



# Walking in Nature: A Step Towards Mental Health, a Leap Towards Resilience



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# Societal Challenges

- Climate Catastrophe (IPCC, 2018)
- Biodiversity vacuum (IPBES, 2019)
- Physical inactivity (Eurobarometer, 2018)
- Air Pollution (EEA, 2019)

***What problem accounts for the greatest burden of disease globally?***

*A: Cardiovascular disease*

*B: Mental Health*

***C: Depression***

**Depression today has the greatest burden of disease (WHO, 2017)**



# The State of Play

## Environmental Challenges



Climate Change



Biodiversity  
Loss



Air  
Pollution



Heat Island



Urbanisation

## Human Problems



Digital  
Immersion



Physical  
Inactivity



Social  
Isolation



Ageing  
Population



Carbon  
Footprint

# A Green Solution

- Nature has long been established as providing a role in coping, both in human geography (e.g., therapeutic landscapes, [Bell et al., 2018](#))
- Explanatory accounts of human-nature interactions (e.g., stress reduction theory, [Ulrich et al., 1991](#))
- Literature on psychological recovery ([Sonnentag et al., 2017](#)).
- Perception of awe has unique beneficial effects for mood, according to a recent review by [Lumber et al. \(2017\)](#).

# Timeline of Concepts



Over 35 years of research on nature and health.

## Green Exercise: Activity in Natural Settings

### Green Exercise Opportunities



Increased access



Restorative Space



Active Commuting



Green Playgrounds

*What percentage of Europeans say that the most common setting for their physical activity is outdoors?*

A: 20% **B 40%** C 60 %

**In the UK it's estimated at 18-20% (Eurobarometer, 2018)**

# Mapping Benefits



City level indexes are available to map benefits to goals

## Target 11.7



Increased access



Restorative Space



Active Commuting



Green Playgrounds

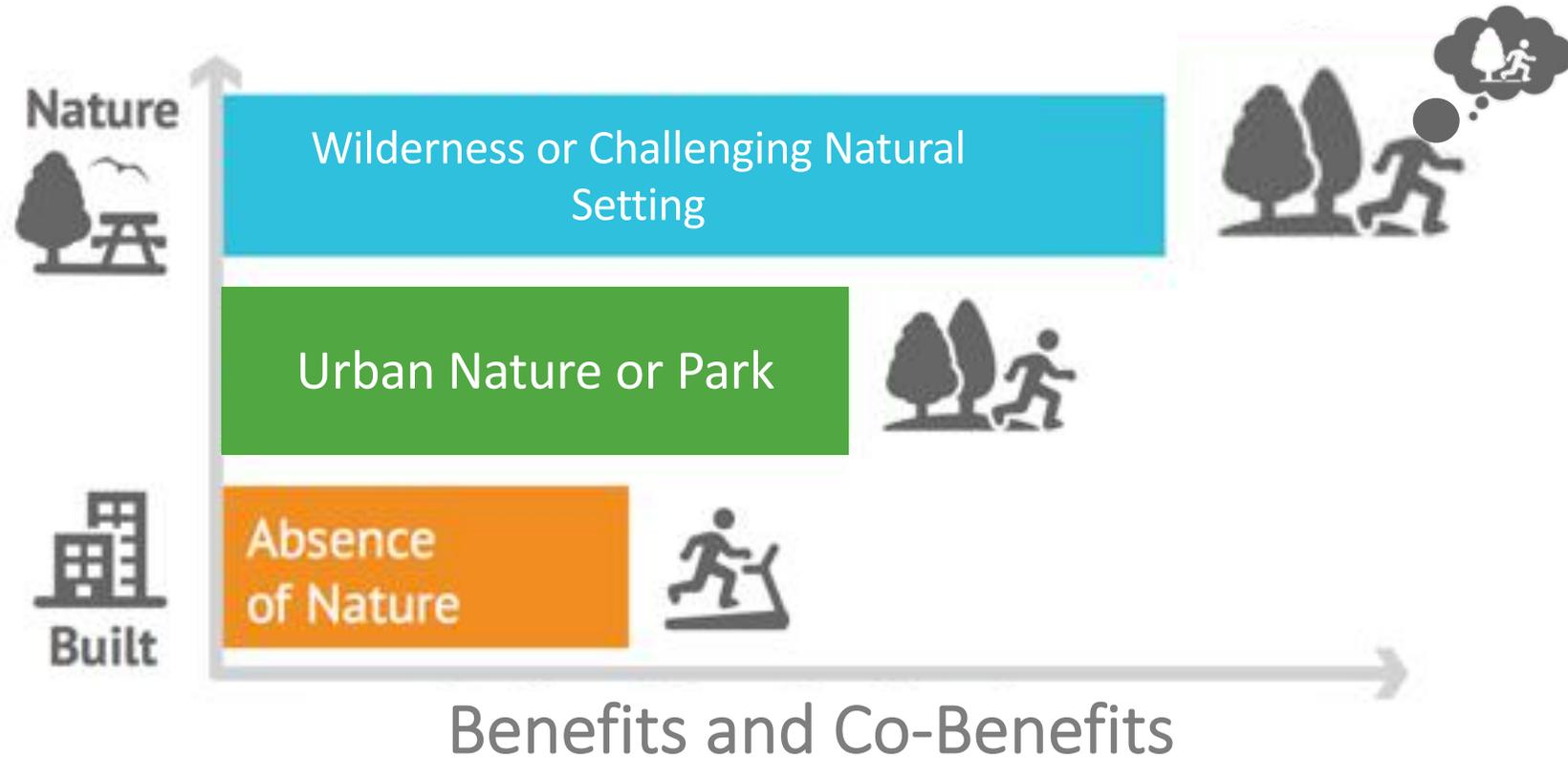


*By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities*

**Urbanisation requires us to high quality accessible green space**

# Evidence base

# Where you Walk Matters

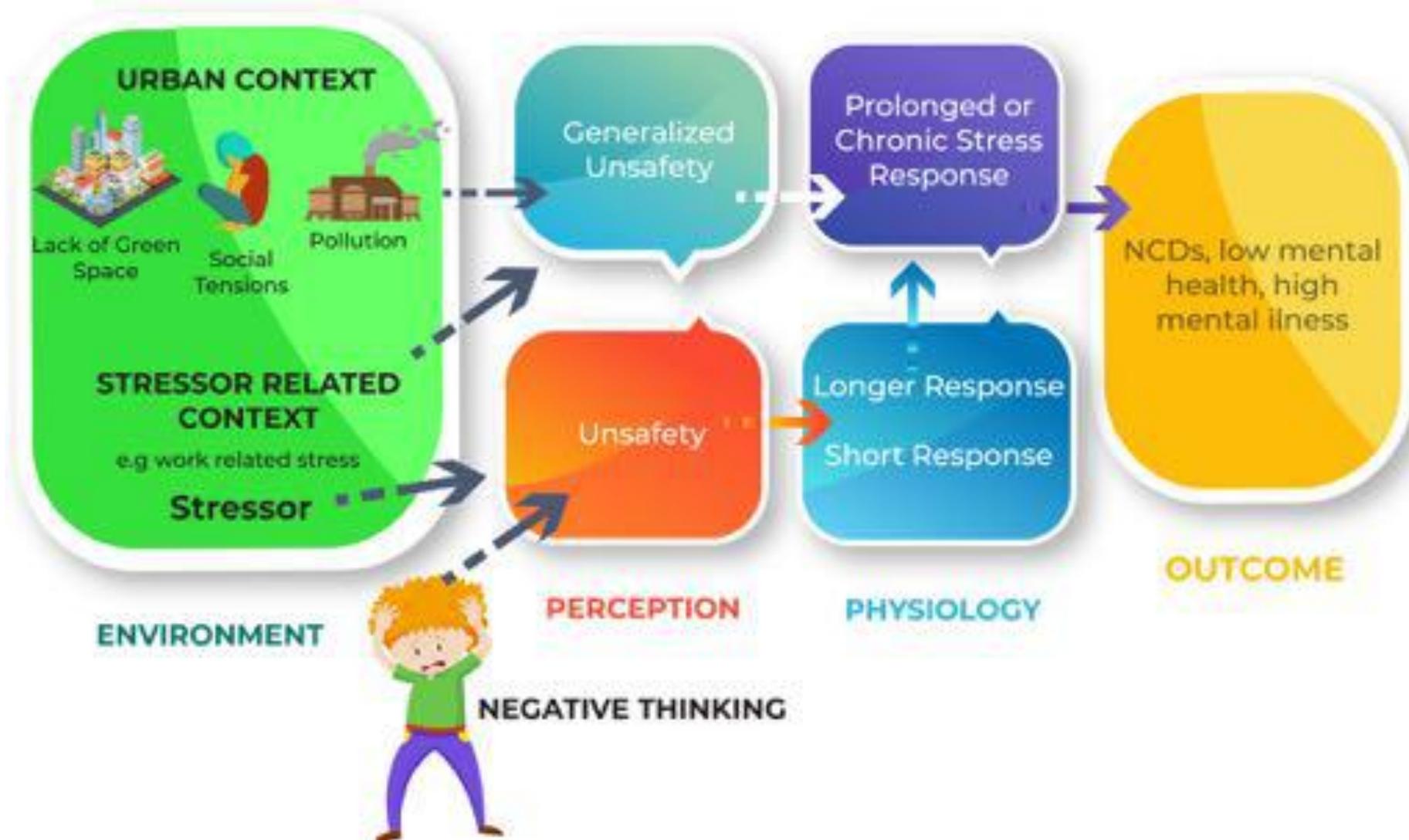


**The Hyde Park effect shows there air pollution can negate the health benefits of physical activity**

## Therapeutic Lifestyle Changes

Well-being and Mental health promoting strategies by Roger Walsh (2011)





Stress is not simply a response to events not traits  
But it is dependent upon our habitual setting

## Timed Test Do the Math

$4+4 =$

$4+4 = 8$

$4+4 = 8$

$6 + 3 + 3 =$

$6 + 3 + 3 = 12$

$6 + 3 + 3 = 12$

$9 \times 2 =$

$9 \times 2 = 18$

$9 \times 2 = 18$

$12+7=$

$12+7= 18$

$12+7= 18$

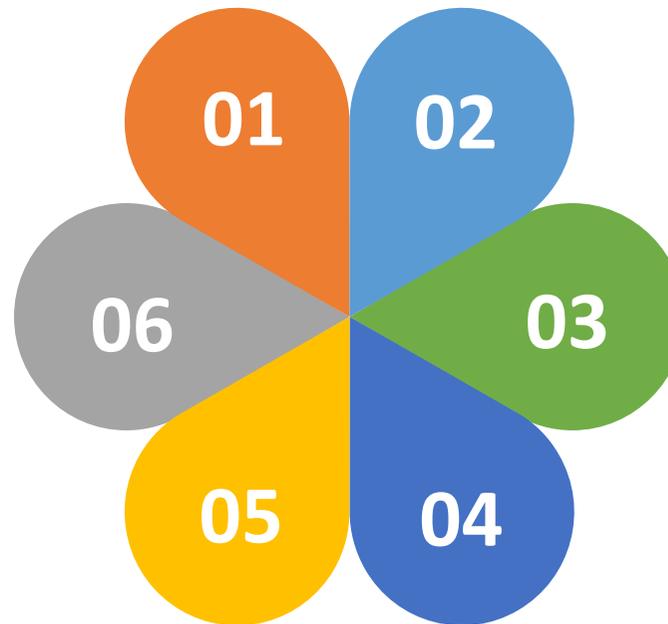
If you had been outside you are more likely to say  
I was 75% right.

# Benefits of Green Exercise

**01** Reduced Stress

**02** Enhanced Attention

**03** Increased Empathy



**04** Greater Nature Connectedness

**05** Reduced Perceived Effort

**06** Increased Resilience

See Donnelly & MacIntyre (2019)

# Unusual Suspects



Jan 29th 2017, 9:37 PM  27,794 Views  4 Comments

**Jessie Barr** has seen her promising career interrupted by a succession of injuries but she's hoping to return in 2017.

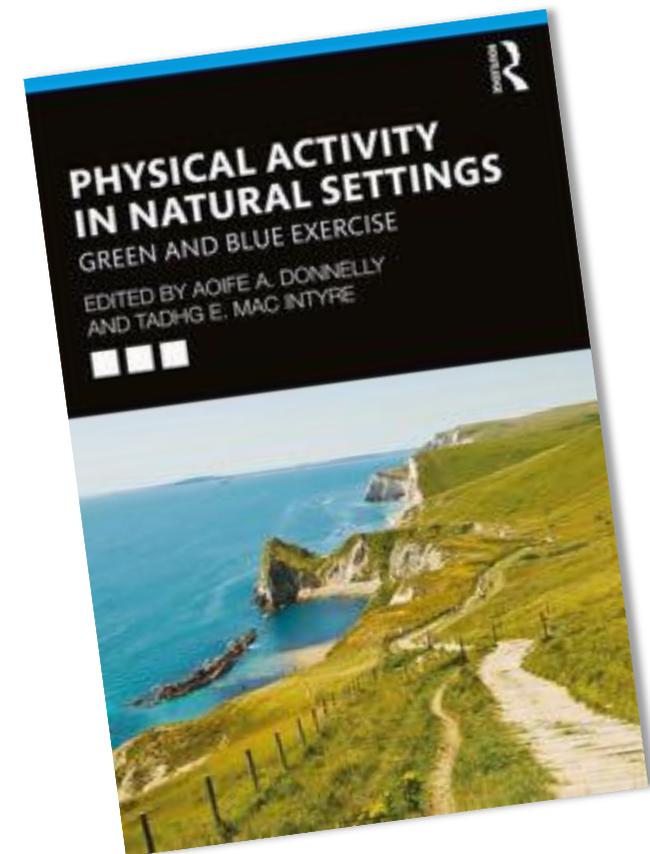
## Resources

**Chapter 10. From Tracks to Trails: Case Studies in Green Exercise**

**Chapter 11: Immersion, Water Sports and BlueWays: Resilience and the Growth Mindset**

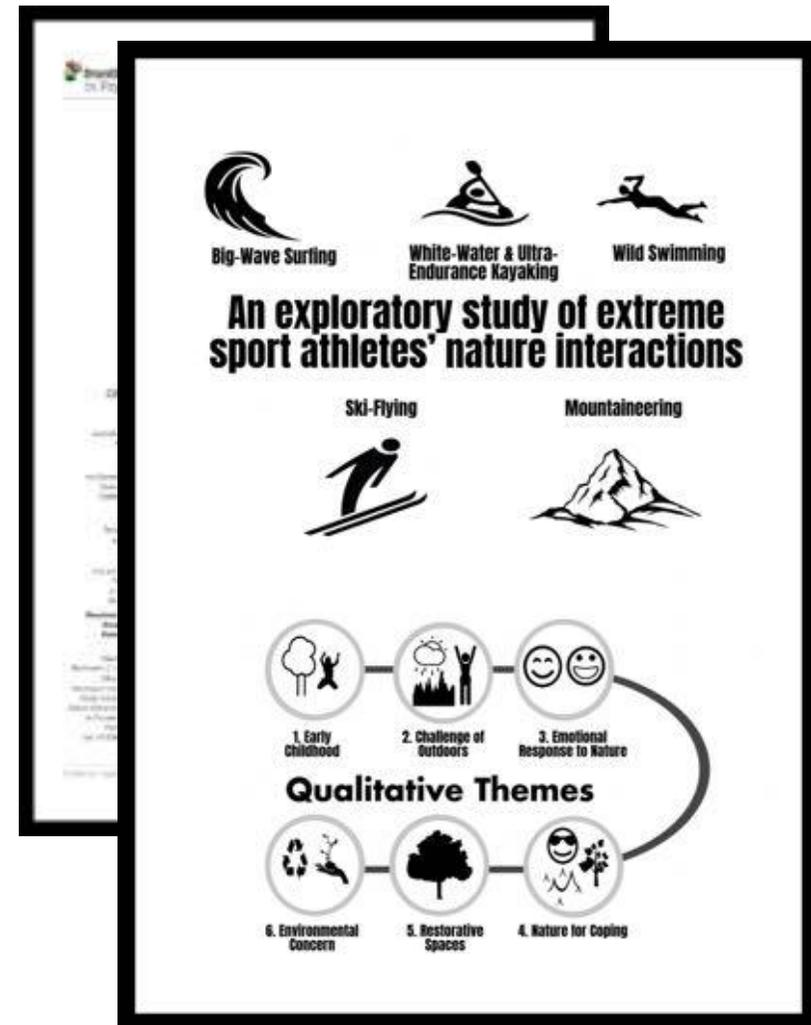
**Chapter 12 Why outdoors? A systematic approach to examine and value the social benefits of outdoor sports**

*Mike McClure and Barbara Eigenschenk*



# Nature for Recovery

- What emotions have you felt during your natural experiences?
- What type of nature do you prefer?
- Can you identify your Happy Natural Space?
- What are your conservation habits?



# Exploratory Research

Name	Gender	Nationality	Sporting experience
Easkey Britton	F	Irish	Former international professional surfer and big wave surfer
Chris Bryan*	M	Irish	International competitor in long distance open-water swimming.
Rosie Foley*	F	Irish	Channel swimmer and former Ireland rugby international (36 caps)
Sandra Hyslop	F	British	White-water kayak competitor
Jim Kennedy	M	Irish	Ultra-endurance kayak competitor
Andreas Küttel	M	Swiss	Three time Olympian in ski-jumping and ski-flying competitor
Tehillah McGuinness*	F	South African	International professional surfer and big wave surfer
Humphrey Murphy	M	Irish	Everest mountaineer and white-water kayaker

\*denotes active competitor.



Big-Wave Surfing



White-Water & Ultra-Endurance Kayaking



Wild Swimming

## An exploratory study of extreme sport athletes' nature interactions

Ski-Flying



Mountaineering



# Qualitative Findings

*I think the real barrier or issue is even when we do access its' the quality of the environment... I think we are at crisis point when it comes to the health of our oceans.*

- Dr Easkey Britton



## Nature for Coping

*When I'm swimming I can cry,  
when I'm swimming I can do  
whatever the hell I want, when  
I'm swimming and it's me on  
my own and its fine and I'm not  
upsetting anyone else ...that's  
how it helps me cope.*

*-Rosie Foley (Channel Swimmer)*



# Best practice

## Four Ways to Increase Well-Being

1. **Green exercise-** moving in nature.



2. **Nature Savouring-**recalling positive affect of nature experiences.



3. **Restorative Natural Space-**knowing where you can go to feel calm.



4. **Micro-breaks-**40 sec to 2 min. viewing of nature to enhance recovery





- **Nature Savouring**-recalling positive affect of prior experiences.
- **Nature savouring explored** in a 2 week campus based study in Vancouver (Passmore & Holder, 2016)
- Students took photos of natural vs built environment.
- Noted how photo made them feel.
- Increased pro-social behaviour and positive affect
- **Reminiscing about old or recent experiences can evoke similar positive emotions.**



## Restorative Natural Space

- Recovery refers to unwinding and restoration processes during which a person's strain level that has increased as a reaction to a stressor or any other demand returns to its pre-stressor level (Sonnentag et al. 2017).
- Recovery long associated with therapeutic landscapes.
- Environmental enrichment is linked to consistent health benefits (Townsend et al., 2018).
- **Is there somewhere close to you that evokes calm in you?**



# Micro-Breaks

- Included in well-being Apps like **Calm™**
- 40 sec of viewing of nature scene compared to built environment scene promoted restored attention (Lee et al., 2015).
- Bespoke images of natural stimuli can increase attention.
- **Taking short breaks of 40 sec. to 2 min. can help you cope with stress and recover.**



# Future Proofing

# Digital Natives



Digital  
Innovation

## Technological Nature:

technologies that in various ways mediate, augment, or simulate the natural world.

**Immersive Virtual Reality** and even simply images can reduce barriers to participation.

VR can provide a Segway for people to break down barriers to green exercise.



# Next Steps for All

## Evidence Base

Green exercise reduces stress, increases resilience, attention, empathy and is linked to higher level of adherence and provides a setting for recovery.

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## New Initiatives

Exploration of the role of technological nature as a tool to reduce barriers to green exercise.

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## Policy Impact

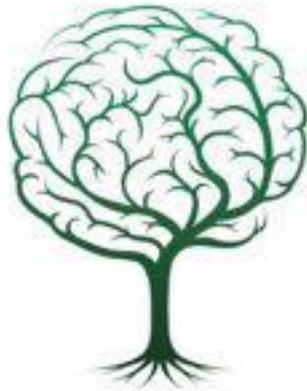
- Coordinated approach to account for all possible benefits and risks.
- The health of our planet and our well-being are not entirely unrelated.



# CONCLUSIONS

## Resources

See our special issue in the journal *Frontiers in Psychology*



human-nature-interactions-  
perspectives-on-conceptual-and-  
methodological-issues

See our special issue in the journal *Int. J. Env. Res. & Pub. Health*:



International Journal of  
*Environmental Research  
and Public Health*

Advances in Green Exercise  
and Health Promotion