



# T3-A4 Fire Case Studies

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# Why case studies?

- Lived experience
- Use advanced techniques
- Gather all relevant data
- Utilise a wide range of expertise
- Luxury of time
- Benefit of hindsight
- Deeper understanding of what, how, why
- Translate into working knowledge
- Contribute to formal enquiries
- Information exchange researchers / practitioners
- Adapt to changing climate

### OFFICIAL Corryong simulations ACCESS-Fire 0410LT 31 December

# Fire-atmosphere coupling OFF





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### The Waroona Fire – PyroCb, Low Level Jet and Downslope Winds

Vertical motion 2016 Jan 06 14:30 (LT)

Mean(468m - 1633m)



Credit: Darren McCagh, Farmhouse Films.

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### **Doing case studies better**

- Existing process: ad hoc, slow, requires high level of technical expertise
- Streamlined process: standardised, semi-automated, initial quick-but-deep look, possible to drill deeper.
- Benefits:
  - Deepen understanding
  - Quicker turn-around
  - Less technical skill required
  - Input to inquiries
  - Upskill operational people
  - Strengthen relationships research / operations, across agencies
- Deliver:
  - Studies of Currowan (with NSW RFS) and Woorooloo (with WA DBCA and DFES)
  - Documented framework
  - Streamlined model run and visualisation
  - Input to training material
  - Discussion paper

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## Our Research Context – High Impact Weather Research, Bureau of Meteorology

	High resolution ACCESS incl. ensembles	Low level jets Downslope winds	Training
Fire weather, tropical cyclones, east coast lows, tornadoes, severe thunderstorms	ACCESS-Fire	Fire-generated vortices	Pyrocumulus prediction
	Satellite and radar data	Pyrocumulus	Ember Transport
	Large-eddy model	Plume dynamics	Inquiries
	Soil moisture	Ember transport	
People			
Links to operations			
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### **Summary**

- Do case studies quicker, faster, better
- Learnings are available sooner
- Grow the body of working knowledge
- Upskill operational staff
- Knowledge transfer
- Strengthen relationships and partnerships between research and operations, across jurisdictions
- World-leading science, relevant to end users







