

Est.
1841

YORK
ST JOHN
UNIVERSITY

Sharpley, Olivia Alice (2026) Nature on Prescription in the Yorkshire Dales. Masters thesis, York St John University.

Downloaded from: <https://ray.yorks.ac.uk/id/eprint/15754/>

Research at York St John (RaY) is an institutional repository. It supports the principles of open access by making the research outputs of the University available in digital form. Copyright of the items stored in RaY reside with the authors and/or other copyright owners. Users may access full text items free of charge, and may download a copy for private study or non-commercial research. For further reuse terms, see licence terms governing individual outputs. [Institutional Repository Policy Statement](#)

RaY

Research at the University of York St John

For more information please contact RaY at ray@yorks.ac.uk

Nature on Prescription in the Yorkshire Dales

Olivia Alice Sharpley

Submitted in accordance with the requirements for the degree of
Master of Science by Research

York St John University

York Business School
School of Education, Language and Psychology

June 2026

The candidate confirms that the work submitted is their own and that appropriate credit has been given where reference has been made to the work of others.

This copy has been supplied on the understanding that it is copyright material. Any reuse must comply with the Copyright, Designs and Patents Act 1988 and any licence under which this copy is released.

© 2026 York St John University and Olivia Alice Sharpley

The right of Olivia Alice Sharpley to be identified as Author of this work has been asserted by them in accordance with the Copyright, Designs and Patents Act 1988.

Acknowledgements

This project would not have been possible without the support of a myriad of individuals and organisations. These include, but are not limited to:

The Institute for Health and Care Improvement at York St John and the Yorkshire Dales National Park Authority, for making this project possible; my supervision team, Dr. Thomas Ratcliffe, Kiri Wood and Professor Divine Charura, for their advice, guidance and mentorship; Dr Sophie Brigstocke, for her ongoing encouragement; the individuals who participated in this study; and finally my family, particularly my parents, for their ongoing love, emotional support and motivation during a challenging year.

Abstract

The benefits of nature for human health and wellbeing are widely recognised across disciplines; it is also recognised that nature and natural landscapes are not equally accessible to all. However, there is a lack of research into how protected landscapes, such as the Yorkshire Dales National Park (YDNP), may impact human health and wellbeing, and limited research into how diverse populations access protected landscapes. The aim of this study was to examine and evaluate the impact of the YDNP Nature Prescription Calendar – a green social prescribing resource focused on improving wellbeing through nature connection – on the wellbeing of those who have been using it in and around the Yorkshire Dales National Park, as well as its impact on access to nature and the national park. In addition to applying a systems-thinking perspective throughout, this study took a pragmatic approach, with a convergent mixed methods design employed to capture data from both prescribers and recipients of the calendar: this included a survey; semi-structured interviews; a focus group; a questionnaire. Reflexive thematic analysis was undertaken to identify common themes in participant responses, which were complemented by descriptive statistics. Key findings highlighted the importance of a pre-existing relationship with nature for calendar engagement and the calendar's impact on the perceived legitimacy of nature-based interventions; pathways for connecting with nature and the national park through the calendar; a 'virtuous circle' effect on barriers to calendar use and landscape access, despite persistent systemic challenges; the importance of systemic integration of the resource. These findings begin to contribute to an emerging field of research into the potential impact of protected landscapes on health and wellbeing, and have implications for the future of the Nature Prescriptions calendar and the YDNP's role within the healthcare landscape of North Yorkshire.

Contents

Acknowledgements	3
Abstract	4
Contents	5
List of figures and list of tables	6
Abbreviations and acronyms	7
Chapter 1: Introduction	8
Chapter 2: Literature review	15
Chapter 3: Methodology	43
Chapter 4: Findings and discussion	58
Chapter 5: Further discussion and conclusion	98
References	110
Appendices	128

List of figures

Figure 1.1 : initial 'lifecycle' of the YDNP Nature Prescriptions project	12
Figure 2.1 : simplified IICN scale as it appears in the Nature Prescription calendar	31
Figure 2.2: system of interconnecting themes within Literature Review	41
Figures 3.1: photos of focus group location	52
Figure 4.1: updated 'lifecycle' of the YDNP Nature Prescriptions project	59
Figure 4.2: connection between themes identified through reflexive thematic analysis	60
Figure 4.3: comparison of frequency of calendar prescription with time elapsed since Nature Prescriptions training	52
Figure 4.4: reproduction of fig. 2.1	71
Figure 4.5: likelihood of HCPs engaging with nature after attending training and/or using Nature Prescriptions calendar in their practice	75
Figure 4.6: the 'virtuous circle' relationship between calendar use, relationship with nature and wellbeing benefits	83
Figure 5.1: reproduction of fig. 2.2	108

List of tables

Table 3.1: number and types of participants in the study	47
Table 3.2: details and designations of HCP survey respondents	47
Table 3.3 : designations and professional roles of interview participants	48
Table 3.4: designations and details of focus group participants	48
Table 3.5: designations and details of calendar recipient questionnaire respondents	49
Table 4.1: how frequently HCPs prescribe the calendar	66
Table 4.2: frequency of independent calendar use by CR questionnaire respondents	87

Abbreviations and acronyms

ART	Attention Restoration Theory
CR	Calendar Recipient
FGP	Focus Group Participant
GSP	Green Social Prescribing
HCP	Healthcare Professional
IICN	Illustrated Inclusion of Nature in Self
IP	Interview Participant
NBSP	Nature-based Social Prescribing
NYMPN	North York Moors National Park
PDNP	Peak District National Park
PDNPA	Peak District National Park Authority
SRT	Stress Reduction Theory
WHO	World Health Organization
YDNP	Yorkshire Dales National Park
YDNPA	Yorkshire Dales National Park Authority

Chapter 1

Introduction

Natural landscapes have been recognised as contributing significantly towards human wellbeing since before the time of the ancient Greeks (Ward Thompson, 2011). Recent research across a variety of disciplines has confirmed the wisdom of the ancients: spending time in or near a natural environment can decrease stress (Song *et al.*, 2018), improve long-term mental health (Alcock *et al.*, 2014), result in lower blood pressure, improve cardiovascular health (Jimenez *et al.*, 2021) and reduce the likelihood of developing a non-communicable disease (Bird *et al.*, 2018).

Natural landscapes, green spaces and nature in general have also been shown as not equally accessible to all members of society in the UK. For example, those living in the most socio-economically deprived areas have the least access to green space (Ngan *et al.*, 2025), and less than 1% of visits to the countryside are made by those from non-white backgrounds (CPRE, 2021). This has marked implications for health inequality, as there are evidently groups who benefit less from the health and wellbeing benefits of spending time in nature.

In recent years, the focus has turned from the health effects of simply spending time in nature to *connectedness* with nature – that is, forming a sense of relationship with it (Pritchard *et al.*, 2020) – particularly as research from the last decade has shown this to be much more significant for predicting mental wellbeing than exposure or proximity to nature (Richardson *et al.*, 2021b). Although it is a measurable concept (Hague *et al.*, 2024), it must be noted that the specific mechanisms which result in an increased level of nature connectedness are still under debate. Physical contact with nature, in addition to meaning, compassion, and noticing nature, have thus far been identified as pathways towards nature connection (Barragon-Jason *et al.*, 2023; Lumber *et al.*, 2017; Richardson *et al.*, 2021a) and are therefore strongly linked to the wellbeing effects of spending time connecting with nature.

Concurrently, and no doubt related to this emerging evidence base, there has been an increase in research undertaken into the effects of green social prescribing, or nature-based social prescribing. This is defined as supporting people to engage in nature-based activities to support their mental or physical health (NHS England, 2026), and has been shown to have positive outcomes for wellbeing (Haywood *et al.*, 2024), although it is also acknowledged that robust research in the field is limited (Thomas, Aggar, Massey *et al.*, 2022; Darcy *et al.*, 2025).

The RSPB Nature Prescription calendar (Appendix A) is one such example of a green social prescribing initiative in the UK. Initially developed and trialled in Shetland by RSPB Scotland, a further pilot study was planned and undertaken in Edinburgh between 2019 and 2021 (Bradley, 2022). The RSPB Nature Prescription was first taken up in England in 2023 by social prescribing services in Derbyshire, with the project led by the RSPB and the Peak District National Park Authority (NASP, 2023a). It has since been implemented across North Yorkshire in and around both the Yorkshire Dales National Park and the North York Moors National Park, starting in 2024, with the former being the focus of this research project.

The YDNP Nature Prescription project was developed in partnership with the NYMPNA, the North York Moors Trust and the RSPB, and aims to ‘boost’ health and wellbeing across North Yorkshire (YDNPA, 2026). It consists of a calendar of activities that ‘have been chosen knowing what you do in nature is far more important than how long or where you spend time in nature’ (RSPB, 2024). The pages for each month contain seasonal nature photos, including photos of the local area, a selection of accessible activities that align with the season¹ and space for reflection. Each page also suggests a place to visit within the YDNP. Although they follow a monthly structure, the calendars are not dated and can therefore be used repeatedly.

The project also involves offering free training to healthcare and wellbeing professionals across the region on the use of the calendar, focusing on how the Nature Prescription and nature in general can benefit health and wellbeing. The Nature Prescription calendar’s

¹ For example, searching for yellow flowers in March. See Appendix A for further examples.

potential to positively impact this has been demonstrated by the findings of the Edinburgh pilot programme, following which 74% of patients identified the prescription as beneficial to them, and over half noted an increase in their awareness of nature (Bradley, 2021). To date, however, there has been no significant evaluation of the impacts of the Nature Prescription resource in a protected landscape context, and most notably no primary qualitative research has been undertaken with calendar recipients.

This is reflective of the state of research when it comes to the health and wellbeing potential of the UK's protected landscapes more generally. Despite the recognised potential of natural environments to impact human wellbeing, and indeed the findings of Romagosa *et al.* (2015) indicating that protected landscapes and parks could constitute an essential resource for wellbeing, little attention has since been paid to UK National Parks and protected landscapes in the literature. In addition to this, research into the barriers to accessing these protected landscapes specifically is also limited; discouragingly, research that has been undertaken into factors limiting access to the countryside seem to show that little progress has been made in this area over the past two decades (National Centre for Social Research, 2022; Natural England, 2005) and to date, the barriers of accessing specifically protected landscapes, rather than the countryside in general, have not been addressed in the literature. Both of these 'gaps' are particularly significant when it is considered that the National Parks of England and Wales were established to benefit the health of the wider population (Hobhouse Report, 1947 in Parker and Ravenscroft, 2000) following the 1949 National Parks and *Access to the Countryside*² Act (UK Government, 2019). Indeed, access to these landscapes is still contested, as demonstrated by the ongoing Right to Roam movement (Breen *et al.*, 2023).

The purpose of this research project is therefore to explore the impact of the Nature Prescriptions project within a protected landscape context, with the aim of both effectively evaluating the YDNP Nature Prescription project and contributing to the limited evidence base on the potential for a protected landscape to function as a resource for wellbeing. This is particularly pertinent when it is considered that levels of common mental health

² Author's emphasis.

conditions, including anxiety and depression, have been increasing in the adult population of England over the past 30 years (NHS England, 2025). The research project will also investigate the implications of health and access inequalities for those who have participated in the project, either through prescribing or receiving and using the Nature Prescriptions calendar.

In so doing, the research is guided by a number of objectives co-developed in partnership with the YDNPA. These objectives are as follows:

- How has the Nature Prescriptions resource been used by patients and healthcare professionals?
- How has it reduced barriers to accessing nature and the National Park?
- How does spending time immersed in the special qualities of the Yorkshire Dales National Park promote positive health and wellbeing for individuals?
- How can we improve the project so that it brings more diverse communities to the National Park and enhances their health and wellbeing?
- How has the Nature Prescriptions training and project benefited healthcare staff?

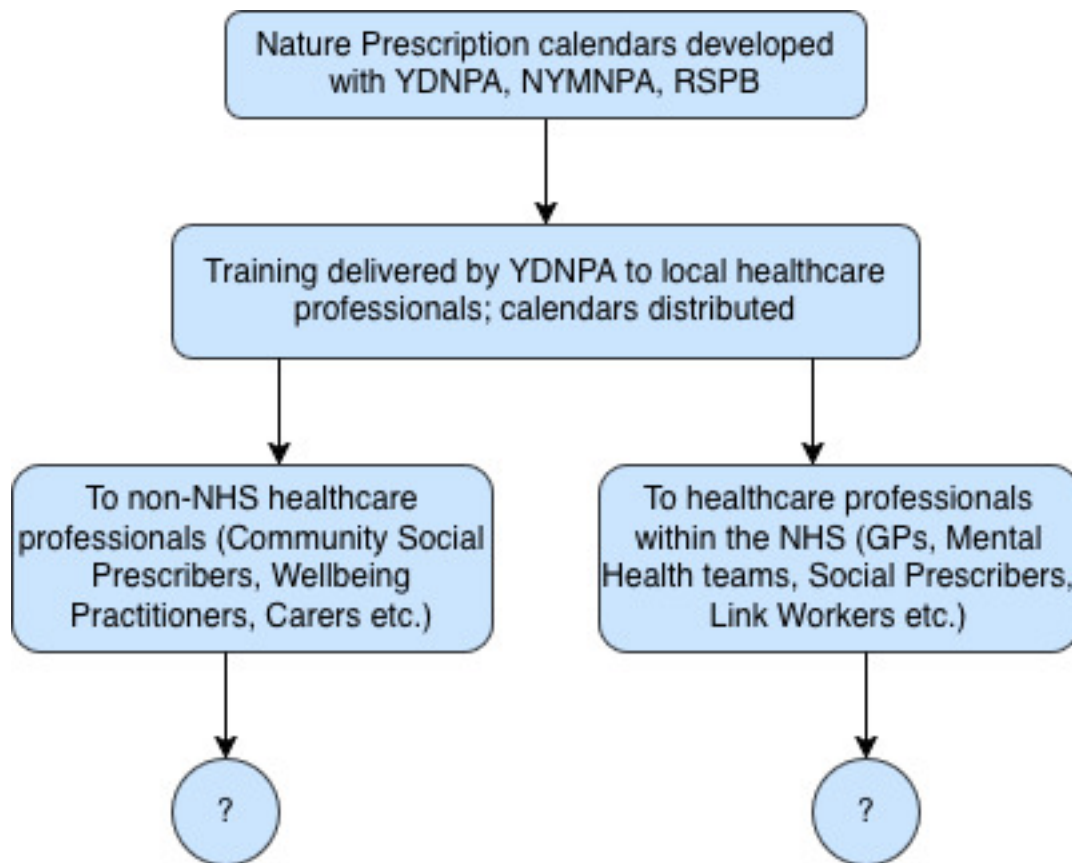
To help guide the investigation of these objectives, particularly the first objective **Figure 1.1** was developed, following preliminary conversations with stakeholders from the YDNP and RSPB, to demonstrate what was initially known about the Nature Prescriptions prescription process – or, its ‘lifecycle’. This diagram is expanded later in the dissertation following analysis of data to gain a clearer picture of the project, in addition to guiding the structure of the results.

The above objectives are addressed through a co-produced, primarily qualitative mixed-methods design with a pragmatic approach taken to the research, working in partnership with the Yorkshire Dales National Park Authority to both evaluate the impact of the Nature Prescriptions project³ and contribute to the growing knowledge base around prescribing

³ See Appendix B for a logic model depicting the development and aims of the YDNP Nature Prescriptions project; this helped guide the research project in its early stages.

nature in the UK. The YDNP Nature Prescriptions project taking place in a protected landscape adds another dimension to this research, as well as building upon studies undertaken in North Yorkshire in recent years, which include a green social prescribing ‘test and learn’ programme (Hurd and Armitt, 2023), empowering diverse communities to engage with the natural environment (Berding-Barwick *et al.*, 2024) and, most recently, a pilot study into the potential for North Yorkshire’s protected landscapes to make up part of a ‘Natural Health Service’ (Ratcliffe *et al.*, 2026).

Figure 1.1: initial ‘lifecycle’ of the YDNP Nature Prescriptions project



This project not only aims to build upon this base, but also influence the future of the Nature Prescriptions project, both in the Yorkshire Dales National Park and beyond. It also aims to bring protected landscapes into the discussion surrounding nature, green space, wellbeing and social and ecological justice, where they have heretofore been primarily

focused on in discussions surrounding tourism, heritage, landscape management and conservation. This dissertation acknowledges that each field does not exist in isolation. Each impacts upon the other, and equally has relevance for the implementation of health and wellbeing projects within the existing system of the UK's national parks. As such, a systems thinking perspective is adopted to guide the structure and provide form to the interdisciplinary nature of this project.

It is with this perspective in mind that the key findings of the project are briefly presented: a pre-existing relationship with nature may mediate engagement with the calendar resource in both recipients and prescribers, and using the resource may also contribute towards an increased perceived legitimacy of nature-based interventions for wellbeing; contact and meaning are key mechanisms for connecting with nature for wellbeing through the calendar resource, and are also identified as potential pathways for connecting with the YDNP protected landscape, in addition to knowledge and compassion; systemic barriers to using the calendar and accessing the YDNP for wellbeing persist, however some barriers such as motivation and confidence may be addressed by calendar use in a 'virtuous circle' effect. In addition to this, the calendar is viewed as most effective when integrated into a 'bigger' system of healthcare or wellbeing.

The dissertation begins with an in-depth thematic narrative literature review. This explores the current state of research as it pertains to the health benefits of nature, including leading theories and empirical research; where protected landscapes have and have not been considered within this; access to the countryside and green health inequality; nature connection and the factors that may mediate this; green social prescribing within the UK; and, the theory behind systems thinking and how an ecological systematic perspective is appropriate to unite all of the above themes.

This is followed by a chapter detailing the methodology of this research project, including the methods undertaken, the participants, the limitations and the ethical considerations of the project. The findings are then presented, following a clear structure guided by the lifecycle of the Nature Prescriptions calendar; the implications of these results are discussed

in the following, concluding chapter, where practical recommendations and suggestions for future research are made.

Chapter 2

Literature Review

2.1 Introduction to the review

Since ancient times, the link between nature and good health has been recognised as popular wisdom, if not outright fact (Boyd *et al.*, 2023). In recent decades, however, the number of scientific studies, reviews and papers examining the relationship between nature and health – which have both confirmed the wisdom of our predecessors and prompted an increased public interest in the topic – has increased exponentially. The effect that spending time in nature has on our health, both mental and physical, has been widely explored across a range of disciplines, both within and without the social sciences (Oxford Nature Network, 2025), and has implications for all of these fields. These include but are not limited to: psychology; health and public health; urban and landscape planning; education; inequality; social and ecological justice; and, tourism and leisure (Howlett and Turner, 2024). This diversity of interest in the topic of nature and health will be demonstrated throughout this narrative review⁴, with attention brought to the different disciplines concerned throughout. It will also have implications for the terms used in this thesis, as achieving consensus in defining terms across interdisciplinary research into nature and health has proved difficult (Howlett and Turner, 2024; Taylor and Hochuli, 2017).

For the purpose of this review, ‘nature’ is defined as broad in scope, ranging from individual or small groups of plants or animals, gardens, national parks and urban nature (Zerbe *et al.*, 2025). This is particularly relevant to this study as the Nature Prescriptions calendar encourages interaction with nature at all scales. Health is defined as ‘a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’ (WHO, 1948); as such, this review discusses the effect of nature on each of these aspects, with a particular focus on mental wellbeing.

⁴ A review structure chosen due to its flexibility, practicality and ability to synthesise a diverse body of literature (Sukhera, 2022), and appropriate for the scope of this dissertation.

Despite the wide-ranging and interdisciplinary interest in the relationship between nature and health, there remains surprisingly limited research into the specific question of how England's National Parks, which make up nearly 10% of the country's land cover, may be able to play a part in the unfolding green health revolution. Therefore, in addition to expounding on the wide variety of disciplines interested in the convergence of nature and health, this review will also demonstrate where current and past research into national parks and protected landscapes does, or does not, intersect with this.

It commences by examining the current state of knowledge with regards to the link between nature and health, from the differing perspectives of academia, scientific research and public awareness. This is contrasted with the contemporary academic research into health and wellbeing in national parks and protected landscapes in particular, with a specific focus on landscapes within the UK.

The review then goes on to expand on current and past evidence of nature's beneficial effects on human health, including leading theories from the past 50 years and recent scientific evidence in the fields of psychology, epidemiology and public health. Continuing on from this, the difference between nature exposure, contact and connection is explored in relation to health, which is subsequently linked to social inequalities and injustices in greenspace access. This, in turn, leads to a discussion on how wellbeing benefits from nature and the factors of accessing nature have been united in recent emerging research into green social prescribing in the UK and beyond. Throughout the review, these themes are compared to existing research relating to protected landscapes in the UK and, notably, to data from previous RSPB Nature Prescriptions initiatives to identify both links and areas for further research.

These connected but potentially disparate themes, exposed over the course of undertaking this thematic literature review, are then brought together by a systems thinking perspective. This shows that addressing problems such as health inequality, green space access, and the ecological crisis together, through an initiative such as the Yorkshire Dales Nature Prescriptions project, rather than separately, can contribute to solving the 'ecosocial' crisis (as coined by Amengual-Moreno, Cash-Gibson *et al.*, 2025) rather than the

current ‘vicious cycle between social and ecological impacts’ (Robèrt *et al.*, 2018). In the conclusion, the intersection of these themes as they relate to the Nature Prescriptions project will be visually represented in a diagram.

In view of this, and guided by the research objectives of this project, this review will also interrogate the question: how do green prescribing initiatives such as the YDNP’s Nature Prescriptions improve health and wellbeing and increase access to protected landscapes?

2.2 Nature and health – who’s interested?

As observed above, literature on the relationship between nature and health abounds, as does scientific and public interest in this subject. Indeed, in their ‘review of reviews’ on health and nature, Hartig *et al.* (2014) particularly note the recent increase in the volume of papers and studies on the subject; undertaking a single search on Web of Knowledge revealed a steady increase in the number of hits for the search term ‘greenspace and health’. For 1990-1999, they found 2 hits, 34 for 2000-2009 and, from 2010-2013, they found 45 published works. In an attempt to judge the current scope and extent of knowledge on the subject and make a direct comparison to illustrate the growth in interest, for the purposes of this review this search was replicated on Web of Knowledge (now Web of Science), using the exact same search term, for the past decade (2015-2025). It returned 1,579 results for this 10-year period. It therefore appears that the developing field of knowledge has experienced a wave of enthusiasm of tsunami-like proportions during these years, in contrast to the steady trickle of interest in previous decades.

This is also reflected in the number of reviews undertaken in the past decade (for example, James *et al.*, 2015; Twohig-Bennett and Jones, 2018; Zhang *et al.*, 2020; Panicià *et al.*, 2025). Nevertheless, despite this recent surge of interest, and considering that there may be papers on the topic that have never been digitised (and, hence, are not included in results from online database searches), nature, landscape and the natural world has been a recurring theme in discussions of better human health for thousands of years. There are striking similarities between modern and ancient theories on why this might be (Ward Thompson, 2011). This ‘classical’ mode of thinking also partially formed the basis of the

post-industrial Victorian urban parks movement (Hickman, 2013), which can itself be seen as a precursor to the national parks movement (Blunden and Curry, 1990); studies into the health effects of urban green space such as parks have since abounded, as demonstrated by the wealth of recent literature reviews specifically focusing on this topic (Browning *et al.*, 2022; Xu *et al.*, 2025, for example).

Apparent in historical thinking about health, as well as more contemporary scientific and academic research, this not-so-recent phenomenon has also entered the public psyche. For instance, Kathy Willis' recent book *Good Nature* (2024) introduces the general reader to the scientific evidence for nature being good for human health. Willis builds upon Kaplan and Kaplan's (1989) influential work on the psychological effects of nature which, interestingly, was also aimed at readers 'who are *not* trained as scientists' (Lewis, 1989) in addition to scientifically trained academics. There has also been a proliferation of non-fiction publications in the past few years touching directly on humanity's relationship to nature, including but not limited to: *Wilding* (Tree, 2018), *Reconnection* (Richardson, 2023) and *Is a River Alive?* (Macfarlane, 2025).

The contemporary literature is, therefore, remarkably broad in scope, crossing the boundaries of disciplines, time, and the gap between academic and public discourse. It is also, however, limited by the use of the single search term 'greenspace and health' (as employed by Hartig *et al.* 2014) and the lack of distinction between 'nature', 'outdoors' and 'green space', as well as 'health' and 'wellbeing.' This is reflective of not only this review thus far, but also of the wider field of research. Despite a recent attempt to classify the term 'greenspace' within the literature (Taylor and Hochuli, 2017), there continues to be a significant inconsistency in the vocabulary used in discussion about and research into nature and health. This reflects the diversity of disciplines across which greenspace is analysed, and also results in a 'wide range of potentially related, but disparate findings' (Taylor and Hochuli, 2017: 25).

It is in this context, in a time of unprecedented academic and public interest in the connection between the natural world and human health, of an exponential increase in the

number of studies and publications on the subject, and with a need to find an intersection between diverse fields of research, that the Nature Prescriptions project finds itself.

2.3 The relationship between the UK's National Parks and health

The YDNP Nature Prescriptions calendar, introduced in Chapter One of this thesis, is specifically designed to be used in and around one of England's largest protected landscapes, the Yorkshire Dales National Park. It is a calendar of activities which are based on recent evidence on the benefits that spending time in nature can have for health (Bradley, 2022), benefits which will be further explored within this chapter.

Although there has been an exponential increase in publications, both grey and white, on green space and health, as demonstrated above in **2.2**, comparatively little research has been undertaken into how the national parks of England, Wales and Scotland come into the argument of nature benefiting human health. Given that national parks account for 9.3% of the land area in England, 19.9% in Wales and 7.2% in Scotland (National Parks UK, 2020) and, therefore, collectively represent a significant proportion of the UK's green space and nature⁵, this is arguably a surprising omission.

This omission is not, however, unexpected. Despite the 1949 Access to the Countryside Act leading to the establishment of the Peak District as England's first national park in 1951 in order to allow 'everyone who lives to get out into the open air' (Blunden & Curry, 1990), and indeed the much earlier establishment of Yellowstone as the world's first national park in 1872, it was not until the year 2000 that the first definitive volume addressing tourism and the impact of visitor activity on national parks was published (Butler and Boyd, 2000). In the entirety of this book, only one chapter directly discusses England's national parks. None address health, or the impact of national parks on their visitors rather than vice versa, beyond a reference to the 1947 Hobhouse Report which stated that national parks 'would be a national investment in health' (Parker and Ravenscroft, 2000).

⁵ There are currently no designated national parks in Northern Ireland.

For the past 25 years, this trend has largely continued (Frost and Hall, 2009 and Wearing *et al.*, 2016 also forego any mention of health and wellbeing), particularly when it comes to England, Wales and Scotland's national parks. Recent case studies have examined the benefits of outdoor activity, (Pomfret *et al.*, 2025) and the promotion of cycling (Shaker and Hermans, 2021) in the Peak District National Park; while the former found that outdoor activity in the national park can help to maintain mental health and enhance subjective wellbeing, the latter bypasses health and focuses on conservation and park management. Equally, there was no research undertaken into wellbeing and pro-environmental behaviour change in a protected landscape context in the UK before a study undertaken in the Brecon Beacons in 2021 (n.d. Conor). This study made up part of a doctoral thesis that, although open access, was never published.

This lack of academic focus on national parks in the UK and their potential contribution to human health and wellbeing is not replicated in other countries. To give some examples, there have been studies into how parks promote health in the US and Australia (Rice, Lacey *et al.*, 2020), how national parks in China could contribute to health and wellbeing (Li *et al.*, 2021; Qin, Wang and He, 2024), and how protected areas influence wellbeing in households across Africa (Fisher *et al.*, 2024). Nevertheless, global as well as national scholarship on the subject remains lacking; often, focus remains on the economic benefits of national parks with wellbeing as a footnote (Richardson and Peacock, 2018, for example).

An assumption has been made that, because nature and green space have been generally proven to support human health and wellbeing (as discussed later in this review), spending time in national parks and protected landscapes in England, which arguably meet the definition of green space and nature⁶ is also beneficial for human health. However, this assumption, it must be noted, is not always upheld in the literature. For example, a systematic review from 2013 suggested that it would be impossible to say with any certainty that protected areas have a net positive impact on human wellbeing due to the range of factors involved (Pullin *et al.*, 2013). Moreover, this review is not the only study to observe

⁶ That is, bodies of water or areas of vegetation in a landscape such as forests and wilderness areas and coastal areas, in addition to urban parks, gardens and trees (Taylor, 2017).

that the establishment of protected areas often involves eviction of locals, and the imposition of a 'European nature/culture dichotomy' (West *et al.*, 2006) that negatively impacts on those living in and around protected landscapes⁷.

In addition, it is difficult to draw any meaningful comparison between national parks globally and those in the UK due to the fact that the latter do not fit the IUCN's definition of a national park (Parker & Ravenscroft, 2000). As living, working landscapes, which support both permanent settlements and occupations, they do not adequately align with the internationally accepted characteristics of National Parks, or Category II protected landscapes (IUCN, 2022). Rather, they are more accurately regarded as Category V protected landscapes; that is,

An area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
(Dudley and Stolton, 2010; IUCN, 2022)

Nevertheless, throughout this review comparisons will be made, where possible, between existing research into nature and health and contemporary studies into the UK's protected landscapes. Romagosa *et al.* (2015), for example, explore how protected areas across the global north 'constitute a crucial resource for human health and well-being' in a comparison between park-focused programmes in the US, Canada, Australia, Spain and the UK. With this being said, no similar study has been undertaken in the past decade and the UK-based programme focused simply on the 'natural environment' rather than parks and/or protected landscapes. As well as the lack of academic interest in the relationship between health and the country's protected landscapes, the national parks' designation as category V protected landscapes – that is, living and working landscapes – raises another point for

⁷ With this being said, these latter two articles refer to parks and protected areas not in England, Scotland or Wales and, therefore, may not be directly relevant to this thesis.

consideration⁸. It is, perhaps, especially important that the interaction between permanent residents of these landscapes and the landscapes themselves is considered.

2.4 How is nature good for us?

2.4.1 The wellbeing benefits of nature – in theory

The literature dedicated to the relationship between nature and health is eclectic, extremely broad in scope and sometimes conflicting and, within the scope of this project, almost impossible to synthesise effectively. However, a point of consensus across the literature is that nature and greenspace exposure is good for us, although there are different schools of thought as to *how* it benefits humans, particularly with regards to psychological wellbeing as well as physical health (Kaplan and Kaplan, 1989; Ulrich, 1991; Wilson, 1984; Kellert and Wilson, 1993).

The early concept of Attention Restoration Theory (ART) proposes that spending time in natural environments that demonstrate certain properties/fulfil certain conditions – being away, extent, fascination and compatibility – has a restorative effect and reduces the mental fatigue that results from prolonged ‘directed attention’ by engaging our brains in ‘involuntary attention’ (Kaplan and Kaplan, 1989; Kaplan, 1995). Notably, the Kaplan siblings did acknowledge that there were limited empirical data upon which to base their theory. However, it has since been shown that nature exposure can lead to attention restoration (Herzog *et al.*, 1997; Hartig *et al.*, 2003; Berto, 2005; Roe and Aspinall, 2011), although questions remain over the mechanisms used to assess attention restoration, prompted by the diversity of studies and their outcomes (Ohly *et al.*, 2016, Subiza-Perez *et al.*, 2019). ART also has limits as a theory when considering the impact of nature on health, referring as it does only to a sense of increased wellbeing.

In a direct response, Ulrich *et al.* (1991) propose a theory of stress reduction (SRT) which builds on Ulrich’s psycho-evolutionary theory that humans respond differently to different

⁸ which may be outside the scope of this study, but nonetheless relevant to it.

landscapes (Ulrich, 1983). These responses, based on evolutionary preferences, lead to an accelerated reduction in acute stress, as well as a sense of restoration. Additionally, although positioned in contrast to ART, both van den Berg and Staats (2018) and Hartig (1991) point out that stress and mental fatigue, whilst often appearing concurrently, also manifest separately from each other and, therefore, require different responses. Indeed, experiments have demonstrated that environment may influence change in ‘attentional and physiological variables through separate processes’ (Hartig *et al.*, 2003). Hence, ART and SRT should perhaps be positioned alongside rather than in opposition to each other, at least when it comes to measuring the ‘restorativeness’ of environments.

Preceding both of these theories is Wilson’s Biophilia hypothesis, first referenced in his book *Biophilia* (Wilson, 1984), which argues that humans subconsciously seek connection with ‘the rest of life’, or nature. The findings of a recent meta-analysis focused on biophilic design lend credence to this hypothesis, providing evidence to this fundamental evolutionary theory (Gaekwad *et al.*, 2022). It has, in fact, been posited that both ART and SRT, as psychological evolutionary theories, can be viewed and in fact integrated as ‘pillars’ of, and evidence for, Wilson’s hypothesis (Gaekwad *et al.*, 2022; Han, 2001), and that viewing them in conjunction can provide a broader view into how natural environments can aid restoration and stress recovery.

2.4.2 The wellbeing benefits of nature – in practice

Thus far, this section has offered a necessarily brief introduction into the leading theories concerned with the relationship between human wellbeing and nature. Despite these theories dating back, in some cases, up to 50 years, it has been important to establish not only the history of scientific enquiry into the relationship between nature and health, but also the language used when addressing this relationship, particularly when discussing mental health and wellbeing. *Restoration* and *stress reduction* remain key terms within the literature.

Since ART, SRT and the Biophilia hypothesis were first proposed, much research has been undertaken into the different ways that contact or interaction with nature can benefit

mental wellbeing. For example, it has been found that just viewing nature can decrease stress and increase cognitive function (Li and Sullivan, 2016; Lee *et al.*, 2015; Song *et al.*, 2018), whilst listening to natural sounds makes us less stressed (Annerstedt *et al.*, 2013; Hedblom *et al.*, 2019, Buxton *et al.*, 2021). Similarly, van den Berg *et al.* (2010) suggest that living in closer proximity to greenspace can act as a buffer for the negative health effects of stress and, according to Sarkar *et al.* (2018), reduces the likelihood of suffering from a major depressive disorder. Moving to a greener area also results in significantly better long-term mental health (Alcock *et al.*, 2014). These papers represent just some of the myriad studies demonstrating some of the ways in which interacting with, or just being close to nature, can impact our mental wellbeing. This is, of course, significant for the Nature Prescriptions project as an initiative focusing on improving mental health and wellbeing. In the discussion on the health benefits of nature, however, it is equally as important to consider its impact on physical health, particularly because mental health disorders are more prevalent in people with physical conditions, and severe mental illness can almost double the risk of physical multimorbidity (Barnett *et al.*, 2012; Pizzol *et al.*, 2023).

Increased exposure to green space coincides with better levels of self-reported physical health (Twohigg-Bennett and Jones, 2018). It can lead to lower blood pressure, better sleep, lower risk of cardiovascular disease and higher levels of physical activity (Jimenez *et al.*, 2021). Exposure to the natural environment can also have a beneficial effect on the human immune system and essential microbial diversity in humans (Rook, 2018). Bird *et al.* observe that nature deficiency can lead away from good health and increase the likelihood of chronic stress, which itself contributes to a rise in non-communicable diseases such as depression, dementia, diabetes and cardiovascular disease (2018), once more demonstrating the link between mental and physical health when it comes to nature exposure. It must be mentioned, however, that there is a small number of studies that have found little evidence that increasing green space exposure has a positive impact on mental and physical health (Weimann *et al.*, 2015; Houlden *et al.*, 2017), suggesting that more research, particularly into the mechanisms by which nature affects health, is needed. This will be further explored in 2.6, where the distinction and differing health and wellbeing effects between nature contact and nature connection are discussed, especially when it comes to considering simple exposure to nature compared to active engagement with it.

It must also be noted that nature exposure does not always have a positive effect. The negative impact of allergenic pollen on human health has increased over the past centuries (Dahl, van den Bosch and Ogren, 2018), for example, as have vector-borne diseases from ticks, fleas and mosquitos (Wong, 2018). It could, however, be argued that these are caused by the effects of human behaviour leading to favourable conditions for allergenic plants in the first case, or by human-driven climate change expanding vector habitats in the second. In any case, it would seem that the risks associated with avoiding nature, or becoming ‘nature deprived’, are far greater than those that may come from contact with nature. Indeed, the danger lies in not spending *enough* time in nature, which has serious implications for those with limited access to it.

2.5 Green health inequality

It is clear that access to green space and time spent in nature is good for both mental and physical health in a multitude of interconnected ways. Yet, despite the seemingly universal benefits of nature for health, not only are these benefits not universally available, but they also impact on different populations to different extents. As such, this is one manifestation of health inequalities – that is, differences in health that occur due to differences in social and economic status (Braveman, 2025). These are, in turn, strongly linked to/governed by the social determinants of health, described as ‘the conditions in which people are born, grow, work, live and age, and the wider forces that shape the conditions of daily life’ (WHO, 2025). These conditions are principal determinants of people’s health. Although not established definitively in the literature, it is clear that access to green space and nature is one such determinant of health, or at least modifies and is modified by existing health determinants, particularly as the likelihood of nature contact depends on cultural, ethnic and socioeconomic characteristics, in addition to age (Hartig *et al.*, 2014). In fact, Groulx *et al* (2022) point out that the natural environment as a determinant of quality of life is often disregarded, particularly in discussions on medical disability. As recently as 2008, the idea that different types of physical environment could have an impact on health inequality was seen as ‘novel’ (Mitchell and Popham, 2008).

So, how exactly does green health inequality present itself? Firstly, (urban) green space is inequitably distributed on both a national and a worldwide scale in terms of both quality and quantity; specifically, those living in more socioeconomically deprived areas tend to have less access to nature and green space (Astell-Burt *et al.*, 2014; Twohigg-Bennett and Jones, 2018; Groulx *et al.*, 2022, Rigolon *et al.*, 2024; Ngan *et al.*, 2025). Inversely, people with more exposure to green space are more likely to be less deprived than those with less access (Mitchell and Popham, 2008). This is compounded by the urban-rural health divide – urban populations tend to have worse mental and physical health than rural populations – which several studies have shown persists even when socio-economic factors are controlled for (Paykel *et al.*, 2003; Riva *et al.*, 2009; Alcock, 2015; Allan *et al.*, 2017). This may be partially explained by access to green space, although other factors such as selective migration are also at play (Maas *et al.*, 2006). Given that those living in the most deprived areas in England are more than twice as likely to suffer from a major illness than those living in the least deprived areas (Raymond *et al.*, 2024), it can be clearly seen that green health inequality is both a pressing and relevant concern when it comes to public health in England, as well as across the world.

Secondly, nature contact and access to green space affects different populations in different ways; it would be fair to say that its benefits are unequal. For instance, it has been suggested that in more deprived areas, a 1% increase in grassland can lead to a 37% reduction in annual preventable deaths (Ngan *et al.*, 2025). Although those conducting this study admitted that it would be inappropriate to conclude that this relationship is causal, Rigolon *et al.* (2021) have also shown that disadvantaged groups gain greater protective health benefits from green space. Public parks also have a greater protective effect on the physical health of low-socioeconomic status (SES) populations and ethnic minorities than green land cover. In addition to this, green space has been found to have a greater protective effect on physical health in urban areas (Browning *et al.*, 2022), where people are more likely to suffer worse health.

Importantly, both of these studies refer only to physical health, but the disparity in the beneficial effects of green space exposure and nature contact are even more evident when mental health and wellbeing is considered. It has been shown that green space access can

protect against the negative impact that socioeconomic deprivation has on mental health (Belcher *et al.*, 2024), that visits to natural spaces can have a buffering effect on anxiety associated with socioeconomic status (Moura *et al.*, 2024), and that socioeconomic inequality in mental wellbeing is narrower in areas where there is a good level of access to green spaces (Mitchell *et al.*, 2015). In addition to this, visiting green spaces has a more pronounced restorative effect⁹ on those experiencing greater emotional stress (Roe and Aspinall, 2011) and on those with poor mental health (who, as it has been shown, are more likely to live in an urban and/or deprived area) than on those whose mental health is already good. That said, it also demonstrates a protective effect on mental wellbeing for those in good health (Grigoletto *et al.*, 2023).

As Ngan *et al.* (2025) point out, these two points mirror Hart's 1971 Inverse Care Law – that those who most need healthcare typically have least access to it – and add another dimension to the inclusion of nature and green space access in discussions on health inequality. Taking this one step further, Pritchard *et al.* (2025) hypothesise that green spaces can have an 'equigenic' effect that disrupts the relationship between socioeconomic inequities and health inequality. Green space access is therefore clearly a question of social justice, which reinforces the Victorian commitment to green space access and outdoor recreation as a 'public good', a value which has since been lost in park and landscape management (Worpole, 2007).

Despite this, there has been increasing attention paid to how green space functions as a public good in urban areas. Perhaps because it has been found that green space access can have a greater positive effect on urban populations (Hartig, 2003; Browning *et al.*, 2022), and because health tends to be poorer among urban populations, the overwhelming majority of populations featuring in studies on nature's impact on health have been *urban*. The Nature Prescriptions pilot study was also undertaken in peri-urban Edinburgh (Bradley, 2022). There has, however, been little attention paid to how it may impact on more rural populations. Although rural populations may tend towards better mental and physical health, when poor mental health is experienced by individuals living more rurally, it may be

⁹ In a reflection of Kaplan and Kaplan's ART (1989)

harder to treat (Alcock, 2015), which makes this a particularly relevant consideration for this study on the YDNP Nature Prescription, where many of the communities targeted are more rural. More generally, some research suggests that green space promotes health equally well across urban-rural gradients (Browning *et al.*, 2022); therefore, rural and northern communities should not be overlooked.

For the purposes of this review and the research being undertaken into the Nature Prescriptions project and its impact on healthcare professionals, it is also relevant to this section on health inequality to mention that NHS workers experience some of the highest sickness absence rates in the country, (Parnham, 2017) and mental health has been cited as one of the two ‘biggest drivers’ of sickness absence (House of Commons Committee of Public Accounts, 2023). When considering sub-groups of England’s population in relation to health and wellbeing and how Nature Prescriptions have the opportunity to positively impact health, it is important that healthcare practitioners are also taken into account. For example, it has previously been found that increasing green space at NHS sites can lead to increased levels of wellbeing among staff (Centre for Sustainable Healthcare, 2020); NHS staff who participated in a green infrastructure project at their hospital site showed increased resilience, nature connection and wellbeing in addition to reduced common mental health symptoms following the project (Davies, McKenna, Hughes *et al.*, 2026), and green space has been found to support the wellbeing of staff working in psychiatric care (Wilhelm *et al.*, 2026).

This review has also not considered the growing body of knowledge on this subject when addressing health inequities in the Global South, due to the research being focused in the north of England.

2.5.1 Access to national parks in England

It is evident from the above that access to green space plays a large part in who benefits and does not benefit from contact with nature. This question of access, then, naturally extends to national parks and protected landscapes within the UK.

A recent report from the National Centre for Social Research (2022) built upon the 2019 DEFRA Landscapes Review¹⁰ – which found that those from lower socio-economic groups, those living in deprived areas, and ethnic minorities were the least likely to visit a protected landscape (Glover, 2019) – to identify barriers to accessing these landscapes. It was found that lack of awareness and knowledge, access issues such as transport, cultural understandings, and (a lack of) sense of belonging were the main factors preventing people from accessing these landscapes (National Centre for Social Research, 2022). There were also concerns about safety and discrimination towards visible minorities, which echoes a review which found the same nearly 20 years prior (Natural England, 2005). In addition to this, less than 1% of visitors to England’s countryside were found to be from non-white backgrounds (CPRE, 2021). Although this represents a disturbing lack of progress where access to the countryside and protected landscapes are concerned, it must be noted that 3% of UK visitors to the YDNP in 2022 were people from ethnic minority backgrounds (Roberts, Marshall and Wisher, 2022), representing a promising increase.

The discouraging figures above do not indicate that no action is being taken by the authorities managing protected landscapes in the UK, particularly where health inequality is concerned. ‘The Great National Parks Plan’ recognises that access and health are intertwined (National Parks England, 2024), and the ‘Landscapes for Everyone’ project aims to work through partners to co-create programmes to meet the needs of underrepresented park users (National Parks England, 2025). The YDNP Nature Prescriptions project has a similar goal, as the calendar resource aims not only to improve health and wellbeing through accessible nature-based activities, but also encourage visits to areas of the Yorkshire Dales National Park. The YDNP’s 2025-30 Management Plan reflects this, with its aim to ‘tackle inequalities and improve health and wellbeing’ for at least 1500 people through social prescribing activities by 2030 (YDNPA, 2025).

¹⁰ The last independent assessment of England’s protected landscape system.

2.6 Nature contact vs nature connection

As has been shown by the above arguments, there is a disparity not only in who has access to nature, green space, and protected landscapes; there is also a difference in perceived relationships with these landscapes, with some seeing them as potentially dangerous, rather than restorative, environments. This adds yet another dimension to green health inequality, particularly as connection to nature is equally, if not more so important than nature contact, when it comes to health and wellbeing benefits.

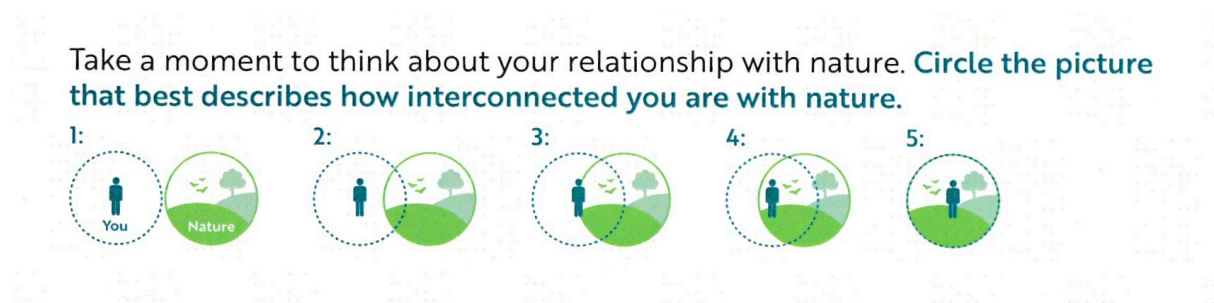
The majority of studies into the relationship between nature and human health, especially at a population level, use the proximity of green (or blue) space, often established by landscape mapping, as a way to measure nature contact or exposure (Alcock *et al.*, 2025). However, very rarely is *how* people interact with nature considered. This is unsurprising; as Hartig *et al.* (2014) point out, it is difficult to measure exposure to nature. A recent review highlighted the fact that there is no standardised method to either define or measure nature contact, that ‘surrounding greenness and access to green space are often used as proxies for time spent in nature,’ and that there are multiple mechanisms linking nature and health (Holland *et al.*, 2021). Several studies corroborate the argument that nature or green space proximity has a limited effect on mental wellbeing. For example, in a recent study, Houlden *et al.* (2017) found that although local green space may be associated with happiness, there was no significant association between the amount of local green space and mental wellbeing when a multidimensional measure for wellbeing was used for both urban and rural locations, suggesting that more research into green space use and accessibility is required. This is supported by another study that showed that mental wellbeing is not associated with neighbourhood green space (Martin *et al.*, 2020). Moreover, yet another found that the ‘quality’ of the surrounding environment has no direct effect on the prevalence of depressive disorders (Wilson, Jackman and Moore, 2024).

In section 2.4 above it was established that nature has a beneficial effect on human mental and physical health and the mechanisms by which nature impacts on physical health have been outlined. However, the studies referred to in the preceding paragraph call into question the mechanisms by which interacting with nature has an impact on mental

wellbeing. In short, simply having access to green space does not make improved mental health and wellbeing an inevitability. Yet it is clear that being in nature makes humans feel good; green space benefits health, but the pathways are unclear (Markevych *et al.*, 2017).

Nature connection has been suggested and explored as a potential mechanism for strengthening nature's positive effect on mental wellbeing, with nature connection, or nature relatedness, and nature contact described as 'related but distinct' (Capaldi *et al.*, 2015). Nature connection is not a simple, unidimensional construct (Hague *et al.*, 2024) but can be defined as an individual's subjective sense of relationship with the natural world (Pritchard *et al.*, 2020) or, at its most basic level, an 'emotional bond with nature' (Richardson, 2023). Although multidimensional, nature connectedness is not a new construct; moreover, it can be measured. Some years ago, Mayer and Frantz (2004) devised the Connectedness to Nature Scale (CNS) to measure an individual's level of 'feeling connected to the natural world', and since then several different scales and questionnaires have been developed, such as the NR-6 (Nisbet and Zelenski, 2013); the NCI (Natural England, 2017); and, the NEQ, (Hague *et al.*, 2024) – see Tiscareno-Osorno *et al.* (2023) for a systematic review of these scales. Most notable for this study is the IICN, or the illustrated inclusion of nature in self scale (Kleepsies *et al.*, 2021), a pictographic rendering of the human-nature relationship; a simplified illustration inspired by this concept has been rendered in the YDNP Nature Prescriptions calendar in order for participants to measure their own feeling of inclusion in, or connection with nature (**Figure 2.1**).

Figure 2.1: simplified IICN scale as it appears in the Nature Prescription calendar.



(RSPB, 2024)

Unsurprisingly, perhaps, nature connection and its impact on wellbeing and happiness has been explored at length in the literature, with a clear association being identified between individuals' sense of connection with nature and their happiness and wellbeing (Mayer *et al.*, 2009; Howell *et al.*, 2011; Capaldi *et al.*, 2014, Nisbet and Zelenski, 2012; Cleary *et al.*, 2017; Liu *et al.*, 2022, to name but a few). It is interesting to note that these studies also comment on the association between nature connection and pro-environmental behaviour, which, while not directly relevant to nature's impact on wellbeing, is important to consider when thinking about systematic planetary health as a whole, which itself has implications for human wellbeing. This is also relevant to this study as the YDNP Nature Prescription calendars have a 'helping nature' section alongside the featured activities.

Over the last decade, scholars have increasingly noted the link between nature contact and health, and nature connection and wellbeing, in so doing proposing nature contact as a key mechanism in the association between nature contact and individual wellbeing (Bell *et al.*, 2014). Nevertheless, empirical work on how nature contact may moderate the nature connection/mental health relationship has thus far been limited (Alcock *et al.*, 2025). At the same time, different suggestions have been made to explain the interaction between these concepts. For example, Lumber *et al.* (2017) suggest that nature contact is a pathway towards increased nature connectedness, whilst Barragan-Jason *et al.* (2023) argue that physical connection with nature improves psychological connection to it. It has also been found that noticing nature, especially by watching and listening to it, increases nature connectedness (Richardson *et al.*, 2021a.) It would, therefore, seem that a higher level of interaction with the natural world leads to a greater feeling of nature connectedness. Liu *et al.* (2022a) go on to posit that nature contact mediates the association between nature connection and wellbeing. In addition to this, Rosa *et al.* (2020) found that higher levels of nature connectedness predict a preference for nature recreation. Either way, it is clear that nature connection may mediate the association between nature contact and health and wellbeing, and vice versa.

A recent study into the nature contact/connection/health nexus suggests that not only does this connection exist but also that when an individual's level of nature connectedness is higher, they may gain greater wellbeing benefits, such as reduced stress and anxiety, from

visits to nature. In contrast, those with a lower level of nature connectedness gain fewer benefits from visiting nature, even if those visits are frequent (Chia-Chen *et al.*, 2024). Indeed, two independent studies found that nature connectedness is a much more significant factor in predicting mental wellbeing, and explaining variance in mental health, than nature exposure or time spent in nature (Richardson *et al.*, 2021b; Liu *et al.*, 2022b). Hence, although this review has demonstrated that a clear relationship exists between nature contact and nature connection as a potential mechanism for wellbeing in nature, and that they may moderate each other, it is also clear that nature connectedness is an important part of the conversation in its own right. In fact, Lambert *et al.* (2020) propose that nature connectedness should be considered a significant measure for global wellbeing.

This suggests, therefore, that it is not enough for England's national parks to promote health and wellbeing through simply encouraging people to spend time in these protected landscapes, or to experience the ecosystem services they provide (for example, recreational, cultural and spiritual benefits, Millennium Ecosystem Assessment, 2005). In other words, if visitors are to benefit health-wise from their visit, a level of nature connection may be a pre-requisite. As the YDNP Nature Prescriptions calendar is designed to be used with nearby nature, in some cases even nature you can see out of a window, it could go far towards instilling a sense of connection with nature in its recipients, and potentially show itself as an effective mechanism for building such a relationship. The Edinburgh Nature Prescriptions pilot showed that 56% of patients had an increased awareness of nature after using the resource (Bradley, 2022). The majority of prescribers also reported that their awareness of nature had increased; this study will also address the question of prescribers' relationship with nature.

2.7 Prescribing nature in and around protected landscapes

The concept of nature connectedness, discussed above, is important to consider in discussions surrounding the prescribing of nature for health and wellbeing, not least because it has implications for the type and effectiveness of the activities prescribed. For example, activities that involve not only contact with nature but also inspire emotion, meaning and compassion amongst participants lead to a much higher incidence of nature

connectedness (Lumber, Richardson *et al.*, 2017) which, as observed in section 2.6, is significant for mental wellbeing. Richardson *et al.* (2021b) expand on this further by suggesting that activities that form a connected relationship with nature rather than time spent in nature, and noticing nature around you rather than visiting nature, are more significant for health. This is reflected in the current Yorkshire Dales National Park RSPB Nature Prescriptions calendar, which contains suggestions for activities ‘which have been chosen knowing that what you do and notice in nature is far more important than how long or where you spend time in nature’ (RSPB, 2024).

This does not, however, mean that the location where social prescribing/the prescribing of nature and subsequent nature-related activities takes place is not a significant factor for its success; in a study on the effects of the quality of environment on nature connectedness and restoration, both were found to be higher following a visit to non-urban green spaces and to protected landscapes or designated areas, such as the UK’s national parks (Wyles *et al.*, 2019). In addition, increased ‘wildness’ of the environment can lead to greater nature-connectedness (Lengieza, Richardson and Hughes, 2025). The Nature Prescriptions calendar also encourages visits to locations within the Yorkshire Dales National Park, a landscape which reflects both of the above criteria. That said, as has been demonstrated earlier in this review, a protected landscape context does not always lead to more wellbeing benefits.

2.8 Social prescribing in the UK

In order to discuss effectively how nature has been prescribed in the UK, it is first necessary to establish what is meant by ‘prescribing nature’, particularly as the object of this study is a Nature Prescription, not only by definition but by title. The UK has a well-established history of providing alternative, non-clinical interventions alongside traditional healthcare practices, and it is where the term ‘social prescribing’ was coined (Tierney *et al.*, 2020; Morse *et al.*, 2022); it has become a ‘core component’ of NHS policy and practice (Tierney *et al.*, 2020). Although the practice of social prescribing is not new, there is a lack of consensus regarding its definition, with ‘significant vagaries’ within the term (Lawson *et al.*, 2022). The National Association for Social Prescribing (NASP), established recently in 2019 with the goal of establishing social prescribing as a social movement for health (Pretty and Barton, 2020),

describe it as ‘connecting people to activities, groups and support that improve health and wellbeing’ (NASP, 2023b). It would therefore be accurate to describe the Nature Prescriptions calendar, a collection of activities given as a non-clinical intervention, as social prescribing. The NASP’s definition is also supported by Bickerdike *et al.*’s (2017) review of the subject and Morse *et al.*’s (2022) more recent assessment of the state of social prescribing globally. Both of these studies concur that, despite it being widely advocated for and implemented with studies to date revealing positive results, evidence of the benefits of social prescribing is limited and further evaluation is required.

Another recent review observed that non-clinical, socially prescribed interventions for mental health can result in significant improvements for anxiety, depression, social isolation and loneliness, although drawing any robust conclusion was impossible due to the heterogeneity of the programmes studied (Cooper *et al.*, 2022). There is, therefore, a general acceptance that social prescribing is beneficial, but a lack of scientific data to show exactly *how* and *why*. This is also true for the Nature Prescriptions calendar; its positive outcomes have been shown through previous evaluation projects, both in Edinburgh (Bradley, 2022) and the Derbyshire Dales (PDNP, 2024), but there is limited evidence for the mechanisms that result in these outcomes, or research into the motivations and barriers to its use.

It is not surprising, then, that green social prescribing, or GSP, also suffers from this phenomenon. GSP, or nature-based social prescribing (NBSP) as it is also referred to, is social prescribing which takes place in nature, supporting people to engage in nature-based interventions for both mental and physical health (NHS England, 2026). It is therefore a more suitable definition for the Nature Prescription calendar than ‘social prescribing’, as it includes the involvement of nature in the intervention, although Stanhope and Weinstein warn against conflating ‘green’ prescriptions and ‘nature’ prescriptions (2025), suggesting that ‘nature prescription’ would be the more accurate term. Ensuring that ‘green’ is the descriptor for social prescribing, rather than the type of prescription, would however seem to solve this issue; as this descriptor aligns with ‘green space’ and ‘green health inequality’ as described in this review, the term GSP will be utilised throughout. Notwithstanding the terminology used, this form of social prescribing may be active or passive (de Bell *et al.*,

2024) and involve a variety of activities such as nature walks, community gardening and conservation activities (Leavell *et al.*, 2019, Wood *et al.*, 2022a; Wood *et al.*, 2022b). These types of activities can result in a significant increase in psychosocial wellbeing for adults with mental ill health (Thomas, Aggar, Massey *et al.*, 2022); however, as noted above, peer-reviewed evidence for GSP is scant and there is very little published literature on the topic, although grey literature is relatively abundant according to Thomas, Aggar, Massey *et al.*, (2022), and demonstrated by the number of government and NGO-published reports referenced in this review.

Despite this, some headway has been made in establishing an evidence base for green social prescribing for health and wellbeing in the UK in recent years. In a final report to Defra, evaluating the impact of the 'Preventing and Tackling Mental Ill Health Through Green Social Prescribing Project' (Haywood *et al.*, 2024), it was found that the project resulted in significant increases in happiness and decreases in anxiety among participants. Similarly, participants in a Wales-based study reported improved mental health following an NBSP programme (Lynch *et al.*, 2025), and the results of an evaluation on GSP in North Yorkshire and the Humber showed that it is beneficial for mental health and wellbeing, whilst pointing out that terminology and delivery models between programmes can vary significantly, and that evidence is at a high risk of bias (Darcy *et al.*, 2025). These three evaluations also pointed to a positive social return on interest, highlighting the economic as well as healthcare benefits of GSP programmes. That said, the impacts of GSP may not always be positive: Pollard *et al.* (2025) posit that social prescribing could prove disruptive to existing community groups, and it has been suggested that those who feel more pressured to spend time in nature for their health are less likely to feel the benefits from doing so (Tester-Jones *et al.*, 2020). It would therefore seem that choice and autonomy are significant to the uptake and effectiveness of social prescribing.

Prescribing nature is, therefore, complex, with the waters muddied even further by the lack of a general accepted definition and protocol for it. GSP or NBSP, although a slightly separate concept from social prescribing, nevertheless shares similarities and connections with social prescribing (Nguyen *et al.*, 2023). This study will take this into account, and aim to further investigate the mechanisms of the nominative Nature Prescriptions calendar that

lead to positive wellbeing outcomes specifically within the context of the Yorkshire Dales National Park. This is particularly pertinent as, thus far, there has been no academic research undertaken into the effects of social prescribing, nature-based or otherwise, in the context of a protected landscape, apart from a recent pilot study into the potential wellbeing benefits of a structured GSP programme in North Yorkshire's protected landscapes (Ratcliffe *et al.*, 2026).

2.9 Using protected landscapes as health resources

In a departure from previous studies into the outcomes of social prescribing and nature prescriptions in general, and in a return to the idea of nature connection as something that creates a reciprocal relationship between humans and the landscape they connect with (Barragan-Jason *et al.*, 2023), this study will also consider the potential positive impact the calendar recipients may have on the landscape around them, as well as vice versa.

Taking this view changes the positionality of the landscape and nature within existing research. In the studies into the impact of nature and protected landscapes on health, the impact of social prescribing, and inequality in health and access referenced thus far in this review, nature and these landscapes are positioned as a resource to be used for the benefit of humanity. In discussing how contact and connection with nature and protected landscapes can benefit wellbeing, this poses a significant problem; viewing nature as a health resource is anthropocentric rather than 'ecocentric', and centring humanity and human needs may lead to a greater disconnection from nature (Richardson, 2023). This has also not always been the case: prior to the start of enlightenment thinking and the industrial revolution, humans and nature were considered to be interconnected rather than separate (Amengual-Moreno *et al.*, 2025; Furley, 1987). It has previously been suggested that historical and non-western ways of looking at the relationship between human health and nature are more holistic and concerned with 'oneness' (Boyd *et al.*, 2023). The anthropocentric view of the natural world, and the idea of nature being controllable by, and in some cases subservient to human advancement, came later, and has only recently been challenged (Parisi, 2000; Amengual-Moreno *et al.*, 2025), despite Bateson's identification of 'conventional (but wrong) ideas about the nature of man and his relation to the

environment’ being one of the roots of the ecological crisis in his seminal essays from the mid-1900s (1972).

The anthropocentric view is problematic, particularly because it has been established that nature connection (which is lacking when an anthropocentric, human-centred worldview is adopted) is a significant player in the positive impact nature can have on human wellbeing. Bock, Nesbitt *et al.* (2026) propose a shift in vocabulary from ‘nature use’ to ‘nature interaction’ when discussing the relationship between human health and nature. It could also, however, be overcome by adopting our ancestors’ ‘holistic’ view of humans’ relationship to, and position within, the natural environment. There are several emergent theories proposing such a view, which consider not only nature’s impact on humanity, but also our impact on the earth, when it comes to health and wellbeing. The One Health approach ‘recognises that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent (WHO, n.d), particularly when it comes to disease prevention and global health security. This is not a new concept, but has become increasingly popular in the healthcare sphere following the Coronavirus pandemic (Adisasmito *et al.*, 2022). Similarly, the concept of Planetary Health has been defined as ‘the health of human civilisations and the natural systems on which they depend’ (The Lancet Planetary Health, 2017). The comparatively old idea of ‘EcoHealth’ has also been mentioned alongside the two other frameworks (Weatherly *et al.*, 2023); all three propose an interdisciplinary, integrated approach, and recognise the connection between human health and the health of our natural ecosystems. This proposal is perhaps best summarised by Bateson in his *Steps to an ecology of mind* (1972), in which he describes a healthy ecology of human civilisation as ‘a single system of environment combined with high human civilisation in which the flexibility of the civilisation shall match that of the environment to create an ongoing complex system’.

2.10 Systems thinking for health and nature: bringing it together

This approach to nature and human health is reflective of the theory behind systems thinking; that is, thinking about problems as part of a connected, complex system (as suggested by Bateman) and planning accordingly, rather than solving one problem just to

create another in a ‘vicious cycle between social and ecological impacts’ (Robèrt *et al.*, 2018). Indeed, systems thinking has recently been applied to the One Health and Planetary Health approaches, and deemed essential for their continued application and development (Iyer *et al.*, 2021; Hansen *et al.*, 2025). They could, in fact, be seen as examples of a systems thinking approach within the context of human and planetary health.

Just as the subject of nature and health has found itself applied to a wide variety of disciplines, systems thinking has also been applied to many disciplines over the years. Recently, these disciplines have shown a significant overlap with the same fields concerned with nature and health, such as; climate education (Lorenzo-Rial *et al.*, 2025), sustainable development (Robèrt *et al.*, 2018), public health and health policy (Silburn, 2025; George *et al.*, 2025), global mental health (Jordans, 2024) and, in one example that is particularly notable for this study, preventive health and US national parks (Penbrooke *et al.*, 2022). Systems thinking has been described as inclusive, cross-disciplinary, and not confined to a single area of study or method (Chughtai and Blanchet, 2017; Silburn, 2025), as are many of the concepts that have been discussed in this review thus far. It therefore seems appropriate to apply a systems thinking lens to this project. But what, exactly, does that entail? Perhaps due to its cross-disciplinary nature, systems thinking has often been seen as something challenging to define (Arnold and Wade, 2015), yet every study agrees on one thing: systems thinking is concerned with finding connections or relationships between the different elements of a system, generally as a vehicle for problem-solving at multiple levels. The conclusion of this review will adopt the approach taken by Souliotis and Voulvoulis (2025), which is one that ‘views social, economic and ecological phenomena as interdependent components of a single dynamic system’, and recognises humans as part of nature.

The Nature Prescriptions calendar lends itself well to this approach; although the project is localised, and its current reach relatively small, it is representative of the integrated systems thinking approach to problem solving. The Nature Prescriptions calendar was created as a resource to support wellbeing and mental health through building the recipients’ connection to nature both in and around the Yorkshire Dales National Park, as well as to support local healthcare professionals in prescribing nature. As has been shown, increased

nature connection can lead not only to increased wellbeing (e.g. Richardson *et al.*, 2021) but also an increased level of pro-environmental behaviour (e.g. Cleary, 2017), which is another aim of the calendar – on each page, it includes a suggestion of how to help nature. A resource such as the calendar therefore has the potential to address more than one aspect of the ‘ecosocial crisis’ at once, addressing mental health (social phenomenon) and environmental degradation (ecological phenomenon) as connected problems existing within the same interconnected system. The problems of increasing levels of mental ill health and degradation of the natural environment have been recognised as clearly linked (Boluda-Verdú *et al.*, 2022).

Another crisis the calendar aims to address is the inequality of access to nature and protected landscapes and its relation to health inequality, by recognising that certain groups have less access to, or feel less welcome in, the landscapes that could benefit their health. This review has outlined existing research in health inequality (particularly green health inequality) and protected landscape access and, once again, the Nature Prescriptions calendar aims to address these problems concurrently by suggesting locations to visit in the National Park alongside activities promoting nature connection closer to home. Multiple groups and stakeholders, from the YDNPA and the RSPB to local healthcare practices and wellbeing organisations, are concerned in these aims. Once again, it is for these reasons that applying a systemic lens to the Nature Prescriptions project is an appropriate way to contextualise it within the broader scope of this review.

2.11 Conclusion

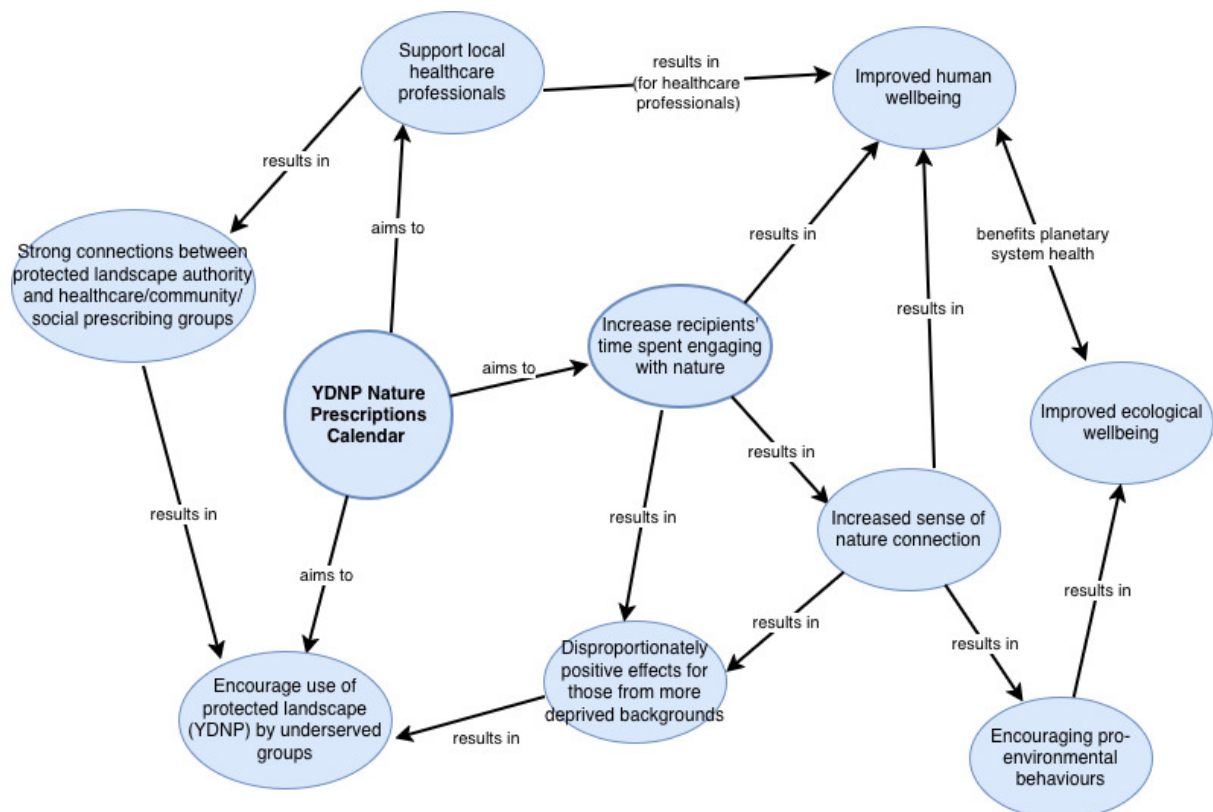
The purpose of this chapter has been to demonstrate the breadth and depth of existing knowledge on the subject of nature and health, as it applies to the YDNP Nature Prescriptions project; additionally, it has been to interrogate how the Nature Prescriptions resource may improve health and wellbeing and increase access to protected landscapes. In doing so, this review has revealed the extent and diversity of disciplinary perspectives on the subject, from psychological and evolutionary theory, to historical and contemporary attitudes and relationships to nature, to the benefits and practical challenges of delivering a green social prescribing programme in the UK in response to wellbeing needs and green

health inequality. In addition to this, it has become clear that despite a wide-ranging, multi-disciplinary interest in nature's impact on human health, there is a dearth of research examining the subject in a protected landscape context, particularly within the UK.

This diversity suggests that no one specific framework is appropriate to reveal all the nuances of such a complex topic, even for a study and evaluation as localised as the YDNP Nature Prescriptions project. Consequently, a systems thinking approach is suggested to both highlight and explore the interconnectivity of the themes exposed in this chapter.

Figure 2.2 demonstrates how these themes, and the crises mentioned above in 2.9, are connected through and may be addressed by the YDNP Nature Prescriptions resource.

Figure 2.2: systematic relationships between themes in the literature review, as they relate to the Nature Prescriptions project.



This also exposes avenues for enquiry, as the mechanisms proposed within the diagram, although supported by existing evidence from this review, remain hypothetical. What is

particularly lacking is research into how the health benefits of protected landscapes such as the YDNP may impact these mechanisms, and how the nature contact/nature connection debate may have implications for green health inequality, especially within evidence-based practice. These key issues, as they pertain to the YDNP Nature Prescriptions project, will be addressed by the research questions outlined in the introduction and methodology chapters, and considered at length in the results and discussion chapters of this study.

Chapter 3

Methodology

3.1 Introduction

The previous chapter introduced the key debates and themes surrounding the question of prescribing nature for health and wellbeing, in addition to exposing gaps within the research when it comes to addressing nature and health in a protected landscape context. This subsequent chapter aims to detail the methodology followed in this study, from its philosophical underpinnings and design to the data collection process and ethical considerations. It will explore the rationale for the choices made to best evaluate the impact of the YDNP Nature Prescriptions project on those who have experienced it, and to answer the sub-questions laid out in the introduction and revisited here:

- How has the Nature Prescriptions resource been used by patients and healthcare professionals?
- How has it reduced barriers to accessing nature and the National Park?
- How does spending time immersed in the special qualities of the Yorkshire Dales National Park promote positive health and wellbeing for individuals?
- How can we improve the project so that it brings more diverse communities to the National Park and enhances their health and wellbeing?
- How has the Nature Prescriptions training and project benefited healthcare staff?

3.2 Philosophical considerations

Prior to addressing the research design and approach to data collection undertaken in this project, it is important to consider the philosophical paradigms underpinning the research. Research philosophy is based upon three essential concepts: ontology, epistemology, and methodology (Morgan, 2014). As defined by Morgan, these concepts consider the nature of reality (ontology), what can be known about that reality (epistemology), and how that

knowledge can be produced (methodology). Ontology and epistemology are linked because, in order to gain knowledge of the world, it is equally important to know what kind of things exist in the world (Hughes and Sharrock, 2016). Importantly, the way in which ontology and epistemology are seen to interact is influenced by the paradigm, or *worldview* that is adopted by the researcher. This latter term is strongly proposed by Creswell and Creswell for research in an interconnected, international modern era (2023), and will therefore be adopted in this study, which seeks to find connections within the systems and subjects it addresses.

A postpositivist, or 'traditional' scientific worldview seeks to generate knowledge and test theories by observing and measuring objective reality (Creswell and Creswell, 2023), taking a 'cause and effect' view. Constructivism, on the other hand, is a worldview that asserts that human beings construct their own subjective meanings through their experience of and engagement with the world (Crotty, 1998). These paradigms, or worldviews, have generally been seen as incompatible (Howe, 1988), and the debate concerning their use, or the 'paradigm wars', have been ongoing since the 1980s.

As this study adopts a mixed methods approach, it is particularly important to address this 'incompatibility', as there is a clear tension between the worldviews associated with different methods: that is, quantitative typically uses postpositivist assumptions, and qualitative research constructivist assumptions (Creswell and Creswell, 2023).

This tension is absolved, however, through the adoption of a pragmatic worldview, which finds a 'middle road' through these contrasting assumptions (Morgan, 2014). Indeed, pragmatism is 'generally regarded as the philosophical partner of the mixed methods approach' (Denscombe, 2010), with a focus on practical outcomes and 'what works' rather than the underlying philosophy, whose surrounding debates are considered 'unproductive' (Denscombe, 2021). It values both objective and subjective knowledge (Creswell and Plano Clark, 2018). Given that the nature of this research project is a practical approach to evaluating a real-world social prescribing project and researching its impacts, and taking the above exploration into research philosophy into account, the best way to meet the demands of the project is via a pragmatic approach. Escaping the postpositivist-

constructivist binary is also in line with the systems thinking approach mentioned earlier, which seeks to find interconnections, rather than boundaries, between ideas and concepts.

Additionally, this approach aligns with the co-produced elements of this study which, due to academic/practitioner collaboration and the dissolution of the boundary between them, can problematise the use of paradigms (Kelemen and Rumens, 2019). It is also a suitable approach for co-production in research that aims to contribute to societal problem-solving (Tholen, 2025).

3.3 Research design and methods

In line with the philosophical worldview discussed above, this project employs a mixed methods design, collecting both quantitative and qualitative data, with an emphasis on the qualitative aspect. Both sets of data were collected and analysed concurrently, in line with the convergent mixed methods design. This specific design was chosen in order to develop a complete understanding of the results by combining them, to explain and evaluate quantitative results in more detail with qualitative data and vice versa, and to develop a complete understanding of changes needed for the group concerned – in this case local community members requiring support with mental health and landscape access, and the healthcare professionals providing this support – through the combination of qualitative and quantitative data (Creswell and Creswell, 2023).

A mixed methods approach can also add value to research, including the benefit of triangulating findings to mutually corroborate them, to increase their credibility, and to provide a more complete picture of the area being researched. It also allows for a diversity of views (Clark *et al.*, 2021), particularly important for a study with co-produced elements and diverse groups of participants. In addition to this, different approaches can answer different research questions; for this study, a mixed methods approach allowed the multiple research objectives to be addressed.

It must also be considered that mixed methods findings may not always corroborate one another. However, this could also have the added value of leading to unexpected results

which would not be exposed by an isolated quantitative or qualitative approach (Clark *et al.*, 2021), or by the researcher themselves.

The methods that the research design employed are:

- A quantitative-qualitative Qualtrics survey targeting health professionals working in and around the Yorkshire Dales National Park. These professionals underwent training in the use of the Nature Prescriptions resource, and have since been using the resource in their practice.
- Semi-structured interviews with non-NHS health professionals who have been prescribing the calendars and using them in their work.
- Focus group with members of a local community social prescribing group who have received the calendars and been using them to benefit their wellbeing, and who have previously accessed the Yorkshire Dales National Park for their wellbeing.
- A short Qualtrics questionnaire to capture data from calendar recipients who were not able or willing to attend the focus group session.

These methods were chosen to effectively capture data from the different groups involved in the Nature Prescriptions project. This included NHS healthcare professionals, such as GPs, social prescribers, link workers and mental health nurses and non-NHS healthcare professionals and community practitioners such as therapists and wellbeing managers. Most significantly it included recipients of the calendar; those whose wellbeing it is aimed at improving, and whose access to nature and National Parks are interrogated by the research questions.

3.4 Data collection, participants and sampling

A total of 39 participants were recruited across the different methods; the split of participant number and method of participation is detailed in the table below.

When the HCP survey responses were reviewed, it became clear that 3 participants had entered the survey by responding ‘yes’ to the participant consent question, but had failed to complete the rest of the survey. These ‘responses’ were subsequently removed from the data set. The total number of participants in this study was therefore **36**.

Table 3.1: number and types of participants in the study.

	Healthcare professionals	Calendar recipients
Service evaluation survey	22	
Semi-structured interview	4	
Focus group		4
Short questionnaire		6

Participants were recruited using a combination of criterion, convenience and snowball sampling. Criterion sampling is defined as the selection of participants who meet pre-determined criteria; convenience sampling selects participants who are easily available; snowball sampling selects participants through referrals by existing participants (Moser and Korstjens, 2017). The specific selection criteria and sampling type for each participant group selection are detailed in the following subsections; the tables below detail the participant designations that will be used to refer to each individual throughout this dissertation.

Table 3.2: details and designations of healthcare professional survey respondents.

Designation	Occupation	Gender	Age
HCP 1	Social Prescriber	F	Under 30
HCP 2	Occupational Therapist	M	30 - 49
HCP 3	Social Prescriber	F	50 +
HCP 4	Social Prescriber	F	30 - 49
HCP 5	Creative Wellbeing Facilitator	M	30 - 49
HCP 6	Practice Manager	F	30 - 49
HCP 7	Knowledge Officer	F	30 - 49

HCP 8	Health and Wellbeing Coordinator	F	Under 30
HCP 9	Community Care Coordinator	F	30 - 49
HCP 10	Mental Health Specialist	F	50 +
HCP 11	Social Prescriber	F	30 - 49
HCP 12	Social Prescriber	F	Under 30
HCP 13	Occupational Therapist	F	50+
HCP 14	Community Care Coordinator	F	30 - 49
HCP 15	Carer Caseworker	F	50+
HCP 16	Social Prescriber	F	30 - 49
HCP 17	Psychologist	F	30 - 49
HCP 18	Community Volunteer	F	50+
HCP 19	General Practitioner	F	30 - 49
HCP 20	Community Wellbeing Lead	F	30 - 49
HCP 21	Community Wellbeing Team Member	F	50+
HCP 22	Social Prescriber	F	50+

Table 3.3: designations and professional roles of interview participants (IP).

Designation	Occupation
IP 1	Creative Wellbeing Facilitator
IP 2	Director of Community Social Prescribing Organisation
IP 3	Creative and Wellbeing Programmes Manager
IP 4	Community Development Worker

Table 3.4: designations and details of focus group participants.

Designation	Gender	Age
FGP A	M	30 - 49
FGP B	F	50+
FGP C*		
FGP D	F	50+

*FGP C did not consent to sharing their age and gender.

Table 3.5: designations and details of calendar recipient questionnaire respondents.

Designation	Gender	Age
CR 1	F	30 - 49
CR 2	M	50+
CR 3	M	50+
CR 4	F	30 - 49
CR 5	F	50+
CR 6	F	30 - 49

Data collection took place between February and April 2026.

3.4.1 Surveys

The formulation of the survey (Appendix D) was guided by the standpoint of pragmatism, in addition to previous research undertaken both into the impact of the Nature Prescriptions project (Bradley, 2022; Peak District National Park, 2024), and on perceptions of green social prescribing in the UK (ONS, 2023). It was also influenced by the fact that the Nature Prescriptions project has been running since early 2024, and was therefore structured and worded to be cross-sectional; pre- and post-test surveys, as have been undertaken in previous GSP evaluations including the RSPB Nature Prescriptions Pilot (2024) were not possible. In order to capture data from NHS healthcare professionals it was structured as a service evaluation, which imposed some limitations on the survey content. These participants would otherwise not have been available due to NHS ethical guidelines and the timeline of this research project being limited to 12 months.

The survey was hosted on Qualtrics, and was distributed via an online link. Participants were recruited using a combination of criterion, convenience and snowball sampling. Initially,

gatekeepers within the YDNPA and the NHS shared the link directly with participants who fit the criteria; that is, being a health professional working in or around the YDNP who had received training on the use of the Nature Prescriptions calendar, and/or been using it in their practice. Additionally, recipients of the link were requested to share it with their wider teams who had also been using the calendar resource. All participants were provided with an electronic version of the Participant Information Sheet (Appendix F), and indicated their consent to be a participant at the start of the survey.

Emails were sent via gatekeeper to 20 people, and 25 survey responses were received. Responses were recorded on Qualtrics and stored securely on the York St John OneDrive.

3.4.2 Semi-structured interviews

The semi-structured interviews¹¹ were undertaken with non-NHS health and wellbeing professionals who had been using the Nature Prescriptions resource in their practice with individuals or groups of their service users. Semi-structured interviews were selected as a method as they can generate rich, in-depth insights which can lead to a deeper understanding of the subject matter (Denscombe, 2021).

Participants were recruited through a combination of criterion and convenience sampling, providing they fit the same criteria laid out for the survey participants, in addition to *not* being NHS staff members. They were recruited via collaboration with a gatekeeper at the YDNPA and the researcher's pre-existing professional network. There were 6 potential participants who fit the criteria, of whom 4 were available to undertake an interview.

Interviews were conducted both in-person and online, at a time convenient to the participants, in order to maximise the number of people who were able to participate. They took place in the garden of the offices of a social prescribing organisation in North Yorkshire and on Microsoft Teams from the researcher's home office. Interviews were recorded and

¹¹ Not feasible for the majority of healthcare professionals participating in this study due to ethical constraints placed upon undertaking research involving NHS staff.

transcribed, using either a recording device or the Microsoft Teams recording and transcription function, and recordings and transcriptions were stored securely on the York St John OneDrive. To ensure the accuracy of the data, each recording was listened to alongside a reading of the transcription, with any errors being corrected. This ensured the data was 'clean' and also contributed to the 'familiarisation' stage of the reflexive thematic analysis process, further outlined in section 3.5.

3.4.3 Focus groups

There were several reasons for selecting the focus group interview method, the first of which was practical. The method allows a large amount of qualitative data to be captured over a relatively short period of time (Acocella, 2011), which aligns with the pragmatic approach of 'what works when' taken in this project, and the limited time-frame.

From an ethical point of view, the focus group also allowed participants with diagnosed long-term mental illness to share their views in a familiar group setting with their peers, supported by healthcare professionals that they knew, rather than in a potentially high-stress one-on-one situation with an unfamiliar researcher. Finally, focus groups can create a sense of active involvement in the research, positioning participants as collaborators rather than subjects, leading to greater social inclusion (Nind, Kaley and Hall, 2022). This is particularly important for a project investigating how protected landscape access can be facilitated for health and wellbeing, especially in underserved groups.

It was therefore decided that undertaking a focus group would be the most effective, and least intrusive way to directly capture the experiences of the calendar recipients. Facilitating the focus group was a particularly important aspect of this project, as previous Nature Prescriptions evaluations had thus far not encompassed direct interaction with calendar recipients; the Edinburgh pilot study (Bradley, 2022) acquired a small number of surveys completed by recipients, and the Peak District evaluation (Peak District National Park, 2024) focused on healthcare practitioners and wellbeing facilitators providing secondary insights on the people they had worked with.

Participants were recruited through a gatekeeper in a local social prescribing organisation who had received the Nature Prescriptions training and been using it in their practice. The gatekeeper approached potential participants who fit the criteria to invite them to participate in a workshop followed by a group discussion; this was facilitated by the researcher.

The focus group consisted of 4 service users of this organisation, all of whom had a long-term mental illness, and whom had been given the calendar by a wellbeing professional in their organisation. They had all also attended a previous social prescribing programme involving a series of walks and activities at different locations in the YDNP. They were accompanied by 2 members of staff who were present during the focus group, should any of the participants have needed support, but who did not directly participate. The session involved an hour-long workshop of engaging with the activities in the calendar in a local green space, followed by a 40-minute group discussion. This element of action research not only created inspiration for the following discussion, but also allowed the researcher to form a rapport with the participants.

Figures 3.1: photos taken by the researcher of the area where the workshop and focus group took place, before, during and after the calendar workshop and discussion.



(Sharples, 2026)

The focus group discussion was recorded using a recording device and transcribed. To ensure the accuracy of the data, the recording was listened to alongside a reading of the transcription, with any errors being corrected. Both the recording and the transcript were securely stored on the York St John OneDrive.

3.4.4 CR Questionnaire

The CR questionnaire (Appendix E) was formulated to capture further data from calendar recipients who were unable or unwilling to attend a focus group. It was not expected that there would be a particularly extensive level of engagement from the target group; a QR code linking to a short feedback form is present on several pages of the Nature Prescriptions calendar, yet over the two years of it being in circulation this form has never been successfully completed by a calendar recipient. However, 6 calendar recipients responded to the targeted questionnaire, which was administered by gatekeepers in two organisations across North Yorkshire who had been using the calendars in their practice.

3.4 Data analysis

The data produced by this study, across the four methods outlined above, were predominantly qualitative, and were analysed through the process of thematic analysis. Thematic analysis is not bound to any specific theoretical framework, which makes it a versatile tool for both inductive and deductive approaches to data analyses (Sirwan, 2025), and particularly appropriate for a 'what works, when' approach to an evaluation and research addressing a significant gap in the literature.

A specifically reflexive approach to thematic analysis was adopted, as 'pure induction is impossible' in qualitative research due to the researcher's pre-existing perspectives; reflexivity is therefore an important part of the process (Braun and Clarke, 2021). This approach builds upon Braun and Clarke's original 6-step guide to thematic analysis (2006), and recognises that knowledge is situated and shaped by the process of knowledge production, including the practices and standpoint of the researcher (2021).

The reflexive thematic analysis of the data started with the process of data familiarisation (1), followed by a systematic coding (2) of the qualitative dataset. These first two stages were undertaken across a range of locations including the researcher's desk, the university library, the researcher's garden and other green spaces, recognising that different environments may result in a shift of perspective. Following this, initial themes were generated (3), which were then developed and reviewed (4). These themes were redefined and named (5), and the final report was written (6). Throughout the process of analysis, in addition to the planning and data collection stages, the researcher kept a reflexive diary (Appendix C) of their thoughts and responses.

The reflexive thematic analysis is accompanied, where appropriate, by the quantitative results arising from the HCP survey and the Calendar Recipient Questionnaire. These results are presented via the use of descriptive statistics, including univariate and bivariate analysis¹², following the methods of a recent study into healthcare providers' views on GSP in Scotland (Frost *et al.*, 2025) and an ONS research report exploring perceptions of GSP among clinicians and the general public (2023). This method will also allow for comparison with the descriptive statistics presented in the RSPB Nature Prescriptions pilot study (Bradley, 2022).

These methods of analysis are similar in approach to studies undertaken in the last year into the wellbeing impact, barriers and facilitators to an outdoor social prescribing programme in Scotland (Bradley and Narzisi, 2026), which took an entirely qualitative approach, and a pilot study into the potential for North Yorkshire's protected landscapes to make up part of a Natural Health Service (Natural Health Service, 2026), which took a mixed methods approach. Once again, this will allow for comparisons to be made between results in the discussion sections of this dissertation, resulting in a systems-led 'bigger picture' being drawn.

¹² That is, the analysis of single variables, and the exploration of the relationship between two variables.

3.5 Researcher reflexivity

As Denscombe observes, a pragmatist worldview, as much as a postpositivist or interpretivist one, requires a degree of reflexivity, as it is impossible for the researcher to remain completely objective (2021); any knowledge produced is also dependent on ‘time and place’, in an echoing of Braun & Clarke’s justification for a reflexive approach to thematic analysis (2021). For this reason, in addition to the fact that a specifically *reflexive* thematic analysis of the data has been undertaken, this section will address the researcher’s positionality in relation to the research in order to address any potential bias that may arise.

The researcher has spent their childhood, and much of their subsequent adult life, in and around protected landscapes, first by the Northumberland Coast and then in the Nidderdale National Landscape. It is recognised that this familiarity with rural landscapes, particularly ones designated for their natural beauty, may lead to certain assumptions, including the idea that rural nature is a comfortable, safe space. Throughout data collection, care was taken to not impose the researcher’s view upon participants. Appendix G contains a number of photos illustrating local natural spaces where the researcher feels comfortable.

As mentioned above, a reflexive research diary (Appendix C) was kept over the course of the research project in order to record observations, experiences and reactions to the themes of the research, the research participants, and the places in which the research took place. This included a period of shadowing YDNPA staff members during Nature Prescriptions training delivery and the delivery of a related programme of GSP walks within the YDNP. The researcher also undertook qualitative data collection for the 2026 Natural Health Service for North Yorkshire pilot, which allowed them to develop their interview skills and gain a wider understanding of the evolving research landscape within which their own dissertation sits.

3.6 Ethical considerations

Ethical approval for this research was applied for in November 2025, and granted in January 2026, from York Business School Ethics Committee (Appendix H).

Responses to the HCP survey were automatically recorded anonymously, as were responses to the short questionnaire for calendar recipients. Interviewees and focus group recipients were informed that all personal details recorded would be anonymised, and were assigned a pseudonym (in the case of this research, a designation and number) to ensure protection of their identity. It has been noted that this approach allows the participant more freedom to fully express their views, opinions and feelings, which can lead to more accurate analysis (Kumar, 2011).

The HCP survey was structured in such a way that any NHS HCPs who responded were not at risk of revealing patient personal data, in addition to remaining anonymous themselves. Due to the sensitivity of the subject matter, and the fact that Nature Prescriptions calendar recipients who participated in the project were accessing the service due to mental ill health, gatekeepers from local social prescribing organisations were used to recruit this set of participants, as outlined in **3.4.3** and **3.4.4**.

3.7 Limitations

Due to the type of sampling employed, and the relatively small number of respondents, these findings cannot be generalised to the population of healthcare professionals across the UK. They are, however, sufficient to address the aims of this study, namely:

- To evaluate the impact of the YDNP Nature Prescriptions resource on those who have been using it in communities in and around the YDNP.
- To consider the research objectives outlined in the introduction and earlier in this chapter.

The 12-month time frame of the research project, in addition to recruiting NHS staff as participants resulted in some further limitations; the HCP survey was structured as a service evaluation survey, with permission given by the relevant NHS R&D departments for its dissemination among staff via a gatekeeper. As previously mentioned, gaining NHS REC approval for any further contact with staff was an impossibility for this study due to the time constraints. It is recognised that those working within healthcare and wellbeing, both NHS

and non-NHS, may also have limited time to respond to surveys or undertake semi-structured interviews.

Due to the nature of the participants (people with long term mental ill health) and the sensitivity of the subject matter (surrounding mental health and wellbeing), focus group participants were never pushed to answer a question, and none of the short questionnaire questions apart from the one detailing participants' consent were made obligatory. This led to questionnaire responses not being completed in full, and potentially a slightly less rich qualitative dataset, however it ensured the ongoing wellbeing of the participants.

Unlike previous research and evaluation studies into the impact of green social prescribing, this project was focused around the evaluation of a particular resource rather than a series of interventions (for example, the 'test and learn' programme (Hurd and Armitt, 2023) and the Natural Health Service for North Yorkshire pilot (Ratcliffe *et al.*, 2026).

3.8 Conclusion

This chapter has outlined the methodological approach to the research undertaken for this dissertation, including the pragmatic and reflexive approach underpinning to the convergent mixed methods design and data analysis, and the ethical implications and limitations arising from these methods. The next chapter presents the results of the data collection.

Chapter 4

Findings and discussion

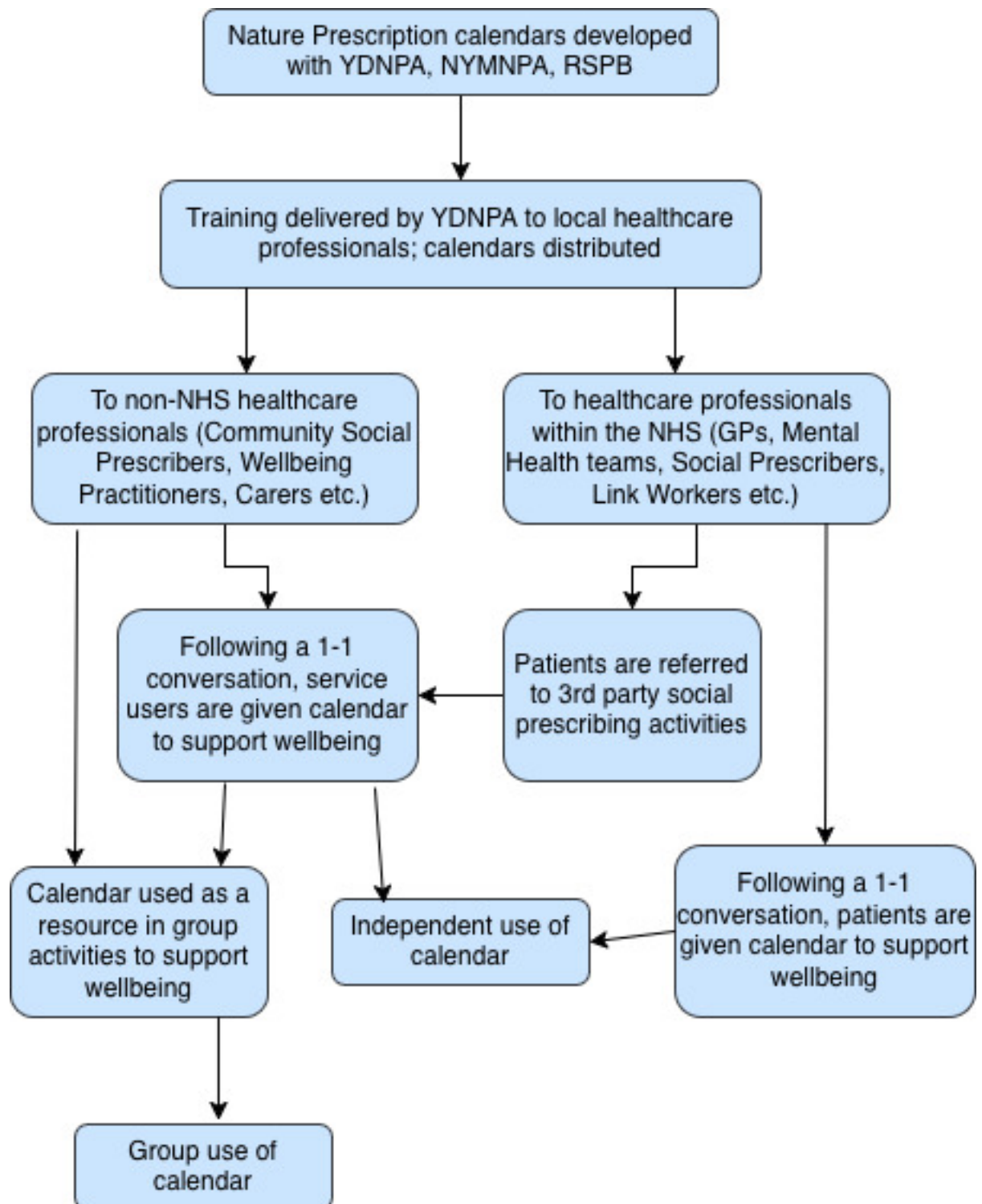
4.1 Introduction

The purpose of this chapter is to present and discuss the outcomes of the research. As established in the methodology chapter, a mixed methods approach was employed. Reflecting the convergent design of the research, the primarily qualitative results were analysed convergently through the process of reflexive thematic analysis, resulting in the generation of 6 distinct themes. These results are blended, where appropriate, with univariate and bivariate analysis of survey results which, while lacking a dataset large enough to generate statistically significant suggestions, are nonetheless indicative and sufficient to address the objectives of the research.

In the introductory chapter to this dissertation, **Figure 1.1** was presented as a framework for exploring how and by whom the YDNP Nature Prescriptions calendar has been used, a key objective of this research project. Following data collection and the analysis of results, a more complete version of this diagram has been produced in **Figure 4.1** below to help guide the discussion and to act as a map for the structure of this chapter, as well as answering the question of how the Nature Prescriptions calendar has been used by healthcare professionals and calendar recipients.

The semi-structured interviews with calendar prescribers, along with survey responses and data collected during the focus groups, all contributed to the formulation of this diagram which reflects the process by which the Nature Prescriptions calendar is prescribed and used. The resulting themes that emerged add nuance to the two main stages of calendar prescription; that is, the initial prescription process, including training and receiving the calendar, and actually putting the calendar into practice. An additional 'stage' concerns the barriers and facilitators to calendar use which may occur throughout the calendar's lifecycle.

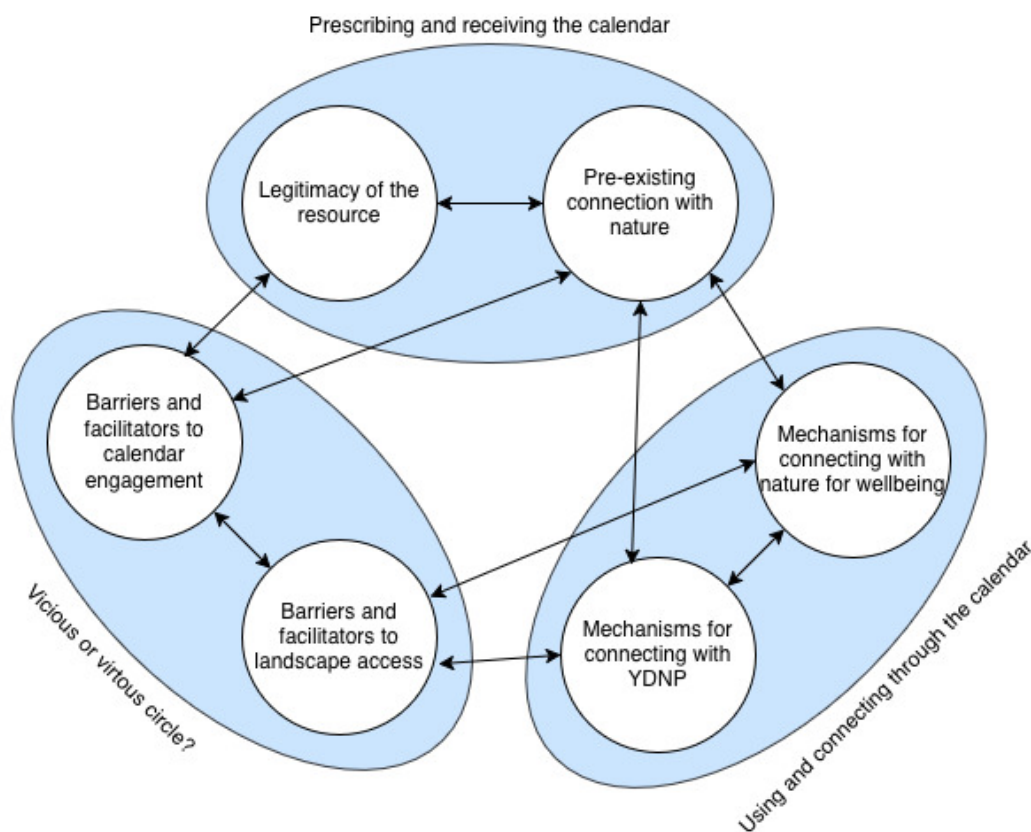
Figure 4.1: Lifecycle of the Nature Prescriptions calendar/prescription process



Reflexive thematic analysis identified 6 themes; these have been organised into three overall themes reflecting the ‘timeline’ of the Nature Prescriptions calendar use identified above. These themes are as follows:

- Prescribing and receiving the calendar
- Using and connecting through the calendar
- Vicious or virtuous circle? Barriers and facilitators

Figure 4.2: connection between themes identified through reflexive thematic analysis.



It should be noted that although presented in a linear manner, each of the themes and subthemes presented in this chapter interact with and reflect upon each other. The manner in which they do so is further explored in the discussion section as these relationships are important for evaluation of the Nature Prescriptions calendar, as well as for informing recommendations and considering future research. They also reflect the systemic approach

taken to this research, outlined in the literature review. By way of introducing this report and justifying its structure, **Figure 4.2** presents a summary of the relationships between themes.

4.2 Prescribing and receiving the calendar

4.2.1 Pre-existing connection to nature mediates calendar engagement

This first subsection of the chapter addresses the two themes of *pre-existing connection to nature* and *legitimacy of the resource*. These themes are united by the overall theme of prescribing and receiving the calendar; that is to say, the first ‘step’ in the lifecycle or timeline of the calendar. In addition to addressing the overall impact of the Nature Prescriptions project, this section will be particularly relevant to the objectives of investigating how the Nature Prescriptions calendar has been used, and how it may promote health and wellbeing. To add additional context to this phase of Nature Prescription calendar use, the table below shows the frequency at which the HCP survey respondents prescribe the calendar.

Table 4.1: how frequently HCPs prescribe the calendar

Frequency	Count	%
Daily or several times a week	1	5
Around once a week	1	5
Once or twice a month	9	45
Less than once a month	4	20
Never	5	25

This frequency is considered alongside the themes identified in this sub-section, and referred to throughout the results chapter.

Pre-existing connection mediates engagement in calendar recipients

In the literature review, it was revealed that in order to gain greater wellbeing benefits from time spent in nature, a pre-existing relationship with or connection to nature is potentially a pre-requisite (Chia-Chen *et al*, 2024). Conversely, a lower level of nature connectedness can result in fewer benefits gained. This argument was reflected in the outcomes of semi-structured interviews with non-NHS health and wellbeing professionals who work with groups of patients they know well; their responses show that they similarly consider an affinity for nature within their service users as a pre-requisite for calendar use which can moderate the likelihood of calendar recipients' engagement with the resource and with the natural environment.

We've tended to only use it with people who we know are, um, up for going outside and doing stuff in our outside projects. Sort of, so we tend to use it with that group of people, so they've already themselves thought about wanting to be outside and wanting to kind of like think about, you know, natural rules and connecting with it and exploring new spaces...when we've done activities with people, they've always been, responded to them positively. But again, I think that's partly because the people who've come along to those sessions want to, have identified wanting to be out in nature and wanting to take part in them.

(IP 2)

The idea that a pre-existing relationship with nature helps facilitate engagement with the Nature Prescriptions calendar resource and can result in greater wellbeing benefits was also supported by IP 3, a Creative and Wellbeing Programmes Manager in a different North Yorkshire-based social prescribing organisation. When discussing responses to and engagement with the calendar resource, they noted:

The ones it's worked best with that have been, really enjoyed engaging with certain parts of the calendar have been those who are quite outdoorsy anyway and know the benefit of being outside for them.

(IP 3)

These recipients not only have an affinity for nature, but are also already aware of the '*benefits of being outside for them*', suggesting that it is not only a pre-existing relationship with nature but also an awareness of nature's wellbeing benefits that affects engagement. This was echoed by IP 4, who simply said '*for those who want to get out, we're going to get out*,' placing emphasis on the desire of calendar recipients to engage with the natural world and the activities in the calendar. In addition to corroborating Liu *et al.*'s (2022a) findings, the observations and assumptions made by the health and wellbeing professionals parallel the findings of Rosa *et al.* (2020), who posit that higher levels of pre-existing nature connectedness predict a preference for nature recreation.

The potential of the Nature Prescriptions calendar to facilitate the establishment of such an awareness of/connection to/relationship with nature will be explored later in this chapter. However, it is significant that the theme of pre-existing connection mediating engagement with the resource is also related to recent findings relating to the more negative or less beneficial effects of social prescribing and GSP, namely, the disruption of existing community groups and the limitation of the wellbeing effects of nature when participants are pressured to spend time in a natural environment that they may not be familiar with (Pollard *et al.*, 2025; Tester-Jones *et al.*, 2020). It must be noted all the focus group participants reported feeling better and more positive following the hour of nature connection activities. They had all, however, elected to be involved and had all previously attended facilitated visits to the Yorkshire Dales National Park with their social prescribing organisation.

This theme of a pre-existing relationship to nature moderating engagement was evident not only in the semi-structured interviews, but also in the qualitative answers to the HCP survey. HCP 5, for example, said that '*people who enjoy walking/nature*' would be the most suitable recipients of the calendar. This was supported by another respondent, who said:

As we listen to our clients during a wellbeing review, if nature and getting outside used to or still is a hobby/interest/important aspect of their life – this can encourage them to restart it or motivate them to do it more.

(HCP 8)

On the other hand, HCP 9 suggested it would not be suitable for ‘people who would dismiss it without trying it,’ once again positioning an existing relationship with/connection to nature as a perceived pre-requisite for engagement with the calendar. HCP 20 also indicated that one reason that patients may not engage with the resource is their ‘preconceived ideas or expectations,’ and that they ‘sometimes struggle to find patients who I feel would engage with the prescriptions.’ IP 3 expanded upon this idea when discussing their service users’ initial response to the calendar:

Well, there’s a bit of resistance at first in the sense that they don’t really see the point. Until you kind of talk them through the benefits and what they might see, and then...

Once more, an awareness of the benefits of nature is positioned as a pre-requisite for calendar engagement; in this case, IP 3 describes how the prescription process and discussing the benefits of the calendar may lead to a change in opinion and behaviour, a theme that is subsequently explored in this subsection and throughout the results chapter.

Pre-existing connection mediates engagement in calendar prescribers

The theme of pre-existing connection with nature as a pre-requisite for calendar engagement was again evident in a response from IP 4, who elaborated on their changing view of the Nature Prescriptions calendar resource, nature as a resource for wellbeing in general, and their personal level of nature connectedness after spending a week engaging with nature through a different programme:

And I think this, like, I’m going to keep going back to this week what I’ve spent in nature as is like, oh my god, why am I not over here [indicates number 5 on nature

relatedness scale on the calendar]? I used to be there [number 1], not involving nature in my life at all and honestly, I think this past week is like, oh my god, I've been missing out on life me. I didn't even know it until you've gone to something like what I've been to and you realise the importance of it. So, I think that is really valuable to see, like, as, uh, nature, how it affects you, how it should be part of our everyday life and it's not. You know, I'm going to work really hard to make it more of our lives from now on.

The interview participants' level of connection with nature, which they reported as previously being non-existent with nature not featuring in their '*life at all*,' and awareness of the wellbeing benefits of time spent in nature resulting from such a connection, has an obvious effect on IP 4's perception of nature as a tool for wellbeing. They went on to say that they would be using the calendar much more in their work from now on, demonstrating how their previous nature experience has an effect on their response to the resource.

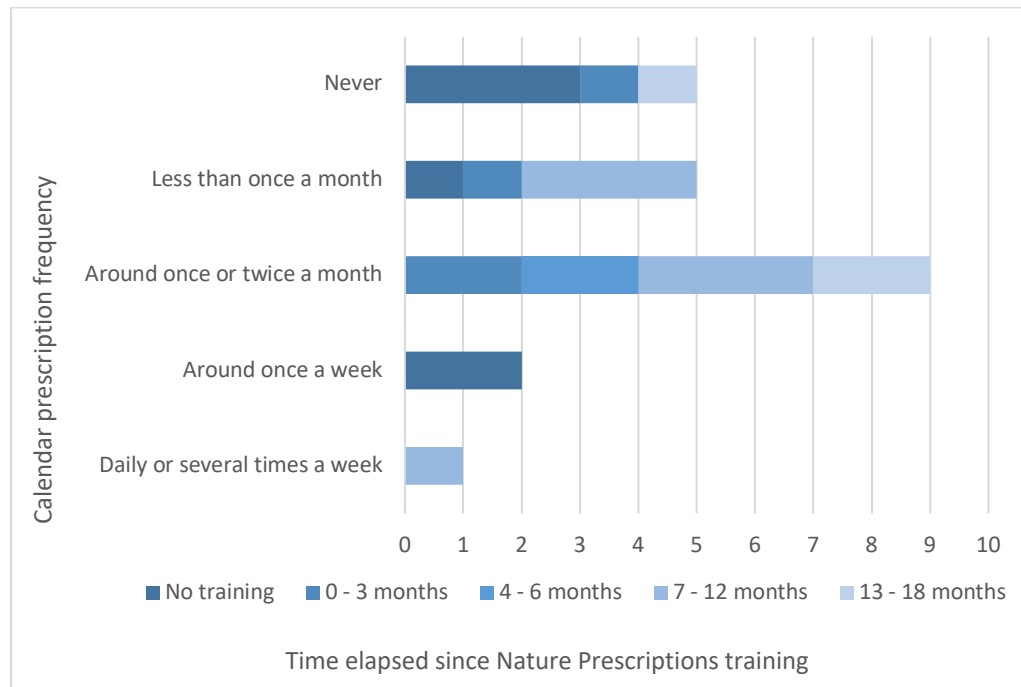
In a similar vein, a number of HCPs who participated in the HCP survey or the semi-structured interviews already had a pre-existing connection to nature and an awareness of the benefits of nature for health and wellbeing. For these participants, using and prescribing the Nature Prescriptions calendar solidified these views. For example, IP 3 stated '*I've always thought nature is a brilliant intervention*,' whilst HCP 2 explained that attending the training and having access to the Nature Prescriptions calendar had not changed the likelihood of them using nature as a healthcare intervention, as '*I am a Nature Therapist so it made no difference as I was already using nature all the time in practice*.' Notably, HCP 2 was the only survey respondent to respond '*no*' to the question of whether they were more likely to prescribe nature as an intervention following the Nature Prescriptions training, justified by their explanation above. IP 1 and IP 2 also explained the personal importance of nature to them and that they were pleased to be able to integrate it further into their work.

It would therefore appear that not only does a pre-existing relationship with or awareness of nature lead to greater wellbeing benefits for recipients, but also potentially a higher likelihood of prescribing nature as an intervention. Indeed, after attending the Nature

Prescriptions training delivered by the YDNP, 75% of HCP survey respondents indicated that they were now more likely to prescribe nature as an intervention than before. When crosstabulation was performed between the frequency of calendar prescription and the time elapsed since receiving the training, there was no significant correlation between time elapsed since training and frequency of calendar prescription. However, those who *'never'* prescribe the calendar were least likely to have attended a formal training session, once more positioning an awareness of nature as a pre-requisite for prescription.

This theme both reflects and adds an additional dimension to the findings of the Edinburgh Nature Prescriptions Pilot, which suggested that prescribers' willingness to adopt the resource was affected by a predisposition towards or awareness of nature engagement (Bradley, 2022), in that the calendar recipients' predisposition towards nature engagement is also important.

Figure 4.3: comparison of frequency of calendar prescription by prescribers with time elapsed since receiving Nature Prescriptions training.



4.2.2 Legitimacy of resource

From the above, it is evident that not only does a pre-existing relationship with nature potentially affect both the level of engagement with and the wellbeing benefits gained from the calendar by patients and calendar recipients, but that there is also in some cases a sense of ‘dismissal’ of nature as a legitimate resource for health and wellbeing, and ‘not seeing the point’ in engaging with nature for improved wellbeing. Hence, despite the wide range of interdisciplinary literature on the subject, as outlined in the literature review in Chapter 2, which shows a clear movement towards positioning green spaces, nature contact and nature connection as essential for human health, the reality may be different in practice. Indeed, this echoes the findings of the literature review concerning GSP in the UK which showed that GSP is as yet in its infancy and, despite a positive initial response to it, there exists a limited evidence base (Darcy *et al.*, 2025) which, in turn, may affect its perceived legitimacy amongst HCPs.

This is exemplified by the responses of HCP survey respondents who attended the Nature Prescriptions training delivered by the YDNPA:

It [the training] was a good surprise, like I didn't realise that it could be 'prescribed' to go out into nature.

(HCP 9)

I actually thought [the training] was going to be a bit of a waste of time, I was completely wrong! The training had a big impact on me on a personal level...

(HCP 10)

It has made me more aware of and appreciative of the influence and need for nature in our lives...to improve health, physical and mental.

(HCP 11)

I was surprised by how much I enjoyed it.

(HCP 4)

Each of these responses reveal an initial lack of awareness or, arguably, a certain flippancy towards the use of nature connection as a legitimate healthcare resource, followed by a change in attitude accompanied by an increase in awareness of the potential for nature to have a positive effect on wellbeing. Whilst these views were expressed by healthcare and wellbeing professionals, this same theme was evident in the views of FGP C who, reflecting upon receiving the calendar for the first time, said:

I just thought, what's this?... and then when I opened the pages, yeah, I found it would be helpful.

Conversely, FGP D said that they immediately *'thought [the calendar] would be helpful.'* It is interesting to note that this participant was an artist who already spends a significant amount of time observing and engaging with the natural world for their art, which may have influenced their response and, once again, demonstrates a level of pre-existing affinity for nature and the natural world. Engagement with the calendar and awareness of the benefits of spending time in nature, in addition to the perceived legitimacy of using nature as an intervention, may therefore be mediated by both calendar prescribers' and recipients' pre-existing relationship with nature.

At the very least, the Nature Prescriptions calendar provides a certain legitimacy to the use of nature as a healthcare and wellbeing intervention in the minds of both those prescribing the calendar and those receiving it. Indeed, IP 1 noted that *'the photography is very good. I think that gives it a level of quality and authenticity, I think'*. HCP survey respondents shared their opinion on the effect of the calendar on using nature as an intervention for wellbeing which also suggests the calendar legitimises GSP:

I really think it is a wonderful resource and the effectiveness of going out into nature has previously been undervalued and overlooked, so it is great to see it being pushed out.

(HCP 8)

[It] allows us to highlight the positive role nature can play for promotion of mental wellbeing.

(HCP 1)

In a reflection of the literature review and as touched upon earlier in this chapter, there is a general sense among the HCP respondents who have a pre-existing relationship with/awareness of nature that it is an untapped resource, and a resource such as the calendar ‘allows’ them to discuss it with patients and calendar recipients. To build upon this point, it is not just the existence but also the content and the title of the Nature Prescriptions calendar that adds to this idea of it being a legitimate healthcare resource. This was expanded upon by IP 3, who explained:

And what it has helped us use nature for in this kind of way is a valid prescription of using nature for the benefits of health, and people taking it more seriously because it’s called a prescription in some ways.

This view was echoed by the focus group participants who had been prescribed the calendar. One of them, when asked what their favourite thing about the calendar was, responded ‘*I think the title...it just says everything, doesn’t it? In the title*’ (FGP C). When the conversation directed itself once more to the title of the resource, three out of the four focus group participants also agreed that a nature prescription, for them, could have a similar effect to a medical prescription. Equally, CR 3 observed that ‘*focusing on nature is therapeutically helpful*’ for them, indicating through their choice of vocabulary that they recognise its beneficial effects.

This general consensus amongst prescribers and calendar recipients would seem to suggest that despite a general confusion around the vocabulary of ‘green’ prescriptions and ‘nature’ prescriptions used in the literature (Stanhope and Weinstein, 2025), the title ‘Nature Prescriptions’ is effective in conveying the purpose of the calendar resource. It may also aid in adding to the recent evidence base in favour of GSP as an effective intervention (Haywood *et al.*, 2024; Lynch *et al.*, 2025; Darcy *et al.*, 2025), and results in calendar

recipients taking the resource seriously as an intervention. This legitimacy is enhanced by training and actually receiving the calendars, the practical implications of which will be further explored in the discussion chapter.

4.3 Using and connecting through the calendar

This next subsection of the results chapter will address two themes that are related in two ways. The first connection is that they both relate to the next part of the calendar's lifestyle; that is, they concern the effects of the calendar being used following prescription. The second is that they both relate to mechanisms for connecting for wellbeing and how they may be mediated by the calendar, in the first instance with nature in general and in the second instance with the YDNP protected landscape in particular. This subsection therefore particularly relates to the questions of promoting health and wellbeing and accessing nature and the National Park, in addition to the other research objectives.

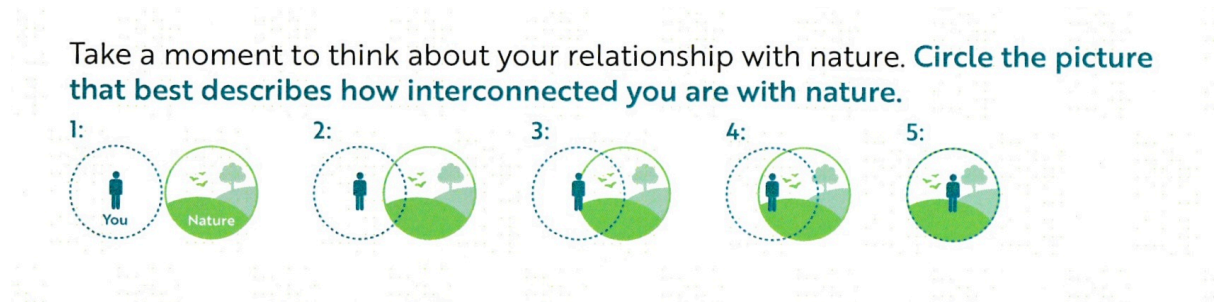
4.3.1 Mechanisms for nature connection for wellbeing

The Nature Prescriptions calendar resource was developed with the purpose of providing activities to increase recipients' level of connectedness with nature and, therefore, to enhance their wellbeing. Each of the activities in the calendar was 'chosen knowing that what you do and notice in nature is far more important than how long or where you spend time in nature' (RSPB, 2024), guided by the pathways to nature connectedness – that is, contact, beauty, meaning, emotion and compassion – as established by the work of Lumber *et al.* (2017) and built upon in recent years (Liu *et al.*, 2022a).

The effectiveness of these pathways to nature connectedness, and their use in the activities suggested by the calendar, are made evident by the responses of both HCPs and calendar recipients. Out of the 6 respondents to the Calendar Recipient questionnaire, all 3 of the participants who responded to the question of whether using the Nature Prescriptions calendar made them feel more connected to nature responded 'Yes'. The focus group discussion expanded on this positive response; in a general sense, calendar recipients felt more connected to nature after spending some time outdoors in a local green space and

actually undertaking some of the activities suggested in the calendar for March. The focus group participants unanimously reported that they felt more connected to nature and indicated that they felt at one with nature by selecting the fifth image in **Fig. 4.4**.

Figure 4.4: simplified IICN scale as it appears in the Nature Prescription calendar.



(RSPB, 2024)

They also reported that using the activities in the calendar changed how they felt, saying that *'if you did one of the activities, it would make you feel more positive. You know, it would make you feel better'* (FGP C). This demonstrates the effectiveness of the calendar in its potential to positively change the mood of those who have been prescribed it for their wellbeing, in a reflection of the theories of ART and SRT which suggest that time spent in nature can reduce mental fatigue and stress (Kaplan and Kaplan, 1989; Ulrich *et al.*, 1991). It also exposes nature connection through the activities as one of the mechanisms for this result.

Contact with nature as a pathway to nature connection and wellbeing

The focus group participants also highlighted several of the specific mechanisms or 'pathways' proposed by Lumber *et al.* (2017); contact with nature (in the sense of actively using the senses of touch, smell, sight rather than simply spending time in a green space, (Richardson, 2017)) was one of the things that particularly stayed with them. This became apparent in their extended answers when asked how they felt after undertaking a selection of activities from the calendar:

It's kind of showing you that with a little bit of effort, and, you can increase your mindfulness and awareness of things that you wouldn't otherwise be able to access, 'cause now I can think about touching the bark, and it make- and it's lovely touching the tree as well, but it wouldn't be something that I would normally do on a walk. So, things like listening to the birds, watching the clouds, are things I'll take with me. And do again, so...

(FGP B)

It's stuff you wouldn't normally... You wouldn't normally go around feeling the earth. You might touch the trees. Um. But there was a ladybird on the bark of that tree, just walking about, and you can see it going up and down on the thing. So it's something that you wouldn't really stand there and watch, normally.

(FGP D)

This was reflected in the experiences of another group based in an urban area in West Yorkshire on the fringes of the YDNP. IP 4, who works closely with this group, recounted:

We found a green space near us that was an absolutely hidden gem. I just did not know it. I've lived in this area for over 20 years. And we found that and we absolutely loved going down there. It's like just switches off from everyday life. And so the ladies and like we... Listen to the sounds of what you can hear. We found a little waterfall. I say little, it was just a little like little trail of like one little line of dripping, but it was still a waterfall. Yeah, constantly flowing and, and, and we loved it.

These responses highlight how a deeper sense of contact with nature – through touch, sight, looking and listening – stays with the calendar recipients after using the activities and adds a depth to their experience of nature that they ‘wouldn't otherwise be able to access,’ or ‘wouldn't normally’ do. IP 3 summarised this by observing:

You can make any space a place through the different senses, can't you? Which is why some of those activities are really useful, being able to actually access those

senses, enable you to then actually transfer that skill to other places you're spending a lot of time in.

As part of a different social prescribing organisation, IP 3 noted a similar experience amongst service users to the one described by the focus group participants and IP 4; that is, developing a sense of connection through the guided use of the senses to make contact with the nature around you. This corroborates the findings of Lumber *et al.* (2017) above, in addition to Richardson *et al.* (2021) and Barragon-Jason *et al.* (2023). It also demonstrates how the Nature Prescriptions calendar resource effectively employs this principle of nature connectedness to promote wellbeing through the activities suggested. Interestingly, a recent evaluation of a Natural Health Service for North Yorkshire green social prescribing initiative also found that sensory experiences both deepened participants' sense of connectedness with nature and contributed to their feeling more calm and relaxed (Ratcliffe *et al.*, 2026).

It is key to note here that it is not only the calendar recipients who benefit from a change in mood as a result of exposure to the Nature Prescriptions calendar. One HCP who was introduced to the calendar during a training session delivered by the YDNPA, and has since been using the calendar in practice, described their experience:

When I did the training, I had just moved house and I was really struggling to settle in to the new area. I was really resentful and upset about it if I'm being honest. I did the training and the Merlin app was suggested for identifying bird calls...after the training, I made time to stand outside early in the morning. I used the Merlin app and I could identify the birds. I started to feel a connection...I stopped rushing around feeling angry and resentful and took my time. I noticed there were wrens living local to me which I wouldn't have noticed if I hadn't slowed down and listened and really looked. Nature welcomed me in and showed me that it was there in abundance, I just needed to let it into my conscience...I know this sounds a bit rambling, but the training was exactly what I needed at that time and I felt it saved my mental health from spiralling down.

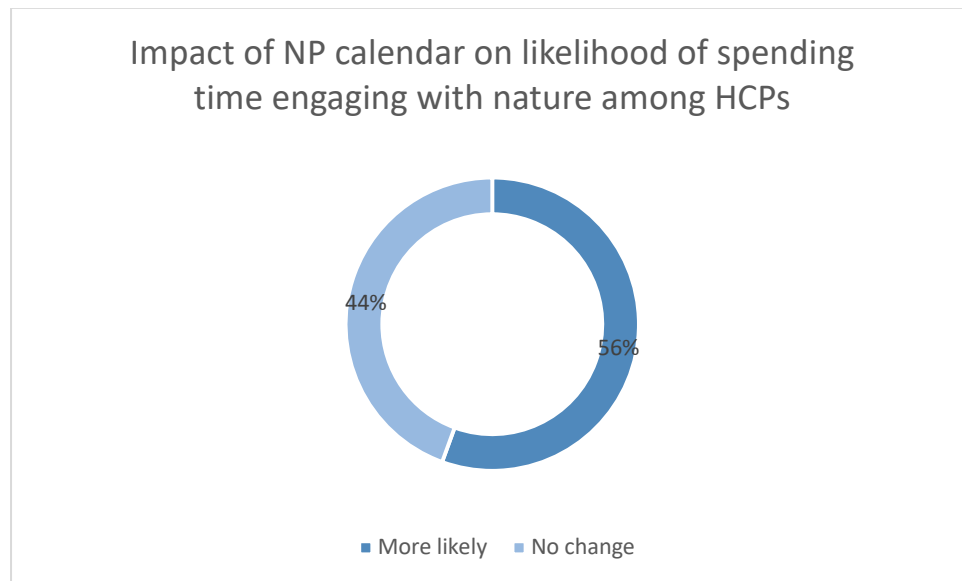
(HCP 10)

This survey respondent essentially summarises the nature connection process, in this case with nearby nature, and reports its positive effects on her own mental health and wellbeing. Noticing the abundance of nature around her new house, and taking time to connect with it on a deeper level, had a profound impact on her sense of wellbeing; this was a direct result of engaging with the activities in the Nature Prescription calendar during the healthcare professional training session. In her case, simply spending time outside and in nature was not enough – *‘I have a dog which I walk several times a day’*; rather, it was specifically *listening, looking and letting nature into my conscience* that led to an impact on wellbeing. Once again, this supports the argument that nature contact is significantly more effective than simply spending time in or near the countryside or green space in building the level of nature connectedness that leads to increased wellbeing. It also demonstrates how the Nature Prescriptions calendar may benefit healthcare staff, in addition to calendar recipients.

Interestingly, the same survey respondent reported a pre-existing affinity for nature, saying *‘I love wild birds, particularly robins and wrens.’* This once again corroborates the findings of Chia-Chen *et al.* (2024) that showed a pre-existing relationship with nature led to increased wellbeing benefits from spending time in, and connecting with, nature, but on this occasion with a member of healthcare staff rather than patients or service users. Indeed, 56% of the HCP respondents reported that they were more likely to spend time engaging with nature themselves after attending the training and having access to the calendar, whilst the remaining 44% reported no change in behaviour.

These findings also build upon the results reported earlier in this chapter in suggesting that although a pre-existing affinity for/relationship with nature increases the likelihood of engaging with the calendar as either a prescriber or a recipient, the activities in the calendar can also act as a catalyst for behaviour change that leads to wellbeing benefits for both patients and prescribers, whether indirectly or through an increased likelihood of nature being prescribed.

Figure 4.5: likelihood of HCPs engaging with nature after attending training and/or using Nature Prescriptions calendar in their practice.



In relation to these findings, it must also be noted that following cross-tabulation of survey responses there was no correlation found between frequency of prescription and the rurality of HCPs' work locations, or the amount of time they spend in nature in their free time, indicating once more that spending time in or around nature is not necessarily a predictor of nature connection, nor is it a predictor of prescribers' likelihood of suggesting the Nature Prescriptions calendar as an intervention.

Finding meaning in nature as a pathway to nature connection

In addition to the nature connectedness pathway of 'contact', it became clear from the research that 'meaning,' described as 'using natural symbolism to represent an idea, thinking about the meaning and signs of nature, eg: the first swallow of summer' (Richardson, 2017), was another pathway to nature connection induced by using the calendar. Several of the IPs related the wellbeing benefits of the calendar to changes in the seasons and how this creates meaning for calendar recipients:

You kind of look at it and you think oh, it's March, great, these things are gonna happen. This is going to happen. You know, daffodils are gonna come out. There's gonna be blossom, et cetera. So it's kind of like positive in that respect in terms of looking forward to what's happening through, particularly through winter, which is difficult.

(IP 2)

I liked the, I think there was different wildlife you could see at different times of the year...I liked that because it made you notice what was coming up in different seasons...I also think that just noticing lots of little changes in growth and the shift in seasons. I mean, humans follow shifts in seasons, don't we? So, seeing that happen as a natural thing in the world is kind of a good way of being able to understand that everything has seasons and nothing is going to permanently stay in one state.

(IP 3)

Once the months start to match the pictures [in the calendar], they are really, really, really like, just on point of what's out there at the time, of what birds are out there at the time. So, it is really, really beneficial.

(IP 4)

Each of these interview participants considers the meaning attached to different seasons, and the ability to notice this change, as linked to the wellbeing benefits of the calendar. Indeed, this same idea is acknowledged by a focus group participant when sharing their thoughts on whether using the calendar can change how you feel:

Yes, I would [agree] certainly. I think whether it's just, um, looking at the pictures, say it's the depth of winter, and looking at, uh, you know, some of the pictures of summer, things like that, and thinking, oh, yeah, it'll appear eventually. It seems to be on its way a bit today.

(FGP A)

One HCP Survey respondent also reported that they *'Liked some pics I wouldn't usually see like the winter months.'* Ascribing meaning to the seasons and taking notice of what small changes in nature might mean is, therefore, a result of engaging with the calendar, whether that might be undertaking the activities suggested or just *'looking at the pictures'*. This demonstrates another way in which the calendar leads to wellbeing benefits via a defined pathway to nature connection. It also demonstrates how the pathways to nature connectedness, accessed as they are by engaging with the Nature Prescriptions calendar, do not function in isolation but, rather, operate as a system; contact with nature and noticing what is happening during the seasons is, for example, what leads to ascribing meaning to the blossom appearing. This also once more aligns with the idea that contact with nature can mediate connection with it, in addition to suggesting how the Nature Prescriptions calendar may mediate connection with nature.

4.3.2 Mechanisms for connecting with YDNP through the calendar

Contact with nature and meaning in nature as pathways to connecting with the YDNP

Contact and meaning, as interlinked pathways towards nature connection, may also be considered pathways towards accessing or connecting with the protected landscape of the Yorkshire Dales National Park. This is particularly relevant to this study's objective of interrogating how the Nature Prescriptions calendar may encourage access to the YDNP and contribute towards overcoming barriers to access. In the same way that contact with nature mediates a sense of connection with it (by allowing meaning to be ascribed to it), the focus group participants' responses demonstrate this same mechanism in discussing their relationship with the YDNP:

I think, as we've been to some of these places, through [our organisation], it's, um, you know, a lovely reminder of those places and inspiring to go again.

(FGP A)

You know, I'd like to be taken there. Yeah. And then you can connect the calendar with the place.

(FGP C)

The ability to connect with key locations in the YDNP by having been there, and relating the experience to the content of the calendar, was repeated by the interview participants:

Mentioning like Aysgarth and stuff, I think it is, like, the calendar doesn't feel static in that way. It's like the more you kind of engage those things, the more, um, they're not just kind of photos, you kind of relate in them to memories of the walks or what you've got up to and stuff.

(IP 1)

Because... I think it's when we go to spaces and they become our places, that's what makes them special, isn't it? That when they have a hold of a memory or a feeling that we can then reconnect to.

(IP 3)

It's beneficial because you know some of the pictures they've taken. And when you see them in real life and you can relate to them, that is really positive. Like, like I'm just looking at that front picture there of that Ribblehead. I think we went there. And it's when you see something where you've been to, you just connect to it more better.

(IP 4)

It is interesting to note the frequency with which the word 'connect' appears in these responses, indicating that, in the case of the YDNP, it is in fact a physical connection with the landscape that may lead to an emotional or psychological connection with it. This supports the findings of Liu *et al.* (2022a) and Barragon-Jason *et al.* (2023) which suggest that a greater level of interaction and physical connection with the natural world – or in this case, the YDNP – leads to a greater psychological connection with it.

But beyond that, in terms of a real connection, I think it's about visiting, being there and going there regularly.

(IP 2)

It also positions the pathways of contact and meaning as linked, not only when it comes to a sense of connectedness with nature in general but also with a sense of connectedness with the Yorkshire Dales as a protected area in particular. Spending time within the landscape leads to a greater connection with it, and also creates a sense of meaning which is mediated by the calendar; once recipients have visited a location such as Aysgarth Falls or Ribbleshead Viaduct, they can relate the positive experiences they had there with the calendar, which acts as *'a lovely reminder of those places and inspiring to go again'* (FGP A). Interestingly, in response to the question: 'is there a particular activity in the calendar that makes you feel more connected to nature?', CR 4 reported *'visiting new places suggested in the calendar'*. To build upon the idea that facilitating contact with the YDNP leads to a greater connection with it, this latter quote suggests that contact with the protected landscape may also lead to a greater overall sense of nature connection. Once again, this reflects emerging findings highlighted in the literature review suggesting that non-urban green spaces and 'wilder' environments can lead to greater nature connectedness (Wyles *et al.*, 2019; Lengieza *et al.*, 2025).

Knowledge as a pathway to connection with YDNP

Interestingly, even though it has been found that knowledge and learning were not necessarily linked to nature connection (Lumber *et al.*, 2017), both focus group recipients and HCPs who took part in the interviews mentioned the fact that learning more about nature and their local area was a positive outcome of using the calendar, and could in fact be built upon more in future iterations of it.

I think there could be more in there perhaps around, that's kind of like that helps you might identify something like bird song, what might help you identify a particular tree or the plants or something. You know what I mean, so people kind of have a bit

more knowledge around what they're looking at. So, a bit more educational stuff in there.

(IP 2)

And we've learned specific things around kind of like bird calls, identifying trees, how to engage in the natural world slightly differently and observe it.

(IP 3)

You know, because you can learn more, now about the nature. You know, and have a look for it. It is really nice.

(FGP C)

It gives you the added knowledge of it, just empowers you because you've seen it and you know what's going to be there. And then you look out for it.

(IP 4)

Once the recipients, and indeed the prescribers, have learned more about nature and about the particular qualities and places to 'look out for' through using the calendar, it arguably adds to the meaning of the landscape for them. Rather than being an unknown space, the YDNP become recognisable and identifiable. In addition to its relevance as a potential mechanism for connecting with the landscape, increasing knowledge and awareness of the YDNP is also considered in the subsequent discussion on barriers and facilitators to using the calendar and accessing protected landscapes for wellbeing. As is discussed, lack of awareness and knowledge is a key barrier to accessing the countryside (National Centre for Social Research, 2022).

Pro-environmental action as a pathway to connection with YDNP

As with the section above, this sub-theme strongly relates to the other themes identified and discussed in this chapter. In **4.1**, it was found that a pre-existing connection with nature mediates engagement with the calendar resource. Preceding this sub-theme, it was found in this section that using the calendar may promote this connection, both to nature in general

and to a specific landscape. As such, a cyclical relationship between these two overall themes can already be identified.

Another sub-theme that may increase connection to nature, and to specific landscapes, is that of pro-environmental action. In the literature review, a clear association between nature connection and pro-environmental behaviour was identified (Capaldi *et al.*, 2014; Cleary *et al.*, 2017, for example). This association was also identified by semi-structured interview participants, who observed that the action of giving back to nature by, for example, following the 'helping nature' suggestions in the calendar, has the potential not only to increase wellbeing but also identification with the landscape where the pro-environmental activities are undertaken:

Part of it is that kind of care and kind of feeling of belonging to those places and caring about them, wanting to nurture them and protect them.

(IP 2)

So maybe that's a way of utilising it as well. It's not just for them, it's for something else, because giving something a purpose is a huge, huge beneficial part of their wellbeing and mental health improvement.

(IP 3)

I think your perception changes and makes you want to take care of things. That you know it's a beautiful space and you enjoyed it, and then when you go back and it's like somebody's trashed it, it makes you, it empowers you to like actually, don't, let us move that, so much prettier without it, so I think it benefits nature in the long run.

(IP 4)

Taking care of a particular space is strongly linked not only with wellbeing benefits, but also with a sense of belonging and empowerment; an increased feeling of connectedness with nature may therefore not only lead to a higher incidence of pro-environmental behaviour (Howell *et al.*, 2011), but this relationship may also function in reverse. That is to say,

undertaking conservation-related activities may lead to a greater sense of connection with both nature and a particular landscape.

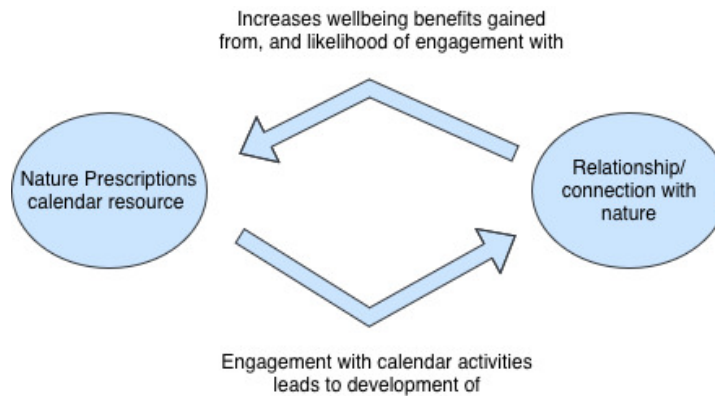
In addition to exploring the mechanisms by which the Nature Prescriptions calendar may increase connection for wellbeing, and connection with the YDNP protected landscape, this section has also begun to explore the cyclical nature of the themes within this chapter, recognising how they are related within a system. This concept will be further explored in the subsequent section, as well as in the discussion chapter.

4.4 Vicious or virtuous circle?

Thus far, this chapter has reported the potential effect that a pre-existing relationship with nature can have not only on calendar use and effectiveness for those who are prescribed it, but also on the health and wellbeing professionals who prescribe the calendar. It has been recognised that lacking this pre-existing relationship may act as a barrier to fully benefiting from the calendar and from accessing protected landscapes for wellbeing, which adds a further dimension to the idea of specifically green health inequality as explored in the literature review in Chapter 2. The mechanisms by which the calendar may work towards instilling this pre-requisite connection, both with nearby nature and with the Yorkshire Dales National Park, have also been explored. It may therefore be argued that although a lack of a pre-existing relationship with nature can be seen as a barrier to effectively using the calendar and accessing its wellbeing benefits, using the calendar may contribute to overcoming this barrier by establishing the pre-requisite relationship with nature through its use in a 'virtuous' circle.

Nevertheless, there exist further barriers to fully using and accessing the calendar, in addition to accessing the YDNP for health and wellbeing, that this standpoint does not fully consider. These barriers, as reported by study participants, will be outlined in the following subsection, under the theme of 'virtuous circle?' The relationships between barriers and facilitators will therefore also be considered.

Figure 4.6: the ‘virtuous circle’ relationship between calendar use, relationship with nature and wellbeing benefits.



4.4.1 Barriers and facilitators to calendar use

Language barrier

The Nature Prescriptions calendar describes itself as ‘for everyone regardless of circumstance’ (RSPB, 2024), a sentiment that seems to be shared by many of the HCP survey respondents: when asked who would particularly benefit from the calendar, responses included; ‘everyone’ (HCP 4); ‘everyone. It has a universal appeal and has something that will benefit everyone’ (HCP 9); ‘I think everyone can benefit from this’ (HCP 22); ‘anyone who can understand it’ (HCP 13).

Despite the calendar’s universal appeal, there are nevertheless barriers to its use, one of which is highlighted by HCP 13’s response above – it is effective only for those ‘*who can understand it.*’ This respondent builds upon this argument, stating that ‘*lack of English language*’ is a barrier to prescription:

I work with asylum seekers. Many do not speak or read English. I have used some ideas from the calendar if they have access to nature.

(HCP 13)

Other participants similarly highlighted this barrier. For example, HCP 16 reported that the calendar is not a useful resource for *‘people who struggle with literacy or visual impairment’*; HCP 10 concurred, suggesting it is not useful *‘when English is not the first language’*. The respondent in one of the semi-structured interviews, who works with the elderly Pakistani community in an urban area in West Yorkshire, added nuance to this idea:

A lot of them are illiterate, right? So, I feel like, you know how, although I will interpret it out and stuff, but it’s not the same as reading and understanding it fully because I might not interpret the words as they are...

I don’t think anybody’s used it without me there, because of the, they can’t read and write. Yeah, I know they can look at the pictures, but it’s...

(IP 4)

However, IP 4 still views the calendar as a useful resource to use with a group, but accepts that it may be less effective when delivered through interpretation rather than through engaging with it directly. They note that, despite the pictures being partially useful, language is a barrier that would completely prevent calendar recipients from using the resource independently. This is a barrier that will be essential to consider for the success of the YDNP Nature Prescriptions project in effectively targeting underserved and underrepresented communities, in addition to the national ‘Landscapes for Everyone’ project proposed by National Parks England (2025). It will also be key for the fulfilment of the YDNP 2025-30 Management Plan, which aims to greater engage diverse and underserved communities through volunteering opportunities, and improve their wellbeing by helping over 1500 individuals access green social prescribing activities (YDNPA, 2025).

Language and cultural understandings are also a key theme when considering barriers to accessing protected landscapes such as the Yorkshire Dales National Park (NCSR, 2022, for example). This will be addressed later in this section of the results chapter, after exploring another significant barrier to engaging with the Nature Prescriptions calendar, particularly when investigating its independent use by the individuals who have received it: motivation.

Motivation as both barrier and facilitator

Motivation was identified as a key barrier by the HCPs who responded to the survey, as well as by those who participated in the semi-structured interviews. This opinion was shared by HCP 10, HCP 3 and HCP 19, whilst several of the survey respondents also described how this barrier could be overcome with facilitation on the part of health and wellbeing practitioners:

I deal with people lacking motivation for behaviour change so need to work for a few sessions with the calendar/ideas to ended the engagement.

(HCP 22)

[A barrier is] remaining consistent and having to actively encourage them to keep going with it. Sometimes people lack the motivation and the calendar sometimes needs that self motivation.

(HCP 8)

It was recognised that this lack of motivation was linked to the mental health of the calendar recipients; HCP 10, a Mental Health Specialist, specified that motivation would be a barrier *'for the client group.'* In a recent qualitative study into the barriers and facilitators of outdoor cycling activities for those experiencing mental ill health (Bradley and Narzisi, 2026), it was found that motivation was a barrier to participation and, indeed, linked to participants' mental ill-health which may itself act as a barrier. In another similarity between this study and the outdoor cycling study, facilitation by intervention providers was found to aid in overcoming these barriers. Both of these relationships were also identified by the interview participants:

I think the biggest, the biggest thing is that, is the motivation. I think it's about how, how motivated you're feeling in terms of your mental health at any one point to think, oh yeah, I'll use this...it's very easy for it to just fall off the agenda, and allow everything else to take over.

(IP 2)

It's, um, people's minds can be really scattered or busy or...sometimes you're just not in the, you're not in the headspace to engage with anything.

(IP 1)

The fact that there's nobody there to check in with and hold accountability...it's a long time in that sense of like continual engagement without anybody helping them kind of maintain motivation.

(IP 3)

Motivation, mental health or state of mind and facilitation are linked when discussing motivation as a barrier to participation. This was a sentiment shared by the FGPs who had been prescribed the calendar, with reasons given for not using it such as '*mood, motivation and other commitments getting in the way*' (FGP B) and '*life takes over. You know, I've had a bad year*' (FGP C). The link between motivation and facilitation was most explicitly described by FGP A, who said:

If it's just left up to me, I won't get around to it, 'cause there's always tomorrow, but then you just, years can go past, and you haven't done the thing, whatever it may be.

'If it's just left up to' calendar recipients to motivate themselves to use the calendar, engagement with the resource will be lower and it will, therefore, be less effective as both a resource for wellbeing and as a means to accessing nature and/or the YDNP for health and wellbeing. This is exemplified by the low engagement with the short Calendar Recipient questionnaire which makes up part of this study and the low frequency of their independent use of the calendar (shown in the table below), in addition to the lack of responses to the feedback form in the Nature Prescriptions calendar itself; although appearing as a QR code

link on every other page of the calendar, the YDNPA is yet to receive a response. As outlined above, however, having a prescriber repeatedly facilitate calendar use may be one way to overcome the barrier of motivation.

Table 4.2: frequency of independent calendar use by CR questionnaire respondents

Frequency	Count
Around once a week	1
Once or twice a month	2
Less than once a month	2

Having acknowledged that mental health-related lack of motivation is a barrier to engaging with the calendar, it is interesting to note that, conversely, some participants – both health and wellbeing professionals and calendar recipients – also viewed the calendar as a source of motivation.

You might have looked at doing a couple of things, then say, oh, there's an activity I haven't thought about doing, or haven't got around to doing. So that might be a way of getting on to them.

(FGP A)

Just looking at this calendar and it's like, it's like. Now, I'm going to do this this year.

(IP 4)

I find [the calendar] particularly helpful for those struggling with low mood and struggling to get out of the house – it acts as perfect motivation to get out.

(HCP 1)

This once again suggests that the calendar may have a 'virtuous circle' effect when it comes to the question of motivation, in that using it may lead to greater motivation to continue

using it. This theme will become even more pertinent when reporting the barriers and facilitators to accessing the YDNP via the calendar in the following section of this chapter.

Related to this is the argument that presenting a series of activities to a group already struggling with motivation could, conversely, have a negative effect:

If you give someone something that has activities and they're struggling with their mental health, and finding, not finding motivation to be able to do any of this, it can be a really negative thing to give people. Because it actually, it feels like you're failing.

(IP 2)

With this being said, a focus group participant explained how completing one or more of the activities improved their mood not only through connecting with nature, but also by helping them feel that they had achieved something.

It's an achievement, isn't it, just doing an activity sometimes when you don't feel like doing anything? It's, um, accessible, achievable.

(FGP B)

Once again, reflexive thematic analysis of the data not only identifies barriers to calendar use, but also suggests calendar use as a way to overcome these barriers, in a repetition of the 'virtuous circle' theme.

4.4.2 Barriers and facilitators to YDNP access

Transport, fear and confidence as barriers to landscape access

Barriers to accessing the countryside and protected landscapes, particularly for those from lower socio-economic groups and ethnic minorities, have been identified as a lack of knowledge or awareness, cultural understandings, lack of sense of belonging and fears around discrimination (National Centre for Social Research, 2022; Natural England, 2005). In

addition to these socio-cultural barriers, key practical issues surrounding transport were identified. One of the aims of the Nature Prescriptions calendar, alongside increasing health and wellbeing, is to encourage more people to access the Yorkshire Dales National Park. However, over the course of this study it has become apparent that the barriers above, particularly around the question of transport, persist.

All four of the focus group participants identified transport as a limitation to accessing the Yorkshire Dales National Park for their health and wellbeing, with one in particular extrapolating on the difficulties of not having a car.

Well, [the main thing stopping me is] getting there. I don't have a car now. So, uh, how would I get there? Cause you've always got to get back. So, I might get there. It might take me... I'd be able to get there, then I'd go back straight away.

(FGP D)

Transport was also identified as a barrier by HCP 2 and HCP 5, as well as by all four of the semi-structured interview participants, with the lack of public transport in particular identified as a problem; *'there's not enough public transport to get [service users] there'* (IP 3) and *'public transport very rarely takes you there [to the YDNP]'* (IP 2). CR 3 equally identified *'no private transport available'* as the main challenge to accessing places in the YDNP, as an explanation for why the calendar had not necessarily encouraged them to visit these places more.

However, transport is not the only barrier to accessing the YDNP for the recipients of the calendar. As mentioned above, there are myriad reasons for why people from underrepresented groups may not access protected landscapes. As shown by the following interview excerpt, these barriers do not function in isolation:

I think sometimes when I've taken a big group on public transport, the comments have been quite negative and like 'they're taking over the bus' and things like that...and the comments were not like, um, they come across as racist, actually. Looking back at it. But we didn't take any action because it's like for the group to

stay like happy and content...but at the back of it, I think there was that fear of, what if somebody like went worse?

(IP 4)

During a previous trip into the YDNP, IP 4 had taken a group of service users – a group of Pakistani women – on public transport and experienced a negative reaction. In this case, transport was not necessarily a barrier as it was available, but it became a barrier due to the discrimination that the group faced, which also affected their confidence in accessing the YDNP via public transport. As IP 4 went on to recount, *'they don't want to use public transport again after that'*, and it *'has stopped me going much on buses.'* It would therefore seem that barriers to accessing PLs can act in a negative feedback loop/vicious cycle, and at the very least demonstrates the complexity of the barriers to countryside or protected landscape access, as highlighted by the Commission on Race and Ethnic Disparities (2021).

While fear of discrimination was specific only to the group mentioned by IP 4, fear and lack of confidence are nevertheless a barrier for calendar recipients when considering visiting the Yorkshire Dales National Park. This lack of confidence has been linked by HCPs to stress and anxiety, which may be caused by existing mental ill health, as well as to the more practical aspects of accessing a rural area:

That's the thing of people not having the knowledge of how to be safe in their spaces. And navigate and explore those spaces safely.

(IP 2)

For those that transport isn't a barrier, I would say the biggest barrier is their anxiety and worry, for the fact that they're going somewhere new, they don't know it. They don't necessarily want to go alone in case they get lost. They don't always have the skills to be able to map read or go somewhere simple.

(IP 3)

A lot of the ladies have never, ever bought a ticket on their own. Some of them had never been on a train before.

(IP 4)

IP 3 expanded on their statement by mentioning that independently going to some of the places suggested in the calendar is ‘*quite scary*’ for the calendar recipients. Once again, these barriers do not operate in isolation; lack of confidence is linked by the HCPs to a lack of awareness or familiarity with the landscape, as well as confidence using public transport in the first place. One of the FGP’s responses demonstrated this concept:

I do drive. Uh, I’m not very good with a satnav, because sometimes the satnav takes you in the wrong direction. And then I’m afraid to get lost. And being in the middle of nowhere, where do you go? To find your way out.

(FGP C)

Once again, the link between confidence, transport and awareness of the environment is made evident. Whilst the calendar aims to encourage more visits to the YDNP for health and wellbeing, particularly among underserved groups, issues around transport and discrimination are systemic (Commission on Race and Ethnic Disparities, 2021; National Centre for Social Research, 2022), and cannot be overcome by the calendar. With this being said, as using the calendar may lead to a greater likelihood to continue using it, at least in the case of motivation as a barrier, it may be that using the calendar could start to address some of these barriers to protected landscape access. It is important to consider that recent research has shown that there is a multiplicity of reasons, in addition to access barriers, that those from ethnically diverse backgrounds do not access the English countryside (Palmer *et al.*, 2025), although these issues were beyond the scope of this study.

Aspiration, achievement and facilitation promote access to YDNP

Although confidence is a clear barrier to accessing the YDNP for the recipients of the calendar, using the calendar could itself contribute to increasing the confidence of its recipients to access nature and potentially protected landscapes independently. At the very

least, it increases awareness of ‘what’s out there’, which leads to an aspiration, or a desire, to visit.

Even when I’m feeling most divorced from nature and can’t face going out and stuff, I think it’s still a reminder that it is out there.

(FGP B)

This is the first time I’ve used [the calendar] in a group experience. But, yeah, it’s just, um, been a good experience doing this. I feel more inspired to use it on my own...

(FGP A)

You know, we went on them trips, and it really opened my eyes, you know, I mean, it just, how many beautiful places there is, not far away from here, you know? It does inspire me...

(FGP C)

Once this aspiration is fulfilled, it results in a sense of achievement, similarly to how FGP B described the sense of achievement from completing an activity. It was observed by IP 1 that going to the YDNP, even as part of a facilitated group activity, is ‘*a massive achievement for some people...a bit of an achievement and a goal.*’ Equally, IP 2 suggested a similar response from calendar recipients or YDNP visitors after overcoming barriers to accessing a protected landscape:

It’s like, wow, I’ve done it. I managed to get out to this space. And it’s been really inspiring, all really positive, and it’s been a real challenge to do it, and it’s gone really well. So, I get that kind of buzz and kind of feeling like, oh, yeah, I’ve done it. I’ve done something potentially very difficult.

(IP 2)

The calendar could, therefore, be positioned as a starting point in facilitating protected landscape access, if not the entire solution to overcoming existing barriers. In addition to acting as a reminder that nature is out there and a source of inspiration that may inspire

future visits, for some recipients using the calendar has led to a tangible change in behaviour concerning accessing nature and the YDNP. IP 2 reflected on the influence that using the calendar, alongside visiting the YDNP on facilitated trips, had on some of their organisation's service users:

[They] started their own kind of, like, walking group together. And just go out, like, every couple of weeks. Just locally, all a bit further afield. But that was, that came out as a hook, like Yorkshire Dales.

(IP 2)

IP 3, a health and wellbeing professional from a different organisation, observed a similar behaviour change in calendar recipients:

I've got two ladies that have, they've now started their own little walking group off the back of it [the calendar], and a little photography kind of collection. So, they've gone out and found different things that they want to bring in and share to different people in the groups and they've started doing more so they started doing trips out to the places that suggested it, is that suggested in the calendar.

(IP 3)

In both of these cases, using the calendar has arguably increased the recipients' confidence in accessing nature independently, whether it be locally or to places in the YDNP suggested in the calendar. It must also be noted that service users from both IP 2 and IP 3's organisations had participated in a programme of facilitated visits to the YDNP as well as receiving the calendars. This leads to a key theme that must be considered when addressing the question of whether the calendar resource facilitates visits and access to the YDNP, which is that the calendar does not operate in isolation but functions best as **part of a bigger system**. IP 2 expanded on how facilitating visits to the YDNP, alongside using the calendar resource, could aid in overcoming a series of interconnected barriers:

There's all these amazing kind of, like, green spaces around, but people, whether that's too, with their mental health or whether it's like transport they can't get,

through, or financial reasons, they can't get to these spaces, or culturally, they don't feel it's, like, the kind of spaces you go to...if we can help facilitate that, so that you can have, you can get to some of these spaces that you want to go to, or you don't know exist, and think actually these spaces are for us.

(IP 2)

Systemic thinking: the calendar as part of a bigger system

Thus far, this chapter has been defined by the synergy between barriers and facilitators that do not function in isolation but as part of a wider system. Equally, the themes identified and explored throughout this chapter as a whole relate to each other in a myriad of ways, as demonstrated by **Figure 4.2** in the introduction to this chapter. These relationships are explored more fully in the further discussion and conclusion chapter of this dissertation. Here, however, it is important to consider the theme of the calendar being part of a bigger system, as revealed in the data, in addition to a facilitator of calendar use itself and protected landscape access. First of all, the Nature Prescriptions calendar was highlighted as being most useful when operating within an existing healthcare system:

The idea that, if somebody is anxious, or isolated, or depressed, then giving them medication might be addressing the symptoms, rather than the cause of why that is, and it might be a part of the solution, but, um, you might be kind of, on antidepressants, but still not getting out and seeing people, and still be isolated, and maybe, like, getting out and doing an activity, and seeing people might be a better route to wellness...

(IP 1)

IP 1 acknowledges the value of a resource like the Nature Prescriptions calendar as a non-medical intervention for wellbeing and, indeed, highlights the importance of social prescribing resources as part of the healthcare system, echoing the findings of Tierney *et al.* (2020) concerning the importance of social prescribing as a core component of healthcare policy. They then go on to report that '*the calendar is a really good resource, but I think it's a... Part of something else*' and '*one part of that bigger picture*' (IP 1).

IP 3 said that they *'use it as a bit of a tool alongside what we already do to help widen those skills'*, echoing the idea proposed by IP 1 about the calendar being part of something else, and describing how it had already been built in to the existing programme offered by their organisation. IP 2 concurred:

For us now, it's about, if we use the calendar, building it into our programme much more. So, it's much more linked into our outdoor programme, and using it as a tool within those activities. So, yeah, that would be my big solution.

(IP 2)

HCP 3 also agreed the calendar would be most useful *'accompanying a nature programme/explanations'*, once more positioning it as part of a wider system. Systems thinking aims to solve problems by finding connections or relationships between the elements, either social, economic, or ecological, of a system (Souliotis and Voulvoulis, 2025), a view which is reflected by the HCPs who have been using the calendar in their practice. To build upon this, the theme of being part of a bigger system is also evident in HCP and FGPs' responses to the resource, this time related to humans being part of a wider ecological system.

I think it's really good that it [the nature connectedness scale] does acknowledge that you can feel completely divorced and separate to nature. But there is always a possibility of an overlap, so even when you're feeling completely disconnected it's not excluding. 'Cause it's acknowledged there, so I just think that's helpful.

(FGP B)

[How to connect with nature], they're all things we once knew, that were natural to us. And I think being able to reconnect with that actually helps us feel connected in general, not just to ourselves, but to the wider world.

(IP 3)

[Pakistani immigrants to the UK] are forgetting who and what they actually love. It's like the littlest things are made out of nature, the pots and pans are made out of clay. Every little element in their life was natural and...like my generation who's been brought up here and stuff and we don't know that life and we don't know any better like yeah, we just live in inner-city areas.

(IP 4)

Not only does this add to the argument that the Nature Prescriptions calendar operates within a system that includes multiple different interacting elements, including between the social and the ecological; it also demonstrates how the Nature Prescriptions calendar, and engaging with nature for wellbeing in general, could inspire a 'return' to a mode of thinking that that views humans and nature as interconnected (as laid out by Amengual-Moreno *et al.*, 2025).

To once more adopt a systemic viewpoint within the context of this chapter, this also links to the mechanisms through which calendar recipients engage with nature and the Yorkshire Dales National Park, particularly where engaging in pro-environmental behaviours within the landscape may result in greater identification with and desire to protect it.

4.5 Conclusion

This chapter has presented the outcomes of the research in a chronologically-inspired structure, including key themes identified during reflexive thematic analysis which are pertinent to the overall objectives of the research. These include: the arguments of pre-existing connection to nature and perceived legitimacy of the Nature Prescriptions calendar resource as they relate to both prescribing and receiving the calendar; the mechanisms for connecting with nature and the YDNP landscape as exposed through the use of the calendar; the barriers and facilitators to both using the calendar and accessing the YDNP, and the reflexive 'virtuous circle' relationship between these barriers and facilitators.

In addition to this, the systemic relationship between the themes has been considered in a preliminary manner. In a 'full-circle' effect, the barriers and facilitators to calendar use and

YDNP access discussed in **4.3** may prevent or enhance the development of the connection with nature discussed in **4.1**, which itself may enhance or inhibit engagement with and wellbeing benefits gained from calendar use and YDNP visitation. Equally, the barriers and facilitators discussed are important to consider when addressing the specific mechanisms for connecting with nature and protected landscapes.

These relationships and their interactions, the way in which they contribute towards fulfilling the objectives of this study, and their implications for both practical action and future research, will be discussed in more detail in the following, concluding chapter of this dissertation.

Chapter 5

Further discussion and conclusion

The preceding chapter presented the outcomes and findings of the research, in addition to a preliminary discussion of the results and themes. This chapter further highlights the relationships between these themes, following the systemic perspective that has been employed throughout this dissertation, and draws further conclusions from them. It also highlights areas for further research into the relationship between nature, protected landscapes and wellbeing in general, as well as presenting practical recommendations for the Nature Prescriptions calendar project in particular.

5.1 Further discussion of findings

During analysis of the results, key themes relating to the overall objective of this study – researching and evaluating the impact of the YDNP Nature Prescriptions project – emerged. The ways in which the different themes and findings move towards fulfilling this objective, both in relation to previous findings as laid out in the literature review and in relation to the new findings pertaining to the Nature Prescriptions calendar specifically, will be discussed in this section.

The key findings of this study are as follows:

- A pre-existing relationship with nature may mediate engagement with the Nature Prescriptions calendar in both calendar recipients and prescribers; a greater affinity for nature predicts a higher rate of engagement and potentially a greater prescription rate. The Nature Prescriptions training and using the resource may also contribute to the perceived legitimacy of GSP as an intervention for health and wellbeing.
- Contact and meaning are key mechanisms for connecting with both nature and with the YDNP for wellbeing through calendar use; knowledge and compassion may also be pathways towards increasing a sense of connection with the protected landscape.

- Barriers to calendar use are language and motivation; barriers to accessing the YDNP are transport, fear of discrimination and confidence; while some of these barriers remain systemic, others may be addressed and overcome through calendar use in a 'virtuous circle' effect.
- The calendar resource is most effective and has most potential when positioned as part of a bigger system rather than used in isolation.

The following section discusses how these findings are significant for each 'stage' of the calendar's lifecycle: its prescription and reception, its use, and the barriers and facilitators to calendar use and YDNP access.

Prescribing and receiving the calendar

The results suggested that for both recipients and prescribers of the Nature Prescriptions calendar, a pre-existing connection with nature was potentially a pre-requisite for engagement with the calendar. Prescribers' responses indicated that calendar recipients were more receptive to the idea of a nature prescription if they were already interested in nature, or aware of the benefits of spending time in nature; conversely, they were dismissive of the idea if they did not have an awareness of the benefits. Equally, it was found that the likelihood of HCPs prescribing the calendar, and nature as an intervention in general, may depend on their pre-existing relationship with nature. This corroborates the findings of Rosa *et al.* (2020), who posit that higher levels of nature connectedness can predict a preference for nature recreation in general. It also mirrors findings pertaining to the specific use of the Nature Prescriptions calendar; during the Edinburgh pilot study, it was found that the willingness of prescribers to adopt the calendar depended on their predisposition towards nature engagement (Bradley, 2022). This study builds upon these findings, as providing training for HCPs on the use of the Nature Prescriptions calendar – thereby increasing their awareness of it – increased the likelihood of HCPs prescribing nature as an intervention across 75% of survey respondents. It also indicates that this trend exists not only in prescribers, but in recipients of the calendar, both of which are significant when considering calendar prescription.

The theme of a pre-existing relationship or connection with nature is also significant not when considering the wellbeing benefits gained from calendar use. It has previously been found that the wellbeing benefits gained from visits to nature, such as reduced stress and anxiety, are greater when an individual's level of nature connection is higher (Chia-Chen *et al.*, 2024), which has obvious implications for the effectiveness of the calendar. In addition to this, it has also previously been found that the wellbeing effects of green social prescribing may be limited when participants are forced to spend time in an unfamiliar natural environment (Pollard *et al.*, 2025; Tester-Jones *et al.*, 2020). The calendar may, therefore, be positioned as an effective resource for establishing the relationship and familiarity with nature which is a pre-requisite for continued engagement and for increased wellbeing effects, through its ability to increase recipients' connection with nature. This relationship will be further explored when discussing the mechanisms for connecting with both nature and a protected landscape that emerged during analysis of the data.

The second theme within the prescribing and receiving 'stage' of the calendar, emerging from data collected from both prescribers and receivers of the calendar, was an increased perceived legitimacy of the resource. The 'legitimacy' of GSP and social prescribing in general has previously been explored in the literature, as it is a relatively recent phenomenon that can result in significant wellbeing benefits (Thomas, Aggar and Massey *et al.*, 2022; Lynch *et al.*, 2025), but is difficult to define (Stanhope and Weinstein, 2025) and evidence for it is at high risk of bias (Darcy *et al.*, 2025). The findings suggested that, in spite of the recent interest in nature's impact on health, demonstrated in **2.2** in this dissertation, and a recent increase in green social prescribing interventions across the UK (**2.8**), there remains a lack of awareness around its potential as a genuine intervention in some groups of healthcare staff and potential patients. Despite this, the results also show that the Nature Prescriptions training, the quality of the resource and even its title result in both calendar prescribers and receivers taking it more seriously as a resource for wellbeing, potentially leading to increased engagement with it. This may also add to the perceived legitimacy of nature-based interventions and the ability of protected landscapes such as the Yorkshire Dales National Park to act as credible 'providers' of health and wellbeing benefits, or at least add to the limited evidence base for it.

These two initial themes of pre-existing connection with nature and legitimacy of the resource are clearly linked through prescribers and recipients' initial responses to undergoing the training and receiving the calendars, and are key in exploring the impact of the resource on those who have been using it. From a more practical point of view, this would suggest that increasing prescribers' connection to nature through further training or related programmes could have the potential to increase calendar use by recipients which, in turn, could lead to an increased connectedness in this group, further leading to greater wellbeing benefits from time spent in nature. The mechanisms by which this may happen through calendar use, as alluded to above, are discussed in the following subsection.

Connecting through the calendar: using the resource

The next 'stage' of the Nature Prescriptions calendar's lifecycle is the use of the calendar; the results show that a particularly important consideration during this stage is the calendar's effects on connection to both nature and the YDNP. Indeed, if a pre-existing relationship with or connection to nature is to be considered both a driving force behind engagement with the resource and a mediator of the wellbeing effects of contact with nature, these mechanisms are significant when investigating how the project may improve wellbeing, especially among underserved groups who are known to access green space, the countryside and protected landscapes less frequently.

After undergoing an hour of nature connection activities from the calendar, all of the focus group participants reported feeling more connected to nature; they also concurred that the activities had positively impacted how they feel, in a reflection of findings that indicate the link between nature connection and happiness and wellbeing (Cleary *et al.*, 2017). Equally, the majority of calendar recipients who completed the short questionnaire indicated that using the calendar helped them feel more connected to nature. In fact, it was also suggested that attending the Nature Prescriptions training and having access to the calendar could improve HCPs' connection with nature, and therefore their health and wellbeing; 56% of survey respondents said that they were now more likely to spend time in nature for their own wellbeing.

The findings suggest that the key mechanisms for this increased sense of connection, as facilitated by engagement with the calendar, are contact and meaning. This corroborates the initial findings of Lumber *et al.* (2017), built upon more recently by Richardson *et al.* (2021a), that both contact and meaning are pathways to nature connection, and demonstrates how these mechanisms manifest through specific use of the Nature Prescriptions calendar. The results also indicate that the pathways of contact and meaning are linked, reflecting the argument that nature connection is not a simple, unidimensional construct (Hague *et al.*, 2024), in addition to the idea that nature contact may mediate nature connection (Liu *et al.*, 2022). This demonstrates how engaging with the calendar leads to wellbeing benefits for its recipients. However, a more pertinent question for this dissertation may be how engaging with the calendar can lead to connection with, and benefits from the YDNP specifically.

The findings show that, similarly to the pathways for engaging with nature in general, contact and meaning are key mechanisms for connecting with the YDNP for calendar recipients. In contrast to the way that contact mediates connection with nature in general – that is, through employing the senses to really notice it, rather than simply spending time in it (Richardson *et al.*, 2021) – just visiting the YDNP was enough for calendar recipients to then feel a connection with the landscape, and recall the positive experience that they had in it, through viewing the photos in the calendar afterwards. In addition to this, being able to recognise places from the photos seen in the calendar was suggested as adding to the meaning and understanding of the landscape for participants. As is discussed later, this positions the calendar as part of the solution to increasing access to protected landscapes for wellbeing, if not the whole solution.

The link between nature connection and pro-environmental behaviour has previously been studied at length, with a positive association found between the two (Capaldi *et al.*, 2014, for example). Although this relationship did not emerge when analysing the mechanisms for nature connection through the calendar, it was in fact noted by research participants that caring for a landscape such as the YDNP could lead to greater connection with it. This once again reflects the findings of Lumber *et al.* (2017), who identified compassion as a pathway to nature connection. In the case of the Nature Prescriptions project, however, it would

appear that this mechanism is particularly significant for engagement with the landscape, not just nature in general. In another departure from the findings of Lumber *et al.* (2017), who posit that knowledge is not an effective pathway to nature connection, it was found that increasing knowledge of the YDNP was another mechanism for more effectively connecting with the landscape.

It is also suggested later in this chapter that increasing awareness of nature and the YDNP may contribute to overcoming specific barriers to accessing them which, when a systemic lens is adopted, would also suggest that removing barriers is a key aspect of *connection* as well as *access*. This positions that ability to form a connection with nature as an issue of green health inequality; it has been established in both the literature and this study that contact with nature is a key part of forming a connection with it (Barragon-Jason *et al.*, 2023), yet those who stand to gain the most from establishing a connection with nature (Belcher *et al.*, 2024) are the least likely to have the means to form such a connection. Until now, research into green health inequality has been focused on access or proximity to green space rather than nature connection, but as the mechanisms for creating a sense of nature connectedness, in addition to establishing a connection to a protected landscape, may depend on physical contact with elements of that landscape, it is imperative that future research addresses this relationship.

This also supports the argument that nature connectedness should be considered as a measure for global well-being (Lambert *et al.*, 2020), particularly when considering how determinants of health operate across different groups in society. To shift the lens from global to local, these findings are significant for the Nature Prescriptions project as they not only demonstrate how the calendar successfully employs mechanisms for increasing nature connection, which subsequently improves wellbeing; they also show how the calendar may increase interaction with the YDNP protected landscape. This potential is still mitigated, however, by the barriers to both using the calendar and accessing the YDNP.

A virtuous circle? Identifying and overcoming barriers

The findings of this study indicate that language and literacy, in addition to motivation, were key barriers to using the calendar. This builds upon the evaluation of the Derbyshire Dales Nature Prescription evaluation workshop, where motivation was also identified as a key barrier by prescribers (PDNPA, 2024). Interestingly, the Edinburgh Nature Prescriptions pilot suggested that most patients did not experience significant barriers to using the calendar (Bradley, 2022); this has been shown to not be the case with Nature Prescriptions projects in protected landscapes, rather than in urban areas, which has implications for the future of any Nature Prescriptions-style GSP in a protected landscape context. Admittedly, the evidence base is still limited, and more research will be required to identify the difference in barriers to calendar use across different landscapes.

Prior to the 2026 Natural Health Service for North Yorkshire pilot evaluation (Ratcliffe *et al.*, 2026) there had also been no significant research undertaken into the barriers to accessing protected landscapes as part of a GSP programme. The results of this study, as well as the findings in this dissertation, indicate that previously identified barriers to accessing the countryside – transport, lack of awareness and knowledge, and fear of discrimination (National Centre for Social Research, 2022) – are also endemic in the YDNP, even alongside Nature Prescriptions calendar use, across the underserved groups¹³ involved.

The results also show that the calendar may go some way towards overcoming the person-centred barriers of motivation and confidence, acting as a source of motivation and a means to build knowledge around interacting with natural environments and leading to positive behaviour change in some individuals. However, if more systemic barriers to protected landscape access are to be overcome – essential when considering how more diverse communities may profit from the wellbeing benefits potentially offered by protected landscapes – the Nature Prescriptions calendar must be positioned as only a part, but

¹³ Underserved groups within the YDNP include those from minority ethnic backgrounds, people with disabilities and mental or physical health conditions, and people experiencing socio-economic disadvantage (YDNPA, 2025); participants in this study included those with long-term mental ill health, and health and wellbeing professionals who work with all of the above groups.

nevertheless an important one, of the process of overcoming these barriers. The findings suggest this process could include more facilitated visits to the YDNP, combined with use of the calendar before, during and after these visits to create and maintain a sense of connection with the landscape.

In addition to this, and building upon the perceived legitimacy of the resource, the results show that the Nature Prescriptions calendar is also recognised as an important part of an existing healthcare system of which social prescribing is a core component (Tierney *et al.*, 2020) – yet still just one component of a system – by the HCPs who have been prescribing it. This also supports findings of Yorkshire and Humber test and learn programme (Hurd and Armitt, 2023) which called for GSP to be systematised, and for the evidence base on GSP in North Yorkshire to be built upon. Indeed, the Natural Health Service evaluation (Ratcliffe *et al.*, 2026) both demonstrates how the Nature Prescriptions calendar may be integrated into such a system and identifies a ‘lack of system readiness’ as a barrier to increased uptake.

The healthcare system is not the only system within which the Nature Prescriptions calendar is positioned by the results, however. It was also recognised by participants that the calendar has the potential to induce its users, both prescribers and recipients, to consider their relationship to the wider ecological system, in a move towards the integrated human-ecological system suggested by Bateson (1972), and in a paradigm shift away from the anthropocentric view of the natural world which has persisted for centuries (Amengual-Moreno *et al.*, 2025).

5.3 Recommendations and further research

Considering the above, it is therefore recommended that the Nature Prescription calendar continue to be integrated into new and existing social prescribing systems through training for healthcare providers and the continued establishment of relationships with local healthcare providers and community groups; this would contribute towards fulfilling some of the aims of the YDNP 2025-30 Management plan, with respect to increasing the number of people whose health and wellbeing is supported by the YDNP.

If the diversity of people who benefit from the YDNP is to be increased, however – the most recent survey showed that only 3% of UK visitors to the national park were from minority ethnic backgrounds (Roberts *et al.*, 2022) – this study has also shown that practical and systemic barriers to accessing the protected landscape and fully engaging with the calendar persist. Although making recommendations to address these systemic barriers is beyond the scope of this study, it is recommended that foreign-language and picture-led versions of the Nature Prescriptions calendar are developed in order to increase the diversity of communities who may benefit from the resource.

In addition to acting as an evaluation of the Nature Prescriptions calendar, this study has also gone some way towards addressing the dearth of research into the potential positive effects of the UK's protected landscapes on human health and wellbeing. It has positioned the YDNP as part of the conversation on green social prescribing, health inequality and, to some extent, the twin issues of social and ecological justice. It is also recognised that there remains a great deal of further research to be undertaken into these areas in a protected landscape context.

The first key area for research that has not necessarily been approached by this study is the potential difference in wellbeing outcomes between engaging with the calendar in nearby nature and a national park. The Nature Prescriptions calendar has the potential to increase connection with nature and with the YDNP, however further interrogation of how this connection, and the related wellbeing benefits it offers, may differ in a protected landscape context is required. In addition to this, whether different protected landscapes have different health effects for different populations may also be considered in the future.

More research is also required into the specific barriers to accessing the Yorkshire Dales National Park for its underserved communities and satellite urban communities. In relation to this, how the Nature Prescriptions calendar may be further integrated into NHS practice and community practice in the surrounding area could be further explored, particularly in discussions of how to reach underserved communities.

5.4 Conclusion

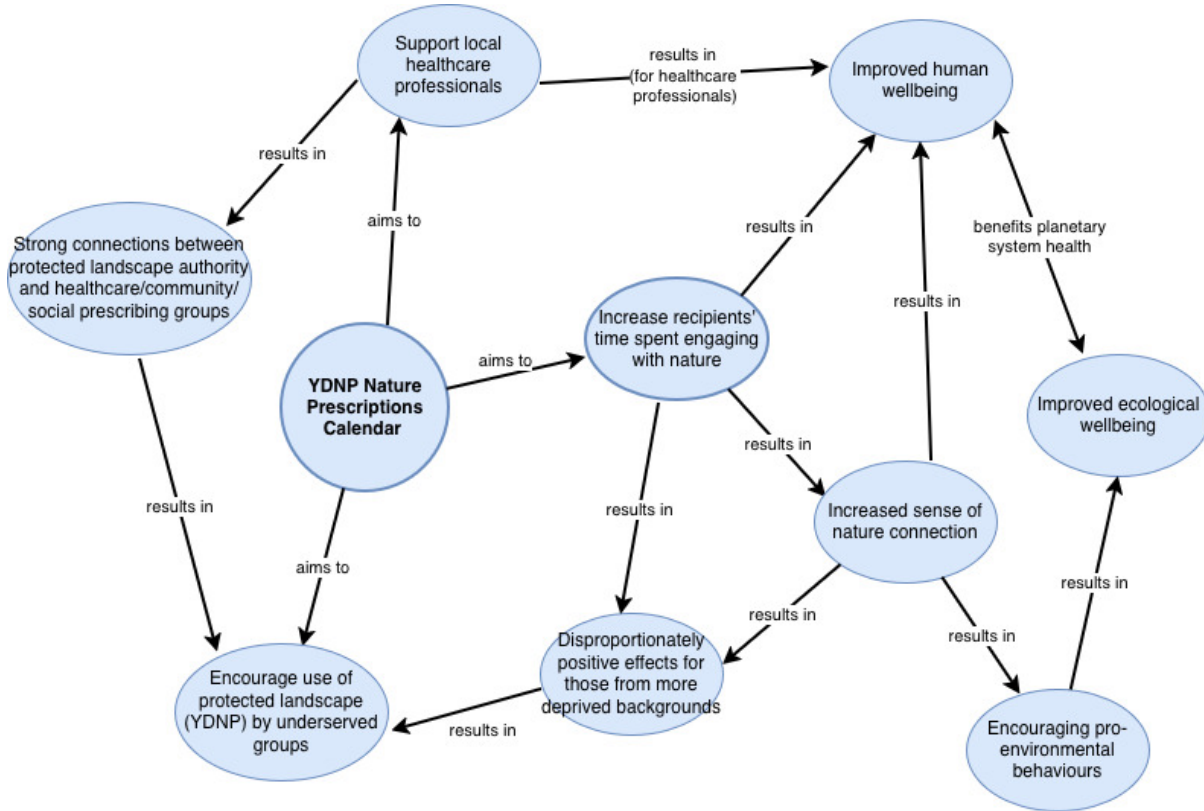
Throughout the discussion, as throughout this dissertation, it has been clear that each of the themes discussed and the subjects approached are intrinsically linked. Addressing the extent to which the research questions have been fulfilled throughout the study must therefore also be done from a systems-based point of view. The conclusion to this dissertation returns once more to **Figure 5.1**, the diagram of relationships between themes developed through the course of the literature review, to examine this.

The Nature Prescriptions calendar resource has been used in a variety of ways by both healthcare professionals and calendar recipients; this includes one-to-one conversations, group interventions, individual use and, to a certain extent, integration into existing local green social prescribing programmes. It is clear that its use has the potential to benefit the mental health and wellbeing of not only calendar recipients, but also the wellbeing of calendar prescribers, through increasing their sense of connectedness with nature. Undertaking conservation-based activities is suggested as a pathway to connecting with both nature and the YDNP protected landscape for wellbeing; similarly, reflecting on previous visits to special locations in the YDNP by using the calendar is also suggested as a pathway to this.

Despite these findings, it is also clear that the calendar has not necessarily reduced practical and systemic barriers to accessing the YDNP, such as transport and fear of discrimination, however it may contribute towards addressing barriers such as confidence in interacting with nature and encourages an aspiration to visit the national park.

From a more positive point of view, using the calendar may result in facilitating further future calendar use and nature interaction through a virtuous circle effect, as the results indicate that it may act as a source of motivation. Using the calendar results in a greater sense of connectedness to nature, which may also lead to greater wellbeing benefits from future nature interactions, either with nearby nature or within the YDNP.

Figure 5.1: system-based relationships between themes in the literature review



Ultimately, this research has shown that the YDNP Nature Prescriptions project has the potential to add to an existing system of healthcare and impact positively on the behaviour of individuals, particularly when it comes to increasing their nature connection for wellbeing. However, it has also highlighted the ongoing need to address continued barriers to accessing not only the YDNP but all of the UK's protected landscapes and countryside in general, if those who would benefit most from engaging with nature are to be able to access it. It has also demonstrated the importance of a systems-thinking, holistic approach to considering the social and ecological implications of positioning protected landscapes as facilitators of human health and wellbeing, from both an academic perspective and in evidence-based practice.

References

- Acocella, I. (2012). The focus groups in social research: Advantages and disadvantages. *Quality & Quantity*, 46(4), 1125–1136. <https://doi.org/10.1007/s11135-011-9600-4>
- Adisasmito, W. B., Almuhairi, S., Behraves, C. B., Bilivogui, P., Bukachi, S. A., Casas, N., Cediel Becerra, N., Charron, D. F., Chaudhary, A., Ciacci Zanella, J. R., Cunningham, A. A., Dar, O., Debnath, N., Dungu, B., Farag, E., Gao, G. F., Hayman, D. T. S., Khaita, M., Koopmans, M. P. G., ... Zhou, L. (2022). One Health: A new definition for a sustainable and healthy future. *PLoS Pathogens*, 18(6), e1010537. <https://doi.org/10.1371/journal.ppat.1010537>
- Alcock, I., White, M. P., Lovell, R., Higgins, S. L., Osborne, N. J., Husk, K., & Wheeler, B. W. (2015). What accounts for 'England's green and pleasant land'? A panel data analysis of mental health and land cover types in rural England. *Landscape and Urban Planning, Special Issue: Critical Approaches to Landscape Visualization*, 142, 38–46. <https://doi.org/10.1016/j.landurbplan.2015.05.008>
- Alcock, I., White, M. P., Wheeler, B. W., Fleming, L. E., & Depledge, M. H. (2014). Longitudinal Effects on Mental Health of Moving to Greener and Less Green Urban Areas. *Environmental Science & Technology*, 48(2), 1247–1255. <https://doi.org/10.1021/es403688w>
- Allan, R., Williamson, P., & Kulu, H. (2017). Unravelling urban–rural health disparities in England. *Population, Space and Place*, 23(8), e2073. <https://doi.org/10.1002/psp.2073>
- Amengual-Moreno, M., Cash-Gibson, L., Vivas, L., Martínez-Herrera, E., Almazán, A., Pericàs, J. M., & Benach, J. (2025). Health & nature: A critical review of historical perspectives to support narratives for change. *International Journal for Equity in Health*, 24(1), 247. <https://doi.org/10.1186/s12939-025-02550-y>
- Annerstedt, M., Jönsson, P., Wallergård, M., Johansson, G., Karlson, B., Grahn, P., Hansen, A. M., & Währborg, P. (2013). Inducing physiological stress recovery with sounds of nature in a virtual reality forest—Results from a pilot study. *Physiology & Behavior*, 118, 240–250. <https://doi.org/10.1016/j.physbeh.2013.05.023>
- Arnold, R. D., & Wade, J. P. (2015). A Definition of Systems Thinking: A Systems Approach. *Procedia Computer Science, 2015 Conference on Systems Engineering Research*, 44, 669–678. <https://doi.org/10.1016/j.procs.2015.03.050>
- Astell-Burt, T., Hartig, T., Putra, I. G. N. E., Walsan, R., Dendup, T., & Feng, X. (2022). Green space and loneliness: A systematic review with theoretical and methodological guidance for future research. *Science of The Total Environment*, 847, 157521. <https://doi.org/10.1016/j.scitotenv.2022.157521>
- Barnett, K., Mercer, S. W., Norbury, M., Watt, G., Wyke, S., & Guthrie, B. (2012). Epidemiology of multimorbidity and implications for health care, research, and medical education: A cross-

sectional study. *The Lancet*, 380(9836), 37–43. [https://doi.org/10.1016/S0140-6736\(12\)60240-2](https://doi.org/10.1016/S0140-6736(12)60240-2)

Barragan-Jason, G., Loreau, M., de Mazancourt, C., Singer, M. C., & Parmesan, C. (2023). Psychological and physical connections with nature improve both human well-being and nature conservation: A systematic review of meta-analyses. *Biological Conservation*, 277, 109842. <https://doi.org/10.1016/j.biocon.2022.109842>

Bateson, G. (1972) *Steps to an ecology of mind*, Jason Aronson Inc. Northvale, New Jersey

Belcher, R. N., Murray, K. A., Reeves, J. P., & Fecht, D. (2024). Socioeconomic deprivation modifies green space and mental health associations: A within person study. *Environment International*, 192, 109036. <https://doi.org/10.1016/j.envint.2024.109036>

Berto, R. (2005). Exposure to restorative environments helps restore attentional capacity. *Journal of Environmental Psychology*, 25(3), 249–259. <https://doi.org/10.1016/j.jenvp.2005.07.001>

Bickerdike, L., Booth, A., Wilson, P. M., Farley, K., & Wright, K. (2017). Social prescribing: Less rhetoric and more reality. A systematic review of the evidence. *BMJ Open*, 7(4), e013384. <https://doi.org/10.1136/bmjopen-2016-013384>

Bird, W., Epel, E., Ickovics, J. R., & van den Bosch, M. (2018). Unifying mechanisms: Nature deficiency, chronic stress, and inflammation. In M. van den Bosch, W. Bird, M. van den Bosch, & W. Bird (Eds.), *Oxford Textbook of Nature and Public Health: The role of nature in improving the health of a population* (p. 0). Oxford University Press. <https://doi.org/10.1093/med/9780198725916.003.0034>

Blunden, J., Curry, N. and Great Britain Countryside Commission. (1990) *A People's Charter? : Forty Years of the National Parks and Access to the Countryside Act 1949*. London: H.M.S.O.

Bock, J. L., Nesbitt, L., Mavoa, S., & Jarvis, I. (2026). Literature review of human interactions with urban nature and their mental health associations. *Environment & Behavior*, 58(2), 262–302. (190817888). <https://doi.org/10.1177/00139165251401858>

Boluda-Verdú, I., Senent-Valero, M., Casas-Escolano, M., Matijasevich, A., & Pastor-Valero, M. (2022). Fear for the future: Eco-anxiety and health implications, a systematic review. *Journal of Environmental Psychology*, 84, 101904. <https://doi.org/10.1016/j.jenvp.2022.101904>

Bosch, M. van den, & Bird, W. (2018). *Oxford Textbook of Nature and Public Health: The Role of Nature in Improving the Health of a Population*. Oxford University Press.

Boyd, F., Allen, C., Robinson, J. M., & Redvers, N. (2024). The past, present, and future of nature and place-based interventions for human health. *Landscape Research*, 49(1), 129–145. <https://doi.org/10.1080/01426397.2023.2244430>

Bradley, S., & Narzisi, K. (2026). Cycling to health: A qualitative research study into facilitators and barriers to physical activity take-up amongst those experiencing mental health ill-

health. *Advances in Mental Health*, 0(0), 1–13.
<https://doi.org/10.1080/18387357.2026.2632922>

Bradley, E. (2022). A report on the outcomes of an urban pilot of Nature Prescriptions in Edinburgh. RSPB. <https://base-prod.rspb-prod.magnolia-platform.com/dam/jcr:29370331-1b85-42a4-b11d-194d5f0134c8/Edinburgh-pilot-final-report.pdf>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

Braun, V. (2021). *Thematic Analysis: A Practical Guide* / Virginia Braun, Victoria Clarke. SAGE Publications, Ltd. (UK).
<https://openurl.ebsco.com/contentitem/cat01061a:ysjl.SGCAT1.9781526417299?sid=ebsco:plink:crawler&id=ebsco:cat01061a:ysjl.SGCAT1.9781526417299&crl=c>

Braveman, P. (20250701). Health Inequalities, Disparities, Equity: What's in a Name? *American Journal of Public Health*, 115(7), 996–1002. <https://doi.org/10.2105/AJPH.2025.308062>

Breen, T., Flint, A., Hickman, C., & O'Hara, G. (2023). Whose right to roam? Contesting access to England's countryside. *The Journal of Transport History*, 44(2), 276-307

Browning, M. H. E. M., Rigolon, A., McAnirlin, O., & Yoon, H. (Violet). (2022). Where greenspace matters most: A systematic review of urbanicity, greenspace, and physical health. *Landscape and Urban Planning*, 217, 104233.
<https://doi.org/10.1016/j.landurbplan.2021.104233>

Butler, R., & Boyd, S.W. (2000). *Tourism and National Parks: Issues and Implications*. John Wiley & Sons Inc.

Buxton, R. T., Pearson, A. L., Allou, C., Fristrup, K., & Wittemyer, G. (2021). A synthesis of health benefits of natural sounds and their distribution in national parks. *Proceedings of the National Academy of Sciences*, 118(14), e2013097118. (world).
<https://doi.org/10.1073/pnas.2013097118>

Capaldi, C. A., Dopko, R. L., & Zelenski, J. M. (2014). The relationship between nature connectedness and happiness: A meta-analysis. *Frontiers in Psychology*, 5, 976.
<https://doi.org/10.3389/fpsyg.2014.00976>

Capaldi, C. A., Passmore, H.-A., Nisbet, E. K., Zelenski, J. M., & Dopko, R. L. (2015). Flourishing in nature: A review of the benefits of connecting with nature and its application as a wellbeing intervention. *International Journal of Wellbeing*, 5(4). <https://doi.org/10.5502/ijw.v5i4.449>

Chughtai, S., & Blanchet, K. (2017). Systems thinking in public health: A bibliographic contribution to a meta-narrative review. *Health Policy and Planning*, 32(4), 585–594.
<https://doi.org/10.1093/heapol/czw159>

- Clark, T., Foster, L. & Sloan, L. Bryman, A. (2021). *Bryman's Social Research Methods Sixth Edition.*, Oxford University Press
- Cleary, A., Fielding, K. S., Bell, S. L., Murray, Z., & Roiko, A. (2017). Exploring potential mechanisms involved in the relationship between eudaimonic wellbeing and nature connection. *Landscape and Urban Planning*, 158, 119–128.
<https://doi.org/10.1016/j.landurbplan.2016.10.003>
- Cooper, M., Avery, L., Scott, J., Ashley, K., Jordan, C., Errington, L., & Flynn, D. (2022). Effectiveness and active ingredients of social prescribing interventions targeting mental health: A systematic review. *BMJ Open*, 12(7), e060214. <https://doi.org/10.1136/bmjopen-2021-060214>
- Creswell, J. W. & Creswell, J. D. (2023), *Research Design; Qualitative, Quantitative and Mixed Methods Approaches*, 6th ed., SAGE, London
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research*. (3rd ed.). Los Angeles, CA: SAGE.
- Crotty, M. (1998), *The Foundations of Social Research*, 1st ed., SAGE, London
- Dahl, Å., van den Bosch, M., & Ogren, T. (2018). Allergenic pollen emissions from vegetation—Threats and prevention. In M. van den Bosch, W. Bird, M. van den Bosch, & W. Bird (Eds.), *Oxford Textbook of Nature and Public Health: The role of nature in improving the health of a population* (p. 0). Oxford University Press.
<https://doi.org/10.1093/med/9780198725916.003.0008>
- Darcy, P. M., Armit, H., Hurd, A., Paton, L. W., White, P. C. L., Coventry, P. A. (2025). Green Social Prescribing: A Before and After Evaluation of a Novel Community-Based Intervention for Adults Experiencing Mental Health Problems. *Health Soc Care Comm*, 2025 doi. (1003558). <https://research.ebsco.com/linkprocessor/plink?id=54f25ccc-ba99-3e44-9b27-7d14c0d16026>
- de Bell, S., Alejandre, J. C., Menzel, C., Sousa-Silva, R., Straka, T. M., Berzborn, S., Bürck-Gemassmer, M., Dallimer, M., Dayson, C., Fisher, J. C., Haywood, A., Herrmann, A., Immich, G., Keßler, C. S., Köhler, K., Lynch, M., Marx, V., Michalsen, A., Mudu, P., ... Bonn, A. (2024). Nature-based social prescribing programmes: Opportunities, challenges, and facilitators for implementation. *Environment International*, 190, 108801.
<https://doi.org/10.1016/j.envint.2024.108801>
- Denscombe, M. (2010) *The Good Research Guide*, 4th ed., The Open University Press, Maidenhead
- Denscombe, M. (2021) *The Good Research Guide*, 7th ed., The Open University Press, Maidenhead

- Dudley, N., & Stolton, S. (2010). *Arguments for Protected Areas: Multiple Benefits for Conservation and Use*. Routledge. <https://doi.org/10.4324/9781849774888>
- Fisher, J., Allen, S., Yetman, G., & Pistolessi, L. (2024). Assessing the influence of landscape conservation and protected areas on social wellbeing using random forest machine learning. *Scientific Reports*, 14(1), 11357. <https://doi.org/10.1038/s41598-024-61924-4>
- Frost, W., & Hall, C. M. (Eds.). (2012). *Tourism and National Parks: International Perspectives on Development, Histories and Change*. Routledge. <https://doi.org/10.4324/9780203884201>
- Frost, H., Tooman, T. R., Mason, B., Donaghy, E., Hawkins, K., Lewis, S., Wolters, M., & Mercer, S. W. (2025). General practitioners' views on green social prescribing in Scotland: Analysis of a national cross-sectional survey. *BJGP Open*. <https://doi.org/10.3399/BJGPO.2024.0259>
- Gaekwad, J. S., Sal Moslehian, A., Roös, P. B., & Walker, A. (2022). A Meta-Analysis of Emotional Evidence for the Biophilia Hypothesis and Implications for Biophilic Design. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.750245>
- George, A., Ahmed, D., Guo, L., Dissanayake, N., Clarke, P., & Dalrymple, B. (2025). Embedding systems thinking in local authority public health practice: A case study. *Perspectives in Public Health*, 145(5), 246–248. <https://doi.org/10.1177/17579139251317480>
- Glover, J., (2019). Landscapes review: National Parks and AONBs, DEFRA. <https://assets.publishing.service.gov.uk/media/5d8a19a3e5274a083d3b78bd/landscapes-review-final-report.pdf>
- Grigoletto, A., Toselli, S., Zijlema, W., Marquez, S., Triguero-Mas, M., Gidlow, C., Grazuleviciene, R., Van de Berg, M., Kruize, H., Maas, J., & Nieuwenhuijsen, M. J. (2023). Restoration in mental health after visiting urban green spaces, who is most affected? Comparison between good/poor mental health in four European cities. *Environmental Research*, 223, 115397. <https://doi.org/10.1016/j.envres.2023.115397>
- Groulx, M., Freeman, S., & Lemieux, C. (2022). Accessible nature beyond city limits – A scoping review. *Journal of Outdoor Recreation and Tourism*, 37, 100490. <https://doi.org/10.1016/j.jort.2022.100490>
- Hague, L., Brough, P., Buckley, R., Burton, N., & Spedding, J. (2025). Development and validation of the Nature Experiences Questionnaire: A brief multidimensional measure of nature connection. *Applied Psychology*, 74(1), e12565. <https://doi.org/10.1111/apps.12565>
- Han, K. (2001) A Review: Theories of Restorative Environments. *AHTA Journal of Therapeutic Horticulture*, 12, 30-43.
- Hansen, A., Chaber, A.-L., Reid, S., & Milazzo, A. (2025). Connecting the Dots: Systems Thinking Highlights the Role of the Environment Sector in One Health Operationalization. *Global Challenges*, 9(12), e00256. <https://doi.org/10.1002/gch2.202500256>

- Hart, J. T. (1971). THE INVERSE CARE LAW. *The Lancet*, 297(7696), 405–412.
[https://doi.org/10.1016/S0140-6736\(71\)92410-X](https://doi.org/10.1016/S0140-6736(71)92410-X)
- Hartig, T., Evans, G. W., Jamner, L. D., Davis, D. S., & Gärling, T. (2003). Tracking restoration in natural and urban field settings. *Journal of Environmental Psychology, Restorative Environments*, 23(2), 109–123. [https://doi.org/10.1016/S0272-4944\(02\)00109-3](https://doi.org/10.1016/S0272-4944(02)00109-3)
- Hartig, T., Mang, M., & Evans, G. W. (1991). Restorative Effects of Natural Environment Experiences. *Environment and Behavior*, 23(1), 3–26.
<https://doi.org/10.1177/0013916591231001>
- Hartig, T., Mitchell, R., Vries, S. de, & Frumkin, H. (2014). Nature and Health. *Annual Review of Public Health*, 35(Volume 35, 2014), 207–228. <https://doi.org/10.1146/annurev-publhealth-032013-182443>
- Hedblom, M., Gunnarsson, B., Iravani, B., Knez, I., Schaefer, M., Thorsson, P., & Lundström, J. N. (2019). Reduction of physiological stress by urban green space in a multisensory virtual experiment. *Scientific Reports*, 9(1), 10113. <https://doi.org/10.1038/s41598-019-46099-7>
- Herzog, T. R., Black, A. M., Fountaine, K. A., & Knotts, D. J. (1997). REFLECTION AND ATTENTIONAL RECOVERY AS DISTINCTIVE BENEFITS OF RESTORATIVE ENVIRONMENTS. *Journal of Environmental Psychology*, 17(2), 165–170.
<https://doi.org/10.1006/jevp.1997.0051>
- Hickman, C. (2013). ‘To brighten the aspect of our streets and increase the health and enjoyment of our city’: The National Health Society and urban green space in late-nineteenth century London. *Landscape and Urban Planning*, 118, 112–119.
<https://doi.org/10.1016/j.landurbplan.2012.09.007>
- Holland, I., DeVille, N. V., Browning, M. H. E. M., Buehler, R. M., Hart, J. E., Hipp, J. A., Mitchell, R., Rakow, D. A., Schiff, J. E., White, M. P., Yin, J., & James, P. (2021). Measuring Nature Contact: A Narrative Review. *International Journal of Environmental Research and Public Health*, 18(8), 4092. <https://doi.org/10.3390/ijerph18084092>
- Houlden, V., Weich, S., & Jarvis, S. (2017). A cross-sectional analysis of green space prevalence and mental wellbeing in England. *BMC Public Health*, 17(1), 460.
<https://doi.org/10.1186/s12889-017-4401-x>
- Howe, K. S. (2020). One Health, One National Park: A Contribution to New Perspectives and Economics for Modern Times. *Wiś i Rolnictwo*, (2 (187)), 35–56.
<https://doi.org/10.53098/wir022020/02>
- Howe, K. (1988). Against the Quantitative-Qualitative Incompatibility Thesis or Dogmas Die Hard. *Educational Researcher*. 17. 10-16. 10.2307/1175845.

- Howell, A. J., Dopko, R. L., Passmore, H.-A., & Buro, K. (2011). Nature connectedness: Associations with well-being and mindfulness. *Personality and Individual Differences*, 51(2), 166–171. <https://doi.org/10.1016/j.paid.2011.03.037>
- Howlett, K., & Turner, E. C. (2024). Research on the benefits of nature to people: How much overlap is there in citations and terms for ‘nature’ across disciplines? *People and Nature*, 6(1), 27–40. <https://doi.org/10.1002/pan3.10573>
- Hughes, J. A., & Sharrock, W. W. (2016). *The Philosophy of Social Research* (3rd ed.). Routledge. <https://doi.org/10.4324/9781315840710>
- Hurd, A. & Armit, H. (2023) Humber and North Yorkshire Green Social Prescribing ‘Test and Learn’ Programme, Final Report, Smile Foundation, <https://heysmilefoundation.org/wp-content/uploads/2022/08/Humber-and-North-Yorkshire-Green-Social-Prescribing-Test-and-Learn-Programme-Final-Report-April-2023-1.pdf>
- IUCN WCPA (2022). PARKS. The International Journal of Protected Areas and Conservation, Volume 28.2 Gland, Switzerland: IUCN. <https://portals.iucn.org/library/sites/library/files/documents/IUCN-Parks-NS-vol28-002.pdf>
- Iyer, H. S., DeVille, N. V., Stoddard, O., Cole, J., Myers, S. S., Li, H., Elliott, E. G., Jimenez, M. P., James, P., & Golden, C. D. (2021). Sustaining planetary health through systems thinking: Public health’s critical role. *SSM - Population Health*, 15, 100844. <https://doi.org/10.1016/j.ssmph.2021.100844>
- James, P., Banay, R. F., Hart, J. E., & Laden, F. (2015). A Review of the Health Benefits of Greenness. *Current Epidemiology Reports*, 2(2), 131–142. <https://doi.org/10.1007/s40471-015-0043-7>
- Jimenez, M. P., DeVille, N. V., Elliott, E. G., Schiff, J. E., Wilt, G. E., Hart, J. E., & James, P. (2021). Associations between Nature Exposure and Health: A Review of the Evidence. *International Journal of Environmental Research and Public Health*, 18(9), 4790. <https://doi.org/10.3390/ijerph18094790>
- John, C. (2021). *Behaviour change in The Brecon Beacons National Park: An applied collaborative research project to investigate cross-context behaviour change and behavioural interventions in a UK National Park* [PhD, Cardiff University]. <https://orca.cardiff.ac.uk/id/eprint/152098/>
- Jordans, M. J. D. (2025). Applying systems theory to global mental health. *Cambridge Prisms: Global Mental Health*, 12, e2. <https://doi.org/10.1017/gmh.2024.147>
- Kaplan, R., & Kaplan, S. (with University of Illinois Urbana-Champaign). (1989). *The experience of nature: A psychological perspective*. Cambridge ; New York : Cambridge University Press. <http://archive.org/details/experienceofnatu00kapl>

- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, Green Psychology*, 15(3), 169–182.
[https://doi.org/10.1016/0272-4944\(95\)90001-2](https://doi.org/10.1016/0272-4944(95)90001-2)
- Kellert, S., Wilson, O. (1993) *The Biophilia Hypothesis*. Shearwater
- Kelemen, M., & Rumens, N. (2019). Re-Asserting Paradigm Plurality: Pragmatism and Co-Production in Management and Organisation Studies. *Studi Di Sociologia*, 57(1), 81–92.
<https://www.jstor.org/stable/26874202>
- Kleespies, M., Braun, T., Dierkes, P., & Wenzel, V. (2021). Measuring Connection to Nature—A Illustrated Extension of the Inclusion of Nature in Self Scale. *Sustainability*, 13, 1761.
<https://doi.org/10.3390/su13041761>
- Kumar, R. (2011) *Research Methodology: A Step-by-Step Guide for Beginners*. 3rd Edition. Sage, New Delhi.
- Lambert, L., Lomas, T., Weijer, M. P. van de, Passmore, H. A., Joshanloo, M., Harter, J., Ishikawa, Y., Lai, A., Kitagawa, T., Chen, D., Kawakami, T., Miyata, H., & Diener, E. (2020). Towards a greater global understanding of wellbeing: A proposal for a more inclusive measure. *International Journal of Wellbeing*, 10(2). <https://doi.org/10.5502/ijw.v10i2.1037>
- Lawson, J. T., Wissing, R., Henderson-Wilson, C., Snell, T., Chambers, T. P., McNeil, D. G., & Nuttman, S. (2022). Health empowerment scripts: Simplifying social/green prescriptions. *Frontiers in Psychology*, 13, 889250. <https://doi.org/10.3389/fpsyg.2022.889250>
- Leavell, M. A., Leiferman, J. A., Gascon, M., Braddick, F., Gonzalez, J. C., & Litt, J. S. (2019). Nature-Based Social Prescribing in Urban Settings to Improve Social Connectedness and Mental Well-being: A Review. *Current Environmental Health Reports*, 6(4), 297–308.
<https://doi.org/10.1007/s40572-019-00251-7>
- Lee, K. E., Williams, K. J. H., Sargent, L. D., Williams, N. S. G., & Johnson, K. A. (2015). 40-second green roof views sustain attention: The role of micro-breaks in attention restoration. *Journal of Environmental Psychology*, 42, 182–189. <https://doi.org/10.1016/j.jenvp.2015.04.003>
- Lengieza, M. L., Richardson, M., & Hughes, J. P. (2025). Feature networks: The environmental features that are central to nature- connectedness experiences. *Landscape and Urban Planning*, 259, 105362. <https://doi.org/10.1016/j.landurbplan.2025.105362>
- Li, D., & Sullivan, W. C. (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape and Urban Planning*, 148, 149–158.
<https://doi.org/10.1016/j.landurbplan.2015.12.015>
- Li, X., Chen, C., Wang, W., Yang, J., Innes, J. L., Ferretti-Gallon, K., & Wang, G. (2021). The contribution of national parks to human health and well-being: Visitors' perceived benefits of Wuyishan National Park. *International Journal of Geoheritage and Parks*, 9(1), 1–12.
<https://doi.org/10.1016/j.iigeop.2020.12.004>

- Liu, Y., Cleary, A., Fielding, K. S., Murray, Z., & Roiko, A. (2022). Nature connection, pro-environmental behaviours and wellbeing: Understanding the mediating role of nature contact. *Landscape and Urban Planning*, 228, 104550. <https://doi.org/10.1016/j.landurbplan.2022.104550>
- Lorenzo-Rial, M.-A., Varela-Losada, M., Pérez-Rodríguez, U., & Vega-Marcote, P. (2024). Developing systems thinking to address climate change. *International Journal of Sustainability in Higher Education*, 26(1), 83–100. <https://doi.org/10.1108/IJSHE-12-2022-0404>
- 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. <https://doi.org/10.1371/journal.pone.0177186>
- Lynch, M., Whiteley, H., Hartfiel, N., Cuthbert, A., & Edwards, R. T. (2025). *Nature based social prescribing for enhancing mental health and well-being | International Journal of Integrated Care*. <https://doi.org/10.5334/ijic.ICIC24026>
- Maas, J., Verheij, R. A., Groenewegen, P. P., Vries, S. de, & Spreeuwenberg, P. (2006). Green space, urbanity, and health: How strong is the relation? *Journal of Epidemiology & Community Health*, 60(7), 587–592. <https://doi.org/10.1136/jech.2005.043125>
- Macfarlane, R. (2025). *Is A River Alive?* Random House: Canada
- Martin, L., White, M. P., Hunt, A., Richardson, M., Pahl, S., & Burt, J. (2020). Nature contact, nature connectedness and associations with health, wellbeing and pro-environmental behaviours. *Journal of Environmental Psychology*, 68, 101389. <https://doi.org/10.1016/j.jenvp.2020.101389>
- Mayer, F. S., & Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology*, 24(4), 503–515. <https://doi.org/10.1016/j.jenvp.2004.10.001>
- Mayer, F. S., Frantz, C. M., Bruehlman-Senecal, E., & Dolliver, K. (2009). Why Is Nature Beneficial?: The Role of Connectedness to Nature. *Environment and Behavior*, 41(5), 607–643. <https://doi.org/10.1177/0013916508319745>
- Miles. (2023, January 5). Nature Contact is not Connection. *Finding Nature*. <https://findingnature.org.uk/2023/01/05/infinity-of-connection/>
- Millennium Ecosystem Assessment. (2005). *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC.
- Mitchell, R. J., Richardson, E. A., Shortt, N. K., & Pearce, J. R. (2015). Neighborhood Environments and Socioeconomic Inequalities in Mental Well-Being. *American Journal of Preventive Medicine*, 49(1), 80–84. <https://doi.org/10.1016/j.amepre.2015.01.017>

- Mitchell, R., & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: An observational population study. *Lancet (London, England)*, 372(9650), 1655–1660. [https://doi.org/10.1016/S0140-6736\(08\)61689-X](https://doi.org/10.1016/S0140-6736(08)61689-X)
- Morgan, D. L. (2014). Pragmatism as a Paradigm for Mixed Methods Research. In *Integrating Qualitative and Quantitative Methods: A Pragmatic Approach* (pp. 25–44). SAGE Publications, Inc. <https://doi.org/10.4135/9781544304533>
- Morse, D. F., Sandhu, S., Mulligan, K., Tierney, S., Polley, M., Giurca, B. C., Slade, S., Dias, S., Mahtani, K. R., Wells, L., Wang, H., Bo Zhao, Figueiredo, C. E. M. D., Meijs, J. J., Nam, H. K., Lee, K. H., Wallace, C., Elliott, M., Mendive, J. M., ... Husk, K. (2022). Global developments in social prescribing. *BMJ Global Health*, 7(5). <https://doi.org/10.1136/bmjgh-2022-008524>
- Moser, A., & Korstjens, I. (2017). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *The European Journal of General Practice*, 24(1), 9–18. <https://doi.org/10.1080/13814788.2017.1375091>
- National Academy for Social Prescribing. (2023). *RSPB Nature Prescriptions - Social Prescribing Story*. NASP. <https://socialprescribingacademy.org.uk/resources/social-prescribing-story-rspb/> Accessed on 21 June 2026
- National Academy for Social Prescribing. (2023b). *What is Social Prescribing?* NASP. Available at <https://socialprescribingacademy.org.uk/what-is-social-prescribing/> Accessed on 21 June 2026
- National Centre for Social Research (2022) *Improving the Ethnic Diversity of Visitors to England's Protected Landscapes Final Report*. DEFRA National Centre for Social Research. <https://randd.defra.gov.uk/ProjectDetails?ProjectId=20625>
- National Parks England. (2019) *Landscapes for everyone*. Available at <https://nationalparksengland.org.uk/landscapes-for-everyone> Accessed January 6, 2026
- National Parks UK (2020, October). *Key Facts and Figures for all 15 UK National Parks*. Available at <https://www.nationalparks.uk/app/uploads/2020/10/Key-Facts-and-Figures-for-the-15-UK-National-Parks.pdf> Accessed on 4 November 2025
- Natural England (2005). “What about us?": Diversity Review evidence – part one Challenging perceptions: Under-represented groups' visitor needs—CRN94. Natural England - Access to Evidence. Retrieved November 7, 2025, from <https://publications.naturalengland.org.uk/publication/63060>
- Natural England (2017). *Monitor of Engagement with the Natural Environment Survey: Developing a method to measure nature connection across the English population (adults and children) - NECR233*. Natural England - Access to Evidence. Retrieved January 6, 2026, from <https://publications.naturalengland.org.uk/publication/5337609808642048>

- Natural England (2022). *Included outside: Engaging people from ethnic minority backgrounds in nature - TIN185*. Natural England - Access to Evidence. Retrieved July 3, 2025, from <https://publications.naturalengland.org.uk/publication/4729021765255168>
- Ngan, T. T., Wang, R., Tate, C., Green, M., Mitchell, R., Hunter, R. F., & O'Neill, C. (2025). Inequality in green space distribution and its association with preventable deaths across urban neighbourhoods in the UK, stratified by Index of Multiple Deprivation. *J Epidemiol Community Health*, 79(2), 102–109. <https://doi.org/10.1136/jech-2024-222485>
- Nguyen, P.-Y., Astell-Burt, T., Rahimi-Ardabili, H., & Feng, X. (2023). Effect of nature prescriptions on cardiometabolic and mental health, and physical activity: A systematic review. *The Lancet Planetary Health*, 7(4), e313–e328. [https://doi.org/10.1016/S2542-5196\(23\)00025-6](https://doi.org/10.1016/S2542-5196(23)00025-6)
- NHS England (2025). *Adult Psychiatric Morbidity Survey: Survey of Mental Health and Wellbeing, England, 2023/24*. Available at <https://digital.nhs.uk/data-and-information/publications/statistical/adult-psychiatric-morbidity-survey/survey-of-mental-health-and-wellbeing-england-2023-24#> Accessed on 24 June 2026.
- NHS England (2026). *NHS England: Green social prescribing*. Retrieved June 23, 2025, from <https://www.england.nhs.uk/personalisedcare/social-prescribing/green-social-prescribing/>
- Nind, M., Kaley, A., & Hall, E. (2022). Focus Group Method. In *Handbook of Social Inclusion* (pp. 1041–1061). Springer, Cham. https://doi.org/10.1007/978-3-030-89594-5_57
- Nisbet, E. K., & Zelenski, J. M. (2013). The NR-6: A new brief measure of nature relatedness. *Frontiers in Psychology*, 4, 813. <https://doi.org/10.3389/fpsyg.2013.00813>
- Ohly, H., White, M. P., Wheeler, B. W., Bethel, A., Ukoumunne, O. C., Nikolaou, V., & Garside, R. (2016). Attention Restoration Theory: A systematic review of the attention restoration potential of exposure to natural environments. *Journal of Toxicology and Environmental Health, Part B*, 19(7), 305–343. <https://doi.org/10.1080/10937404.2016.1196155>
- ONS. (2023, November 7). *Personal well-being in the UK - Office for National Statistics*. [Www.ons.gov.uk. https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/measuringnationalwellbeing/april2022tomarch2023](https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/measuringnationalwellbeing/april2022tomarch2023) Accessed 25 May 2026
- Oxford Nature Network | Nature, health and wellbeing: Evidence and action. (2025). Oxford Biodiversity Network. Available at <https://www.biodiversity.ox.ac.uk/events/event/nature-health-and-wellbeing-evidence-and-action> Accessed 17 November 2025
- Palmer, A. K., Riley, M., Clement, S., Evans, K. L., Jones, L., Brockett, B. F., & Opara, V. (2025). In and out of place: Diverse experiences and perceived exclusion in UK greenspace settings. *Environment and Planning E: Nature and Space*, 8(2), 742–769.
- Parker, G. & Ravenscroft, N. (2000) 'Tourism, 'national parks' and private land' in Butler, R., & Boyd, S.W. (2000). *Tourism and National Parks: Issues and Implications*. Wiley

- Parnham, A. (2017). Wholistic well-being and happiness: Psychosocial-spiritual perspectives. In A. Bonner (Ed.), *Social Determinants of Health: An Interdisciplinary Approach to Social Inequality and Wellbeing* (pp. 29–40). Bristol University Press.
<https://www.cambridge.org/core/books/social-determinants-of-health/wholistic-wellbeing-and-happiness-psychosocialspiritual-perspectives/4B5CF4DC4DDD62748CC8E07528BD4808>
- Paykel, E., Abbott, R., Jenkins, R., Brugha, T., & Meltzer, H. (2003). Urban-rural mental health differences in Great Britain: Findings from the National Morbidity Survey. *International Review of Psychiatry (Abingdon, England)*, 15(1–2), 97–107.
<https://doi.org/10.1080/0954026021000046001>
- Peak District National Park (2024), RSPB Nature Prescriptions in Derbyshire Discussion Workshop Report, PDNP
- Penbrooke, T. L., Edwards, M. B., Bocarro, J. N., Henderson, K. A., & Hipp, J. A. (2022). Applying Systems Thinking Approaches to Address Preventive Health Factors through Public Parks and Recreation Agencies. *Journal of Park and Recreation Administration*, 40(1).
<https://doi.org/10.18666/JPra-2021-11007>
- Pizzol, D., Trott, M., Butler, L., Barnett, Y., Ford, T., Neufeld, S. A., Ragnhildstveit, A., Parris, C. N., Underwood, B. R., Sánchez, G. F. L., Fossey, M., Brayne, C., Fernandez-Egea, E., Fond, G., Boyer, L., Shin, J. I., Pardhan, S., & Smith, L. (2023). Relationship between severe mental illness and physical multimorbidity: A meta-analysis and call for action. *BMJ Mental Health*, 26(1). <https://doi.org/10.1136/bmjment-2023-300870>
- Pollard, T. M., Gibson, K., Tupper, E., McGuire, L., Griffith, B., & Jeffries, J. (2025). Delivering green social prescribing: An ethnographic exploration of the place of walking and gardening groups in a social prescribing intervention. *Social Science & Medicine*, 380, 118184.
<https://doi.org/10.1016/j.socscimed.2025.118184>
- Pomfret, G., Frost, J., & Frost, W. (2025). Exploring the benefits of outdoor activity participation in national parks: A case study of the Peak District National Park, England. *Annals of Leisure Research*, 28(4), 441–459. <https://doi.org/10.1080/11745398.2024.2358776>
- Pretty, J., & Barton, J. (2020). Nature-Based Interventions and Mind–Body Interventions: Saving Public Health Costs Whilst Increasing Life Satisfaction and Happiness. *International Journal of Environmental Research and Public Health*, 17(21), 7769.
<https://doi.org/10.3390/ijerph17217769>
- Pritchard, A., Richardson, M., Sheffield, D., & McEwan, K. (2020). *The Relationship Between Nature Connectedness and Eudaimonic Well-Being: A Meta-analysis*. 21, 1145–1167. (vdc.100164293531.0x000001).
<https://research.ebsco.com/linkprocessor/plink?id=6596530d-c537-3bbd-b112-af7f11cd77a7>

- Pritchard, T., Astell-Burt, T., Lin, B., Parmenter, B., Veerman, L., & Feng, X. (2025). Levelling the field? A cross-sectional study exploring potentially equigenic effects of green space on socioeconomic inequalities in adult body mass index. *Urban Forestry & Urban Greening*, 112, 128984. <https://doi.org/10.1016/j.ufug.2025.128984>
- Progress in improving NHS mental health services—Committee of Public Accounts*. (n.d.). Retrieved June 15, 2026, from <https://publications.parliament.uk/pa/cm5803/cmselect/cmpubacc/1000/report.html>
- Pullin, A. S., Bangpan, M., Dalrymple, S., Dickson, K., Haddaway, N. R., Healey, J. R., Hauari, H., Hockley, N., Jones, J. P. G., Knight, T., Vigurs, C., & Oliver, S. (2013). Human well-being impacts of terrestrial protected areas. *Environmental Evidence*, 2(1), 19. <https://doi.org/10.1186/2047-2382-2-19>
- Qin, L., Wang, Z., & He, D. (2024). From well-being to conservation: Understanding the mechanisms of community pro-environmental actions in Wuyishan national park. *Journal for Nature Conservation*, 81, 126680. <https://doi.org/10.1016/j.jnc.2024.126680>
- Ratcliffe, T., Brigstocke, S, Metcalfe, J and Goodwin, A (2026) [Natural Health Service For North Yorkshire : Final Evaluation Report](#). Project Report. York St John University / North York Moors Trust.
- Rice, W. L., Lacey, G., Peel, V., Pan, B., Klemm, C., Miller, Z. D., Newman, P., Hutchins, B., & Taff, B. D. (2020). Examining Health Promotion in Parks: A Cross-National Inquiry of Healthy Parks Healthy People Programs. *Recreation, Parks, and Tourism in Public Health*, 4, 5–14. Sociology Collection (2462185615). <https://www.proquest.com/scholarly-journals/examining-health-promotion-parks-cross-national/docview/2462185615/se-2?accountid=17386>
- Richardson, M. (2023). *Reconnection: Fixing our Broken Relationship With Nature*, Pelagic
- Richardson, M., Hamlin, I., Butler, C., Thomas, R., & Hunt, A. (2021a). Actively Noticing Nature (Not Just Time in Nature) Helps Promote Nature Connectedness. *Ecopsychology*. <https://doi.org/10.1089/eco.2021.0023>
- Richardson, M., Passmore, H.-A., Lumber, R., Thomas, R., & Hunt, A. (2021b). Moments, not minutes: The nature-wellbeing relationship. *International Journal of Wellbeing*, 11(1). <https://doi.org/10.5502/ijw.v11i1.1267>
- Richardson, M. (2017, May 18). *5 Ways to Be Closer to Nature*. www.derby.ac.uk. <https://www.derby.ac.uk/blog/5-ways-closer-nature/> Accessed 11 May 2026
- Rigolon, A., Browning, M. H. E. M., McAnirlin, O., & Yoon, H. V. (2021). Green Space and Health Equity: A Systematic Review on the Potential of Green Space to Reduce Health Disparities. *International Journal of Environmental Research and Public Health*, 18(5), 2563. <https://doi.org/10.3390/ijerph18052563>

- Rigolon, A., Osei Owusu, R., Becerra, M., Cheng, Y. (Daniel), Christensen, J., Connolly, J. J. T., Corbin, C. N. E., Douglas, J. A., Fernandez, M., Jennings, V., Ito, J., Mullenbach, L. E., Nesbitt, L., Osborne Jelks, N., Walker, R., Viera, S., Romero, F., & Espiricueta, A. (2024). Advancing green space equity via policy change: A scoping review and research agenda. *Environmental Science & Policy*, 157, 103765. <https://doi.org/10.1016/j.envsci.2024.103765>
- Riva, M., Curtis, S., Gauvin, L., & Fagg, J. (2009). Unravelling the extent of inequalities in health across urban and rural areas: Evidence from a national sample in England. *Social Science & Medicine, Part Special Issue: Selected Research from the XII International Symposium in Medical Geography 2007*, 68(4), 654–663. <https://doi.org/10.1016/j.socscimed.2008.11.024>
- Robèrt, K.-H., Hernke, M. T., Fortney, L., & Podein, R. J. (2018). Systems thinking for global health and strategic sustainable development. In M. van den Bosch, W. Bird, M. van den Bosch, & W. Bird (Eds.), *Oxford Textbook of Nature and Public Health: The role of nature in improving the health of a population* (p. 0). Oxford University Press. <https://doi.org/10.1093/med/9780198725916.003.0032>
- Roberts, G., Marshall, K., Wisher, S., (2022), Yorkshire Dales National Park Authority Visitor Survey 2022 Final Report, Information by Design Ltd., Hull. https://www.yorkshiredales.org.uk/wp-content/uploads/sites/13/2023/01/P1231-YDNPA-Visitor-Survey-2022-Report-Final-14_12_22-PDF.pdf
- Roe, J., & Aspinall, P. (2011). The restorative benefits of walking in urban and rural settings in adults with good and poor mental health. *Health & Place, Health Geographies of Voluntarism*, 17(1), 103–113. <https://doi.org/10.1016/j.healthplace.2010.09.003>
- Romagosa, F., Eagles, P. F. J., & Lemieux, C. J. (2015). From the inside out to the outside in: Exploring the role of parks and protected areas as providers of human health and well-being. *Journal of Outdoor Recreation and Tourism, SI: Health and Well-Being*, 10, 70–77. <https://doi.org/10.1016/j.jort.2015.06.009>
- Rook, G. (2018). Microbes, the immune system, and the health benefits of exposure to the natural environment. In M. van den Bosch, W. Bird, M. van den Bosch, & W. Bird (Eds.), *Oxford Textbook of Nature and Public Health: The role of nature in improving the health of a population* (p. 0). Oxford University Press. <https://doi.org/10.1093/med/9780198725916.003.0038>
- RSPB. (2024) Yorkshire Dales Nature Prescription Calendar. RSPB.
- Sarkar, C., Webster, C., & Gallacher, J. (2018). Residential greenness and prevalence of major depressive disorders: A cross-sectional, observational, associational study of 94 879 adult UK Biobank participants. *The Lancet Planetary Health*, 2(4), e162–e173. [https://doi.org/10.1016/S2542-5196\(18\)30051-2](https://doi.org/10.1016/S2542-5196(18)30051-2)

- Shaker, M., Hermans, E., & Zahoor, A. (2021). Cycling as a means to improve the health and Wellbeing of both locals and visitors of national parks. *International Journal of Spa and Wellness*, 4(1), 93–105. <https://doi.org/10.1080/24721735.2021.1898833>
- Silburn, A. (20250728). Systems thinking in public health policy development. *Frontiers in Health Services*, 1–6. <https://doi.org/10.3389/frhs.2025.1555284>
- Sirwan, A. K., Mohammed, R. A., Nashwan, A. J., Ibrahim, R. H., Abdalla, A. Q., M. Ameen, B. M., & Khedhir, R. M. (2025). Using thematic analysis in qualitative research. *Journal of Medicine, Surgery, and Public Health*, 6, 100198. <https://doi.org/10.1016/j.glmedi.2025.100198>
- Song, C., Ikei, H., & Miyazaki, Y. (2018). Physiological Effects of Visual Stimulation with Forest Imagery. *International Journal of Environmental Research and Public Health*, 15(2), 213. <https://doi.org/10.3390/ijerph15020213>
- Souliotis, I., & Voulvoulis, N. (2025). Sustainability transitions: The role of systems thinking in improving planetary health and human prosperity. *Frontiers in Environmental Science*, 13. <https://doi.org/10.3389/fenvs.2025.1730692>
- Subiza-Pérez, M., Vozmediano, L., & San Juan, C. (2019). Pretest-posttest field studies on psychological restoration: A descriptive review and reflections for the future. *Landscape Research*, 44(4), 493–505. <https://doi.org/10.1080/01426397.2018.1493443>
- Sukhera, J. (2022). Narrative Reviews: Flexible, Rigorous, and Practical. *Journal of Graduate Medical Education*, 14(4), 414–417. <https://doi.org/10.4300/JGME-D-22-00480.1>
- Taylor, L., & Hochuli, D. F. (2017). Defining greenspace: Multiple uses across multiple disciplines. *Landscape and Urban Planning*, 158, 25–38. <https://doi.org/10.1016/j.landurbplan.2016.09.024>
- Tester-Jones, M., White, M. P., Elliott, L. R., Weinstein, N., Grellier, J., Economou, T., Bratman, G. N., Cleary, A., Gascon, M., Korpela, K. M., Nieuwenhuijsen, M., O'Connor, A., Ojala, A., van den Bosch, M., & Fleming, L. E. (2020). Results from an 18 country cross-sectional study examining experiences of nature for people with common mental health disorders. *Scientific Reports*, 10(1), 19408. <https://doi.org/10.1038/s41598-020-75825-9>
- The Biophilia hypothesis*. (1993). Washington, D.C. : Island Press/Shearwater Books. <http://archive.org/details/biophiliahypothe0000unse>
- National Parks England. (2024) *The Great National Parks Plan*. Available at 2026 <https://nationalparksengland.org.uk/the-great-national-parks-plan> Accessed on 17 January 2026
- The Lancet Planetary Health. (2017). Welcome to The Lancet Planetary Health. *The Lancet Planetary Health*, 1(1), e1. [https://doi.org/10.1016/S2542-5196\(17\)30013-X](https://doi.org/10.1016/S2542-5196(17)30013-X)

- Tholen, B. (2025). Managing Co-production. Lessons from Pragmatist and neo-Aristotelian Approaches. *Administrative Theory & Praxis*, 47(3), 252–268. <https://doi.org/10.1080/10841806.2025.2537594>
- Thomas, T., Aggar, C., Baker, J., Massey, D., Thomas, M., D’Appio, D., & Brymer, E. (2022). Social prescribing of nature therapy for adults with mental illness living in the community: A scoping review of peer-reviewed international evidence. *Frontiers in Psychology*, 13, 1041675. <https://doi.org/10.3389/fpsyg.2022.1041675>
- Tierney, S., Wong, G., Roberts, N., Boylan, A.-M., Park, S., Abrams, R., Reeve, J., Williams, V., & Mahtani, K. R. (2020). Supporting social prescribing in primary care by linking people to local assets: A realist review. *BMC Medicine*, 18, 49. <https://doi.org/10.1186/s12916-020-1510-7>
- Tiscareno-Osorno, X., Demetriou, Y., Marques, A., Peralta, M., Jorge, R., MacIntyre, T. E., MacIntyre, D., Smith, S., Sheffield, D., Jones, M. V., Beckmann, J., & Schönbach, D. M. I. (2023). Systematic Review of Explicit Instruments Measuring Nature Connectedness: What Do We Know and What is Next? *Environment and Behavior*, 55(8–10), 551–608. <https://doi.org/10.1177/00139165231212321>
- Tree, I. (2018). *Wilding: The Return of Nature to a British Farm*, Pan Macmillan: UK
- Twohig-Bennett, C., & Jones, A. (2018). The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. *Environmental Research*, 166, 628–637. <https://doi.org/10.1016/j.envres.2018.06.030>
- UK Government. (2019). *National Parks and Access to the Countryside Act 1949*. Legislation.gov.uk. <https://www.legislation.gov.uk/ukpga/Geo6/12-13-14/97> Accessed 10 July 2025
- Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. *Human Behavior & Environment: Advances in Theory & Research*, 6, 85–125.
- van den Berg, A. E., Maas, J., Verheij, R. A., & Groenewegen, P. P. (2010). Green space as a buffer between stressful life events and health. *Social Science & Medicine*, 70(8), 1203–1210. <https://doi.org/10.1016/j.socscimed.2010.01.002>
- van den Berg, A. E., & Staats, H. (2018). Environmental psychology. In M. van den Bosch, W. Bird, M. van den Bosch, & W. Bird (Eds.), *Oxford Textbook of Nature and Public Health: The role of nature in improving the health of a population* (p. 0). Oxford University Press. <https://doi.org/10.1093/med/9780198725916.003.0035>
- Ward Thompson, C. (2011). Linking landscape and health: The recurring theme. *Landscape and Urban Planning*, 99(3), 187–195. <https://doi.org/10.1016/j.landurbplan.2010.10.006>
- Wearing, S. L., Schweinsberg, S., & Tower, J. (2016). *Marketing National Parks for Sustainable Tourism*. Channel View Publications. <https://www.perlego.com/book/571514/marketing-national-parks-for-sustainable-tourism-pdf>

- Weatherly, C., Carag, J., Zohdy, S., & Morrison, M. (2023). The mental health impacts of human-ecosystem-animal relationships: A systematic scoping review of Eco-, Planetary, and One Health approaches. *One Health*, 17, 100621. <https://doi.org/10.1016/j.onehlt.2023.100621>
- Weimann, H., Rylander, L., Albin, M., Skärbäck, E., Grahn, P., Östergren, P.-O., & Björk, J. (2015). Effects of changing exposure to neighbourhood greenness on general and mental health: A longitudinal study. *Health & Place*, 33, 48–56. <https://doi.org/10.1016/j.healthplace.2015.02.003>
- West, P., Igoe, J., & Brockington, D. (2006). Parks and Peoples: The Social Impact of Protected Areas. *Annual Review of Anthropology*, 35(Volume 35, 2006), 251–277. <https://doi.org/10.1146/annurev.anthro.35.081705.123308>
- Willis, K. (2024). *Good Nature: The New Science of How Nature Improves Our Health*, Bloomsbury: London
- Wilson, K., Jackman, M., & Moore, W. (2024). The impact of environmental quality on mental health: An ecological study. *Journal of Public Mental Health*, 23(4), 383–397. <https://doi.org/10.1108/JPMH-06-2024-0071>
- Wilson, O. (1984). *Biophilia*. <http://archive.org/details/edward-o.-wilson-biophilia>
- Wong, D. (2018). Vector-borne diseases and poisonous plants. In M. van den Bosch, W. Bird, M. van den Bosch, & W. Bird (Eds.), *Oxford Textbook of Nature and Public Health: The role of nature in improving the health of a population* (p. 0). Oxford University Press. <https://doi.org/10.1093/med/9780198725916.003.0009>
- Wood, C., Chalmin-Pui, L. S., Smyth, N., & Rajcani, J. (2022). Editorial: Nature-based social prescriptions for improving health and wellbeing. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1095064>
- Wood, C. J., Polley, M., Barton, J. L., & Wicks, C. L. (2022). Therapeutic Community Gardening as a Green Social Prescription for Mental Ill-Health: Impact, Barriers, and Facilitators from the Perspective of Multiple Stakeholders. *International Journal of Environmental Research and Public Health*, 19(20), 13612. <https://doi.org/10.3390/ijerph192013612>
- World Health Organization. (1948) *Constitution of the World Health Organization*. Available at <https://www.who.int/about/governance/constitution> Accessed 15 June 2026.
- World Health Organization. (n.d.). *One Health*. Available at <https://www.who.int/health-topics/one-health> Accessed 13 January 2026
- World Health Organization. (2025). *Social Determinants of Health*. World Health Organization. Available at https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1 Accessed on 22 April 2026

- Worpole, K. (2007). 'The health of the people is the highest law': Public health, public policy and green space. In *Open Space: People Space*. Taylor & Francis.
- Wyles, K. J., White, M. P., Hattam, C., Pahl, S., King, H., & Austen, M. (2019). Are Some Natural Environments More Psychologically Beneficial Than Others? The Importance of Type and Quality on Connectedness to Nature and Psychological Restoration. *Environment and Behavior*, 51(2), 111–143. <https://doi.org/10.1177/0013916517738312>
- Xu, Z., Marini, S., Mauro, M., Maietta Latessa, P., Grigoletto, A., & Toselli, S. (2025). Associations Between Urban Green Space Quality and Mental Wellbeing: Systematic Review. *Land*, 14(2), 381. <https://doi.org/10.3390/land14020381>
- Yorkshire Dales National Park Authority. (2025). Yorkshire Dales National Park Management Plan 2025-2030, <https://www.yorkshiredales.org.uk/wp-content/uploads/sites/13/2025/12/Yorkshire-Dales-National-Park-Management-Plan-2025-2030-v4.pdf>
- Zelenski, J. M., & Nisbet, E. K. (2012). Happiness and Feeling Connected. *Environment and Behavior*. (Sage CA: Los Angeles, CA). <https://doi.org/10.1177/0013916512451901>
- Zhang, J., Yu, Z., Zhao, B., Sun, R., & Vejre, H. (2020). Links between green space and public health: A bibliometric review of global research trends and future prospects from 1901 to 2019. *Environmental Research Letters*, 15(6), 063001. <https://doi.org/10.1088/1748-9326/ab7f64>
- Zerbe, S., Schmid, H.-L., Hornberg, C., Freymüller, J., & Mc Call, T. (2025). Nature's impact on human health and wellbeing: The scale matters. *Frontiers in Public Health*, 13, 1563340. <https://doi.org/10.3389/fpubh.2025.1563340>

Appendices

Appendix A: YDNP Nature Prescription calendar.



January



Upper reaches of Wensleydale



Moss and lichen



The River Wharfe at Grassington



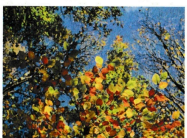
Hoar frost on trees

Photos: Robin – Ben Andrew [rspb-images.com](https://www.rspb-images.com)
The upper reaches of Wensleydale – Andy Kay
Moss and lichen – Colin Wilkinson [rspb-images.com](https://www.rspb-images.com)
The River Wharfe at Grassington – Adobe Stock
Hoar frost on trees – Ben Andrew [rspb-images.com](https://www.rspb-images.com)

Nature connection is important to our physical and mental health and wellbeing. These suggestions will help you to feel connected to nature.

- ❑ Open your window or step outside. Be still for three minutes and listen for sounds of nature.
- ❑ Enjoy the shape of trees without their leaves. Look out for leaf skeletons. The remnants of last year's beauty. Look at the lines in your hands. Can you see these shapes repeated in the branches?
- ❑ Look and listen for Robins, one of the few birds that can be heard singing at this time of year. If you were a Robin where would you nest, what would you eat, what would you need to thrive in winter?
- ❑ It's a great month for looking at mosses and lichens. They can be found on many buildings, walls, pavements, trees and hedges. How many colours, textures and shapes can you see?
- ❑ Visit a stream or river. Take a few moments to follow patterns in the water as it flows downstream. Watch a leaf float away.
- ❑ Search online for 'Winter Morning Poem' by Ogden Nash. Follow his suggestion and catch a snowflake on your tongue! Could you write a poem about nature?
- ❑ Make a hot drink, pop it in a flask, and head out for a walk. Choose a nice spot to stop, rest and enjoy your time with nature.
- ❑ Take a walk in your local park or garden and look out for the spring bulbs pushing up through the soil.

October



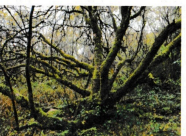
Autumn leaves



Acorn



Aysgarth Falls Bridge



Moss covered tree

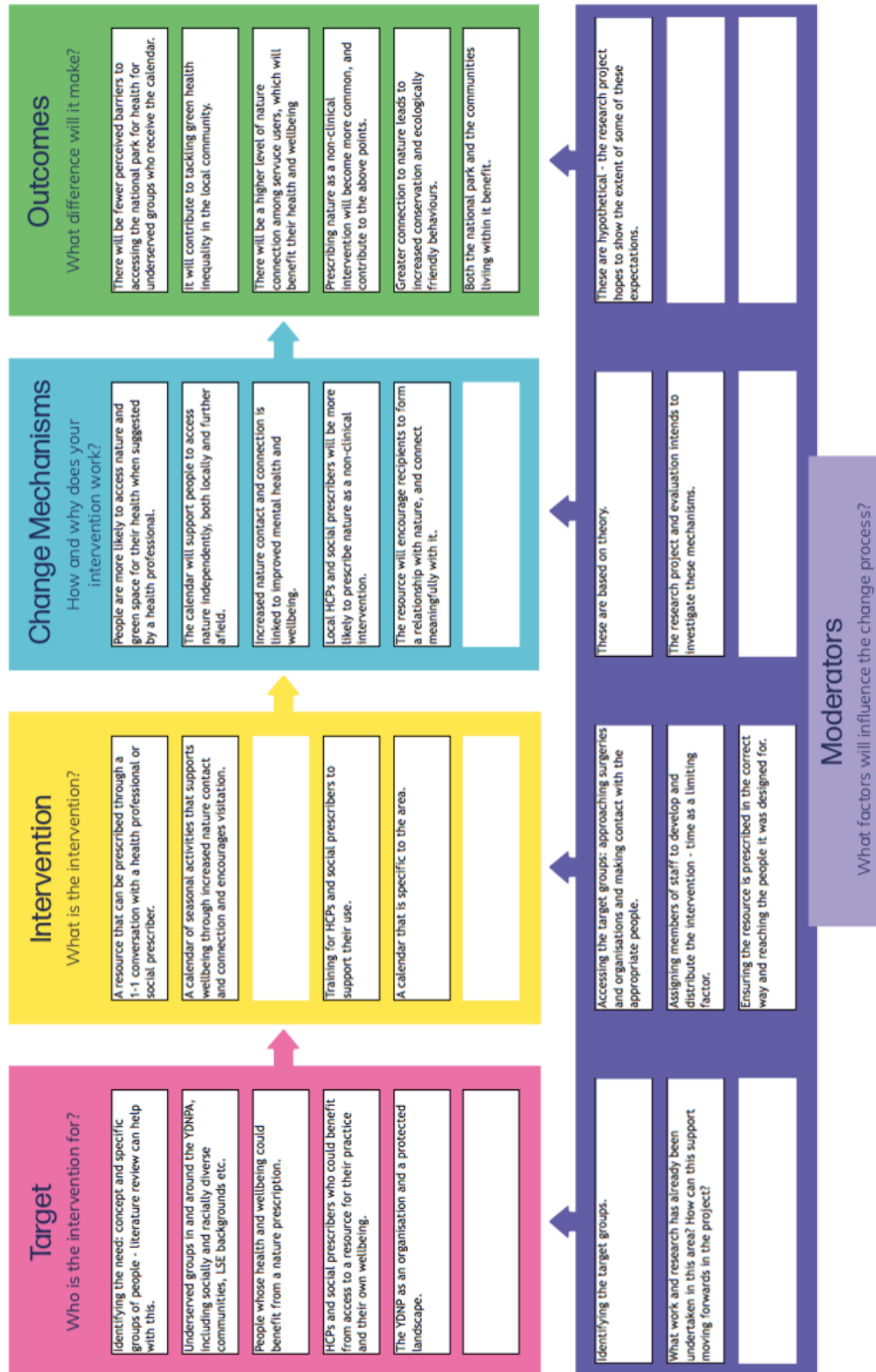
Photos: Fly Agaric fungus – Rosie Dutton [rspb-images.com](https://www.rspb-images.com)
Autumn leaves – Michael Harvey [rspb-images.com](https://www.rspb-images.com)
Acorn – Ben Andrew [rspb-images.com](https://www.rspb-images.com)
Aysgarth Falls Bridge – Paul Harris Photography
Moss covered tree – Sam Turley [rspb-images.com](https://www.rspb-images.com)

You don't need to do the suggestions in the order they are printed. Do them in any order you prefer. Repeat them when you can.

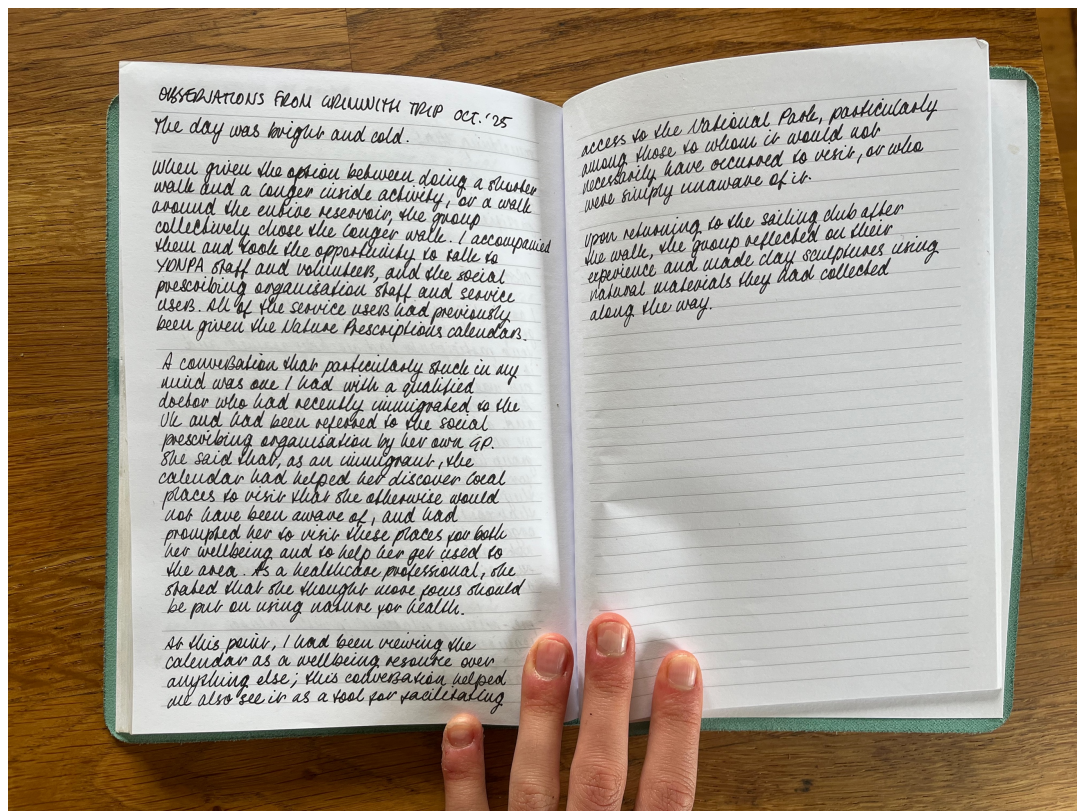
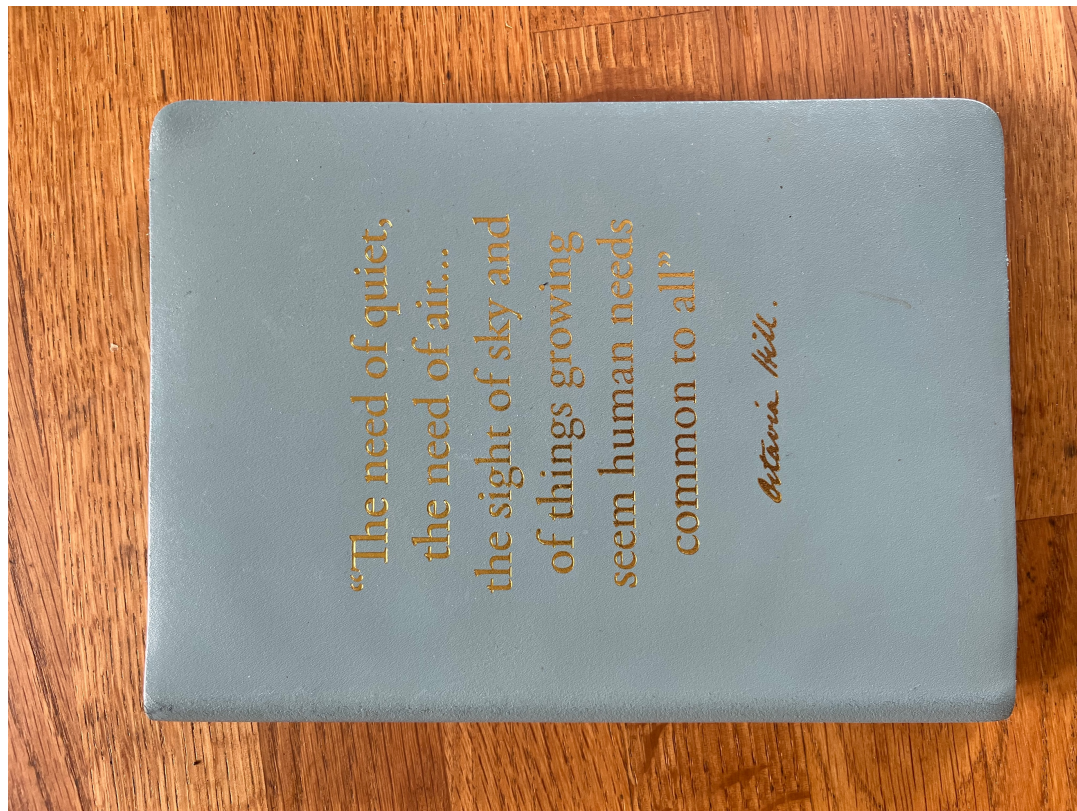
- ❑ Take a weekly walk and notice the changing colours, light and scents of autumn. You could join a local walking group to explore new places. Notice how you feel before and after your walk.
- ❑ Look for fungi growing near trees and on patches of grass. How many types can you find? Spot the different colours, shapes and patterns. But please don't touch or taste them as they can be poisonous! Sometimes fungi have names based on their smell, can you think of a fun name for a fungus?
- ❑ Find somewhere to take your lunch outside. Look and listen for birds. How does it feel to take a break in nature in the middle of the day?
- ❑ It's a muddy time of year, can you find some animal tracks in a patch of mud? Can you guess which animals made the tracks?
- ❑ Take a photo of leaves on the ground. How many different shapes and colours can you see? Try making a picture using the leaves.
- ❑ Look out for acorns falling from oak trees. If you wait quietly, you may see birds and squirrels collecting them.
- ❑ Find nature in everyday things. Look around your house and see how many pictures or objects have a nature theme.
- ❑ On sunny days, watch how the light moves around your room and track shadows as they cross your walls. What changes through the month do you notice?

Appendix B: Logic model formulated following initial research and conversations with stakeholders.

Logic Model



Appendix C: research diary, including excerpt.



Appendix D: HCP Survey questions

Consent form/welcome page

Do you consent for this information to be captured and stored securely?

Yes

No

Page 1 – role

Please select the job description that most closely describes your role.

GP

Link worker

Mental health specialist

Nurse

Consultant psychologist

Community social prescriber

Community mental health worker

Other (please describe)

Gender

Female

Male

Prefer not to say

Age

Under 30

30-49

50 and over

Page 2 – focus on training and its outcomes

You may have attended a training session led by the YDNPA on the use of the Nature Prescriptions calendar.

How long ago did you receive the training?

0-3 months

4-6 months

7-12 months

13-18 months

18+ months

I did not attend a training session but have been using the Nature Prescriptions calendar in my practice

The training gave me all the information I need to use the Nature Prescriptions calendar in my practice. Please indicate the statement that is true for you.

Strongly agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Strongly disagree

Did anything surprise you about the Nature Prescriptions training?

Page 3 – the resource and response to it

How often do you prescribe the calendar to patients, or use the calendar in your practice?

Daily/several times a week

Around once a week

Once or twice a month

Less than once a month

Never

Has having access to the Nature Prescriptions resource made you more likely to prescribe nature as a non-clinical intervention?

Yes

No

Not sure

Please briefly explain your above answer.

For which health issues are you most likely to prescribe the Nature Prescriptions calendar?

Which types of patients would particularly benefit from the Nature Prescriptions calendar? For example, patients of a certain age, gender or social group.

How would you describe the area in which you work?

Rural

Semi-rural

Urban

How often do you spend time in the Yorkshire Dales National Park?

Daily/several times a week

Around once a week

Once or twice a month

Less than once a month

Never

How often do you spend time in nature in your free time?

Daily/several times a week

Around once a week

Once or twice a month

Less than once a month

Never

Has the Nature Prescriptions calendar had any impact on the likelihood of you spending time engaging with nature or visiting the National Park for your own health and wellbeing?

Yes, I now spend more time in nature for my own wellbeing.

I spend the same amount of time in nature as before.

No, I spend less time engaging with nature.

Page 4 – barriers, facilitators and improvements

Have you experienced any barriers to prescribing nature using the Nature Prescriptions calendar resource? What are they?

Do you perceive any barriers for patients to effectively using the Nature Prescriptions calendar, once they have received it?

Is there anything that would make the Nature Prescriptions calendar easier to prescribe or use as a non-clinical intervention?

Do you have any further comments on the Nature Prescriptions resource and training, including any ways the service could be improved?

Appendix E: CR Questionnaire**Consent form/welcome page**

We want to find out how the calendar has been used and how it could be improved. If you are happy to answer the following questions, please show your consent below. All answers will be anonymous, and all of the questions are optional.

Yes, I consent to take part in the questionnaire.

No, I do not consent.

Page 1 – demographic information

How old are you?

Under 30

30 – 49

Over 50

What is your gender?

Male

Female

Non-binary/third gender

Prefer not to say

Page 2 – using the calendar

How often do you use the calendar?

Daily/several times a week

Around once a week

Once or twice a month

Less than once a month

Never

Does using the calendar affect your mental health and wellbeing? If so, how?

If you have the calendar but have never used it, how do you think it might affect your health and wellbeing?

Has the Nature Prescriptions calendar made you more likely to spend time in nature for your wellbeing?

Yes

No

Not sure

Has it made you feel more connected to nature?

Yes

No

Not sure

Is there a particular activity in the calendar that makes you feel more connected to nature? If so, which one?

What is your favourite thing about the calendar?

Page 3 – barriers and improvements

Has the calendar encouraged you to visit more places in the Yorkshire Dales National Park? If so, how?

Are there any challenges stopping you from visiting these places? What are they?

Is there anything that makes it difficult to use the calendar?

What would make it easier to use?

Do you have any further thoughts about the calendar, or using nature for wellbeing?

Appendix F: participant information sheet

Participant Information Sheet

Est.
1841YORK
ST JOHN
UNIVERSITY

Title of Project	Nature on Prescription in the Yorkshire Dales
Researcher/Department name and contact details	Olivia Sharpley, York Business School olivia.sharpley@yorks.ac.uk Supervisors: Dr Thomas Ratcliffe, thomas.ratcliffe@yorks.ac.uk Prof. Divine Charura, divine.charura@yorks.ac.uk Kiri Wood, Education, Engagement and Wellbeing Manager, kiri.wood@yorkshiredales.org.uk
University contact details	York St John University, Lord Mayors Walk, York YO31 7EX. Tel: 01904 624624

Part 1: Project Details	
Introduction	My name is Olivia Sharpley, and I'm undertaking a Masters by Research at York St John University, in partnership with the Yorkshire Dales National Park (YDNPA). This project is supported by the Institute for Health and Care Improvement, in addition to my supervisors Dr Thomas Ratcliffe and Prof. Divine Charura. If you wish to get in contact, please use the email addresses found above. The health and wellbeing benefits of spending time in nature and green space have been widely researched, and has been shown to have a positive effect on people's health and wellbeing, as well as a positive effect on the planet. Despite this, accessing nature is much more difficult for certain groups of people within the UK, which may lead to greater health inequalities. In collaboration with the RSPB, the Yorkshire Dales National Park Authority (YDNPA) have designed a 'Nature Prescription' calendar, a resource focused on increasing contact with and connection to nature to support health and wellbeing. It contains activities to help you connect with nearby nature, and also promotes access to and interaction with nature in and around the National Park. The main aim of this study is to evaluate the Nature Prescriptions project, and look further into its impact on health and wellbeing in the local area, particularly when it comes to green health inequality and accessing nature and the national park for health.
What is the purpose of the project?	The project aims to understand the impact of the Nature Prescriptions project on the people who have experienced the prescription and on the health professionals and social prescribers who have taken part in the training. Additionally, it seeks to consider the wider implications the project has for health inequalities in the communities who participate in the project, their relationship with the natural environment and their ability to access green space in the National Park. The focus groups will explore how the Nature Prescriptions resource has been used by people who have received it as a 'prescription' from community social prescribing and mental health organisations.
What can I expect?	You will participate in a 60 minute group discussion with other people from your community, led by Olivia. This will involve discussing your opinions on the Nature Prescriptions calendar, how you've used it, whether it's helped you get out into the national park, and whether there's anything stopping you from using it.

Why have I been asked to take part?	You have been given the calendar by a community health or social prescribing professional to use to support your wellbeing. We'd like to find out how you've been using the calendar to support your wellbeing, what your opinions on it are, and how it could be improved to help you better access nature and the national park.
Is taking part voluntary?	Your decision to take part is entirely voluntary; consent is a requirement of participation. If you do not consent, you will not be asked to participate. As this is a group activity, you will not be able to 'withdraw' any data collected during the group discussion, however you will be free to withdraw as a participant at any point leading up to the focus group session. You will also be free to leave at any point during the session, with no negative consequences. All identifying data will be anonymised.
Are there any risks?	There are no significant risks associated with this project. The final report and dissertation will be made available to all participants. Should a risk develop or arise as a result of something discussed, the researcher will reach out to the individual to check the inclusion of any data in the project. Participants will be reminded that they do not have to disclose any information they do not feel comfortable discussing, and if they exhibit any signs of distress staff who are known to them from their organisation will be on hand to support them. Risks are very unlikely, but any information arising that may compromise a specific organisation or individual, will be removed and not included in the results. Advice will be sought from the YBS Ethics Committee Chair should any unforeseen ethical issues emerge.
What information will be collected?	The data collected from interviews will be aggregated and anonymised. In the unlikely event that non-anonymised data is required for reporting, the researcher will contact the individual to obtain their ongoing consent for the data to be used. This consent would be voluntary and fully informed, with the option to withdraw before publication.
Who will have access to the information?	The research lead and supervisory team will have access to the data during the development of the project.
Where will the information be stored?	Data will be stored securely on the YSJU OneDrive.
How long will the information be retained?	The anonymous data produced will be retained indefinitely in the final output of the project.
Ethical information	There are no ethical risks associated with this survey. Ethical approval for this project has been granted by the York Business School Ethics Committee (pending).
What happens next?	If you experience any issues or have any concerns relating to the topics discussed in the interview, please don't hesitate to get in touch with Olivia or the supervisory team. The data collected from your interview will be anonymised and used to fulfil the aims of the project listed above.

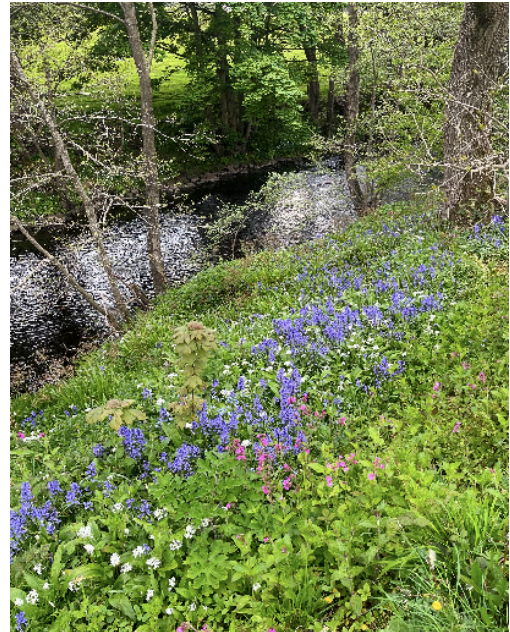
Part 2: Privacy Notice	
All personal information gathered and held by York St John University (detailed in Part 1 of this Participant Information Sheet) is treated with the care and confidentiality required by the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. For the purposes of processing your personal information, the data controller is York St John University. The University's Data Protection Officer is the University Secretary and Registrar.	
Legal basis for processing your information	Academic research and service evaluation.
Your rights in relation to personal data	Under the GDPR, you have a right to: • be kept informed as to how we use your data; • request a copy of the data we hold about you via a Subject Access Request; • update, amend or rectify the data we hold about you; • change your communication preferences; • ask us to remove your data from our records; • object to or restrict the processing of your information • raise a concern or complaint about the way in which your information is being used.
Any questions of concerns?	If you have any questions or concerns about the way we are collecting and using your personal data we request that you contact the University by emailing: gov.compliance@yorks.ac.uk . You also have the right to complain to the Information Commissioner's Office (ICO) about the way in which we process your personal data. Details can be found at: https://ico.org.uk .

Part 3: Participant Consent		Yes	No
(3a) I have read and understood the project details and have been able to ask questions about the project and my questions have been answered to my satisfaction.			
(3b) I consent voluntarily to be a participant in this project and understand that I can refuse to answer questions and I can withdraw from the project at any time, without having to give a reason.			
(3c) I understand what the information I provide will be used for, how it will be stored and how long it will be retained.			
(3d) I give my permission for the information specified in (3e) to be retained by the University after the project has ended so that it can be used for future research and learning.			
(3e) Information to be retained	The anonymous research data produced will be retained indefinitely in the final output of the project.		
Name of Participant			
Signature			
Date			

If you have any concerns, or a complaint regarding this research, please contact our independent chair Tilo Reifenstein at York St John University. E-mail: t.reifenstein@yorks.ac.uk

If you have any questions or concerns about the way we are collecting and using your personal data, please contact the University by emailing: gov.compliance@yorks.ac.uk

Appendix G: photos of local natural spaces where the researcher spends time across the seasons.



Appendix H: Ethical approval from York Business School Ethics Committee



Research Ethics Committee - York Business School

Outcome of Research Ethics application:

Name: Olivia Sharpley

Reference: ETH2526-0014

Project Title: MSc by Research - Nature on Prescription in the Yorkshire Dales

Date: 15/01/2026

Thank you for your recent application for ethical approval in relation to the above-named project.

I am pleased to inform you that the York Business School Ethics Committee has approved your proposal. The reviewers had the following comments:

Reviewer 1:

Thank you for attending to earlier comments, I am now happy to approve this ethics application.

Reviewer 1:

I am happy to approve this application.

Please notify the committee if you intend to make any amendments to the original research as submitted at the date of this approval, including changes to methodology or accompanying documentation. All changes must receive ethical approval prior to commencing any further research.

The Committee would like to take this opportunity to wish you every success with your research.

Kind regards,

Steven Hirschler

Chair - Research Ethics Committee - York Business School

York St John University