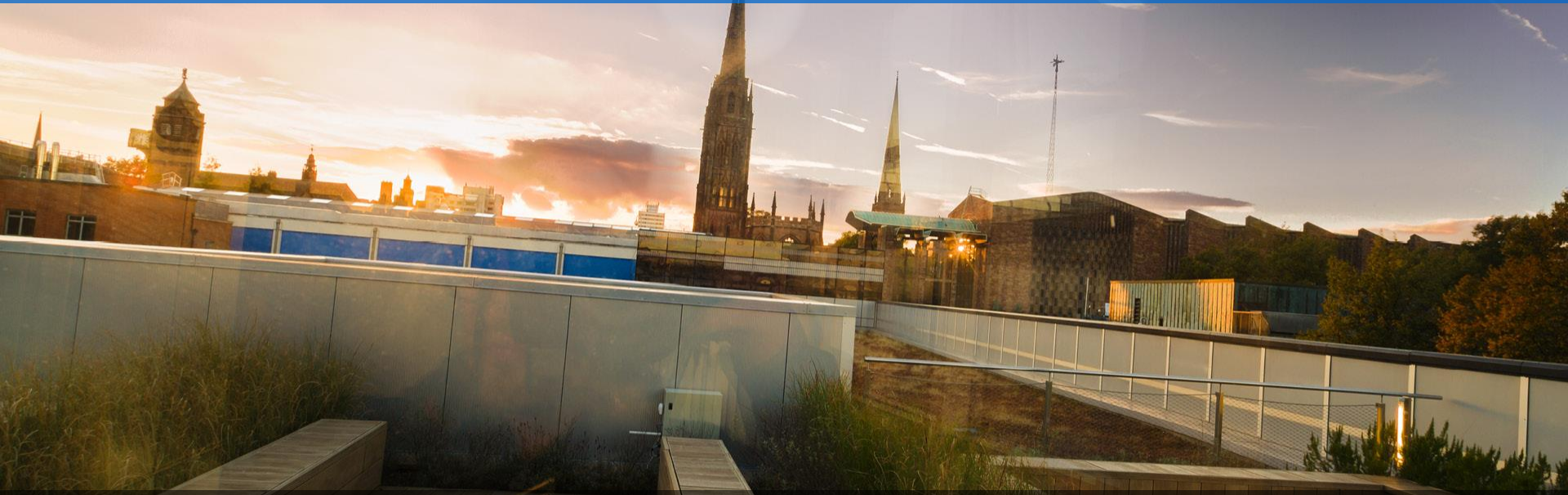




Research Centre  
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Coventry  
University 



# Investigating the role of tree planting on sub-catchment level runoff in Warwickshire, England: Preliminary findings

*Craig Lashford, Soroush Abolfathi, Thomas Lavers, Nathaniel Revell, Sue Charlesworth, Matt Blackett & Frank Warwick*

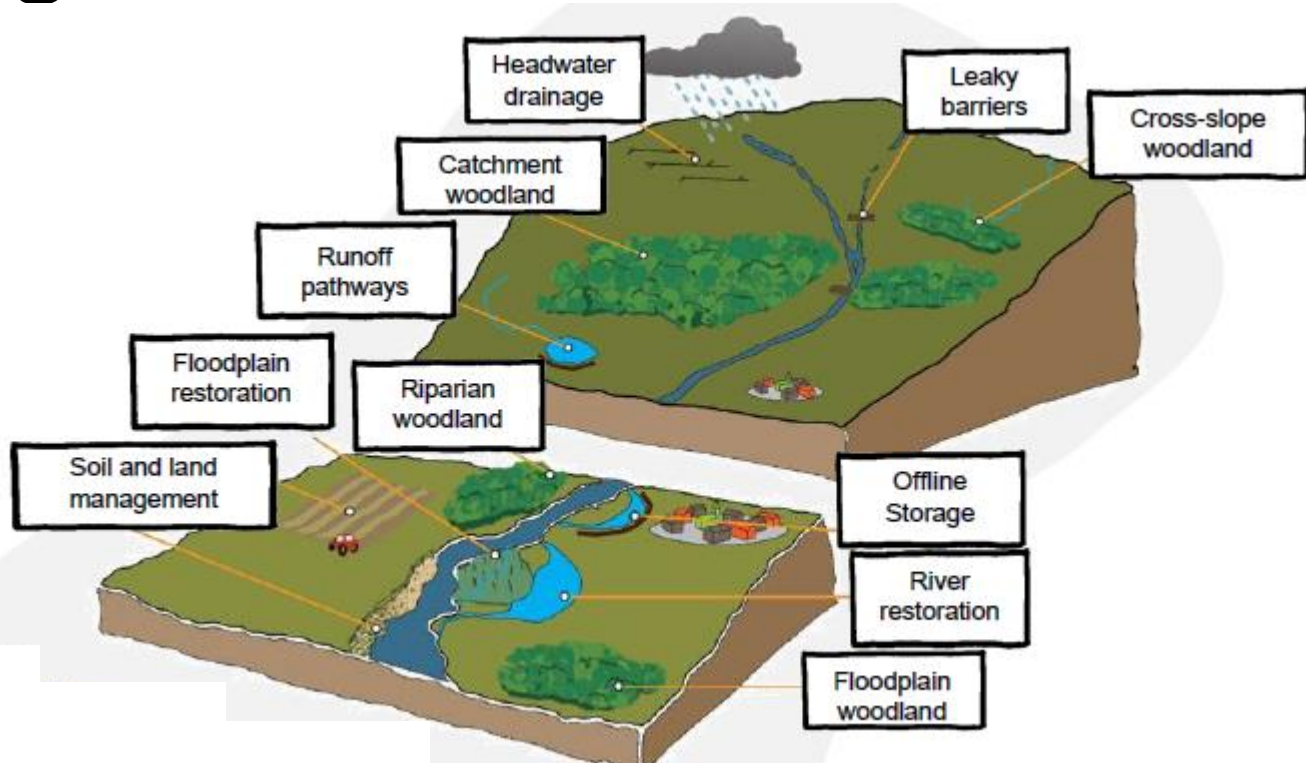
*Centre for Agroecology, Water & Resilience, Coventry University, Priory Street, CV1 5FB*

# Presentation Structure

- Introduce the site
- Methodology
- Preliminary findings

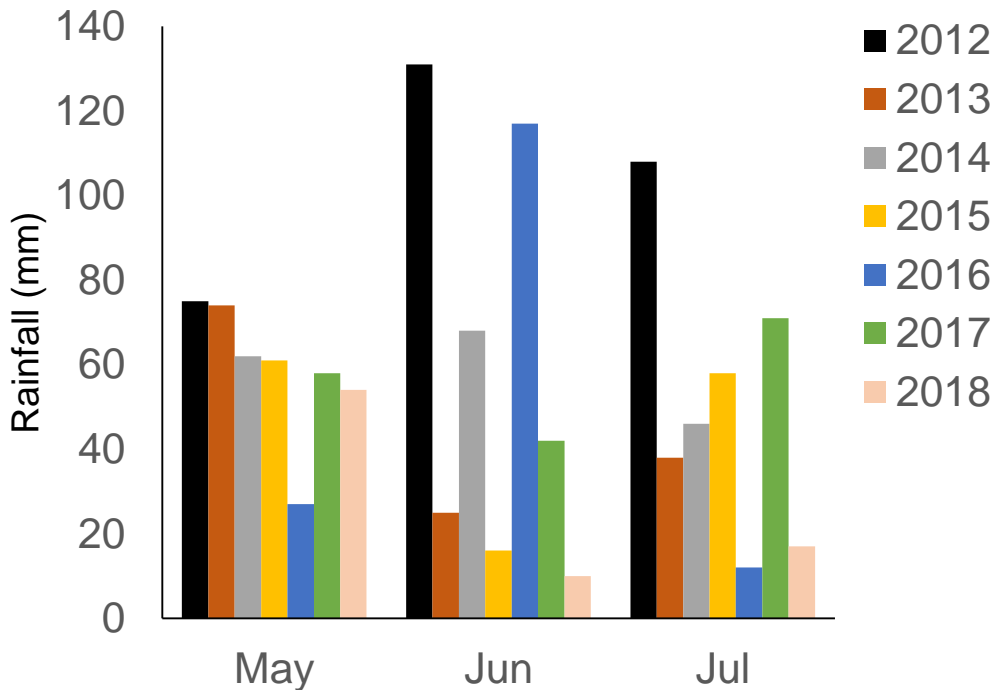


# Natural Flood Risk Management



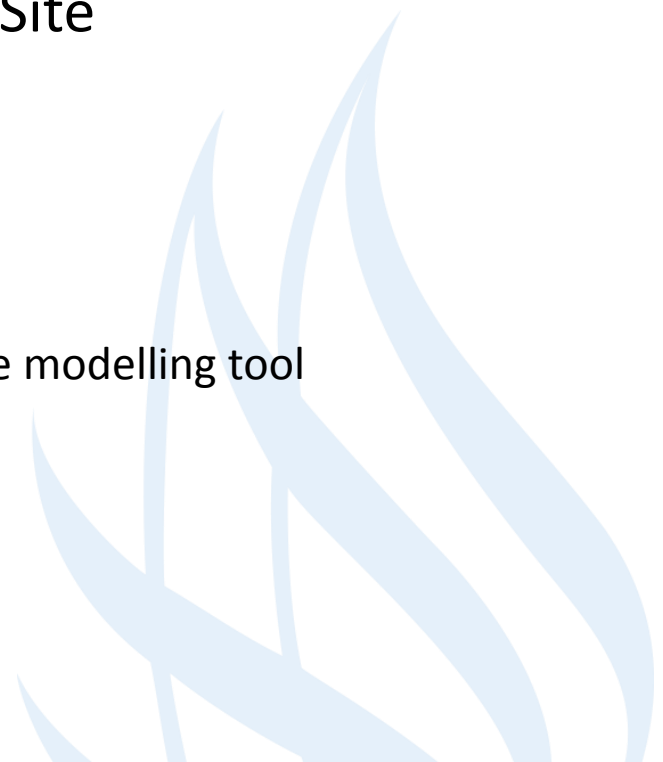
# Summer 2018...

Month	May – July total rainfall (mm)	Days with more than 10mm rain
2012	314	10
2013	137	4
2014	176	5
2015	135	0
2016	156	4
2017	171	5
2018	81	2



# Presentation Structure

- Discuss Heart of England Forest Study Site
- Proposed methodology
- Findings from other work...
  - Validating MicroDrainage, UK standard drainage modelling tool





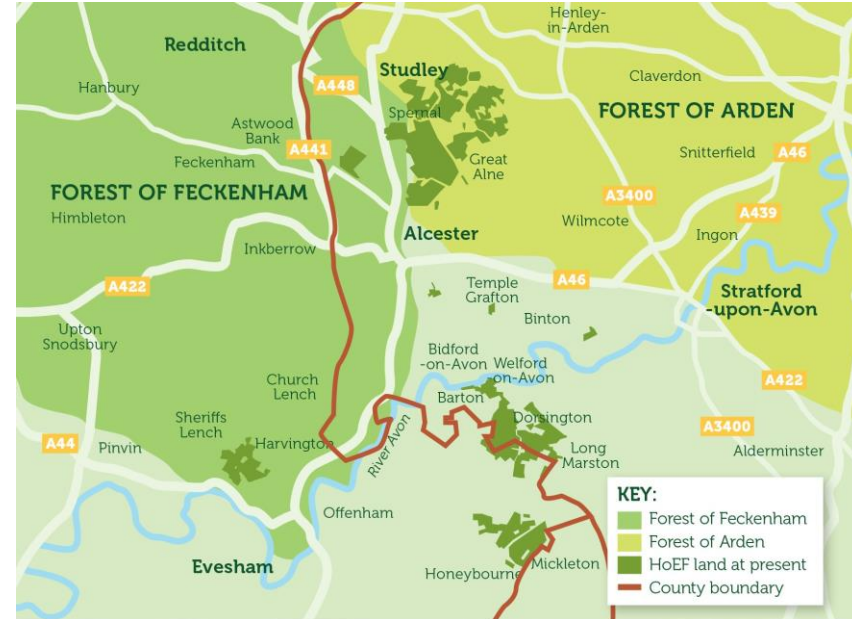
# Study Site: Heart of England Forest

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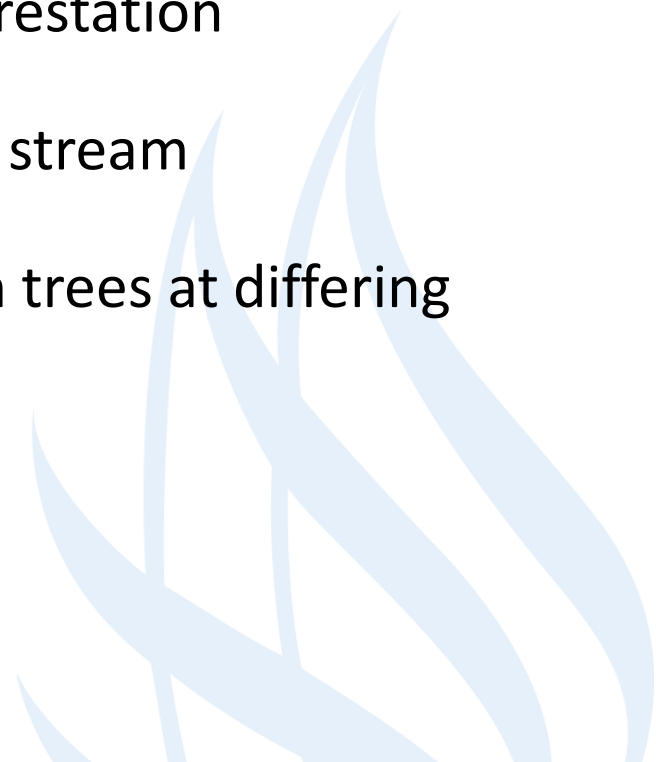
# Study Site: Heart of England Forest

- Located in the catchment of the Rivers Alne, Arrow and Avon
- 3,750 acres of planted woodland
  - Planted 1.7 million trees since 2002
- Aim to cover 30,000 acres
  - Create a connected native forest



# Proposed methodology

- Monitor catchments pre and post afforestation
- Install depth sensors along the nearby stream
- Monitor multiple sub-catchments with trees at differing stages of maturity
- Monitor rainfall

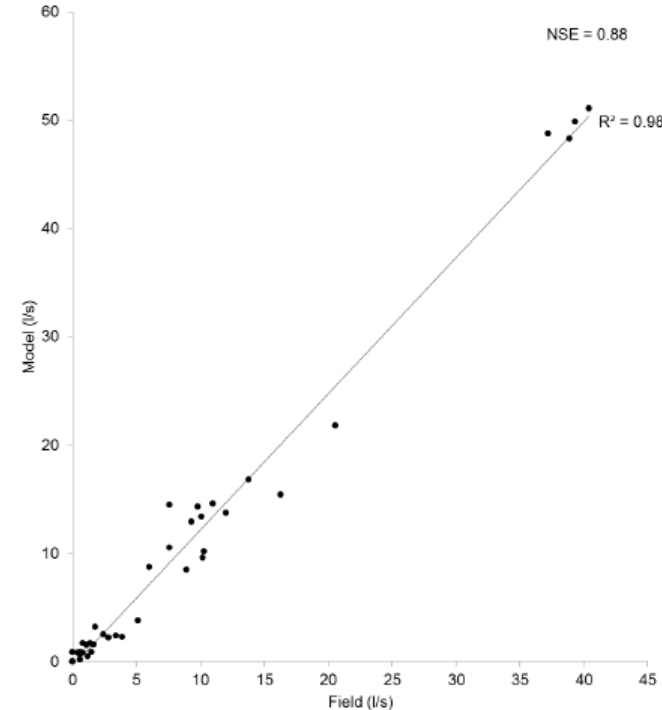




# Results: Field Validation of MicroDrainage



- Monitored 5 rainfall events



Hamilton, Leicestershire, UK

# Results: Lab Validation of MicroDrainage

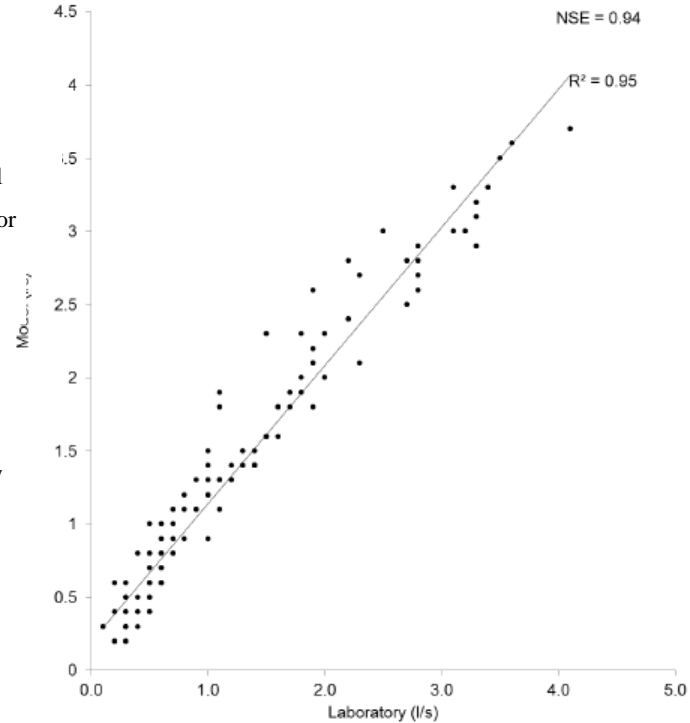


Rainfall  
simulator

PPS rig

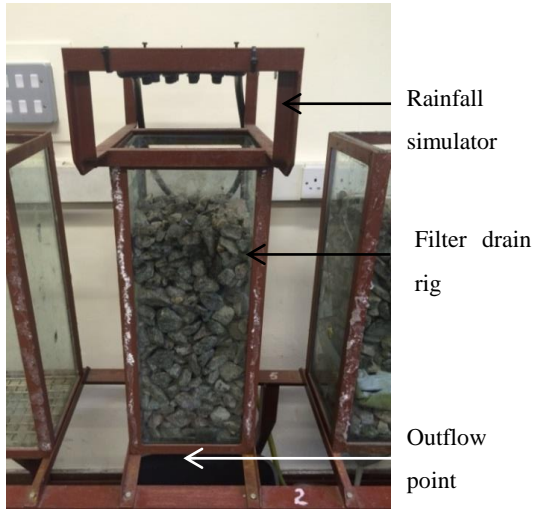
Outflow  
point

- Analysed 5 differing rainfall intensities and durations

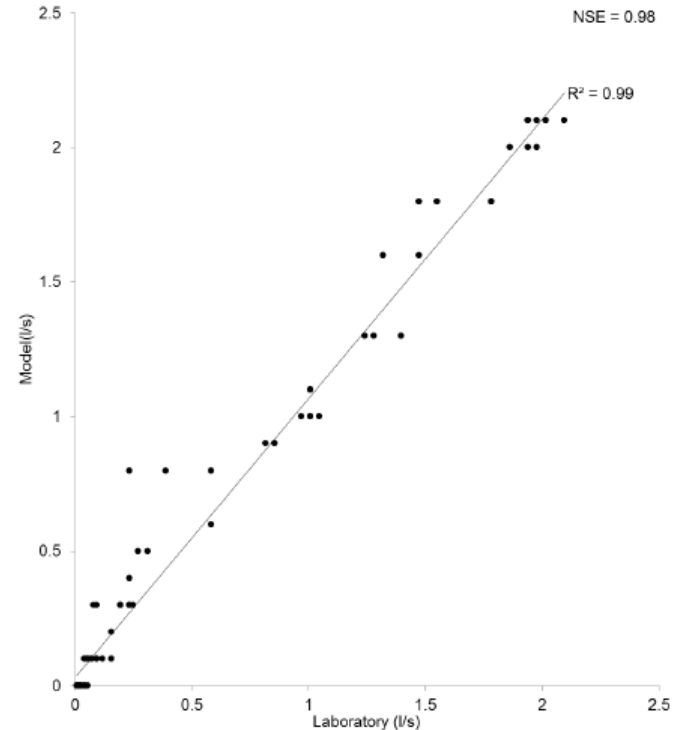


Porous Pavement

# Results: Lab Validation of MicroDrainage



- Analysed 5 differing rainfall intensities and durations



# Acknowledgements

- Heart of England Forest
- Coventry University
- Environment Agency
- Forestry Research
- Environmental Monitoring Solutions



# Summary

- Give yourself time for field research!
- Planting trees is one aspect of the wider approach to NFRM
- MicroDrainage is an extremely effective tool for modelling flow through SuDS

