
**HULL CITY COUNCIL &
PMP CONSULT LTD**

**KINGSTON UPON HULL
OPEN SPACE ASSESSMENT -
SITES OF NATURE CONSERVATION
INTEREST (SNCI)**

APPENDIX II
QUALITY ASSESSMENT METHODOLOGY

HULL CITY COUNCIL & PMC CONSULT LTD
KINGSTON UPON HULL OPEN SPACE ASSESSMENT –
SITES OF NATURE CONSERVATION INTEREST (SNCI)

APPENDIX II
QUALITY ASSESSMENT METHODOLOGY

Penny Anderson Associates Limited
'Park Lea'
60 Park Road
Buxton
Derbyshire
SK17 6SN

Project Manager
Alistair Blackshaw BSc (Hons), MSc

October 2008

This project has been undertaken in accordance with PAA policies and procedures on quality assurance.



Signed: _____

CONTENTS

1. INTRODUCTION

- 1.1
- 1.2

2. QUALITY ASSESSMENT METHODOLOGY

- 2.1 Overview
- 2.5 The Criteria
 - 2.6 1. Diversity
 - 2.7 Site supports UKBAP habitats
 - 2.8 Site Supports UKBAP species
 - 2.9 High habitat diversity
 - 2.11 High species diversity
 - 2.13 Site has high potential for HBAP / UKBAP / protected species
 - 2.15 2. Naturalness
 - 2.16 Remnant natural system or long established man-made habitat evident on site
 - 2.17 Remnant rural landscape evident on site
 - 2.18 Part or all of site naturally colonised
 - 2.19 Part or all of site amenity managed greenspace
 - 2.20 3. Rare or Exceptional Features
 - 2.24 Site supports a significant area of a habitat that is rare in the city
 - 2.25 Site supports 1 or more native species that are very rare in the city
 - 2.26 Site supports 1 or more native species that are rare in the city
 - 2.27 Site supports 3 or more native species that are uncommon or rare in the city
 - 2.28 Site supports a range of common and native species
 - 2.30 4. Typicalness
 - 2.31 Outstanding example of 1 or more particular habitat(s) in the city
 - 2.33 Good examples of two or more particular habitats in the city
 - 2.35 Habitats present give local distinctiveness
 - 2.36 5. Fragility
 - 2.37 Species / habitats at risk from succession (lack of management)
 - 2.38 Species / habitats at risk from invasive species
 - 2.40 Species / habitats at risk from recreational pressure
 - 2.41 Species / habitats at risk from litter / flytipping / pollution
 - 2.42 6. Connectivity within the landscape
 - 2.43 The site is a key link in Hull's Green Network
 - 2.44 The site is an important 'stepping stone' feature
 - 2.45 The site is an important linear feature or contains linear features
 - 2.46 Site is adjacent to another SNCI (including those outside the city)
 - 2.47 Site adjacent to other green space (including countryside outside the city)
 - 2.48 7. Recorded history and cultural associations
 - 2.49 Detailed recording of biological history
 - 2.50 Limited recording of biological history
 - 2.51 Site with strong historic associations
 - 2.52 Site with strong historic associations

2.53	8. Community Value
2.55	Site accessible to the public
2.56	Site has high aesthetic or landscape value
2.57	Provides opportunities for contact with nature
2.58	Close to residential areas
2.59	Close to schools
2.60	Provides access out of city
2.61	Provides links between open spaces

REFERENCES

TABLE

1	Interpretation of the Criteria Scores (in text, para 2.4)
---	---

FIGURES

1	Hull SNCI Site Assessment Form
2	Weightings

1. INTRODUCTION

- 1.1 Penny Anderson Associates Ltd. was commissioned by Hull City Council, in February 2008, to undertake an audit of Sites of Nature Conservation Importance (SNCI) within the city boundary. This audit was undertaken as part of a study managed by PMP Consult Ltd to satisfy the requirements of Planning Policy Guidance Note 17 (PPG17).
- 1.2 A major part of the study was to assess the quality of each site using the criteria devised by Ratcliffe (1977) and adopted by DEFRA in their guidance on the identification and selection of non-statutory wildlife sites (i.e. SNCI) (DEFRA 2006).
- 1.3 The quality assessment methodology is highly technical and is based on a largely subjective assessment of the features of a site by an experienced ecologist. It was therefore thought expedient to provide the methodology and a detailed justification for it in a separate appendix. This appendix provides a detailed explanation of the quality assessment methodology used so that the study could be repeated in the future.

2. QUALITY ASSESSMENT METHODOLOGY

Overview

2.1 The quality assessment sheets were designed to give a quick overview of the value of a given site. Hull is unique in its surroundings, a highly developed urban area, within the largely rural East Riding of Yorkshire. It was therefore considered appropriate to assess site quality in the context of the biodiversity resource within the city boundary. This means that the value of each site is relative to the suite of SNCI within Hull and cannot as such be directly compared with those in other areas (i.e. the East Riding). If the value of the city's wildlife sites were considered concurrently with those in the East Riding, most would probably achieve relatively low quality scores only. The quality assessments therefore draw mainly upon information sources that are specific to Hull and the immediate surrounding area, though national policy and guidance was consulted where relevant. The main information sources used in the site quality assessments were:

- The UK Biodiversity Action Plan (UKBAP);
- The Hull Biodiversity Action Plan (HBAP);
- New Atlas of British and Irish Flora (Preston *et al.*, 2002);
- Flora of the East Riding of Yorkshire (Crackles 1990);
- The Birds of Yorkshire (Mather 1986);
- The Plants of Hull : A Millennium Atlas (Middleton 2000);
- Hull Bird Survey 2006-7 (Hull Valley Wildlife Group 2008); and
- Data provided by Hull City Council on SNCI within the city.

2.2 The quality assessment was completed by filling in a computerised form (Figure 1) in Excel which posed questions about the site under 8 broad criteria:

1. Diversity;
2. Naturalness;
3. Rare or exceptional features;
4. Typicalness;
5. Fragility;
6. Connectivity within the landscape;
7. Recorded history and cultural associations; and
8. Community value

2.3 The above criteria were adapted from those which appeared in the '*Natural Environment*' chapter of the '*Hull CityPlan*' (adopted May 2000) and are comparable to those issued by DEFRA for the selection of non-statutory wildlife sites (DEFRA 2006). The criteria are ultimately

based on Ratcliffe's criteria (Ratcliffe 1977), developed for the selection of important conservation sites in the UK, which formed the basis for the selection of Sites of Special Scientific Interest (SSSIs) in England (NCC 1989).

2.4 The quality assessment Excel spreadsheet calculated a grade for each broad criterion based on 'yes' or 'no' answers to a set of sub-criteria (see Figure 1). A value of two points was attributed to each sub-criterion; hence, if a site satisfied a sub-criterion it scored two points. The sub-criteria considered most important were positively weighted (Figure 2). When all of the sub-criteria under a broad criterion were answered, a numerical grade was calculated and this translated into grade between Low (L) and Very High (VH) (Table 1) as shown below:

- Very High – The score was higher than the sum of the un-weighted sub-criterion scores (e.g. for a broad criterion with 4 sub-criteria this was when the score > 8);
- High – The score was within the upper third of the sum of the un-weighted sub-criterion scores (e.g. for a broad criterion with 4 sub-criteria this was when the score > 5);
- Medium – The score was within the middle third of the sum of the un-weighted sub-criterion scores (e.g. for a broad criterion with 4 sub-criteria this was when the score > 2); and
- Low – The score was within the lower third of the sum of the un-weighted sub-criterion scores (e.g. for a broad criterion with 4 sub-criteria this was when the score < 3).

Table 1 Interpretation of the Criteria Scores

Criteria Score	Interpretation of Value
Very High (VH)	The site was considered outstanding in the city for that criteria
High (H)	The site was considered important in the city for that criteria
Medium (M)	The site was considered good in the city for that criteria
Low (L)	The site was considered above average for that criteria

The Criteria

2.5 Below is a detailed description of each of the eight criteria to enable future repetition of the study and to provide a guide to answering each of the sub-criteria questions. It should be noted that these descriptions draw heavily from Ratcliffe (1977).

1. Diversity

2.6 The variety of habitats and species present on a site is one of its most important biological attributes. Habitat diversity is often related to the range of physical characteristics occurring across a site (e.g. soil parent material, soil nutrient regime, soil moisture and landform). These features, in turn, are strongly related to the richness of floral and faunal species present on a site, although some habitats may intrinsically support more species than others of equal value. In the context of the quality assessment, sites were considered more important where the habitats or species present are the subject of Biodiversity Action Plans at a national (UKBAP) or local scale (HBAP).

Site supports UKBAP habitats

2.7 The habitat maps were reviewed to determine whether any of the habitats present on the site accorded with the habitats listed in the revised UKBAP (BRIG 2007).

Site Supports UKBAP species

- 2.8 The species lists were reviewed to determine whether any of the species present on the site accorded with the species listed in the revised UKBAP (BRIG 2007).

High habitat diversity

- 2.9 Sites which were attributed with high habitat diversity were usually those where aquatic (ponds, rivers and streams), terrestrial (grassland) and arboreal (woodland, scrub and hedgerows) were all represented. Sites which had a range of wetland, woodland or grassland types but were missing one of the others were also considered to have high habitat diversity.
- 2.10 It should be noted that this attribute needs to be assessed subjectively and can only be considered reliable when the form is completed by an experienced ecologist.

High species diversity

- 2.11 Sites with high species diversity were usually those which also had high habitat diversity. Exceptions to this general rule were made if a particular habitat was exceptionally species-rich. On the other hand, sites with a high number of impoverished habitats could claim high habitat diversity but not species diversity.
- 2.12 Due to the variation in the number of species a habitat can intrinsically support, no specific cut off point was set for the sub-criterion. It should therefore be noted that this attribute needs to be assessed subjectively and can only be considered reliable when the form is completed by an experienced ecologist.

Site has high potential for HBAP / UKBAP / protected species

- 2.13 Where sites contained the features required by species that have been listed in either local or national BAPs, or species that have been given special legal protection, the relevant species / species groups were recorded on the form. For example, if a site contained linear features such as a hedgerow, a stream or a strip of woodland, it was determined to have a potentially high value for bats as a foraging area (Mitchell-Jones 2004). Sites with semi-natural terrestrial vegetation in combination with ponds were considered to have high potential for amphibians.
- 2.14 Given the level of technical knowledge of the ecology of different species groups required by this sub-criterion, scores should only be considered reliable when the form is completed by an experienced ecologist.

2. Naturalness

- 2.15 Truly natural habitats are rare, if they exist at all, in the UK. The term 'semi-natural' is applied to vegetation in which the constituent species are native to Britain and the structure of the community is similar to that which would be expected in a natural stand. Habitats regarded as having high naturalness in this study were semi-natural at best and were found often to have formed following the abandonment of man-made features. For example, Calvert Sidings (NE42 and NE43) are the remnants of a large area of railway land which fell into disuse in the 1960s: The habitats are considered to have high naturalness because they contain a range of naturally colonised species that reflect the physical attributes of the underlying substrate in terms of pH and nutrient status.

Remnant natural system or long established man-made habitat evident on site

- 2.16 Evidence that a site fulfilled this sub-criterion was usually exhibited through its flora. Plant species that are intolerant of disturbance and high nutrient levels and ubiquitous features of

many sites in the city are a good indication that a habitat has remained untouched for a considerable length of time. Middleton's flora of 2000 indicates that these 'stress tolerators' (Grime *et al.*, 2007) are usually rare or uncommon in the city and are therefore probably good indicators of relatively 'natural' sites. Examples of such indicator plants include brown sedge (*Carex disticha*) for old agricultural grassland, wood small-reed (*Calamagrostis epigejos*) for undisturbed industrial sites, sea club rush (*Bolboschoenus maritimus*) and greater pond-sedge (*Carex riparia*) for wetlands. Woodland cover in Hull is estimated at 0.3% of the land area of the city (Forestry Commission 2008) and none of this is thought to be ancient woodland. One site which scored highly for the naturalness of its woodland was Holderness House, where two ancient woodland indicator species, wood sedge (*Carex sylvatica*) and goldilocks buttercup (*Ranunculus auricomus*), were recorded.

Remnant rural landscape evident on site

- 2.17 Sites which fulfilled this sub-criterion generally exhibited physical features associated with the countryside. Hedgerows, intact or defunct, or large areas of semi-natural grassland (as at Rockford fields) were considered good indicators.

Part or all of site naturally colonised

- 2.18 This sub-criterion was again based on the plant species present, but the requirements were less specific than with the first sub-criterion. To fulfil this sub-criteria, sites had to demonstrate that a significant area of their key habitat(s) had arisen through natural colonisation by native species. Key indicators here were those species that are not normally planted, such as false oat-grass (*Arrhenatherum elatius*), rosebay willowherb (*Chamerion angustifolium*) and great willowherb (*Epilobium hirsutum*).

Part or all of site amenity managed greenspace

- 2.19 This sub-criterion was designed to ensure that all sites received at least some points for naturalness as it was considered that all green spaces in the city were intrinsically more 'natural' than the surrounding matrix of housing, commercial development and roads.

3. Rare or exceptional features

- 2.20 Nature conservation often prioritises rarity, a logical argument given that a rare species is, in general, much more vulnerable to extinction (local or global) than a common one. Rarity is an important criterion, particularly in an urban area such as Hull where change in land use is frequent and often drastic, resulting in a highly fragmented landscape and small, isolated patches of suitable habitat. In this respect, Ratcliffe (1977) suggests that sites which are acting as 'refugia' (e.g. where several rare species occur together), and sites where only one rare species occurs are both worthy of conservation.
- 2.21 Two excellent and recent information sources enabled species rarity to be quantified in the two most commonly recorded groups.
- The Plants of Hull : A Millennium Atlas (Middleton 2000); and
 - Hull Bird Survey 2006-7 (Hull Valley Wildlife Group 2008)
- 2.22 Habitat rarity was subjectively assessed based on the surveyors' experience of the city gained from carrying out the site surveys.
- 2.23 The species and habitats considered rare by the study may be considered relatively common outside the city. However, as Hull is a separate administrative entity from the East Riding, with its own policies and strategic vision, it was thought that rarity should be measured within the

boundary of the city so that decisions made using the study would have an appropriate sphere of influence.

Site supports a significant area of a habitat that is rare in the city

2.24 Of the habitats recorded in the study, extensive areas of several are thought to be rare in the city (though the assessment of rarity in this case is subjective). These are:

- Saltmarsh;
- Reedbed;
- Ponds;
- Rivers;
- Streams / drains;
- Unimproved grassland;
- Semi-improved grassland;
- Semi-natural native woodland; and
- Hedgerows.

Site supports 1 or more native species that are very rare in the city

2.25 This sub-criterion was satisfied if the site supported one or more native species found in less than 7 (5%) of the 119 1km grid squares surveyed by Middleton (2000).

Site supports 1 or more native species that are rare in the city

2.26 This sub-criterion was satisfied if the site supported one or more native species found in less than 19 (15%) but more than 7 (5%) of the 119 1km grid squares surveyed by Middleton (2000).

Site supports 3 or more native species that are uncommon or rare in the city

2.27 This sub-criterion was satisfied if the site supported three or more uncommon native species or any combination of rare and uncommon native species not already counted in the previous two sub-criteria. Uncommon species were found in less than 37 (30%) but more than 19 (15%) of the 119 1km grid squares surveyed by Middleton (2000).

Site supports a range of common and native species

2.28 Common species were those found in more than 37 (30%) of squares during Middleton's (2000) survey of the plants of Hull. This category included species such as tufted hair grass (*Deschampsia cespitosa*) at the lower end of the scale (common) and creeping thistle (*Cirsium arvense*) at the upper end of the scale (abundant).

2.29 This sub-criterion acknowledges that all sites have some rarity value in the city as they support a different range of species to the surrounding matrix of housing, commercial development and roads.

4. Typicalness

- 2.30 Typicalness is a useful criterion in describing how well a site exemplifies a particular habitat within the context of the city. Sites with high typicalness were those containing the best examples of the most natural habitats within the city.

Outstanding example of 1 or more particular habitat(s) in the city

- 2.31 Sites which fulfilled this sub-criterion were generally those which supported a rare habitat. Many of the rare habitats were found to be so scarce that only a few examples remained in the city and, thus, their condition was irrelevant to the assessment. Notable exceptions are Priory cycle track north of spring bank west (NE103) and Andrew Marvell School (NE 349) which both have ponds, a very rare habitat in the city, though on these sites they are in very poor condition.
- 2.32 Assessment of this sub-criterion was subjective and was informed by the assessors having visited most of the other SNCI in the city recently. If the study is repeated it is therefore recommended that assessors are familiar with the ecology of a range of sites in the city.

Good examples of two or more particular habitats in the city

- 2.33 Sites fulfilled this criterion where the assessors felt that the habitats in question were above average examples of that particular habitat type in the city. The assessment took into account not only species richness but structure and extent. The sub-criterion was generally applied to less rare habitats, for example planted woodland with a naturalistic structure or tall ruderal vegetation containing a range of species.
- 2.34 Assessment of this sub-criterion was subjective and was informed by the assessors having visited most of the other SNCI in the city recently. It is therefore recommended, if the study is repeated, that assessors are familiar with the ecology of a range of sites in the city.

Habitats present give local distinctiveness

- 2.35 This sub-criterion was included to ensure that all the sites gained some points for typicalness, as many of the lower ranking sites were found to be important greenspace locally and thus provided local distinctiveness.

5. Fragility

- 2.36 This criterion reflects the degree of sensitivity of habitats and species to environmental change and other factors of negative human influence that are particularly common in an urban setting. If the site supports a rare habitat, the number of points received under each sub-criterion is increased.

Species / habitats at risk from succession (lack of management)

- 2.37 By definition, most semi-natural habitats are dependent on some form of management to maintain them in the desired state. Those habitats that are ephemeral, such as open grassland on skeletal soils, are called seral habitats and are more vulnerable to change than climax vegetation types, such as woodland. Seral habitats will therefore require more frequent management to halt the shift of vegetation to one of the climax types (natural succession) and maintain them in the desired state. Most of the important sites are notable for their seral habitats.

Species / habitats at risk from invasive species

- 2.38 This sub-criterion deals with invasive plants and animals not considered native to the UK. Invasive plants are usually vigorous, robust, patch forming species that are able to take over an area to the exclusion of native flora. They can reduce the extent of an important habitat or

species which then becomes more vulnerable to disturbance and environmental change. Two invasive species were recorded frequently during the study:

- Japanese knotweed (*Fallopia japonica*); and
- Giant hogweed (*Heracleum mantegazzianum*)

2.39 Notably, Himalayan balsam (*Impatiens glandulifera*), a common invasive weed of river banks and woodland (Preston *et al.*, 2002) was not recorded during the study even on the banks of the city's major waterways. This might be because it cannot tolerate the apparently regular cutting that the banks of the River Hull and the land drains undergo.

Species / habitats at risk from recreational pressure

2.40 The current extent of damage by recreation and the future potential for sites to be affected by the following issues associated with recreation was determined based on their location, landform and sensitivity of their habitats:

- Heavy use of a site causing erosion of important habitats through the creation of desire lines (unofficial pathways);
- Dog walking leading to a build up of nutrients from faeces, causing localised enrichment in sensitive habitats;
- Inappropriate use of sites for BMX / mountain bike / motorbike trials, leading to high levels of erosion; and
- Secluded sites becoming hotspots for congregating, leading to fires and associated loss of important habitats.

Species / habitats at risk from litter / flytipping / pollution

2.41 The current extent and future potential for sites to be affected by litter, flytipping and pollution was determined from a visual assessment of the site. It is important to acknowledge the subjectivity of this sub-criterion. In order to minimise the probability of errors arising by differing surveyor opinion, the surveyors spent time synchronising their assessment techniques in the field at the beginning of the study. Using the same two surveyors throughout the study was a further safeguard against this type of error.

6. Connectivity within the landscape

2.42 At the landscape scale, continuous links between sites are of high importance for mobile species, enabling the dispersal of individuals and the flow of genes between populations. In a highly developed urban area like Hull, uninterrupted links are rare, but in cases where sites are separated by a tree-lined avenue or residential street, mobile species such as birds and bats may use the two habitat patches as a continuous site. A 'Green Network' was designated as part of the CityPlan in 2000. This Green Network formed the basis for the assessment of this sub-criterion.

The site is a key link in Hull's Green Network

2.43 The Local Plan map was consulted to determine whether a site was included within the Green Network. Where it was felt that a site's exclusion from the Green Network was unjustified, a justification for its inclusion was made.

The site is an important 'stepping stone' feature

- 2.44 This sub-criterion recognises that sites justifiably outside the Green Network have a role to play in the dispersal of mobile species throughout the city.

The site is an important linear feature or contains linear features

- 2.45 Linear features in the landscape are considered important for the movement of animals, with bats most commonly cited as examples. Nonetheless, small mammals and birds also use linear features such as hedgerows and waterways to move through the landscape. Indeed, the importance of linear features is recognised in Planning Policy Statement 9, Article 10 of the EU Habitats Directive and the UKBAP.

Site is adjacent to another SNCI (including those outside the city)

- 2.46 The Local Plan map was consulted to determine whether a site was adjacent to another SNCI.

Site adjacent to other green space (including countryside outside the city)

- 2.47 The Local Plan map was consulted to determine whether a site was adjacent to another green space. Sites on the edge of the city, adjacent to farmland, also fulfilled this sub-criterion.

7. Recorded history and cultural associations

- 2.48 Non-statutory wildlife sites are part of the Hull's natural heritage. Where sites were also part of the city's cultural heritage or had strong historic associations, their value was increased. Also, some sites have a history of biological recording, making them valuable indicators of change in the urban landscape. Sites with extensive biological records are also much easier to manage as the features of conservation interest are well documented. Managing sites without historical data could cause some potentially valuable, but unknown, feature to be irreversibly damaged before it is actually detected.

Detailed recording of biological history

- 2.49 Sites qualified under this sub-criterion where there was demonstrable evidence of site specific biological recording at regular intervals over a period of at least ten years.

Limited recording of biological history

- 2.50 This sub-criterion was satisfied by sites with at least some recording of species or habitats since they were notified.

Site with strong historic associations

- 2.51 Sites could lay claim to this sub-criterion if they were able to demonstrate strong links to the past (i.e. if they had existed in the same or at least similar state for long periods). For example, research using the internet revealed parts of the Holderness Drain (NE316) to date back to the middle ages. Regardless of the modifications this site has undergone in more recent times, its physical persistence in the same location for many years provides a strong link to the past.

Site with strong historic associations

- 2.52 Sites could lay claim to this sub criterion if they were able to demonstrate strong cultural links. Several sites with historic buildings, such as Haworth Hall (NE196) and Holderness House (NE280), were found to have a rich cultural history. Sites with links to the city's industrial past were also included here.

8. Community Value

2.53 Changes in the countryside and the growth of urban areas have led to a growing disconnection of urban populations from the natural world. Before the Industrial Revolution, many people would have been engaged in rural employment and would have been immersed in a wildlife-rich landscape free from the influences mechanisation, inorganic fertilisers and pesticides that are prevalent today. Wildlife-rich landscapes not only are part of our heritage, but there is mounting evidence that regular visits to such places have associated health and well-being benefits.

2.54 Many of the adopted sub-criteria are subjective, but it is not necessary to have specialist ecological knowledge to answer them.

Site accessible to the public

2.55 Physical access to a site is usually required in order to obtain direct benefits from a SNCI. An affirmative response to this sub-criterion means that subsequent affirmative answers to the remaining sub-criteria in this section will be weighted more highly.

Site has high aesthetic or landscape value

2.56 Sites that qualified for this sub-criterion were large and were generally highly natural in appearance so that they provided a rich visual experience. Sites with landforms that offered a commanding view over the surrounding land were included.

Provides opportunities for contact with nature

2.57 This sub-criterion recognises all SNCI that are accessible to the public offer potential for users to experience a greater wealth of wildlife than the surrounding urban or purely amenity green spaces.

Close to residential areas

2.58 In order to qualify for this sub-criterion sites needed to be roughly within a ten minute walk from the nearest residential area.

Close to schools

2.59 In order to qualify for this sub-criterion sites needed to be roughly within a ten minute walk from the nearest residential school.

Provides access out of city

2.60 This sub-criterion was applied to those sites which provided direct access out of the city, such as the Former Withernsea Railway Line (NE331). It was also applied to sites, such as those which were very large or completely enclosed by vegetation, which provided an experience immersive enough to make the user effectively forget they were still in the city.

Provides links between open spaces

2.61 Sites that were found to provide links between open spaces (Green Corridors) were included under this sub-criterion. Such sites are important as they enable the movement of people between amenity green spaces and SNCI still within a relatively natural environment, enhancing their overall experience.

3. REFERENCES

- Biodiversity Reporting and Information Group (BRIG), 2007. *Report on the Species and Habitat Review*. BRIG, UK.
- Crackles, E., 1990. *Flora of the East Riding of Yorkshire*. Hull University Press, Hull, UK.
- Department for Environment Food and Rural Affairs (DEFRA), 2006. *Local Sites – Guidance on their Identification, Selection and Management*. DEFRA, UK.
- Forestry Commission, 2008. *The value of trees in our changing region – The strategic framework for trees, woods and forests in Yorkshire and the Humber region*. Forestry Commission, York. UK.
- Grime, J.P., Hodgson, J.G & Hunt R., 2007. *Comparative Plant Ecology*. Castlepoint Press. Kircudbrightshire, UK.
- Hull Valley Wildlife Group, 2008. *Hull Bird Survey 2006-7*. <http://www.hull.ac.uk/HBP/hullbirds/index.htm>
- Mather, J.R., 1986. *The Birds of Yorkshire*. Croom Helm, London, UK.
- Middleton, R. 2000. The Plants of Hull: A Millennium Atlas. <http://www.hull.ac.uk/hullflora/>
- Mitchell-Jones, A. M., 2004. *Bat mitigation guidelines*. English Nature, Peterborough.
- NCC, 1989. *Guidelines for the selection of Biological SSSIs*. Nature Conservancy Council, Peterborough.
- Preston, C.D., Pearman, D.A. and Dines, T.D., 2002. *New Atlas of the British & Irish Flora – An atlas of the vascular plants of Britain, Ireland, the Isle of Man and the Channel Islands*. Oxford University Press.
- Ratcliffe, D.A., 1977. *A Nature Conservation Review – Volume 1*. Cambridge University Press, Cambridge, UK.

FIGURES

Figure 1 Hull SNCI Assessment form

1	Hull SNCI Site Assessment Form		
Site name:	Site code	Date of visit	Assessor(s)
Past visits / surveys			
Assessment criteria			Criterion Score
			Qualify?
1. Diversity <i>* give details</i> <i>i. Site supports UK BAP habitats*</i> <i>ii. Site supports UK BAP species*</i> <i>iii. Site supports HBAP habitats*</i> <i>iv Site supports HBAP species*</i> <i>v. High habitat diversity present</i> <i>vi High species diversity present</i> <i>vii Site has high potential for HBAP / UKBAP / protected species*</i>			Numerical score 0 / 12
Comments: 			Overall Score L
2. Naturalness <i>* give details</i> <i>i. Remnant natural system or long established man-made habitat evident on site*</i> <i>ii. Remnant rural landscape evident on site*</i> <i>iii. Part or all of site naturally colonised</i> <i>iv. Part or all of site amenity managed greenspace or allotment</i>			Numerical Score 0 / 8
Comments: 			Overall Score L
3. Rare or exceptional features <i>* give details</i> <i>i. Site supports a significant area of a habitat that is rare in the city*</i> <i>ii. Site supports 1 or more native species that are very rare in the city*</i> <i>iii. Site supports 1 or more native species that are rare in the city*</i> <i>iv. Site supports 3 or more native species that are uncommon or rare in the city*</i> <i>v Site supports a range of common native species</i>			Numerical Score 0 / 10
Comments: 			Overall Score L
4. Typicalness <i>* give details</i> <i>i. Outstanding example of 1 or more particular habitat(s) in the city*</i> <i>ii. Good examples of two or more particular habitats in the city*</i> <i>iii. Habitats present give site local distinctiveness</i>			Numerical Score 0 / 6
Comments: 			Overall Score L

Figure 1 Hull SNCI Assessment form

2	Hull SNCI Site Quality Assessment Form	
Assessment criteria (Continued)		Criterion Score
		Qualify?
<p>5. Fragility * <i>score doubles if site scores over 5 pts in rarity category</i></p> <p><i>Does the site support a rare habitat?</i></p> <p><i>Species / habitats at risk from succession (lack of management)*</i></p> <p><i>Species / habitats at risk from invasive species*</i></p> <p><i>Species / habitats at risk from recreational pressure*</i></p> <p><i>Species / habitats at risk from litter / fly tipping/ pollution*</i></p>		<p>Numerical Score</p> <p>0 / 10</p>
<p>Comments:</p> <p> </p> <p> </p> <p> </p>		<p>Overall Score</p> <p>L</p>
<p>6. Connectivity within the landscape</p> <p><i>The site is a Key link in Hull's Green Network</i></p> <p><i>The site is an important 'stepping stone' feature</i></p> <p><i>The site is an important linear feature or contains linear features</i></p> <p><i>Site is adjacent to another SNCI (including those outside the city</i></p> <p><i>Site adjacent to other greenspace (including countryside outside the city)</i></p>		<p>Numerical Score</p> <p>0 / 10</p>
<p>Comments:</p> <p> </p> <p> </p> <p> </p>		<p>Overall Score</p> <p>L</p>
<p>7. Recorded history and cultural associations * <i>give details</i></p> <p><i>Detailed recording of biological history</i></p> <p><i>Limited recording of biological history</i></p> <p><i>Site with strong historic associations*</i></p> <p><i>Site with strong cultural associations*</i></p>		<p>Numerical Score</p> <p>0 / 8</p>
<p>Comments:</p> <p> </p> <p> </p> <p> </p>		<p>Overall Score</p> <p>L</p>
<p>8. Community value * <i>give details</i></p> <p><i>Is the site accessible to the general public?</i></p> <p><i>Site has high aesthetic or landscape value*</i></p> <p><i>Provides opportunities for contact with nature</i></p> <p><i>Close to residential areas</i></p> <p><i>Close to schools</i></p> <p><i>Provides access out of city</i></p> <p><i>Provides links between open spaces</i></p>		<p>Numerical Score</p> <p>0 / 12</p>
<p>Comments:</p> <p> </p> <p> </p> <p> </p>		<p>Overall Score</p> <p>L</p>

Figure 2 Weightings

Criteria	Basic score	Weighting	Weighted score
1. Diversity			
<i>i. Site supports UK BAP habitats (+1)</i>	2	1	3
<i>ii. Site supports UK BAP species (+1)</i>	2	1	3
<i>iii. Site supports HBAP habitats (-)</i>	2	0	2
<i>iv. Site supports HBAP species (+1)</i>	2	1	3
<i>v. High habitat diversity present (-)</i>	2	0	2
<i>vi. High species diversity present (-)</i>	2	0	2
<i>vii. Site has high potential for HBAP / UKBAP / protected species*</i>	2	0	2
Total	14		
2. Naturalness			
<i>i. Remnant natural system evident on site (+1)</i>	2	3	5
<i>ii. Remnant rural landscape evident on site (+1)</i>	2	1	3
<i>iii. Part or all of site naturally colonised (+1)</i>	2	1	3
<i>iv. Part or all of site amenity managed greenspace (-1)</i>	2	-1	1
Total	8		
3. Rare or exceptional features			
<i>i. Site supports habitat that is rare in the city*</i>	2	2	4
<i>ii. Site supports 1 or more native species that are very rare in the city*</i>	2	3	5
<i>iii. Site supports 1 or more native species that are rare in the city*</i>	2	2	4
<i>iv. Site supports between 3 or native species that are uncommon uncommon in the city*</i>	2	0	2
<i>v. Site supports a range of common native species (-1)</i>	2	0	2
Total	10		
4. Typicalness			
<i>i. Outstanding example of 1 or more particular habitat(s) in the city* (+3)</i>	2	3	5
<i>ii. Good examples of two or more particular habitats in the city* (+2)</i>	2	2	4
<i>iii. Habitats present give site local distinctiveness (-)</i>	2	0	2
Total	6		
5. Fragility			
<i>Species / habitats at risk from succession (lack of management)* (+3)</i>	2	5	5
<i>Species / habitats at risk from invasive species* (+1)</i>	2	1	3
<i>Species / habitats at risk from recreational pressure* (+1)</i>	2	1	3
<i>Species / habitats at risk from litter / fly tipping (+1)</i>	2	1	3
<i>Site features at low risk from above factors (-)</i>	2	0	2
Total	10		
6. Connectivity within the landscape			
<i>The site is a Key link in Hull's Green Network (+3)</i>	2	3	5
<i>The site is an important 'stepping stone' feature (+3)</i>	2	3	5
<i>The site is an important linear feature or contains linear features (+2)</i>	2	2	4
<i>Site is adjacent to another SNCI (including those outside the city) (+2)</i>	2	2	4
<i>Site adjacent to other greenspace (including countryside outside the city) (+1)</i>	2	1	3
Total	10		
7. Recorded history and cultural associations			
<i>Detailed recording of biological history (+2)</i>	2	2	4
<i>Limited recording of biological history (-)</i>	2	1	3
<i>Site with strong historic associations (+2)</i>	2	2	4
<i>Site with strong cultural associations (+2)</i>	2	2	4
Total	8		
8. Community value			
<i>Site has high aesthetic or landscape value (+3)</i>	2	3	3
<i>Provides opportunities for contact with nature (-)</i>	2	0	2
<i>Close to residential areas (+1)</i>	2	1	1
<i>Close to schools (+1)</i>	2	1	1
<i>Provides access out of city (+1)</i>	2	1	3
<i>Provides links between open spaces (+1)</i>	2	1	3
Total	12		