



**Woodlands
for
Health**

Evaluation Report 2020

**NATURE-BASED
INTERVENTIONS
AND WELL-BEING:
A PRELIMINARY STUDY**



An evaluation of a 12 week green exercise forest-based activity programme by the GO GREEN research initiative at the Physical Activity for Health cluster, Health Research Institute, University of Limerick.

Acknowledgments: We would like to express our gratitude to all participants in the programme, and Charlie Burke (Coillte: Woodlands For Health)-Project Initiator; Ellen Moran MA (GO GREEN, UL-analysis of findings and graphics; Emer O'Leary PhD (Get Ireland Walking)-survey design, and staff in Local Sport Partnerships, Mental Health Services and Mental Health Ireland Development officers who facilitated the programme.

Executive Summary

This report presents the findings of preliminary research on the Woodlands for Health project which involves a nature-based intervention for mental health and well-being in Coillte forests. The findings indicated an improvement in well-being (on average 31%) and nature connectedness (on average 11%). These findings merit further systematic research and provide tentative support for the programme. Additional co-benefits for sustainability, enhanced environmental concern and potential increases in pro-environmental behaviour should be considered in future studies. Overall, the findings suggest positive impacts upon participants with potential significant reciprocal benefits for those engaged in coordinating the programme on-site.

Glossary of Key Terms

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Positive mental health is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.

Nature-Based Interventions are programmes, activities or strategies that aim to engage people in nature-based experiences with the specific goal of achieving improved health and wellbeing.

Nature connectedness relates to an individual's subjective sense of their relationship with the natural world.

Green Exercise refers to physical activity in natural settings.

Blue exercise specifically refers to physical activity in water-based natural settings or adjacent to them.



Background and Evolution of the Programme

Exercise within green and blue natural spaces, referred to in the scientific literature as green or blue exercise, offers low-cost, non-invasive solutions to public health challenges - particularly for mental health.

More broadly, these programmes are categorised as nature-based interventions and a rich literature has provided almost four decades of evidence largely supporting their efficacy (Donnelly & MacIntyre, 2019). In addition to benefits for mental health and well-being they have potential co-benefits in terms of physical health and environmental sustainability. Nature connectedness, a propensity for contact with the natural world (Nisbet et al., 2009), can be enhanced through outdoor physical activity with commensurate benefits in a range of pro-environmental behaviours and increased positive attitudes towards the environment. Recent international research on physical activity, health and the natural environment has led to the genesis of evidence-informed programmes. Guidance on implementing nature-based interventions for a range of participants can provide a foundation for the ideals of autonomy, solidarity, and sustainability at the individual, community and city level.

Woodlands for Health is a nature-based intervention programme focused on green exercise in a forest setting. The voluntary programme has been developed specifically for those with mental health difficulties. It is supported by medical professionals complementing a positive mental health approach which is central to the role of Mental Health Ireland. In 2012 the first Wicklow programme was initiated by Charlie Burke of Coillte in partnership with the HSE, Mental Health Ireland, Wicklow Mental Health Association and Wicklow Sports Partnership. Currently, there are over almost a dozen counties conducting the programme with over nationwide interest in coordinating the programme in 2020 and beyond.





Strategic Alliances: Stronger Together

Coillte recognises that forests provide an excellent landscape for a wide range of recreational activities and the company, as the country's largest landowner, has such a special place in the provision of access to recreation. Coillte makes a valuable contribution to social well-being through the provision of an extensive range of recreation facilities.

Get Ireland Walking is an initiative co-funded by Sport Ireland and Healthy Ireland who coordinate their activities through a network of 29 Local Sports Partnerships across Ireland. Together this partnership meets their joint needs and provides value to the participants by promoting sustainable physical activity as a pathway to positive mental health.

Mental Health Ireland, promotes positive mental health and wellbeing to all individuals and communities, and through their network of Mental Health Associations, we support people who experience mental health difficulties on their journey of recovery. Martin Rogan CEO of Mental Health Ireland describes "green exercise as a giant step for individual well-being. Just one step into nature has the potential for long term benefits for our mental health and well-being. We are more likely to return to green exercise than any other form of physical activity. It's also cheaper than gym-based activity and opens peoples' eyes to nature and their environment." Mental Health Ireland's strategic plan 2019-2021 'Empowerment – From Ideas to Action' commits its support for green exercise and specifically to promote and extend the Woodlands for Health initiative.

Gogreen **GO GREEN**, an acronym for Going Outdoors: Gathering Research Evidence on Emotions and Environment, is a transdisciplinary research initiative led by Dr. Tadhg MacIntyre at the Health Research Institute, University of Limerick with over 50 national and international partner organisations. GO GREEN develops evidence-based interventions based on human-nature interactions to benefit individual and organizational health, well-being and performance. Recent funding includes a new EU funded H2020 project (€10.48 million) on nature based solutions to promote urban health and well-being across six European cities which is planned to commence in June 2020 and they continue to provide research support for Mental Health Ireland and other partners.

PARTNERSHIPS



THE PROGRAMME

As illustrated in the figure below the programme requires integrated support in organization, management, delivery and evaluation.

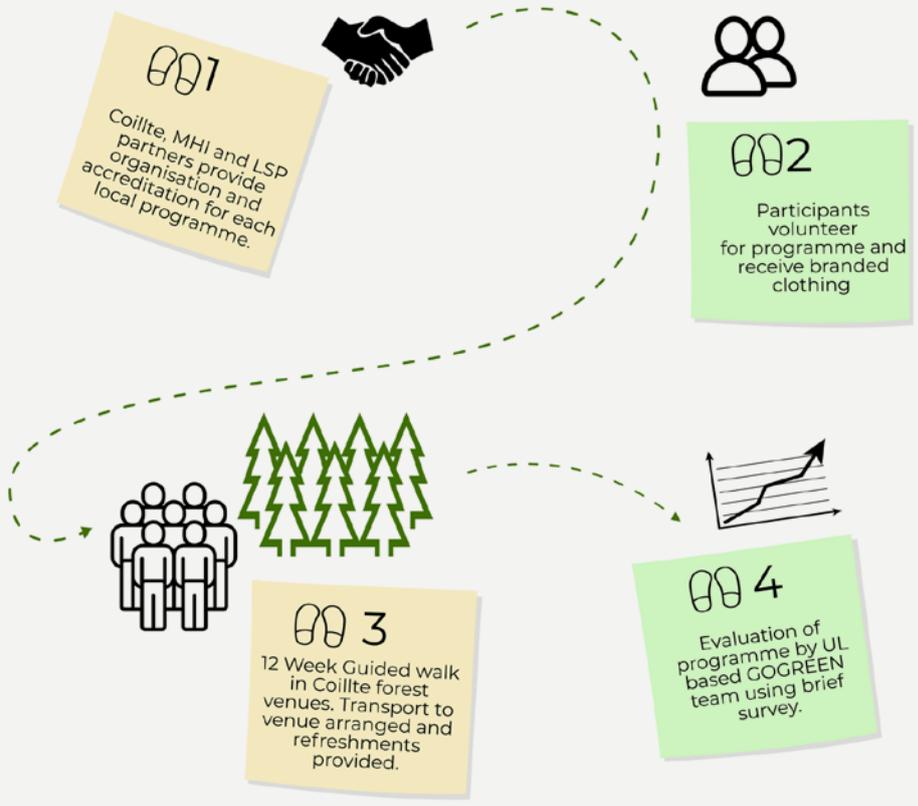


Figure above: The steps in the Woodlands for Health programme.

METHODOLOGY

Survey Approach & Sampling

Standardised psychological instruments which are indicative of mental health and well-being (e.g. WHO-5 Well-Being Index; WHO,1998) were included in addition to a brief questionnaire on nature-relatedness (NR-6, Nisbet & Zelenski, 2013), demographic items and open-ended questions for participant feedback. Further information on the tests used are available in the Appendices.

Measuring Well-Being (WHO-5)

Standard measure of mental health used globally

Scores range from 0-100

Scores around 70 are indicative of high levels of positive mental health

Below 50 indicates a level of distress

Brief test with just 5 items

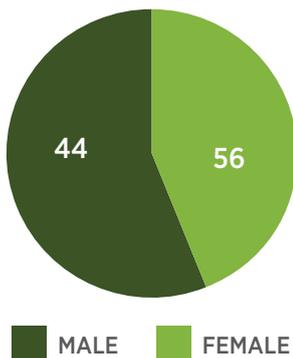


Key Findings

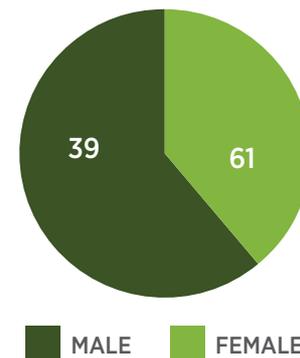
Findings from completed surveys across six counties including Limerick, Wexford, Roscommon, Laois, Wicklow and Sligo were included in the analysis.

The sample comprised over 150 participants at pre and post, largely derived from an overlapping sample. Gender representativeness should be explored in future surveys but both genders participated with a higher response rate among female participants. Given that there are gender differences in the prevalence of psychological difficulties, help-seeking and mental health stigma, future evaluation should consider gender as a key variable.

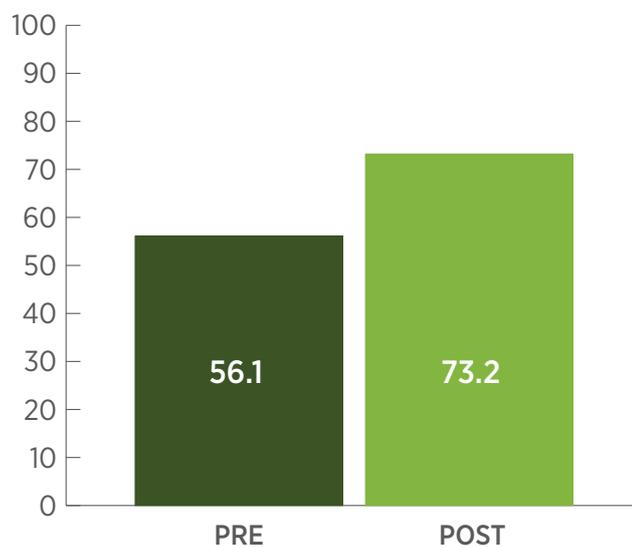
PRE-TEST SAMPLE (N=174)



POST-TEST SAMPLE (N=162)



Well-Being Scores



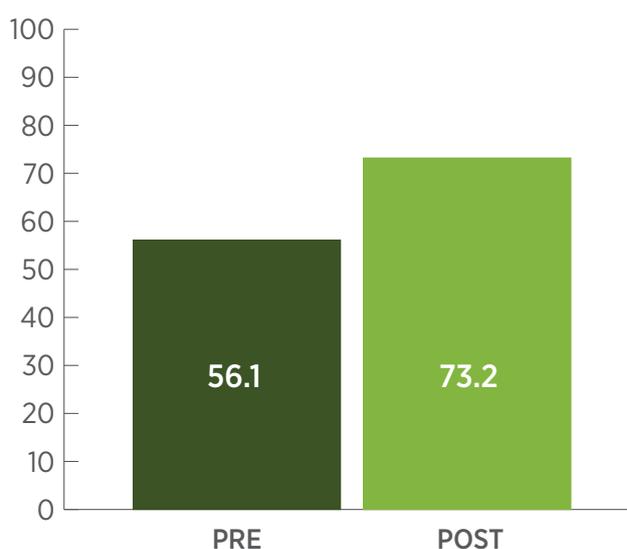
WHAT DO THE SCORES MEAN?

The scores on the WHO-5 represented a 31% increase in self-reported well-being after the 12 week program. Note that higher scores indicate higher levels of self-reported well-being and values below 50 suggest psychological distress with values above 70 indicative of high levels of well-being. The findings indicated a noticeable positive impact on well-being. Average Post-programme scores were above 70. A score at this level is above the threshold that suggests well-being may buffer against future mental health challenges. Caution must be used in interpreting the findings as this was a feasibility study without a control group. Spontaneous remission and recovery may occur due to other recovery processes and treatments. Future research should use an ethically sound wait-list control group to clearly demonstrate programme effectiveness. A small increase in nature connectedness was found and this limited effect may be due to ceiling effects as their initial scores indicated very high levels reducing the envelope for positive change.

Nature Relatedness Scores

10.8% increase in self-reported nature relatedness

Higher scores indicate higher levels of self-reported connection to nature



Nature relatedness scores were initially high for this sample indicating a prior positive perception of their connectivity to the natural environment. Thus ceiling effects (the limited number of possible choices on the rating scale which was 1-5 Likert scaled) may have limited the possible scores for the sample. In addition the participants predominantly agreed with additional items supporting the efficacy of the programme. For example, 98% agreed it was highly enjoyable and 95% recommended it be included as part of a holistic recovery strategy. One recommendation that was consistently reported by the participants was to go to blue natural spaces or BlueWays suggesting a preference, at least among some participants, for blue exercise. Similarly, they would like the programme extended across the year which provides further evidence for its acceptability for participants.

LIMITATIONS OF QUANTITATIVE ANALYSIS

Evaluation of nature-based interventions are challenging partly because of the potential placebo effects, difficulty in maintaining a valid control and measurement issues. A wait list control could provide a higher degree of control for future evaluations and the use of e-surveys would ease barriers to participation in the evaluation. Other factors relating to sustainability should be included in future analyses in addition to a three-month follow-up, and process evaluation focusing on the support personnel in addition to participants.



Listening: The Participant Voice

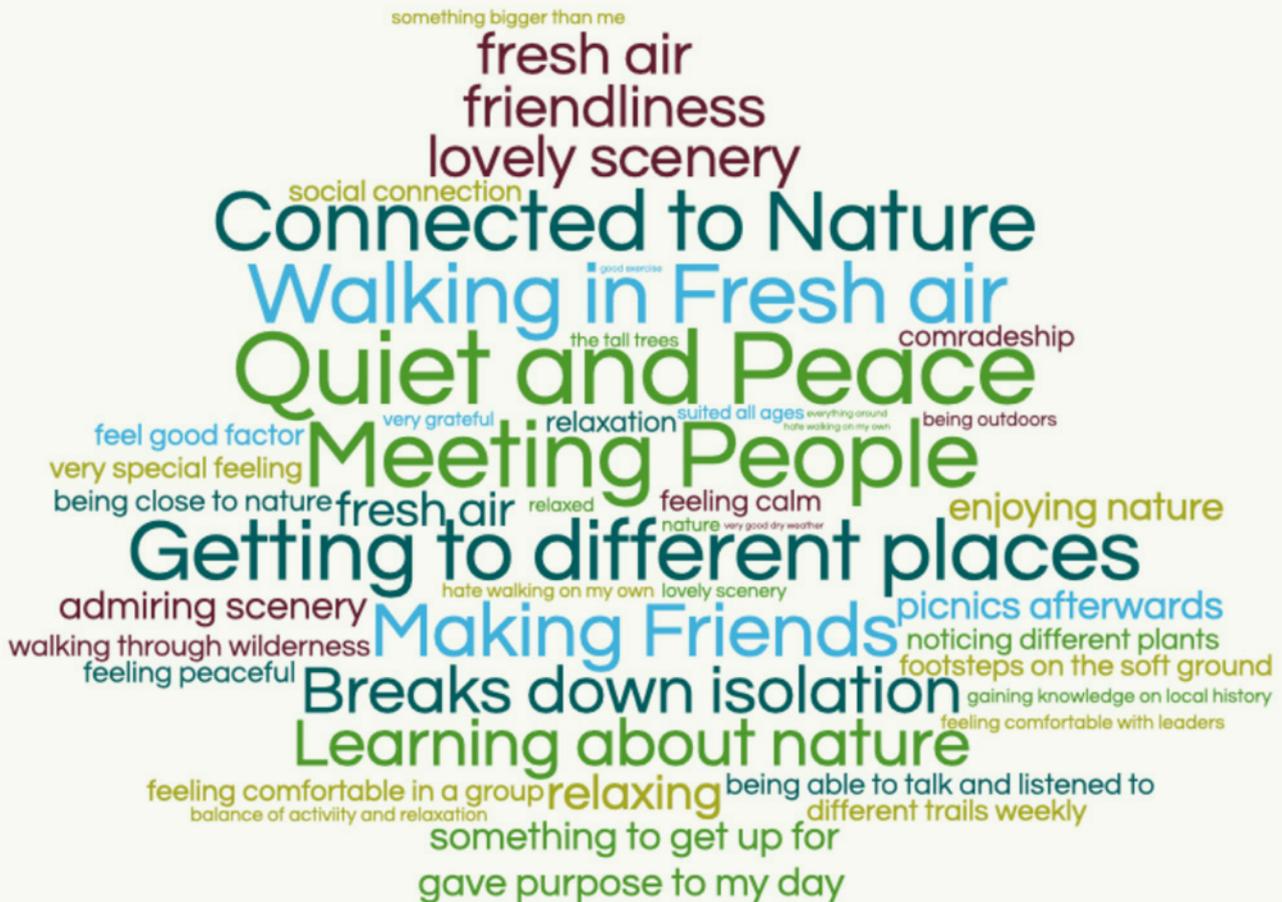


Figure above: A word cloud illustrating the Open-ended response of the Participants.



Recommendations: The Next Steps

- Maintain the steady increase and roll-out of the programme where resources exist to maintain program fidelity.
- Explore the option of 'blue exercise' and work with others engaged in stewardship of our natural resources.
- Provide training on dimensions of the programme to promote nature contact (e.g. Green Care Code).
- Provide recommendations for non-targeted community based green exercise programmes (See Appendix C).
- Evaluate the programme effectiveness through both qualitative means with an emphasis on the participant's voice and online-survey methods in future iterations.

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APPENDIX A

WHO—5 Well-Being Index

Description

The World Health Organisation- Five Well-Being Index (WHO-5) is a short self-reported measure of current mental wellbeing.

The measure was first introduced in its present form in 1998 by the WHO Regional Office in Europe as part of the DEPCARE project on well-being measures in primary health care.

Psychometric properties

The WHO-5 has been found to have adequate validity in screening for depression and in measuring outcomes in clinical trials. Item response theory analyses in studies of younger persons and elderly persons indicate that the measure has good construct validity as a unidimensional scale measuring well-being in these populations (Winther Topp et al., 2015).

	Sample Items					
	Over the last two weeks	All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time
I have felt cheerful and in good spirits	5	4	3	2	1	0
I have felt calm and relaxed	5	4	3	2	1	0
I have felt active and vigorous	5	4	3	2	1	0
I woke up feeling fresh and rested	5	4	3	2	1	0
My daily life has been filled with things that interest me	5	4	3	2	1	0

APPENDIX B

Nature Relatedness Scale (NR-6; Nisbet & Zelenski, 2013)

Description

The construct of nature relatedness (NR; and the self-report scale by the same name) captures individual differences in the way people view their relationship with the natural world (Nisbet et al., 2009). High nature relatedness, or a strong subjective connection with nature, is typically associated with greater happiness and environmental concern. Disconnection likely has harmful consequences for both human and environmental health, yet is a regular consequence of the modern lifestyles that often separate people (physically and psychologically) from the natural world. Thus, research on nature relatedness has potentially important implications.

Psychometric properties

The short-form version of the nature relatedness scale (NR-6), comprises of 6 items from the “self” and “experience” dimensions. The new NR-6 scale demonstrated good internal consistency, temporal stability, and predicted happiness, environmental concern, and nature contact.

Sample Items				
1	2	3	4	5
Disagree strongly	Disagree a little	Neither agree or disagree	Agree a little	Agree strongly

Instructions: Using the scale above, for each of the following, please rate the extent to which you agree with each statement,

1. My ideal vacation spot would be a remote, wilderness area.
2. I always think about how my actions affect the environment.
3. My connection to nature and the environment is a part of my spirituality.
4. I take notice of wildlife wherever I am.
5. My relationship to nature is an important part of who I am.
6. I feel very connected to all living things and the earth.

APPENDIX C

Recommended Best Practice Guidelines “PACER” by GO GREEN

- **P**hones can provide you with a navigation tool (GPS) and you can take photos of your adventure.
- **A**ctivity levels in green exercise can initially be easy on the effort spectrum and when you feel comfortable you can ramp it up in intensity or increase the duration.
- **C**hoose your setting as we have personal preferences for natural environments-for example some prefer open spaces to running under a canopy of trees.
- **E**nvironmental benefits of outdoor exercise are reduced exposure to pollutants, reduced carbon footprint from gym activity and increased awareness of our natural environment.
- **S**avouring or recalling your experience of nature can evoke the same positive emotions that you had on the hillside so you don't even have to be in nature to feel its benefits.



Woodlands for Health