Do climate change induced weather conditions elicit behavioural changes in woodlice?

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Why are woodlice important?

- Decomposition and nutrient recycling
- Globally widespread

Yang *et al.*, 2020

How is climate change involved?

Precipitation intensity and **wind speeds** projected to increase

Knock on effects on ecosystem functioning

Sheltering is positively correlated with rainfall

Aggregating is likely to be affected by wind speed

Min *et al*., 2011; Rahim *et al*., 2012; Hassall and Tuck, 2007; Koh *et al*., 2010

Hypothesis

- Time spent sheltering would increase with increasing precipitation intensity
- Time spent aggregating would increase with increasing wind speed.

Methods

Experimental set up

Data collection

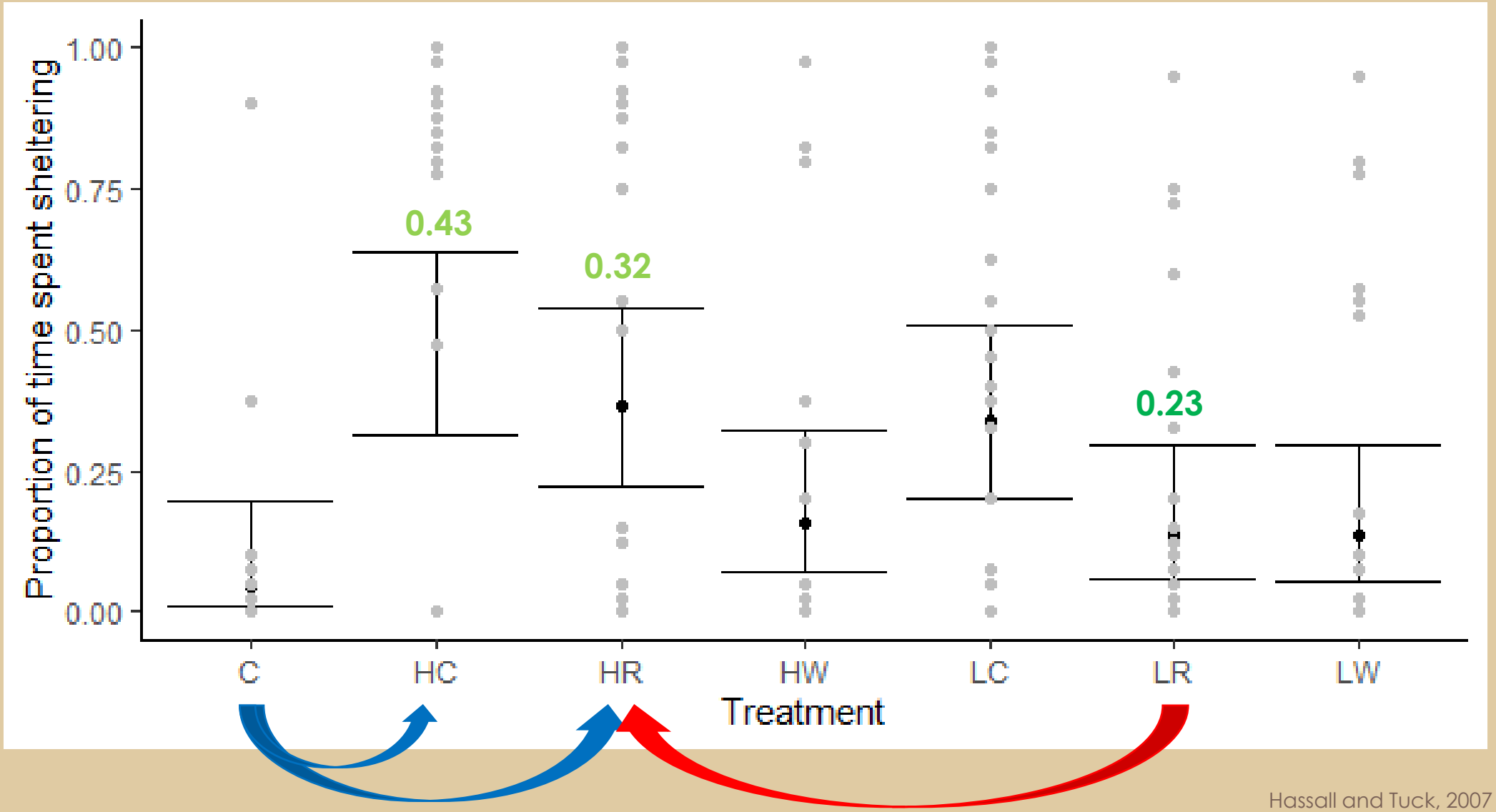
- **7 treatments**
  - Control
  - Light and heavy rain
  - Light and heavy wind
  - Light and heavy combination
- **Behaviour** recorded every 15 seconds

Statistical analysis

- **GLM**
- **Response** = Proportion of time spent sheltering OR aggregating
- **Explanatory** = Treatment
- **Pairwise comparisons**

Results - Sheltering

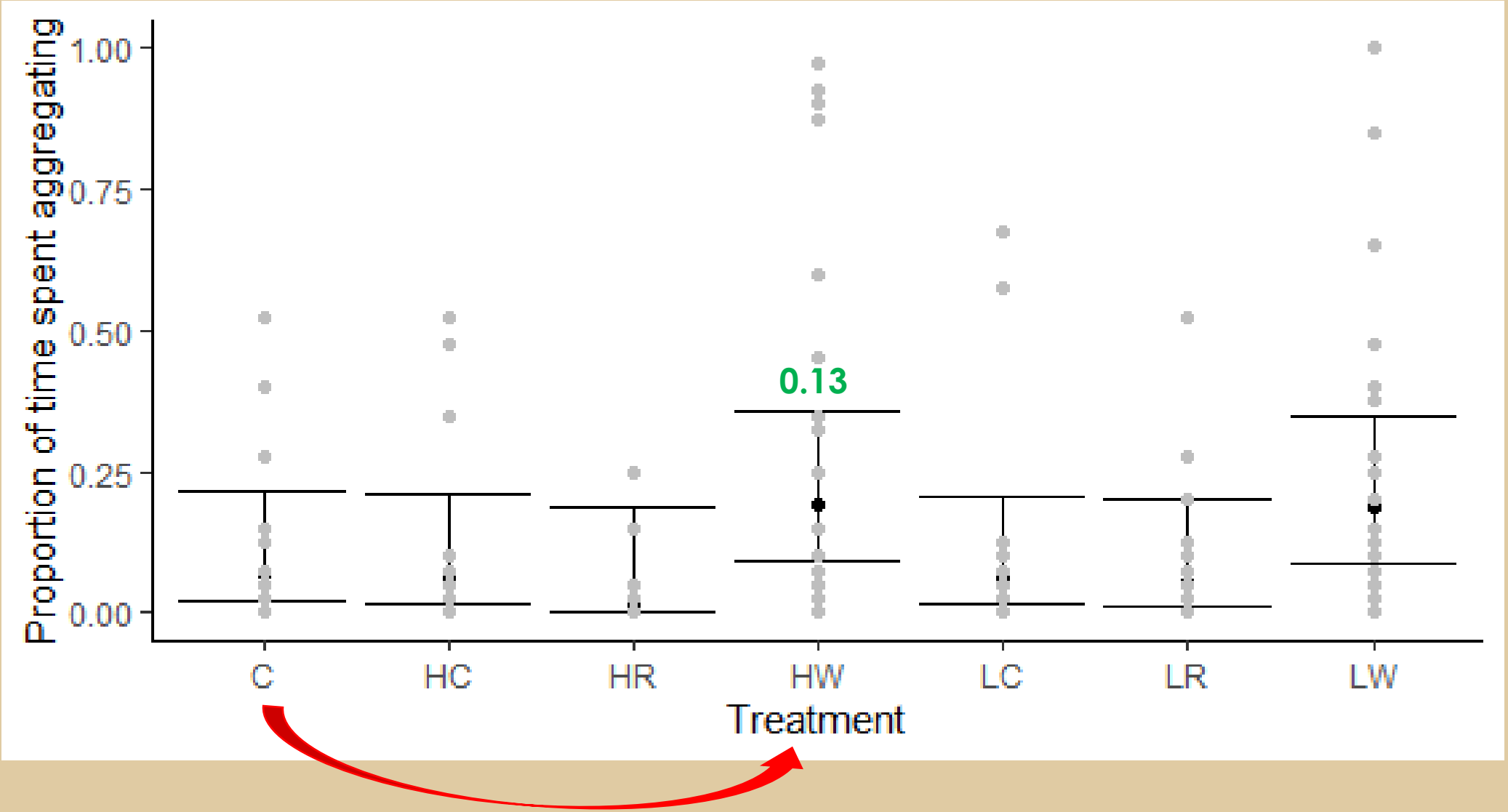
n = 34



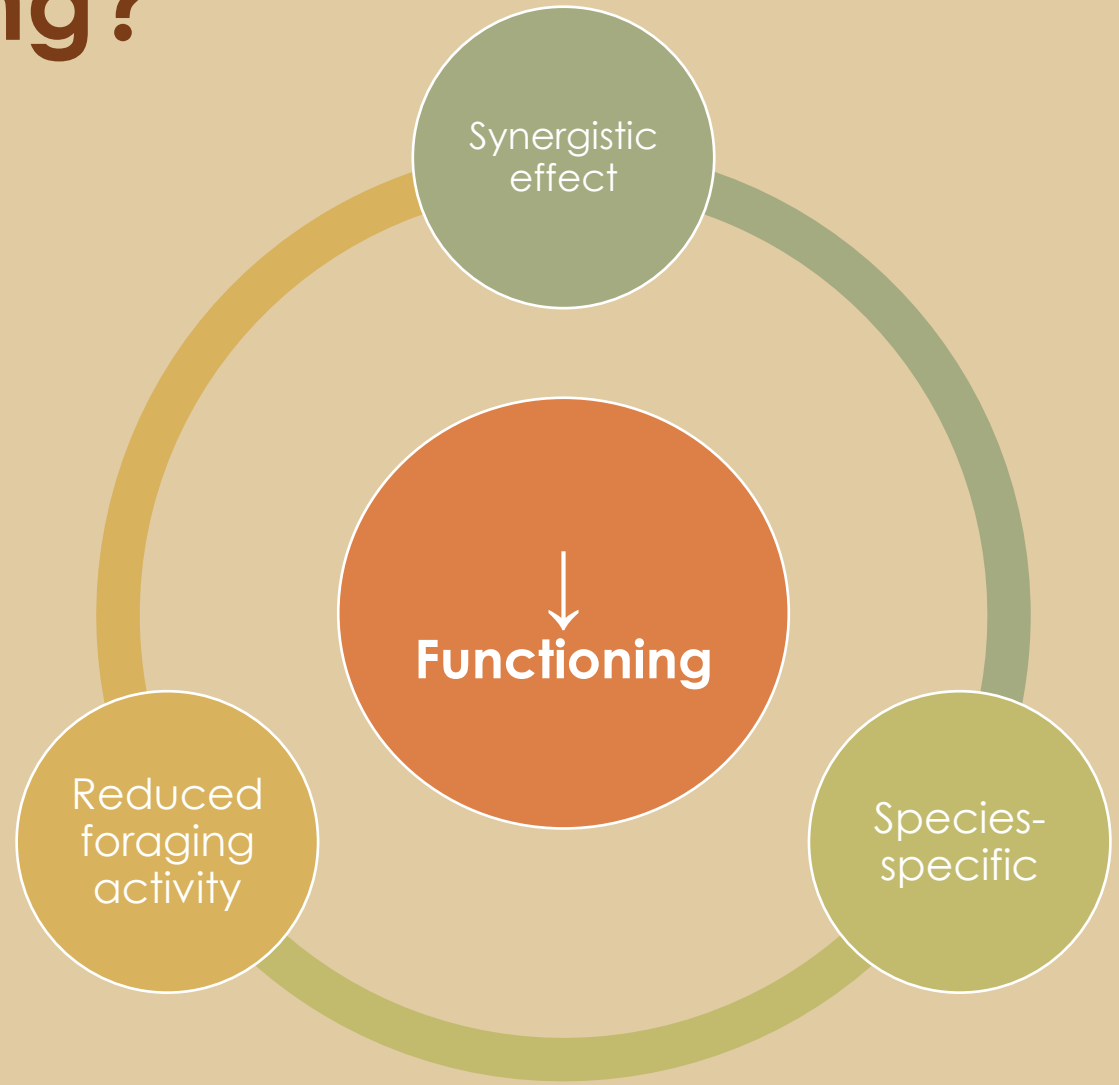
Hassall and Tuck, 2007

Results - Aggregating

n = 34



What are the implications for ecosystem functioning?



Joly *et al.*, 2019; Zimmer *et al.*, 2005; Hassall and Tuck, 2007; Csonka *et al.*, 2018

Going forward…

- Further investigate the relationship between increasing precipitation intensity and sheltering
  - Larger sample size
  - Greater magnitudes
  - Species-specific
  - Link to ecosystem functioning

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Questions?