





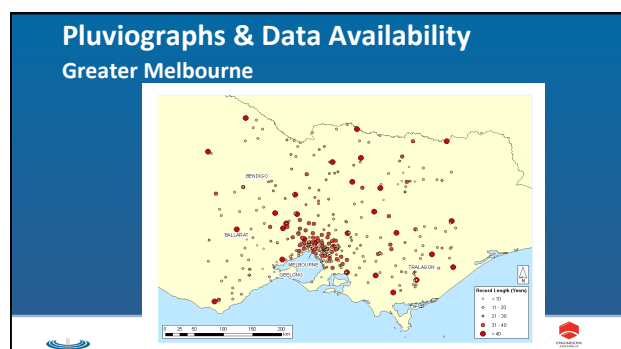
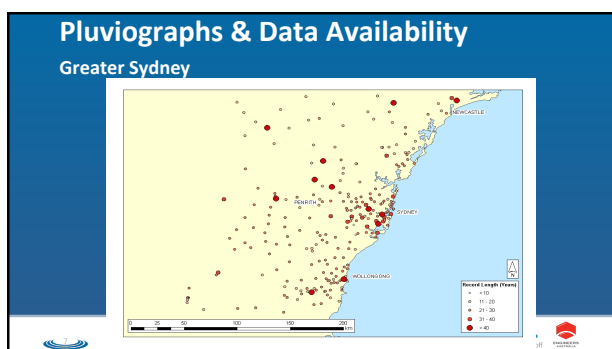
Short Duration Areal Reduction Factors

Peter Stensmyr
Mark Babister

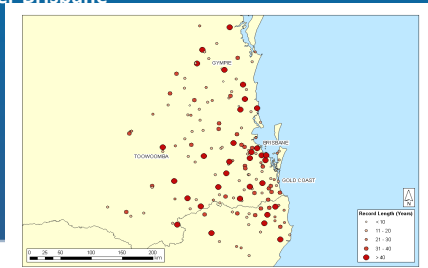



Two stage approach

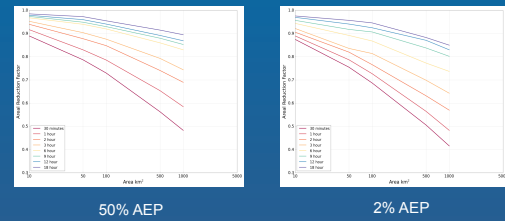
Initial study <ul style="list-style-type: none"> • Exploratory study • Empirical approach to ARF • Test the viability of approach • identify major issues? 	Current study <ul style="list-style-type: none"> • Extend to Greater Melbourne and Brisbane • Refined methodology • Final results for ARR
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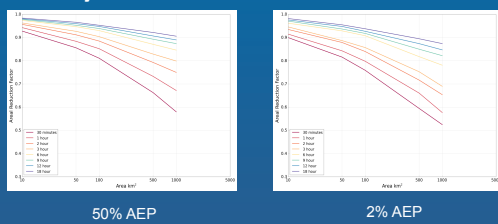
Pluviographs & Data Availability Greater Brisbane



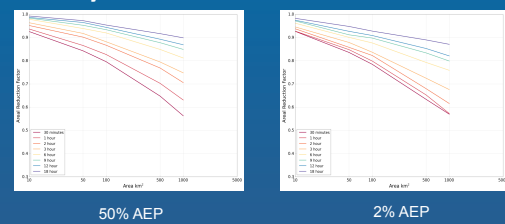
ARF by Area and Duration - Sydney



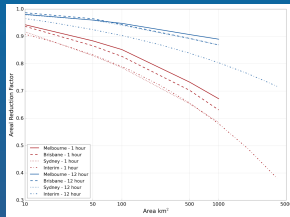
ARF by Area and Duration - Melbourne



ARF by Area and Duration - Brisbane



Regional Comparison (50% AEP)



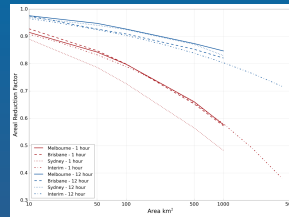
- Different metropolitan regions
- Sydney an outlier?
- P2 Interim Equation (NSW GSAM)



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Regional Comparison (2% AEP)



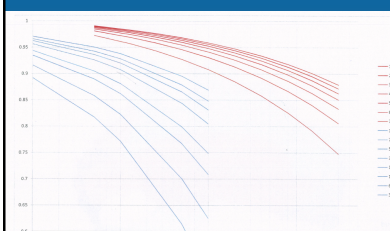
- Different metropolitan regions
- Sydney an outlier?
- P2 Interim Equation (NSW GSAM)



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Fitting Equation to Short Duration ARFs - Brisbane



- 50% AEP
- Blue – Sub-daily
 - Red - Long-duration (BoM)

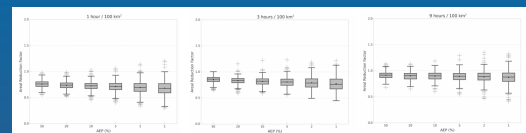


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Box Plots – 100 km² (Sydney)

Longer duration →



- Longer duration => higher ARF (less reduction in rainfall)


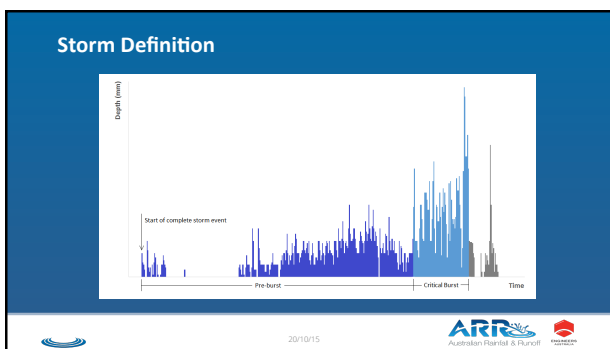
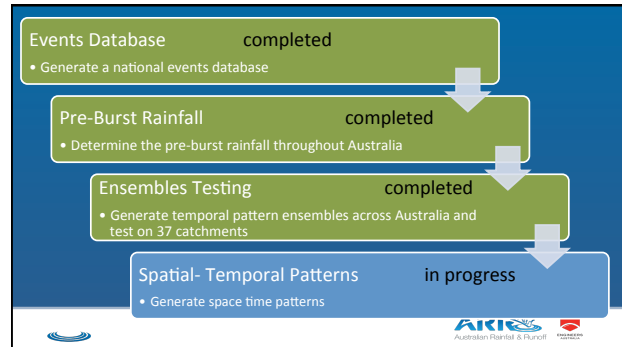


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Pre-burst Rainfall and Temporal Patterns

Melanie Loveridge
Mark Babister

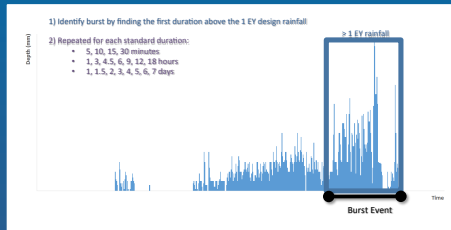




Approach

- extracted every event > 1 EY from the BoM database
- assess pre-burst behaviour
- extract and test temporal patterns



Event Database: Burst Identification



ARR Revision Project 3:
Temporal Patterns of Rainfall

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Storm definition event database

Numerical definition to replicate SKM/Jacobs manual storm definition from the loss study:

- deal with overlapping/closely spaced event
- define critical burst/AEP, pre-burst and post burst



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Event Database: Conclusions

- 95% events are well defined
- Pre-burst is very definition dependent
- Some events overlap, but vary in duration



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ROI space for time Pre-burst approach

On a fine and course grid select all events from near locations with:

- similar IFD and
- similar target AEP

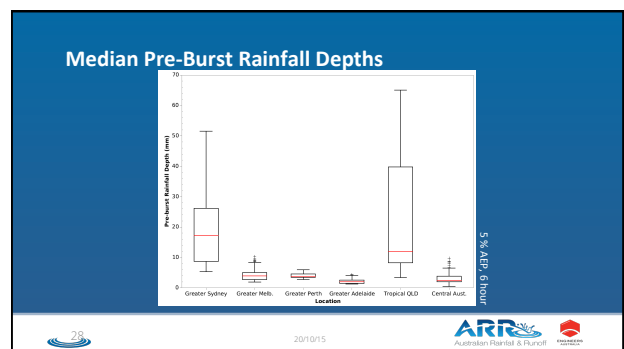
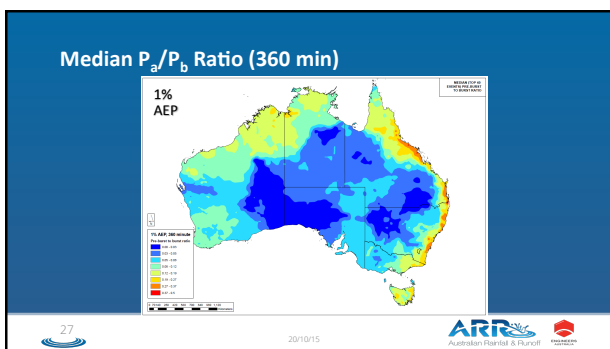
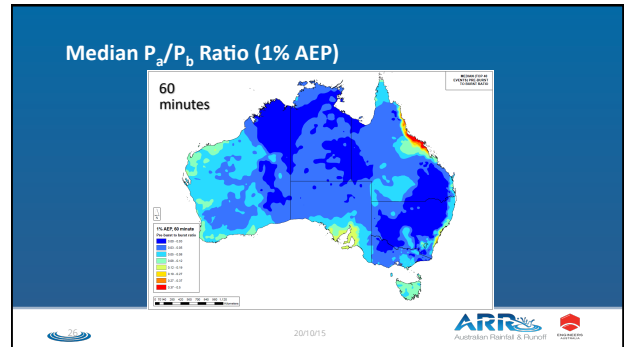
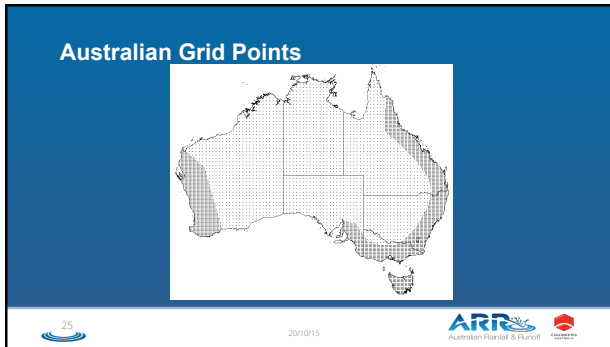
Transfer to target site and select events on weighted criteria

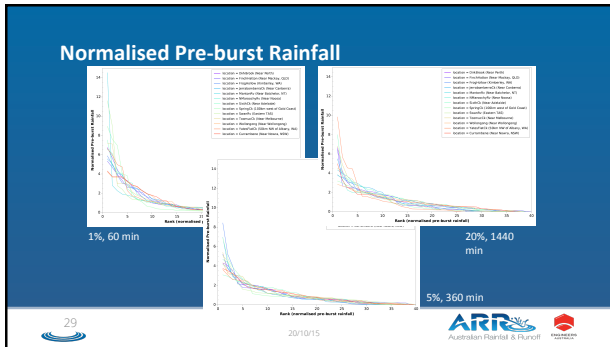


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Temporal Pattern Approaches

- 2 selection approaches
 - Region and
 - Region of Influence (ROI)
- 3 event approaches
 - Burst,
 - burst + pre-burst and
 - complete storm(ROI only)

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