australia

Rising CO<sub>2</sub>

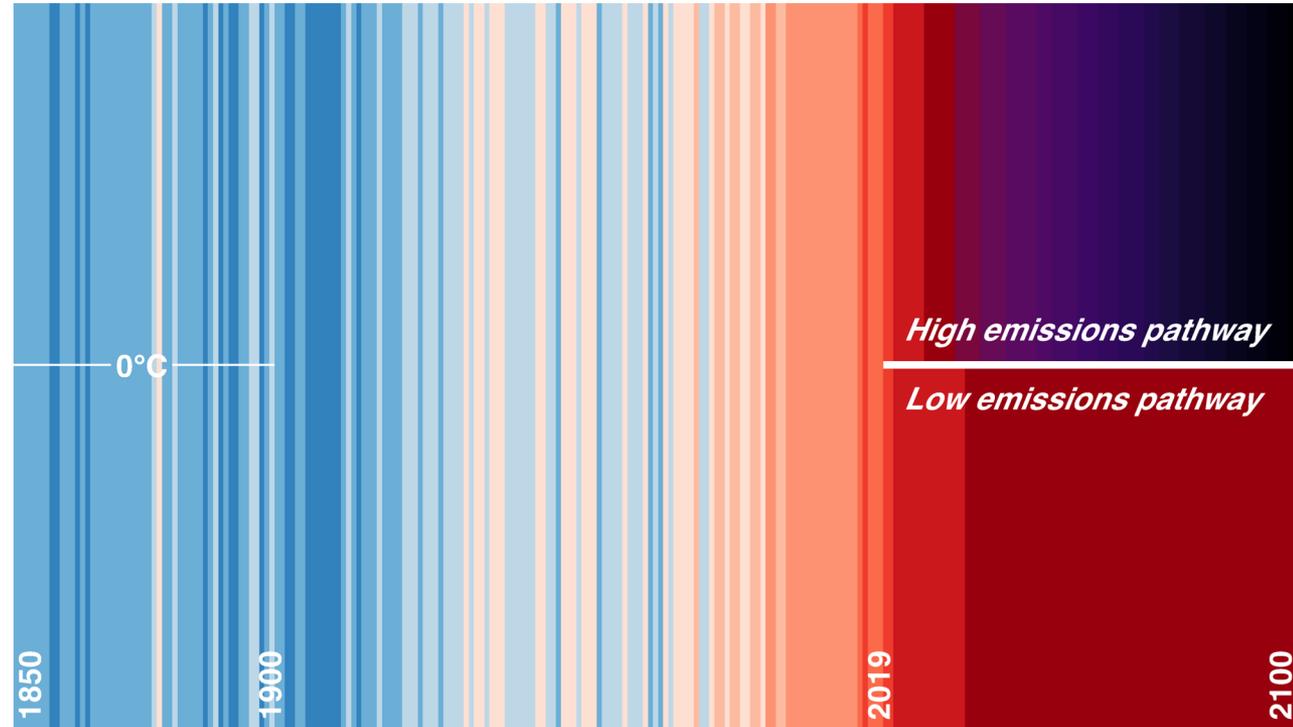
Rising temperature

Changing rainfall

Changing variability

Increasing frontal activity

# Future climate choices



 *High Confidence / Virtually Certain*

 *Medium Confidence*

 *Low Confidence*