

# Nature connection, wellbeing and citizen science

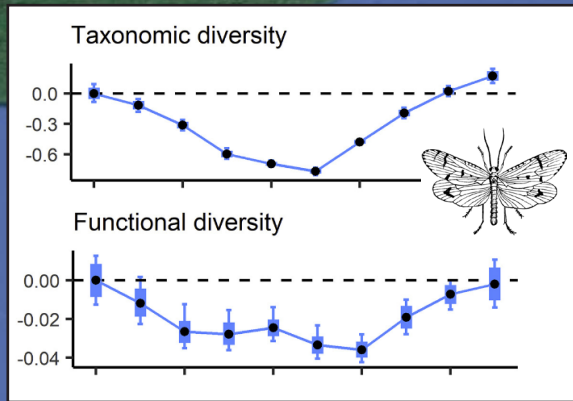


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# Volunteer-collected biodiversity data is valuable

Crucial part of environmental monitoring, complementing data from professionals & sensors/remote sensing

Benefits **science**: monitoring



Greenop et al. (2021)  
*Current Biology* 31, 4627-4634.e3



Benefits **people**:  
nature connectedness  
& wellbeing

Pocock et al. (2023)  
*People and Nature* 5, 591–606

Benefits **society**:  
action for nature



# Benefits of nature engagement

- 84% Being in nature makes me happy
- 73% I've engaged more with everyday nature
- 41% Nature is more important *than ever* to my wellbeing

Source: People and Nature Survey, Natural England, June 2020



# Benefits of nature engagement

## Time in nature benefits wellbeing...



Studies demonstrated positives effects after:

- 30 mins per day  
Harmann & Ivtzan 2016
- 120 mins per week  
White et al. (2019) *Sci Rep* 13, 7730

## ...But *quality of time* in nature is more important



Nature connectedness more strongly related to...

*Happiness and Sense of worthwhile life*  
...than time spent in nature  
(*n* = 2000)

Richardson et al. (2021) *Int. J. Wellbeing* 11

*Wellbeing, less anxiety and less depression...*  
than amount of local greenspace  
(*n* = 877)

Wicks et al. (2023) *Int. J. Env. Public Health* 20, 5083



Richardson, M., Passmore, H-A., Lumber, R., Thomas, R., & Hunt, A. (2021). Moments, not minutes: The nature-wellbeing relationship. *International Journal of Wellbeing*, 11(1), 8-33. <https://doi.org/10.5502/ijw.v11i1.1267>

ARTICLE

## Moments, not minutes: The nature-wellbeing relationship

Miles Richardson · Holli-Anne Passmore · Ryan Lumber  
Rory Thomas · Alex Hunt

**Abstract:** A wealth of literature has evidenced the important role that the greater-than-human natural environment plays in our mental health and wellbeing (reviews by Bratman et al., 2019; Capaldi et al., 2014, 2015; Pritchard et al., 2019). Spending time in nature, engaging with nature directly and indirectly, and a strong sense of nature connectedness (a psychological/emotional connection with nature) have each been shown to positively impact

## The Impact of the Coronavirus Pandemic on the Contribution of Local Green Space and Nature Connection to Mental Health

by Claire L. Wicks <sup>1</sup>, Jo L. Barton <sup>2</sup>, Leanne Andrews <sup>1</sup>, Sheina Orbell <sup>3</sup>, Gavin Sandercock <sup>2</sup> and Carly J. Wood <sup>2,\*</sup>

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*Int. J. Environ. Res. Public Health* **2023**, *20*(6), 5083; <https://doi.org/10.3390/ijerph20065083>

Received: 31 January 2023 / Revised: 8 March 2023 / Accepted: 9 March 2023 / Published: 14 March 2023

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Review Reports

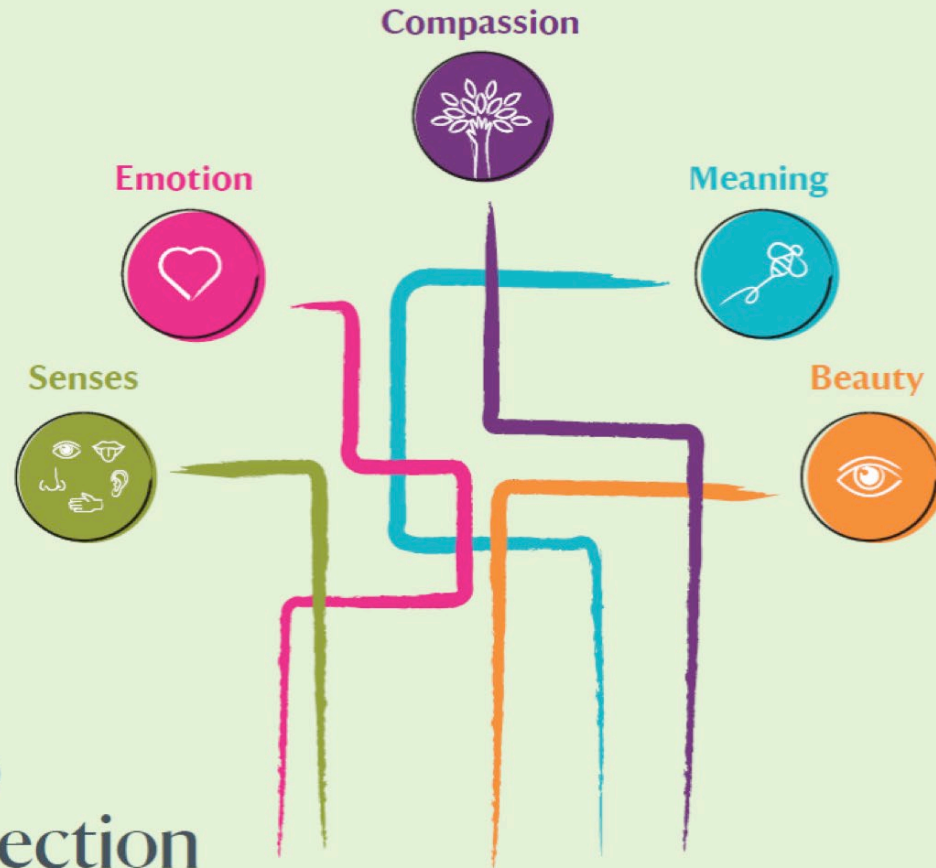
Versions Notes



UK Centre for  
Ecology & Hydrology



National Trust



The five pathways to nature connection

Image from:  
<https://findingnature.org.uk/2019/01/28/5-ways-to-wellbeing-with-nature/>

Lumber et al. (2017) Beyond knowing nature: Contact, emotion, compassion, meaning, and beauty are pathways to nature connection. PLoS ONE 12(5): e0177186

# Does citizen science provide nature connection benefits?



About us Science Data Services Staff News & media Cymraeg 



Randomised, controlled trial  
of the impact of nature-based citizen science  
on wellbeing and nature connectedness



Thanks to:

University of Derby

- Miles Richardson (@findingnature)
- Iain Hamlin
- Holli-Anne Passmore

UKCEH

- Jenny Christelow
- British Science Association

Pre-survey on Nature Connectedness & Wellbeing

5 times over one week

Citizen science

Noticing 3 Good Things in Nature

Combined: Citizen science + 3GTiN

'Waiting list' control (not given any activity)

Post-survey on Nature Connectedness & Wellbeing

Random allocation



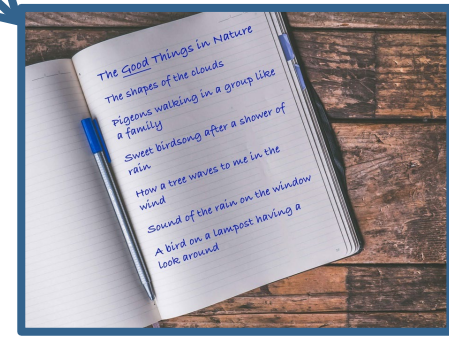
iRecord Butterflies

iRecord Butterflies  
Simple, app-based reporting



**POMS**  
UK Pollinator Monitoring Scheme

Pollinator FIT Counts  
More complex structured sampling



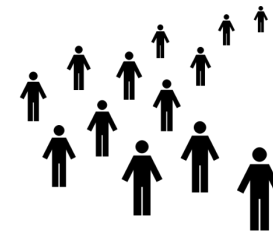
Write down 3 Good Things you noticed in nature

Image:

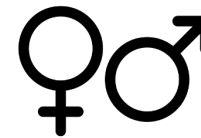
<https://findingnature.org.uk/2021/10/13/three-good-things-walking/>

## The benefits of citizen science and nature-noticing activities for well-being, nature connectedness and pro-nature conservation behaviours

Michael J. O. Pocock<sup>1</sup>  | Iain Hamlin<sup>2</sup>  | Jennifer Christelow<sup>1</sup> |  
Holli-Anne Passmore<sup>3</sup>  | Miles Richardson<sup>2</sup> 



1174 signed up  
501 provided complete  
responses

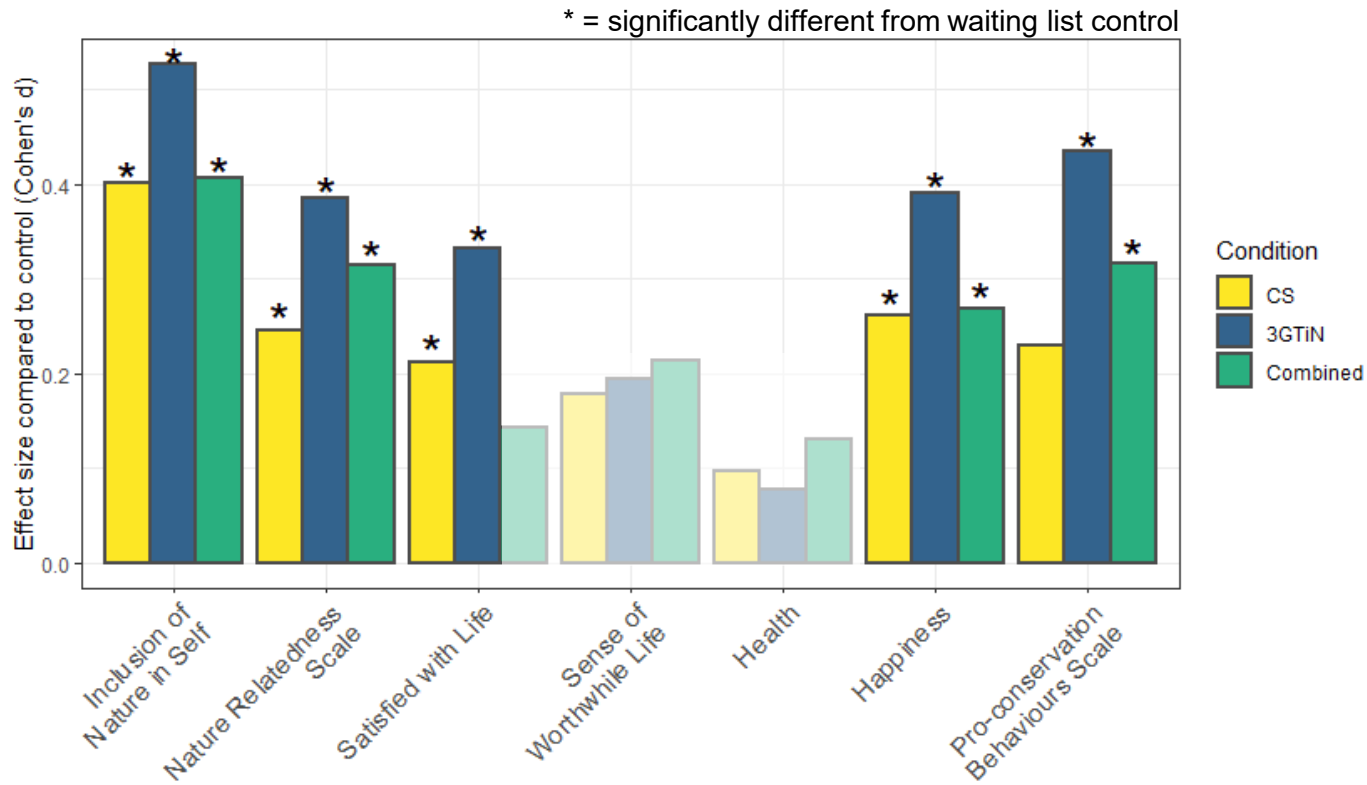


80% of  
participants were  
women

Pocock et al. (2023) *People and Nature* 5, 591–606  
<https://doi.org/10.1002/pan3.10432>

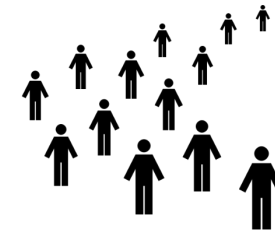


# Findings 1

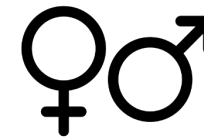


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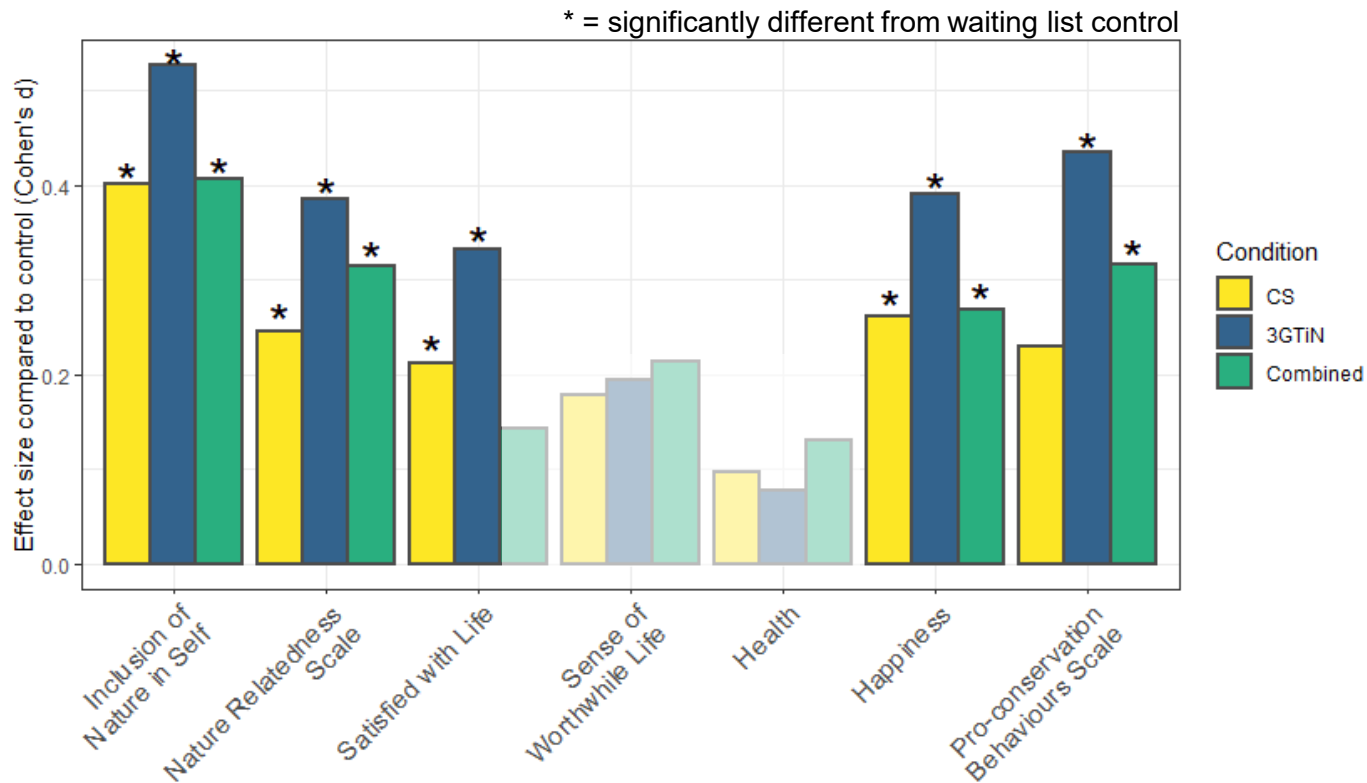


80% of participants were women

Any of the nature-based activities was good for you = **Citizen science** is beneficial!

Pocock et al. (2023) *People and Nature* 5, 591–606  
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# Findings 1



Any of the nature-based activities was good for you = **Citizen science** is beneficial!

# Findings 2

## 'Pathways to nature connectedness'

- I felt close to nature through my **senses**
- I found taking part **calming or joyful**
- I noticed the **beauty** of nature
- I found taking part **meaningful**
- I felt I was helping to **take care** of nature

Highest 'agreement'

- 3GTiN & Combined**
- 3GTiN & Combined**
- Combined**
- all similar
- CS & Combined**

- **All** activities engaged the pathways to nature connectedness
- **'Noticing nature' activities** especially boosted sensory/emotional engagement
- **Citizen science** especially boosted 'compassion'
- **Combined** had strengths of both



We designed the activity to collect data *and* boost nature connectedness – wherever they were

5871 people engaged, 60% were new to citizen science

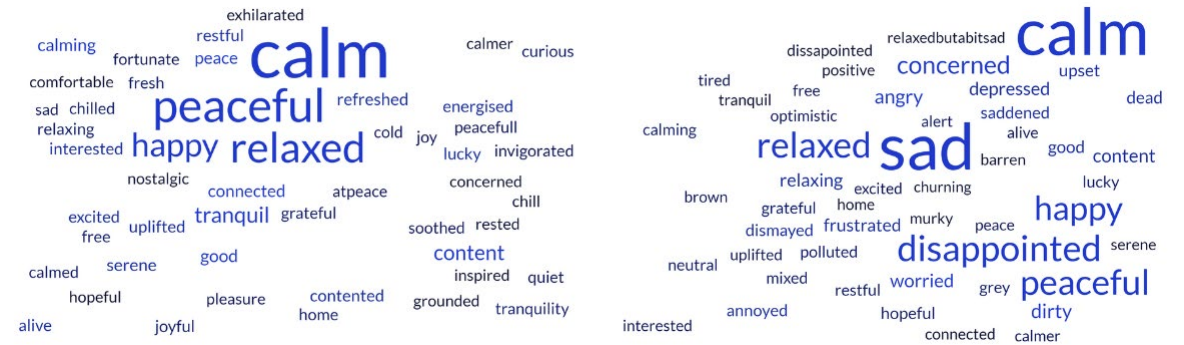
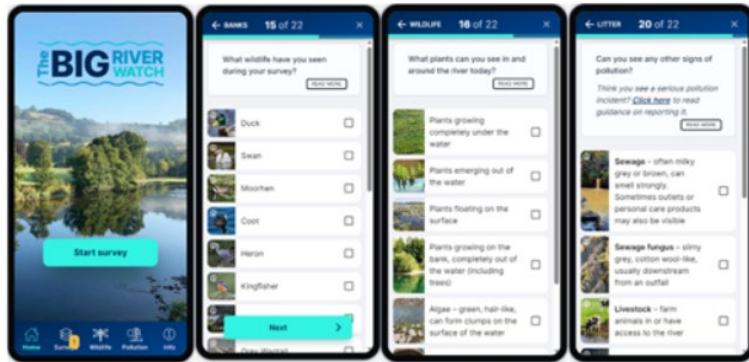
This September, we're launching The Big River Watch to help build a picture of river health across the country. It's good for you, and good for our rivers.



Healthy river



Unhealthy river



“Calm”/”peaceful” - It boosted nature connectedness  
“Sad” – could citizen science lead to action?



<https://theriverstrust.org/about-us/news/big-river-watch-weekend-first-look-data>

Citizen science can provide the 'meaningful moments' in nature to benefit wellbeing and nature connectness

Citizen science provides data *and* (potentially) can lead to action



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