



Cardiff Beech Woods SAC Recreation Mitigation Strategy 2026

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Summary

This strategy sets out the mitigation requirements relating to impacts from recreation (associated with new housing in Cardiff) for the Cardiff Beech Woods Special Area of Conservation (SAC). The Beech Woods are of international importance and designated for their biodiversity, and the strategy ensures Cardiff Council meets legislative requirements and adequately protects the site when permitting development.

The Cardiff Replacement Local Development Plan (RLDP) provides for around 24,000 homes over the plan period (2021 – 2036), this is equivalent to around 1,600 homes per year. Mitigation measures are set out in detail and comprise ranger provision, path management, signage and interpretation alongside regular monitoring of visitor use.

Mitigation will be funded through developer contributions from all new residential development within 6km of the SAC boundary. By addressing risks up front, the strategy provides a proactive solution that ensures cumulative impacts of growth are taken into account. The strategy ensures necessary resources and costs are identified and provides clarity for developers when bringing forward sites for development.

This strategy will be updated on a rolling basis approximately every 5 years, providing the opportunity to check the mitigation, scale of growth and update any costs. As such the strategy provides a long-term solution to recreation impacts.

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1. Introduction

- 1.1 This strategy relates to housing and other types of development within the Cardiff. It addresses risks from increased recreation use (associated with local housing growth in the Cardiff Replacement Local Development Plan (the RLDP)) on the Cardiff Beech Woods Special Area of Conservation (SAC).

Background

- 1.2 The Cardiff Replacement Local Development Plan (RLDP) sets out how development is expected to come forward over the period to 2036. The RLDP describes where and how many new homes, jobs and infrastructure are to be provided. It has developed through a series of consultation phases.
- 1.3 The RLDP was submitted for examination in 2025 and will result in around 24,000 homes over the plan period (2021 – 2036), this is equivalent to around 1,600 homes per year.

Legislative context

- 1.4 This strategy has been produced in order to meet particular legislative requirements. European sites are those afforded the highest level of legislative protection for biodiversity.
- 1.5 The designation, protection and restoration of European sites is embedded in the Conservation of Habitats and Species Regulations 2017, as amended, which are commonly referred to as the 'Habitats Regulations'. They include Special Protection Areas (SPA) classified under the 1979 Birds Directive and Special Areas of Conservation (SAC) designated under the 1992 Habitats Directive. Ramsar sites are afforded the same statutory protection through Welsh policy. In this strategy we use the term 'European site' to refer to SPA, SAC and Ramsar sites.
- 1.6 European sites are the cornerstone of UK nature conservation policy. Public bodies, including local planning authorities, have specific duties in terms of avoiding deterioration of habitats and species for which sites are designated or classified, and stringent tests have to be met before plans and projects can be permitted. Public bodies are referred to as 'competent authorities' within the legislation. The duties set out within the Habitats Regulations in relation to the consideration of plans and projects are applicable in

situations where the competent authority is undertaking or implementing a plan or project, or authorising others to do so.

- 1.7 The legislation is founded on the 'precautionary principle' and it is necessary to rule out harm, rather than demonstrate impacts. Assessment (Habitats Regulations Assessment, 'HRA') requires consideration of effects either alone or in-combination, and this strategy therefore relates to the cumulative effects of plan-led development across the combined authorities.

The Cardiff Beech Woods

- 1.8 The Cardiff Beech Woods are located on the outskirts of Cardiff and lie adjacent to the settlements of Taffs Well, Morganstown and Tongwynlais. The Beech Woods are a designated Special Area of Conservation (SAC) for *Asperulo-Fagetum* beech forests and *Tilio-Acerion* forests of slopes, screes and ravines. The SAC is divided into four forest blocks (Garth Woods, Castell Coch Woodlands, Forest Ganol and Cym Nofydd), which are underpinned by three Sites of Special Scientific Interest (SSSIs). Forest Ganol is also a local nature reserve.
- 1.9 The SAC is dissected mostly by minor roads as well as the A470. The SAC is adjacent to other woodland blocks, including Forest Fawr (open access land), Coed-y-Wenallt (part of SSSI) and Coed y Bedw Nature Reserve (also SSSI). These woodlands are interlinked by a network of public rights of way, bridleways and open access land which facilitates visitor use between all woodland blocks.
- 1.10 The Beech Woods are characterised by steep slopes of mixed-broad leaved woodland, and the beech forests are present in all of the four forest blocks. The beech forests support a suite of rare plants, including Bird's nest orchid *Neottia nidus-avis* and Yellow Bird's-nest *Monotropa hypopitys*. Where undisturbed, the forests have a dense understorey of bramble and young oak, birch and beech regeneration under the canopy.
- 1.11 The SAC boundary is shown in Map 1.

Need for a strategy

- 1.12 The HRA that accompanied the Cardiff's Deposit Plan (Kenny, 2024)¹ identified that: *Given the known vulnerabilities of Cardiff Beech Woods SAC and the fact that a majority of regular visitors to the SAC are Cardiff residents, it is considered that a total of 9,744 net new dwellings that do not already have planning consent will potentially increase recreational pressure in the SAC further. Such pressure may also be exacerbated by initiatives under Policies SP10: Tourism and EC9: Hotel Development. While tariffs on new development cannot be used to address existing recreational pressure issues, it is essential in order to conclude no adverse effects on SAC integrity from the Local Plan that a mechanism exists to address recreational pressure from further population growth.*
- 1.13 In addition, the HRA concluded that: *Since mitigation is likely to be most effective if coordinated in an SAMM [Strategic Access Management and Monitoring], Cardiff should also work towards developing a mitigation strategy funded by a tariff on net new residential development and have an outline of such a mitigation strategy available by the time of Local Plan Examination.*
- 1.14 This strategy therefore follows on from the HRA findings and secures the necessary mitigation to ensure adverse effects on site integrity for the Cardiff Beech Woods SAC can be ruled out for the levels of growth proposed in the RLDP.

Other similar mitigation strategies

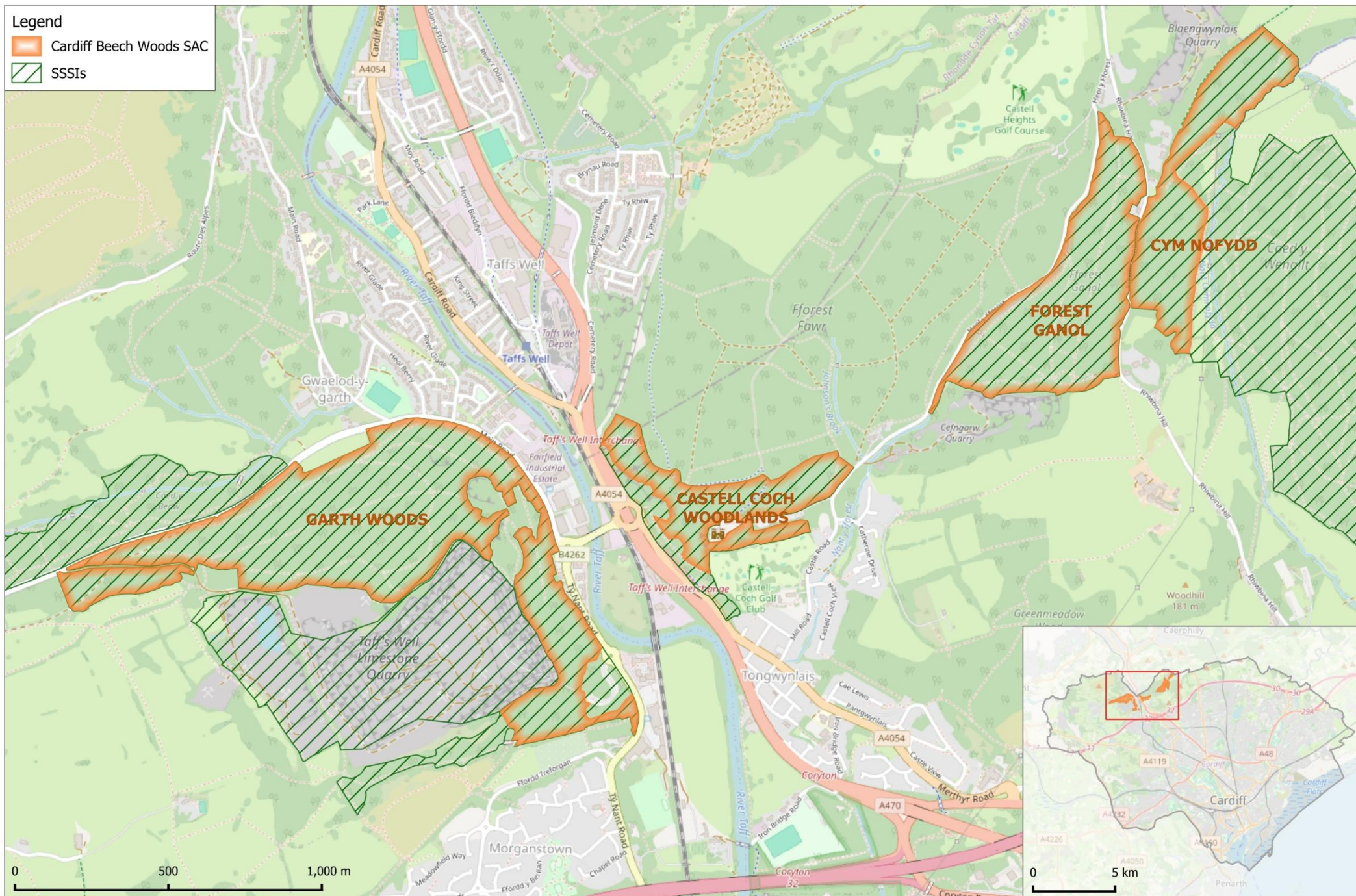
- 1.15 Many of the SACs in the UK where the Asperulo-Fagetum beech forest feature is a primary reason for site selection have mitigation strategies in place to address recreation impacts from local housing growth. These strategies reflect the vulnerability of the habitat to recreation pressure and contain much useful background and context on the impacts of recreation to Beech Woods and mitigation measures. Relevant examples include:
- Burnham Beeches SAC (Chiltern and South Bucks Councils, 2020; Liley *et al.*, 2022a);
 - The New Forest (Liley *et al.*, 2023);
 - Cotswold Beechwoods SAC (Liley and Panter, 2022);

¹ See para 6.18, <https://www.cardiffldp.co.uk/wp-content/uploads/RLDP-23-Habitat-Regulations-Assessment-ENGLISH.pdf>

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- Chilterns Beechwoods SAC (Panter *et al.*, 2022; Buckinghamshire Council, 2024).

Map 1: Cardiff Beechwoods SAC and nearby SSSIs.



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2. Recreation use, housing change and impacts from recreation on the Cardiff Beech Woods SAC

Overview

- 2.1 This section summarises the background evidence with respect to visitor survey data, the scale of growth proposed in the Plan within the relevant catchment and how recreation could impact the European site features.

Access to the Beech Woods

- 2.2 It is now increasingly recognised that access to the countryside is crucial to the long-term success of nature conservation projects, for example through enforcing pro-environmental behaviours and instilling a greater respect for the world around us (Richardson *et al.*, 2016). Access also brings wider benefits to society that include benefits to mental/physical health (Lee and Maheswaran, 2011; Bragg and Atkins, 2016; Kondo *et al.*, 2020) and economic benefits (Bateman *et al.*, 2014; Day, 2020; Dasgupta, 2021). In recent years there have been shifts in government policy and debate around enhancing access to the countryside.

Access infrastructure and variation in use

- 2.3 Map 2 shows relevant access infrastructure in terms of car parks and rights of way. Car parks are extracted from OpenStreetMap² and do not necessarily include all informal parking options. Public rights of way are shown and where these cross the SAC boundary we have identified foot access points, however not all informal access points and informal paths are shown. The map also shows the wider context in terms of adjacent woodlands and paths. In addition, the Forest Café within Forest Fawr is not shown on the map, and while the café is not signposted within the site or much designated parking provided, the café is located at the intersection of several routes and may be a draw for users.

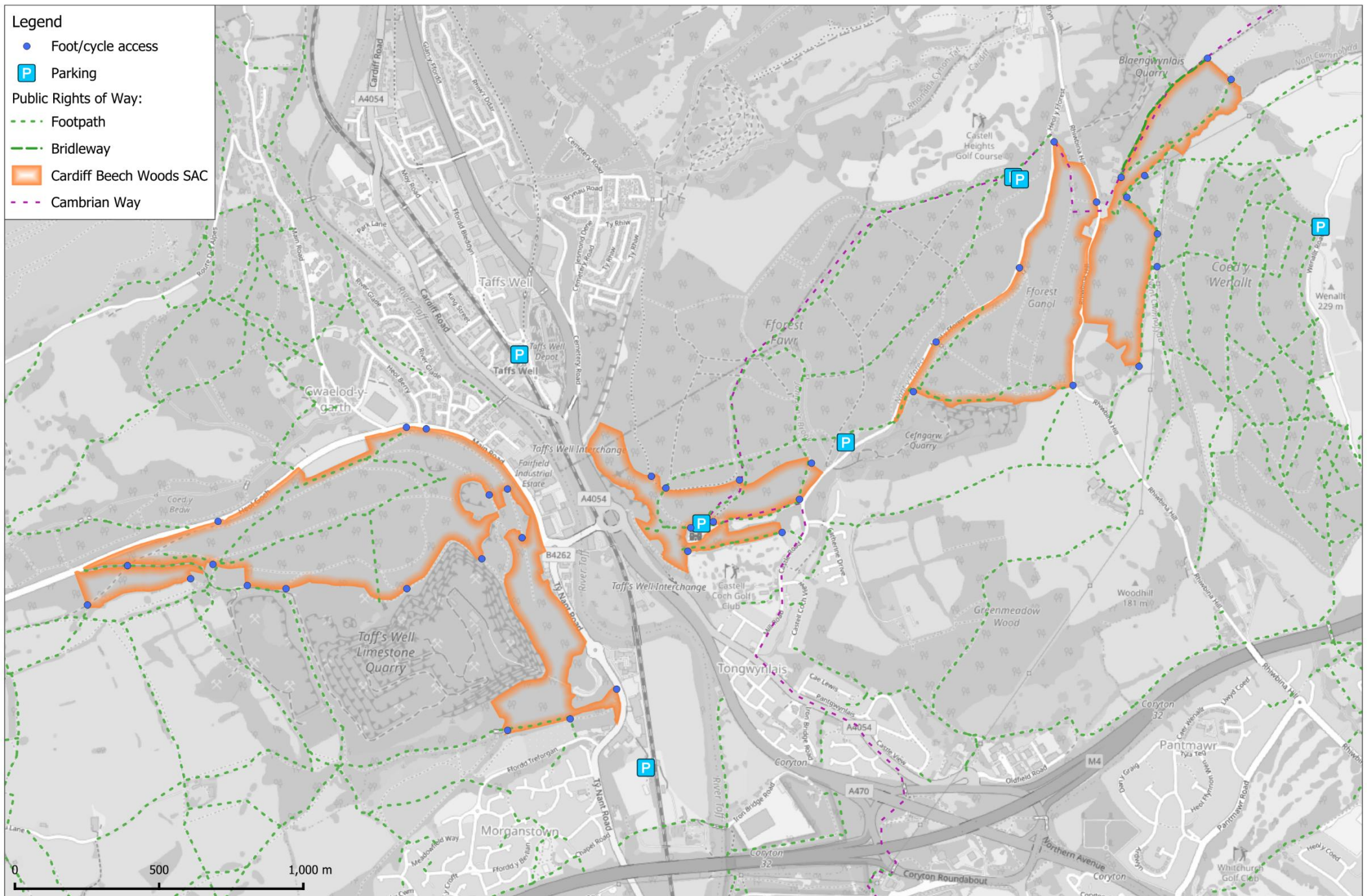
² See <https://www.openstreetmap.org/about>

- 2.4 A selection of images of different parts of the Cardiff Beech Woods is shown in Figure 1. The SAC is dissected by a network of public rights of way and minor roads, and is adjacent to open access land and local nature reserves. At most access points, there is an information board, either detailing the possible routes and interest features on site (see Figure 1, a) or the wildlife interest for the woodland blocks which are part of the nature reserves (see Figure 1, b). Waymarkers are also used to direct public rights of way, mostly in Garth Wood, and the Cambrian Way is also signposted through the site (although note that this route mostly passes through adjacent woodland and not the SAC).
- 2.5 Each woodland block of the SAC differed in levels of use, although it is clear from the site visit that the main activities undertaken across the site are mountain biking, walking, dog walking and occasional horse riding along public bridleways. In **Cwm Nofydd** to the east, while there is some public access, recreational use appears limited with a single track along the top of the slope in the northern section and at the bottom of the slope (just outside the boundary) in the southern section, with one central route connecting them. There is no parking, and very limited waymarking. Two small paths in the northern section were overgrown. Similarly, within **Forest Ganol** two interpretation boards provide visitor information on routes across site and potential wildlife to encounter. These are located at two of the access points along Hoel-Y-Fforest Road. While there is no dedicated parking provision in this area of the SAC, visitors can use the nearby Forest Fawr car park and there is space for approximately two cars at the entry point along Rhiwbina Hill Road. Routes on site link with other sections of the forest (Cwm Nofydd and Forest Fawr) and include a bridge over the stream adjacent to the road in the southern end of this forest block.
- 2.6 **Castell Coch Woodlands** also link to Forest Fawr and any routes advertised on site are part of this forest block. At the time of visiting, access behind the castle itself was limited due to ongoing building works, although steep routes to join the elevated plateau behind the castle were still in use. Climbing is also popular within this section of the SAC, on the exposed chalk wall which lies to the west of Castell Coch, bordering the A470 and accessed by a layby (parking provision for approximately five cars. On-site parking is available in the nearby Castell Coch visitor car park, although not strictly prohibited. All recreational routes on site were generally sign-posted on one of the many information boards, as part of a wider network of trails round the site. Most routes either followed the plateaus between slopes to provide a flatter,

shorter walk, or weaved down steep slopes to the roads which intersect the forest blocks. Across each block, but particularly in Forest Ganol, the designated trails are crossed by multiple 'wild' mountain bike trails created by recreational users.

- 2.7 Finally, **Garth Wood** to the western end of the site has some on-foot access to via entry points scaling steep slopes from Main Road in Taffs Well. There is also informal parking near Heol Goch (on the roadway leading to the quarry). Usage of the wood is likely to be localised from nearby housing, as access provision is otherwise limited. Dog walking, some evidence of horse riding and mountain biking are popular on site, with a well-established series of 'wild' mountain bike trails, jumps and routes evident on site. Due to safety, most of the quarry section of the site is inaccessible due to fencing, however some gaps in fencing and chalk visible on old quarry walls suggest that there is some level of climbing possible in the southern corner of the wood.

Map 2: Access infrastructure



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Figure 1: Examples of visitor infrastructure present on site: a) Information board detailing trails around Forest Fawr, b) Information board suggesting wildlife present around Forest Ganol, c) Car park at Forest Fawr, and d) Waymarking to follow PROW across site.

Visitor survey data

2.8 Visitor surveys were undertaken in 2024 to inform the HRA and the results are summarised in an Appendix to the HRA (Kenny, 2024). Key findings from the survey included:

- 143 interviews were conducted, with the majority (97%) involving people on a day trip or short visit and having travelled directly from home.
- Dog walking was the most common activity (62% of interviewees), followed by walking (23%). Other activities included Exercising (6%) and Cycling (6%).
- Most visits were quite short (83% under 2 hours);
- Many visitors were frequent visitors, with 58% of those interviewed visiting at least weekly.
- Proximity to home was the main reason interviewees had chosen to visit the Cardiff Beech Woods rather than another local site (cited by 47% of interviewees).
- Only 27% of interviewees were aware of any conservation designations that applied to the woodlands.
- Home postcode data indicated that, for those visiting from home on the day of the interview, 75% lived within a 6km radius of the survey point, establishing a zone of influence for the site.

Scale of housing growth proposed in the Plan

2.9 Current postcode data (from 2026) indicates there are around 159,184 residential dwellings within Cardiff. The distribution of these is shown in Map 3, and it can be seen that most housing is south of the M4, with the highest density in the city centre.

2.10 Current housing figures (i.e. 2026) within 6km of the Cardiff Beech Woods SAC are:

- Within Cardiff: 70,181 dwellings (44% of the total number within Cardiff)
- Across all authorities including Cardiff: 106,702

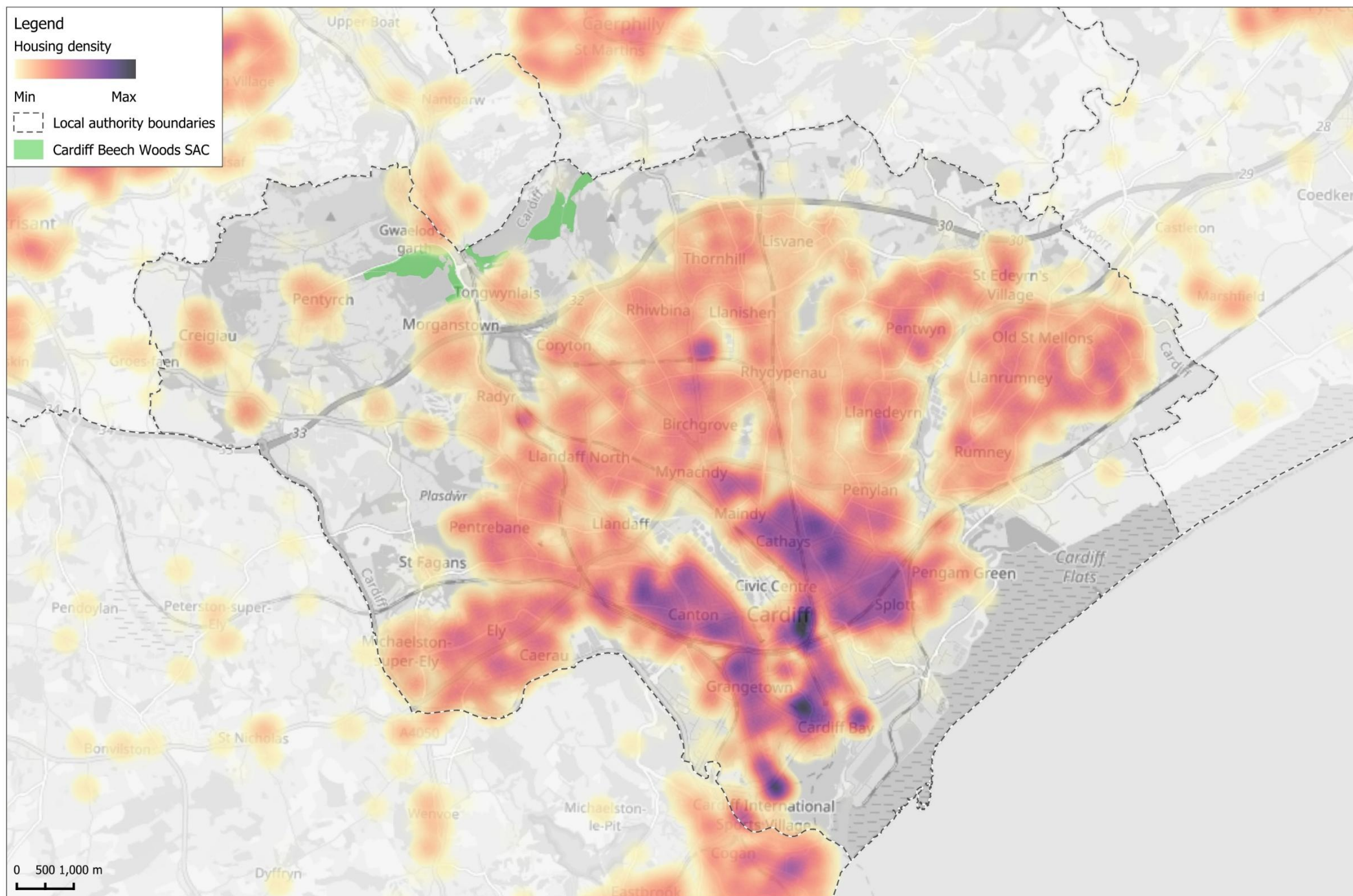
2.11 Allocations within the Local Plan are shown in Map 4, along with the 6km zone of influence. There are 14 sites shown on the map, of which 7 are within the 6km zone of influence. These are summarised in Table 1, and total 2,577 dwellings. This represents an increase of 4% within the Cardiff part of the ZOI, and looking at all housing within 6km, an increase of 2%.

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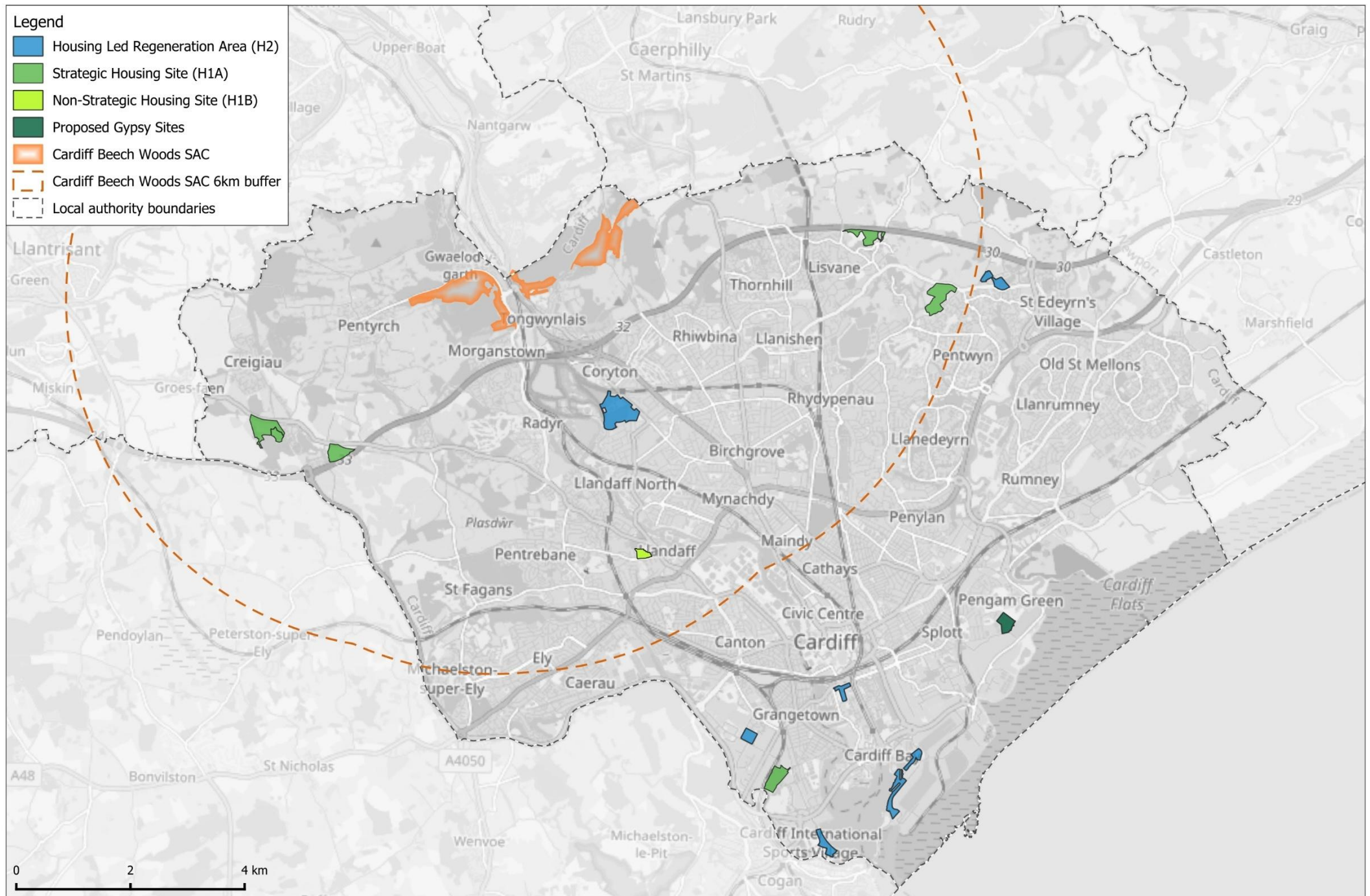
Table 1: Allocations within 6km of the Cardiff Beech Woods SAC.

Type	Number of plots
Strategic sites	970
Housing-led regeneration areas	410
Non-strategic housing sites	90
Windfall (not shown on map)	902
Changes of use (not shown on map)	205
Total	2,577

Map 3: Current distribution of housing in Cardiff, using the number of residential delivery points at each postcode.



Map 4: Local development plan allocations.



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Impacts of recreation

- 2.12 There is both a wide body of reviews concerning the impacts of recreation on woodlands or the countryside (e.g. Anderson and Radford, 1992; Buckley, 2004; Corney *et al.*, 2008; Lowen *et al.*, 2008; Liley *et al.*, 2010, 2019; Marzano and Dandy, 2012; Ryan, 2012; Saunders *et al.*, 2025) and a range of detailed studies of other beechwood sites including the New Forest (Lake, Liley and Saunders, 2020); Chilterns Beechwoods (Panter *et al.*, 2022); and Burnham Beeches (Liley *et al.*, 2022b). Drawing on these studies, the potential impacts from recreation that might be associated with local housing growth around the Cardiff Beech Woods are summarised in Table 2.
- 2.13 It is important to recognise that impacts of recreation may well operate synergistically with other impacts such as climate change and as such cannot necessarily be isolated from other factors. SSSI condition assessments indicate parts of the underlying SSSI are in unfavourable condition³, highlighting the challenges facing the site.

³ E.g. Fforestganol A Chwm Nofydd SSSI Monitoring Summary Report by NRW, 2022.

Table 2: Summary of potential nature conservation impacts (to the SAC interest) linked to increased levels of surrounding development at the Cardiff Beech Woods.

Type of impact	Examples
Contamination	Dog fouling (nutrient enrichment from faeces and urine)
	Litter
	Fly-tipping
	Spread of disease (e.g. plant pathogens)
	Spread of non-native species (can be both unintentional and deliberate)
	Pollution from run-off (surrounding roads and hard surfaces)
Fire	Increased fire incidence linked to increased recreation use (BBQs, campfires etc.)
Trampling/wear	Soil compaction from high levels of footfall
	Loss of vegetation cover
	Erosion
	Direct damage to veteran trees from climbing
Harvesting	Collection of wood for firewood
	Collection of fungi
Difficulties in management	Challenges in maintaining grazing regime with high levels of access and dogs
	Public pressure for more facilities, path surfacing, cafes, events, different management etc.
	Management of veteran trees potentially made more challenging due to need for more regular checks and need to ensure public safety (i.e. removal of dead limbs etc.)
Disturbance	Distribution of deer and grazing livestock within site affected
Fragmentation	Loss of supporting habitats
	Isolation (lack of connectivity with other woodland or semi-natural habitat)
Hydrology	Changes in water availability and flow linked to soil compaction, visitor infrastructure etc.

2.14 A site walkover and recreation impact assessment was undertaken in August 2026 to inform the strategy. The impacts assessment followed a standard methodology used at other designated sites by Footprint Ecology, with the location of any recreation impacts observed on site mapped as point data with associated information recorded, describing the type of impact and the severity (light, moderate or severe). The walkover covered main paths, key routes and parking areas but did not cover every small path or desire line and is a snapshot in time.

2.15 A total of 117 impacts were noted during the assessment (see Table 2). Erosion/trampling of paths, formation of desire lines and frequent mountain bike trails and jumps accounted for 75% of the impacts and were most commonly observed in Garth Woods (50 points noted) and Forest Ganol (32

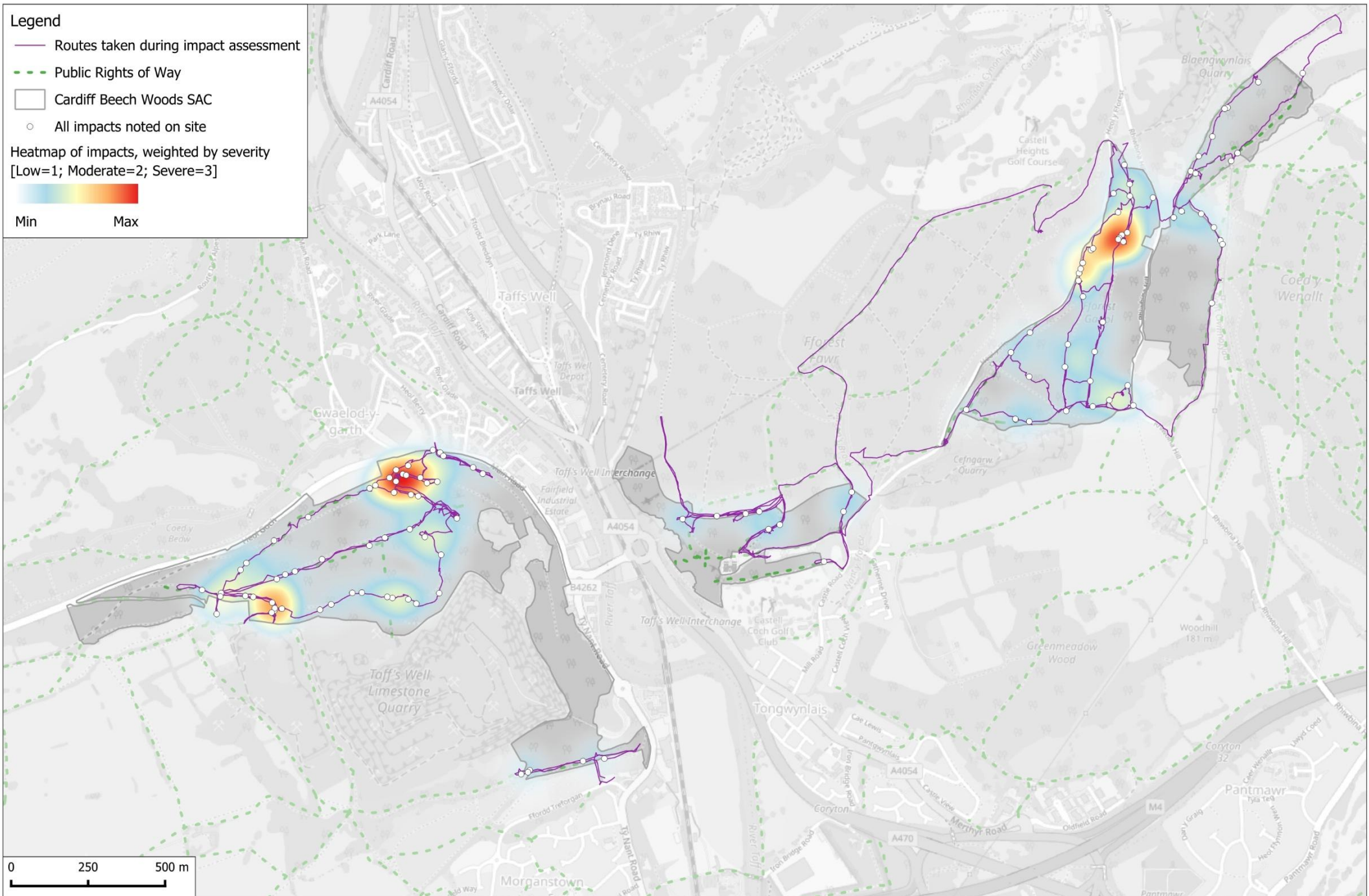
points). Contamination (accounting for 24% of impacts) was also frequent, with abandoned dog mess bags, occasional litter (such as beer cans and food wrappers) and the loss of epiphytic vegetation on the base of trees adjacent to main paths, where dog urine had apparently resulted in a loss of mosses, liverworts and lichens from the base of trunks. There was also one incidence of fly-tipping. Potential contamination relating to recreation included the spread of invasives; this was noted as a potential risk from recreation at four locations, where Japanese Knotweed *Reynoutria japonica* and Himalayan Balsam *Impatiens glandulifera* were observed. A single instance of fire (1%) was noted in Forest Ganol and one 'Other' impact noted, relating to evidence of climbing in the abandoned quarry in Garth Woods. We note that this activity also takes place on the edge of the SAC near Castell Coch, where three climbers were visible during the visit.

Table 3: Summary of impacts observed on site by area of SAC and the type of impact (note that a single point could be multiple types of impact). Figures show count only and not the severity of impact.

Part of SAC	Erosion	Contamination	Fire	Other
Castell Coch (south-western end of Forest Fawr)	6	3	0	0
Cwm Nofydd	6	8	0	0
Forest Ganol	32	8	1	0
Garth Woods	50	11	0	1
Total	94 (74.6%)	30 (23.8%)	1 (0.8%)	1 (0.8%)

- 2.16 The distribution of impacts is shown in Map 5, which is a heatmap showing the combination of density and severity of impacts identified, with some examples shown in Figure 2. A full description of each part of the SAC and detail of the relevant impacts is given in Appendix 2.

Map 5: Distribution of recreation impacts.



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Figure 2: Examples of impacts found on site: a) Evidence of climbing with chalk marks visible on abandoned quarry walls, b) Loss of moss on trunk from dog urine, c) Fly-tipping, d) Extensive mountain bike jumps built in Garth Woods, e) Marked erosion from bikes, and f) Remnants of a campfire in Forest Ganol.

3. Mitigation measures

Overview

- 3.1 Guidance (Tyldesley and Chapman, 2013) is clear that to be taken into account, at the appropriate stages of assessment, mitigation measures must be effective, reliable, timely, guaranteed to be delivered and as long-term as they need to be to achieve their objectives. Local plan allocations are also only required to make planning obligations that are proportionate to address the impacts this create.
- 3.2 The aim of this strategy and the mitigation set out below, is to ensure necessary measures are secured to allow Cardiff Council to rule out adverse effects from recreation on the integrity of the Cardiff Beech Woods SAC in relation to the RLDP and potential recreation impacts. Mitigation is proportionate to the scale of impact.
- 3.3 Mitigation (where appropriate and relevant) will comprise SAMM ('Strategic Access Management and Monitoring'). SAMM comprise measures targeted at or around the Beech Woods, such as signage, interpretation, ranger provision etc. and extends to include monitoring linked to mitigation delivery and ensure the mitigation is targeted appropriately.
- 3.4 The provision of green infrastructure away from the European site such as SANG ('Suitable Alternative Natural Greenspace') to deflect visitors is an additional standard approach and widely used in other mitigation strategies (see Beveridge *et al.*, 2024 for overview). There is scope in the woodlands directly adjacent to the SAC but just outside to enhance access or deflect use, and this is picked up through the overall package of SAMM.
- 3.5 SANGs provision away from the Beech Woods area is not however routinely included in this strategy for all development. Any need for SANGs provision would be determined on a case-by-case basis where development proposals have a high risk on their own, for example those in close proximity to the SAC or those involving large numbers of dwellings in a single location. Where project level assessment identifies the potential for significant effects in isolation, additional, bespoke mitigation may be necessary to ensure compliance with the Habitats Regulations. In such cases, the provision of Suitable Alternative Natural Greenspace (SANG) or other targeted mitigation should be considered to avoid adverse effects on site integrity.

SAMM

- 3.6 SAMM elements are summarised in Table 4. They have been derived in part from discussions with Council staff and representatives from the Breedon Group (who own the quarry).
- 3.7 The issues from recreation have been long recognised and there is existing, on-going work by Cardiff Council, Natural Resources Wales and the Wildlife Trust South & West Wales (WTSWW) to restore the woods and ensure appropriate and safe access. This project is called the North Cardiff Woodlands Project⁴ and in 2025 the project was granted 2 years of funding through the National Lottery Heritage Fund, the Routes to Resilience project. This supports a project officer and focuses on a collaborative approach, working with users and restoring habitat and improving access.
- 3.8 The North Cardiff Trails Collective⁵ is part of the Woodlands Project. It involves users (the mountain bike community) directly in trail management and promotion with the aim of establishing a sustainable mountain bike trail network in Cardiff.
- 3.9 SAMM measures are additional to the above and build on the work already achieved, rather than attempting to do something separate. The existing lottery funding is time limited (2025-2027). New housing will potentially exacerbate the current levels of use and pressure and the impacts will be in-perpetuity.
- 3.10 Mitigation measures therefore provide for long term project officer funding, ensuring continuity. The ranger role covers direct liaison with user groups, presence on the ground to intercept and influence behaviour and a staff presence to oversee and implement works on the ground.
- 3.11 In addition, the SAMM provides a small amount for annual path and trail maintenance, at a level sufficient to top-up/provide additional work. Costs are also provided for signage and interpretation, again as a small annual budget that provides scope to help maintain, replace and enhance existing provision.

⁴ See <https://www.outdoorcardiff.com/biodiversity/cardiff-north-woodlands-project/?cn-reloaded=1>

⁵ <https://northcardifftrails.co.uk/woodland-conservation/>

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Monitoring will include visitor surveys at 5-year intervals. These surveys will check levels of use, types of activity, awareness of mitigation measures and map where people go, providing information to further direct mitigation as necessary in the future.

Table 4: Overview of SAMM mitigation measures.

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
Community Ranger Provision	Cost for ranger provision	CC	Rangers are a cornerstone of mitigation for other strategies. Post provides additional staff presence rather than any replacement of existing post	Ranger presence already secured through other funding to 2027 but not further
Ranger travel costs	Budget to cover travel and other support costs	CC	Covers cost for ranger travel, essential to carry tools, equipment and provide staff presence.	Cost for small van
Path maintenance costs	Small annual budget to cover additional path works, repairs etc	CC, community groups	Long term aim is to have 6 established mountain bike trails that are well maintained and promoted and use outside these limited/protected. Budget sufficient to help fund some small work each year in addition to other funding streams and work	
Signage and interpretation	Small annual budget to help maintain and enhance signage and interpretation	CC	Signage and promotion of trails on the ground key to directing use and funds will help maintain and enhance - providing additional fundings	
Visitor survey	Visitor survey to cover all relevant woodland blocks at 5 year intervals.	CC	Provides data on changing use patterns, demographics, visitor numbers and visitor origins.	Repeat surveys of a selection of locations in line with work undertaken to inform HRA with improvements to design to map routes and include questions on mitigation measures and effectiveness

4. Implementation

Types of development covered

- 4.1 This strategy applies to any future development granted planning permission that results in a net increase in residential units (i.e. C3 Use Class), located within the relevant zone of influence. It is anticipated that all development sites, large and small, contribute towards the mitigation which is designed to address the cumulative impacts of recreation. Contribution to the strategic mitigation will enable applicants to secure the appropriate avoidance or mitigation measures and enable the Council to conclude through appropriate assessment that there is no adverse effect on the integrity of the Cardiff Beech Woods SAC from recreation.
- 4.2 While the strategy is focussed towards C3 Use Class, there are other uses and forms of development that could come forward within the zone of influence and could trigger likely significant effects for the Cardiff Beech Woods SAC. Types of development are summarised in Table 5. For residential development contributions will be on a per unit basis, but this may not necessarily be directly transferable to other situations such as visitor attractions, food outlets or tourist development. Nonetheless it should be possible for such applications to be mitigated through the strategic approach, on a bespoke basis. Such cases will require more detailed consideration, checks with Natural Resources Wales and the mitigation checked through appropriate assessment.

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Table 5: Relevant types of development

Use Type/Class	Likely Significant Effect	Mitigation requirements
Dwelling houses (C3) Any net increase	Yes	Per dwelling contribution.
Dwelling houses (C3) Replacement dwelling	No, if demolition and replacement linked through same planning consent.	Per dwelling contribution where there is a significant delay (5 years or more) between demolition and replacement.
Residential Institutions (C2/C2A) Accommodation and care to people in need of care including nursing homes, hospitals and secure institutions	Possibly, case-by-case decision depending on whether residents likely to be mobile and independent.	Per unit contribution for relevant schemes (where residents potentially likely to visit the Beech Woods).
Residential Institutions (C2/C2A) School, college or training centre	Possibly, case-by-case decision. If a training centre or college has associated adult accommodation, then residents can visit the Beech Woods.	Per unit contribution for relevant schemes (where residents potentially likely to visit the Beech Woods).
Hotel (C1) Including boarding houses and guest houses	Yes	Contribution per room equivalent to a per dwelling contribution (possible exceptions if it can be clearly demonstrated residents won't access the Beech Woods).
Houses in Multiple Occupation (C4/Sui Generis) Including managed student accommodation	Yes	Contribution per bedroom equivalent to a per dwelling contribution.
Holiday Dwellings (Sui Generis)	Yes	Contribution per dwelling or pitch equivalent to a per dwelling contribution (possible exceptions if it can be clearly demonstrated residents won't access the Beech Woods).
Gypsy and Traveller Pitches (Sui Generis) Net new pitches that are either temporary or permanent	Yes	Per dwelling contribution.
Café, food outlet or visitor attraction	Possibly, case-by-case decision based on application, location and links to the Beech Woods.	Contribution decided on a case-by-case basis. Any food/drinks outlet or attraction within a 500m radius of the European site boundary or within walking distance of the European site likely to require mitigation (i.e. drawing new users or encouraging new or different recreational use). Level of contribution could be determined on a case-by-case basis.

Zone of influence

- 4.3 A zone of influence of 6km is applied and relevant development within this zone is assumed to trigger likely significant effects in relation to the Cardiff Beech Woods and recreation. Mitigation will be necessary to address the cumulative effects of housing growth and the strategy provides a means to secure that mitigation.
- 4.4 The 6km figure is based on visitor survey results and the HRA (Kenny, 2024). This distance should be reviewed and checked as part of any update or review of the strategy.

HRA matters

- 4.5 This strategy provides a solution to address the cumulative effects of housing growth in terms of recreation impacts at a local-plan level. Guidance on HRA (Tyldesley and Chapman, 2013) indicates that a plan-maker needs to be sufficiently and genuinely confident about the deliverability of mitigation. The level of detail needs to be such that the competent authority has sufficient information to be duly satisfied that the mitigation can be achieved in practice. The strategy does not by-pass the need for HRA in relation to recreation, it simply ensures that a mechanism is in place to facilitate the appropriate assessment of new development, and it should allow a conclusion of no adverse effects from recreation to be reached. Certain developments, such as those that are particularly large, those very close to the Cardiff Beech Woods SAC or those just outside the zone of influence may require bespoke consideration.
- 4.6 The strategy does not address other impacts from housing that might be triggered by the same development sites, for example impacts associated with air quality or water quality.
- 4.7 Contribution to the SAMM for the Cardiff Beech Woods SAC does not address recreation impacts to the Severn Estuary or other European sites and additional SAMM payments may be required where development lies within other zones of influence.

Costs per dwelling

- 4.8 Residential development set out in the RLDP for Cardiff and requiring mitigation (within 6km of the SAC boundary) is estimated to be around 2577 dwellings. The total cost of SAMM measures is estimated to be £4,436,580

(see Appendix 3 for details). When apportioned to the total level of development requiring mitigation this gives a per dwelling contribution of £1,721.61. This tariff is derived on the basis that all new dwellings within the zone of influence would contribute a standard amount. Some other mitigation schemes further refine costs per dwelling to allow different rates for flats vs houses or for different sizes of house (e.g. number of bedrooms). A single, standard single per dwelling charge is applied here for simplicity.

- 4.9 The single per dwelling charge assumes a mechanism available to spread the cost of all mitigation across all new dwellings coming forward, and this may require further refinement and review in light of pooling restrictions that apply to S106 agreements in Wales.
- 4.10 The tariff will be further adjusted on an annual basis to take into account inflation, any administrative costs and any other adjustments necessary (e.g. in relation to changing costs or variations in housing delivery).

Long term delivery and in-perpetuity costs

- 4.11 Mitigation is secured for the duration of the impact, and it is assumed the implementation of the mitigation will run for as long as it is required, with money set aside to provide long-term stability and in-perpetuity delivery. The strategy will operate on a rolling basis into the future, adjusting as necessary to changing levels of house building and impacts arising.
- 4.12 Measures are assumed to need to run for many years, extending well outside the Plan period and some are costed to cover 80 years. SAMM is, however, highly unlikely to need to be constant over time and will need to evolve. Changes to access infrastructure and the increased awareness raising should ensure that the need and annual cost for SAMM can decrease with time and it will therefore be important for regular review and revision of costs as necessary to adjust the amount set aside for long term funding of mitigation measures.

Governance

- 4.13 It will be important, looking forward, that there is flexibility and regular review as to how money is spent and what is needed on the ground. It will be essential that the mitigation delivery can respond to change. There is uncertainty, as climate change and other factors may influence the scope of mitigation and access patterns may change.

- 4.14 A steering group will be necessary to oversee the mitigation delivery, with the steering group comprising officers from the Council, Natural Resources Wales and other relevant bodies, as appropriate. The steering group's role will include authorising annual budgets, approving funding for specific projects and major changes to the strategy approach. Natural Resources Wales participation will ensure measures are appropriate as mitigation.

Review and timing

- 4.15 The strategy is produced as an initial, interim strategy that will run for around 5 years. After 5 years it will be necessary to review and update the strategy. Any review or update will need to include a check on housing numbers, delivery, costs and mitigation priorities.
- 4.16 The costs and actions within this strategy will feed through into a 1-year and 5-year business plan that will underpin mitigation delivery.

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Appendix 1: Cardiff Beech Woods SAC

The qualifying features of the Cardiff Beech Woods SAC are summarised below. Links cross references to the relevant site conservation objectives on the JNCC website. The description is drawn from NRW's core management plan.

European site	Qualifying features	Description
Cardiff Beech Woods SAC	9130 <i>Asperulo-Fagetum</i> beech forests 9180 <i>Tilio-Acerion</i> forests of slopes, screes and ravines	The SAC represents an area of semi-natural broadleaved woodland dominated by Beech <i>Fagus sylvatica</i>. There are two European features of interest present, <i>Asperulo-Fagetum</i> beech forests (45ha) and <i>Tilio-Acerion</i> forests of slopes, screes and ravines (30ha). Both of these features are present within Garth Wood and Fforestganol a Chwm Nofydd SSSI but only the <i>Asperulo Fagetum</i> is found within Castell Coch Woodlands and Road Section SSSI. Cardiff Beech Woods is considered to be one of the best areas in the UK for <i>Asperulo-Fagetum</i> beech forests. The site contains one of the largest concentrations of <i>Asperulo-Fagetum</i> beech forests in Wales, and represents the habitat close to the western limit of its past native range in both the UK and Europe. The woods show mosaics and transitions to other types, including more acidic <i>Fagus sylvatica</i> woodland and Oak <i>Quercus robur</i> and Ash <i>Fraxinus excelsior</i> woodland. Characteristic and notable species in the ground flora include Ramsons <i>Allium ursinum</i>, Sanicle <i>Sanicula europaea</i>, Bird's-nest Orchid <i>Neottia nidus-avis</i> and Yellow Bird's-nest <i>Hypopitys monotropa</i>. This habitat type occurs on circumneutral to calcareous soils. The area is considered to support a significant presence of <i>Tilio-Acerion</i> forests of slopes, screes and ravines. These woods consist of <i>F. excelsior</i>, Wych Elm <i>Ulmus glabra</i>. Introduced Sycamore <i>Acer pseudoplatanus</i> is often present. The habitat type is found on calcareous substrates. At Cardiff Beech Woods the <i>Tilio-Acerion</i> comprises W8e <i>Geranium robertianum</i> sub-community, W8f <i>Allium ursinum</i> sub-community and W8b/d <i>Anemone nemorosa</i> / <i>Hedera helix</i> intermediate form. Semi-natural broadleaved woodland is a feature of all three component SSSIs. In addition, Garth Wood SSSI supports a nationally rare cave dwelling spider <i>Porrhomma rosenhaueri</i>, and Castell Coch Woodlands and Road Section SSSI supports geological exposures

Appendix 2: Impact Assessment

The recreation impact assessment was completed as part of this project to help understand the layout of the site, the sensitive features present and the potential pressures impacting the SAC. Ahead of the site visit, a desk-based exercise was undertaken to determine the site boundaries (SAC boundaries, relevant SSSI boundaries) and any current pressures identified in the SSSI site assessment and core management plan.

Methods

The site visit consisted of a mapping exercise across all publicly accessible routes within the SAC on the 17th & 18th August 2026. A map of the route taken on site was recorded using a handheld GPS and waypoints were recorded together with photos of any recreation impacts identified. Such impacts include:

- **Erosion/trampling:** Evidence of path widening, desire lines, trampled vegetation, soil compaction and exposed roots.
- **Contamination:** Evidence of dog fouling (including nutrient enrichment / damage from dog urine/faeces), dogs accessing ponds/watercourses, presence of invasive species and littering.
- **Disturbance:** Observations of people/dogs flushing or chasing birds or other wildlife, dogs/people killing wildlife and any evidence of animals avoiding the area due to human presence.
- **Fire:** Discarded bbqs, campfires, camping gas canisters or burnt vegetation.
- **Other:** Damage to fences, den building, bike ramps, harvesting/foraging, effects on livestock and anti-social behaviour. Any isolated positive impacts from recreation or management are also recorded in this section.

Each impact was categorised as either **light** (some evidence of impact, but habitat is still largely in good condition), **moderate** (the condition of the habitat/feature is clearly being impacted by the activity) or **severe** (the condition of the habitat/feature is being severely impacted by the activity or area of damage is extensive). Note that lack of vegetation on paths was not recorded as a specific impact – all woodland paths were largely unvegetated.

Results

There were a total of 117 impacts recorded from the areas of the SAC visited. Most of these were erosion, trampling, formation of desire lines and of 'wild' mountain bike

trails. These were most common in Garth Wood (almost half of the points noted), followed by Forest Ganol. Castell Coch Woodlands few identified recreation impacts, with some localised hotspots within the woodland behind the castle. It is possible that some of the current access is deterred by ongoing work at the adjacent Castell Coch site. Similarly Cwm Nofydd had very few impacts, beyond erosion along the central connecting path.

Approximately 47% of the impacts recorded were 'light', with some evidence of recreation, but the habitat largely still in good condition. These were mostly erosion/trampling points leading off the main path. A further 40% of impacts were 'moderate' where the habitat was clearly being impacted by the activity (these were also mostly instances of erosion/trampling). Almost 10% were deemed 'severe' - these impacts were identified where damage to the habitat was significant and included extensive mountain bike jumps (located at the top of Garth Woods, with smaller sections of jumps in the middle and south, and in the northern half of Forest Ganol). These jumps were extensive and of significant height, with notable erosion, compaction and loss of vegetation and leaf litter. Other severe impacts included forest clearings (such as behind Castell Coch) where the understorey was absent where people have disperse from the paths. 'Severe' impacts also included formalised routes (such as rights of way) where trampling has resulted in paths being widened (by more than 5m in places) and extensive erosion with exposed tree roots and gullies within paths.

Table 6 below summarises the severity of impacts by each forest block, and a description of the sites, detailing paths, impacts and character of each block is provided below.

Table 6: Summary of severity of recreation impacts noted during site visit.

Part of SAC	Light	Moderate	Severe	Risk*
Castell Coch (south-western end of Forest Fawr)	5	3	1	0
Cwm Nofydd	9	2	0	3
Forest Ganol	11	19	6	0
Garth Woods	30	23	4	1
Total	55 (47%)	47 (40.2%)	11 (9.4%)	4 (3.4%)

*Risk was used to indicate instances where existing Himalayan Balsam and Japanese Knotweed immediately adjacent to paths create potential for further contamination.

Castell Coch

Much of this section of the SAC is protected by the natural steep cliffs around which the woodland is situated. However, the paths which traverse the sheer sides are heavily eroded and up to 3m wide in places (two such trails extend from the Castell Coch car park into the woodland above). There are few desire lines extending from these trails, likely due to their steep, uneven nature; however, there is some localised exposure of tree roots where users have accessed benches, particular trees and other features adjacent to the path.

Reaching the top of the plateau, the main path which extends westwards towards Castell Coch is outside of the SAC, with a few desire lines diverging from the main track. As above, deviations from the main path appear to only access rope swings and other nearby features and are typically narrow (<30cm in width) with leaf litter still present on the ground. Towards the western boundary of the SAC above Castell Coch there is a clearing, where almost all understorey and ground flora has been lost. This localised, severely impacted area includes evidence of a fire-pit, den building and inscriptions on trees, with multiple desire lines extending out from the centre of the clearing.

While this area feels busier overall, it would appear that many visitors use only the main paths to access other areas of the adjacent Forest Fawr. Two families, a walker and four mountain bikers were encountered passing through this section (all apparently remaining on the main trails).

Finally, visible from the A470 road and accessed via a layby at the base, one of the sheer rock faces of the steep cliffs appears to be regularly accessed by climbers, with three visible on the rocks at the time of visiting. Chalk marks were visible from the road and local climbing reports suggest that some access is possible at the top after some 'jungle bashing'.

Cwm Nofydd

The Cwm Nofydd part of the SAC appears to be least impacted by recreation. A path runs along the top of the slope in the northern section. This is 0.5-1m wide, characterised by trodden leaf litter. There is no vegetation, but the ground flora of the surrounding woods is in any case sparse at this point (Ivy *Hedera helix*, Brambles *Rubus fruticosus* agg., occasional Bluebell *Hyacinthoides non-scripta*). This appears to be a desire line, as the PROW runs along the adjacent track. There was a little litter (beer cans) at an area with fallen trunks near the NW boundary at the time of our visit. There was dumped garden waste and rubble along the track just within the SAC.

Near the bottom of the slope within the northern section, a little-used path is only about 30cm wide with encroaching Bramble. It is wet in places where there are seepages (one has bryophytes encrusted in calcareous deposits, which would be very vulnerable to trampling). There are patches of Himalayan Balsam and Japanese Knotweed - any increased use of the path is likely to facilitate their dispersal. The path fades out in places. A slightly more defined path runs upslope – there is a waymarker and style near the top, with a constructed path border for about 20m. This path is barely visible from the top and again use is limited. The ground flora is denser, particularly where Ash *Fraxinus excelsior* has fallen, with Brambles, also Shield Ferns *Polystichum* sp., Broad Buckler-fern *Dryopteris dilatata* and Hart's-tongue *Asplenium scolopendrium*. Many fallen trees make navigating the steep slopes difficult, and there is little evidence that visitors penetrate the woods here.

At the centre of the western boundary, a waymarker guides people in where a path descends the valley side, becoming quite eroded in the centre in places. The path is about 1m wide, stony, steep and braided by mountain bike trails. It then joins a broad, flat track along the valley bottom bordering the woodland. This has mostly natural margins (with Dog's Mercury *Mercurialis perennis*, Wood Melick *Melica uniflora* etc.) but occasional patches of Broad-leaved Plantain *Plantago major* indicate disturbance and trampling. There are no other public rights of way in the woodland and, apart from the mountain bike trails, little evidence of visitor use in this section of the SAC. No-one was encountered during our visit. There is no parking.

Forest Ganol

Recreation pressure in Forest Ganol appears to be limited to the main paths plus a series of informal mountain bike trails that cross the main paths. The main paths are quite broad, with a gravelly surface in places. Most litter has been worn away, but some remains – there is generally no vegetation. The margins are mostly representative of the surrounding woodland flora and, in most places, trampling seems to be limited to the paths. Some trees immediately adjacent to the paths have bare patches reaching about 30cm up from the ground where epiphytic mosses, liverworts and lichens are absent – this may be due to dog urine.

The mountain bike routes are narrow, often curved in profile and tend to run up/downhill. A notable area of mountain bike jumps built from compacted soils is evident in the north west section adjacent to one of the main trails. A significant route also runs along the stream, adjacent to the road, at the bottom of the slope. This is wider, around 0.75m, rocky and eroded where it climbs the slope. Several mountain bike routes meet this one, sometimes forming larger bare areas where they coalesce. Some routes appear to be used by other recreational users, with bagged rubbish,

occasional litter (beer cans etc.) and remnants of a fire found partway down one route. Towards the south east of Forest Ganol, there is a small layby with room for two cars. Near to this is an extensive area with a network of mountain bike trails (and a dustbin with a full bin bag next to it at the time of our visit) resulting in a reduction of the natural ground flora, erosion on slopes, some exposed roots and compacted ground.

Overall, recreation impacts are currently fairly contained, although pressures is greater in the western side of the forest adjacent to Heol-Y-Fforest road. No walkers were met during our visit, although three separate mountain bikers were observed.

Garth Woods

Garth Woods is in places heavily used by mountain bikers. There are numerous steep, narrow, eroded mountain bike routes running downhill from the main paths. In contrast, the main paths are mainly characterised by trodden leaf litter, although sometimes bare and rocky with exposed roots where there is more erosion towards the east of the site, where the construction of mountain bike jumps and tracks has caused significant disturbance. Waymarkers are frequent along the main paths, although in some places have been removed and left to the side – it was unclear whether this was deliberate. Litter, such as discarded cans, is limited but occasional, e.g. at the mountain bike ramps. Dog walking is more evident here than Forest Ganol or Cwm Nofydd, with a few dropped dog bags. One dog walker and one mountain biker were encountered during our visit. The dog walker mentioned some tensions between user groups, due to the speed of the mountain bike riders.

From the south, access is possible via a public right of way from Ffordd Treforgan road, which follows the back of the allotments. Access to the rest of the site is limited by tall fencing, presumably preventing entry to the working quarry, although a few narrow desire lines suggest some level of access is possible. As with the main area of Garth Wood, evidence of dog walking is apparent here, with discarded bags, the loss of epiphytes at the base of trunks adjacent to main paths and unbagged dog mess along path edges.

There was evidence of tree pruning or felling adjacent to paths – presumably for H&S purposes – and some trees had been marked up. Unfortunately, this included some notable individual trees with veteran features.

A cliff near the NE corner of the site (accessed along an old tarmac road) is clearly used by climbers, with climbing chalk evident on handholds. There is some trampling at the foot of the cliff.

Appendix 3: SAMM costs

The table below summarises the mitigation measures as set out in the strategy and the relevant costs for each. These have been used to calculate the overall cost of mitigation. Costs are estimates only and intended to provide a level to set the tariff. The costs will be reviewed and updated as the strategy is implemented, with annual budgets adjusted according to housing growth. Where staff posts are referred to, 'FTE' refers to full-time equivalent.

Mitigation measure	One-off/ Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated
Community Ranger Provision		£39,632	80	£3,170,580	1 post costed at 0.75 of £52,843 fte. Cost provided by Cardiff Council and based on existing lottery funded post (that runs to 2027). Cost includes shift, weekend and evening allowance, support costs and national insurance. 80 years ensures funding in-perpetuity
Ranger travel costs		£7,200	80	£576,000	Cost based on figures provided by CC of £422 for van hire per month, with additional costs for fuel, insurance tc. 80 years ensures funding in-perpetuity
Path maintenance costs		£5,000	80	£400,000	Costs provided by CC and simply provide small amount of additional/top-up money on an annual basis, with scope to pool across years if necessary. 80 years ensures funding in-perpetuity
Signage and interpretation		£3,000	80	£240,000	Costs provided by CC and simply provide small amount of additional/top-up money on an annual basis, with scope to pool across years if necessary. 80 years ensures funding in-perpetuity
Visitor survey		£10,000	5	£50,000	Cost allows for 5 repeat surveys - potentially one survey every 5 years for 25 years.
TOTAL				£4,436,580	