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What is this document?

This document is a management plan for the land under the jurisdiction of the Malvern Hills Conservators (MHC). It provides information about the land management MHC will be delivering in the next five years and the reasons for it.

The document broadly follows the format recommended by the Countryside Management System consortium (Alexander, 2008). It provides this information in three parts; Part 1 takes a look at the framework in which MHC's work must sit, including the legislative drivers. It then describes the land under MHC's jurisdiction. Part 2 evaluates what has been described to help identify priorities before Part 3 clarifies what the goals are and how MHC will go about achieving them. The whole document should therefore provide a transparent link between theory and legislation, and the practical tasks undertaken on the ground.

It is a working document intended for those managing MHC land. But it will also be publicly available and may be of interest to anyone wishing to know how the Hills and Commons are managed and why. It should help to answer questions about the way in which our land is managed and inform you about works that may affect you in the near future. A shorter, public version will also be made available.

This management plan is the product of multiple consultations with the public, local groups, non-government organisations and public bodies, all of whom will play a role in delivering this plan.

This document does not cover the internal workings of the Board of Conservators nor MHC as an organisation. These are covered by the Malvern Hills Acts of Parliament and the MHC Business Plan.

The information in this plan has been made as accurate as possible using existing information. The document will be continuously updated.
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I.1 Introduction

1.1.1 Introduction to the Hills and Commons

“The long narrow ridge rising majestically from the plain and presenting a skyline unique in Britain” The Royal Commission

The Malvern Hills and Commons are an iconic and cherished landscape of England. Their geology, nature and past land uses by man have created a unique and varied place that today acts as a green space, habitat, aquifer, historical reference, vista and much, much more. It is a landscape that has inspired poets, artists and composers and plays an important part in thousands of people’s lives. The future aesthetics, character and quality of this landscape are dependent upon its users and its management. The management of this land is a complex balancing act, with many issues and stakeholders involved, but it is one that must be delivered for it is in the nation’s interest to do so.

1.1.2 Map of MHC jurisdiction – see Map 1.

1.1.3 A brief history of the Malvern Hills Conservators

The Malvern Hills Conservators were set up under Act of Parliament in 1884. This was a time when the nation was taking action to protect its landscapes, wildlife and heritage in the face of change. New legislation, the creation of clubs and societies, such as the Commons Preservation Society in 1865, and the establishment of national bodies such as the National Trust in 1895 and several Boards of Conservators across England and Wales, all played a part.

The Malvern Hills Act was a major achievement. Chiefly it established a right of access across the Hills and Commons for the public. Secondly, it created protective measures to prevent enclosure and encroachment upon common land, to protect the rights of commoners, and to manage the increase in tourism. The Act provided a Board of Conservators to manage and supervise the Malvern Hills in accordance with the provisions of the original and subsequent Acts.

Over the years the Board has employed staff to undertake practical work, warden the land and to advise the Board members. As the pressures on the Hills and Commons have increased, so too has the number of staff with 18 present today. While the goal is still the same the Conservators’ work of today takes place in a very different context to 130 years ago.
Map 1: land under MHC jurisdiction.
1.2 Setting

This section answers the question of ‘why are MHC here?’ It also gives information on the organisation and takes a quick look at how this land management plan relates to other relevant documents.

The Malvern Hills Conservators have an explicit reason for existing as defined in the unique legislation that creation them. Like many landowners, MHC are also subject to obligations from national law. Here follows a brief summary of the key legislative drivers behind the work of MHC (please follow the internet links for further information):

**The Malvern Hills Acts of Parliament**
The Conservators were established under the Malvern Hills Act 1884. There have been four subsequent Acts in 1909, 1924, 1930 and 1995. The Malvern Hills Acts were set up to protect the rights of Commoners and the public and to prevent encroachment on the Malvern Hills, lands and commons. Under these and other relevant Acts, the Malvern Hills Conservators shall manage the Hills to:

- Preserve the natural aspect
- Protect and manage trees, shrubs, turf and other vegetation
- Prevent unlawful digging and quarrying
- Keep the Hills open, unenclosed and unbuilt on as open spaces for the recreation and enjoyment of the public

These Acts apply to all MHC land. The full text of the Malvern Hills Acts of Parliament is available at the MHC office (Manor House, Grange Road, Malvern WR14 3EY) or online at: [http://www.malvernhills.org.uk/manage/acts_of_parliament.aspx](http://www.malvernhills.org.uk/manage/acts_of_parliament.aspx)

**Malvern Hills Conservators’ Vision for the Hills and Commons**
A long-term vision statement will be completed and added at the end of this management plan writing process.

**Area of Outstanding Natural Beauty (AONB)**
A large proportion (85%) of the MHC holding is within the Malvern Hills AONB. This designation means the landscape is of such high quality that it is in the interest of the nation to safeguard it. An AONB Joint Advisory Committee and staff work to conserve and enhance the natural beauty of the designated area. [www.malvernhillsaonb.org.uk](http://www.malvernhillsaonb.org.uk)

As a public body with land in the AONB, MHC has, under the National Parks and Access to the Countryside Act 1949, a statutory duty upon them. Specifically, the legislation states that, “in exercising or performing any functions in relation to, or so as to affect, land in these areas, relevant authorities shall have regard for the purposes of the AONB”. Relevant authorities are also expected to be able to demonstrate that they have fulfilled these duties.

As an AONB the International Union for the Conservation of Nature (IUCN) determines this landscape a Category 5 protected area:

‘A protected area where the interaction of people and nature over time has produced an area of distinct character with significant, ecological, biological, cultural and scenic value: and where
safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values’ (IUCN, 2014). As such the AONB area is of international importance.

Charities Act, 2011
The Malvern Hills Conservators are a registered charity (no. 515804) and are thus regulated by the Charity Commission.

Commons Acts (several) / Rights of Common
90% (1018 hectares) of MHC land is registered common land. This means MHC’s rights are subject to statutory control and the commoners’ interests. Commoners have a legal right to exercise their rights of common on common land (see Tenure).

Wildlife and Countryside Act, 1981
The Wildlife and Countryside Act is the primary legislation which protects animals, plants, and certain sites in the UK. This protection means that land management has to be done in a certain way in compliance with this Act.

This Act (as amended by the Countryside and Rights of Way Act (CROW), 2000) also places a duty upon public bodies with regard to Sites of Special Scientific Interest (SSSI). ‘The duty is to take reasonable steps, consistent with the proper exercise of the authority’s functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest (SSSI)’.

If MHC, as with any other SSSI landowner, fails to work towards favourable condition for the notified features of the SSSI land, they can be liable to enforced management and/or court action. Alternatively, the appropriate management would be organised by Natural England and the costs charged to MHC.

This duty applies to the two SSSIs that together cover a total of around 57% of MHC’s holding. The Malvern Hills SSSI was first notified in 1954 and the Castlemorton Common SSSI was first notified in 1955. Further information about these designations can be found at www.naturalengland.org.uk

Ancient Monuments and Archaeological Areas Act, 1979
‘This Act protects nationally important heritage assets by inclusion on the Schedule of Monuments, which regulates works to them through a consent procedure. To carry out works without consent is a criminal offence. English Heritage maintains and enhances the Schedule, provides advice and support for owners of monuments, provides advice to local planning authorities and manages the consent procedure’.
www.english-heritage.org.uk/caring/listing/scheduled-monuments

Occupier’s Liability Acts, 1957 and 1984
These Acts impose on MHC an obligation to ensure that every reasonable care is taken to remove any risk both to legitimate visitors and to trespassers. The duty of care does not apply to risks that adults willingly accept on behalf of themselves or those immediately in
their care. All infrastructure, bridges, boardwalks etc. must be maintained in a safe condition at all times. All visitors must be made aware of all natural hazards.

**Equality Act, 2010**
This Act requires public bodies to have due regard to the need to: *eliminate unlawful discrimination, harassment, victimisation and any other conduct prohibited by the Act; advance equality of opportunity between people who share a protected characteristic and people who do not share it; and foster good relations between people who share a protected characteristic and people who do not share it*.

This ‘ensures that public bodies consider the needs of all individuals in their day to day work – in shaping policy, in delivering services, and in relation to their own employees’. This process could involve making reasonable adjustments to meet the need of disabled people.

**Health and Safety at Work Act, 1974 & Regulations, 1999**
All operations carried out on this site must be in compliance with this act. This will include the completion of hazard identification, assessments and reviews, and specific activity risk assessments (generic or site specific) will be completed for all activities.

**Countryside and Rights of Way (Crow) Act, 2000**
The CROW Act introduced a public right of access on foot on areas of open country and registered common land across England. However, common land in the Conservators’ holding has a legal access right through the preceding Malvern Hills Acts. The Hills and Commons fall under Section 15 of the CROW Act because they are ‘an area with public access rights under a local or private Act, or under a scheme of regulation made under the Commons Act 1899’ therefore the CROW rights and restrictions do not apply and this land category is managed by ‘bylaws or other statutory controls’.

The CROW Act also brought relevant amendments to the Wildlife and Countryside Act.

There are many other pieces of legislation that affect the way in which MHC operates. For reference these include:

- Control of Substances Hazardous to Health Regulations 2002 (COSHH).
- Natural Environment and Rural Communities Act, 2006 Section 40 ‘The biodiversity duty’.
- Cross Compliance.

Government guidance through public policies and circulars at both central and local level is also received and enacted. Further information about these Acts and UK legislation can be found at: [www.legislation.gov.uk](http://www.legislation.gov.uk)
The management of the Hills and Commons also sits within a framework of the local government planning system. Key documents are:

1.3 Description of the Holding

This section provides basic information under various headings about all of the land under the jurisdiction of MHC. It aims to answer the question ‘what have we got?’ The description only includes statements of fact that will provide the basis for evaluation and decision making in Parts 2 and 3.

1.3.1 General Information

1.3.1.1 Location and site boundaries

See Map 1. The land under the jurisdiction of the Conservators is located in the English West Midlands region, within the counties of Worcestershire and Herefordshire. It totals 1200 hectares. Some land in Gloucestershire owned by a private estate is covered by a joint arrangement with MHC (see Tenure). MHC may acquire land within 9 miles of Great Malvern Priory.

The relevant local authorities are: Worcestershire County Council, Herefordshire Council, Gloucestershire County Council, Forest of Dean District Council and Malvern Hills District Council. The relevant Parish Councils are: Malvern Wells, West Malvern, Newland, Mathon, Castlemorton, Colwall, Guartford, Madresfield, Hanley Castle, Welland, Powick, Birtsmorton, Little Malvern, Eastnor & Donnington and Malvern Town Council.

The land is extensive and varied and as such a variety of boundaries are present. The northern half of the Hills and many of the road verges are adjacent to hundreds of private dwellings, both urban and rural, and some farm holdings. The southern half of the Hills, Old Hills and Castlemorton are mainly neighboured by farm holdings and large estates with scattered domestic dwellings. As much of the land is common land the boundaries here are in private ownership and it is for neighbouring landowners to fence against common land. Blue stone MHC boundary markers can be found in places.

In UK law there are certain boundaries where, unless evidence to the contrary is present, the following ‘hedge and ditch presumption’ can be made: where two properties are divided by a hedge, bank and ditch, there is a presumption that the boundary is along the opposite side of the edge of the ditch from the hedge or bank. This is known as the hedge and ditch rule. This only applies to man-made ditches.

However, this does not hold true in the Manor of Malvern where the above rule does not always apply. For boundary information here please refer to the documents. Deeds relating to this Manor are found at MHC offices.

County Parish Holding number: 17/470/0078
1.3.1.2 Zones

The land has been divided into 7 zones to facilitate the remainder of this plan. The zones used are those detailed in previous management plans (Alma, 1999 and Havard, 2006) and it makes sense to continue their use.

<table>
<thead>
<tr>
<th>Management Zones:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Northern Hills</td>
</tr>
<tr>
<td>2. Central Hills</td>
</tr>
<tr>
<td>3. Southern Hills</td>
</tr>
<tr>
<td>4. Hollybed Common</td>
</tr>
<tr>
<td>5. Castlemorton Common</td>
</tr>
<tr>
<td>6. Enclosed lowlands – Malvern’s urban commons, Colwall Green, Bowling Green meadow and the roadside verges</td>
</tr>
<tr>
<td>7. Old Hills</td>
</tr>
</tbody>
</table>

They are presented on Map 2.
Map 2: the management zones.
1.3.1.3 Tenure

This is not a legal document. Please refer to the original tenure documents before taking any decision or any action which may have legal implications. These documents are located at the MHC offices.

Much of the holding is owned by MHC as freehold (~85%). However, significant sections are held under leasehold and other arrangements and are thus under MHC jurisdiction. A summary map of the freehold and leasehold position is to be produced but key arrangements include:

<table>
<thead>
<tr>
<th>Land / asset</th>
<th>Tenure</th>
<th>Timescale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land around British Camp reservoir including Broad Down</td>
<td>Leasehold from Severn Trent Water</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Water reservoir and infrastructure near Tank Valley</td>
<td>Owned by Severn Trent Water but located on or under MHC land.</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Colwall Green (part)</td>
<td>Land part owned by Colwall Parish Council and managed by MHC.</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Land at Ragged Stone Hill, Midsummer Hill and Midsummer Hillfort owned by Eastnor Estate and the National Trust respectively</td>
<td>Under a joint Higher Level Stewardship agreement with Eastnor Estate and the National Trust.</td>
<td>Joint agreement expires in 2020</td>
</tr>
<tr>
<td>Land at Chase End Hill owned by Bromsberrow Estate</td>
<td>Under a joint Higher Level Stewardship agreement with Bromsberrow Estate.</td>
<td>Joint agreement expires in 2022</td>
</tr>
</tbody>
</table>

Easements
An easement is a non-possessory right of use and/or entry onto the property of another, most easements across MHC land give access to a residential property. The Malvern Hills Conservators have the power to grant easements under Section 8 of the Malvern Hills Act 1995. As such, over 100 easements exist over MHC land. Applications for new easements are considered by the Board according to the Easement Policy. An easement, once granted, typically is attached to a property rather than a person.

Wayleaves
A wayleave is a means of providing rights for a company to install and retain their infrastructure such as cabling, piping or pylons across private land usually in return for annual payments to the landowner. Tens of wayleaves are in existence mostly with utility companies; however, since the Malvern Hills Act 1995, MHC are unable to grant new overground wayleaves.

Further information on specific easements and wayleaves is held at MHC offices.
Public Rights of Way
The Holding contains 70 kilometres of public rights of way, including 56.5 km of bridleway and 13.5 km of public footpaths. Under the Highways Act and Cross Compliance, MHC has a responsibility to ‘provide and maintain styles or gates; cut back overhanging vegetation that may obstruct the PROW; ensure that field-edge paths are left free from cultivation for the legal minimum width of 1.5 metres for a public footpath and three metres for a public bridleway’.

Lord of the Manor
Lords of the Manor have been present in the area and across England for hundreds of years. The title may have passed across to the Conservators with the purchase of land (these should appear in the conveyances). However, being Lord of the Manor does not itself carry or confer any legal obligations or rights.

Manorial rights such as fishing, shooting or mining typically come with a freehold but they can be detached and sold separately. Several past Lords of the Manor have sold land to Conservators whilst retaining certain manorial rights. The 1924 Act gave the Conservators the power to purchase these manorial rights held over MHC land. Manorial rights over MHC land may still be held by other people; however, it is extremely unlikely they can be used as they would conflict with the Malvern Hills Acts that cover all of MHC land. Both the conveyance and the presence of manorial rights over MHC land need confirming.

Commoners’ Rights
Fourteen units of pastoral common land that are registered with the County Councils are owned partly or wholly by MHC as below. Owners of certain properties are entitled to exercise rights of common as detailed in the County Council commons register.

<table>
<thead>
<tr>
<th>Common Land (CL) unit no.</th>
<th>Name</th>
<th>Registered Area (ha)</th>
<th>Calculated Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Castlemorton / Shadybank / Hollybed</td>
<td>275.82</td>
<td>275.82</td>
</tr>
<tr>
<td>10</td>
<td>Chase End Hill and land to the north</td>
<td>12.95</td>
<td>12.95</td>
</tr>
<tr>
<td>11</td>
<td>Ragged Stone Hill</td>
<td>12.95</td>
<td>12.95</td>
</tr>
<tr>
<td>12</td>
<td>Herefordshire Beacon-Hangman’s Hill</td>
<td>67.18</td>
<td>67.18</td>
</tr>
<tr>
<td>13</td>
<td>Roadside verge, Brand Green</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>14</td>
<td>Land in Colwall / Little Malvern</td>
<td>91.06</td>
<td>91.06</td>
</tr>
<tr>
<td>15</td>
<td>Land in Parish of Colwall (the Purlieu)</td>
<td>1.82</td>
<td>1.82</td>
</tr>
<tr>
<td>16</td>
<td>Worcestershire Beacon / Sugarloaf</td>
<td>72.44</td>
<td>72.44</td>
</tr>
<tr>
<td>17</td>
<td>Wells (Malvern) Common</td>
<td>70.82</td>
<td>70.82</td>
</tr>
<tr>
<td>18</td>
<td>Malvern Common and roadside verge</td>
<td>20.24</td>
<td>20.24</td>
</tr>
<tr>
<td>19</td>
<td>Malvern Link Common</td>
<td>24.28</td>
<td>24.28</td>
</tr>
<tr>
<td>28</td>
<td>The Old Hills</td>
<td>57.19</td>
<td>57.19</td>
</tr>
<tr>
<td>29</td>
<td>Newland Common (south)</td>
<td>5.26</td>
<td>5.26</td>
</tr>
<tr>
<td>119</td>
<td>Newland Common (north)</td>
<td>0.81</td>
<td>0.81</td>
</tr>
</tbody>
</table>

# the registered areas of common land units are believed inaccurate. Areas have since been re-calculated (Aitchison et al, 2000).
As a landowner of common land MHC is subject to statutory control and the commoners’ interests. A variety of common rights exist including the following: estovers, turbary, piscary but the most frequent right is that of pasturage; whereby each commoner can graze a certain number of livestock on common land as per the Commons Register. Without commoners’ rights such activities are undertaken by members of the public only at the discretion of MHC.

National Trust Covenants
Approximately a third of Conservators’ land is covered by 7 covenants owned by the National Trust. These covenants date from the 1930’s. They were created to protect the landscape by imposing restrictions on building, quarrying and tree works within the covenanted areas. Any work of this type needs to obtain permission from the National Trust before commencing. Copies of the covenants and relevant maps are held at MHC offices.

1.3.1.4 Status of the site

The holding is covered by:

<table>
<thead>
<tr>
<th>DESIGNATION / SCHEME</th>
<th>AREA</th>
<th>DATE</th>
<th>MORE INFO AT:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malvern Hills AONB</td>
<td>All except Old Hills, Link Common, certain verges.</td>
<td>Designated in 1959</td>
<td><a href="http://www.malvernhillsaonb.org.uk">www.malvernhillsaonb.org.uk</a></td>
</tr>
<tr>
<td>Malvern Hills SSSI</td>
<td>723.3ha Zones 1,2,3</td>
<td>Designated in 1954, re-notified in 1990</td>
<td><a href="http://www.naturalengland.org.uk">www.naturalengland.org.uk</a></td>
</tr>
<tr>
<td>Castlemorton Common SSSI</td>
<td>158.66ha Zones 5</td>
<td>Designated in 1955, re-notified in 1986</td>
<td><a href="http://www.naturalengland.org.uk">www.naturalengland.org.uk</a></td>
</tr>
<tr>
<td>Nitrate Vulnerable Zone – surface water type. No. 583</td>
<td>Zone 6</td>
<td>Designated in November 2013</td>
<td><a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a></td>
</tr>
<tr>
<td>Nitrate Vulnerable Zone – surface water type. No. 581</td>
<td>Zones 6, 7</td>
<td>Designated in November 2013</td>
<td><a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a></td>
</tr>
<tr>
<td>Groundwater source protection – zone 1</td>
<td>Zones 1,2,3</td>
<td>2015</td>
<td><a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a></td>
</tr>
<tr>
<td>Groundwater source protection – zone 2</td>
<td>5.68 square km Zones 1,2,3</td>
<td>2015</td>
<td><a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a></td>
</tr>
<tr>
<td>Environmental Stewardship Agreements</td>
<td>All zones</td>
<td>Various ten year schemes</td>
<td>MHC Office</td>
</tr>
<tr>
<td>English Woodland Grant Scheme</td>
<td>Park Wood</td>
<td>March 2012 – February 2017</td>
<td>MHC Office Forestry Commission</td>
</tr>
</tbody>
</table>
1.3.1.5 Site infrastructure

This management plan does not cover MHC staff buildings nor their associated grounds as these are covered in MHC’s Business Plan. Site infrastructure includes the following:

Access infrastructure (car parks, signs, paths, walls, gates/barriers, bins, benches, railings)
Safety infrastructure (fences, safety equipment)
Grazing infrastructure (fences, water troughs, signs, cattle grids)
Hydrological infrastructure (pipes, ditches, culverts, grills, spouts, springs, wells)
Interpretation and education infrastructure (toposcopes, interpretation boards)
Other infrastructure (memorial stones, Mill Pond dam)

1.3.1.6 Map coverage

The site is covered by Ordnance Survey maps; Explorer 190 and Landranger 150.

1.3.1.7 Photographic Coverage

A large photographic and postcard collection is held at MHC offices. This has been grouped by location and indexed. The collection provides articles from 1806 to today.

1.3.2 Environmental Information

1.3.2.1 Climate

Shielded by Wales from the most persistent rain, drier than the southern Cotswolds and west Birmingham, but not as dry as much of the east Midlands, the Malvern Hills are favourably located to enjoy some of the most pleasant weather in England.

The average annual rainfall (using 1981 to 2010 data) on the upper slopes is around 780mm, falling to 720mm at the foot and around 650mm in the valleys of the Wye and Severn. On average, the driest months are February, March and April, each with around 50 to 60mm on the higher ground, and the wettest are August, October and November, each with around 80mm, but there is a wide variation from year to year. In spite of recent concerns over a possible trend to more extreme rainfall, this is not strongly confirmed by the data. The
wettest year since records began in 1889 is still 1924 (1083mm) and the driest is still 1921 (469). The wettest month was August 1912 (241mm) and the driest was April 1957 (nil).

Temperatures have shown more definite trends. The average annual temperature is now about 1.3°C higher than a hundred years ago. However, the warming has not been gradual. There was a warming trend from 1912 to 1937, cooling from 1938 to 1965, warming from 1966 to 2006 and recently another cooling. For example, there were eight days in July 2006 when the temperatures exceeded 30°C. It did not reach 30°C again for seven years. There is still uncertainty over the cause of these oscillations.

Daytime temperatures on the hills are typically 2 or 3°C lower than along the foot, but at night there is often a downslope or katabatic drift which keeps the slopes some 2 to 3°C warmer than on surrounding low ground. This reduces frost damage to tender trees and shrubs in, say, Gt. Malvern compared with Malvern Link. It also reduces the frequency of fog when there is a light wind from the west. With light easterly winds, however, fog over the Severn Valley is trapped by the Malvern Hills. This often leads to the well-known feature of the upper slopes being in sunshine while the lower slopes and valleys are shrouded in fog. The top of the fog is typically between 400 and 700ft above sea level in the morning but gradually rises before it clears, so the effect becomes less impressive later in the day.

Sunshine duration per year is less than in southern England, especially at the coastal resorts, but more than in the majority of areas elsewhere. The average on the hills is around 1530 hours. At lower sites, there is a lot of variation due to losses caused by trees, buildings, and the shadow of the hills themselves early or late in the day, but a reasonably open site can expect about 1440 hours. The sunniest years were 1929 and 2003 each with around 1800 hours.

Snow is extremely variable from one winter to another. In general, there is less snow in Worcestershire than in counties further north and east. On low ground around Malvern, snow is observed to fall on an average of 13 days per year, but this has varied from nil (in 1989/90 and 2013/14) to 33 days in 1984/85 and 2009/10. Snow falls more frequently above about 800ft ASL (averaging 20 days) and in the worst winters has lain for 40 to 50 days, although the main roads are kept clear on most days. (Hill, 2014)

The global climate is changing, the International Panel on Climate Change states that ‘warming of the climate system is unequivocal and since the 1950’s many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished and sea level has risen’ (IPCC, 2014).

1.3.2.2 Geology & geomorphology

The solid geology of the Malvern Hills has long interested the professional and amateur geologist with the first paper appearing in 1811 by Leonard Horner. Despite this, the geology is still not completely understood but advances in knowledge are ongoing.
The Malvern Hills are the product of the Earth’s geological activity over hundreds of millions of years in which sedimentation, tectonic activity, volcanics and metamorphism have all played a part in creating this complex and multi-phased site. The Malvern axis is a line of geological weakness in the Earth’s crust along which movement has taken place over hundreds of millions of years, pushing up the old Precambrian rocks, steeply folding the sedimentary rocks to the west and dropping down the younger rocks to the east by 2.5km. This horst structure has formed the spectacular scenery and shaped all that we see today.

Geological exposures come in the form of natural rock outcrops and man-made quarries and cuttings. The geology underpins Malvern landscape, ecology, hydrology and many other qualities.

The geological resource is summarised below in chronological order. For more detailed accounts of Malvern geology and its formation please see:

The main north-south line of the Malvern Hills is comprised of rocks of Precambrian age (between 560-677 million years old). They are split into two distinct groups; the Malverns Complex and the Warren House Volcanics. The former group of plutonic rocks makes up 95% of the Hills’ bedrock and consists predominantly of diorites, tonalites and hybrids, together with some granite and ultrabasic rocks. The corresponding metamorphic rocks are also present including schist, gneiss and amphibolite. Some of these rocks have been intruded by younger rocks, principally dolerites.

The Warren House Volcanics cover only 5% of the Hills including Broad Down and Hangman’s Hill. These are volcanic rocks including basalt, trachytes, and ignimbrites with dolerite and calcite veins. Pillow lavas can be found at Clutter’s cave.

Only a handful of exposures of Precambrian rock exist in England and the Malvern Hills therefore hold an important resource that allows scientific study of this period of Earth’s history. All of the exposures of Precambrian geology are notified features of the Malvern Hills Site of Special Scientific Interest and many are designated as Local Geological Sites (LGS), see Table 1 below. (For further information on the national importance and conservation of this geology please see the JNCC’s Geological Conservation Review Series no. 20 [http://jncc.defra.gov.uk/page-2947 ).

Cambrian rocks are represented by a sedimentary quartzite conglomerate called the Malvern Quartzite, succeeded by sandstones of the Hollybush Sandstone Formation and shales of the younger White-leaved Oak Shale Formation. These lithologies occupy only a very small part MHC land on Ragged Stone and Hollybush hills.
Several volcanic intrusions into older rocks that have formed dykes and sills dating back to the Ordovician (510-435Ma) are present on much of Eastnor Estate’s land but very little is present on MHC land.

MHC land to the west of the Hills including Park Wood, Old Hollow and Colwall Green are all on a bedrock of Silurian age (443-419Ma). Over millions of years a series of different sedimentary rocks were deposited in shallow marine and terrestrial environments. The rocks include: sandstones and conglomerates of the May Hill Sandstone Group, mudstones of the Coalbrookdale Formation; the fossiliferous Much Wenlock Limestone Formation; siltstones and mudstones of the Lower Ludlow Shales, limestones and mudstones of the Aymestry Limestone Formation; siltstones the Upper Ludlow Shales and siltstones and mudstones of the Raglan Mudstone Formation. Where exposed, these Silurian rocks provide a valuable palaeoenvironmental and palaeontological resource with fossils including brachiopods, trilobites and corals. One of the most important contacts in the UK between Silurian and Precambrian rocks can be found at Gullet Quarry.

All MHC land to the east of the Hills is located on Triassic bedrock, dominated by the mudstones of the Mercia Mudstone Group with a small area of dolomitic siltstones at Old Hills. A linear band of Bromsgrove Sandstone Formation underlies part of central and North Malvern. Few exposures of these lithologies can be found today and much is overlain by much younger Quaternary deposits.

The most recent deposits are unconsolidated, superficial layers deposited in the last 2.6 million years of the Quaternary up until today. Silts and tills of the glacial phase of the Anglian Stage have been deposited in the area but with only minor evidence on MHC land. Processes associated with glacial and inter-glacial periods have left head deposits on the lower slopes of the Hills and outwards onto the lowlands. These can be 1m thick on Castlemorton Common where they are known as ‘Malvern gravels’. River deposits and a series of river terraces from the Avon and Severn rivers can be found on Castlemorton and Hollybed Commons. The active streams here provide further geomorphological interest.

Table 1: Designated geological and geomorphological features

<table>
<thead>
<tr>
<th>Geological resource name &amp; location</th>
<th>Geological resource type</th>
<th>Malvern Hills SSSI</th>
<th>Castle-morton SSSI</th>
<th>LGS</th>
</tr>
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<tbody>
<tr>
<td>All of the Malvern Hills</td>
<td>Malverns Complex lithologies, landforms</td>
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<td>(some)</td>
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<tr>
<td>Wide Valley, Worcs Beacon</td>
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<td>Clocktower Car Park</td>
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<td>✓</td>
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<td>North Quarry</td>
<td>Malverns Complex lithologies</td>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>Site</td>
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<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------------</td>
<td>---</td>
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<td>Swinyard Hill Quarry</td>
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<td>Little Malvern Quarry (Beringtons quarry)</td>
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<tr>
<td>Westminster Bank Quarry</td>
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<td>Gullet Top Quarry</td>
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<td>Ivy Scar Rock, North Hill</td>
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<tr>
<td>Broad Down Quarry</td>
<td>Warren House Volcanics</td>
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<tr>
<td>Park Wood Quarries</td>
<td>Silurian lithologies</td>
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<td>✓</td>
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<td>Brockhill Stream Section</td>
<td>Silurian lithologies</td>
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<td>Clutters Cave</td>
<td>Warren House Volcanics</td>
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<td>✓</td>
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<td>Malverns Complex &amp; Cambrian Sandstone Unc</td>
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<td>Castlemorton Common</td>
<td>Mercia Mudstone and Quaternary mass movement deposits (head) River geomorphology</td>
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<tr>
<td>Broomhill Quarry, West Malvern</td>
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<td>Wyche Cutting (not all parts are on MHC land)</td>
<td>Malverns Complex lithologies</td>
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<td></td>
</tr>
</tbody>
</table>

Sites marked # are currently candidates for LGS status.
1.3.2.3 Soils

The soils of the main ridge are free-draining, acidic, brown podsolic soils with little fertility in them. This type of soil covers just 2.6% of England but makes up 23% of Wales. The foothills of the Hills are covered by head deposits that have acidic, stagnogley soils and acidic, skeletal argillic and silty brown earths. Land further west has similar soils to the foothills. They are of low fertility and are seasonally wet owing to their highly impeded drainage.

To the east of the Hills, lowland commons and road verges also have clayey soils including argillic pelosols, stagnogley soils and silty brown earths. The majority of these soils have impeded drainage, however, they are more base rich (alkaline) and of moderate fertility. These soils are seasonally wet and are vulnerable to compaction and poaching.

Finally, Old Hills has soils classified as slightly acidic loams with some clay. These soils are of moderate to high fertility with slightly impeded drainage. (Soil Survey of England and Wales Sheet SO74) (Cranfield Soil and Agrifood Institute, 2014)

Agricultural land classification maps recognise the main Hills as grade 5 (very poor), the foothills and much of the lowland commons as grade 4 (poor). Minor areas are also classified as grade 3 (good to moderate).

1.3.2.4 Hydrology

The geological outcrop of the Malvern Hills covers an area of approximately 7 square kilometres. The majority of MHC land is within the Severn catchment with a watershed along the ridge of the hills, the western side of which water flows west into tributaries of the Teme. The outcrop is a bedrock aquifer meaning the body of rock receives, stores and releases rainwater. Rainfall is received directly onto rock or infiltrates into the soils and from here it enters the aquifer. The hard igneous and metamorphic rock types are not permeable but their highly fractured and fissured nature mean that water travels quickly through this network of voids.

The aquifer is classified as a fracture flow aquifer with fast travel times which can vary from days to weeks (for comparison it can take water several years to pass through a chalk aquifer). Malvern Water is famous for ‘containing nothing at all’ as there has been little time for the rainwater to interact with the minerals of the rocks.

Almost any activity such as erosion, walking, grazing by animals and land management can add other substances to the water such as sediment or pollutants that would travel through the aquifer suspended in the water.

Water leaves the aquifer at springs, streams, wet seepages and where man has manipulated it at boreholes, spouts, wells, quarries and ponds. Today many local residents and tourists
still use the numerous springs in the area for drinking water. Commercially, Holywell Malvern Spring Water Ltd bottle and sell water from Holywell near Malvern Wells.

The Malvern springs are classified as private drinking water supplies and are sampled for their quality on behalf of Malvern Hills District Council by Worcestershire Regulatory Services. The Regulatory Service sample for select chemical and bacteriological parameters for drinking water quality reasons. Evendine Spring is monitored by Herefordshire Council Environmental Health Department. To help protect groundwater the Environment Agency have designated 5.68 square km of the main Hills as a type 2 Groundwater source protection zone and the areas immediately surrounding (100m radius) the springs as a type 1 (highest risk). Land management should acknowledge this information and follow guidance to protect the water.

The Malvern Hills and the surrounding district are in a designated groundwater drinking water protected area under the Water Framework Directive 2000. Drinking Water Protected Areas (DrWPAs) are water bodies where ‘raw’ water is abstracted for human consumption at a rate of at least 10m3/day or where over 50 people are served. 50 properties are supplied with water from the Hills.

The lowlands are covered by drift deposits that are classified as superficial aquifers with shallow water tables. Significant rainfall here travels into the soils and into the fluvial network of ditches and streams which ultimately feed into the Severn or Teme. There is a role played by these lowland commons such as Castlemorton in storing water and helping to prevent flooding further downstream (extracts from: Brown, 2014).

### 1.3.3 Biological information

**Flora – Higher Plants**

The flora of the Malvern Hills and Commons has attracted botanical study for hundreds of years with works such as Edwin Lees’ ‘The Botany of Malvern’, 1868. They contain habitats and species highly unusual for the English Midlands and are particularly notable for their grasslands and a number of coastal plants present, leftover from a time when the Severn estuary reached as far north as the Malvern Hills. The varied vegetation of woods, grasslands, scrub, heath, ponds and meadows play a huge role in making an attractive landscape for people, a livelihood for graziers and providing natural services, such as clean air.

This section describes the vegetation types present on the MHC holding. These vegetation types, called communities, are largely based on a survey undertaken in 2013 (RSK, 2013) which used the National Vegetation Classification methodology (JNCC, 2014). Each description includes a community name in brackets, typical species, area, more unusual species, and where an example of this community may be found on the Conservators’ land. Also highlighted are any nationally rare or scarce plants (nationally rare is defined as
occurring in ≤15 hectads (a hectad is a 10x10km square), nationally scarce as occurring in ≤100 hectads (BSBI, 2014)) largely based on 'Notable Flora' (Barnett and Garner, 2013).

Grasslands

The main ridge and upper slopes of the Hills, from End Hill to Chase End Hill, contain distinctive upland grassland communities that are dominated by acid grasslands. In general, the grasslands of the northern and central hills and Herefordshire Beacon are dominated by tussocky swards of Wavy Hair Grass Deschampsia flexuosa with some Tormentil Potentilla erecta, Sheep's Sorrel Rumex acetosella and Heath Bedstraw Galium saxatile present (NVC community: U2 Deschampsia flexuosa). Such a sward can be found on Sugarloaf Hill. Smaller areas of grassland that comprises of Sheep’s Fescue Festuca ovina, Yorkshire Fog Holcus lanatus, Common Bent Agrostis capillaris (U4 Festuca ovina-Agrostis capillaris-Galium saxatile) can also be found here. Musk Storks-bill Erodium moschatum is rare in Worcestershire and a single colony is found on Beacon Road.

From Midsummer Hill southwards the acid grasslands of the upper slopes are instead dominated by grasses of the Bent family often with a large amount of lichen and moss but no Wavy Hairgrass. Other common species include Common Bent, Harebell Campanula rotundifolia and Cladonia spp (U1 Festuca ovina-Agrostis capillaris-Rumex acetosella) which makes for an intricate sward on sites including Ragged Stone Hill.

Throughout the Hills on ground of very thin, rocky soils such as the exposed hilltops, only small, hardy plants can persist. This specialised community is recognised as a subcommunity of U1. Species include Early Hair-grass Aira praecox and Silver Hair-grass Aira caryophyllea along with spring flowering ephemeral plants including the rarities Little Mouse-ear Cerastium semicandrum, Common Cudweed Filago vulgaris, Knotted Clover Trifolium striatum, Bird’s Foot Clover Trifolium ornithopioides, Annual Knawel Scleranthus annuus and Early Forget-me-not Myosotis ramosissima. Certain species have a very localised presence with Shepherd’s Cress Teesdalia nudicaulis on Worcestershire Beacon only, and the uncommon Smooth Cat’s Ear Hypocheris glabra restricted to Ragged Stone Hill, its numbers fluctuating greatly from year to year.

Together the upland acid grasslands cover an area of 102 hectares (9%) of the Conservators’ holding. The communities U1, U2, U4 are all notified features of the Malvern Hills Site of Special Scientific Interest (SSSI).

Locally interspersed with the upland grassland communities on the northern hills are plants more typical of a heath community (H12 Caluna vulgaris - Vaccinium myrtillus / U20b Pteridium aquilinum-Galium saxatile) which contains, and is often dominated by, Bilberry Vaccinium myrtillus. This bilberry heath totals only 1 hectare (0.1%) but it is expanding. Common Heather Calluna vulgaris can be found in small patches from British Camp to Swinyard Hill. The heath community is a notified feature of the Malvern Hills Site of Special Scientific Interest (SSSI).

A single more calcareous stretch of grassland can be found on the southern hills. Located on the Warren House volcanics geology, an unusual mix of calcifuge (calcium-hating) and
calcicole (calcium-loving) plants are present together. Many of these plants are spring ephemerals. Commoner species in this community (CG10a *Festuca ovina-Agrostis capillaris*) include Red Fescue *Festuca rubra*, Common Bent *Agrostis capillaris*, Wild Thyme *Thymus polytrichus* and Sheep’s Fescue *Festuca ovina*. More unusual species include Common Rock-rose *Helianthemum nummularium* and Early Forget-me-not *Myosotis ramosissima*. In spring, certain small patches are emblazoned with the yellow of the nationally scarce Spring Cinquefoil *Potentilla tabernaemontani*. This vegetation community covers just 2.87 hectares (0.3%).

Parts of the Hills’ mid-slopes and large areas of the lowlands including the roadside verges, urban commons and Old Hills are predominantly vegetated by mesotrophic grasslands (meaning of moderate fertility). These grassland communities are more luscious and nutrient-rich compared to the upland acid grasslands and are far more prevalent across the UK.

Frequent grazing on improved and semi-improved land, dominantly on Castlemorton and Hollybed Commons, has created a sward of common hardy grasses including Crested Dog’s Tail *Cynosurus cristatus*, ryegrass species and herbs including White Clover *Trifolium repens* and Daisy Bellis *Bellis perennis* (MG6 *Lolium perene-Cynosaurus cristatus*). However, in places of least agricultural improvement, but not necessarily less grazing pressure, more species-rich variations are found. More calcareous areas include Autumn Ladies Tresses *Spiranthes spiralis*, Quaking Grass *Briza media*, Upright Brome *Bromopsis erecta* and Dwarf Thistle *Cirsium acaule*, whilst in more acidic areas this includes the coastal species Fiddle Dock *Rumex pulcher*, Pale Flax *Linum bienne* and the nationally scarce Slender Hare’s Ear *Bupleurum tenuissimum* in its only inland site in Britain. Castlemorton and Hollybed grasslands are a rich mosaic of different grassland communities. Petty Whin *Genista anglica* is very rare in Worcestershire and now thought to be lost from its site near Welland. MG6 communities are found on 141 hectares (12%).

Grasslands dominated by False Oat-grass *Arrhenatherum elatius* and other species indicative of high nutrients such as Common Nettle *Urtica dioica* (MG1 *Arrhenatherum elatius*) are found mostly on the lowlands although small areas can be found on the Hills even in close proximity to the ridge. Typically this community is species-poor although some sub-communities found were more species-rich with Common Knapweed *Centaurea nigra*, Common Bird’s Foot Trefoil *Lotus corniculatus* and, at the Bowling Green Meadow, Clevelode, the nationally scarce Spreading Bellflower *Campanula patula* is present. MG1 communities cover 67 hectares (5.8%) of MHC land.

Regular hay cutting has created a grassland community akin to traditional hay meadows (MG5 *Cynasurus cristatus-Centaurea nigra*). They include a wide variety of grasses such as Common Bent, Crested Dog’s tail and a substantial proportion of herbs including Bird’s Foot Trefoil, Common Knapweed and White Clover. More uncommon species are Downy Oat Grass *Helictotrichon pubescens*, Common Spotted and Southern Marsh Orchids *Dactylorhiza fuchsia* and *D. praetermissa* and their hybrid. This community covers about 15 hectares (1.3%) and makes a colourful summer display that is much appreciated by local people on sites including Malvern Common. In areas that are regularly trampled and mown, hardy species dominate in leys that comprises of Perennial Ryegrass *Lolium perenne*
accompanied by broad-leaved herbs such as plantains (MG7 Lolium perenne). In areas of even greater trampling this community grades into an open vegetation of either Scented Mayweed Matricaria chamomilla, Greater Plantain Plantago major and Annual Meadow-grass (OV21 Poa annua-Plantago major) or Perennial Ryegrass and Cock’s Foot grasses (OV23 Lolium perenne-Dactylis glomerata). These three communities cover 52 hectares (4.5%) of the holding.

In the wetter areas of MHC’s land, grassland is characterised by Tufted Hair Grass Deschampsia cespitosa, Bent grasses, and rush and sedge species (MG9 Holcus lanatus-Deschampsia cespitosa). This often grades into wetter mire communities. On the muddy margins of pools and tracks Water Purslane Lythrum portula can be found, a rare plant in Worcestershire. This community covers 45 hectares (4%). The final mesotrophic grassland community is a rushy pasture found on Old Hills and other permanent pastures with poor drainage (MG10 Holcus lanatus-Juncus effusus). This comprises a lown sward that contains commoner coarse grasses with a moderate to high amount of Soft Rush Juncus effusus and herbs including Creeping Buttercup Ranunculus repens. It covers 1.67 hectares (0.1%).

Mire

Only one vegetation community here can be defined as a mire (M23 Juncus effusus/acutiflorus-Galium palustre). This community is characteristic of poorly drained and agriculturally unimproved pasture and grades into other drier habitats on both Malvern and Castlemorton Common, Castlemorton Common and in small flushes on the Hills. Typical species include Yorkshire Fog Holcus lanatus, Soft Rush Juncus effusus, Sharp-flowered Rush J. acutiflorus, Common Marsh Bedstraw Galium palustre, Meadow Brome Bromus comnmutatus, Water Mint Mentha aquatica and Ragged Robin Silene flos-cuculi. Less common species which have been recorded are Few-flowered Spike-rush Eleocharis quinqueflora, Slender Spike-rush E. uniglumis, Star Sedge Carex echinata, Green-ribbed Sedge C. binervis, Distant Sedge C. distans, Tawny Sedge C. hostiana, Southern Marsh Orchid Dactylorhiza praetermissa, Tubular Water Dropwort Oenanthe fistulosa and Parsley Water Dropwort Oenanthe lachenalii which is rare inland in the UK.

In seasonally dry parts of mire habitat, specialist plants such as Lesser Marshwort Apium inundatum, the pungent tasting Water Pepper Persicaria hydropiper and its nationally scarce relative Tasteless Water Pepper P. mitis can be found. Narrow-leaved Water Dropwort Oenanthe silaifolia, also nationally scarce, is found in the mire and watercourses of Castlemorton Common. The mire community covers 10ha (0.9%). This habitat is a feature notified in the SSSIs.

In very small areas on the slopes of the Hills, principally Swinyard Hill, remnants of bog communities can be found often linked to flushes. Today they contain Bog Pimpernel Anagallis arvensis, Marsh Valerian Valeriana dioica, Marsh Arrowgrass Triglochin palustris and Sphagnum mosses. However, records exist to show that these bogs were once more extensive and contained a wealth of bog specialist species including the charismatic Sundew Drosera sp. and Cotton Grass Eriophorum angustifolium. These have been lost to changes in hydrology and drainage, and to scrub encroachment but a seed bank may persist in the soils.
Woodland
In parts of the Hills and Commons, woodlands are the dominant vegetation providing a different habitat and a more intimate experience for visitors. At present, woodlands cover just under a third of the MHC holding. Ancient woodland (i.e. older than 400 years) is found at Holy Well, Hollybush Roughs, Park Wood, and beside Link Top. Much woodland adjacent to MHC land is also ancient including Tinker’s Hill Wood and News Wood.

Several different woodland communities are recognised with the most expansive, at 144 hectares (13%), being Ash woodland (W8 Fraxinus excelsior-Acer campestre-Mercurialis perennis), a woodland dominated by Ash trees with an understorey of Hazel Corylus avellana and Field Maple Acer campestrum. This woodland is typically found on more alkaline sites including Park Wood. Here, twenty-one species of ancient woodland indicators were found including Wood Anemone Anemone nemorosa, Woodruff Galium odoratum and Herb Paris Paris quadrifolia. Rarer species include Bird’s Nest Orchid Neottia nidus-avis, Violet Hellborine Epipactis purpurata and the nationally scarce Wood Barley Hordeum europaeus. The vegetation in Park Wood is partly the result of the historic quarrying and woodland industries of this area including coppicing.

Sites on more acidic substrates tend to hold Oak and Birch woodlands (W16 Quercus spp-Betula spp-Deshampsia flexuosa or W10 Quercus robur-Pteridium aquilinum-Rubus fruticosus). Here Pedunculate, Sessile and hybrid oaks overshadow an understorey of Downy Birch Betula pubescens, Rowan Sorbus aucuparia, Holly Ilex aquifolium, and Honeysuckle Lonicera periclymenum. This includes ancient woodland at Hollybush Roughs - here thirteen species indicative of ancient woodland were found including Golden-scaley Male Fern Dryopteris affinis, Bluebell Hyacinthoides non-scripta and Dog’s Mercury Mercurialis perennis. Oak woods cover 106 hectares (9%) of the holding. When clearings are made in either woodland type the nationally scarce plant Narrow-leaved Bittercress Cardamine impatiens can be found colonising the open ground until it is outcompeted. These native broadleaved woods are a feature of the SSSI notification.

On wetter sites two wet woodland communities can be found. Willow woodland (W2 Salix cinerea-Betula pubescens-Phragmites australis) can be found where mire and rushy pasture vegetation have succeeded to woodland. Grey willow Salix cinerea and Downy Birch Betula pubescens make up the canopy with a variety of rushes, reeds and herbs below including Greater Tussock Sedge Carex paniculata, Meadowsweet Filipendula ulmaria, and Yellow Flag Iris pseudacorus. Along stream and in valleys a eutrophic (nutrient rich) woodland community characterised by Alder can be found (W6 Alnus glutinosa-Urtica dioica and W7 Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum). It is a rather species-poor community with some willow, Rough Meadow Grass Poa trivialis and Cleavers Galium aparine making up the ground layer. Alder woodland is a notified feature of the SSSI. These wet woods occupy about 1ha (0.1%).

Much woodland on the Hills (99ha 8.6%) was not attributable to any NVC community. This includes the mixed woodlands of the mid and lower slopes of the Hills. The majority are not ancient woodlands and their origins lie in a mixture of planting, natural succession and garden escapees making them highly variable. Species include Sycamore Acer pseudoplatanus,
Pines, European Larch *Larix decidua*, Sweet Chestnut *Castanea savita*, Rowan *Sorbus aucuparia*, Turkey Oak *Quercus cerris*, Horse Chestnut *Aesculus hippocastanum*, Beech *Fagus sylvaticus*, Birch (*Betula*) species, Holm Oak *Quercus ilex* and more. The understorey is also highly variable and can include Laurel *Prunus laurocerasus*, Rhododendron species and, in places, a developing native ground flora. Much of these mixed woodlands, such as Thirds Wood plantation and the hill-side edge of Great Malvern, have been present for decades but some, especially on the mid-slopes of the Hills where it has invaded open habitat, is fairly young.

**Orchard**

Two small orchards are present. The first is an old, traditional orchard found adjacent to Hollybed Common, just south of the Mill Pond. Around 25 fruit trees are present including apple and pear. A second new orchard can be found near Townsend Way. This orchard was planted in 2011 and contains twenty fruit trees of local variety such as Worcester Permai apple and Madresfield Court apple.

**Notable trees**

There are a wide variety of individual trees and groups of trees on Conservators’ land that have significant cultural, ecological and landscape values; these are termed notable trees. They include some veteran, ancient and heritage trees, and can be found throughout the holding. A total of 284 pollards have been recorded. Examples of notable trees include ancient Willows at Clevelode, veteran Hawthorns scattered across the Hills, the iconic avenues of Limes on Link Common, the Black Poplar *Populus nigra* (subspecies *betulifolia*) pollards of Castlemorton Common and the amazing Sweet Chestnut and Beech beside the zigzag path downhill of St Ann’s Well. Some of these trees are protected through Planning Conservation Areas and 15 Tree Preservation Orders (concentrated in Great Malvern).

**Aquatic vegetation**

A variety of open waterbodies exist on the Conservators’ holding including mill ponds, disused quarries, stock ponds and watercourses. Although small in extent these water bodies hold a range of floral communities associated with water. The floating community dominated by Lesser Duckweed (*A2 Lemna minor*) is found on many ponds and quite often mixed with White and Yellow Waterlily communities (*A7 Nymphaea alba* and *A8 Nuphar lutea* respectively), Fringed Waterlily *Nymphaoides peltata* and Water Starwort communities (*A16 Callitriche stagnalis*). The invasive non-native New Zealand Pygmyweed *Crassula helmsii* and Water Fern *Azolla filiculoides* are present on certain water bodies, dominating the flora in places. Giant Hogweed *Heracleum mantegazzianum* is also found on many of the watercourses near the Pool Brook.

Near to waterbodies a wet grass and herb community can be found dominated by Red Fescue, Creeping Bent and Silverweed (*MG11 Festuca rubra-Agrostis stolonifera-Potentilla anserina*) or mats of Creeping Bent and buttercups (*OV28 Agrostis stolonifera-Ranunculus repens*). At the edge of water bodies vegetation that is capable of coping with periodic inundation can be found with species such as Water Purslane and Lesser Spearwort (*OV35 Lythrum portula-Ranunculus flammula*). Ponds gradually fill in through natural processes and as they do so they hold various transition communities including swamp vegetation. Two
swamp communities have been found; the first dominated by Reedmace *Typha latifolia* and the second by Common Spike-rush (*S12 Typha latifolia* and *S19 Eleocharis palustris*). In muddier, more enriched waters the vegetation can be dominated by Floating Sweet-grass (*S22 Glyceria fluitans*). More unusual species from the aquatic floras are Thread-leaved Water Crowfoot *Ranunculus trichophyllus*, Floating Club-rush *Eleocharis fluitans* and Water Purslane *Lythrum portula*, all rare in Worcestershire and Herefordshire. In total aquatic floras cover 0.8 hectares (0.1%).

Tall herb and Bracken communities
In between woodlands and grassland are a range of other vegetation communities including scrub, tall herbs and Bracken *Pteridium aquilinum*. These communities are found throughout the holding, often grading into each other and woodlands and grasslands. Bracken is a widespread fern species that is well known especially as its changing hues contribute much to the landscape through the year. Bracken can be found with herbs and grasses such as Sheep’s Fescue *Festuca ovina*, Sweet Vernal Grass *Anthoxanthum odoratum* and Heath Bedstraw *Galium saxatile* (U20 *Pteridium aquilinum-Galium saxatile*). However large, dense stands of Bracken leave little resources for any other species and some significant areas are solely Bracken. When found with Bramble *Rubus fruticosus*, an impenetrable stand of vegetation can be formed called an under-scrub (W25 *Pteridium aquilinum-Rubus fruticosus* community). This can include woody species such as Hawthorn and Ash saplings too where the community is succeeding to woodland. Herbs present can include Bluebell, Wood Sage *Teucrium scorodonia*, Common Nettle, Ivy *Hedera helix* and Yorkshire Fog. These communities can easily be found, such as the well-visited Bluebell site on Jubilee Drive, and on Old Hills. They cover an area of 175 hectares (15%).

On disturbed, nutrient-rich ground thistles and nettles can become dominant in tall herb communities which can be found in small patches throughout the holding such as on old fire sites. Typical species include Common Nettle, Cleavers, Great Willowherb *Epilobium hirsutum*, Rosebay Willowherb *Chamerion angustifolium* and Foxglove *Digitalis purpurea*. The latter two species make some striking floral displays attracting visitors and photographers. Four of these communities are recognised (OV24 *Urtica dioica-Galium aparine*, OV25 *Urtica dioica-Cirsium arvense*, OV26 *Epilobium hirsutum* community and OV27 *Chamerion (Epilobium) angustifolium*) totalling 17 hectares (1.5%).

Scrub
Scrub is often defined as vegetation dominated by woody shrubs or bushes typically less than 5 metres in height. Scrub communities can be permanent features or most often a temporary feature that is gradually replaced by woodland through ecological succession. Openings made in scrub are often quickly colonised by Climbing Corydalis *Ceratocapnos claviculata* a very scarce species in the West Midlands.

Gorse scrub is present on the Hills and many of the lowland commons. It is easily recognised and can be found flowering at most times of years with a coconut scent. Two Gorse species can be found with Common Gorse *Ulex europaeus* almost exclusively on the lowland commons and Western Gorse *U.gallii* on the Hills, often with Bramble present.
(W23 Ulex europaeus-Rubus fruticosus). While the densest stands have no accompanying species and a thick litter of gorse on the ground, the more open stands can yield Broom Cytisus scoparius, Bramble, acid grasses and herbs including Foxglove Digitalis purpurea, Heath Bedstraw and Common Mouse-ear Cerastium fontanum. Gorse scrub covers 26 hectares (2.3%). The habitat called ‘ffridd’ comprises a mosaic of scattered trees, gorse, grass and bracken (RSPB, 2014) which has declined much on the Hills and Commons.

However, the most common type of scrub is that dominated by Hawthorn with some Blackthorn Prunus spinosa (W21 Crataegus monogyna-Hedera helix scrub). This community is typically dense when mature and when young it often forms mosaics with grasslands, this is often because neglected grasslands readily develop into Hawthorn scrub. Bramble is abundant in the field layer with Rose species, Ivy and grassland species still hanging on. This community covers most hedgerows within the area too. Any hedges or scrub comprised entirely of Blackthorn are identified as a separate community (W22 Prunus spinosa-Rubus fruticosus). In some areas, typically next to woods and scrub, large areas can be found that are dominated by Bramble (W24 Rubus fruticosus-Holcus lanatus) with some tree saplings and rank grasses present such as Yorkshire Fog, Cock’s Foot and False Oat-grass Arrhenatherum elatius. This is typically a low but dense underscrub that’s great for blackberries in autumn. The nationally scarce Small-leaved Sweet Briar (Rosa agrestis) can be found in such a community on Malvern Common.

These three scrub communities total 59 hectares (5.2%).

Quarrying has left a lasting legacy on the Malvern Hills and the rocky, exposed habitat created provides a niche for certain well-adapted plants including Navelwort Umbilicus rupestris and the uncommon Hoary Cinquefoil Potentilla argentea, Spear-leaved Willowherb Epilobium lanceolatum and, albeit sporadically, the nationally scarce White Horehound Marrubium vulgare.

Flora – Lower Plants

One well-recorded notable species known about is the nationally rare clubmoss Diphasiastrum x. issleri. This species has occurred for some years on one fragment of acid grassland near British Camp where it is the only extant population of this plant in England and Wales and the only known locality in lowland Britain. However, it was last recorded here in 1997 and thought to have been lost to the spread of more competitive plants but it may still persist in some state.

Five nationally scarce and two nationally rare lichens have been recorded. Further information on the lower plants (bryophytes, mosses, liverworts, lichens) needs to be obtained.

Fungi

The Malvern Hills and Commons provide habitat for a wealth of fungi, both common and rare. Over 100 species have been recorded so far, but species new to the holding continue
to be discovered. Of particular note is the critically endangered Berkley’s Earthstar *Geastrum berkleyii*, once thought to be extinct, it was recorded at Old Hills during the late 1990’s near to old Elm *Ulmus* sp. stumps.

An important assemblage of waxcap fungi is seen right across the Hills and Commons, some 33 different species of waxcap species are associated with unimproved grassland, including the Pink Waxcap *Hygrocybe calyptiformis*, Parrot Waxcap *H. psittacina* and the Spangle Waxcap *H. insipida*.

Together with fairy clubs, four species of spindles, two species of earth-tongues and a wealth of Entoloma species, this diversity achieves a national importance for grassland fungi. According to Rald, an internationally renowned mycologist, the definition of high conservation value grassland is a minimum of 17 different species of waxcap recorded (Rald, 1995), so on waxcap species alone the area’s importance for grassland fungi is well founded. The areas that are most notable for their waxcap fungi are Old Hollow, Castlemorton Common, Golden Valley and Herefordshire Beacon.

As well as adding to the diversity of life on the holding, fungi provide a unique point of interest and foraging opportunity for local people (extracts from Spence, 2014).

**Fauna – Amphibians and Reptiles**

Waterbodies and their surrounding habitats support populations of five amphibians. Common Frog *Rana temporaria*, Common Toad *Bufo bufo* and all three species of newt are found on the holding, Palmate *Lissotriton helveticus*, Smooth *L. vulgaris* and the Great-crested *Triturus cristatus*. The latter species is heavily protected under European law (Conservation of habitats and species Regulations 2010 as amended) and is a priority UK species (under the NERC Act, 2006), together with Common Toad owing to its recent widespread decline over its range largely due to road mortality whilst travelling to breeding ponds in the spring.

Four species of reptile are present. Common Lizard *Zootoca vivipara*, Slow-worm *Anguis fragilis* and Grass Snake *Natrix natrix* are all widespread across the holding. A regionally significant population of Adder *Vipera berus* is present in the southern and central hills. All of these reptiles are priority UK species.

**Fauna – Fish**

Little information on fish is currently held. Quarry lakes, ponds and watercourses are known to contain native and non-native fish. The Environment Agency and local anglers may have further information which will be sought.

No nationally scarce or rare fish have been recorded.
Fauna – Birds

With a diverse range of habitats present there is a corresponding diverse avifauna although several species have been lost in the last 60 years. 121 species were recorded on the holding during the period 1985-2006, with 82 of these breeding (Duncan, 2008). The woods, especially the ancient woodland, support an excellent woodland bird assemblage with Pied Flycatcher *Ficedula hypoleuca*, Lesser Spotted Woodpecker *Dendrocopos minor*, Spotted Flycatcher *Muscicapa striata*, Marsh Tit *Parus palustris*, Willow Tit *Parus montanus*, Redstart *Phoenicurus phoenicurus*, Song Thrush *Turdus philomelos*, Woodcock *Scolopax rusticola*, and Wood Warbler *Phylloscopus sibilatrix* are all particularly notable (although both of the latter two species have been lost as breeding species).

Larger areas of scrub and open habitats on the Hills and lowlands support small populations of scarcer species including Stonechat *Saxicola torquata*, Willow Warbler *Phylloscopus trochilus*, Reed Bunting *Emberiza schoeniclus*, Tree Pipit *Anthus trivialis*, Yellowhammer *Emberiza citrinella*, Grasshopper Warbler *Locustella naevia*, Skylark *Alauda arvensis*, Meadow Pipit *Anthus pratensis*, Cuckoo *Cuculus canorus*, Linnet *Carduelis cannabina* and, in the mature scrub, Turtle Dove *Streptopelia turtur*. In the very open areas found on the lowland commons Lapwing *Vanellus vanellus* and Curlew *Numenius arquata* have bred up until the last few years.

Many species range over much of the holding with notable species including Goshawk *Accipiter gentilis*, Kestrel *Falco tinnunculus*, Peregrine *Falco peregrinus*, Barn Owl *Tyto alba* and, following recent re-colonisation, Raven *Corvus corax*. All of the species above are listed as red or amber status nationally (Eaton et al, 2015) and many are UK priority species (see Part 2).

The large area of semi-natural habitat supports many other more widespread and familiar bird species such as Blue Tit *Cyanistes caeruleus*, Moorhen *Gallinula chloropus*, Green Woodpecker *Picus verdis* and House Sparrow *Passer domesticus*. The accessible nature of the land and presence of green spaces within settlements gives great opportunity for people to encounter these commoner species.

The area also provides habitat to migrating birds and over-wintering birds with regular species including Redwing *Turdus iliacus*, Fieldfare *T. pilaris*, Ring Ouzel *T. torquatus*, Snow Bunting *Plectrophenax nivalis*, Lesser Redpoll *Carduelis cabaret* and occasionally Yellow Wagtail *Montacilla flava* and Great Grey Shrike *Lanius excubitor*.

Fauna – Mammals

Recent years have seen an increase in numbers of the non-native Reeve’s Muntjac *Muntiacus reevesi* and the native Roe Deer *Capreolus capreolus*. Sightings of Brown Hare *Lepus europaeus* and Fallow Deer *Dama dama* are uncommon.

Rarer mammals present that are recognised as priority species under the UK BAP are the Harvest Mouse *Micromys minutus*, Hazel Dormouse *Muscardinus avellanarius*, Polecat *Mustela putorius*, Otter *Lutra lutra* and all bat species found on the holding so far which include; Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared *Plecotus auritus*, Lesser horseshoe *Rhinolophus hipposideros*, Noctule *Nyctalus noctula*, Barbastelle *Barbastella barbastellus* and Bechstein’s *Myotis bechsteinii*. The latter two species are listed on the IUCN’s red list classified as globally ‘near threatened’.

The following bats are known to be present in the area and are almost certainly using MHC land in some way; Leisler’s *Nyctalus leisleri*, Whiskered/Brandts *Myotis mystacinus / brandtii* and Daubenton’s *Myotis daubentonii*.

Fauna - Invertebrates

Given the diversity of habitats, longevity of extensive land management and continuity of habitats and features, such as veteran trees, it is highly likely that the holding contains a diverse and significant range of invertebrates. The Hills are known for their relict species and their ability to collect and assemble convected and windblown insects (Whitehead, 2014). However, few records are held for most invertebrate groups.

Butterflies and moths (Lepidoptera) are well recorded. Around 33 species of butterflies are present with rarer species including Dingy Skipper *Erynnis tages*, White Admiral *Limenitis camilla*, Small Heath *Coenonympha pamphilus*, White-letter Hairstreak *Satyrium w-album* and Grayling *Hipparchia semele*. The presence of Small Pearl Bordered *Boloria selene* and Pearl Bordered *Boloria euphrosyne* Fritillaries is uncertain as only very low numbers are recorded in some years. Unfortunately the endangered High Brown Fritillary *Argynnis adippe* has been lost from the area. All of the above butterflies are UK priority species. An excellent range of commoner butterflies of the wider countryside are supported including Comma *Polygonia c-album*, Small Skipper *Thymelicus sylvestris*, Speckled Wood *Pararge aegeria* and Common Blue *Polyommatus icarus*.

A total of 1117 species of moth have been recorded. This range of moths includes some spectacular species, such as Elephant Hawkmoth, common and widespread species and many rarities. Rarer species include the Pauper Pug *Eupithecia egenaria* (red data book), Drab Looper *Minoa murinata* and Silver Cloud *Egira conspicillaris* (both nationally scarce).

Lepidoptera associated with the acid grasslands and woodland are features of the SSSI notification.

A population of native White-clawed Crayfish *Austropotamobius pallipes* is believed to be present in waterbodies on MHC land but is yet to be confirmed.
Uncommon bees, wasps and beetles, such as the dung beetle *Onthophagus similis*, have been recorded on the Hills. They have an association with the long history of livestock grazing.

Further work is necessary to obtain invertebrate records from more taxonomic groups and take these into account during management.

Non-native species

As with much of the UK, this holding is home to many species of both ‘naturalised’ species and recent introductions from other countries. Many of these species have been mentioned in the text already but the following have not. A recent audit of the non-native plants (Garner & Barnett, 2014) found 81 species of recent (post 1500 AD) non-native plants. Certain plants can host diseases, invade and dominate native vegetation or hybridise with native species. An evaluation of the threat posed by each species will be undertaken and appropriate action taken.

Non-native animals include Pheasant *Phasianus colchicus*, Carp spp, and Canada Goose. The presence of American Mink and Signal Crayfish are yet to be confirmed, however, a large population of Narrow-clawed (Turkish) Crayfish *Astacus leptodactylus* exists in Gullet Quarry. Anecdotal records exist for Red-eared Terrapin *Trachemys scripta elegens*, a jellyfish species in Gullet Quarry and an unknown Wallaby species – these have not been corroborated.

A list of all native species recorded on MHC land and their conservation status is presented in Part 2.

1.3.4 Landscape

The dramatic nine kilometre ridgeline of steep-sided hills contrasts so strongly with much of the surrounding landscape and offers such breath-taking views that, combined with a significant impact upon English culture from Elgar’s music and the Malvern Water, the Malvern Hills have long been an iconic and cherished English landscape. Their existence and shape is down to geology whilst the overlying tapestry of woods, commons and fields that we see today results from thousands of years of interaction between nature and mankind, typical of what is known of as ancient countryside (Rackham, 2000).

The Hills and the wider landscape were deemed special enough to be designated as an Area of Outstanding Natural Beauty (AONB) in 1959 under the National Parks & Access to the Countryside Act 1949 meaning the conservation of this landscape is of national importance. 960 hectares (85%) of MHC land fall within this protected landscape.

The task of describing what makes up the landscape of the Malvern Hills and Commons has been undertaken and updated several times. All studies have identified that the Malvern Hills are a distinct landscape worthy of its own ‘National Character Area’. (Profile 103, Natural
England, Oct 2012). This profiles identifies the following as key characteristics that are relevant to this landscape chapter:

- A prominent, narrow north–south ridge of high, unenclosed, rounded hills of igneous and metamorphic rocks, which rise abruptly from the Severn Vale along a fault plane to form a highly visible dominant landmark, visible from a long distance. The ridge is offset by several faults, which have been eroded to form prominent passes through the hills.

- A varied geology, which is reflected in the soils, which range from thin, acidic soils on the Malvern Hills, through deeper, neutral soils over the Old Red Sandstone to calcareous soils on Silurian shale and siltstone.

- Along the Malvern Hills ridge there are a number of dramatic historic sites, including the bronze-age barrows, iron-age hill forts at British Camp and Midsummer Hill, and the Shire Ditch.

- The high hills and the surrounding area are dominated by unimproved grassland, heathland and bracken, with encroaching scrub from the woodlands below.

- There is a high density of public rights of way and an extensive area of open access land.

- To the north and west of the hills there are wooded limestone ridges, separated by vales of mixed shale. The lower slopes and ridges – particularly the steeper ones – are densely wooded, with blocks of ancient woodland and occasional plantations. Many field boundaries are species-rich and also of medieval origin.

- Redundant quarries and sandpits providing relatively rare standing water habitats.

- On the steep sides of the Malvern Hills are distinctive Victorian and Edwardian buildings. (Natural England, Oct 2012)

Old Hills and the lowland commons and road verges to the east of the Hills all form a part of a second, larger National Character Area profile; 106 ‘the Severn and Avon Vales’ (Natural England, July 2012). This profile identifies the following as key characteristics that are relevant to this landscape chapter:

- West of the Severn the Mercia Mudstones predominate, producing poorer silty clay soils. Lias clays in the Avon Valley and east of the Severn create heavy but productive soils. River terrace gravels flank the edges of watercourses.

- Woodland is sparsely distributed across this landscape but a well wooded impression is provided by frequent hedgerow trees, parkland and surviving traditional orchards. Remnants of formerly extensive Chases and Royal Forests, centred on Malvern, Feckenham and Ombersley still survive.

- Small pasture fields and commons are prevalent in the west with a regular pattern of parliamentary enclosure in the east. Fields on the floodplains are divided by ditches (called rhines south of Gloucester) fringed by willow pollards and alders.

- Pasture and stock rearing predominate on the floodplain and on steeper slopes, with a mixture of livestock rearing, arable, market gardening and hop growing elsewhere.

- Unimproved neutral grassland (BAP lowland meadow) survives around Feckenham Forest and Malvern Chase. Along the main rivers, floodplain grazing marsh is prevalent. Fragments of unimproved calcareous grassland and acidic grasslands are also found. (Natural England, July 2012)
The Worcestershire landscape character assessment (Worcestershire County Council, 2012), Herefordshire landscape character assessment (Herefordshire Council, 2006) and the Malvern Hills AONB Management Plan and ‘Landscape Strategy and Guidelines’ (MH AONB, 2004 & 2011) break the character areas down into landscape types. Six landscape types are present on the MHC holding. These are presented below along with their component key characteristics:

<table>
<thead>
<tr>
<th>Landscape Type</th>
<th>Key characteristics and example site</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Hills and Slopes</td>
<td>• Dominant, steeply sloping highland topography.</td>
</tr>
<tr>
<td></td>
<td>• Shallow mineral soils supporting extensive areas of acid grassland and heath.</td>
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<tr>
<td></td>
<td>• Exposed character with panoramic views.</td>
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<tr>
<td></td>
<td>• Unenclosed rough grazing land with few signs of human habitation.</td>
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<tr>
<td></td>
<td>• Ancient Precambrian geology with numerous accessible outcrops.</td>
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<tr>
<td></td>
<td>• Water spouts and springs.</td>
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<td></td>
<td>• Heavily wooded lower slopes.</td>
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<td></td>
<td>• E.g. North Hill</td>
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<tr>
<td>Unenclosed Commons</td>
<td>• Unenclosed rough grazing land.</td>
</tr>
<tr>
<td></td>
<td>• Impoverished, poorly draining soils.</td>
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<tr>
<td></td>
<td>• Extensive areas of shrubby acid grassland.</td>
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<td></td>
<td>• Patches of scrub and secondary woodland.</td>
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<td></td>
<td>• Wayside dwellings, often red brick, located around the perimeter of the commons.</td>
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<tr>
<td></td>
<td>• Small plots associated with dwellings.</td>
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<tr>
<td></td>
<td>• E.g. Hollybed Common</td>
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<tr>
<td>Enclosed Commons</td>
<td>• Gently rolling, lowland landform.</td>
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<td></td>
<td>• Impoverished, poorly draining soils.</td>
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<td></td>
<td>• A planned enclosure pattern of straight boundaries and roads.</td>
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<td></td>
<td>• Pastoral land use with some arable farming.</td>
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<td></td>
<td>• An open landscape with views through scattered hedgerow trees.</td>
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<td></td>
<td>• Strips of linear tree cover along watercourses.</td>
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<td></td>
<td>• E.g. land adjacent to Castlemorton Common</td>
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<tr>
<td>Urban</td>
<td>• E.g. Link Common</td>
</tr>
<tr>
<td>Principal Wooded Hills</td>
<td>• Varied, often steeply sloping landscape.</td>
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<tr>
<td></td>
<td>• Ancient mixed geology with narrow bands of limestone.</td>
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<td></td>
<td>• Frequent, narrow wooded valleys, or dingles.</td>
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<tr>
<td></td>
<td>• Large, interconnecting, irregularly shaped blocks of ancient broadleaved woodland.</td>
</tr>
<tr>
<td></td>
<td>• Organic pattern of thickly hedged pastoral fields.</td>
</tr>
<tr>
<td></td>
<td>• Patches of rough grassland and scrub.</td>
</tr>
<tr>
<td></td>
<td>• Sparsely settled pattern of farmsteads and wayside dwellings.</td>
</tr>
</tbody>
</table>
| Principal Timbered Farmlands | • Low-lying rolling topography with occasional steep-sided hills.  
• Organic pattern of small-medium sized fields bounded by mixed species hedgerows.  
• Irregularly shaped woodlands of ancient character.  
• Filtered views through scattered mature, hedgerow trees.  
• Irregular network of winding lanes with thick roadside hedges.  
• Clustered pattern of farmsteads, rural dwellings and occasional small villages.  
• Traditional and commercial orchards.  
• E.g. Old Hills |

Landscape can be further investigated through the use of the ‘Worcestershire Historic Landscape Characterisation’ (WCC, ?).

### 1.3.5 Cultural heritage

#### 1.3.5.1 Archaeology

Mankind has had a long relationship with the Malvern Hills area. The dramatic landscape, natural boundary and source of spring water has given it special attention throughout time and this is still the case today.

The Hills we know today are a palimpsest landscape, meaning that signs of man’s activities from a range of different ages can still be seen today. The archaeological evidence for the use of the Hills through time, including landforms and artefacts, and inferences on the importance of the area to religious, spiritual and other cultural interests are discussed elsewhere, such as ‘The Malvern Hills An Ancient Landscape’ (English Heritage, 2005). The following text here describes what archaeological features can be found on MHC land.

Early prehistory and Neolithic periods are only represented by finds and no structures are known of so far. The first structures are from the Early Bronze Age, they are identified as two barrows or cairns found on the ridge of Pinnacle Hill. The barrows have been disturbed in more recent centuries, but would have originally been used as funerary monuments for the burial of the dead. These features are designated as a Scheduled Monument making them nationally important (Scheduled Monument reference number HE177).

Further evidence of Early Bronze Age activity was identified during excavations on Midsummer Hill Camp. These identified an earlier banked enclosure on Hollybush Hill predating the Iron Age hillfort and therefore of potential Bronze Age date. Similarly, the Shire Ditch is a well-known linear feature running along much of the length of the Malvern Hills ridge. While it was thought to be Medieval in age, recent research suggests it lies on top of an older demarcated boundary structure dated to the Late Bronze Age. The Shire
Ditch is also designated as a Scheduled Monument (Scheduled Monument reference numbers HE 244 for Herefordshire and WT 244 for Worcestershire).

The two great Iron Age Hillforts of Midsummer Hill and Herefordshire Beacon/British Camp dominate the archaeological landscape of the Malverns, the first being in National Trust ownership and the second in Conservators ownership. The hillforts have their own management plans written by Herefordshire Archaeology that detail the site features and management. These details are not repeated in this plan. Both hillforts are Scheduled Monuments (British Camp list entry 1003814). The scheduled area includes the pillow mound just to the south of British Camp hillfort. The hillfort management plans can be seen at: www.malvernhills.org.uk/visiting/archaeology_of_the_hills.aspx

The Roman period left little in terms of fixed structures on MHC land. Roman artefacts have been found and their management of woodlands through coppicing, although much less widespread, is still undertaken today as at Park Wood.

The Medieval period saw the further development of Herefordshire Beacon with the addition of the castle ringworks, banks, bailey and ditches. It also saw the remodelling of the Shire Ditch as we know it today. ‘Change throughout the Medieval period was profound…a heavily wooded landscape was cleared and cultivated in the 12th and 13th centuries’ (English Heritage, 2005). In this period small shrines and chapels were erected around the many springs by Holy people. In woodlands platforms for the burning of charcoal and sawpits also form part of the mediaeval legacy. It is thought that this time of settlement and cultivation may have resulted in the division of the Hills into management units.

Springs continued their importance into the post-Medieval period. Their fame as the ‘water cure’ attracted many visitors and saw the development of Malvern as a Victorian Spa Town. This increase in tourism initiated a suite of developments changing the character of the Hills. The construction of St Ann’s Well pump room and octagon in the 19th century. This is protected as a listed building. Further Edwardian and Victorian structures include many of the surfaced paths and their associated drainage and walls, follies such as Clutters Cave, carriageways, lampposts, the toposcope, various water piping and storage structures including the now defunct artificial stream and waterfall near Tank Quarry. Tree planting, often involving non-native species, also took place as part of Edwardian and Victorian landscaping.

Not all of the archaeological features of the Hills and Commons are understood. Very little is known about certain features and it is highly probable that entirely new features await discovery.

1.3.5.2 Past land use

The very oldest ways in which man used the Hills and surroundings can only be inferred from archaeological remains. The area was certainly occupied in the Bronze and Iron Ages as evidenced by the settlements and burial mounds. With settlement came livestock, hunting and clearance that cut small swathes into woodlands. This continued into Roman times.
Following afforestation in 1080, all of the land within MHC’s holding, with the exception of Old Hills, would have been a part of one of William the Conqueror’s Royal Hunting Forests (Forest meaning an area specifically concerned with the protection of deer and their habitats for royal hunting purposes, not an area of dense woodland). His Malvern Forest, with all the legal implications of that status, was to restrict development of an extensive area for the next 550 years (Hurle, 2007). The Royal Forest became a Chase (an area for nobility to hunt deer) in the thirteenth century and the area continued to be managed primarily for deer. Local people did eke out a living so long as it did not interfere with the deer and Forest law.

Clearance or development on Forest land required the King’s permission, but both happened unlawfully through the centuries opening up the landscape further. Local people exercised common rights including collecting dead wood, catching fish and grazing livestock on the wastelands. Some minor arable land was also present. Clay was dug locally for pottery and construction.

The protected status of the land was removed in 1632 by Charles I through dissafforestation. Charles I took a third of the former Chase leaving two thirds open and free to be used by local people and so the main land use changed from hunting for the elite to small-scale farming by local people.

For the last two centuries it is possible to be a bit more specific about land use:

The Malvern Hills saw changes to accommodate tourism particularly in the northern and central hills. Here, many paths were constructed including several carriageways, such as Lady Howard de Walden drive, used by walkers, donkeys and carriages. Some of these activities conflicted with the use of the same land for grazing hundreds of animals. Edwin Lees writes, in 1868, of Hills that were dominantly grassland. Unlawful encroachments and enclosures still afflicted the area, this coupled with increasing conflict between recreation and farming, led local people to take a Bill through parliament to protect the Hills and establish the Malvern Hills Conservators in 1884.

MHC staff regulated the grazing and other historic rights such as gorse and bracken cutting and took legal action on land theft.

In the twentieth century road building and quarrying became significant land uses. Modern roads including several busy B-roads now cut across or border much of MHC land. The Hills are crossed in four places and roads divide most of the flat commons too. Quarrying ceased in the 1960’s and left a legacy on the land including many small quarries and five large quarries. Commemorative Tree plantings took place for aesthetic reasons and for commemorations; Thirds Wood (a Larch plantation) was planted in for Queen Victoria’s Golden Jubilee.

Castlemorton and Hollybed Commons were much less in the tourist spotlight and these commons changed less, traditional grazing by commoners continues today. Localised gravel
digging and pollarding occurred. During the Second World War parts were cultivated and grew potatoes and oats. These commons were purchased in the 1960’s by MHC.

The dominant land use of Old Hills, the roadside verges and the urban commons was livestock grazing, mainly sheep, by local people. This also included grazing by tethered horses.

Since the Second World War the amount of grazing has been in decline throughout the holding. The urban commons are no longer grazed and Old Hills sees just a few tethered horses. Grazing on the Malvern Hills stopped around 1990.

With the decline in grazing, new legal designations and a more environmentally conscious zeitgeist, the MHC have increasingly had to undertake alternative forms of conservation land management to conserve the landscape. Mechanical works and new projects have had to fill the hole left by the loss of grazing. A hay cut is now taken from Malvern Common, the verges and Old Hills. Controlled burning has also been used.

Significant areas are now bracken rolled or mowed. MHC field staff and volunteers work to reduce and control invasive scrub and trees. Grazing has been reintroduced onto the Hills after funding was secured to support local graziers. The balancing act between recreation and maintaining the Hills and Commons and protecting against encroachment is just as challenging today as it has been in the past.
1.3.6 People – stakeholders, access & recreation

1.3.6.1 Stakeholders

The Malvern Hills and Commons are a large, complex and popular landscape that has a high number and variety of stakeholders (i.e. any individual, group, or community living within the influence of the site or likely to be affected by management decision or action, and also any individual, group or community likely to influence the management of the site (Alexander, 2008)). To manage the land successfully, stakeholders must be identified and worked with. They include:

- Local residents
- People with Commoners’ rights and the Castlemorton Common Association
- Visitors
- Graziers
Local interest groups such as Malvern Spa Association, Beacon Camera Club, H&W Earth Heritage Trust, the Wildlife Trusts, Malvern Hills Arts and Crafts Guild

Education institutes including Malvern College, Worcester University, Schools

Recreation clubs e.g. Malvern Hang Gliding Club

MHC Staff, Wildlife Panel, Recreation Panel, Board Members, Volunteers

Utility companies including Severn Trent Water, British Telecom

Councils and affiliates including Worcestershire County, Herefordshire, Malvern Hills District, Highways agencies, Land Drainage Partnerships, Parish Councils and Tourist Information Centres.

Neighbouring landowners including Bromsberrow Estate, Eastnor estate, the National Trust, Little Malvern Estate.

Local businesses including: shops, pubs, cafes, bed & breakfasts, hotels, walking tours, Malvern Outdoor Elements.


The Malvern Hills and Commons are seen in many different ways and valued for many different things by a huge range of people. To help inform this management plan MHC ran a consultation in 2014 called ‘Your Views’. This asked stakeholders to identify their top three important features of the Hills and Commons and their top three issues. 461 replies were received giving 1420 responses to the first question and 1122 responses to the second. The aggregated results of what stakeholders said are presented here in two pie charts.
Results of the 2014 ‘Your Views’ consultation:

**Important features of the Malvern Hills and Commons**

- Landscape and views: 34%
- Access and recreation: 22%
- Plants and wildlife: 19%
- Specific areas: 10%
- Land management: 3%
- Livestock grazing: 3%
- History & archaeology: 2%
- Springs: 2%
- Car parking: 2%
- Geology: 1%
- Not applicable to mhc: 1%
- Signage: <1%
- Other / ambiguous: 1%

**Issues on the Malvern Hills and Commons**

- Bikes: 15%
- Dogs: 15%
- Scrub and trees - too much clearance: 3%
- Waste / litter: 3%
- Parking: 5%
- Facilities / services: 5%
- Livestock grazing: 5%
- Cable car: 7%
- Land management: 9%
- Access and recreation: 10%
- Development: 3%
- Policies / organisation: 2%
- Miscellaneous: 2%
- Horses: 2%
- Signage: 2%
- Bikes: <1%
- Development: 3%
- Scrub and trees - too much scrub/trees: 12%
- Miscellaneous: 2%
- Horses: <1%
- Development: 3%
- Policies / organisation: 2%
- Miscellaneous: 2%
- Horses: 2%
- Signage: 2%
- Bikes: <1%
- Development: 3%
Stakeholders may also see the future of the Hills and Commons and its management in as equally diverse set of ways. Here are a selection of views…

“Management should be tree friendly. However, I am aware of the need for some control in certain areas. The visual effect, of tree clearance is quite depressing, this is particularly the opinion of some locals who find the tree shaded walk they do regularly is now an open area dotted with stumps where the trees once were. Above a certain contour the grassland should be managed. If this contour is about where we currently have the tree line there will be less tree work to do. There are areas where grass is extending down to lower levels. There should be an ongoing sapling removal project that could preserve the mature ash, birch and oak and the landscape trees. Trees should not be removed to ‘open up the views’ as this is not conservation”.

Steve Price, Barnard’s Green

“In 5-10 years’ time I would wish to see the Malvern Hills free of tree encroachment on the upper slopes and well managed by grazing livestock. An increase in the acid grassland and bilberry/heather vegetation would be welcome and a reduction of bracken cover. It would be good to have strengthened populations of the rare and scarce plants and animals which live on the Malverns. I would not wish to see the café rebuilt or a cable car or similar infrastructure erected on the hills – this would greatly detract from the natural beauty of the landscape”.

Hilary Ward, West Malvern

“As bee keepers, my husband and I really value the diversity of flora on the hills and commons, especially the horse chestnut trees, lime trees and rosebay willow herb. The gorse is also good for its pollen. However, as we live closest to the Peachfield Road, Malvern Common we are disappointed in the huge swathes of bracken that have taken over in recent years. We would like to see this removed or at least reduced over the next few years.

Heather has been introduced on the hills and we would enjoy seeing more areas covered in the purple tones of heather.

Willow is good for nectar and pollen for all types of bee, so if some could be planted near the water courses on the commons that would be helpful as well as being attractive”.

Heather Fooks, Malvern

“I would like to see the accessibility to the hills and commons remaining as open as possible to everyone who wants to enjoy them. They must be managed in a way that balances ALL the different recreational uses so that no one sector dominates and new uses can be accommodated. Regular critical review and feedback should be a fundamental part of the management plan and just because something did or did not work in the past should not be a reason for excluding it from review. Health and safety should remain an important concern but should not be allowed to dominate how an area is managed. Incentives for, and education of the public should be encouraged to enhance the stewardship of the land (volunteering, open days, walks and talks etc.) and new technology should be embraced in achieving this wherever appropriate.

As a runner, good way-marking, properly maintained paths, stiles and gates, and clearly defined ‘no go’ areas, would be well received as would encouragement of dog walkers to keep their dogs under control and mountain bikers to respect other users of the bridleways”.

Jon Pickering, Great Malvern
1.3.6.2 Access and Recreation

The majority of the holding is easily accessible both in terms of getting to it and exploring the site once there. The Malvern Hills Acts determine that all MHC land is open to the public with certain constraints provided by the Byelaws. Whilst walkers and horse riders may go anywhere, cycling is only permitted on public bridleways. Areas can be excluded from public access for reasons of safety or conservation.

This large expanse of publicly accessible space means surrounding populations enjoy the highest standards of access provision in the county as shown in green infrastructure work by Worcestershire County Council (WCC, 2014).

The land is criss-crossed by public footpaths and bridleways (see Tenure). The Worcestershire Way long distance footpath finishes on the northern hills. Easier-access paths are present from Earnslaw, Beacon Road and Black Hill car parks allowing those who are less mobile to experience the quarries, lakes and views of the Hills.

Access is facilitated through the provision of access infrastructure including 22 car parks, bins, signage/interpretation and land management that maintains footpaths and keeps the land open. Three public toilets are available at the Herefordshire Beacon (maintained by Herefordshire Council), the Wyche Cutting (owned and maintained by Herefordshire Council but on MHC land) and near St Ann’s Well. A private café business is run from the MHC owned building at St Ann’s Well.

Because the land can be readily accessed at any place and any time, gaining an understanding of the amount of people accessing the land is difficult. No specific measures are in place to count the number of users but it is possible to gain some understanding of numbers and trends through proxy indicators.

A visitor survey in 2007 found that the average group size was 2.36. Assuming this is correct we can use ticket sales to gain an idea of visitor numbers and which are the most visited of the metered car parks. These calculations are presented below:

<table>
<thead>
<tr>
<th>Car Park</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Camp</td>
<td>68,060</td>
<td>59,983</td>
<td>62,950</td>
<td>63,664</td>
</tr>
<tr>
<td>Black Hill</td>
<td>18,240</td>
<td>15,239</td>
<td>16,220</td>
<td>16,567</td>
</tr>
<tr>
<td>Beacon Road</td>
<td>14,158</td>
<td>12,966</td>
<td>13,490</td>
<td>13,538</td>
</tr>
<tr>
<td>Gardiners</td>
<td>12,101</td>
<td>10,474</td>
<td>11,271</td>
<td>11,282</td>
</tr>
<tr>
<td>Earnslaw</td>
<td>13,207</td>
<td>10,078</td>
<td>10,799</td>
<td>11,261</td>
</tr>
<tr>
<td>North Malvern</td>
<td>11,422</td>
<td>10,879</td>
<td>11,342</td>
<td>11,214</td>
</tr>
<tr>
<td>West of England</td>
<td>7,160</td>
<td>5,769</td>
<td>5,796</td>
<td>6,241</td>
</tr>
<tr>
<td>Swinyard</td>
<td>5,741</td>
<td>5,305</td>
<td>5,651</td>
<td>5,566</td>
</tr>
<tr>
<td>Plateau/Jubilee Drive</td>
<td>3,045</td>
<td>2,773</td>
<td>2,733</td>
<td>2,850</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153,161</strong></td>
<td><strong>133,467</strong></td>
<td><strong>140,252</strong></td>
<td><strong>142,293</strong></td>
</tr>
</tbody>
</table>
Anecdotal evidence from long-serving staff concurs that these are the busiest car parks. Staff also identify those busiest parts of the holding which include; the ridgeline of the Hills, Gullet Quarry, the Mill Pond, Old Hills, Worcestershire Beacon and Herefordshire Beacon. Those doing longer walks and sponsored walks tend to walk the ridgeline with a resultant eroded trail running along the ridge. In contrast, the southern hills and several of the smaller sites such as Bowling Green Meadow are much less visited. Numbers clearly vary through the year with summer and bank holidays being particularly busy times.

The majority of people visiting the Hills can be classed as local, 92.3% of people visiting the Malvern Hills had travelled less than an hour, and 71.6% of respondents had travelled less than 30 minutes to visit.

Most visitors tend to spend between 1 and 2 hours on the Hills. Only 3.7% of respondents to the visitor survey had not visited the Malvern Hills in the last 12 months which suggests that a large number of the visitors to the area are repeat visitors. Responses from the same question noted that almost a quarter of respondents had visited the Hills 50+ times in the last year, more than once a week. This, again, suggests that a large number of visitors are local. Those visitors travelling further to reach the Malvern Hills would be expected to spend more time on the Hills (Worcestershire County Council, 2008).

Further data relating to other visitor demographics such as age, ethnicity are not currently held.

The majority of visitors travel by car or walk from their homes. Road and rail networks are numerous and capacious surrounding the northern and central hills. Here too coaches are able to park. Whilst the southern hills, Castlemorton and Hollybed Commons are served by fewer roads and no railway station and there are no MHC car parks large enough for coaches.

For information about visitors to the wider area please see ‘Malvern Hills AONB Visitor Survey’ 1999/2000 by the Heart of England Tourist Board.

The Hills and Commons are used for a large range of recreational activities by people. These include the legal activities of:

- Walking (including group walks and sponsored walks)
- Dog walking
- Mountain biking
- Horse riding
- Hang gliding / paragliding
- Climbing
- Jogging / running
- Orienteering / geocaching
- Foraging (blackberries etc.)
- Fishing
• Photography
• Barbeques / picnics
• Hunting / ferreting (only with authorisation)
• Arts/painting/crafts/music
• Model aeroplane flying
• Birdwatching / natural history
• Scuba diving (only with authorisation)
• Snow and grass sledging
• Yoga / Tai chi
• Research and study
• Kite flying

It also includes the unlawful activities of:

• Swimming (an offence under the bylaws)
• Camping (an offence under the bylaws)

Many of the above activities are done as part of a group or society and several of these are represented on MHC’s Recreation Advisory Panel. One particularly notable event that is now a part of the area’s culture is the annual well dressing event run by the Malvern Spa Association.

1.3.6.3 Interpretation and Education

Interpretation

Leaflets produced by MHC provide some information for visitors and are available from the local Tourist Information Centres and the MHC office. The majority of these publications are also available on the Conservators’ website. There are specific interpretation publications relating to easier access trails on the Hills, open access, walking trails, and management of the Hills and Commons. Codes of conduct are also available providing information for use of the Hills. Much of the interpretation was designed in the 1980’s and is in need of updating.

The website has a large array of information including the Acts of Parliament, byelaws, latest news, recommended walks, survey information etc. www.malvernhills.org.uk
A Facebook page is also available promoting events and the latest news.
https://www.facebook.com/malvernhillsconservators

Several QR (quick response) codes are present at popular localities. They provide local information to certain mobile phones. They are not run by MHC.

Interpretation boards are also present at a number of the main car parks around the Hills. The majority provide a small amount of information relating to the Malvern Hills Conservators and the organisation, a map, and information concerning the features of interest or history of the area. For example, interpretation at Park Wood provides some information on the history of the lime kilns and the management technique of coppicing
within the woodland. Some areas such as Old Hills and the urban commons do not have any interpretation provisions.

Education

The holding is readily used by many schools and other educational bodies. While some information is provided as above, there is no bespoke educational material.

A small area of woodland above Westminster Bank is currently used as a ‘forest school’ by St James C of E Primary School for outdoor teaching and learning.

A programme of public events organised by MHC in 2013 onwards offer guided walks and training using local experts and MHC staff.

Students from Worcester University, and occasionally universities elsewhere in the country, make requests to complete their research and thesis on the Hills and Commons. Typical focuses of study are the environment, land management and archaeology.

Malvern Outdoor Elements uses some areas of the Hills for teaching school and adult groups from the West Midlands area. Outdoor activities include abseiling, climbing and orienteering.
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END OF PART 1