



Topic Paper for the Chilterns Beechwoods SAC

A summary/overview of available evidence

Dacorum Local Plan (2020-2038) Emerging Strategy for Growth
November 2020

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Overview of the Chilterns Beechwoods SAC



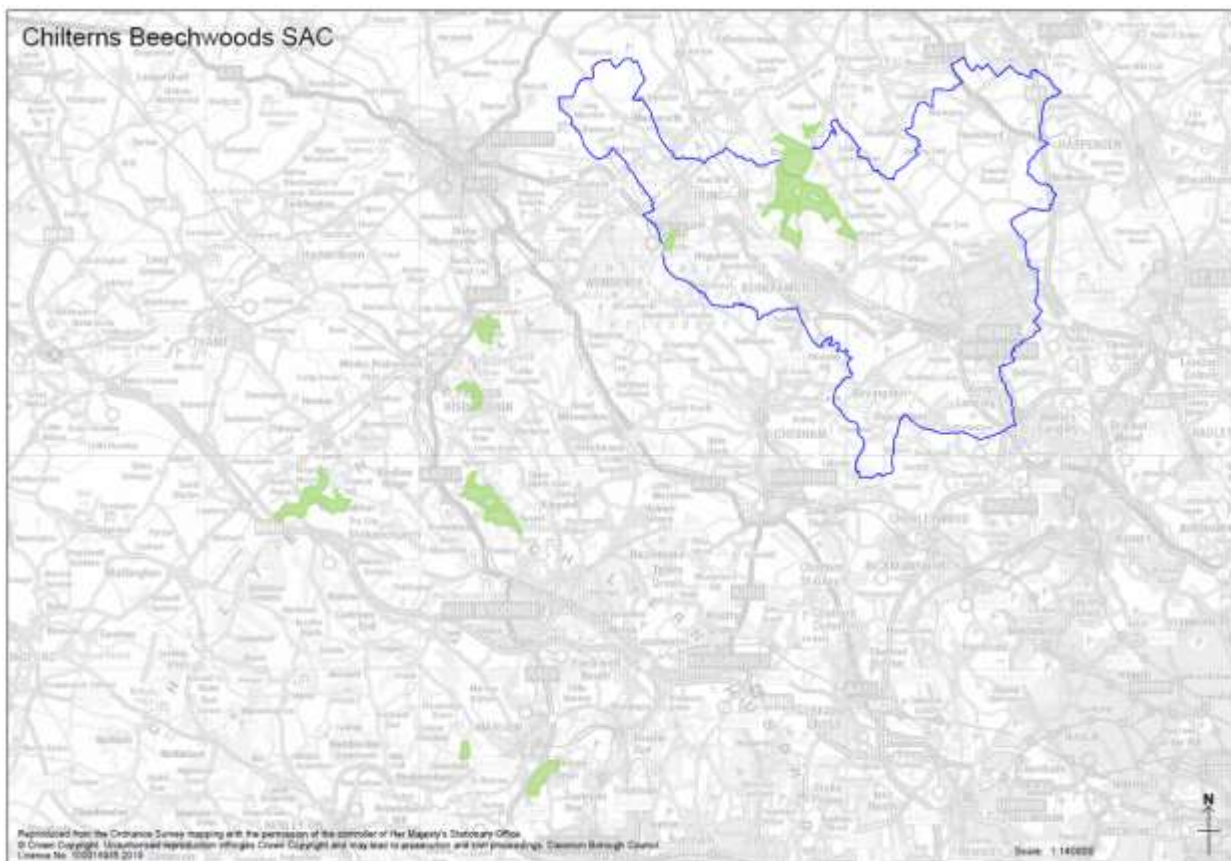
The appendices to this document includes the following important overview information produced by Natural England. It should be noted that the initial list of documents cover all the units of the SAC (which extends to a number of other parcels located outside of Dacorum (as shown by the map below).

- Citation for Chilterns Beechwoods Special Area of Conservation (SAC) (Appendix 1);
- Chilterns Beechwoods SAC Features Matrix (Appendix 2);
- Site Conservation Objectives for Chilterns Beechwoods SAC (Appendix 3); and
- Site Improvement Plan for Chilterns Beechwoods SAC, 2015 (Appendix 4).

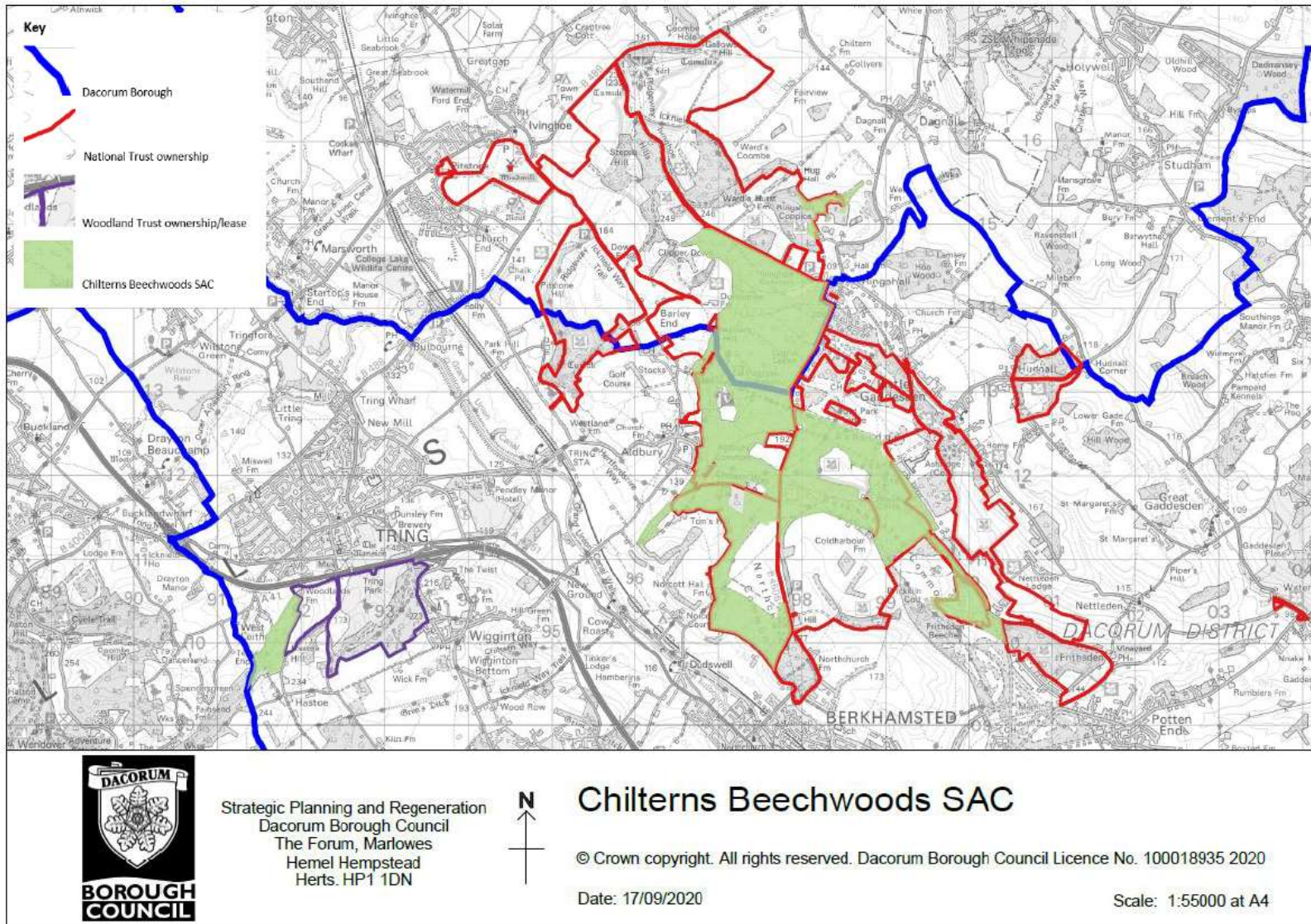
For the Tring Woodlands SSSI and Ashridge Commons and Woods SSSI, there are the following unit specific documents held within the appendices to this document:

- Citation (Appendix 5 and 10);
- Condition summary by Natural England (Appendix 6 and 11);
- Condition Assessment by Natural England (Appendix 7 and 12);
- Operations likely to damage the special interest features (Appendix 8 and 13); and
- Views About Management: A statement of English Nature's views about the management of the SSSI (Appendix 9 and 14).

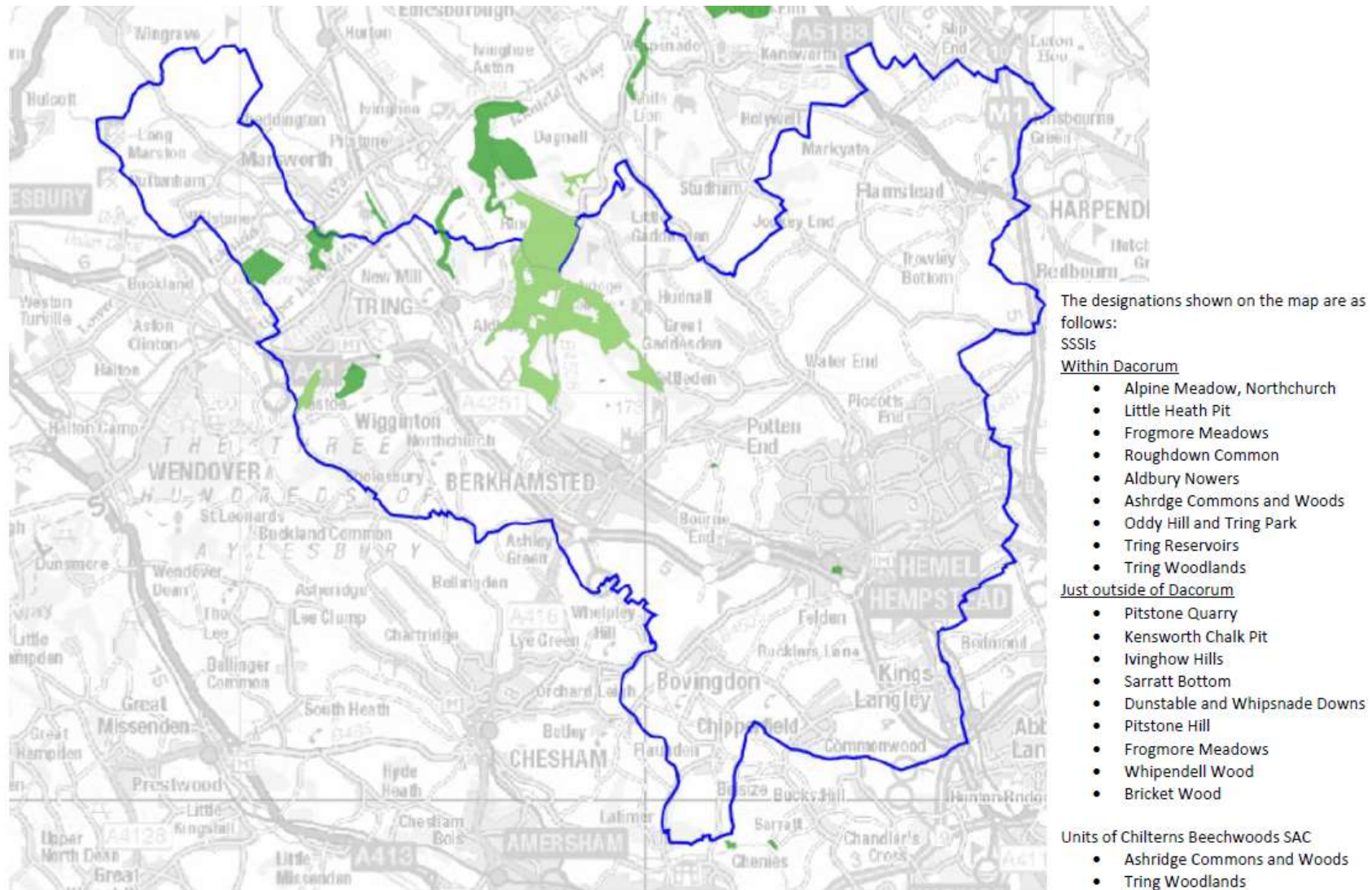
Map showing the whole of the Chilterns Beechwoods



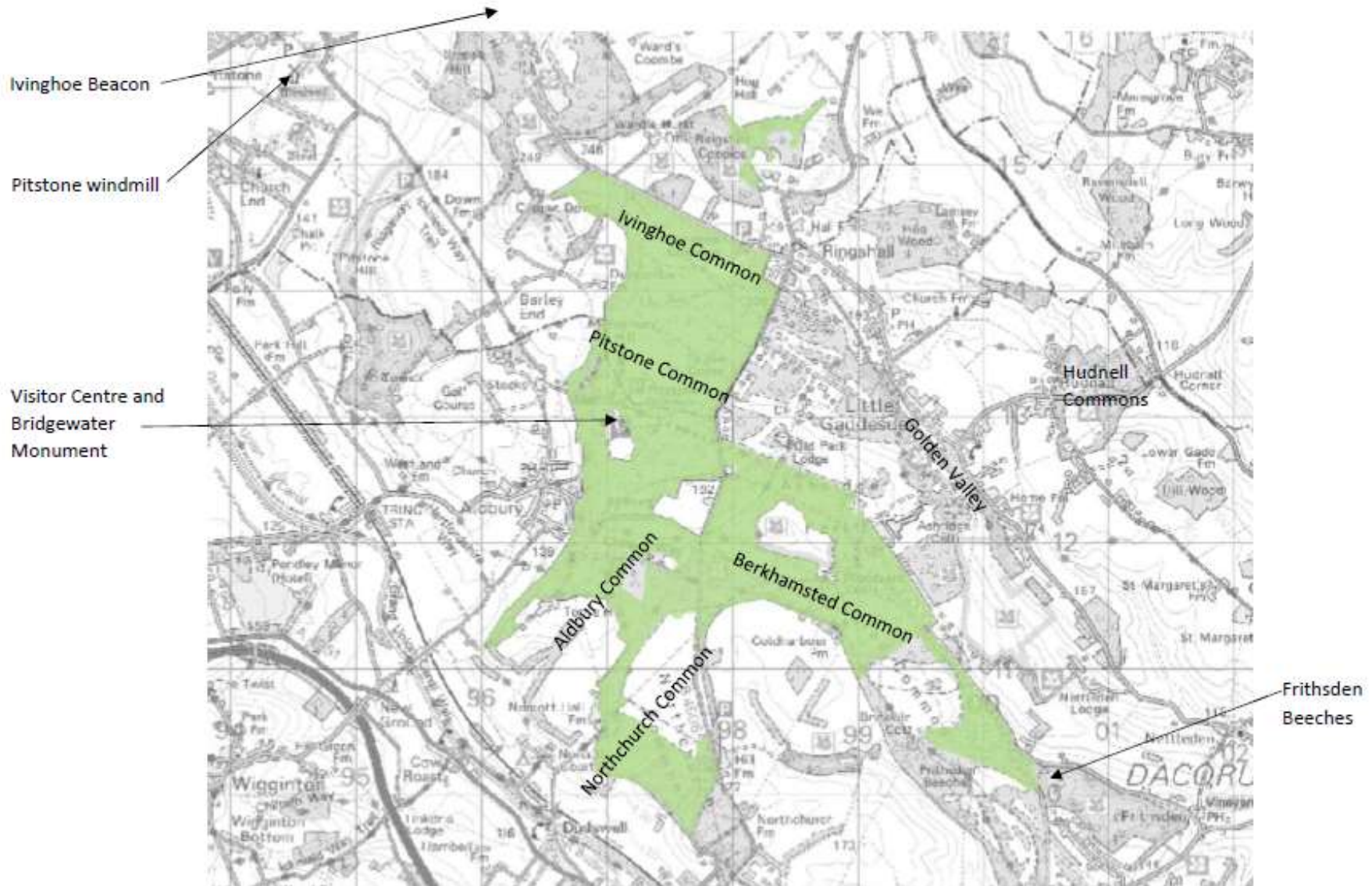
Map showing the Chilterns Beechwoods within Dacorum



Mapping showing SSSIs (dark green) and Chilterns Beechwoods SAC (light green)



Map showing the areas of Ashridge Estate



Distance to Chilterns Beechwoods SAC from proposed site allocations in the emerging Local Plan (Regulation 18 as at November 2020)

Sites for housing	Tring Woodlands SSSI	Ashridge Commons and Woods SSSI
	Approximate distance	
Tring		
Dunsley Farm	1,360m	2,085m
Miswell Lane	1,125m	4,555m
Icknield Way	1,125m	4,865m
East of Tring	2,110m	1,735m
Berhamsted		
Lockfields, Northchurch	5,340m	480m
East of Darrs Lane	5,310m	1,145m
Blegberry Gardens	5,840m	1,980m
Rossway Farm	5,190m	1,765m
Former Jewson site Billet Lane	6,360m	1,190m
Berkhamsted Civic Centre	7,580m	2,390m
South of Berkhamsted	7,590m	2,920m
Land of Bank Mill	8,850m	2,700m
Hemel Hempstead		
LA3 West Hemel	11,140m	5,380m
North Hemel Phase 1	12,580m	4,160m
LA1 Marchmont Farm	13,760m	5,300m
Henry Wells Square	14,720m	6,095m
Cupid Green Depot Redbourne Road	15,430m	6,820m
Heart of Maylands	15,950m	7,600m
Plots 2 & 3 Kier Park, Maylands Avenue	16,285m	7,930m
Land to r/o St Margaret's Way / Datchworth Way 5	16,940m	8,560m
Land South of Green Lane	17,075m	8,730m
MU1 West Herts College site and Civic zone	13,800m	5,635m
MU2 Hemel Hempstead Hospital site	14,100m	6,030m
Market Square and bus station	14,050m	5,900m
NCP car park Hillfield Road	13,950m	5,790m
MU3 Paradise / Wood Lane End	14,310m	6,270m
Two Waters North (the Plough)	14,140m	6,250m
Station Gateway	12,955m	5,505m
National Grid site	13,610m	6,110m
Symbio Place Whiteleaf Road	14,085m	6,480m
Two Waters / London Road junction	14,260m	6,615m
233 London Road	14,435m	6,790m
Frogmore Road	14,835m	7,200m
Ebberns Road	14,870m	7,210m
Bovingdon		
Chesham Road/Molyneaux Avenue	10,910m	6,340m

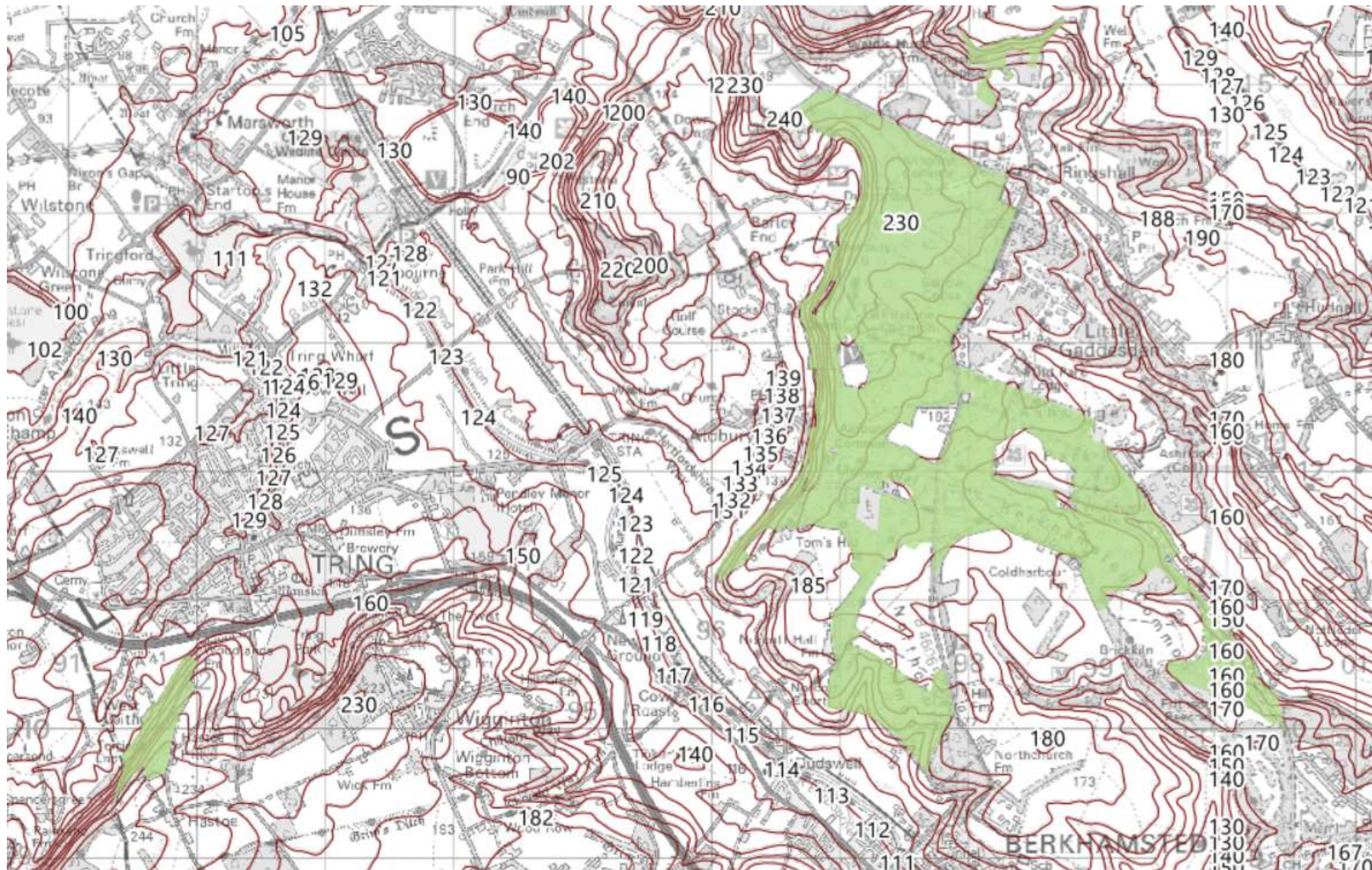
Sites for housing	Tring Woodlands SSSI	Ashridge Commons and Woods SSSI
	Approximate distance	
Grange Farm	10,980m	6,810m
Kings Langley		
Rectory Farm	16,600m	9,650m
Coniston Farm	16,100m	9,170m
Markyate		
South of London Road	15,510m	7,940m
Watling Street r/o Hicks Road and High Street	15,455m	7,560m
Hicks Road and High Street	13,370m	7,500m
Sites for employment	Tring Woodlands SSSI	Ashridge Commons and Woods SSSI
	Approximate distance	
Dunsley Farm, Tring	1,360m	2,085m
Bourne End	10,625m	4,430m
Land East of A41 Hemel Hempstead	13,705m	6,265m
Maylands Business Park	16,980m	8,530m

Recreational Pressure



Recreational Pressure

Topography/contour lines of Chilterns Beechwoods SAC: Ashridge Commons and Woods SSSI and Tring Woodlands



Recreational pressure at Tring Park



Tring Park is adjacent/proximate to Tring Woodlands SSSI (part of the Chilterns Beechwoods SAC).

Tring Woodlands is a 23.8 hectare SSSI close to Tring. It is part of the Chilterns Area of Outstanding Natural Beauty. The wood has a rich flora and is well established. It is a good example of a semi-natural beech wood in Hertfordshire. The beech is intermingled with Ash and Oak predominately.

Supporting documents

The appendices to this document include the following important overview information produced by the Woodlands Trust. It should be noted that this data relates in the main to Tring Park (which is adjacent/proximate to the Tring Woodlands SSSI and is likely to generate the greatest volume of 'car based' visitors within this area). This may be useful data to be used as a 'proxy for the area', as well as to understand how the site is proposed to be expanded in future years (including the delivery of an on-site car park).

- Potential Impacts of Recreation on Woodland Trust's Tring Park Site, September 2019 (Appendix 25); and
- Ecological Walkover Assessment, Visitor Survey and Identification of Potential Impacts of Recreation on the Woodland Trust's Tring Park Site, September 2019 (Appendix 26).

Promoted walking routes at Tring Park

These are mapped publicly available documents off of the Trust's website.

Map for children



Map for all users



Google Earth aerial image (as at 2020) of Tring Woodlands

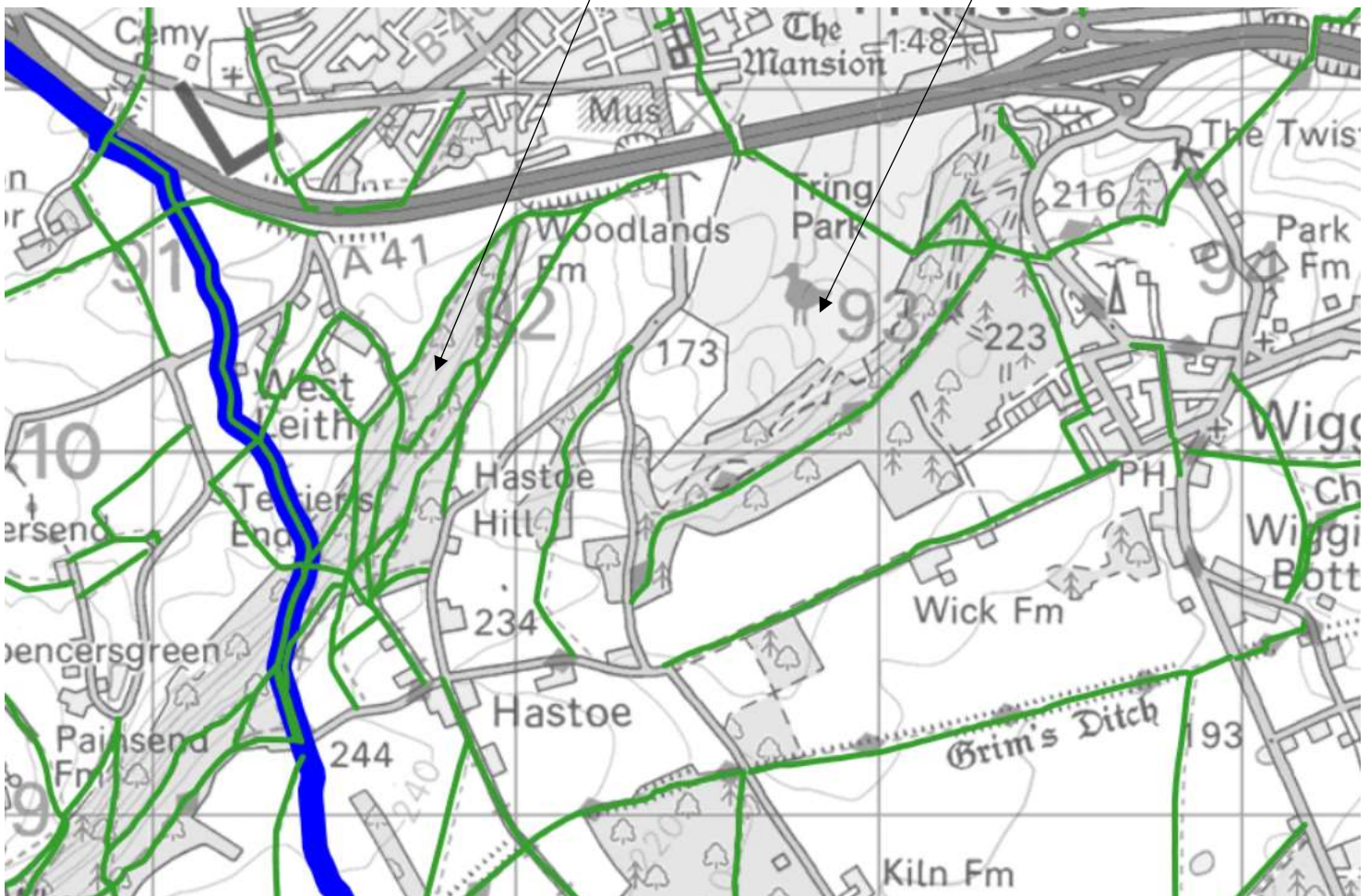


<https://earth.app.goo.gl/C3swfX>

Tring Woodlands SSSI

Oddy Hill and Tring Park SSSI

Public Rights of Way within the area



Recreational pressure at Ashridge Estate



Ashridge Estate is a 2000Ha (5,000 acres) area of the Chilterns Hills with beech and oak woodlands, commons and chalk downlands. These very different landscapes each support a rich variety of wildlife, including carpets of bluebells in spring, rare butterflies in summer and fallow deer that run in autumn. It is part of the Chilterns Area of Outstanding Natural Beauty.

Ecological reports

The appendices to this document include the following important ecological reports for Ashridge Estate (which have been commissioned by and kindly shared with us by the National Trust). These are:

- A survey of Saproxyllic coleopteran (and other invertebrates) of selected areas of the Ashridge Estate; Hertfordshire and Buckinghamshire by A.P.Foster, 2017 and 2018 (Appendix 15 and 16);
- Monument Drive, Ashridge Estate Breeding Bird Survey Report – draft by Denny Ecology, October 2018 (Appendix 17); and
- Preliminary Ecological Appraisal for the National Trust’s Proposed new car park, Ashridge Estate by Bernwood ECS Ltd, October 2017 (Appendix 18).

Woodland and Conservation Management Plans

The appendices to this document include the following important ecological reports for Ashridge Estate (which have been commissioned by and kindly shared with us by the National Trust). These are:

- Woodland Management Plan including priority actions map, summary overview map and compartment plan, September 2019 (Appendix 20);
- Brief to produce a Conservation Management Plan for the central area of the Ashridge Estate and plan boundary by National Trust, July 2018 (Appendix 21);
- A Conservation Management Plan for the Central Area of the Ashridge Estate (Part 1) by Historic Environment Associates. September 2019 (Appendix 22); and
- Nature Conservation Evaluation Ashridge Estate: Monument Drive, 2015 survey by National Trust (Appendix 23).

Summary of routes promoted by the National Trust¹

Below highlights the routes across the Estate to assist with highlighting how visitors may be accessing the site (by foot or by car) and also where ‘non-local’² visitors may be attracted to walking/are promoted to visit by the Trust.

How to get to Ashridge Estate

The Trust’s website details how you can access the site by cycling (from the Chilterns Cycle route), on foot (from the Ridgeway footpath), by train (with a route set out from Tring train station to the Estate or from Cheddington train

¹ <https://www.nationaltrust.org.uk/ashridge-estate/>

² Someone who does not live in a local settlement proximate to the Estate.

station to Ivinghoe Beacon) and by bus (one which stops close to the end of Monument Drive, or ones also in Tring or Aldbury village).

Rights of Way

The Trust's website says that the best way to explore the Ashridge Estate is on foot or by bike. Miles of footpaths and bridleways give you plenty of space to explore, and if you drop into the visitor centre they say they are happy to share their favourite routes with you.

There are numerous routes promoted by the National Trust on their website. A summary of the data is available below. Much of this information has been taken from or is accessible from the Trust's general site overview pages at: <https://www.nationaltrust.org.uk/ashridge-estate/activities>. For ease, key information is shown/summarised below.

Cycling

- There are over 30 miles of public bridleways to cycle on at Ashridge Estate. Interested parties can either get an Ordnance Survey map that will show all of these routes (marked with a long green dash) or you can purchase an Ashridge cycling map from the Visitor Centre.
- The Trust asks that visitors keep to the marked bridleways and cycle tracks. They also ask that cyclists ride carefully and give way to horse riders and walkers.
- Family cycle route: If you're looking for a shorter ride, the Estate has a 4 mile route suitable for families. Taking you through woodland and commons (promoted as seeing some of Ashridge's best landscapes). The route is waymarked with red waymarkers and starts near the cafe (as you head down the hill).

Walking

- The Trust's website says that Ashridge visitor centre is a short detour from the Ridgeway footpath at Ivinghoe Beacon.
- Simple waymarked routes: the ancient tree walk and the woodland walk both start and finish at the Bridgewater Monument.
- Surfaced Family Walks: two routes starting near the visitor centre are accessible to pushchairs and wheelchairs, including a circuit around Meadleys Meadow (0.8 miles, 20 minutes), Duncombe Terrace Family Walk (duration varies on when visitors turn around – up to 2.5 miles) and other woodland walks. These are promoted by National Trust for family visits. The website suggests that these are not waymarked routes.
- Pathways: the website states that there are smooth and flat tracks to rougher routes and sloping natural terrain across the Estate. It also highlights that many routes can be slippery and muddy after wet weather.
- All ability trails: three accessible routes starting near the visitor centre.
- Waymarked walks: there are four routes for you to follow during your visit. They range from a one-mile family stroll to a heart-pumping eight-mile hike. Alongside these, there is also a popular 17 mile boundary trail or a simple route along Duncombe Terrace (2.5 miles).
- There are also some other paths shown on the Trust's website which you can see here: <https://www.nationaltrust.org.uk/ashridge-estate/lists/self-led-walks-at-ashridge>.

Picnicing and large groups of visitors

- The Trust's website says visitors can picnic on the estate, though not in some sensitive areas. It emphasises that visitors should help the Trust to look after these areas by taking their litter home with them.
- All parties and groups need to contact the visitor centre for permission for their event.

Horse riding

- The National Trust also have a permitted bridleway network covering a further 20 miles of paths.
- Annual permits and day passes are available for the Estate. The Trust ask that horse riders to keep to bridleways and display their riding permit if using permitted bridleways.
- The Trust asks trailer/horsebox users park on surfaced car parks to limit damage to the site.

Events

Due to Covid, there are no formal Trust promoted events occurring on the site. These would normally be promoted online at: <https://www.nationaltrust.org.uk/ashridge-estate/whats-on>.

Dogs

Dogs are welcome, but must be kept under close control at all times to avoid worrying wildlife. The Trust ask all dogs to be kept on leads along Monument Drive and around the visitor centre. There is a dog walking code of conduct (available from the visitor centre). There are five poo bins along Monument Drive and around the visitor centre. Although, the Trust ask that visitors take dog poo home with you.

Litter bins

The Trust says that there are no litter bins on site, so visitors are asked to take litter home with them.

Access and Facilities

The National Trust's website provides details on the facilities that the site provides, available at: <https://www.nationaltrust.org.uk/ashridge-estate>.

- Toilets and baby changing facilities are available at the visitor centre (between 10am and 4pm).
- Accessible parking – 12 accessible parking spaces 50 yards from the visitor centre. One of these two zones is located in the main car park next to the visitor centre and the other is past the visitor centre opposite the café.
- Mobility Vehicles (PMVs): They are available to help visitors explore more of the estate. Single seater scooters and two-seater golf buggies that have been adapted for off road use and are available to borrow from 3rd August until mid-October (Mon to Fri) and runs from behind the café. Booking is essential with slots available at 12pm, 1.30pm and 3pm. Vehicles can be collected from just outside the visitor centre and can be borrowed for up to an hour (weather permitting).
- Visitor centre: includes a main entrance, exhibition room, study base and gift shop which are all available on one level.

Location of facilities



An example of the hours that the site is promoted as being open from/till is shown below:



Some further detail relating to specific areas of the Estate are as follows:

Monument Drive: BBQ's are only permitted on Monument Drive and need to be raised off the ground to prevent fires. Disposable BBQs are not allowed as they are a fire hazard and can easily set fire to dry grass especially when disguardred while still extremely hot. . The Trust says if you don't want to walk too far park up on Monument Drive and have a picnic nearby.

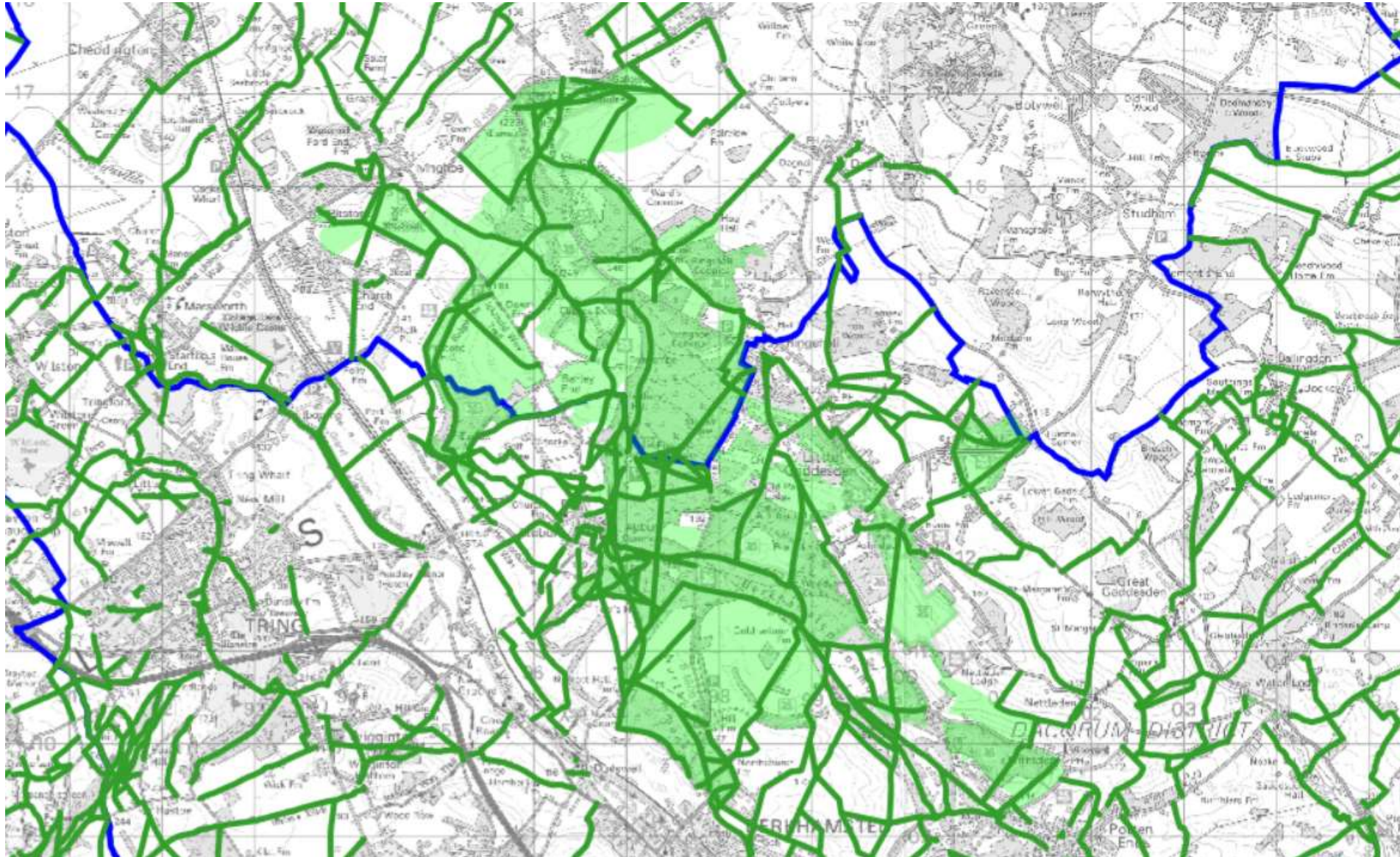
Monument Green: Close to Bridgewater Monument is a central spot close to the visitor centre. BBQs, gazebos and pop up tents are not permitted in this area.

Meadleys Meadow: Behind the visitor centre its open space for family games, large groups and room to spreadout your picnic blanket. BBQs are not permitted in this area.

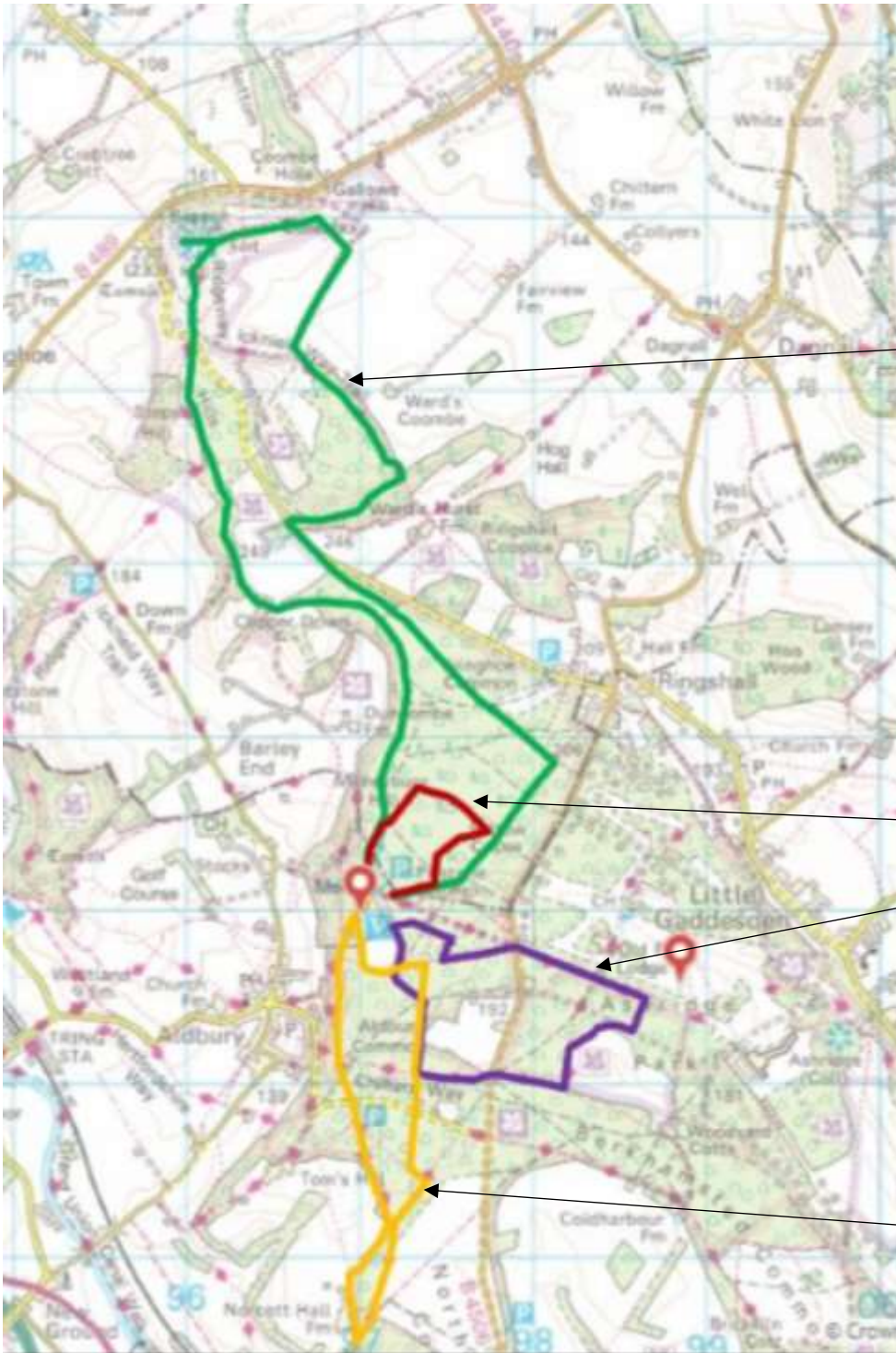
Rights of Way

This map shows the rights of way as shown on the definitive map for Buckinghamshire and Hertfordshire.

Ashridge Estate



The four **waymarked routes** at Ashridge Estate are shown below. Additional details for these routes are available in the Trust's Ashridge Estate 'pamphlet':



Wildlife Walk - 5 miles (8.0km)
 A shorter return option is available on this walk. This circular walk will take roughly 4 hours to complete and is not suitable for wheelchairs or buggies.

Wildlife Walk

Woodland Walk - 1 mile (1.6km)
 This circular walk will take roughly thirty minutes to complete and is not suitable for wheelchairs or buggies.

Woodland Walk

Foresters' Walk

Foresters' Walk - 3 miles (4.8km)
 This circular walk will take roughly two hours to complete and is not suitable for wheelchairs or buggies.

Rangers' Ramble

Rangers' Ramble - 3 miles (4.8km)
 This circular walk will take roughly two hours to complete and is not suitable for wheelchairs or buggies.



Ashridge Estate surfaced tracks



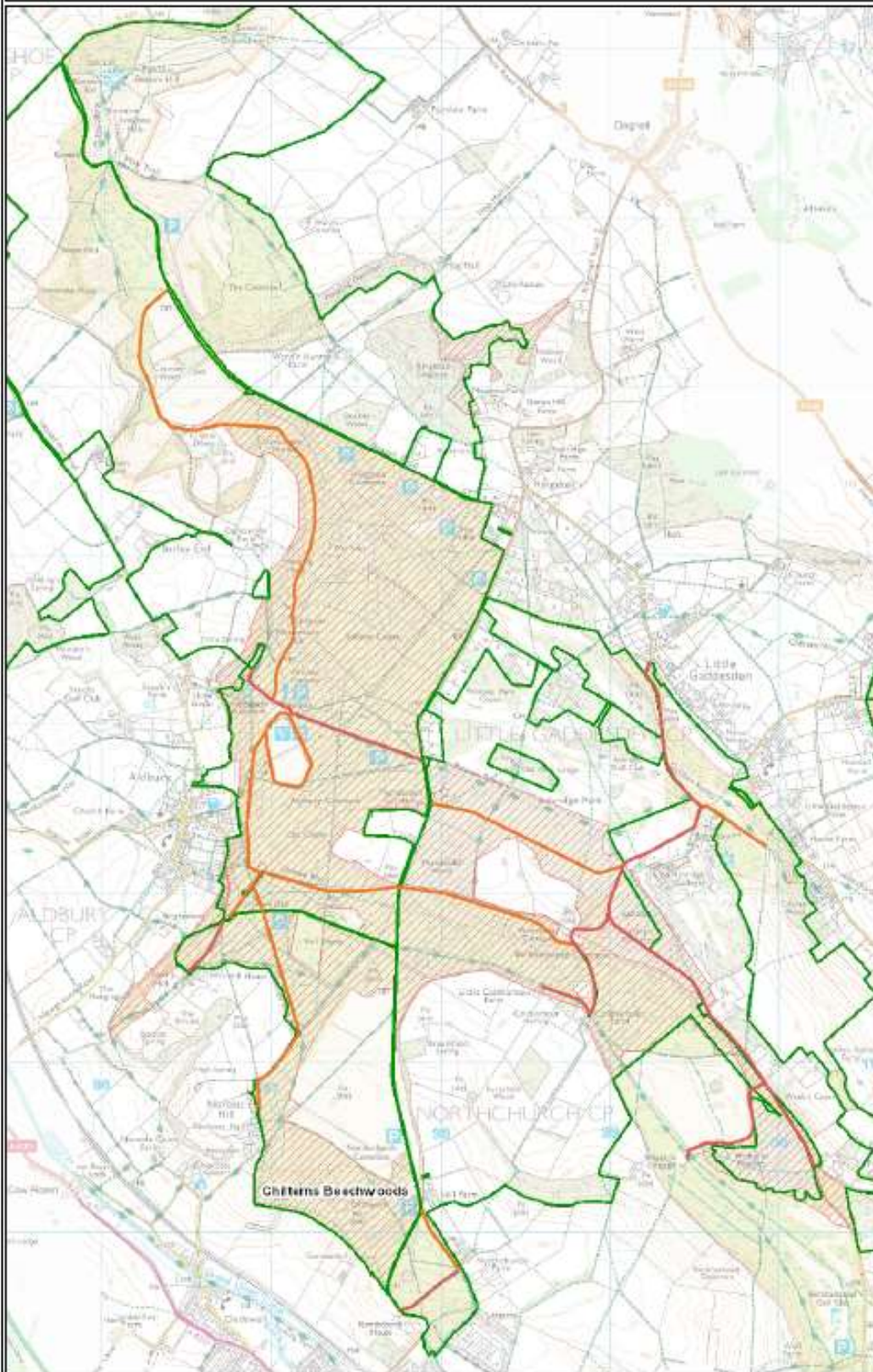
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Legend

- NT Ownership (GB)
- SAC_England

Orange - surfaced tracks of varying quality

Red - access roads of higher quality



000.0 0 450.00 900.0 Metres

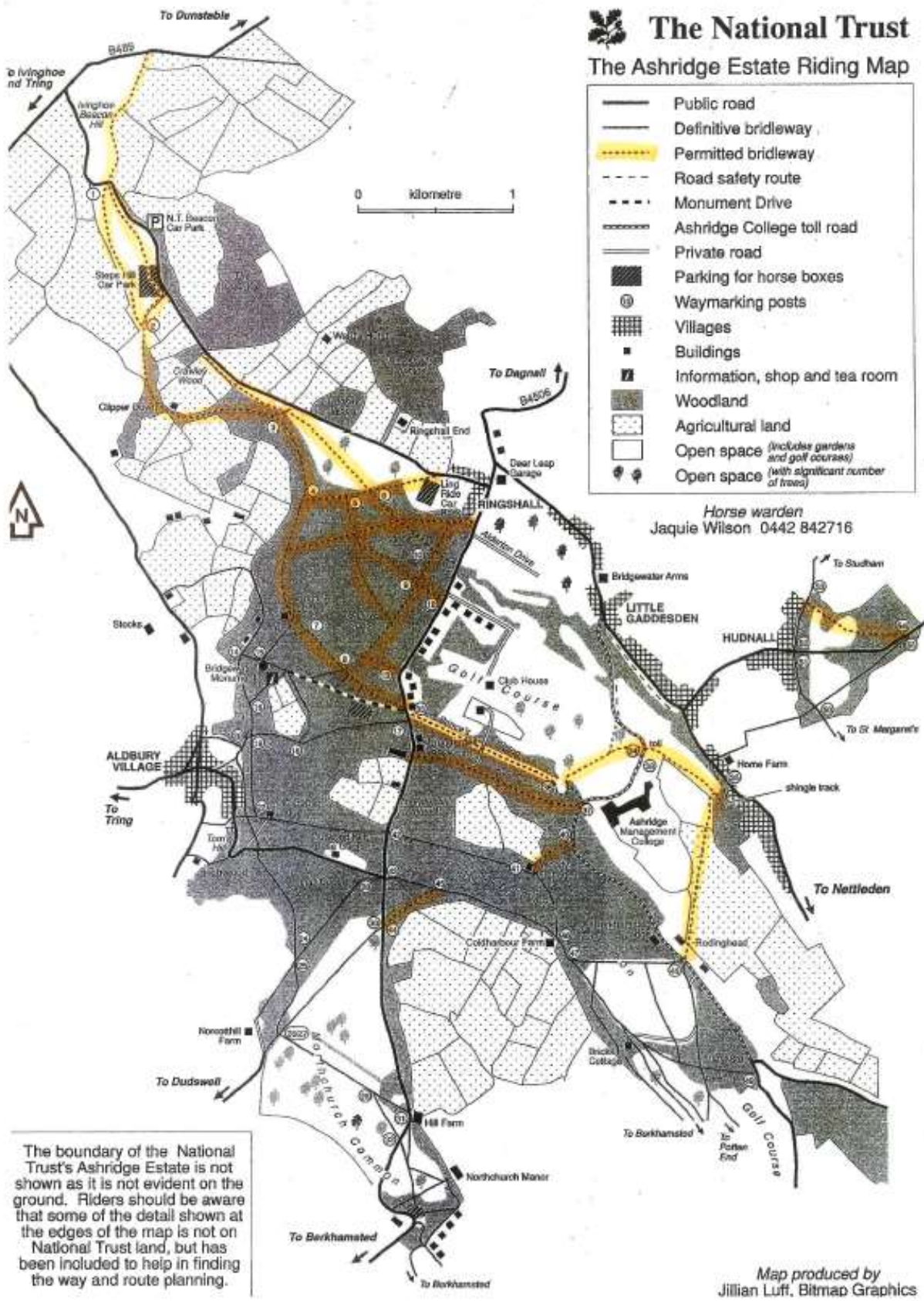
British_National_Grid

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Date: 30-Nov-2020

This map was created using National Trust's GIS Browser

Ashridge Estate Horse riding map



Ashridge Estate boundary trail walk



Chilterns Cycleway

The Chilterns Cycleway passes right through the Estate. The Trust's website says that the Ashridge visitor centre is close to the Chilterns Cycle route and there are cycle stands at the centre. You can find out more about the [Chilterns Cycleway](#) here. The extent of the cycleway is shown below (by the brown line):



Chilterns Cycleway off-road sections: alternative road routes

There is an alternative route to this cycleway which takes users along some busy main roads (in places), but it allows cyclists to avoid some unsurfaced sections (which can be rutted and muddy and can be unsuitable for 'skinny tyres'). The Chilterns AONB website says that cyclists can either push their bikes along these sections or follow an on-road alternative detailed at:

<https://www.chilternsaonb.org/uploads/files/ChilternsCycleway/CyclewayAlternativeRoadRoutesforSlick%20tyres.pdf>

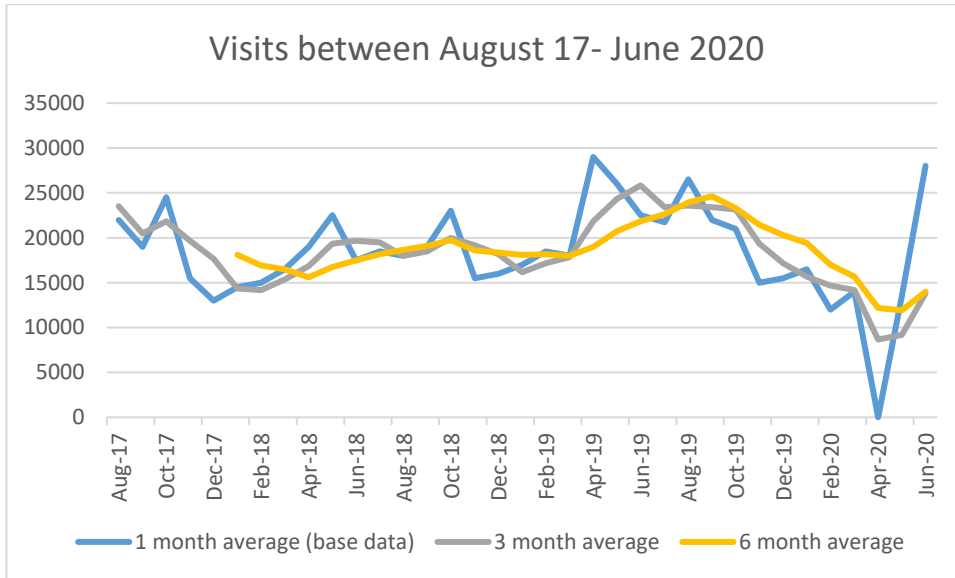
The part of the route of relevance is shown below, where the alternative route directs cyclists through a different part of the Ashridge Estate.

Section through the Ashridge Estate along Duncombe Terrace (from the Monument and visitor centre to the road near Ivinghoe),

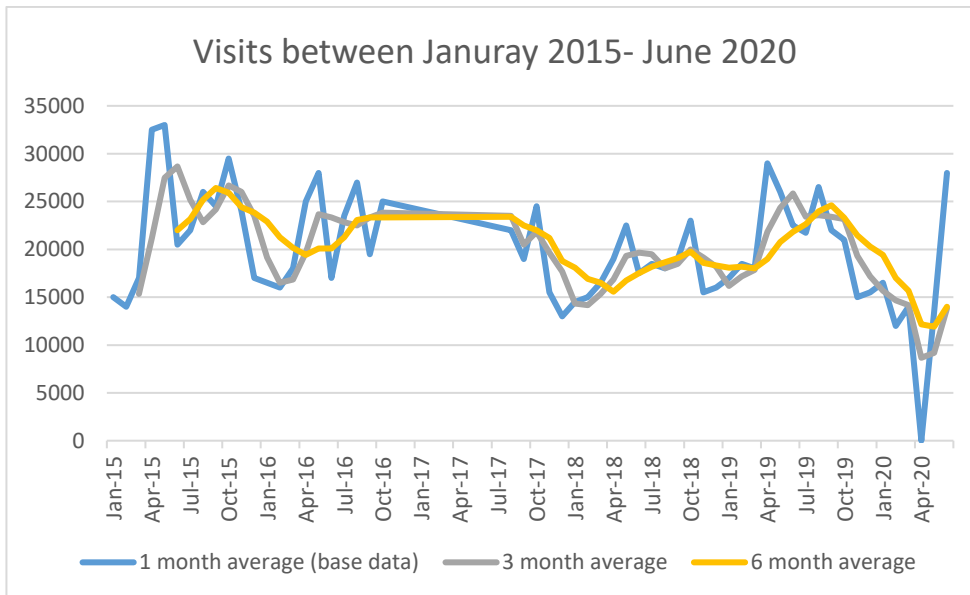


Car count data – car park survey data / map and average numbers of visitors per car along Monument Drive

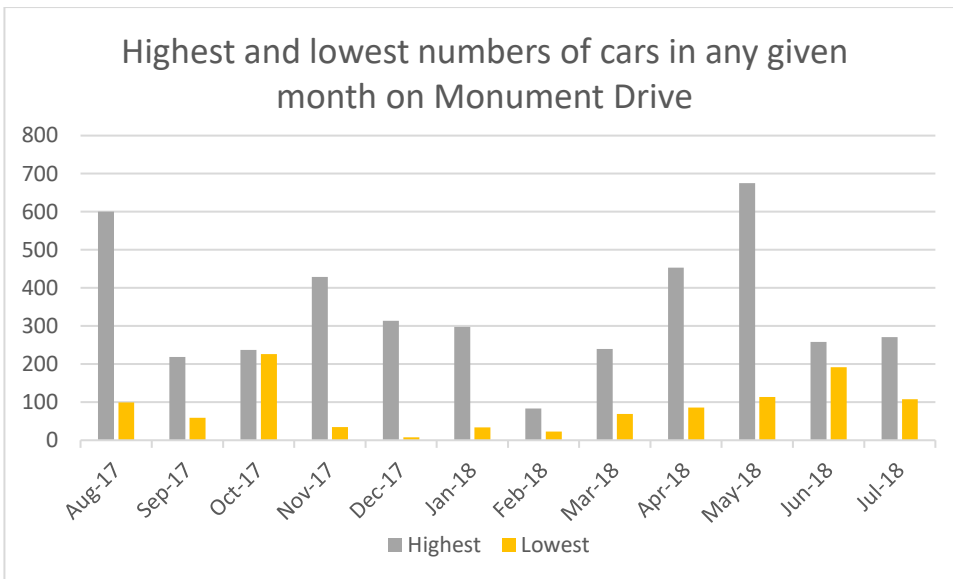
Car Counter Study Reports produced for the National Trust by Linetop Ltd



This shows the total visits by car using a moving average over 3 months and 6 months. This seeks to reduce the ‘seasonality effect’. The blue line shows the total visits by car using the data provided by the National Trust.

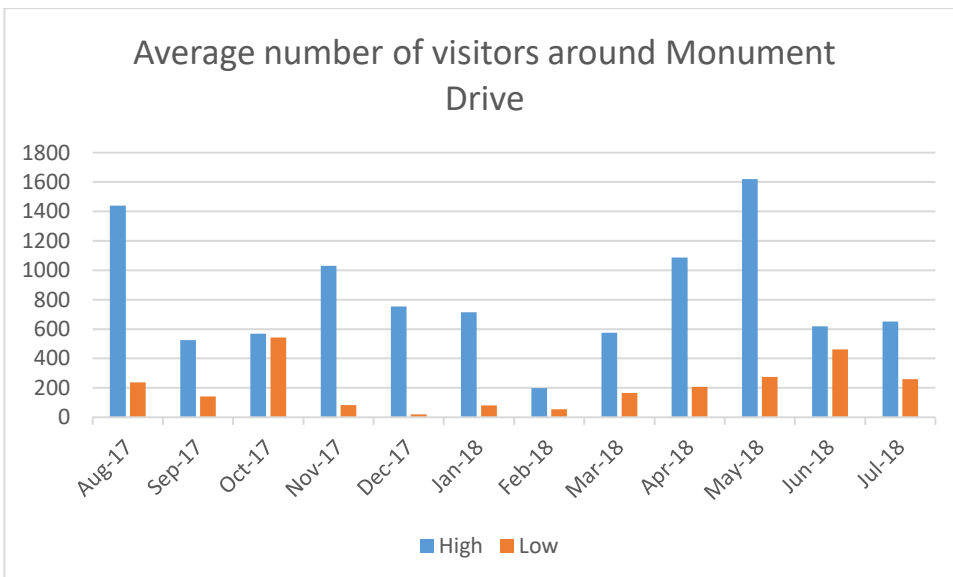


This shows the total visits by car using a moving average over 3 months and 6 months. This seeks to reduce the ‘seasonality effect’. Based on data provided by the National Trust (please note there is no recorded data available between October 2016 and August 2017 which is why there is declines at these times). The steep decline at April 2020 is related to ‘lockdown’ for the Pandemic.



This shows the highest and lowest recorded value of cars parked along Monument Drive on any given day during the months shown. Created using data provided by the National Trust.

Numbers of people per vehicle as collected by the National Trust



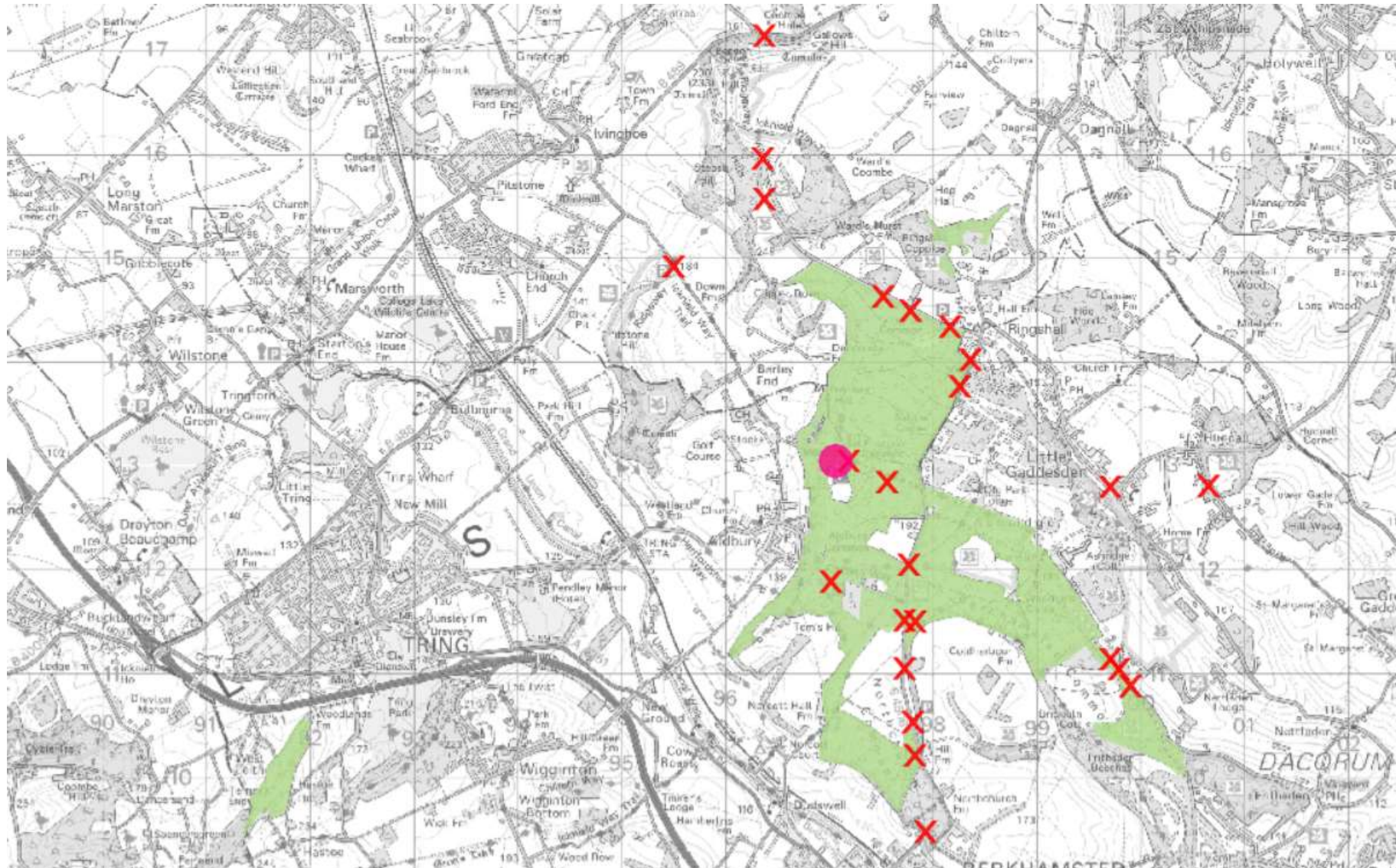
This shows the highest and lowest total average number of people around the Monument Drive part of the Estate.

This makes use of the high and low car values and extrapolates this using the average number of people per car (2.4³ people per car) based on data collected by the National Trust.

³ Figure based upon average number of visitors per vehicle. Data collected by the National Trust between 2017 & 2018

Ashridge Estate Car Parks

The on-site facilities are identified by the pink dot and the various car parks are identified by red crosses below. The Trust advises that many car parks around the Estate are free. There are surfaced parking areas halfway up Monument Drive at Barracks Square and the visitor centre.



The National Trust's website for Ashridge Estate details proposals for a new car park proposal to alleviate the pressures currently experienced and unregulated parking along Monument Drive. This page includes some FAQs. One of these mentions: *"Based on data from car counters and visitor surveys, we aim to achieve 450 appropriately surfaced car parking spaces. There are currently around 200 spaces in existing surfaced car parks, which we intend to retain."*

This is detailed at: <https://www.nationaltrust.org.uk/ashridge-estate/features/ashridge-estate-car-parking-faqs>.

Google aerial photography data for facilities and car parking along Monument Drive



External references to recreational pressure on SAC land within Ashridge

The following documents have been identified and provided by the National Trust. They are included in the appendix to this document which are relevant to recreational pressure, consideration of the special features on the site (i.e. ecology such as invertebrate groups) or include references to pressures on the site:

- 1) *Nature Conservation Evaluation, Ashridge Estate: Monument Drive, National Trust, 2015*
- 2) *Ashridge Estate, Monument Drive Invertebrate Survey, A. P. Foster, 2018*
- 3) *Central Area Conservation Management Plan, September 2019*
- 4) *Ashridge Car Park Proposal, Preliminary Ecological Appraisal, Bernwood ECS Ltd, October 2017*
- 5) *Denny Ecology, Monument Drive, Ashridge Estate, Breeding Bird Survey Report, Draft October 2018*



National Trust's photographic record to illustrate the impacts of recreational pressure on Ashridge Commons and Woods SSSI (a part of the Chilterns Beechwoods SAC)

In addition to the information below, the appendices include the following important information produced by the National Trust:

- Cranfield University: Ground Compaction at Ashridge, June 2012 (Appendix 19)

This document seeks to illustrate those impacts that directly affect designated SSSI and SAC features through a collection of photographs, all of which were taken on the SAC in the last few years. This is not intended to be an exhaustive record, but rather an illustration of the issues.

Recreational pressures vary between those that result purely from the high number of visitors on site to those that are the consequence of anti-social behaviour. There are additional impacts over and above those illustrated here which are harder to photograph such as the ecological damage caused by unauthorised mushroom harvesting, the disturbance to breeding bird communities, nutrient enrichment of the soil (as a result of dog walking) and joy riding.



Fig 1. In areas of high footfall the ground flora and hummus layer have been eroded away. This photo is taken near to the Ashridge Visitor Centre and shows the effect of high visitor numbers on the surrounding woodland. This is not a path, just an area of high footfall. The only surviving plant in the ground layer is common chickweed, an indicator of disturbed ground and nitrogen enrichment.

Wet ground conditions



Fig 2. Aldbury Common 2019. In wet ground conditions paths become churned up very quickly purely as a result of the weight of foot traffic. This is also the time when compaction impacts are at their worst, thus exacerbating the problem.



Fig 3. Delly's Ride Sallow Copse 2012. When conditions are difficult under foot, paths become braided as visitors seek to avoid the mud.

Root compaction



Figs 4 and 5. Monument Drive April 2020. Where compaction is extreme, vegetation cover is unable to re-establish. This is a visual indicator of the problems that can be experienced by tree roots, a problem that becomes more acute as trees age. These oaks are significant landscape features and, where not already classed as ancient or veteran, should certainly be protected as the next generation of ancient trees.





Fig 6. Ancient beech on Monument Drive April 2020. Significant compaction is evident within the root protection zone.



Fig 7. Notable mature beech on Duncombe Terrace April 2020. Root compaction is evident on these trees despite the application of woodchip for protection.



Figs 8 and 9. Ancient oak Aldbury Common 2016 and notable beech Monument Green 2016. Vulnerable trees are protected by spreading woodchip over the compacted roots and by physically preventing pedestrian access such as with this dead hedge built by volunteers in 2016.



Car parking



Figs 10 and 11. Parking on Monument Drive 2018 and Northchurch Common 2020. People look for shade in which to park their cars in hot weather, pushing ever further into the tree line around car parks, another cause of compaction on tree roots.



Sensitive flora on road verges



Fig 12 and 13. Harding's Rookery 2020. The property team have been struggling to prevent car parking on the verges at Harding's Rookery for at least a decade. The latest strategy has been to put out logs to physically prevent parking, but any gaps are quickly taken up by cars. Violet helleborines grow on this roadside verge and they are vulnerable to damage by cars as well as deer. Cages are put out to help protect them.



Damage to ground flora



Figs 14 and 15. Old Copse 2020. Some of the most extensive damage to ground flora is visible during the bluebell season. The attraction of the bluebells themselves causes people to purposefully leave the paths. The trampling effect of large crowds of people at this time of year is considerable, resulting in ever-widening paths and an ever-increasing number of paths that never re-vegetate. These photos were taken in the height of lockdown when there were virtually no visitors on the estate. They show the accumulation of damage going back years.





Fig 16 and 17. Old Copse 2020. It is not only bluebells that suffer from this kind of trampling damage, all ground flora is lost. The effects on soil structure and function as well as the effects on tree roots requires investigation.



Fire



Fig 18 Ling Ride 2020. Camp fires are a persistent problem, such as this one amongst a group of veteran trees near Ling Ride. Deadwood is a particularly important component of the habitat and Ashridge is a site of international importance for invertebrates associated with deadwood, scoring 114 on the Index of Ecological Continuity and with a Saproxylic Quality Index score of 586.2.



Fig 19. Old Park 2020. Arson is not infrequent, with standing trees as well as fallen wood being targeted. There is an incident of arson requiring the attention of the fire brigade in most years.

Mountain bike tracks



Figs 20 and 21. Northchurch Common 2020. Mountain biking is popular and uncontrolled, with bikers often using any tracks they like. Certain areas are favoured for the creation of unauthorised downhill tracks, particularly in areas of bracken or down the scarp slopes.





Locations of photos taken at Ashridge Commons and Woods SSSI

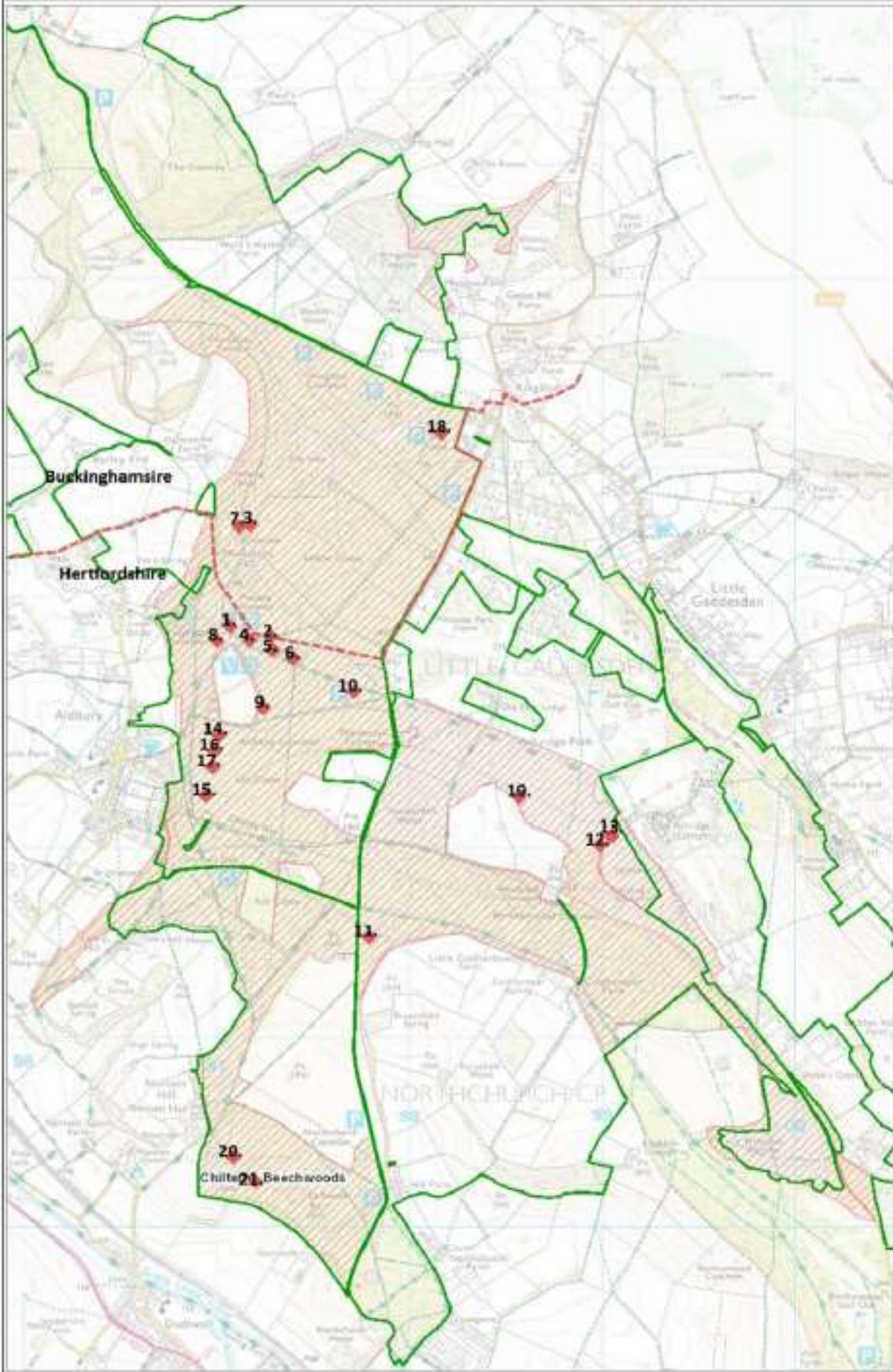
N



Scale: 1: 20,000

Legend

- NT Ownership (GB)
- NT Leasehold (GB)
- SAC_Wales
- SAC_England



0 400.00 800.0 Metres

British_National_Grid

© Crown copyright and database rights 2000 Ordnance Survey 100025004

Date: 19-Oct-2020

This map was created using National Trust's GIS Browser

Tring Woodlands SSSI and
Ashridge Commons and
Woods SSSI Aerial
photography



Historic aerial photographs – Tring Woodlands SSSI

The information below highlights how the sites have changed over time, although the woodland coverage does tend to ‘mask’ how much recreational disturbance has occurred during that period.

1940



2000



2010



2016



1970



2006



2010 – infra red⁴



Latest aerial from Strava



<https://www.strava.com/heatmap#12.93/-0.57798/51.80029/hot/run>

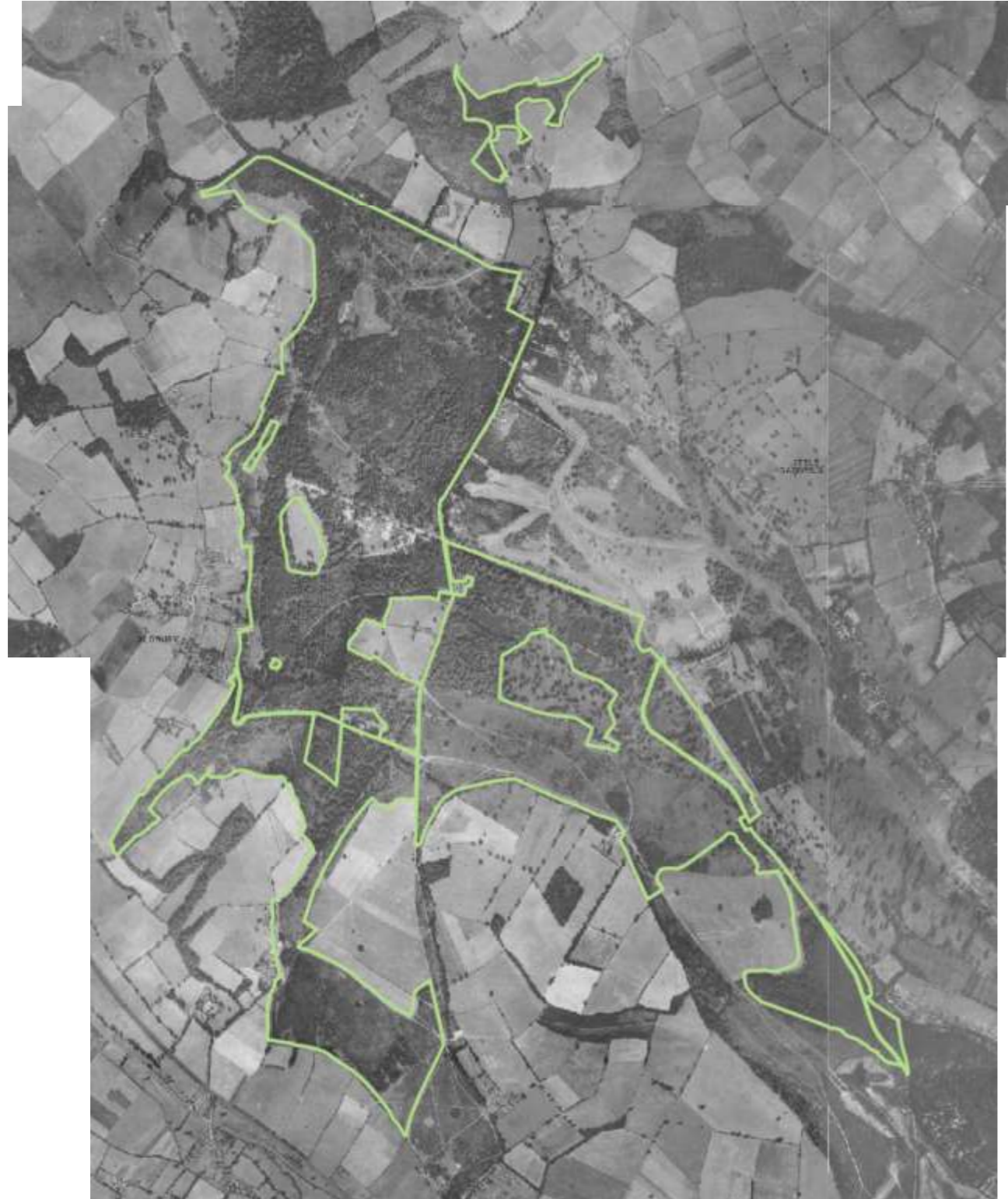
Unless otherwise stated images are taken from Dacorum’s GIS system and is subject to copyright.

⁴ See footnote 3 below, which clarifies what the different colours in this infrared photo shows.

Historic aerial photographs – Ashridge Commons and Woods SSSI

Unless otherwise stated images are taken from Dacorum's GIS system and is subject to copyright.

1940



1970



2000



2000



2006



2006



2010



2010 – infra red⁵



⁵ What do the different colours in a colour-infrared aerial photograph represent?

Colour-infrared (CIR) aerial photography--often called "false colour" photography because it renders the scene in colours not normally seen by the human eye--is widely used for interpretation of natural resources. Atmospheric haze does not interfere with the acquisition of the image.

- Live vegetation is almost always associated with red tones. Very intense reds indicate dense, vigorously growing vegetation. As plant vigour decreases, the vegetation appears as lighter shades of red and pink, various shades of greens, and possibly tans.
- Bare soils appear as shades of white, blue, or green in most agricultural regions. In general, darker shades of each colour indicate moister soil.
- Man-made features appear in tones that relate to the materials with which they are made. Asphalt roads, for example, are dark blue or black; gravel or dirt roads are lighter colours depending on their composition; and clean concrete roads are light in tone. The colours of buildings are similarly dependent on the materials used to create them.
- Water appears as shades of blue, varying from nearly black (clean, clean water) to very pale blue (increasing amounts of sediment). The colour of very shallow water is often determined by the material present at the bottom of the water. For example, a very shallow stream with a sandy bottom will appear white due to the high level of sand reflection.

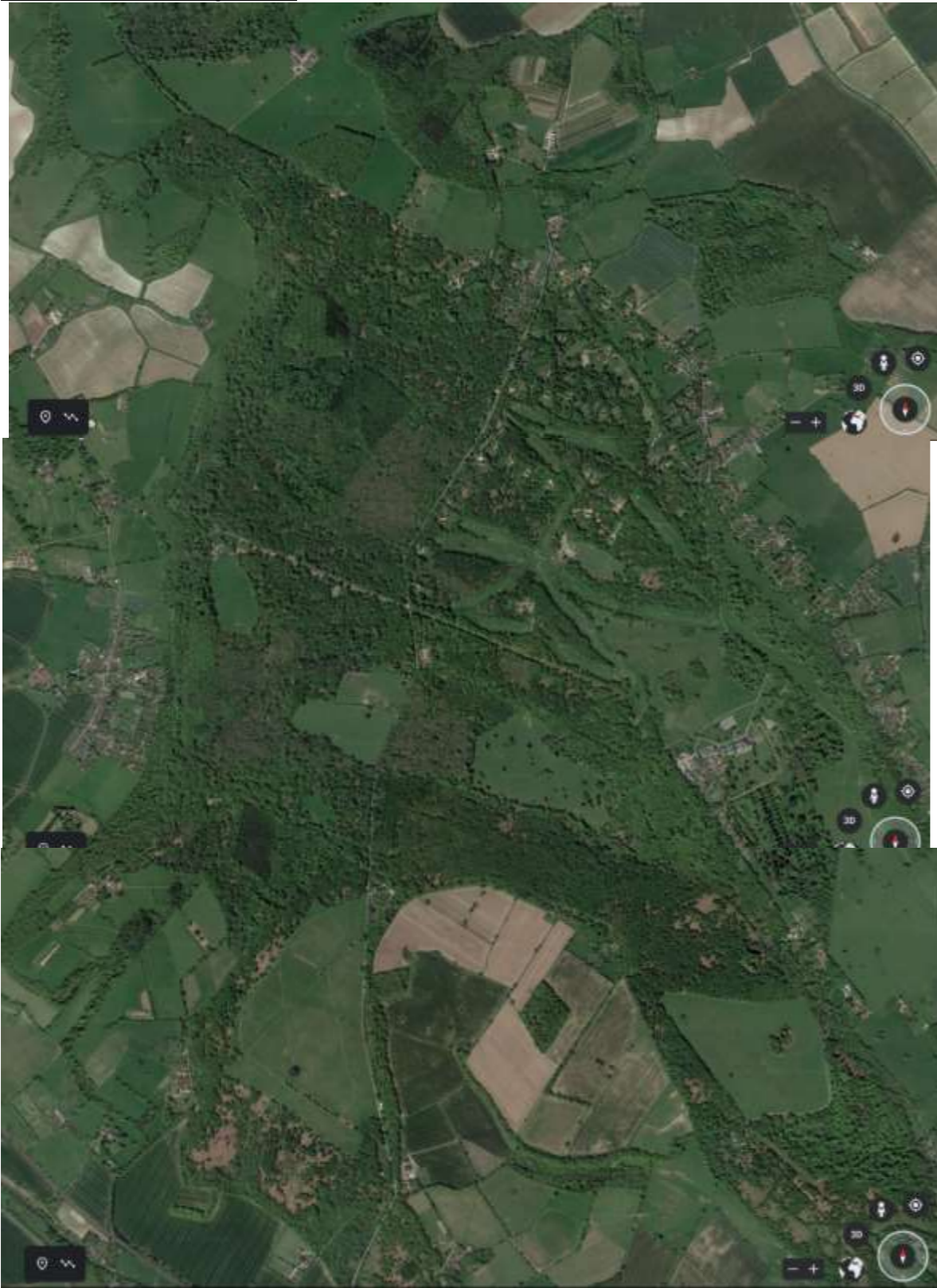
2015



2016

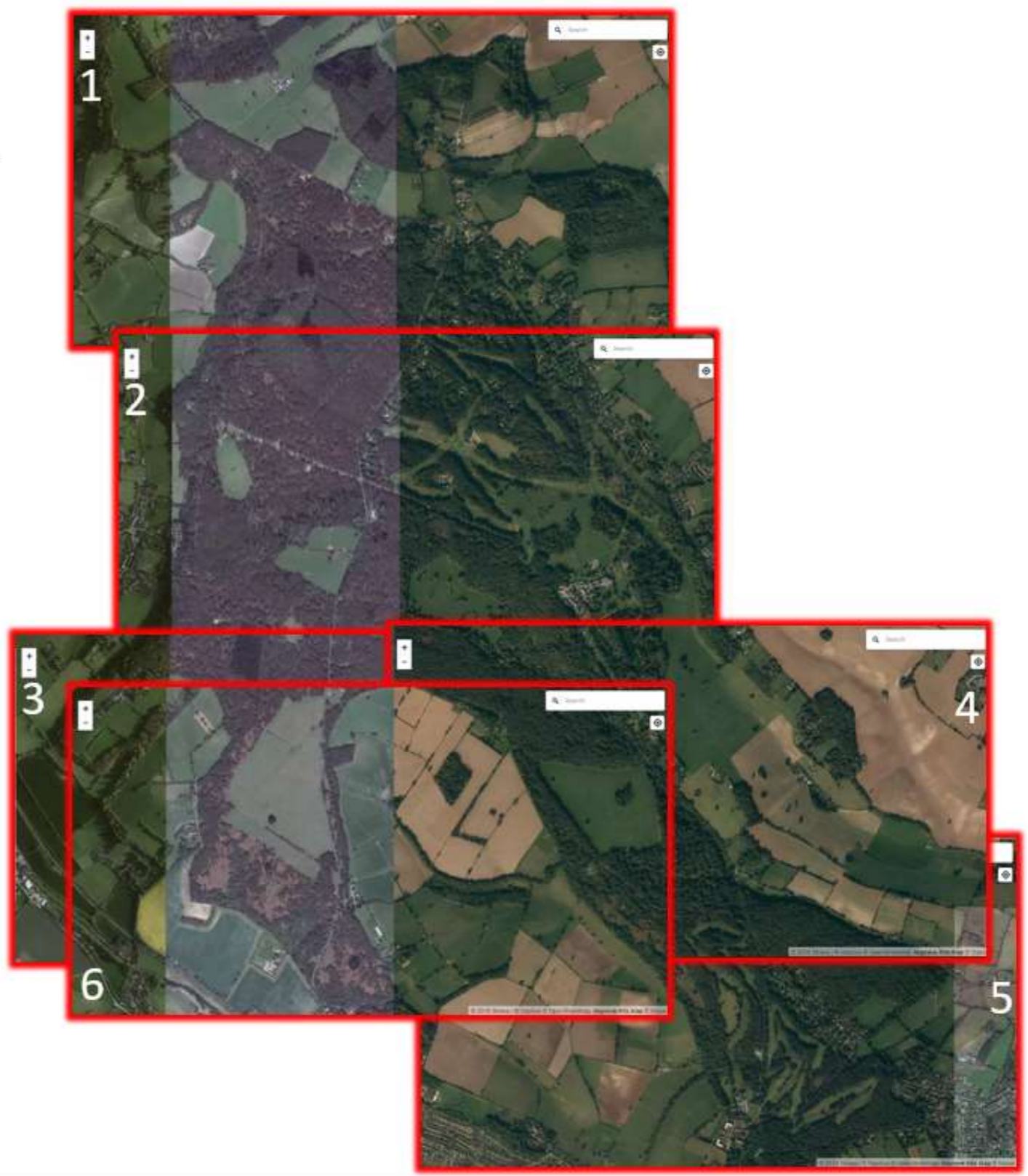


Latest aerial from Google Earth



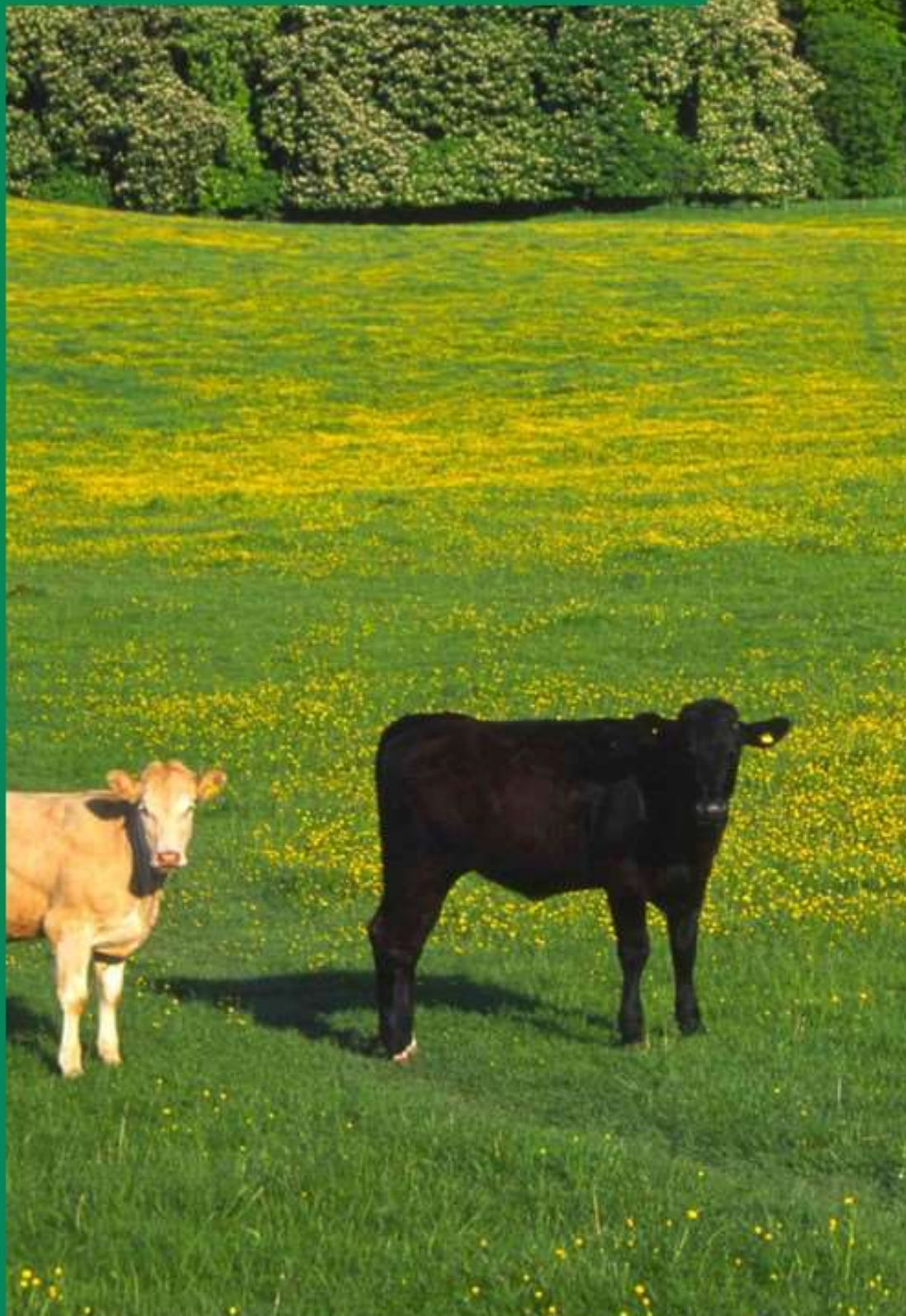
<https://earth.app.goo.gl/BXexnf>

Latest aerial from Strava



<https://www.strava.com/heatmap#12.93/-0.57798/51.80029/hot/run>

National and County level Visitor Data & Surveys



Google mobility data

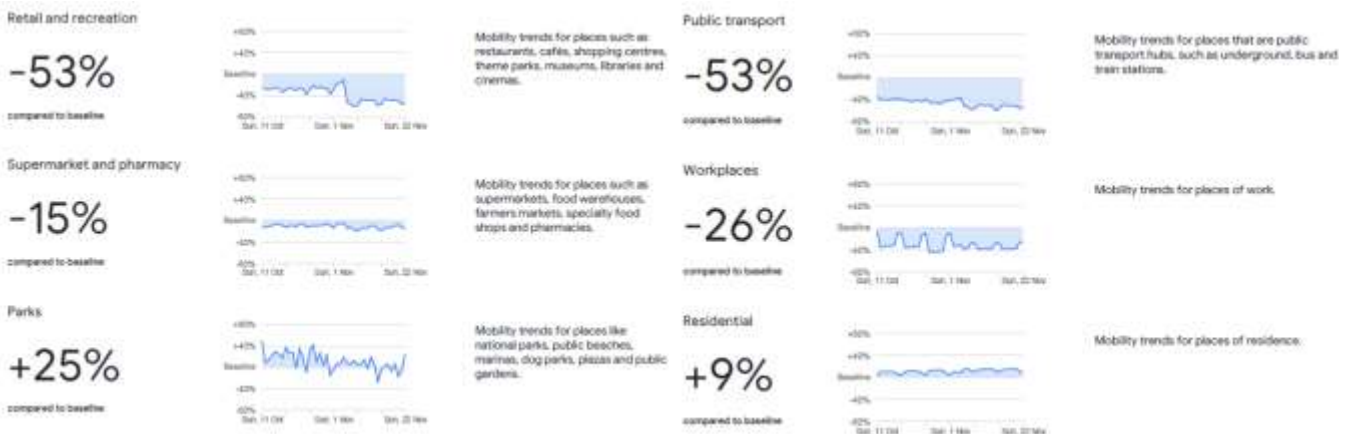
The Community Mobility Reports below show movement trends by region, across different categories of places. For each category in a region, reports show the changes in 2 different ways:

- **Headline number:** Compares mobility for the report date to the baseline day. Calculated for the report date (unless there are gaps) and reported as a positive or negative percentage.
- **Trend graph:** The percent changes in the 6 weeks before the report date. Shown as a graph.

Insights in these reports are created with aggregated, anonymized sets of data from users who have turned on the Location History setting (which is off by default). Remember that these mobility reports show relative changes, and not absolute visitors or duration. These reports will be available for a limited time, so long as public health officials find them useful in their work to stop the spread of COVID-19. They show how visits to places such as corner shops and parks are changing in each geographic region. Location accuracy and the understanding of categorised places vary from region to region (so google do not recommend using the data to compare between different countries or regions).

As at 22 November 2020

Overview for the UK -



Overview for Buckinghamshire

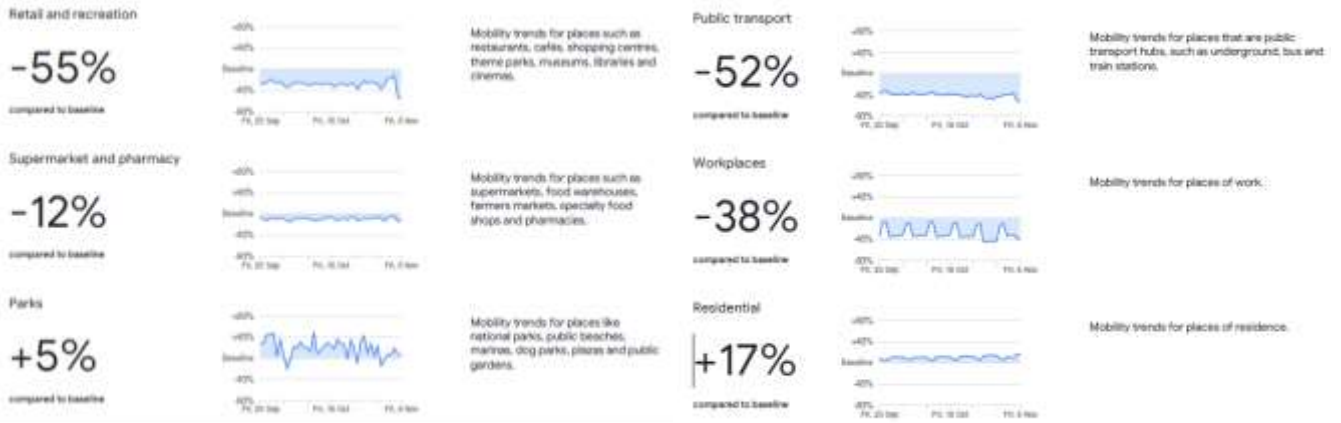


Overview for Hertfordshire



As at 6 November 2020

Overview for the UK -



Overview for Buckinghamshire



Overview for Hertfordshire



Detailed mobility data as at 22nd November 2020

Hertfordshire

Retail and recreation

-56%

compared to baseline

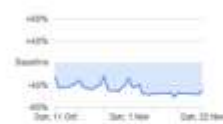


Mobility trends for places such as restaurants, cafes, shopping centres, theme parks, museums, libraries and cinemas.

Public transport

-49%

compared to baseline



Mobility trends for places that are public transport hubs, such as underground, bus and train stations.

Supermarket and pharmacy

-13%

compared to baseline



Mobility trends for places such as supermarkets, food warehouses, farmers markets, speciality food shops and pharmacies.

Workplaces

-25%

compared to baseline

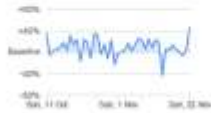


Mobility trends for places of work.

Parks

+47%

compared to baseline

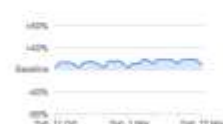


Mobility trends for places like national parks, public beaches, marinas, dog parks, plazas and public gardens.

Residential

+10%

compared to baseline



Mobility trends for places of residence.

Buckinghamshire

Retail and recreation

-56%

compared to baseline

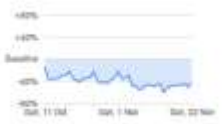


Mobility trends for places such as restaurants, cafes, shopping centres, theme parks, museums, libraries and cinemas.

Public transport

-44%

compared to baseline

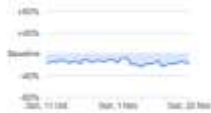


Mobility trends for places that are public transport hubs, such as underground, bus and train stations.

Supermarket and pharmacy

-18%

compared to baseline



Mobility trends for places such as supermarkets, food warehouses, farmers markets, speciality food shops and pharmacies.

Workplaces

-28%

compared to baseline



Mobility trends for places of work.

Parks

+26%

compared to baseline

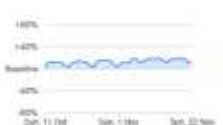


Mobility trends for places like national parks, public beaches, marinas, dog parks, plazas and public gardens.

Residential

+10%

compared to baseline



Mobility trends for places of residence.

Dacorum

Retail and recreation

-52% compared to baseline



Supermarket and pharmacy

-9% compared to baseline



Parks

+47% compared to baseline



Aylesbury Vale

Retail and recreation

-47% compared to baseline



Supermarket and pharmacy

-14% compared to baseline



Parks

+24% compared to baseline



Public transport

-42% compared to baseline



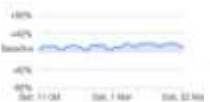
Workplaces

-28% compared to baseline



Residential

+10% compared to baseline



Public transport

-40% compared to baseline



Workplaces

-25% compared to baseline



Residential

+10% compared to baseline



Detailed mobility data as at 6th November 2020 Hertfordshire

Retail and recreation

-57%

compared to baseline



Mobility trends for places such as restaurants, cafes, shopping centres, theme parks, museums, libraries and cinemas.

Public transport

-56%

compared to baseline



Mobility trends for places that are public transport hubs, such as underground, bus and train stations.

Supermarket and pharmacy

-12%

compared to baseline

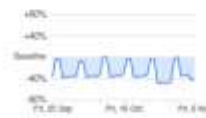


Mobility trends for places such as supermarkets, food warehouses, farmers markets, specialty food shops and pharmacies.

Workplaces

-41%

compared to baseline



Mobility trends for places of work.

Parks

+14%

compared to baseline



Mobility trends for places like national parks, public beaches, marinas, dog parks, plazas and public gardens.

Residential

+19%

compared to baseline



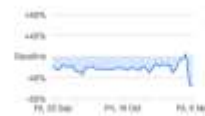
Mobility trends for places of residence.

Buckinghamshire

Retail and recreation

-54%

compared to baseline



Mobility trends for places such as restaurants, cafes, shopping centres, theme parks, museums, libraries and cinemas.

Public transport

-49%

compared to baseline



Mobility trends for places that are public transport hubs, such as underground, bus and train stations.

Supermarket and pharmacy

-18%

compared to baseline



Mobility trends for places such as supermarkets, food warehouses, farmers markets, specialty food shops and pharmacies.

Workplaces

-41%

compared to baseline



Mobility trends for places of work.

Parks

+1%

compared to baseline



Mobility trends for places like national parks, public beaches, marinas, dog parks, plazas and public gardens.

Residential

+19%

compared to baseline



Mobility trends for places of residence.

Dacorum

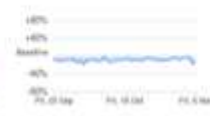
Retail and recreation

-54% compared to baseline



Supermarket and pharmacy

-13% compared to baseline



Parks

+9% compared to baseline



Public transport

-54% compared to baseline



Workplaces

-40% compared to baseline



Residential

+18% compared to baseline



Aylesbury Vale

Retail and recreation

-50% compared to baseline



Supermarket and pharmacy

-14% compared to baseline



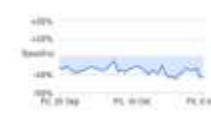
Parks

+8% compared to baseline



Public transport

-44% compared to baseline



Workplaces

-39% compared to baseline



Residential

+18% compared to baseline



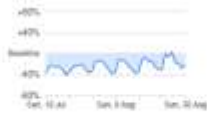
Detailed mobility data as at 30th August 2020

Hertfordshire

Retail and recreation

-22%

compared to baseline



Mobility trends for places such as restaurants, cafes, shopping centres, theme parks, museums, libraries and cinemas.

Public transport

-19%

compared to baseline



Mobility trends for places that are public transport hubs, such as underground, bus and train stations.

Supermarket and pharmacy

-16%

compared to baseline



Mobility trends for places such as supermarkets, food warehouses, farmers markets, specialty food shops and pharmacies.

Workplaces

-4%

compared to baseline



Mobility trends for places of work.

Parks

+72%

compared to baseline



Mobility trends for places like national parks, public beaches, marinas, dog parks, plazas and public gardens.

Residential

+1%

compared to baseline



Mobility trends for places of residence.

Dacorum

Retail and recreation

-18% compared to baseline



Supermarket and pharmacy

-17% compared to baseline



Parks

+83% compared to baseline



Public transport

-1% compared to baseline



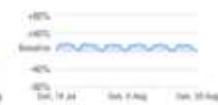
Workplaces

-9% compared to baseline



Residential

+0% compared to baseline



* The data doesn't meet quality and privacy thresholds for every day in the chart.

About this data

These reports show how visits and length of stay at different places change compared to a baseline. We calculate these changes using the same kind of aggregated and anonymised data used to show [popular times](#) for places in Google Maps.

Changes for each day are compared to a baseline value for that day of the week:

- The baseline is the *median* value, for the corresponding day of the week, during the five-week period 3 Jan – 6 Feb 2020.
- The reports show trends over several weeks with the most recent data representing approximately 2–3 days ago (this is how long it takes to produce the reports).

The data that is included in the calculation depends on user settings, connectivity and whether it meets our privacy threshold. If the privacy threshold isn't met (when somewhere isn't busy enough to ensure anonymity) we don't show a change for the day.

We include categories that are useful for social distancing efforts, as well as access to essential services.

We calculate these insights based on data from users who have opted in to Location History for their Google Account, so that the data represents a sample of our users. As with all samples, this may or may not represent the exact behaviour of a wider population.

We continue to improve our reports as places close and reopen. We updated the way that we calculate changes for *groceries and pharmacy*, *retail and recreation*, *public transport stations* and *parks* categories. For regions published before May 2020, the data may contain a consistent shift (up or down) which starts between 11–18 April 2020.

Preserving privacy

These reports were developed to be helpful while adhering to our stringent privacy protocols and protecting people's privacy. No personally identifiable information, like an individual's location, contacts or movement, is made available at any point.

Insights in these reports are created with aggregated, anonymised sets of data from users who have turned on the [Location History](#) setting, which is off by default. People who have Location History turned on can choose to turn it off at any time from their [Google Account](#) and can always delete Location History data directly from their [Timeline](#).

These reports are powered by the same world-class anonymisation technology that we use in our products every day and that keep your activity data private and secure. These reports use [differential privacy](#), which adds artificial noise to our data sets enabling high-quality results without identifying any individual person. These privacy-preserving protections also ensure that the absolute number of visits isn't shared.

Further resources

To learn how you can get the most out of this report in your work, visit [Mobility Reports Help](#).

To get the latest report, visit google.com/covid19/mobility

Data available at: <https://www.google.com/covid19/mobility/>

Natural England's Monitoring Engagement with the Natural England (MENE) data

We recognise that Natural England have collected view from individuals for many years⁶ across England. Data from 2009 to 2019 which is readily available online (detailed below). The data is designed predominantly to be viewed at a UK, region/County scale. A small summary of this data is shown below and is grouped as year by year data.

We have been advised that use of the MENE data for an individual SAC (or any designation) will be based upon a very small sample size. Therefore any results could have a huge margin of error and so shouldn't really be used (although the SAC level data has been included in the main report to highlight locally specific data with the greater sample size data included in this document, but for parity the summarised data for England, Hertfordshire and Buckinghamshire has been shared directly with Natural England and other relevant stakeholders).

Data has been taken from Natural England's [online dashboard](#).



On this website, there is a report published in September 2019 which summarises the MENE data for years 1 to 10, as well as headline report data tables.



⁶1994, 1996, 1998, 2002-3, 2005, 2009-10, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19




Total sample size	
England	Buckinghamshire
<p>Sample size: 48,514 (Use with caution (<100))</p> <p>Annual visits: 2,780,830 (W*) Estimated visits (from your local authority)</p> <p>Proportion of all visits: 100 %</p> <p>Average per person (from your local authority): 69</p> <p>Average duration (minutes) (from your local authority): 155.7</p>	

Hertfordshire	
	<p>Select a survey year: 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19</p> <p>Sample size: 1,144 (Use with caution (<100))</p> <p>Annual visits: 70,111 (W*) Estimated visits (from your local authority)</p> <p>Proportion of all visits: 2 %</p> <p>Average per person (from your local authority): 79</p> <p>Average duration (minutes) (from your local authority): 143.4</p> <p>Average duration (minutes) (vs national average): -12.3</p> <p>Average duration (minutes) (vs your local authority): -35.4</p>


Places	
<h3>Hertfordshire</h3> <p>(W*) Types of places visited (general)</p> <p>from: 545 to: 403</p> <p>(W*) Types of places visited (specific) (years 1 to 7 only)</p> <p>from: 340 to: 266</p>	
<h3>Buckinghamshire</h3> <p>(W*) Types of places visited (general)</p> <p>from: 297 to: 193</p> <p>(W*) Types of places visited (specific) (years 1 to 7 only)</p> <p>from: 196 to: 131</p>	


<h3>Total sample size</h3>	
<h4>England</h4>	<h4>Buckinghamshire</h4>
<p>Sample size: 46,099 (Use with caution (<100) Indicative (100-200) Significant (>200) </p> <p>Annual visits: (W*) Estimated visits (from your local authority) 2,393,897</p> <p>(W*) Estimated visits (Y1-7 only) (to your local authority) 2,393,897 Proportion of all visits 100 %</p> <p>Average per person (from your local authority) 59 Average per person (from all local authorities) 59</p> <p>Average duration (minutes) (from your local authority) 155 vs national average +0</p> <p>Average duration (minutes) (to your local authority) 155 vs national average +0</p>	

<h3>Hertfordshire</h3>	
	<p>Select a survey year: 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19</p> <p>Sample size: 1,073 (Use with caution (<100) Indicative (100-200) Significant (>200) </p> <p>Annual visits: (W*) Estimated visits (from your local authority) 51,216</p> <p>(W*) Estimated visits (Y1-7 only) (to your local authority) 38,092 Proportion of all visits 1.6 %</p> <p>Average per person (from your local authority) 60 Average per person (from all local authorities) 59</p> <p>Average duration (minutes) (from your local authority) 125.5 vs national average -29.4</p> <p>Average duration (minutes) (to your local authority) 120 vs national average -35</p>

<h3>Places</h3>	
<h4>Hertfordshire</h4>	
<p>(W*) Types of places visited (general)</p> <p>from: 450 to: 339</p>  <p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 305 to: 246</p> 	<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 305 to: 246</p> 

<h4>Buckinghamshire</h4>	
<p>(W*) Types of places visited (general)</p> <p>from: 281 to: 209</p>  <p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 190 to: 153</p> 	<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 190 to: 153</p> 

Total sample size	
England	Buckinghamshire
<p>Sample size: 47,418</p> <p>Annual visits: 2,640,879</p> <p>Average per person: 65</p> <p>Average duration: 150.2</p>	

Hertfordshire	
	<p>Sample size: 1,266</p> <p>Annual visits: 65,281</p> <p>Average per person: 75</p> <p>Average duration: 138.9</p>

Places

Hertfordshire

(W1) Types of places visited (general)

from: 563 to: 452


(W2) Types of places visited (specific) (years 1 to 7 only)

from: 391 to: 326



(W1) Types of places visited (general)

from: 391 to: 326




Buckinghamshire

(W1) Types of places visited (general)

from: 241 to: 218


(W2) Types of places visited (specific) (years 1 to 7 only)

from: 172 to: 167



(W1) Types of places visited (general)

from: 172 to: 167



Total sample size	
England	Buckinghamshire
<p>Sample size: 46,749 (with caution, <math>n < 1000</math>)</p> <p>Annual visits: 2,764,764</p> <p>Proportion of all visits: 100%</p> <p>Average per person: 67</p> <p>Average duration: 160.1</p>	

Hertfordshire	
<p>Sample size: 1,164 (with caution, <math>n < 1000</math>)</p> <p>Annual visits: 59,761</p> <p>Proportion of all visits: 1.7%</p> <p>Average per person: 70</p> <p>Average duration: 144.2</p>	


Places	
<h3>Hertfordshire</h3> <p>(W*) Types of places visited (general): from 458 to 341</p> <p>(W*) Types of place visited (specific) (years 1 to 7 only): from 339 to 259</p>	
<h3>Buckinghamshire</h3> <p>(W*) Types of places visited (general): from 239 to 207</p> <p>(W*) Types of place visited (specific) (years 1 to 7 only): from 158 to 141</p>	

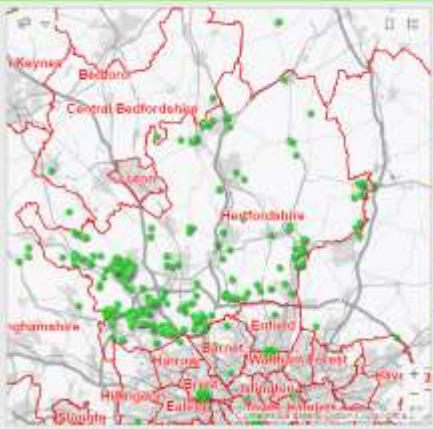
Total sample size	
England	Buckinghamshire
<p>Sample size: 46,785</p> <p>Use with caution (<100) Indicative (100-200) Significant (>200)</p> <p>Annual visits: 2,804,200</p> <p>(W*) Estimated visits (Y1-7 only) to your local authority: 2,804,200</p> <p>Proportion of all visits: 100 %</p> <p>Average per person (from your local authority): 68</p> <p>Average per person (from all local authorities): 68</p> <p>Average duration (minutes) (from your local authority): 156</p> <p>vs national average: -0</p> <p>Average duration (minutes) (to your local authority): 156</p> <p>vs national average: -0</p>	

Hertfordshire	
<p>Select a survey year: 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19</p> <p>Sample size: 1,156</p> <p>Use with caution (<500) Indicative (100-200) Significant (>200)</p> <p>Annual visits: 67,470</p> <p>(W*) Estimated visits (from your local authority): 49,920</p> <p>(W*) Estimated visits (Y1-7 only) to your local authority: 49,920</p> <p>Proportion of all visits: 1.8 %</p> <p>Average per person (from your local authority): 78</p> <p>Average per person (from all local authorities): 68</p> <p>Average duration (minutes) (from your local authority): 144.4</p> <p>vs national average: -11.7</p> <p>Average duration (minutes) (to your local authority): 119.9</p> <p>vs national average: -36.1</p>	


Places	
Hertfordshire	
<p>(W*) Types of places visited (general)</p> <p>from: 543 to: 392</p> <p>Woodland: 22.17%</p> <p>River/streams: 40.12%</p> <p>Other outdoor: 1.90% (includes)</p> <p>Open spaces: 1.02% (includes)</p> <p>Footpaths: 22.47%</p> <p>Greenways: 11.22%</p>	<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 434 to: 323</p> <p>Woodland: 5,774</p> <p>River/streams: 2,594.4</p> <p>Footpaths: 8,130</p> <p>Country park: 2,191</p> <p>Urban park: 20,446.1</p> <p>Playing field: 3,822.1</p>



Buckinghamshire	
<p>(W*) Types of places visited (general)</p> <p>from: 313 to: 279</p> <p>Woodland: 22%</p> <p>River/streams: 40%</p> <p>Other outdoor: 2%</p> <p>Open spaces: 1%</p> <p>Footpaths: 22%</p> <p>Greenways: 11%</p>	<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 232 to: 214</p> <p>Woodland: 4,500</p> <p>River/streams: 2,000</p> <p>Footpaths: 7,500</p> <p>Country park: 2,000</p> <p>Urban park: 18,000</p> <p>Playing field: 3,000</p>


Total sample size	
England	Buckinghamshire
<p>Sample size: 45,225</p> <p>Annual visits: 2,988,604</p> <p>Average per person: 73</p> <p>Average duration: 152.5</p>	

Hertfordshire	
	<p>Sample size: 1,228</p> <p>Annual visits: 73,316</p> <p>Average per person: 86</p> <p>Average duration: 156</p>

Places
Hertfordshire
<p>(W*) Types of places visited (general)</p> <p>From: 594 To: 433</p>  <p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>From: 442 To: 323</p> 

<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>From: 442 To: 323</p> 

Buckinghamshire
<p>(W*) Types of places visited (general)</p> <p>From: 236 To: 209</p>  <p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>From: 168 To: 144</p> 

<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>From: 168 To: 144</p> 

Total sample size	
England	Buckinghamshire
<p>Sample size: 45,965</p> <p>Use with caution (<100) Indicative (100-200) Significant (>200)</p> <p>Annual visits (W*) Estimated visits (from your local authority): 2,992,172</p> <p>(W*) Estimated visits (Y1-7 only) (to your local authority): 2,992,172</p> <p>Proportion of all visits: 100%</p> <p>Average per person (from your local authority): 73</p> <p>Average per person (from all local authorities): 73</p> <p>Average duration (minutes) (from your local authority): 152.5</p> <p>vs national average: +0</p> <p>Average duration (minutes) (to your local authority): 152.5</p> <p>vs national average: +0</p>	


Hertfordshire	
	<p>Select a survey year: 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19</p> <p>Sample size: 1,061</p> <p>Use with caution (<100) Indicative (100-200) Significant (>200)</p> <p>Annual visits (W*) Estimated visits (from your local authority): 65,868</p> <p>(W*) Estimated visits (Y1-7 only) (to your local authority): 49,393</p> <p>Proportion of all visits: 1.7%</p> <p>Average per person (from your local authority): 75</p> <p>Average per person (from all local authorities): 73</p> <p>Average duration (minutes) (from your local authority): 140.9</p> <p>vs national average: -11.7</p> <p>Average duration (minutes) (to your local authority): 115.5</p> <p>vs national average: -37</p>


Places
Hertfordshire
<p>Select a survey year: 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19</p> <p>(W*) Types of places visited (general)</p> <p>from: 454 to: 284</p> <p> <ul style="list-style-type: none"> Green park: 52.2% Open park: 30.3% Woodland: 1.0% Other parks: 17.5% </p> <p>(W*) Types of places visited (specific) (years 1 to 7 only)</p> <p>from: 360 to: 223</p> <p> <ul style="list-style-type: none"> Woodland: 14,506.4 Woodland: 5,288.1 Footpaths path: 3,000.0 Country park: 3,000.0 Open park: 13,400.0 Playing field: 3,148.8 </p>

<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 360 to: 223</p> <p> <ul style="list-style-type: none"> Woodland: 14,506.4 Woodland: 5,288.1 Footpaths path: 3,000.0 Country park: 3,000.0 Open park: 13,400.0 Playing field: 3,148.8 </p>


Buckinghamshire
<p>(W*) Types of places visited (general)</p> <p>from: 198 to: 170</p> <p> <ul style="list-style-type: none"> Green park: 50.0% Open park: 40.0% Woodland: 10.0% Other parks: 10.0% </p> <p>(W*) Types of places visited (specific) (years 1 to 7 only)</p> <p>from: 141 to: 129</p> <p> <ul style="list-style-type: none"> Woodland: 1,000.0 Woodland: 500.0 Footpaths path: 1,000.0 Country park: 500.0 Open park: 1,000.0 Playing field: 500.0 </p>


<p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>from: 141 to: 129</p> <p> <ul style="list-style-type: none"> Woodland: 1,000.0 Woodland: 500.0 Footpaths path: 1,000.0 Country park: 500.0 Open park: 1,000.0 Playing field: 500.0 </p>



Total sample size	
England	Buckinghamshire
<p>Sample size: 46,558</p> <p>Annual visits: 3,147,923</p> <p>Average per person: 78</p> <p>Average duration: 149.8</p>	


Hertfordshire	
	<p>Sample size: 1,329</p> <p>Annual visits: 68,296</p> <p>Average per person: 77</p> <p>Average duration: 139.7</p> <p>Average duration: 128.1</p>


Places	
Hertfordshire	Buckinghamshire
<p>(W*) Types of place visited (general)</p> <p>From: 605</p> <p>To: 148</p>  <p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>From: 0</p> <p>To: 0</p>	<p>(W*) Types of place visited (general)</p> <p>From: 288</p> <p>To: 61</p>  <p>(W*) Types of place visited (specific) (years 1 to 7 only)</p> <p>From: 0</p> <p>To: 0</p>
No types of place visited to or from data available	

Total sample size	
England	Buckinghamshire
<p>Sample size Use with caution (<100) Indicative (100-200) Significant (>200) ✔</p> <p>47,477</p> <p>Annual visits (W*) Estimated visits (from your local authority)</p> <p>3,439,148</p> <p>(W*) Estimated visits (Y1-7 only) (to your local authority) Proportion of all visits</p> <p>No Data No Data</p> <p>Average per person (from your local authority) Average per person (from all local authorities)</p> <p>86 86</p> <p>Average duration (minutes) (from your local authority) vs national average</p> <p>141 +0</p> <p>Average duration (minutes) (to your local authority) vs national average</p> <p>141 +0</p>	

Hertfordshire	
	<p>Select a survey year: 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19</p> <p>Sample size Use with caution (<100) Indicative (100-200) Significant (>200) ✔</p> <p>1,346</p> <p>Annual visits (W*) Estimated visits (from your local authority)</p> <p>78,998</p> <p>(W*) Estimated visits (Y1-7 only) (to your local authority) Proportion of all visits</p> <p>No Data No Data</p> <p>Average per person (from your local authority) Average per person (from all local authorities)</p> <p>89 86</p> <p>Average duration (minutes) (from your local authority) vs national average</p> <p>117.2 -23.7</p> <p>Average duration (minutes) (to your local authority) vs national average</p> <p>124.5 -16.4</p>

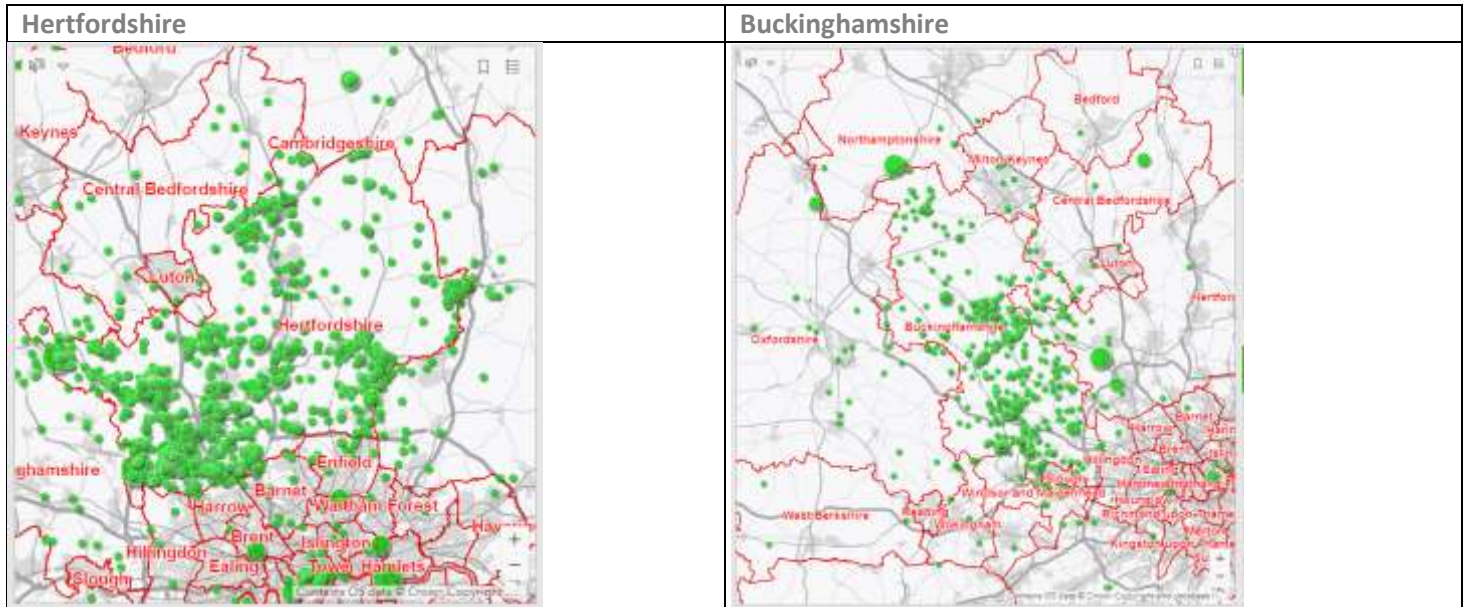
Places	
Hertfordshire	Buckinghamshire
<p>(W*) Types of places visited (summary)</p> <p>From: 716 ✔ To: 135 ?</p>  <p>(W*) Types of places visited (summary) (years 1 to 7 only)</p> <p>From: 0 ▲ ? To: 0 ▲ ?</p> <p>No Data</p>	<p>(W*) Types of places visited (summary)</p> <p>From: 413 ✔ To: 77 ▲ ?</p>  <p>(W*) Types of places visited (summary) (years 1 to 7 only)</p> <p>From: 0 ▲ ? To: 0 ▲ ?</p> <p>No Data</p>
No types of place visited to or from data available	

Total sample size	
England	Buckinghamshire
<p>Sample size: 47,580</p> <p>Annual visits: 3,615,029</p> <p>Average per person: 90</p> <p>Average duration: 137.5</p>	

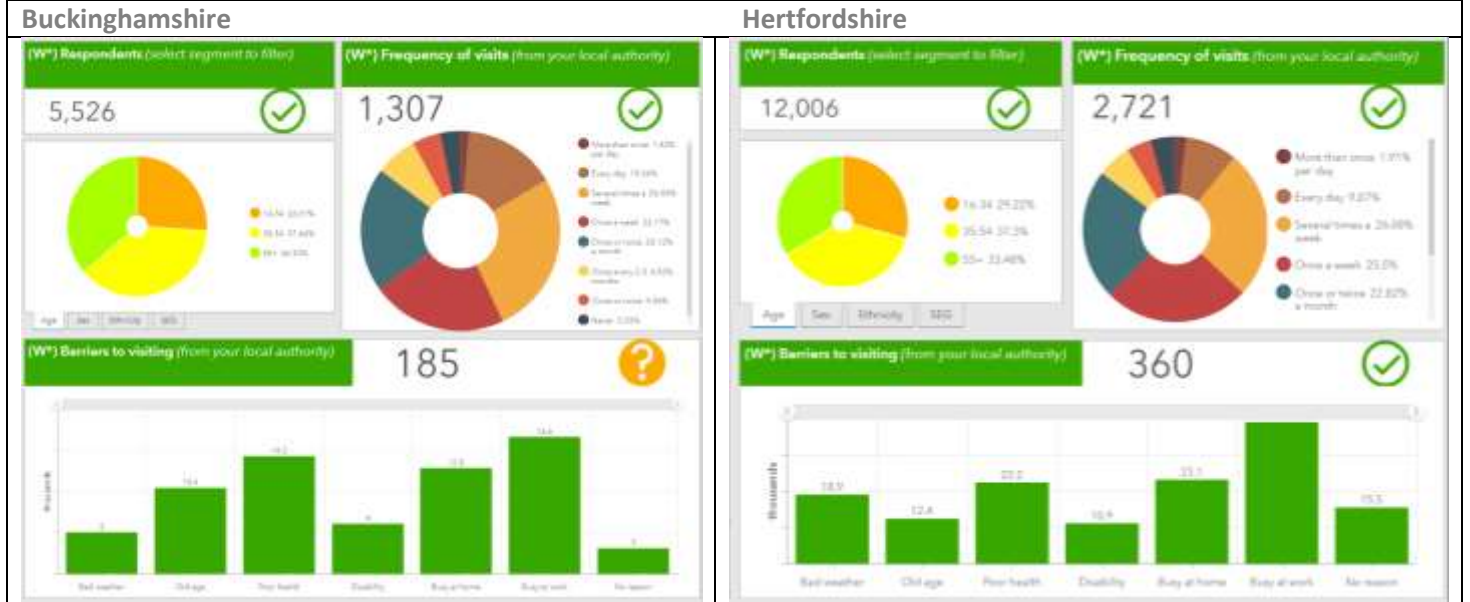
Hertfordshire	
	<p>Sample size: 1,239</p> <p>Annual visits: 80,886</p> <p>Average per person: 91</p> <p>Average duration: 129.8</p> <p>Average duration: 114</p>

Places	
<p>Hertfordshire</p> <p>Types of places visited (general): from 640 to 104</p> <p>Types of places visited (specific) (years 1 to 7 only): from 0 to 0</p>	<p>Buckinghamshire</p> <p>Types of places visited (general): from 344 to 58</p> <p>Types of places visited (specific) (years 1 to 7 only): from 0 to 0</p>
<p>No types of place visited to or from data available</p>	

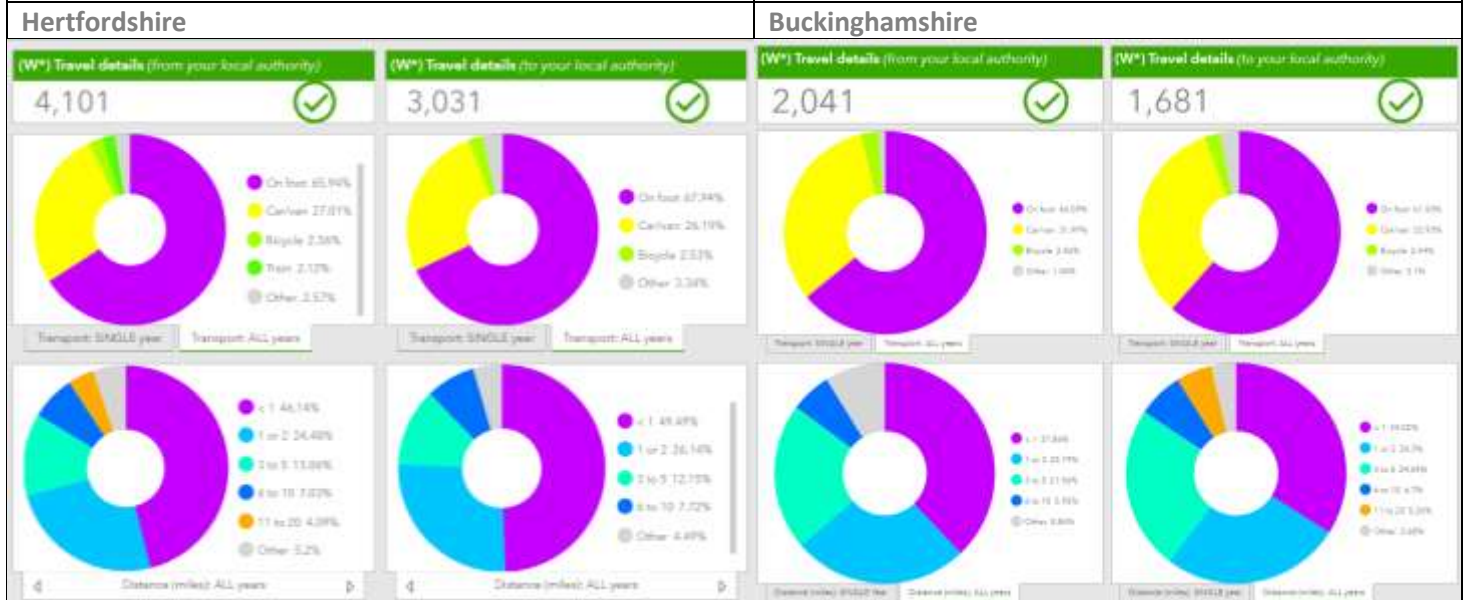
2009 to 2019



Frequency and barriers (all years)



Travel (all years)



Motivations (all years)

Hertfordshire



Buckinghamshire



Spend (Years 1 to 7)			
Hertfordshire		Buckinghamshire	
(W*) Visitors (to your local authority) (select segment to filter) 3,031		(W*) Visitors (to your local authority) (select segment to filter) 1,681	
(W*) Visitors that spent (no) Years 1 to 7 only: 585		(W*) Visitors that spent (no) Years 1 to 7 only: 354	
Average spend per visit (£) 2.62		Average spend per visit (£) 4.97	
Food and drink (£) 1.67	Public transport (£) 0.05	Food and drink (£) 2.86	Public transport (£) 0.17
Parking (£) 0.02	Admissions (£) 0.43	Parking (£) 0.07	Admissions (£) 0.23

Environmental attitudes – East of England		
(W*) Respondents (select segment to filter) 468,370	(W*) Pro environmental behaviours 34,962	(W*) Loss of variety of life (England) 17,634
(W*) Environmental attitudes (not agree) 33,625 "I am concerned about damage to the natural environment"	(W*) Changes in Lifestyle 33,625	(W*) Local greenspaces (not agree) 21,194 "Local greenspaces are within walking distance"
(W*) Respondents (select segment to filter) 47,975	(W*) Environmental attitudes (not agree) 3,527 "Having open greenspaces close to where I live is important"	(W*) Local greenspaces (not agree) 2,238 "Local greenspaces are of a high standard"
(W*) Local greenspaces (not agree) 2,238 "Local greenspaces are easy to get into"	(W*) Respondents (select segment to filter) 47,975	(W*) Respondents (select segment to filter) 47,975

Environmental attitudes – South East of England



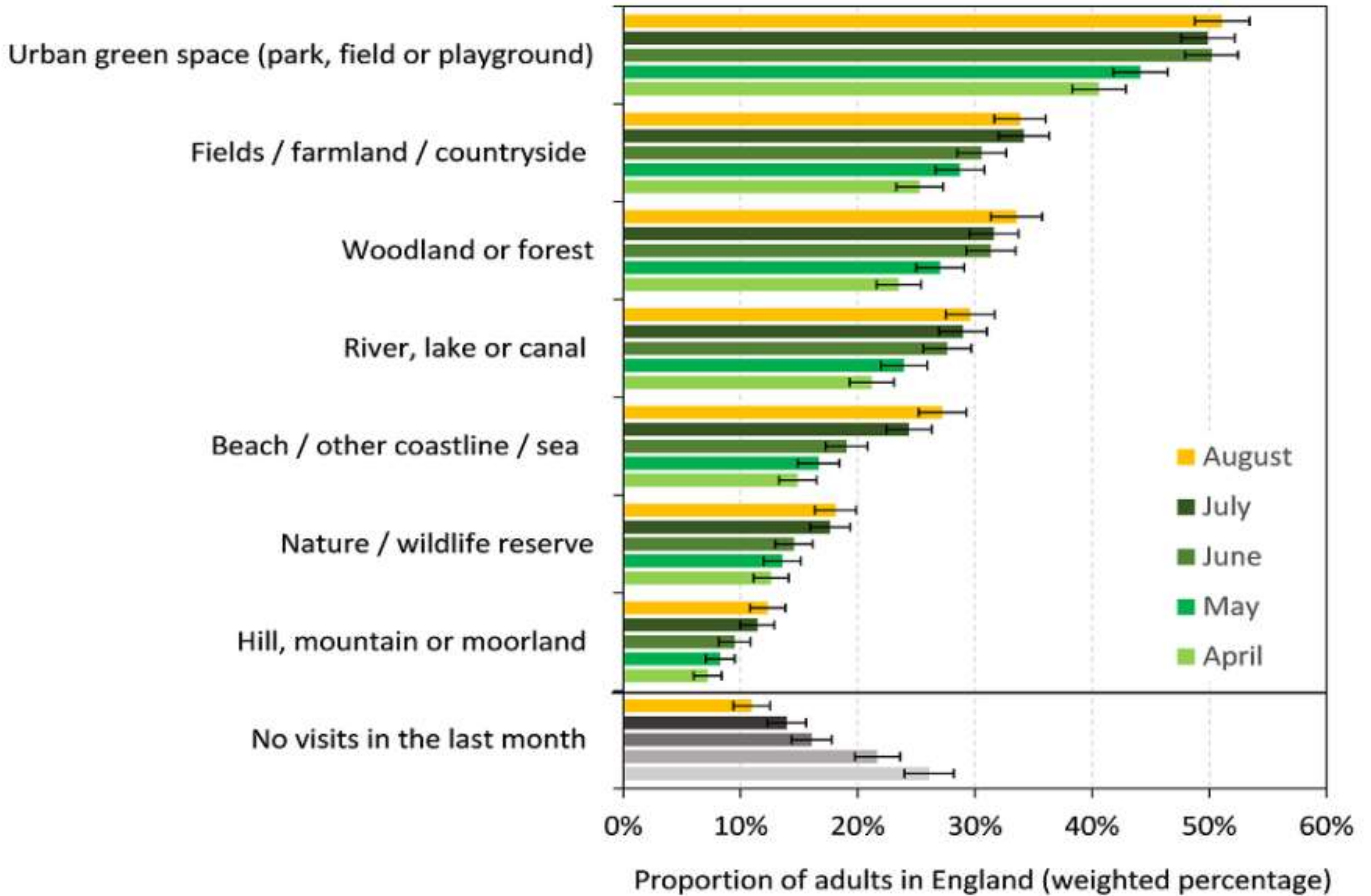
All MENE data, headline reports, analysis and publications can be accessed at:

<http://publications.naturalengland.org.uk/publication/2248731>.

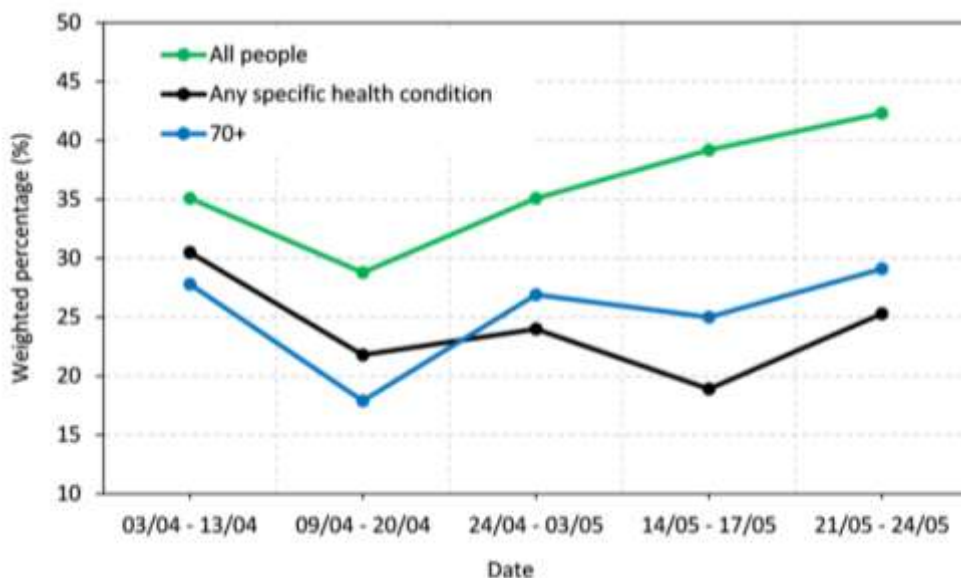
Natural England's People in Nature data

Natural England are currently running a new survey ([People in Nature](#)) which follows on from MENE survey. We understand from Natural England that there is a lot of interest in the survey, especially due to COVID-19.

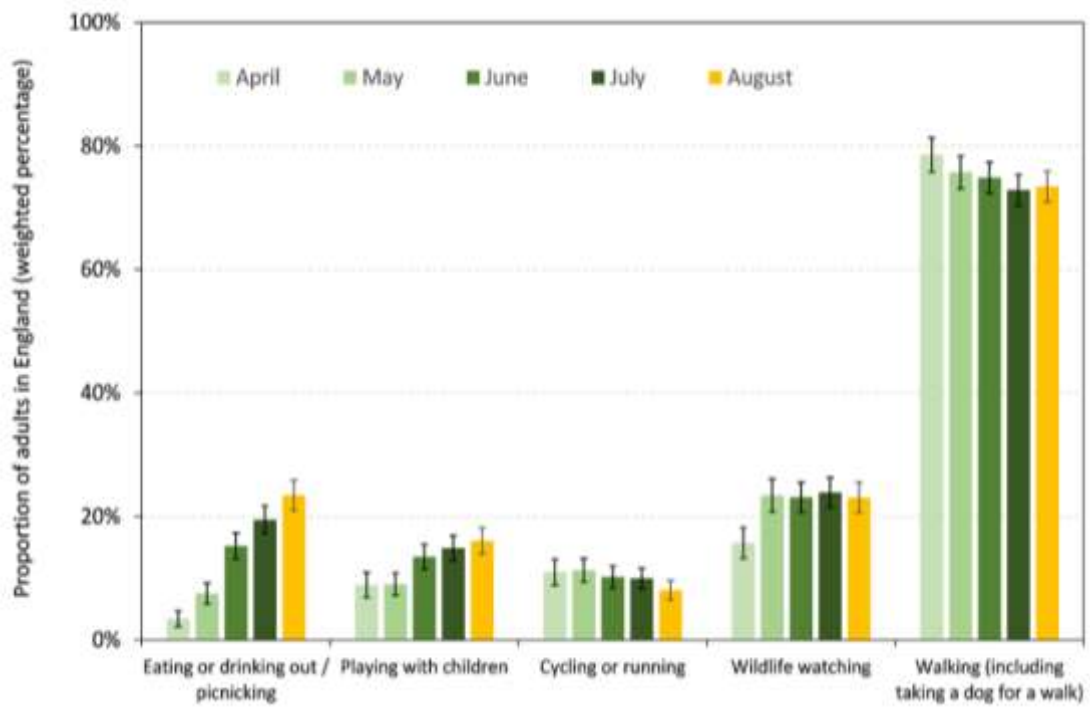
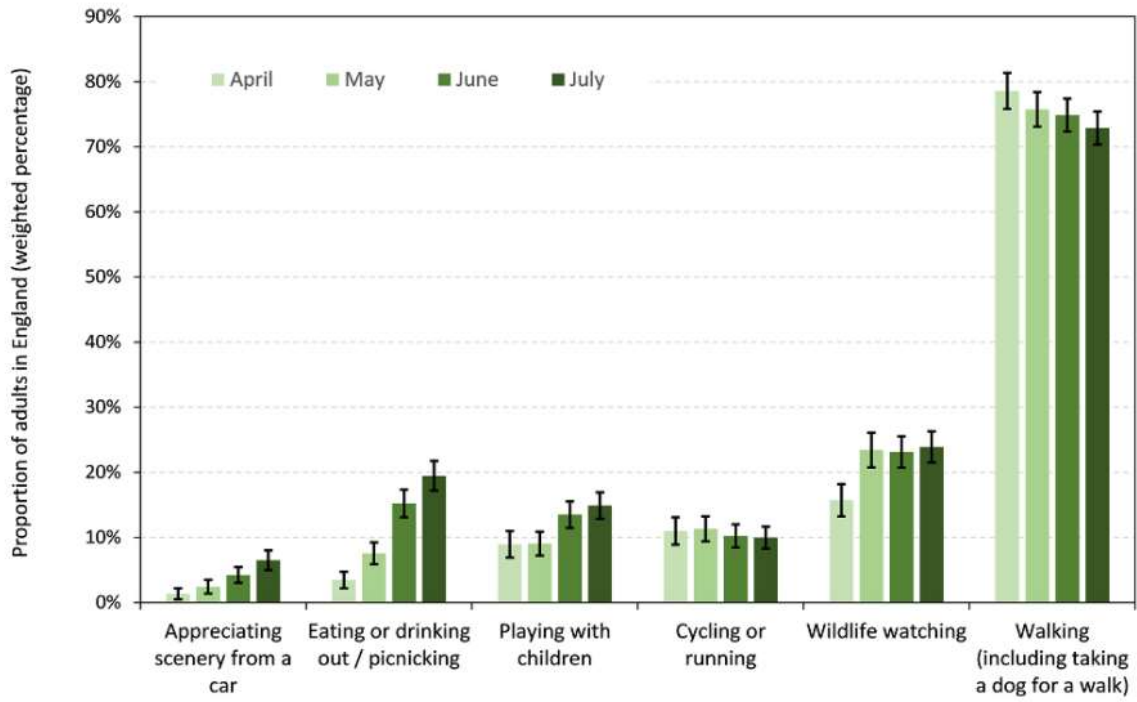
Proportion of adults in England (weighted percentage) visiting different types of green and natural spaces within the last month (August 2020)



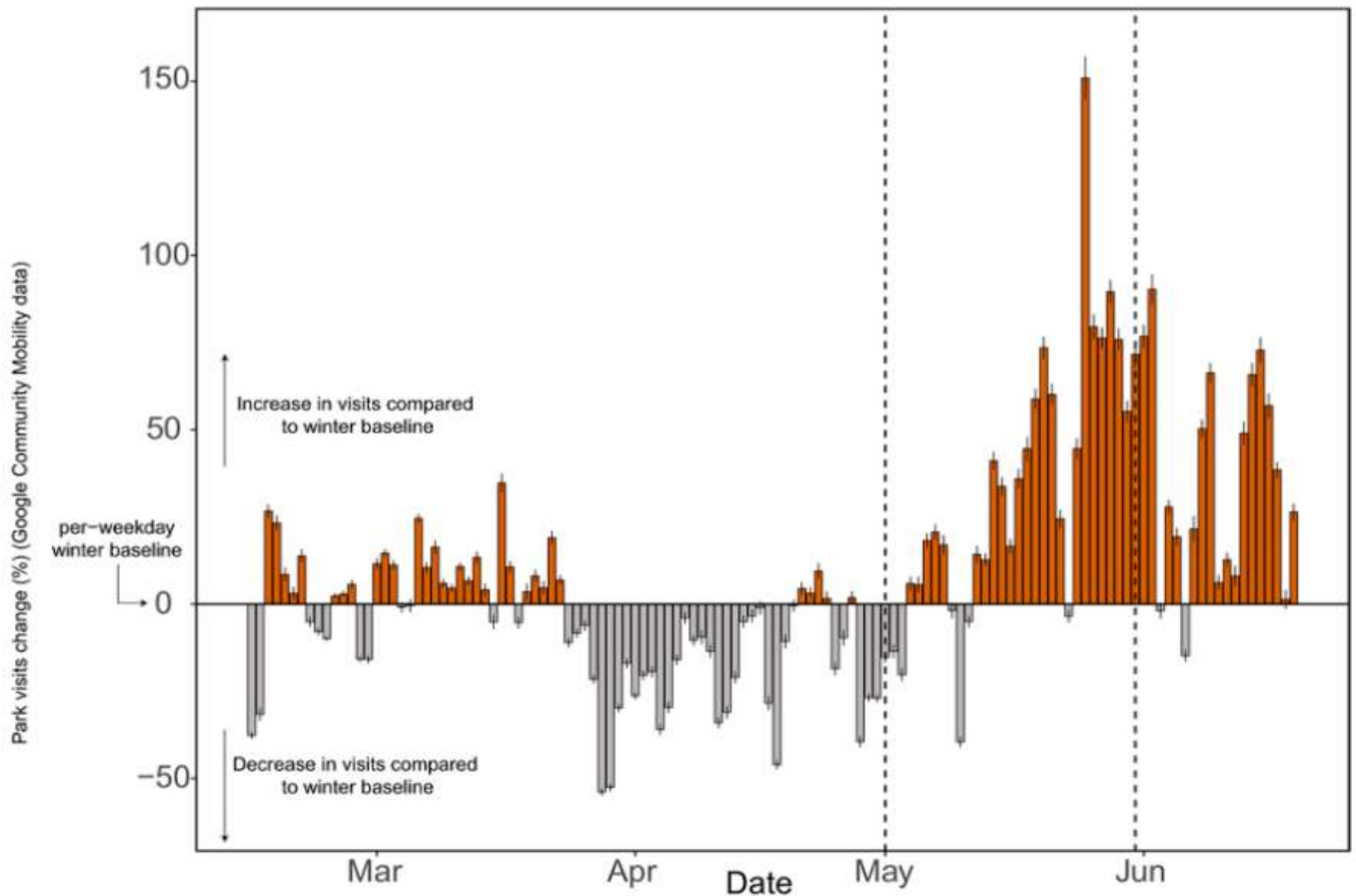
Proportion of adults in Great Britain making a visit to a park or greenspace in the last 7 days across the period 3rd April to 24th May



The main activities undertaken on the visit by proportion of adults in England

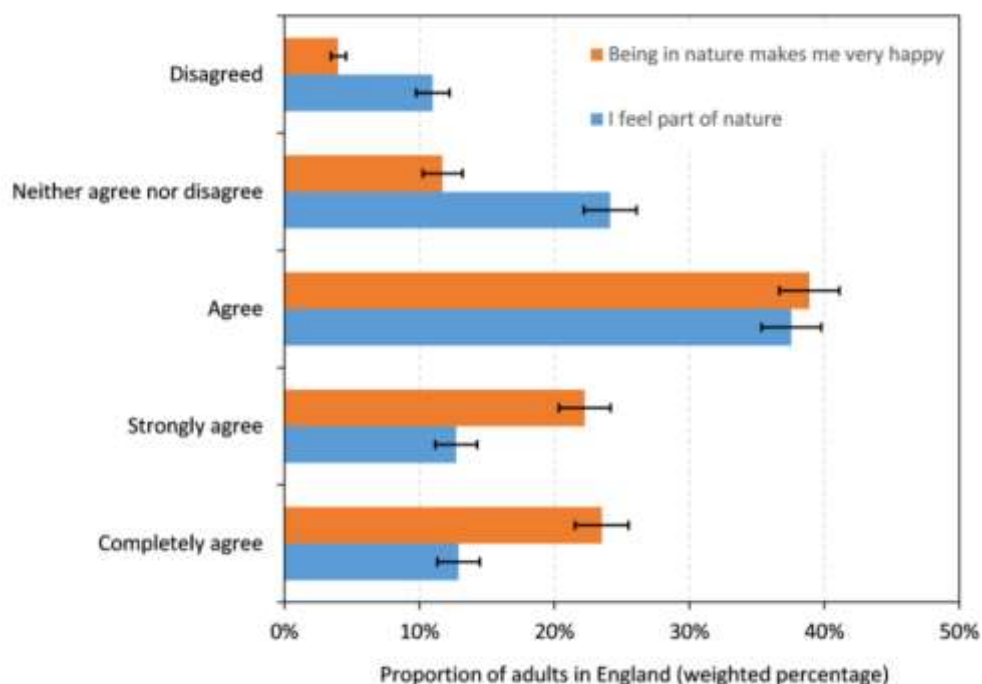


Google COVID-19 Community Mobility trends for parks (including national parks, public beaches, marinas, dog parks, plazas and public gardens) in England during spring/early summer 2020 based on daily averages (medians) in relation to the equivalent day-of-the-week Google baseline averages (3 January to 6 February 2020)

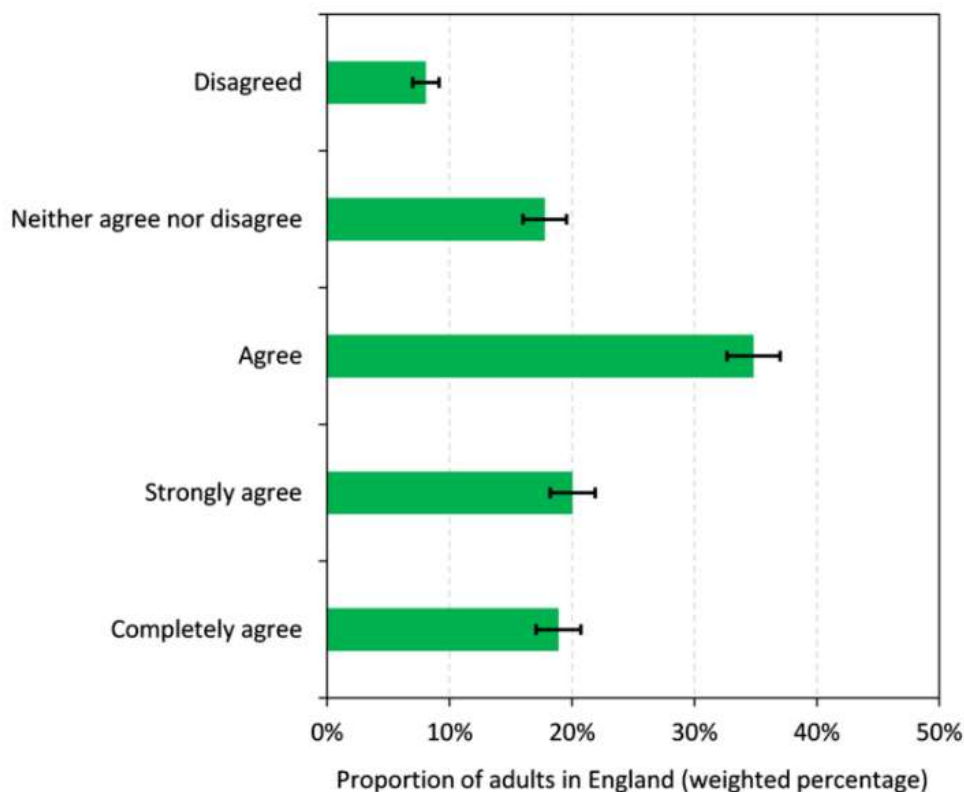


Data taken from: <https://www.google.com/covid19/mobility/>

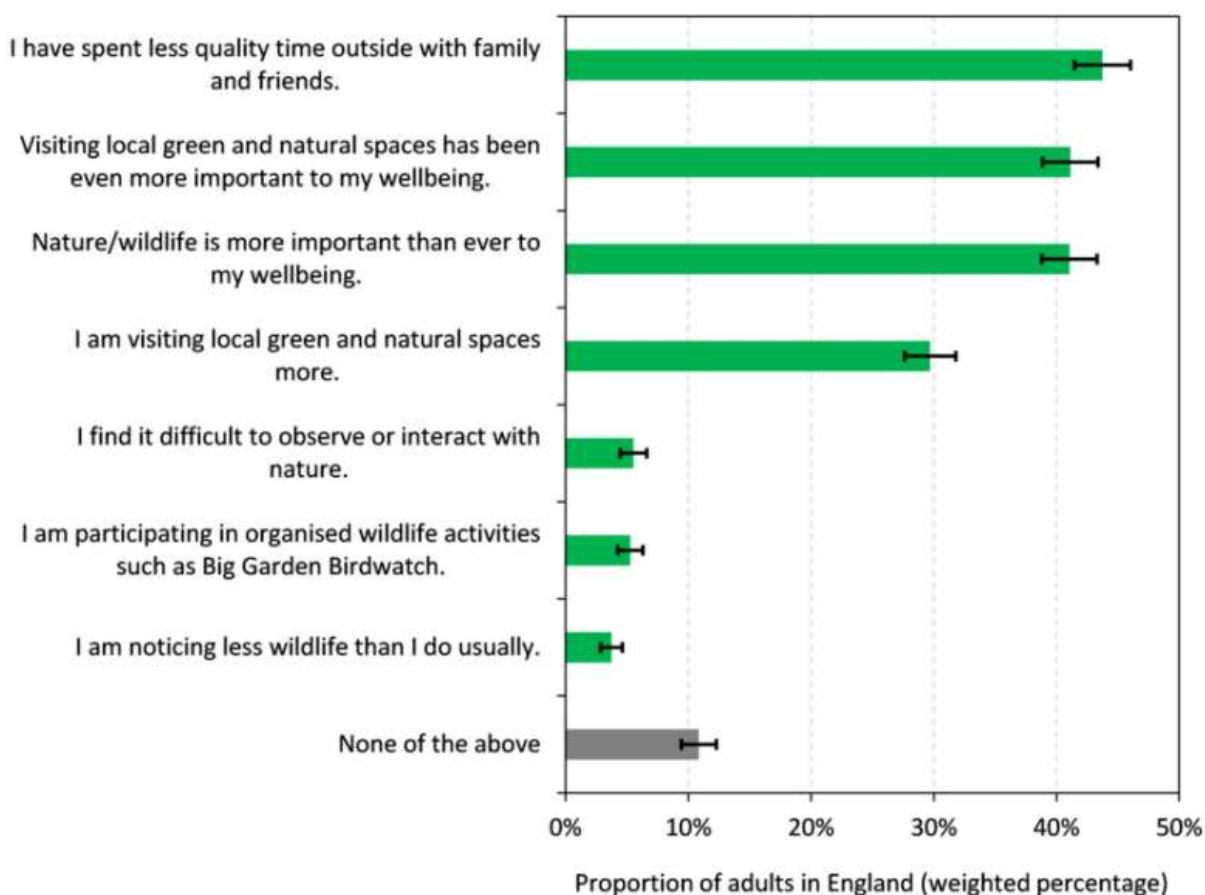
Proportion of adults in England agreeing with the following statements: “Being in nature makes me very happy” and “I feel part of nature” (May 2020)



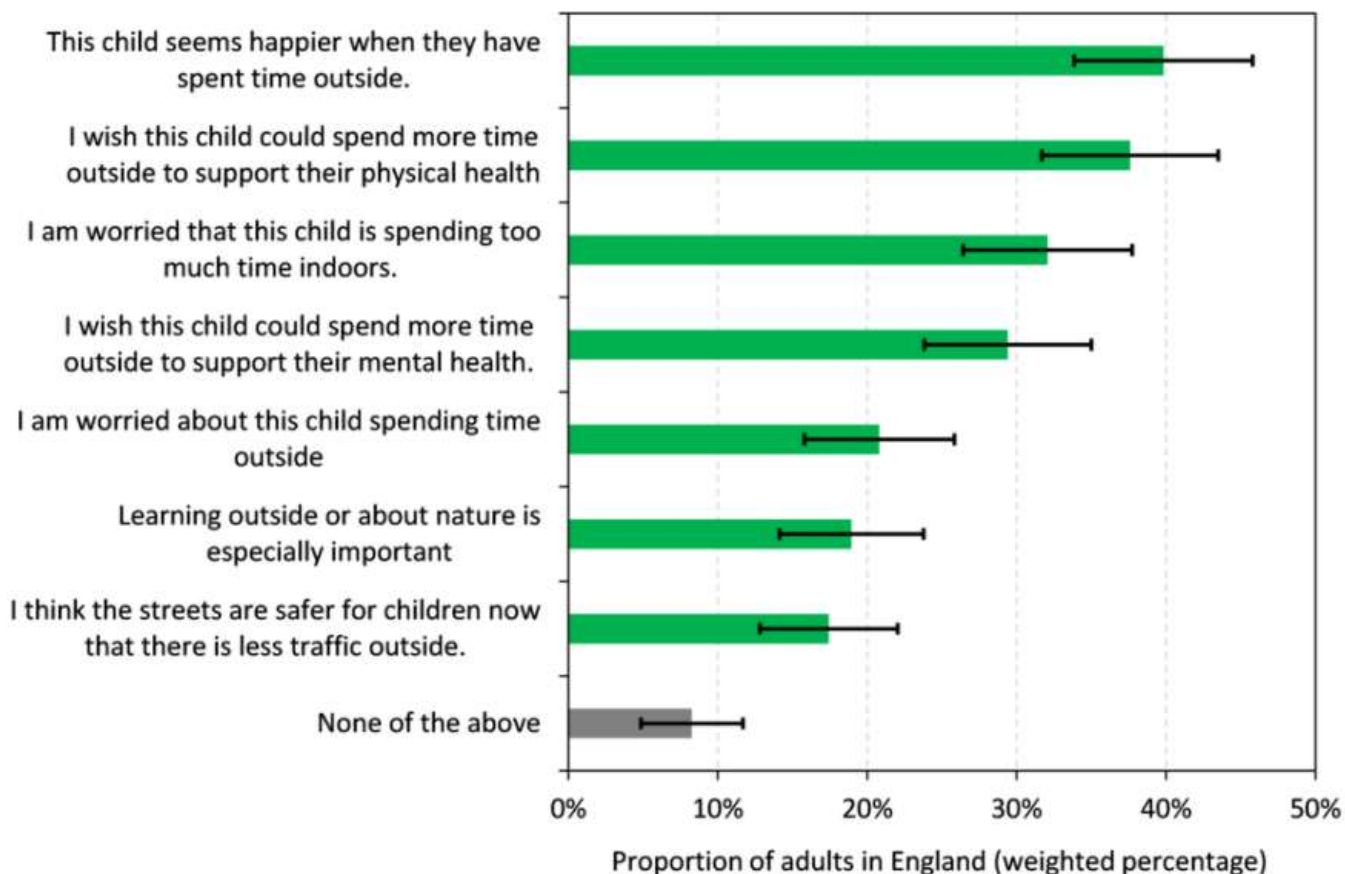
Proportion of adults in England agreeing with the following statement: "I am taking more time to notice and engage with everyday nature (e.g. listening to birdsong, noticing butterflies)" (May 2020)



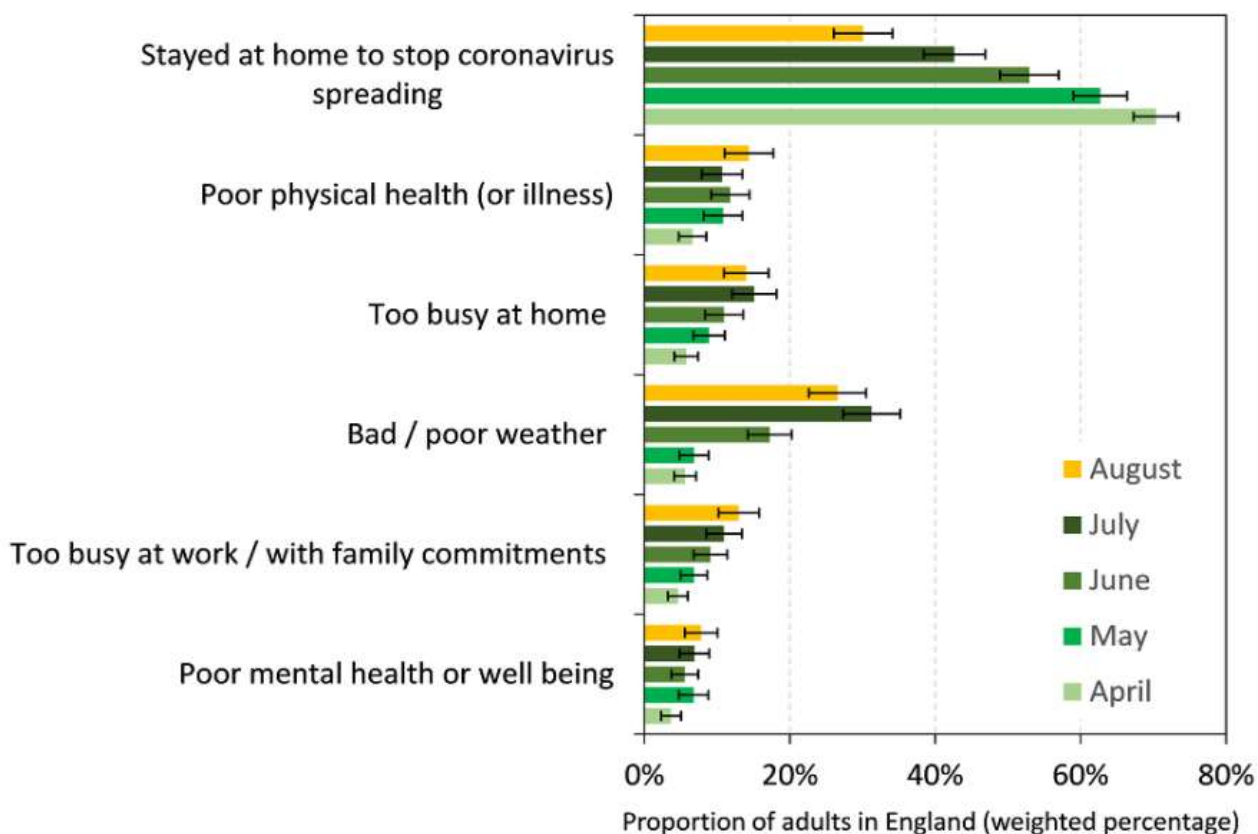
Respondents' engagement with nature since coronavirus restrictions began (as proportion of adults in England) (May 2020)



Children's engagement with nature and time spent outdoors since coronavirus restrictions started (proportion of adults in England reporting on a child in their household) (May 2020)



The main reason(s) for not spending free time outdoors in the last 14 days (August 2020) by proportion of adults in England

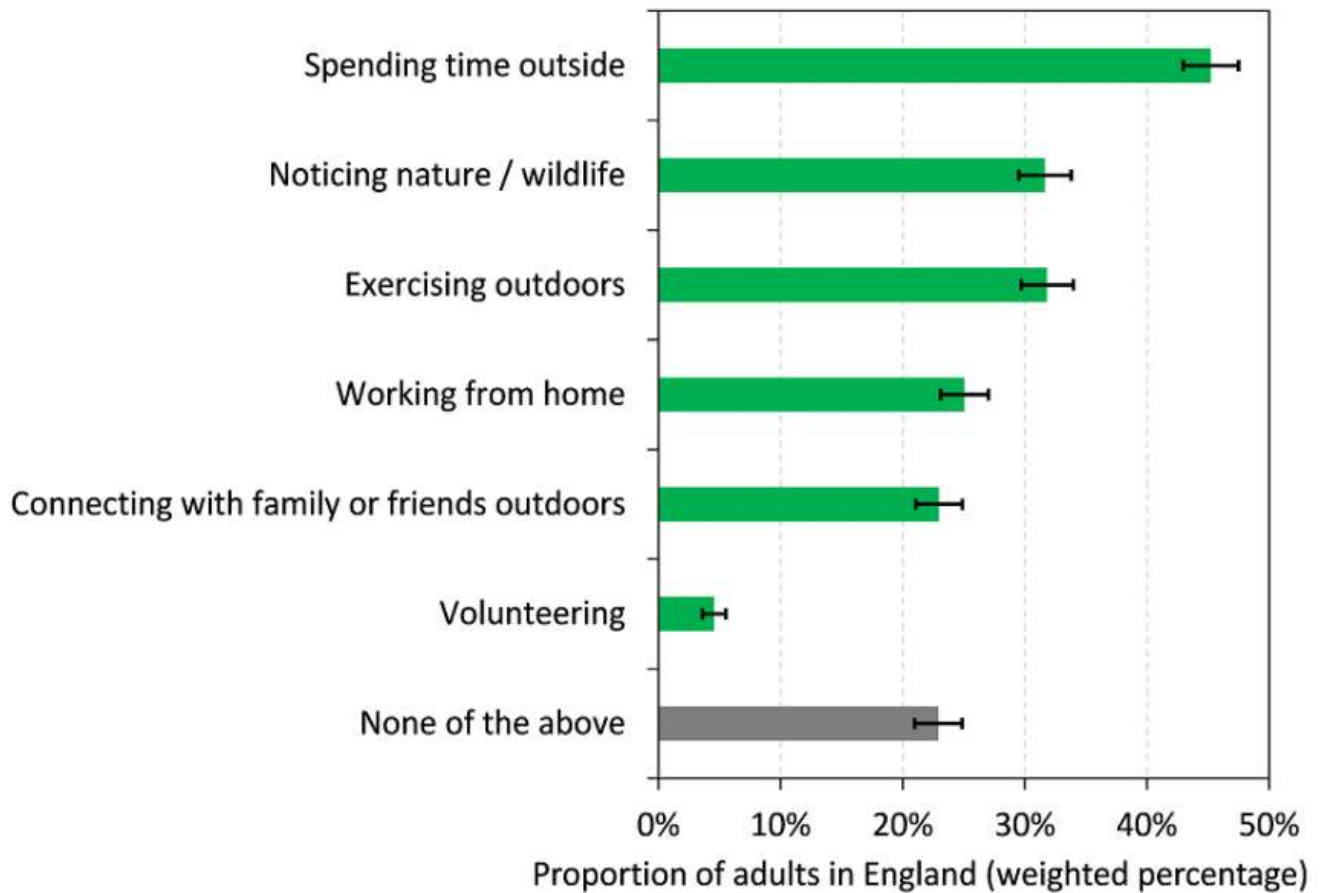


Behaviour changes during the Coronavirus pandemic

Natural England's website recognises that since May there has been a gradual, but consistent decrease in respondents reporting that they have reduced the amount that they drive or travel by car since coronavirus restrictions were introduced (61% in August, down from 72% in May).

Proportion of adults in England (weighted percentage) increasing their time spent on certain activities since coronavirus restrictions began

1st–31st August



A photograph of a misty forest path. The path is covered in fallen brown leaves. A large tree trunk is visible on the right side. The background is a soft, hazy landscape with trees and a bright light source, possibly the sun, creating a warm, golden glow. A white rectangular box with a green border is positioned in the upper left quadrant, containing the text.

Locally specific Visitor Data & Surveys

Visitor Data

Strava: overview

Below are detailed screenshots from Strava which highlight how extensive and intensively the walking and cycling routes across the two sites are. This can be used as a useful 'proxy' to understand the levels of recreational pressure across the site and where focused pressure is likely to be seen.

Initially these show very simplified and high level heat maps which remove a lot of the detailed trails from them, these are then followed by more detailed/extensive trail walking/cycling data. Data can be viewed from: <https://www.strava.com/heatmap#12.93/-0.57798/51.80029/hot/run> (although a log on is required to be created before clear images/the full detail is visible).

Ashridge Commons and Woods SSSI

All modes



Cycling



Walking



Strava: Detailed mapping

Ashridge Common and Woods SSSI

All modes



Cycling

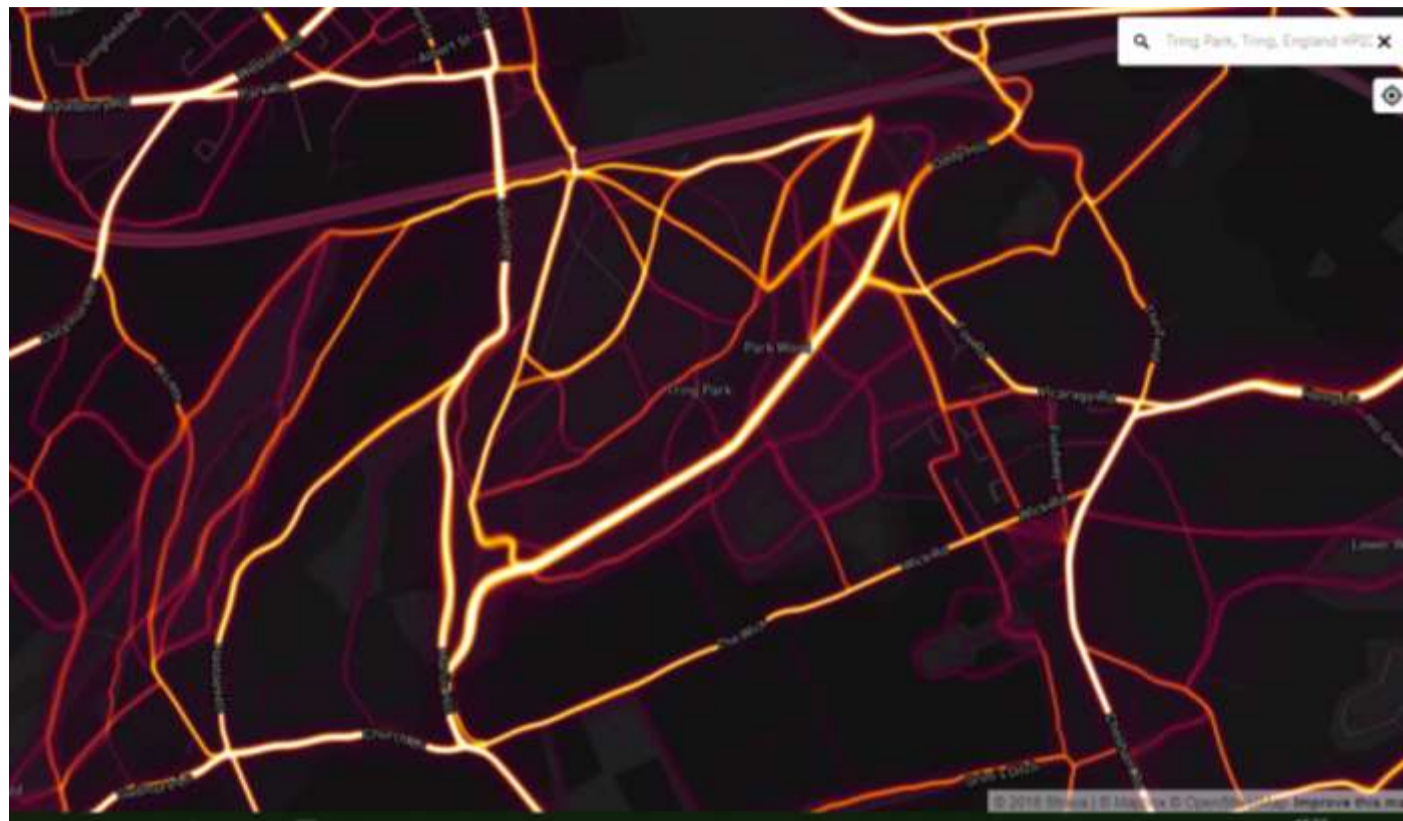


Walking

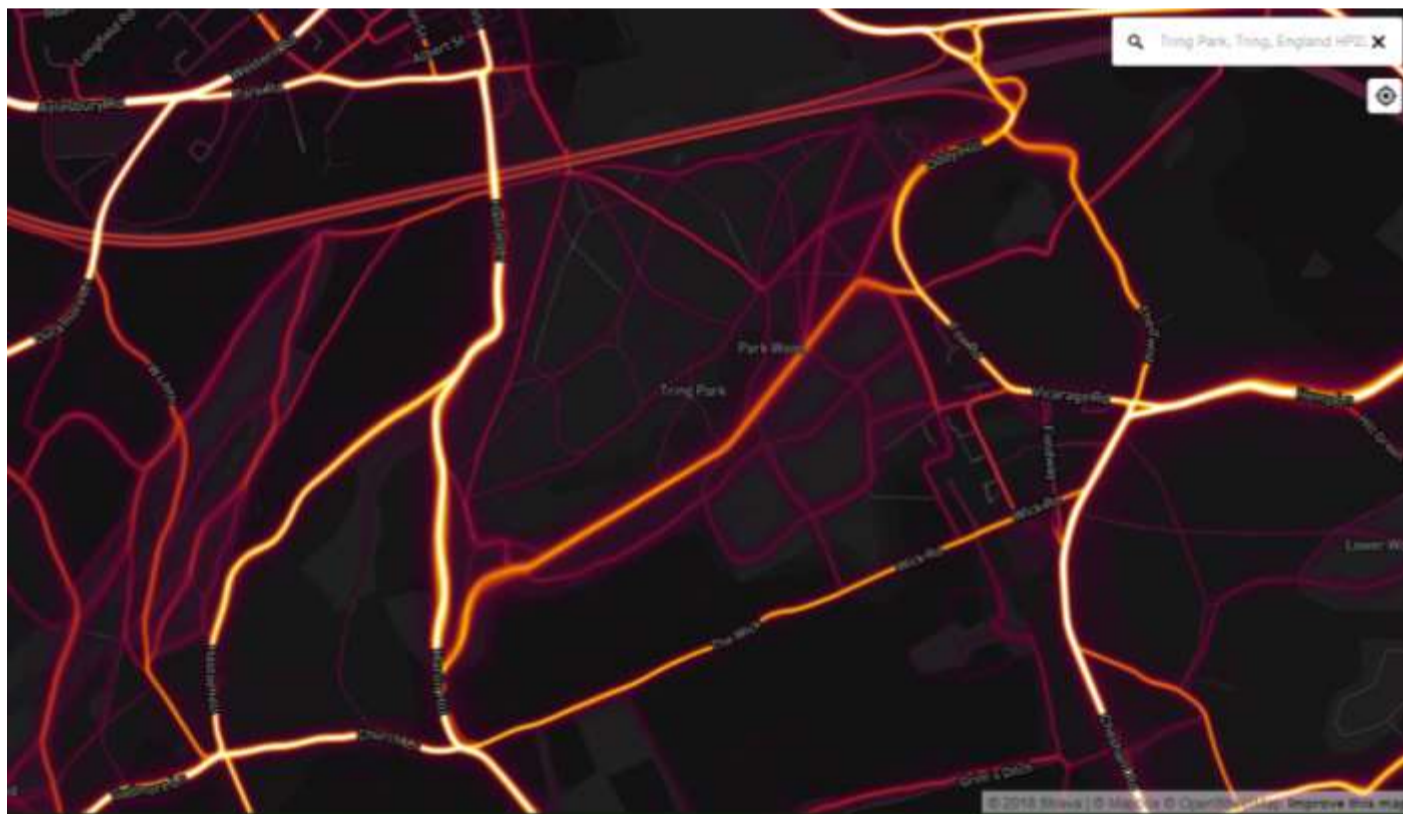


Tring Park and Tring Woodlands

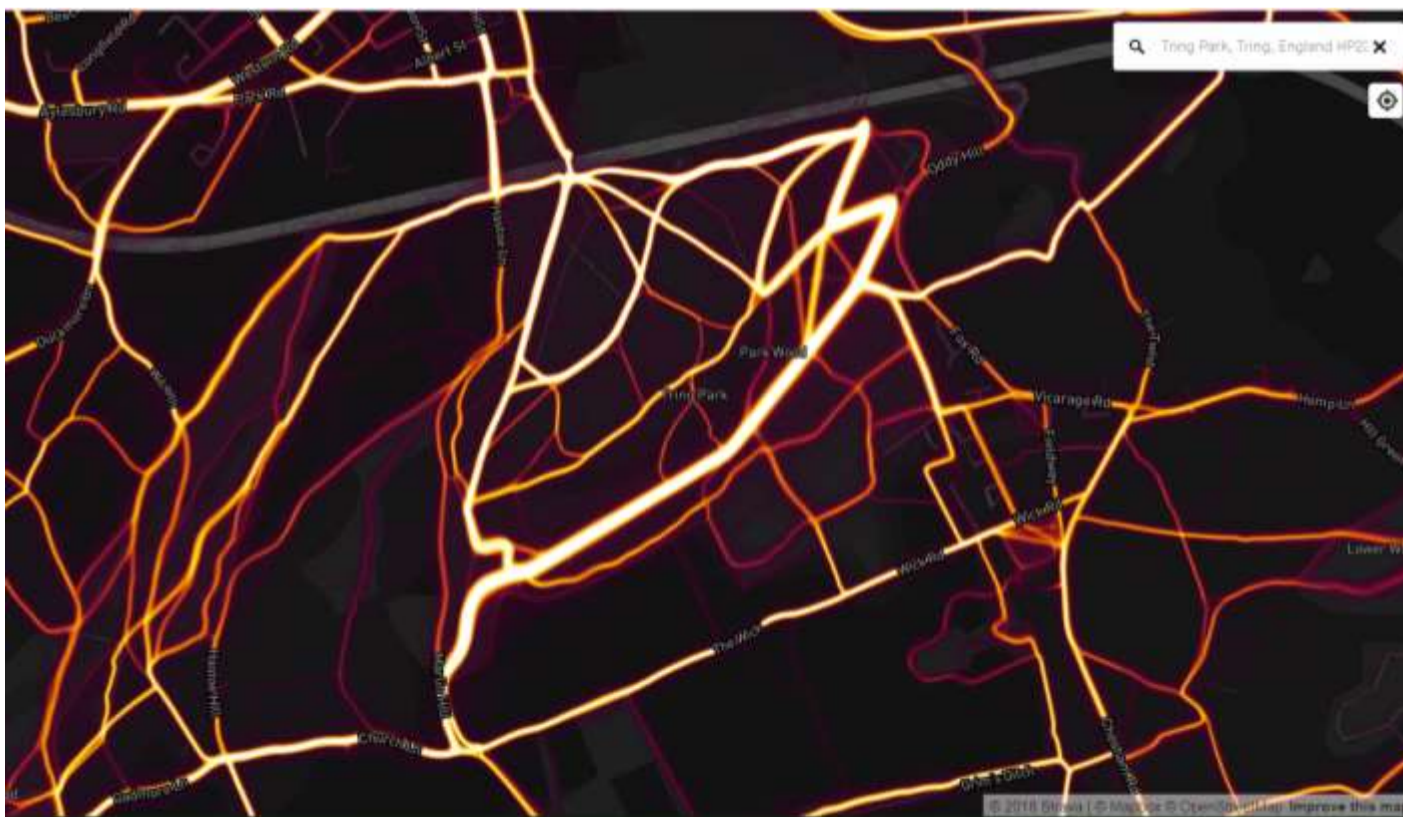
All modes



Cycling



Walking



Tring Park and Tring Woodlands SSSI

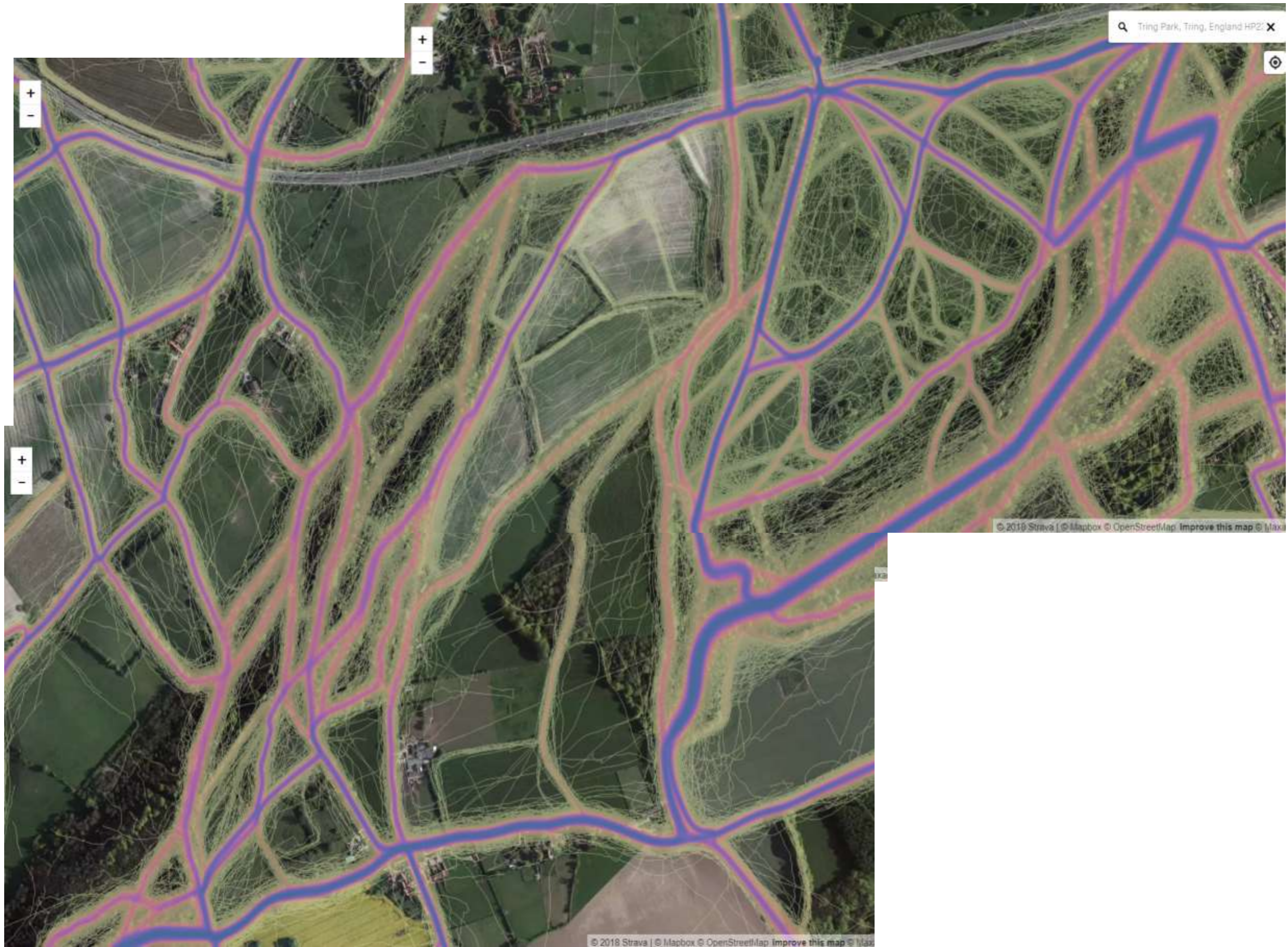
All modes



Cycling



Walking



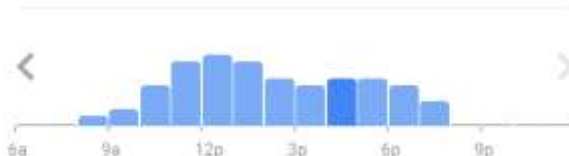
Popular times at venues within the Ashridge Estate (as at September/October 2020)

Bridgewater monument

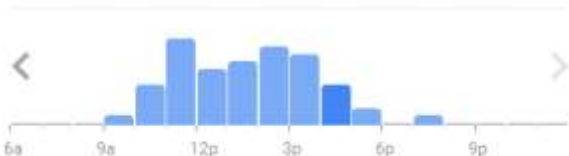
Popular times Mondays ▾



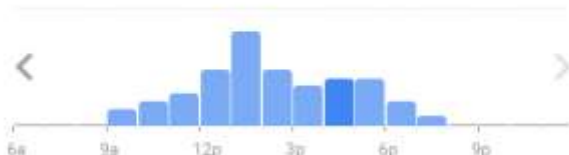
Popular times Tuesdays ▾



Popular times Wednesdays ▾



Popular times Thursdays ▾



Popular times Fridays ▾



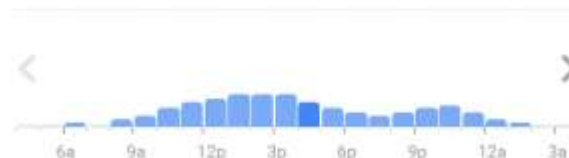
There is no information Saturday or Sunday

Donkey Wood

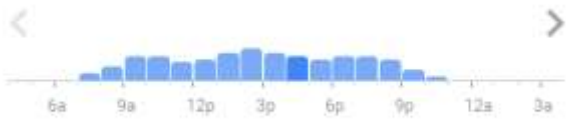
Popular times Mondays ▾



Popular times Tuesdays ▾



Popular times Wednesdays ▾



Popular times Thursdays ▾



Popular times Fridays ▾



Popular times Saturdays ▾



Popular times Sundays ▾



Browlow Café

Closed Monday

Popular times Tuesdays ▾



Popular times Wednesdays ▾



Popular times Thursdays ▾



Popular times Fridays ▾



Popular times Saturdays ▾



Popular times Sundays ▾



Ashridge Estate Visitor Centre

MON TUE WED THU FRI SAT SUN



MON TUE WED THU FRI SAT SUN



MON TUE WED THU FRI SAT SUN



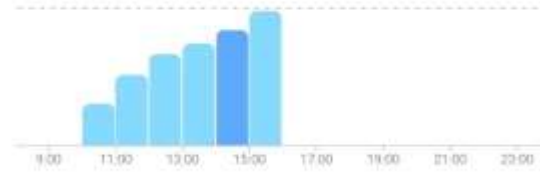
MON TUE WED THU FRI SAT SUN



MON TUE WED THU FRI SAT SUN



MON TUE WED THU FRI SAT SUN



MON TUE WED THU FRI SAT SUN



No information for Ashridge woodlands on Google



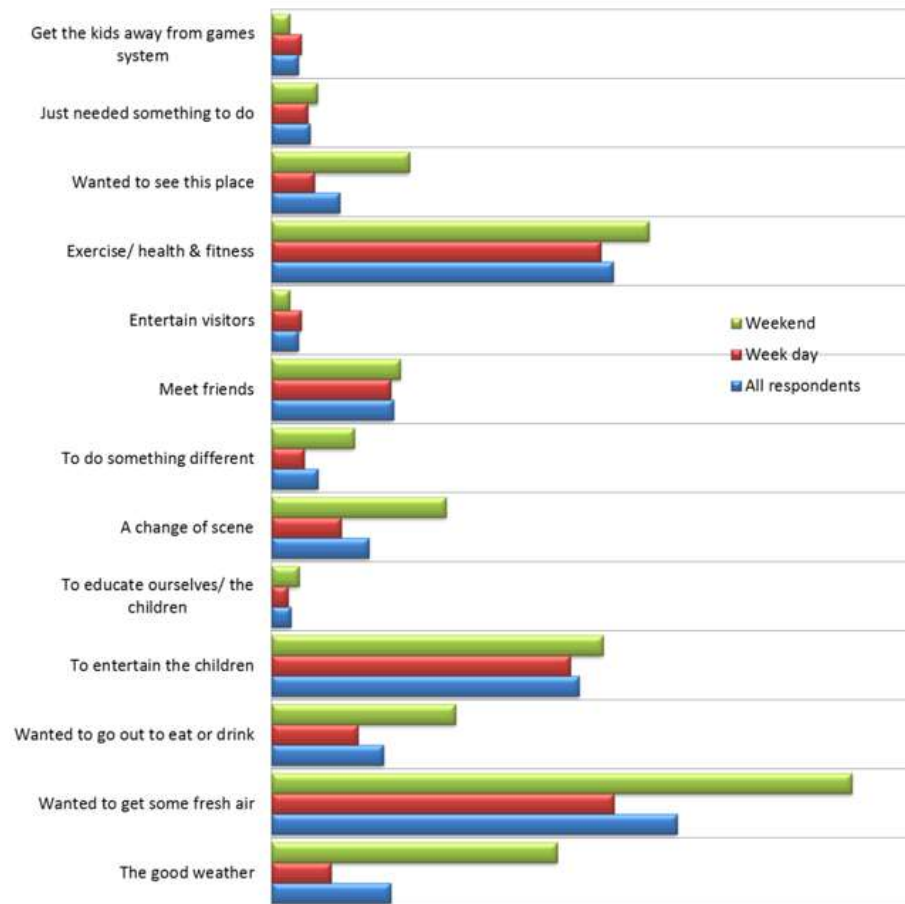
Image taken at: Ashridge Estate East Egg H

Visitor Survey undertaken by the National Trust at Ashridge Estate

2013 by Arkenford

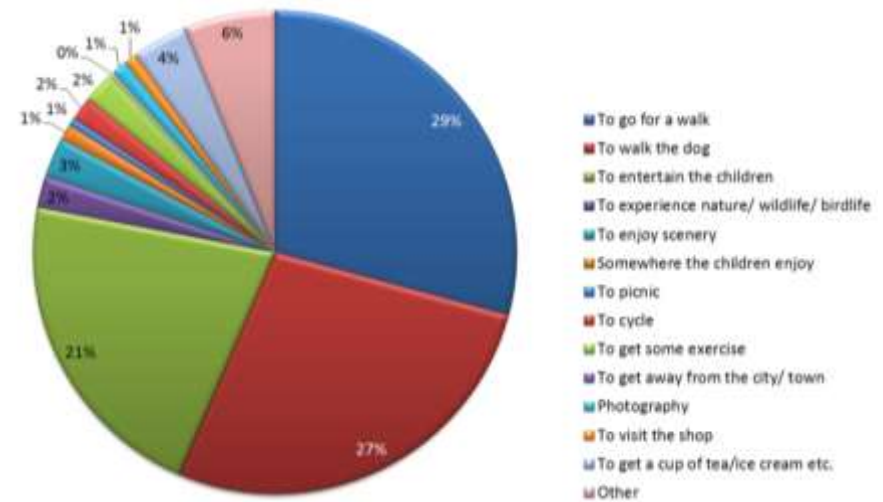
Visitor survey data undertaken by Arkenford in 2013 for Ashridge Estate and Polesden Lacey. There were 377 face to face interviews over 20 consecutive days. The survey covered the Easter weekend. The below slides are summaries provided by Arkenford to the National Trust.

Motivations for leaving the house



This confirmed that fresh air and exercise are the two most common reasons for getting out of the house. Entertaining children is a popular reason for getting out of the house on any day of the week.

Why are people coming to Ashridge?



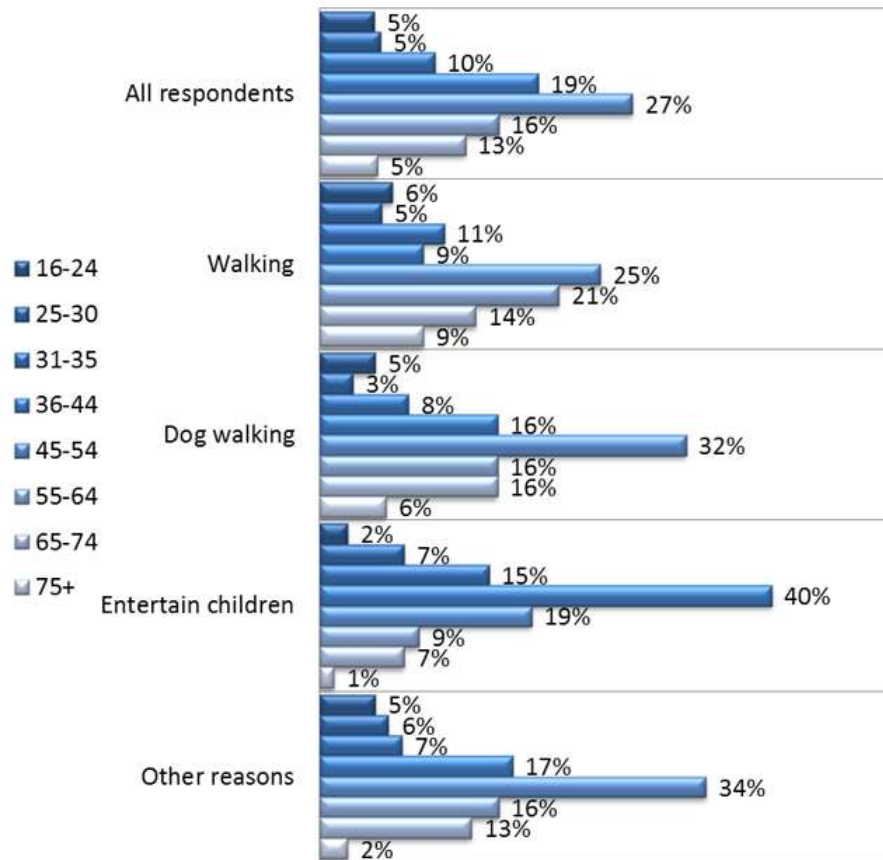
Reasons for visit to Ashridge Estate can be grouped into 3 main groups:

- Walking;
- Dog walking;
- Entertaining children; and
- Other niche reasons (i.e. Easter Egg Hunt was frequently mentioned).

Scenery/nature accounts for a very small proportion of reasons.

Entertaining children is more popular during the week than at the weekends (except for Easter Egg hunt respondents).

Profile of visitors at Ashridge Estate

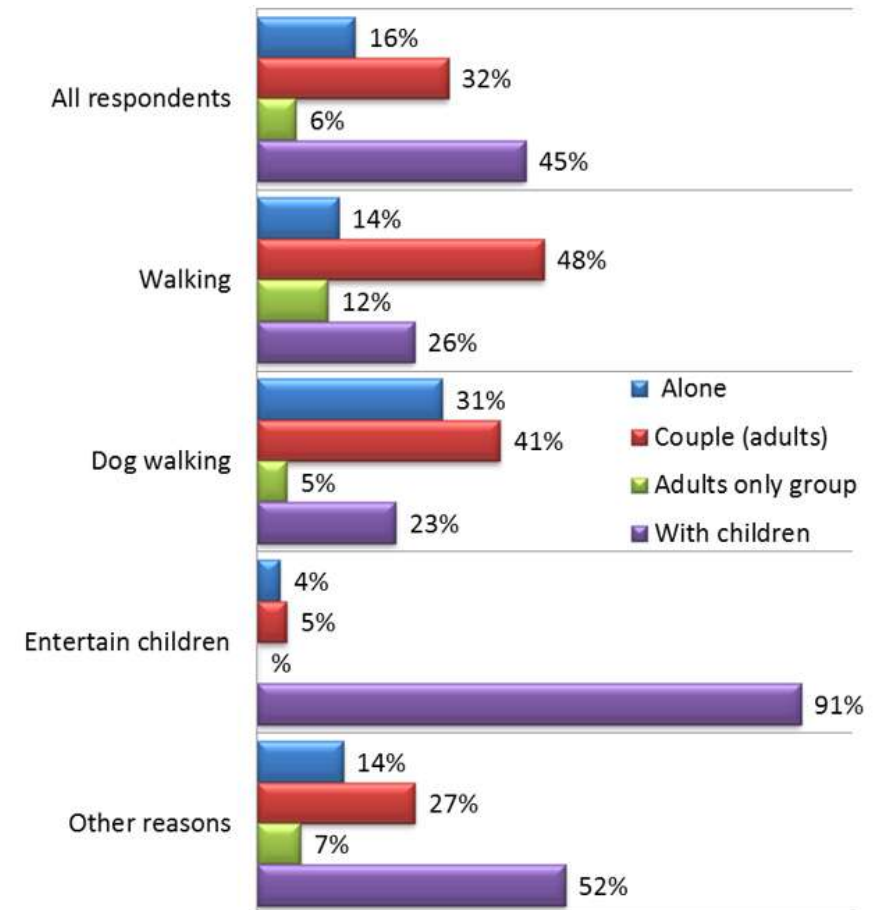


There is a spread of ages across all the different reasons for visiting Ashridge.

If the results are indexed then the over 75s are twice as likely to be visiting for walking.

Profile of visitors at Ashridge Estate (cont.)

Group composition

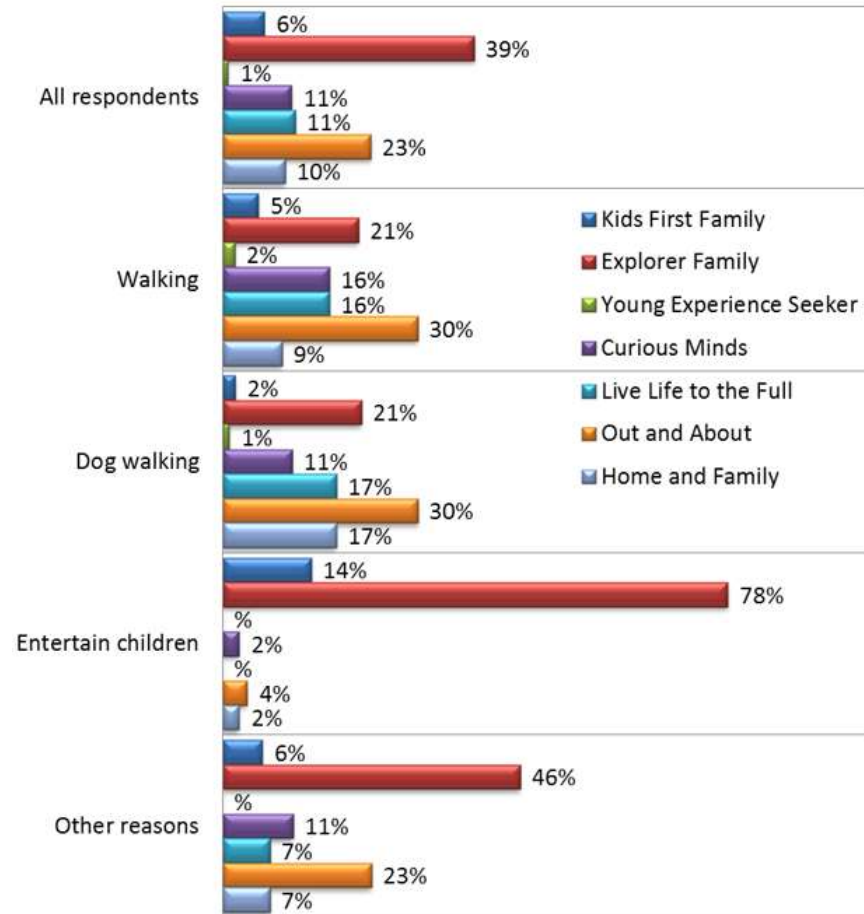


Almost half the visitors are there with children.

Dog walking is a social activity at Ashridge Estate with 2/3rds in group of 2 or more

With the Easter Egg Hunt on over the weekend, over 50% of those visiting for other reasons had children with them.

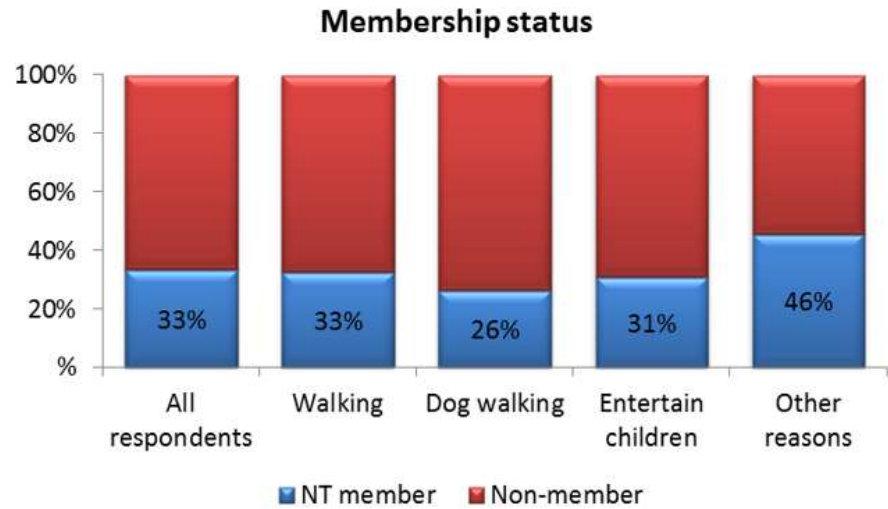
Segment profile at Ashridge Estate



Explorer Family and Out and Abouts are the two most prominent segment groups at Ashridge Estate

Out and Abouts tend to be slightly more social than other segments and are likely to choose known signposted countryside sites rather than seeking their own natural piece of countryside

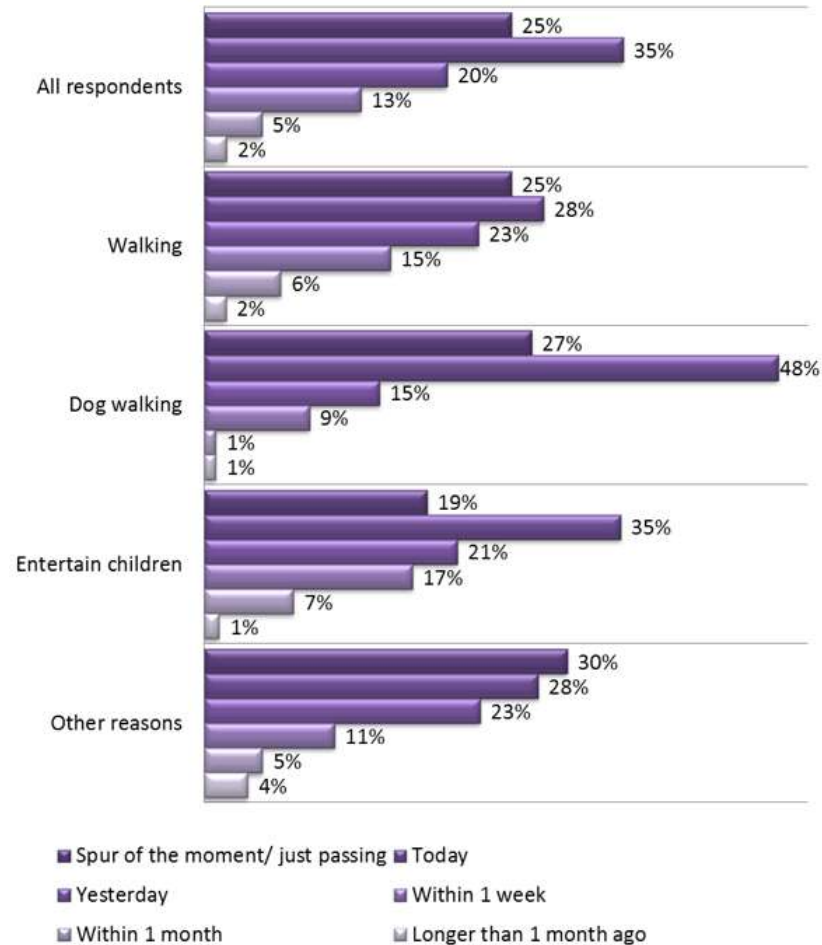
Profile of Ashridge Estate visitors



A third of visitors are members but this rises to 46% when there are 'other reasons' e.g. Easter Egg Hunts for visiting

Dog walkers who are most likely there for functional reasons are least likely to be members.

Decision to visit

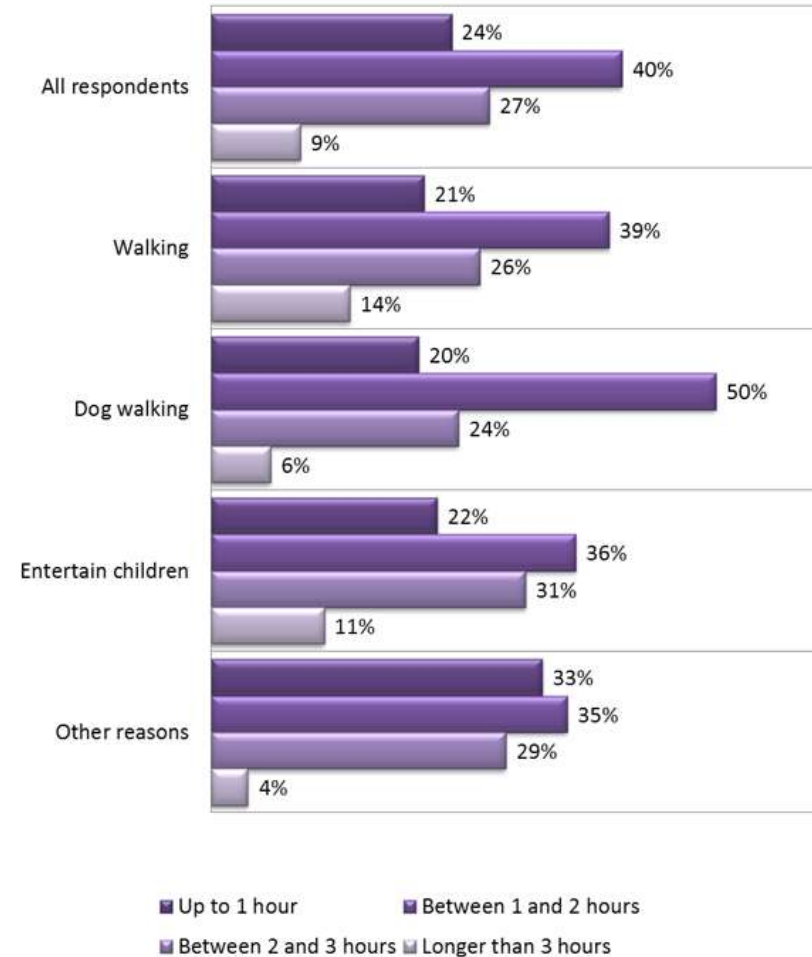


The vast majority choose to visit within 24 hours:

- 60% on the day
- 80% within 24 hours

This is common with countryside sites, especially over March/April as people are waiting to see what the weather will be like.

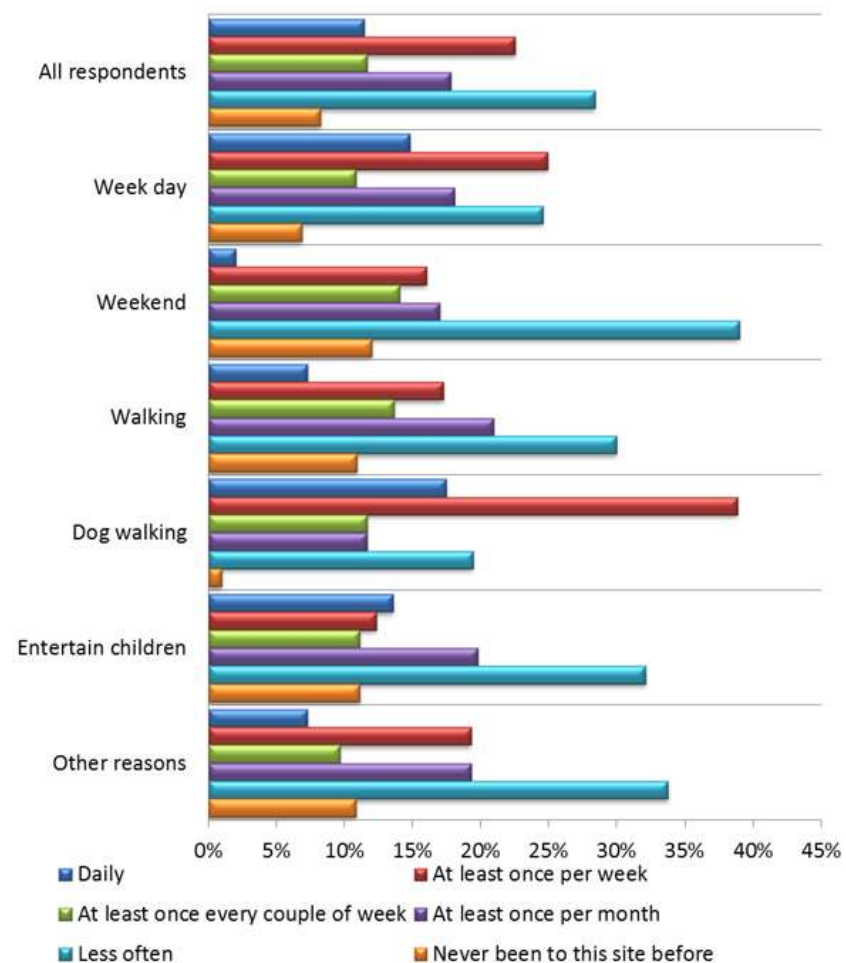
Duration of visit



The majority stay for 2 hours or less.

As the weather was so cold during the research it would be expected that people stay longer in warmer weather.

Frequency of visits



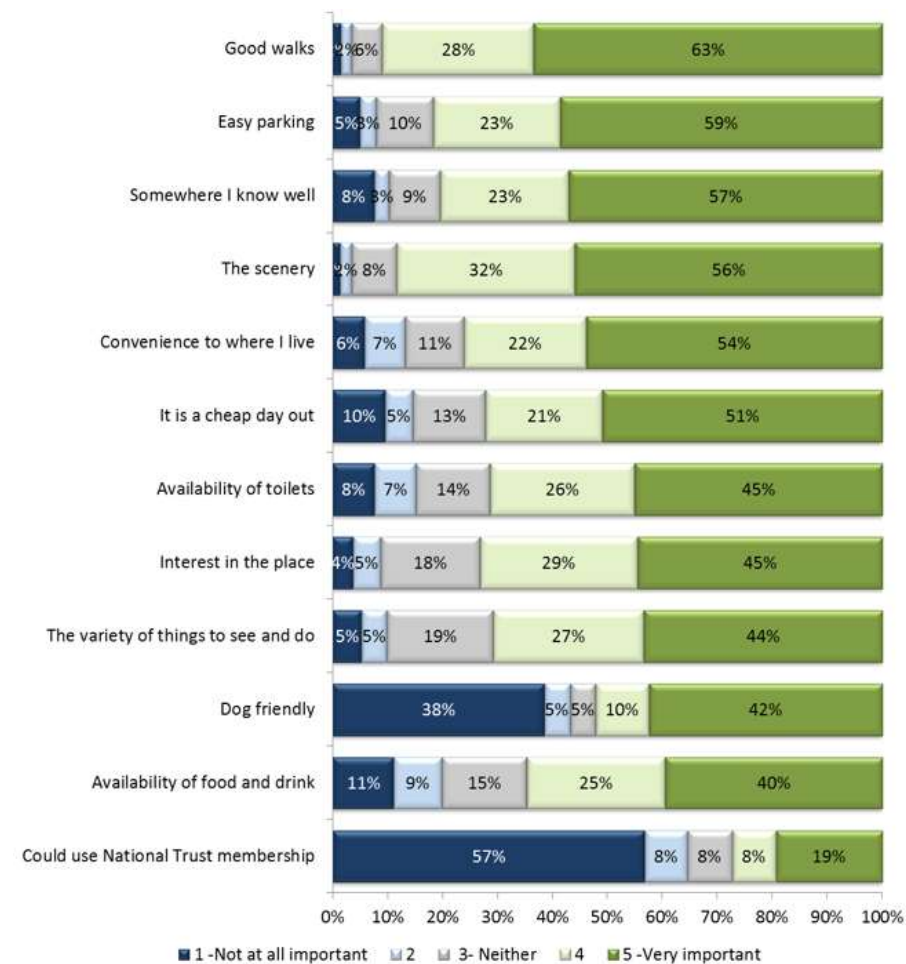
Weekday visitors tend to be more frequent than weekend visitors.

Dog walkers visit the site most frequently.

Those entertaining children visit least frequently:

- Often people have a repertoire of 4 or 5 outdoor places they visit so are unlikely to head to the same one all the time

Importance of factors in choosing Ashridge Estate



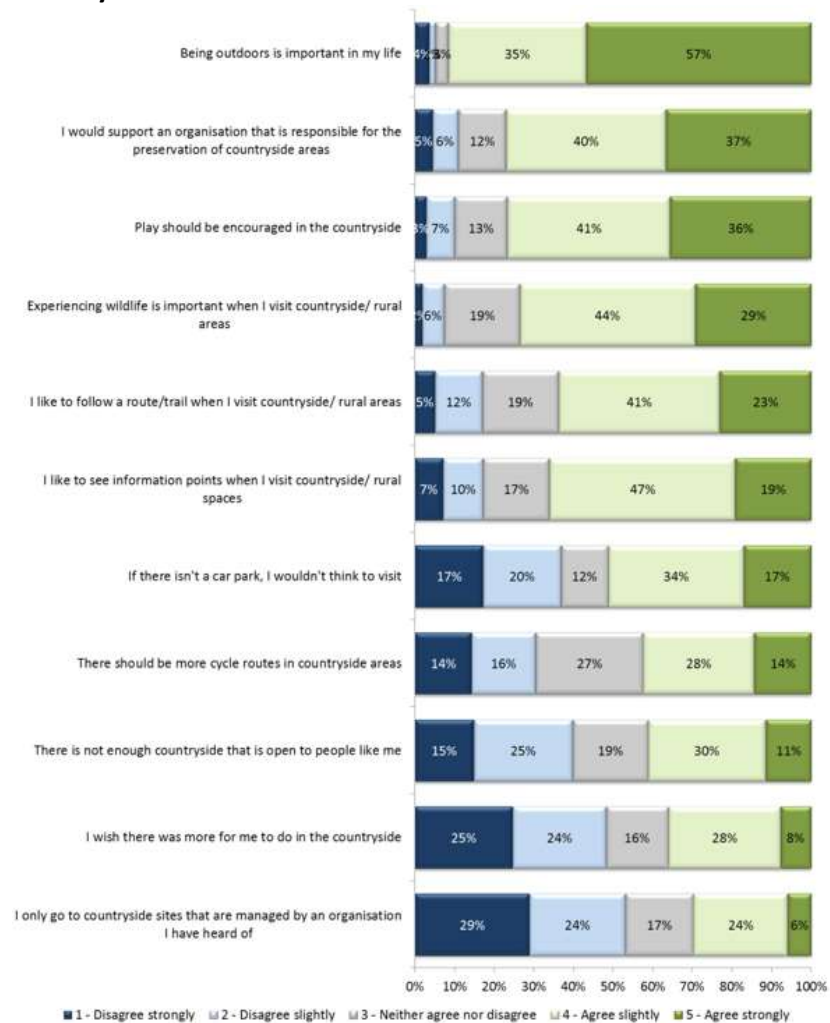
Good walks and the scenery are important factors in choosing Ashridge Estate. Convenience and previous knowledge of the site are also important factors for visitors.

Easy parking makes the experience easy for many which is why it scores highly.

Things to see and do, catering and the ability to use National Trust membership were down near the bottom end of the list.

People don't tend to choose a countryside site because of the availability of laid on activities or services but because it is a nice environment where they can spend time together.

Countryside statements

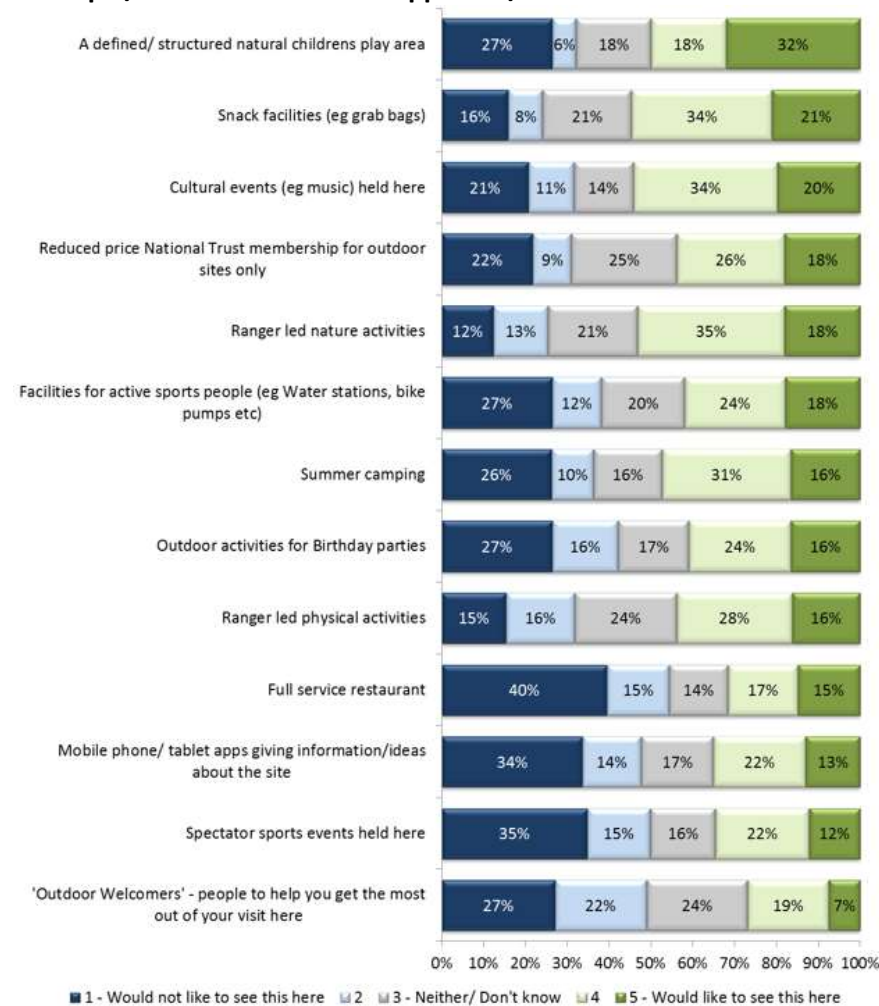


During the cold weather it is more likely to be people who like being outdoors that are interviewed.

Experiencing wildlife and following marked trails with information points are all important. Wildlife could be as simple as a squirrel or a pheasant.

There is an even split of those who are seeking more from their countryside visit and those who are not

Concepts/facilities which 'hold appeal to/attract visitors'



Of the list of developments there is a mixed feelings across the board.

Snack facilities and ranger led nature activities have the highest appeal across all respondents.



2017 – 2020 by the National Trust

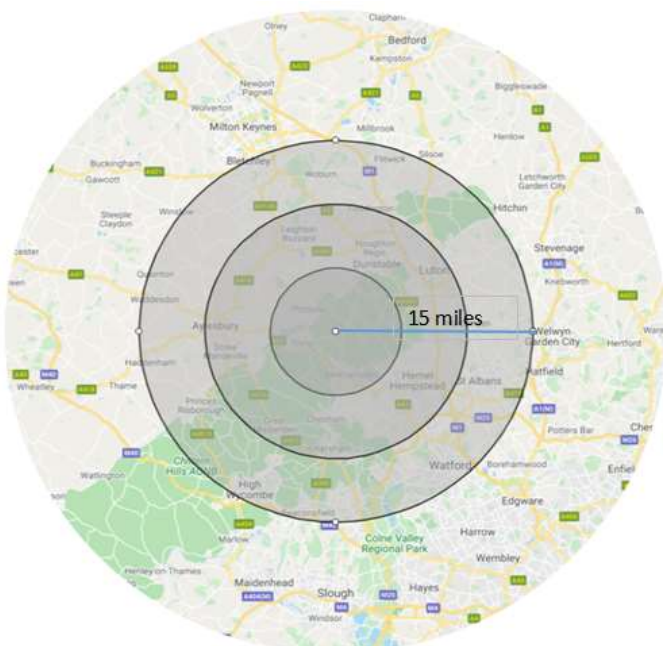
The Visitor Survey template used to collate the data below is available to view in the appendices (Appendix 24). The below data has been summarised by the Council from data collected on the Ashridge Estate by the National Trust and its volunteers.

The National Trust has confirmed that visitor surveys are ongoing *“but accept that the available data is still quite limited”*.

The Trusts visitor survey shows that just over 40% come from within Dacorum to Monument Drive and they expect the % to be much greater than this when factoring in the other 25 car parks and those on foot. The current survey shows that the majority of these visitors were from Berkhamsted and Hemel Hempstead, alongside settlements outside of Dacorum in Marsworth, Dunstable and Leighton Buzzard and to a lesser extent other settlements within Dacorum.



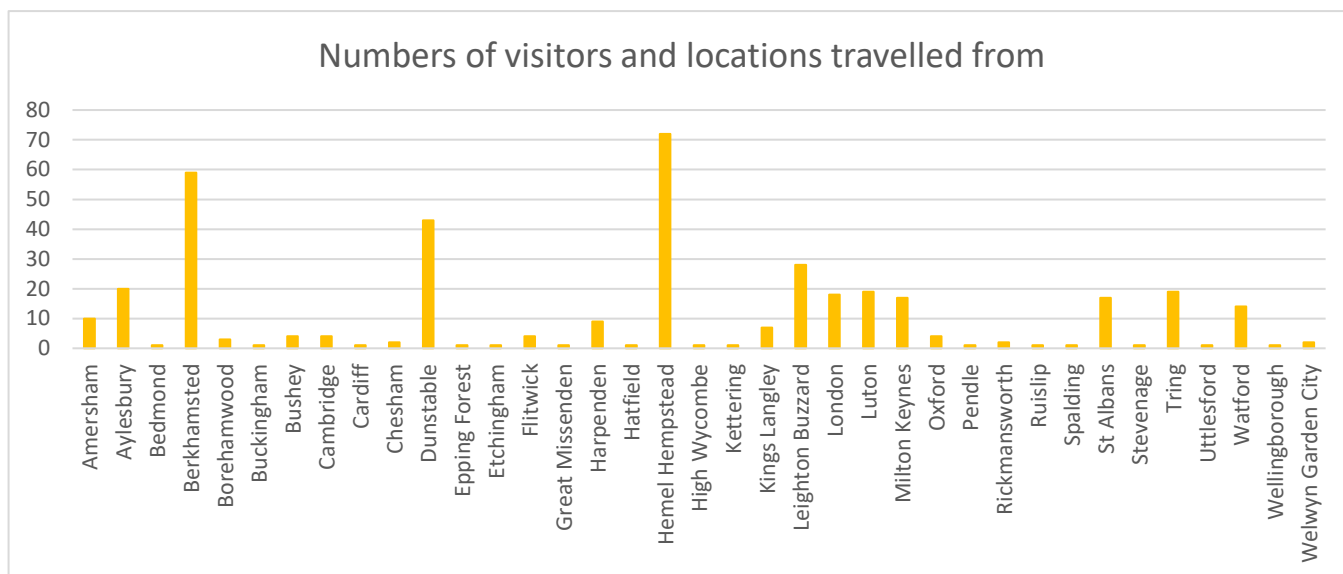
Distance travelled by visitors from data collected by the National Trust including the number of respondents in each category.



The average distance visitors travelled was approximately 12 miles. The above graph showed that the largest proportion (around a third) of those visitors surveyed on Monument Drive were from within a 5 and 10 mile radius of the site.

This image shows a 15 mile radius from Monument Drive to highlight areas most frequently travelled from based on National Trust data.

Geo locations from postcodes collected by the National Trust through surveys focused along Monument Drive April to July 2017

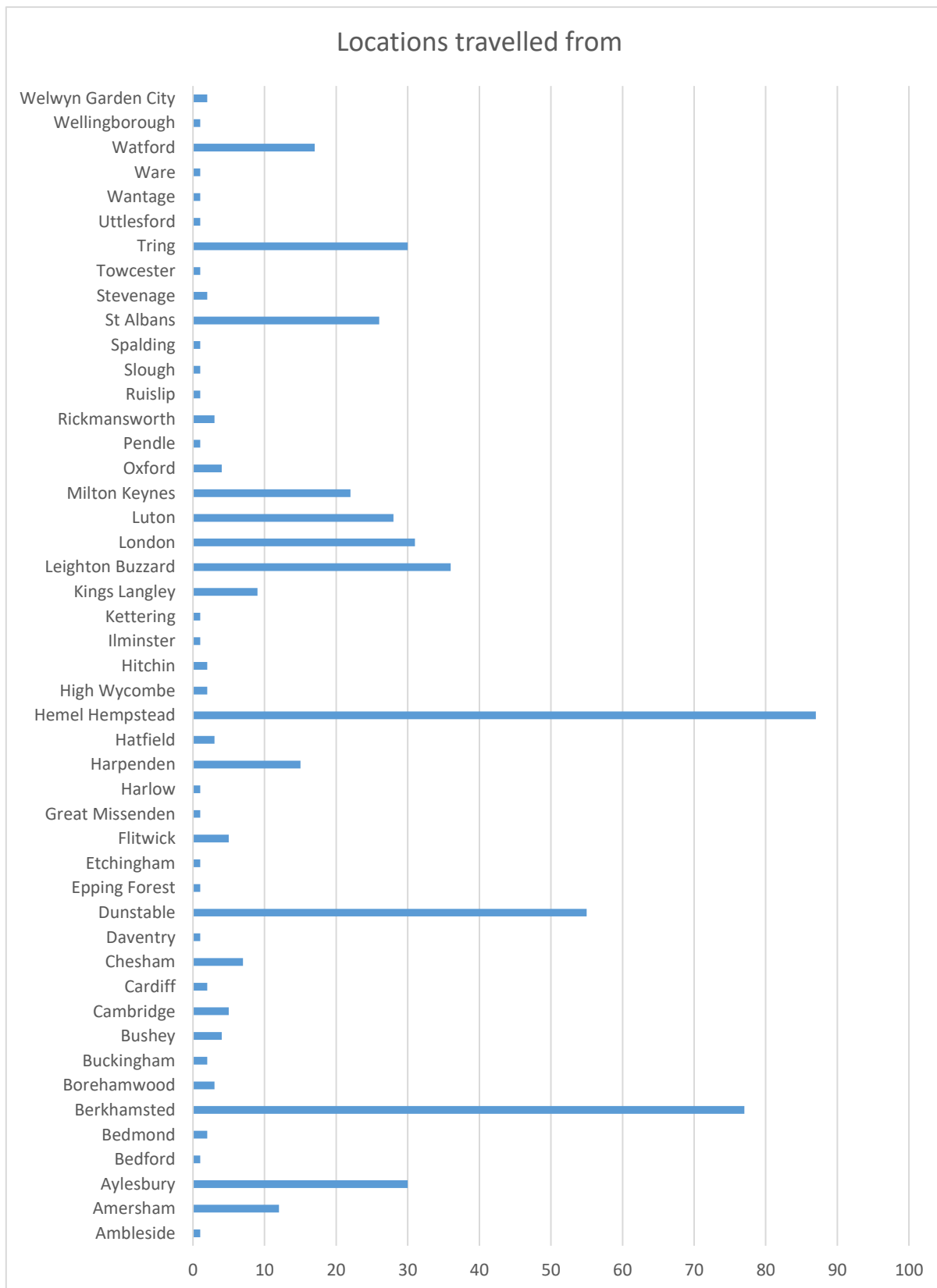


Based on the postcode data collected by the National Trust. This shows the number of people visiting from each town over a 3 month consecutive period from April 2017 to July 2017.



Based on the postcode data collected by the National Trust. This shows the percentage breakdown of where people have travelled from to reach the site (undertaken over a consecutive/focused 3 month period of surveying April to July 2017).

Geo locations from postcodes collected by the National Trust through surveys focused along Monument Drive 2017 to 2020



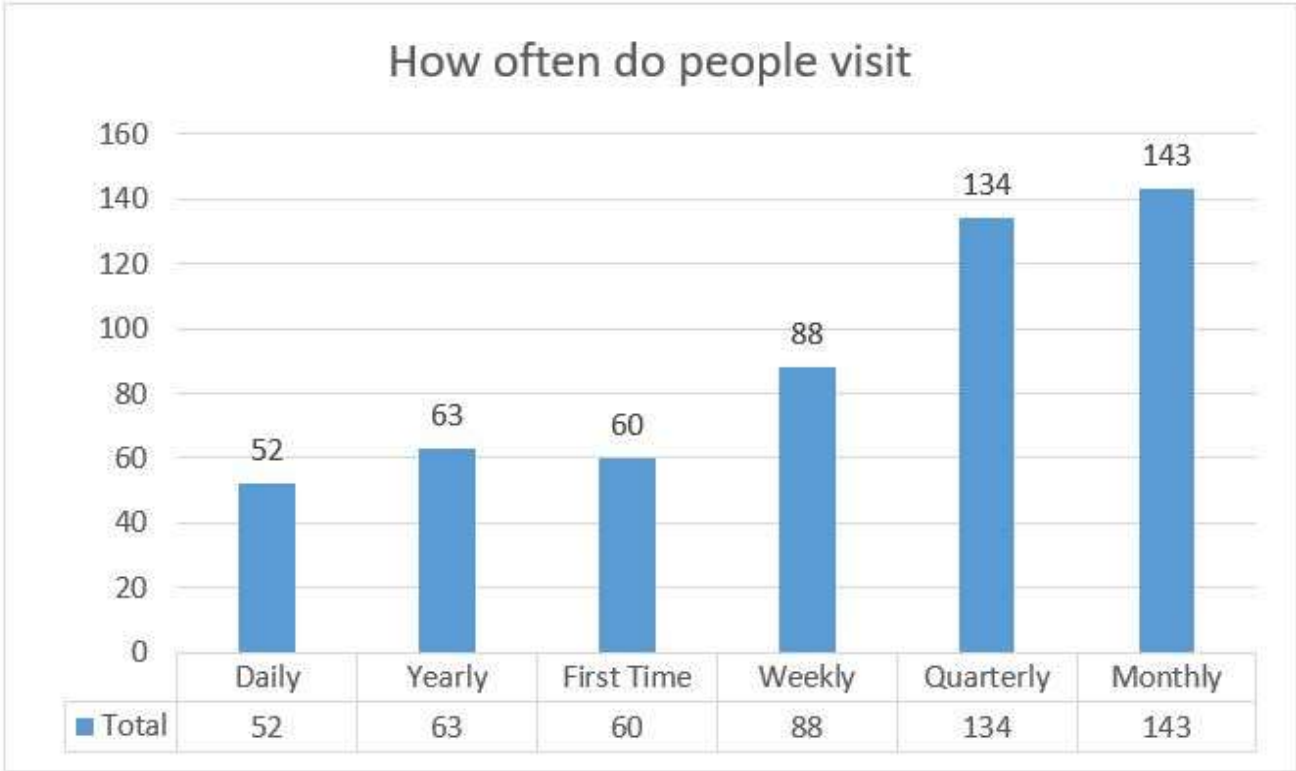
Based on the postcode data collected by the National Trust. This shows the number of people visiting from each town for the period April 2017 to March 2020.



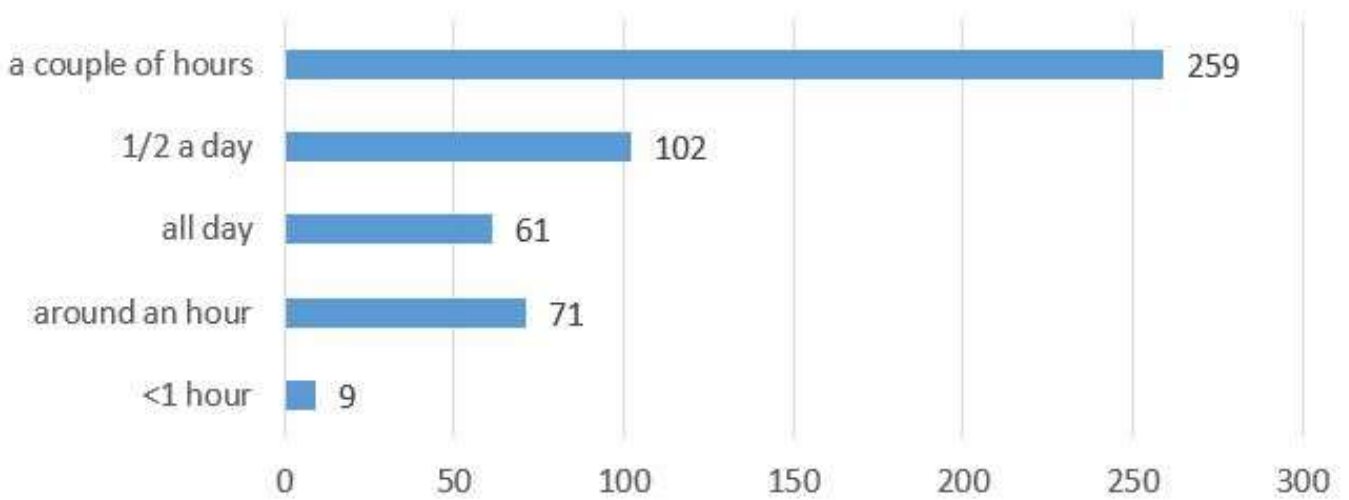
Based on the postcode data collected by the National Trust. This shows the percentage breakdown of where people have travelled from to reach the site for the period April 2017 to March 2020.

Responses to National Trust’s Visitor Survey Questions

The following graphs are based upon 541 respondents to the National Trust’s on site Visitor Surveys. The questions to this are held in the associated appendices.

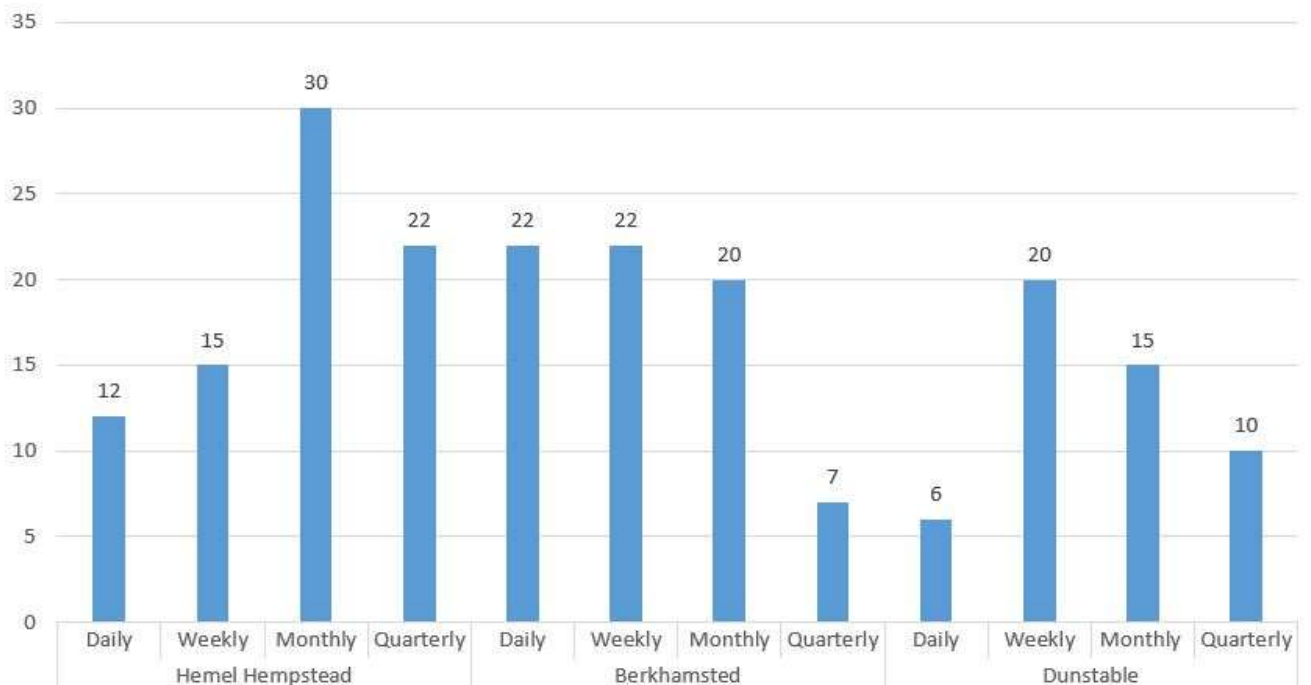


Length of visit



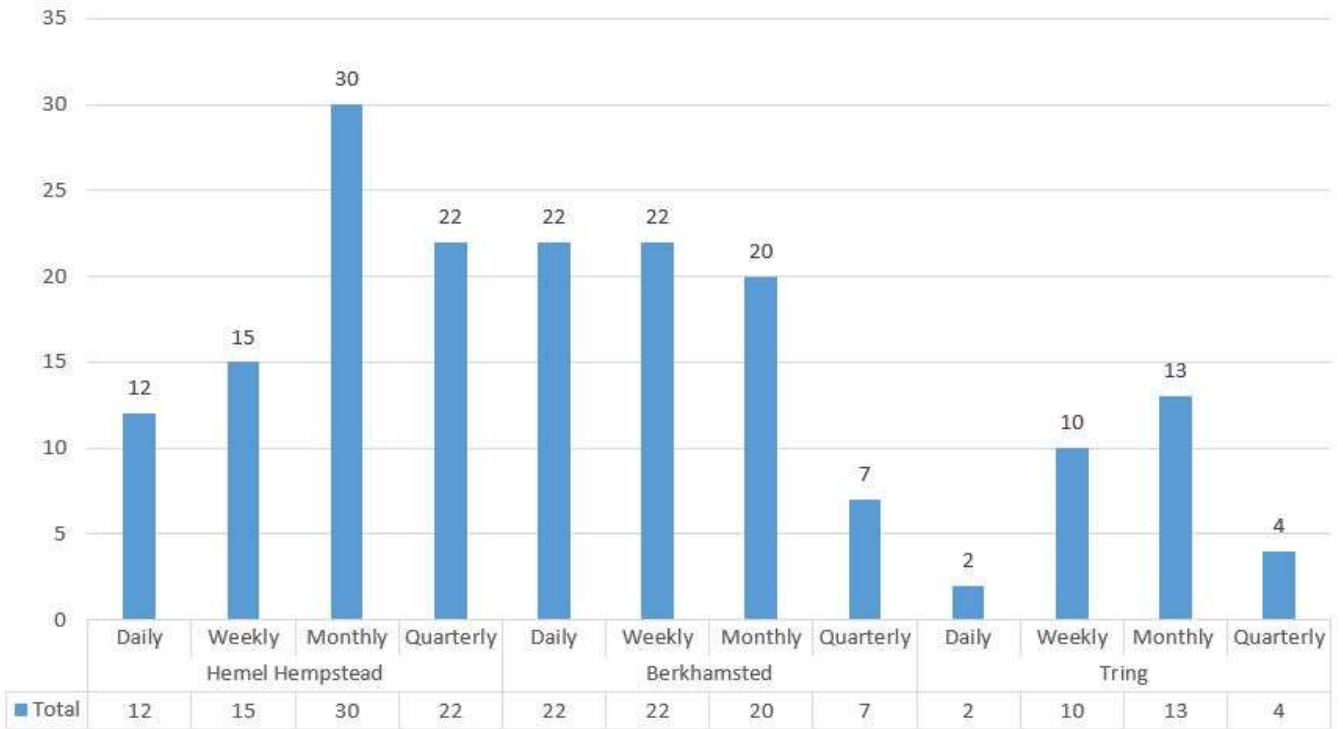
	<1 hour	around an hour	all day	1/2 a day	a couple of hours
■ Total	9	71	61	102	259

Frequency of visits from towns with highest response rate

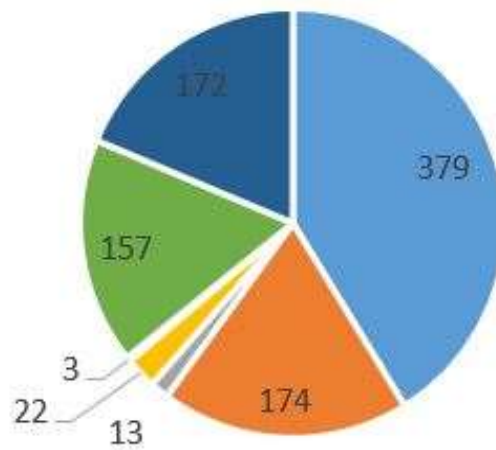


	Daily	Weekly	Monthly	Quarterly	Daily	Weekly	Monthly	Quarterly	Daily	Weekly	Monthly	Quarterly
■ Total	12	15	30	22	22	22	20	7	6	20	15	10

Frequency of visits from main settlement in Dacorum

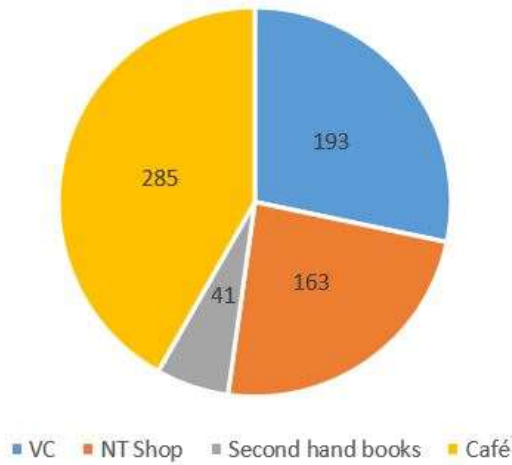


Reason for visiting

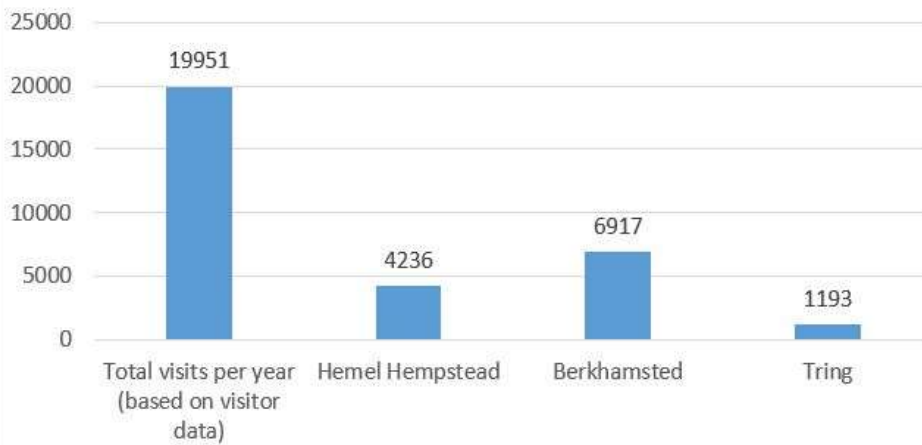


- Walking
- Dog walking
- Running
- Cycling
- Horse riding
- Meeting friends
- Organised event

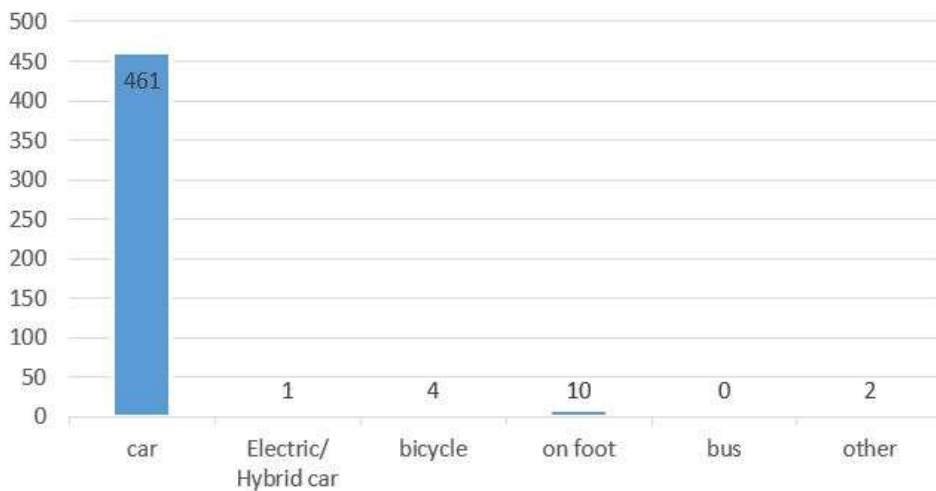
Facilities used during visit



Estimated visits per year (based on visitor survey data)

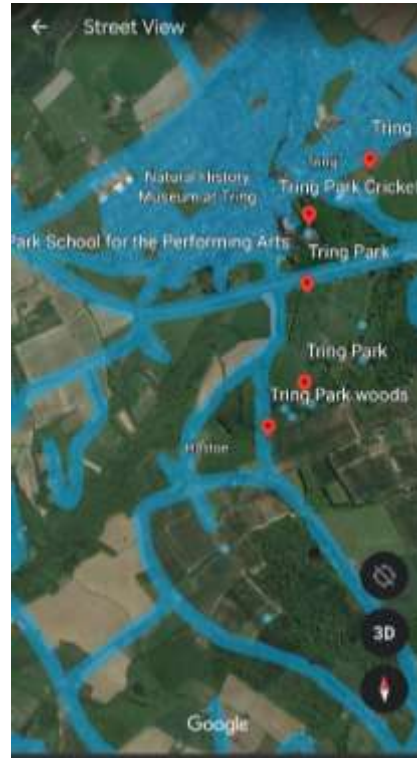
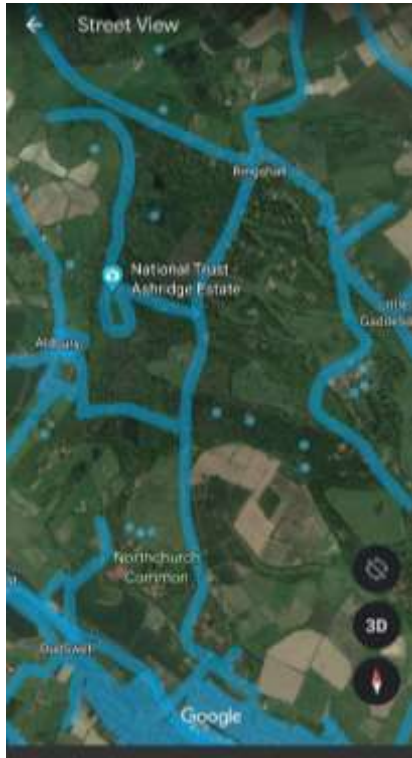


Form of transport used



Google Street View

Images of the sites across a varied time period (taken and uploaded by visitors can be viewed on Google Street view). Depending on the time period they were taken these show differing levels of recreational pressure (trampling and soil compaction, etc). A few examples are shown below. The first 2 images shows 'dots' which highlight where photos for these locations are available: one for Ashridge Commons and Woods and one for Tring Woodlands.



Google Earth link: <https://earth.app.goo.gl/BXexnf>.

Examples of the sorts of photos available are shown below:



Air Quality



Current baseline data for Dacorum

Various relevant datasets related to air quality are presented below.

The Council notes the following paragraph as important to air quality matters (taken from the Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations, Version: June 2018):

4.47 In general terms, it is important for a competent authority to remember that the subject plan or project remains the focus of any in-combination assessment. Therefore, it is Natural England's view that care should be taken to avoid unnecessarily combining the insignificant effects of the subject plan or project with the effects of other plans or projects which can be considered significant in their own right. The latter should always be dealt with by its own individual HRA alone. In other words, it is only the appreciable effects of those other plans and projects that are not themselves significant alone which are added into an in-combination assessment with the subject proposal (i.e. 'don't combine individual biscuits (=insignificant) with full packs (=significant)').

Tring Woodlands SSSI element of Chiltern Beechwoods SAC in relation to A41

Area within 200m of A41 = 0.977ha of 24.19ha SSSI (4.04%). (0.077% of the 1,276.48ha SAC area)

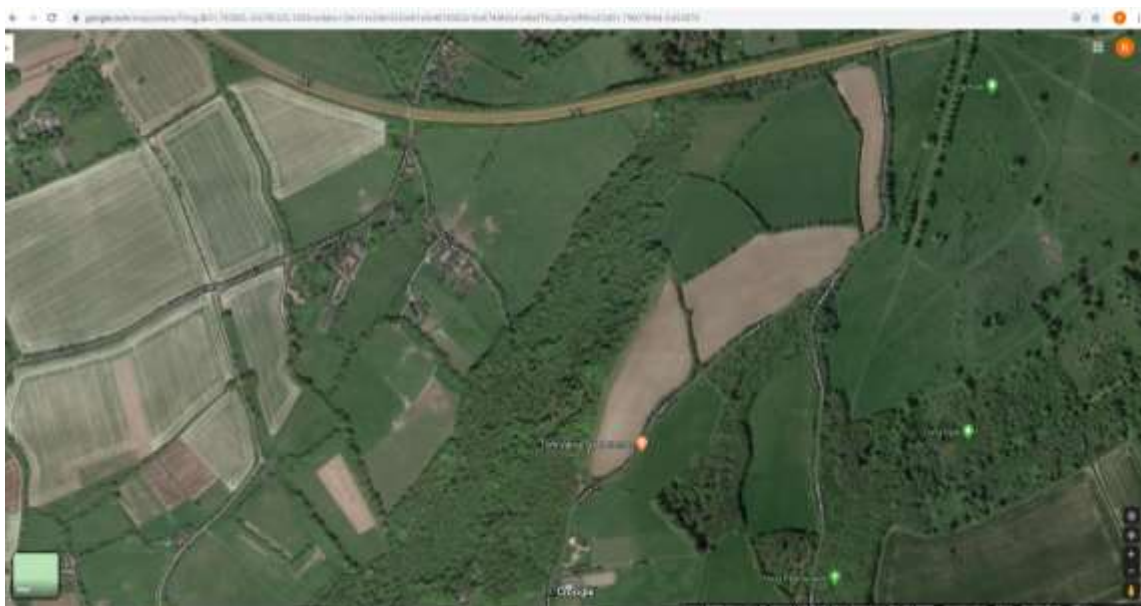
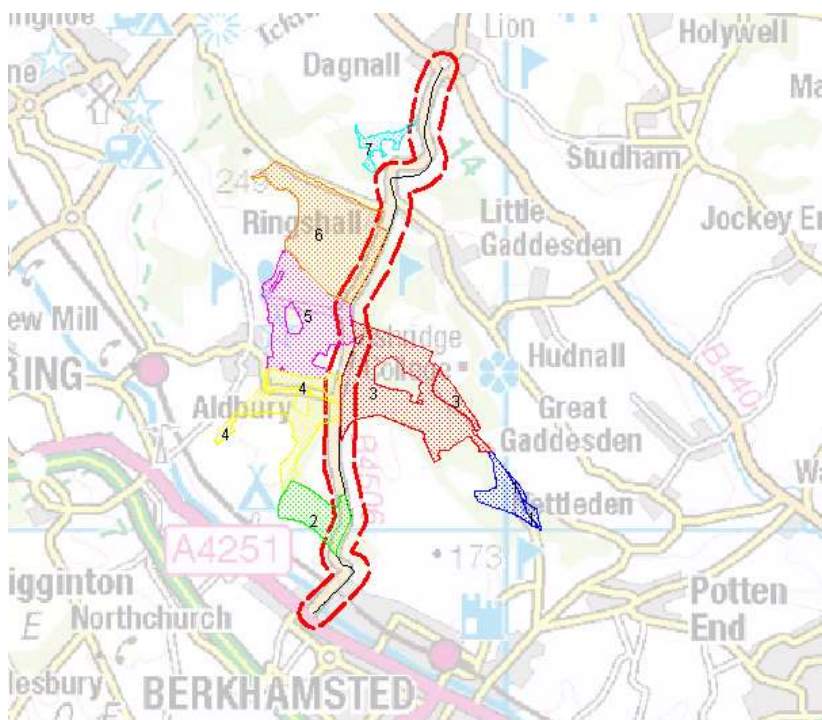


Image from Google

Ashridge Commons and Woods SSSI element of Chiltern Beechwoods SAC in relation to B4506 - By

SSSI Unit Number

- SSSI area 627.34 ha (taken from NE GIS shapefile). It is noted that the SSSI citation refers to 640.1 ha.
- SSSI area in 200m buffer of B4506 = 88.2 ha (approximately 14.1% of the designated SSSI area)



Area of Unit in 200m buffer

- Unit 1:** 0 ha of 30.92 ha = 0%
- Unit 2:** 13.42 ha of 47.57 ha = 28.2%
- Unit 3:** 28.07 ha of 169.16 ha = 16.6%
- Unit 4:** 12.52 ha of 85.63 ha = 14.6%
- Unit 5:** 11.55 ha of 122.29 ha = 9.4%
- Unit 6:** 22.29 ha of 158.4 ha = 14.1%
- Unit 7:** 0.35 ha of 13.4 ha = 2.6%

Relevant extracts taken from recent HRA reports for neighbouring local authorities to Dacorum

AVDC HRA Screening Report (LUC, April 2017)

“5.15 . Breaking it down into component areas, 4.39 ha of Ellesborough and Kimble Warrens SSSI (out of 69.49 ha, equating to 6.3 %), and 0.98 ha of Tring Woodlands SSSI (out of 24.19, equating to 4 %) are located within 200 m of the A4010 and A41 trunk roads, respectively. The habitats within these small areas are comprised of lowland beech and yew woodlands.”

Chilterns and South Bucks HRA Report (Lepus, May 2019)

“7.4.6 A review of aerial photography indicates that qualifying features are located within 200m of the A41. The qualifying habitat present is likely to be H9130. Asperulo-Fagetum beech forests; ‘Beech forests on neutral to rich soils’. The area of qualifying habitat (0.97ha) that is located within 200m of this road link represents 0.08% of the overall Chiltern Beechwood SAC area. This is considered to be a very small area of habitat.”

National datasets

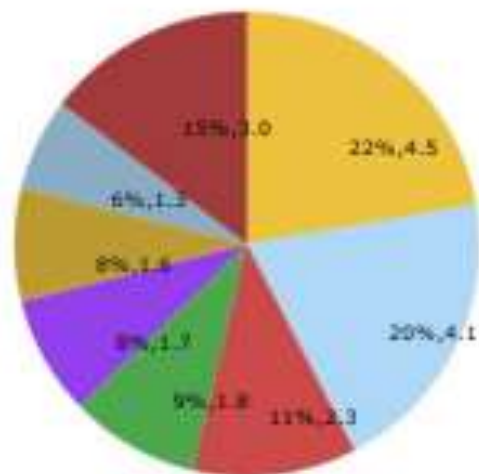
Various relevant datasets related to air quality are presented below which can be used as useful baseline/'proxy' data to this emerging work.

SAC – APIS

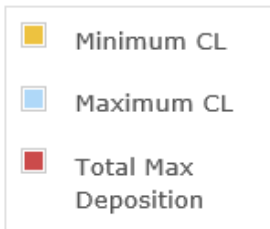
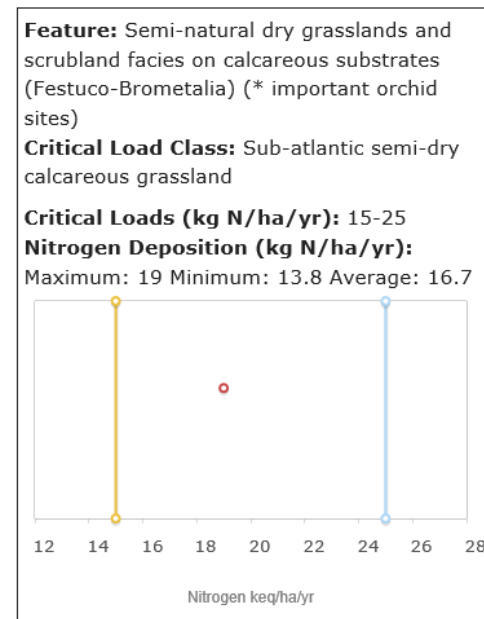
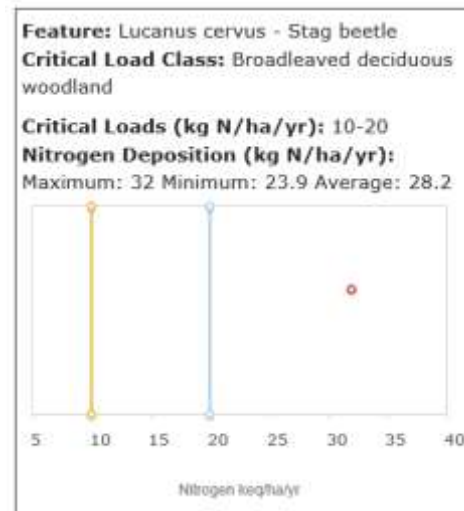
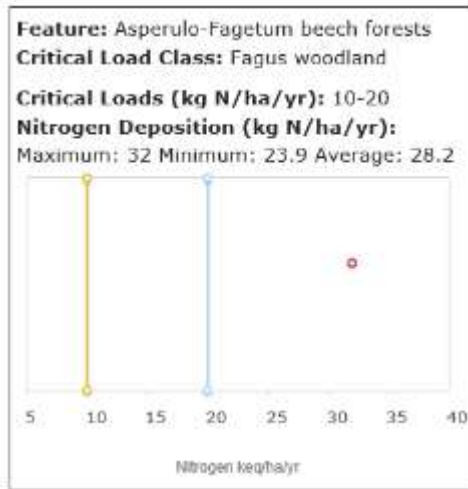
Total Nitrogen deposition(Kg N/ha/yr) from combined UK sources

Data Table: sources ranked by total deposition showing short/long range split, and NO_y/NH_x split

Pie Chart: Sources ranked by total Nitrogen deposition (Kg N/ha/yr)

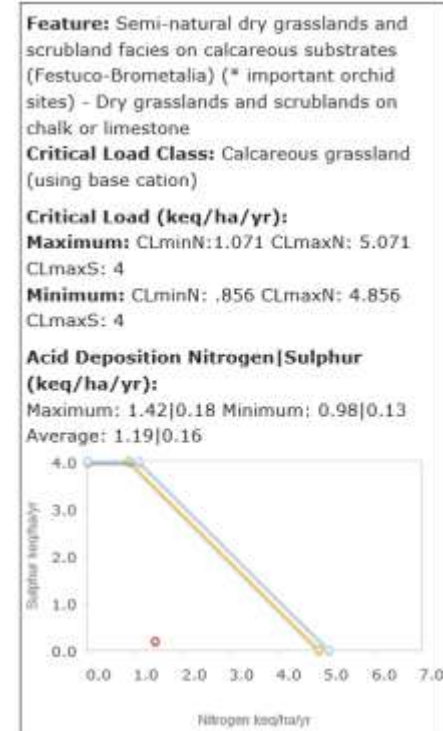
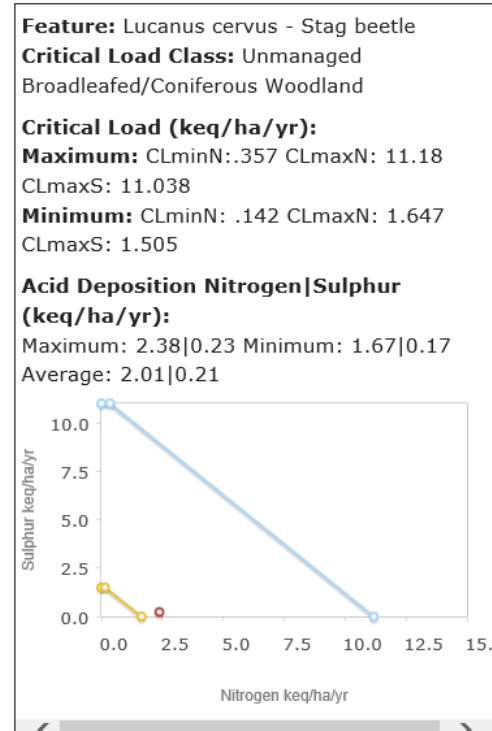
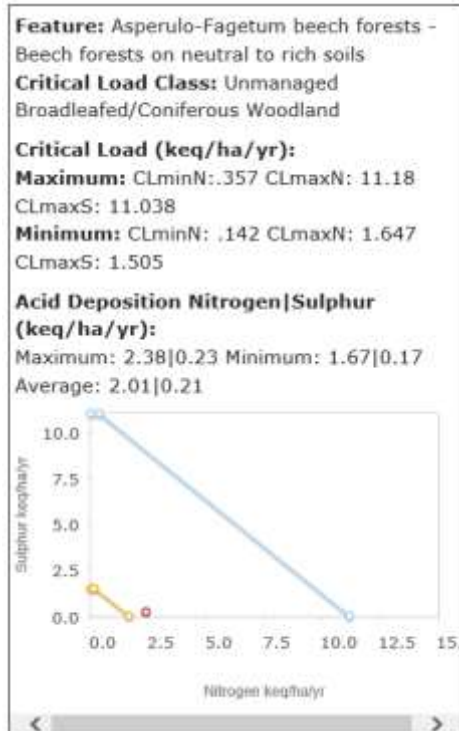


APIS – Nitrogen Critical Loads



<http://www.apis.ac.uk/src/select-a-feature?site=UK0012724&SiteType=SAC&submit=Next>

APIS – Acidity Critical Loads



- Minimum CL
- Maximum CL
- Total Max Deposition

APIS – NOx critical level

Nutrient Nitrogen Acidity NH₃ **NO_x** SO₂ Concentrations & Depositions Trends Critical Loads

Source Attribution

The site interest features are listed below. They are ordered by sensitivity to NO_x with the most sensitive at the top. Select the + sign to expand information for each feature

- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) (H6210)

Habitat sensitive to NO _x ?	Critical Level (µg NO _x /m ³ annual mean)	Critical Level (µg NO _x /m ³ 24-hour mean)
Yes	30 (set for All vegetation)	75 (set for All vegetation)

- Asperulo-Fagetum beech forests (H9130)

Habitat sensitive to NO _x ?	Critical Level (µg NO _x /m ³ annual mean)	Critical Level (µg NO _x /m ³ 24-hour mean)
Yes	30 (set for All vegetation)	75 (set for All vegetation)

- Lucanus cervus - Stag beetle (S1083)

Broad habitat	Is species' broad habitat sensitive to NO _x ?	Critical Level (µg NO _x /m ³ annual mean)	Critical Level (µg NO _x /m ³ 24-hour mean)	Is species sensitive due to acidity impacts on broad habitat?	Reason
Broadleaved, mixed and yew woodland	Yes	30 (set for All vegetation)	75 (set for All vegetation)	No	No expected negative impact on species due to impacts on the species' broad habitat.

APIS – Nutrient Nitrogen critical level

- Asperulo-Fagetum beech forests (H9130)

Habitat sensitive to Nitrogen?	Relevant Nitrogen Critical Load Class	Empirical Critical Load kg N/ha/yr	Uncertainty in these values?	EUNIS ecosystem class	Exceedance Impacts	Justification for linking habitat to Critical Load Class
Yes	Fagus woodland	10 - 20	expert judgement	G1.6	Changes in ground vegetation and mycorrhiza, nutrient imbalance, changes soil fauns	Based on the NBN Habitats Dictionary (http://www.nbn.org.uk/habitats) this EUNIS class contains, overlaps with or is contained with the Annex 1 habitat feature and represents the most equivalent EUNIS class for which a critical load is set.

- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) (H6210)

Habitat sensitive to Nitrogen?	Relevant Nitrogen Critical Load Class	Empirical Critical Load kg N/ha/yr	Uncertainty in these values?	EUNIS ecosystem class	Exceedance Impacts	Justification for linking habitat to Critical Load Class
Yes	Sub-atlantic semi-dry calcareous grassland	15 - 25	reliable	E1.26	Increase in tall grasses, decline in diversity, increased mineralization, N leaching; surface acidification.	Based on the NBN Habitats Dictionary (http://www.nbn.org.uk/habitats) this EUNIS class contains, overlaps with or is contained with the Annex 1 habitat feature and represents the most equivalent EUNIS class for which a critical load is set.

- Lucanus cervus - Stag beetle (S1083)

Broad habitat	Is species' broad habitat sensitive to Nitrogen?	Relevant Nitrogen Critical Load Class	Empirical Critical Load kg N/ha/yr	Uncertainty in these values?	EUNIS ecosystem class	Exceedance Impacts	Justification for linking habitat to Critical Load Class	Is species sensitive due to nutrient nitrogen impacts on broad habitat?	Reason
Broadleaved, mixed and yew woodland	Yes	Broadleaved deciduous woodland	10 - 20	reliable	G1	Changes in soil processes, nutrient imbalance, altered composition mycorrhiza and ground vegetation	Based on the NBN Habitats Dictionary (http://www.nbn.org.uk/habitats) this EUNIS class contains, overlaps with or is contained within the Broad Habitat, or component of the broad habitat, in which the feature occurs, and represents the most equivalent EUNIS class for which a critical load is set.	No	No expected negative impact on species due to impacts on the species' broad habitat.

Important Note: For application at broad geographical scales.

APIS – Acidity critical level

Asperulo-Fagetum beech forests (H9130)

Habitat sensitive to Acidity?	Acidity Class	Acidity Critical Loads (keq)	Exceedance Impacts
Yes	Unmanaged Broadleaved/Coniferous Woodland	MinCLminN: 0.142 MaxCLminN: 0.357 MinCLMaxS: 1.505 MaxCLMaxS: 11.038 MinCLMaxN: 1.647 MaxCLMaxN: 11.18	Leaching will cause a decrease in soil base saturation, increasing the availability of Al ³⁺ ions; mobilisation of Al ³⁺ may cause toxicity to plants and mycorrhiza; may cause a decline in tree vitality and changes in ground flora species composition; may have direct effect on lower plants (bryophytes and lichens); may cause increased susceptibility to pathogens and pests.

Lucanus cervus - Stag beetle (S1083)


Broad habitat	Is species' broad habitat sensitive to Acidity?	Acidity Class	Acidity Critical Loads (keq)	Exceedance Impacts	Is species sensitive due to acidity impacts on broad habitat?	Reason
Broadleaved, mixed and yew woodland	Yes	Unmanaged Broadleaved/Coniferous Woodland	MinCLminN: 0.142 MaxCLminN: 0.357 MinCLMaxS: 1.505 MaxCLMaxS: 11.038 MinCLMaxN: 1.647 MaxCLMaxN: 11.18	Leaching will cause a decrease in soil base saturation, increasing the availability of Al ³⁺ ions; mobilisation of Al ³⁺ may cause toxicity to plants and mycorrhiza; may cause a decline in tree vitality and changes in ground flora species composition; may have direct effect on lower plants (bryophytes and lichens); may cause increased susceptibility to pathogens and pests.	No	No expected negative impact on the species due to impacts on the species' broad habitat.

Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) (H6210)

Habitat sensitive to Acidity?	Acidity Class	Acidity Critical Loads (keq)	Exceedance Impacts
Yes	Calcareous grassland (using base cation)	MinCLminN: 0.856 MaxCLminN: 1.071 MinCLMaxS: 4 MaxCLMaxS: 4 MinCLMaxN: 4.856 MaxCLMaxN: 5.071	Leaching will cause a decrease in soil base saturation, increasing the availability of Al ³⁺ ions; mobilisation of Al ³⁺ may cause toxicity to plants and mycorrhiza; may have direct effect on lower plants (bryophytes and lichens).

APIS – Concentrations and Depositions

Asperulo-Fagetum beech forests

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Broadleaved, mixed and yew woodland				
Maximum: 32	Maximum: 2.3 0.2	Maximum: 1.79	Maximum: 24.31	Maximum: 1.33
Minimum: 23.9	Minimum: 1.7 0.2	Minimum: 1.15	Minimum: 12.47	Minimum: 0.71
Average: 28.2	Average: 2 0.2	Average: 1.36	Average: 14.39	Average: 0.87
 Click icon to view full concentration and deposition across the whole site				

Lucanus cervus - Stag beetle

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Broadleaved, mixed and yew woodland				
Maximum: 32	Maximum: 2.3 0.2	Maximum: 1.79	Maximum: 24.31	Maximum: 1.33
Minimum: 23.9	Minimum: 1.7 0.2	Minimum: 1.15	Minimum: 12.47	Minimum: 0.71
Average: 28.2	Average: 2 0.2	Average: 1.36	Average: 14.39	Average: 0.87
 Click icon to view full concentration and deposition across the whole site				

Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)

Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen Sulphur keq/ha/yr	Ammonia Concentration µg/m3	NOx Concentration µg/m3	SO2 Concentration µg/m3
Broad Habitat: Calcareous grassland				
Maximum: 19	Maximum: 1.4 0.2	Maximum: 1.79	Maximum: 24.31	Maximum: 1.33
Minimum: 13.8	Minimum: 1 0.1	Minimum: 1.15	Minimum: 12.47	Minimum: 0.71
Average: 16.7	Average: 1.2 0.2	Average: 1.36	Average: 14.39	Average: 0.87
 Click icon to view full concentration and deposition across the whole site				

CBED gridded across site

The table below shows all the 5km grid squares providing concentration and deposition values across the whole site. The grid reference is in metres and represents the mid-point of the grid square. Deposition is described here by three different ecosystem types 1. deposition to forest for forest and woodland habitats, 2. deposition to moorland for short vegetation habitats (e.g. grasslands, bogs and heaths), and 3. Grid average - a default deposition to other ecosystems.

Site Name: Chilterns Beechwoods

Feature name: Beech forests on neutral to rich soils (*Asperulo-Fagetum* beech forests)

Deposition Type: Forest

Grid reference (km)	Designation	Site Area (ha)	% Area of Grid Square covering the site	Nitrogen Deposition (kg N/ha/yr)	Acid Deposition as Nitrogen Sulphur (keq H+/ha/yr)	Ammonia concentration ($\mu\text{g}/\text{m}^3$)
492500,212500	SAC	1284	0.91	30.950	2.211 0.202	1.72



492500,212500

CBED gridded across site

The table below shows all the 5km grid squares providing concentration and deposition values across the whole site. The grid reference is in metres and represents the mid-point of the grid square. Deposition is described here by three different ecosystem types 1. deposition to forest for forest and woodland habitats, 2. deposition to moorland for short vegetation habitats (e.g. grasslands, bogs and heaths), and 3. Grid average - a default deposition to other ecosystems.

Site Name: Chilterns Beechwoods

Feature name: Beech forests on neutral to rich soils (*Asperulo-Fagetum* beech forests)

Deposition Type: Forest

Grid reference (km)	Designation	Site Area (ha)	% Area of Grid Square covering the site	Nitrogen Deposition (kg N/ha/yr)	Acid Deposition as Nitrogen Sulphur (keq H+/ha/yr)	Ammonia concentration ($\mu\text{g}/\text{m}^3$)
492500, 212500	SAC	1284	0.91	30.950	2.211 0.202	1.72

Grid reference (km)	Designation	Site Area (ha)	% Area of Grid Square covering the site	Nitrogen Oxide (Nox) concentration ($\mu\text{g}/\text{m}^3$)	Sulphur dioxide ($\mu\text{g}/\text{m}^3$)
492500, 210500	SAC	1284	0	15.03	0.93
492500, 210500	SAC	1284	0.9	15.01	0.96



491500,209500



491500,210500



492500,210500

APIS – Concentrations and Depositions

The table below shows all the 1km grid squares providing acidity critical load values across the whole site. The grid reference is in metres and represents the mid-point of the grid square. Critical Loads are given here for the feature/feature habitat you have chosen in the form of minN, maxN and maxS. They are in the units keq (kiloequivalents of H+ ions)

Critical Load Class: Unmanaged Broadleafed/Coniferous Woodland

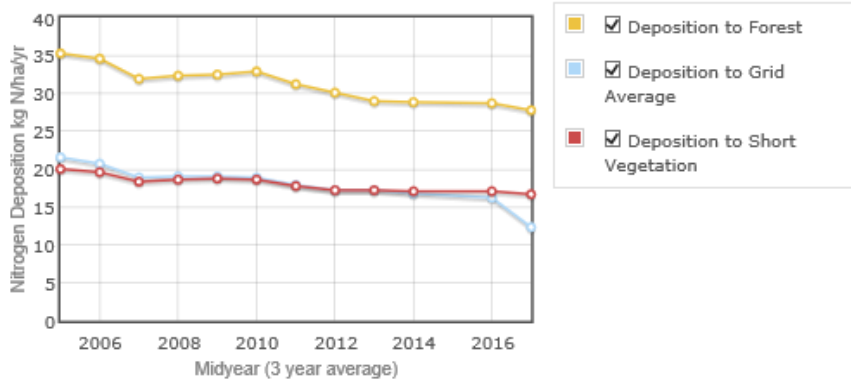
Grid reference (km)	Designation	Site Area (ha)	% Area of Grid Square covering the site	MinN Unmanaged Broadleafed / Coniferous Woodland (keq)	MaxN Unmanaged Broadleafed / Coniferous Woodland (keq)	MaxS Unmanaged Broadleafed / Coniferous Woodland (keq)
491500, 209500	SAC	1284	0.98	142	11.1526	11.0106
491500, 210500	SAC	1284	0.9	142	11.0694	10.9274
492500, 210500	SAC	1284	0	142	11.0718	10.9298

APIS – Trends

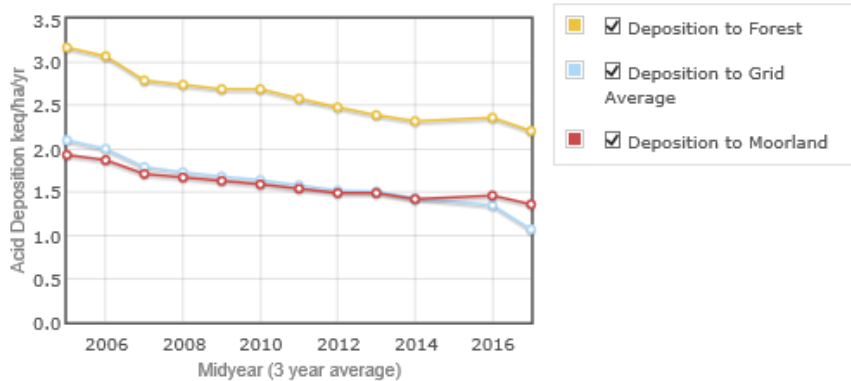
Nutrient Nitrogen	Acidity	NH ₃	NO _x	SO ₂	Concentrations & Depositions	Trends	Critical Loads
Source Attribution							

The graphs below show the deposition and concentration trends since 2004. The years are based on three year averages (i.e. year 2005 is the average of 2004, 2005 & 2006). Deposition plots are shown for three deposition ecosystems, deposition to forests, moorland (short-vegetation) and a grid average. Results are presented based on the centroid point of the site and the corresponding grid square that covers that centroid point. For nitrogen and acid deposition and concentrations of ammonia (NH₃) these values are at a 5 × 5 km grid square and are outputs from the **CBED** (Concentration Based Estimated Deposition) model. Concentration data for SO₂ and NO_x are from the **PCM** model and are on a grid square of 1 × 1 km. You should match your habitat type of interest to the relevant deposition plots. You can turn on/off the graph lines in the legend.

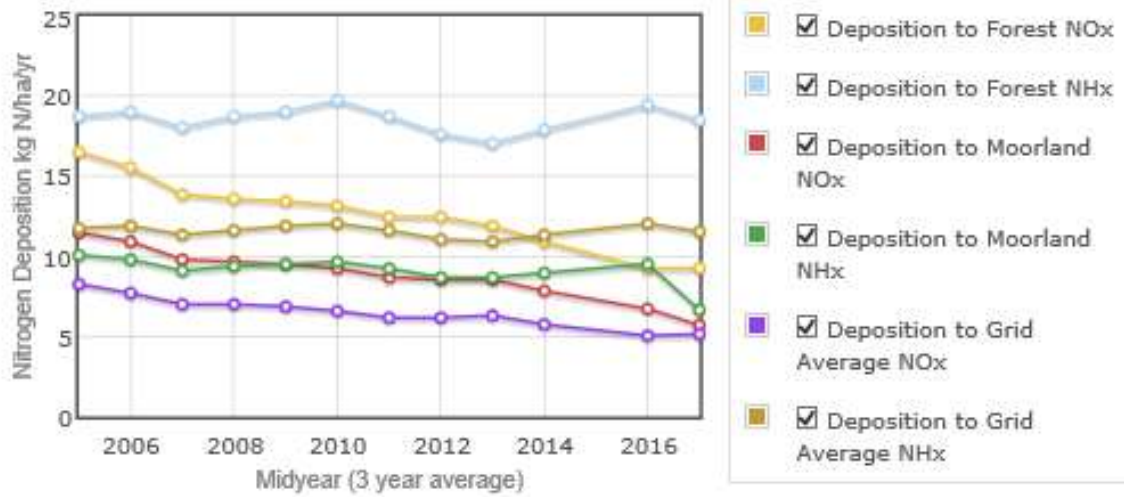
Total Nitrogen deposition



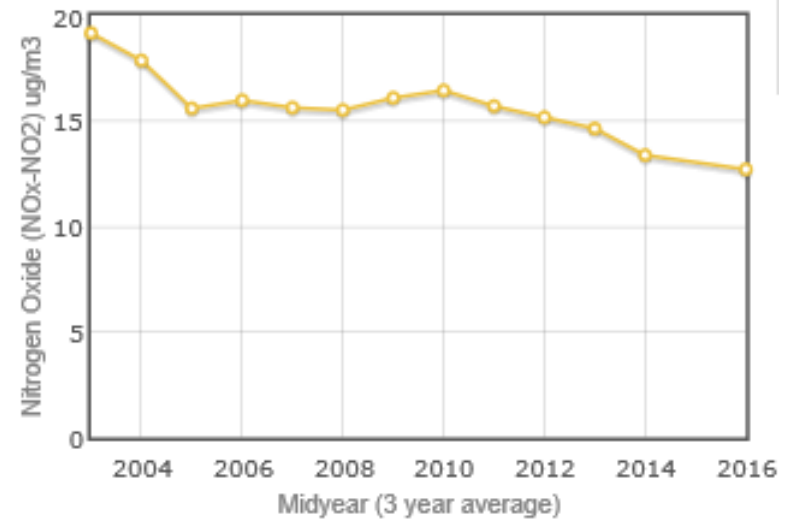
Acid deposition



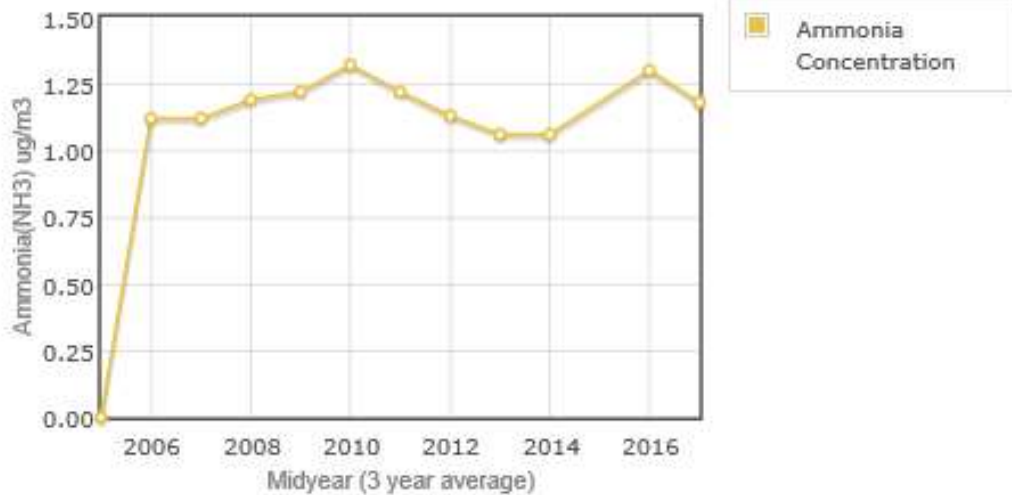
Nitrogen deposition: reduced (NHx) vs oxidised form (NOx)



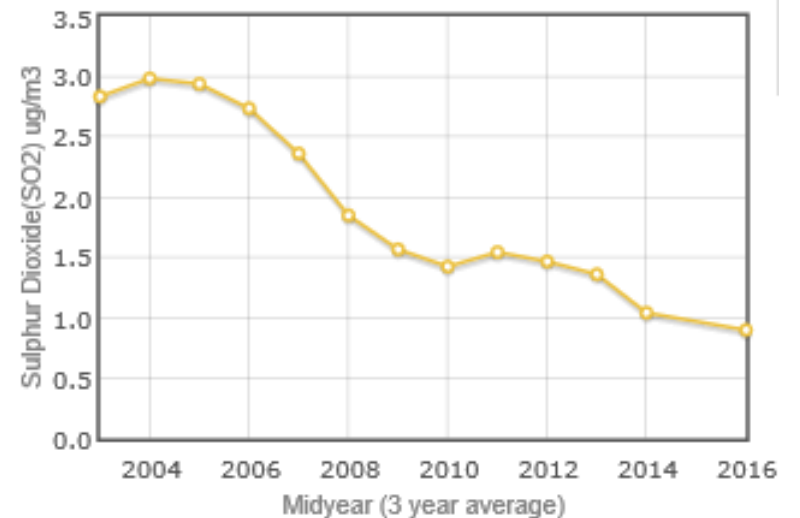
Nitrogen Oxides (NOx-NO₂) concentration



Ammonia (NH₃) concentration



Sulphur Dioxide (SO₂) concentration



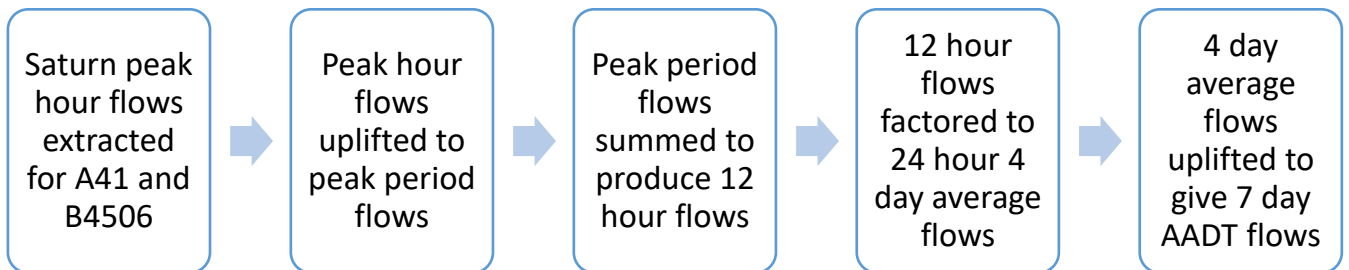
AADT Flows

- B4506 North of Berkhamsted
- A41 between Tring and Berkhamsted

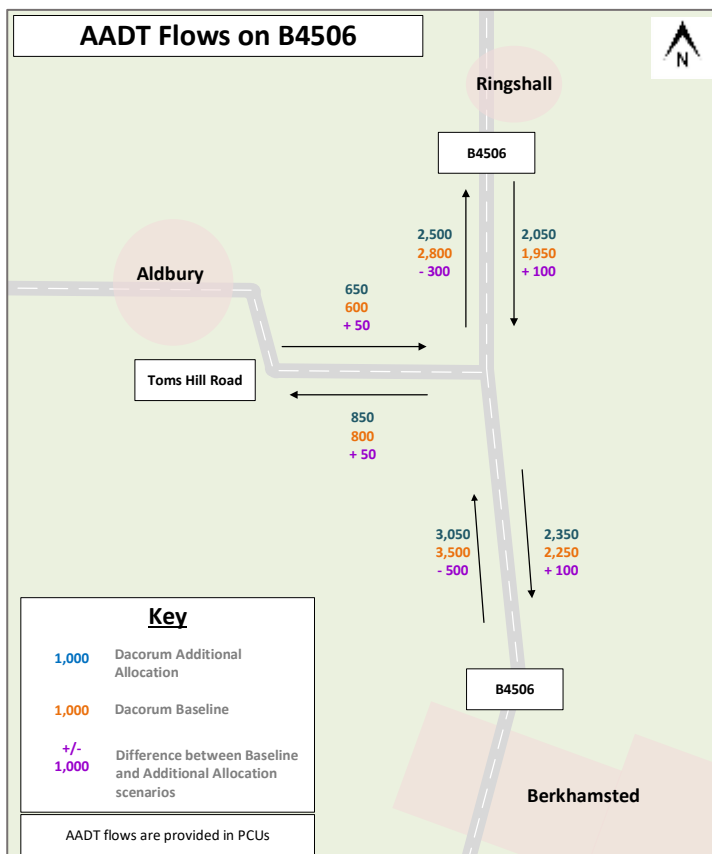
The flows extracted from the Saturn transport model were processed as detailed below to provide AADT flows by direction for the B4506 north of Berkhamsted including Aldbury and the A41 between two junctions (Dunsley Farm and B4009).

Factors for each stage were derived from traffic counts across Hertfordshire and are split by road type.

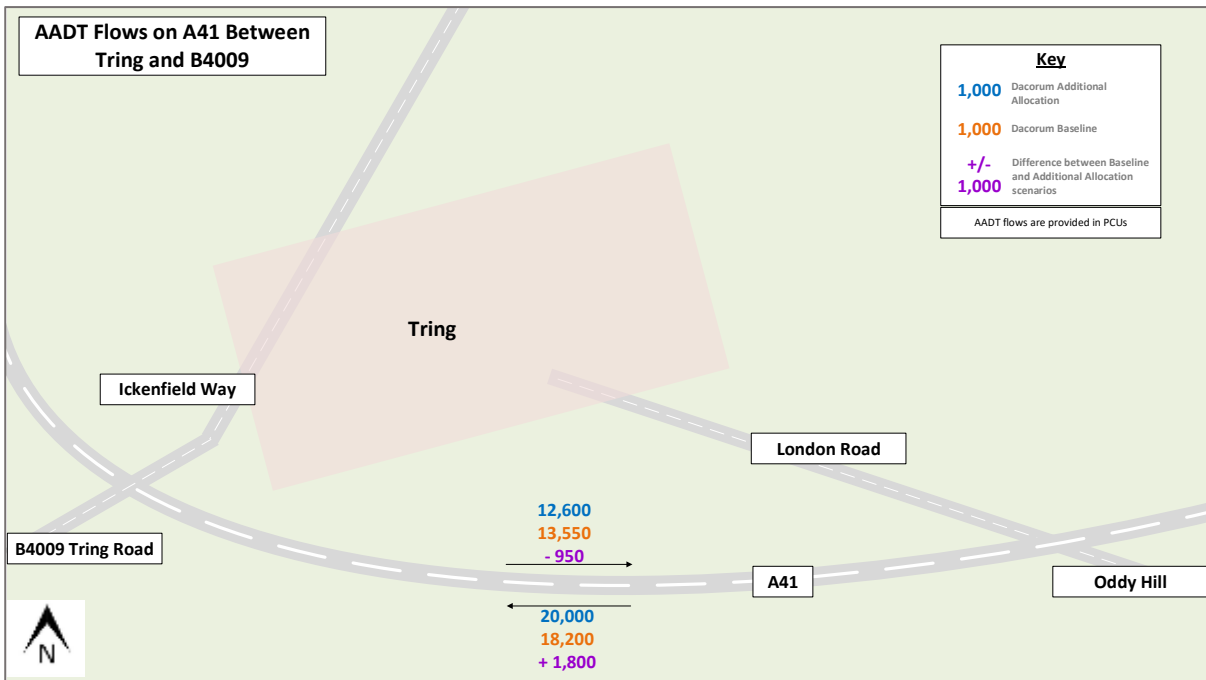
AADT flows are reported in PCUs and are rounded to the nearest 50 pcus.



AADT on B4506



AADT on A41



Links to other relevant reports or websites



A list of other relevant documents

- JNCC website with data on the designated Special Area of Conservation:
<https://hub.jncc.gov.uk/search?k=http%3A%2F%2Fvocab.jncc.gov.uk%2Fjncc-category%2FJNCC+Publications>

Chilterns AONB

- Chilterns AONB Management Plan 2019 – 2024: <https://www.chilternsaonb.org/conservation-board/management-plan.html>
- Chilterns AONB visitor survey, 2007 (could be a useful ‘proxy’):
https://www.chilternsaonb.org/uploads/files/ConservationBoard/Chilterns_AONB_Visitor_Survey_2007.pdf

Water Resources

- Water Resource Management Plans
 - Thames Water Final WRMP 2029: HRA (Ricardo, April 2020):
<https://www.thameswater.co.uk/about-us/regulation/water-resources#current>
HRA: <https://www.thameswater.co.uk/media-library/home/about-us/regulation/water-resources/technical-appendices/appendix-c-habitats-regulation-assessment.pdf>
 - Affinity Water WRMP HRA – AECOM 2019:
<https://www.affinitywater.co.uk/corporate/plans/water-resources-plan>
HRA:
https://www.affinitywater.co.uk/docs/4.12_Habitat_Regulations_Assessment_Final_WRMP19.pdf
- Hertfordshire Water Cycle Study – currently unavailable publicly as in draft format
- Dacorum Borough Council, St Albans City and District Council, Three Rivers District Council, Watford Borough Council, Welwyn Hatfield Borough Council: Water Cycle Study Scoping Study 2010:
https://www.dacorum.gov.uk/docs/default-source/strategic-planning/en7-waterstudy-scopingstudy-2010.pdf?sfvrsn=13a9229e_0

Management Plans

- Ashridge Estate Management Plan
- Forestry Commission Woodland Management Plan

National Trust reports

- Deer Management at Ashridge Estate: <https://nt.global.ssl.fastly.net/ashridge-estate/documents/deer-management-at-ashridge-2020.pdf>
- The Management of Deer on National Trust Land, July 2009
- Ecological appraisals (provided in the associated appendices)
- Ashridge Estate Monument Drive - Nature Conservation Evaluation (National Trust 2015 Survey)
- Proposed New Car Park, Ashridge Estate – Preliminary Ecological Appraisal (Bernwood ESC Ltd, October 2017)
- Ashridge Central Area Conservation Management Plan (Historic Environment Associates, September 2019)

Woodlands Trust reports

- Tring park – recreational pressure as assessed by Footprint Ecology (part of planning applications – available from Dacorum Borough Council’s planning application website: <https://planning.dacorum.gov.uk/publicaccess/>)

Local Authority data

- Burnham Beeches visitor survey
 - 2014 by Footprint Ecology: Could be a useful ‘proxy’: https://www.southbucks.gov.uk/media/5804/Burnham-Beeches-Visitor-Survey-2014/pdf/Burnham_Beeches_Visitor_Survey_2014.pdf?m=635877628390070000
 - 2015/16: http://democracy.cityoflondon.gov.uk/documents/s74690/Appendix%203.%20Final%20Visitor%20Numbers%20BB%20Report%202015_16%20December%202016.pdf
- DBC/Herts CC traffic modelling (COMET/Paramics for Hemel Hempstead)
- Natural England’s response to AVDC Local Plan publication – this references that ‘on-SAC’ mitigation should be considered
- Natural England’s letter to Uttlesford District Council regarding the recreational pressure at Hatfield Forest SSSI

Natural England reports (most available online)

- Natural England: Theme papers for SACs : <http://publications.naturalengland.org.uk/category/5605910663659520>
 - Public Access and Disturbance Theme Plan: A strategic approach to identifying and addressing significant effects on the features of Natura 2000 sites
 - Grazing Theme Plan: Developing a strategic approach for England’s Natura 2000 sites
 - Public Access and Disturbance Theme Plan
 - Atmospheric nitrogen theme plan
- Natural England’s approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations, Version: June 2018
- Natural England DAS advice between 2018 and now
- Citations for component SSSIs
- European Site Conservation Objectives: Supplementary advice on conserving and restoring site features. Chilterns Beechwoods Special Area of Conservation (SAC) Site code: UK0012724. Date of Publication: 30 November 2018
- Updated Conservation Objective document (which provides updates to the legislative context)
- Improvement Programme for England’s Natura 2000 Sites (IPENS) Planning for the future: Programme Report – a summary of the programme findings.
- New Supplementary Advice (Draft: 30-Nov-18, Final: 4-Mar-2019) which has some references to Tring Woodlands SSSI, Ashridge Commons and Woods SSSI and ‘recreational pressure’

SANGS/SAMMs

- Developing a strategic approach for England’s Natura 2000 sites
- Understanding the relevance and application of the Access to Natural Green Space Standard, May 2008
- Appendix 4: Natural England’s SANGs guidance: Guidelines for the creation of Suitable Accessible Natural Green Space. 2007

Forest Research publications⁷ :

- Climate Change impacts: <https://www.forestryresearch.gov.uk/research/climate-change-impacts/>
- Engagement with nature before and during Covid-19 restrictions: <https://www.forestryresearch.gov.uk/research/engagement-nature-and-during-covid-19-restrictions/>
- Valuing mental health benefits of forests: <https://www.forestryresearch.gov.uk/research/valuing-mental-health-benefits-forests/>
- Forest damage by deer depends on cross-scale interactions between climate, deer density and landscape structure: <https://www.forestryresearch.gov.uk/research/forest-damage-by-deer-depends-on-crossscale-interactions-between-climate-deer-density-and-landscape-structure/>
- A sequential multi-level framework to improve suitability modelling: <https://www.forestryresearch.gov.uk/research/sequential-multi-level-framework-improve-habitat-suitability-modelling/>
- Understanding land managers behaviours for tree health policy options: <https://www.forestryresearch.gov.uk/research/understanding-land-managers-behaviours-tree-health-policy-options/>
- Technical development in land restoration: <https://www.forestryresearch.gov.uk/research/technical-development-land-restoration/>
- Tributes to trees: <https://www.forestryresearch.gov.uk/research/tribute-trees/>
- UK landscape ecology: trends and perspectives from the first 25 years of ialeUK: <https://www.forestryresearch.gov.uk/research/uk-landscape-ecology-trends-and-perspectives-first-25-years-ialeuk/>
- Valuing and governing tree and forest ecosystem services: <https://www.forestryresearch.gov.uk/research/valuing-and-governing-tree-and-forest-ecosystem-services/>
- Exploring changes in ecosystem services under varying services: <https://www.forestryresearch.gov.uk/research/exploring-changes-ecosystem-services-under-varying-scenarios/>
- Children's and young people's engagement with nature: <https://www.forestryresearch.gov.uk/research/children-and-young-peoples-engagement-with-nature/>
- Integrating research for policy and practice: <https://www.forestryresearch.gov.uk/research/integration-research-policy-and-practice/>

Relevant GIS Datasets (not covered in this background dataset)

- Aquifers
- SSSI impact zones

⁷ <https://www.forestryresearch.gov.uk/research/> which includes a range of social and ecological reports.



Document produced to support the Council's New Local Plan. Any questions: please contact the Strategic Planning and Regeneration Team