



# **Audit of Access and Greenspaces for the Durham Magnesian Limestone Plateau**

**Commissioned by the  
Limestone Landscapes Partnership**

Report by The Access Company

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## 1 Summary

This report describes the work undertaken to audit access and greenspaces in National Character Area (NCA<sup>1</sup>) 15, and presents the findings. The work can be viewed in three stages:

- 1) GIS data collection from partner organisations and local authorities
- 2) Data handling to create typology datasets
- 3) Data analysis using Accessible Natural Greenspace Standards (ANGSt)

Over 590 MB of source GIS data was collected in approximately 170 datasets from more than 30 partner organisations<sup>2</sup>. These datasets were filtered and combined to form six typology datasets below :

- 1) Parks & Gardens
- 2) Natural & Semi-Natural Greenspace
- 3) Amenity Greenspace
- 4) Churchyards & Cemeteries
- 5) Woodland
- 6) Access (linear access routes)

Together the typologies represent 3062 individual parcels of greenspace, totalling over 24,310 hectares (243 km<sup>2</sup>), or 5 MB.

The data was combined to form one master set comprising all accessible natural greenspace in the NCA over two hectares in size. This master set was used for the ANGSt analysis.

There are few published examples of implementation of the ANGSt analysis and toolkit<sup>3</sup>, the approach taken for this project was experimental and designed to fit the needs of the Limestone Landscapes Partnership. The scope of the project was limited by available resources, requiring a methodology to be developed which could be applied across the area without necessitating site visits.

Accessible Natural Greenspace Standards for towns and cities (ANGSt) analysis of the data was carried out to identify areas where the resident population do not have adequate access to greenspace. The results revealed that provision is variable, with some areas poorly served and others well served. The population of the NCA has good access to medium sized greenspace. Access to Local Nature

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<sup>1</sup> Formerly known as “Joint Character Areas”

<sup>2</sup> The study would not have been possible without the cooperation and support of the local authorities and partner organisations who supplied the data.

<sup>3</sup> English Nature ANGSt report (Accessible Natural Green Space Standards in Towns and Cities: A Review and Toolkit for their Implementation 2003) <http://www.english-nature.org.uk/special/lmr/pdf/GreenSpaceReport.pdf>

Reserves (LNR) is adequate for the area as a whole, but 89% of the population do not have an LNR in their immediate neighbourhood. Access to large countryside sites is limited, in particular in the west of the area. In addition a significant number of small areas have poor access to sites close to where they live, the population of Sunderland are particularly poorly served. It should be remembered that ANGSt has been developed for towns and cities, the results may show rural areas as having poor access when in reality the community are surrounded by greenspace.

Access to the higher quality natural greenspace is not consistent across the area, with large areas having no access to local sites.

A summary of the ANGSt findings concludes that :

- The NCA as a whole has adequate access to Local Nature Reserves<sup>4</sup> according to the ANGSt criteria. Within the NCA spatial distribution of this adequacy varies with some areas having poor access to Local Nature Reserves. Approximately ninety percent of Super Output Areas (areas with a population of 1500 people) do not have a Local Nature Reserve. Coverage is poorest across the centre of the NCA.
- The population of the NCA generally have good access to medium sized greenspace - only a few small areas of the NCA do not meet the criteria for access to greenspace over twenty hectares. However, a significant area of Sunderland does not have adequate access to greenspace of this size within two kilometres of home.
- Access to greenspace within five minutes walk of home is a significant measure, impacting on the health and well-being of the community. A significant number of small areas of the NCA do not have access to sites close to their homes; fewer people have access to higher quality sites.
- Access to large sites (over 500 hectares) is limited to the population living on the east of the NCA, as the only significant sites of this size are along the coastline. Using ANGSt criteria the population living in the west of the NCA do not have adequate access to large sites. (Data was collected from within the NCA, and a ten kilometre buffer zone around the edge to ensure that the methodology worked across the whole NCA.)

Public rights of way and other linear access are well distributed across the area, providing areas for exercise and an ability to walk through green areas even where no designated sites exist. In particular the railway walks provide popular, safe and

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<sup>4</sup> ANGSt standards are used to assess the availability of greenspace to local people. A key measure is the amount of Local Nature Reserve (LNR) per 1000 people. The ANGSt standard is for one hectare of LNR per 1000 people. This is just met within the NCA which has 1.015 hectares per 1000 people - although spatially the distribution can vary greatly. If the NCA was a slightly different shape, the result could change radically. See section 6.2 of this report.

easy access to greenspace for many people. However this network is fragmented in places, in particular the bridleway network. There are also barriers which restrict access including main roads, motorways and railways. These are discussed in the region's Rights of Way Improvement Plans, but have not been explored in depth in this study. A more detailed analysis of access to greenspace taking such barriers into consideration is likely to conclude that access is not as good in some areas as the preliminary findings suggest.

ANGSt is only one approach to determining access to greenspace; others are referred to in the report in particular the Woodland Trust's Woodland Access Standard which analyses access to woodland. Applying this standard to the authority areas covered by the NCA the report concludes that some 180 hectares of additional woodland are required.

- About 100 hectares of new woodland creation is needed in order to meet the standard of access to two hectare sites within 500 m of home;
- Eighty hectares of new woodland is needed in Darlington to meet the 20 hectares within 4 kilometre standard, 40 hectares are needed in Durham County (in the Sedgfield and Wear Valley districts), a further 40 hectares needed in both Sunderland and Hartlepool, and 20 hectares in South Tyneside.
- Easington, Hartlepool already nearly meet the standard for access to 20 hectare woodland. Sedgfield, Teesside, Durham City and the Wear Valley would meet the standard if all areas of local woodland were publically accessible.
- There is greatest need for new woodland creation in Darlington - where less than 2 percent of the population already have access to 20 hectare sites within 4 kilometres. There is also need for woodland creation in Sunderland and South Tyneside.

Both studies conclude that additional access to greenspace both close to home, and to larger sites within 10 kilometres of home is desirable in order to ensure the population benefits fully from the recognised physical and mental health benefits of greenspace.

Both studies only consider sites above 2 hectares in size. There are a large number of smaller sites, for example 81 percent of amenity greenspace in the NCA is smaller than 2 hectares, as are 74 percent of cemeteries. Access could be improved by adding to existing small sites; through negotiating public access to existing private land; or through creating new sites either in their own right, such as new Local Nature Reserves, or to join existing sites and create additional larger spaces.

Small illustrative maps have been used in the body of the report to indicate the geographical distribution of various greenspaces; more detailed maps are supplied in Appendix 10.

Some areas stand out as having poor access to the more natural sites, for example the area around Sunderland is well supplied with amenity greenspace, and parks and gardens, but has poor access to natural and semi-natural sites, and woodland. The roughly triangular area between Spennymoor, Newton Aycliffe and Sedgefield shows a similar pattern.

The report identifies a number of recommendations which, if implemented, would improve the dataset, increase access to sites, and increase public awareness of where they can go to enjoy greenspace.

## 2 Introduction

This study was commissioned<sup>5</sup> in October 2008 by the Limestone Landscapes Partnership, comprising representatives from Natural England, Durham County Council, local authorities, biodiversity groups and other relevant organisations. The partnership was established in April 2008. A stakeholder workshop held in spring 2008 included 29 organisations.

The study was steered by a task group made up of members from Natural England, Durham County Council, Durham Biodiversity Partnership and East Durham Groundwork Trust.

Digital data was collected from more than 50 people in over 30 partner organisations<sup>6</sup>. An incredible amount of raw data was supplied to the project team; approximately 170 datasets were supplied, totalling over 590 MB. This was edited and restructured to meet the needs of the project. The final datasets were organised into typologies, including 1300 parcels and totalling 243 km<sup>2</sup> of greenspace. The final dataset is just over 5 MB demonstrating the amount of editing required.

Thanks are extended to all the contacts who supplied GIS data.

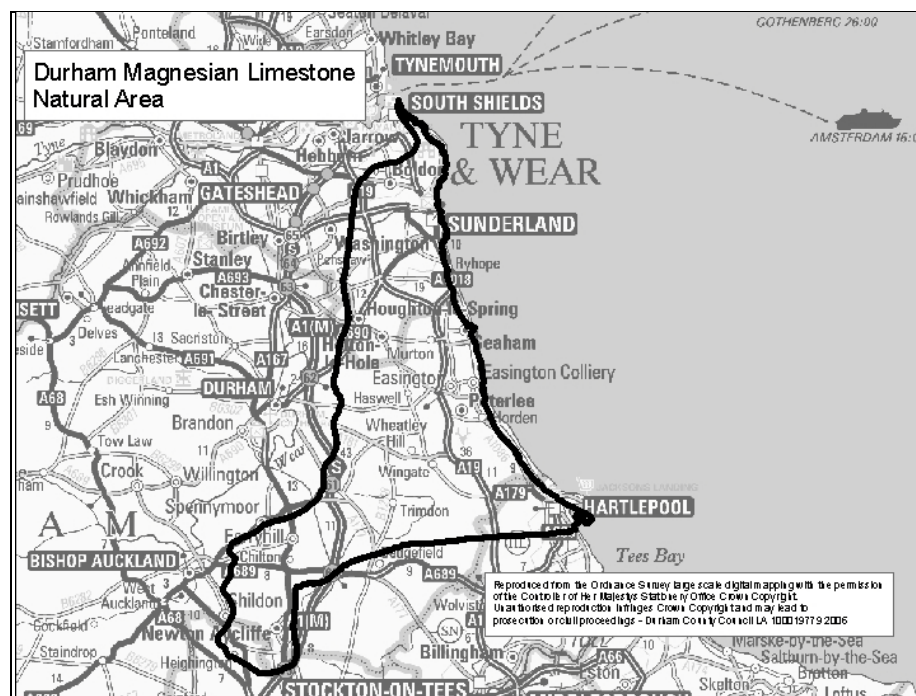
This report outlines the approach taken to the audit and the results from an ANGSt analysis (Accessible Natural Greenspace Standards) in the Durham Magnesian Limestone Plateau National Character Area.

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<sup>5</sup> Concurrently, two other projects were also commissioned : a) Limestone Landscapes - a geodiversity audit and action plan for the Durham Magnesian Limestone Plateau and b) Limestone Landscapes Historic Environment Audit and Action Plan

<sup>6</sup> See appendix 6 for a list of organisations

## 2.1 Study area



Map 1 - National Character Area 15 (map taken from project brief)

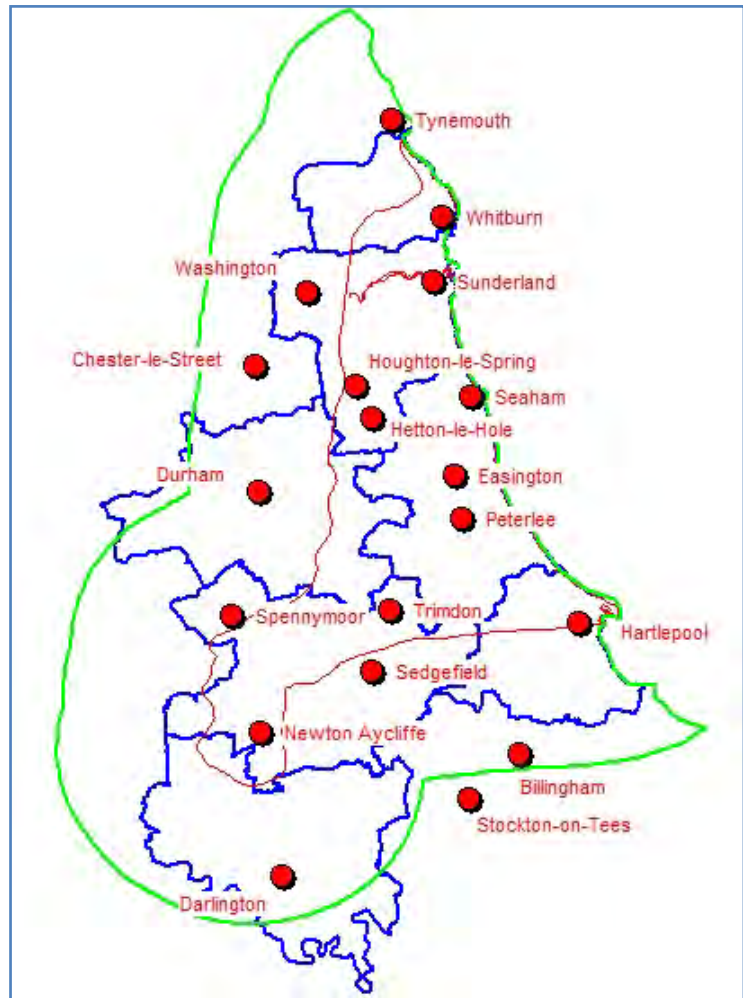
The study was carried out across the Durham Magnesian Limestone Plateau (Natural Area number 6, National Character Area number 15); a roughly triangular-shaped area across east Durham, south-east Tyne & Wear and the northern half of Hartlepool. Urban areas include Sunderland, Peterlee and Newton Aycliffe, Tyne & Wear and the northern parts of Hartlepool. The underlying geology is based on magnesium-rich limestone forming escarpments. Land-use is mostly mixed arable and pastoral farming, with an industrial legacy of limestone quarries and mining.

The area of the National Character Area (NCA) is just over 45,260 hectares, with a population of 433,653 people (see appendix 2 for workings).

A new unitary authority replaces the two-tier system on the 1<sup>st</sup> April 2009. The affected councils in the NCA are City of Durham, Easington District, Sedgfield Borough and Durham County Council. Hartlepool and Darlington remain as separate Unitary Authorities. Throughout this document references to the local district / borough / city councils were correct at the time of writing.

For the purposes of this contract, Natural England's OS licence<sup>7</sup> was used (as a sub-contractor, and a time-limited licence agreement signed). Natural England also supplied black and white OS 1:50,000 raster base maps for the study area.

To enable accurate application of the ANGSt criteria a 10 kilometre buffer zone was drawn around the NCA and GIS data was collected for this area. The buffer zone is illustrated in Map 2.



Map 2 - NCA 15 plus 10 km buffer zone

All of the maps in this report have been produced as images without a legend or scale bar. The district boundaries are shown here in blue, the NCA is a red line, and the 10 kilometre buffer a green line. Selected towns are illustrated with red dots. For an indication of scale, the NCA is approximately 17 miles at its widest point (Spennymoor to Hartlepool) and 30 miles at its tallest point (Tynemouth to Newton Aycliffe). This image represents approximately 30 x 45 square miles.

<sup>7</sup> Reference 100046223 [2009]. In the course of the project, licence agreements were also signed with Durham City Council, Durham County Council, The Forestry Commission, The National Trust, Sedgefield Borough Council & Sunderland City Council.

## 2.2 Background Research

Background research for the project draws in material from existing PPG17 open space strategies (Appendix 5), The Woodland Trust's "Space for People" report<sup>8</sup> (Appendix 7) and published Rights of Way Improvement Plans (ROWIPs) (Appendix 8).

There are a number of different approaches to determining whether communities have adequate access to greenspace, and ANGSt is just one of these models. The Woodland Trust's "Space for People" approach is similar, addressing adequacy of local provision of woodlands. The report in Appendix 7 presents data relevant to the study area, and concludes that some 180 hectares of new woodland is required across the six districts<sup>9</sup> relevant to this study area.

The review of four ROWIPs identifies common links with local provision of greenspaces as well as various barriers (road, rail severance etc) in the access network. The following ROWIPs were reviewed, and are quoted in Appendix 8, specifically where they mention barriers in the local rights of way network :

- Darlington Unitary Authority
- Durham County Council<sup>10</sup>
- Hartlepool Borough Council
- The joint Tyne & Wear ROWIP<sup>11</sup>

Barriers affecting use of the local rights of way network include :

- **Roads**, in particular the A1(M), the A66, A19, A68, A179, A689 - there is a local need for safer road crossings, bridges, refuges etc. One Highway Authority is planning to catalogue all such dead-ends, propose solutions, and have stronger future input into road improvement schemes. Another Highway Authority is already planning a new multi-user bridge implementation project.
- **Railway lines**, in particular the east coast main line where trains travel at high speeds making crossing on foot very hazardous.
- **Fragmentation** for particular user-groups in particular the bridleway and byway network. Fragmentation of the bridleway network is an issue across

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<sup>8</sup> The Woodland Trust (2004) *Space for People : Targeting action for woodland access*  
[www.woodland-trust.org.uk/publications](http://www.woodland-trust.org.uk/publications)

<sup>9</sup> All the references to Durham City Council, Easington District Council and Sedgefield Borough Council in this report were correct at the time of writing. A new Unitary Authority starts in Durham on the 1<sup>st</sup> April 2009

<sup>10</sup> Durham County Council is the Highway Authority for three boroughs / districts relevant to this report : Easington, Sedgefield and Durham City.

<sup>11</sup> Covers five authority areas - relevant to this study are : South Tyneside Council and Sunderland City Council

England, this is addressed within one ROWIP through the production of a separate equestrian strategy detailing barriers for equestrians.

- Land use can cause severance in local areas, for example golf courses, intensive farming and the Durham Tees Valley airport all have an impact on access to greenspace.

## 2.3 ANGSt model

The Green Infrastructure Planning Guide<sup>12</sup> notes there are a range of standards that can be used in connection with Green Infrastructure (GI) planning, including ANGSt, CABE, PPG17, the Six Acre Standard and Woodland Trust's 'Space for People'<sup>13</sup>. However, ANGSt is, "... regarded as having the best fit to GI planning...", although it is also pointed out that "...simple distance-based standards should be applied with care and thought..."<sup>14</sup>

The ANGSt model was first published in 1995<sup>15</sup> with the aim of size and distance criteria being used to identify the greenspaces which contribute most to local sustainability. The model was reviewed in 2003<sup>16</sup> in order to determine whether its validity could be supported, how local authorities were managing greenspace policy, and how the standards might be promoted effectively. (The review was being drafted at the same time as PPG17 and ROWIP guidance - and all three recommend a GIS-approach to identify areas of inadequacy). The review found that awareness of ANGSt was low amongst thirty local authorities interviewed by

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<sup>12</sup> Green Infrastructure Planning Guide (version 1.1 by C Davies, R MacFarlane, C McGloin & M Roe), produced by a partnership including Natural England, <http://www.greeninfrastructure.eu/> - West Park, Darlington is illustrated on the front cover!

<sup>13</sup> See Appendix 7

<sup>14</sup> In particular, three caveats are made in the GI Planning Guide about ANGSt : a) the size of the radius around green spaces which ensures 'adequate' access should be sensitive to local conditions, constraints and needs, b) drawing a radius as a particular distance is relatively arbitrary and debate over given measurements will always be lively, c) distance-based approaches are relatively crude and may fail to represent actual travel distances - results should be reviewed carefully and major barriers such as railways and roads accounted for.

<sup>15</sup> (the then) English Nature Research Report No. 153, Accessible Natural Greenspace in Towns and Cities: A Review of Appropriate size and distance Criteria (1995) - <http://naturalengland.etraderstores.com/NaturalEnglandShop/product.aspx?ProductID=5e441c75-2609-4816-9e61-82aba4f2fee8> - and in 1996 the ANGSt model was publicised through the leaflet "A Space for Nature" <http://naturalengland.etraderstores.com/NaturalEnglandShop/Product.aspx?ProductID=e98fc3cf-93fd-4e52-96c0-f33134435760>

<sup>16</sup> John Handley *et al* (2003), Accessible Natural Green Space Standards in Towns and Cities: A Review and Toolkit for their Implementation <http://naturalengland.etraderstores.com/NaturalEnglandShop/product.aspx?ProductID=9d028d4b-eb27-4545-a1fe-3064f70c2f7a>

telephone. Those that had worked with ANGSt reported the following barriers to using the model :

- The need for clear and operational definitions of natural greenspace (the original ANGSt definition <sup>17</sup> was considered clear and practical by only 16% of respondents),
- Rules on determining / measuring access distances (simply drawing a buffer zone does not take account of access points, major road / rail barriers in the access network, or socio-demographic features),
- More flexibility for size criteria and hierarchy (sites under 2 hectares may still have great value in built-up areas, or that small towns with good quality surrounding countryside may not need the application of the same standards.)
- Comprehensive information on the provision and quality of greenspace (quality / condition of greenspaces, access to greenspaces, ownership, land-use planning)
- Availability of GIS
- Planning and Implementation (the ANGSt model was perceived to lack any formal standing and so a need to relate the model to policies / plans / incorporate with planning guidance was identified).

The ANGSt model requires that:

- There should be at least 1 hectare (ha<sup>18</sup>) of Local Nature Reserve (LNR) per 1000 people,
- Nobody should live more than 300 metres from their nearest natural greenspace at least 2 hectares in size,
- Nobody should live more than 2 kilometres (approx 1¼ miles) from their nearest natural greenspace at least 20 hectares in size,
- Nobody should live more than 5 kilometres from their nearest natural greenspace at least 100 hectares in size,
- Nobody should live more than 10 kilometres from their nearest natural greenspace at least 500 hectares in size.

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<sup>17</sup> The original definition was “areas naturally colonised by plants and animals” which theoretically excludes areas such as recreated grassland on previously industrial sites, with high biodiversity value. A strict interpretation of the definition requires complete knowledge of the site history. The ANGSt review suggests instead “places where human control and activities are not intensive so that natural processes are allowed to predominate”.

<sup>18</sup> A hectare is an area of land 100m x 100m (or 10,000 m<sup>2</sup>) and 100 hectares = 1km<sup>2</sup>. See appendix 1 for how the ANGSt distances translate into average walking / cycling / riding times.

Although ANGSt analysis makes reference to the quality and naturalness of sites, there is no standard agreed approach to assessing or recording these attributes. While there are toolkits available which could be used, for example CABE's Spaceshaper<sup>19</sup> toolkit or UDAL's Placecheck<sup>20</sup>, these require considerably more time to carry out than was available through this contract. Community consultation has already been carried out in the area during local authority's work on their PPG17 open space audits, it is important that communities are not confused by too many similar consultations<sup>21</sup>. Other options considered by the team included 'Green Flag' or 'Green Pennant'<sup>22</sup> status, which provides a useful standard for parks, but does not yet include other more natural spaces, such as woodlands, grasslands etc.

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<sup>19</sup> Spaceshaper is a facilitated workshop-based toolkit to measure the quality of a public space (<http://www.cabe.org.uk/default.aspx?contentitemid=1675>) developed by the Commission for Architecture and the Built Environment, the government's advisor on architecture, urban design and public space. The record of perceptions of individual spaces includes the following sections: access, use, how the space caters for different needs, maintenance, environment (safety and comfort), design, appearance and community. Spaceshaper software can then produce diagrams .

<sup>20</sup> [www.placecheck.info/](http://www.placecheck.info/) UDAL (The Urban Design Alliance) is a network of professional and campaigning organisations formed in 1997 to prove the value of good urban design.

<sup>21</sup> See, for example, Sedgefield's Open Space audit, page 27, para 4.5

<sup>22</sup> The Green Flag Award is the national standard for parks and greenspaces in England and Wales. The scheme began in 1996 as a means of rewarding and encouraging high environmental standards, creating a benchmark of excellence. Key criteria include access, safety, cleanliness, sustainability, management of conservation / heritage, and community involvement. Each site is judged on its own merits and the community it serves. The Green Pennant Award is for sites managed by voluntary and community groups and is part of the Green Flag scheme. Both awards are managed by The Civic Trust and supported by Communities and Local Government. <http://www.greenflagaward.org.uk/>

### 3 Methodology

Working with the Limestone Landscapes steering group and taking best practice from existing documentation (e.g. local authority open space needs assessments under PPG17 and other green infrastructure strategies) the project team:

- Developed five categories (typologies) of greenspace plus one of access routes
- Developed an approach to record the quality of ‘naturalness’ and ‘access’ for each site
- Agreed a set of data attributes
- Agreed an approach for the calculation of the amount of Local Nature Reserve per 1000 people.
- Collated data from partner organisations, edited and refined this data and assembled typology datasets
- Analysed access to greenspace using the ANGSt technique.

A desk-top study was carried out to identify and obtain relevant material. Partners, including local authorities, public bodies, and large land owners, were approached and asked for relevant GIS material. Where digital data was not available sites were identified through other means and digitised.

The data was combined into sets representing typologies (see below). When complete the data was combined to create an overall GIS dataset of accessible greenspace.

ANGSt criteria were used to assess the current availability of accessible greenspace within the NCA, and to identify areas where the criteria are not met and improvements are needed.

The approach followed throughout this project was developed specifically to meet the needs of the Limestone Landscapes Partnership. The approach was limited by available resources, the budget did not permit site visits or for any cross-checking of assumptions made. The methodology was experimental<sup>23</sup> and the resulting dataset, although a powerful collection of data, will require further editing to ensure complete accuracy.

The study would not have been possible without the cooperation and support of the local authorities and partner organisations who supplied the data.

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<sup>23</sup> A brief evaluation of the methodology has been drafted separately for the Limestone Landscapes steering group

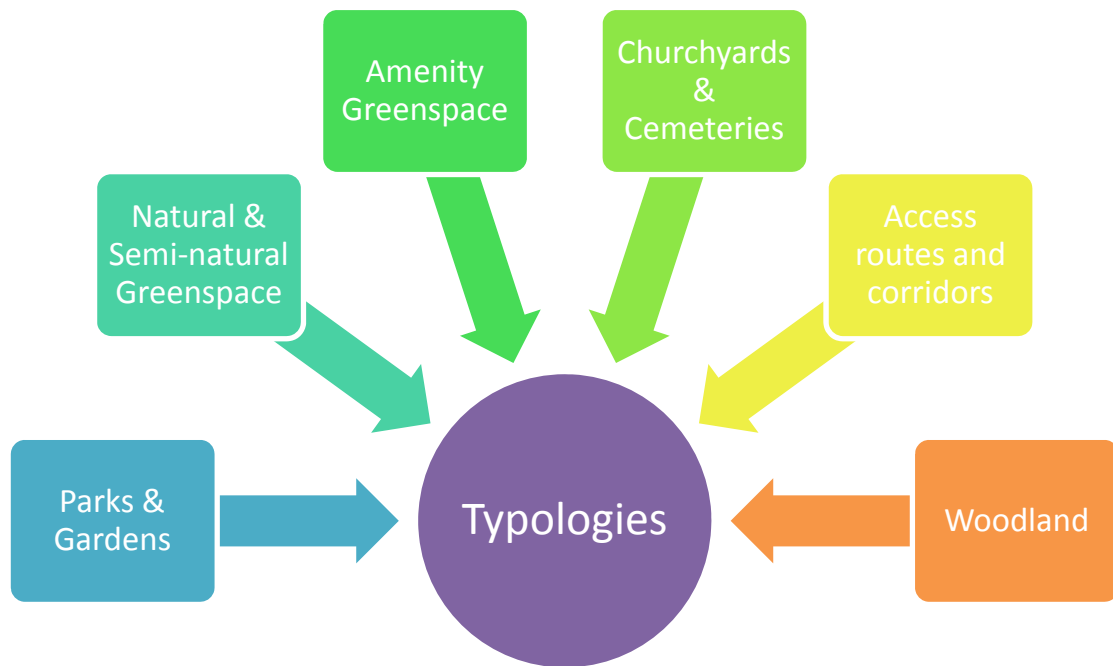


Figure 1 - typologies contributing to accessible greenspace

This study, unlike an open space audit<sup>24</sup> only collected data relating to *green* spaces. Areas of public space, for example civic spaces, public squares, and urban spaces ('grey space') were not included in the typology tables or in the analysis.

The GI Planning Guide notes a grey-green continuum in relation to open spaces. Green infrastructure, as opposed to grey infrastructure, is sometimes hard to visualise and therefore may not be properly accounted for in the planning process. The continuum concept helps to make green infrastructure more obvious :

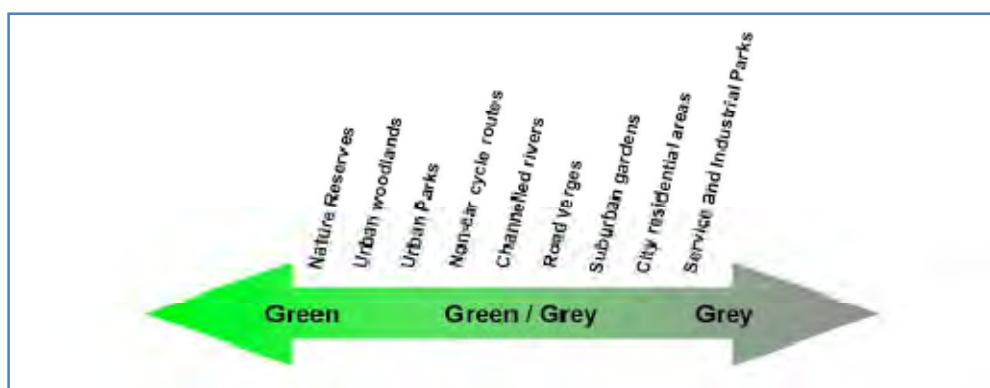


Figure 2 - The Grey-Green continuum, taken from GI Planning Guide

<sup>24</sup> Open Space Audits are also sometimes referred to as "Open Space Needs Assessment" or "PPG17 audit".

For the purposes of this report, a line could be drawn to the right of ‘non-car cycle routes’, showing which elements of GI have been included (to the left of the imaginary line).

The data collected included all natural and semi-natural greenspace, however only the sites which are freely accessible to the public were included in the overall analysis. Sites which were included in the source data sets but were not transferred into the typology datasets<sup>25</sup> include golf courses, allotments and school playing fields (all of which are unlikely to be freely accessible). In addition where local authorities supplied GIS data including parcels marked as ‘inaccessible’ these were not included. In summary, areas not included in the typology datasets, but which are included in some of the source datasets are :

- “Grey spaces” : civic spaces, public squares, urban spaces
- Sites unlikely to be accessible to the public such as golf courses, allotments, school playing fields
- Sites identified in source data as ‘inaccessible’

Due to the time constraints and scale of this project, site visits and public consultation were not possible. This meant that scores for naturalness and quality had to be allocated based on available data. A basic system, using a three-point scoring system (high, medium, and low) was developed to record the quality of access on the site, and how natural the site is. Scores were initially allocated following a set of assumptions (see table 4 appendix 5), these were then refined using documentary evidence if available, or through checking aerial photography or Google Earth.

The population of the NCA was calculated using Lower Level Super Output Areas (SOAs - see appendix 2). This figure was then used to calculate the amount of Local Nature Reserve per 1000 people.

More details about the methodology used are given in the diagram overleaf and in appendices 2-5. The project was limited in scale necessitating a number of assumptions to be made. Ideally site visits and local knowledge would have been used to test assumptions, in particular relating to quality scores, and to identify additional or missing sites.

- To calculate population, it was assumed that each SOA contains 1500 people and that the population is evenly spread throughout each SOA.
- Scores for Naturalness and Quality of Access were allocated initially on assumptions, based on the nature of the site. These were then refined

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<sup>25</sup> These sites remain in the source data sets, but were not attributed to a typology, and were not included in the master data set of combined typologies.

where data was available (for example where datasets included relevant information, e.g. the Magical Meadows Woodland Inventory.)

- Source data provided by partners has been collected for a variety of purposes - it was not collected specifically to record green space. The project team have collated and edited this data to generate datasets meeting the typologies as described. However it is possible that some areas which are relevant to the project may have been omitted from the source data, or that a small number of sites may have been included which do not meet the definitions of the typologies. For example a number of authorities provided datasets of areas they are responsible for mowing - while many of these are accessible greenspace, many are not - without additional data or site visits it was not possible to be 100% accurate when editing these datasets.
- Due to the limitations of the source data it is possible that areas of inadequacy identified through the ANGSt analysis may represent lack of information rather than lack of available greenspace.
- Analysis of *access* to greenspace was done “as the crow flies”. This approach did not take into account a) where the access point of the site is or b) physical or perceptual barriers such main roads, rivers, areas of urban development. The significance of barriers is discussed in several of the regions ROWIPs, see appendix 8.

The merged “all greenspace typologies” dataset 1300 parcels of greenspace were collected and analysed, totalling over 24,000 hectares (243 km<sup>2</sup>)<sup>26</sup>.

The data produced as an output of this project has been supplied to members of the steering group on CDs and consists of:

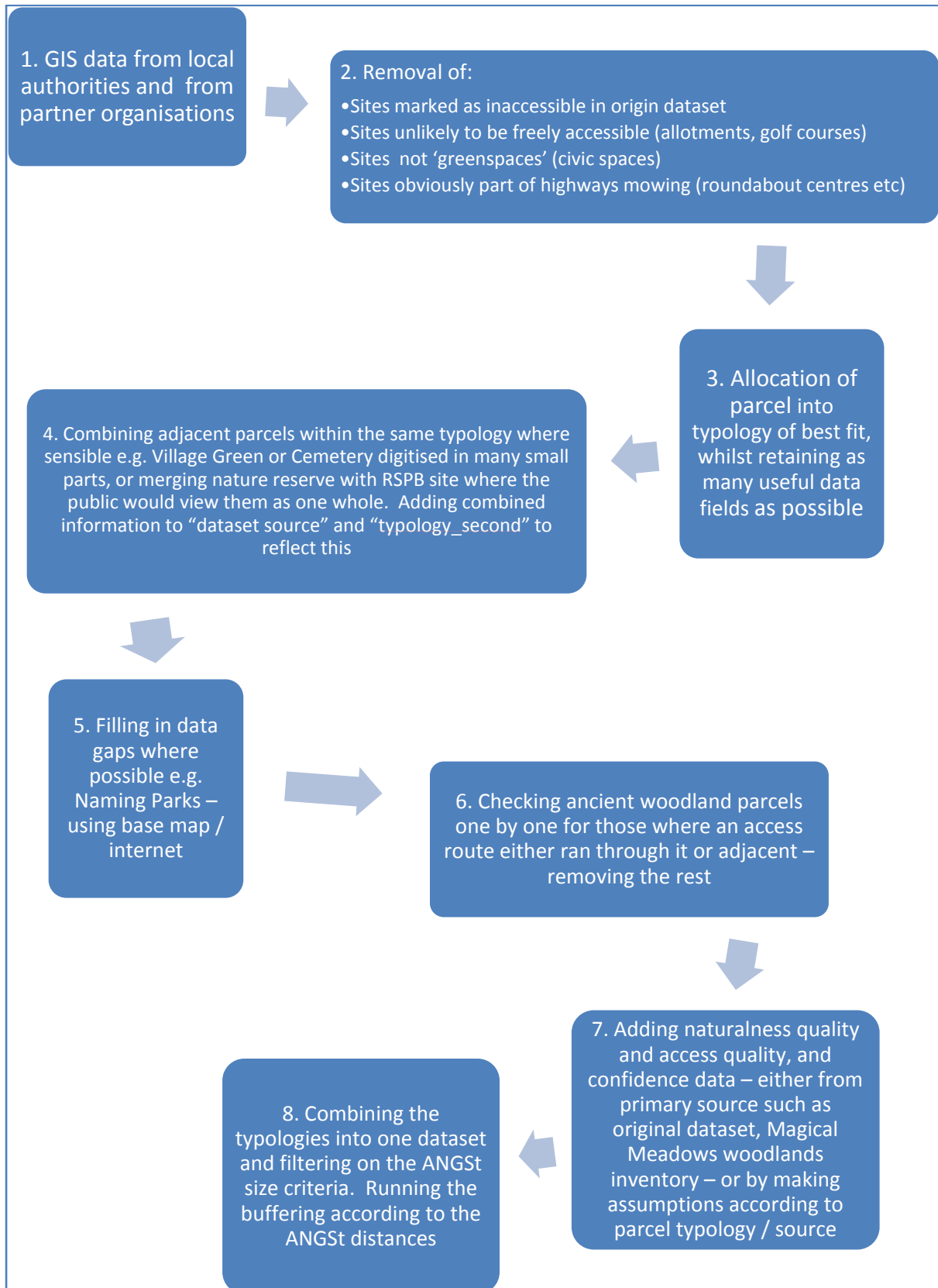
- Original source data from partners - structured into folders according to source organisation<sup>27</sup> - and in places some original emails also included and electronic copies of signed licence agreements where possible
- Typologies - structured into folders to match above and including duplicated railway paths (and similar) in the ‘access’ typology - each typology has a metadata sheet
- A merged dataset (“all greenspace typologies”) of the typologies together, with sites smaller than 2 hectares removed - with a metadata sheet
- Some background literature / references
- An excel spreadsheet of the contact information for the various partner authorities and bodies
- And this report.

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<sup>26</sup> With the “less than 2 hectare parcels” Amenity Greenspace parcels removed / not carried forwards, the dataset contains 1133 parcels and totals 23,399 hectares

<sup>27</sup> All datasets are supplied in both MapInfo tab and ESRI shape file format

Figure 3 - the data handling process



## 4 Typologies

The typologies were developed with reference to PPG17 companion guide annex A and best practice from existing open space audits and green infrastructure strategies<sup>28</sup>. The typologies form broad categories enabling practical and effective data manipulation. Within each are a number of secondary typologies.

The five original typologies were :

- Parks and gardens
- Natural and Semi-Natural Greenspace
- Amenity Greenspace
- Churchyards & cemeteries
- Access routes

Due to the complexity of the data-set it was decided that an additional typology of “woodland” should be added. At a later stage this set could be added into “natural and semi natural greenspace”.

### 4.1 Parks & Gardens

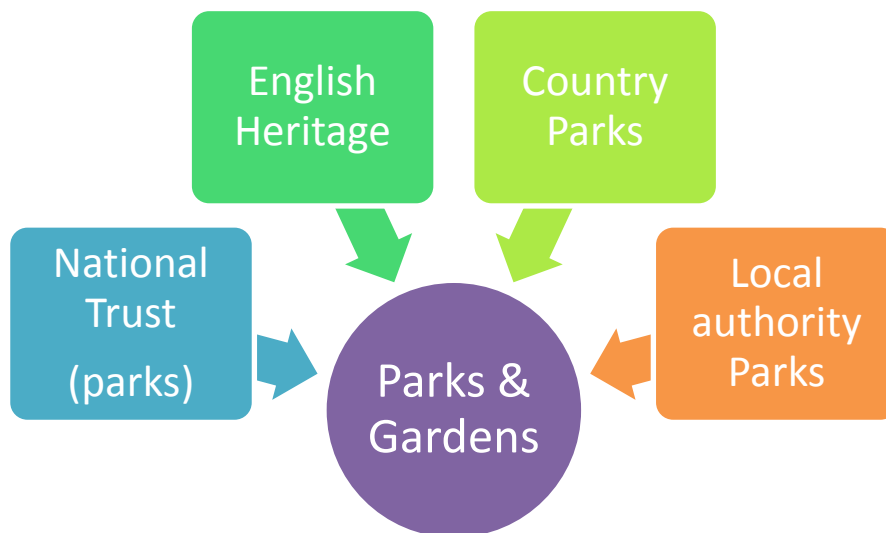


Figure 4 - parks and gardens typology

<sup>28</sup> See appendix 3 for a list of the typologies suggested by PPG17 and adopted by local authorities in their open space audits.

This typology includes historic parks and gardens (English Heritage), Urban Parks, Country Parks, local authority parks and National Trust Park and garden sites.

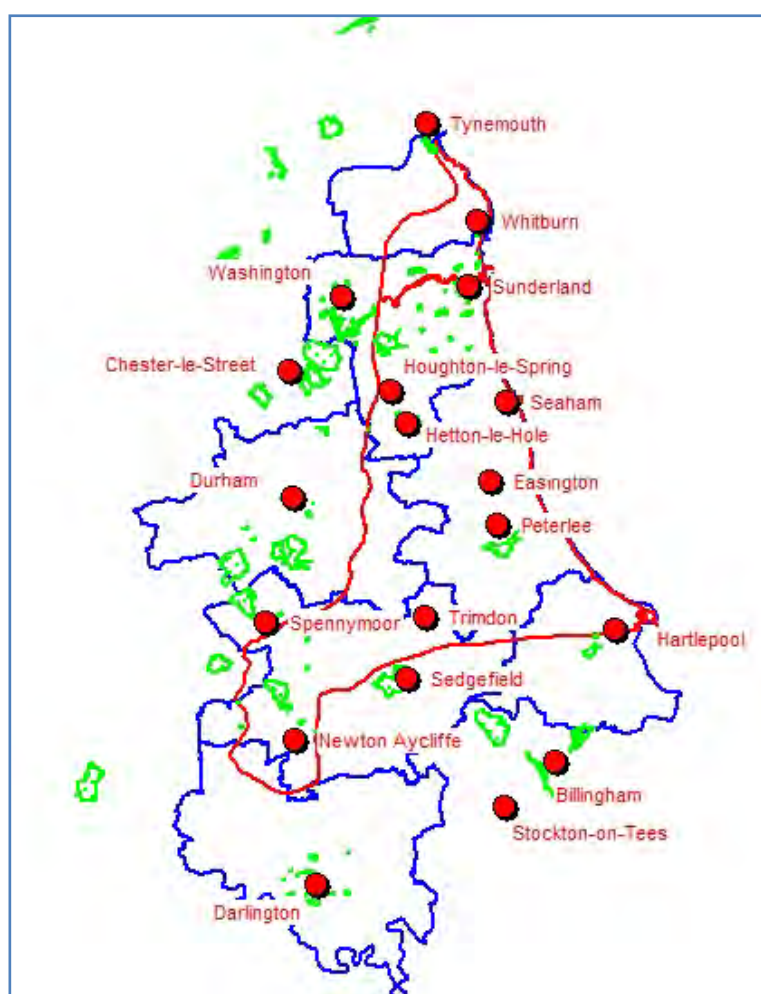
There is no agreed definition of a Country Park; it is possible that some of the sites included in this dataset are private sites, for examples grounds of hotels called a 'Country Park' but only accessible to hotel guests. Any such sites identified during data checking should be removed from the dataset.

Parks and gardens are often the first place that people think to go when seeking fresh air and outdoor exercise. They are traditionally safe and accessible places where a range of activities take place. They also are of significance for nature conservation with many having valuable large trees and areas managed to encourage and support wildlife.

In total the data set comprises 92 parcels of Parks & Gardens with a combined area of 4,092 hectares.

Twenty of these parcels are smaller than 2 hectares<sup>29</sup>.

Map 3 illustrates the distribution of parks and gardens (shown in green) across the NCA and the buffer zone. Many sites shown in Map 3 are in the buffer zone and are not within the NCA boundary (shown in red on the map). A cluster of small sites exists around Sunderland. There are few sites in the central part of the area.



Map 3 - all parks and gardens

<sup>29</sup> The summary statistics, both here and below, refer to parcels inside the NCA and those in the ten km buffer zone.

## 4.2 Natural and Semi-Natural Greenspace



Figure 5 - natural and semi-natural greenspace

This typology includes National Trust land sites, land mapped as open access through the Countryside and Rights of Way Act 2000 (CROW land) and common land, all nature reserves, local wildlife sites<sup>30</sup>, “green / wildlife corridors”, stewardship land with access<sup>31</sup>, and some greenspaces from local councils, such as “tree belt”.

The many kilometres of railway paths in the area were also included in this dataset in recognition of their role as wildlife corridors. These routes are duplicated, appearing in both this dataset as natural and semi-natural greenspaces and in the access dataset as linear access routes. However they only appear once in the final, master dataset.

<sup>30</sup> “Local Wildlife Sites” is the new generic term for “Sites of Importance for Nature Conservation” - sites recognised as worthy of safeguarding (yet which fall outside international or national designations such as SSSI).

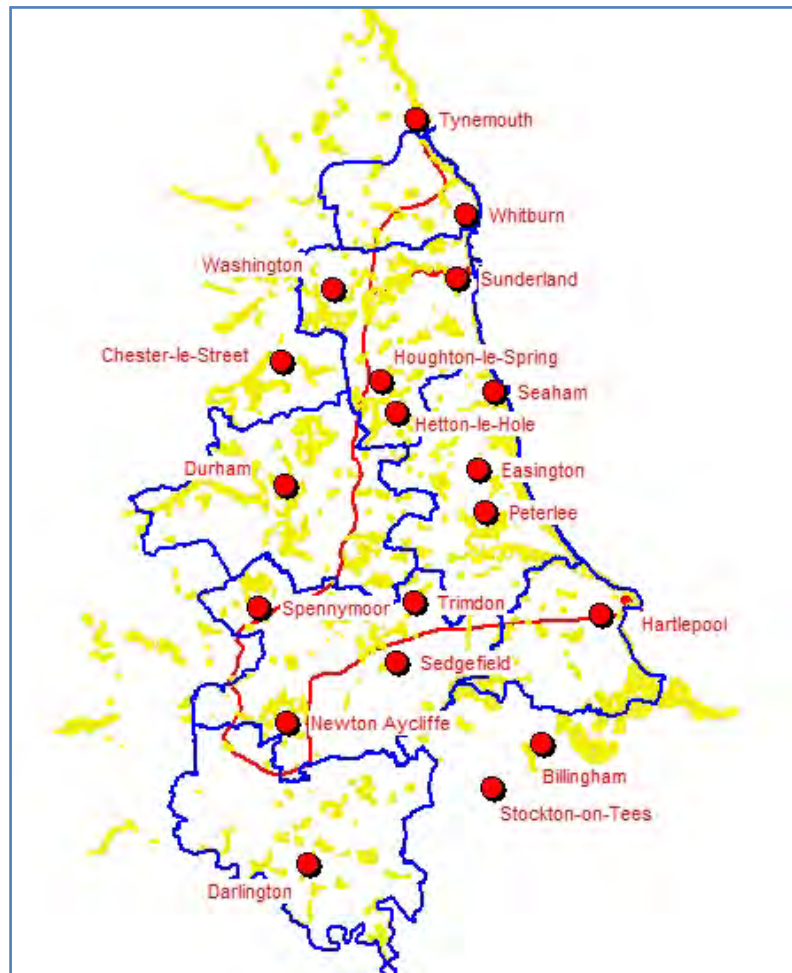
<sup>31</sup> Stewardship land with access in this context includes permissive area-based open access through agri-environment schemes.

This typology includes all the more natural sites, which are of the greatest significance for nature conservation. These sites tend to be managed to protect wildlife, or are given a designation in recognition of their quality.

This dataset includes a total of 614 parcels of Natural & Semi-Natural Greenspace, with a combined area of just over 11,833 hectares.

146 of these parcels are smaller than 2 hectares.

Map 4 illustrates the distribution of natural and semi-natural greenspace across the NCA. Distribution within the NCA is fairly even, although closer inspection reveals that there are gaps to the south of Sunderland, and coverage is patchy in the triangle between Spennymoor, Newton Aycliffe and Sedgefield.



Map 4 - Natural and semi-natural greenspaces

### 4.3 Amenity Greenspace

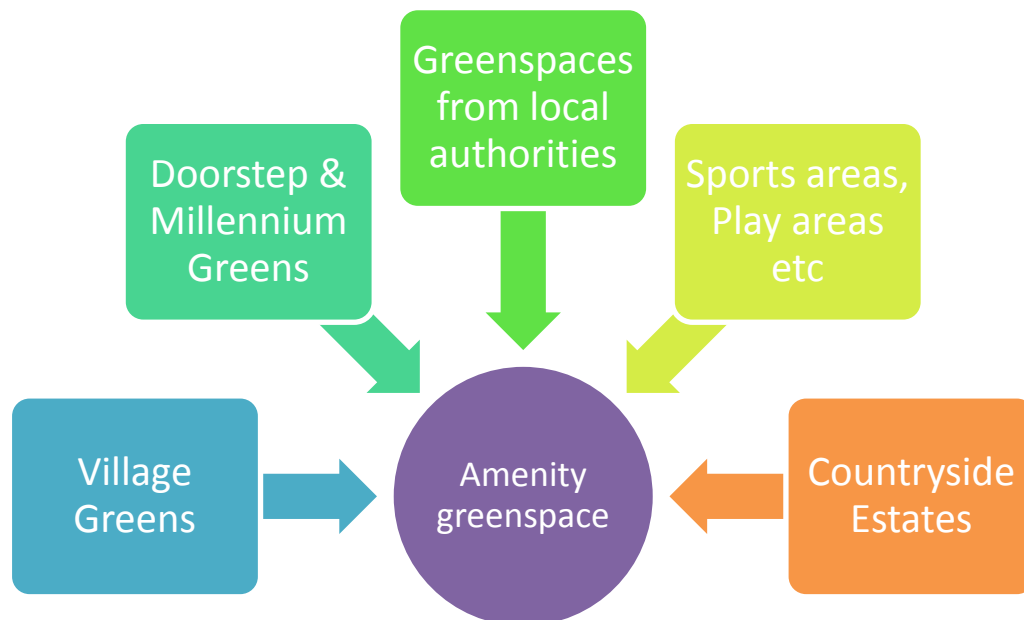


Figure 6 - amenity greenspace

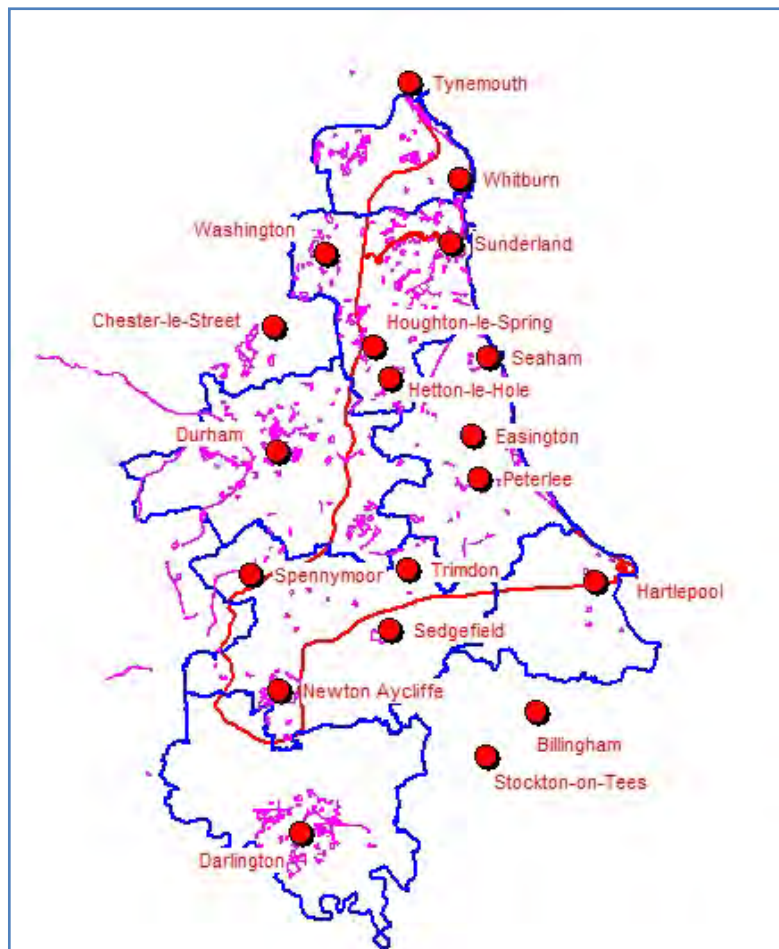
This typology includes village greens, doorstep greens, sports areas, play areas and other open spaces from local authorities. Many greenspace strategies include an additional typology for formal sports areas (designed specifically for sport, such as sports pitches, school playing fields, running tracks etc) as opposed to informal sport. However this study is addressing access to freely accessible greenspace, so these areas are not included in the study.

The importance of Amenity Greenspace is sometimes overlooked, as it is rarely of high conservation value. The sites are often small but are locally important providing mown grassy areas close to where people live. They provide an invaluable resource for local people to enjoy greenspace, fresh air and exercise. They are of particular importance to families especially people without access to a car. Activities on these areas might include dog walking, jogging, taking traffic-free short-cuts, kite-flying and having picnics. Such areas often inspire a sense of community, as dog-walkers stop to chat, or people sit on benches and watch informal sport. The contribution of amenity greenspace on physical and mental well-being is, therefore, significant.

The typology comprises 1,976 parcels of Amenity Greenspace, with a combined area of just over 3,864 hectares.

1604 (81%) of these parcels are smaller than 2 hectares, and so are not included in the ANGSt analysis.

Map 5 illustrates amenity greenspace shown in purple. The area around Sunderland is well supplied with amenity greenspace; other areas are less well supplied.



Map 5 - Amenity greenspace

#### 4.4 Churchyards & cemeteries

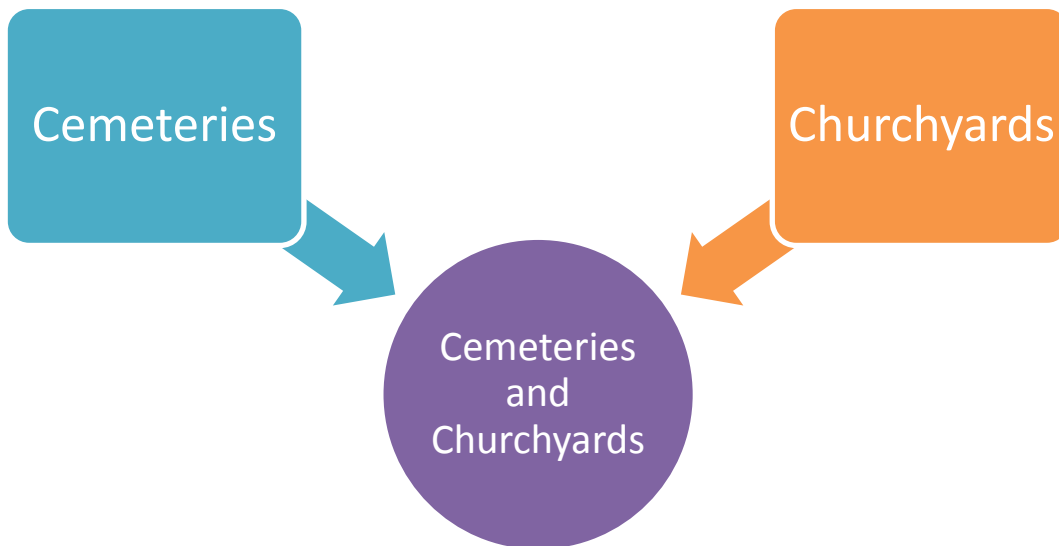
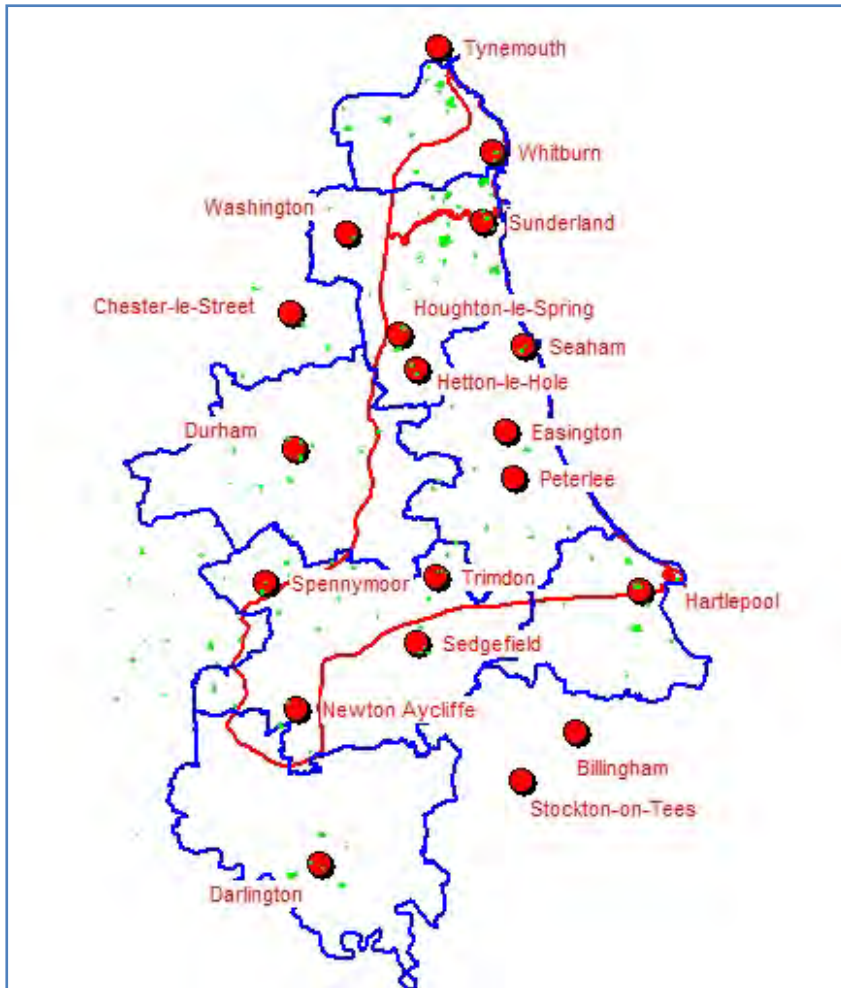


Figure 7 - churchyards & cemeteries

This proved to be the most straightforward typology - being the easiest to define.

Churchyards and cemeteries are often of high conservation value, providing mixed habitats with little disturbance and often in the centre of towns and villages. While not traditionally recognised as a public recreational space, people use them as short-cuts or as a tranquil place for a stroll. They also contribute to a sense of place and history.

The data includes a total of 140 parcels of churchyards and cemeteries, with a combined area of just over 343 hectares. Churchyards and cemeteries are usually small sites, 104 (74%) of those recorded are smaller than 2 hectares, therefore their significance is not generally recognised in ANGSt analysis which only addresses sites over 2 hectares. Churchyards and cemeteries are shown in green in Map 6 below. Distribution is dispersed as expected, with most settlements having access to a churchyard or cemetery, the larger sites being closer to more densely populated areas.



Map 6 - churchyards and cemeteries

## 4.5 Woodland

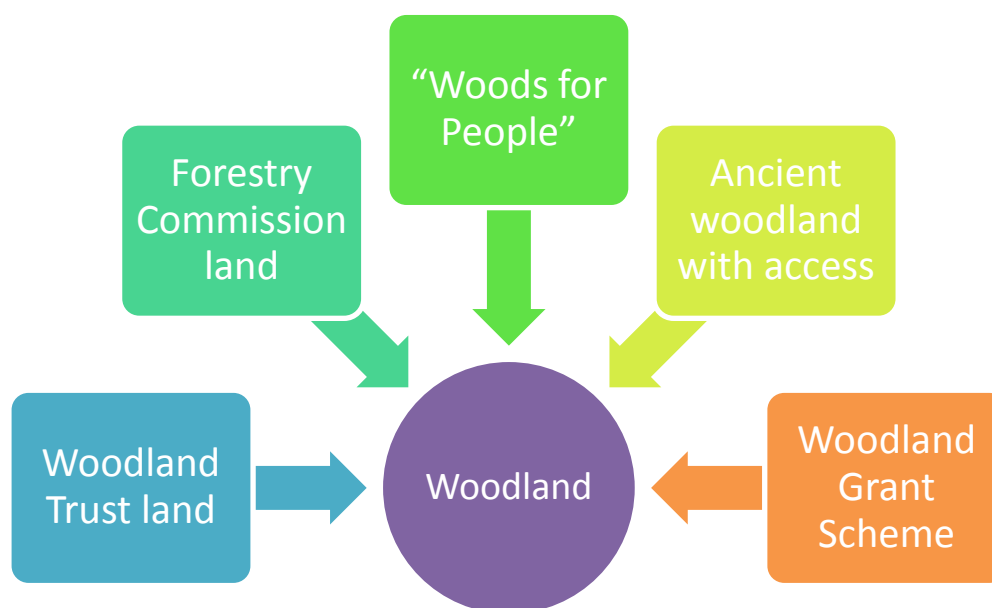


Figure 8 - woodland

This typology was added during the data collection phase, due to the complexity and number of sources of woodland data. Woodland data was sourced from The Woodland Trust<sup>32</sup>, Forestry Commission, Natural England and local authorities.

Woodland is very popular as a place to relax, providing opportunities for exploration, a chance to see wildlife, and a place to let dogs run free. The significance of accessible woodland to the public is recognised by The Woodland Trust who published 'Space for People' in 2004<sup>33</sup>. This introduced the Woodland Access Standard as well as assessing the extent of accessible woodland in the UK, and finally establishing targets for opening up existing woodland and creating new woods. The standard aspires that nobody should live more than 500m from one area of accessible woodland 2 hectares in size or larger, and that there should also be at least one larger (20 hectares) piece of accessible woodland within 4 kilometres of people's homes. Their analysis for authorities within the NCA is shown in Appendix 7 and concludes that 80 hectares of new woodland is required in Darlington in order to meet the 20 hectares within 4 kilometres standard, 40 hectares area needed in Durham County (in the Sedgefield and Wear Valley

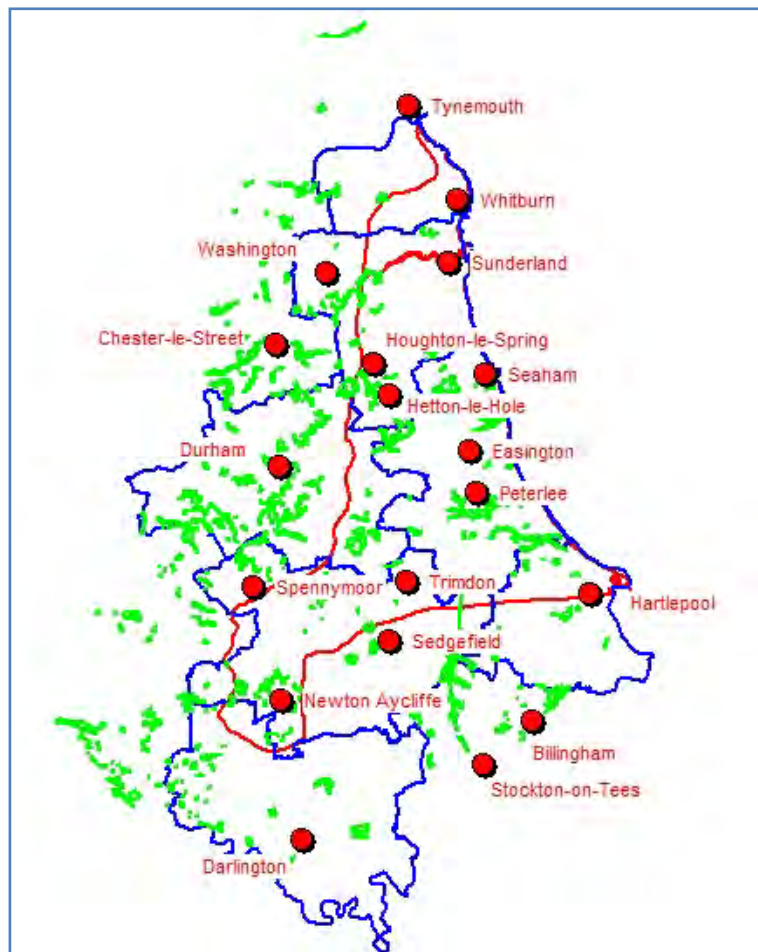
<sup>32</sup> Including the Woodland Trust's own landholding plus a project "Woods 4 People" which is their inventory of known accessible woods.

<sup>33</sup> The Woodland Trust (2004) *Space for People: Targeting action for woodland access* [www.woodland-trust.org.uk/publications](http://www.woodland-trust.org.uk/publications)

districts), a further 40 hectares needed in both Sunderland and Hartlepool, and 20 hectares needed in South Tyneside.

The final data set collected for this project includes a total of 240 parcels of Woodland, with a combined area of just over 4,202 hectares. Fifty-three of these parcels are smaller than 2 hectares.

Map 7 illustrates the distribution of woodland. Again, as with natural and semi-natural greenspace there are obvious gaps south of Sunderland and few sites in the triangle between Spennymoor, Newton Aycliffe and Sedgfield.



Map 7 - Woodland

## 4.6 Access routes

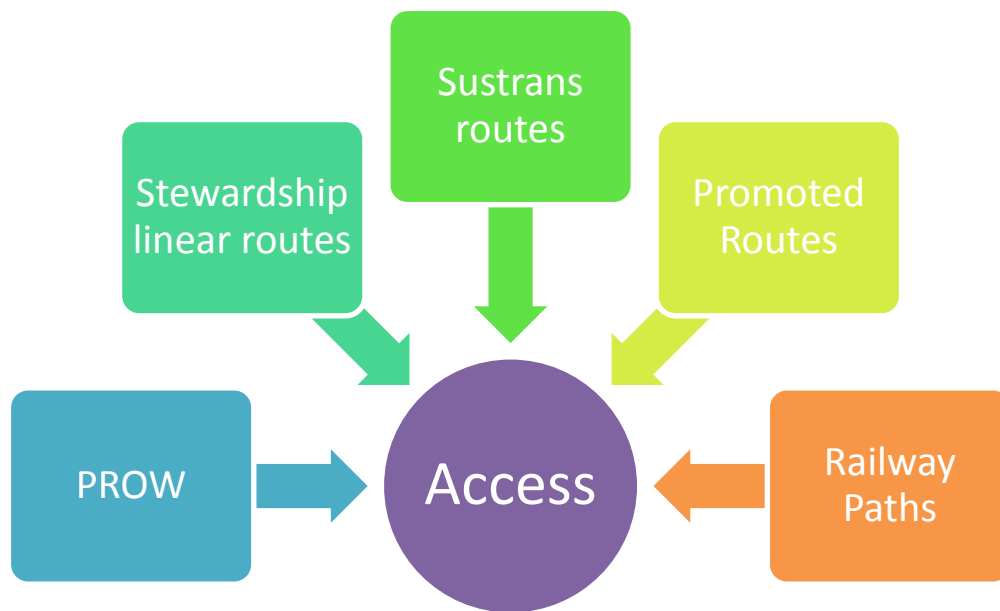


Figure 9 - access routes

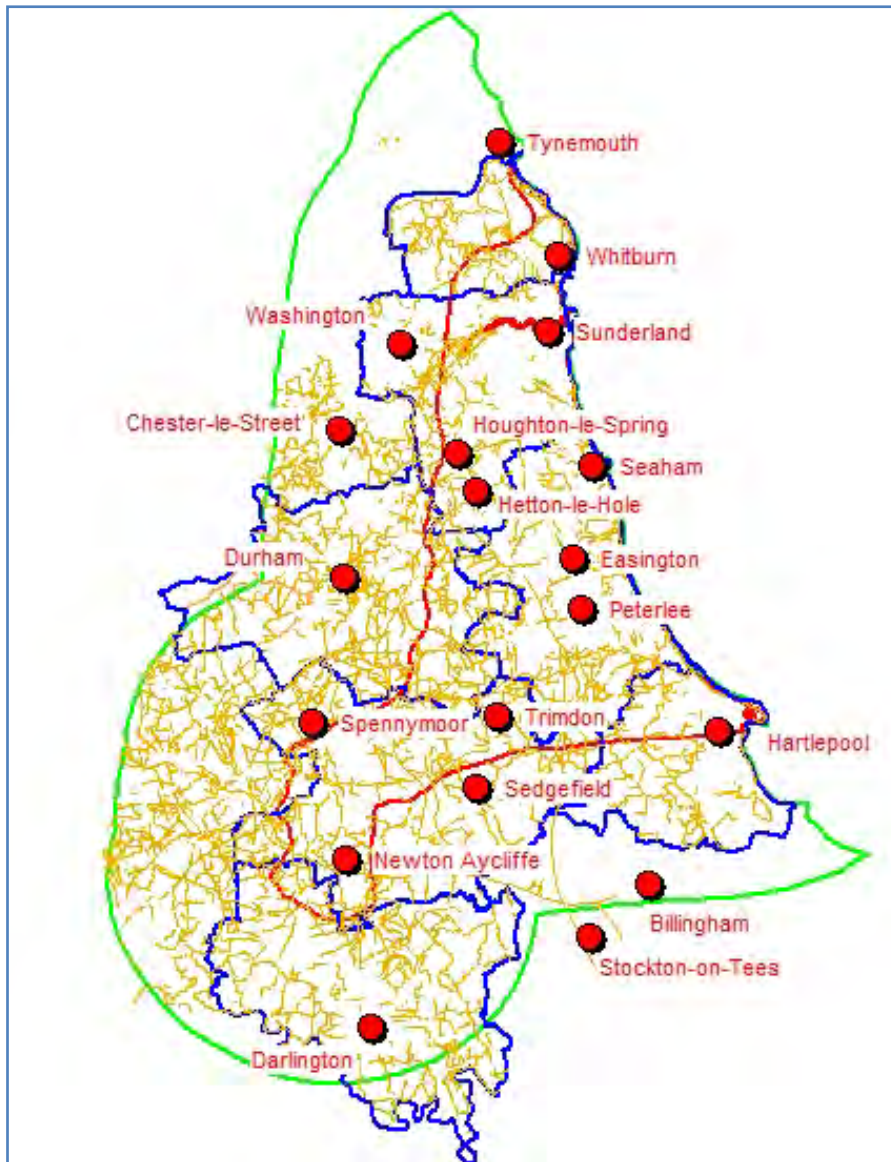
This typology is different to the others as it covers linear access. It includes Public Rights of Way, stewardship access routes, other identified permissive access, cycleways, promoted routes<sup>34</sup>, disused railway paths, and other linear access. The dataset is shown in Map 8 below.

The majority of this data relates to narrow access routes, although some, for example railway paths, are much wider and form not only access routes but greenspaces in their own right.

The access dataset is the largest, comprising 5,086 records, with a combined length of just over 2,411 kilometres. In addition, it includes 73 parcels where access is wider than a narrow line and has been mapped as polygons; these make up just over 677 hectares.

The linear access routes were not included in the ANGSt analysis. They were used to check the access arrangements to greenspaces. It is important to remember that linear access provides access to greenspace, in particular in rural areas, which is not identified through the ANGSt analysis.

<sup>34</sup> Promoted routes means any promoted route GIS information that the local authority supplied. For example, this included the Great Aycliffe Way in Sedgfield, or more local walks such as Native Tree Walk in Hartlepool.



Map 8 - Access routes

Further information about the all the typologies and the dataset sources is given in appendix 3.

## 4.7 Overlap of definitions <sup>35</sup>

It is not always possible to apply a single descriptive typology to an area of land; as a result there is some overlap in the definitions. An example of where the definitions are confusing relates to National Trust sites which appear in “Parks & Gardens” and “Natural & Semi-Natural Greenspace”. This does not mean that the sites appear twice - simply that sites owned by the National Trust may fit into either category, some will have a “Parks & Gardens” character and therefore be included in that typology, others will be more natural, for example open land owned by the National Trust, and appear in the “Natural & Semi-Natural” typology.

Where a parcel of land fitted more than one category it was allocated to the typology of best fit. Any information that may have been relevant was retained in the column “Second\_Typology”. The parcel was **not** duplicated in both typology datasets - it was allocated to the typology of best fit<sup>36</sup>.

Examples of sites which may not fit clearly into a typology include :

- Sites with a mixture of woodland and other natural habitats may be included in the “Natural & Semi-Natural” typology or in “Woodland”,
- Some authority datasets included ‘tree belts’, depending on what these represent they may be included in “Amenity Greenspace” or in “Woodland”,
- Picnic Areas or Play Areas may be included in “Parks & Gardens” or in “Amenity Greenspace” depending on their location,
- Source datasets handled green corridors and railway paths in different ways; as a result an individual site may appear as “Natural & Semi-Natural Greenspaces”, “Amenity Greenspaces” or “Woodland” depending on the approach the dataset source took and the vegetation on site. Where such sites were identified they were duplicated into a second access dataset called “duplicated railway paths”.

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<sup>35</sup> This issue was also encountered by the PPG17 Open Space Needs Assessments by local authorities. For instance, **Durham City’s Open Space Needs Assessment** says, “It is often the case that an open space may fit into more than one of the PPG17 categories, e.g. a country park could fit into “public parks & gardens” or into “natural or semi natural green space”, or a recreation ground containing a football pitch and play equipment, could be classed as a “public park” or an “outdoor sports facility” or as a “children’s play facility”. For the purposes of this study, the primary use was determined by the site surveyor and corroborated by the study team. With some of the larger sites, where there were clearly at least two distinctly separate uses, the sites were divided so that each distinct use was separately categorised ...” (page 50).

<sup>36</sup> The **only** duplication in the datasets was for access routes that were also greenspaces in their own right.

## 5 Attribute data

Information about each green space is stored in the attribute table. Key attributes are recorded for all sites where possible; others are only recorded if the data was included in the original dataset. A metadata sheet is supplied separately (on CD) for each typology dataset and the overall greenspaces dataset which gives more information.

Key fields are shaded in table 1.

Figure 10- attribute table

Attribute	Description / notes
<b>Name</b>	Site name. About half the datasets included site names. Some sites were named using a base map or the internet – where names were guessed at a question mark has been added at the end of the site name. Where sites were too small to name sensibly, or where it was not possible to identify a name, this field is left as ‘No Name’ <sup>37</sup> .
<b>ANGSt typology</b>	One of the six typology categories
<b>Second Typology</b>	If the original data source included information such as “Picnic Area” or “SSSI” this was slotted in to this column
<b>Naturalness Quality</b> (Nat_Qual) <sup>38</sup>	High, medium or low
<b>Naturalness Confidence</b> (Nat_Conf)	This field allocates a confidence score to the field above. If the naturalness score is based on clear evidence the confidence score will be high, if the evidence is not clear or if the score was based on generic assumptions the confidence will be medium or low.  It is recommended that as the data is refined all sites with medium or low confidence scores are checked and updated.
<b>Access Quality</b> (Acc_Qual)	It is important to bear in mind that this relates to the <i>quality of the access experience</i> and not an indication of the level of access rights  High, medium or low

<sup>37</sup> 138 out of 1213 greenspace records over 2ha have “No Name” in this column

<sup>38</sup> Because ESRI shape files can only have column names up to 9 characters long, the abbreviations Nat\_Qual, Nat\_Conf, Acc\_Qual and Acc\_Conf were used in the final datasets.

<b>Access Confidence</b> (Acc_Conf)	As for 'naturalness confidence score' above
<b>Data source</b>	<p>Either the name of the original GIS dataset or the name of the organisation or person<sup>39</sup> who supplied it.</p> <p>The attribute table may include more than one entry here, indicating that two different organisations or data sources supplied the same (or similar) parcel.</p>
<b>Area</b>	Size of parcel in hectares
Easting	Where the origin dataset included Eastings and Northings these were preserved in the attribute table. Similarly, where OS grid references were included, these were preserved.
Northing	
Grid Ref	
<b>Landowner</b>	If supplied with original data set, or identified through research. Acronyms in this column (e.g. H, CA, P) are from the original data and any queries can be followed up directly with the relevant body.
<b>Notes</b>	<p>This column includes any information about potential for improving site naturalness quality or access quality that was either preserved from the origin GIS dataset or gleaned from reading a report.</p> <p>Any additional information from the original datasets beyond that covered above was added to 'Notes'.</p> <p>Some notes in this column refer to access arrangements, taken from columns in the PPG17 source data<sup>40</sup>. For instance<sup>41</sup>:</p> <ul style="list-style-type: none"> <li>• "unlimited" would mean free unrestricted access at least during daylight hours</li> <li>• "formal agreement" would mean usually as part of organised activities or groups e.g. on school pitches</li> <li>• "informal agreement" would mean one that could be ended at any time e.g. an informal agreement with a headteacher relating to playing fields</li> </ul>

<sup>39</sup> In some cases, many different people within each organisation were contacted for GIS data. To keep the reference to the origin data source, sometimes the person's name was used in this column together with the organisation.

<sup>40</sup> For the precise definition in each case, the reader would have to go back to the methodology documents as part of the published PPG17 audit for the authority area concerned

<sup>41</sup> This example is from Darlington's Open Space Strategy methodology, page 2, table 3.

	<ul style="list-style-type: none"><li>• “members / tenants only” would mean that access is restricted to employees, club members, key holders or guests of the above – it is likely that this category was not carried into the typology datasets</li><li>• “unauthorised access” or “no” would mean that the landowner would not actively discourage public access but that no rights are established, or that access would be regarded as trespass – it is likely that this category was not carried into the typology datasets</li></ul>
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It should be noted that the attribute table for the linear access dataset is slightly different, reflecting the difference in data type.

## 6 ANGSt analysis : results and interpretation

This section considers each element of the ANGSt analysis in turn and interprets any geographical deficiencies in greenspace provision. Throughout this section it should be remembered that the ANGSt distances are purely “as the crow flies” - the scale of the project and number of sites involved did not permit more detailed analysis allowing for barriers and access points.

### ANGSt criteria

- There should be at least 1 hectare (ha) of Local Nature Reserve (LNR) per 1000 people,
- Nobody should live more than 300 metres from their nearest natural greenspace at least 2 hectares in size,
- Nobody should live more than 2 kilometres (approx 1¼ miles) from their nearest natural greenspace at least 20 hectares in size,
- Nobody should live more than 5 kilometres from their nearest natural greenspace at least 100 hectares in size,
- Nobody should live more than 10 kilometres from their nearest natural greenspace at least 500 hectares in size.

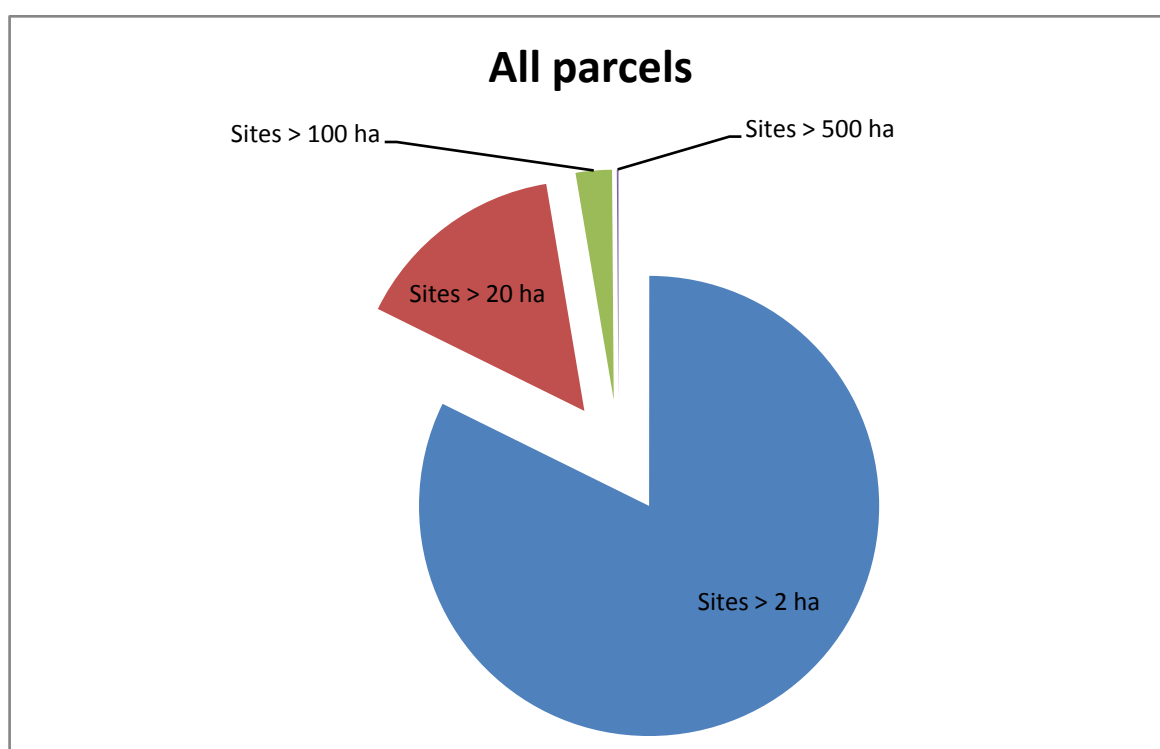


Figure 11 - the proportions of all greenspaces collected

## 6.1 Summary of ANGSt analysis

The population of the NCA has good access to medium sized greenspace. Access to local Nature Reserves is adequate for the area as a whole, but 89% of the population do not have an LNR in their immediate neighbourhood. Access to large countryside sites is limited, in particular in the west of the area. In addition a significant number of small areas have poor access to sites close to where they live, the population of Sunderland is particularly poorly served.

Access to higher quality countryside sites within 300 metres of home is patchy, with large areas having no local sites.

Public rights of way and other linear access are well distributed across the area, providing areas for exercise and an ability to walk through green areas even where no designated sites exist. In particular the railway walks provide safe and easy access to greenspace for many people.

Access to Local Nature Reserves in the NCA only just meets the ANGSt criteria. However, unlike the other ANGSt criteria, this measure is taken across the whole area, meaning that while many people have good access to local nature reserves, many do not, especially in the central area of the NCA. Areas where provision is poor include :

- West of Hartlepool
- East of Spennymoor
- South of Peterlee
- East of Durham City and West of Easington
- North of Houghton-le-Spring.

Development of more Local Nature Reserve sites would be beneficial in this central area.

There are significant areas within the NCA where the population do not have adequate access to greenspace close to where they live.

Only a few small areas of the NCA do not meet the criteria for access to greenspace over 20 hectares. However a significant area of Sunderland does not have adequate access to greenspace within 2 kilometres.

One small, sparsely populated area close to Trimdon does not meet the criteria for access to sites over 100 km.

Access to large (>500 hectare) sites is limited within the NCA. The only sites identified as being over 500 hectares are along the coast. Access to the coast is

good in some places, and less good in others. Overall it can reasonably be assumed that people living in the east of the NCA have reasonable access to large sites, and those in the west do not.

## 6.2 Access to Local Nature Reserves

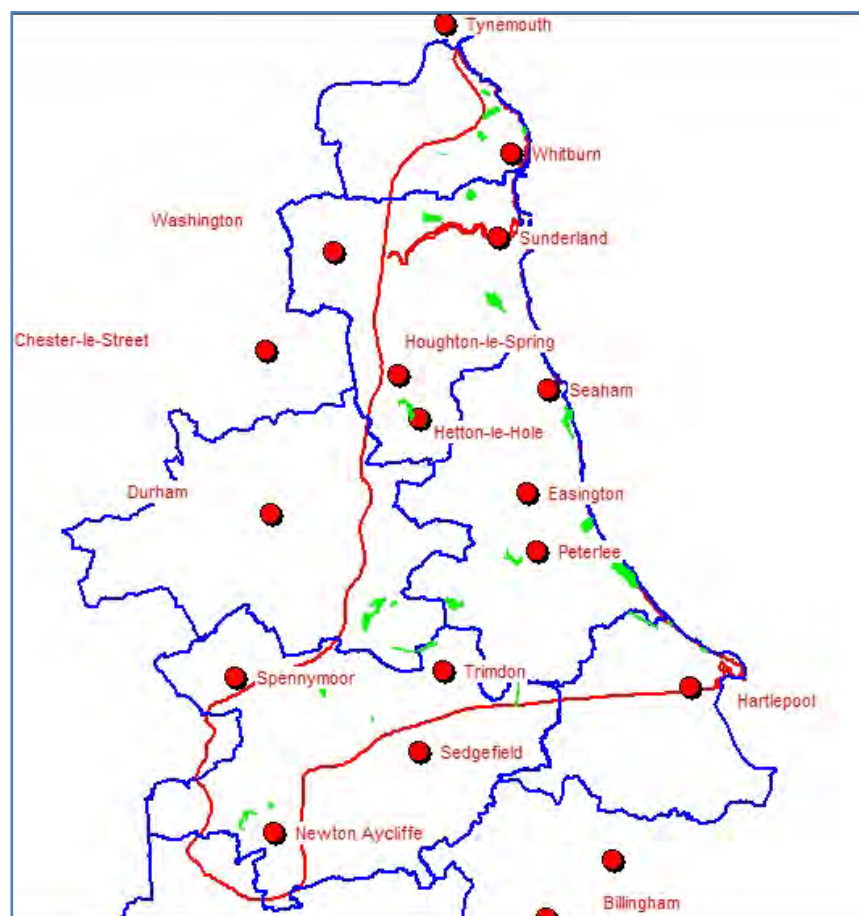
ANGSt recommendation:

*There should be at least one hectare (ha) of Local Nature Reserve (LNR) per 1000 people.*

There are twenty-seven<sup>42</sup> Local Nature Reserve (LNR) sites within or partly within<sup>43</sup> the NCA study area, with a total area of 441 hectares<sup>44</sup>.

These are illustrated in Map 9.

The LNRs are not evenly spread across the NCA, there are several areas including a large central area with few reserves.



Map 9 - Local Nature Reserves

<sup>42</sup> These are : Bracken Hill Wood, Spion Cop Cemetery, Hart Warren, Tiledsheds, Cleadon Hills, Wingate Quarry, Horden Grasslands, Crow Trees, Raisby Way and Trimdon Grange Quarry, Harton Down Hill, Little Wood, Coxhoe Quarry Wood, Blackhall Grasslands, Limekiln Gill, Noses Point, Whitburn Point, Hart to Haswell Walkway, Fulwell Quarry, Hylton Dene, Hetton Bogs, Tunstall Hills, Marsden Old Quarry, The Moor, Ferryhill Carrs, Byerley, Bishop Middleham Community Wildlife Garden and part of Castle Eden Walkway.

<sup>43</sup> The SQL command used was “intersects”. The twenty-seven LNR includes the Castle Eden Walkway, partly inside the NCA and partly outside. This was therefore split in half, and the calculations performed on only that part of the LNR within the NCA.

<sup>44</sup> Note - there are sixty-one LNRs in the NCA + 10 km buffer zone, with an area of 1,178 hectares

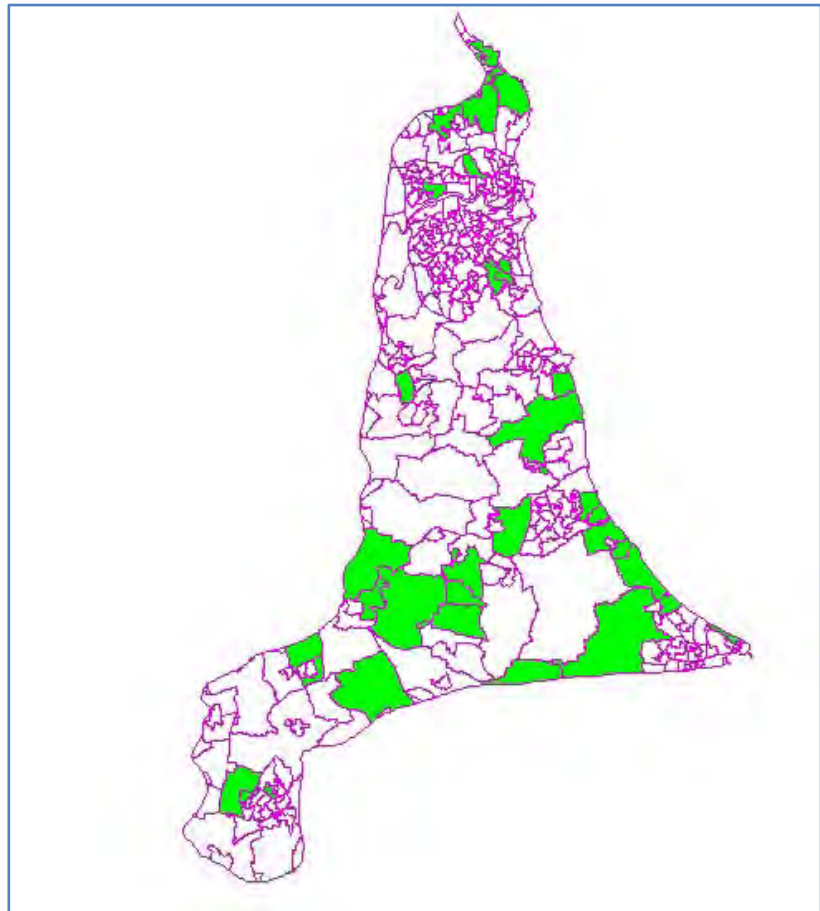
The population of the NCA has been calculated to be 433,653 people (see appendix 2 for details of the approach taken to reach this figure).

Assuming this population level is correct, there is just over 1 hectare (1.015 ha) of Local Nature Reserve per 1000 people, which just meets the ANGSt criteria.

Map 10 shows Super Output Areas (areas with a population of 1,500 people) with a LNR in green. 89% of SOAs do not include a LNR.

There are 37 SOAs (or part SOAs) that have an LNR in them (illustrated) = approx 50,000 people.

This leaves approx 299 SOAs (or part SOAs) or nearly 384,000 people without an LNR in their immediate neighbourhood.



Map 10 - Super Output areas with a LNR

It could be assumed that each SOA should have access to 1.5 hectares of LNR. While this is not a strict application of the ANGSt criteria it is revealing. Map 10 shows that many of the more densely populated areas have poor access to LNRs.

Development of more LNRs would be beneficial, in particular in the central area to the east of Durham (south of Hetton-le-Hole and Seaham and north of Peterlee), and in the more densely populated area north of the NCA.

### 6.3 Access to greenspace within 300 metres of home (all sites over 2 hectares)

ANGSt recommendation:

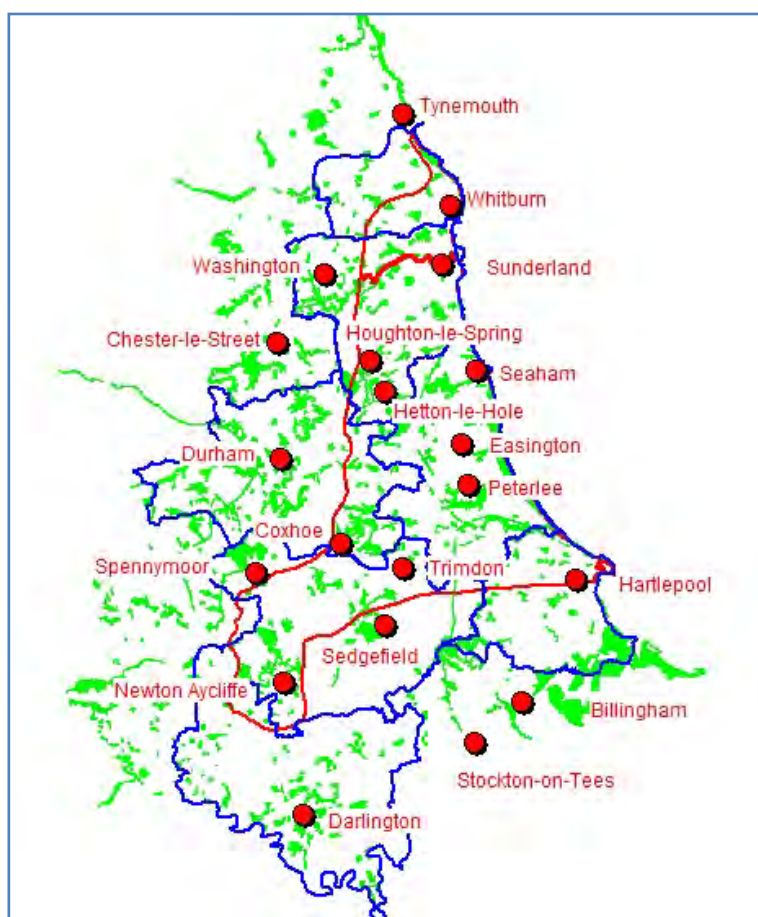
*Nobody should live more than 300 m from their nearest natural greenspace at least two ha in size.*

1,368 parcels of Accessible Natural Greenspace over 2 hectares were collected, with a combined area of just over 24,191 ha <sup>45</sup>.

These parcels include all sites over 2 hectares, up to and including those over 500 hectares.

Map 11 shows all of these sites, regardless of typology or quality.

It is not immediately obvious from the map where the large sites are, as the larger (over 500 hectare) sites are long and narrow following the coast (see Map 23).



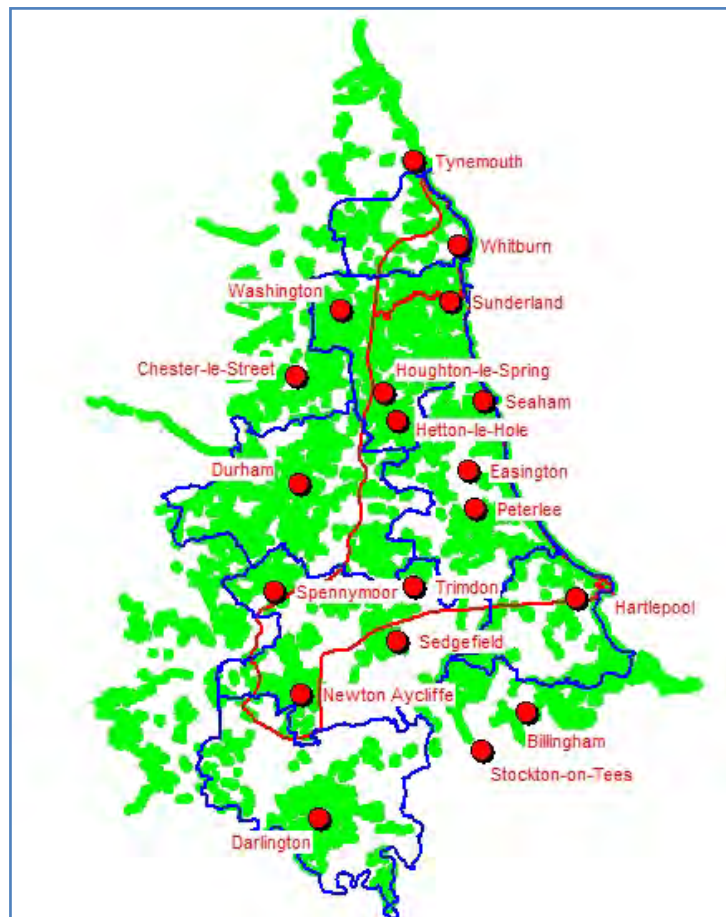
Map 11 - combined areas of greenspaces > 2ha

<sup>45</sup> These summary figures refer to parcels both inside the NCA and those in the ten km buffer zone.

Map 12 shows the sites with a 300 metre buffer drawn around them. This map demonstrates where people have access to local greenspace (within 300 metres)<sup>46</sup>, shown as green circles, and where they do not (the uncoloured areas). This analysis includes all sites, regardless of their nature or quality.

Maps 13 and 14 below present a more accurate picture of access to higher quality greenspace.

This analysis investigates access to sites very close to home, within five minutes on foot. It does not take into account access to green areas using the linear access network.



Map 12- areas with access to greenspaces >2ha within 300m of home (all sites)

Where the maps shows gaps (people that are not within the 300 metre radius of a site), it is possible that the rights of way network locally provides adequate access to greenspace. This should be investigated in more detail for individual locations where improvements are proposed.

Appendix 10 includes maps which provide details of the areas which do not have access to greenspace within 300 metres. These include:

- Near Cleadon and behind Whitburn
- Parts of Sunderland, including the docks, parts of the central built-up area, and the countryside near Middle Herrington, Newbottle, west of Ryhope and east of Houghton-le-Spring and Hetton-le-Hole.
- A central belt in Seaham
- Land near Easington Lane
- A large area of deficiency stretching south of Murton to Peterlee, including Easington, Easington Colliery and Shotton Colliery.

<sup>46</sup> Using ANGSt criteria

- Inland from Blackhall Colliery
- Around Wheatley Hill & Thornley
- A large area around Sheraton / South Wingate/ Black Hurworth towards Embleton.
- South of West and East Rainton
- Land around Shadforth and Old Cassop
- South of Low Moorsley towards Sherburn
- South-West of Coxhoe including Cornforth
- Parts of built-up Hartlepool
- The countryside West of Hartlepool, including High Throston, & Hart, towards Elwick
- Most of rural Sedgfield and around Trimdon
- Mainsforth and Great Chilton westwards towards Kirk Merrington, Middlestone and Coundon,
- Land near Old Eldon
- South-west of Newton Aycliffe, including Heighington

Maps 11 and 12 (above) show access to all greenspace, however the quality and accessibility of these sites is variable.

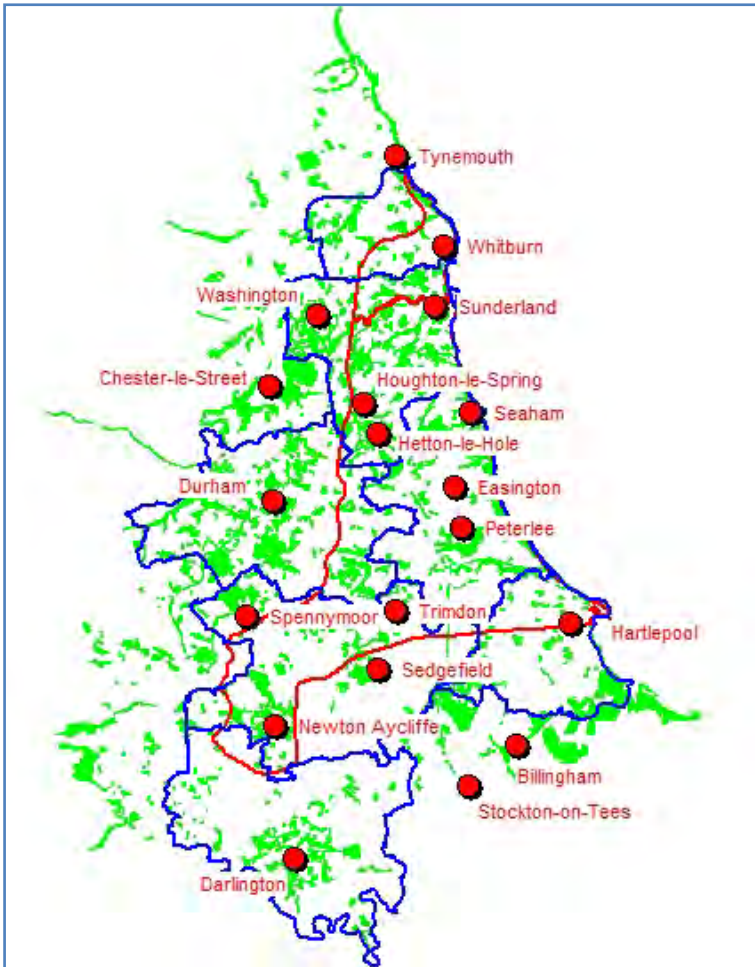
The GI Planning Guide recognises these variations<sup>47</sup> and therefore, in order to better understand access to natural and semi-natural greenspace in the NCA, the analysis was re-run including only the sites which scored medium or high for naturalness<sup>48</sup>, shown in Map 13, below.

A total of 371 sites scored “low” in terms of naturalness and were excluded from this phase 2 analysis (these sites are English Heritage parks, National Trust parks, other parks and picnic areas, Village Greens, play areas and sports areas). The remaining 762 parcels total 18,245 ha in area (these sites are Country Parks, most Natural & Semi-Natural Greenspaces parcels, Railway Paths, Churchyards & Cemeteries and Woodlands).

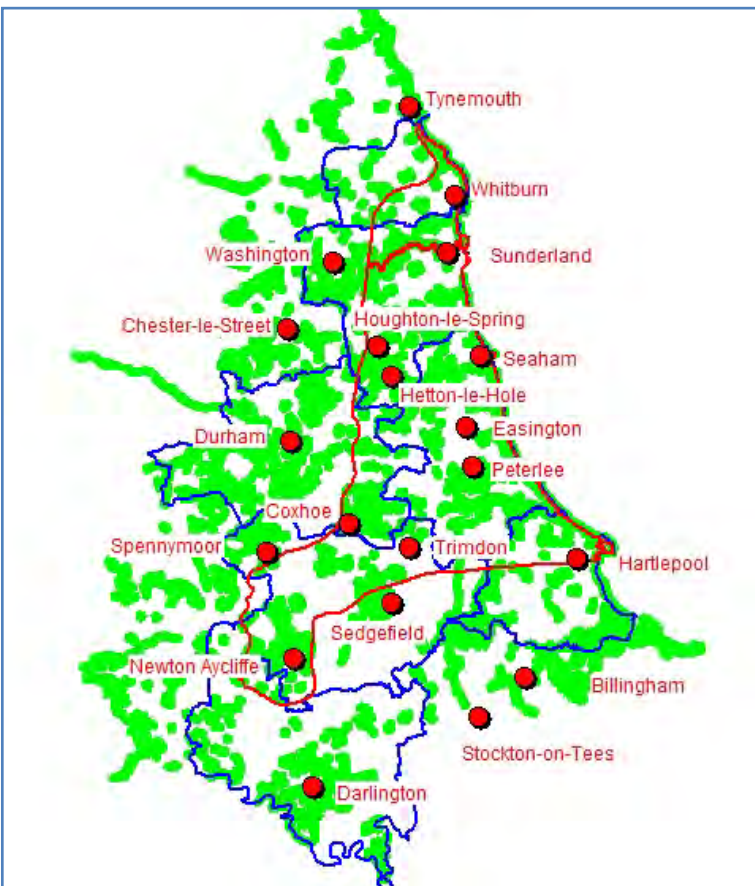
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<sup>47</sup> GI Planning Guide, page 32

<sup>48</sup> see Table 5 - a summary of the generic scoring system under Appendix 5 for more details



Map 13 - greenspaces >2 ha scoring medium or high for naturalness



Map 14 - areas with access to high and medium sites >2ha within 300m of home

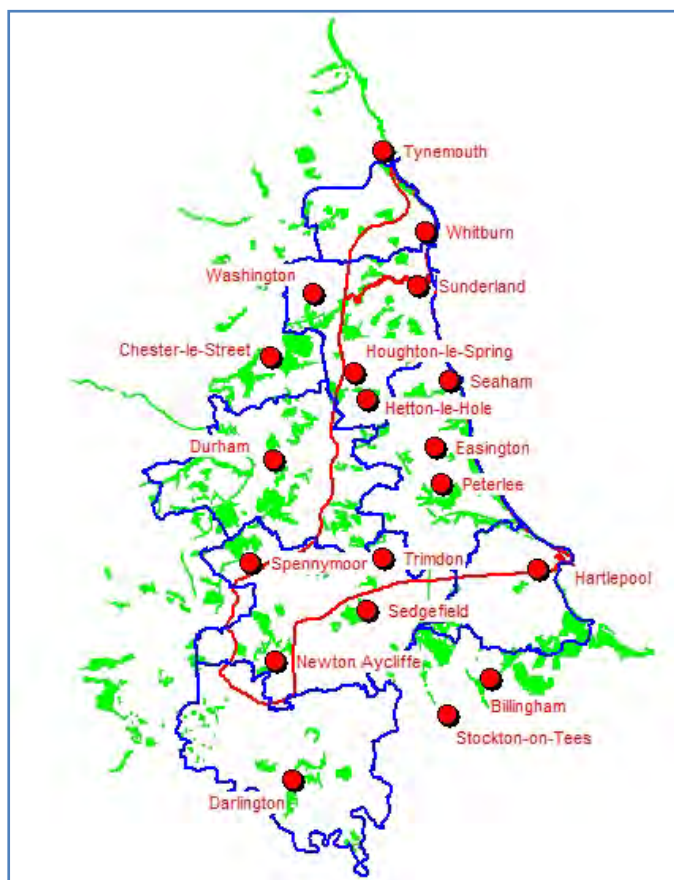
Map 14 shows the areas with access to higher quality natural sites within 300 metres of home. This map, when compared to Map 11, reveals that coverage is not comprehensive - access to high quality natural sites in the NCA is patchy, with large areas having no local sites.

It has not been possible to calculate the number of people who do not have access to greenspace within 300 metres of their homes, as to do this an assumption would have to be made that the population are evenly distributed within each SOA (which is clearly not the case, some of the areas are densely populated, for example Hartlepool, Seaham and Easington; others are very rural with low density of population, for example around Sherburn and Coundon).

#### 6.4 Access to greenspace within 2 kilometres of home (all sites over twenty hectares, up to and including those over 500 hectares)

ANGSt recommendation:

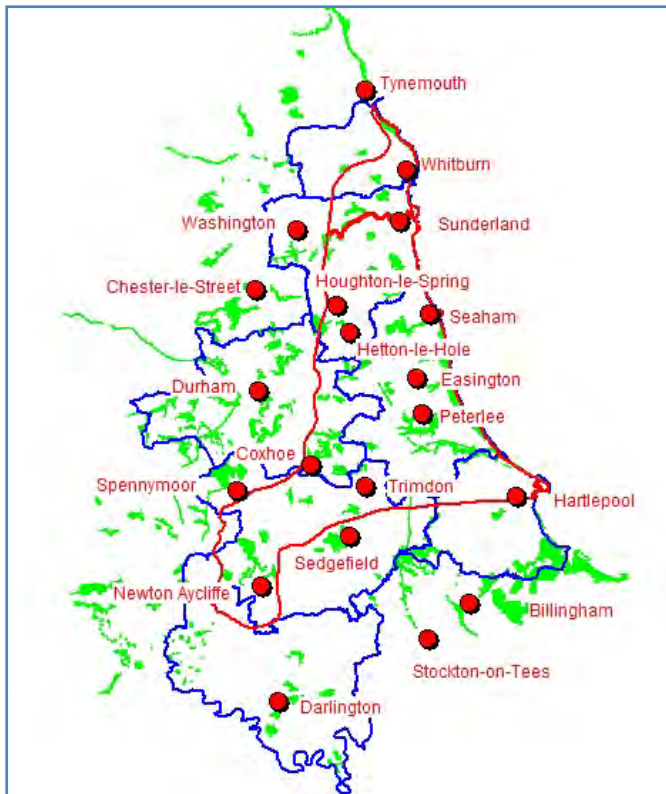
*Nobody should live more than two km (approx 1¼ miles) from their nearest natural greenspace at least twenty ha in size.*



250 parcels of Accessible Natural Greenspace over twenty hectares were collected, with a combined area of just over 18,285 hectares

Map 15 shows these greenspaces, and reveals large gaps, these become more apparent when the less natural sites are excluded (Map 16 below).

Map 15 - combined typologies of greenspace >20 ha, all sites



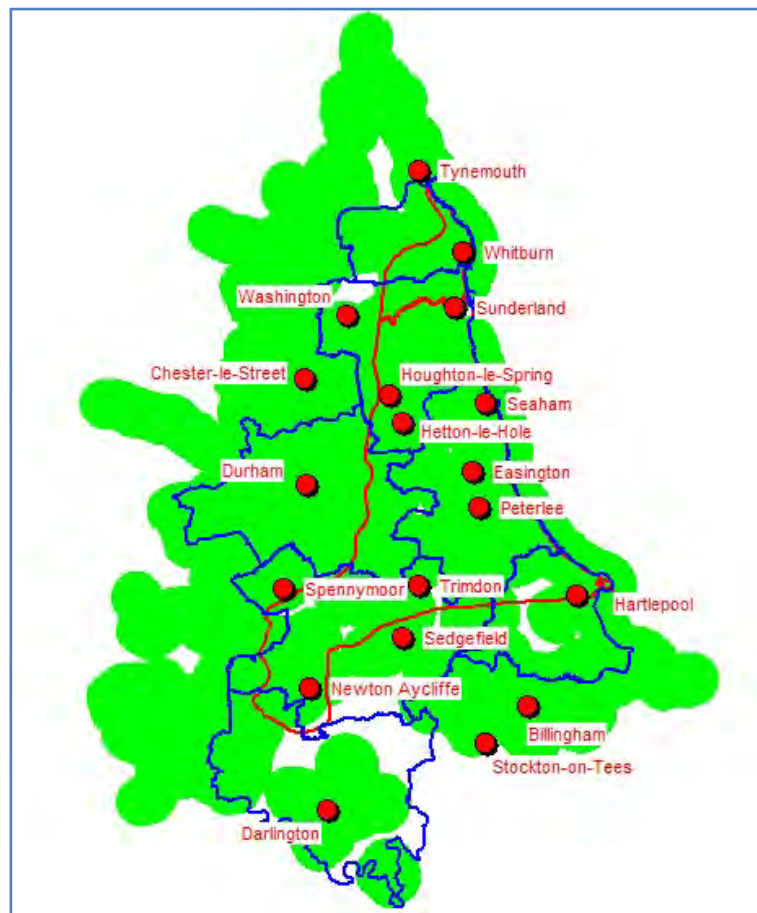
Map 16 - medium and high sites >20 ha

Map 17 shows areas with access to any greenspace over 20 hectares, within 2 kilometres of home.

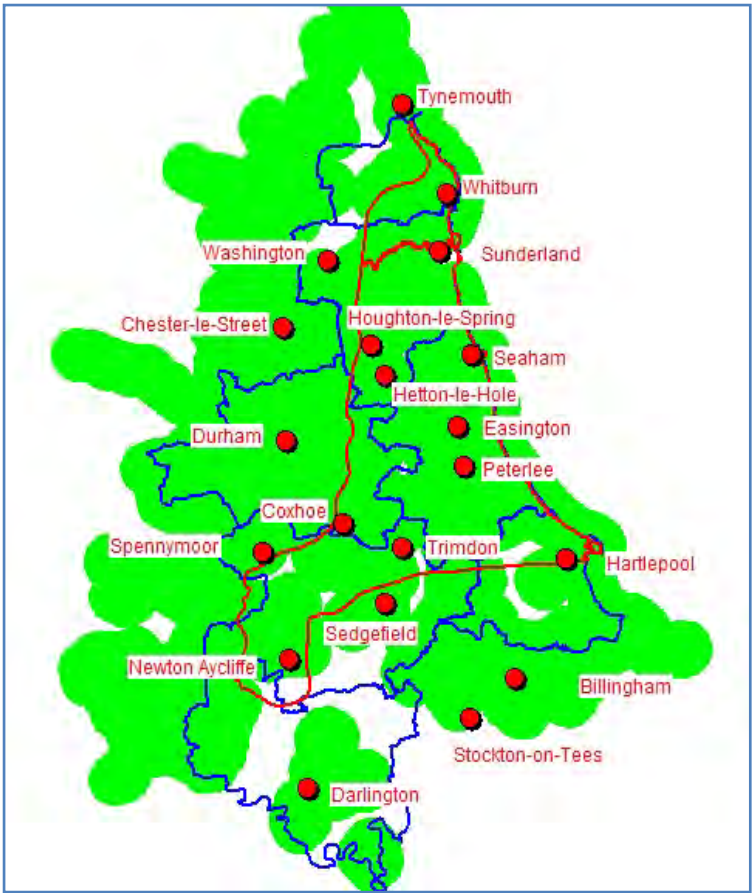
Map 18 (below) shows access to the same sized sites, excluding those scoring 'low' for naturalness.

A total of 212 parcels scoring "high" or "medium" for naturalness over 20 hectares are shown totalling 14,189 hectares.

There is little obvious difference between the two maps.



Map 17 - access to greenspace >20ha within 2Km



Map 18 - access to higher quality greenspace over 20ha within 2Km

A few areas of the NCA do not meet the criteria for access to greenspace over 20 hectares. Appendix 10 shows these areas in more detail. They include:

- The docks in Sunderland and the built-up area inland
- Land east of South Hetton in Easington district
- Thornley, in Easington and Durham district
- Land near Trimdon Colliery and near Trimdon / Fishburn.
- Between Elwick and High Throston in Hartlepool district, extending to near Sheraton in Sedgefield district
- Land near Bradbury / Great Chilton
- South-east of Spennymoor, near Kirk Merrington & Middlestone & Dean Bank
- South of Newton Aycliffe

The majority are tiny areas which are sparsely populated, the only significant exception being Sunderland.

## 6.5 Access to greenspace within 5 kilometres of home (all sites over 100 hectares, up to and including those over 500 hectares)

ANGSt recommendation:

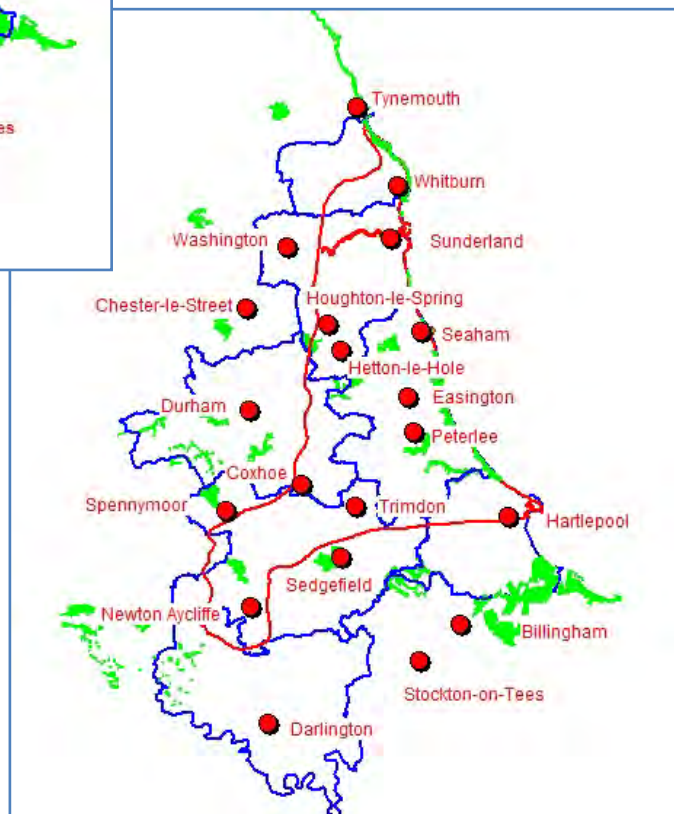
*Nobody should live more than five km from their nearest natural greenspace at least 100 ha in size.*

42 parcels of Accessible Natural Greenspace over 100 hectares were collected, with a combined area of just over 9,574 hectares. Map 19 shows these greenspaces, revealing the dispersed nature of the larger sites.



Map 19 - combined typologies of greenspaces > 100ha, all sites

37 of these sites score “medium” or and “high” for naturalness, totalling 7,240 hectares. Map 20 shows these sites with those allocated a low score for naturalness removed.



Map 20 - sites >100ha scoring high or medium for naturalness



Map 21 - access to greenspaces >100ha within 5km, all sites

To meet the ANGSt criteria residents should have access to sites larger than 100 hectares within 5 kilometres of their homes. This is illustrated in Map 21 which reveals that two areas of the NCA are outside the ANGSt criteria for sites of this size. These are shown in detail in Appendix 10, and are:

- Around Trimdon, Trimdon Grange, Town Kelloe & Kelloe in Durham City Council area
- South of Newton Aycliffe (Aycliffe Village / Aycliffe Industrial Estate)



Map 22 - access to higher quality greenspace >100ha

When the lower quality sites are removed from the analysis (Map 22) an additional area around Washington is revealed to have poor access to high quality greenspace over 100 ha within five km.

## 6.6 Access to greenspace within 10 kilometres of home (all sites over 500 hectares)

ANGSt recommendation:

*Nobody should live more than ten km from their nearest natural greenspace at least 500 ha in size.*

Only two parcels of Accessible Natural Greenspace over 500 hectares were collected, with a combined area of just over 2,303 hectares.

These are shown in Map 23. None of these sites score low for naturalness.

The sites are :

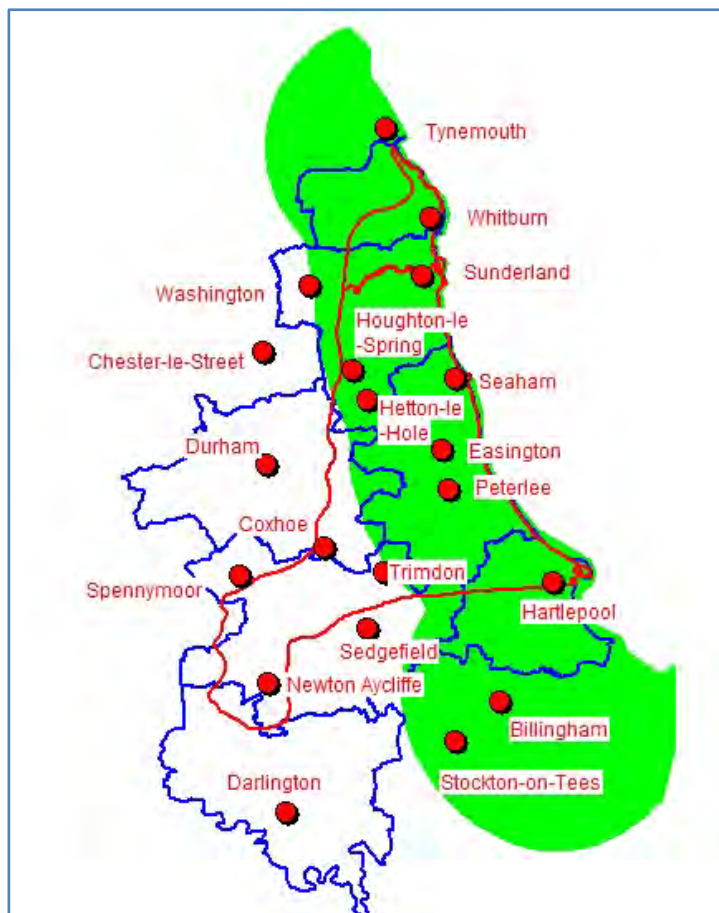
- Durham Coast and Limekiln Gill - part NNR, part LNR, part SSSI
- Tees & Hartlepool foreshore & wetlands, Seal Sands etc - part NNR, part LNR, part SSSI, part RSPB site



Map 23 - combined typologies of greenspaces > 500ha

These sites are along the coast, and are generally long and thin. Access to the coastal strip is likely to be good in some areas, and less good in others. It is possible that in some places which are shown in Map 24 to be within the 10 kilometre buffer zone do not have good access to the coast due to barriers such as main roads or railway tracks.

Generally access to these large sites appears to be good in the east, and poor in the west. Most of the western side of the NCA does not meet the criteria for access to large sites.



Map 24 - access to sites >500ha

Details are given in Appendix 10. Areas not meeting the criteria include:

NCA areas west of an imaginary line broadly 10 kilometres inland from the coast following - Trimdon, Chilton, Kelloe, Cassop, Sherburn Hill, Pitlington & West Rainton, including Fishburn, Bishop Middleham, Newton Aycliffe, Heighington, Coundon, Ferryhill, Cornforth, Coxhoe, Old Quarrington & Old Cassop.

## 7 Recommendations

### 7.1 Improving the quality of the greenspace data

The data collected through this project represents a powerful tool, however assumptions have been made, and attributes have been given to sites based on broad assumptions. While these assumptions are based on sound judgements, the value of the data would be strengthened if some of the assumptions were tested.

The source data was collected by partners for a number of purposes, none of which match exactly the needs of this project. There is a small chance that sites have been missed, or that some sites included in the datasets should be removed.

#### Recommendations

Test assumptions about quality through identifying a geographical area with a mix of sites, and visit these sites and record actual quality scores for naturalness and access. During this process any sites which should not be included would be identified.

The data needs to be updated based on local knowledge, this could be done piecemeal as it is used and new information becomes available. An alternative approach could be to share the data with local authority staff or volunteers (for example Local Access Forum members) with the aim of adding to the information. Examples of where this will add to the data include; sites which are not included in the datasets, sites with no name, sites with unknown access arrangements, sites with low confidence scores relating to quality scores, sites with no known landownership, and amenity spaces with no attribute data describing their purpose.

### 7.2 Refining the quality scoring

The approach to scoring naturalness and access quality was based on a number of assumptions in the absence of any primary information sources. At present the datasets have four columns (Naturalness quality, Naturalness confidence, Access quality, Access confidence) with high, medium and low scores.

The GI Planning Guide <sup>49</sup> introduces a matrix for quality of greenspaces and green infrastructure, (see Appendix 5, section 2), containing nine boxes of actions to move towards a desired state. This matrix neatly combines quality and infrastructure (access) into one action for each site. A similar approach could be taken for this data, which would need to be amended accordingly.

### **Recommendation**

The high-medium-low scores in the typology datasets could be substituted for actions taken from the GI matrix. This would combine ‘naturalness quality’ and ‘access quality’ into one action, which would translate well into action-planning.

### **7.3 Refining the data for local use**

The scale of this project meant that a broad approach has been used to determine access, for example access barriers and site access points have not been considered. These may be particularly relevant to people living close to main railway lines, motorways or dual carriage ways. It is likely that some communities have poorer access to greenspace than the results of this project suggest.

Further analysis is required to determine if the areas appearing to be deficient in greenspace have good access to linear routes. It may well prove to be easier to create linkages through new sections of linear access (for example through permissive path agreements or higher level stewardship agreements) than to create new areas of greenspace

The GI Planning Guide <sup>50</sup> recognises the importance of connectivity and uses a modified form of ANGSt, adding an additional point to the standard :

- That adjacent greenspaces are interconnected; the priority and extent being determined by local decision-making informed by stakeholder involvement.

### **Recommendations**

Test the impact of barriers on access to greenspace. Re-run the ANGSt analysis in an affected area at a smaller scale, taking account of road and rail crossings, and the locations of access points into larger sites. If a significant difference is detected, consider using this approach along main road and rail corridors.

<sup>49</sup> GI Planning Guide, pages 25-6

<sup>50</sup> GI Planning Guide, page 10

Use the linear access dataset as an overlay on areas appearing to be deficient in greenspace, and note any areas which do not have good linear access. These areas will be those that are truly deficient.

Consider further analysis of the interconnectivity of greenspaces as suggested in the GI planning guide.

#### **7.4 Matching datasets to local needs / opportunities**

The ANGSt analysis and interpretation outlined in this report uses assumptions and Lower Level SOAs to approximately calculate the population of the NCA and a broad indication of LNRs per 1000 people. Two of the main assumptions are that population is evenly distributed within each SOA, and that the population of each SOA is 1500 people.

The analysis is not linked to more sophisticated information about population density or local deprivation - in areas of high deprivation it is likely that health inequalities are higher and that car ownership is lower, so improving access or quality of greenspaces in these areas would target investment with the greatest impact.

A more sophisticated approach to population, adequacy and forward-planning would give greater confidence in the results and would target site-based action-planning to local needs, so that most people benefit. Extra dimensions would be added to the analysis.

#### **Recommendation**

GIS could be used further, to overlay information relating to population density (from census), or Indices of Multiple Deprivation (IMD)<sup>51</sup>. The methodology described in the GI Planning Guide could be followed<sup>52</sup>.

#### **7.5 Links to the Planning System**

This audit has identified gaps in the accessible natural greenspace network, which is a first stage towards developing a greenspace strategy. The areas identified as inadequate in the ANGSt analysis need to be improved and linked to implementation mechanisms, such as identifying opportunities through the Planning system.

<sup>51</sup> The Index of Multiple Deprivation dataset is available from the ODPM. See the GI Planning Guide (page 33).

<sup>52</sup> GI Planning Guide, page 33-34

## Recommendation

Local Plan datasets could be overlain with the gap analysis, in order to identify opportunities for improvements to greenspace. Improvements can be considered both in terms of quality of existing sites or of quantity (new sites)<sup>53</sup>.

## 7.6 Improving access to greenspace

The ANGSt analysis reveals that the population of the NCA do not all have adequate access to greenspace.

### 7.6.1 Access to local greenspace (within 300 metres of home)

Areas with poor access to local greenspace are identified in section 6.3. These include:

- Whitburn
- Areas of Sunderland
- A central belt in Seaham
- A large area of deficiency around Easington
- Wheatley Hill & Thornley
- Parts of Hartlepool, and the countryside to the west
- Most of rural Sedgfield and around Trimdon
- Areas around Newton Aycliffe, including Heighington, Kirk Merrington and Coundon

## Recommendation

These areas should be targeted for further analysis with the aim of improving access. As many of these areas are rural they may already have good access to greenspace through the rights of way network, these need to be investigated in more detail. Following a more detailed analysis additional countryside sites may need to be developed, or access to existing sites negotiated, in some of these areas.

### 7.6.2 Access to Local Nature Reserves

Access to Local Nature Reserves in the NCA only just meets the ANGSt criteria. However a large proportion of the population do not have easy access to LNRs. Areas where provision is poor include :

- West of Hartlepool

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<sup>53</sup> This is illustrated in the GI Planning Guide, page 35

- East of Spennymoor
- South of Peterlee
- East of Durham City and West of Easington
- North of Houghton-le-Spring.

### **Recommendation**

Work to identify and develop more LNRs, in particular in the central area and in the more densely populated area north of the NCA.

### **7.6.3 Access to larger areas of greenspace**

Access to larger sites (over 500 hectares) is poor in the west of the area. It is important to remember that when the data has been checked the situation may be improved

### **Recommendation**

Consider working to improve access to large sites. Actions could include identifying some of the larger existing sites to the west of the NCA and connecting these to other sites to create larger parcels of accessible greenspace. The railway paths form a good network and in themselves are good green corridors, it may be possible to create links using, or including, these. For example there are several sites close to Chester le Street which, if linked together, could create a site big enough to meet the ANGSt 500 hectare requirement. Another area worth further investigation is between Spennymoor and Durham City. Some of these sites are outside the NCA boundary and may require new partnerships in order to progress developments.

### **7.6.4 Access to woodland**

The Woodland Trust have carried out a similar analysis of access to woodland, working jointly could be of great benefit.

### **Recommendation**

Liaise with the Woodland Trust to ensure coordination, avoid duplication of effort, and where possible to achieve greater access to larger sites.

## 7.7 Improving awareness of greenspace

The difficulties encountered while compiling the greenspace dataset are revealing. There is no central place the public can go to find out exactly where they can go to enjoy open green space. Confident map readers can find the information they need on Ordnance Survey maps, but the majority of the population are not able to do this, and are unlikely to be able to access such information.

### Recommendation

Consider making information on countryside sites available to the public through an interactive or informative website.<sup>54</sup>

The dataset collected through this project could be made available to the public<sup>55</sup>. This could be approached in a number of ways :

#### Interactive website

- The individual typologies could be available on a website, with people encouraged to make comments or corrections if the data is incorrect
- Such an approach would require disclaimers to warn the public that although the sites are on the map they may not actually be accessible
- Similar to Google Earth, users could upload their own geo-referenced photographs, helping to encourage engagement with the sites. This user-friendly approach will encourage others to explore the locations, and will contribute to understanding and accumulation of information about the sites.
- Encouraging user feedback is a good way to update the quality scores and clean up the dataset, it may also reveal sites which have been missed, in particular informal sites used by the public but not recorded by authority
- Local authorities and other partners could be encouraged to have links to the data from their own websites.

An example of this approach can be seen at :

<http://wildweb.london.gov.uk/wildweb/Welcome.do> where the public are asked to report on naturalness and access to build up picture of local use / value of sites.

#### Informative website

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<sup>54</sup> Note that the licence agreements signed for supply of the GIS data was for this audit only, if the data were to be published the origin data contacts should be informed and new licence agreements entered into.

<sup>55</sup> Subject to agreement with the supplying organisations

- The data could be checked and amended where required before being shared with the public
- This approach will require more resources, as sites will need to be visited
- However authorities are more likely to agree to this approach, as they may fear the repercussions of publishing less than 100 percent accurate access data.

It may be possible to combine the two approaches, depending on the level of commitment of the partnership members. Volunteers or Local Access Forums could be tasked with checking out sites and amending the data for example.