Green Health Partnerships in Scotland – evaluation of the first three years

Green Health Partnerships are part of the programme to make more use of Scotland's outdoors as **Our Natural Health Service**. National partners include:

NatureScot NàdarAlba

Scottish Forestry Coilltearachd na h-Alba

Public Health Scotland

Sustainability Action Our NHS Our People Our Planet

Transport Scotland Còmhdhail Alba

Healthier Scotland Scottish Government

Executive Summary

This report presents an overview of how the pilot Green Health Partnerships (GHPs) worked to achieve their five key aims in the first three years of operation. The range and volume of work it illustrates is creditable considering the impact of Covid-19 during this period. Overall, progress towards each aim has been substantial, with certainty of progress established for some of them. The monitoring and evaluation exercise demonstrated that an increase in cross-sectoral collaboration and awareness of the potential contribution of nature to health has been achieved in the GHP areas. Going forward, the GHP model can be considered effective at facilitating green health opportunities, awareness, and capacity-building activities across sectors.

- Four pilot GHPs were set up in 2018 to demonstrate how better cross-sectoral coordination can mainstream approaches to improving health through engagement with the natural environment. They were in Dundee, Lanarkshire, North Ayrshire and Highland. Led by local health boards and local authorities, these partnerships bring together health, social care, environment, leisure, sport, and active travel interests in both state and third sectors, to make more use of local green space as a health-promoting and, where appropriate, healing resource.

- A logic model was developed which set out both the kinds of outcomes the GHPs might produce and the processes by which those outcomes could be achieved. Together an evaluation team and GHPs distilled a set of core measures to measure progress along the logic model pathways.

- This report details the monitoring and evaluation of the core measures between June 2018 and September 2021.

- GHPs facilitated or promoted nearly 550 opportunities for green health activities across all three of the ONHS 'types' of interaction with nature (everyday, promotional initiative, targeted intervention). Participation in these likely increased contact with nature and introduced new users to nature.

- GHPs undertook more than 440 awareness raising and capacity building activities with the majority reaching health and social care staff. The numbers and range of nature-based health promotion activities and referral pathways increased over time, showing health professionals became aware and involved.

- The GHPS reported 63 referral pathways established or facilitated. These were for a variety of client groups / health problems or situations, including clinical therapies such as cardiac rehabilitation and cancer care.

- Around 300 public-facing outreach and information activities were completed. The presence of mass media and government campaigns about nature and health during Covid-19 will have boosted GHP efforts.

- Green health / the GHPs were mentioned in 58 local policies and plans, including those focused on health. This is an important marker of mainstreaming and cross-sectoral reach.

– Lanarkshire GHP is now sustainably funded. The other three GHPs were re-funded for a further 2 years via a consortium led by NatureScot.

– The GHPs are working with NIHR to conduct an evaluation of impacts on health and inequalities.

Dundee Green Health Partnership

Get Outdoors Lanarkshire

think health think nature
The Highland Green Health Partnership

North Ayrshire Green Health Partnership

This report was prepared by Professor Rich Mitchell, University of Glasgow and Bridget Finton, NatureScot and should be cited as: Mitchell, R. and Finton, B. Green Health Partnerships in Scotland – evaluation of the first three years (November 2022). NatureScot.

Many of the public and voluntary sector organisations from North & South Lanarkshire involved in the Green Health Partnership gathered for its launch event, September 2018.

Background

The **Our Natural Health Service** (ONHS) programme is an initiative developed by Scottish Government with NatureScot in the lead. ONHS is designed to bring Scotland's health and environment sectors closer together and maximise the contribution of Scotland's green infrastructure and environment to protecting and improving population health. ONHS aims to better connect health and natural environment at multiple levels: in government; in the delivery of policy and practice by the health, environment, and other sectors; and ultimately in individuals across Scotland via the health and environmental benefits which accrue from their increased awareness, and use of, Scotland's natural environments.

Green Health Partnerships (GHPs) were conceived as a key means of delivering some of ONHS's aims. Pilot GHPs were set up to demonstrate how better cross-sectoral coordination can mainstream approaches to improving health through engagement with the natural environment. Led by local health boards and local authorities, these partnerships bring together health, social care, environment, leisure, sport, and active travel interests, across state and third sectors, to make more use of local green space as a health-promoting and, where appropriate, healing resource.

In 2018, four pilot GHPs were established: Dundee, Highland, Lanarkshire, and North Ayrshire. Around £100k funding per year was available to each GHP, although in the event not all GHPs required the full amount, and all also acquired additional funds or in-kind contribution. Whilst the precise set up, function and focus of GHPs varied, they had a common set of aims. These included:

1. An increase in the number of people having contact with nature.
2. Greater awareness in health professionals of the contribution of nature-based health promotion and interventions to physical and mental health and well-being.
3. Public Health and Health & Social Care sectors routinely embracing nature-based health promotion and interventions for prevention, treatment and care.
4. Greater public awareness of the benefits & opportunities for contact with nature as part of everyday life.
5. Nature-based contributions to health mainstreamed and funded sustainably.

Ayr Gorge Woodlands Fungi Walk with the Scottish Wildlife Trust's Time Out Thursday Group is an example of green health activity provision within North Ayrshire's Green Health Partnership – photo credit Harry Richards

The Green Health Partnerships

GHPs are a place-based approach to increasing use of the natural environment as a health-promoting asset and as such, have their own priorities and ways of working, developed in response to local strategic plans, working relationships and staffing arrangements. The staff resource associated with all the GHPs was affected to a greater or lesser degree during the Covid-19 pandemic.

Lanarkshire GHP was the first to appoint a dedicated project officer, hosted by the health board, and establish a 2-tier governance structure with the Director of Public Health chairing the strategic group. An initial focus on the relevance of nature-based initiatives to improve mental health broadened over time and has now seen the GHP become an integral part of delivering NHS Lanarkshire's Weight Management Service. Green health options have been integrated into a range of existing referral pathways.

Dundee GHP's project officer was initially hosted by Dundee City Council and has been co-managed by the council and the health board. Funding was also provided for a post based at Dundee Volunteer and Voluntary Action (DVVA) which facilitated development of and support for the bespoke green prescribing system. Encouraging participation in outdoor physical activity has been a constant theme, with promotion of the associated benefits to physical and mental health to the fore.

North Ayrshire GHP has a project officer hosted by The Conservation Volunteers (TCV) which has contributed to strong links with the community and voluntary sectors and the development of a Green Health Network and small grants fund. Close working with the health board included promoting greater use of NHS greenspace and influencing plans and strategies, and partnership work with the leisure trust helped develop options for green prescribing.

Highland GHP has a project officer hosted by the health board and the area has a large number of green health opportunities and partners. Work has highlighted nature as a resource for health and wellbeing and promoted more people to be more active more often in their communities. Because of the size of and range of issues within the area, work has often been piloted in localities to test an approach to influencing health and social care practice or green health project delivery.

ReDiscover Dundee is an e-bikes and e-trikes project initiated by the Dundee Green Health Partnership. This picture shows a 'have-a-go' session at the Ninewells Hospital Community Garden.

The monitoring and evaluation process

Soon after the advent of the GHPs, an evaluability assessment (EA) of the ONHS programme and GHPs specifically was carried out by the University of Glasgow. EA is a systematic and collaborative approach to planning evaluation. It involves: structured engagement between researchers and stakeholders to clarify intervention goals and how they are expected to be achieved; development and evaluation of a logic model or theory of change; and provision of advice on whether an evaluation can be carried out at reasonable cost, or further development work on the intervention should be completed first. The EA made multiple recommendations about the evaluation of GHPs, the most pertinent of which were:

- To provide the highest quality evidence for the impacts of GHPs, an experimental approach would be needed to identify effects (and cost effectiveness) accurately and reliably. This might take the form of a cluster-randomised controlled trial, or a stepped wedge design, in which partnerships are implemented sequentially in a random order. This would be an expensive and long-term undertaking but might be justified if the process evaluation was promising.

- The scale of investment (4 GHPs) may not justify large scale primary data gathering at this stage. Creating new datasets which can track and detect local changes in attitudes, behaviours and outcomes is expensive, requires a long lead time and the identification of 'control' or comparison populations. Without large scale investment, there is a risk of false negative findings.

- Evaluation of the GHPs should therefore focus most on processes: recording participation and engagement of local service provider and agency staff in the delivery and dissemination of GHP activities, participation of the public in events and schemes delivered by the GHPs, and contextual constraints and enablers of change, may be useful for planning further development and evaluation of the scheme. GHP co-ordinators should ensure that attendance numbers of the public or clients at events and activities and recorded in a consistent and robust way. Engagement is perhaps the strongest measure of effect the GHPs will have in these early stages.

A logic model was developed from the EA (Appendix 1) which set out both the kinds of outcomes the GHPs might produce and the processes by which those outcomes could be achieved. Guided by the EA, the evaluation team and GHPs distilled a set of 'core measures' (Appendix 2) through which progress on the logic model pathways towards the aims listed above could be identified. In discussion with the GHPs, NatureScot produced a spreadsheet-based template to assist and standardise reporting by the GHPs. NatureScot produced and subsequently refined guidance on each core measure within the spreadsheet, and on qualitative components.

Data collection was piloted and refined during a period referred to as Phase 1: June 2018 to December 2019. Phase 1 data were collated, assessed, and an interim report produced which recommended several changes to simplify and further standardise the data collection process. The refined framework was used for a second wave of data collection, referred to as Phase 2: 1 January 2020 to 30 Sept 2021.

Two sets of adjustments were made to these datasets for this report. Phase 1 data were cleaned and re-worked by NatureScot to fit the Phase 2 data collection system. The Phase 1 and 2 data were then merged with attention to duplicate entries (identifying where the same opportunity or outcome had been reported in both phase 1 and 2, for example) and consistency over time. This single dataset captured the actions and reach of the GHPs over the entire time-period of the study, as far as possible.

Resourcing and independence

The monitoring and evaluation process had no budget or wholly dedicated staff. Whilst reporting was a condition of the GHPs' grant, it placed a considerable burden on them. The coordination, cleaning, analysis and interpretation of the data was also a substantial task absorbed by staff at NatureScot and the University of Glasgow. Mitchell and Finton were part of ONHS from the outset. Mitchell is on the board of ONHS and Finton is employed by NatureScot.

Assessing impact and achievement

The core measures were designed to align with aims 1-5 above. In the rest of this report, data are presented and interpreted to assess evidence for the GHPs meeting those aims. As the EA identified, defining and attributing the extent to which the aims have been met is difficult from this scale and style of monitoring. Results are therefore specified in terms of the likelihood that aims have been met. A summary of these is presented at the end of the report.

During Covid-19 lockdowns, the Highland Green Health Partnership co-ordinated the preparation and delivery of green health home packs to provide nature-related activities for those who couldn't access other forms of support. Young Oliver has impaired vision and was one of the recipients

Measuring participation

Aim 1 was to increase the number of people in contact with nature. The EA identified that discerning impact of the GHPs from routine national monitoring data (such as NatureScot's People and Nature Survey, or the Scottish Household Survey) would not be possible. This was because of both the sample size of those sources in GHP areas, and the difficulty of attributing any change to the actions of a GHP. Resources were not available to either survey the general population within the GHP areas or establish a cohort study. Nor were they available to establish 'control' or counter-factual areas in which GHPs were not present. Reporting and assessment on this aim therefore focused on the opportunities for green health activities that the GHPs facilitated or promoted.

Throughout the monitoring period, discussions took place with the GHPs about their ability to report both the number of 'places' available in green health opportunities (e.g. how many people *could* be accommodated in a particular opportunity), and the number of people who took up an opportunity (e.g. how many people *attended*). However, opportunities were almost always run by delivery partners, and this presented substantial problems for the GHPs when trying to achieve robust reporting of places and uptake. Sometimes, the number of places was not fixed or had no maximum, the number of attendees could not be captured accurately, or the provider was not willing to collect the data. Even where recording of uptake was possible, there was no way to distinguish between 'repeat' participants and 'new' participants. These problems are not specific to GHPs; they are commonly experienced within many types of service provision.

The arrival of Covid-19 early in Phase 2 of data collection disrupted green health activity provision and participation. There were periods of time when people were not allowed to leave home other than for brief exercise, and when social gathering was either illegal or discouraged. The impact on GHP staff was also substantial, with many of those working in the health sector diverted to work on Covid response. In contrast to these constraints, there was also a massive increase in both media and official messaging that spending time in nature is healthy and might help relieve stress and anxiety. Monitoring of contact with, and attitudes to, natural environments by both the University of Glasgow and NatureScot showed positive changes during the pandemic. All these events meant that changes over time between phases 1 and 2 do not simply reflect the smooth implementation of GHPs and a simple population response. For this report, most attention will therefore fall on activities and achievements across phases 1 and 2 together.

Overall, it was not possible to accurately capture changes in contact with nature that are directly attributable to GHPs. However, the monitoring and evaluation system was able to capture the number and range of opportunities for green health activity in GHP areas, over the study period. The following section describes the number and type of these activities across the GHP programme as a whole and, where appropriate, at individual GHP level.

How many opportunities for green health activities have the GHPs facilitated?

An opportunity was defined as a scheme, project, initiative or intervention that took place in or engaged with our natural environment and related to health. The GHPs recorded the number of provider partners and opportunities for green health activity. During phase 2, GHPs were asked if the opportunity had begun during that period, however analysis showed that this was not always recorded consistently. The data from both phases were therefore assessed and cleaned to prioritise consistency and avoid double counting. For example, where the same opportunity appeared in both the phase 1 and phase 2 datasets, it has been counted once. This yielded a total of 548 green health opportunities across all GHPs and both phases, delivered by 228 partners in phase 1 and 221 partners in phase 2. The number of opportunities was comparatively even in Dundee, Lanarkshire, and North Ayrshire, with the geographically larger Highland offering more (Figure 1).

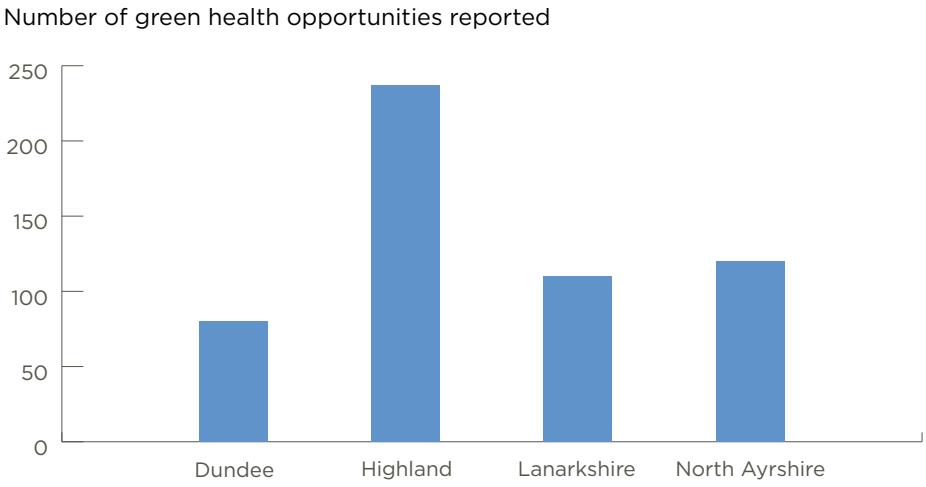

Figure 1 – Number of green health opportunities delivered across phases 1 and 2

The impact of Covid-19

Impact of Covid-19 on opportunity provision was measured in two ways; the number of opportunities provided in each phase, and the number of *new* opportunities provided in phase 2. Remarkably, the number of opportunities provided overall rose from 353 in phase 1, to 399 in phase 2. The number of opportunities *added* in phase 2 varied slightly between GHPs (Figure 2) but every GHP did continue to develop and increase its provision during the pandemic. There was substantial variation in the extent and duration of Covid-related restrictions across Scotland during the pandemic, with West of Scotland experiencing tougher and substantially longer restrictions than other areas. This had a significant impact on green health opportunities provided.

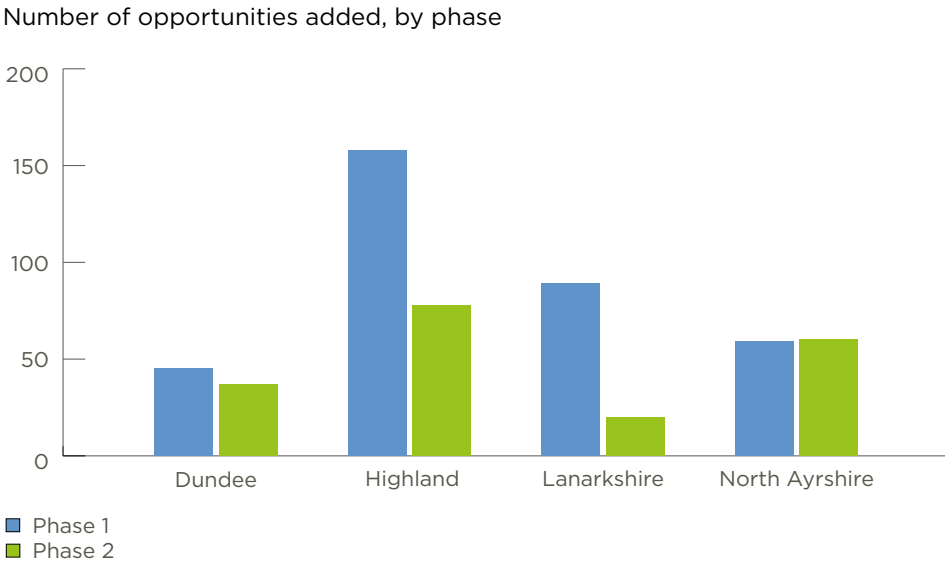

Figure 2 – the number of opportunities for green health activities 'added' by phase of data collection

Whilst the data collection process did not offer definitive evidence that the GHPs met aim 1 (increase in the number of people having contact with nature), the achievement of curating and facilitating large numbers of green health opportunities was substantial and sustained. It is implausible that so many new opportunities for green health were all unattended! So, whilst the data do not quantify how many people had contact with nature as a result of GHPs, an increase in the number of people doing so seems likely.

What was the balance in types of green health opportunity delivered by GHPs?

The **ONHS model** sets out three kinds of use of natural environments for health: everyday contact with nature for anyone; nature-based health promotion initiative; and a targeted nature-based intervention to which clients could be referred as part of a care/treatment package. GHPs were asked to record the number of opportunities for green health activities under each category. Given that key aims of GHPs were to raise awareness among health and social care professionals of the benefits of nature, and to get it routinely used in treatment and prevention (aims 2 and 3 in the list above), the number of health promotion and nature-based intervention activities was of interest.

There was a broadly even split between opportunities aimed at everyday activities and nature-based health promotion, with opportunities promoted to more than one category also offered in similar numbers. The strong presence of nature-based health promotion activities is clear evidence of progress on aims 2 and 3 above (Figure 3).

All GHPs

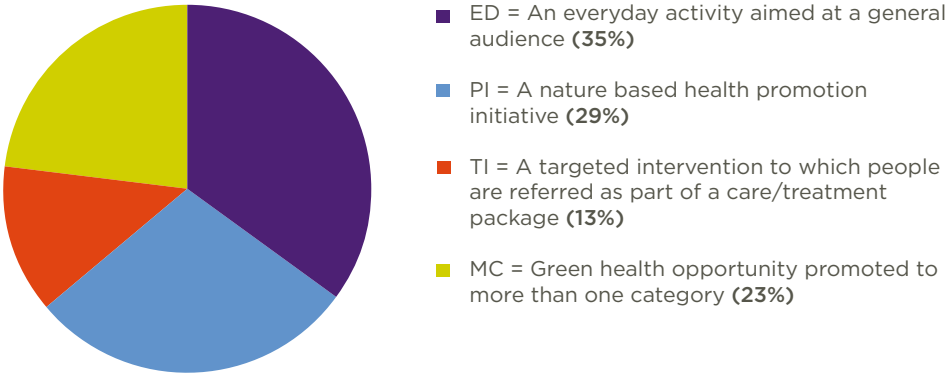

Figure 3 – Distribution of green health opportunities between the types of contact set out in Our Natural Health Service

There were 73 targeted intervention opportunities recorded by the GHPs across phases 1 and 2. It is notable that this category had the greatest proportion of opportunities which began during phase 2 (41%). It is plausible that this reflected the novelty of targeted interventions at the outset, the subsequent action of GHPs to facilitate them and, therefore, evidence of GHP impact on aim 3. It's certainly evidence of an increased use of natural environments in care/treatment which chimes with the evidence for increased numbers of referral pathways (see below).

What kinds of opportunities were provided and what was the balance between them?

GHPs were asked to categorise each opportunity by activity type. Walking was the most popular activity type, largely encompassing Health Walks groups (Figure 4). A significant number of opportunities provided multiple types of activity – an example would be Branching Out which includes physical activity, mindfulness, bushcraft and environmental art within programmes. The range of opportunities offered ensured something suitable for almost all audiences and tastes. The activities were not solely focused on exercise or physical activity, with arts and conservation activities also featuring for example. There were some differences between GHPs in the activity types offered (Figure 5), but it is hard to assess the extent to which this reflects how GHPs responded to the reporting process (i.e. which opportunities they considered to be part of their 'offer') or what the range and number of opportunities actually was.

Without consistent and comparable data on uptake or health impact, it is difficult to prove the virtue of a wide range of activity types or explore which types had greatest benefit. However, it does point to inclusivity and imaginative use of natural environments. Given the existing scientific evidence for pathways by which nature affects health, the availability of activities which promoted physical activity, social interaction and relaxation was appropriate. All GHPs connected with a range of opportunities.

Number of opportunities by activity type

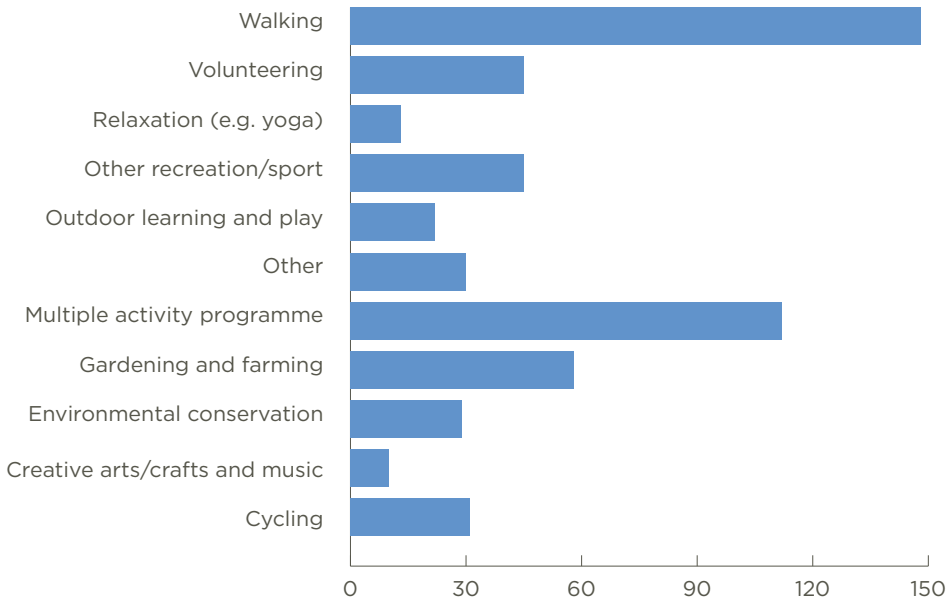

Figure 4 Range and number of green health activity types.

Opportunities by GHP

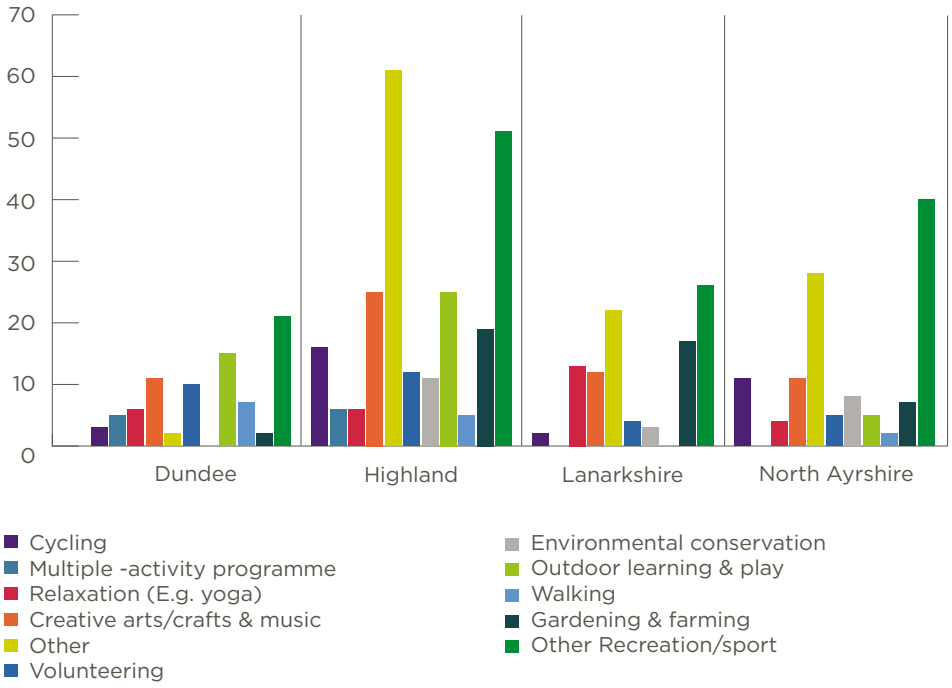

Figure 5 – Range and number of activities offered, by GHP.

Raising awareness and building capacity among health and social care practitioners and community-based green health delivery partners.

The GHPs recorded 445 individual events, activities or actions aimed at raising awareness and building capacity among health and social care sector staff and community-based green health delivery partners. GHPs were asked to classify the type of engagement activity and results show that talking was the most common medium. Two thirds of the activities were either presentations or meetings (Figure 6). Data suggest that the GHPs were also excellent at taking advantage of other people's events and that this was far more common than organising a bespoke event themselves. Formal training / cpd featured too, with nearly 10% of activities in that category.

All GHPs

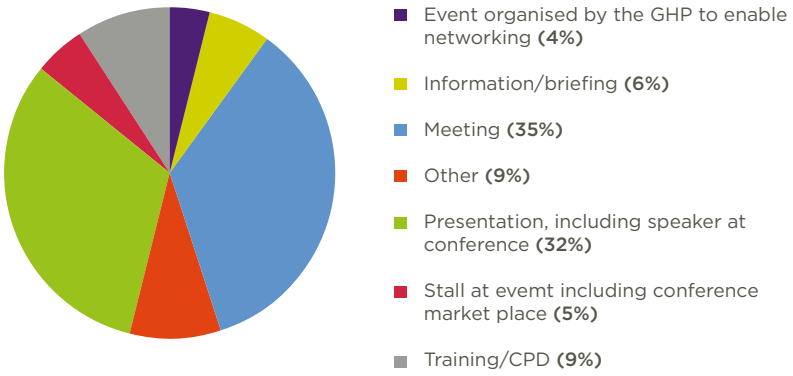

Figure 6 – actions to raise awareness and build capacity among health, social care and green health delivery partners.

At the advent of GHPs, there was a concern that green health delivery partners would be a relatively easy audience to reach, but that staff in the health and social care sector might be more difficult given the novelty of the intervention and competing demands on their time. The GHPs were asked to record the sector of the audience for each capacity building/awareness raising activity and analysis shows that, in fact, health and social care audiences were reached very successfully (Figure 7). There was some variation between GHPs in the balance of audience sectors. The structure and focus of Dundee GHP, for example, was more oriented to the NHS and this may explain how and why their interactions were dominated by that sector.

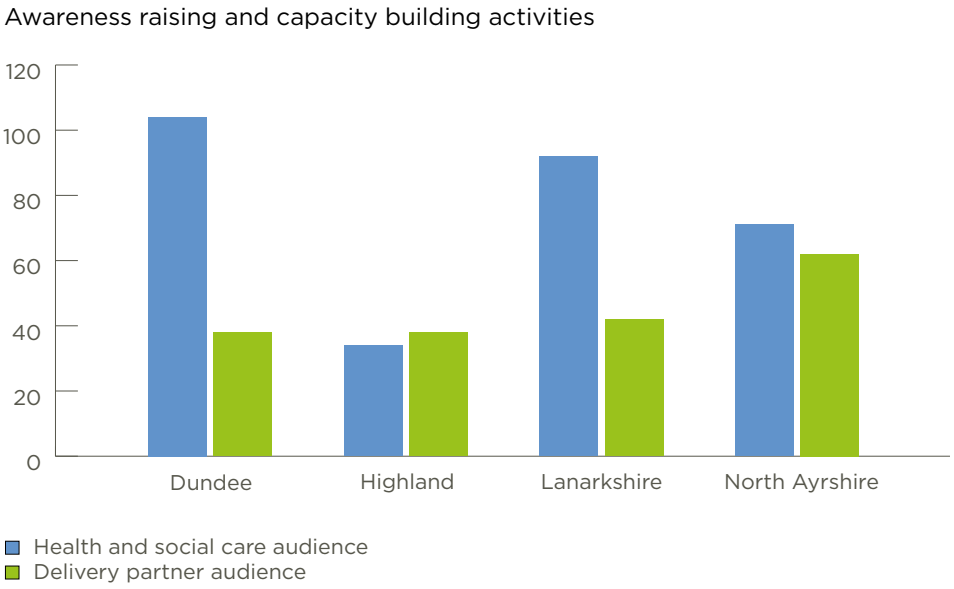

Figure 7 – Audience for awareness raising and capacity building activities, by GHP

Although the quantitative data did not capture firm evidence for impact of these events, it is certainly evidence of action towards aim 2. For many events, GHPs provided estimates for the numbers of people reached. The estimates are a good indication of the scale of action which took place. The estimate total number of health and social care staff reached was 11,549, and for green health delivery partner staff it was 7,988. The data suggest that the numbers of people reached decreased in phase 2, particularly among delivery partners, because of Covid-related restrictions on organised group activities.

Referral pathways

Establishing referral pathways (via which green activities can be 'prescribed' or recommended) is a crucial means of connecting the health and social care services with our natural environment. Green prescribing is one part of a much broader movement called social prescribing. This movement reflects the broader determinants of health, and that medication or counselling are often not the only routes to improvement for a range of health problems and conditions. The referral pathways facilitated by GHPs followed a variety of models, from signposting by staff to patients and clients, to formal prescription of green activity by clinicians. Referral to green health activities remains comparatively novel in Scotland. Once a 'treatment' becomes routine in clinical care, it may become easier to justify funds and perhaps easier to evaluate its impacts on the patient/user.

The GHPs reported 63 referral pathways across phases 1 and 2. In the main, GHP action resulted in green health opportunities being added to the range of options referred to via an existing pathway, but work (in particular in Dundee, see **research paper** published April 2022) has also developed new pathways specifically for green health. The pathways were for a variety of client groups / health problems or situations. (Figure 8). Whilst general health and wellbeing, or multiple health issues was the most common reason for referral, other clinically specific conditions or situations were also covered. Those with poor mental health and physical inactivity were common client groups, but cardiac and pulmonary rehabilitation, and cancer care emerged too.

Referral pathways

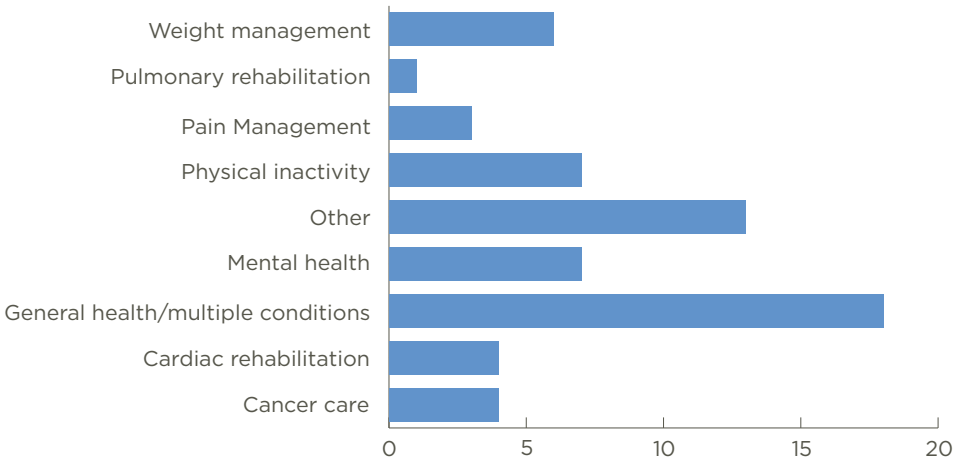

Figure 8 – Number and client group foci of referral pathways in GHP areas.

All GHPs reported active referral pathways in their area. North Ayrshire reported a particularly sharp increase in phase 2, leading to its position as the GHP offering the largest number (Figure 9). Again, the number and range of pathways identified by GHPs is likely to reflect differences in reporting practice as well as actual provision. It was not possible to independently verify every pathway reported.

Number of pathways reported

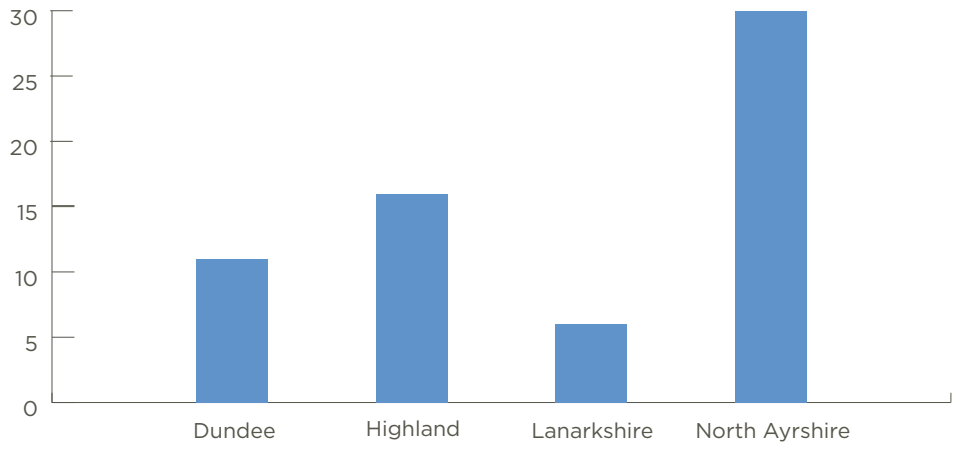

Figure 9 - Number of referral pathways reported by GHPs across phases 1 and 2.

Green prescriptions are occurring elsewhere in Scotland too and have been developing over time. There is currently no coherent map of their location and operation, so it is hard to say definitively that referral has surged in GHP areas more than elsewhere. However, GHPs have worked hard to develop green prescribing practice (Dundee won the Award for Best Nature Based Social Prescribing Project at the 2021 International Social Prescribing Conference), and the evidence presented here, combined with knowledge of the sector, suggests that their establishment has led to both a greater focus on, awareness and number of, such pathways. This indicator provides evidence for good progress towards aim 3.

Public facing promotion of GHP and green health activities

GHPs aimed to facilitate opportunities for green health activity and broker intersectoral collaboration. However, for green health to really have an impact on population health and inequalities it must be acceptable to, and used by, the public. As well as targeting professional audiences, the GHPs therefore undertook substantial public promotion campaigns. Around 300 different activities and events were carried across phases 1 and 2. An extraordinary variety of approaches was deployed, with GHPs showing considerable ingenuity and invention to deliver and maintain their promotion, which was especially important during the Covid-19 pandemic (Figure 10).

All GHPs - public facing promotional campaigns and activities

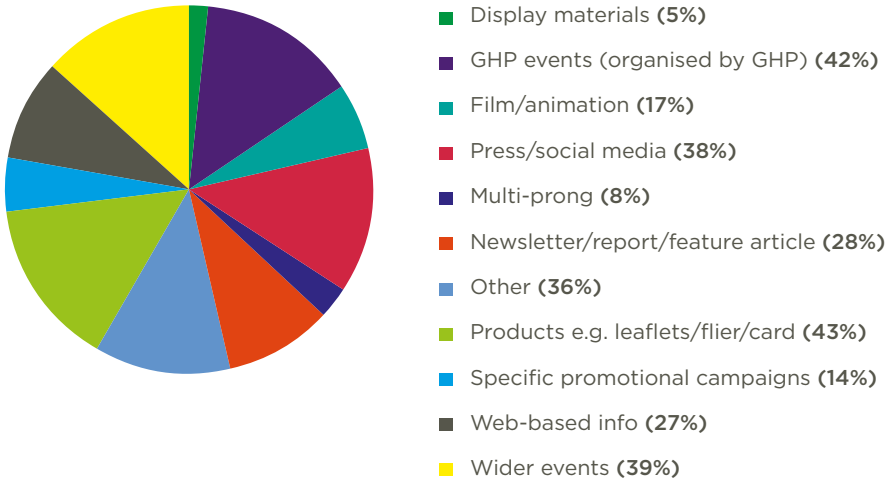

Figure 10 – Variety and number of public-facing promotion events and activities

All GHPs engaged in substantial quantities of these events and activities, with Dundee achieving the highest numbers across phases 1 and 2 (Figure 11).

Number of public-facing promotion events and activities

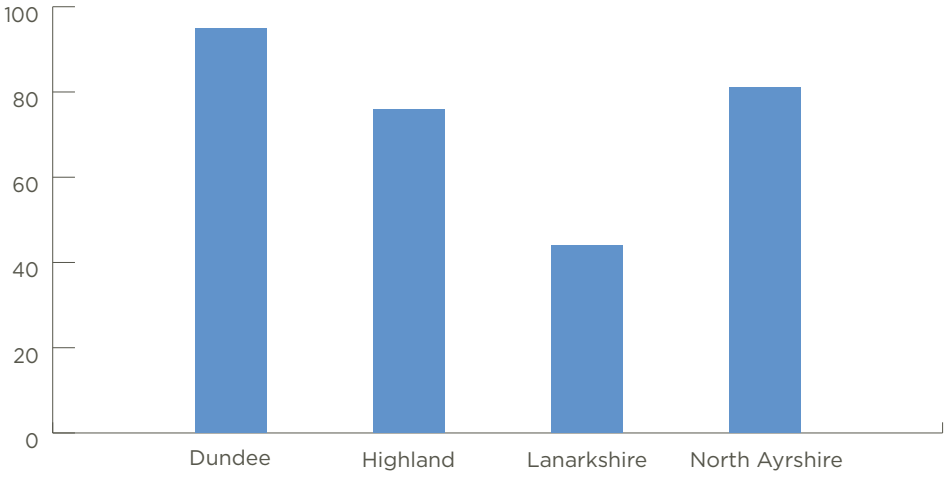

Figure 11 – Numbers of public-facing promotion events and activities by GHP.

With the data focused on the number events and activities rather than impact, it is hard to say definitively that public awareness was increased by the GHPs actions. However, the range and number of activities delivered to an audience (that was also bombarded with Covid-19-related messages about the positive impact of nature on mental health), is highly likely to have had a positive impact and contributed to aim 4.

Achieving policy recognition

Aim 5 refers to mainstreaming and funding green health, and GHPs by inference, sustainably in the long term. One means of achieving this is to bind appropriate references into relevant strategic plans and policies. This advertises and legitimises GHPs, recognises what they can and might deliver, and may help ensure they have a continuing role in the future. If a GHP can point to the value of green health and its own presence in strategic plans and policies, the chances of integration and funding may increase. The appearance of green health and GHPs in local plans and policies was therefore monitored and the sector to which the policy or plan primarily referred was recorded.

Considering their relatively brief existence and current lack of long-term funding, all GHPs achieved considerable success in getting 'linked in' to 58 plans and policies (Figure 12). Their presence in health plans and policies is solid evidence that cross-sectoral linkages have been achieved and contributes to aim 2 as well. Organisations that use and promote nature are now featured in documents that discuss and plan for population health and social care.

Green health and GHP mentions in local plans and policies, by document sector

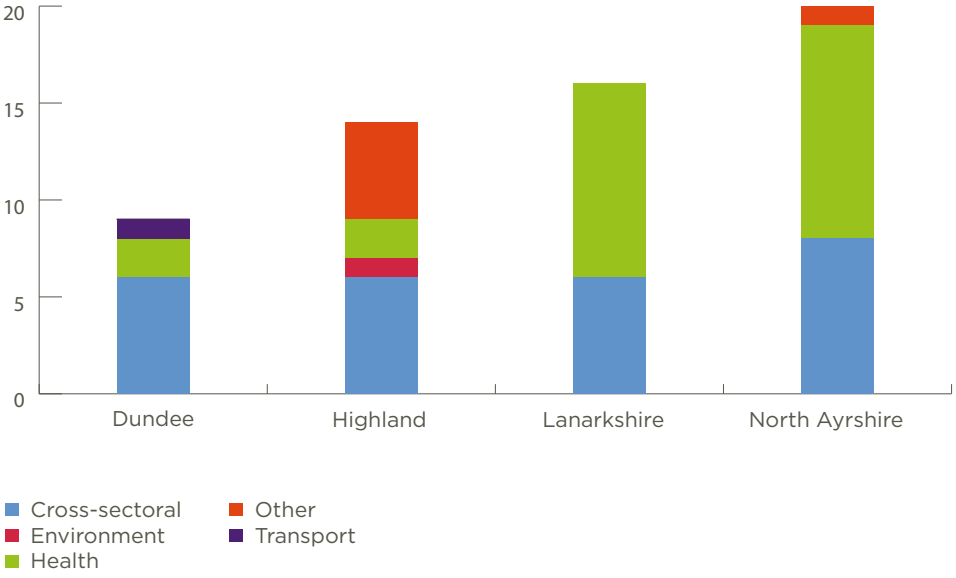

Figure 12 – Number and sector of policies and plans in which green health and GHPs are included.

Sustainable funding

NatureScot has led the development and funding of this work with support from Transport Scotland: pump-priming the initial interventions to test that they deliver with the intention that they would be mainstreamed if they do. This has now been largely achieved by the Lanarkshire GHP which is the longest running of the partnerships. Their project officer post has been mainstreamed, though other aspects of their work primarily around delivery of green health interventions by partners, remain reliant on uncertain funding. While good progress has also been made by the three other GHPs, Covid-19 has impacted on their work and a second phase of funding was considered essential to fully realise the potential of these newer partnerships.

Both greater recognition and a collaborative approach to funding across Scottish Government portfolios of this proposed second phase is seen as important in the successful mainstreaming of this intervention in public health policy and practice. It is therefore significant that Scottish Government Active Scotland funding was secured for this second phase while the **NHS Scotland Climate Emergency and Sustainability Strategy: 2022-2026** will further embed the work of GHPs in mainstream health policy and practice.

Qualitative data

The monitoring and evaluation framework also gathered stories of impact and meaning from the GHPs. The original intent was to gather information in a consistent manner and to try to synthesise findings as the evaluation team was acutely aware that the quantitative evaluation component measured GHP activities in terms of 'how many?' but not 'why?', 'why not?', 'how?' or 'with what impact?'

Some of the views and experiences of GHP staff and stakeholders were very well-captured in a **bespoke qualitative study** from Edinburgh Napier and that report should be read in conjunction with this one. It provides a vivid and useful assessment of the reality of setting up a GHP and making progress in the first year.

All GHPs also offered qualitative information about the experiences of their clients (and sometimes staff) and these are often powerful testament to the impact that contact with nature and the social interaction that green health opportunities promoted. Some GHPs shared these stories directly with the public. Highland established the **thinkhealththinknature.scot** website, including blogs through which people share their experiences of being outside. This passage from **one post** is typical of the stories people told.

The environment fully engaged me both physically and mentally, made me focus on the 'here and now', feeling the shock of the cold water splash but with my body warm, responding to what it was asked to do.

The river worked its magic and I came off feeling renewed and with my doom and gloom washed away. Getting out into nature is a beautiful escape from this very strange world.

Other qualitative information from the GHPs included accounts of the transformative power of social interaction on a walking group, of gardening and of conservation. The numbers in this report reveal how much work the GHPs put into spreading 'the word' about nature and health, how they managed to facilitate green health opportunities in their areas, to get their message into the world of health and social care, get into policy documents and get more money to continue the work. Those numbers do not reveal the enjoyment, experience, and benefits that this work led to when people in need of physical and mental restoration got outside and into nature.

Summary and recommendations

Table 1 summarises the results of the monitoring and evaluation exercise against the 5 listed GHP aims, with an indicator of the strength of evidence provided for each aim. Overall, progress towards each aim has been substantial, with certainty of progress established for some of them.

The monitoring and evaluation exercise demonstrated that an increase in cross-sectoral collaboration and awareness of the potential contribution of nature to health has been achieved in the GHP areas. Going forward, the GHP model can be considered effective at facilitating green health opportunities, awareness, and capacity-building activities across sectors.

Table 1 – Summary assessing GHP attainment against the 5 listed aims

GHP aim	Evidence	Achieved? certainly not X X X very unlikely X X unlikely X likely ✓ very likely ✓✓ certain ✓✓✓
1. An increase in the number of people having contact with nature	GHPs facilitated substantial number and variety of opportunities for green health activities across all 3 of the ONHS 'types' (everyday, health promotion, targeted intervention). Participation in these likely increased contact with nature, and introduced new users to nature.	✓
2. Greater awareness in health professionals of the contribution of nature-based health promotion and interventions to physical and mental health and well-being.	GHPs undertook substantial number of awareness raising and capacity building activities with the majority reaching health and social care staff. The numbers and range of nature-based health promotion activities and referral pathways increased, showing health professionals aware and involved.	✓✓✓
3. Public Health and Health & Social Care sectors routinely embracing nature based health promotion and interventions for prevention, treatment and care.	Numbers of activities classed as nature-based health promotion rose, numbers of referral pathways increased and diversified. Important clinical groups now have referral pathways in place.	✓✓
4. Greater public awareness of the benefits & opportunities for contact with nature as part of everyday life.	Very large numbers of public outreach and information activities completed. Presence of mass media and government campaigns during Covid-19 will have boosted GHP efforts.	✓
5. Nature-based contributions to health mainstreamed and funded sustainably.	Green health and GHPs mentioned in large numbers of local policies and plans, including those focused on health. Lanarkshire GHP sustainably funded. Other three GHPs re-funded via NatureScot.	✓✓✓

Referral pathways for green health opportunities have been established in GHP areas, though they are also being established elsewhere. Referral remains a very broad church and a national exercise to map, explore and evaluate green health referral would be useful. This is likely to require mixed methods and realist evaluation. Ultimately, carefully designed randomised controlled trials could be used to determine whether it is more effective than conventional care.

The impacts of public-facing promotion are unclear from this work, though it has been demonstrated that the GHPs made tremendous efforts to conduct it, carrying out many events and activities. It would not be good value to spend resources tracking the impacts of public promotion by GHPs specifically in the future. The question of how much behaviour change is initiated by these kinds of actions in general may well have been studied elsewhere.

The impacts on individual and population health, and on health inequalities, of the green health opportunities were also not covered by this monitoring and evaluation process. The EA argued that the level of resource and study required to properly demonstrate a health impact was too great to commit until the GHPs were first established and proven to be effective in terms of action and reach. That stage has now arguably been reached and the GHP programme has had an expression of interest in independent evaluation accepted by NIHR's PHIRST programme. In that application it was argued that -

[t]he three [funded] GHPs provide usefully diverse approaches which have the potential to highlight which activities are most successful in which contexts. The presence of both social and clinical referral pathways offers potential for evaluation using routine and linked data. Local directors of public health are supportive. The geographical specificity of the GHPs also offers the potential for assessing local changes in population levels of contact with nature.

Study designs focussing on the referral pathways and/or tracking the health impacts among participants of green health opportunities are recommended. This stage of evaluation of GHPs concludes with the intention that impact on health and inequalities will be demonstrated by the PHIRST scheme.

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Appendix 1 Local Green Health Partnerships – Revised Logic Model – December 2018

Goals	Activities	S-T (1-2 year) Outcomes	M-T (2-3 year) Outcomes	L-T (>3 year) Outcomes
Public and voluntary health, social care and environmental organisations plus local communitites work together to deliver green health interventions to improve population health and wellbeing. Improved health and well-being for local populations; reduced health inequalitites.	Provision of green health inequalitites. Information systems to monitor referral/take up of interventions. Innovative social marketing of green health interventions. Workface development/ capacity building for health, social care and voluntary sector practitioners. Evidence based for green health intervention accessible to practitioners in health, social care and voluntary sectors. Working relationships established between lead Health Boards and local delivery partners. Communication of roleand purpose of GHP activities.	Improved awareness among local communities and health and social care professionals of green health interventions. Increased referral or sign posting to green health interventions. Increased uptake of green health interventions by users of health and social care.	Green health interventions integrated into health and social care sectors. More people participating in green health activities. GHPs embedded into local partnership plans with resources allocated.	Green health interventions incorporated in the planning and use of public estate. Sustained increases in numbers of people participating in green health activities. Stable funding for GHPs. Long term partnerships established between lead Health Boards and local delivery partners.

Appendix 2 Evaluation Framework – Revised Version – June 2019

Activities	Core measures	What GHPs are asked to record
Facilitate and support the provision of a range of green health interventions / opportunities	1. Changes in the number and range of delivery partners offering green health interventions/opportunities within GHP area 2. Changes in the number and range of opportunities for people to participate in green health activities within GHP area 3. Changes in the overall number of people participating in green health activities in GHP area	1.1 List of delivery partners offering green health opportunities 2.1 List of green health opportunities provided by each delivery partner 2.2 Categorisation of green health opportunities provided by each delivery partner 2.3 Number of participant places offered by each green health opportunity 3.1 Number of people participating in green health opportunities + Identify potential case studies / personal stories on the impact of participation in green health opportunities
Deliver local workforce development / capacity building for local communities and for practitioners from the health, social care and voluntary sectors	4. Changes in health & social care workforce's awareness of the benefits and options for connecting people to nature 5. Changes in capacity and skills of community based staff / organisations to contribute to GHP objectives and deliver green health opportunities	4.1 Health and social care workforce - volume of awareness raising activity delivered, reach and audience breakdown 5.1 Green health delivery partners - volume of awareness raising & skill development activity delivered, networking activity, reach and audience breakdown + Identify case studies / practice exemplars

Activities	Core measures	What GHPs are asked to record
Establish information systems to monitor referral and take-up of local green health interventions	6. Changes in the number of pathways in Health and Social Care services linking into green health interventions 7. Changes in the number of referrals made to green health interventions 8. Changes in the number of people taking up green health intervention referrals	6.1 List of referral pathways developed or promoted by GHP 6.2 Target client group(s) for each pathway 7.1 Number of people who have been referred to a green health intervention by each pathway. 8.1 Number of the people referred who have actually taken up an intervention + Identify potential case studies / personal stories on the impact of participation in green health interventions
Raise public awareness of local green health interventions/ opportunities Communicate the role and purpose of the GHP to local policy & decision makers and health & social care professionals Make the evidence base for green health accessible to local communities and practitioners in the health, social care and voluntary sectors	9. Changes in the number and range of promotional tools used to market green health interventions/ opportunities to the public 10. Changes in the number and range of promotional tools used to engage policy/decision-makers and health & social care professionals in the work of the GHP	9.1 Record of public facing promotional activity and products 9.2 Record of purpose of promotional activity, reach, impact (where available) 10.1 Record of promotional activity and products aimed at professional audiences 10.2 Record of purpose of promotional activity, reach, impact (where available)
Establish working relationships between Area Health Boards and local delivery partners	11. Changes in the number and range of strategic policies and plans in which green health / GHPs are embedded	11.1 Record of local plans and policies in which green health / the GHP is referenced