

## Utilizing Protected and Conserved Areas for Human Health and Well-being: A Technical and Methodological Framework

### KEY MESSAGE

In recent years, social prescribing—particularly green prescribing and nature prescriptions—has rapidly gained popularity as a holistic approach to improving health and well-being by connecting individuals with nature-based activities and community support. Due to the unique qualities of protected and conserved areas, they provide irreplaceable benefits to humans. This has prompted many to quickly identify, define, and measure their positive impacts on human health and well-being. As exciting as this potential may be, it is imperative to consider that health is the terrain of another sector. Just as ecosystem management may be unfamiliar to health professionals, health is a field that is less familiar to the conservation professional. In this technical note, we provide a framework for people working in both the conservation and health sectors to effectively and equitably utilize protected and conserved areas as resources that support human health and well-being objectives. By working together, these sectors can develop more comprehensive and effective solutions to both global health and environmental challenges.

### 1. SCOPE & PURPOSE

This technical note focuses on initiatives intended to generate human health and well-being benefits derived from visiting protected areas and other effective area-based conservation measures (OECMs) (hereafter referred to as “conserved areas”). Specifically, it examines the considerations inherent to interacting with these unique natural spaces – through activities such as engaging with wildlife, exploring natural ecosystems, participating in recreation and leisure activities, acquiring new skills, and immersing oneself in ecosystems relatively untouched by human influence, with the attendant psychological, physiological, and social benefits inherent to this – for the purpose of human health and well-being gains. It is also recognized that Indigenous peoples have depended on nature for health and well-being through access to traditional lands, sustainable resources, and cultural practices, since time immemorial. Protected and conserved area initiatives are increasingly Indigenous-led and foster spiritual connections, support traditional ecological knowledge, cultural continuity, and community resilience.

By offering a framework for practical guidance and procedural considerations, this technical note aims to assist program designers, managers, and health and social prescribers in effectively utilizing protected and conserved areas as resources for human health and well-being objectives, including both disease prevention and health promotion. Its scope is therefore wider than the [Healthy Parks Healthy People Toolkit](#) produced in 2022 by the Europarc Federation which focuses primarily on how managers of protected and conserved areas can apply the principles of [Healthy People, Healthy Parks Europe](#) in practice.

This new framework can be considered as part of national target-setting and implementation initiatives such as reported with the United Nations (UN) *Convention on Biological Diversity (CBD) Kunming-Montreal Global Biodiversity Framework (GBF)*, including (but not limited to) [Target 12 Enhance Green Spaces and](#)

[Urban Planning for Human Well-Being and Biodiversity](#) which calls on Parties to increase the quality, connectivity, accessibility and benefits from green and blue spaces for the purposes of enhancing native biodiversity, ecological connectivity and integrity, and of improving human health and well-being and connection to nature. Elements of the framework proposed here can also be used to support the targets of the U.N. [Sustainable Development Goals](#) (SDGs), including targets 11.7 and 11.b.

## 2. PROTECTED AND CONSERVED AREAS AS DISTINCT, LONG-TERM HEALTH RESOURCES

Both protected and conserved areas are geographically defined spaces dedicated to the long-term conservation of nature<sup>1</sup>. Unlike the broader concept of “nature”, these areas are distinct with specific geographic boundaries, management objectives, and legal or other effective means of protection. Most also have some level of resourcing and staffing. These attributes provide protected and conserved areas with unique identities and characteristics that differentiate them from general natural environments.

Protected and conserved areas exhibit several similar qualities that support holistic health and well-being by combining physical, mental, social, and environmental benefits. These include:

- **Geographical Boundaries:** Protected and conserved areas have clearly defined boundaries that are either legally required for protection or which facilitate effective management. These boundaries act to organize areas into discrete entities, separate from other areas. ***They are individually distinct and different.***
- **Unique Ecological Features:** Each protected and conserved area possesses specific ecosystems, species compositions, and natural characteristics which provide unique conservation value and afford a unique feel, identity, and a range of visitor experience opportunities with associated health and well-being outcomes. ***Each protected area and conserved area provide distinct health benefits, shaped by its location, ecosystems, and socio-cultural context.***
- **Cultural and Historical Significance:** Many protected and conserved areas hold cultural, historical, or spiritual importance for local and Indigenous communities. This significance of place is of historic and contemporary importance and can occur over thousands of years or within a relatively short time. For example, Thaidene Nëné, one of Canada’s first Indigenous Protected and Conserved Areas (IPCAs) located in the Northwest Territories and established in 2019, has been home to Dene people – especially the Dënesųłíné – since time immemorial. Kruger National Park in South Africa, on the other hand, carries importance and a shared tradition for hundreds of thousands of South African families that has developed within the last 60 years. ***Such Indigenous and Community Conserved Areas (ICCAs) are places of great potential for elevating Indigenous rights and responsibilities and delivering health and well-being benefits to their communities and to those visiting them<sup>2</sup>.***

Whilst other documents note the conservation value of protected and conserved areas, in terms of their contribution to a healthy planet (i.e., biodiversity conservation, ecosystem quality, and climate regulation)<sup>3</sup>, it may be less appreciated that the unique nature of such areas carry identifiable and unmatched potential for human health and well-being gains. This potential includes:

- **Managed Environments:** Protected and conserved areas are relatively undisturbed and are actively managed to preserve ecological integrity or sustained long-term outcomes for biodiversity, which often results in higher quality natural spaces compared to other areas<sup>4</sup>.
- **Long-term:** Long-term intent and outcomes are fundamental to the definitions of both protected and conserved areas. Due to their long-term (in perpetuity) status and the management and monitoring practices taken to safeguard the integrity of their ecosystems, both protected and conserved areas can be depended on as high quality and sustainable health and well-being resources for populations.

Similarly, Indigenous Peoples often govern with a multi-generational lens, conserving lands for future generations<sup>5</sup>.

- **Human Connection to Nature:** The boundaries of protected and conserved areas create a sense of persona which the human mind can easily relate to and create relationships with. This nature connectedness encourages if not fosters a stronger sense of place and identity<sup>6,7</sup>. This connection has the potential to trigger more meaningful and regular active and/or passive behaviours that can enhance human health and well-being and support environmental initiatives such as conservation more broadly<sup>8</sup>. Similarly, ICCAs recognize that many natural spaces are cultural landscapes providing opportunities for connection to the land and land-based learning<sup>9</sup>.

**Related to the above, protected and conserved areas represent important places for people to see, experience, and enjoy nature.** While the protection of nature is prioritised within protected areas, many are popular places to visit with both visitor infrastructure and education and outreach programmes which are, or can be, tailored to deliver more health and well-being specific activities. The contribution of these areas in supporting physical activity and mental health for the many people who visit them is increasingly recognised. In some countries, this recognition is even used as justification for public investment in these areas. For example, in Finland, more than 6.2 million visits were made to protected areas with estimated savings to the health sector of EUR 1.6 billion over the next 10 years<sup>10</sup>.

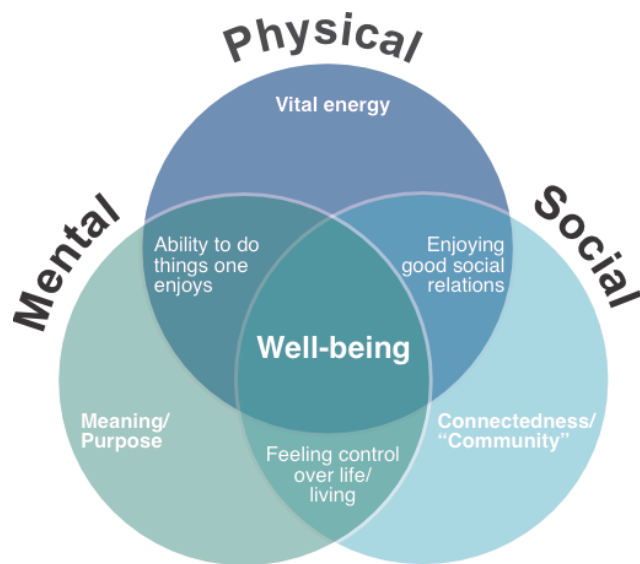
### 3. UNDERSTANDING THE ASPIRATIONAL CONCEPTS OF HEALTH AND WELL-BEING IN RELATION TO PROTECTED AND CONSERVED AREAS

#### 3.1. Health & Well-being as a Multi-dimensional Resource

The World Health Organization’s (WHO) definition of health as “*a state of complete physical, mental, and social well-being*” has been universally adopted as the foundational concept of health<sup>11</sup>. This aspirational view encourages human health to be seen as a resource which can be measured across a variety of dimensions. These support the notion of resilience, the capacity to meet life’s challenges, and the potential for humans to thrive. WHO’s definition has been instrumental in broadening the scope of interest, concern and investment in the healthcare sector to include preventative aspects of health and public health, while substantially improving the health systems’ capacity to address mental health and incorporating many social determinants of health.

The concept of health has evolved and can be understood as a state of well-being emerging from favorable interactions between individuals' potential, life demands, and social and environmental determinants of health<sup>12</sup>, highlighting that both health and nature are complex systems in interaction. This influences how nature can affect people's health and well-being<sup>13</sup>.

Whilst researchers attempt to define the separation between health and well-being<sup>14,15</sup>, in practice, these concepts are closely interconnected and often dealt with as if they are interchangeable (**Figure 1**). Our focus is on how various discrete natural spaces can play a role in promoting and enhancing human health and well-being.



**Figure 1:** The interrelated dimensions of mental, physical, and social well-being.

### 3.2. The Health and Well-being Benefits of Nature Contact: Making Sense of the Evidence

Most people attribute better health to a healthcare system. However, research indicates that only 20% of human health is attributable to clinical care and the remaining 80% depends on social, economic, and environmental determinants of health<sup>16,17</sup>. Biodiversity has been positioned as the single most important measure of natural system health<sup>18</sup>, underpinning nature's contributions to people (NCP)<sup>19,20</sup>, and integral to key development sectors that moderate health outcomes directly or indirectly, such as pharmaceutical, biochemistry, recreation and tourism, and the food system<sup>19,21</sup>. As such, the health benefits from protected and conserved areas cover both general ecosystem services and the spectrum of specific health outcomes from healthy lifestyles (for everyone); health promotion (for specific target groups) and treatment (for specific health reasons).

Although protected areas (and more recently conserved areas) are considered fundamental to biodiversity conservation and play a key role in maintaining livelihoods, and human health and well-being, these benefits are just beginning to be understood as relevant to the health sector. At a foundational level, biodiversity underpins the ecological functions and processes that give rise to the goods and services provided by ecosystems<sup>17</sup>. In addition to the material provisions (e.g., food, fresh water) and regulating functions of ecosystems (e.g., climate, pollination) – contributing to people's health and well-being<sup>22</sup>, an increasing body of evidence indicates that exposure to biodiverse environments, across the nature continuum from urban parks to large, remote protected and conserved areas, can provide many health benefits, including improved mental health through reduced stress and anxiety<sup>23–25</sup> and physiological health including through increased physical activity<sup>26</sup>. Biodiverse environments also provide important spaces that contribute to social well-being<sup>27</sup> and are critical to the development of children (e.g., better concentration, and experiences of environmental competence)<sup>28</sup>. A recent systematic review also showed that psychological connection with nature had significant positive impact on pro-environmental behaviors and values<sup>29</sup> but has been largely neglected in health and conservation policies.

Despite these advances, little is known about how differences in ecosystem composition, structure, and function influence mental health and well-being<sup>30</sup>. While there is some evidence to suggest that interacting with higher levels of biodiversity promotes better mental health and well-being, more studies reported non-significant results<sup>31</sup>. The evidence is not yet of the extent necessary to characterize the role of biodiversity in relation to mental health or well-being<sup>32</sup>.

While the evidence base continues to grow, several recent reviews reveal **methodological limitations** that need to be recognized in many studies that focus on assessing the health benefits of nature contact. These include, but are not limited to:

- **Variability in Definitions:** Different studies often use varying definitions of “nature contact” across the nature continuum from household backyards to large, remote wilderness areas, making it difficult to compare results<sup>29,33</sup>.
- **Variability in Study Designs:** Many studies have limited participant numbers over short durations (affecting the generalizability of findings and limiting sustained benefits over time), lack standardized measures (there is no universally accepted set of tools for measuring health outcomes related to nature contact, resulting in inconsistencies across studies), and are subject to self-reporting bias (leading to over- or under-estimation of benefits). Studies have also focused on specific regions or populations, which may not reflect the experiences of broader, more diverse groups, including Indigenous peoples<sup>34,35</sup>.
- **Lack of Context with Respect to the Ecosystem and Management Context Relevant to Protected and Conserved Areas:** Methods that consider specific activities and ecosystem types, and different aspects of the composition, structure, and function of ecosystems (i.e., ecological integrity), to

achieve a given health effect are in their nascent stages overall<sup>24,30</sup>. This is a critical area of research needed the world-over.

Medical interventions are exact, precise, clearly defined, highly consistent, repeatable, and eminently comparable. If they are not, they are unlikely to get ethical or regulatory approval to proceed and/or quickly gain traction. With conservation under constant critical pressure, we believe it is paramount for all protected and conserved area-based health and well-being initiatives to meet this basic requirement.

***Considering the above, it is critical that initiative designers do not over-state the reach, scope, power, or implications of evidence, misapply evidence intended for one context to another where it does not apply, or utilize research that was not designed to evaluate the efficacy of interventions, faulty research or findings that, for example, do not recognize confounding variables or misattribution of causal forces.***

Addressing these limitations will be crucial to moving forward more robust and reliable assessments of the health benefits associated with nature contact in protected and conserved areas. It is strongly advisable to recruit a health professional capable of interpreting the health evidence relevant to any proposed initiative.

#### **4. EFFECTIVELY AND EQUITABLY UTILIZING PROTECTED AND CONSERVED AREAS AS SALUTOGENIC RESOURCES: A STRUCTURED METHODOLOGICAL FRAMEWORK**

Successfully leveraging protected and conserved areas for health promotion involves several conceptual and technical considerations. ***Well-designed initiatives that are effective, proven safe, genuinely equitable, appropriately monitored, readily scalable and replicable, contribute to the global evidence base and over time earn credibility, gain reputation, build participation and become mainstream in society, do not come about by chance.*** We propose that there is an interconnected set of success determining considerations which designers must navigate. Conceptually speaking, all initiatives should consider the following:

- ✓ **The Health and Well-being Benefits of Nature Contact:** All conceptual models are multi-dimensional which encourage initiatives to consider and support diverse well-being aspects, not just physical health. They might address emotional resilience, social connections, identity formation, motivation, or life meaning, as well as the many physiological endpoints associated with health. They can productively address physical rehabilitation but also healing from trauma and recovery from addiction. ***Multi-dimensional models provide more opportunity for effective initiatives.***
- ✓ **Use of Metrics:** Numerous well-being metrics reflect the multi-dimensional nature of well-being. For example, the World Health Organization-Five Well-Being Index (WHO-5)<sup>36</sup> measures positive mood, vitality, and satisfaction, emphasizing how individuals feel about their lives and activities. The OECD Better Life Index<sup>21</sup> tracks aspects like life satisfaction, social connections, work-life balance, and environmental quality. ***The dominant perspective of health and well-being as a desirable state lends itself to the utilization, or adaptation, of existing metrics, or even the development of new custom tools which can quantify an otherwise abstract idea.***
- ✓ **Inclusive Design Principles:** Recognizing health and well-being as aspirational goals allows for the creation of progressive, engaging activities in natural settings (moving from contact with nature to a state of connection with nature), from structured social events to physical challenges that promote social and emotional well-being and allow the development of individual competencies over time. ***Designers must consider the different values and interests of different peoples and seek diversity and inclusion, recognizing that the universal human aspiration for life satisfaction can be expressed in many ways, across a wide variety of activities, which should prioritize quality and safety, principles that are central to health.***

- ✓ **Personalization:** One’s health is profoundly personal, both in an empowering and in a functionally limiting context. Our era of genomics is ushering in an unprecedented level of precision medicine to deliver personalized treatments, and this fits well with a multi-dimensional aspirational journey of an individual on a continuum of life well-being. We expect highly customized evaluations of health to be the norm in the coming decades. ***For the initiative designer, the unique and customized nature of geographically bounded protected and conserved areas, allows them to offer experiences that can be highly customized, which can be expected to drive participation.***

**The conceptual considerations above highlight the rich matrix of opportunity for utilizing protected and conserved areas as a salutogenic resource for people and communities.** Such initiatives can apply to anyone (since no one has fully realized their potential), are broadly applicable (there are multiple dimensions of value gain), and deeply personal. Designing effective and equitable initiatives involves harmonizing the best practice requirements of two different disciplines, those of human healthcare and those of nature conservation. Whilst there are parallels between these two professions, they are very different in practice and so effective collaboration is by no means guaranteed and must be carefully cultivated.

#### 4.1. From Principles to Practice

To successfully bring together health and conservation professionals to deliver effective interventions for people and nature, a structured approach is needed, with initiatives unfolding in **three progressive orders of consideration: 1) Designing the Initiative; 2) Evaluating Feasibility and Ethics,** and **3) Implementation and Continuous Refinement (Figure 2).** Each order builds upon the last to ensure the initiative is grounded in an explicit concept, thoroughly evaluated, and responsibly implemented.

**Figure 2:** A structured methodological framework for designing, evaluating, and implementing therapeutic health and well-being initiatives in protected and conserved areas.



This structured framework provides a roadmap for designing, evaluating, and implementing therapeutic health initiatives in protected and conserved areas. Divided into three key stages, it ensures that initiatives are well-defined, ethically sound, and effectively governed.

## STAGE 1: Designing the Initiative

The first stage is about turning a general idea into a concrete plan by addressing the basics: **What is the initiative? Where, when, and how will activities occur? Who will be involved?** This is the *‘what’*.

Initiative designers should explore two key possibilities: 1) how activities in protected and conserved areas might offer benefits beyond urban settings; and 2) how to create unique experiences only possible in these areas, such as backcountry camping or hiking. Traditional activities like fishing and hiking have long drawn people to protected areas, but new pursuits such as mountain biking, e-biking, rafting, and climbing are also motivating people to connect with nature<sup>37</sup>. Health professionals could develop specialized programs that build out structured offerings in these areas, based on such factors as interest, ability, cost, and expected benefits.

- a) **Health Objectives:** Define the clinical conditions, health outcomes, or determinants targeted by the initiative, such as cost reduction or improved effectiveness. Engage stakeholders to ensure relevance and prioritize objectives with strong evidence of benefit. Speculative or unsupported interventions should be avoided. Initiative designers should seek to align project objectives with national and regional health priorities and be guided by strategic organizations like the WHO, IUCN, and medical associations and state-level health regulatory agencies.
- b) **Pathway Differentiation:** Initiatives should follow one of two paths:
  - **General Wellness Program:** Offers broad health benefits without specific clinical targets and does not require regulatory approval; or,
  - **Therapeutic Intervention:** Targets specific conditions and must adhere to higher standards, potentially requiring regulatory approval.
- c) **Method of Delivery:** Define the **where**, and **how** of the intervention: specifying the exact location and delivery method of experiences or activities. Mainstream medical interventions are extremely specific about the exact manner and method of delivery, and are built around standard regimes, protocols and pathways. Interventions seeking to gain credibility within the health sector will need to be very clear about the exact method in use. At a minimum, a good method of delivery would include candidate selection criteria, the specific characteristics of the setting, the procedure participants follow, what equipment is used, how it is used and what monitoring processes are employed.
- d) **Nature Dosage:** The “nature dose” (i.e., the frequency and duration of nature exposure activity) is a major factor influencing efficacy, cost, and viability. ***This is the when and how often variable.*** The literature is beginning to explore the minimum amount of time a person should be exposed to nature to obtain benefits.<sup>38,39 40</sup> Current research indicates that nature contact for twenty minutes a day, or at least two hours a week, is likely to produce various health and well-being benefits<sup>41,42</sup>. It is also essential to consider multiple factors, such as quantity, quality, distance, time of exposure and the specific mental health disorder. The scientific literature highlights the need to define minimum exposure thresholds, but also cautions that the effectiveness of contact with nature may depend on the interaction between these elements and the individual characteristics of each person and their socioeconomic and cultural context.<sup>43</sup>
- e) **Efficacy / ‘Place’:** Even if speculative, initiative designers must address the intervention’s hypothesis. All approved medical interventions, be they procedures, drugs, devices, or other interventions, are based on a theory of how they work. Without a clear theory, an intervention risks being dismissed. While healthcare practices often update their theories as knowledge evolves, ignoring foundational observation and awareness undermines credibility. A long-term perspective that deeply connects knowledge to specific places and landscapes, while considering all variables and interconnectedness, is crucial. This mindset harmonizes scientific and Indigenous ways of

knowing and is essential for successful health and well-being initiatives in protected and conserved areas.

- f) **Communication:** A well-structured plan is essential for gaining stakeholder support, obtaining consent, and ensuring necessary approvals. Over-promising benefits or lack of research could harm the reputation of health initiatives in protected and conserved areas and the organizations involved.
- g) **Alignment:** The “what” and the “why” must be developed in parallel, ensuring the initiative aligns with both the unique attributes of the protected and conserved area and the specific health challenges of the target population.

## STAGE 2: Evaluating Feasibility and Ethics

The second stage addresses the critical question: Should we implement this initiative? This involves three key considerations: **1) ethical implications; 2) economic viability; and 3) environmental and community impacts**, ensuring the initiative is feasible, fair, and sustainable.

- a) **Ethical Considerations:** This ensures the initiative aligns with ethical standards, is inclusive, and promotes informed participation.
  - **Fairness and Justice:** Does the initiative treat all participants fairly, especially vulnerable or marginalized groups? Are power imbalances addressed to safeguard well-being?
  - **Equity:** Does the initiative ensure access for all, regardless of socioeconomic status, ethnicity, or location? Health equity is essential in both healthcare and conservation efforts, aiming to address systemic barriers.
  - **Addressing Barriers:** Initiatives must tackle interpersonal, intrapersonal, and structural barriers to ensure equitable access<sup>44</sup>. Without careful design, initiatives could inadvertently widen health inequities<sup>45</sup>.
  - **Safety/Risk Management:** Are safety measures in place to protect participants physically and emotionally? Is the environment safe, and can risks to both participants and ecosystems be mitigated?
    - Initiatives need to consider risks to all participants, those with pre-existing illnesses, mental health illnesses, phobias, anxiety, vulnerabilities, allergies, mobility challenges, those at increased fall risk, participant knowledge, and competency and ability to recognize wildlife, weather, and terrain hazards.
  - **Informed Consent:** Can the initiative be clearly communicated to participants, ensuring they understand the risks and benefits before giving consent?
- b) **Economic Viability:** The initiative’s economic feasibility should be evaluated in terms of costs, benefits, and sustainability.
  - **Benefit Valuation:** What is the estimated value of health, social, or long-term economic benefits derived from the initiative? Specific reference to disability-adjusted life years ([DALY](#)) and quality-adjusted life years (QALY) should be included where possible.
  - **Comparison to Contemporary Healthcare:** How do costs compare to conventional healthcare methods, and are there savings in leveraging protected and conserved areas?



- **Affordability:** Can the initiative be financially accessible for both organizers and participants? Is there a plan for long-term sustainability?
- c) **Ecosystem and Community impact:** The initiative must ensure that ecosystem integrity is maintained.
- **Protected and Conserved Area Suitability:** Does the protected or conserved area have the necessary attributes to support the initiative?
  - **Environmental Impact:** Will the initiative harm natural resources or contribute to habitat degradation, pollution, or invasive species?
  - **Community Impact:** Does the initiative benefit local communities, or could it negatively affect their quality of life by increasing outside visitors?
  - **Resource Conservation:** Can the initiative be designed to minimize negative environmental impacts and promote sustainable practices?
  - **Carrying Capacity:** Can the area accommodate the initiative without straining wildlife, ecosystems, or infrastructure? Will human activity interfere with other species or the natural environment?

### STAGE 3: Implementation and Continuous Refinement

Stage 3 focuses on implementation, monitoring, and ongoing refinement to maximize effectiveness, control, safety, and minimize down-side. This stage ensures that the initiative has a sufficiently robust governance structure and adaptability built into the process to allow it to gain traction quickly, meet objectives, and scale as quickly and widely as possible. Good governance will not happen unless it is explicitly designed and consciously championed at all levels of the accountable organization.

- **Curation of the Oversight Community:** A governance structure is responsible for monitoring and auditing the initiative, ensuring it aligns with the vision, charter and policies, managing participant protocols, and overseeing implementation at various levels.
    - Determine the appropriate constitution of a multistakeholder steering committee by considering what professional level expertise is required. For all initiatives, consider and include relevant national and regional authorities and skillsets from both conservation and healthcare professionals.
    - There is a valuable opportunity for health and well-being initiatives to harmonize the scientific approach and Indigenous ways of knowing and doing.
- b) **Implement Safety and Risk Management Protocols:** Initiatives should develop comprehensive safety and risk management strategies to protect participants from potential harm, such as physical injury, psychological distress, or other unintended effects, as well as safeguard environmental integrity and prevent unplanned degradation or harm to biodiversity within the natural space.
- c) **Pilot Testing / Staged Roll Out:** Starting with a pilot project to test feasibility, safety, and efficacy is a commonly used strategy in new health initiatives. Gradually initiatives can expand to broader groups, scaling responsibly based on evidence gathered during pilot testing.
- d) **Monitoring:** Implement metrics and monitoring systems to track both expected and unexpected outcomes, such as health impacts, safety indicators, environmental effects, and participant satisfaction. Wherever possible, initiative designers should be willing to adopt, or develop, consistent data formats, conventions and terminology, to facilitate data comparisons (across case studies) and

aggregation. Initiatives should identify and utilize clear and measurable indicators for health and well-being, valuing objective measures above subjective ones, where possible and appropriate to the context.

- e) **Reporting:** Initiatives should document findings, enable transparency for collective knowledge, and potential adoption in other settings. Wherever possible, registries of initiatives should be created, and initiatives should voluntarily participate.
- f) **Exit Strategy and Re-evaluation:** All responsible projects should develop a clear exit strategy to discontinue the initiative if unforeseen risks arise, if effectiveness cannot be demonstrated, or if the intervention proves unsafe or detrimental. Such preparations should include a mechanism to document the lessons and insights and disseminate them. *Empirical knowledge is built on noticing what does not work as well as what does work.*

## 5. CONCLUSION

A “nature is medicine” movement has emerged in the U.S., U.K., Canada, Australia, New Zealand, South Korea, Singapore, Japan, Scotland, Finland and other countries to encourage doctors and other health care providers to write medical prescriptions to visit parks for physical and mental health benefits, gaining broad support within the medical community and receiving international recognition<sup>30,38</sup>. This movement represents a tangible, powerful example of how health professionals and protected and conserved area practitioners can collaboratively work together toward the societal transformations that are so desperately needed to improve both human health and the health of ecosystems. These are local initiatives, relevant to practitioners in their *day-to-day work* and to people in their *everyday lives*. The [\*Nature is Good Medicine - Call to Action\*](#) developed by the [IUCN WCPA Health and Well-Being Specialist Group](#) recognizes the irreplaceable potential of nature-derived health services to individuals and society and calls on the IUCN and its members to actively promote and support partnerships with the health sector and other key partners to make access to nature and its benefits available to all.

Despite their potential, nature prescription programs have failed in the past because of a lack of transdisciplinary collaborative pathways. Recent research emphasizes that there needs to be a mechanism (or body/organization) that bridges the health and environmental/conservation sectors together to enhance the effectiveness of such programs. For example, in the U.K., where green prescribing is active, a recent review found that the most common constraint for health general practitioners (GPs) to nature prescribing was the perceived lack of services or organizations to support nature-based interventions, while for nature-based organizations it was the difficulty engaging with GPs and other primary health care professionals<sup>46</sup>. This disconnect underscores the need to establish transdisciplinary, cross-sector collaborative pathways that can help bridge collaborations between the two sectors. The piloting of greenhealth partnerships in Scotland with similar initiatives by the [National Health Service \(NHS\) in England](#) has sought to close these gaps between the health and conservation professions, and initiatives occurring in other regions can learn from these early experiences.

Protected and conserved areas offer a unique opportunity – and resource – to promote, improve, and protect human health and well-being across multiple dimensions. While there is no doubt that the synergy inherent in these areas can support both public health and conservation goals, initiatives in this space need to be designed rigorously, with consideration of best practices and in collaborative stewardship structures, to be meaningful and achieve the objectives they set out to achieve.

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