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PS 5.1 Changing People

The psycho-social effects of tree-removal from urban parks

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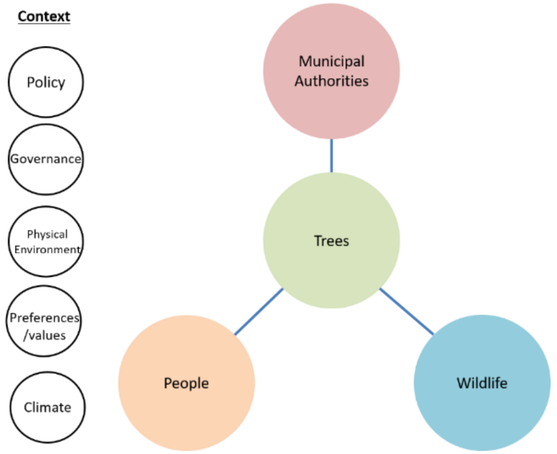
Overview

- Background: *Tree removals & social benefits*
- Tree removal experiments
- Implications
- Future Research

Urban Trees, People & Wildlife



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Cities struggle to maintain and increase tree numbers

CITY OF MELBOURNE

2008-2017

Total trees removed	20,099
Total trees removed close to developments	1,965
Cumulative last 4 years close to developments	x2-5 times baseline
Annual tree plantings	3,000

Croeser et al. 2019

➔ Evidence to protect/compensate beyond environmental benefits

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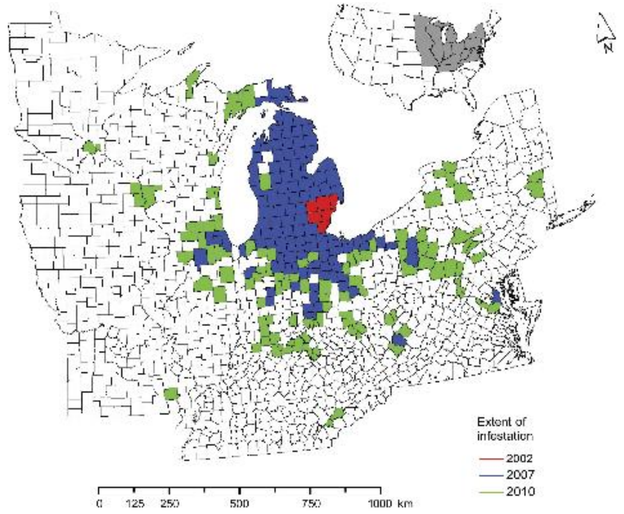
Social benefits are studied through tree abundance

Meanings/Values of Urban Forests

Ordonez et al 2017

Health Effects of Ash Loss



Donovan et al 2013

Tree-canopy cover associations with General Health

Mediating variable	IRR	95% confidence interval
Overweight or obese	0.897**	(0.829,0.971)
High blood pressure	0.876**	(0.809,0.949)
Type 2 diabetes	0.877**	(0.809,0.950)
Current asthma	0.877**	(0.807,0.953)
Social cohesion index	0.892**	(0.797,0.999)

Ulmer et al 2016

➔ Evidence beyond coarse correlative associations

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Knowledge gap

trees → psycho-social benefits

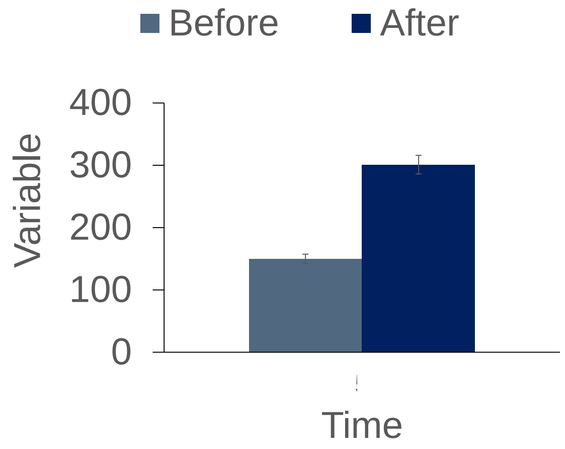
BACKGROUND FACTORS ➡ CONTACT WITH URBAN NATURE ➡ BENEFIT

Hartig et al. 2014

Characteristics of People

Characteristics of Space

Type
Frequency
Duration



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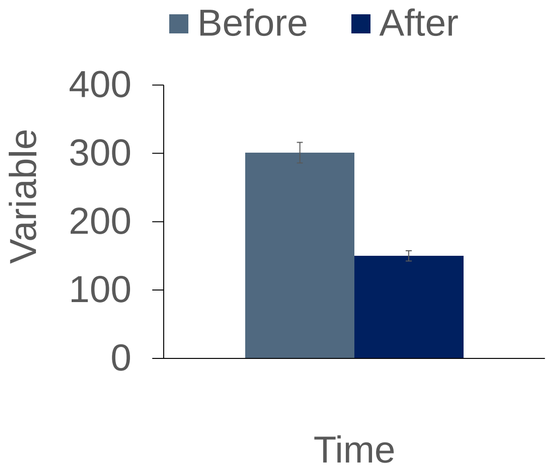

➔ Experimental, tree-centred studies

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Tree Removal Experiments
City of Melbourne

- What happens when trees are removed?

Social & Biodiversity effects of tree removal

Parameters:

- Before-After-Control-Impact
- Tree-level and site-level
- Spatial & temporal effects
- Controls & impact sites/trees

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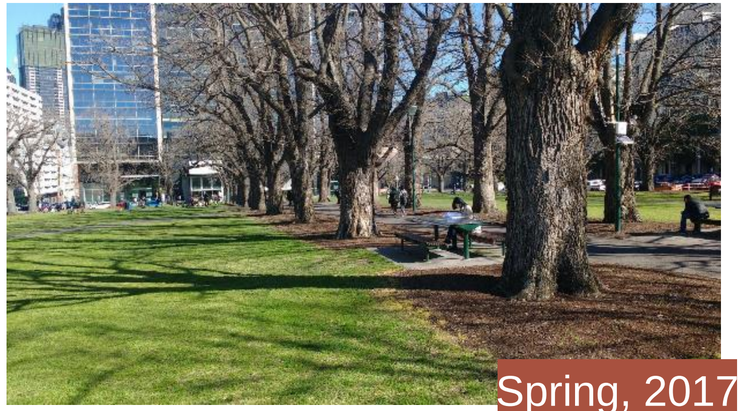
Tree Removal Experiments

City of Melbourne

Experiment 1: University Square

June, 2018



Spring, 2017

Future

November, 2018

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Tree Removal Experiments

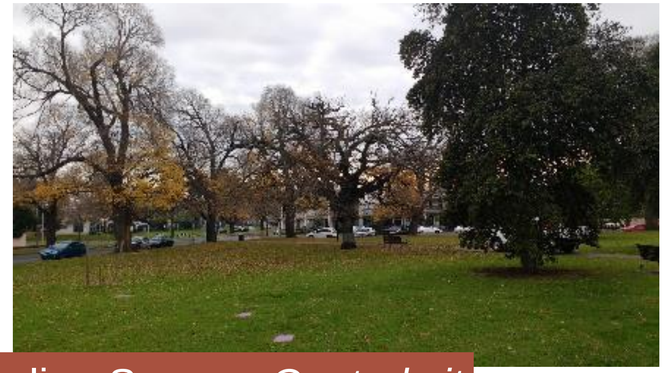
City of Melbourne

Sidewalk Interception

- Convenient, placed-based method

- Scales:
  1. Importance of **site**, **trees**, **wildlife**
  2. Values/meanings
  3. Well-being scale

- Demographics
  - Age
  - Education
  - …etc.



Darling Square, *Control site*

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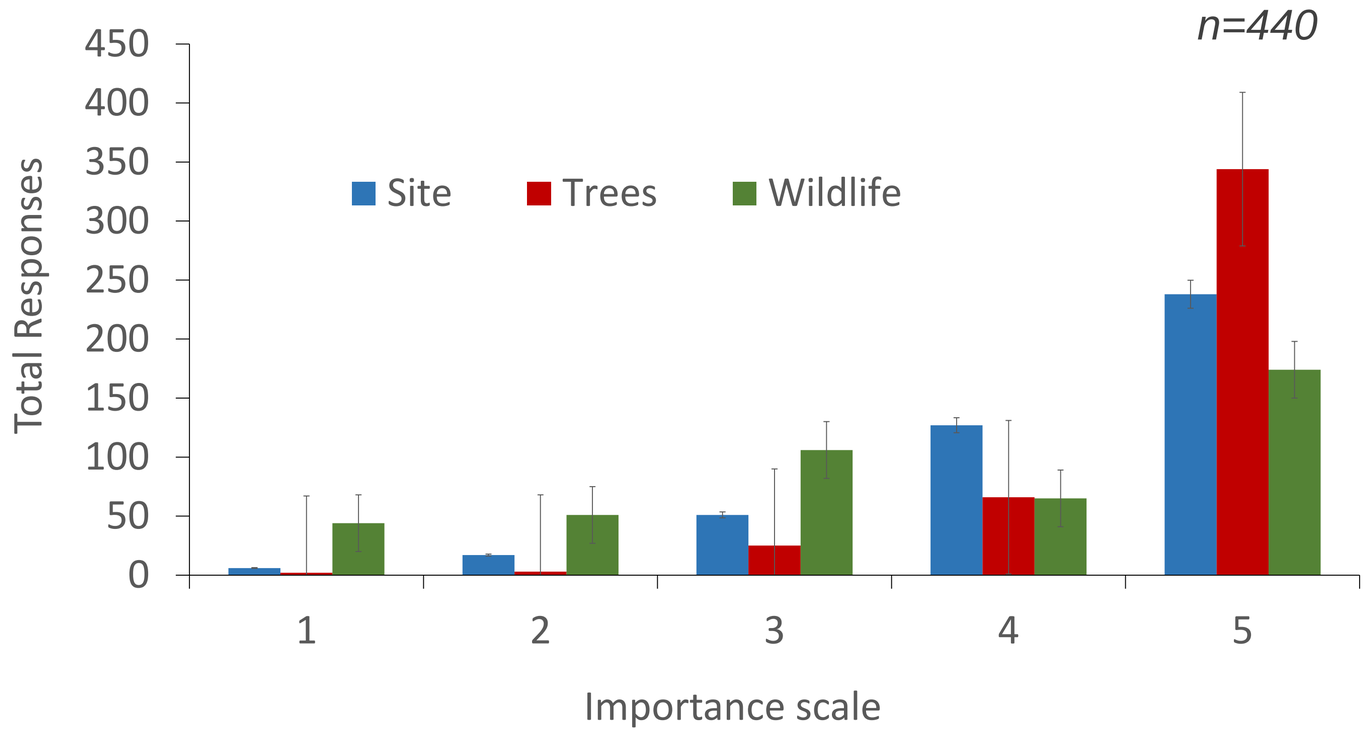
Tree Removal Experiments

Preliminary Results

Importance Scales



Significant differences in means:

Trees Wildlife	Time of day	Higher afternoon
Site	Australian born	Higher

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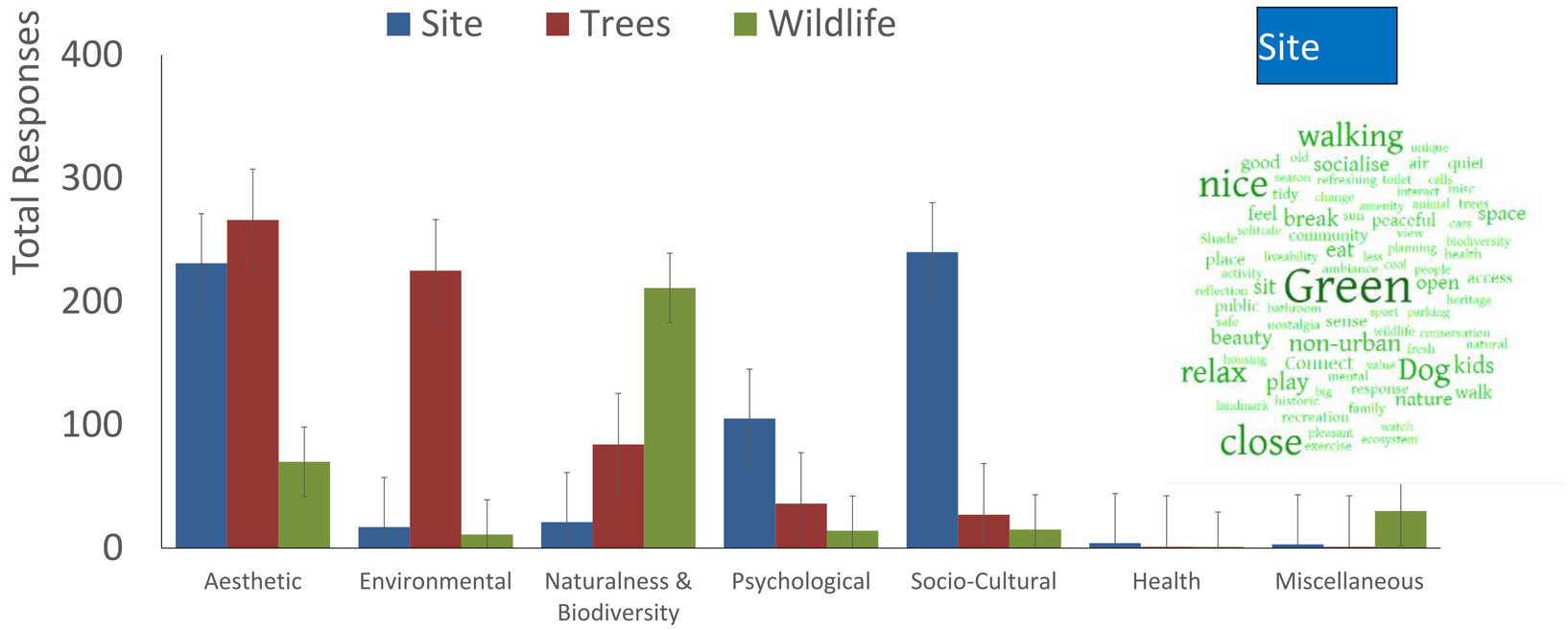
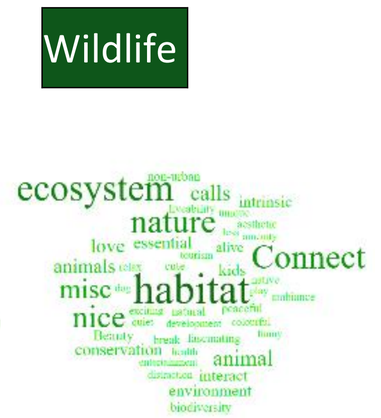
Tree Removal Experiments

Preliminary Results

Values/Meanings

n=379





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Tree Removal Experiments

Preliminary Results

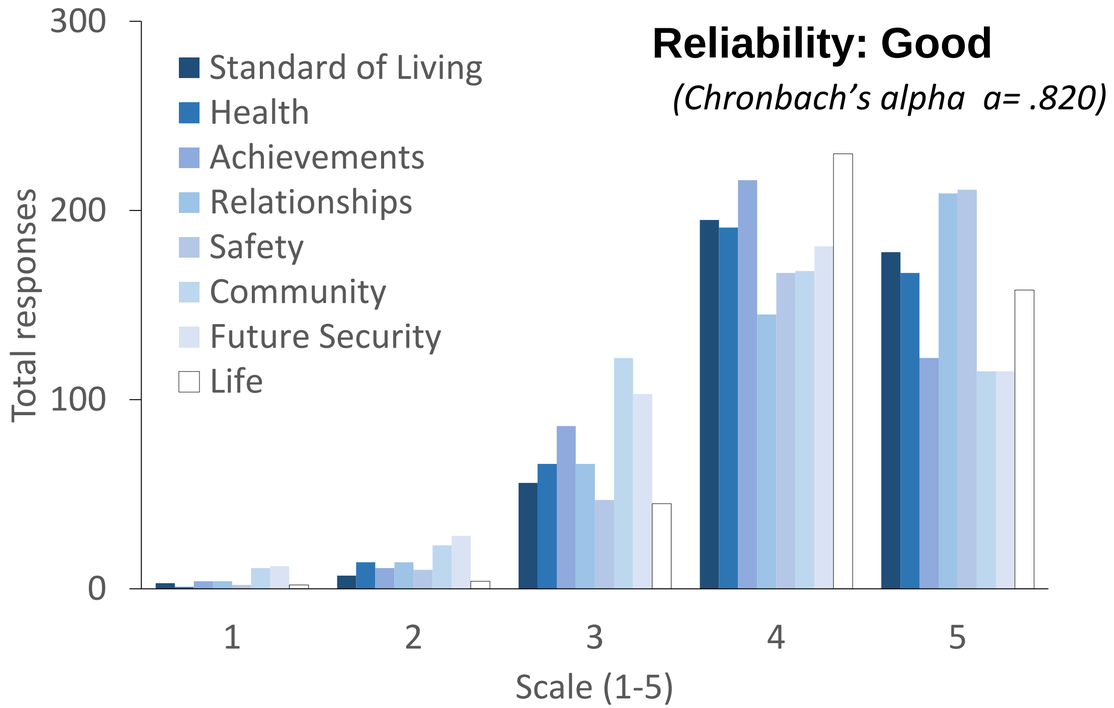
Well-being

n=440

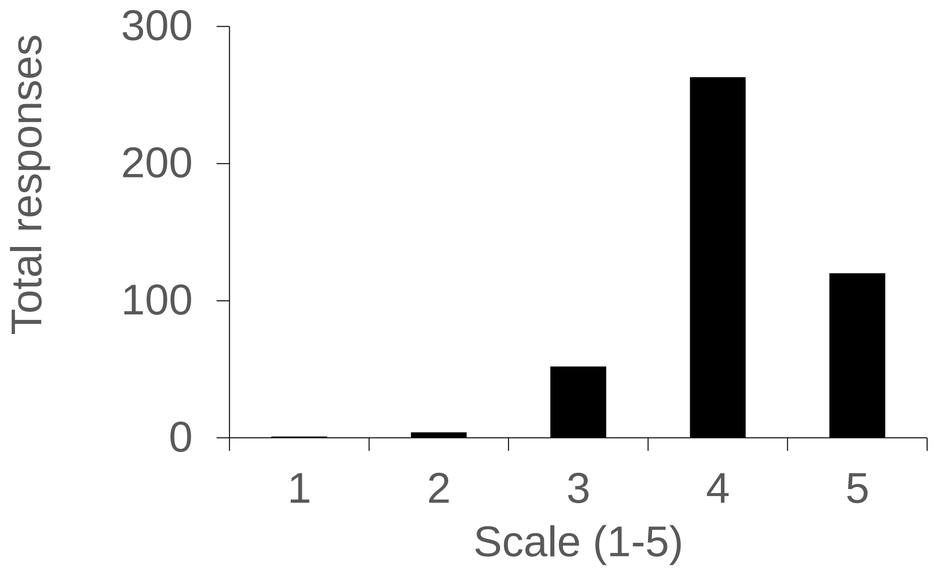
Individual Elements

Reliability: Good

(Chronbach's alpha a= .820)



Discrete Averages



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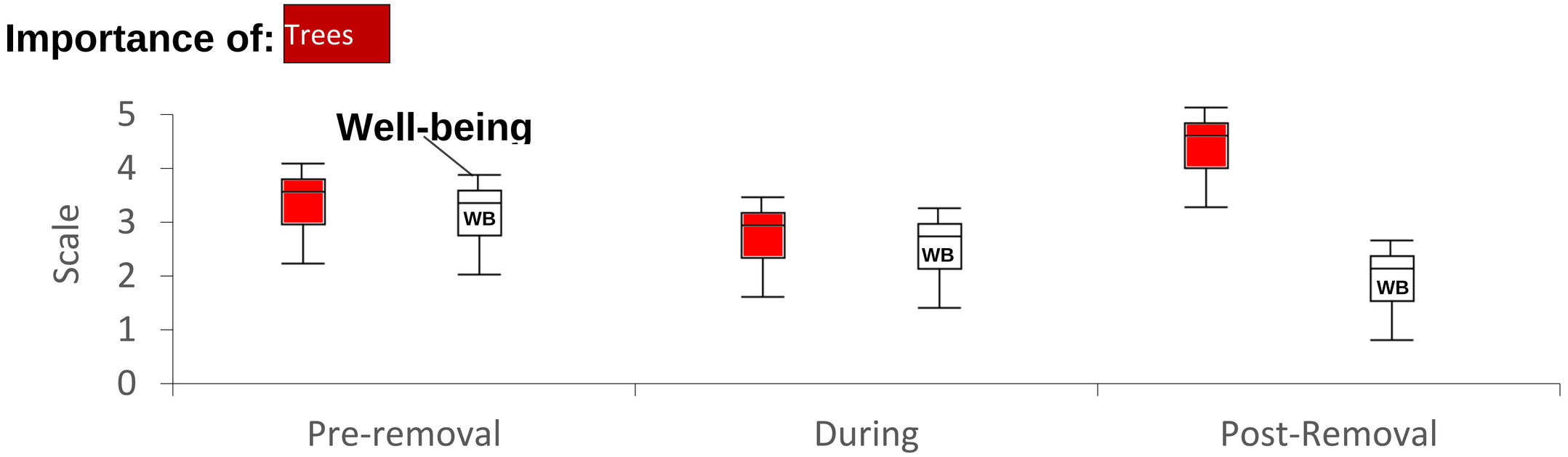
Tree Removal Experiments

Expected Results (?)



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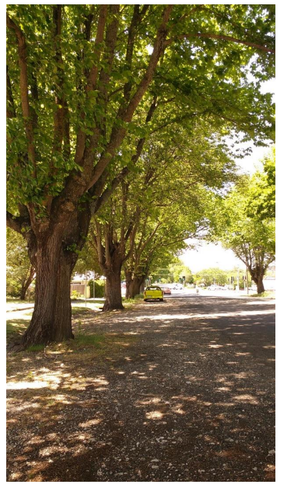
Implications

- Quantify standards
- Update valuation tools
- Biodiversity & social considerations

Future Research

- Other cities, other sites
  - City of Ballarat: street removal
- Native vs. exotic
- People’s movements
- Car traffic



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Thank You

Questions?

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Green Infrastructure Research Group
https://thegirg.org/

Australian Government
Australian Research Council

CITY OF MELBOURNE

Moreland City Council

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THE UNIVERSITY OF SYDNEY

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

RMIT UNIVERSITY

UNIVERSITY of TASMANIA

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