

DRAFT ENVIRONMENT REPORT HAGLEY PARISH

June 2025

Abstract

This draft report outlines a plan to protect and enhance Hagley's green spaces, wildlife, and natural environment. It examines the local landscape, from ancient woodlands and ponds to parks and footpaths, and offers practical ways to care for it, such as planting trees, creating wildlife corridors, and enhancing flood protection.

By working together as a community, we can make Hagley a healthier, greener, and more climate-friendly place for everyone, now and for the future. Your input is essential. Please provide feedback details below:

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List of Acronyms

Acronym	Full Term
ALC	Agricultural Land Classification
AGS	Amenity Green Space
AONB	Area of Outstanding Natural Beauty
BDC	Bromsgrove District Council
BMV	Best and Most Versatile
BNG	Biodiversity Net Gain
CO_2	Carbon Dioxide
DEFRA	Department for Environment, Food & Rural Affairs
DMP	Development Management Plan
EA	Environment Agency
FRA	Flood Risk Assessment
GHG	Greenhouse Gases
GIS	Geographic Information System
HER	Historic Environment Record
HCAP	Heritage Conservation Advisory Panel
HSI	Habitat Suitability Index
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
LDUs	Landscape Description Units
LED	Light-Emitting Diode
LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
LPA	Landscape Protection Area
LWS	Local Wildlife Site
MMO	Marine Management Organisation
N_2O	Nitrous Oxide
NCA	Natural Capital Accounting
NPPF	National Planning Policy Framework
NRN	Nature Recovery Network
PG	Policy Guidance
PROW	Public Rights of Way
RSPB	Royal Society for the Protection of Birds
SDM	Species Distribution Modelling
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage Systems
TPOS	Tree Preservation Orders
UKBAP	UK Biodiversity Action Plan
UKCP	UK Climate Projections
WCC	Worcestershire County Council
WPS	Worcestershire Pollinator Strategy
WWT	Worcestershire Wildlife Trust
WwTW	Wastewater Treatment Works
WWF	Worldwide Fund for Nature

Glossary of Terms

- **AONB**: Areas of land designated for their significant natural beauty and protected under planning policy.
- **BNG (Biodiversity Net Gain)**: A measurable increase in biodiversity due to conservation or development activity.
- **GIS (Geographic Information System)**: Technology used to collect, manage, and analyse spatial and geographic data.
- **HSI (Habitat Suitability Index)**: A rating system used to evaluate the suitability of a habitat for a particular species.
- **Hydrosere**: A natural process of ecological succession from freshwater through wetland to woodland.
- **LWS (Local Wildlife Site)**: Areas recognised locally for their wildlife importance, often not legally protected but essential for conservation.
- **SSSI (Site of Special Scientific Interest)**: Areas legally protected to conserve their unique flora, fauna, or geology.

Executive Summary

This Environment Report outlines Hagley Parish's strategic response to key environmental and planning challenges. With increased development pressure, climate change, and biodiversity loss, Hagley must protect its heritage, green infrastructure, and ecological assets. The Environment Report proposes six policy themes (ENV 1–6) that reflect local priorities and national planning requirements (NPPF 2024).

Key Challenges:

- Balancing housing development with conservation of green spaces and biodiversity
- Mitigating flood risk and improving water quality
- Adapting to climate change impacts, including extreme weather and water scarcity
- Protecting historical assets and enhancing public access to heritage sites

Policy Themes (ENV 1–6):

ENV 1: Biodiversity and Environmental Protection
ENV 2: Developing a Green Space Network
ENV 3: Blue Infrastructure and Sustainable Water Management
ENV 4: Flood Resilience and Water Quality
ENV 5: Climate-Positive Hagley
ENV 6: Heritage and Historic Landscape Protection

Proposed Actions and Benefits:

- Enhancing green infrastructure to improve health, well-being, and air quality
- Integrating Sustainable Drainage Systems (SUDS) to reduce flood risk
- Promoting energy-efficient housing and renewable energy adoption
- Establishing digital heritage tools and protecting archaeological sites
- Community involvement in habitat restoration and climate adaptation strategies

VIEWS FROM WYCHBURY TO HAGLEY WEST....



1.0 Introduction

In the West of the Clent Hills, Hagley's highest point stands at 225 meters (740 feet) above sea level, with its lowest point at 70 meters (230 feet) below sea level. The Clent Hills, part of the Clent-Lickey ridge, feature Walton Hill (highest at 1,037 feet/316 meters), Clent Hill (1,014 feet/309 meters), and Wychbury Hill (843 feet/257 meters). Water from the slopes flows into streams that form part of the River Stour, shaping the area's ecological character.

Hagley Parish is a nature-rich community committed to preserving its environmental and historical assets. Once a rural farming area, it has evolved into a thriving village with significant development and infrastructure changes. The challenge lies in striking a balance between growth and the preservation of the countryside, heritage, and community well-being.

1.1 Environment Planning Group

The Environment Group has produced the following report to outline strategic approaches for managing and protecting the parish's natural resources and ecosystems. These approaches prioritise sustainable growth while preserving Hagley's countryside, historical landmarks, and the well-being of its residents. The Hagley Neighbourhood Planning Group established an Environment Group under the Environment Act 2021.

1.2 National Planning Policy Framework (NPPF 2024)

The NPPF (2024) provides national guidelines that shape local planning policies, ensuring development aligns with sustainability, housing, infrastructure, and environmental goals.

- **Sustainability and Balanced Development**: Sustainable development is a core NPPF principle, balancing economic, social, and environmental factors while meeting present needs without compromising the needs of future generations.
- **Biodiversity and Environmental Protection**: The NPPF prioritises biodiversity, landscape conservation, and natural resource protection, advocating for policies that ensure Biodiversity Net Gain (BNG) and minimise environmental impact.
- **Integration with Local Plans**: Local development plans must align with national policies while addressing local needs, including housing, transport, and community well-being.
- **Community Engagement in Planning**: The NPPF encourages active community participation, ensuring that residents and environmental groups are involved in planning decisions.
- **Housing and Economic Growth**: Local policies must support economic growth and housing supply, including affordable housing, while respecting environmental constraints.

1.3 Key NPPF 2024 Changes Affecting Hagley Parish. The NPPF 2024 introduces key changes that directly impact Green Belt land, affecting the Hagley Parish area. Notably,

the introduction of 'Grey Belt' land and new policies for Green Belt release and development hierarchy.

1.3.1 Green Belt Protection: The five purposes of the Green Belt remain unchanged, emphasising the limitation of sprawl and safeguarding the countryside. However, local authorities no longer need to review Green Belt boundaries unless exceptional circumstances arise.

1.3.2 Grey Belt: This refers to previously developed land or land that doesn't strongly contribute to key Green Belt purposes. Areas like Sites of Special Scientific Interest (SSSIs) and flood-risk zones are excluded.

1.3.3 Green Infrastructure and Sustainable Transport: The revised NPPF emphasises green infrastructure and sustainable transport, aligning with Hagley's emerging movement and housing policies in the Neighbourhood Plan for improving connectivity and ecological sustainability.

1.4 Local and National Policy Alignment and Compliance

The Environment Report aligns with the Hagley Parish Council Biodiversity Policy and national and local frameworks. It aims to preserve biodiversity and promote sustainable land use. Table 1 lists the key policies influencing the local conservation agenda.

Table 1: Key Policies Influencing Local Conservation Agenda

Policy	Purpose
The National Planning Policy Framework (NPPF) 2024	The NPPF encourages local authorities to adopt planning policies that promote the conservation and enhancement of biodiversity. In Hagley, this includes measures that protect wildlife habitats and implement green infrastructure projects to reconnect fragmented habitats.
Worcestershire Local Nature Recovery Strategy (LNRS) 2024	The Worcestershire Local Nature Strategy (LNRS) outlines the priority habitats and species for conservation within the county. Hagley's conservation actions align with the county-wide strategy by restoring key habitats, such as woodlands, wetlands, and acid grasslands, which support the species identified in the report.
Biodiversity Net Gain (BNG) Standards	Under the BNG framework, development projects in Hagley are required to demonstrate a net gain in biodiversity. This can be achieved through habitat restoration, the creation of new wildlife corridors, and measures to protect existing natural areas during construction activities.

Environment Act 2021	Supports measurable biodiversity net gain and the restoration of degraded ecosystems.

1.5 Population Health Challenges in Hagley Parish

Hagley faces several health challenges detailed in ENV 3 and Appendix B, including:

- Above-average rates of self-harm, childhood obesity, and low birth weight.
- Higher-than-average rates of breast, colorectal, and prostate cancers.
- A 14.2% disability rate and alcohol-related health conditions.

Research indicates that the natural environment has a significant impact on both mental and physical health. Air and light pollution correlate with adverse health effects, while access to green spaces can improve overall well-being. West Hagley is also located in Flood Zone 3 (Environment Agency, 2025), emphasising the need for flood mitigation strategies.

1.6 Hagley Parish Council Biodiversity Policy (2023)

The Biodiversity Policy (2023) aligns with Defra's definition of biodiversity, which encompasses the variety of all life on Earth, including species, habitats, and ecosystems. The policy prioritises access to green spaces, conservation of historical sites, and recreational opportunities.

1.7 Purpose of the Environment Report

This report aims to:

- Coordinate conservation and planning efforts.
- Prevent fragmented decision-making.
- Promote sustainable development and community well-being.

1.8 Future Site Proposals

Future developments in Hagley should:

- Conduct landscape and biodiversity assessments.
- Preserve indigenous trees for their shade, privacy, pollution reduction, and flood mitigation benefits.
- Preserve hedgerows for wildlife corridors.
- Protect and enhance local green spaces for recreation and biodiversity.
- Support eco-friendly housing solutions that strike a balance between affordability and sustainability.

1.9 Community Consultation

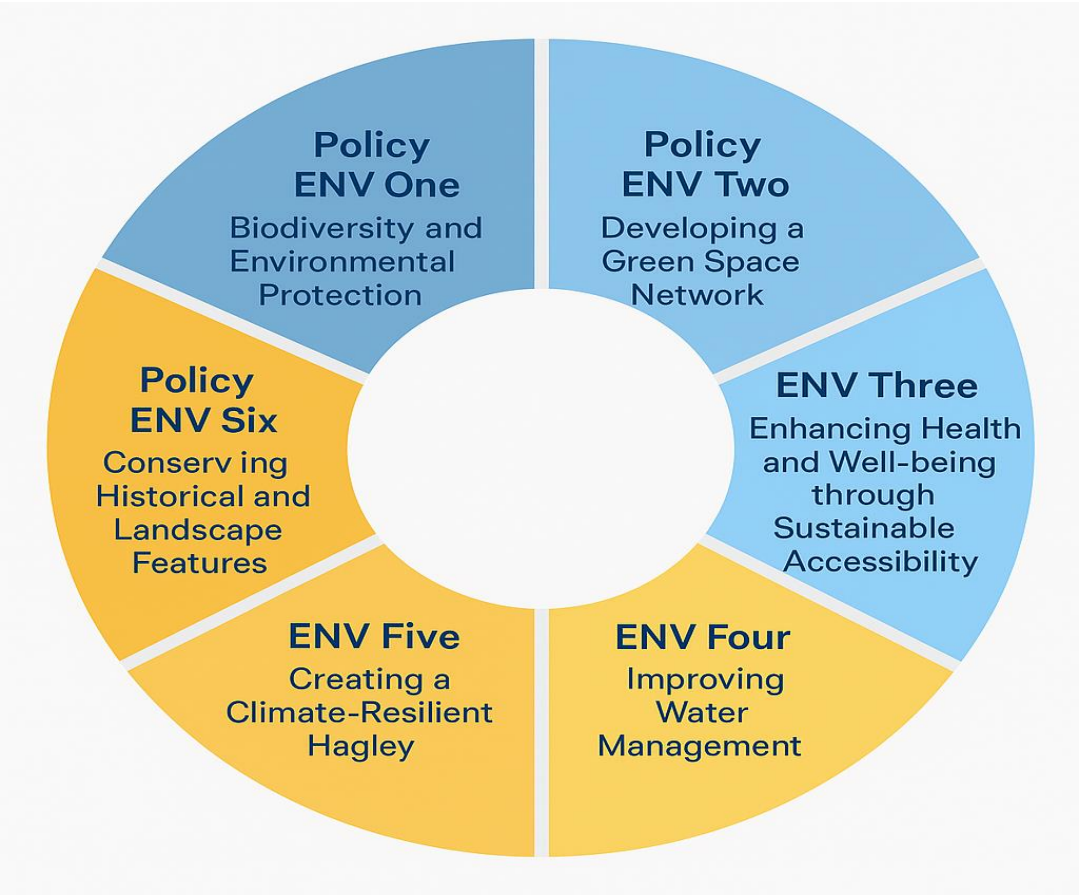
Community consultation indicates strong support for:

1. Preserving the openness of the Green Belt.
2. Addressing environmental challenges, such as increased traffic, noise, and light pollution.
3. Mitigating climate change impacts through better planning and green infrastructure.

1.10 Policy Overview

This report establishes the following six key environmental policies, adapted from Natural England, to protect Hagley's rural character.

Illustration 1: Six Key Policy Areas



1.11 Evidence Base Sources

This report is supported by a variety of sources with valuable input from:

- Worcestershire Biological Records
- Worcestershire Wildlife Trust
- Natural England
- Severn Trent
- Bromsgrove District Council Planning Team
- Worcestershire County Council Ecology Unit
- North Worcestershire Water

1.12 Objectives and Action Plans

The key objectives and action plans focus on landscape preservation, green infrastructure, and heritage conservation as shown in Table 2.

Table 2: Objectives and Outline Action Plan

Objective	Action Plan
Biodiversity and Environmental Protection	Protect and preserve local nature, landscape, and heritage while promoting sustainable growth.
Developing a Green Space Network	Enhance and expand landscape features such as trees, hedges, meadows, and water.
Enhancing Health and Well-being	Create walking paths, cycle routes, and pathways that connect people to nature.
Improving Water Management	Improve flood management and water quality, reduce air pollution, and incorporate new green spaces to enhance environmental sustainability.
Community Engagement	Involve the community in habitat restoration projects and increase biodiversity in future developments.
Creating a Climate-Resilient Hagley	Focus on climate adaptation strategies, such as enhancing green infrastructure and reducing environmental vulnerabilities.
Conserving Historical and Landscape Features	Preserve and protect significant historical sites and landscapes.

1.13 Summary

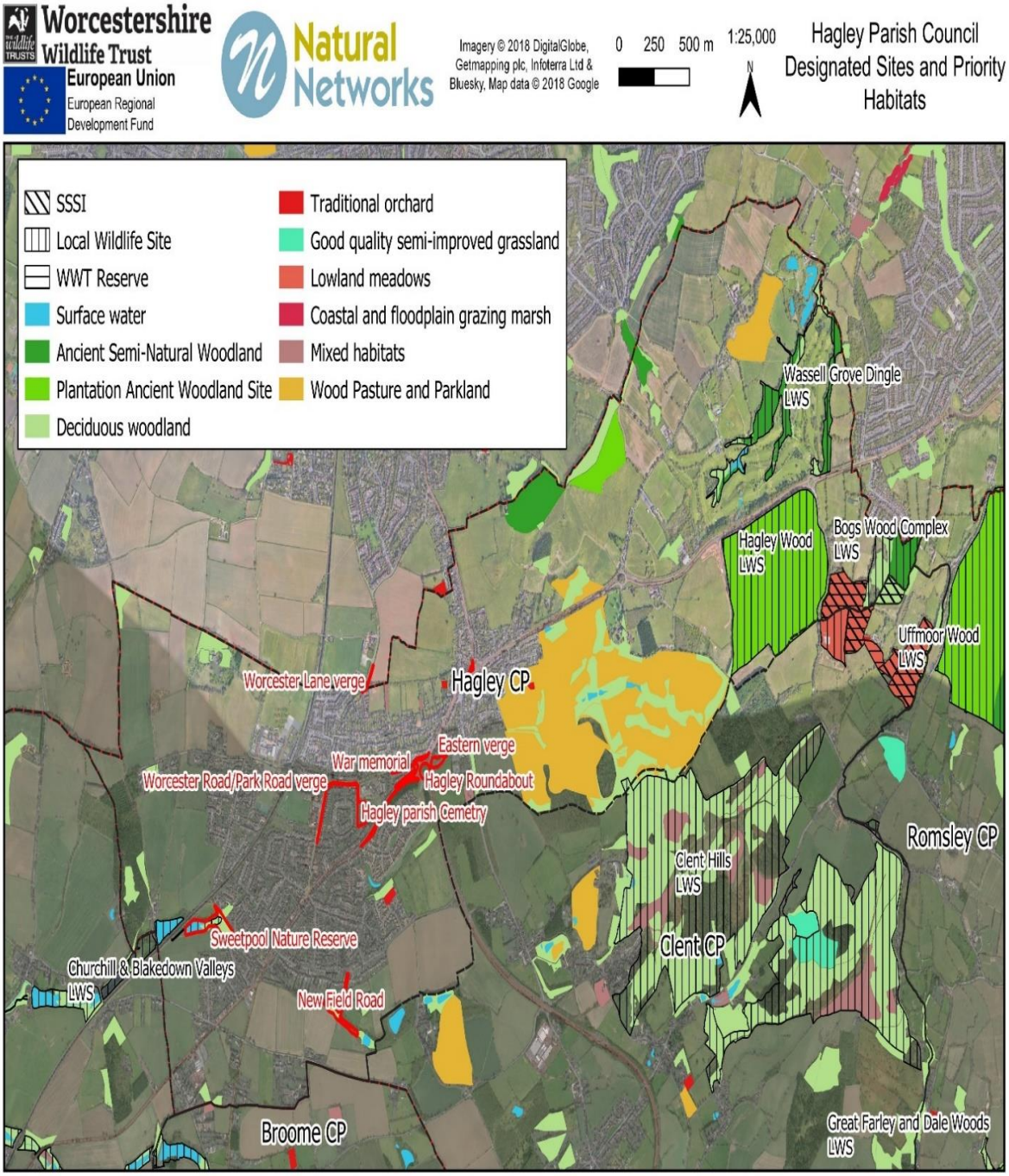
This report synthesises Worcestershire Biodiversity Action Plan (BAP) Habitat Action Plans (HAPs) with local mapping data to assess the habitat composition and ecological importance of Hagley Parish Council. Illustration 2 shows a map indicating designated sites and priority habitats. Natural Networks produced the map, which provides a foundation for biodiversity-conscious planning, conservation efforts, and community stewardship. Table 3 indicates the map's key designations, habitat types, and biodiversity objectives.

Table 3: Key Designations, Habitat Types, and Biodiversity Objectives – Hagley Parish

Category	Details
Key Designations	- SSSIs: Penorchard, Spring Farm Pastures - Local Wildlife Sites (LWS): Clent Hills, Wassell Grove Dingle, Hagley Wood, Uffmoor Wood
Ancient Woodlands	Ancient Woodlands located in Wychbury Hill, Hagley Park, Clent and Romsley Civil Parishes
Priority Habitats	- Traditional orchards- Deciduous woodland- Semi-improved grassland- Floodplain grazing marsh- Wood pasture & parkland (e.g., Hagley Park)
Ecological Highlights	- Sweetpool Nature Reserve (wetland and meadow habitats; invasive species threats)- Mown grass verges/greenspaces with enhancement potential- Ancient woodland and hedgerows as ecological corridors
Proposed Enhancements	- Wildflower bulb and plug planting- Native shrub/tree planting- Hibernacula and habitat piles- Invasive species control- Bird/bat box installation- Boardwalk repairs and interpretation panels

Notable Species	- Flora: Bluebell, Lily-of-the-valley, Greater tussock-sedge- Fauna: Hedgehog, Brown long-eared bat, Yellowhammer, Small heath butterfly, Polecat
Overall Objectives	- Increase habitat diversity and connectivity- Enhance floral diversity for pollinators- Support protected and notable species- Improve community engagement via wildlife-friendly public spaces

Illustration 2: Hagley Parish Designated Sites and Priority Habitats



1.14 Conclusion

This report underscores the need for sustainable planning in Hagley Parish, balancing housing, conservation, and community well-being. Given the erosion of green spaces and wildlife corridors from previous high-density developments, this Environmental Report provides a framework for fostering long-term sustainability. Aligning with the NPPF (2024) and Bromsgrove District Plan ensures that Hagley remains a thriving, nature-rich community.

2.0 ENV 1 Biodiversity and Environmental Protection in Hagley Parish

Table 4: Policy and Objectives on ENV 1 and link to BDC Policy

Policy	Priority Objectives
ENV 1 ***Aim - To identify and safeguard Hagley Parish assets, including trees and promote measurable growth in biodiversity*.** ***Bromsgrove District Policy 24*** *Green Infrastructure: Delivers a high-quality, multi-functional Green Infrastructure network by ensuring developments adopt a holistic approach to delivering the multiple benefits and vital services of Green Infrastructure, with priorities determined by local circumstances*.	**ENV 1.1:** Ensure a measurable increase in biodiversity through all future developments by actively creating, protecting, enhancing, and connecting new and existing habitats. This holistic approach will strengthen ecological networks, enhance species diversity, and promote sustainable land-use practices throughout the Parish. **ENV 1.2:** Prevent the loss of mature and veteran trees, preserving native trees and woodlands as integral parts of the local ecosystem. These natural assets will be rigorously protected to maintain their critical role in carbon sequestration, habitat provision, and the preservation of landscape character. **ENV 1.3:** Designate and safeguard local wildlife corridors to improve habitat connectivity to ensure safe and effective movement for wildlife. These corridors will be strategically planned to link key habitats and promote biodiversity resilience, facilitating species migration, dispersal, and survival. **ENV 1.4:** Foster strong community engagement by actively involving Hagley residents in environmental initiatives and raising awareness about the importance of biodiversity. By cultivating a shared responsibility for conservation, we aim to empower the community to participate in the ongoing protection and enhancement of Hagley Parish's natural heritage.

2.1 Introduction

ENV1 integrates species data, ecological modelling, policy compliance, and measurable outcomes, aligning with legislative frameworks. It uses GIS tools to produce maps to inform Hagley Parish's plans for habitat restoration and climate resilience measures. Hagley Parish is committed to identifying, safeguarding, and enhancing its natural assets, including trees and biodiversity, through effective management and strategic planning. Our approach emphasises the creation of sustainable, interconnected habitats that promote measurable biodiversity growth. Table 5 presents the Hagley Green Infrastructure Framework, which includes spaces that support nature, improve the environment, and benefit the Hagley estate.

Table 5: Green Infrastructure Framework Assets Key

Existing Assets	Enhanced Assets	Engineered Assets
Sweet Pool (Hydrosere)	Bioswales	Permeable surfaces
Brake Mill Pond	Rain gardens	Water butts
Wychbury Hill	Planting pollinators	Green roofs
Hagley Park	Planting fruit trees	Green walls
Woods, including ancient woodland		
Trees		
Hedgerows		
Ponds & streams		
Grassland		
Lawns		
Playing Fields		
Allotment		

2.2 Hagley Parish Landscape

Hagley Parish boasts a rich landscape, shaped by centuries of human activity and natural processes. The topography includes rolling hills to the east, offering scenic views of the Black Hills in Wales and the Wrekin in Shropshire. These hills descend into the flatter areas of West Hagley, where the village High Street is located.

2.2.1 Hagley Landscape Character

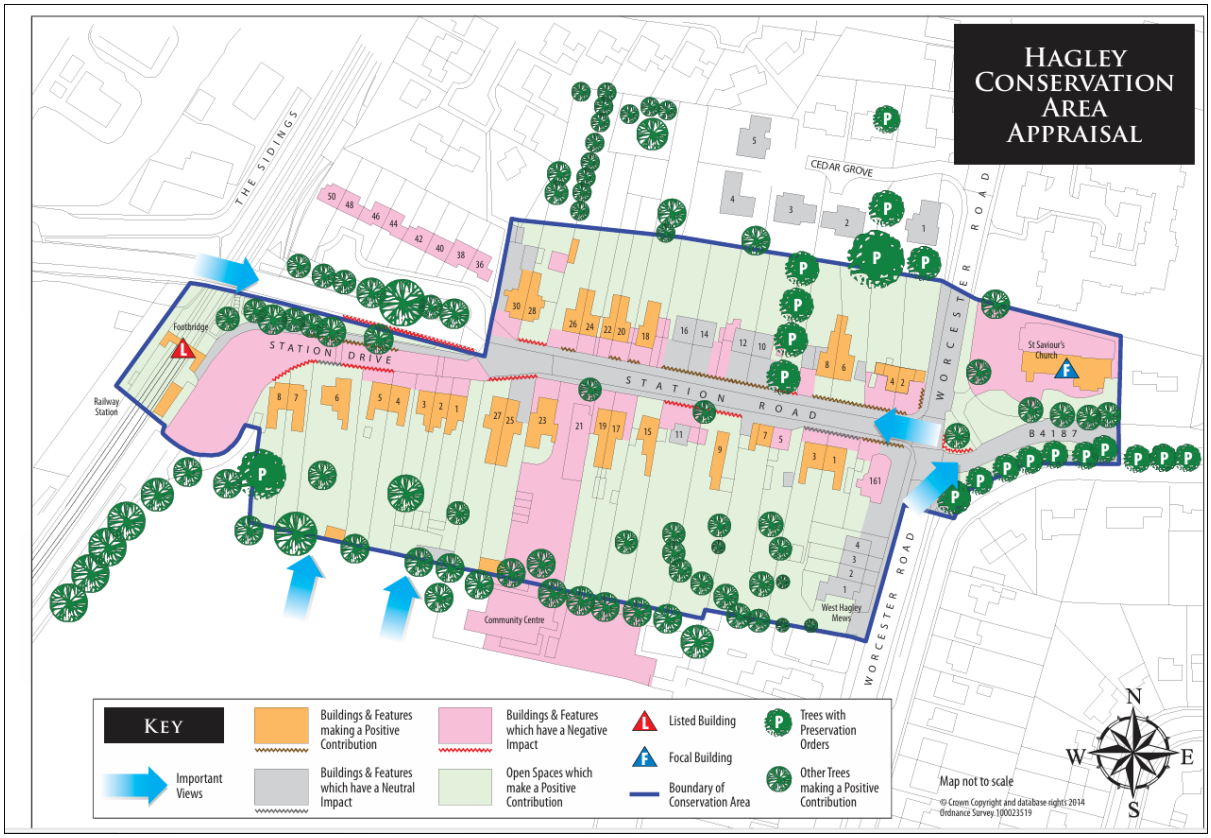
2.2.2 Landscape Description Units (LDUs) The Worcestershire Landscape Character Assessment (LCA) used Landscape Description Units (LDUs) to divide the county into distinct, spatially defined areas based on consistent physical, ecological, and cultural characteristics (Worcestershire County Council, 2013). LDUs have six attributes: geology, topography, soils, tree cover character, land use, and historic settlement pattern (Natural England, 2014). They help us to understand the local landscape and its sensitivity to change. Hagley is a Principal Village Farmlands landscape type, characterised by gently rolling topography, mixed agricultural land use (arable and pastoral), scattered hedgerows, trees and small woodlands, and a settlement pattern dominated by dispersed farmsteads and housing (Worcestershire County Council, 2013) in the case of Hagley.

2.2.2.1 Hagley Park Hagley Park is an 18th-century estate and a key historical and aesthetic feature, notable for its association with the English Landscape Garden tradition. It features a Palladian bridge, classical follies, rotundas, and extensive woodland and parkland (Historic England, 2021; Wikipedia, 2024).

2.2.2.2 The Hagley Conservation Area The Hagley Conservation Area, which encompasses parts of West Hagley, lies within LDU KS31 and features predominantly late Victorian and early Edwardian architecture, as well as extensive green spaces. Landmarks include the Grade II-listed railway footbridge and the Church of St Saviour.

Proximity to rural Local Development Units (LDUs), such as MW136, further emphasises the need for sensitive edge-of-settlement planning to maintain a harmonious transition between built form and rural landscapes.

Illustration 3: Hagley Conservation Area Appraisal (BDC 2014)



The use of LDUs aids conservation and planning by offering a structured, evidence-based approach to managing the landscape. It supports the preservation of landscape character and informs development in a way that maintains the integrity of both ecological systems and historical features (Natural England, 2014).

Table 6: Landscape Description Units – Hagley Parish and Planning Implications

LDU	Name	Landscape Type	Location	Key Features	Planning Implications
MW137	Central Hagley (Urban Core)	Urban	Central and East Hagley, including Hagley village	Dense residential development; Urban infrastructure: schools, shops, road network	Manage housing, traffic, and community services; Maintain green buffers and limit rural sprawl
KS31	West Hagley	Urban	West Hagley, bordering Brake Lane	Suburban residential developments; Closely packed	Enhance urban green spaces, promote tree

			and Westwood Avenue	housing, some commercial/retail	planting, and limit rural expansion
MW136	Southwest Hagley	Principal Timbered Farmlands	Southern fringe of Hagley, near Newfield Road and Brake Lane	Rolling farmland with hedgerows and scattered trees; Urban-rural transition zone	Landscape buffer importance; Development pressure; Conserve and enhance hedgerows and corridors
MW123.1	South Hagley / North Clent	Principal Timbered Farmlands	Southeast of Hagley, between Worcester Road and Clent	Historic field patterns; Intermittent woodland patches	Conserve traditional landscape; Integrate ecological networks and footpaths
MW149	Clent Hills Fringe	Wooded Hills and Farmlands	Southernmost section, just past the A491	Woodland, agricultural mix; High scenic value; Adjacent to Clent Hills AONB	Strong landscape protection, Limit development, Ideal for recreation and conservation
AR03.1	Eastern Edge	Wooded Hills and Farmlands	East of the parish border	Acts as a rural backdrop and buffer zone	Maintain buffer character; Support wider landscape setting

2.2.2.3 Geology

Hagley's geology mixes sandstone and mudstone, with permeable bedrock beneath. The surface is characterised by freely draining acidic, loamy soils, with heavier clayey soils in the steeper areas near Wychbury Hill. Reports of subsidence due to clay desiccation are standard in the catchment.

2.2.2.4 Features:

Areas of Outstanding Natural Beauty (AONB): Wychbury Hill is part of the Clent Hills, which surround Hagley and are recognised for their scenic beauty and biodiversity.

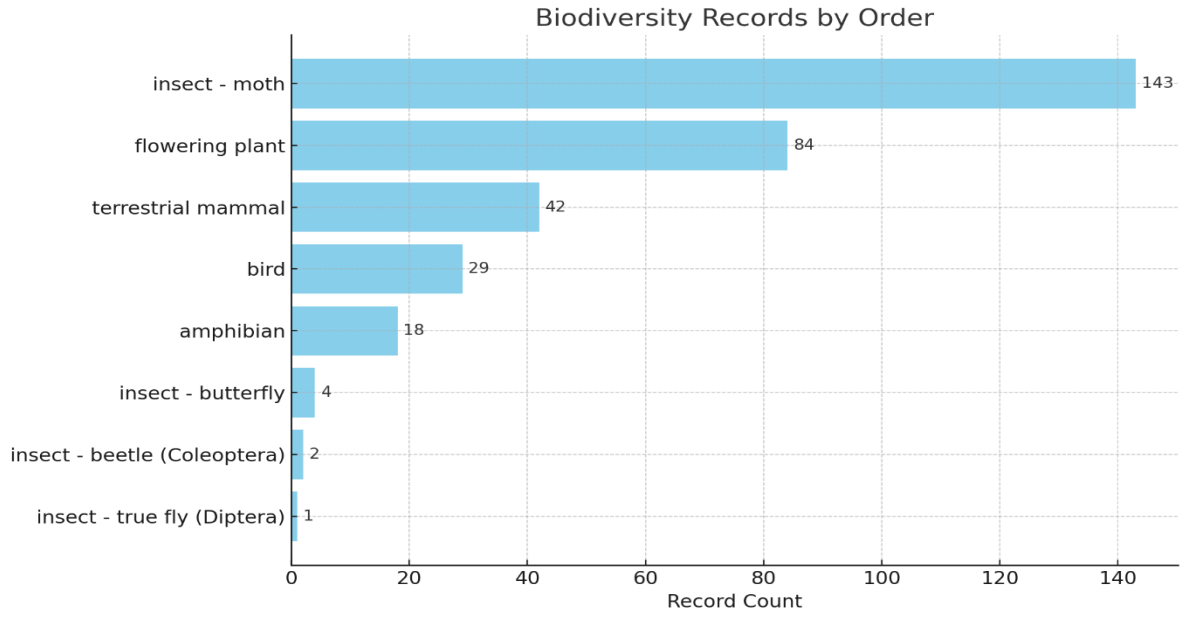
Illustration 4: Obelisk Landmark on top of Wychbury Hill (Hagley Hall)



2.2.3 Worcestershire Biological Records

Data was sourced from Worcestershire Biological Records to understand the recorded wildlife. The data showed that the total number of records was 323, comprising 107 unique species, with a data range from 1978 to 2022. The data encompass observations across various taxonomic groups, highlighting notable species with conservation significance (Appendix E).

Illustration 5: Chart 1: Biodiversity Records by Order



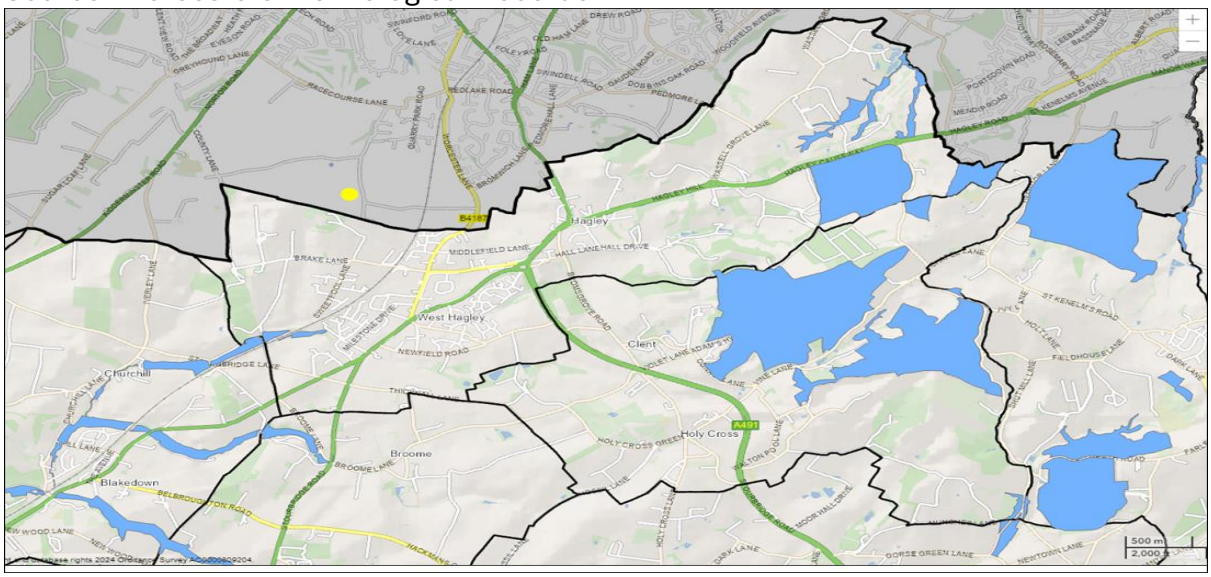
2.2.4 Wildlife Corridors (source Worcestershire Biological Records)

The data showed that essential wildlife sites are directly located within wildlife corridors. The five local wildlife sites are Hagley Parish, Churchill and Blakedown Valleys, Clent Hills, Wassell Grove Dingle, Hagley Wood, and Bogs Wood Complex. Corridors support the movement of species and the maintenance of ecological

networks. The preservation and enhancement of wildlife corridors are crucial for maintaining environmental networks and facilitating the movement of species across fragmented habitats.

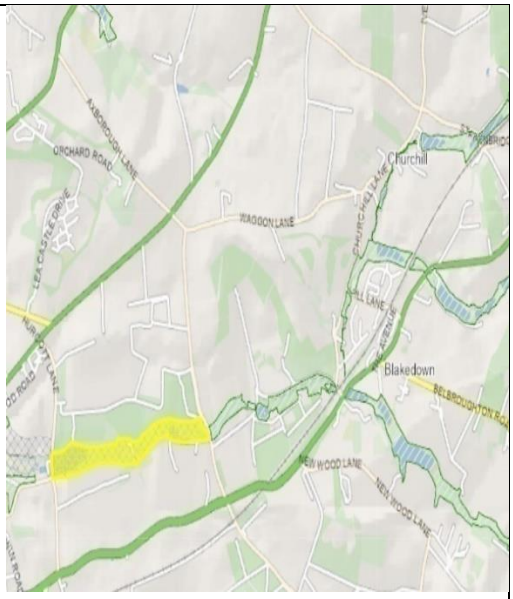
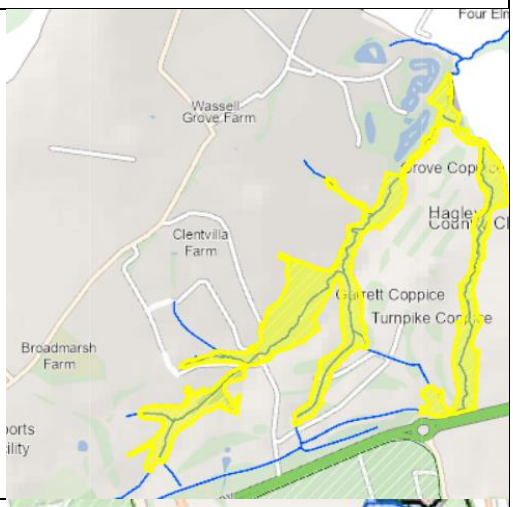
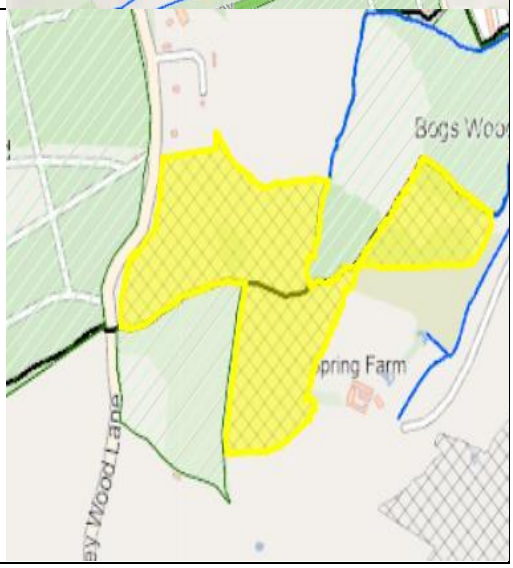
2.2.4.1 Historical Ecological Reports:
The naturalist Chris Bains (1979) highlighted the importance of specific wildlife corridors, some of which are lost or at risk due to urban expansion.

Illustration 6: Wildlife Corridors (blue) across Hagley, Churchill, Blakedown and Clent.
Source: Worcestershire Biological Records



2.2.5 Detailed Wildlife Sites

Churchill & Blakedown Valleys – Local Wildlife Site A mosaic of brook, lake, hedgerows, and semi-natural habitats forms a vital ecological corridor. The area supports a diverse range of wildlife and is accessible via public footpaths.	

Hurcott and Podmore Pools SSSI A 50-hectare wetland reserve near Kidderminster, notable for its alder carr woodland and rich wetland. It is linked hydrologically through the Blakedown Brook. This brook receives a constant discharge pumped into its upper reaches near Hagley, which helps maintain water levels and ecological balance in the Site of Special Scientific Interest (SSSI). archive.wyreforestdc.gov.ukGOV.UK Water management in Hagley influences the health of the Hurcott and Podmore Pools SSSI downstream. Ensuring sustainable practices in Hagley is vital for conserving this significant ecological site.	
Wassell Grove Dingle - Local Wildlife Site A 20-acre site featuring fishing pools, woodlands, and open grassland. It offers habitats for various species and includes public footpaths for nature walks.	
Penorchard & Spring Farm Pastures SSSI One of Worcestershire's largest remaining semi-natural grasslands, rich in wildflowers like knapweed and orchids. The site is maintained through traditional grazing and scrub clearance.	

2.2.5.1 Additional Sites and Corridors

Several additional sites of ecological interest, though not formally recorded with the Worcestershire Biological Records Centre, are essential to local biodiversity:

- **Sweet Pool Nature Reserve**
  A key wetland habitat for amphibians, birds, and invertebrates. It starts a chain of pools within the Churchill and Blakedown Valleys LWS, connecting downstream to the River Stour and intersecting with multiple LNRs and SSSIs.
- **Brake Mill Pond and Wychbury Hill**
  These areas contribute additional value to the local green infrastructure. Wychbury Hill is ecologically and geologically notable, featuring the Kidderminster Formation Rock from the Triassic period, and contains an Iron Age hillfort, a designated heritage site at risk due to development pressures.

Illustration 7: Brake Mill Pond



Table 7: Key Ecological Assets within Hagley Parish:

Site Name	Designation	Key Features	Connectivity / Notes
Churchill & Blakedown Valleys	LWS	Brook, lake, hedgerows, semi-natural habitats	Ecological corridor, linked to the River Stour
Sweet Pool Nature Reserve	LWS	Wetland with amphibians, birds, and invertebrates	Start of the Churchill/Blakedown corridor
Wassell Grove Dingle	LWS	Fishing pools, woodland, and grassland	Supports diverse local species
Hagley Wood	LWS	Ancient woodland	Eastern habitat block
Bogs Wood Complex	LWS	Mixed deciduous woodlands	Enhances eastern parish biodiversity
Clent Hills	LWS	Mosaic upland habitat	Part of the Clent Hills ecosystem

Hurcott & Podmore Pools	SSSI	Wetland reserve, alder carr woodland	Linked via Blakedown Brook to Hagley
Penorchard & Spring Farm Pastures	SSSI	Wildflower-rich grassland, traditional grazing	High ecological and geological value
Brake Mill Pond	Unrecorded	Aquatic habitat	Proposed wildlife corridor
Wychbury Hill	Geological/Heritage	Triassic rock formation, Iron Age hillfort	Cultural and ecological value

Illustration 8: Key Ecological Assets in Hagley Parish

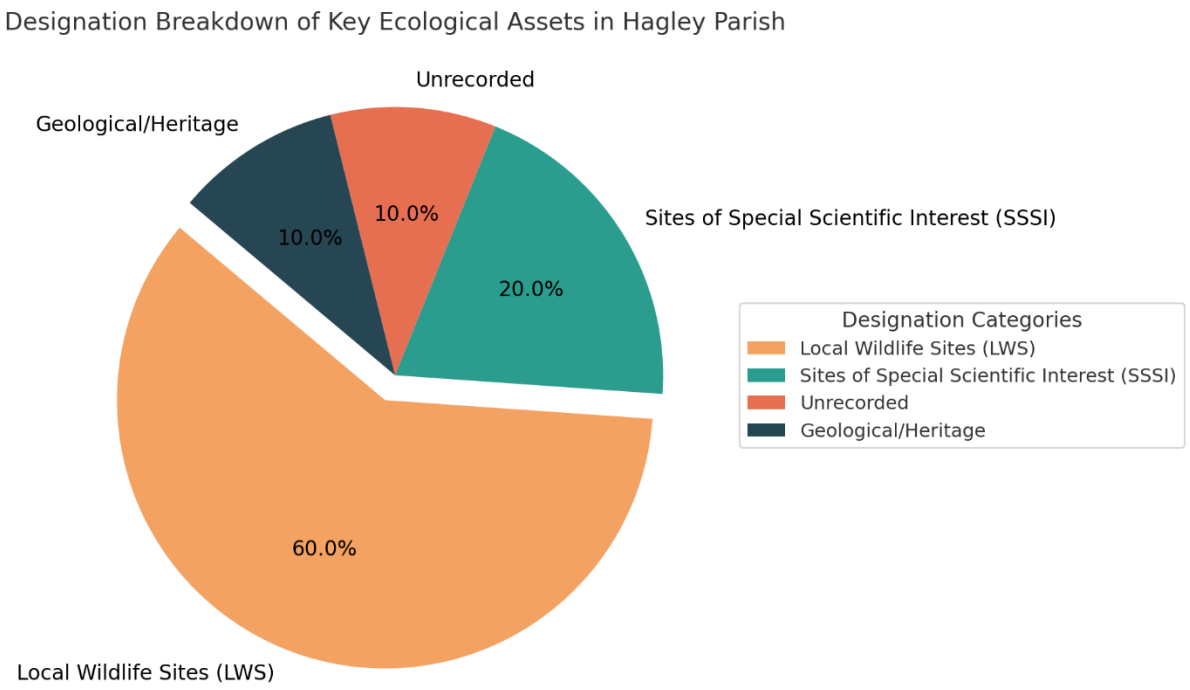
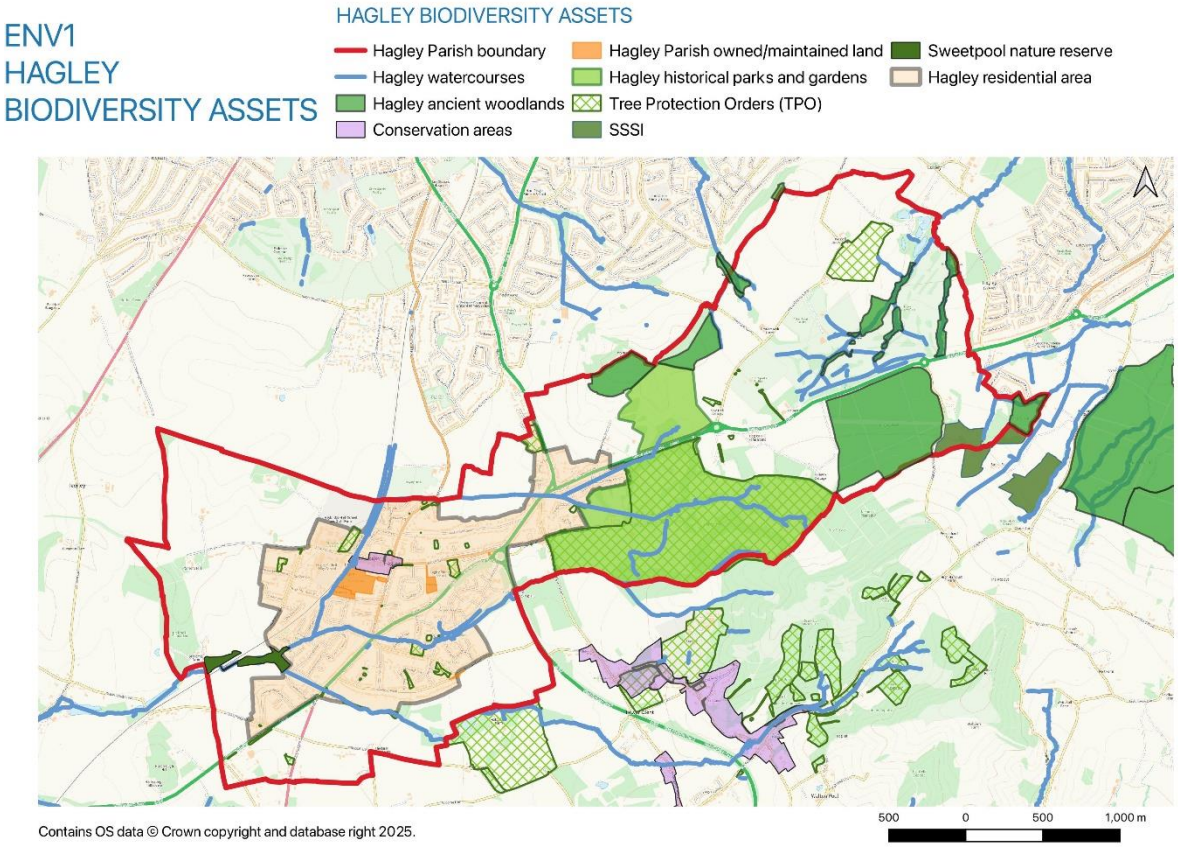


Illustration 9: Views from Wychbury Hill Fort towards Stourbridge (UNESCO site)



2.2.6 Illustration 10: Hagley Parish Council (HPC) Biodiversity Assets Map

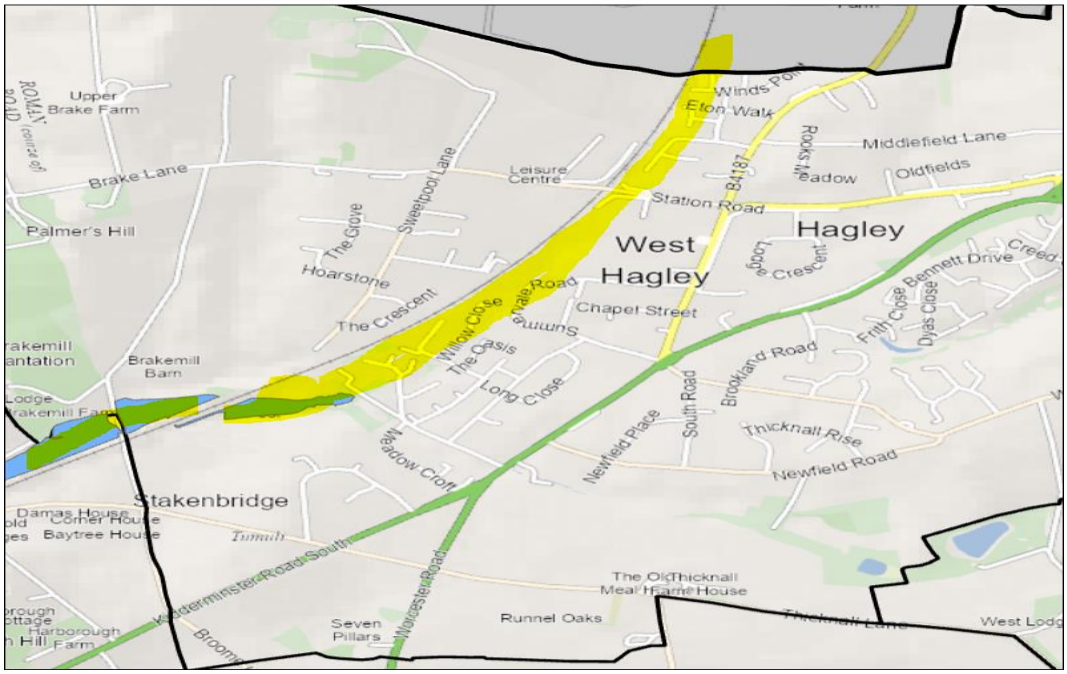
This map identifies key biodiversity assets within Hagley Parish, including Sweetpool Nature Reserve, designated Sites of Special Scientific Interest (SSSI), Local Wildlife Sites (LWS), and ancient woodland. It highlights the parish boundary (red line), major watercourses (blue), and open spaces contributing to habitat connectivity and green infrastructure.



2.2.7 Proposed Wildlife Corridor

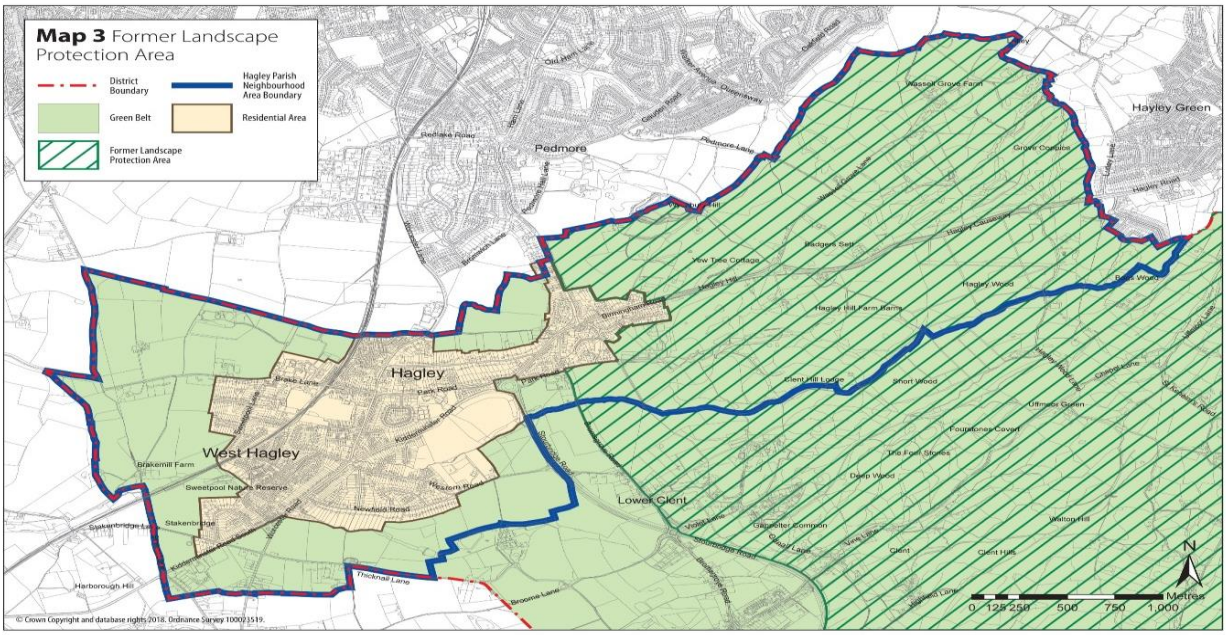
A proposed wildlife corridor extending from the Network Rail line through Sweet Pool Nature Reserve and Brake Mill Pond. This corridor aims to enhance habitat continuity, increase resilience to climate change, and promote the development of green infrastructure. Strengthening these connections aligns with the parish's broader biodiversity conservation and ecological resilience strategies. The highlighted area represents the proposed wildlife corridor.

Illustration 11: Example of Proposed Wildlife Corridor



2.2.8 Urban Encroachment: Urban expansion over recent years has led to encroachment on vital environmental assets. Hagley is unprotected due to the removal of the designated Landscape Protection Area (LPA) in the Bromsgrove District Plan (2017).

Illustration 12: Landscape Protection Area and Greenbelt

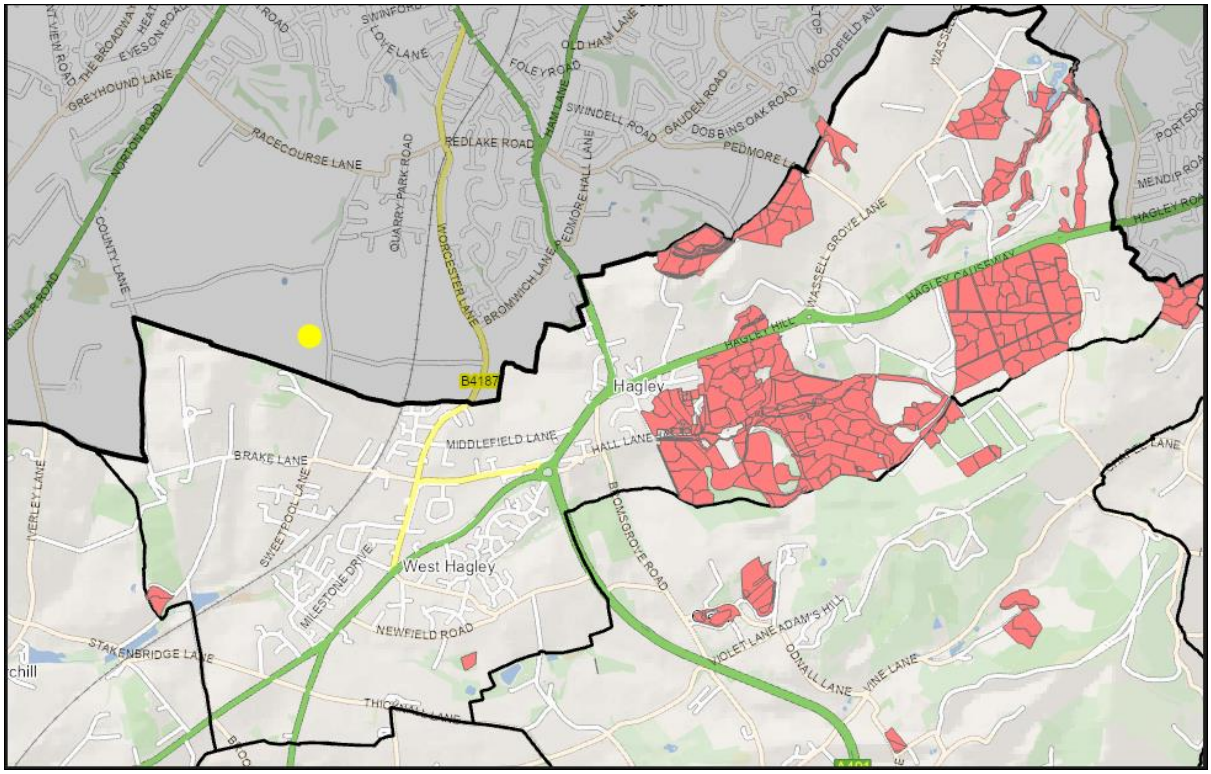


2.3 Biodiversity Audit

A comprehensive biodiversity audit of the parish was conducted, focusing on the Greenbelt and Greenfield areas, as well as areas for maintaining habitat connectivity and biodiversity.

- **Irreplaceable Land:** Hagley Parish has sites designated as Irreplaceable Habitat

Illustration 13: Irreplaceable Habitat



- **Grassland, Hedgerows, and Verges:**
  Grasslands, wet meadows, and hedgerows are found in the rural areas of Hagley, including acid grasslands. These habitats support many important species and provide a buffer zone for wildlife to move between other habitat types. The hedgerows are vital for wildlife corridors, offering shelter, food, and safe routes for animals to travel (Table 5: Appendix E)

Table 8: Key Species in Grasslands and Hedgerows (Detail in Appendix E)

Birds	Insects	Mammals
Skylarks, lapwing, meadow pipits, corn bunting, yellowhammer, house sparrow, linnet and various species of finches.	Bees, butterflies (including small heath, wall and grizzled skipper), moths, beetles (including black headed cardinal beetle), flies and grasshoppers.	Badger, fox, polecat, hedgehog, hare, field mice, voles and bats.

However, grasslands face significant threats from agricultural intensification and urbanisation, which reduce their area and quality. Hedgerows, too, are in danger from farming practices and development.

Table 9: Ecosystem Services Provided:

Provisioning Services:	Provide food and clean water.
Regulating Services:	Pollination, carbon sequestration, and flood mitigation.
Cultural Services:	Recreation and heritage landscapes.

Supporting Services:	Soil formation and nutrient cycling.

2.4 Biodiversity Net Gain (BNG) Metrics

The DEFRA Biodiversity Metric 4.0 will be employed for a minimum 10% Biodiversity Net Gain and an aspirational 40% Biodiversity Net Gain (BNG) target to ensure measurable conservation success. Measures include:

- **Habitat Enhancement**: Revitalising wildflower meadows, hedgerows, trees and the Sweet Pool Nature Reserve.
- **Improved Wildlife Corridor Connectivity**: Strengthening ecological links across fragmented landscapes.
- **Species Recovery**: Conservation actions for UK BAP (Biodiversity Action Plan) species, such as the Skylark (Alauda arvensis) and Great Crested Newt (Triturus cristatus).

2.5 Green Infrastructure and Climate Resilience

Green Infrastructure (GI) is a strategic framework for enhancing biodiversity, resilience to climate change, and the well-being of local communities. It is reflected throughout the report and includes:

- **Tree Planting:** Targeting increased canopy cover to enhance carbon sequestration and urban cooling.

  Illustration 14: Tree cover at Round Wood



- **Sustainable Drainage Systems (Suds):** Incorporating rain gardens, bioswales, and permeable surfaces to reduce flooding risks.
- **Pollinator-Friendly Landscaping**: Designing spaces that support pollinator species, such as bees and butterflies, by planting nectar-rich plants and ensuring habitat connectivity.
- **Climate Resilience Measures:** Green Walls and Solar Panels - Evaluating the Impact of Green Infrastructure on Local Ecosystems and Energy Efficiency.

- **Carbon Sequestration**: The parish's existing woodlands play a significant role in local carbon offsetting, with 1 hectare of woodland absorbing 12–15 tonnes of CO_2 per year.

2.6 Biodiversity Monitoring and Evaluation: Monitoring biodiversity and the effectiveness of conservation measures is crucial for ensuring long-term success. This involves tracking species populations, habitat conditions, and the impact of restoration projects through annual surveys of key species and habitats to assess the health of local ecosystems and reporting on the success of habitat restoration efforts and invasive species control measures.

2.6.1 Site One and Two Ecological Survey: An example of outcomes from ecological surveys includes recommendations for future sites, summarised in Appendix A for Sites One and Two. Both reports presented substantial ecological grounds for protecting existing environmental features. While Site 2 provides slightly more tailored suggestions (due to the field's current use and surroundings), both advocate for similar conservation, mitigation, and biodiversity enhancement principles, aligning with national legislation and planning policy.

Illustration 15: Site One (Aerial)



Illustration 16: Site 2 (Aerial)



Table 10: Priority Species Data

The following table outlines key priority species found in the habitats of Hagley Parish, including their conservation status, threats, and habitat types—additional examples are provided in Appendix E.

Species	Conservation Status	Threats	Habitat
Skylark (Alauda arvensis) Corn bunting, yellowhammer, lapwing, linnet, herring gull, house sparrow, song thrush	Red List (UK)	Habitat loss, agricultural intensification, and changes to planning policy.	Acid grassland
Great Crested Newt (Triturus cristatus)	European Protected Species	Habitat destruction, pollution, and changes to planning policy.	Wetland, ponds
Silver-studded Blue Butterfly (Plebejus argus)	Vulnerable (IUCN)	Habitat loss, climate change, and changes to planning policy.	Heathland, acid grassland
Reed Warbler (Acrocephalus scirpaceus)	Least Concern (IUCN)	Habitat loss, invasive species	Wetland, reed beds

- **Ecological Modelling**
  Species Distribution Modelling (SDM) and Habitat Suitability Index (HSI) will be used to predict how future land-use changes and climate fluctuations may affect species distribution in Hagley Parish. Key models to be applied include:
- **Climate Change Projections**: Analysing potential impacts on habitats, such as acid grassland and wetlands, to inform future conservation planning.
- **Habitat Fragmentation**: Geographic Information Systems (GIS) have allowed for detailed mapping of habitat connectivity across Hagley. This mapping identifies ecological corridors, critical habitats, and areas where wildlife movement is restricted due to urbanisation or land use changes.
- **Key Findings from GIS Mapping:**
  Significant habitat fragmentation in areas surrounding the A456 and B4187 roads limits wildlife movement.
  If improved, several underutilised green spaces in the parish could serve as wildlife corridors.
  Ecological restoration projects could strengthen the connectivity between Hagley's woodland areas and nearby nature reserves.

2.7 ENV 1.4 Community Engagement and Education
Successful biodiversity protection needs the engagement of the local community to raise awareness and create a sense of ownership and responsibility. Initiatives could include:

- **Community Wildlife Surveys:** Encourage residents to participate in local wildlife monitoring, such as bird counts, butterfly surveys, plant identification programs, and an annual 'Bioblitz' starting at Sweet Pool Nature Reserve.
- **School Education Programs**: Partnering with local schools and groups such as Explorers and Scouts to create educational campaigns that promote environmental stewardship. This could involve habitat restoration projects or the creation of wildlife-friendly school gardens, utilising the baseline data in Appendix E. Additionally, school programs can instruct students about local wildlife and the importance of conservation. Hagley Primary School features a wildlife area and pond, providing an ideal setting for studying local wildlife.
- **Community Education:** This is an essential aspect of conservation. Community groups and residents are encouraged to monitor biodiversity and participate in conservation activities such as tree planting and species surveys to foster a sense of responsibility and connection to the environment. Workshops and Events: Organising "wildlife days" or "nature walks" to raise awareness and educate the public on the importance of local ecosystems.
- **Eco-volunteering**: Organising volunteer groups to assist with tree planting to promote native species, habitat restoration, and invasive species management. These activities also provide opportunities to strengthen community bonds.
- **Citizen Science Projects**: These projects utilise platforms such as Nature's Calendar, Merlin, and iNaturalist, where residents contribute data on species observations. This real-time data will be collected across the wildlife corridors in partnership with Churchill and Blakedown and integrated into the parish's monitoring system at Worcestershire Biological Records, where baseline data is found (Appendix E).

2.8 Sustainable Agriculture and Land Use
According to agricultural land assessments, Hagley has access to high-quality agricultural land. Agricultural land in and around Hagley, Worcestershire, is classified under the Agricultural Land Classification (ALC) system used in England. This system grades land from Grade 1 (excellent quality) to Grade 5 (inferior quality) based on factors like soil quality, climate, and topography. Grades 1 to 3a are considered the 'best and most versatile' (BMV) land, offering the highest agricultural value and receiving significant protection from development.

2.9 Agricultural Land Grades in Hagley. A detailed ALC survey conducted in 1997 on land between the western edge of Hagley and the nearby railway line revealed:

- **Grade 2 (Very Good Quality)**: Approximately 45.9% of the site. This land is primarily located in lower-lying areas with sandy loam or loamy sand topsoil overlying sand or sandstone.
- **Subgrade 3a (Good Quality)**: About 21.9% of the site, located in the southern and northern parts, featuring loamy sand over sand to depth.

- **Subgrade 3b (Moderate Quality)**: This accounts for approximately 3.6% of the site, located in the northwest and northern central areas, where the gradient is limiting.
- **Grade 4 (Poor Quality)**: Approximately 1.8% of the site is in areas where the gradient affects agricultural potential.

The remaining 26.8% of the land comprises non-agricultural areas, including built-up land and infrastructure.

2.10 Implications for Land Use

The presence of BMV land (Grades 1 to 3a) around Hagley means that any proposed development in these areas would be subject to stringent planning considerations aimed at preserving agricultural quality. Land of lower grades may be more amenable to development, but factors such as landscape sensitivity, flood risk, and Green Belt status also play crucial roles in planning decisions (Bromsgrove District Council 2013).

The Environment Report aims to support the local authority to encourage sustainable agricultural practices, vital for reducing adverse effects on local ecosystems, including:

- **Agri-environmental Schemes:** Encouraging local farmers to participate in schemes like Countryside Stewardship or Environmental Stewardship, which offer financial incentives for maintaining or restoring biodiversity.
- **Regenerative Agriculture**: Promoting soil health through cover cropping, crop rotation, and minimal tillage, which enhances soil biodiversity and reduces erosion and nutrient runoff.
- **Pollinator-Friendly Farming**: Collaborating with local landowners and farmers to secure subsidies and guidance for creating pollinator-friendly habitats, such as wildflower strips, hedgerows, and cover crops, can help boost local pollinator populations and agricultural productivity. Lower Smite Farm is an example.

2.11 Green Economy and Sustainable Development

Investing in a green economy improves local biodiversity and creates economic opportunities for the community. Key initiatives include:

- **Green Jobs:** Fostering new jobs in areas like habitat restoration, wildlife conservation, green infrastructure installation, and supporting sustainable energy projects (e.g., solar panel installation and energy-efficient buildings). Local employers include the National Trust at Clent.
- **Eco-tourism:** Developing low-impact tourism initiatives, such as guided nature walks, birdwatching, and wildlife photography tours, which generate revenue while supporting conservation goals.
- **Sustainable Building Standards**: Ensuring that new developments adhere to BREEAM (Building Research Establishment Environmental Assessment Method) or Passivhaus standards to minimise energy use, carbon emissions, and environmental impact.

2.12 Technology and Innovation

Technological advancements can be integrated to improve monitoring, data collection, and decision-making. Some ideas include:

- **Remote Sensing and Drones:** Drones equipped with thermal cameras and Lidar sensors to monitor species populations and habitat health in areas that are difficult to reach on foot, such as wetlands or steep hill areas.
- **Artificial Intelligence (AI) for Habitat Monitoring**: AI tools can analyse images captured by field cameras to automatically detect and identify species, track population sizes, and monitor habitat conditions. This technology is becoming more affordable and accessible. For example, Merlin is a free app that identifies birds through their song.

Smart Sensors for Climate Monitoring: Deploying sensors across the parish to monitor temperature, humidity, and precipitation, as well as soil moisture and carbon levels, to better understand how climate change is affecting local ecosystems.

2.13 Natural Capital Accounting

To ensure the sustainability of Hagley Parish's biodiversity efforts, the Natural Capital Accounting (NCA) approach was used. NCA is the practice of accounting for the value of natural resources (like forests, wetlands, and farmland) and the ecosystem services they provide.

- **Economic Valuation of Ecosystem Services**: For example, estimating the monetary value of services provided by Sweet Pool, a wetland ecosystem offering water purification, flood protection, and carbon sequestration.
- **Cost-Benefit Analysis**: Ensuring that the long-term benefits of biodiversity restoration (e.g., increased resilience to climate change, improved public health through access to open spaces) outweigh the costs associated with conservation efforts.

2.14 Collaboration with External Partners

Collaboration with various external agencies and organisations can further enhance the success of biodiversity initiatives:

- **Local Authorities**: Work with Worcestershire County Council and Bromsgrove District Council to ensure biodiversity goals are integrated into regional and local planning, policies, and resource management.
- **Non-Governmental Organisations (NGOs):** Collaborate with organisations such as The Wildlife Trust and RSPB for additional expertise, funding, and support on species conservation projects.
- Partner with universities, including the University of the Third Age, and ecological research organisations to fund studies on local biodiversity, conduct species monitoring, and improve land management strategies.
- **Private Sector:** Encourage local landowners and businesses to adopt sustainable practices. Hagley Hall has already started this approach by developing a country park. Local companies could become corporate sponsors of conservation efforts, such as funding local nature reserves or providing volunteer staff for community events.
- **Volunteers:** Volunteers are vital to conserving and preserving the local environment, as well as sharing their knowledge and expertise. Young people, in particular, are essential as they are the future leaders. Therefore, regional groups, such as the Explorers and the Duke of Edinburgh Awards, are0 encouraged to engage in initiatives, including clearing invasive species and recording species during a Bioblitz.

2.15 Strategic Review and Adaptive Management

Biodiversity conservation is an ongoing process, and it's essential to establish mechanisms for continuous review and improvement:

- **Annual Reviews**: Conduct annual progress reviews to evaluate the effectiveness of biodiversity strategies. This could include monitoring the success of Biodiversity Net Gain (BNG) targets, wildlife corridor improvements, and community engagement efforts.
- **Adaptive Management Approach**: If specific strategies are not yielding the expected results, an adaptive management approach will ensure that plans are adjusted and recalibrated based on new data and changing conditions. This could involve shifting resources or prioritising specific actions over others.

2.16 Funding and Resourcing

The success of ENV 1 will depend heavily on securing adequate funding and resources through the Parish Council and encouraging investment through the District and County Councils. An example of disinvestment in Worcester Wildlife Trust by Bromsgrove District Council has resulted in a lack of initiatives in the local area. Potential sources include:

- **Government Grants**: Access to government funding through the Environmental Protection Fund or the Local Nature Recovery Fund.
- **Crowdfunding:** Launching a local crowdfunding campaign to raise money for specific conservation projects (e.g., tree planting, wildlife corridors).
- **Philanthropy:** Encouraging donations from individuals or companies with a vested interest in local conservation and environmental sustainability.

2.17 Enhancing Habitat Connectivity

Biodiversity thrives when ecosystems are connected, allowing species to migrate, breed, and access essential resources. Key strategies to enhance habitat connectivity include developing:

- **Wildlife Corridors**: Designing and implementing wildlife corridors that connect fragmented habitats. These can be created through reforestation projects, planting hedgerows, or restoring riparian buffers along rivers and streams. Corridors ensure genetic diversity and enable species to move in response to environmental changes.
- **Bridges and Underpasses**: For larger species or areas where road networks fragment habitats, creating wildlife-friendly bridges or underpasses can help prevent wildlife-vehicle collisions while maintaining habitat connectivity.
- **The Biodiversity Enhancement Assessment (BEA) for Hagley Parish Council and the Worcestershire Pollinator Strategy (WPS)**: The two reports are closely aligned, providing a clear vision and actionable framework with direct relevance to habitat restoration, public engagement, and pollinator resilience in Hagley. The following two tables capture the opportunities and recommendations for Hagley Parish.

Table 11: Implications for Hagley Parish in Biodiversity and Habitat Management

Strategic Theme	Key Actions	Alignment with Wider Plans	Local Opportunity
Pollinator Habitat Creation and Restoration	- Wildflower bulb and plug planting - Focus on public areas (verges, cemeteries, roundabouts)	- Supports Worcestershire Pollinator Strategy (WPS) - Enhances B-Lines and grassland connectivity	Hagley as a pilot parish for county-level pollinator initiatives
Ecological Connectivity via Road Verges	- Focus on Worcester Rd, Park Rd, Kidderminster Rd - Biodiversity-friendly verge management - Creation of ecotones	- Reflects WPS goals for linear habitat improvement - Encourages plant-style management	Trial and monitor ecological verge schemes in Hagley
Invasive Species Control	- Target Himalayan balsam & skunk cabbage - Restoration of native riparian and woodland edge flora	- Matches WPS focus on invasive species control - Enhances native habitat resilience	Hagley is a demonstration site for invasive control and habitat recovery
Community and Public Engagement	- Community planting events - Interpretation panels - School and local group collaborations - Work with Duke of Edinburgh and Explorer groups	- Delivers the WPS goal of empowering parish action - Builds public participation in biodiversity	Establish Hagley as a model for public-led stewardship and biodiversity education. Engage young people with an interest in the environment and future leaders.
Integration into Nature Recovery Networks	- Enhance Sweetpool NR, Hagley Park, and Hagley Wood - Connect with the surrounding LWS and corridors	- Fills B-Lines and NRN gaps - Supports landscape-scale ecological connectivity	Hagley is positioned as a strategic hub in local and regional Nature Recovery Networks

Habitat enhancement improvement: Natural Networks surveyed sites within Hagley using European Funding and identified the following areas for biodiversity enhancement, with the actions outlined in Table 12 below.

Table 12: Summary of Biodiversity Enhancements

Site	Enhancement measure and estimated area/number/etc
1. New Field Road	A. Fruit tree planting - 10 fruit trees (with guards and mulch) B. Bulb and plug planting - 400 woodland bulbs and plugs C. Control of invasive plants - scattered Himalayan balsam - area TBC
2. Worcester Lane verge	A. Bulb and plug planting - 200 grassland bulbs and plugs B. Herb planting - 1 planter
3. Worcester Road/Park Road verge	A. Bulb and plug planting - 500 grassland bulbs and plugs B. Tree and shrub planting - 100 native shrubs and small trees C. Wildlife boxes - 2 bird boxes D. Public access and prevention of damage to banks - 1-2 sets of steps
4. Hagley roundabout, verges, and war memorial	A. Bulb and plug planting - 1000 grassland bulbs and plugs, 500 woodland bulbs and plugs B. Tree and shrub planting (Eastern verge) - 150 shrubs and small trees, 0.09 ha C. Consider control of invasive plants (Eastern verge) - cherry laurel and cotoneaster - 0.02 ha D. Tree and shrub planting (Kidderminster Road) - 100 shrubs and small trees, 0.06 ha E. Herb planting - herbs for 1 planter F. Wildlife boxes - 4 bird boxes
5. Birmingham /Stourbridge Road	A. Bulb and plug planting - 300 grassland bulbs and plugs
6. Hagley cemetery	A. Bulb and plug planting - 400 grassland bulbs and plugs B. Wildlife boxes - 2 bird boxes, 2 bat boxes
7. Sweetpool Nature Reserve	A. Meadow management - 0.13 ha (potential seeding and plug planting) B. Control of invasive plants - 1.1 ha scattered Himalayan balsam and American skunk cabbage control C. Wildlife boxes - 4 bat boxes D. Habitat features - habitat piles and hibernacula E. Public access - consider repairs to boardwalks and steps F. Interpretation panel - 1 panel (e.g. A3/A2)
Estimated total area to be enhanced: approximately 1.85 ha (excluding New Field Road site)	

2.18 Sustainable Forestry and Woodlands Management

The importance of the Hagley woodlands cannot be overstated in biodiversity conservation:

Key Species Found in Hagley Woodlands:

- **Birds:** Tawny owls, woodpeckers, crossbills, song thrush and sparrowhawks.
- **Mammals:** Roe deer, badgers, bats and red foxes.
- **Invertebrates:** Various species of beetles, moths, and butterflies.

Woodlands also serve as important carbon sinks, absorbing carbon dioxide from the atmosphere to help mitigate the effects of climate change.

2.19 Community Forest Projects:

- Develop or maintain community forests or woodlands where local people can engage in sustainable forestry activities such as thinning, tree planting, or wildlife monitoring.
- Conserve veteran and ancient trees such as the Wychbury Yews (Appendix J) to ensure the continuation of deadwood habitats and create buffer zones around protected areas.

Wychbury Hill is a special place, home to a rare group of ancient yew trees—some of which are believed to be over a thousand years old. These trees aren't just important for nature; they also hold deep meaning for many people and have long been a peaceful spot for quiet reflection and local gatherings.

Sadly, these treasured trees are under threat. Without proper protection and with more people visiting the area, some of the ancient yews have been damaged or lost (Appendix M)

2.20 Sweet Pool and Waterway Restoration

Wetlands are among the most biodiverse ecosystems and are highly threatened. Sweet Pool is a hydrosere, a type of ecological succession that occurs in wetlands and other water-dominated environments and is rare in Worcestershire. The proximity to the River Stour plays a vital role in maintaining local biodiversity. The habitats support a rich diversity of plant and animal life, and the wetlands help to regulate water flow, filter pollutants, and provide vital ecosystem services.

Table 13: Key Species seen in Hagley Wetlands:

Birds	Amphibians	Fish	Invertebrates
Herons, ducks, kingfishers and wading birds like snipe and lapwing	Frogs, newts, and toads	Various species of freshwater fish	Water beetles, dragonflies, and mayflies

A hydrosere describes the gradual transformation of a body of water into terrestrial land due to the accumulation of organic matter and sediment over time. As part of its succession process, a hydrosere often includes wetlands. For example, during the intermediate stages of a hydrosere, ecosystems such as swamps, marshes, and bogs may develop before eventually transitioning into fully terrestrial habitats.

Illustration 17: Sweet Pool Nature Reserve



Table 14: Stages of Hydrosere Succession

Stages of Hydrosere Succession:	
Open Water Stage – The process begins in a body of water.	
Submerged Plant Stage – Aquatic plants (e.g., pondweed) start to colonise. Sweet Pool 2024	
Floating Plant Stage – Plants like water lilies grow, contributing to the accumulation of organic matter.	
Reed Swamp Stage – Emergent plants (e.g., reeds and rushes) dominate, marking a wetland stage. The picture shows grass, sticks, and a swampy area, Sweet Pool 2025	
Marsh or Fen Stage – Peat forms, supporting wetland vegetation like sedges and mosses. The picture shows Polypodium vulgare (liquorice fern) at Sweet Pool 2025	
Woodland Stage – Trees and shrubs grow over time, transitioning the area into dry land. Alder Sweet Pool 2025 was spotted with 12 Greenfinches.	

Restoration and management detailed by Worcestershire Wildlife Consultancy for Sweet Pool Nature Reserve include:

- **Natural Flood Management**: Implementing nature-based solutions such as wetland creation, floodplain reconnection, or pond restoration to reduce flood risk, improve water quality, and enhance biodiversity.
- **Native plants**: Create critical habitats for amphibians, fish, and other wildlife, supporting biodiversity.
- **Riparian Buffer Zones**: Encouraging landowners to establish riparian buffer zones along watercourses to prevent erosion, improve water quality, and create corridors for aquatic species.

2.21 Pollinator Protection

Pollinators, including wasps, hoverflies, bees, butterflies, and moths, play a vital role in ecosystem functioning and agriculture. Some potential initiatives to protect and enhance pollinators include:

- **Pollinator Gardens and Wildflower Meadows**: Encouraging the planting of wildflowers, particularly native species that provide food for pollinators, in both private gardens and public spaces, including Sweet Pool Meadow.
- **Encourage more relaxed mowing regimes.** Adjust the timing of grassland management to allow plants to flower between April and August, or, ideally, between September and October, depending on the species present and their flowering times. Encourage more extended periods between mowing lawns, verges, and parks.
- **Bee Hotels and Pollinator Hives**: Installing bee hotels in key locations across the parish to provide habitats for solitary bees. Boosting floral resources creates a better habitat and food for wild bees. Some honeybees compete with wild bees for food, essentially serving as livestock, and are managed by sixteen local beekeepers.
- **Native plants**: In Hagley, native plants are well-adapted to the local climate and soil conditions, and their use offers significant ecological benefits, enhancing soil health, supporting local wildlife, and contributing to the overall sustainability of the local ecosystem. By focusing on native species, Hagley can create vibrant, resilient landscapes that foster biodiversity and enrich the community's connection to nature. Through educational initiatives and community engagement, Hagley can promote the importance of native plants for both the environment and local wildlife.

Table 15: The following are some of the native plants recorded in Hagley (Appendix D)

Trees	• **English Oak (Quercus robur)**: A majestic tree known for its strength and longevity, providing habitat for numerous species. • **Silver Birch (Betula pendula)**: This tree, recognised by its white bark, is essential for wildlife, including birds and insects. • **Hornbeam (Carpinus betulus)**: It is often found in hedgerows and provides excellent bird cover and nesting sites.
Shrubs	• **Blackthorn (Prunus spinosa)**: A dense shrub that produces sloe berries, providing food for birds and other wildlife. • **Hawthorn (Crataegus monogyna)**: Commonly used in hedgerows, its flowers attract pollinators, and its berries are a bird's food source. • **Dog Rose (Rosa canina)**: A climbing shrub with fragrant flowers, it produces hips and is a food source for various birds and mammals.

Wildflowers	• **Common Bluebell (Hyacinthoides non-scripta)**: A beautiful spring flower that carpets woodlands and attracts pollinators. • **Meadow Buttercup (Ranunculus acris)**: A common wildflower in meadows, providing nectar for insects. • **Red Campion (Silene dioica)**: A flowering plant found in woodlands and hedgerows, known for its bright pink flowers.
Grasses and Ground Covers	• **Common Bent (Agrostis capillaris)**: A native grass that thrives in various habitats, providing ground cover and supporting wildlife. • **Wild Strawberry (Fragaria vesca)**: A low-growing plant that produces sweet berries, attracting insects and birds.
Ferns	• **Lady Fern (Athyrium filix-femina:** This native fern flourishes in shaded environments, playing a vital role in enhancing the biodiversity of woodland ecosystems.
Aquatic Plants	• **Water Mint (Mentha aquatica)**: This aromatic plant grows in wetlands and along riverbanks, providing habitat for insects and other wildlife.

2.22 Public Engagement and Advocacy

Beyond education and volunteering, building a culture of advocacy for biodiversity is essential:

- **Local Advocacy Campaigns**: Launch local campaigns that emphasise the value of biodiversity to the local economy and well-being, such as the “Nature Needs You” campaign or the "Save Our Wild Spaces" movement.
- **Biodiversity Champions**: Developing a “Biodiversity Champion” program, where individuals or local businesses can commit to sustainable practices and become public advocates for biodiversity conservation.

2.23 Local Policy Integration

For long-term success, it’s essential to integrate biodiversity goals into local policy and planning:

- **Green Planning Policies**: Encouraging local planning authorities to incorporate biodiversity goals into land-use zoning, building design codes, and regional development plans for Hagley Parish.
- **Biodiversity Offset Programs**: Implementing or advocating for biodiversity offset programs, where developers compensate for biodiversity loss through investments in local conservation initiatives or habitat restoration within Hagley Parish.

2.24 Community-Based Eco-Tourism

Eco-tourism could be developed as a sustainable way to raise awareness and generate funding for biodiversity conservation:

- **Wildlife Tours:** Organising eco-friendly tours to local wildlife and bird habitats, ensuring minimal environmental impact while educating visitors on regional biodiversity and conservation efforts.
- **Biodiversity Trails:** Creating walking or cycling trails that connect key biodiversity sites across the parish, with information boards to raise awareness about local species and habitats.

2.25 Public Art and Biodiversity

Public art installations could serve as an innovative way to raise awareness and engage the public with biodiversity goals:

- **Wildlife Art Installations**: Collaborating with local artists to create large, wildlife-inspired sculptures in public spaces to spark conversation about local biodiversity and the need for conservation.
- **Biodiversity Murals**: Creating murals or interactive art pieces in schools, the local park and public buildings that depict local wildlife or highlight the importance of habitat preservation.

2.26 Threats to Hagley Biodiversity

Despite the rich biodiversity of Hagley, numerous threats jeopardise the long-term health of local ecosystems. These threats include:

- **Habitat Loss and Fragmentation:** The expansion of urban areas and intensive agriculture has destroyed and fragmented critical habitats. As habitats become fragmented, wildlife populations are isolated, reducing genetic diversity and increasing the risk of local extinctions.

Table 16: Species at Risk in Hagley

Species Name	Conservation Status	Key Habitats/ Regions	Threats	Conservation Actions
European Hedgehog An essential part of the ecosystem is providing pest control services.	Vulnerable (IUCN Red List)	Woodland edges, gardens, and hedgerows	At risk from habitat fragmentation, road mortality, and pesticide use, including slug pellets.	Habitat restoration. Hedgehog populations can be supported by creating hedgehog highways (gaps in fences) and implementing pesticide control measures.
Great Crested Newt	Vulnerable (UK BAP)	Wetlands, ponds, ditches	Habitat destruction, pollution, and housing development.	Pond restoration, habitat protection, and monitoring are

				critical for the survival of ponds. Work with developers to incorporate wildlife-friendly plans.
Bats (e.g., the Common Pipistrelle and Brown Long-Eared Bat): Protected under the Wildlife and Countryside Act, bats control insect populations and pollinate plants.	Least Concern (IUCN)	Woodland, buildings, and water sources	Threatened by habitat loss (particularly roosting sites in buildings) and light pollution.	Bat boxes and dark corridors. Effective bat conservation will require maintaining and creating suitable habitats for roosting. Collaborate with developers to integrate bat bricks and an appropriate lighting design.
Common Toad	Near Threatened (IUCN Red List)	Wetlands, forests, gardens	Habitat fragmentation, pesticides, pollution, and disease.	Habitat restoration, pond creation
Song Thrush and House Sparrow	Declining due to habitat loss, particularly the loss of hedgerows , and reduced food availability	Gardens, forests, hedgerows	Species are indicator species for broader environmental health and have shown significant declines due to habitat loss, as well as human disturbance, food scarcity, and more frequent extreme weather events.	Restore habitat, plant native trees. More sensitive hedgerow management, such as restoring hedgerow networks and controlling pesticide use, can aid recovery.
Pollinators (including bees and butterflies): These species are crucial for pollination, which is essential for both agriculture	Declining due to habitat loss, particularly the loss of hedgerows , and reduced food availability	Gardens, meadows, verges, hedgerows , trees.	Pollinators: Facing population declines due to habitat loss, pesticide use, and climate change.	Planting pollinator-friendly plants, increasing food availability (in the form of pollen and nectar) throughout the year, and reducing pesticide use are

and the reproduction of wild plants.				key to reversing this trend.
Corn bunting, skylark, yellowhammer, lapwing, house sparrow	At risk of further decline with the loss of agricultural land	Agricultural land and meadows	Habitat loss increases the risk of decline.	Monitor and conserve sites where rarer birds reside, e.g. Wychbury Hill - skylarks – Hill Field.

- **Pollution:** Pollution from various sources, including agricultural runoff, waste disposal, noise, light and air pollution, negatively impacts the local environment. Sweet Pool, Gallows Brook, and local streams are particularly vulnerable to the influx of pollutants, which can degrade water quality and harm aquatic species (ENV4).
- **Invasive Species:** The introduction of non-native species poses a significant threat to native wildlife. Invasive species can outcompete native species for resources, disrupt ecosystems, and introduce new diseases. Efforts to control and manage invasive species are essential to preserving local biodiversity. The following species pose significant challenges to conservation efforts in the UK by disrupting food chains, damaging habitats, and competing with native species.

Table 17: Examples of non-native, invasive Species

Plants	**Identified in Hagley**
Himalayan Balsam (*Impatiens glandulifera*) – Rapidly spreads along riverbanks, outcompeting native plants and increasing soil erosion.	Yes
Japanese Knotweed (*Reynoutria japonica*) – A highly aggressive plant that damages buildings, roads, and natural habitats.	Yes
Giant Hogweed (*Heracleum mantegazzianum*) – A Toxic plant that causes severe skin burns when touched.	NK
Rhododendron (*Rhododendron ponticum*) – Forms dense thickets that block light, reducing woodland biodiversity.	Yes
Cherry laurel (*Prunus laurocerasus*) – Common in people's gardens as hedging. Supports very few native species and shades out native plants. It can be a particular problem in woodlands.	
Floating Pennywort (*Hydrocotyle ranunculoides*) – Clogs waterways, disrupting aquatic ecosystems and increasing flood risks.	NK
6 Skunk Cabbage (Lysichiton americanus) (Western Skunk Cabbage or Yellow Skunk Cabbage). It is native to North America but has become invasive in parts of the UK and Europe, particularly in Sweet Pool, where it outcompetes native plants. It spreads rapidly along streams and in damp woodlands, disrupting local ecosystems downstream.	Yes
Animals	

Grey Squirrel (*Sciurus carolinensis*) – Outcompetes the native red squirrel and damages trees.	Yes
American Mink (*Neovison vison*) – A predator severely reducing native water vole populations.	Yes
Signal Crayfish (*Pacifastacus leniusculus*) – Carries a disease that wipes out native, white-clawed crayfish.	NK
Chinese Mitten Crab (*Eriocheir sinensis*) – Burrows into riverbanks, causing erosion and infrastructure damage.	NK
Zebra Mussel (*Dreissena polymorpha*) – Rapidly colonises waterways, blocking pipes and altering ecosystems.	NK

2.27 Local Hagley Parish Conservation Strategies and Actions

Several conservation initiatives aim to restore habitats, protect vulnerable species, and enhance ecological connectivity within the area to combat the threats facing local biodiversity.

- **Habitat Restoration Projects:** Habitat restoration efforts focus on reclaiming degraded habitats and improving their quality. Key projects include the restoration of Sweet Pool, the enhancement of woodlands through the replanting of native tree species at Hagley Park, and the identification of hedgerow networks to increase wildlife corridors and create green corridors that support pollinators and other wildlife. Waterways improvements will improve water quality and provide habitats for migratory birds. Tree protection, planting and woodland management projects to enhance biodiversity in ancient woodlands.
- **Invasive Species Management:** Control of invasive species is a priority for local conservation groups. Efforts are focused on regularly removing non-native species, such as Japanese knotweed and Himalayan balsam, which threaten native plants and disrupt ecosystems. North Worcestershire Water Management monitors and reports on invasive species to prevent further spread.

The following table shows the key habitat types relevant to Hagley Parish.

Table 18: Key Habitat Types Relevant to Hagley.

Habitat Type	Key Features	Ecological Importance
Woodland & Veteran Trees	- Ancient semi-natural & secondary woodland- Veteran trees- High fungal, bryophyte & lichen diversity	- Bat roosts- Saproxylic invertebrates- Cultural heritage & landscape connectivity
Hedgerows	- Diverse woody species (hawthorn, blackthorn, hazel)- Possible ancient origin- Veteran trees in hedge lines	- Wildlife corridors- Habitat for farmland birds, mammals, and invertebrates
Scrub & Transitional	- Found between woodland and grassland- Structural diversity	- Habitat for nightingale, whitethroat, turtle dove- Part of habitat mosaics

Arable Farmland	- Arable margins- Uncultivated strips	- Rare arable flora- Pollinators and seed-eating birds- Nectar sources
Traditional Orchards	- Veteran fruit trees- Wildflower grassland under canopy- Presence of mistletoe	- Habitat for saproxylic species- Support specialist orchard fauna
Rivers & Streams	- Brooks, tributaries to the River Stour/Severn	- Riparian habitats for otter, water vole- Fish spawning- Landscape corridors
Ponds & Lakes	- Field ponds, ornamental ponds, marl pits	- Amphibians (e.g., great crested newt)- Dragonflies, aquatic flora- Biodiversity hotspots
Urban & Garden Habitats	- Residential gardens, allotments, churchyards- Garden ponds, lawns	- Habitat for swifts, bats, sparrows- Refuges and ecological stepping stones
Road Verges	- Verges with diverse flora if appropriately managed	- Habitat for rare flora (e.g., Deptford pink)- Nectar for invertebrates- Landscape connectivity
Grasslands	- Lowland hay meadows (MG5), calcareous & acid grasslands	- Supports diverse invertebrates, birds, and plant species

2.28 ENV 1.3 Wildlife Corridors Action Plan

Table 19: ENV 1.3 Wildlife Corridors Action Plan

The following table outlines the action areas, plan, and desired outcomes resulting from creating corridors for wildlife.

Action Area	Action Plan	Outcomes
Wildlife Corridors	Mapping and Identification: Conduct a landscape assessment to identify areas of fragmentation (e.g., roads, urban spaces, agricultural lands) and existing natural corridors.	- Improved movement of species across the landscape, resulting in enhanced genetic diversity. - Reduced animal mortality, particularly those prone to vehicle collisions. - A more resilient ecosystem adapting to climate change and other external pressures.
	Corridor Design: Develop corridors that cater to multiple species, incorporating a variety of habitats to support diverse ecosystems. Design should address physical barriers such as roads and rivers. Landscapes incorporating native plants can serve as wildlife corridors, facilitating movement	

	and migration for various species and enhancing genetic diversity.	
	Landowner Engagement: Collaborate with private landowners to restore hedgerows, maintain woodlands, or create buffer zones. Support landowners through funding opportunities.	
	Buffer Zones: Establish zones along corridors to protect them from development and minimise human-wildlife contact.	
Wildlife Bridges and Underpasses	Prioritisation of Sites: Use wildlife data to identify high-risk areas (e.g., highways, urban edges) where wildlife fatalities are frequent.	- Reduced road mortality for wildlife, leading to higher survival rates and healthier populations. - Enhanced connectivity between isolated wildlife populations, fostering gene flow and biodiversity preservation.
	Design Considerations: Design wildlife bridges and underpasses tailored to the specific needs of various animals (e.g., high railings for deer, damp conditions for amphibians).	
	Maintenance and Monitoring: Regularly monitor wildlife bridges and underpasses to ensure their effectiveness, including clearing debris and tracking usage through camera traps.	
Pollinator Protection	Pollinator Gardens and Wildflower Meadows: Create spaces for pollinators, involving local schools and businesses in planting and maintaining pollinator-friendly areas.	Increased food resources for pollinators, resulting in population recovery. - An engaged community that understands the importance of pollinators. - Creation of beautiful, biodiverse landscapes that improve aesthetic value and well-being.
	Pollinator-Friendly Landscaping: Encourage residents to plant nectar-rich native flowers, reduce pesticide use, and provide habitat features for ground-nesting and other solitary bees.	

	Pollinator Meadows: Designate larger-scale wildflower meadows in public spaces with a mix of perennial and annual flowers to provide a year-round food supply for pollinators.	
Bee Hotels and Pollinator Hives	Bee Hotel Installation: Strategically build and install bee hotels to provide nesting sites for solitary bees.	- A significant increase in solitary bee populations, enhancing local pollination services. - A community that is more aware of pollinator needs and actively contributes to their protection.
	Pollinator Hives: Work with local beekeepers to install honeybee hives where they are needed most, e.g., for crop pollination, and where they are not directly competing with wild honeybees.	
	Maintenance and Education: Educate the community on building and maintaining bee hotels.	
Sustainable Forestry and Woodlands Management	Local Forestry Initiatives: Implement forest management programs that involve community members in tree planting, controlled burns, and the removal of invasive species.	- Increased biodiversity through better forest management. - Strengthened community bonds and a shared sense of responsibility for local ecosystems.
	Education Programs: Offer training on sustainable forestry practices, including selective logging, forest regeneration, and biodiversity monitoring.	
	Forest Restoration Projects: Engage in the restoration of degraded forests by removing non-native species and replanting with native species.	
Forests for Ecological Benefits	Multi-Purpose Forests: Create forests that serve multiple functions, such as timber production, recreation, and biodiversity conservation. Incorporate birdwatching paths, educational signs, and wildlife observation points.	- Improved forest ecosystems that support diverse plant and animal species. - Economic benefits to local communities through timber production and recreation.

2.29 Summary

Table 20: Summary of Objectives and Key Actions

Objective	Actions	Monitoring and Evaluation
ENV 1.1: Achieve an aspirational 40% Biodiversity Net Gain	• Protect, enhance, and restore habitats. - Develop wildlife corridors. • Improve soil and water quality. • Focus on Parish Council land first, then County Council and private lands. • Include verges using Natural Networks recommendations. • Rephotograph sites.	• Conduct biodiversity surveys. – • Engage residents for feedback.
ENV 1.2: Preserve Native Trees and Woodlands	• Enforce Tree Preservation Orders (TPOS). • Safeguards mature and veteran trees. • Establish buffer zones (20m–50m) by the Woodland Trust's guidance. • Strategically plant indigenous and fruit trees.	• Regular monitoring of TPO enforcement. • Biodiversity tracking of newly planted trees.
ENV 1.3: Designate Wildlife Corridors	• Work with landowners and parishes to create connected green spaces. - Engage the community through Facebook groups, educational programs, and outreach initiatives. - Protect and monitor habitats for vulnerable species.	• Collaborate with neighbouring Parish Councils, schools, and relevant bodies. • Community feedback and participation.

3.0 ENV 2 Developing a Green Space Network

Policy and link to Bromsgrove DC Policy
ENV 2 Create a green space network that includes existing playing fields, informal parks, recreational areas and Hagley allotments to improve health through the environment. *BDP25 Health and Well Being Bromsgrove District Council will support proposals and activities that protect, retain or enhance existing sport, recreational and amenity assets, lead to the provision of additional assets, or improve access to facilities, particularly by non-car modes of transport. This will include maintaining greater access to and enjoyment of the countryside.*

Table 21: Objectives and Monitoring Information

Objective	Expected Outcome	Measurement Criteria	Responsible Party	Timeline
ENV 2.1 Designate Accessible Green Spaces (ENV 2.1)	Increased public access to green spaces	Number of new designated spaces, accessibility score	Hagley Parish Council	2025-2027
ENV 2.2 Achieve Green Flag Award (ENV 2.2)	Enhanced park quality and community pride	Green Flag certification, community involvement	Local volunteers, Parish Council	2026
ENV 2.3 Minimise Light Pollution	Reduction in light pollution	Number of streetlights converted to monitor light levels	Worcestershire County Council	Ongoing

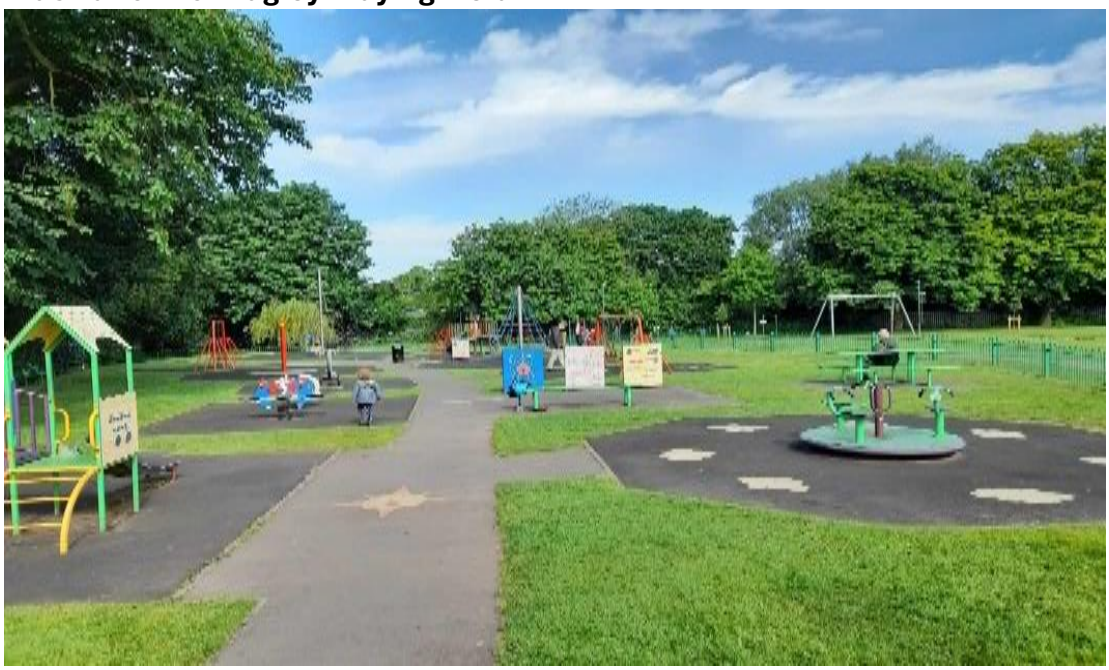
3.1 Introduction

Hagley faces a significant shortage of accessible green spaces, considering its population size. This lack of open areas is increasingly concerning, as green spaces play a vital role in carbon storage, mitigating the Urban Heat Island Effect—particularly during summer heatwaves—and promoting physical health. Rising adult and childhood obesity rates in the community further highlight the need for such spaces.

The National Planning Policy Framework (NPPF, 2024) underscores the importance of integrating or enhancing green spaces within new developments, ensuring they are within walking distance for residents. However, current provisions fall short. According to the NPPF (2024), Hagley has a deficit in high-quality open spaces and facilities that support physical activity, which are essential for public health, well-being, and environmental sustainability.

Hagley West lags behind the district average in open space per 1,000 residents. It has no public gardens or free park access, with only a playing field and allotment available.

Illustration 18: Hagley Playing Field

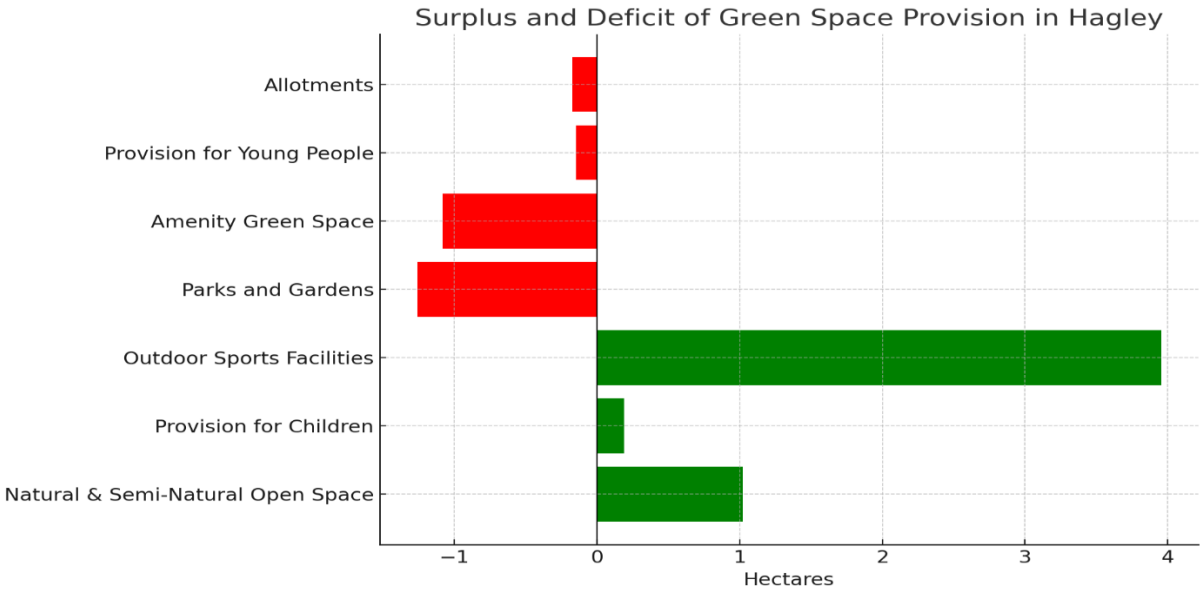


There are limited Opportunities for outdoor sports, and no designated natural or semi-natural green spaces exist.

Open Space in Hagley

The Bromsgrove District Council's Open Space Audit 2017 identified a deficit and a surplus of open space, shown in the following bar chart.

Illustration 19: Bar Chart showing Surplus and Deficit of Open Space in Hagley



While Hagley benefits from certain open space surpluses, there are deficits in areas crucial for community well-being, such as public parkland and amenity green space. As highlighted in the Bromsgrove District Council's *Open Space, Sport and Recreation Assessment*, residents in Hagley fall outside the recommended 15-minute walking catchment for a park or amenity green space. Despite access to natural open space, sports facilities, and allotments, the area lacks opportunities for informal recreation—an issue repeatedly raised through community consultation and the Parish Plan. This deficiency is projected to worsen with population growth, and the Council explicitly recommends creating new green space in Hagley to meet local demand.

Eight Hills Regional Park

The proposed Eight Hills Regional Park, led by the National Trust, presents a significant opportunity to enhance environmental quality and community well-being across Bromsgrove District. Its potential inclusion in the BDC Local Plan aligns strongly with identified local needs for accessible green space.

Addressing Open Space Deficiency in Hagley

The Eight Hills Regional Park would directly respond to this need, helping to fulfil policy objectives set out in AGS4 and PG7 of the BDC open space strategy.

Environmental and Social Benefits

The park would provide:

- Accessible, informal green space for Hagley, which currently lacks this amenity.
- Opportunities for walking, active travel, and outdoor recreation, contributing to healthier lifestyles and stronger community cohesion.
- Biodiversity enhancement, habitat protection, woodland preservation, and the development of ecological corridors.
- A platform for sustainable land management, with income-generation potential for local farmers via ecosystem services markets.

Strategic Fit with Local Planning Goals

The Eight Hills proposal supports Bromsgrove District Council's broader strategic objectives, including:

- Strengthening the green infrastructure network.
- Enhancing access to natural environments, particularly in areas of identified need.
- Supporting a balanced approach to development, safeguarding the green belt while enabling future growth.

As an ample, multifunctional green space, the park would serve as a regional asset while delivering localised benefits in line with the Council's planning framework. It offers a scalable, integrated solution for addressing environmental priorities and community access gaps. A coordinated, long-term approach to green space provision, environmental protection and public well-being in Bromsgrove District will be ensured.

3.2 Allotments

The local community allotment is a valuable green space that offers numerous social, environmental, and health benefits. Beyond providing an area for growing food, it fosters social interaction, strengthens community ties, and promotes physical and mental well-being. Studies have shown that access to green spaces, including allotments, can lower cortisol levels, reduce anxiety, and improve overall mood.

Additionally, the allotment supports local biodiversity, serving as a habitat for grass snakes, miner bees, and woodpeckers. Research indicates that urban allotments can enhance biodiversity by providing nesting sites, shelter, and food sources for pollinators and other wildlife, contributing to ecosystem resilience.

Furthermore, the allotment offers opportunities for ecotherapy—an evidence-based approach to enhancing mental health through engagement with the natural environment. Studies suggest gardening can help manage stress, alleviate symptoms of depression, and improve cognitive function. The presence of green, open spaces has also been linked to lower rates of cardiovascular disease and obesity, underscoring the importance of protecting and expanding access to these vital resources.

3.3 Benefits of Developing Green Spaces in Hagley Parish

Green spaces offer a range of environmental and social benefits.

- **Climate Control**: Green spaces play a crucial role in stabilising local temperatures, mitigating the effects of extreme heat, and reducing urban air pollution. This is especially vital in high-traffic areas, such as the A456 and A491 roads, where green spaces can act as natural buffers, absorbing pollutants and providing cooler, healthier environments for the surrounding communities.
- **Safer Transport**: Strategically designed green spaces contribute to safer and more sustainable transportation networks. By reducing vehicle speeds through green infrastructure, such as traffic calming features, and enhancing pedestrian and cyclist access, green spaces make roads safer, especially for children walking or cycling to local schools. They encourage active transport and create more walkable, connected communities.
- **Education and Community Engagement**: Green spaces present valuable opportunities for local schools to engage in hands-on environmental education, such as through Eco-School projects. These initiatives can foster a sense of environmental stewardship in children, teaching them about sustainability, biodiversity, and the importance of preserving green spaces for future generations (Worcestershire CC 2023). Community education programs can also involve residents in maintaining and protecting green spaces.
- **Local Employment and Volunteering**: A well-maintained network of green spaces can catalyse local economic growth, creating job opportunities in landscaping, environmental management, and tourism. It can attract visitors, generate revenue, and enhance local pride. Furthermore, establishing volunteer programs to maintain and improve these spaces strengthens community ties, promotes a sense of collective responsibility, and provides residents with meaningful ways to contribute to the well-being of their neighbourhood.

- **Health and Well-Being**: The health benefits of access to green spaces are numerous. Regular exposure to nature has been linked to enhanced motor skills, improved academic performance, increased concentration, and greater longevity. Beyond physical benefits, green spaces offer a sanctuary for mental health, reducing stress and promoting emotional well-being. Activities such as walking, cycling, and community gardening boost physical fitness and help combat loneliness and social isolation, fostering a stronger sense of community.
- **Spiritual and Emotional Connections**: Local green spaces, such as Wychbury Hill and the community cemetery, often become emotionally significant places for residents, providing comfort and solace during difficult times. These spaces offer more than just recreational value; they are integral to the community's collective identity, serving as spaces for reflection, relaxation, and connection. During times of crisis, such as the lockdowns, these areas become lifelines, offering peace and connection to nature while fostering emotional resilience among residents.

3.4 Locally Designated Green Spaces

Designating locally identified green space networks not located within the green belt is a goal, and Hagley Parish follows the requirements of the National Planning Policy Framework (2024), paragraph 106. Communities identify local green spaces as areas of particular importance that they want to protect. The criteria for this designation include proximity to the community, special qualities such as beauty, historic significance, recreational value (e.g. Hagley playing field), tranquillity, or richness of its wildlife. The NPPF (2024) paragraph 7b and c specifies that Local Green Spaces must be:

- Demonstrably special to a local community and holds particular significance, for example, because of its beauty, historic value, recreational use, tranquillity, or richness in wildlife.
- Local and not an extensive tract of land.

Three Green Spaces have been identified within the Environment Report:

- Wychbury Hill
- Sweet Pool Nature Reserve
- Brake Mill Pond

However, plans are in place to add more following consultation with the local community. Green spaces offer numerous benefits, including increased environmental resilience through reduced surface water and improved air quality.
The aim is to make Hagley Parish a nature-rich area through effective planning and management of its green spaces. Job and volunteer opportunities can also be created with local landowners and volunteers.
Other opportunities for small tracts of green space include growing edibles.
Locally, sixteen beekeepers are interested in utilising green spaces for their hives.
Additionally, access needs to be improved, ensuring that wheelchair users, pushchairs, and pedestrians can safely use pathways with appropriate signage.
Any development should avoid harming the open nature of green spaces or areas of historical significance, treating them with respect and consideration, much like the Greenbelt.

Illustration 20: Part of the North Worcestershire Walk



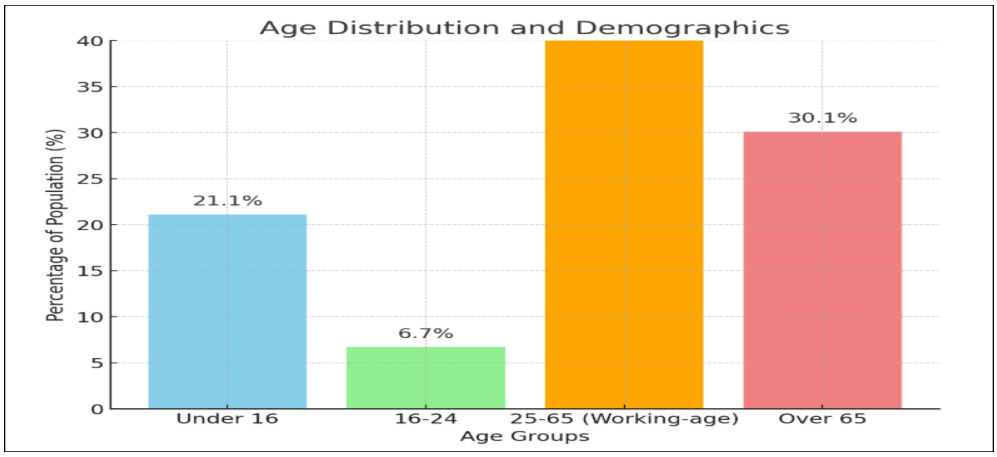
3.5 Hagley Health Profile

Hagley Parish is divided into two electoral wards: Hagley West and Hagley East. Health data is collected from each ward, providing valuable insights into local well-being challenges.

- **Hagley East**

The 2020 Census shows that Hagley East has a population of 3,831.

Illustration 21: Bar chart illustrating the age distribution and demographics of Hagley East



Health Indicators for Hagley East:

Life expectancy is above the average, with mortality rates lower than those of the district and the nation.

Key Health Issues:

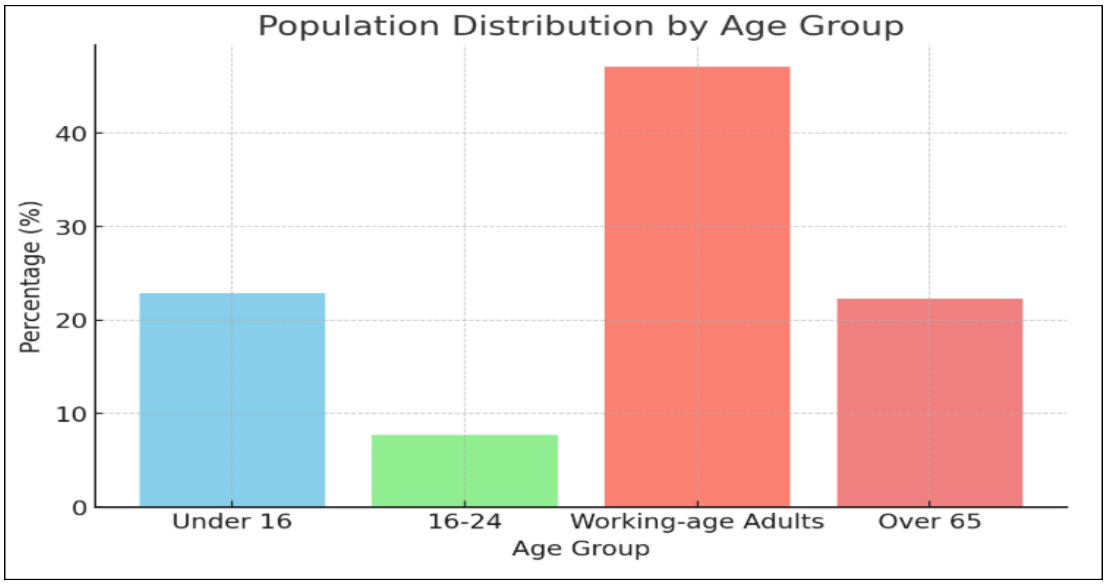
- Childhood obesity, with 13.3% of Year 6 children classified as severely obese.
- Adults face higher-than-average rates of hospital admissions for alcohol-related conditions. Prostate cancer rates are elevated, though other cancer rates are lower.

- Rates of intentional self-harm and hospital admissions for hip fractures are higher than the district average.

Key Demographic Information:
4.1% of the population in Hagley East is registered as having a disability.
Fuel poverty affects 8.5% of households in this area.

3.6 Hagley West

Hagley West has a population of 3,432. The illustration shows the demographics.
Illustration 22: Bar Chart showing Demographics of Hagley West



Health Indicators for Hagley West:

- Obesity and smoking are prevalent issues among children in this area.

Like Hagley East, Hagley West residents experience higher-than-average alcohol-related hospital admissions. Breast, colorectal, and prostate cancers are more common than in the district overall.
14.2% of people in Hagley West are registered disabled.
Mortality rates are lower in women compared to men, and overall life expectancy is reasonable in this area, but slightly shorter for men.
Key Demographic Information:

- 9.9% of residents live in fuel poverty.
- 3.4% of children live in poverty, and 4.0% of older people face poverty.

Table 22: Health and Demographic Data Table (Hagley Health Profile)

Health Indicator	Hagley East	Hagley West	District Average	National Average
Life Expectancy (Years)	82.1	80.7	81.4	81.2
Obesity (Year 6 Children)	13.3% severely obese	11.6% severely obese	10.2%	9.7%
Smoking Prevalence	18%	19%	15%	13%

Hospital Admissions (Alcohol-Related)	4.3 per 1,000	4.8 per 1,000	3.9 per 1,000	3.3 per 1,000

3.7 Light Pollution

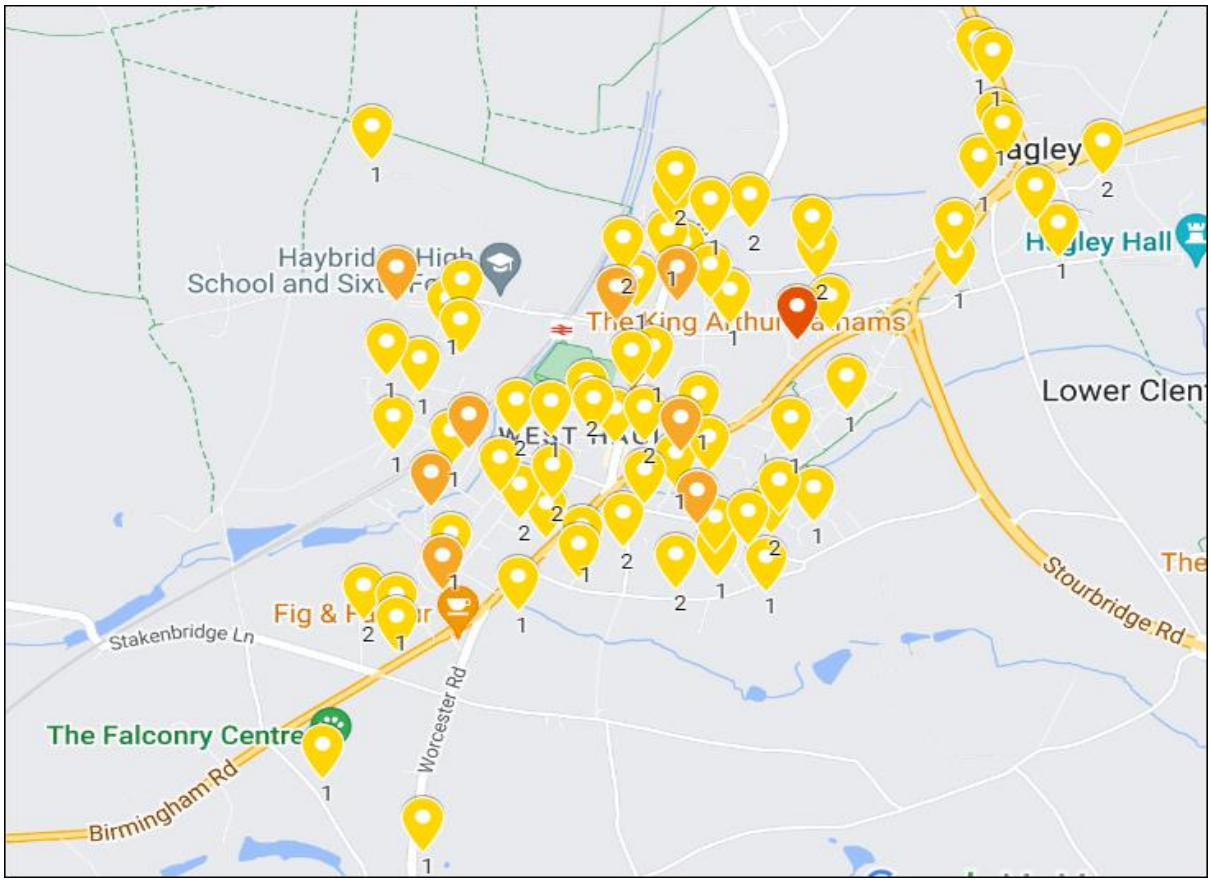
Light pollution is an emerging concern for Hagley residents, particularly near main roads where bright LED streetlights disrupt natural darkness. This issue is exacerbated by the widespread use of LED lighting, which emits a cool blue light that reaches far distances, disturbing human and wildlife activity.

Adverse Effects of Light Pollution:

- Disturbed sleep and disorientation in both humans and animals.
- Disruption of natural behaviours for wildlife, such as mistimed activity and reproductive issues.
- Negative impacts on nocturnal animals, including bats and birds, rely on darkness for survival.

Residents' Concerns: The Hagley Census 2020 highlights that residents living on main roads with intense lighting have expressed significant concern about the light pollution affecting their quality of life. Strong evidence also suggests the need for dark corridors to support nocturnal wildlife.

Illustration 23: Residents in Hagley along main roads provide feedback on light pollution.



4.0 ENV 3: Increasing Health and Wellbeing

Strategic Goal

To increase health and well-being by creating an extensive and accessible network of routes throughout Hagley Parish.

4.1 Introduction

The Hagley Housing Census 2023 revealed a strong community preference for activities such as walking, cycling, horse riding, and nature engagement—activities that improve both mental and physical health. These behaviours directly correlate with reductions in diabetes, coronary heart disease, and obesity (Worcestershire County Council, 2015). Access to nature improves residents' well-being and helps reduce NHS and local authority costs.

Hagley is appreciated for its combination of Green Belt, historic woodland, and a thriving village centre. However, the expansion of gated developments and large housing projects may isolate areas without careful consideration for connectivity and community cohesion.

Despite being a prosperous area, Hagley has pockets of inequality. Access to green infrastructure supports green jobs, boosts local businesses, and enhances tourism, particularly among visitors to Hagley Hall Park and Clent Hills. The area falls short of the recommended 0.51 hectares of green space per 1,000 residents, and an ageing population combined with sedentary lifestyles calls for increased infrastructure for cycling and walking.

4.2 Policy Objectives

Aligned with BDP25: Health and Well-being, the ENV 3 policy seeks to support recreational asset development and non-car access through:

- **ENV 3.1**: Expand and enhance the network of footpaths, bridleways, and cycle paths.
- **ENV 3.2**: Improve recreational opportunities and access to green infrastructure.
- **ENV 3.3**: Enhance the quality and quantity of play opportunities for children and young people.

Developing an extensive and accessible network of footpaths, bridleways, and cycle routes would benefit Hagley Parish by promoting health and well-being. By promoting sustainable travel, enhancing recreational opportunities, and preserving its unique natural and cultural heritage, Hagley Parish can foster a healthier, more connected community.

4.3 Existing Pathway Networks

Hagley boasts several significant routes, including:

- North Worcestershire Path (Illustration 25)

- Monarch's Way

These connect to Clent Hills but need improvements for accessibility, particularly for wheelchair users, pushchairs, and older adults.
Hagley is a prosperous community; however, it has pockets of inequality. The literature and evidence show that having a Green Infrastructure can support green jobs and local businesses through visitors to the village. There is an opportunity to increase tourism by ensuring access to and the connection to local footpaths and rights of way are maintained. Hagley already benefits to a small degree from the visitors to Hagley Hall Park and the Clent Hills, managed by the National Trust. Signage on local biodiversity would enable education and protection of flora and wildlife. Hagley has less green space than the proposed quality standard of 0.51 hectares per 1,000 population: an ageing population, modifiable behaviours and sedentary lifestyles compound health needs. There is a need for better access to cycling and walking routes.

4.4 Footpaths, Bridleways, Cycle Networks and Public Rights of Way
The Hagley parish boundary encompasses a strong network of designated footpaths and bridleways, including the nationally recognised North Worcestershire Path and the Monarch's Way North Worcestershire Path and Monarchs Way, which connect to Clent Hills National Trust. These are well-used for recreation but require improvements for accessibility, particularly for users with disabilities and those using pushchairs.

Table 23: Comparing Accessibility Improvements

Pathway Name	Current State	Proposed Enhancement	Accessibility
North Worcestershire	Well-maintained, narrow	Widen the path, add signage	Moderate (No pushchairs)
Monarchs Way	Limited accessibility	Add cycle lanes, benches	Low (No wheelchair)

Table 24: Recreational Opportunity Table

Facility	Current Access level	Improvement Plan	Community Benefit
Circular walk	Partial	Extend and connect paths	Health and wellbeing
Cycle ways	Partial	Extend and connect cycleways	Health and wellbeing, Green Transport

4.5 Public Rights of Way:
Public consultations and surveys have highlighted the importance of protecting and nurturing local walks. Rights of way provide residents with a vital connection to natural environments, offering respite from daily stresses. Maintaining and enhancing these assets post-pandemic is crucial to preserving and improving health and mental well-being.

4.6 Opportunities for Development

- Create safe, traffic-free, circular routes of varying lengths.
- Link footpaths to tourism and education, including signage on biodiversity.
- Mandate green infrastructure in new housing applications, especially Green Belt revisions.
- Enhance accessibility for all, including individuals with disabilities and their families.
- Mirror successful models like Catshill and North Marlbrook's linked open spaces.

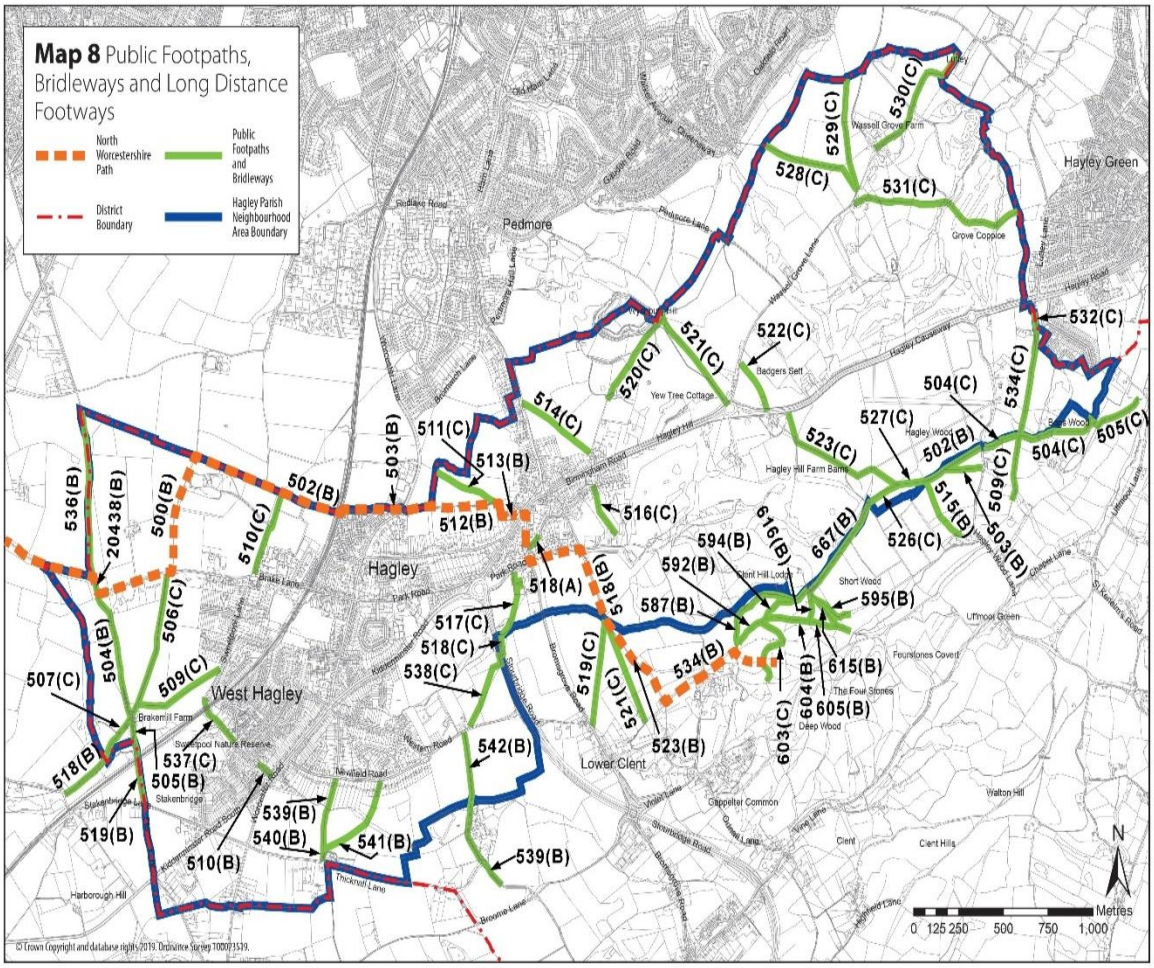
4.7 Strengths

- Widely used by walkers, cyclists, dog walkers, and runners.
- Proven value during COVID-19 lockdowns.
- Connected to national and regional recreational networks.

4.8 Limitations

- Poor access for pushchairs, wheelchairs, and mobility aids.
- Cycling is limited to bridleways, with Sandy Lane and Brake Mill being the main routes.
- Lack of dedicated signage and inclusive infrastructure.

Illustration 24: Map 8: Public Footpaths, Bridleways, and North Worcestershire Way.

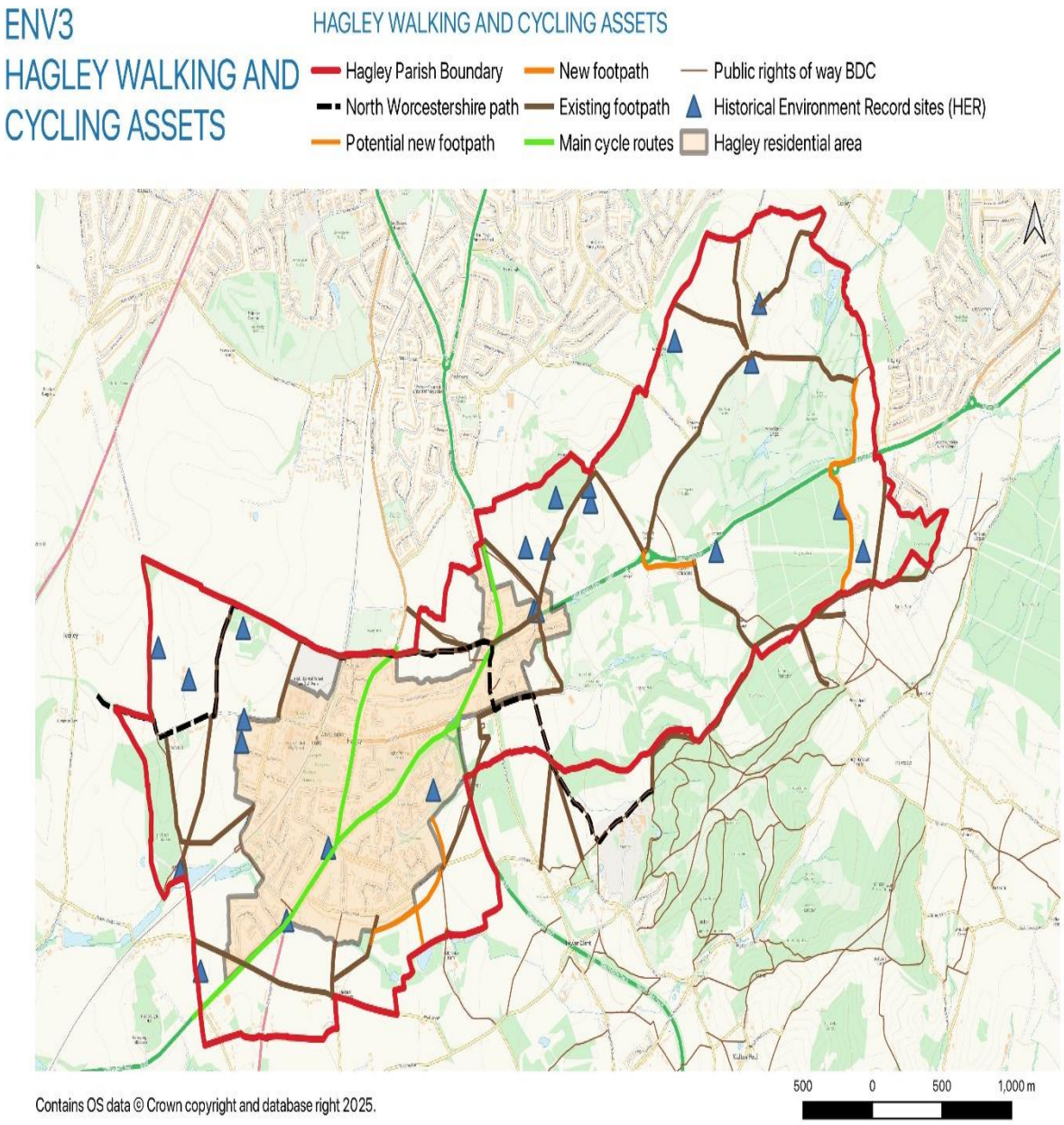


Other identified walks include The Elan Aqueduct Way,https://ldwa.org.uk/ldp/members/show_path.php?path_name=Elan+Valley+Way, North Worcestershire Path https://ldwa.org.uk/ldp/members/show_path.php?path_name=North+Worcestershire+Path, Monarch's Way https://ldwa.org.uk/ldp/members/show_path.php?path_name=Monarch%27s+Way.

The Hagley Historical Society has identified several local walks available on the Hagley Community Association's pages at https://hagleyvillage.org/?page=walks.

Other developed walks include a proposed circular walk around the village, as shown in the map below.

Illustration 25: Map 1 Hagley Walking and Cycling Assets



4.10 Link to Bromsgrove District Policy

BDP Policy 25: Health and Well-being	Hagley Strategic Goal
Support for development that enhances recreational and amenity assets, prioritising non-car transport and countryside access.	To create an extensive and accessible network of walking and cycling routes in Hagley.

4.11 Key Actions for Policy Objectives

ENV 3.1: Expand and enhance the existing network.

- Highlighted as a top priority in the 2020 Housing Survey.

- Initiatives underway by community groups and the Hagley Historical Society.

ENV 3.2: Improve access to public green infrastructure.

- Propose new maps to identify and visualise green space access gaps.
- Encourage inclusive, landscaped design tied to new development.

ENV 3.3: Improve play opportunities.

- Address gaps in recreational offerings (e.g., bowling greens, athletics tracks).
- Increase access to school-based sports facilities.
- Improve playgrounds and family-friendly green areas.

Illustration 26: Views towards Hagley from Wychbury Hill



5.0 ENV 4: To promote sustainable water management, mitigate flood risks, and safeguard water quality within Hagley.

Policies

5.1 Policy Context

This policy aligns with Bromsgrove District Plan Policy 23, mandating water efficiency and Suds in new developments.

Policy 24 BDC: Emphasising green infrastructure, biodiversity, and water management.

Table 25: Sites, Objectives, and Actions

Policy	Objective	Actions
ENV 4.1: Develop Natural Water Retention Measures	Enhance water management and improve habitat quality through natural methods.	- Survey the hydrological regimes of local brooks. - Install rain gardens, bioswales, and infiltration trenches in public spaces. - Promote permeable surfaces in new developments. - Incorporate perforated pipes to improve stormwater drainage.
ENV 4.2: Mitigate Flood Risks	Reduce flood risks in vulnerable areas and enhance climate resilience.	- Conduct Flood Risk Assessments (FRA) for new developments. - Incorporate Suds in development plans. - Maintain and clear watercourses regularly. - Implement upstream water retention strategies.
ENV 4.3: Safeguard and Enhance Water Quality	Improve the water quality and ecological health of Hagley's watercourses.	- Restore natural flow processes. Reduce pollution and nutrient loading through buffer zones and Sustainable Practices. - Enhance water's physical and chemical characteristics through habitat restoration. Implement long-term monitoring and enforcement strategies to ensure effective management and control.
Monitoring and Evaluation	The Parish Council will regularly review its policies to ensure that progress aligns with its sustainability goals.	- Regular inspections of infrastructure. - Water quality testing of local watercourses. - Community engagement through feedback and ecological surveys.
Action Plan (2024-2029)	Implement natural water retention and flood risk management strategies to mitigate the impact of flooding.	- Hydrological surveys and installation of Suds. - Flood risk assessments and Suds design. - Gallows Brook restoration and maintenance of buffer zones. - Enhancing water quality through nutrient reduction and habitat restoration.
Outcome	Ensure a sustainable, resilient environment for future generations.	By implementing this action plan, Hagley will significantly enhance water retention, mitigate flood risks, and restore ecological systems.

5.2 Introduction

The Hagley Parish Council Environmental Report is aligned with the Flood and Water Management Act 2010 to provide more explicit guidance on legal obligations, sustainable flood prevention measures, and opportunities for local engagement in water management. This is important as the Environment Report highlights:

Surface Water Flooding Prevention: Hagley has experienced issues with urban runoff and drainage. The Act requires Worcestershire County Council to assess and mitigate these risks by developing enhanced local flood management strategies.

Sustainable Drainage (SuDS): The Act promotes green infrastructure solutions, such as permeable paving and Sweet Pool restoration, which can be integrated into Hagley's planning.

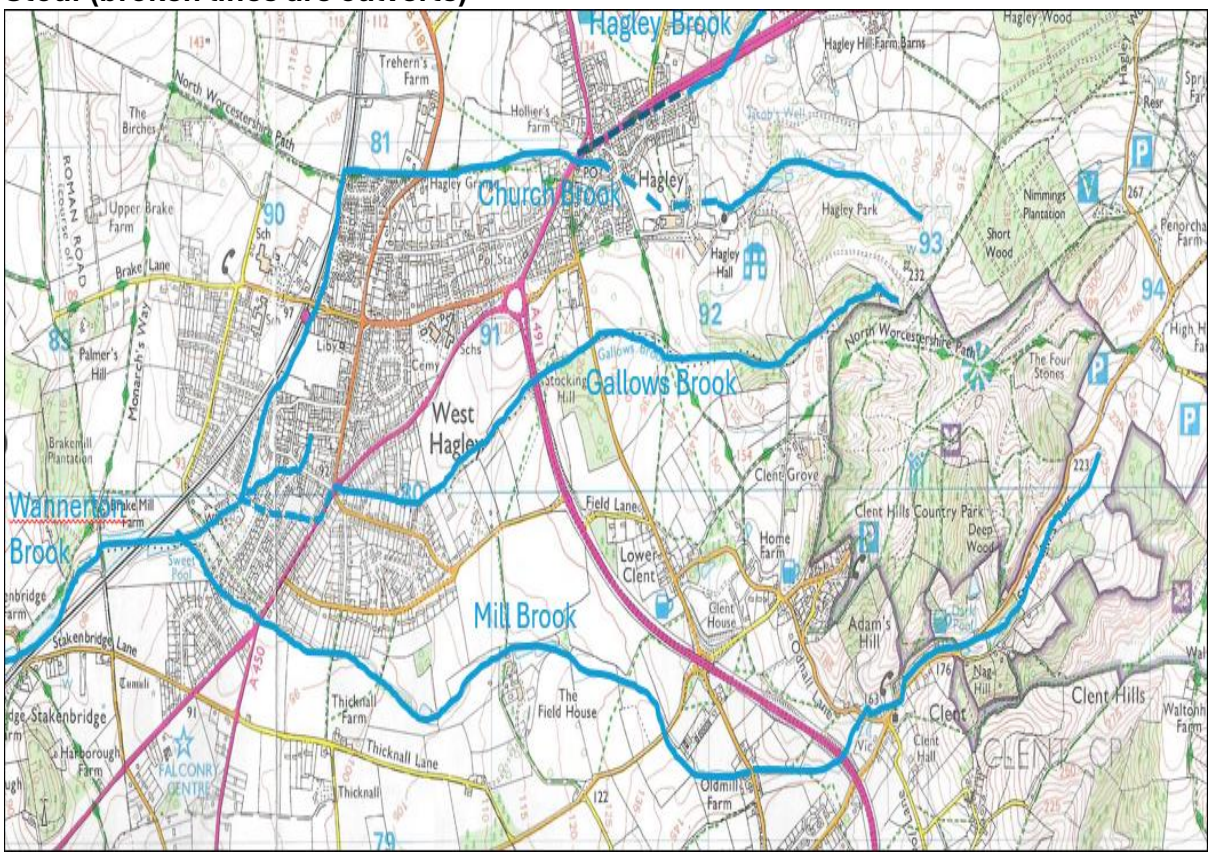
Community and Business Involvement: Landowners and businesses in Hagley must ensure compliance with drainage maintenance responsibilities, contributing to flood resilience efforts.

5.3 Background

Hagley is responsible for safeguarding the headwaters of its catchment, recognising that the quality of water it manages impacts downstream environments. As stewards of this land, it is imperative that we not only take action to prevent environmental harm locally but also acknowledge the consequences of inaction for downstream communities.

Located between West Hagley and Bromsgrove, Hagley is traversed by four tributary systems that flow east to west before merging to form Wannerton Brook. The brook feeds into the River Stour approximately one mile below Wolverley at Broadwaters, near Kidderminster.

Illustration 27: Map showing Brooks in Hagley merging with Wannerton Brook to Stour (broken lines are culverts)



5.4 Key tributaries include:
First Stream: Mill Brook - Originates at St. Kenelm's Pass in the Clent Hills, flowing through West Hagley to Stakenbridge and Churchill.
Second Stream: It begins near Walton Pool in Clent, flowing through Holy Cross and Broom before becoming Gallows Brook.
Third Stream: Hagley Brook - Rises in a yielding tree, joining the central brook south of Blakedown.

All three unite at Sweet Pool to form Wannerton Brook.

Wannerton Brook is named as *Wenferth* in a charter of AD 866 relating to Wolverley, which also gives rise to the name Wannerton for a farm in Churchill and Blakedown (formerly Kidderminster): D. Hooke ed. *Worcestershire Anglo-Saxon Charter-Bounds* (Woodbridge, Suffolk 1990: Boydell Press), 124.

5.4.1 Gallows Brook
The Environment Agency has classified Gallows Brook as a Statutory Main River under the A491, with flood zone 3 areas identified in West Hagley, particularly where the brook meanders. To mitigate these risks, the Agency recommends implementing:

- 20-metre buffer zones along the brook.
- Deculverting measures to restore natural flow pathways.

Gallows Brook has been the focus of various environmental and flood risk assessments.

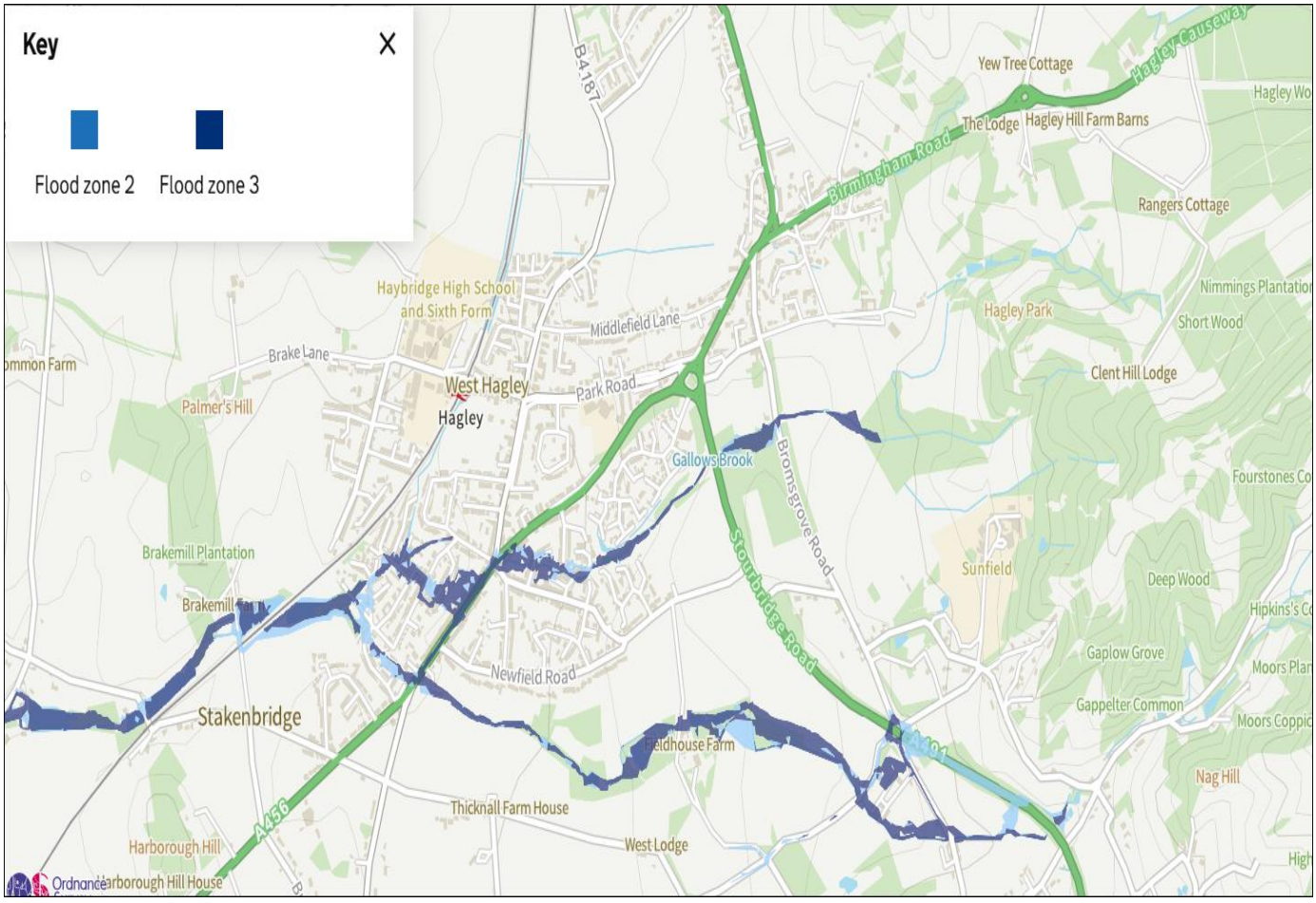
5.5 Flood Risk and Management Efforts:
Hagley has experienced significant flood events, notably in October and November 2019, which were extensively documented in a report by Worcestershire County Council. These events highlighted the village's vulnerability to flooding from Gallows Brook and its tributaries. In response, measures such as installing a gauge on Gallows Brook and lining the Chestnut Drive culvert were implemented to enhance water flow and reduce blockage risks. Worcestershire County Council. Hagley is located in Flood Zone 3, as designated by the Environment Agency (EA), due to its high flood risk. Building in a flood zone should be avoided if alternatives exist. However, if unavoidable, robust flood defences, approvals and risk mitigation are required.
Zone 3a: Flood probability of ≥1% (1 in 100 years) from rivers or ≥0.5% (1 in 200 years) from the sea.
Zone 3b (Functional Floodplain): This area serves as a natural floodwater storage zone; most development is prohibited.

Table 26: Implications of Flood Zone

Category	Details
Planning Permission	The Sequential Test prioritises lower-risk areas. – The Exception Test (if required) must prove sustainability and safety. A Flood Risk Assessment (FRA) is mandatory.
Permitted Development	Essential infrastructure, such as bridges and power stations, must be designed to be flood-resilient. Residential and commercial buildings require strict mitigation measures.

	Highly vulnerable uses (e.g., hospitals, emergency services) are generally prohibited in Zone 3 B and restricted in Zone 3A.
Insurance and Mortgage Risks	Higher insurance costs. Potential difficulties in obtaining a mortgage.
Flood Mitigation Measures	Elevated floor levels. Flood-resistant materials. Sustainable Drainage Systems (Suds).

Illustration 28: Map of Hagley showing Flood Zones 2 and 3, Environment Agency 2025.



5.6 Flow Accumulation

Flow accumulation is a hydrological concept used in geographic information systems (GIS) to represent the movement of water across a landscape. It quantifies the amount of water accumulating at a given point based on the land's topography.

In a digital elevation model (DEM), flow accumulation is calculated by determining the amount of upslope area that drains to each pixel. The result is visualised below in colour gradients, indicating areas of high and low flow accumulation:

1. High-flow accumulation areas typically correspond to river valleys or regions where water collects, indicating potential locations for streams or rivers. These areas have the most intense blue colours, representing where water is likely to flow and accumulate the most.

- Low flow accumulation areas are usually found on higher terrain where water is less likely to gather. The following illustration shows the flood area in Hagley (Environment Agency 2025)

  Two elements influence Hagley: the relationship between the flow accumulation and the topography. Higher areas (elevations) exhibit lower flow accumulation, whereas valleys and depressions have higher values. Urban development areas often alter drainage patterns compared to natural landscapes.

  Water bodies in Hagley align with high flow. The following two diagrams show flow accumulation for Hagley.

Illustration 29: Flow Accumulation Hagley West



Illustration 30: Accumulation Flow Hagley East



5.7 Environmental Considerations:

The Hagley Hinterland Environmental Character Area profile highlights the vulnerability of local water resources, including Gallows Brook, to over-abstraction and pollution. The report emphasises the importance of managing flood risks, restoring natural floodplains, and improving water quality to mitigate nutrient and sediment levels entering watercourses. Worcestershire County Council

The water quality of Gallows Brook has been a subject of concern, particularly regarding nutrient levels. The Bromsgrove District and Redditch Borough Water Cycle Strategy identified Gallows Brook as a significant watercourse in the area, emphasising the need for ongoing monitoring and management to address water quality issues. Redditchbc.gov.uk

Pollution challenges include road and agricultural runoff, as well as rural land management practices and inadequate wastewater treatment. Elevated phosphate and nitrate levels are significant concerns.
Blakedown Brook, a critical water body, is classified as having poor ecological status due to impacts from:

- Agricultural runoff
- Rural land management practices
- Water industry operations

The Environment Agency continues to monitor the catchment data to address these concerns.

Table 27: Water Quality Status of Key Watercourses in Hagley.

Watercourse	Ecological Status	Main Pollution Source	Monitoring Frequency
Gallows Brook	Poor	Agricultural runoff, wastewater	Biannual
Blakedown Brook	Poor	Agricultural runoff, water industry	Annual
First Stream	Moderate	Agricultural runoff	Annual

5.8 Wastewater Management

Hagley is served by the Severn Trent wastewater network, which discharges into the Roundhill Wastewater Treatment Works (WwTW) near Dudley. Wastewater from Hagley is pumped to this facility, which is periodically assessed as part of Severn Trent's Drainage and Wastewater Management Plan (DWMP). While no current infrastructure upgrades are scheduled, any necessary updates will be funded through developer contributions, based on future demand.

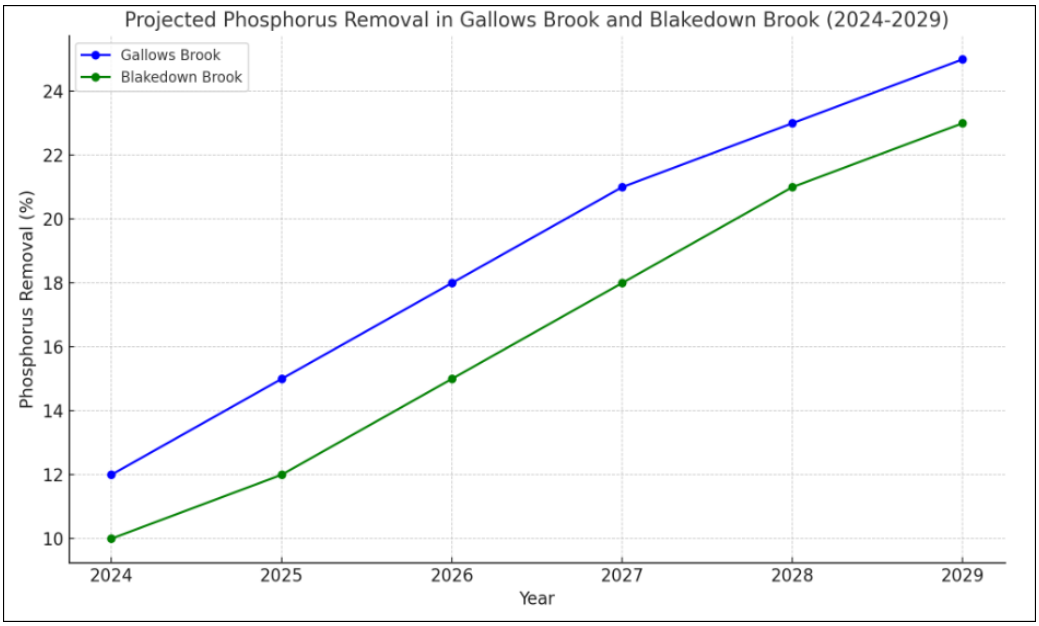
5.9 Phosphate Stripping at Gallows Brook

Severn Trent is finalising an upgrade at the Roundhill WwTW to meet the phosphorus reduction targets. This upgrade will reduce the plant's impact on receiving watercourses, including Gallows Brook.

The treatment plant primarily discharges into the River Stour and supports flow in Gallows Brook, benefiting downstream Sites of Special Scientific Interest (SSSI). Enhanced phosphorus permits will enforce stricter environmental standards, with regular monitoring to ensure compliance.

Illustration 31: Chart Showing Water Quality Improvements Timeline

This chart shows the projected phosphorus removal in Gallows Brook and Blakedown Brook from 2024 to 2029. The data illustrate the anticipated improvements in phosphorus levels over time as part of Severn Trent's efforts to reduce phosphorus pollution in these watercourses.



5.10 Agricultural and Horticultural Practices

Agriculture and horticulture are vital to Hagley's economy; however, water shortages due to climate change pose significant risks. Solutions include:

- Investing in water storage to secure the supply during dry periods.
- Supporting biodiversity through green infrastructure, including water management features.
- Collaborative initiatives among local businesses, councils, and environmental groups are crucial to enhancing waterway health.

5.11 Sewage Infrastructure

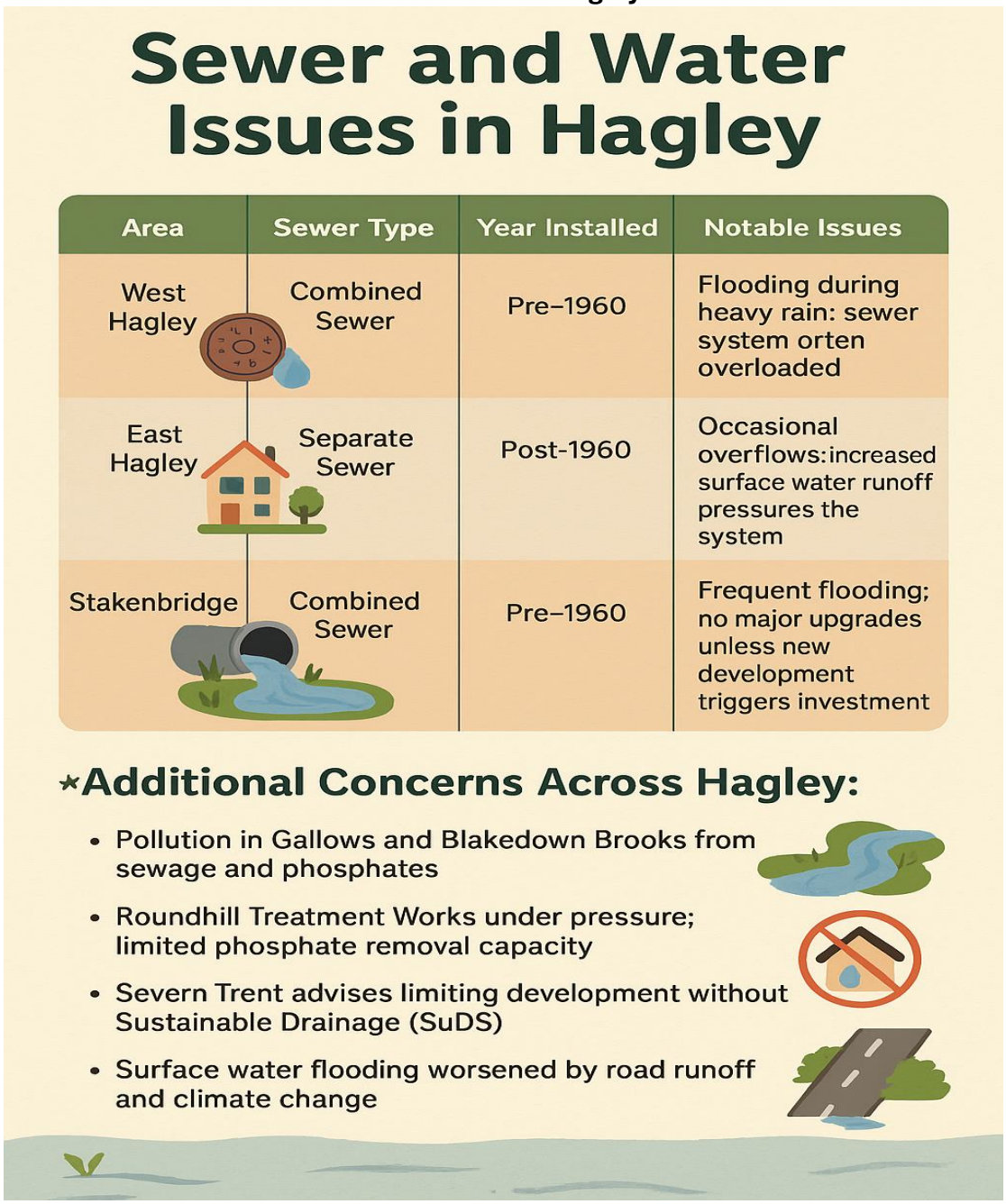
Hagley's sewer network, which serves approximately 7,000 residents, consists of ageing combined sewers and newer separate systems (installed after the 1960s). However, West Hagley and Stakenbridge rely on combined sewer systems installed before 1960, which mix rainwater and sewage and experience flooding during heavy rainfall, as the sewers often exceed their capacity (Table 28, Illustration 32).

Defra is considering changes to the "right to connect" policy, prioritising sustainable drainage solutions (Suds) over traditional sewer connections.
Severn Trent recommends limiting development in areas lacking sustainable drainage infrastructure to prevent strain on the sewer network.

Table 28: Current Sewer and Related Water Issues in Hagley

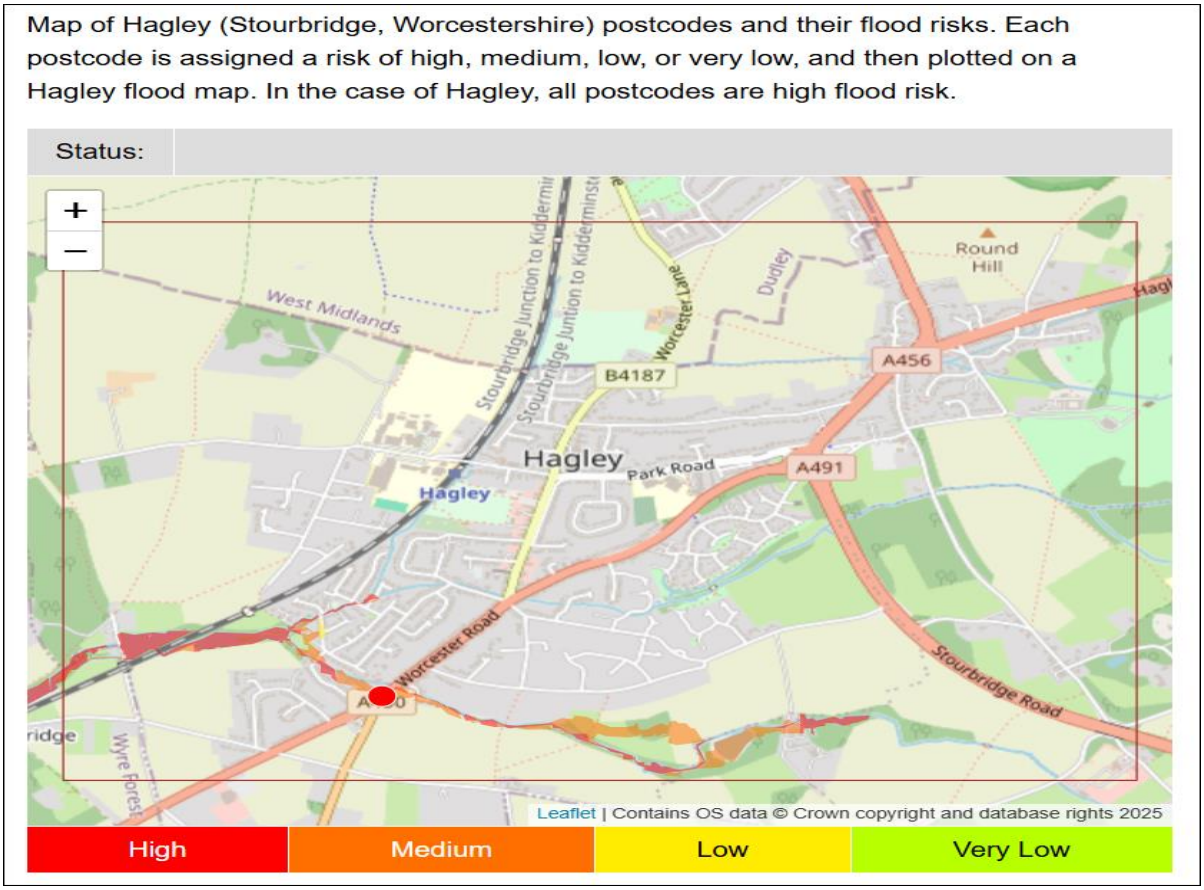
Area	Sewer Type	Year Installed	Notable Issues
West Hagley	Combined Sewer	Pre-1960	Flooding during heavy rain, the sewer system is often overloaded
East Hagley	Separate Sewer	Post-1960	Occasional overflows: increased surface water runoff pressures the system
Stakenbridge	Combined Sewer	Pre-1960	Frequent flooding; no major upgrades unless new development triggers investment

Illustration 32: Sewer and Water Issues in Hagley



5.12 Flooding

The National Planning Policy Framework (NPPF) emphasises preventing inappropriate development in flood-prone areas, ensuring new developments can be made safe without exacerbating flooding risks elsewhere. **Illustration 33: Flood Risk Map Hagley**



(EA 2025)

Hagley is in Flood Zone 3 and has identified areas at risk of surface water flooding, especially after heavy rainfall. Key strategies to mitigate flooding risks include:
Flood zone mapping and assessments inform development decisions.
Prioritising sustainable drainage systems (Suds) and natural flood management measures.

Table 29: Areas of Hagley at Risk of Flooding

Area	Flood Risk Level	Key Vulnerabilities	Proposed Mitigation Measures
West Hagley	High	Proximity to Gallows Brook	Deculverting, Suds installation
Blakedown	Moderate	Surface water flooding	Flood prevention works
Stakenbridge	Moderate	Overloaded sewer systems	Sewer upgrades, Suds

5.12.1 Surface Water Flooding

Certain areas of Hagley are prone to surface water flooding, particularly when drainage systems exceed their capacity. The NPPF calls for steering new developments away from flood-prone areas and emphasises the importance of Suds—Severn Trent advocates for removing surface water from sewer networks to create additional capacity.

5.12.2 Flood Defences

Hagley lacks formal flood defences, but the higher ground along Gallows Brook is mapped as a natural defence. The Parish Council's plan integrates flood risk areas with natural and engineered solutions to minimise flood risks.

5.12.3 Sustainable Drainage Systems (Suds)

Suds offers a sustainable solution for managing rainfall, reducing runoff, and enhancing water quality. Hagley's approach includes:

- Incorporating Suds features like green roofs, rain gardens, and wetlands.
- Addressing urban runoff caused by impermeable surfaces and road runoff.

Suds will be incorporated into all new developments and retrofitted in existing areas as part of the Hagley Neighbourhood Plan.

Sustainable Drainage Systems (Suds) are designed to manage surface water runoff, aiming to reduce flood risk and improve water quality. In Hagley, the implementation of Suds has been part of efforts to address local flooding issues.

Studies in comparable areas have shown that Suds can reduce peak flow rates by up to 30%, decrease runoff volumes by approximately 25%, and improve water quality by filtering out pollutants such as heavy metals and nutrients.

5.13 Brake Mill Pond and Sweet Pool Nature Reserve

In 1754, the Lord of Hagley, Sir John St. Leger, granted permission to create two pools—Sweet Pool and Brake Pool. In the mid-nineteenth century, the railway embankment altered the shape of the pool, and the east end is now a wetland nature reserve.

The mill building, originally constructed around 1770, is now a private dwelling, featuring a new water wheel added for decorative purposes. It is situated at the dam's centre, approximately 700 meters (about 760 yards) long. At the end of the Brake Mill dam, there is a sluice and stream, and about 20 meters (approximately 22 yards) downstream, the remains of a cellar, presumably belonging to an earlier mill house, can be found. A neatly finished arch suggests that this was the end of the building. An old apple tree near the drive entrance of the restored mill may have been associated with an earlier structure (Hagley Historical and Field Society 1993).

Brake Mill Pond and Sweet Pool Nature Reserve are vital wildlife habitats, supporting a range of species and providing key ecological functions. Actions for their improvement include:

- Managing invasive species (e.g., Himalayan Balsam).
- Increasing accessibility and awareness of the sites' ecological value.

5.14 Linking Green and Blue Infrastructure

Integrating green (vegetation) and blue (water) infrastructure is key to building resilience in Hagley. Efforts will focus on reconnecting fragmented green corridors and linking watercourses to the broader landscape for ecological, recreational, and water management benefits.

5.15 Climate Change Considerations

Projected Impacts: The UK Climate Projections (UKCP) highlight future climate challenges, including an increased frequency of extreme rainfall and more extended periods of drought. The UK Climate Projections 2018 (UKCP18) provides detailed insights into anticipated climate changes across the UK, including Hagley. While UKCP18 offers projections at a 12 km resolution, specific data for Hagley is not directly available. However, regional forecasts for the West Midlands can serve as a valuable indicator of expected climate trends in Hagley (Met Office, 2025; CEDA, Centre for Environmental Data Analysis, 2025; University of East Anglia Climatic Research Unit, 2025). Temperature Projections are detailed within ENV 5.

5.15.1 Green Infrastructure Integration: Tree planting, green corridors, and restoration of Sweet Pool are key nature-based interventions. They are solutions that help mitigate climate change-induced water stress by enhancing water retention, reducing flooding, and improving water quality.

Table 30 Shows How the Action detailed in the Report Contributes to the Benefits of building resilience:

Action	Benefits
ENV 1.2 Tree Planting	Reduces Flooding: Trees intercept rainfall, reducing surface runoff and easing pressure on drainage systems. Enhances Water Infiltration: Roots help absorb water and improve soil permeability, reducing flood risks. Cool Urban Areas: Tree canopy provides shade and reduces temperatures, slowing evaporation and maintaining soil moisture.
Green Corridors (Connected Green Spaces and Vegetation)	Improves Water Absorption: Vegetated corridors act as natural sponges, slowing down and absorbing rainwater. Reduces Runoff Pollution: Plants filter pollutants before they reach rivers and water bodies. Enhances Biodiversity: Supports ecosystems that contribute to water cycle regulation and soil stability.
Sweet Pool Restoration	Acts as a Natural Water Buffer: Wetlands store excess rainfall, reducing flood peaks. Filters Water: Wetland vegetation removes pollutants, improving water quality. Supports Groundwater Recharge: Allows water to seep into underground reserves, securing a long-term water supply.
Combined Impact on Climate Resilience	Reduces Flood Risk: By slowing and absorbing water during heavy rainfall.

	Improves Drought Resilience: Enhancing groundwater recharge and reducing evaporation. Enhances Water Quality: By filtering out pollutants before they enter watercourses.

5.16 Regional Climate Adaptation Strategy:

It is recommended that Hagley be part of a Regional Climate Adaptation Strategy that focuses on preparing local areas for the impacts of climate change, particularly flooding and drought. DEFRA (Department for Environment, Food and Rural Affairs)

Table 31: Key Elements of DEFRA's Climate Resilience Framework for Flood and Drought Preparedness:

Flood Preparedness	Integrated Catchment Management: Promotes a whole-system approach, managing water at a regional scale through North Worcestershire Water and Severn Trent to reduce flood risks.
	Sustainable Drainage Systems (Suds): Encourages natural flood management techniques, such as permeable surfaces, wetlands, and retention basins.
	Flood Risk Assessments (FRAS): Requires new developments to assess flood risks and implement mitigation measures.
	Early Warning Systems: Strengthen real-time monitoring and alert systems to prepare communities for extreme weather events.
	Infrastructure Resilience: Protecting critical infrastructure by improving drainage networks, embankments, and flood barriers.
Drought Preparedness	Water Resource Management Plans: Ensures a sustainable water supply by promoting efficient use and conservation.
	Reservoir and Aquifer Recharge: Enhances groundwater storage and captures excess rainfall for future use.
	Drought Response Measures: Implements restrictions, leakage reduction, and demand management strategies during drought periods.
	Nature-Based Solutions: Restores wetlands, woodlands, and green corridors to increase water retention and reduce evaporation losses.
	Public Awareness and Community Engagement: Educates communities on water conservation and climate adaptation strategies

5.17 Cost Considerations:

Cost Estimates for Flood Mitigation:
Implementing a Sustainable Drainage System (Suds) in Hagley involves evaluating the financial implications and the potential benefits. While specific cost estimates for a Suds scheme in Hagley are not publicly available, insights from similar projects can provide a general understanding of the costs.
Capital Costs: Suds projects often demonstrate cost advantages over traditional drainage systems. For example, the Queen Mary's Walk project in Llanelli, Wales, estimated at £1.2 million for a conventional tank sewer, was completed for £787,000 using a Suds approach, resulting in significant savings.
Maintenance Costs: Annual maintenance for Suds is typically estimated at approximately 0.5% of the initial construction cost. This figure can vary based on site conditions and design complexity. Geo Smart

5.17.1 Design Factors Influencing Costs:

- **Early Integration:** Incorporating Suds early in design can reduce capital and maintenance expenses.
- **Simplicity**: Simplified designs with surface-level water management are generally more cost-effective than complex, underground systems.
- Natural Infiltration: Utilising natural infiltration by positioning Suds components where water naturally accumulates can minimise the need for additional infrastructure.
- **Vegetation Choices:** Selecting plant species suited to the local climate can decrease maintenance and replanting costs (West Midlands Combined Authority 2025)

5.17.2 Benefits Beyond Cost Savings:

- **Property Value Enhancement:** Proximity to well-designed Suds features has been associated with increased property values. For instance, the Elvetham Heath development in Hampshire reported a 10% rise in property values near Suds components. Geo Smart
- **Environmental and Social Advantages:** Suds contribute to improved water quality, enhanced biodiversity, and increased recreational spaces, offering broader community benefits.

Case Study – Hagley (Newfield Road) Flood Alleviation:

In 2018, a flood alleviation project in Hagley involved installing storage tanks to manage surface water. While specific cost details are not provided, the project utilised innovative designs to minimise environmental impact and disruption, such as pre-manufactured components and temporary retaining structures to protect existing trees

5.18 Flood and Water Management Act 2010
The Flood and Water Management Act 2010 was introduced in response to the 2007 floods to improve the coordination and management of flood risks. It defines the roles and responsibilities of key stakeholders, including local authorities, the Environment Agency, water companies, and developers.

Table 32: Key Responsibilities under the Act relating to Hagley.
The following Table shows the responsibilities of the different water agencies managing Hagley water.

Authority/Organisation	Responsibilities
Lead Local Flood Authority (LLFA) – Worcestershire County Council North Worcestershire Water	- Develop and maintain a Local Flood Risk Management Strategy, assessing flood risks from surface water, groundwater, and ordinary watercourses . - Investigate significant flood events and publish reports that identify causes and the responsible authorities. Maintain a public Flood Risk Asset Register, which lists structures and features that affect local flood risk. - Approve and oversee the use of Sustainable Drainage Systems (Suds) in new developments to reduce flood risks.
Environment Agency (EA)	- Oversee flooding from main rivers and the sea, issuing flood alerts and warnings for areas at risk. - Implement the National Flood and Coastal Erosion Risk Management Strategy to guide national flood prevention efforts. - Ensure compliance with the Water Framework Directive (WFD) to improve water quality in rivers and floodplains.
Water Companies (Severn Trent)	- Manage public sewer systems and reduce the risk of surface water and sewer flooding. - Encourage the use of Suds to decrease pressure on drainage networks. - Invest in long-term infrastructure resilience against increasing flood risks.
Developers and Landowners	- New developments must comply with Suds regulations, ensuring runoff is managed sustainably. - Property owners with watercourses must maintain them to prevent blockages that could contribute to local flooding.

ENV 5: Hagley to be a Resilient and Climate-Positive Place

6.0 Introduction

This section outlines strategies to transform Hagley into a more resilient and climate-positive community, addressing the impacts of climate change. The primary aim of ENV5 is to mitigate the effects of climate change on Hagley's environment and community through a Green Infrastructure approach (Reeder and Ranger, 2017). The Environment Report highlights the increasing risks posed by climate change, including extreme weather events, habitat loss, flooding, and water scarcity, underscoring the need for adaptive strategies (IPCC, 2021). Greenhouse gas reductions, particularly of nitrous oxide, methane, and carbon dioxide, as well as improvements in air quality, are crucial in reducing Hagley's environmental footprint (Broom et al., 2020).

The action plan includes initiatives like upgrading existing housing with renewable energy technologies, utilising low-carbon materials, incorporating green roofs, ensuring permeable surfaces, and restoring habitats to boost biodiversity (Thomas et al., 2019). Sustainable construction practices and the adoption of renewable energy will be emphasised in new developments, especially in brownfield site redevelopment (Sustainable Energy Association, 2020).

In line with local planning policies such as BDP 19 and BDP 22, this document aims to improve Hagley's quality of life, mitigate climate risks, and meet air quality targets (Bromsgrove District Council, 2019). Monitoring and evaluation measures will include tracking energy efficiency, renewable energy performance, water quality, and biodiversity improvements (UK Green Building Council, 2020).

Ultimately, the plan aims to transform Hagley into a climate-positive, resilient, and sustainable community that promotes green practices and fosters community engagement.

6.1 What is Climate Change?

Climate change refers to long-term shifts in global or regional climate patterns, primarily driven by human activities like deforestation, industrial emissions, and fossil fuel combustion (Stern, 2006). Over the past two centuries, human-induced climate change has primarily been driven by greenhouse gas emissions, particularly carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) (IPCC, 2021).

While natural factors, such as volcanic activity and solar radiation, contribute to climate variability, the current warming trend is predominantly caused by human activities. Current projections suggest that Earth's temperature could rise by 2 to 4°C by the end of the century, which would have profound impacts on ecosystems, biodiversity, and human health (Rogelj et al., 2016). The Intergovernmental Panel on Climate Change (IPCC) warns that such an increase could lead to irreversible damage to many ecosystems and ecosystem services (IPCC, 2021).

6.2 Global Warming and Its Effects

Global warming refers to the rise in Earth's surface temperature caused by the greenhouse effect, wherein gases trap heat within the atmosphere. This process has been exacerbated by human activities, such as the burning of fossil fuels and extensive agricultural practices, particularly livestock farming, which produces methane (U.S. EPA, 2020). Key local effects of global warming include:

- **Habitat Loss:** This results in the migration of species and a decline in biodiversity (Reid et al., 2016).

- **Decrease in Fish Stocks:** Due to changing water temperatures and acidification (Worm et al., 2009).
- **Increased Frequency of Extreme Weather Events:** Including more frequent and severe heatwaves, droughts, and floods (IPCC, 2021).
- **Public Health Risks:** Heat stress, respiratory diseases resulting from poorer air quality, and increased mental health issues associated with environmental stressors (Morris et al., 2020).

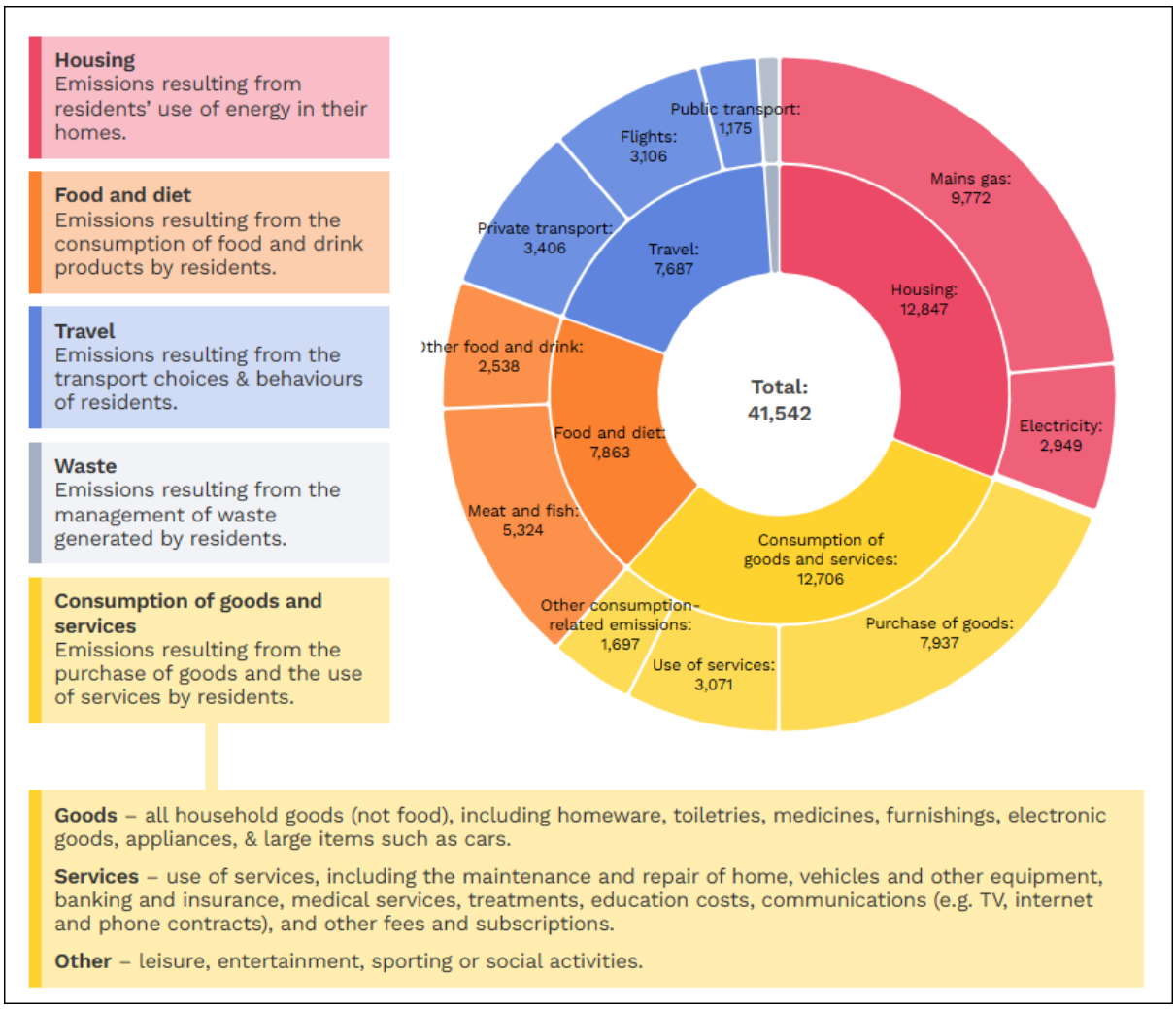
Reducing the emissions of key greenhouse gases, particularly methane and CO_2, is crucial to mitigating these adverse effects (Harper et al., 2018). Policies encouraging the consumption of local food, reducing plastic waste, and limiting meat consumption can significantly help mitigate the impact of climate change (Poore and Nemecek, 2018).

Temperature Projections:

- **Summer Warming:** Under a global warming scenario of 2°C, the UK is projected to experience significant temperature increases, particularly in the Southeast, where summer temperatures may rise by 3 to 4°C relative to the 1981-2000 baseline. The West Midlands, including Hagley, is expected to see similar warming trends, with median temperature increases of at least 1 to 2°C throughout the year.
- **Seasonal Variations:** In summer, hot and cool days are projected to warm by 1.5 to 2°C across England, encompassing the West Midlands region.
- **Precipitation Projections:**
- **Winter Precipitation:** Projections indicate slightly wetter winters, with increased precipitation across the UK. However, natural variations mean that some dry winters will still occur. Met Office
- **Summer Precipitation:** Summers are expected to become drier, particularly in the South, with reductions in precipitation. Dry days in summer may see up to 30% less rainfall in parts of the Southwest. While the West Midlands may not experience cutbacks of this magnitude, a general decrease in summer rainfall is anticipated. Met Office
- **General Climate Trends:**
  The overarching message from UKCP18 projections is a shift towards warmer, wetter winters and hotter, drier summers across the UK. Met Office+1gov.UK Assets+1
  These projections highlight the importance of Hagley's preparation for a changing climate. They focus on strategies to manage increased flood risks during wetter winters and water resource challenges during drier summers.

6.3 Climate Change Impacts on Hagley

Illustration 34: The consumption per Hagley household (Centre for Sustainable Energy Appendix C)

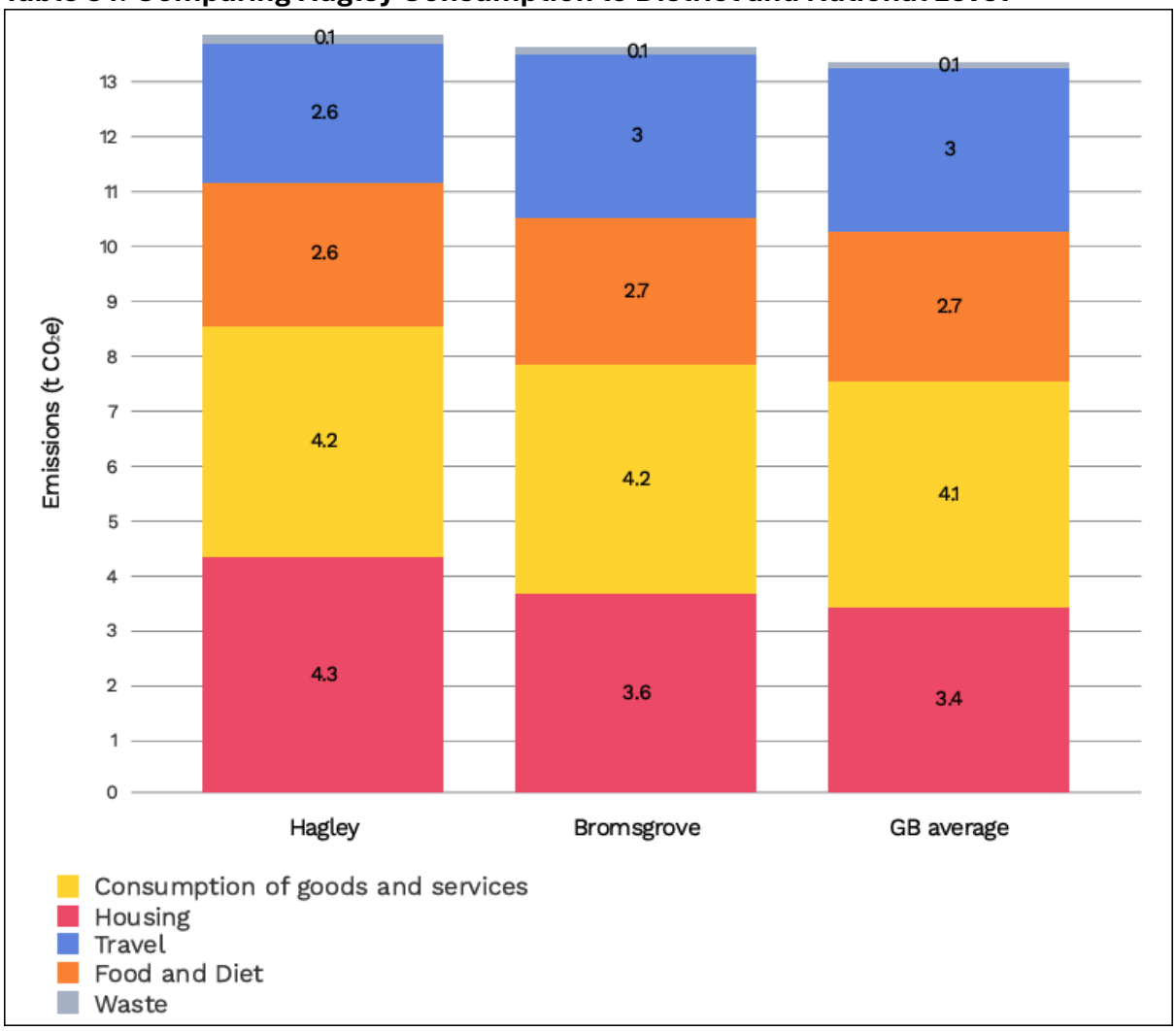


The following table shows a breakdown of the numbers.

Table 33: Breakdown of Numbers

	Total emissions (t CO_2e)	Per-household emissions (t CO_2e)	%
Total emissions	**41,542**	**14**	**100**
Housing	12,847	4.3	31
Consumption of goods and services	12,706	4.2	31
Food and diet	7,863	2.6	19
Travel	7,687	2.6	19
Waste	439	0.1	1

Table 34: Comparing Hagley Consumption to District and National Level



6.4 Risks to Hagley

In Hagley, climate change is expected to exacerbate the following risks:

- **Heat Stress:** Higher temperatures will increase the risk of heat-related illnesses, particularly among vulnerable populations (Semenza et al., 2019).
- **Water Scarcity:** As temperatures rise and rainfall becomes more erratic, water demand is expected to increase while the supply decreases, leading to water scarcity (Vörösmarty et al., 2010).
- **Air Pollution:** Increased temperatures and stagnation can exacerbate air quality, leading to higher rates of respiratory issues (Schwartz et al., 2015).
- **Extreme Weather Events:** Hagley is already experiencing more frequent and severe flooding, heatwaves, and storms, which are likely to intensify in the future (Environment Agency, 2020).
- **Local Ecosystems:** Climate change is predicted to profoundly affect local ecosystems (Table). Changes in temperature and rainfall patterns may shift the ranges of many species, and more extreme weather events could disrupt natural processes, such as flowering, breeding, and migration.

Table 35: Ecological Models and Projections

Area	Habitat Type	Connectivity Index	Projected Climate Impact	Recommended Conservation Strategies
Hagley Parish	Woodland, Hedgerows	Medium	Increased temperature, drought risk	Plant drought-tolerant species, connect hedgerows
Sweet Pool Nature Reserve	Wetland, Pond Areas	High	Increased flooding, water temperature rise	Wetland restoration, improve drainage, and invasive species control.
Wychbury Hill	Heathland, Grasslands	High	Habitat loss due to invasive species	Invasive species control, habitat restoration

The Green Infrastructure approach addresses these risks by creating local solutions such as increased tree planting, restoration of wetland habitats, and the promotion of permeable surfaces (Tzoulas et al., 2007). These efforts are essential to creating a climate-positive and resilient community.

6.5 Objective: Climate Resilience in Hagley

Hagley's goal is to become more resilient to climate change by implementing policies and strategies that:

- **Improve Air Quality:** Reducing pollution and encouraging clean energy use (Giles et al., 2020).
- **Reduce Flood Risks by implementing** sustainable urban drainage systems (SUDS) and creating more green spaces to absorb rainwater (Rutsch et al., 2020).
- **Prevent Water and Soil Pollution:** Improve water quality by using natural filtration systems, such as wetlands and riparian buffers (Kivaisi, 2001).
- **Promote Energy-Efficient, Low-Carbon Solutions:** Supporting renewable energy sources, energy-efficient buildings, and transportation (Becken, 2016).
- **Increase Renewable Energy Production:** Expanding the use of solar, wind, and biomass energy sources (Renewable Energy Association, 2019).

6.6 Ecological Footprint Reduction

Reducing ecological footprints is essential for conservation. Key measures include:

- **Carbon Neutrality:** Encouraging local businesses, organisations, and the parish to set carbon-neutral goals by adopting energy-efficient practices and renewable energy technologies (Carbon Trust, 2020).
- **Sustainable Consumption:** Raising awareness of the importance of reducing plastic waste, supporting local food systems, and reducing meat consumption (Smith et al., 2019).

Additionally, strategies must be implemented to mitigate wildfire risks in coniferous areas on Wychbury Hill by adopting sustainable land management practices (Keeley, 2009).

6.7 Adaptive Climate Resilience Strategies

As climate change continues to impact ecosystems, incorporating resilience strategies into the biodiversity plan is crucial. These strategies provide insights into how habitats

may be affected by climate change in the coming decades. These projections help prioritise conservation actions to ensure that vulnerable species and ecosystems can adapt to changing climate conditions.

- **Key Hagley Climate Resilience Insights:**
  Sweet Pool may face challenges due to rising temperatures and altered precipitation patterns, making water management crucial.
  Woodland areas are projected to experience changes in species composition, with some species at risk due to warmer winters and increased frequency of extreme weather events. There have been fires in the conifer woods on Wychbury Hill.
  Grasslands may be more resilient to climate change, but will require management to combat invasive species that thrive in warmer conditions.
- **Climate-Adaptive Species Planting**: Focusing on planting species more resilient to changing climate conditions (e.g., drought-resistant plants or trees adaptable to fluctuating temperatures).
- **Habitat Shifting Models**: Understanding and predicting where particular species might migrate due to climate change and creating strategies for those species to access new suitable habitats.
- **Restoration of Cultural Landscapes**
- Some traditional human activities have shaped the landscape in ways that can contribute to biodiversity:
- **Rewilding Efforts:** Exploring the possibility of rewilding specific areas.

6.8 Local Policy Linkage

This report is in line with Bromsgrove District Council policies:

- BDP 19 (High-Quality Design): Promotes sustainable construction methods and green infrastructure (Bromsgrove District Council, 2019).
- BDP 22 (Climate Change): Aims for low-carbon, climate-resilient developments (Bromsgrove District Council, 2019).

6.9 Action Plan

The Table below shows the actions planned to achieve the objectives related to housing, energy efficiency, and sustainability in Hagley.

Table 36: Action Plan

Action Area	Action	Details
Housing and Energy Efficiency	**Housing Assessment**	Review existing social housing to identify areas for energy efficiency improvements.
	Sustainable Construction Materials	Prioritise redeveloping brownfield sites using renewable timber and sustainable building practices.
	Energy Efficiency Upgrades	Implement energy-saving measures such as improved insulation, double glazing, and low-energy lighting.
	Renewable Energy Systems	Promote the use of renewable energy technologies, such as solar panels,

		ground-source heat pumps, and battery storage.
New Build Developments	**Low-Carbon Technologies**	Ensure that new buildings incorporate sustainable technologies and designs, such as natural ventilation, green roofs, and passive solar design.
	Green Infrastructure	Develop permeable pavements and other porous surfaces to promote groundwater recharge and reduce urban heat islands.
Enhancing Green Spaces	**Biodiversity Restoration**	To mitigate the urban heat island effect and enhance carbon sequestration, establish ecological corridors, restore habitats, and plant native trees and shrubs.
	Community Engagement	Offer workshops and incentives for sustainable practices, such as rainwater harvesting and climate-resilient gardening.

Table 37:Resources and Support

Resource Type	Details	Reference
Human Resources	Urban planners, environmental engineers, construction experts, local horticulturists, and biodiversity specialists.	Royal Town Planning Institute, 2020.
Financial Resources	Local government funding, environmental grants, corporate sponsorships, and community fundraising.	Environmental Agency, 2020.
Material Resources	Renewable energy systems, sustainable building materials, permeable paving, and native plant species.	Construction Industry Research and Information Association, 2018.

6.9 Milestones and Timeframe

The following table outlines the key actions and timelines for achieving sustainability goals, with references to support the milestones.

Table 38: Milestones and Timetable

Timeframe	Action	Details	Reference
Year 1	Review housing, identify areas for improvement, and initiate community education on sustainability.	Review existing housing for energy efficiency and start community education on sustainability.	Energy Savings Trust, 2020

Year 2-3	Initiate energy efficiency upgrades, implement permeable surfaces, and encourage the use of green roofs.	Begin implementing energy-saving upgrades, install permeable surfaces, and promote green roofs.	UK Green Building Council, 2020
Year 4-5	Complete energy efficiency upgrades, integrate renewable energy and restore biodiversity.	Finalise energy efficiency measures, integrate renewable energy systems and restore local biodiversity.	WWF, 2020

Monitoring and Evaluation

- **Housing Inspections:** Regular checks to assess energy efficiency and carbon reductions (Energy Savings Trust, 2020).
- **Water Quality Monitoring**: Measure the impact of permeable surfaces on water quality and groundwater levels (Environment Agency, 2020).
- **Renewable Energy Performance:** Monitor efficiency of solar, wind, and heat pump installations (National Grid, 2019).
- **Biodiversity Metrics:** Track species richness and improvements in habitat quality (Barton, 2018).
- **Public Dashboards:** Provide real-time data through platforms to engage the community and gather feedback (Sustainable Development Goals, 2020).

6.10 Conclusion

This document presents a comprehensive report outlining how Hagley can become a climate-positive, resilient, and sustainable community. By incorporating renewable energy, sustainable building practices, and green infrastructure, Hagley will be better equipped to address climate change. Local interventions and educational programs will foster a proactive and informed community that contributes to global efforts in mitigating and adapting to climate change (IPCC, 2021).

7.0 ENV 6: Historical Characteristics of the Parish of Hagley to be Conserved and Protected.

7.1 Objectives

ENV 6.1: Proactive management of the historic environment, encompassing all heritage assets recognised for their historical, archaeological and architectural interest.
ENV 6.2: The demolition of buildings or the removal of trees and other landscape features that positively contribute to an area's character or appearance will be resisted.
ENV 6.3: Ensure climate resilience strategies are integrated into heritage conservation efforts to mitigate the effects of extreme weather.
ENV 6.4: Utilise technology-driven solutions to digitally document, preserve, and interpret historical sites for future generations.

7.2 Background

Hagley's heritage assets are essential to its identity, historical growth, and community pride. Future development and regeneration must fully consider local heritage assets, ensuring their protection and accessibility to residents and visitors. The Environment Report adopts Bromsgrove District Council's heritage policy objectives as ENV 6.1 and ENV 6.2.
Hagley Parish aims to identify and safeguard non-designated heritage assets.
The Hagley Historical Society has identified key sites of historical significance and developed walking trails that are linked to these critical locations.
Additionally, Worcestershire County Council (2012) identified the following three heritage priorities:

- Protecting the setting of Hagley Park while enhancing linkages with historic green networks (e.g., hedgerows and woodland).
- Preserving historic water features and buffering moats, fishponds, and millponds.
- Enhancing the diversity of historic field patterns and hedgerows.

7.3 Worcestershire's Heritage Environment Record (HER)

Worcestershire's HER provides a comprehensive database of heritage sites, listing 334 entries for Hagley:

- 46%: Housing and outbuildings
- 19%: Landscape features, monuments, and other buildings
- 17%: Other categories, including Roman artefacts and public houses
- 13%: Farms and farming-related sites
- 5%: World War II-related activities

A notable entry is a Neolithic axe head found at Worcester Road in 1892, now housed in the Worcester County Museum. The dataset contains records of historical and archaeological monuments with their respective grid references, descriptions, and classifications based on periods and structural features, including:

- **Monument Details**

Each record includes a unique Monument Number.
Grid references specify the geographical location of the monument.
Descriptions provide context about the historical significance of each site.
Classification Categories The monuments are categorised into different types, including but not limited to:

- Roman: Sites associated with Roman occupation, such as coin hoards.

- World War II (WWII): Guardhouses and structures from the wartime period.
- Ridge and Furrow: Evidence of historical agricultural activity.
- Settlement: Possible deserted settlements identified through surveys.
- Monuments and Barrows: Includes round barrows and other ancient markers.
- Parks and Gardens: Locations associated with historical landscaping.
- Religious and Industrial Sites: Churches, mills, and other historic structures.
- Prehistoric and Medieval Remains: Iron Age, Neolithic, medieval sites, and Flint artefacts.

7.4 Sample Entries

- Monument No. 116394: Roman coin hoard reportedly found on Clent Hills.
- Monument No. 1414660: A WWII guardhouse, formerly located in Hagley Park.
- Monument No. 870961: Ridge and furrow features identified in a 1985 field survey.
- Monument No. 118736: Possible site of a deserted settlement with no visible remains.
- Monument No. 1414669: Another WWII guardhouse, similar in function and location.
- A complete list of the 334 HER entries is available via the Historical Society.

7.5 Expanding Heritage Conservation Policy and Governance

The following additional policy mechanisms are recommended for long-term protection.

- Local Heritage Protection: Defines criteria for assessing non-designated heritage assets.
- Article 4 Directions: Restricts permitted development rights in historic areas.
- Conservation Area Designation Expansion: Identifies opportunities to extend or create new Conservation Areas.
- Climate Adaptation Strategy for Heritage Sites: Mitigates risks from extreme weather.

7.6 Community and Stakeholder Engagement

Heritage Conservation Advisory Panel (HCAP):

- Establish a volunteer panel, led by the Hagley Historical Society, archaeologists, and residents, to advise on planning applications and conservation priorities.

Crowdsourced Heritage Recording and Oral History:

- Residents will be encouraged to submit historical accounts, old maps, and photographs to the Worcestershire archive.
- Hagley Historical Society has conducted twenty oral history interviews with long-term residents on file.

7.7 Heritage Champions Initiative:

Recruit volunteers to become "Heritage Guardians," who will monitor, report, and advocate for the protection of historic sites.

7.8 Future Digital Innovation and Technology in Heritage Conservation

- Digital Heritage Twin of Hagley: A 3D virtual reconstruction of historic Hagley will allow users to explore lost landscapes and buildings through interactive digital platforms.

- Geospatial Mapping and LIDAR Integration: Drones, LIDAR scanning, and GIS mapping can be used to identify buried or at-risk archaeological features.
- Back-up system for Heritage Documentation: Store heritage records, archaeological findings, and conservation reports on a secure system at Worcestershire Archives to prevent data loss.

Table 39: Action Plan

Objectives	Actions	Time Frame	Resources
ENV 6.1: Proactive management of the historic environment	Design open and amenity spaces to protect sensitive archaeology.	Year 1	Archaeologists, planners
	Conduct field evaluations for archaeological assessments.	Ongoing	Historic England, Worcestershire HER
	Restore and replant historic hedgerows to enhance landscape character and biodiversity.	Year 2	Landscape architects, native plants
	Seek opportunities to create community orchards to preserve pre-1960s landscapes.	Year 3	Community volunteers, funding grants
ENV 6.2: Resist demolition of buildings and removal of valuable landscape features	Ensure Bromsgrove District Council assesses all proposed removals.	Year 4	Conservation officers, planning committee
	Maintain the integrity of landscape features that contribute to Hagley's historic character.	Year 5	Bromsgrove Tree Officer, Local Council
ENV 6.3: Climate resilience and adaptation for historic sites	Develop heritage-specific climate risk assessments.	Ongoing	Climate scientists, conservation groups
	Implement natural flood management strategies to protect historic landscapes and preserve their unique character.	Year 2-3	Worcestershire County Council ecologists, hydrologists
ENV 6.4: Digital heritage documentation and engagement	Establish a backup system to preserve virtual records of Hagley's history.	Year 2	Worcestershire Archives

7.9 Monitoring and Evaluation

Table 40: Monitoring

Metric	Frequency	Responsible Parties
Archaeological site inspections	Annual	Local archaeologists, planning officers
Hedgerow and orchard restoration assessments	Semi-annual	Conservation groups, community volunteers Local Tree lead BDC
Public Rights of Way (PROW) usage	Quarterly	Parish Council,
Approval records for building and landscape changes	As needed	Bromsgrove District Council, Parish Council

7.10 Final Notes: Strengthening Hagley's Heritage for Future Generations

The refined ENV 6 policy ensures that Hagley's heritage is protected and actively enhanced, leveraging community engagement, cutting-edge technology, and climate resilience strategies.

This updated framework aligns with national and regional heritage policies while introducing innovative digital and conservation methodologies to safeguard Hagley's past for future generations.

8.0 Overall Conclusions

The Hagley Parish Environment Report provides a comprehensive framework for enhancing the area's environmental health while fostering community engagement and well-being. Hagley can create a sustainable and resilient community by focusing on local biodiversity, developing green and blue infrastructure, and addressing climate change.

Involving residents in these efforts fosters a sense of ownership and strengthens community ties. As Hagley moves forward, implementing the strategies outlined in the report will be vital in preserving its natural and historical assets for future generations. Building a culture of stewardship and sustainability will ultimately lead to a thriving, nature-rich environment that benefits all residents.

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Appendices

Appendix A:
Appraisal Summary for Site 1 and Site 2: Land Adjacent to Western Road, Hagley, Worcestershire.

Species	Surveys	Observations	Recommendations
Badgers	No survey recommended	No signs of badger setts or latrines were found, but potential badger trackways were noted in the north-western corner leading into dense scrub.	If scrub clearance occurs, it should be performed manually to prevent sett collapse. A qualified ecologist should supervise this process.
Mammals **Foxes** **Deer**	No surveys are recommended if hedgerows are retained.	Signs of the fox (Vulpes vulpes) were observed in the form of trails. Evidence of deer tracks suggests muntjac or roe may frequent the area.	Trenches should be covered when not in use and equipped with a 45-degree escape ramp to prevent trapping mammals.
Bats	No surveys are recommended if trees are retained.	No signs of bats were found on Site 1, and a single-storey tin shed was deemed unsuitable for roosting.	If tree works are planned, a licensed bat ecologist should conduct summer bat activity surveys before any action.
Birds	No surveys are recommended if hedgerows are retained.	Various bird species, including buzzards, crows, and bluetits, were noted in the area.	Retaining hedgerows is crucial as they provide habitat and food for birds. To avoid harming nesting birds, habitat management should occur outside the nesting season, which typically runs from late February to late August. |
Dormice	No surveys are recommended if hedgerows are retained.|	No evidence of dormice (Muscardinus avellanarius) was found, but hedgerows are vital for their movement.	If hedgerows are disturbed, a dormouse footprint tunnel survey should be conducted between May and October.

Great Crested Newts Water Voles White Clawed crayfish and otters	No surveys recommended	No evidence of great crested newts (Triturus cristatus), water voles, white-clawed crayfish, or otters was found. Due to the proximity of flowing water, the site is considered unlikely to support them.	A buffer zone of 5 meters from Gallows Brook should be maintained during work.
Reptiles	Reptile survey recommended	The absence of reptiles was observed, likely due to regular mowing and human activity.	Reptile mats should be deployed around the site for inspection from April to October. If reptiles are found, a designated natural area should be created.

Conclusion: Both documents provide several arguments and recommendations to protect the existing environment of the sites adjacent to Western Road, Hagley. They include Habitat and Species Protection through the retention of mature trees and hedgerows around the site's perimeter, as they are valuable for bats, birds, and potentially dormice. These features offer shelter, foraging grounds, and nesting opportunities. Some dense scrub is identified as possibly containing badger setts or foraging routes. It's recommended that this be cleared by hand under ecological supervision to avoid harm. The reports identify potential habitat or foraging areas for protected species and recommend specific avoidance and mitigation strategies, such as avoiding heavy machinery in scrub areas and implementing seasonal restrictions or conducting ecological surveys to minimise impacts. Specific low-impact lighting strategies are advised to protect bat foraging and commuting routes (low lux, downward-facing, warm spectrum).

To enhance biodiversity, suggestions include:

- Installation of bird boxes, bat boxes, and insect towers
- Planting native species beneficial to wildlife
- Creating hibernacula for reptiles
- Maintaining hedgehog corridors

Common Arguments Across Both Reports:

1. **Retaining Hedgerows and Trees**
    - Both reports emphasise the importance of preserving mature trees and hedgerows for the benefit of bats, birds, dormice, and other wildlife.
2. **Avoiding Harm to Protected Species**
    - Both call for manual clearance of scrub (to avoid disturbing badger setts) and recommend seasonal restrictions to protect nesting birds.

- Both suggest bat surveys if any mature trees are to be felled.

3. **Precautionary Approach During Construction**
   - Each report advises covering trenches and providing escape ramps to prevent trapping mammals, such as badgers or deer.
4. **Legal and Policy References**
   - Both reports cite the NPPF, Wildlife and Countryside Act 1981, and NERC Act 2006 to support biodiversity protection.
5. **Environmental Enhancements**
   - Recommendations include installing bird and bat boxes, planting native species, and creating hibernacula for reptiles.

Key Differences:

Topic	Site 1 Report	Site 2 Report
Development Status	Less detail on the surrounding development	Notes proximity to Hagley Manor and Wychbury Fields
Public Access	No mention of foot traffic	Notes significant use by walkers and dogs, which may affect wildlife
Scrub and Invasive Species	General recommendations	Specifically identifies Himalayan Balsam (an invasive species) and recommends management.
Reptiles	No survey needed mentioned	Recommends a reptile survey and suggests fencing off a wildlife area if needed
Additional Enhancements	Bird boxes, bat boxes, insect towers	Adds hedgehog highways, compost heaps, and insect towers

Appendix B Hagley Health Profile
Hagley East Profile

Local Health. Public Health Data for small geographic areas

Data view
Area profiles

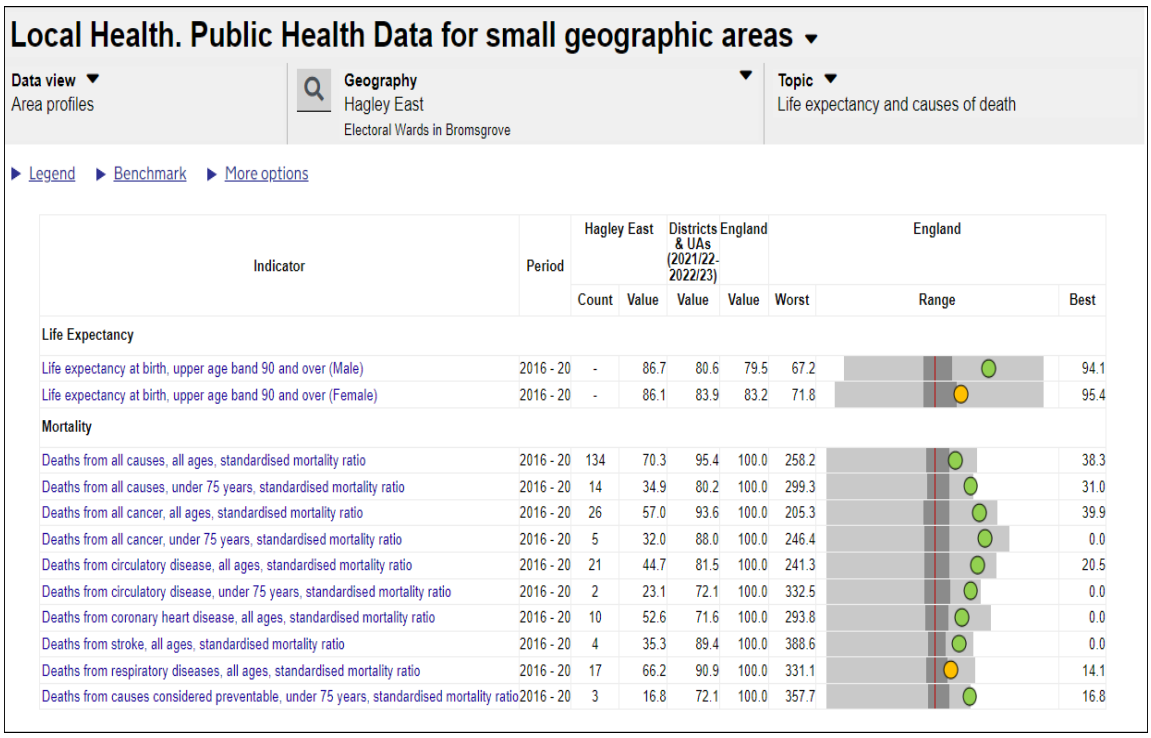
Geography
Hagley East
Electoral Wards in Bromsgrove

Topic
Our community

Legend | Benchmark | More options

Indicator	Period	Hagley East		Districts & UAs (2021/22-2022/23)	England	England	
		Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
Population								
Percentage of the total resident population who are 0 to 4 years of age (0-4 yrs)	2020	155	5.9%	5.2%	5.7%	0.2%		16.9%
Percentage of the total resident population who are 0 to 15 years of age	2020	558	21.1%	18.5%	19.2%	0.8%		36.7%
Percentage of the total resident population who are 5 to 15 years of age (5-15 yrs)	2020	403	15.2%	13.3%	13.5%	0.7%		23.1%
Percentage of the total resident population who are 16 to 24 years of age	2020	178	6.7%	8.2%	10.5%	3.8%		84.1%
Percentage of the total resident population who are 25 to 64 years of age	2020	1,254	47.4%	50.6%	51.8%	11.3%		75.0%
Percentage of the total resident population who are 50 to 64 years of age (50-64 yrs)	2020	521	19.7%	20.9%	19.2%	1.8%		33.8%
Percentage of the total resident population who are 65 and over	2020	657	24.8%	22.7%	18.5%	0.9%		56.9%
Percentage of the total resident population aged 85 and over	2020	141	5.3%	3.4%	2.5%	0.0%		12.8%
Population density, people per square kilometre	2020	3,831	571	464	434	5		29,993
Ethnicity & Language								
Percentage of population whose ethnic group is not 'white'	2011	159	6.4%	4.2%	14.6%	0.0%		93.7%
Percentage of population whose ethnicity is not 'White UK'	2011	200	8.1%	6.4%	20.2%	0.5%		96.5%
The percentage of people that cannot speak English well or at all, 2011	2011	4	0.2%	0.2%	1.7%	0.0%		22.1%
Deprivation, Housing, and living environment								
Index of Multiple Deprivation (IMD) Score	2019	-	4.4	11.7	21.7	1.7		87.1
Income deprivation, English Indices of Deprivation	2019	101	3.2%	7.3%	12.9%	50.7%		0.7%
Child Poverty, Income deprivation affecting children index (IDACI)	2019	18	2.7%	9.5%	17.1%	63.4%		0.6%
Older people in poverty, income deprivation affecting older people Index (IDAOPI)	2019	40	4.5%	8.2%	14.2%	77.2%		1.2%
Modelled estimates of the proportion of households in fuel poverty (%)	2020	114	8.5%	11.7%	13.2%	45.6%		2.5%
Households with overcrowding based on overall room occupancy levels	2011	18	1.8%	3.0%	8.7%	54.4%		0.2%
Older people living alone, Percentage of people aged 65 and over who are living alone	2011	141	25.9%	26.9%	31.5%	63.3%		10.0%
Employment								
Unemployment (Percentage of the working age population claiming out of work benefit)	2021/22	26	1.8%*	3.4%*	5.0%*	23.4%		0.1%
Long-Term Unemployment. Rate per 1,000 working age population	2021/22	0	0.0*	1.8*	1.9*	14.7		0.0

Life Expectancy and Mortality Compared to the English Average



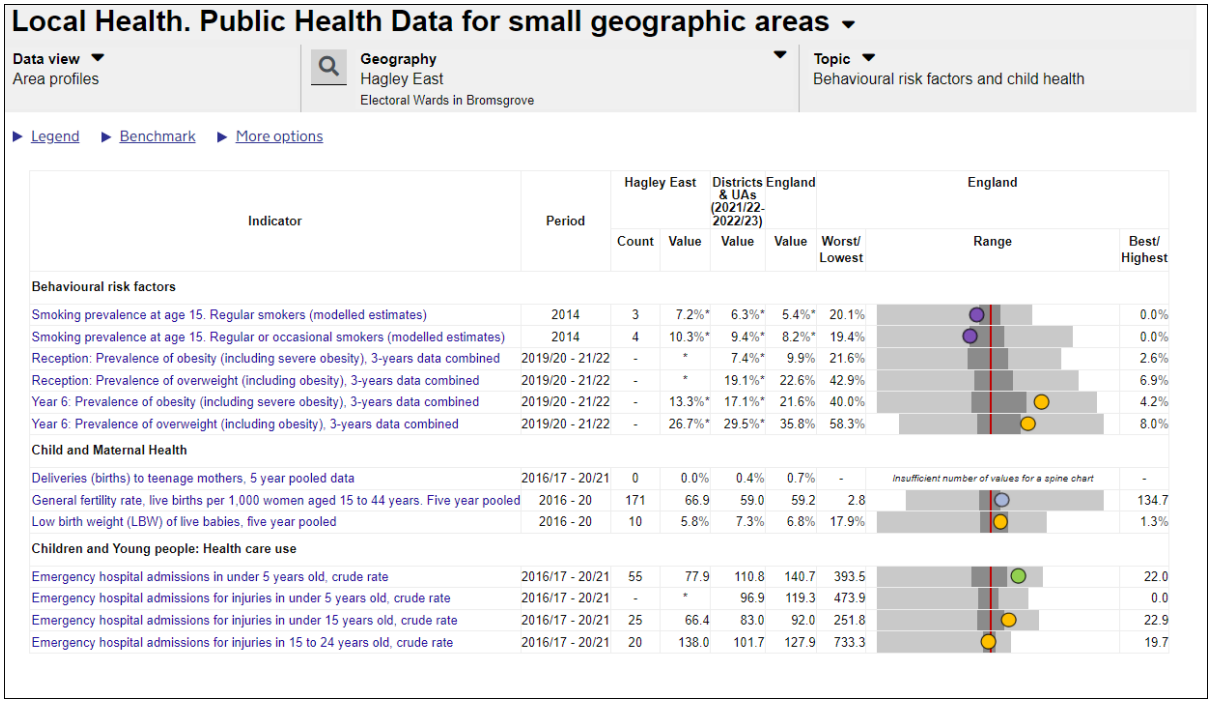
Local Health. Public Health Data for small geographic areas

Data view: Area profiles | Geography: Hagley East, Electoral Wards in Bromsgrove | Topic: Life expectancy and causes of death

Legend | Benchmark | More options

Indicator	Period	Hagley East		Districts & UAs (2021/22-2022/23)	England	England		
		Count	Value	Value	Value	Worst	Range	Best
Life Expectancy								
Life expectancy at birth, upper age band 90 and over (Male)	2016 - 20	-	86.7	80.6	79.5	67.2		94.1
Life expectancy at birth, upper age band 90 and over (Female)	2016 - 20	-	86.1	83.9	83.2	71.8		95.4
Mortality								
Deaths from all causes, all ages, standardised mortality ratio	2016 - 20	134	70.3	95.4	100.0	258.2		38.3
Deaths from all causes, under 75 years, standardised mortality ratio	2016 - 20	14	34.9	80.2	100.0	299.3		31.0
Deaths from all cancer, all ages, standardised mortality ratio	2016 - 20	26	57.0	93.6	100.0	205.3		39.9
Deaths from all cancer, under 75 years, standardised mortality ratio	2016 - 20	5	32.0	88.0	100.0	246.4		0.0
Deaths from circulatory disease, all ages, standardised mortality ratio	2016 - 20	21	44.7	81.5	100.0	241.3		20.5
Deaths from circulatory disease, under 75 years, standardised mortality ratio	2016 - 20	2	23.1	72.1	100.0	332.5		0.0
Deaths from coronary heart disease, all ages, standardised mortality ratio	2016 - 20	10	52.6	71.6	100.0	293.8		0.0
Deaths from stroke, all ages, standardised mortality ratio	2016 - 20	4	35.3	89.4	100.0	388.6		0.0
Deaths from respiratory diseases, all ages, standardised mortality ratio	2016 - 20	17	66.2	90.9	100.0	331.1		14.1
Deaths from causes considered preventable, under 75 years, standardised mortality ratio	2016 - 20	3	16.8	72.1	100.0	357.7		16.8

Two risk factors for children include smoking at age 15 and obesity at year 6, with 13.3% classed as severely obese.



Local Health. Public Health Data for small geographic areas

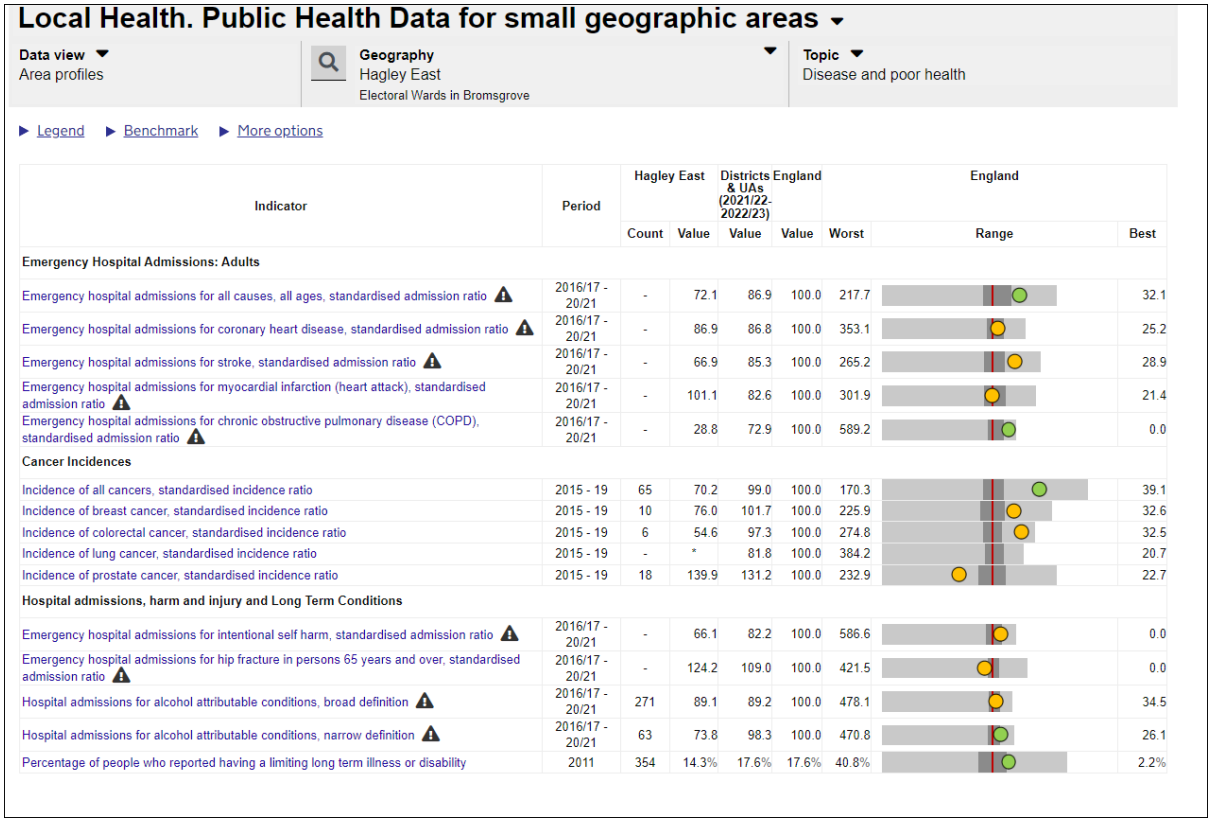
Data view: Area profiles | Geography: Hagley East, Electoral Wards in Bromsgrove | Topic: Behavioural risk factors and child health

Legend | Benchmark | More options

Indicator	Period	Hagley East		Districts & UAs (2021/22-2022/23)	England	England		
		Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
Behavioural risk factors								
Smoking prevalence at age 15. Regular smokers (modelled estimates)	2014	3	7.2%*	6.3%*	5.4%*	20.1%		0.0%
Smoking prevalence at age 15. Regular or occasional smokers (modelled estimates)	2014	4	10.3%*	9.4%*	8.2%*	19.4%		0.0%
Reception: Prevalence of obesity (including severe obesity), 3-years data combined	2019/20 - 21/22	-	*	7.4%*	9.9%	21.6%		2.6%
Reception: Prevalence of overweight (including obesity), 3-years data combined	2019/20 - 21/22	-	*	19.1%*	22.6%	42.9%		6.9%
Year 6: Prevalence of obesity (including severe obesity), 3-years data combined	2019/20 - 21/22	-	13.3%*	17.1%*	21.6%	40.0%		4.2%
Year 6: Prevalence of overweight (including obesity), 3-years data combined	2019/20 - 21/22	-	26.7%*	29.5%*	35.8%	58.3%		8.0%
Child and Maternal Health								
Deliveries (births) to teenage mothers, 5 year pooled data	2016/17 - 20/21	0	0.0%	0.4%	0.7%	-	*Insufficient number of values for a spine chart*	-
General fertility rate, live births per 1,000 women aged 15 to 44 years. Five year pooled	2016 - 20	171	66.9	59.0	59.2	2.8		134.7
Low birth weight (LBW) of live babies, five year pooled	2016 - 20	10	5.8%	7.3%	6.8%	17.9%		1.3%
Children and Young people: Health care use								
Emergency hospital admissions in under 5 years old, crude rate	2016/17 - 20/21	55	77.9	110.8	140.7	393.5		22.0
Emergency hospital admissions for injuries in under 5 years old, crude rate	2016/17 - 20/21	-	*	96.9	119.3	473.9		0.0
Emergency hospital admissions for injuries in under 15 years old, crude rate	2016/17 - 20/21	25	66.4	83.0	92.0	251.8		22.9
Emergency hospital admissions for injuries in 15 to 24 years old, crude rate	2016/17 - 20/21	20	138.0	101.7	127.9	733.3		19.7

Poor health issues for the adult population include high rates of hospital admissions for alcohol-attributable conditions. Cancers are low compared to other areas, though prostate cancer is higher. Data shows figures for intentional self-harm resulting in emergency hospital admission and hip fractures are higher than the rest of the Bromsgrove District.

Emergency Admissions, cancer rates, hospital admissions, self-harm and long-term conditions



Local Health. Public Health Data for small geographic areas

Data view: Area profiles | Geography: Hagley East, Electoral Wards in Bromsgrove | Topic: Disease and poor health

▶ Legend ▶ Benchmark ▶ More options

Indicator	Period	Hagley East		Districts & UAs (2021/22-2022/23) England		England		
		Count	Value	Value	Value	Worst	Range	Best
Emergency Hospital Admissions: Adults								
Emergency hospital admissions for all causes, all ages, standardised admission ratio ⚠	2016/17 - 20/21	-	72.1	86.9	100.0	217.7		32.1
Emergency hospital admissions for coronary heart disease, standardised admission ratio ⚠	2016/17 - 20/21	-	86.9	86.8	100.0	353.1		25.2
Emergency hospital admissions for stroke, standardised admission ratio ⚠	2016/17 - 20/21	-	66.9	85.3	100.0	265.2		28.9
Emergency hospital admissions for myocardial infarction (heart attack), standardised admission ratio ⚠	2016/17 - 20/21	-	101.1	82.6	100.0	301.9		21.4
Emergency hospital admissions for chronic obstructive pulmonary disease (COPD), standardised admission ratio ⚠	2016/17 - 20/21	-	28.8	72.9	100.0	589.2		0.0
Cancer Incidences								
Incidence of all cancers, standardised incidence ratio	2015 - 19	65	70.2	99.0	100.0	170.3		39.1
Incidence of breast cancer, standardised incidence ratio	2015 - 19	10	76.0	101.7	100.0	225.9		32.6
Incidence of colorectal cancer, standardised incidence ratio	2015 - 19	6	54.6	97.3	100.0	274.8		32.5
Incidence of lung cancer, standardised incidence ratio	2015 - 19	-	*	81.8	100.0	384.2		20.7
Incidence of prostate cancer, standardised incidence ratio	2015 - 19	18	139.9	131.2	100.0	232.9		22.7
Hospital admissions, harm and injury and Long Term Conditions								
Emergency hospital admissions for intentional self harm, standardised admission ratio ⚠	2016/17 - 20/21	-	66.1	82.2	100.0	586.6		0.0
Emergency hospital admissions for hip fracture in persons 65 years and over, standardised admission ratio ⚠	2016/17 - 20/21	-	124.2	109.0	100.0	421.5		0.0
Hospital admissions for alcohol attributable conditions, broad definition ⚠	2016/17 - 20/21	271	89.1	89.2	100.0	478.1		34.5
Hospital admissions for alcohol attributable conditions, narrow definition ⚠	2016/17 - 20/21	63	73.8	98.3	100.0	470.8		26.1
Percentage of people who reported having a limiting long term illness or disability	2011	354	14.3%	17.6%	17.6%	40.8%		2.2%

4.1% of residents in Hagley East are registered disabled .

Hagley West

Three thousand four hundred thirty-two people live in Hagley West. 22.9% are under 16, 7.7% are between 16 and 24, and 47.1% are 65 or older. Over 65 accounts for 22.3% of the population. Similar to Hagley East, the ward has a comparable population density to other wards in the district. Child poverty is 3.4%, and older people in poverty are 4.0%. Fuel poverty affects 9.9% of the population, and unemployment impacts 2.1%. Of those over the age of 65, 26.7% live alone.

Demographic Data for West Hagley

Local Health. Public Health Data for small geographic areas

Data view: Area profiles | Geography: Hagley West, Electoral Wards in Bromsgrove | Topic: Our community

▶ Legend ▶ Benchmark ▶ More options

Indicator	Period	Hagley West		Districts & UAs (2021/22-2022/23)	England	England		
		Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
Population								
Percentage of the total resident population who are 0 to 4 years of age (0-4 yrs)	2020	298	6.5%	5.2%	5.7%	0.2%		16.9%
Percentage of the total resident population who are 0 to 15 years of age	2020	1,055	22.9%	18.5%	19.2%	0.8%		36.7%
Percentage of the total resident population who are 5 to 15 years of age (5-15 yrs)	2020	757	16.4%	13.3%	13.5%	0.7%		23.1%
Percentage of the total resident population who are 16 to 24 years of age	2020	356	7.7%	8.2%	10.5%	3.8%		84.1%
Percentage of the total resident population who are 25 to 64 years of age	2020	2,176	47.1%	50.6%	51.8%	11.3%		75.0%
Percentage of the total resident population who are 50 to 64 years of age (50-64 yrs)	2020	834	18.1%	20.9%	19.2%	1.8%		33.8%
Percentage of the total resident population who are 65 and over	2020	1,029	22.3%	22.7%	18.5%	0.9%		56.9%
Percentage of the total resident population aged 85 and over	2020	147	3.2%	3.4%	2.5%	0.0%		12.8%
Population density, people per square kilometre	2020	3,432	1,243	464	434	5		29,993
Ethnicity & Language								
Percentage of population whose ethnic group is not 'white'	2011	212	5.6%	4.2%	14.6%	0.0%		93.7%
Percentage of population whose ethnicity is not 'White UK'	2011	291	7.7%	6.4%	20.2%	0.5%		96.5%
The percentage of people that cannot speak English well or at all, 2011	2011	2	0.1%	0.2%	1.7%	0.0%		22.1%
Deprivation, Housing, and living environment								
Index of Multiple Deprivation (IMD) Score	2019	-	3.7	11.7	21.7	1.7		87.1
Income deprivation, English Indices of Deprivation	2019	116	3.7%	7.3%	12.9%	50.7%		0.7%
Child Poverty, Income deprivation affecting children index (IDACI)	2019	21	3.4%	9.5%	17.1%	63.4%		0.6%
Older people in poverty, income deprivation affecting older people Index (IDAOPI)	2019	39	4.0%	8.2%	14.2%	77.2%		1.2%
Modelled estimates of the proportion of households in fuel poverty (%)	2020	133	9.9%	11.7%	13.2%	45.6%		2.5%
Households with overcrowding based on overall room occupancy levels	2011	23	1.5%	3.0%	8.7%	54.4%		0.2%
Older people living alone, Percentage of people aged 65 and over who are living alone	2011	250	26.7%	26.9%	31.5%	63.3%		10.0%
Employment								
Unemployment (Percentage of the working age population claiming out of work benefit)	2021/22	53	2.1%*	3.4%*	5.0%*	23.4%		0.1%
Long-Term Unemployment. Rate per 1,000 working age population	2021/22	0	0.0*	1.8*	1.9*	14.7		0.0

Children's Health Data

Local Health. Public Health Data for small geographic areas

Data view: Area profiles | Geography: Hagley West, Electoral Wards in Bromsgrove | Topic: Behavioural risk factors and child health

▶ Legend ▶ Benchmark ▶ More options

Indicator	Period	Hagley West		Districts & UAs (2021/22-2022/23)	England	England		
		Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
Behavioural risk factors								
Smoking prevalence at age 15. Regular smokers (modelled estimates)	2014	3	7.4%*	6.3%*	5.4%*	20.1%		0.0%
Smoking prevalence at age 15. Regular or occasional smokers (modelled estimates)	2014	4	10.9%*	9.4%*	8.2%*	19.4%		0.0%
Reception: Prevalence of obesity (including severe obesity), 3-years data combined	2019/20 - 21/22	-	9.5%*	7.4%*	9.9%	21.6%		2.6%
Reception: Prevalence of overweight (including obesity), 3-years data combined	2019/20 - 21/22	-	19.0%*	19.1%*	22.6%	42.9%		6.9%
Year 6: Prevalence of obesity (including severe obesity), 3-years data combined	2019/20 - 21/22	-	10.7%*	17.1%*	21.6%	40.0%		4.2%
Year 6: Prevalence of overweight (including obesity), 3-years data combined	2019/20 - 21/22	-	25.0%*	29.5%*	35.8%	58.3%		8.0%
Child and Maternal Health								
Deliveries (births) to teenage mothers, 5 year pooled data	2016/17 - 20/21	0	0.0%	0.4%	0.7%	-	*Insufficient number of values for a spine chart*	-
General fertility rate, live births per 1,000 women aged 15 to 44 years. Five year pooled	2016 - 20	119	49.8	59.0	59.2	2.8		134.7
Low birth weight (LBW) of live babies, five year pooled	2016 - 20	13	10.9%	7.3%	6.8%	17.9%		1.3%
Children and Young people: Health care use								
Emergency hospital admissions in under 5 years old, crude rate	2016/17 - 20/21	50	87.3	110.8	140.7	393.5		22.0
Emergency hospital admissions for injuries in under 5 years old, crude rate	2016/17 - 20/21	-	*	96.9	119.3	473.9		0.0
Emergency hospital admissions for injuries in under 15 years old, crude rate	2016/17 - 20/21	20	60.8	83.0	92.0	251.8		22.9
Emergency hospital admissions for injuries in 15 to 24 years old, crude rate	2016/17 - 20/21	15	94.9	101.7	127.9	733.3		19.7

Obesity rates for children in West Hagley, measured against Bromsgrove.

Children's weight indicators, %, 2017 to 2018, to 2019 to 2020.		
There have been data collection issues related to lockdown between 2019 to 2020 , please see metadata for details		
Indicators	Hagley West	Bromsgrove(LTLA 2021)
Reception: Prevalence of overweight (including obesity) (%)	15.8	19.6
Reception: Prevalence of obesity (including severe obesity) (%)	10.5	7.4
Year 6: Prevalence of overweight (including obesity) (%)	26.7	28.8
Year 6: Prevalence of obesity (including severe obesity) (%)	13.3	16.3
Source: National Child Measurement Programme (NCMP), NHS Digital		

Hagley West Smoking prevalence compared to England

Smoking prevalence, %, 2014. (Modelled estimates)			
Indicators	Hagley West	England	
Smoking prevalence at 15 years, Regular	7.4	5.4	
Smoking prevalence at 15 years, Regular or Occasional	10.9	8.2	
Source: Department of Geography, University of Portsmouth and Department of Geography and Environment, University of Southampton; Mid year population estimates, Office for National Statistics.			

Similar to Hagley East, the area has a lower fertility rate compared to the District and England, and 10.9% of babies are born with low birth weight.

Table Low Birth Weight is Higher than Bromsgrove and also Higher than the English average.

Child and maternal health, %		
Deliveries to teen mothers, 2016 to 2017, to 2020 to 2021, Fertility rate and Low birth weight, 2016 to 2020		
Indicators	Hagley West	Bromsgrove(LTLA 2021)
Deliveries to teenage mothers (%)	0	0.4
Low birth weight of live babies (%)	10.9	7.3
General fertility rate: live births per 1000 women aged 15 to 44 years (%)	49.8	59
Source: Hospital Episode Statistics (HES), NHS Digital, Office for National Statistics (ONS)		

Incidence of breast, colorectal, and prostate cancers is higher than District data, and though not as high as Hagley East, alcohol-attributable conditions remain a factor. 14.2% of people in West Hagley are registered disabled. Life expectancy is reasonable, differing from Hagley East in that it is longer for women than for men, and mortality rates are lower than those across the district.

Mortality Rates

Local Health. Public Health Data for small geographic areas

Data view
Area profiles

Geography
Hagley West
Electoral Wards in Bromsgrove

Topic
Life expectancy and causes of death

Legend | Benchmark | More options

Indicator	Period	Hagley West		Districts & UAs (2021/22-2022/23)	England	England		
		Count	Value	Value	Value	Worst	Range	Best
Life Expectancy								
Life expectancy at birth, upper age band 90 and over (Male)	2016 - 20	-	82.3	80.6	79.5	67.2		94.1
Life expectancy at birth, upper age band 90 and over (Female)	2016 - 20	-	87.1	83.9	83.2	71.8		95.4
Mortality								
Deaths from all causes, all ages, standardised mortality ratio	2016 - 20	214	81.9	95.4	100.0	258.2		38.3
Deaths from all causes, under 75 years, standardised mortality ratio	2016 - 20	36	55.9	80.2	100.0	299.3		31.0
Deaths from all cancer, all ages, standardised mortality ratio	2016 - 20	52	76.9	93.6	100.0	205.3		39.9
Deaths from all cancer, under 75 years, standardised mortality ratio	2016 - 20	18	72.3	88.0	100.0	246.4		0.0
Deaths from circulatory disease, all ages, standardised mortality ratio	2016 - 20	49	76.7	81.5	100.0	241.3		20.5
Deaths from circulatory disease, under 75 years, standardised mortality ratio	2016 - 20	7	50.5	72.1	100.0	332.5		0.0
Deaths from coronary heart disease, all ages, standardised mortality ratio	2016 - 20	15	56.3	71.6	100.0	293.8		0.0
Deaths from stroke, all ages, standardised mortality ratio	2016 - 20	11	71.8	89.4	100.0	388.6		0.0
Deaths from respiratory diseases, all ages, standardised mortality ratio	2016 - 20	27	77.6	90.9	100.0	331.1		14.1
Deaths from causes considered preventable, under 75 years, standardised mortality ratio	2016 - 20	16	54.3	72.1	100.0	357.7		16.8

Appendix C: Climate Impact Report



centre for sustainable energy

Carbon Footprint Report:

Hagley Civil

parish

01/04/2025

Your Footprint Report

Welcome to your carbon footprint report!

This report tells you about your community's carbon[1] footprint – both the scale of emissions and the main activities responsible for the emissions. This information comes from Impact – an online community carbon footprint calculator: https://impacttool.org.uk/.

The tool was developed by the Centre for Sustainable Energy and the University of Exeter, initially to make carbon footprinting at parish level possible. Since its inception a number of improvements have been made, including the ability to look at different-sized geographical areas.

Your report shows both 'consumption based' and 'territorial' emissions, and also shows how your footprint compares with the district average and the national average.

[1] A 'carbon' footprint, includes carbon dioxide as well as other gases which impact the climate.

It shows your ‘territorial’ and ‘consumption’ footprints.

There are two ways of viewing a community’s carbon footprint: territorial-based, or consumption-based.

Territorial footprints consider the emissions produced within a geographical boundary – such as from heating buildings, transport, industry, and agriculture – regardless of whether the residents within the community are engaged in or demand those activities. For example, if a factory lies within the boundary of a local authority, then regardless of whether what is produced in the factory is consumed locally or exported to other parts of the country (or world), the factory’s emissions would still be counted as part of that local authority’s territorial footprint. A territorial footprint is largely created by taking national and local authority datasets and cutting these down to the local geography in as accurate a way as possible.

A consumption footprint captures all the emissions produced from the activities that the area’s residents engage in, regardless of where geographically they occur. For example, emissions resulting from the food they eat, the clothes and household items they buy, the leisure activities they engage in, their travel behaviours, and the heating of their homes. The consumption-based footprint is based on household and address-level data, which is then aggregated up to the community level (rather than cutting down from a higher geography as with the territorial approach).

Apples and pears.

Showing both territorial and consumption footprints gives you useful information, but it is important to recognise that the two footprints cannot be directly compared as they look at the question of 'where do our emissions come from' in different ways, using different methods, and with different datasets.

Take your footprint as a guide, not as complete fact.

The carbon footprints are modelled, drawing on data from more than 30 datasets (some of which are themselves made up of multiple further datasets!). As with all models, decisions have been taken in terms of what data is used, and how the data is 'cut' and analysed. The Impact footprints have been developed with the intention that they are as useful as possible, but remember to take them as a guide, not as complete fact.

If you would like more detail about the method and datasets, please read the Impact methodology paper: https://impact-tool.org.uk/static/doc/Impact-methodology-paperv2.2.pdf.

You can also download the raw data here: https://impact-tool.org.uk/download

How does knowing our carbon footprint help us tackle climate change?

Footprint information can guide us to where we should target our efforts to reduce emissions and have the greatest impact. To help you think about what to do next with your footprint information, in each section of this report there are change targets for reaching net zero, and some questions to help you think about possible areas for action.

Note that these footprints are intended to raise awareness and improve understanding of the types of activities which contribute to emissions in any given area in order to stimulate individual and collective action. Local Authorities may well have carried out their own analysis and have made climate emergency declarations, drafted action plans, set out policies or be delivering schemes. We hope that the Impact tool can be used to complement this activity.

Your Community's Consumption Footprint

Your whole footprint

This figure shows the annual carbon emissions (measured in tonnes CO_2e[2]) emitted as a result of the different activities that residents within your parish's boundary engage in – from heating to eating.

[2] CO_2e stands for "carbon dioxide equivalent" and is a standard unit of measurement in carbon accounting. It expresses the impact of a number of different gases collectively as a common unit.

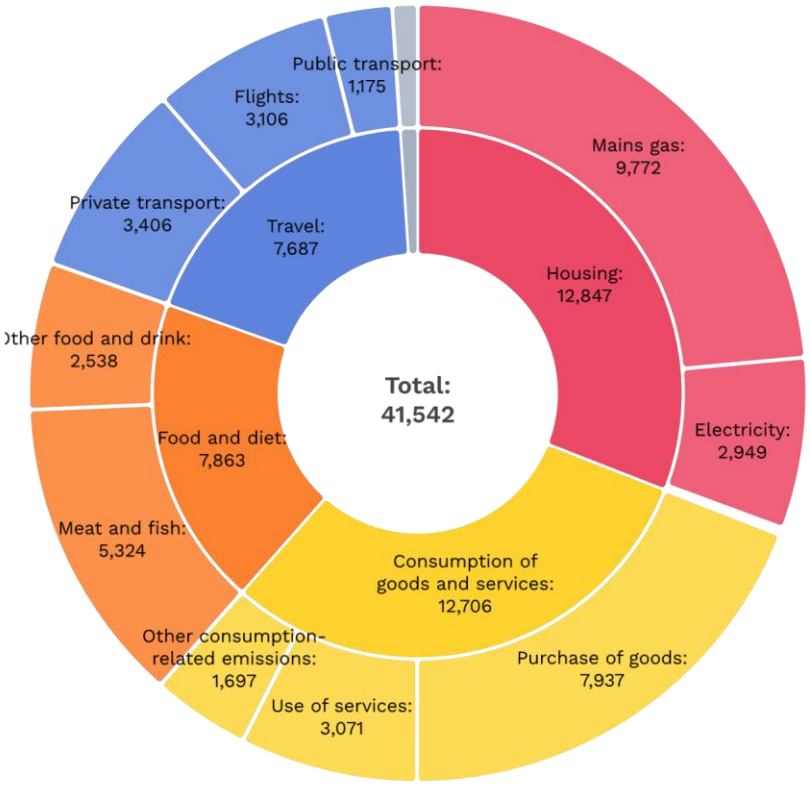
Housing
Emissions resulting from residents' use of energy in their homes.

Food and diet
Emissions resulting from the consumption of food and drink products by residents.

Travel
Emissions resulting from the transport choices & behaviours of residents.

Waste
Emissions resulting from the management of waste generated by residents.

Consumption of goods and services
Emissions resulting from the purchase of goods and the use of services by residents.



Goods – all hou sehold goods (not food), including homeware, toiletries, medicines, furnishings, electronic goods, appliances, & large items such as cars.

Services – use of services, including the maintenance and repair of home, vehicles and other equipment, banking and insurance, medical services, treatments, education costs, communications (e.g. TV, internet and phone contracts), and other fees and subscriptions.

Other – leisure, entertainment, sporting or social activities.

A breakdown of the numbers

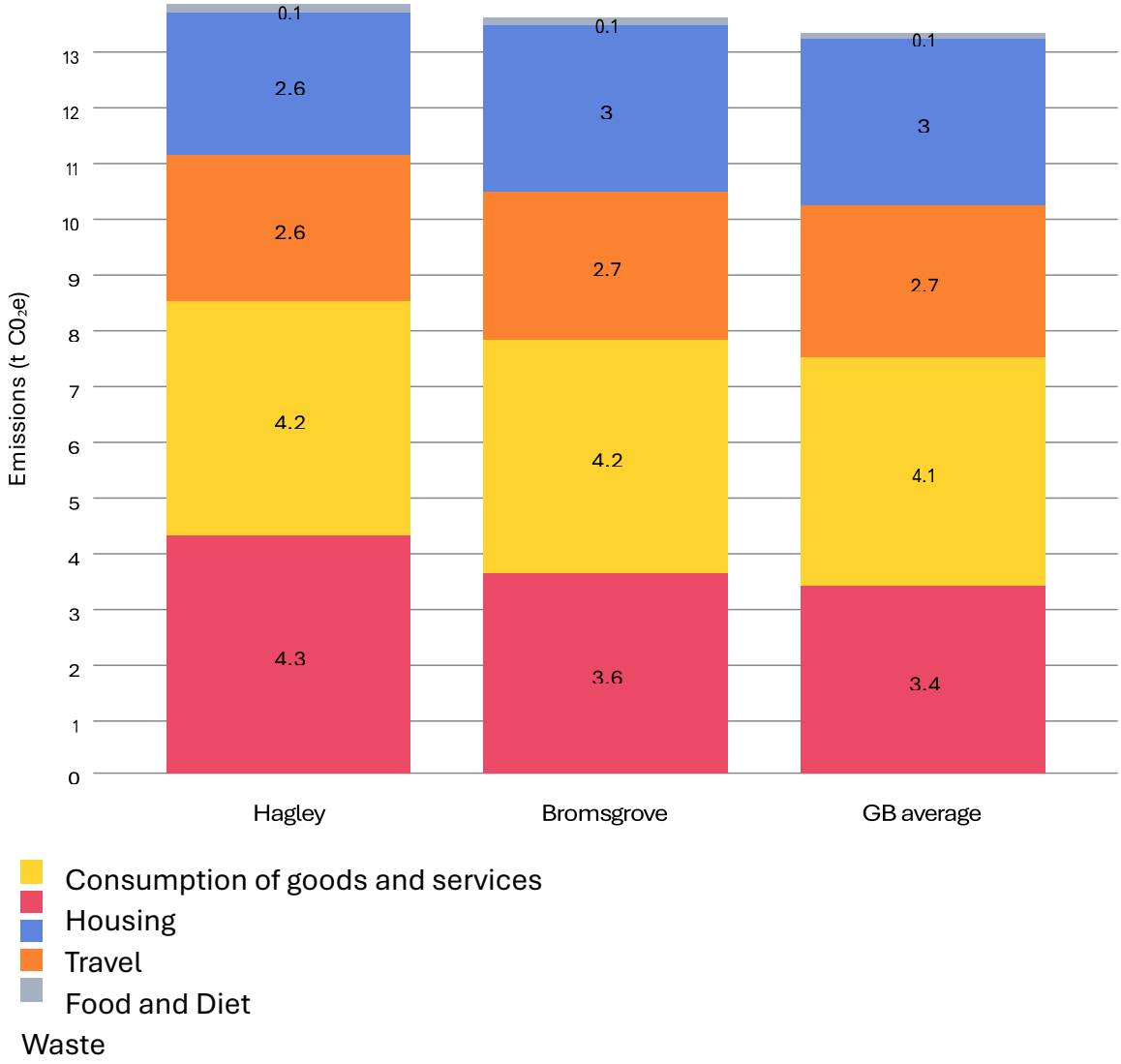
The table below shows your area's consumption footprint – total estimated emissions and per-household averages – so that you can see a breakdown of the numbers.

	Total emissions (t CO_2e)	Per-household emissions (t CO_2e)	%
Total emissions	**41,542**	**14**	**100**
Housing	12,847	4.3	31
Consumption of goods and services	12,706	4.2	31
Food and diet	7,863	2.6	19
Travel	7,687	2.6	19
Waste	439	0.1	1

How does your area compare?

Here is what the average consumption footprint for your area looks like per household, and how this compares with the district average and the national average. Note that

these per household footprints are averages. Within a larger (e.g. local authority) area you may have neighbourhoods with very different per household consumption footprints and it will be worth looking at more granular data if you are planning area-specific initiatives or messaging.



Housing

Change targets:

- Hugely reduced energy demand from existing buildings, including heritage and older buildings
- Smarter and more flexible energy demand patterns, including uses of batteries for excess renewable energy to be stored for later use
- Decarbonised heat generation (this means using heat that has not been generated from fossil fuels e.g. instead is generated by a heat pump)
- New buildings and developments achieve net zero emissions (including associated new transport)

Your community's residents' use of energy in their homes results in annual carbon emissions per household of 4.3 t CO_2e. This compares with 3.6 t CO_2e at the district level and 3.4 t CO_2e at the national level. In the average UK home, 64% of energy is used for space heating, 17% for heating water, 16% for lighting and appliances, and 3% for cooking[3]. As such a large proportion of household energy is used for heating, the type of heating system (i.e. is it low carbon?), and how well the home retains heat, are critical factors shaping the scale of a home's emissions. How well a home retains heat depends on anumber of factors, including: when and how it was built; how much insulation has been installed; how draughty the home is; the efficiency of the windows; and the behaviour of the residents.

Carbon footprints covering a large geographical area will encompass a range of smaller communities with different housing types and demographics. This will influence the types of activities which are most likely to be successful and have the greatest impact in terms of reducing emissions from housing.

Below are some questions to help you to start to think about the implications of your community's household footprint information.

- How does your community's household energy use compare with the the district and national averages? What might the reasons be for the differences?
- What type of housing is there in your community? And what is the main heating fuel (oil, gas, electricity, etc.)?
- Is the housing easily retrofitted to improve how well it retains heat and install low carbon heating? Do you know if residents are doing this? Are there already initiatives to increase demand and encourage and support residents to take action?

3 Energy facts from: Energy consumption in the UK, BEIS (January 2021)

- What opportunities are there to retrofit community buildings?
- Many homes, public and commercial buildings have an Energy Performance Certificate (EPC) which measures the energy efficiency of the property. You can look at the EPCs of the buildings in your community here: https://epc.opendatacommunities.org

- Could you identify homes and buildings where the residents / owners have already made improvements, and showcase these – for example with an event?
- Have you explored local potential for renewable energy generation schemes, such as a solar farm, rooftop solar, or wind? Could a community owned (or jointly owned) initiative be possible?
- Are there opportunities to shift households, community buildings and businesses in your area onto green energy tariffs, where energy is generated from renewable sources?

Transport

Change targets:

- Reduced private car travel and a comparable increase in active travel (walking and cycling) and public transport use
- A complete shift to electric vehicles for remaining road mileage, after shifting a large proportion of private car journeys to other modes (public transport/active travel)
- Massively reduced air travel, particularly among frequent flyers

Car use: Residents' car use results in annual carbon emissions per household of 1.1 t CO_2e. This compares with 1.4 t CO_2e at the district level and 1.4 t CO_2e at the national level.

Air travel: Residents' air travel results in annual carbon emissions per household of 1 t CO_2e. This compares with 1.1 t CO_2e at the district level and 1.1 t CO_2e at the national level.

Public transport: Residents' use of public transport results in annual carbon emissions per household of 0.4 t CO_2e. This compares with 0.4 t CO_2e at the district level and 0.4 t CO_2e at the national level.

Below are some questions to help you start thinking about the implications of your community's transport footprint information.

- How do your community's car use-related emissions compare to public transport emissions? And how do these both compare with the district and national averages? What might the reasons be for the differences?
- Could existing or new community schemes help residents shift their transport behaviours to using public transport (if this is a choice) or more active travel options (e.g. electric bike hire or subsidised purchase schemes)? How could the impact of local initiatives be increased?
- Is there scope more strategically to influence provision of public transport (e.g. routes, frequency, fares, subsidies, low carbon fleets)?
- What is the provision of walking and cycling routes like? How accessible are local service centres and facilities to residents in different neighbourhoods? Is it possible for most households to access what they need without needing to use a car?
- What do you think are the key reasons for air travel in your community? Are there likely to be differences between residents of different neighbourhoods? It is worth noting that about 10% of England's population take more than half of all international flights – so trying to address 'frequent flying' is a good way to target any activities or communications campaign.

Food & diet

Change targets:

- Altered dietary patterns, especially reduced meat and dairy consumption, and a massive reduction in food waste
- Widely adopted land management practices that reduce emissions, increase soil carbon and protect and promote biodiversity

Meat and fish: Residents' consumption of meat and fish results in annual carbon emissions per household of 1.8 t CO_2e. This compares with 1.8 t CO_2e at the district level and 1.9 t CO_2e at the national level.

Other food and drink items: Residents' consumption of other food and drink items results in annual carbon emissions per household of 0.8 t CO_2e. This compares with 0.8 t CO_2e at the district level and 0.9 t CO_2e at the national level.

So, where do the emissions from our food actually come from? Without understanding this it can be difficult to know what we can do to change the carbon footprint of what we eat and drink.

Research shows us that changing **what** we eat will have a greater impact on carbon emissions than changing **where** our food has travelled from – although, of course, eating locally-produced food brings multiple other benefits such as supporting local economies, having more control over mandating more ethical and environmentally-beneficial growing practices, and creating opportunities for people to understand better where the food they eat comes from and how it's grown or made.

Whilst the emissions from a food item can vary depending on how it is grown or reared, it is clear that animal products, and most significantly beef and lamb, account for the largest proportion of food-related emissions. Explore the BBC's Climate Change Food Calculator to understand better how food and drink items compare: https://www.bbc.com/future/bespoke/follow-the-food/calculate-the-environmentalfootprint-of-your-food.html[3].

Below are some questions to help you start thinking about the implications of your community's food and diet footprint information.

- How do your community's food and diet-related emissions compare with the district and national averages?
- Could you establish or support a behavioural change campaign to encourage people to reduce the amount of meat and dairy they consume? (Any community-based activity or communications campaigns around dietary changes must be sensitive to concerns about farmers' livelihoods and people's cultural and traditional links to meat-eating).
- The amount of food wasted 'post-farm-gate' in the UK is equivalent to 22% of food purchased. What initiatives could raise awareness about food waste and encourage unwanted food to be redistributed (e.g. through a 'community fridge')?

Goods& services

Changetargets:

- Decarbonisedpower generation (this meansusing electricitythat does not come from fossilfuels e.g. insteadis generated from solarpanels)
- Hugely altered consumptionpatterns, buying lessand re-using& repairing more

Goods & services: Residents' consumption of goods and use of services results in annual carbon emissions per household of 4.2 t CO_2e. This compares with 4.2 t CO_2e at the district level and 4.1 t CO_2e at the national level.

4 For further information, you can also read this Our World in Data (Oxford University) study:

https://ourworldindata.org/food-choice-vs-eating-local

All goods that we buy will have had carbon emitted in their making (including the sourcing of raw materials), packaging, shipping and sale. Without clear carbon labelling, it is difficult to know the scale of emissions resulting from each item, but it is clear that with every new product made, more carbon is emitted (and more resources are extracted and sourced – which itself can have huge environmental and social impacts). Reducing how many new goods we buy in the first place is the best place to start in terms of reducing goods-related emissions; and then of course re-using and repairing items where goods are needed.

Carbon emissions from the services we use will relate to the energy used by that service provider (e.g. heating in a leisure centre, pub or hospital), as well as the carbon emitted as a result of goods they buy and use (e.g. gym equipment, vehicle repair machinery).

Here are some questions to help you to consider ways to reduce emissions attributable to goods and services:

- How do your community's goods and services-related emissions compare with the district and national average? What might the reasons be for the differences?
- Are there opportunities to: grow the second-hand market; enable residents to upcycle and repair household items; share larger/more expensive/rarely used items, such as power tools?
- Are there opportunities to encourage businesses to switch to green energy tariffs (where energy is generated from renewable sources), or to support local businesses who want to reduce their emissions (e.g. with cargo bike deliveries to replace vans; energy efficiency improvements to buildings to reduce heat demand; low carbon procurement policies; local sourcing and carbon-conscious materials?

Waste

Change targets:

- Greatly increased recycling rates, achieving a 'circular economy', and taking unnecessary plastics and other packaging out of the waste stream.
- Widespread, actively managed and planned carbon capture and storage strategies.

Waste: The management of residents' waste results in annual carbon emissions per household of 0.15 t CO_2e. (Emissions associated with waste management are distributed out evenly across the population.)

The waste 'wedge' in your carbon footprint may look small, but remember that emissions from the management of garbage only represent a small fraction of the total

emissions associated with every item that ends up in our bins or recycling boxes. So, reducing waste in the first place is critical.

> - What sort of messaging could be effective in helping to reduce the amount of waste being generated (e.g. avoiding plastic packaging, water bottle refills, home composting)?
> - What initiatives are likely to be popular (e.g. local food boxes, repair cafes, swap shops)?

Your whole footprint

This figure shows the annual carbon emissions (measured in tonnes) emitted as a result of activities taking place within your parish's boundary.

While these figures should give you a reasonable indication of the significant sources of emissions within your parish's boundary, they should be taken with a small pinch of salt, as some sectors are difficult to apportion territorially. For example, emissions from international shipping are calculated for the whole country and apportioned to each parish based on its population. For more information, see the Impact methodology paper.

Road Transport
Emissions from road vehicles within your parish.

Housing
Emissions from domestic energy consumption.

Aviation

Industrial and Commercial
Emissions from Industrial Processes and Energy Consumption.

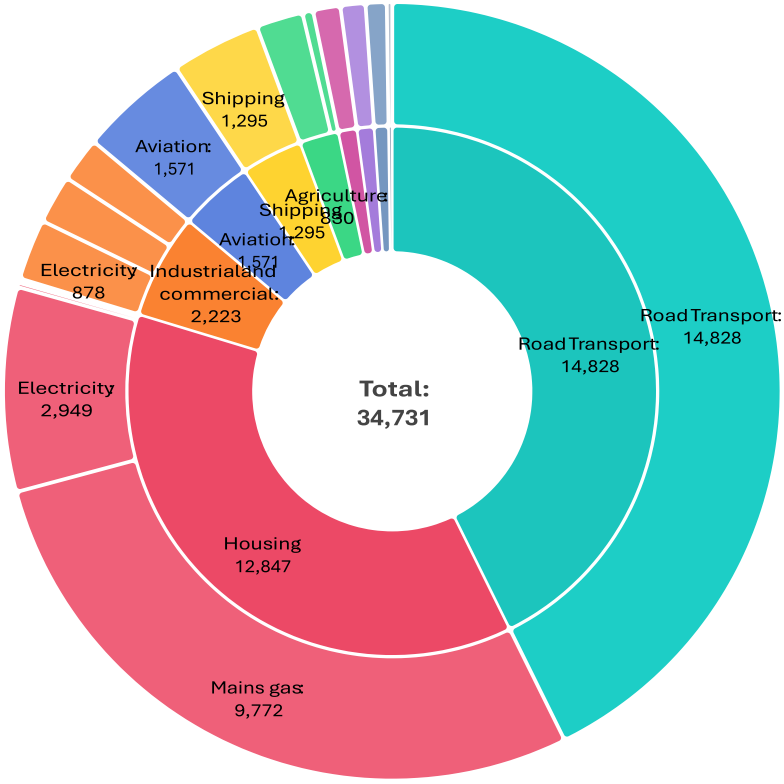
Shipping
Emissions from international shipping.

F-gases
Release of 'f-gases' into the atmosphere.

Waste management

Diesel-fuelled railways

Other Transport



Agriculture

> Emissions from livestock, crops, agricultural vehicles and machinery.

A breakdown of the numbers

The table below shows your parish's territorial footprint – total and per-household averages – so that you can see a breakdown of the numbers.

	Total emissions (t CO_2e)	Per-household emissions (t CO_2e)	%
Total emissions	**34,731**	**14**	**100**
Road Transport	14,828	6	
	43		
Housing	12,847	5.2	
	37		
Main gas	9,772	4	
28			
Electricity	2,949	1.2	
8			
Oil	61	< 0.1	
< 1			
Coal	35	< 0.1	
< 1			
Biomass	16	< 0.1	
< 1			
LPG	13	< 0.1	
< 1			
Industrial and commercial	2,223	0.9	
	6		
Electricity	878	0.4	
3			
Main gas	701	0.3	
2			
Other Fuels	644	0.3	
2			
Large industrial consumers	0	< 0.1	
< 1			
Aviation	1,571	0.6	
	5		
Shipping	1,295	0.5	
	4		
Agriculture	830	0.3	
	2		
Livestock and crop-related emissions	676	0.3	
2			

Fuel	154	0.1
< 1		
Other Transport	394	0.2
	1	
F-gases	360	0.1
	1	
Diesel-fuelled railways	303	0.1
	1	
Waste management	79	< 0.1
	< 1	

Below are some questions to help you start thinking about the implications of your community's territorial footprint information.

- Are there particular sectors which account for a high proportion of the territorial emissions in your community?
- Based on your knowledge, are these sectors surprising, or are they what you would expect?
- Who are the key stakeholders you would need to engage with to address the emissions from the highest emitting sectors?
- For example, for agricultural emissions, can you engage with local landowners or the NFU/other farmer groups to understand what is happening in your area to reduce emissions from agriculture? For industrial and commercial emissions, are there ways that businesses could be supported in reducing their emissions? For road transport, what changes would be needed to improve public and active travel links?

Sources of information

There are numerous sources of support and information on how to reduce carbon footprints – too many to list here. Here is an introductory range of resources that we hope will help you take your next steps now that you know your carbon footprint. Most of these contain many other links relevant to the topic under discussion:

CSE resources

- Support for town and parish councils: https://www.cse.org.uk/my-community/support-for-town-and-parish-councils
- Future Energy Landscapes: a community consultation method to start a conversation about renewables in your area: https://www.cse.org.uk/my-community/community-projects/future-energylandscapes-community-consultation-method
- Community Retrofit Guide: https://www.cse.org.uk/resource/community-retrofit-guide
- Funding for your community project or building: https://www.cse.org.uk/resource/funding-for-your-community-project-or-building-2
- Climate action support for town and parish councils: https://www.cse.org.uk/my-community/support-for-town-and-parish-councils
- Home energy factsheets: https://www.cse.org.uk/resource/home-energy-fact-sheets
- Neighbourhood Planning in a Climate Emergency guide: https://www.cse.org.uk/my-community/engagement-planning/neighbourhood-plans

Engaging and communicating

- Britain Talks Climate is an evidence-based toolkit designed to support any organisation that wants to engage the British public on climate change: https://climateoutreach.org/britain-talks-climate/
- Place the standard tool. This is an engagement tool developed by Public Health Scotland that provides a simple framework to structure conversations about place, based around 14 questions. There is also a climate-focused version of the tool. https://www.ourplace.scot/About-Place-Standard

Other resources

- The National Association for Local Councils has also produced a list of case studies of local councils doing work on the climate emergency: https://www.nalc.gov.uk/library/our-work/climate-change/3297-climate-changecase-studies/file
- Ashden Trust, tools for councils: https://ashden.org/sustainable-towns-cities/tools-for-councils
- The Community Works, offering links to expert advice on local change and climate action: https://www.thecommunityworks.co.uk
- Hubbub, climate action resources: https://hubbub.org.uk
- Possible, climate action resources and case studies: https://www.wearepossible.org
- Community Energy England: https://communityenergyengland.org

Appendix D: Native Plants

Benefits of using Native Plants

Wildflower Gardens	**Pollinator Habitats** • Attract local pollinators like bees and butterflies and provide essential nectar and pollen resources for survival. • Seasonal Interest Offers a range of colours throughout the seasons, enhancing visual appeal and providing continuous food sources for wildlife. • Many native plants produce berries and seeds that serve as food for various wildlife species, including birds and small mammals. • Native shrubs and trees offer suitable nesting sites for birds and small mammals, protecting them from predators and harsh weather conditions.
Native Plant Gardens	• Low-maintenance landscapes. Native species require less water, fertiliser, and maintenance than non-native species, making them sustainable for residential and public gardens. • Biodiversity Enhancement. Incorporating diverse native species supports local wildlife and promotes biodiversity, thereby creating habitats for a wide range of fauna. • Native plants attract beneficial insects, contributing to pollination and pest control, supporting a healthy food web. • Native plants are more resilient to local pests and diseases, which helps stabilise ecosystems and reduce the need for chemical interventions. • Deep root systems of native plants improve soil health, promoting nutrient cycling and water retention.
Buffer Zones	• Riparian Buffers. Create buffer zones along waterways that protect water quality by filtering pollutants and providing habitats for aquatic life. • Windbreaks. Native shrubs and trees act as effective windbreaks, protecting vulnerable plants and soil from erosion.

Appendix E: Notable Species with Conservation Status (Acronyms in Glossary)

Common Name	Scientific Name	Status
Common Toad	Bufo bufo	WCA NERC s.41 UKBAP
Smooth Newt	Lissotriton vulgaris	WCA
Common Frog	Rana temporaria	WCA
Skylark	Alauda arvensis	NERC s.41 Bird:Red
Kingfisher	Alcedo atthis	WCA
Corn Bunting	Emberiza calandra	Bird: Red
Yellowhammer	Emberiza citrinella	NERC s.41 UKBAP Bird:Red
Herring Gull	Larus argentatus	Bird: Red
Linnet	Linaria cannabina	Bird: Red
Common Crossbill	Loxia curvirostra	WCA
Red Kite	Milvus milvus	WCA
House Sparrow	Passer domesticus	NERC s.41 UKBAP Bird:Red
Song Thrush	Turdus philomelos	Bird: Red
Lapwing	Vanellus vanellus	NERC s.41 UKBAP Bird:Red
Silver Hair-grass	Aira caryophyllea	Locally Nb
Early Hair-grass	Aira praecox	Locally Nb
Hard Fern	Blechnum spicant	Locally Nb
Clustered Bellflower	Campanula glomerata	Locally Nb
Large Bitter-cress	Cardamine amara	Locally Nb
Spring Sedge	Carex caryophyllea	Locally Nb
Prickly Sedge	Carex muricata ssp. lamprocarpa	Locally Nb
Common Sedge	Carex nigra	Locally Nb
Pale Sedge	Carex pallescens	Locally Nb
Carnation Sedge	Carex panicea	Locally Nb
Greater Tussock-sedge	Carex paniculata	Locally Nb
Cyperus Sedge	Carex pseudocyperus	Locally Nb
Hornbeam	Carpinus betulus	Locally Nb
Rigid Hornwort	Ceratophyllum demersum	Locally Nb
Corn Marigold	Chrysanthemum segetum	Locally Nb
Lily of The Valley	Convallaria majalis	Locally Nb
Heath-grass	Danthonia decumbens	Locally Nb
Wavy Hair-grass	Deschampsia flexuosa	Locally Nb
a buckler-fern	Dryopteris affinis ssp. affinis	Locally Nb
Narrow Buckler-fern	Dryopteris carthusiana	Locally Nb
Marsh Willowherb	Epilobium palustre	Locally Nb
Violet Helleborine	Epipactis purpurata	Locally Nb
Water Horsetail	Equisetum fluviatile	Locally Nb

Common Cudweed	Filago vulgaris	Locally Nb
Fritillary	Fritillaria meleagris	Nationally Scarce
Heath Bedstraw	Galium saxatile	Locally Nb
Bluebell	Hyacinthoides non-scripta	WCA
Bristle Club-rush	Isolepis setacea	Locally Nb
Toothwort	Lathraea squamaria	Locally Nb
Sticky Catchfly	Lychnis viscaria	Nationally Scarce
Blinks	Montia fontana	Locally Nb
Mat-grass	Nardus stricta	Locally Nb
Trailing Tormentil	Potentilla anglica	Locally Nb
Reflexed Saltmarsh-Grass	Puccinellia distans	Locally Nb
Pond Water-crowfoot	Ranunculus peltatus	Locally Nb
Almond Willow	Salix triandra	Locally Nb
Great Burnet	Sanguisorba officinalis	Locally Nb
Rue-Leaved Saxifrage	Saxifraga tridactylites	Locally Nb
Wood Club-rush	Scirpus sylvaticus	Locally Nb
Orpine	Sedum telephium	Locally Nb
Heath Groundsel	Senecio sylvaticus	Locally Nb
Wild Thyme	Thymus polytrichus	Locally Nb
Large-Leaved Lime	Tilia platyphyllos	Locally Nb Nationally Scarce
Hare's-foot Clover	Trifolium arvense	Locally Nb
Western Gorse	Ulex gallii	Locally Nb
Navelwort	Umbilicus rupestris	Locally Nb
Black-Headed Cardinal Beetle	Pyrochroa coccinea	Notable B
Scaphidema metallicum	Scaphidema metallicum	Notable B
Small Heath	Coenonympha pamphilus	NERC s.41 UKBAP
Wall	Lasiommata megera	NERC s.41 UKBAP
Grizzled Skipper	Pyrgus malvae	NERC s.41 UKBAP WorcBAP
Grey Dagger	Acronicta psi	NERC s.41 UKBAP
Knot Grass	Acronicta rumicis	NERC s.41 UKBAP
Brown-spot Pinion	Agrochola litura	NERC s.41 UKBAP
Brown-Spot Pinion	Agrochola litura	NERC s.41 UKBAP
Beaded Chestnut	Agrochola lychnidis	NERC s.41 UKBAP
Large Nutmeg	Apamea anceps	NERC s.41 UKBAP
Dusky Brocade	Apamea remissa	NERC s.41 UKBAP
Garden Tiger	Arctia caja	NERC s.41 UKBAP
Centre-Barred Sallow	Atethmia centrago	NERC s.41 UKBAP
Minor Shoulder-Knot	Brachylomia viminalis	NERC s.41 UKBAP
Mottled Rustic	Caradrina morpheus	NERC s.41 UKBAP
Broom Moth	Ceramica pisi	NERC s.41 UKBAP
Latticed Heath	Chiasmia clathrata	NERC s.41 UKBAP
Small Square-Spot	Diarsia rubi	NERC s.41 UKBAP

Oak Hook-Tip	Drepana binaria	NERC s.41 UKBAP
Small Phoenix	Ecliptopera silaceata	NERC s.41 UKBAP
Dusky Thorn	Ennomos fuscantaria	NERC s.41 UKBAP
Autumnal Rustic	Eugnorisma glareosa	NERC s.41 UKBAP
Ghost Moth	Hepialus humuli subsp. humuli	NERC s.41 UKBAP
Rustic	Hoplodrina blanda	NERC s.41 UKBAP
Shoulder-striped Wainscot	Leucania comma	NERC s.41 UKBAP
Brindled Beauty	Lycia hirtaria	NERC s.41 UKBAP
Dot Moth	Melanchra persicariae	NERC s.41 UKBAP
Shoulder-Striped Wainscot	Mythimna comma	NERC s.41 UKBAP
Powdered Quaker	Orthosia gracilis	NERC s.41 UKBAP
Autumnal Rustic	Paradiarsia glareosa	NERC s.41 UKBAP
Autumnal Rustic	Paradiarsia glareosa subsp. glareosa	NERC s.41 UKBAP
Shaded Broad-Bar	Scotopteryx chenopodiata	NERC s.41 UKBAP
Latticed Heath	Semiothisa clathrata	NERC s.41 UKBAP
White Ermine	Spilosoma lubricipeda	NERC s.41 UKBAP
Buff Ermine	Spilosoma lutea	NERC s.41 UKBAP
Feathered Gothic	Tholera decimalis	NERC s.41 UKBAP
Blood-Vein	Timandra comae	NERC s.41 UKBAP
Cinnabar	Tyria jacobaeae	NERC s.41 UKBAP
Sallow	Xanthia icteritia	NERC s.41 UKBAP
Dark-barred Twin-spot Carpet	Xanthorhoe ferrugata	NERC s.41 UKBAP
Banded General	Stratiomys potamida	Notable
Hedgehog	Erinaceus europaeus	NERC s.41 UKBAP
Brown Hare	Lepus europaeus	NERC s.41 UKBAP
Badger	Meles meles	PBA
Polecat	Mustela putorius	NERC s.41 UKBAP
Pipistrelle sp.	Pipistrellus	WCA NERC s.41 UKBAP ECH4 WorcBAP
Brown Long-eared Bat	Plecotus auritus	WCA NERC s.41 UKBAP ECH4 WorcBAP

(list from Worcestershire Biological Records)

Common Name	Scientific Name	Status
Common Toad	Bufo bufo	WCA NERC s.41 UKBAP
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Common Frog	Rana temporaria	WCA
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Herring Gull	Larus argentatus	Bird: Red
Linnet	Linaria cannabina	Bird: Red
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Heath Bedstraw	Galium saxatile	Locally Nb
Bluebell	Hyacinthoides non-scripta	WCA
Bristle Club-rush	Isolepis setacea	Locally Nb
Toothwort	Lathraea squamaria	Locally Nb
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Trailing Tormentil	Potentilla anglica	Locally Nb

Reflexed Saltmarsh-Grass	Puccinellia distans	Locally Nb
Pond Water-crowfoot	Ranunculus peltatus	Locally Nb
Almond Willow	Salix triandra	Locally Nb
Great Burnet	Sanguisorba officinalis	Locally Nb
Rue-Leaved Saxifrage	Saxifraga tridactylites	Locally Nb
Wood Club-rush	Scirpus sylvaticus	Locally Nb
Orpine	Sedum telephium	Locally Nb
Heath Groundsel	Senecio sylvaticus	Locally Nb
Wild Thyme	Thymus polytrichus	Locally Nb
Large-Leaved Lime	Tilia platyphyllos	Locally Nb Nationally Scarce
Hare's-foot Clover	Trifolium arvense	Locally Nb
Western Gorse	Ulex gallii	Locally Nb
Navelwort	Umbilicus rupestris	Locally Nb
Black-Headed Cardinal Beetle	Pyrochroa coccinea	Notable B
Scaphidema metallicum	Scaphidema metallicum	Notable B
Small Heath	Coenonympha pamphilus	NERC s.41 UKBAP

Appendix F: Data Sources

- Worcestershire Biological Records Centre
- DEFRA Biodiversity Metric 4.0
- Worcestershire Landscape Character Assessment (2013)
- Natural England Habitat Network Maps
- Worcestershire Pollinator Strategy (2020)
- Hagley Parish Ecological Surveys

Appendix G: Legal Frameworks

Environment Act 2021
- National Planning Policy Framework (NPPF)
- Wildlife and Countryside Act 1981
- Conservation of Habitats and Species Regulations 2017
- Biodiversity Duty for Public Bodies
- Hedgerows Regulations 1997

Appendix H: Tools and Technologies Used

- DEFRA Biodiversity Metric 4.0
- QGIS for habitat mapping
- iNaturalist and Merlin for species identification
- Drone aerial surveys for inaccessible terrain
- Smart sensors for climate monitoring
- Natural Capital Accounting Frameworks

Appendix I: Stakeholder Directory and Engagement Plans

- Hagley Parish Council
- Worcestershire County Council (Environment & Planning)
- Bromsgrove District Council
- Worcestershire Wildlife Trust
- Natural Networks Project
- Hagley Primary School, Scouts, and Duke of Edinburgh participants
- Local landowners and community groups
- Volunteer citizen science networks

Appendix J: Wychbury Hill Yew Tree Survey Report (edited by Dr L Hill, 2025, from Tim Hill's report, 2013)

Date of Survey: 27th September 2001

Location: Wychbury Hill, Worcestershire (starting grid reference SO9205581800)Introduction

Wychbury Hill is home to a rare and significant grove of ancient yew trees, some of which may be over a thousand years old. This site holds botanical importance and spiritual significance, often attracting local visitors and pagan gatherings. However, a lack of protection and increased human activity have led to the degradation and loss of many ancient specimens.

Tree Survey Summary

Tree Number	Location	Description	Girth	Notes
1	Steep bank	Deeply fluted trunk with character	14'	The limb extends above the slope
2	Steep slope	Young and likely recently established	nan	None noted
3	Steep slope	Young and likely recently established	nan	None noted
Stump before 4	Near path	Hollow trunk with visible burn damage	11 3''	None noted
4	Close to the path	nan	11 8''	None noted
5	Below 4	Tall, straight, single-trunked form	nan	Inaccessible
6	Enclosed area	Fluted trunk with regenerating new wood	13 11''	Broken/died branches to 15'
7	Enclosed area	Charred stump with signs of regrowth	nan	Hints of new growth
8	Steep slope	Tall yew with pronounced trunk grooves	10/12'	The limb extends above the slope
9	Ditch	Fluted with a notably elegant trunk	16 11''	Many vertical branches
11	nan	Tall trunk forming upright growth	10'	Divides into upright growth

12	nan	Grooved trunk structure	nan	Large limbs broken off
13	Over path	Fractured structure forming a natural arch	nan	Forms archway, visible roots
14	nan	Topped at height with new emerging growth	nan	New growth from 12'
15	Slope	Young and likely recently established	nan	A fallen tree into it
16	nan	Badly burned, retaining a thin bark layer	13 5''	Single branch rising, burnt
17	nan	Young yew	nan	None noted
18	nan	The trunk divides into two large branches	13 7''	The branch dips to the ground
19	Near path	Sturdy trunk with hidden hollowness	9 9''	Hollow sound at the limb joint
20	20m from the path	Essentially hollow with minimal bark cover	15 11''	Badly burnt, felled in 2002
21	nan	Trunk swells before branching	10 8''	Above the height of the branches
22	Centre of the path	Lifeless tree with retained trunk	10 11''	None noted
23	30m into the enclosure	Partially dead with vigorous regrowth	11'	Branches to the ground
24	Ditch	Strong trunk with fluting and upright limbs	15 2''	Fire damage
25	Ditch	Split trunk, fire-used hollow with live growth	15 8''	Fire use, new growth from embedded branches

Observations

- Fire damage was observed in several trees, particularly affecting older and more hollow specimens.

- Some trees show signs of recovery or regeneration, such as new shoots or embedded branches giving rise to new growth.
- A few trees were noted for their exceptional size and character, with the most considerable recorded girth being nearly 17 feet.
- Sadly, some significant yews observed in previous centuries no longer exist due to fire, decay, or felling.

Appendix K: Original Ecological Surveys – Churchill and Blakedown Valleys, Bogs Wood, Wassell Grove, Hagley Wood, Clent Hills

SITE No: SO87/25

SITE NAME	**CHURCHILL AND BLAKEDOWN VALLEYS**
NATIONAL GRID REFERENCE	SO879789
LINEAR SITE LIMITS (if appropriate)	North SO 896799, South SO865780
DATE OF LISTING	28.09.1990
DISTRICT COUNCIL(s)	Wyre Forest, Bromsgrove.
PARISH	Hagley, Clent, Churchill and Blakedown, Broome
TOTAL AREA	46.6 ha
LENGTH IF LINEAR	7.3 km
LWS HABITAT	Open Water – flowing & standing, Woodland, Grassland
NATIONAL BAP HABITATS	Rivers and Streams, Lowland Acid Grassland, Wet Woodland
OTHER HABITATS OF IMPORTANCE	N/A
NATIONAL BAP SPECIES	Otter
OTHER SPECIES OF IMPORTANCE	Kingfisher, Nodding Bur-marigold, Greater Tussock Sedge

GENERAL DESCRIPTION

This is a complex site consisting of narrow wetland habitats following about 7 kilometres of brook valley around the villages of Blakedown and Churchill. The brooks are frequently impounded and the valleys contain a number of old mill pools, the largest being Ladies Pool. The most conspicuous aquatic community within this water body is yellow water-lily community (A8), which forms three large beds in the pool. In addition there are stands of reedbed (S4) and areas of swamp and tall herb fen. The majority of the pool delta has been colonised by a grey willow woodland most typical of the W1 wet woodland community. Other woodland communities here are dominated either by alder or pedunculate oak.

Churchill Pool holds less aquatic and emergent flora than Ladies Pool but has significant stands of wet willow and alder woodland around its margin, often with a very wet ground layer containing some open pools caused by wind-thrown trees. The wet woodland communities here are considered to be amongst the best in the County.

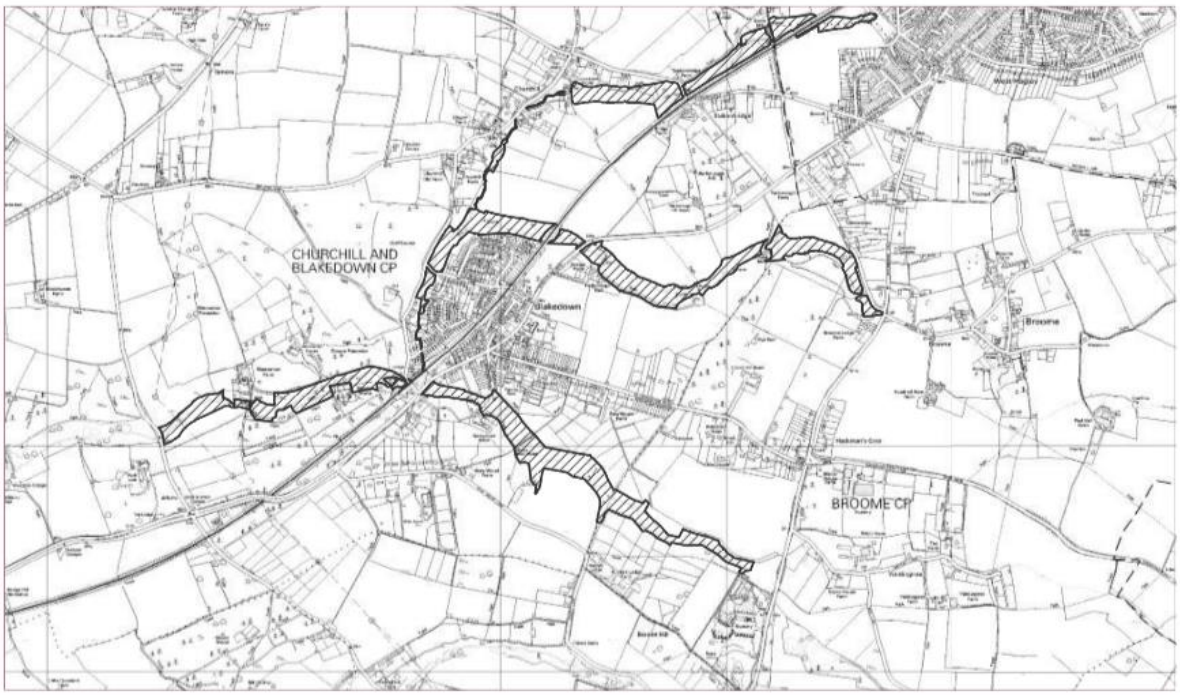
Other pools in the complex have suffered from drying out as a result of past over-abstraction from the catchment. However in places some of their wetland interest remains, or has been partially restored through pumped water supply (as at Windmill Pool). In spite of the damage the overall pool complex still provides a significant wildlife corridor, which is further enhanced by additional areas of high quality wet woodland such as that at Wannerton Carr and dry habitats, most notably acid grasslands, which key into the wider landscape.

Otters are known to use the brook corridors and pools.

Churchill and Blakedown Valleys

Do not scale from map. For accurate plan refer to GIS.

Scale 1:20000



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SITE No: SO98/01

SITE NAME	CLENT HILLS
NATIONAL GRID REFERENCE	SO933801
LINEAR SITE LIMITS (if appropriate)	N/A
DATE OF LISTING	21.07.2008
DISTRICT COUNCIL(s)	Bromsgrove District Council
PARISH	Clent Hagley
TOTAL AREA	162.56 ha
LENGTH IF LINEAR	N/A
LWS HABITAT	Grassland, Lowland Heath, Scrub, Flush Mires
NATIONAL BAP HABITATS	0ak/ash woodland (W10, W8) grassland (U1 U2 U20), rush mire (M23)
OTHER HABITATS OF IMPORTANCE	Coniferous woodland, secondary woodland, open water (flowing – springs)
NATIONAL BAP SPECIES	Fauna: Great Crested Newt (*Triturus cristatus*)
OTHER SPECIES OF IMPORTANCE	Heath bedstraw, sheep's sorrel, sand spurrey, western gorse, heath grass, mat grass, wood sage, yellow archangel, silver hairgrass, bilberry

GENERAL DESCRIPTION

The majority of the site lies on National Trust-owned land and much is also registered common land. Located across hill-tops – Clent hill, Adams hill (to 304m) and Walton hill (to 315m). These are prominent features in the landscape overlooking the Black Country and south-west Birmingham conurbations. Underlying geology is upper carboniferous coal measures (shales and sandstones) but the conical ridges of Clent and Walton Hill are formed of more resistant Clent breccias. This gives rise to mainly acidic soils and brown earths, but locally and where surface flushing and springs occur, there are basic influences.

Habitats/Vegetation Description:

Clent/Adams Hill Complex: the summit areas, which are rabbit grazed and well trampled by visitors are characterised by closed swards of unimproved acidic grassland. The sheep's fescue/common bent/heath bedstraw and wavy hair-grass i.e. National Vegetation Classification (NVC) types U1 and U2 – a national Biodiversity Action Plan priority habitat. Much of this area however is encroached by bracken, together with scattered scrub of birch, hawthorn, oak and occasional gorse. There is a small area of scrub-invaded unimproved neutral grassland of crested dog's tail/knapweed type (MG5c) at the SW Adams hill end of this sub-site.

The main habitat-type on the remainder of the Clent/Adams complex is semi-natural broadleaved woodland, with some mixed and plantation woodland. The natural; vegetation trend on this type of soil/slope profile is towards a W10 (oak/bramble.bracken) type – though all of it is secondary, having colonised neglected pastures over the past 150 years. Sycamore has become invasive in places.

The third main feature of importance is flushes pools and springs. Their botanical interest is generally modest, but they are of importance for invertebrates.

Walton Hill Complex: again the summit areas and around the triangulation point are characterised by short unimproved acidic grassland swards of U1 and U2 type -occasionally with mat grass and heath grass. But here the flat-topped summit has developed extensive western gorse heath (relict dwarf shrub heath of bilberry has been found suggesting true lowland heath origins). As on the Clent ridge, the slopes and valley sides are clothed in mainly secondary scrubby woodland with bracken/bramble/bluebell field layer. Some of this woodland may have originated from wood pasture in the 19thC when the commons were extensively grazed. Brink's and Hipkin's Coppice is a small dingle woodland following a stream. This is ash/field maple/dog' mercury (W8) – type woodland, and probably the only fragment of truly ancient woodland remaining within the Clents LWS.

Marshy Flushes occur, notably in fields at Irongate Cover and St Kenelm's Pass. These are rush pastures of soft rush/marsh bedstraw type (M23/MG10).

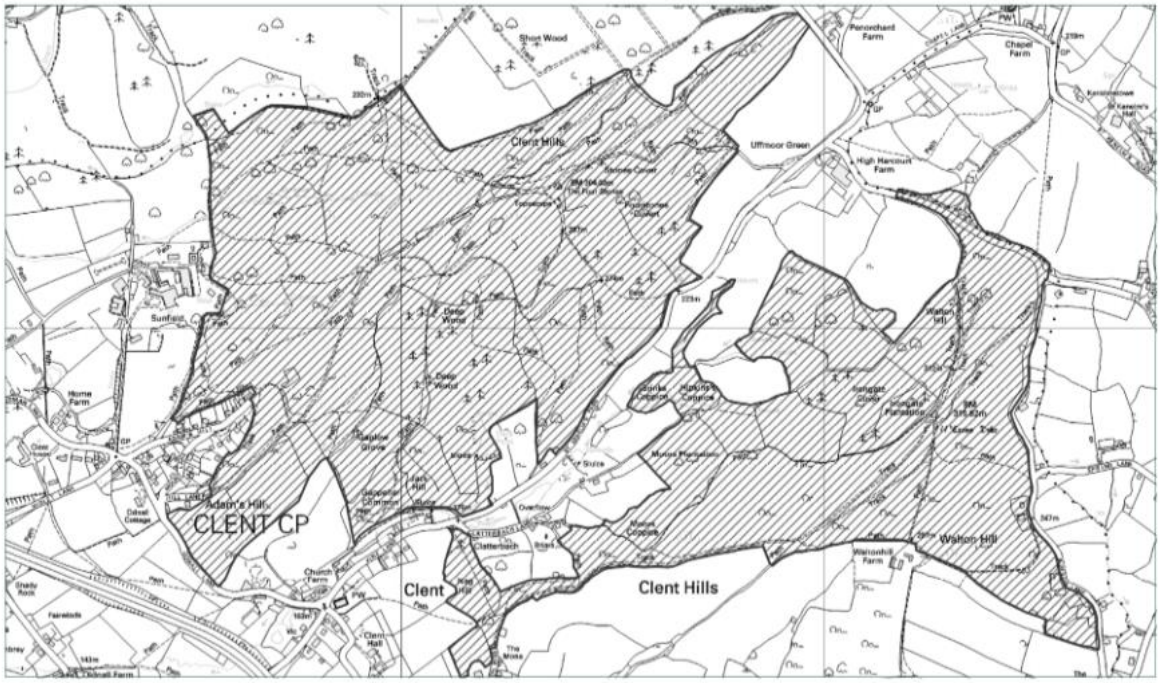
Flora and Fauna:

Species have been well documented within the site, most recently in 2007 surveys. Two notable plants are heath cudweed (*Gnaphalium sylvaticum*) and wood burdock (*Arctium minus ssp nemorosum*). The hills are of especial importance for invertebrate groups, notably mining bees of *Andrena* genus and solitary wasps – some of these are red data book. The Clents hold important populations of breeding and migratory birds, including willow warbler, linnet, meadow pipit, tree pipit and stonechat. Ring ouzel and redstart are regular spring passage birds and there are historical records of breeding for the latter species.

Clent Hills

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Scale 1:10500



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SITE No: SO98/02

SITE NAME	WASSELLGROVE DINGLE
NATIONAL GRID REFERENCE	SO935821
LINEAR SITE LIMITS (if appropriate)	N/A
DATE OF LISTING	25.07.2008
DISTRICT COUNCIL(s)	Bromsgrove District Council
PARISH	Clent Hagley.
TOTAL AREA	12.30 ha
LENGTH IF LINEAR	N/A
LWS HABITAT	Woodland
NATIONAL BAP HABITATS	Ash woodland (W8& W9) Oak woodland (W10) Alder woodland (W7)
OTHER HABITATS OF IMPORTANCE	Scrub, open water (standing & flowing) marshy grassland, tall-herb
NATIONAL BAP SPECIES	No information
OTHER SPECIES OF IMPORTANCE	Wych-elm, rowan, alder, guelder rose, woodruff, wood sorrel, soft shield fern, hart's-tongue fern, sanicle, bluebell, common valerian, giant horsetail

GENERAL DESCRIPTION

The site lies mostly within a golf course. This is the catchment of Lutley Gutter a north-east flowing brook which feeds into the West-Midlands River Stour. It is a complex of narrow steep sided often rocky, dingles, incised into upper coal measure clays sandstones and limestones, and supporting woods of ash, oak, beech, and wych elm over a well developed understorey containing rowan, hazel, blackthorn, elder, holly and hawthorn, and a luxuriant and diverse field layer. The site is shown on the NCC's (1986) Inventory of Ancient Woodland.

Habitats/Vegetation Description:

The three dingle arms – Wassellgrove (main) Dingle, Garratt Coppice and Turnpike Coppice all exhibit the characteristic vegetation types for the locality and the geology, that is:- the steeper talus slopes and part rocky faces running down into the gullies support a humid ashwood vegetation – mostly the ash/field maple/dog's mercury association or National Vegetation Classification (NVC) W8d/e/f types, respectively with a ground flora where ivy, or herb robert or ramsons (wild garlic) show prominence. However, there are anomalies here caused by sharp changes in terrain, geology and soils: First, The abundance of ferns, mosses/liverworts and the constancy of rowan in the canopy suggests transitions to a more north-western and Atlantic ashwood (W9). This would need to be confirmed through more detailed field survey and analysis; Second, dingle-side flushes and springs give rise to wet woodland associations of the alder/ash/yellow pimpernell (W7) type; and third, all along the dingle edges or 'shoulders', where soils have a more brown-earth, humic top and are slightly more acidic, there is a switch to a predominantly oak canopy with hawthorn understorey and bracken/bramble field layer. Species such as foxglove, creeping softgrass and greater stitchwort are also typical, though this woodland type is far less diverse, floristically. In these dingles, large mature beech trees are also a prominent and striking feature, clinging to the rock faces with their gnarled and twisted root systems. Other large specimen trees present include wild cherry, rowan, yew and aspen.

Other habitats included in this wildlife site are pools which are partly ornamental and incorporated within the golf-course as hazards, but support an interesting marginal and aquatic flora, including yellow iris, gypsywort and broad-leaved pondweed; and small fragments of species-rich grassland in the 'roughs' where common spotted orchid colonies occur.

Flora and Fauna:

Special flora to be found throughout the dingles includes broad-leaved helleborine (*Epipactis helleborine*), thin-spiked wood-sedge (*Carex strigosa*). Water avens (*Geum rivale*), a scarce species in Worcestershire is also recorded from here.

Bird species recorded 2008: nuthatch, treecreeper, goldcrest, blackcap, marsh tit and great spotted woodpecker. Otherwise, no recent data is available for other faunal groups.

Wassellgrove Dingle

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SITE No: SO98/03

SITE NAME	**HAGLEY WOOD**
NATIONAL GRID REFERENCE	SO936814
LINEAR SITE LIMITS (if appropriate)	N/A
DATE OF LISTING	14.08.2008
DISTRICT COUNCIL(s)	Bromsgrove District Council
PARISH	Hagley
TOTAL AREA	39.70 ha
LENGTH IF LINEAR	N/A
LWS HABITAT	Woodland
NATIONAL BAP HABITATS	Oak woodland (W10) alder/ash woodland ? (W7)
OTHER HABITATS OF IMPORTANCE	Scrub, grassland & marshy grassland, conifer/mixed plantation woodland
NATIONAL BAP SPECIES	No information
OTHER SPECIES OF IMPORTANCE	Oak, rowan, alder, hazel, wood sorrel, yellow pimpernell, bluebell, yellow archangel, lady fern, bugle, heath bedstraw, tormentil, corn mint.

GENERAL DESCRIPTION

An area of mixed plantation woodland adjoining Hagley Park Estate and the Clent Hills. The site is broadly rectangular and mostly on level ground though it slopes up to the Clent Hills ridges along its southern edge. Soils are heavy clays and brown earths over an underlying geology of sandstones, cornstones, red marls and spirorbis limestones of the upper coal measures.

Though planted in early-mid 20th century with conifers and ornamental deciduous species such as sweet chestnut, the site is actually longstanding semi-natural woodland and is shown on the NCC's (1986) Ancient Woodland Inventory.

Habitats/Vegetation Description:

The major part of the site comprises stands of well-spaced conifers of mixed species interspersed with native broadleaves, the wooded blocks being separated by wide rides. The Rhayader to Birmingham water pipeline crosses the centre of the site from west to east – this is open, locally marshy, grassland.

Though the flora under some of the conifer stands shows a generally low diversity, some more semi-natural field and ground layer flora of oakwood type - Oak/bramble/bracken or National Vegetation Classification (NVC) W10 can be found at the western and central part of the wood, and there are very local vegetational transitions to a damper woodland type – probably the alder/ash/yellow pimpernell (NVC: W7) association.

The main ride has a very varied flora along its length, switching between marshy rush pasture with sharp-flowered rush, Yorkshire fog, bog stitchwort and greater bird's-foot trefoil (MG10/M23), and locally species rich grassland (MG5c/U4) with tormentil, devils-bit scabious, common knapweed and heath bedstraw.

Other habitats include birch and sallow scrub within a block of cleared plantation to the north-east of the site – this provides important breeding territory for small songbirds such as willow warbler and garden warbler.

Flora and Fauna:

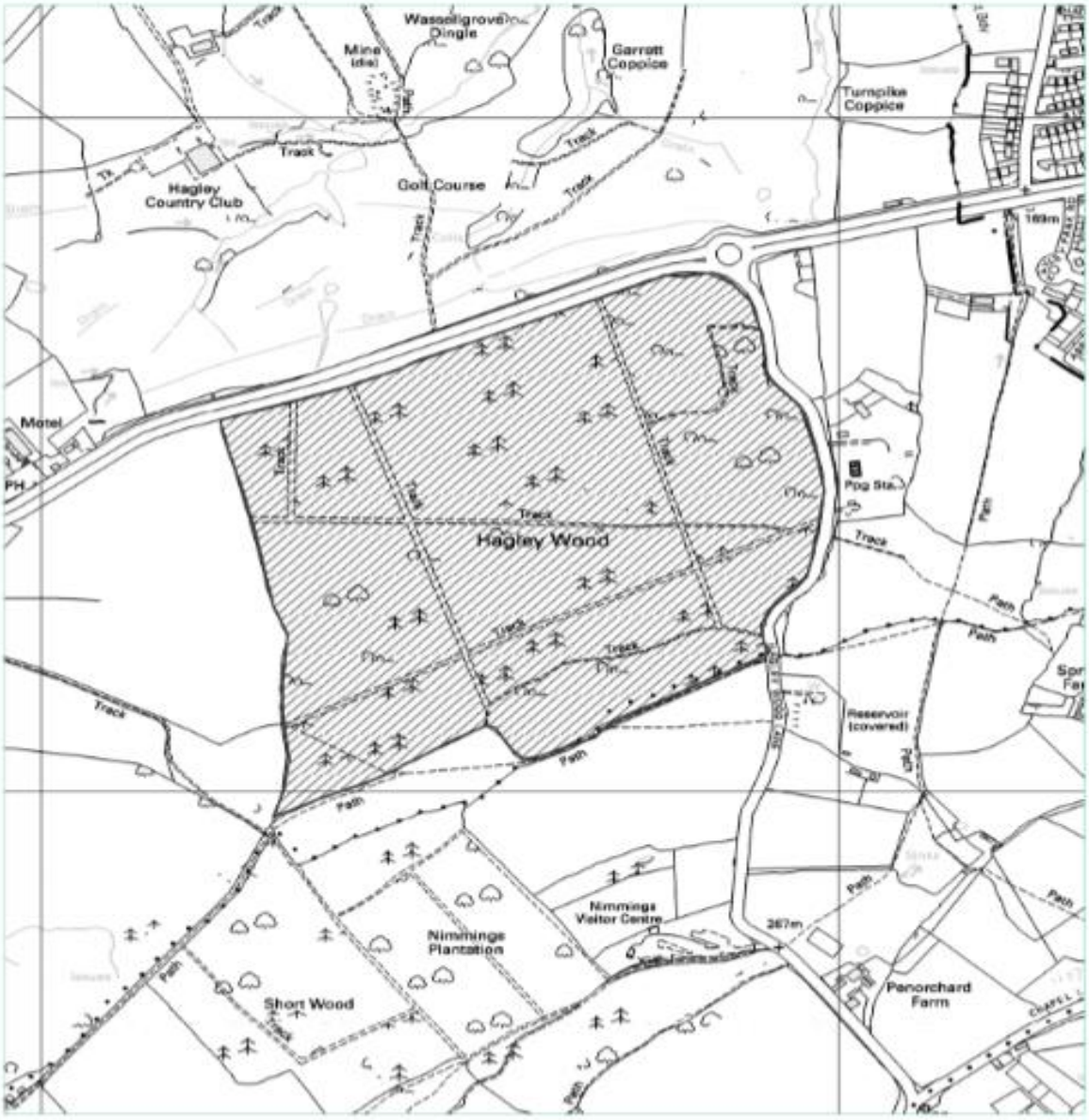
Special flora to be found throughout includes - [woodland]: twayblade (*Listera ovata*) toothwort (*Lathraea squamaria*) and guelder rose (*Viburnum opulus*); - [grassland]: pale sedge (*Carex pallescens*), lady's mantle (*Alchemilla filicaulis ssp. Vestita*), betony (*Stachys officinalis*), adder's-tongue fern (*Ophioglossum vulgatum*), ragged robin (*Lychnis flos-cuculi*).

An interesting range of bird species was recorded in 2008, including: sparrowhawk, nuthatch, goldcrest, blackcap, great spotted woodpecker, common crossbill, spotted flycatcher, willow warbler, garden warbler. Butterflies: ringlet, meadow brown, small skipper. Otherwise, no recent comprehensive data is available for faunal groups.

Hagley Wood

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SITE No: SO98/04

SITE NAME	**BOGS WOOD COMPLEX**
NATIONAL GRID REFERENCE	SO943813
LINEAR SITE LIMITS (if appropriate)	N/A
DATE OF LISTING	25.07.2008
DISTRICT COUNCIL(s)	Bromsgrove District Council
PARISH	Clent Hagley.
TOTAL AREA	10.09 ha
LENGTH IF LINEAR	N/A
LWS HABITAT	Grassland, Wet Woodland
NATIONAL BAP HABITATS	Ash alder woodland (W7)Oak woodland (W10) grassland (U1, U2,MG5c)
OTHER HABITATS OF IMPORTANCE	Scrub, marshy grassland, tall-herb
NATIONAL BAP SPECIES	No information
OTHER SPECIES OF IMPORTANCE	Marsh valerian common valerian, guelder rose, ragged robin, pignut, bristle club-rush, wavy hair-grass, mouse-ear hawkweed, lousewort

GENERAL DESCRIPTION

This is a split site. The northerly section at the foot of the Clent Hills and on the county boundary at Hayley Green/Halesowen is an area of damp and wet alder woodland with scrub, on flat terrain. Much of the woodland appears on the national Inventory of Semi-Natural Ancient Woodlands (NCC 1986). The southern section is located on the steep, north-facing slope of the Clent Hills and comprises acidic and neutral grassland grazed by horses. Though geographically separated, these two sections are ecologically linked by the Penorchard Meadows SSSI and Worcestershire Wildlife Trust nature reserve.

Habitats/Vegetation Description:

Wet Woodland Section: the primary habitat here is a type of alder/ash/yellow pimpernel woodland, approximating to a National Vegetation Classification (NVC) type W7 – damp but locally wet where there are flushes and springs. The canopy is for the most part dominated by over-stood alder coppice, but this grades in to mature ash/oak canopy in places, with a drier ground flora and holly, hawthorn hazel and rowan in the sub-canopy, suggesting transitions to a W10-type.

The ground flora is strikingly sedgey and rushy in places and tufted hair grass is prominent with an underlayer of mosses and liverworts. Fern flora is also locally luxuriant. The most botanically diverse areas occur in and around the flushed areas.

The edges of the wood include scrubbed over meadows – however these could be botanically more interesting, were grazing to be re-introduced.

Pasture Section: this sub-site comprises 2 paddocks and a grass-covered reservoir. The sward vegetation is unusual as it shows a marked transition between an acidic grassland vegetation along the eastern edge and an acid-neutral grassland towards the west of the site. There is evidence of a ridge-furrow terrain crossing the site transversely. The more acidic sward is dominated by a mix of sheep's fescue with common bent, but also locally wavy hair-grass and mat grass, with a very high abundance of tormentil and heath bedstraw. The neutral side of the dividing fence has colonies of common spotted orchid scattered amongst a rich vegetation of dogstail/knapweed type (or NVC MG5c). Some localised ground water movement is apparent – hence, growth of rushes and sedges.

Flora and Fauna:

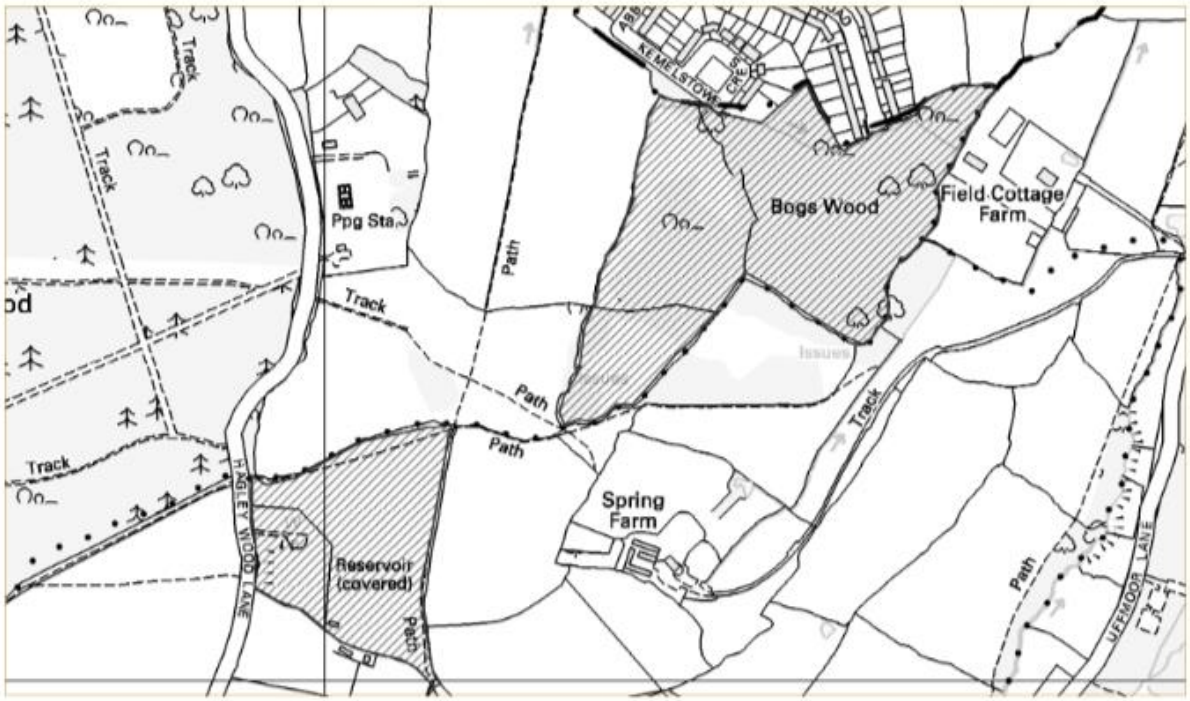
Special flora found in the wooded section includes thin-spiked wood-sedge (*Carex strigosa*) and marsh valerian (*Valeriana dioica*). Water avens (*Geum rivale*), a scarce species in Worcestershire is also found here. The pasture grassland has less common sedges including pill sedge (*Carex pilulifera*), common sedge (*C. nigra*) carnation sedge (*C. panicea*), also bristle club-rush (*Isolepis setacea*) heath-spotted orchid (*Dactylorhiza maculata*) and louse wort (*Pedicularis palustris*) occur. The more neutral grassland includes devil's-bit scabious (*Succisa pratensis*), and quaking grass (*Briza media*).

Bird species: nuthatch, treecreeper, marsh tit and great spotted woodpecker were recorded in 2008. Otherwise, no recent data is available for other faunal groups.

Bogs Wood Complex

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