



Prof. Jason Evans



Climate Change Research Centre, UNSW
ARC Centre of Excellence for Climate
Extremes
jason.evans@unsw.edu.au

My Background

- Grew up in Newcastle
- B. Sci (Physics) & B. Math (Hons) University of Newcastle
- PhD ANU – hydrology and regional climate
- Research scientist, Yale University USA
- Professor, Climate Change Research Centre, University of New South Wales



My Research Expertise

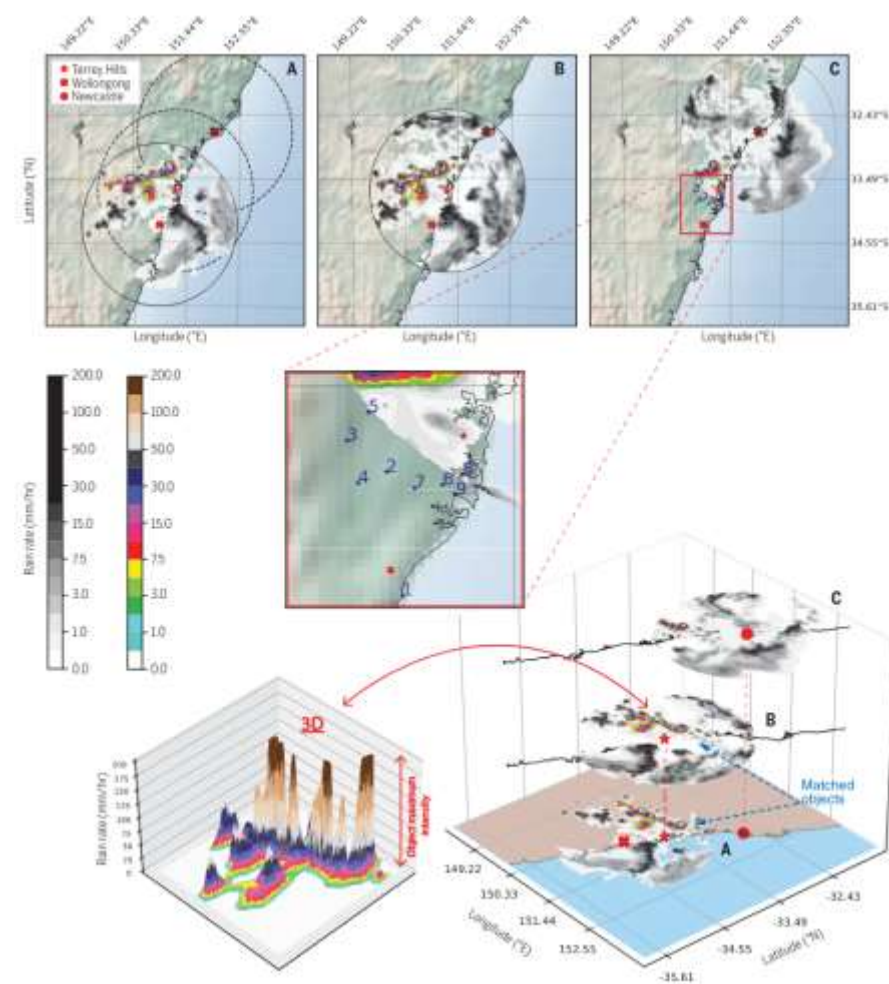
- Climate system science
- Regional climate modelling
- Land surface - atmosphere interactions
- Fire generated thunderstorms
- Climate extremes
- Water cycle processes and changes
- Using satellite based remotely sensed data to assess land cover changes
- Precipitation extremes and their changes due to climate change



Extreme precipitation Research Example

How have 10-minute duration extremes been changing in the Sydney region?

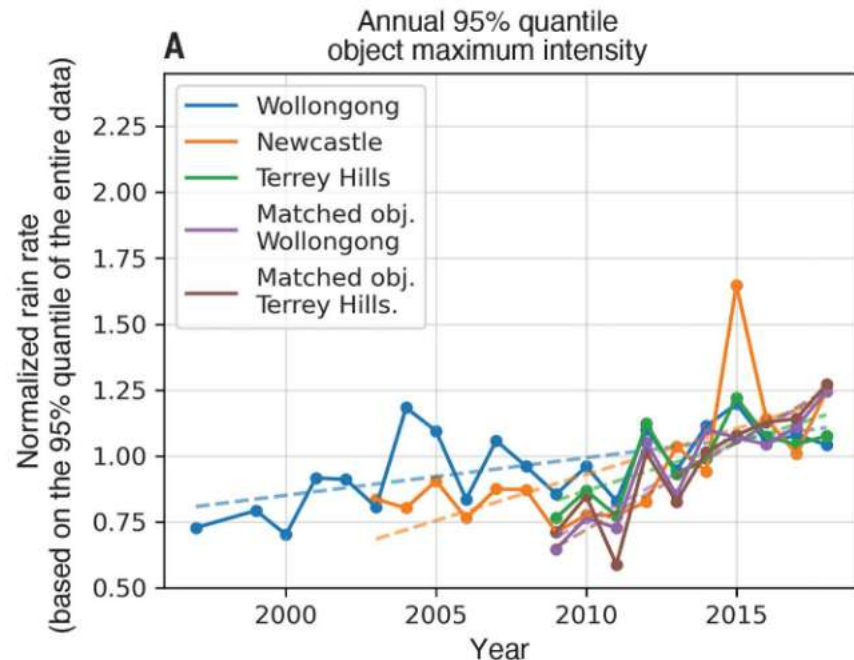
- Use weather radar data from three nearby radars
- Identify storm “objects”
- Track storm objects
- Identify the maximum rainfall intensity over the life of the storm



Extreme precipitation Research Example

How have 10-minute duration extremes been changing in the Sydney region?

- Look at trend in the 95th percentile of the storm maximum rainfall intensity
- Increasing at 2% per year
- Over ~20 years that's a 40% increase in the intensity of the heavy 10-minute duration events!!



My Role in the Climate Change Considerations for AR&R

Member of the science team performing the literature assessment focused on what we know about how precipitation extremes are changing as the climate changes.

- Read many papers
- Assessed paper quality
- Quantified the outcomes in terms of climate change
- Compiled results together for overall summary



My perspective on using the Climate Change Considerations in AR&R to manage Storm Water

Existing infrastructure did not account for climate change increasing the rainfall intensities.

- Given the increases that have already been observed
 - Existing infrastructure is no longer fit-for purpose.
 - It is not resilient to the rarity of event that it was designed for.
 - How do we fix this? Or do we just accept a higher frequency of failure?
- Knowing these rainfall intensity increases will continue, we need to design to a higher standard than historically just to maintain the same level of service.

