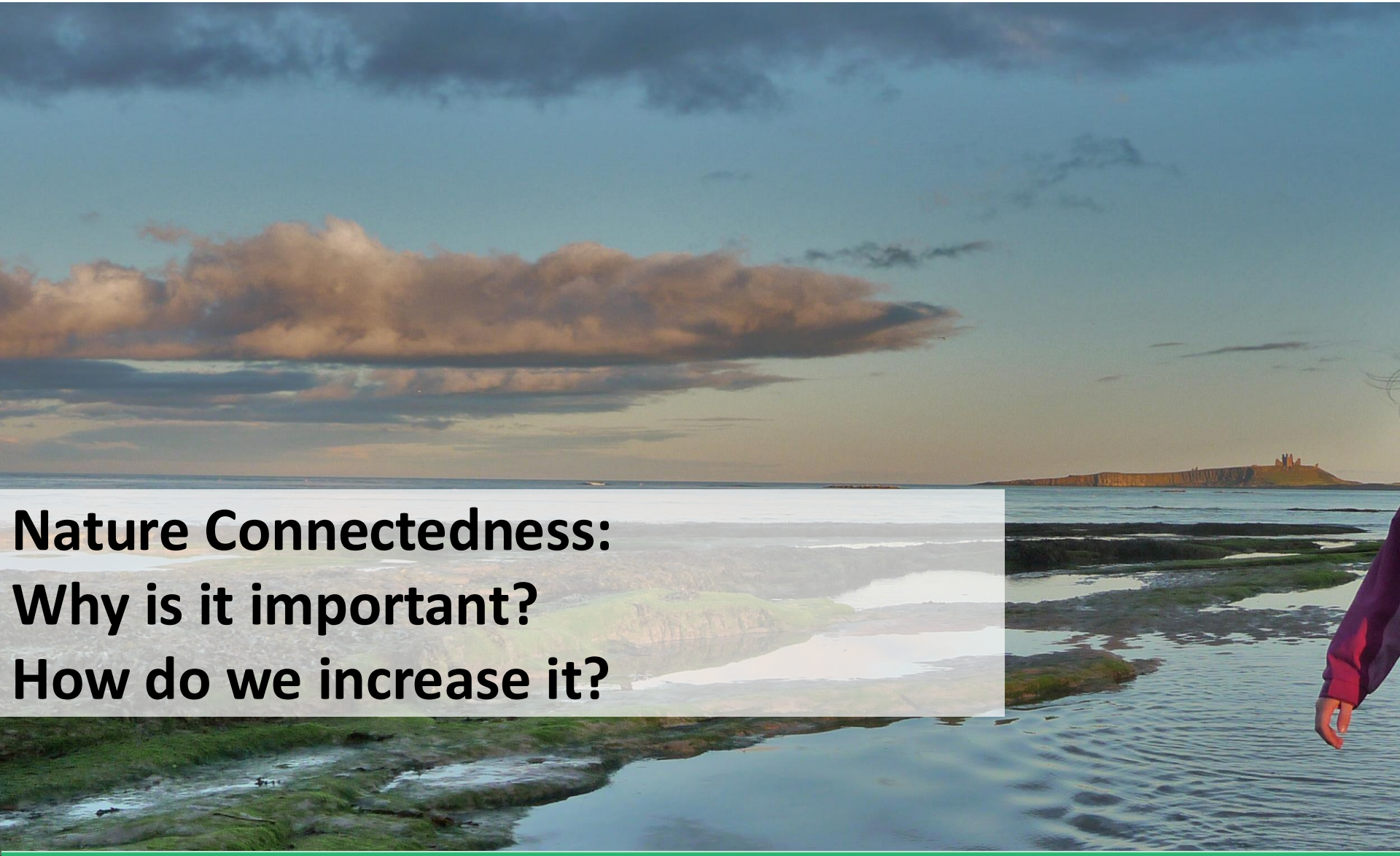


Nature Connectedness:
Why is it important?
How do we increase it?

Nature is Our Story

- Being in nature is good for humans.
- Connecting to nature increases the wellbeing benefits of walking.
- Where we connect matters: biodiversity has an effect.
- Connecting to nature makes us more considerate of (other) nature.

Exercise in Nature

- Exercise for longer, greater exertion and less pain/fatigue.
- Coon et al. (2011) systematic review
- Compared with exercising indoors, exercising in natural environments was associated with greater feelings of
  - revitalization and positive engagement,
  - decreases in tension, confusion, anger, and depression, and
  - increased energy.
- Choe and Sheffield (2022) – mindfulness intervention more effective too!

What is Nature Connectedness?

A realisation of our shared place in nature, which affects our being…

…how we experience the world here and now; our emotional response, beliefs, attitudes & behaviour towards nature.



Ima

A relationship…

What is Nature Connectedness?

The importance of feeling connected with nature is a common historical theme of ecologists (e.g. Leopold 1949) and ecopsychologists (e.g. Bragg 1996).

Modern ways of living, particularly in Western cultures, undermine our sense of belonging to, and of being in community with, nature.

As well as losing a connection with nature, we have also lost our perspective: nature used to be a source of wonder, awe and spiritual enhancement. Now is an object of scientific observation (Bragg 1996).



Imag

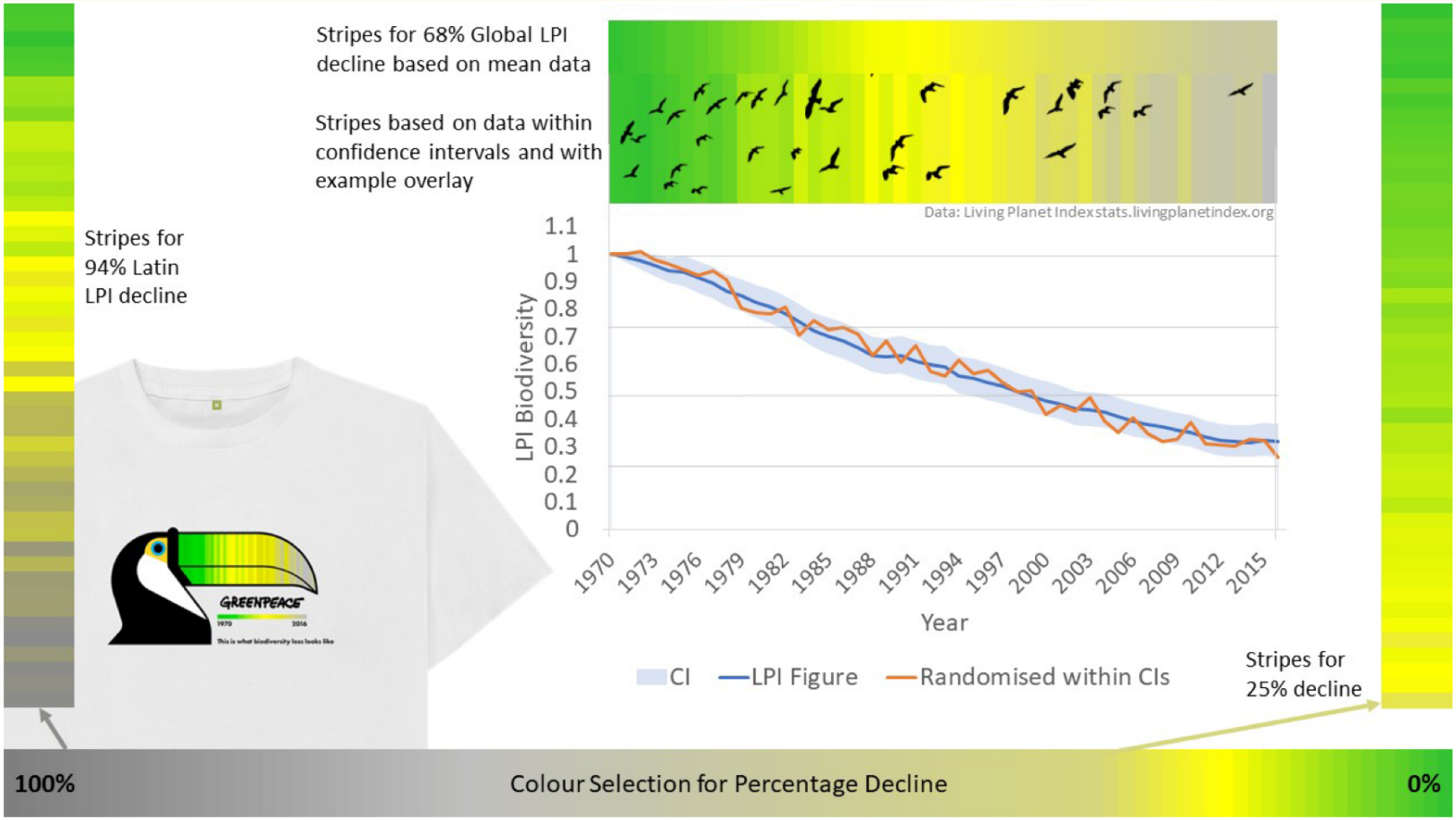
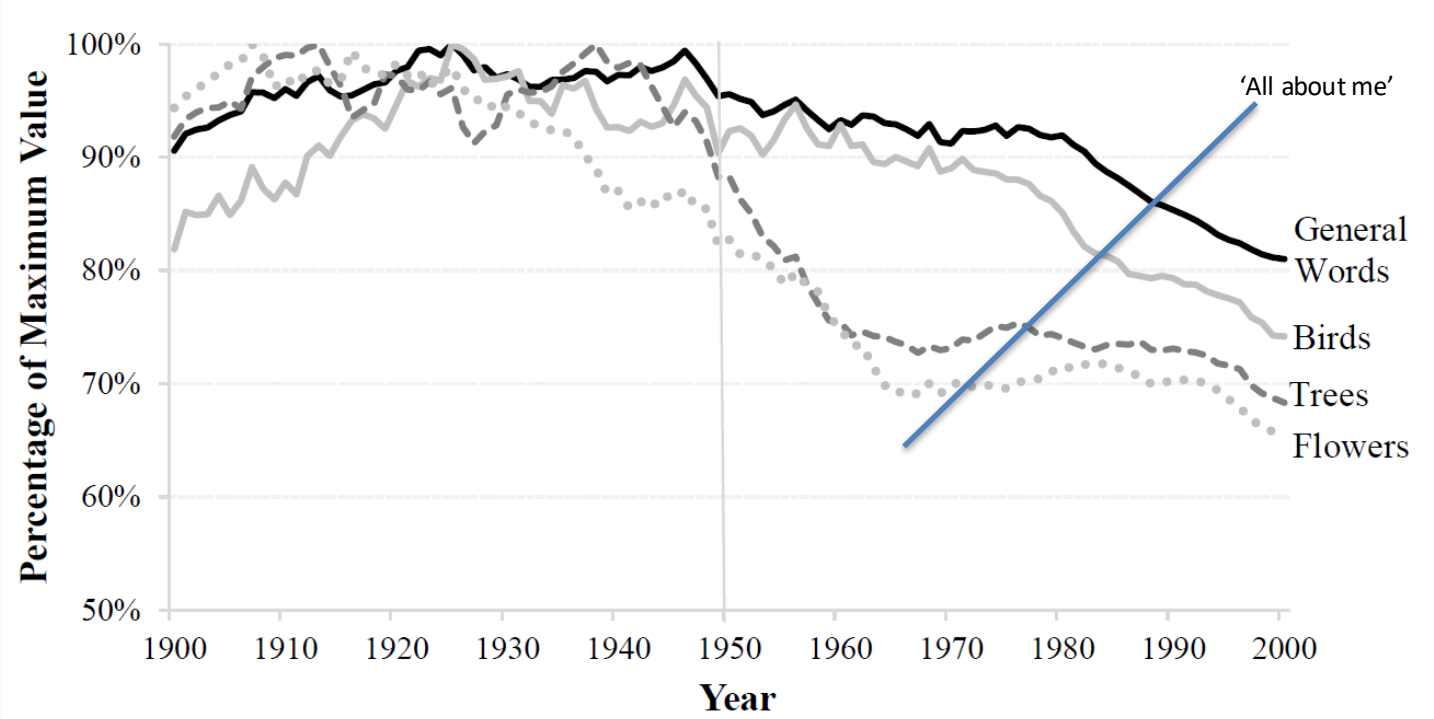


Figure 1. LPI mean and "striped" data in traditional line-chart form and represented with stripes, together with overlay, colour-selection map examples, and use on a Greenpeace T-shirt (© Greenpeace/teemill).



Ratio of nature-related words in English fiction by category, as a percentage of the maximum value for that category (1900-2000).

From - Kesebir, S., & Kesebir, P. (2017). A growing disconnection from nature is evident in cultural products. *Perspectives on Psychological Science*, *12*(2), 258-269.

From - Twenge, J. M., Campbell, W. K., & Gentile, B. (2012). Increases in individualistic words and phrases in American books, 1960–2008. *PloS one*, *7*(7), e40181.

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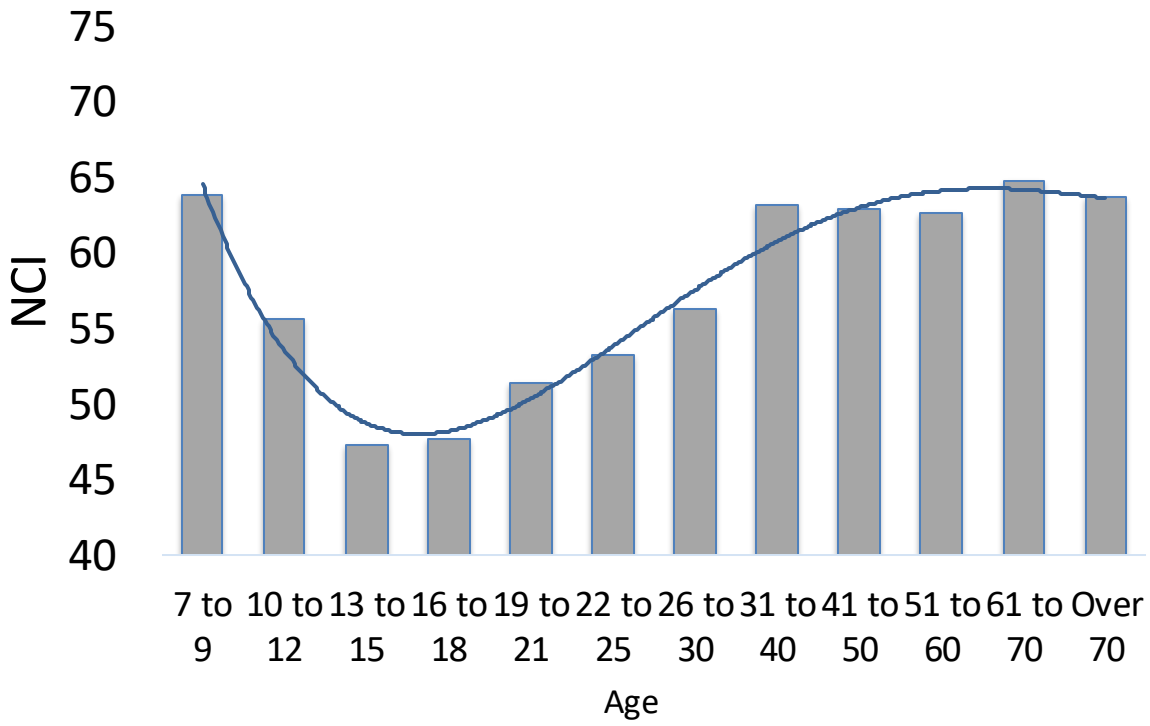
Nature Connection Across the Lifespan



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Richardson, M., Hunt, A., Hinds, J., Bragg, R., Fido, D., Petronzi, D., Barbett, L., Clitherow, T.J., and White, M. (2019). An Affective Measure of Nature Connectedness for Children and Adults: Validation, Performance and Insights. *Sustainability, 11*(12), 3250.

Meta-Analysis: Is NC related to Hedonic and Eudaimonic Well-being

- Happiness vs. Functioning well.
- Capaldi et al. (2014) – NC related to happiness.

- Is NC better related to functioning well:
  - autonomy,
  - personal growth,
  - self-acceptance,
  - life purpose,
  - mastery,
  - positive relatedness?

Main Findings

- A total of 50 effect sizes were recorded,
  - 20 for eudaimonic (n=4758), and
  - 30 for hedonic (n=11638).
- Separate meta-analyses were conducted for the effect of NC on EWB and HWB.
- EWB: r = 0.23, 95% CI (0.20, 0.27).
- HWB: r = 0.19, 95% CI (0.17, 0.22).
  - EWB subscales: personal growth had a moderate mean effect size of r=0.30 (0.26-0.34).

Pritchard, A., Richardson, M., Sheffield, D., & McEwan, K. (2020). The relationship between nature connectedness and eudaimonic well-being: A meta-analysis. *Journal of Happiness Studies*, *21*(3), 1145-1167.

Nature Connectedness as a leverage point

- Three key realms for transformational sustainability interventions (Abson, 2017) =>
- Restructuring institutions.
- Rethinking how knowledge is created and used.
- People’s connection to nature

Humanity Connectedness or Nature Connectedness?

- 474 USA/UK participants.
- Cross-sectional survey.
- CN fosters connection with broader natural world and the human species.
- HN may result in perceiving nature as an out-group and rejecting its values and hinder eco-responsible consumption.

Stinus, Shankland & Berjot (2024)

Improving Nature Connection

- Given the evidence of benefits, need brief interventions to increase connection to nature
- In an everyday way
- 3 Good Things in Nature



Richardson, M., & Sheffield, D. (2017). Three good things in nature: Noticing nearby nature brings sustained increases in connection with nature/Tres cosas buenas de la naturaleza: Prestar atención a la naturaleza cercana produce incrementos prolongados en conexión con la naturaleza. *Psyecology*, *8*(1), 1-32.

In nature (n=50 vs 42)

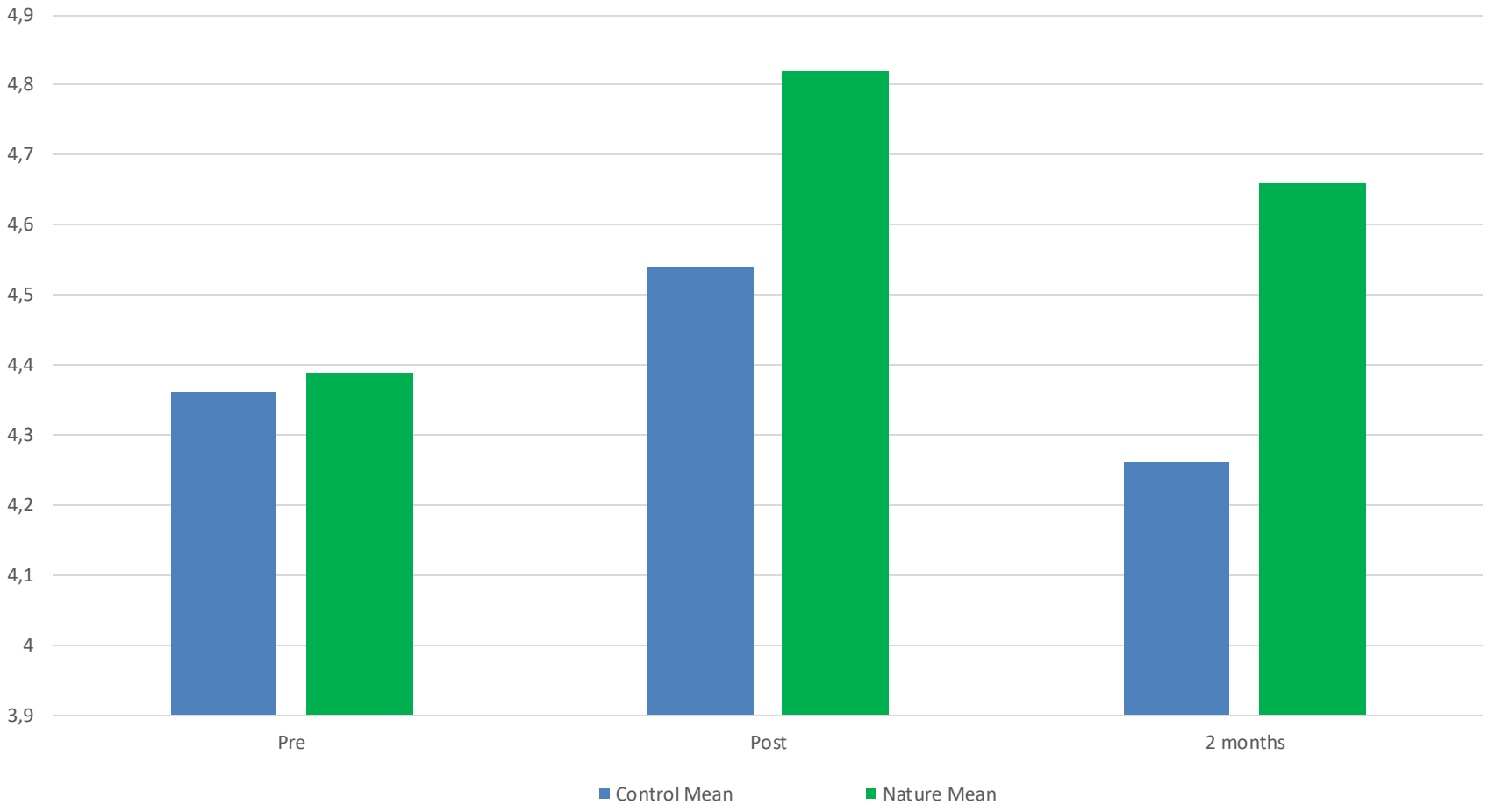
- **Intervention**

"Things you can list can be the beauty of small things at any one moment or wider aspects that arise from attending to the diversity and wonder of the natural world around you. For example, it could be as seemingly trivial as noticing the song of a robin or movement of a tree in the breeze."

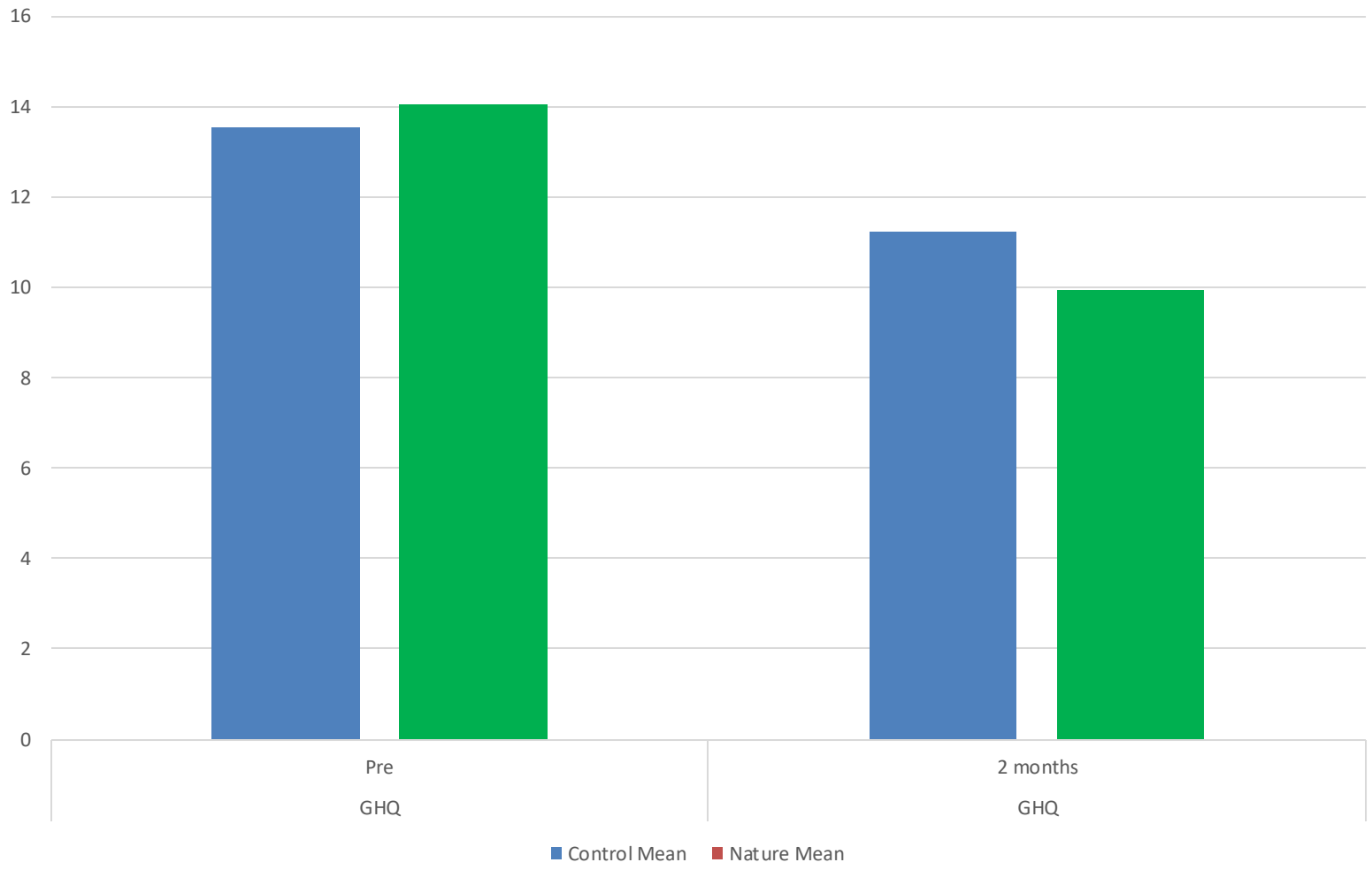
– **Control group**

were instructed to write three factual, non-nature - based things about a different topic each day, items in the kitchen, on a desk, things they did in the living room, wore or ate.

Our findings: Nature Connectedness



Poor Health (GHQ-12)



AND in Children

- A total of 166 children aged 9-11 years, in school years 5 and 6 participated and provided usable data.
- These comprised 81 girls (49%) and 85 boys (51%) with a mean age of 10 years and 7 months.

	Condition		
	Nature writing	Control	Total
Girls	42	39	81
Boys	42	43	85
Total	84	82	166

Five measures of connectedness, well-being and behaviour

- Nature connectedness and pro-environmental behaviours increased in the writing group more than control.
- E.g., I often put food out to feed garden birds.

- Harvey, C., Sheffield, D., Richardson, M. and Wells, R. (2022). The Impact of a "Three Good Things in Nature" Writing Task on Nature Connectedness, Pro-nature Conservation Behavior, Life Satisfaction, and Mindfulness in Children. Ecopsychology.

Shmapped

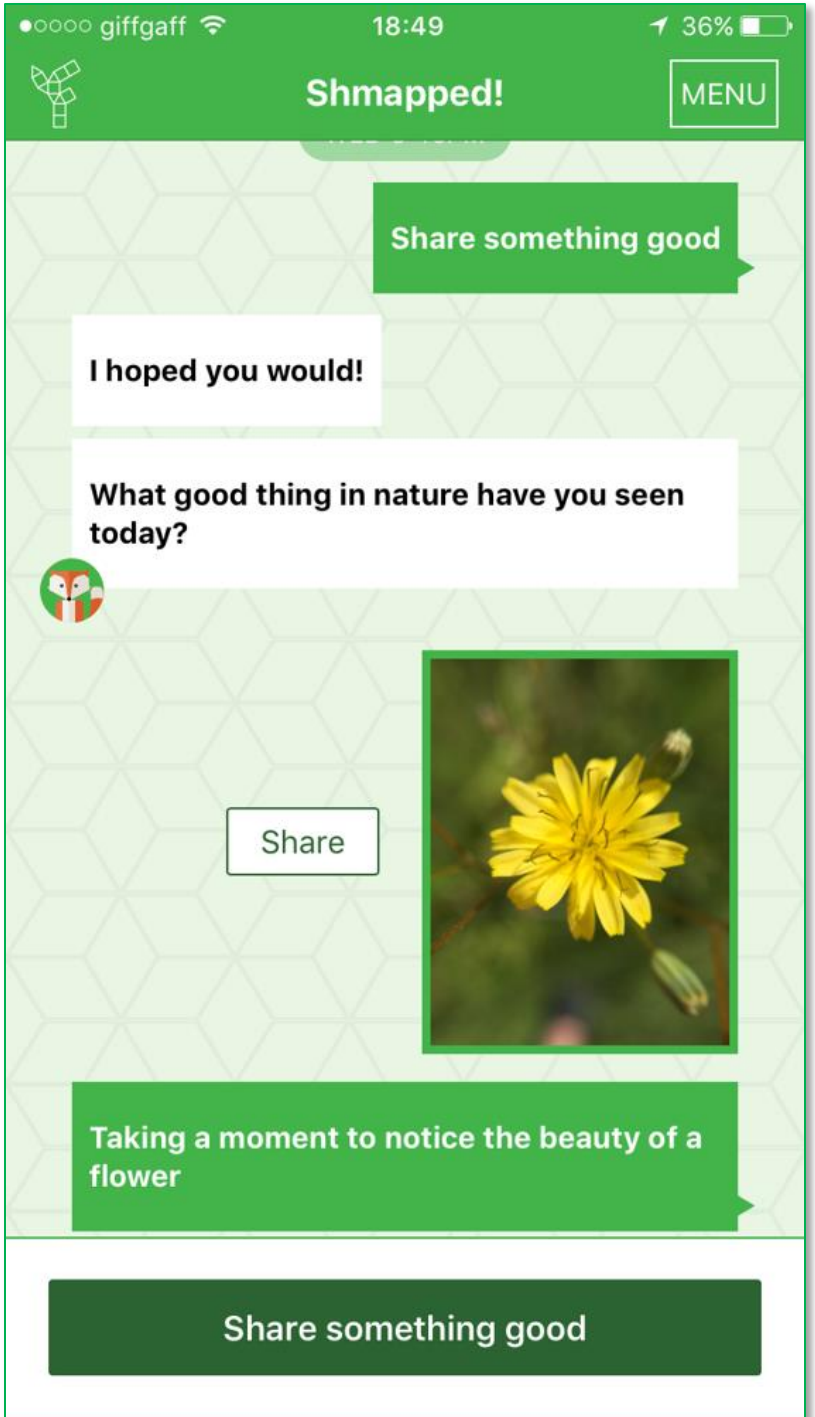
A Smartphone App For Improving Well-Being Through Urban Nature

- Shmapped (Sheffield Mapped) is an app that was developed by Derby and Sheffield Universities, as part of the IWUN (Improving Well-Being Through Urban Nature) project.
- It was designed to be a social prescription for use in Sheffield and aimed to improve users' mental well-being by prompting them to notice the good things about the city.

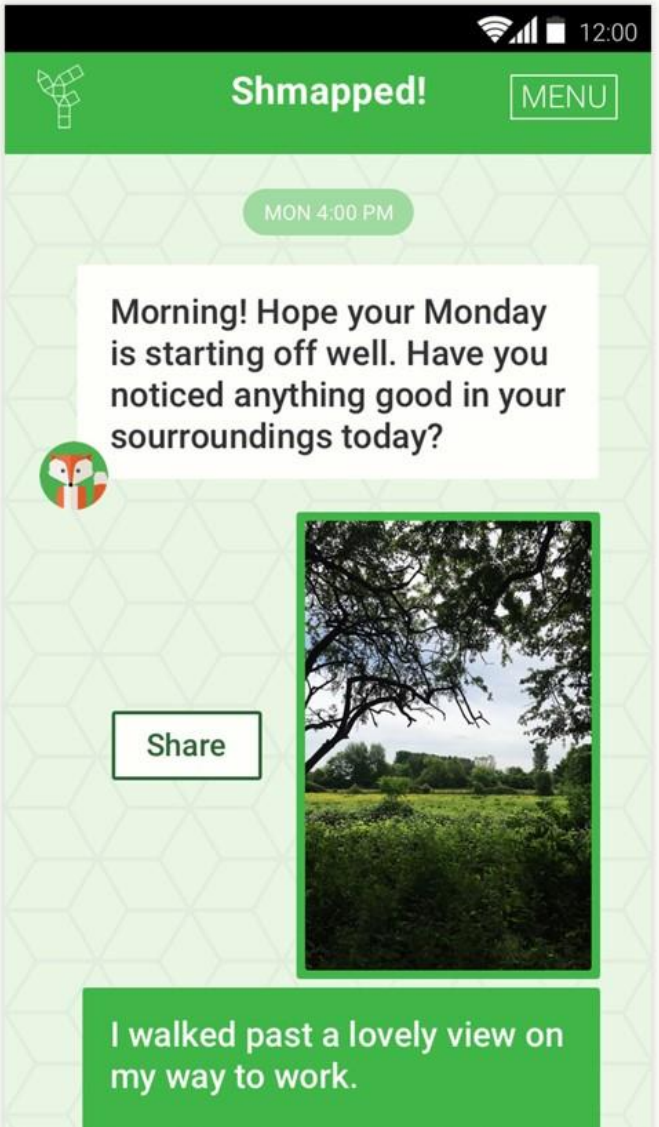
- McEwan, K., Richardson, M., Brindley, P., Sheffield, D., Tait, C., Johnson, S., ... & Ferguson, F. J. (2020). Shmapped: development of an app to record and promote the well-being benefits of noticing urban nature. *Translational Behavioral Medicine*, *10*(3), 723-733.

Intervention and data collection

- Tracking prompted users in parts of the city, either greenspace or built areas.
- Users were prompted to rate their surroundings and were asked questions such as “How does this place make you feel?”, “Who are you with?” and “What are you doing?”.
- If a user did not wish to enter an observation when prompted, they had the option to snooze the response; reminded at 8pm.
- At start, participants completed baseline questionnaires that assessed well-being and connectedness to nature. These questionnaires were completed at the end of the 7 days and again at 1 month follow-up, to assess change over time.

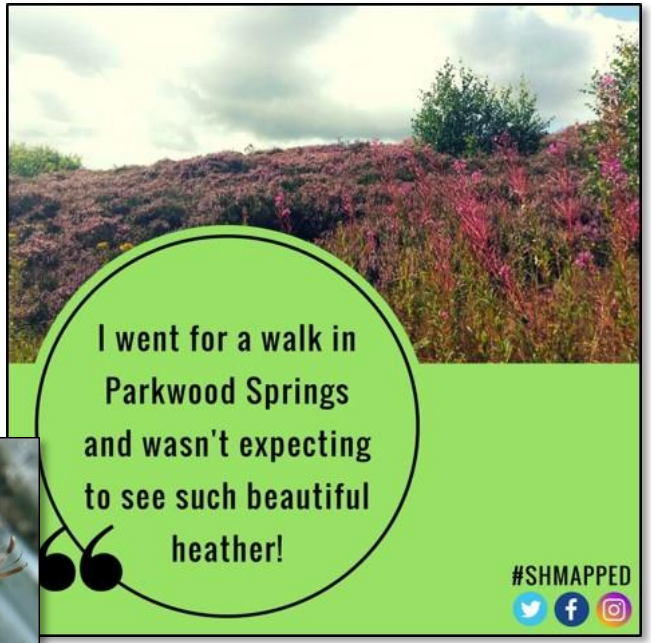


Tell Shmapbot, our helpful companion, about the good things around you.



They noticed…







Main Findings in 582 app users

- Significant increases in wellbeing & nature connectedness after 7 days and 4 weeks later.
- Clinically significant improvements in quality of life in those with mental health difficulties.
- Wellbeing improvement partly explained by changes in nature connectedness & affect.

- McEwan, K., Richardson, M., Sheffield, D., Ferguson, F. J., & Brindley, P. (2019). A smartphone app for improving mental health through connecting with urban nature. *International journal of environmental research and public health*, *16*(18), 3373.

sustainability

MDPI

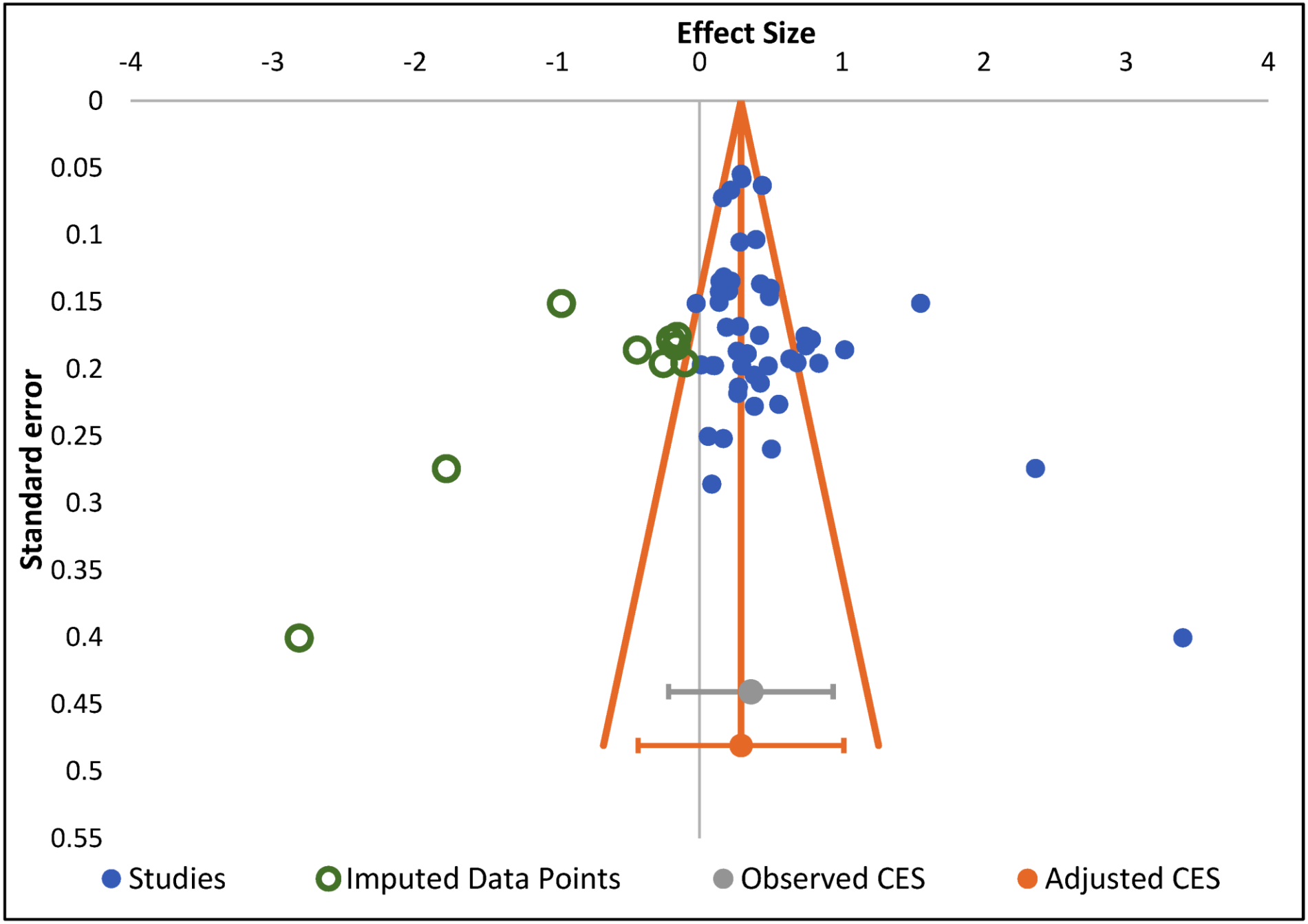
Review

Improving Nature Connectedness in Adults: A Meta-Analysis, Review and Agenda

David Sheffield *, Carly W. Butler and Miles Richardson

School of Psychology, University of Derby, Derby DE22 1GB, UK
* Correspondence: d.sheffield@derby.ac.uk; Tel.: +44-(0)-7825904935

Abstract: With clear links between an individual's sense of nature connectedness, their psychological wellbeing, and engagement in nature-friendly behaviours, efforts to improve people's relationships with nature can help unite human and planetary wellbeing. In the context of a rapidly growing evidence base, this paper updates previous meta-analytic reviews to explore the impact of (quasi-) experimental manipulations and field interventions on nature connectedness in adult populations. The analysis examines the relative effects of type of contact (direct or indirect), quality of engagement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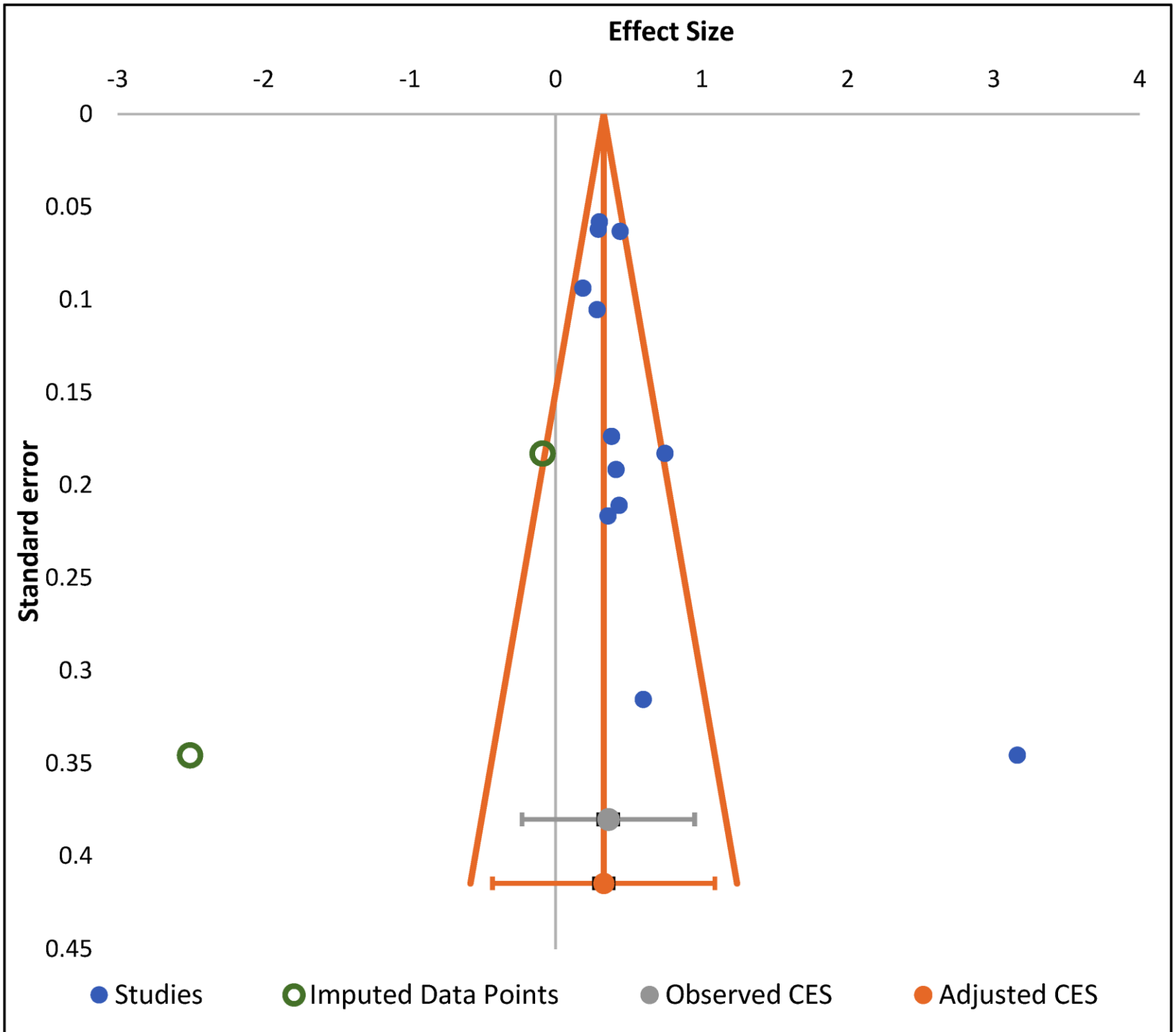
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Studies
Imputed Data Points
Observed CES
Adjusted CES

And in children

- 36 studies focused on 3808 children and adolescents.
- Small positive effect (g = .32).
- Environment education programs bigger effects.
- Active engagement bigger effects.

- Choe, E. Y., & Sheffield, D. (2024). Rebuilding human-nature connections in children and adolescents: insights from a meta-analysis. *Environmental Education Research*, 1–17. https://doi.org/10.1080/13504622.2024.2404206

Connecting to Nature

- Kellert and Wilson (1993) – Biophilia hypothesis. Innate need to affiliate with life.

- Utilitarian
- Naturalistic
- Ecologistic- Scientific
- Aesthetic
- Symbolic
- Humanistic
- Moralistic
- Dominionistic
- Negativistic

- Lumber, R., Richardson, M., & Sheffield, D. (2017). Beyond knowing nature: Contact, emotion, compassion, meaning, and beauty are pathways to nature connection. *PLoS one*, *12*(5), e0177186.

Questionnaire Development

Biophilic Value	Activity Statement
Utilitarian	Tending to fruit or vegetables that you intend to eat Catching an animal for the purpose of eating it e.g. fishing, hunting etc. Collecting or chopping wood for fuel
Naturalistic	Enjoying a sensory experience of nature e.g. listening to birdsong, smelling wild flowers etc. Going bird or nature watching for leisure rather than scientific reason's Watching a sunrise or sunset for more than a minute
Ecologistic-Scientific	Finding out more about an insect or other small animal Studying nature with some apparatus e.g. a microscope, a nature survey, binoculars etc. Drawing a scientific diagram of nature e.g. the anatomy of an animal a plant cell etc.
Aesthetic	Going to a natural place just to look at it e.g. visited hills to appreciate the view Looking at sculptures or pictures of large animals Taking a photograph or painted a picture of a natural view e.g. of hills, rivers etc.
Symbolic	Using nature to represent an idea Thinking about the meaning of natural icons e.g. the green man, mother nature etc. Thinking deeply about the meaning of signs within nature e.g. the first flowers of spring, the first swallow of summer etc.
Humanistic	Feeling a deep emotional attachment to wild nature Having a conversation with others about your thoughts and feelings about nature Thinking about an animal you know when you are not with it e.g. artwork**
Moralistic	Making ethical food or product choice e.g. free range eggs Being moved by a programme on animal welfare e.g. the great fish fight, intensive farming etc. Thinking about the treatment of nature e.g. animal welfare, protecting greenbelt land*
Dominionistic	Going rock climbing or caving Using vehicles in a natural place for sport e.g. quad biking, cross country driving, motocross Controlling pests within your garden or other green-space**
Negativistic	Staying in town rather than visiting a local park or green-space

Predicting Nature Connectedness –3 values, 1 mediated by aesthetics (BEAUTY)

		95% Confidence Interval*	
	Point Estimate	Lower	Upper
Humanistic EMOTION	.056	.016	.097
Symbolic MEANING	.100	.062	.142
Moralistic COMPASSION	.109	.073	.150

Not Pathways to Nature Connection

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Ecologistic - Scientific - Scientific study of nature. Observing nature, increasing knowledge and understanding

Utilitarian - Practical use of material nature for sustaining physical life and security

Dominionistic - Control and dominance of nature. Technological/mechanical skill, physicality, control

Negativistic - Aversion, removal and fear of nature. Security and physical protection

Pathways for survival and progress rather than a rounded and sustainable relationship.



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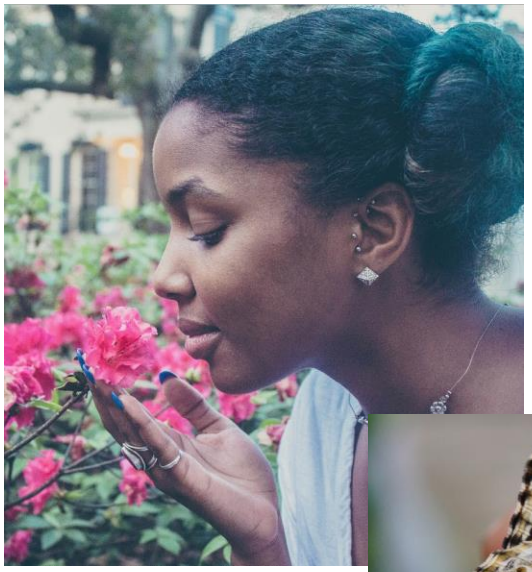
Increasing Connection to Nature is about

Engaging people with nature through:

Contact, Emotion, Compassion, Meaning, and Nature's beauty.









Lumber, R., Richardson, M., & Sheffield, D. (2018). The value of knowing nature? Contact, emotion, compassion, meaning and beauty as pathways to nature connection. Environment & Behaviour.

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50 THINGS TO DO BEFORE YOU'RE 11¾

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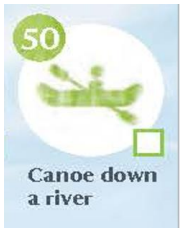




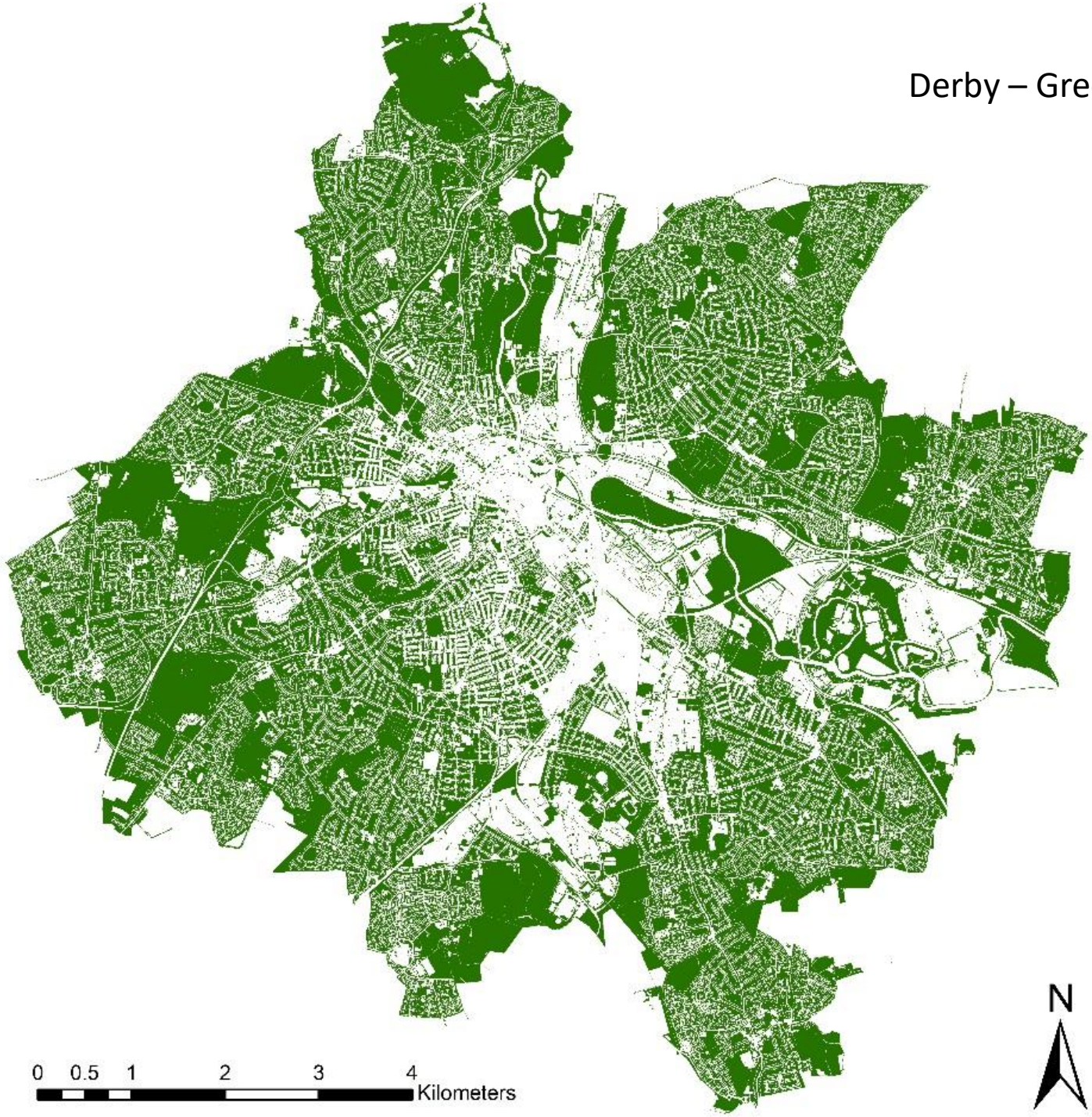
1. Get to know a tree

32. Float in a boat

44. Watch a bird



Derby – Green space



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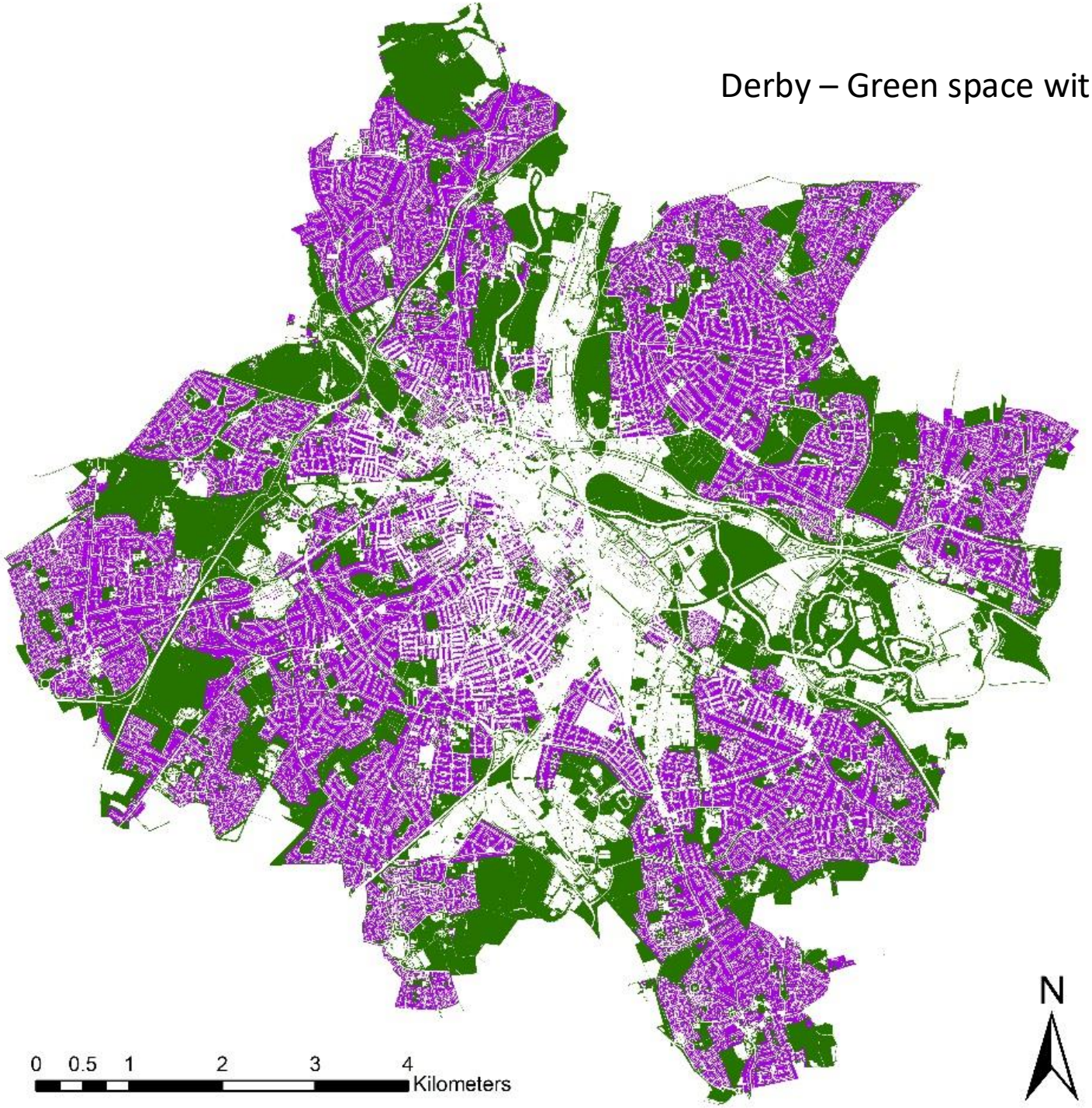
Derby – Green space with gardens



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Gardens are important places for wildlife

In Sheffield, most people had at least…

20 beetle species





6 spider species

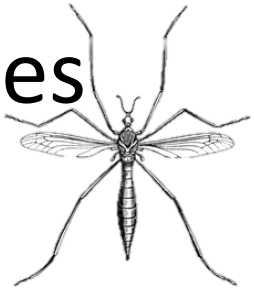
6 bumblebee species





14 true bug species

10 Cranefly species



+ many others

Smith et al (2006) Biodiversity and Conservation 15:2415–2438

Derby NC and gardens

- NC related to garden action.
- Data from Derby Gardens Survey (n=255).
- NC related to willingness to change some features of GARDENS but not all (small vs. larger/landscape).
- NC not related to willingness to change features in NEIGHBOURHOOD except v small things (bird/bat boxes).

Norton, Ramsey, and Sheffield. (under review). Derby gardens survey.

UK NC and gardens

- H1 - Conservation behaviors that support higher visible biodiversity will result in more sensory contact with nature and therefore greater levels of nature connectedness (H2).
- Data from Natural England's People and Nature Survey in the UK (n=4206).
- 2 Pro CoBs independently related to noticing nature: plants for pollinators and food for birds.
- BUT 2 Pro CoBs were not related: create log piles and plants with berries.
- All Pro CoBs related to NC.
- And NC mediated the relationships between noticing nature and 2 Pro CoBs related to increased visibility.

Hamlin, I., & Richardson, M. (2022). Visible Garden Biodiversity is Associated with Noticing Nature and Nature Connectedness. Ecopsychology. https://doi.org/10.1089/eco.2021.0064

Simple activity related to ProCoBs

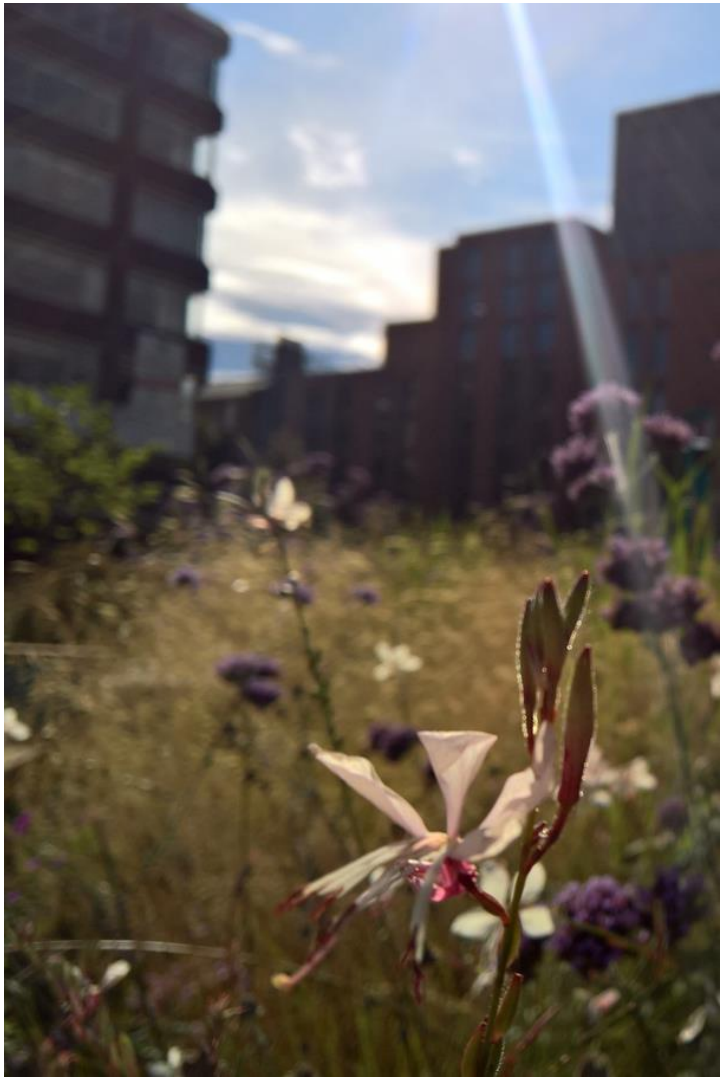
- **Watch wildlife**
- **Listen to birdsong**
- **Smell wild flowers**
- *Take a photo of or draw nature*
- Collect shells or pebbles on beach
- **Notice butterflies or bees**
- **Watch the sun rise**
- Watch clouds
- **Look at natural scenery**
- **Sit or relax in garden**
- Look at moon or stars

  - Richardson et al. (2020) Green Care Code

Diversity of planting and wildlife



A strong relationship between perceived biodiversity and the variety of birds



More diverse green spaces correlated with more positive emotions

Summary

Rather than focusing on knowledge & information:

- **Important to notice nature with the senses**
- **Signpost emotion: joy and wonder**
- **Highlight nature's beauty**
- **Provide reasons to pause and places to reflect**
- **Increase biodiversity.**
- **Good for people and good for the rest of nature.**

Thanks

- Miles Richardson
- Ryan Lumbar
- Alison Pritchard
- Kirsten McEwen
- Briony Norton
- Carly Butler
- Wildlife Trusts
- RSPB
- NERC

- Thanks for listening



Want more?

- https://www.derby.ac.uk/short-courses-cpd/online/free-courses/nature-connectedness-relationship-with-nature/

- https://www.derby.ac.uk/research/centres-groups/nature-connectedness-research-group/