

Local Wildlife Site Guidelines for Greater Lincolnshire

3rd edition

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In December 2004, the Wildlife Sites Review Group (WSRG) met for the first time as a sub group of the Lincolnshire Biodiversity Action Plan Partnership. The members were:

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The document has been reviewed and revised as the 3rd edition by the LWS Panel (and GLNP Team), which now includes:

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1. The Local Wildlife Site system in Greater Lincolnshire

1.1 Overview

- 1.1.1 The wildlife of Greater Lincolnshire is described in a variety of documents, particularly Nature in Lincolnshire – Towards a Biodiversity Strategy (Smith, 1996) and the Lincolnshire Biodiversity Action Plan 2011-2020 3rd edition (LBP, 2011) (subsequently referred to as the 'Lincolnshire BAP'). These should be consulted for information on the habitats and species of the area, and their conservation status.
- 1.1.2 The Local Wildlife Site (LWS) system and these guidelines cover Greater Lincolnshire, in line with the Greater Lincolnshire Nature Partnership (GLNP) remit. This term will be used throughout this document to include the administrative areas of Lincolnshire County, North Lincolnshire and North East Lincolnshire.
- 1.1.3 These guidelines have been developed by the LWS Panel, a working group of the GLNP, and are published by this Partnership. The document is available on the GLNP website (www.glnp.org.uk).
- 1.1.4 This guidance is consistent with Local Sites – Guidance on their Identification, Selection and Management (Defra, 2006) and should be read in conjunction with that publication.
- 1.1.5 The Defra guidance recognises two equivalent designations within the umbrella term Local Sites, these are LWSs and Local Geological Sites (LGSs). The latter replace Regionally Important Geological and Geomorphological Sites (RIGSS) and guidelines for their selection, produced by the LGS Panel in 2009, can be found on the GLNP website (www.glnp.org.uk).
- 1.1.6 Similarly, LWSs supersede Sites of Nature Conservation Importance (SNCIs), which were identified on the basis of local knowledge and were selected without consideration of any formal criteria. In Greater Lincolnshire, the GLNP aims to assess all existing SNCIs using the criteria outlined in this document. To avoid confusion, until sites have been assessed against formal criteria they retain their SNCI status. In this document SNCI is used for SNCIs, SINC, SLINCs and CWSs (see Glossary).
- 1.1.7 The SNCIs, and any newly-identified sites, that satisfy these criteria and are selected by the GLNP are termed Local Wildlife Sites (LWSs). In addition, sites that have not been through the full selection procedure may be referred to as candidate LWSs (cLWSs). The use of these selection criteria will give confidence that those sites which satisfy the criteria have substantive nature conservation value and are of a measurable and comparable standard.
- 1.1.8 Until recently there was no national consensus over nomenclature of Local Site systems. Consequently a variety of terms are used for these sites throughout England, and even within Greater Lincolnshire. See the Glossary for definitions of many of these terms.



1.2 Local Wildlife Sites and their purpose

- 1.2.1 LWSs, along with biological Sites of Special Scientific Interest (SSSIs), are the most important places for wildlife at a local level. The GLNP seeks to identify every site that satisfies the selection criteria presented in Part 3 of this document, thus recognising a comprehensive suite of sites. In contrast, through notification of the biological SSSI series, Natural England seeks to protect a representative suite of habitats and assemblages of species (JNCC, 1988); not all sites which meet SSSI criteria are notified.
- 1.2.2 The vision for the Local Sites system in Greater Lincolnshire is:
To establish an up to date comprehensive suite of sites of substantive wildlife and geological value.
- 1.2.3 Although a non-statutory designation, LWSs are often referred to within statutory documents and guidance aimed at protecting local biodiversity (see Section 1.3). These sites also serve to connect and buffer land with statutory designations, and to complement other mechanisms such as Environmental Stewardship and legal protection of habitats and species (see Section 4 of the Lincolnshire BAP [LBP, 2011]).
- 1.2.4 The identification and selection of Local Sites has most impact and implications within the planning system (see Section 1.3). Identification and selection of LWSs establishes their wildlife value, ensuring that they are recognised and appropriately surveyed and mitigated for within development plans.
- 1.2.5 The LWS system helps to compile data on the condition and conservation management status of semi-natural habitats in the wider countryside, outside of statutorily protected sites. Local authorities are required to report on indicators of local biodiversity as a means of assessing the effectiveness of their planning systems (see Section 1.3).
- 1.2.6 In prioritising allocation of funds, such as those set aside for agri-environment schemes, agencies are potentially able to target grants towards LWSs. Other bodies may be able to channel resources to provide advice and practical assistance with management of these important sites, for example local volunteer groups maintaining urban green space.
- 1.2.7 LWS surveys are also used to identify and map Lincolnshire BAP habitats. The Lincolnshire BAP identifies the priorities for habitat and species conservation and enhancement within Greater Lincolnshire and sets targets for achievement. Appendix 1 lists all of the actions directly related to LWSs from the Lincolnshire BAP (3rd edition). The condition of LWSs provides a measure of BAP achievements at local and national levels.
- 1.2.8 LWS selection provides owners/managers with information that can result in positive outcomes for flora and fauna. One example of a positive outcome is the already

sympathetic owner/manager, who will view the site selection as recognition of their past and present management, and who will therefore continue on that path. Other owners/managers with less prior knowledge of the biodiversity on their land may be encouraged to improve their management for wildlife or may make a conscious decision not to begin activities that might be harmful.

- 1.2.9 LWSs also have the potential to contribute to the quality of life and well-being of the community and reflect the importance of conservation for scientific purposes, education and enjoyment.

1.3 National context

- 1.3.1 In 2005, Planning Policy Statement 9 (PPS9) 'Biodiversity and Geological Conservation' outlined that *"Sites of regional and local biodiversity and geological interest, which include Regionally Important Geological Sites, Local Nature Reserves and Local Sites, have a fundamental role to play in meeting overall national biodiversity targets; contributing to the quality of life and the well-being of the community; and in supporting research and education."* (ODPM, 2005a, Paragraph 9).
- 1.3.2 The guide to good practice on planning for biodiversity and geological conservation published in 2006 specified that *"Local authorities should consider how local sites can be protected and enhanced. The Core Strategy will indicate how the authority and its partners intend to promote biodiversity and geological conservation. Good practice would be to include a strategy for local sites which would include positive proposals for protection and enhancement and how they will work to this end with landowners and developers of these sites."* (ODPM, 2006, Paragraph 4.40).
- 1.3.3 Government Circular 06/2005 on the same subject stated that *"Defra will be issuing separate guidance on sites of regional and local biodiversity and geological interest..... The guidance will provide advice on the development and management of systems to identify these sites. It will propose frameworks and standards for their operation as well as for the selection, protection and management of the sites themselves."* (ODPM, 2005b, Paragraph 95).
- 1.3.4 The Defra guidance on Local Sites followed as promised in 2006, and the document describes the legislative origins and policy context for Local Sites in detail.
- 1.3.5 In 2012, the National Planning Policy Framework (NPPF) replaced the Planning Policy Statements; however Circular 06/2005, relevant to Local Sites, remains an active document. Much of the wording regarding protection of local biodiversity remains the same as PPS9, and the document requires that local nature conservation be considered in developing planning policy.

It confirms the practice laid down in PPS9 that *"Local planning authorities should set criteria based policies against which proposals for any development on, or affecting, protected wildlife or geodiversity sites or landscape areas will be judged."* (DCLG, 2012a, Paragraph 113). These LWS guidelines and selection criteria fulfil the requirement for one such criteria-based planning policy where local planning authorities chose to endorse them. The NPPF makes references to Circular 06/2005 and the Defra guidance on Local Sites in support of identifying local designations, including Local Sites.

The process of *"[identifying and mapping] components of the local ecological networks, including.....locally designated sites of importance for biodiversity"* in planning policies is cited as a means of minimising the impacts of development on biodiversity and geodiversity in the natural environment (DCLG, 2012a, Paragraph

117). The NPPF also reinstated Local Plans as the spatial planning strategy, which had been replaced by Local Development Frameworks (LDFs) for a short time.

- 1.3.6 In 2011, the ‘Single Data List’ replaced the ‘New Performance Framework for Local Authorities and Local Authority Partnerships: Single Set of National Indicators’. National Indicator 197 was replaced by the equivalent Indicator 160-00: Proportion of Local Sites where positive conservation management is being achieved. It states that *“Local authorities have an important role in delivering the UK's international and EU targets to halt the loss of biodiversity. Data on effectiveness of local delivery is essential. More than 42,000 LWSs exist, covering over 5% of England and containing many important priority habitats. Their effective conservation is key to meeting national and international objectives for biodiversity.”* (DCLG, 2012b).

In Greater Lincolnshire, the County Council and the two unitary authorities are expected to report to central government on this measure of performance on local biodiversity annually. The local authorities responsible for each district within the County Council’s area should be able to provide their share of the total figures.

Data provided should be no more than five years old. If necessary a desk-based study could provide recent evidence of a positive conservation management status, especially where surveys are restricted by financial constraints.

- 1.3.7 A Defra guidance note on the collection of data on improved local biodiversity (Indicator 160-00) states that documented evidence of the positive conservation management status of Local Sites must be provided and that *“the nature of the management activity appropriate to interest features of a site will commonly be defined within one, or more of the following:*
- *site management plan;*
 - *management schemes – agri-environment or conservation management agreement or scheme;*
 - *relevant Biodiversity Action Plan (including habitat action plan, species action plan or local biodiversity action plan);*
 - *management guidance and advice.”*

This guidance also states that: *“Where an informed assessment has been made within the last 5 years and ... this assessment finds that no intervention or action is needed at present to conserve the features of a site, ... this can score as positive management.”* (Defra, 2012). Further details can be found in the document, which also states that the *“Local Authority should work with the Local Site Partnership to report on the indicator”* (Defra, 2012).

- 1.3.8 Within the wider conservation policy context, Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 requires local authorities in England to consider biodiversity in the execution of their duties as land managers and service providers (Anon, 2006). Section 13 of the Planning and Compulsory Purchase Act 2004 requires local authorities to be aware of the environmental characteristics of their area that may affect development (Anon, 2004).

- 1.3.9 In 2010 the Lawton Review advocated the need to “*enhance the resilience and coherence of England’s ecological network..... summarised in four words: more, bigger, better and joined.*” (Lawton et al., 2010). England’s wildlife sites were divided into three tiers: those with a high level of protection (e.g. SSSIs); those without full protection (e.g. LWSs); and landscape-scale designations (e.g. AONBs). The review emphasised that better protection, connection and buffering of these high quality sites (as well as identification of more sites) is key to making space for nature and ensuring that our wildlife is more resilient to factors such as climate change.

In the 2011 Natural Environment White Paper entitled ‘The Natural Choice: securing the value of nature’ and in ‘Biodiversity 2020: A strategy for England’s wildlife and ecosystem services’ the Government responds to the findings of the review and makes a number of commitments towards achieving a more coherent and resilient ecological network (Anon, 2011 and Defra, 2011).

- 1.3.10 In 2012 Local Nature Partnerships were added to the Duty to Cooperate under Regulation 4 of The Town and Country Planning (Local Planning) (England) (Amendment) Regulations 2012. This requires that local authorities, county councils and other prescribed bodies cooperate with each other to address sustainable development in the preparation of local development documents, marine plans and activities that support such documents.

Various clauses are in place, but the addition paves the way for Local Sites to be embedded within all of the planning processes as an environmental element of sustainable development.

1.4 The GLNP and Local Wildlife Site Panel

- 1.4.1 Defra guidance on Local Sites recommends the formation of a Local Sites partnership. In Greater Lincolnshire the GLNP has taken on this role. The LWS Panel is a working group of the GLNP and does the majority of the work on the LWS system, but all recommendations must be formally endorsed by the GLNP Steering Group (GLNP SG). The LWS Panel will hereafter be referred to as the Panel.
- 1.4.2 The role of the Local Sites partnership in Greater Lincolnshire has been agreed as:
- Develop and document selection criteria and guidelines.
 - Review and revise the selection criteria, guidelines and system regularly.
 - Assess candidate sites against the criteria.
 - Be responsible for site selection.
 - Record the reasons for selection or rejection of each site.
 - Allow site owners/managers the opportunity to comment.
 - Establish a process for recording and monitoring the condition of selected sites.
 - Recommend de-selection of sites that no longer qualify.
- 1.4.3 The agreed quorum is four Panel members.
- 1.4.4 The Panel meets as necessary to assess sites against the agreed selection criteria. Meetings usually take place over the autumn/winter period, between survey seasons, to consider all the sites that were surveyed during the previous spring/summer. Meetings may also be scheduled to consider individual owner/manager comments, changes to the conservation management status of sites, or any other issues relevant to the LWS system. Alternatively, information may be circulated by email and votes made remotely.
- 1.4.5 The decision making process is well-documented, transparent and consistent; details are given in Section 2.4. Following assessment against the criteria, the Panel makes one of the following recommendations for endorsement by the GLNP SG:
- To select the site as an LWS (and to de-select the site as an SNCI if applicable).
 - To reject the site as an LWS (and to de-select the site as an SNCI if applicable).
 - To defer the decision in order to gain additional information.
- 1.4.6 The Chair of the Panel is nominated and elected annually. New Panel members can be nominated by the Panel at any time. These nominations are taken to the next GLNP SG meeting for endorsement. Members are drawn mostly from statutory agencies, nature conservation organisations and local/unitary authorities; they must all have ecological expertise, or possess adequate technical or local knowledge.
- 1.4.7 Local authorities are invited to nominate a representative to attend Panel meetings when sites in their authority area are being considered. It is expected that the site surveyors will also attend relevant meetings. The Panel may occasionally seek the opinion of the Lincolnshire Naturalists' Union, county recorders, and other wildlife experts or relevant organisations.

1.5 Data management and system review

- 1.5.1 Species data relating to sites (whether selected as LWSs or not) is held by LERC on behalf of the GLNP, and is managed according to its published policies and procedures in line with National Biodiversity Network (NBN) guidelines. All records undergo a validation procedure, as described in the LERC Policies and Forms guidance.
- 1.5.2 The GLNP Team provides the secretariat and administrative support for the LWS system and Panel. Information on surveys, the selection process, owner/manager feedback, correspondence and decision making for each site is stored and maintained by the GLNP Team in its purpose built database.
- 1.5.3 Defra recommends that *“locational details should be sent to relevant decision-makers with further information on the site’s features and interest as appropriate”* (Defra, 2006, Paragraph 71). In Greater Lincolnshire this is achieved through Service Level Agreements (SLAs) with the GLNP (see Paragraph 2.4.11).
- 1.5.4 As recommended by Defra (2006), the Panel and GLNP regularly review these guidelines and assess whether:
- The system is operating in the most efficient way to achieve its aims.
 - The sites selected represent an adequate selection of sites of nature conservation value in Greater Lincolnshire.
 - There is sufficient information on the condition of LWSs.
 - Measures for LWS conservation and management are effective.
- The review also includes consideration of the effects of climate change on habitats and species.
- 1.5.5 If the selection criteria are changed following a review, sites are not normally reassessed until they are revisited as part of the 5-10 year rolling monitoring programme.
- 1.5.6 The revision that led to the 2nd edition of this document involved the inevitable content and policy updates, clarification of certain issues, review of species lists and threshold scores, and the inclusion of sample letters. Also, the acid peatland criteria Pe1 and Pe2 were amended slightly to become AP1 and AP2, and a criterion for purple moor grass and rush pasture was included (PMG1).
- 1.5.7 The revision that led to the 3rd edition of this document included further updates and minor revisions, together with the inclusion of criteria for brownfield mosaic (BM1) and grazing marsh (GM1, GM2 and GM3). There was a major overhaul of the woodland criteria to enable more equitable assessment of ancient, secondary and wet woodland sites; where before the criteria favoured ancient woodlands due to the scoring species that were used. Criteria WD2, WD3 and WD4 became WD2a, WD3a, WD3b and WD4a. The ‘Swamp, marsh and fen’ criteria section was renamed ‘Wetlands’ and the criteria were changed from Sw1, Sw2, Sw3 and Sw4 to We1, We2, We3 and We4. The freshwater criteria, that previously shared a scoring species

list but had different flowing (Flo1-4) and standing water (Sta1-3) criteria and thresholds, were amalgamated to become FW1, FW2 and FW3. The mosaic criteria were replaced (with the exception of Mos1) with the more appropriately named supplementary features criteria (Sup1, Sup2, Sup3, Sup4 and Sup5). The criterion PMG1 for purple moor grass and rush pasture was removed; on consideration its application in Greater Lincolnshire was thought to be inappropriate.

2. System procedure

2.1 Overview

- 2.1.1 Lincolnshire Wildlife Trust (LWT) began sending formal lists of important wildlife areas in Greater Lincolnshire to the local authorities in the 1970s; the process of identifying sites began more than 20 years before that. The creation of nature reserves and designation of Sites of Special Scientific Interest (SSSIs) has helped to conserve the very best of these sites. Such sites are now relatively well protected from damaging activities; the selection of LWSs places much more emphasis on wildlife in the largely unprotected wider countryside.
- 2.1.2 In most cases, LWSs do not overlap with sites of SSSI status. The SSSI designation provides protection for nationally important sites whose interest may be biological, geological, geomorphological or any combination of these. Where a SSSI contains wildlife features of local significance that are not part of its national conservation objectives, these may be considered for LWS selection. Geological or geomorphological SSSIs are considered for LWS selection. Consideration is also given to selecting sites receiving other protection, such as Local Nature Reserves (LNRs) and nature reserves managed by voluntary bodies.
- 2.1.3 Where geodiversity and biodiversity interests coincide on a site, it is selected as both an LWS and an LGS. The Panel and GLNP SG agreed this approach because the conservation management statuses of the wildlife interest and the geological interest have a high likelihood of contradicting each other. In order to make an appropriate positive or negative conservation management status decision for every Local Site, they are considered as individual sites sharing the same location.
- 2.1.4 Candidate LWSs can potentially be brought to the attention of the GLNP by anyone, but are most often identified by the local authority or GLNP Partners. Site surveys are then undertaken and the data is given to the GLNP for analysis and storage.
- 2.1.5 Sites are selected (or not) by the GLNP using a two-stage process whereby the Panel is presented with the survey data from which they make a decision entirely based on the wildlife and conservation value of the site. The owner/manager is then consulted and given a chance to comment on the application of the selection criteria. In order to conclude the selection process, the recommendation of the Panel is presented to the GLNP SG for endorsement (or not).
- 2.1.6 Finally, the GLNP notifies each local authority (that it has an SLA with) of the sites selected within their area. Sites are designated within the planning system and Local Plan and most systems afford some (non-statutory) protection of Local Sites as defined by a robust and evolving evidence base and agreed selection criteria.
- 2.1.7 Figure 1 fully illustrates the LWS system process.



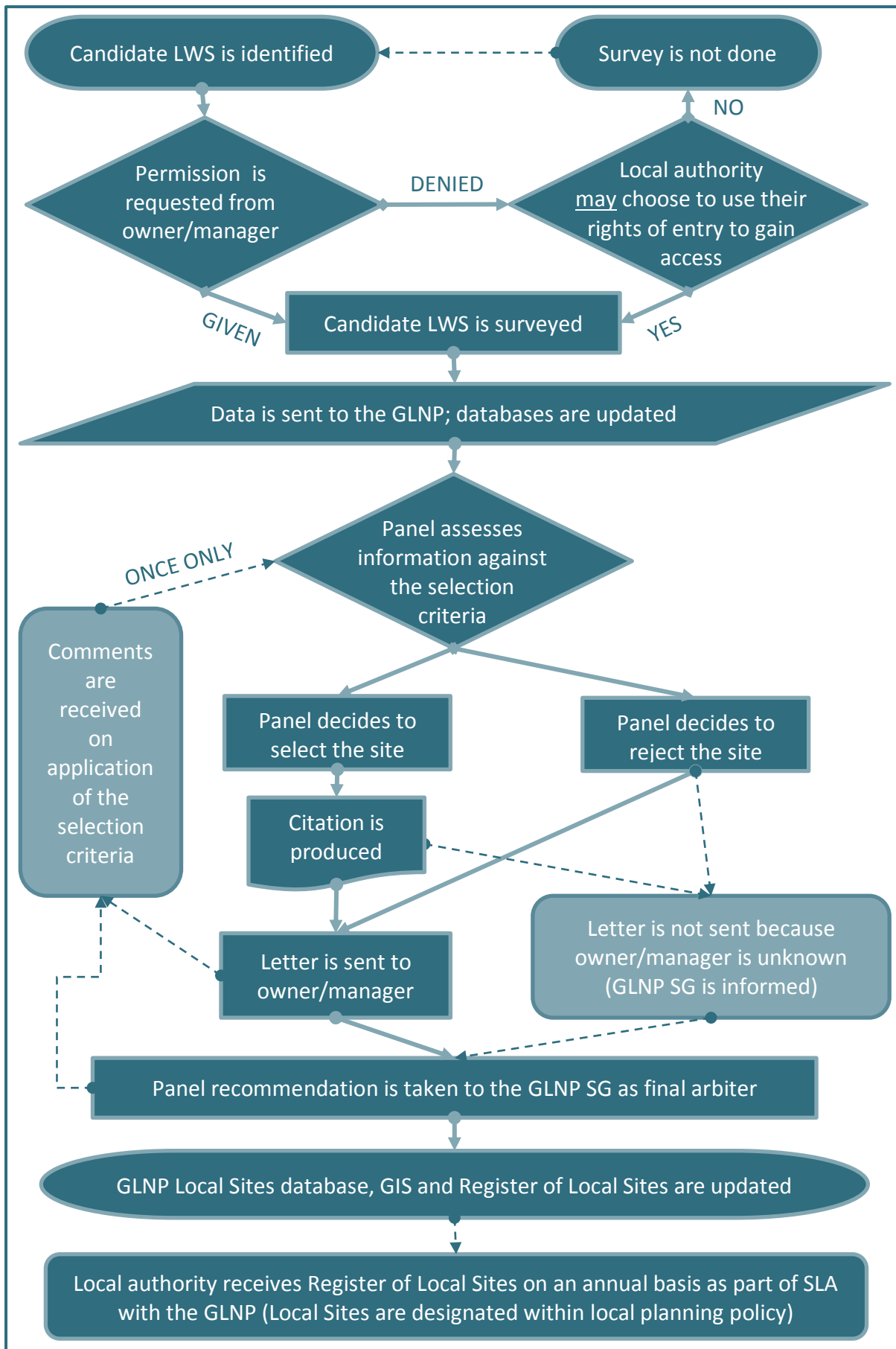


Figure 1: LWS system process for Greater Lincolnshire

2.2 Development of the selection criteria in Greater Lincolnshire

- 2.2.1 In 2001, LWT drafted the first criteria for the selection of 'County Wildlife Sites' (see Glossary) in consultation with local experts and based to a significant extent on similar documents that had been produced in other counties. The draft guidelines and criteria were field tested in four pilot areas during 2004 and then work began to produce a final version. A Wildlife Sites Review Group (the equivalent of what is now the LWS Panel) was set up to carry out this task, under the auspices of the Lincolnshire BAP Partnership (now the GLNP). The first published guidelines and criteria appeared in 2006.
- 2.2.2 In developing the criteria careful consideration was given to the character of Greater Lincolnshire as described for Natural England's Natural Areas, and to the conservation priority given to each habitat locally in the Lincolnshire BAP. The merit of giving different weightings to criteria in different areas was considered, but these considerations were dismissed as adding nothing to the selection process.
- 2.2.3 The standard set of criteria for site selection recommended for use by Defra, and known as the Ratcliffe approach outlined in the Nature Conservation Review 1977, was also considered. Table 1 gives some examples of how these have been used in the development of the selection criteria in Greater Lincolnshire.

Table 1: Application of the Ratcliffe approach in Greater Lincolnshire

Criterion	Examples of application in these selection criteria
Size or extent	- Minimum size requirements are applied to nearly all of the selection criteria. - Woodlands are awarded an extra point for every 5ha of area (up to two points), recognising the importance of size for this habitat.
Diversity	- Criterion threshold scores reflect an agreed minimum level of valuable species diversity within habitats. - The inclusion of 35 different selection criteria adequately represents the habitat diversity of Greater Lincolnshire at a landscape-scale.
Naturalness	- Semi-natural habitats are the main focus of these criteria. Recreated and restored sites are considered very carefully before being selected by the Panel. - Ancient woodland is one of our most 'natural' habitats; these sites automatically satisfy the selection criteria in most cases.
Rare or exceptional features	Sites can be selected for the presence of rare species or exceptional features using the criteria Sup1, Sup4 and Sup5.
Fragility	- The minimum size for the grassland criteria is set relatively low because remnant grasslands often occur in isolated pockets such as roadside verges; these sites are particularly fragile and equally valuable. - Some of the sites that automatically satisfy the criteria, for example those with sand dune habitats, are very susceptible to changes in management and/or environment.

Criterion	Examples of application in these selection criteria
Typicalness	Some habitats such as calcareous grassland, saltmarsh or mudflats are very typical of the Greater Lincolnshire landscape and each of these has its corresponding selection criterion.
Recorded history and cultural associations	- Areas of wood-pasture, parkland and traditional orchard often have significant historic and cultural associations; these criteria do not have botanical thresholds allowing sites to satisfy the criteria based on valuable features. - Grazing marsh has particularly important cultural connections along the coast in Greater Lincolnshire, hence its inclusion in the 3rd edition of these guidelines.
Connectivity within the landscape	Sup2 and Sup3 allow the selection of sites that buffer and connect other sites of substantive nature conservation value, but only where they add value.
Value for appreciation of nature	All of the sites selected by the Panel have high value for appreciation of nature, because they all have an agreed standard of wildlife interest that is more likely to benefit those individuals that are lucky enough to visit them than, for example, an improved grassland.
Value for learning	All of the sites selected by the Panel have high value for learning, because they all have an agreed standard of wildlife interest and this can be used as a basis for education and further study.

- 2.2.4 In formulating the selection criteria those developed for SSSI designation and for Higher Level Stewardship Farm Environment Plan feature identification were also referred to. The GLNP consulted widely to gain a consensus on the definition of substantive nature conservation value in the Greater Lincolnshire context. This consultation was particularly important in setting thresholds for the scoring species for each habitat.
- 2.2.5 The scoring plant species listed in each table have been drawn up in consultation with naturalists who have specific knowledge of Greater Lincolnshire's habitats and their associated indicator species (see Appendix 11 for a comparative list of all scoring species). In the case of ancient woodland, the major part of the list comprises species derived from a detailed study of woodlands in central Lincolnshire in the 1970s and 80s (Peterken, 2000).
- 2.2.6 Scientific and common names of plants in these guidelines follow those in the New Flora of the British Isles, 3rd edition (Stace, 2010). Scientific names of the bog-mosses relevant for Greater Lincolnshire (listed at the end of Appendix 11) follow those in Mosses and Liverworts of Britain and Ireland: a field guide (BBS, 2010). The bird names used follow those used by the British Ornithologists' Union¹.
- 2.2.7 The first attempt to produce selection criteria (Pike, 2001) allocated scores of one to five to all listed plant species, reflecting the differing significance of each one. This complex approach was discontinued, because a comparison with the simpler one-

¹ <http://www.bou.org.uk/british-list/>.

point-per-species scoring method revealed no significant differences in site selection.

Some difficult groups (bog-mosses, polypody ferns, eyebrights, water-starworts, restharrow and stoneworts) are allowed no more than one point altogether. This method enables more equitable comparison between sites because most surveyors do not attempt to identify them to species level. Hybrids, even where one or both parents are scoring species, are not scored.

- 2.2.8 The level at which an index threshold is set directly influences the number and quality of selected sites. For this reason data from surveys is regularly used to test the impact of different thresholds, and to reflect local and national trends in abundance and distribution. Changes are made to thresholds if it is agreed to be worthwhile, and revisions highlighted in the latest edition of the guidelines.
- 2.2.9 Many of the criteria refer to minimum size requirements. Though some small habitat fragments might have value, it would not be practical to select every one. Furthermore, such sites are much more vulnerable to damage and may be unlikely to retain their wildlife value. The size limitations have been set quite low to reflect the average size of SNCl and LWSs in Greater Lincolnshire.

There is no maximum size for LWSs, providing recording has been carried out to a satisfactory level of detail (see Appendix 3) and the data requirements are satisfied for each constituent part.

- 2.2.10 It was decided that the emphasis of these criteria would be on botanical data, using it to determine the type of semi-natural habitat present on each site and to ascertain its likely value for wildlife. Capable botanists are both fairly numerous and able to identify a high proportion of the plant species on site in a relatively short amount of time. In contrast, only a few faunal groups are as well known, for example birds and butterflies. Most other taxonomic groups, notably the hugely diverse invertebrate fauna, are much less well studied and often there may be only one or two county experts per species group.
- 2.2.11 Of the 35 criteria, only eight use faunal species assemblages to assess site value. Grazing marsh is often botanically poor; therefore an assessment of the presence of characteristic bird species is used in the criteria. The criteria FW1, FW3, We3 and We4 use freshwater invertebrate populations as a measure of habitat quality (see Paragraph 2.5.2).

In most other cases, it has been agreed by the Panel that the selection of sites using habitat-based criteria will lead to conservation of the majority of faunal species by association. Examples of this include diverse butterfly populations on calcareous grassland, and saproxylic beetles in wood-pasture and parkland.

Surveyors are asked to record all faunal species that they observe (and are able to identify) while on site. The main issues with recording fauna are the difficulty in

identification of some groups (mainly invertebrates); the additional time or number of visits that may be required; and whether the evidence is sufficient to indicate that a site is being used regularly (for feeding or breeding) and not just in passing.

The Sup5 criterion (previously Mos4) can be used for sites when no other criteria are satisfied and the Panel feel that a species (or suite of species) that has been recorded on site would benefit from LWS selection. Sites that support species which are rare or threatened locally or nationally, particularly those at the edge of their range, should be considered under this criterion.

2.2.12 Some of the criteria (WD3b, GM3 and BM1) include an assessment of additional habitat features that are an important means of alerting the Panel to potential faunal interest. These features can all be recorded during a standard LWS survey. Bryophyte, lichen and fungi communities are treated in a similar manner in these criteria, using a simple assessment of their diversity and abundance. Sup4 can be used in a similar way as Sup5, but for additional habitat features of interest instead of species populations.

2.2.13 Habitat mosaics are important for a large number of invertebrates and other fauna that require a range of different habitats within a limited distance. Mos1 allows selection of combinations of habitats, reflecting the concept that suites of habitats can be of great wildlife value, even if the individual components are not particularly rich in scoring plant species.

Sup2 and Sup3 are intended to provide the option of adding important subsidiary habitat to areas that are of at least LWS quality. The idea of linking and buffering sites, that are in effect stepping stones, is very important for species that are vulnerable when surrounded by inhospitable habitat. Connectivity within the landscape is becoming more and more important as vulnerability increases due to the impact of climate change.

2.3 Site identification and data requirements

- 2.3.1 The majority of SNCIs already referred to in local planning policies are quite likely to satisfy one or more LWS criteria. In the past therefore, existing SNCIs have been used as the starting point for the selection of LWSs. However, there are many sites of considerable wildlife interest that were not identified as SNCIs. Therefore a positive effort is being made to identify and assess such sites in order to provide satisfactory LWS coverage. These new candidate sites can be proposed by anyone at any time, by contacting the GLNP Team.
- 2.3.2 Useful information about a site can be obtained remotely through aerial photography, but ground-truthing is essential for an adequate evaluation.
- 2.3.3 It is very important to use recent data for LWS assessment because changes to habitat and ecological communities can occur relatively quickly. LWS survey data should be less than 10 years old, but ideally no more than five years old.
- 2.3.4 Site owners and managers are contacted beforehand and asked for permission to access and survey the site (see Appendices 3, 4, 6 and 7). However, Defra guidance says that all sites that satisfy the criteria should be selected (Defra, 2006, Paragraph 54). There will be times when a survey is needed and the owner/manager has refused permission to enter the site.

In such cases the local authority may choose to use their rights of entry to gain access to the land; the owner/manager is always informed if this course of action is taken. This right is outlined in Sections 324 and 325 of the Town and Country Planning Act 1990, and states that *“Any person duly authorised..... by a local planning authority may at any reasonable time enter any land for the purpose of surveying it in connection with the preparation, revision, adoption or approval of a local development document.....”* (Anon, 1990), and is used entirely at the discretion of the local authority involved.

- 2.3.5 Surveys are carried out by competent ecologists/naturalists who are able to record all of the information required to make an assessment, as described in Appendices 3 and 4. Surveyors must be able to identify vascular plants, including difficult groups such as ferns, grasses, sedges and pondweeds, at various stages of growth, with or without flowering material. If necessary, surveyors should be able to provide the Panel with evidence of their skills and experience.
- 2.3.6 Large (or long linear) sites are divided into more manageable recording units or subsites and the same data supplied for each of these subsites as is supplied for one small site (see Appendices 3 and 4).
- 2.3.7 The main objective of the baseline survey is to carry out a botanical survey and record the habitats and site features that are present using the standard survey form provided (see Appendix 2). The use of tick boxes should prompt appropriate investigation whilst in the field, and make recording as swift, comprehensive and

consistent as possible. Appendix 3 provides an outline of the baseline (and full) survey procedure and the data that should be provided.

- 2.3.8 Monitoring of the condition and management of LWSs is required as an on-going process within the Local Site system. Defra guidance states that “*Monitoring is a quantity or quality based measurement of the features for which the sites were selected with reference to desired target levels.....as a minimum, to maintain the features for which the site was selected.*” (Defra, 2006, Paragraph 82). For large administrative areas a 5-10 year rolling programme is recommended to keep data current. The monitoring survey procedure and data requirements are outlined in Appendix 4 and discussed in Paragraphs 2.4.15-19.
- 2.3.9 Previously, existing external data may have been used as additional information when assessing LWSs, but this information was seldom used in isolation. However, given the increased pressure to assess sites against the criteria and possible decreased access to funding within local authorities, there may now be a justification for greater use of existing data from external sources. Such external data must adhere to the strict data requirements of the Panel; these are laid out in Appendix 10. Use of existing data to assess a site as an LWS does not occur without the owner/manager’s knowledge.
- 2.3.10 Publicly held data can be used for LWS assessment, even if it has been obtained for other purposes. Examples include data submitted as part of an Environmental Statement or a planning application, or data acquired by local authorities using their rights to enter land (see Paragraph 2.3.4).
- 2.3.11 In general the GLNP prefer electronic data provision. Site boundaries can be supplied as GIS layers or tables, while species lists are better as spreadsheets; these can be viewed within GIS and automatically imported into the LERC database.

2.4 Decision making and site selection

- 2.4.1 Following site surveys, the data is submitted to the GLNP and presented to the Panel for consideration. The Panel's decisions are based on the guidelines laid out in this document, and impartial use of professional judgement, to ensure consistency.
- 2.4.2 The decision making process begins when a list of candidate LWSs is sent to the Panel by a member of the GLNP Team; ideally this happens at least one week before each meeting to allow enough time to consider the information. A GIS layer showing the proposed site boundaries is available upon request, and is on display in the Panel meeting. Site descriptions and full species lists are also made available during the meeting.
- 2.4.3 During assessment the Panel decides whether the site satisfies at least one of the selection criteria. Sites that satisfy one or more criteria are normally selected by the Panel, providing members have confidence in the site data, the proposed boundary and other relevant factors. The Panel also considers relevant supplementary information, such as the presence of notable/rare plant or animal species, additional habitat features, public access and existing or potential value for appreciation of nature or learning.

Sites that the Panel consider are clearly of substantive nature conservation value, but fail to satisfy any of the habitat criteria, may be recommended for selection using one of the supplementary features criteria.

- 2.4.4 The Panel considers the boundary that has been proposed by the surveyor, together with other information if necessary, and agrees the most suitable boundary for the site. If the majority of the area within the boundary proposed by the surveyor supports good quality habitat, then selection of the entire area as an LWS is likely to be acceptable, but candidate LWSs dominated by poor quality habitat need much more careful consideration by the Panel. Guidance for deciding boundaries during survey can be found in Paragraph D of Appendix 3.

Defra guidance states that *“Where a locality has a number of fragments of semi-natural habitat which together could be managed to provide linkages for natural colonisation or movement, a Local Site boundary can be defined to take in a wider area to include both discontinuous natural patches and the areas separating them.”* (Defra, 2006, Paragraph 57).

Where sites extend beyond the county boundary the site boundary is drawn around the interest within Greater Lincolnshire only. Neighbouring Local Site partnerships are notified of the importance of the site in their area.

- 2.4.5 The rationale for individual decisions made by the Panel is recorded, showing the habitats, species and features judged to be of substantive value and how they were assessed against the criteria. Information on all decisions made by the Panel is

clearly documented and held by the GLNP. The basis for site selection or rejection is transparent.

- 2.4.6 Sites that fail to satisfy any of the criteria are not necessarily rejected. If insufficient information is available for an assessment to be made the Panel may defer their decision and request further information, for example asking for a specialist or earlier survey. Once these requests have been satisfied, the new data is submitted to the Panel for consideration.
- 2.4.7 The Panel only rejects a site as an LWS (and subsequently de-selects it as an SNCI) if it considers that adequate recent survey has taken place and other relevant factors have been considered. Reasons for rejection might include failure to satisfy the selection criteria, the presence of significant populations of non-native species or the inclusion of large areas of land with little wildlife interest.
- 2.4.8 A site may be reassessed at any time after selection or rejection if its condition changes, or if new information becomes available.
- 2.4.9 Site owners/managers are informed of the outcome of the Panel assessment as soon as possible after the Panel meeting, and are given the opportunity to make observations on factors relating directly to the application of the selection criteria. At this stage site owners/managers are also sent a citation, which includes a site description and boundary map. Species lists are made available on request.
- 2.4.10 The GLNP SG considers the recommendations of the Panel and is the final arbiter on LWS selection. Sites are only selected (or de-selected) once the recommendation has been endorsed by the GLNP SG.
- 2.4.11 As recommended, *“sites which are selected by the Partnership must be submitted to the local authority for inclusion within their Local Development Frameworks at the earliest opportunity”* (Defra, 2006, Paragraph 24). Local Site updates, which include a Register of Local Sites together with their conservation management status and boundaries as GIS layers, are sent to local authorities annually as part of their Service Level Agreements (SLAs) with the GLNP (see also Paragraph 1.5.3).

Local authorities are formally notified in their role as the planning authority, and also to assist with reporting against Single Data List Indicator 160-00. If the GLNP’s recommendations are agreed by the local authority, LWSs are subsequently designated through inclusion in local planning policy and Local Plans.

- 2.4.12 For deferred or rejected sites, the Panel may use a data search of species records held by LERC to obtain further evidence of the nature conservation value of the site. This option may be explored at any time, though it is not applied to all such sites. The data (as long as it is no older than 10 years old) is judged on its usefulness within the context of LWS survey data and other knowledge of the site.

- 2.4.13 If the owner/manager chooses to comment, the site is reassessed by the Panel when they next meet. If the Panel still consider the site to have substantive nature conservation value, and that the comments made do not affect the application of the selection criteria, then the selection of the site is most often upheld. If the comments affect the application of the selection criteria then the Panel may recommend that the GLNP do not select the site after all. The local authority is notified as usual, drawing particular attention to the owners/managers comments.
- 2.4.14 If for any reason the owner/manager of the site is unknown (though this is not normal procedure because permission should be sought before surveys are undertaken), but the nature conservation value is considered high enough by the Panel, the GLNP may still choose to select the site and make the recommendation that the local authority designates it. The GLNP SG is informed of the unknown owner/manager status when it makes its decision, as is the local authority. A good example of when this might happen is for road verge sites (see Paragraph 2.5.6).
- 2.4.15 After the baseline survey, LWSs are monitored every 5-10 years, or more frequently if necessary (see Paragraph 2.3.8). Where site condition is unchanged, or improves, a three-part cycle is followed. This involves a maximum of two monitoring visits (see Appendix 4), followed by a full resurvey (which follows the same procedure as the baseline survey – see Appendix 3).
- 2.4.16 The site monitoring cycle is illustrated in Figure 2; at each survey stage the decision making procedure outlined earlier in Figure 1 is followed.
- 2.4.17 Data from every monitoring survey is considered by the Panel, which assesses if the site condition is unchanged, improved or degraded and whether the site still satisfies the selection criteria. If the site is unchanged or has improved it is most often retained as an LWS. If evidence from the monitoring survey suggests that the site is degraded, and no longer satisfies the selection criteria, the Panel may de-select the site.
- 2.4.18 If de-selection of the site is contested by the owner/manager or another interested party, the Panel may request a full resurvey. Defra guidance on Local Sites says, *“In considering whether to de-select a site, the partnership should consider any implications for the provision of contact with nature and the availability of sites for educational use. The potential for restoring the site’s features of interest should also be a consideration. This is particularly relevant where a site has been deliberately damaged, or degraded through neglect or inappropriate management.”* (Defra, 2006, Paragraph 37).
- 2.4.19 Where it is not possible to gain permission to monitor an LWS and where there is no evidence of loss of nature conservation value, the site is retained as an LWS. Such sites may be reassessed by the Panel when up-to-date information is available. However, recent evidence (five years old or less) that such sites are in positive conservation management can be supplied without a revisit to ensure they do not

have a negative conservation management status assigned to them (see Paragraph 1.3.6).

2.4.20 Any material changes to site information are approved by the Panel. This includes more relevant site names supplied by owners/managers, boundary amendments based on more recent data, or changes to conservation management statuses resulting from the submission of new evidence.

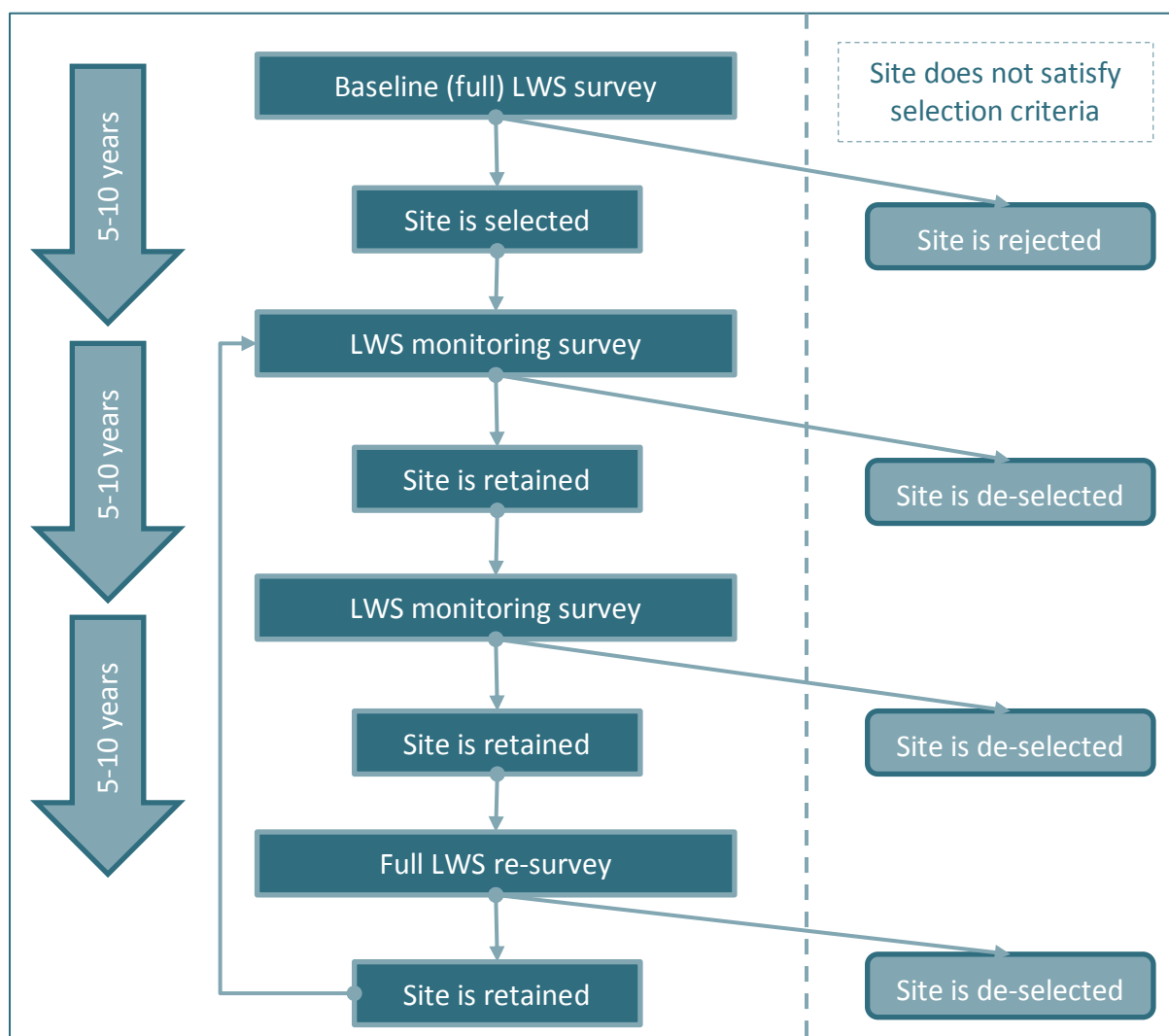


Figure 2: LWS survey cycle

2.5 General guidance

- 2.5.1 Linear sites: These are considered to include disused railway lines, road verges, farm tracks, green lanes, and watercourses and their banks. Metalled roads forming part of a linear site are excluded in most cases. Linear areas are referred to in the grassland/heathland criteria NG1, CG1, HE1 and HE2, where valuable sites are commonly confined in their remnant unimproved or semi-natural state to such places. The linear habitat of criterion Sup3 can be any strip of land with characteristics that facilitate successful movement of species from one area to another.
- 2.5.2 Invertebrate diversity: Some of the criteria appropriate to freshwater and wetland habitats make use of a Community Conservation Index (CCI). This index demonstrates the conservation value of aquatic invertebrates at a site in terms of relative rarity of species present and species diversity (Chadd and Extence, 2004). This data is usually provided by the Environment Agency.
- 2.5.3 Veteran and ancient trees: The term ‘ancient tree’ refers to specimens that are old for their species. The term ‘veteran’ is often used with the same meaning but in fact refers to the condition of a tree and the existence of ‘veteran features’ (Fay, 2007). These veteran features can be found in trees that are not ancient, but have been subject to premature aging (LBP, 2011).

For the purposes of these guidelines, the term ‘veteran trees’ refers to both ancient and veteran trees and can include trees with any of the following features:

- Large girth, apical die-back, trunk hollowing.
- Accumulation of dead and dysfunctional woody tissue.
- Live stubs, shattered branch ends, lightning strikes.
- Limb loss, cavities, water pockets.
- Loose bark, wounds, scars, tears, sap runs, rot sites.
- Fungal colonisation, epiphytic higher and lower plants.

These trees provide important micro-habitats for a range of organisms.

- 2.5.4 Areas of scrub: No criteria deal directly with scrub. It is often a transitional habitat, and the presence of scrub may indicate deterioration of grassland, heathland or wetland habitat. However, it is a scoring habitat feature in the brownfield mosaic criterion BM1, and scrub does have significant wildlife value in certain circumstances. Therefore its inclusion in selected sites is carefully considered.
- 2.5.5 Hedgerows: These have fairly effective protection under the Hedgerow Regulations 1997 and cross compliance rules as part of the Single Payment Scheme (LBP, 2011). ‘Species-rich’ and ‘ancient hedgerows’ are not particularly abundant in Greater Lincolnshire, and are not covered by any of the LWS criteria, however they are included in the ‘Habitat’ and ‘Additional habitat features’ tick boxes on the survey form, and should be recorded when observed.

Hedgerows may be included within LWS boundaries if they add to general habitat and structural diversity; this is not the case for grazing marsh sites where tree cover for predators may deter ground-nesting birds. Inclusion of hedgerows is carefully considered when ownership and management units are factors affecting the boundary of a site.

For the purposes of these guidelines:

- Ancient hedgerows might: mark historic parish, township or estate boundaries; incorporate archaeological features; pre-date the Parliamentary Enclosure Acts; or contain relics of ancient woodland vegetation (such as the species found in Table 3). (Anon, 1997; LBP, 2011)
- Species-rich hedgerows should have at least five woody UK native species (in any 30m stretch) and/or a rich basal herbaceous flora (Defra, 2007); the latter should be judged by the surveyor.

2.5.6 Road verges: These are sites where owners/managers are often very hard to trace. In most cases the county council or unitary authority has responsibility for the management of public roads and their verges and often claims ownership of the topsoil (while the adjacent landowners might own the subsoil and trees). Adjacent owners are consulted on the selection of the site if they are known, and attempts may be made to trace owners/managers if circumstances allow.

2.5.7 Reedbeds: Large reedbeds are uncommon nationally and within Greater Lincolnshire, but are important for a number of dependent species such as bearded tit and bittern. Linear reedbeds can be important elements of water-based wildlife corridors, where the presence of associated species, particularly reed warbler, is of additional significance.

Many birds breeding in reedbeds benefit from stands dominated by common reed, which often represents a less botanically-rich habitat than might otherwise be present in the same wetland area. In most cases, reedbeds need sympathetic treatment in order to retain their nature conservation value, so selection using criterion We1 needs to take management issues into account.

For the purposes of these guidelines:

- All reedbeds should be recorded on the survey form, selecting 'Linear reedbed' where appropriate.
- We1 quality reedbeds are only selected by the Panel after considering all relevant aspects of the site, including management, significant populations of plants and animals, extent of the reedbed, and relationship to adjacent habitats.
- Reedbeds as part of the habitat mosaic for grazing marsh can be any wetland habitat dominated by common reed (i.e. satisfying the BAP habitat description in Appendix 5).

2.5.8 Habitat re-creation and restoration: It is widely recognised that long-established habitats, resulting from consistent application of traditional management, are valuable for wildlife. It is impossible to artificially create some habitats, such as

ancient semi-natural woodland. However, some examples of recently created, restored or artificial habitats may be of significant wildlife value, for instance new ponds that have been colonised naturally by aquatic plants and animals.

Unfortunately, many new habitats are of much less wildlife value, especially where inappropriate introduction of species of flora and fauna has taken place. Many well-meaning habitat creation areas are significantly altered by commercially available trees, shrubs, aquatic plants and wildflowers. The Panel takes the history of each individual site into account, and makes a decision about its naturalness. Sites are only generally considered for selection if the plant community is established and self-sustaining. Planting or reseedling using local provenance stock is preferable. Surveyors are asked to draw attention to suspected introductions and planted species when providing their data to the GLNP.

Natural re-colonisation of previously developed land such as disused quarries and industrial sites is covered by the brownfield criterion BM1.

- 2.5.9 Lincolnshire BAP habitats: Churchyards, cemeteries, gardens, parks and greenspace usually comprise more than one habitat type, such as grassland, woodland, parkland or wood-pasture. They do not have their own selection criteria because they are adequately covered by the habitat criteria, but the survey form includes tick boxes for recording these as 'site types' (see Appendix 2).
- 2.5.10 Agricultural habitats: The nature conservation value of scarce arable weeds cannot be denied, however the LWS system does not provide an effective means of protection. The habitat is ephemeral; it is dependent upon continued cultivation and could lose its interest even when favourably managed. It is important to conserve these plants, but perhaps the best approach is through agri-environment schemes and the achievement of Lincolnshire BAP targets. Wherever possible, observations should be made while on site to record conservation-managed arable field margins and important areas for arable plants.

3. The selection criteria

3.1 Overview

- 3.1.1 The selection criteria form Part 3 of this document, which comprises eleven sections. There is some variation in approach, but each section contains one to eight criteria. The data for each site is assessed against the criteria to determine its nature conservation value, and the diversity and quality of the habitats present.
- 3.1.2 Most of the criteria require comparison between the botanical species list taken for the site and tabulated lists of scoring plant species considered indicative of the main semi-natural habitats present in Greater Lincolnshire. A few criteria involve the assessment of habitat features, which are also recorded during an LWS survey. Two criteria for grazing marsh require bird survey data and some of the freshwater criteria require aquatic invertebrate data, which is obtained from other sources.
- 3.1.3 Although there are some minor exceptions (see Paragraph 2.2.7), every recorded plant species that appears in any of the scoring species tables contributes one point towards an index score. If the index score equals or exceeds the stated threshold score, then there is a strong case for selection.
- 3.1.4 A quick reference guide to these criteria has been included at the end of the document in Appendix 12.
- 3.1.5 The Panel has used relevant editions of the Lincolnshire BAP extensively in development of these criteria. Table 2 below shows relationships between UKBAP priority habitats, Lincolnshire BAP habitats (3rd edition) and the current LWS criteria.
- 3.1.6 The criteria here outlined are used at the Panel's discretion; sites with little or no value for wildlife are not selected. The Panel uses its best judgement when resolving issues, which may include:
- Inclusion of buffer land (or land of less wildlife value) within site boundaries.
 - Maximum site size.
 - Division of larger ecological networks into individual sites dependent on management, ownership or habitat (for administration only; in landscape-scale terms the sites can be considered together).
- Standardised guidance has not been produced for these issues because each individual case will have different factors and information to consider.
- 3.1.7 Each section is introduced by a description of the habitat extent in Greater Lincolnshire. Individual criteria are accompanied by a brief justification and/or guidance for use. For each criterion, all of the text shown in bold must be true for a site to qualify.



Table 2: Relationship between UK and Lincolnshire BAP habitats and the selection criteria

UK BAP habitat (From: Maddock, 2010)	Lincolnshire BAP habitat (From: LBP, 2011)	Greater Lincolnshire LWS criteria
Trees and woodland		
Lowland mixed deciduous woodland	Lowland mixed deciduous woodland	WD1, WD1a, WD2a, WD3a, WD3b
Traditional orchards	Traditional orchards	WD6
Wet woodland	Wet woodland	WD4a
Wood-pasture and parkland	Wood-pasture and parkland	WD5
Farmland and grassland		
Arable field margins	Arable field margins	[See Paragraph 2.5.10]
Coastal and floodplain grazing marsh	Grazing marsh	NG1, We2, We3, GM1, GM2, GM3
Hedgerows	Hedgerows and hedgerow trees	[See Paragraph 2.5.5]
Lowland calcareous grassland	Lowland calcareous grassland	CG1
Lowland meadows	Lowland meadows	NG1, We2, We3
Heathland and peatland		
Lowland heathland Lowland raised bog	Heathland and peatland	HE1, HE2, AP1, AP2
Lowland dry acid grassland	Lowland dry acid grassland	HE2
Rivers and wetland		
	Chalk streams and blow wells	FW1, FW2, FW3
Lowland fens	Fens	We2, We3, We4
Ponds Eutrophic standing water	Ponds, lakes and reservoirs	FW1, FW2, FW3
Reedbeds	Reedbeds and bittern	We1
Rivers	Rivers, canals and drains	FW1, FW2, FW3
	Springs and flushes	FW1, FW2, FW3
Coastal and marine		
Coastal sand dunes	Coastal sand dunes	Co3
Peat and clay exposures	Peat and clay exposures	[LGSs]
<i>Sabellaria spinulosa</i> reefs	<i>Sabellaria spinulosa</i> reefs	[Beyond intertidal limit]
Saline lagoons	Saline lagoons	SL1
Coastal saltmarsh	Saltmarsh	Co1
Mudflats		Co2
Urban		
Open mosaic habitats on previously developed land	Brownfield	BM1
	Churchyards and cemeteries	WD5, NG1, CG1, HE2
	Gardens and allotments	WD5, NG1, CG1, HE2
	Parks and open spaces	WD5, NG1, CG1, HE2

3.2 Woodland and parkland

A little over 4% of the total area of Greater Lincolnshire is thought to be wooded; this is considerably less than the national average. Approximately 0.8% of Greater Lincolnshire's land area supports ancient semi-natural woodland, which is close to half that of the national average. There are probably fewer than 100 areas of parkland in Greater Lincolnshire and roughly 124ha of orchard (only some of which is traditionally managed). (LBP, 2011)

WD1 All ancient semi-natural woodland (ASNW) listed in Natural England's Ancient Woodland Inventory²

Not only is this a scarce and declining habitat, but it is impossible to re-create once lost. It is crucial to the biological diversity of Greater Lincolnshire that remaining areas of ancient semi-natural woodland are conserved.

WD1a All plantations on ancient woodland sites (PAWS) listed in Natural England's Ancient Woodland Inventory²

PAWS are woodlands planted on sites identified as previously being ancient semi-natural woodland, and are good candidates for woodland restoration.

WD2a Woodland that does not appear in the Ancient Woodland Inventory, but has characteristics of ancient semi-natural woodland and a minimum species index score of eight using Table 3

Ancient Woodland Inventories are not considered to be comprehensive because they only include sites of 2ha or larger, and it was not possible to ground-truth all of the sites identified. Therefore, this criterion can be used for sites smaller than 2ha and any other suspected semi-natural ancient woodland missing from the relevant inventory.

WD3a Woodland with a combined minimum species index score of 15 using Tables 3 and 4

This criterion can be used for all other woodland and plantations.

WD3b Woodland with a minimum woodland features index score of six using Table 6

This criterion can be used for all other woodland and plantations, where WD3a is not satisfied.

WD4a Wet woodland with a combined minimum species index score of 15 using Tables 3, 4 and 5

² Ancient Woodland Inventory datasets can be viewed on the MAGIC website at: <http://magic.defra.gov.uk/>. The details of this dataset can be found at: http://www.gis.naturalengland.org.uk/pubs/gis/tech_aw.htm.

These woodlands are found on poorly drained and/or seasonally wet soils where the woodland canopy and shrub layer often comprises much alder, willow and birch. Alder carr in particular is uncommon yet important in Greater Lincolnshire. This criterion (and Table 5) cannot be used in a Mos1 combination with the Wetland criteria (and Table 12) due to a high level of duplication between the two scoring species lists.

WD5 Parkland or wood-pasture at least 1ha in extent that supports at least one veteran tree³

This criterion can be used for sites with veteran trees amongst managed grassland. Thus improved, semi-improved or unimproved grassland are considered, but never arable land. The primary importance of both parkland and wood-pasture is the potential for supporting veteran trees (Read, 2000). These trees provide habitat for distinctive and important assemblages of fungi, epiphytic ferns, bryophytes, lichens, invertebrates, bats and birds. Further features of value include younger trees for potential long term habitat continuity, as well as plants providing nectar sources for dead wood invertebrate specialists.

WD6 Traditional orchard with at least five standard fruit and/or nut trees with crown edges no more than 20m apart

Traditionally-managed orchards are very rare in Greater Lincolnshire. These habitats are generally dominated by mature/over-mature standard trees growing within permanent grassland at relatively low densities, which allows livestock grazing and/or mowing beneath the canopy. Low-intensity methods of fruit and/or nut cultivation and grassland management are typical, involving no pesticides or fertilisers.

Table 3: Ancient woodland species

Each species scores one point.

Species with an * relate to a feature in Table 6.

<i>*Allium ursinum</i>	Ramsons
<i>*Anemone nemorosa</i>	Wood anemone
<i>Calamagrostis canescens</i>	Purple small-reed
<i>Campanula trachelium</i>	Nettle-leaved bellflower
<i>Carex pallescens</i>	Pale sedge
<i>Carex pendula</i>	Pendulous sedge
<i>Carex remota</i>	Remote sedge
<i>Conopodium majus</i>	Pignut
<i>*Convallaria majalis</i>	Lily-of-the-valley
<i>Cornus sanguinea</i>	Dogwood
<i>Dipsacus pilosus</i>	Small teasel
<i>Elymus caninus</i>	Bearded couch
<i>Epipactis helleborine</i>	Broad-leaved helleborine
<i>Euonymus europaeus</i>	Spindle
<i>Euphorbia amygdaloides</i>	Wood spurge
<i>Fragaria vesca</i>	Wild strawberry

³ Veteran trees for the purposes of these guidelines are described in Paragraph 2.5.3.

<i>*Galium odoratum</i>	Woodruff
<i>*Hyacinthoides non-scripta</i>	Bluebell
<i>*Lamiastrum galeobdolon ssp. montanum</i>	Yellow archangel
<i>Luzula pilosa</i>	Hairy wood-rush
<i>Luzula sylvatica</i>	Great wood-rush
<i>Lysimachia nemorum</i>	Yellow pimpernel
<i>*Melica uniflora</i>	Wood melick
<i>Milium effusum</i>	Wood millet
<i>*Orchis mascula</i>	Early-purple orchid
<i>*Oxalis acetosella</i>	Wood-sorrel
<i>*Paris quadrifolia</i>	Herb-Paris
<i>Platanthera chlorantha</i>	Greater butterfly-orchid
<i>Poa nemoralis</i>	Wood meadow-grass
<i>Populus tremula</i>	Aspen
<i>Potentilla sterilis</i>	Barren strawberry
<i>*Primula vulgaris</i>	Primrose
<i>Quercus petraea</i>	Sessile oak
<i>*Ranunculus auricomus</i>	Goldilocks buttercup
<i>Scrophularia nodosa</i>	Common figwort
<i>Sorbus torminalis</i>	Wild service-tree
<i>*Stellaria holostea</i>	Greater stitchwort
<i>Tilia cordata</i>	Small-leaved lime
<i>Valeriana officinalis</i>	Common valerian
<i>Veronica montana</i>	Wood speedwell
<i>Viburnum opulus</i>	Guelder-rose
<i>*Viola reichenbachiana</i>	Early dog-violet

Table 4: Woodland species

Each species scores one point, unless otherwise indicated.

Species with an * relate to a feature in Table 6.

<i>*Adoxa moschatellina</i>	Moschatel
<i>Arum maculatum</i>	Lords-and-ladies
<i>Athyrium filix-femina</i>	Lady-fern
<i>Betula pendula</i>	Silver birch
<i>Blechnum spicant</i>	Hard-fern
<i>Brachypodium sylvaticum</i>	False-brome
<i>Bromopsis ramosa</i>	Hairy-brome
<i>Campanula latifolia</i>	Giant bellflower
<i>Carex sylvatica</i>	Wood-sedge
<i>Ceratocarpus claviculata</i>	Climbing corydalis
<i>Circaea lutetiana</i>	Enchanter's-nightshade
<i>Clematis vitalba</i>	Traveller's-joy
<i>Corylus avellana</i>	Hazel
<i>Crataegus laevigata</i>	Midland hawthorn
<i>Daphne laureola</i>	Spurge-laurel
<i>Dryopteris affinis</i>	Golden-scaled male-fern
<i>Dryopteris carthusiana</i>	Narrow buckler-fern
<i>Dryopteris dilatata</i>	Broad buckler-fern
<i>Dryopteris filix-mas</i>	Male-fern

Frangula alnus
Humulus lupulus
Hypericum hirsutum
Ilex aquifolium
Iris foetidissima
Ligustrum vulgare
Lonicera periclymenum
**Mercurialis perennis*
Moehringia trinervia
**Myosotis sylvatica*
**Neottia ovata*
Oreopteris limbosperma
Polypodium spp.
Polystichum aculeatum
Polystichum setiferum
Rhamnus cathartica
Ribes nigrum
Ribes rubrum
Ribes uva-crispa
Rubus idaeus
**Sanicula europaea*
Schedonorus giganteus
Tamus communis
**Viola odorata*
**Viola riviniana*

Alder buckthorn
 Hop
 Hairy St John's-wort
 Holly
 Stinking iris
 Wild privet
 Honeysuckle
 Dog's mercury
 Three-nerved sandwort
 Wood forget-me-not
 Common twayblade
 Lemon-scented fern
 Polypody ferns (one point maximum)
 Hard shield-fern
 Soft shield-fern
 Buckthorn
 Black currant
 Red currant
 Gooseberry
 Raspberry
 Sanicle
 Giant fescue
 Black bryony
 Sweet violet
 Common dog-violet

Table 5: Wet woodland species

Each species scores one point.

Ajuga reptans
Alnus glutinosa
Angelica sylvestris
Betula pubescens
Caltha palustris
Cardamine flexuosa
Cardamine pratensis
Carex acutiformis
Carex paniculata
Carex riparia
Chrysosplenium oppositifolium
Equisetum palustre
Equisetum telmateia
Eupatorium cannabinum
Filipendula ulmaria
Galium palustre
Geum rivale
Glyceria maxima
Hypericum tetrapterum
Iris pseudacorus
Lysimachia nummularia

Bugle
 Alder
 Wild angelica
 Downy birch
 Marsh-marigold
 Wavy bitter-cress
 Cuckooflower
 Lesser pond-sedge
 Greater tussock-sedge
 Greater pond-sedge
 Opposite-leaved golden-saxifrage
 Marsh horsetail
 Great horsetail
 Hemp-agrimony
 Meadowsweet
 Common marsh-bedstraw
 Water avens
 Reed sweet-grass
 Square-stalked St John's-wort
 Yellow iris
 Creeping-Jenny

<i>Lysimachia vulgaris</i>	Yellow loosestrife
<i>Mentha aquatica</i>	Water mint
<i>Molinia caerulea</i>	Purple moor-grass
<i>Phalaris arundinacea</i>	Reed canary-grass
<i>Phragmites australis</i>	Common reed
<i>Ranunculus flammula</i>	Lesser spearwort
<i>Salix caprea</i>	Goat willow
<i>Salix cinerea</i>	Grey willow
<i>Scrophularia auriculata</i>	Water figwort
<i>Silene flos-cuculi</i>	Ragged-Robin
<i>Sphagnum</i> spp.	Bog-mosses
<i>Valeriana dioica</i>	Marsh valerian
<i>Viola palustris</i>	Marsh violet

Table 6: Woodland features

Each feature scores one point.

Feature	Notes
Undisturbed, mature, shady, broadleaved habitat	Includes areas away from glades and rides, but not dense coniferous woodland habitat.
Veteran trees	See Paragraph 2.5.3
Pollarded trees	Trees cut well above the ground to allow for animal grazing; this can be recent or historic.
Coppiced trees	Trees cut down to near ground level, usually on a regular rotation; this can be recent or historic.
Diverse and/or abundant lichen community	Usually on trees.
Diverse and/or abundant bryophyte community	On the ground, e.g. liverworts on stream banks, and/or on trees.
Diverse and/or abundant fungi community	On the ground and/or on trees.
Large populations of any of the species in Tables 3 and 4 marked with an ‘*’	Includes carpets of species such as lily-of-the-valley or bluebell.
No more than small amounts of non-native plant species, whether planted or naturally colonised	In canopy, shrub layer and ground flora, including seedlings. Examples include conifers, sycamore, rhododendron, laurel, snowberry, game cover species, exotic species and garden varieties.
No more than moderate amounts of native invasive/undesirable plant species	Includes bramble, bracken, common nettle, ivy as ground cover, rosebay willowherb.
Full age range within native tree species	Includes seedlings and saplings, as well as mature and ancient trees. These provide valuable structural diversity.
Frequent standing/fallen dead wood	Standing or fallen tree stems/trunks/large boughs that are dead or significantly decaying.
Good habitat diversity: • Glades/grassy areas • Wide/sunny rides	If three or more of these complementary habitats are present, the site scores one point. Provides edge habitat and valuable structural

Feature	Notes
• Narrow/shady rides • Running water/watercourses • Standing water/wetland/wet flushes	diversity.
Significant size	One point is awarded for every five hectares, to a maximum of two points.

3.3 Grassland (neutral and calcareous)

There is probably less than 140ha of agriculturally unimproved neutral grassland and less than 150ha of agriculturally unimproved calcareous grassland remaining in Greater Lincolnshire. The remnant grasslands of roadside verges have declined drastically in recent decades, but are now becoming more highly valued with increased recognition and management efforts through the Life on the Verge Project⁴. Churchyards, cemeteries and commons are another valuable resource for unimproved or semi-improved grassland.

Lowland meadow and pasture sites with permanent neutral grassland in Greater Lincolnshire are predominantly small and suffering from the effects of fragmentation within the agricultural landscape. The area's grazing marshes formerly supported much neutral grassland, but the majority of this is now cultivated or has been agriculturally improved and is botanically-poor. Calcareous grassland on lime-rich soil tends to be restricted by topographical features such as thin soil and dry slopes, or occurs on sites such as disused quarries.

NG1 Neutral grassland at least 0.1ha in extent, or linear areas at least 50m long, with a minimum species index score of eight using Table 7

Pasture and meadow sites supporting a wide range of species are becoming increasingly uncommon, mainly due to intensification of agricultural techniques and replacement of stock farming with arable and horticultural enterprises. The conservation of species-rich neutral grassland is a critical part of maintaining the biological diversity of Greater Lincolnshire.

CG1 Calcareous grassland at least 0.1ha in extent, or linear areas at least 50m long, with a minimum species index score of eight using Table 8

Calcareous grassland is one of the most rare and vulnerable habitats in Greater Lincolnshire. Conservation of sites supporting many typical calcareous plant species is particularly important for maintenance of Greater Lincolnshire's biological diversity.

Table 7: Neutral grassland species

Each species scores one point, unless otherwise indicated.

<i>Achillea ptarmica</i>	Sneezewort
<i>Ajuga reptans</i>	Bugle
<i>Alopecurus geniculatus</i>	Marsh foxtail
<i>Alopecurus pratensis</i>	Meadow foxtail
<i>Anacamptis morio</i>	Green-winged orchid
<i>Angelica sylvestris</i>	Wild angelica
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass
<i>Betonica officinalis</i>	Betony
<i>Briza media</i>	Quaking-grass

⁴ <http://www.lifeontheverge.org.uk/>.

Cardamine pratensis
Carex caryophyllea
Carex disticha
Carex flacca
Carex leporina
Carex nigra
Carex panicea
Centaurea nigra
Conopodium majus
Cynosurus cristatus
Dactylorhiza fuchsii
Dactylorhiza praetermissa
Equisetum palustre
Filipendula ulmaria
Galium verum
Genista tinctoria
Geum rivale
Gnaphalium uliginosum
Hordeum secalinum
Hypochaeris radicata
Juncus acutiflorus
Juncus articulatus
Lathyrus pratensis
Leontodon hispidus
Leontodon saxatilis
Leucanthemum vulgare
Lotus corniculatus
Lotus pedunculatus
Luzula campestris
Neottia ovata
Ononis spp.
Ophioglossum vulgatum
Pimpinella saxifraga
Poa pratensis
Potentilla erecta
Primula veris
Ranunculus bulbosus
Ranunculus hederaceus
Ranunculus sardous
Rhinanthus minor
Sanguisorba officinalis
Saxifraga granulata
Schedonorus pratensis
Serratula tinctoria
Silaum silaus
Silene flos-cuculi
Succisa pratensis
Trifolium fragiferum
Trisetum flavescens

Cuckooflower
 Spring-sedge
 Brown sedge
 Glaucous sedge
 Oval sedge
 Common sedge
 Carnation sedge
 Common knapweed
 Pignut
 Crested dog's-tail
 Common spotted-orchid
 Southern marsh-orchid
 Marsh horsetail
 Meadowsweet
 Lady's bedstraw
 Dyer's greenweed
 Water avens
 Marsh cudweed
 Meadow barley
 Cat's-ear
 Sharp-flowered rush
 Jointed rush
 Meadow vetchling
 Rough hawkbit
 Lesser hawkbit
 Oxeye daisy
 Common bird's-foot-trefoil
 Greater bird's-foot-trefoil
 Field wood-rush
 Common twayblade
 Restharrows (one point maximum)
 Adder's-tongue
 Burnet-saxifrage
 Smooth meadow-grass
 Tormentil
 Cowslip
 Bulbous buttercup
 Ivy-leaved water-crowfoot
 Hairy buttercup
 Yellow-rattle
 Great burnet
 Meadow saxifrage
 Meadow fescue
 Saw-wort
 Pepper-saxifrage
 Ragged-Robin
 Devil's-bit scabious
 Strawberry clover
 Yellow oat-grass

Table 8: Calcareous grassland species

Each species scores one point, unless otherwise indicated.

<i>Anacamptis pyramidalis</i>	Pyramidal orchid
<i>Anthyllis vulneraria</i>	Kidney vetch
<i>Astragalus danicus</i>	Purple milk-vetch
<i>Avenula pratensis</i>	Meadow oat-grass
<i>Avenula pubescens</i>	Downy oat-grass
<i>Blackstonia perfoliata</i>	Yellow-wort
<i>Brachypodium pinnatum</i>	Heath false-brome
<i>Briza media</i>	Quaking-grass
<i>Bromopsis erecta</i>	Upright brome
<i>Campanula glomerata</i>	Clustered bellflower
<i>Campanula rotundifolia</i>	Harebell
<i>Carex caryophyllea</i>	Spring-sedge
<i>Carex flacca</i>	Glaucous sedge
<i>Carlina vulgaris</i>	Carlina thistle
<i>Centaurea nigra</i>	Common knapweed
<i>Centaurea scabiosa</i>	Greater knapweed
<i>Centaureum erythraea</i>	Common centaury
<i>Cirsium acaule</i>	Dwarf thistle
<i>Cirsium eriophorum</i>	Woolly thistle
<i>Clinopodium acinos</i>	Basil thyme
<i>Clinopodium vulgare</i>	Wild basil
<i>Cruciata laevipes</i>	Crosswort
<i>Dactylorhiza fuchsii</i>	Common spotted-orchid
<i>Daucus carota</i>	Wild carrot
<i>Euphrasia</i> spp.	Eyebrights (one point maximum)
<i>Festuca ovina</i>	Sheep's-fescue
<i>Filipendula vulgaris</i>	Dropwort
<i>Fragaria vesca</i>	Wild strawberry
<i>Galium verum</i>	Lady's bedstraw
<i>Genista tinctoria</i>	Dyer's greenweed
<i>Gentianella amarella</i>	Autumn gentian
<i>Gymnadenia conopsea</i>	Chalk fragrant-orchid
<i>Helianthemum nummularium</i>	Common rock-rose
<i>Hippocrepis comosa</i>	Horseshoe vetch
<i>Hypericum perforatum</i>	Perforate St John's-wort
<i>Inula conyzae</i>	Ploughman's-spikenard
<i>Knautia arvensis</i>	Field scabious
<i>Koeleria macrantha</i>	Crested hair-grass
<i>Leontodon hispidus</i>	Rough hawkbit
<i>Linum catharticum</i>	Fairy flax
<i>Lotus corniculatus</i>	Common bird's-foot-trefoil
<i>Myosotis ramosissima</i>	Early forget-me-not
<i>Neottia ovata</i>	Common twayblade
<i>Odontites vernus</i>	Red bartsia
<i>Ononis</i> spp.	Restharrow (one point maximum)
<i>Ophrys apifera</i>	Bee orchid
<i>Origanum vulgare</i>	Wild marjoram

<i>Pimpinella saxifraga</i>	Burnet-saxifrage
<i>Plantago media</i>	Hoary plantain
<i>Polygala vulgaris</i>	Common milkwort
<i>Poterium sanguisorba</i> ssp. <i>sanguisorba</i>	Salad burnet
<i>Primula veris</i>	Cowslip
<i>Reseda lutea</i>	Wild mignonette
<i>Ranunculus bulbosus</i>	Bulbous buttercup
<i>Rhinanthus minor</i>	Yellow-rattle
<i>Saxifraga granulata</i>	Meadow saxifrage
<i>Scabiosa columbaria</i>	Small scabious
<i>Serratula tinctoria</i>	Saw-wort
<i>Silene vulgaris</i>	Bladder campion
<i>Succisa pratensis</i>	Devil's-bit scabious
<i>Thymus polytrichus</i>	Wild thyme
<i>Trisetum flavescens</i>	Yellow oat-grass
<i>Viola hirta</i>	Hairy violet

3.4 Heathland and acid grassland

By 1995 the extent of heathland in Greater Lincolnshire was estimated at only 628ha, an 88% decline since 1920. This trend was partially reversed as a result of investment of resources through the Coversands Heathland Project⁵. However continued appropriate management is necessary to ensure that benefits of the project are maintained.

Lowland acid dry grassland has also significantly declined both nationally and within Greater Lincolnshire. This nutrient-poor habitat often forms a mosaic with heathland and therefore shares a similar distribution and suite of indicator species in Greater Lincolnshire.

HE1 Heathland at least 0.1ha in extent, or linear areas at least 50m long, with at least 25% ground cover of heather species⁶

Lowland heath is one of Europe's most threatened habitat types; it has been estimated that 75% of the Western European lowland heath resource is located in England. As a result, the conservation of this habitat is of international importance.

HE2 Acid grassland and heathland at least 0.1ha in extent, or linear areas at least 50m long, with a minimum species index score of eight using Table 9

This criterion can be used for acid grassland and heathland of significant nature conservation value that supports less than 25% heather cover.

Table 9: Heathland and acid grassland species

Each species scores one point.

<i>Achillea ptarmica</i>	Sneezewort
<i>Agrostis canina</i>	Velvet bent
<i>Agrostis vinealis</i>	Brown bent
<i>Aira caryophylla</i>	Silver hair-grass
<i>Aira praecox</i>	Early hair-grass
<i>Anagallis tenella</i>	Bog pimpernel
<i>Anchusa arvensis</i>	Bugloss
<i>Arenaria serpyllifolia</i>	Thyme-leaved sandwort
<i>Astragalus danicus</i>	Purple milk-vetch
<i>Betonica officinalis</i>	Betony
<i>Calluna vulgaris</i>	Heather
<i>Campanula rotundifolia</i>	Harebell
<i>Carex arenaria</i>	Sand sedge
<i>Carex leporina</i>	Oval sedge
<i>Carex nigra</i>	Common sedge
<i>Carex pilulifera</i>	Pill sedge
<i>Carlina vulgaris</i>	Carline thistle
<i>Centaureum erythraea</i>	Common centaury

⁵ <http://www.opalexplornature.org/Coversands-heathland-project>.

⁶ These are *Erica cinerea*, *Erica tetralix* and *Calluna vulgaris*.

Cerastium arvense
Cerastium semidecandrum
Conopodium majus
Cytisus scoparius
Dactylorhiza maculata
Danthonia decumbens
Deschampsia flexuosa
Digitalis purpurea
Echium vulgare
Erica cinerea
Erica tetralix
Erodium cicutarium
Erophila verna
Festuca ovina
Filago minima
Filago vulgaris
Galium saxatile
Hypericum humifusum
Hypericum pulchrum
Hypochaeris glabra
Hypochaeris radicata
Juncus squarrosus
Luzula multiflora
Molinia caerulea
Myosotis ramosissima
Nardus stricta
Oreopteris limbosperma
Ornithopus perpusillus
Pilosella officinarum
Plantago coronopus
Polygala serpyllifolia
Potentilla anglica
Potentilla erecta
Rumex acetosella
Saxifraga tridactylites
Succisa pratensis
Teesdalia nudicaulis
Teucrium scorodonia
Trifolium arvense
Trifolium scabrum
Trifolium striatum
Ulex europaeus
Veronica officinalis
Viola canina

Field mouse-ear
 Little mouse-ear
 Pignut
 Broom
 Heath spotted-orchid
 Heath-grass
 Wavy hair-grass
 Foxglove
 Viper's-bugloss
 Bell heather
 Cross-leaved heath
 Common stork's-bill
 Common whitlowgrass
 Sheep's-fescue
 Small cudweed
 Common cudweed
 Heath bedstraw
 Trailing St John's-wort
 Slender St John's-wort
 Smooth cat's-ear
 Cat's-ear
 Heath rush
 Heath wood-rush
 Purple moor-grass
 Early forget-me-not
 Mat-grass
 Lemon-scented fern
 Bird's-foot
 Mouse-ear-hawkweed
 Buck's-horn plantain
 Heath milkwort
 Trailing tormentil
 Tormentil
 Sheep's-sorrel
 Rue-leaved saxifrage
 Devil's-bit scabious
 Shepherd's cress
 Wood sage
 Hare's-foot clover
 Rough clover
 Knotted clover
 Gorse
 Heath speedwell
 Heath dog-violet

3.5 Acid peatland

There are approximately 190ha of lowland raised bog remaining in Greater Lincolnshire, the vast majority of which has some form of statutory designation. Crowle Waste (or Moor), for example, is part of the internationally important Humberhead Peatlands NNR, which is designated at a number of levels. High water tables and lack of drainage are important for the survival of this fragile habitat that has historical importance in places such as the Isle of Axholme.

AP1 Acid peatland with a minimum species index score of five using Table 10

Peatland is one of Greater Lincolnshire's most vulnerable and scarce habitat types; it is under particular threat from commercial exploitation and supports many rare and endangered species. As a result, the conservation of this habitat is of international importance.

AP2 Buffer land where sympathetic management of water levels and water quality is essential for the well-being of adjacent acid peatland

Maintenance of buffer zones around acid peatlands is important, in view of the extreme vulnerability of such sites to the lowering of water tables. Use of this criterion is essential for protection of true peatland habitat.

Table 10: Acid peatland species

Each species scores one point, unless otherwise stated.

<i>Agrostis canina</i>	Velvet bent
<i>Anagallis tenella</i>	Bog pimpernel
<i>Calluna vulgaris</i>	Heather
<i>Carex binervis</i>	Green-ribbed sedge
<i>Carex canescens</i>	White sedge
<i>Carex demissa</i>	Common yellow-sedge
<i>Carex panicea</i>	Carnation sedge
<i>Carex pilulifera</i>	Pill sedge
<i>Comarum palustre</i>	Marsh cinquefoil
<i>Dactylorhiza maculata</i>	Heath spotted-orchid
<i>Danthonia decumbens</i>	Heath-grass
<i>Erica cinerea</i>	Bell heather
<i>Erica tetralix</i>	Cross-leaved heath
<i>Eriophorum angustifolium</i>	Common cottongrass
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass
<i>Glyceria declinata</i>	Small sweet-grass
<i>Hydrocotyle vulgaris</i>	Marsh pennywort
<i>Isolepis setacea</i>	Bristle club-rush
<i>Juncus acutiflorus</i>	Sharp-flowered rush
<i>Juncus bufonius</i>	Toad rush
<i>Juncus bulbosus</i>	Bulbous rush
<i>Juncus squarrosus</i>	Heath rush

Menyanthes trifoliata
Molinia caerulea
Potamogeton polygonifolius
Sphagnum spp.
Stellaria alsine
Succisa pratensis
Viola palustris

Bogbean
Purple moor-grass
Bog pondweed
Bog-mosses (one point maximum)
Bog stitchwort
Devil's-bit scabious
Marsh Violet

3.6 Freshwater habitats

Greater Lincolnshire contains a wide range of freshwater habitats including: the extensive River Trent valley; drains and ditches, particularly in the Fens and the Isle of Axholme; water-filled pits following mineral extraction; and reservoirs, lakes and ponds. Nationally important chalk streams, rivers and blow wells are characteristic of Greater Lincolnshire (especially within the Wolds National Character Area) and are of key importance for a number of fish and invertebrate species.

FW1 Running or standing water with a minimum Community Conservation Index (CCI) score of 15

All types of running and standing waters can be considered under this criterion, which is entirely based on aquatic invertebrate interest.

FW2 Running or standing water with a minimum species index score of 10 using Table 11

All types of running and standing waters can be considered under this criterion, which is entirely based on botanical interest.

FW3 Running or standing water with a Community Conservation Index (CCI) score of 10-14 and a minimum species index score of six using Table 11

This criterion applies to all types of running and standing waters supporting both botanical and aquatic invertebrate interest.

Table 11: Freshwater species

Each species scores one point, unless otherwise indicated.

<i>Alisma plantago-aquatica</i>	Water-plantain
<i>Apium nodiflorum</i>	Fool's-water-cress
<i>Berula erecta</i>	Lesser water-parsnip
<i>Butomus umbellatus</i>	Flowering-rush
<i>Callitriche</i> spp.	Water-starworts (one point maximum)
<i>Carex acutiformis</i>	Lesser pond-sedge
<i>Carex elata</i>	Tufted-sedge
<i>Carex riparia</i>	Greater pond-sedge
<i>Ceratophyllum demersum</i>	Rigid hornwort
<i>Characeae</i> spp.	Stoneworts (one point maximum)
<i>Eleocharis acicularis</i>	Needle spike-rush
<i>Eleocharis palustris</i>	Common spike-rush
<i>Eleogiton fluitans</i>	Floating club-rush
<i>Equisetum fluviatile</i>	Water horsetail
<i>Equisetum palustre</i>	Marsh horsetail
<i>Glyceria fluitans</i>	Floating sweet-grass
<i>Glyceria maxima</i>	Reed sweet-grass
<i>Glyceria notata</i>	Plicate sweet-grass

<i>Groenlandia densa</i>	Opposite-leaved pondweed
<i>Hippuris vulgaris</i>	Mare's-tail
<i>Hottonia palustris</i>	Water-violet
<i>Iris pseudacorus</i>	Yellow iris
<i>Lemna gibba</i>	Fat duckweed
<i>Lemna trisulca</i>	Ivy-leaved duckweed
<i>Lycopus europaeus</i>	Gypsywort
<i>Lythrum salicaria</i>	Purple-loosestrife
<i>Mentha aquatica</i>	Water mint
<i>Menyanthes trifoliata</i>	Bogbean
<i>Myosotis laxa</i>	Tufted forget-me-not
<i>Myosotis scorpioides</i>	Water forget-me-not
<i>Myriophyllum spicatum</i>	Spiked water-milfoil
<i>Myriophyllum verticillatum</i>	Whorled water-milfoil
<i>Nasturtium officinale</i>	Water-cress
<i>Nuphar lutea</i>	Yellow water-lily
<i>Oenanthe aquatica</i>	Fine-leaved water-dropwort
<i>Oenanthe fistulosa</i>	Tubular water-dropwort
<i>Oenanthe fluviatilis</i>	River water-dropwort
<i>Phalaris arundinacea</i>	Reed canary-grass
<i>Phragmites australis</i>	Common reed
<i>Potamogeton berchtoldii</i>	Small pondweed
<i>Potamogeton crispus</i>	Curled pondweed
<i>Potamogeton friesii</i>	Flat-stalked pondweed
<i>Potamogeton lucens</i>	Shining pondweed
<i>Potamogeton natans</i>	Broad-leaved pondweed
<i>Potamogeton pectinatus</i>	Fennel pondweed
<i>Potamogeton perfoliatus</i>	Perfoliate pondweed
<i>Potamogeton pusillus</i>	Lesser pondweed
<i>Potamogeton trichoides</i>	Hairlike pondweed
<i>Ranunculus aquatilis</i>	Common water-crowfoot
<i>Ranunculus circinatus</i>	Fan-leaved water-crowfoot
<i>Ranunculus fluitans</i>	River water-crowfoot
<i>Ranunculus peltatus</i>	Pond water-crowfoot
<i>Ranunculus penicillatus</i>	Stream water-crowfoot
<i>Ranunculus trichophyllus</i>	Thread-leaved water-crowfoot
<i>Rumex hydrolapathum</i>	Water dock
<i>Sagittaria sagittifolia</i>	Arrowhead
<i>Schoenoplectus lacustris</i>	Common club-rush
<i>Schoenoplectus tabernaemontani</i>	Grey club-rush
<i>Scrophularia auriculata</i>	Water figwort
<i>Scutellaria galericulata</i>	Skullcap
<i>Silene flos-cuculi</i>	Ragged-Robin
<i>Sparganium emersum</i>	Unbranched bur-reed
<i>Sparganium erectum</i>	Branched bur-reed
<i>Stachys palustris</i>	Marsh woundwort
<i>Thalictrum flavum</i>	Common meadow-rue
<i>Typha angustifolia</i>	Lesser bulrush
<i>Typha latifolia</i>	Bulrush
<i>Utricularia minor</i>	Lesser bladderwort
<i>Veronica anagallis-aquatica</i>	Blue water-speedwell

Veronica beccabunga
Veronica catenata
Zannichellia palustris

Brooklime
Pink water-speedwell
Horned pondweed

3.7 Wetland habitats

The extent of reedbed habitat in Greater Lincolnshire has increased in recent years to over 100ha, a trend that is mirrored nationally. Within the Fens almost all remaining fenland habitat is within nature reserves. The estimated fen resource in Greater Lincolnshire is 100-150ha (LBP, 2011).

Wetland habitats covered by these criteria include marsh, fen, flushes, rush pastures and wet/damp grassland; others such as wet woodland, acid peatland and grazing marsh are covered elsewhere. All such wetlands are vulnerable to a range of threats, and many have become important refuges for uncommon and declining species of flora and fauna, especially birds.

We1 Wet reedbeds at least 0.5ha in extent where the vegetated element comprises at least 90% common reed *Phragmites australis*

Greater Lincolnshire supports a number of important reedbed sites and dependent species, and it is therefore important to conserve this habitat. Linear reedbeds are also considered under this criterion; two examples that satisfy the minimum area requirement along a 1km stretch of watercourse are: a continuous 5m reed margin on one side only, and a continuous 2.5m reed margin on both sides.

We2 Wetland at least 0.5ha in extent with a minimum species index score of eight using Table 12

Sites subject to this criterion (which is entirely based on botanical interest) are located in poorly drained areas, some of which are adjacent to natural or artificial water bodies.

We3 Wetland at least 0.5ha in extent with a minimum Community Conservation Index (CCI) score of 15

Sites subject to this criterion (which is entirely based on aquatic invertebrate interest) are located in poorly drained areas, some of which are adjacent to natural or artificial water bodies.

We4 Wetland at least 0.5ha in extent with a Community Conservation Index (CCI) score of 10-14 and a minimum species index score of five using Table 12

This criterion applies to habitat in poorly drained areas supporting both botanical and aquatic invertebrate interest.

Table 12: Wetland species

Each species scores one point.

Angelica sylvestris

Apium nodiflorum

Wild angelica

Fool's-water-cress

<i>Berula erecta</i>	Lesser water-parsnip
<i>Caltha palustris</i>	Marsh-marigold
<i>Cardamine pratensis</i>	Cuckooflower
<i>Carex acutiformis</i>	Lesser pond-sedge
<i>Carex demissa</i>	Common yellow-sedge
<i>Carex distans</i>	Distant sedge
<i>Carex disticha</i>	Brown sedge
<i>Carex elata</i>	Tufted-sedge
<i>Carex nigra</i>	Common sedge
<i>Carex otrubae</i>	False fox-sedge
<i>Carex panicea</i>	Carnation sedge
<i>Carex paniculata</i>	Greater tussock-sedge
<i>Carex pseudocyperus</i>	Cyperus sedge
<i>Carex riparia</i>	Greater pond-sedge
<i>Cirsium palustre</i>	Marsh thistle
<i>Dactylorhiza incarnata</i>	Early marsh-orchid
<i>Dactylorhiza praetermissa</i>	Southern marsh-orchid
<i>Eleocharis palustris</i>	Common spike-rush
<i>Equisetum fluviatile</i>	Water horsetail
<i>Equisetum palustre</i>	Marsh horsetail
<i>Equisetum telmateia</i>	Great horsetail
<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Galium palustre</i>	Common marsh-bedstraw
<i>Galium uliginosum</i>	Fen bedstraw
<i>Geum rivale</i>	Water avens
<i>Glyceria fluitans</i>	Floating sweet-grass
<i>Glyceria maxima</i>	Reed sweet-grass
<i>Glyceria notata</i>	Plicate sweet-grass
<i>Hydrocotyle vulgaris</i>	Marsh pennywort
<i>Hypericum tetrapterum</i>	Square-stalked St John's-wort
<i>Iris pseudacorus</i>	Yellow iris
<i>Isolepis setacea</i>	Bristle club-rush
<i>Juncus acutiflorus</i>	Sharp-flowered rush
<i>Juncus articulatus</i>	Jointed rush
<i>Juncus bufonius</i>	Toad rush
<i>Juncus subnodulosus</i>	Blunt-flowered rush
<i>Lotus pedunculatus</i>	Greater bird's-foot-trefoil
<i>Lycopus europaeus</i>	Gypsywort
<i>Lysimachia nemorum</i>	Yellow pimpernel
<i>Lysimachia nummularia</i>	Creeping-Jenny
<i>Lysimachia vulgaris</i>	Yellow loosestrife
<i>Lythrum salicaria</i>	Purple-loosestrife
<i>Mentha aquatica</i>	Water mint
<i>Menyanthes trifoliata</i>	Bogbean
<i>Myosotis scorpioides</i>	Water forget-me-not
<i>Oenanthe fistulosa</i>	Tubular water-dropwort
<i>Phalaris arundinacea</i>	Reed canary-grass
<i>Phragmites australis</i>	Common reed
<i>Pulicaria dysenterica</i>	Common fleabane
<i>Ranunculus flammula</i>	Lesser spearwort

Ranunculus hederaceus
Sanguisorba officinalis
Scrophularia auriculata
Scutellaria galericulata
Silene flos-cuculi
Sparganium erectum
Stachys palustris
Stellaria alsine
Succisa pratensis
Thalictrum flavum
Triglochin palustris
Valeriana dioica
Viola palustris

Ivy-leaved water-crowfoot
Great burnet
Water figwort
Skullcap
Ragged-Robin
Branched bur-reed
Marsh woundwort
Bog stitchwort
Devil's-bit scabious
Common meadow-rue
Marsh arrowgrass
Marsh valerian
Marsh violet

3.8 Grazing marsh (coastal and floodplain)

Grazing marsh is culturally important in Greater Lincolnshire, especially in the Lincolnshire Coast and Marshes and at the edge of the Wash and the Humber. Away from the coast, it occurs in river catchment areas including the Trent, Witham and Welland. This habitat has the potential to support internationally and nationally important numbers of breeding and wintering birds and also diverse invertebrate communities.

The grassland element of grazing marsh is occasionally botanically-rich neutral grassland, however it can be equally valuable as botanically-poor, improved grassland. Dense hedgerows and tree cover can reduce the value of grazing marsh habitat, because it provides refuge for predators of ground-nesting birds. Functioning grazing marsh is now a scarce habitat.

GM1 Grassland at least 2ha in extent that is subject to a low intensity grazing regime⁷ and holds surface water in the winter months⁸ and supports a breeding bird population that scores a minimum bird index score of 13 using Table 13 (a)

The species list (and therefore the index score) is compiled from all recording visits in any five of the last ten years. Each species in Table 13 (a) that is recorded as breeding or probably breeding at least once contributes a score. Records that contribute to the index score must be taken from at least two of the five recording years.

This criterion is aimed at sites for which bird data is supplied from existing external data sources. Bird population data such as this is impossible to gather during standard LWS surveys; therefore not all candidate sites are assessed against this criterion.

GM2 Grassland at least 2ha in extent that is subject to a low intensity grazing regime⁷ and holds surface water in the winter months⁸ and supports a wintering/passage bird population that satisfies the threshold count for at least two of the species listed in Table 13 (b)

The highest count for each of the species in Table 13 (b) is compiled from all recording visits in any five of the last ten years, and is used for assessment against this criterion. Records that contribute a threshold count must be taken from at least two of the five recording years.

This criterion is aimed at sites for which bird data is supplied from existing external data sources. Bird population data such as this is impossible to gather during standard LWS surveys; therefore not all candidate sites are assessed against this criterion.

⁷ This is defined as low input grazing over a long period, with relatively few livestock. It should achieve a sward height of roughly 2-10cm by October/November.

⁸ November to May.

GM3 Grassland at least 2ha in extent that is subject to a low intensity grazing regime⁷ and holds surface water in the winter months⁸ and supports a minimum grazing marsh features index score of five using Table 14

The habitat features of functioning grazing marsh sites are recognisable and easy to record during standard LWS surveys, and can help to identify nature conservation value even when the bird species listed in Table 13 are not recorded.

Table 13: Grazing marsh species

(a) Breeding (or probable breeding) ⁹ bird species	Score	(b) Wintering/passage bird species	Threshold count
Black-tailed godwit	6	Snipe	2
Garganey	6	Black-tailed godwit	5
Ruff	6	Curlew	5
Snipe	6	Redshank	5
Avocet	5	Ruff	5
Curlew	5	Shoveler	5
Lapwing	5	White-fronted goose	5
Redshank	5	Whooper swan	5
Teal	5	Lapwing	10
Marsh harrier	4	Pink-footed goose	10
Shoveler	4	Teal	10
Yellow wagtail	4	Wigeon	10
Oystercatcher	3	Brent goose	20
Reed bunting	2	Golden plover	20
Reed warbler	2		
Sedge warbler	2		
Skylark	2		
Mallard	1		
Mute swan	1		

Table 14: Grazing marsh features

Each feature scores one point.

Feature	Notes
Site is within an extensive block larger than 10ha	The site can be on the edge, or in the centre, of any block of land that is uninterrupted by hedgerows; this does not have to be all grazing marsh. Ditches and/or post and wire fences are acceptable boundaries where they do not inhibit ground-nesting bird visibility.
Periodic/seasonal freshwater flooding	Areas that are wet or damp for at least part of the year (normally November to May). This includes standing water in hollows and scrapes.
Variation in sward height and	Cover of rush tussocks should be less than 40%.

⁹ See Glossary for BTO definitions of probable and confirmed breeding.

Feature	Notes
structure; including tussocks of grass, rush or sedge	Areas of very short sward are important for some ground-nesting birds ($\leq 5\text{cm}$).
Evidence of long-term presence of permanent pasture	Includes anthills, humps and hollows, historic ridge and furrow, rills, remnants of deserted villages, salterns, other relevant historic earthworks, remnant hedgebanks.
Areas of reedbed ¹⁰ as part of the habitat mosaic	No size requirements, but should comprise at least 90% common reed <i>Phragmites australis</i> , and contribute to the mosaic effect of the habitat. Linear reedbeds are acceptable.
Permanent water-filled ponds	Recently created ponds are included here, as well as natural ponds and areas of standing water.
Complex margins of wetland habitats	Relates to shallow and steep sides, and irregular edges in standing water features. Emergent vegetation is also important.
Brackish or freshwater drainage ditches holding water throughout most of the year	Includes a wide variety of depths and widths, and can be scored for <u>each</u> adjacent subsite within a larger site.
A Community Conservation Index (CCI) score of 10-14	This is a measure of aquatic invertebrate diversity.
A breeding bird index score of 6-12	Using Table 13 (a).
A threshold count for any one of the wintering/passage bird species	Using Table 13 (b).

¹⁰ For more information on reedbeds, including linear reedbeds, see Paragraph 2.5.7.

3.9 Coastal and estuarine habitats

Greater Lincolnshire has an impressive 50miles (80km) of coastline connecting the internationally important estuaries of the Wash and the Humber. There are approximately 580ha of sand dune, 6,000ha of saltmarsh, 38,000ha of intertidal mudflats and less than 110ha of saline lagoons around the coast. Much of the coast is protected by national and international conservation designations, for example Donna Nook and Gibraltar Point NNRs.

Co1 All BAP quality saltmarsh at least 0.5ha in extent, or linear riversides at least 50m long

Appendix 5 describes typical saltmarsh habitat. Greater Lincolnshire supports a nationally important saltmarsh resource, and its conservation is a critical part of maintaining local biodiversity.

Co2 All BAP quality mudflats at least 0.5ha in extent, or linear riversides at least 50m long

Intertidal mudflats are formed by the deposition of silts and clays in low energy coastal environments, usually in estuaries and other sheltered areas. They commonly occur between subtidal channels and vegetated saltmarsh habitats and act as important buffers for the latter by reducing the wave activity that may cause erosion. Mudflats are important for invertebrates, and predatory birds and fish. (UKBAP, 1999.) Greater Lincolnshire supports a nationally important mudflat resource, and its conservation is a critical part of maintaining local biodiversity.

Co3 All BAP quality coastal sand dunes and dune grassland at least 0.5ha in extent

Appendix 5 describes typical sand dune and dune grassland habitat. Coastal sand dune habitat is important for its dune grassland and dune slack flora. Due to recreational and development pressure and lack of sympathetic management (often leading to scrub encroachment and erosion), this is the most threatened of coastal habitats in Greater Lincolnshire.

SL1 All BAP quality saline lagoons

Appendix 5 describes typical saline lagoon habitat. Saline lagoons represent a rare and diminishing type of habitat in the UK and in Europe generally, and support a highly specialised flora and invertebrate fauna, including several rare species. All saline lagoons are likely to support sea club-rush and common reed; other species that occur in saline or brackish water are brackish water-crowfoot, beaked tasselweed, spiral tasselweed, fennel pondweed, spiked water-milfoil and wild celery.

3.10 Brownfield mosaic

Brownfield represents a diverse range of sites, usually with a known history of disturbance, with previous land uses including mineral extraction, industry, airfields, transport routes and housing or other development. Many such places are concentrated in, but not confined to, urban and former industrial landscapes. These sites are at substantial risk of destruction and serious degradation from a number of factors, including urban development (which has targets for using brownfield in preference to greenfield sites), landfill, unsuitable reclamation, eutrophication, lack of appropriate management and natural succession. (Riding *et al.*, 2010.)

BM1 **Brownfield mosaic at least 0.25ha in extent with loose substrate or bare ground and at least two of the early successional communities¹¹ in Table 15 and a minimum brownfield features index score of four using Table 16**

These composite habitats support habitat types that are a priority for nature conservation, such as pioneer communities and flower-rich grasslands, and are important for many UK BAP priority species or Red Data Book species. Of particular importance is the habitat mosaic and spatial variation itself, including features such as loose substrate or bare ground, overwintering habitat and nectar sources that are important for invertebrates.

Table 15: Brownfield early successional communities

	Community	Notes
	Relatively open bryophyte communities on the ground	A fine-grained mosaic. These should not form dense carpets that restrict other species.
	Diverse or abundant lichen communities on the ground	To include foliose (leaf-like), crustose (crust) and/or fruticose (shrubby and branched) growth forms.
	Inundation	Comprises plant species suited to periodic flooding, usually interspersed with bare areas of mud, e.g. marsh foxtail, toad rush, redshank, lesser spearwort.
	Sparse, short-sward grassland	Comprises mainly perennial stress-tolerant species amongst grass species and patches of bare ground, e.g. sheep's-fescue, cat's-ear, mouse-ear hawkweed, sheep's sorrel.
Flower-rich	Annual colonisers	Short sward. Comprises mainly stress-tolerant species suited to low nutrient availability and shallow soils, e.g. thyme-leaved sandwort, common centaury, fairy flax, hare's-foot clover.
Flower-rich	Ruderal colonisers	Comprises species that are usually the first to colonise disturbed ground; generally more typical of more nutrient-rich areas than the annual community described above, e.g. wild carrot, common toadflax, weld, common mallow, teasel, evening primrose.

¹¹ At least one early successional community should be flower-rich (see Table 15).

	Community	Notes
Flower-rich	Flower-rich grassland	Comprises a more mature, closed grassland sward with a high proportion of robust flowering herbs, e.g. common knapweed, common bird's-foot-trefoil, meadow buttercup, red clover. This could also score quite well for the NG1 , CG1 or HE2 criteria.
Flower-rich	Heathland	Comprises generally a more open structure and less plant litter than typical heath; may be interspersed with lichens, lower plants and grasses, e.g. heather (<i>Calluna</i>), wavy hair-grass, mat-grass, sheep's-fescue. This could also score quite well for the HE2 criterion.

Adapted from: Riding *et al.*, 2010

Table 16: Brownfield features

Each feature scores one point.

Feature	Notes
Variation in topography and substrate	Includes humps, hollows and depressions; piles/mounds of rubble, gravel, sand and ash; and significantly broken-up concrete and tarmac. These provide natural and artificial habitat variation at ground level.
South-facing slopes, banks and cliffs	Provide important basking and burrowing habitat for reptiles and invertebrates, receiving direct sunlight for a large proportion of the day.
Variation in sward height and structure; including tussocks of grass, rush or sedge	Areas of short sward, taller herb species and tussocks, providing structural diversity within the vegetation.
Unmanaged areas of dead and dying plant matter	Includes stems, leaves, flower heads, seed heads, standing and fallen dead trees. These habitats are important for over-wintering and nesting insects.
Areas of scrub	These should cover no more than 25% of the site and should not threaten detrimental encroachment into other habitats within the mosaic. Scrub should be structurally and/or botanically diverse.
Ephemeral wet/damp areas	Includes naturally occurring or artificially created damp areas that are at or close to the water table, marginal habitat surrounding standing water, and the seasonal accumulation of water on the ground.
Permanent ponds/pools/wetlands	Provide (and should include) shallow margins, wide drawdown zones, a variety of water depths and emergent vegetation; all of which are important habitats for invertebrates.
Activities that will maintain the bare substrate	Includes rabbit activity, or acceptable levels of human activity such as dirt-biking or quarrying. These should not be so intensive that irreparable damage is incurred.

3.11 Mosaic habitats

Mos1 **Areas at least 0.25ha in extent that support a combination of two or more individual habitats, each with a species index score that is no more than three points below the qualifying threshold**

This criterion recognises the fact that habitat diversity is good for species diversity. It should be used to select adjacent areas of different habitats, where not all are of LWS quality on their own, but together they represent a valuable wildlife resource. To avoid the inclusion of duplicate scoring species, care should be taken to check that the total number of all scoring species for the site satisfies the highest threshold of the constituent habitat criteria.

3.12 Supplementary features

Sup1 Areas at least 0.1ha in extent that satisfy any criterion threshold, using a combination of the species index score from that criterion and a notable plant species index score using Table 17

This criterion is used to recognise the value of land which does not initially satisfy any habitat criterion thresholds, but assumes greater value due to the presence of notable plant species. An example might be a semi-improved pasture that achieves the NG1 threshold of eight by scoring six points from Table 7 and two more points because it supports two notable plants listed in Table 17. Any species can contribute towards a threshold score for any criterion.

Sup2 Areas that add to the wildlife value of adjacent land of at least LWS quality

This criterion is used to recognise the value of land that is not of LWS quality on its own, but does add to the proven wildlife value of adjacent land.

Sup3 Linear features that connect, and therefore add to the wildlife value of, adjacent land of at least LWS quality

This criterion is used to recognise the value of land that is not of LWS quality on its own, but performs a valuable connecting role between two or more areas of proven wildlife value.

Sup4 Areas at least 0.1ha in extent with a species index score within 50% of any criterion threshold and a suite of additional habitat features¹²

This criterion recognises that sites can have substantive nature conservation value through possession of certain recognisable habitat features. For example, a woodland site supporting extraordinary amounts of dead wood that is of value for saproxylic invertebrates.

Sup5 Areas at least 0.1ha in extent with a species index score within 50% of any criterion threshold and a self-sustaining population of a species (or suite of species) of high conservation value

This criterion recognises that sites can have substantive nature conservation value through possession of certain species populations. Examples include heronries, sand martin colonies, bat roosts, great-crested newt ponds, or any population of local or national importance. The status of the population, and its conservation value, are judged by the Panel using their expertise and local knowledge or in consultation with surveyors and/or county recorders.

¹² From the survey form (see Appendix 2).

Table 17: Notable plant species

Each species scores one point (towards any qualifying threshold).

<i>Agrostemma githago</i>	Corncockle
<i>Alchemilla xanthochlora</i>	Pale lady's-mantle
<i>Alisma gramineum</i>	Ribbon-leaved water-plantain
<i>Allium oleraceum</i>	Field garlic
<i>Allium scorodoprasum</i>	Sand leek
<i>Althaea officinalis</i>	Marsh-mallow
<i>Andromeda polifolia</i>	Bog-rosemary
<i>Apera interrupta</i>	Dense silky-bent
<i>Aquilegia vulgaris</i>	Columbine
<i>Armeria maritima</i> ssp. <i>elongata</i>	Tall thrift
<i>Asperula cynanchica</i>	Squinancywort
<i>Bidens cernua</i>	Nodding bur-marigold
<i>Bidens tripartita</i>	Trifid bur-marigold
<i>Blysmus compressus</i>	Flat-sedge
<i>Blysmus rufus</i>	Saltmarsh flat-sedge
<i>Botrychium lunaria</i>	Moonwort
<i>Bupleurum tenuissimum</i>	Slender hare's-ear
<i>Callitriche hermaphroditica</i>	Autumnal water-starwort
<i>Calystegia soldanella</i>	Sea bindweed
<i>Cardamine amara</i>	Large bitter-cress
<i>Carex divisa</i>	Divided sedge
<i>Carex echinata</i>	Star sedge
<i>Carex ericetorum</i>	Rare spring-sedge
<i>Carex hostiana</i>	Tawny sedge
<i>Carex laevigata</i>	Smooth-stalked sedge
<i>Carex lasiocarpa</i>	Slender sedge
<i>Carex pulicaris</i>	Flea sedge
<i>Carex rostrata</i>	Bottle sedge
<i>Carex strigosa</i>	Thin-spiked wood-sedge
<i>Carex vesicaria</i>	Bladder-sedge
<i>Catapodium marinum</i>	Sea fern-grass
<i>Centaurea cyanus</i>	Cornflower
<i>Centunculus minimus</i>	Chaffweed
<i>Ceratophyllum submersum</i>	Soft hornwort
<i>Chenopodium polyspermum</i>	Many-seeded goosefoot
<i>Chrysosplenium alternifolium</i>	Alternate-leaved golden-saxifrage
<i>Cirsium dissectum</i>	Meadow thistle
<i>Cladium mariscus</i>	Great fen-sedge
<i>Coeloglossum viride</i>	Frog orchid
<i>Crassula tillaea</i>	Mossy stonecrop
<i>Dianthus armeria</i>	Deptford Pink
<i>Dianthus deltoides</i>	Maiden pink
<i>Drosera intermedia</i>	Oblong-leaved sundew
<i>Drosera rotundifolia</i>	Round-leaved sundew
<i>Eleocharis multicaulis</i>	Many-stalked spike-rush
<i>Eleocharis quinqueflora</i>	Few-flowered spike-rush

<i>Eleocharis uniglumis</i>	Slender spike-rush
<i>Epipactis dunensis</i>	Dune helleborine
<i>Epipactis palustris</i>	Marsh helleborine
<i>Epipactis phyllanthos</i>	Green-flowered helleborine
<i>Epipactis purpurata</i>	Violet helleborine
<i>Equisetum hyemale</i>	Rough horsetail
<i>Equisetum ramosissimum</i>	Branched horsetail
<i>Equisetum sylvaticum</i>	Wood horsetail
<i>Eryngium maritimum</i>	Sea-holly
<i>Euphorbia paralias</i>	Sea spurge
<i>Festuca longifolia</i>	Blue fescue
<i>Frankenia laevis</i>	Sea-heath
<i>Gagea lutea</i>	Yellow star-of-Bethlehem
<i>Genista anglica</i>	Petty whin
<i>Gentiana pneumonanthe</i>	Marsh gentian
<i>Gentianella anglica</i>	Early gentian
<i>Geranium columbinum</i>	Long-stalked crane's-bill
<i>Geranium sanguineum</i>	Bloody crane's-bill
<i>Gnaphalium sylvaticum</i>	Heath cudweed
<i>Gymnadenia densiflora</i>	Marsh fragrant-orchid
<i>Herniaria glabra</i>	Smooth rupturewort
<i>Hordelymus europaeus</i>	Wood barley
<i>Hordeum marinum</i>	Sea barley
<i>Hydrocharis morsus-ranae</i>	Frogbit
<i>Hypericum elodes</i>	Marsh St John's-wort
<i>Hypericum montanum</i>	Pale St John's-wort
<i>Hypopitys monotropa</i>	Yellow bird's-nest
<i>Jasione montana</i>	Sheep's-bit
<i>Kickxia elatine</i>	Sharp-leaved fluellen
<i>Kickxia spuria</i>	Round-leaved fluellen
<i>Lamiastrum galeobdolon</i> ssp. <i>galeobdolon</i>	Yellow archangel
<i>Lathraea squamaria</i>	Toothwort
<i>Lathyrus linifolius</i> var. <i>montanus</i>	Bitter-vetch
<i>Lathyrus nissolia</i>	Grass vetchling
<i>Lathyrus palustris</i>	Marsh pea
<i>Linum bienne</i>	Pale flax
<i>Linum perenne</i> ssp. <i>anglicum</i>	Perennial flax
<i>Maianthemum bifolium</i>	May lily
<i>Malus sylvestris</i>	Crab apple
<i>Malva setigera</i>	Rough mallow
<i>Marrubium vulgare</i>	White horehound
<i>Medicago arabica</i>	Spotted medick
<i>Melampyrum pratense</i>	Common cow-wheat
<i>Minuartia hybrida</i>	Fine-leaved sandwort
<i>Montia fontana</i>	Blinks
<i>Myosurus minimus</i>	Mousetail
<i>Myrica gale</i>	Bog-myrtle
<i>Narthecium ossifragum</i>	Bog asphodel
<i>Neotinea ustulata</i>	Burnt orchid
<i>Neottia nidus-avis</i>	Bird's-nest orchid
<i>Oenanthe lachenalii</i>	Parsley water-dropwort

<i>Oenanthe silaifolia</i>	Narrow-leaved water-dropwort
<i>Ophrys insectifera</i>	Fly orchid
<i>Orchis anthropophora</i>	Man orchid
<i>Orobanche purpurea</i>	Yarrow broomrape
<i>Orobanche rapum-genistae</i>	Greater broomrape
<i>Osmunda regalis</i>	Royal fern
<i>Parapholis incurva</i>	Curved hard-grass
<i>Pedicularis sylvatica</i>	Lousewort
<i>Pilularia globulifera</i>	Pillwort
<i>Pinguicula vulgaris</i>	Butterwort
<i>Poa bulbosa</i>	Bulbous meadow-grass
<i>Polypogon monspeliensis</i>	Annual beard-grass
<i>Potamogeton coloratus</i>	Fen pondweed
<i>Potamogeton compressus</i>	Grass-wrack pondweed
<i>Potamogeton gramineus</i>	Various-leaved pondweed
<i>Potamogeton obtusifolius</i>	Blunt-leaved pondweed
<i>Potamogeton praelongus</i>	Long-stalked pondweed
<i>Potentilla argentea</i>	Hoary cinquefoil
<i>Pulsatilla vulgaris</i>	Pasqueflower
<i>Pyrola minor</i>	Common wintergreen
<i>Pyrola rotundifolia</i> ssp. <i>rotundifolia</i>	Round-leaved wintergreen
<i>Pyrus pyraeaster</i>	Wild pear
<i>Ranunculus arvensis</i>	Corn buttercup
<i>Ranunculus parviflorus</i>	Small-flowered buttercup
<i>Rhinanthus angustifolius</i>	Greater yellow-rattle
<i>Rubus saxatilis</i>	Stone bramble
<i>Ruppia maritima</i>	Beaked tasselweed
<i>Salix aurita</i>	Eared willow
<i>Salix repens</i>	Creeping willow
<i>Sambucus ebulus</i>	Dwarf elder
<i>Sarcocornia perennis</i>	Perennial glasswort
<i>Scirpus sylvaticus</i>	Wood club-rush
<i>Scandix pecten-veneris</i>	Shepherd's-needle
<i>Schoenus nigricans</i>	Black bog-rush
<i>Scutellaria minor</i>	Lesser skullcap
<i>Sedum telephium</i>	Orpine
<i>Silene gallica</i>	Small-flowered catchfly
<i>Sium latifolium</i>	Greater water-parsnip
<i>Solidago virgaurea</i>	Goldenrod
<i>Sparganium natans</i>	Least bur-reed
<i>Spartina maritima</i>	Small cord-grass
<i>Spiranthes spiralis</i>	Autumn lady's-tresses
<i>Stellaria neglecta</i>	Greater chickweed
<i>Stellaria nemorum</i>	Wood stitchwort
<i>Stellaria palustris</i>	Marsh stitchwort
<i>Sueda vera</i>	Shrubby sea-blite
<i>Teucrium chamaedrys</i>	Wall germander
<i>Thelypteris palustris</i>	Marsh fern
<i>Thesium humifusum</i>	Bastard-toadflax
<i>Thymus pulegioides</i>	Large thyme
<i>Trichophorum germanicum</i>	Deergrass

Trifolium ochroleucon
Trifolium squamosum
Trifolium subterraneum
Ulmus plotii
Utricularia vulgaris
Vaccinium myrtillus
Vaccinium oxycoccus
Valerianella dentata
Vicia sylvatica

Sulphur clover
Sea clover
Subterranean clover
Plot's elm
Greater bladderwort
Bilberry
Cranberry
Narrow-fruited cornsalad
Wood vetch

Adapted from: Kirby (2007)

Glossary

Terms used for Local Sites in Greater Lincolnshire¹³

County Wildlife Site (CWS)

Sites referred to in a Local Plan, selected as being of importance for nature conservation on the basis of local knowledge before development of selection criteria. The term CWS has been used by North Kesteven District Council. This term was also used for the original draft of the LWS selection criteria, and is often used to describe both LWSs and SNCIs.

Critical Natural Asset (CNA)

Sites referred to in a Local Plan, selected as being of importance for nature conservation on the basis of local knowledge before development of agreed selection criteria. The term CNA has been used by City of Lincoln Council.

Local Geological Site (LGS)

These are equivalent to LWSs, but are selected for geological or geomorphological interest. Guidelines on their identification and selection can be found on the GLNP website at www.glnp.org.uk.

Local Site (LS)

This is the umbrella term advocated by Defra (2006), and often describes LGSs, LWSs, RIGSs, SNCIs and many more. When used in policy or by local authorities it can also include Local Nature Reserves (LNRs). When it is used by the GLNP however, it refers only to LWSs and LGSs.

Local Wildlife Site (LWS)

This is the term that has been advocated for general use by Defra in their guidance. The GLNP only considers a site in Greater Lincolnshire to be an LWS when it has selected using the agreed selection criteria.

Regionally Important Geological and Geomorphological Site (RIGS/RIGGS)

Established in 1990 by the Nature Conservancy Council (NCC), RIGSs were the most important non-statutory geoconservation sites at the time. Selection was based on local knowledge before development of the LGS selection criteria.

Site of Importance for Nature Conservation (SINC)

Sites referred to in a Local Plan, selected as being of importance for nature conservation on the basis of local knowledge before development of agreed selection criteria. The term SINC has been used by North Lincolnshire Council.

¹³ Other terms used elsewhere in England for these sites can be found in Annex A of 'Local Sites: Guidance on their Identification, Selection and Management' (Defra, 2006).



Site of Local Nature Conservation Importance (SLNCI)

Sites referred to in a Local Plan, selected as being of importance for nature conservation on the basis of local knowledge before development of agreed selection criteria. The term SLNCI has been used by South Holland District Council.

Site of Nature Conservation Importance (SNCI)

Sites referred to in a Local Plan, selected as being of importance for nature conservation on the basis of local knowledge before development of agreed selection criteria. The term SNCI has been used by East Lindsey District Council, Lincolnshire County Council, North East Lincolnshire Council, South Kesteven District Council, and West Lindsey District Council.

Wildlife Site (WS)

Sites referred to in a Local Plan, selected as being of importance for nature conservation on the basis of local knowledge before development of agreed selection criteria. The term WS has been used by Boston Borough Council.

Other terms

Agri-environment - schemes under the Common Agricultural Policy offering farmers payment to implement environmentally-beneficial management and demonstrate good environmental practice on their farm. This is the overarching term for the variety of schemes which have operated since these payments began. The current scheme is called Environmental Stewardship and includes Higher Level Stewardship (**HLS**) and Entry Level Stewardship (**ELS**).

Ancient Woodland Inventory (AWI) - is a provisional list of woodland sites over 2ha in size that have had continuous woodland cover since at least 1600 AD. This includes ancient semi-natural woodland (**ASNW**) and plantation on ancient woodland sites (**PAWS**).

Area of Outstanding Natural Beauty (AONB) - these were created by legislation within the National Parks and Access to the Countryside Act of 1949. In Greater Lincolnshire there is one AONB, which is the Lincolnshire Wolds.

Biodiversity - is shorthand for biological diversity – the variety of life on earth and the systems that support that variety.

Biodiversity Action Plan (BAP) - is a plan that lists actions to improve the state of threatened biodiversity. See Sections 1-6 of the Lincolnshire BAP (LBP, 2011) for detail on how this works in policy and practice within the UK and Greater Lincolnshire.

British Trust for Ornithology (BTO) - is an independent wildlife and bird research charity.

- **Evidence of probable breeding in birds:** pair observed in suitable nesting habitat in breeding season; permanent territory presumed through registration of territorial behaviour; courtship and display; visiting probable nest site; agitated behaviour or anxiety calls from adults; brood patch on adult examined in the hand; nest building or excavating nest-hole.

- **Evidence of confirmed breeding in birds:** distraction-display or injury feigning; used nest or eggshells found; recently fledged or downy young; adults entering or leaving nest-site in circumstances indicating occupied nest or adults seen incubating; adult carrying faecal sac or food for young; nest containing eggs; nest with young seen or heard.

More details can be found on their website at: <http://www.bto.org/volunteer-surveys/birdatlas/taking-part/breeding-evidence>.

Community Conservation Index (CCI) - is a method for assessing the conservation value of aquatic invertebrates present at a site (see Paragraph 2.5.2).

Core Strategy – this is the key compulsory component of local authorities' Local Plans.

County recorders - individuals who collate information about specific groups, orders or families of species, either via the Lincolnshire Naturalists' Union (LNU) or via national schemes and societies. The LNU hold details of all the county recorders.

Environmental Statement - supplied as part of an **Environmental Impact Assessment (EIA)** for any proposed development that might have an impact on the environment. It should provide information on the environmental effects of the project and will be the subject of consultation with the public and environmental bodies.

Epiphytic - referring to species that grow on other plants (usually trees); this is a non-parasitic relationship as the former usually derives its moisture and nutrients from the air.

Eutrophic - referring to waters rich in nutrients that encourage plant growth, often promoting undesirable algal blooms.

Geodiversity - is the variety of rocks, minerals, fossils, soils and landscapes, together with the natural processes that form them.

Greater Lincolnshire Nature Partnership (GLNP) - brings together local authorities, statutory agencies, voluntary and not-for-profit organisations with a responsibility for and interest in nature in Greater Lincolnshire. It coordinates action, information and protection, and provides services for Partner organisations. The Partnership is independent of any of its constituent organisations. Partners are listed on the website: www.glnp.org.uk.

Greater Lincolnshire Nature Partnership Steering Group (GLNP SG) - consists of representatives of the GLNP Partner organisations who meet to determine policy and action.

Greenspace - is defined in a wide variety of ways and often used interchangeably with Green Infrastructure. It is also used much more informally to mean any kind of green area (that may be important for access) regardless of its contribution to a network.

Halophytic - referring to species that are adapted to living in a saline environment.

Intertidal - the area between high and low tide marks; it is submerged at high tide but above water at low tide. The constant but periodic inundation results in a particular ecology and subset of species.

Landscape Character Assessment (LCA) - is a tool that aims to help people understand and articulate the characteristics of landscape; basically to identify the essence of 'place'. It is used for various purposes including planning policies, environmental management and to measure change in landscapes. See **National Character Areas** below. Please see Natural England's website for more information:
www.naturalengland.org.uk/ourwork/landscape/englands/character/assessment

Lincolnshire Biodiversity Action Plan (Lincolnshire BAP) - is the local BAP for Greater Lincolnshire, i.e. the areas administered by Lincolnshire County Council, North Lincolnshire Council and North East Lincolnshire Council. The first edition was published in 2000, the second in 2006 and the third in 2011. This is available on the GLNP website:
www.glnp.org.uk

Lincolnshire Biodiversity Partnership (LBP) - see Greater Lincolnshire Nature Partnership, which replaced it in 2012.

Lincolnshire Environmental Records Centre (LERC) - collects, collates, manages and disseminates information relating to the species, habitats and sites of the Greater Lincolnshire, under the auspices of the GLNP.

Lincolnshire Wildlife Trust (LWT) - is the Lincolnshire nature conservation charity, previously known as Lincolnshire Trust for Nature Conservation, and Lincolnshire and South Humberside Trust for Nature Conservation.

Local authority (LA) - in this document this term is used to describe the two unitary authorities (North Lincolnshire and North East Lincolnshire), Lincolnshire County Council, the five district councils (East Lindsey, North Kesteven, South Holland, South Kesteven and West Lindsey), one borough council (Boston) and one city council (Lincoln).

Local Development Framework (LDF) - the now defunct spatial planning strategy introduced in England and Wales by the Planning and Compulsory Purchase Act 2004. The LDF replaced the system of county level Structure Plans, district level Local Plans, and Unitary Development Plans for a short time. See **Local Plans** below.

Local Nature Reserve (LNR) - areas designated by the local authority, and protected through the Local Plan as of special wildlife interest that enhance public enjoyment of wildlife. The local authority either has ownership or a legal interest in the land.

Local Plans - the current spatial planning strategy which was proposed for replacement by Local Development Frameworks (LDFs) in 2004. Local Plans were reinstated by the NPPF in 2012.

Local provenance - this term is almost exclusively applied to plants. The term provenance is used to describe the location from which the seed/plant/cutting was collected. Local implies it is close to the current location of the plant and by implication should have similar genetics. This is considered beneficial to continue/aid local genetic adaptations. Whether this is accurate or not has been debated but the practice is widely used.

Local Wildlife Sites Panel (LWSP) - is a working group of the GLNP, preceded by the Wildlife Sites Review Group (WSRG). This is the Panel of experts that assess candidate LWSs against the selection criteria and make decisions on their selection (see Section 1.4).

National Character Area (NCA) - these subdivide England into 159 areas of similar landscape character. Each NCA has a unique identity resulting from the interaction of wildlife, landforms, geology, land use and human impact. NCAs have built on much previous work on landscape designation – including Natural Areas and Landscape Character Assessment. Greater Lincolnshire is covered by 10 NCAs and two Marine Natural Areas. Please see Natural England's website for more information:
www.naturalengland.org.uk/ourwork/landscape/englands/character/areas

National Biodiversity Network (NBN) - makes the UK's wildlife information freely available to everyone over the internet. Please see their website for more information:
www.nbn.org.uk.

National Indicator 197 (NI 197) - is *"Improved Local Biodiversity – proportion of Local Sites where positive conservation management has been or is being implemented"*. A now defunct National Indicator for the performance of local authorities. See **Single Data List Indicator 160-00** below.

National Nature Reserve (NNR) - these represent many of the finest wildlife and geological sites in the country. They are selected from the Sites of Special Scientific Interest (SSSIs) and so each NNR has at least two designations.

National Planning Policy Framework (NPPF) - This document, published in 2012, set out to simplify the planning system, reduce the number of policy documents and provide guidance for planning authorities. The document can be found at:
<https://www.gov.uk/government/publications/national-planning-policy-framework--2>.

National Vegetation Classification (NVC) - a common standard of plant community classification developed by the Nature Conservancy Council in 1975. NVC is not used in the LWS system but is referred to in some BAP habitat descriptions. For more information please see: <http://jncc.defra.gov.uk/page-4259>.

Natural Area - these are similar to the NCAs but are based primarily on wildlife and natural features. They are seen as biogeographic zones, unlike the NCAs, which incorporate more human and social elements. Natural Areas have been retained for describing marine areas, and Greater Lincolnshire has two Marine Natural Areas. Please see Natural England's website for more information:

www.naturalengland.org.uk/ourwork/conservation/biodiversity/englands/naturalareas.aspx
x

Planning Policy Statement (PPS) - these were published by the Office of the Deputy Prime Minister (ODPM), replacing Planning Policy Guidance. They have now themselves been superseded by the NPPF, though some accompanying Government Circulars are still in relevant.

Right of Way (ROW) - legally granted access for members of the public onto private land.

Roadside Nature Reserve (RNR) - these are a selection of wildlife-rich or important verges in Greater Lincolnshire, and are protected and managed by LWT in co-operation with the County Council.

Saproxyllic - referring to species that are involved in, or dependent on, the process of fungal decay of wood or the products of that decay.

Service Level Agreement (SLA) - is the formal definition of services to be provided, in this case between the GLNP and its Partner organisations, for an agreed fee.

Single Data List Indicator 160-00 - is *“Local nature conservation/biodiversity - proportion of Local Sites where positive conservation management is being achieved”*. This indicator of local authority performance replaced NI 197 in 2011. For more information please see: <https://www.gov.uk/government/policies/making-local-councils-more-transparent-and-accountable-to-local-people/supporting-pages/single-data-list>

Site of Special Scientific Interest (SSSI) - part of the national suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. These sites are also used to underpin other national and international nature conservation designations, and are currently designated under the Wildlife and Countryside Act 1981 (as amended in the Countryside Rights of Way Act 2000).

Special Area of Conservation (SAC) - these are protected sites designated under the EC Habitats Directive.

Veteran trees - see Paragraph 2.5.3.

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Appendix 1: Lincolnshire BAP actions relevant to LWSs 2010-2020

Table 18: Selected actions from the Lincolnshire BAP 3rd edition (LBP, 2011)

Section of BAP	Action plan	Action code	Details	Partners ¹⁴	Action date
Common themes	Biodiversity information and monitoring	LIN3_BIM_A05	Resurvey remaining SNCLs for assessment against LWS criteria.	LAs	2015
Common themes	Biodiversity information and monitoring	LIN3_BIM_A06	Identify and survey potential new Local Sites.	LBP, LAs, NE, EA, LWT	Ongoing
Common themes	Biodiversity information and monitoring	LIN3_BIM_A07	Designate all sites meeting criteria in LWS guidelines and maintain a sound evidence base by monitoring all LWSs every 5-10 years.	LAs, LBP, LWS Panel	Ongoing
Coastal and marine	Saline lagoons	LIN3_SAL_A01	Ensure that all qualifying saline/brackish lagoons in Lincolnshire are protected by appropriate designation – SSSI or LWS.	LWS Panel, LBP, LAs, LWT, NE, WESG	2015
Coastal and marine	Saltmarsh	LIN3_STM_A01	Ensure that all saltmarsh is covered by appropriate designation (SSSI or LWS).	NE, LAs, LWS Panel, LWT, RSPB, WESG	Ongoing
Farmland and grassland	Grazing marsh	LIN3_GRZ_A02	Develop criteria for selecting grazing marsh as LWSs.	LWS Panel, LBP, LAs, LWT	2012
Farmland and grassland	Lowland calcareous grassland	LIN3_LCG_A01	Complete survey of roadside verges, quarries and other potential LWSs on limestone in the Kesteven Uplands and South Lincolnshire Edge NCAs.	LWT, NE, LAs	2014
Farmland and grassland	Lowland calcareous grassland	LIN3_LCG_A02	Complete survey of roadside verges, quarries and other potential LWSs on chalk in the Lincolnshire Wolds NCA.	LWT, NE, LWCS, LAs	2015
Farmland and	Lowland calcareous	LIN3_LCG_A03	Complete survey of roadside verges, quarries and other potential LWSs on limestone in the Northern Lincolnshire Edge with Coversands NCA.	LWT, LAs	2018

¹⁴ The GLNP has replaced the LBP and has therefore taken responsibility for the actions assigned to the latter.

Section of BAP	Action plan	Action code	Details	Partners ¹⁴	Action date
grassland	grassland				
Farmland and grassland	Lowland calcareous grassland	LIN3_LCG_A05	Ensure 90% of calcareous grassland LWSs are in positive conservation management by 2018 by providing advice and incentives e.g. via HLS and RNR scheme. Kesteven Uplands and South Lincolnshire Edge NCAs by 2016. Lincolnshire Wolds NCA by 2017. Northern Lincolnshire Edge with Coversands NCA by 2018.	NE, LWT, LAs, LWCS	2018
Farmland and grassland	Lowland calcareous grassland	LIN3_LCG_A06	Develop by 2012 and implement by 2015 management regimes for calcareous grassland roadside verges – ensuring positive conservation management for those meeting LWS criteria.	LCC, NLC, NELC, LWT	2015
Farmland and grassland	Lowland calcareous grassland	LIN3_LCG_A08	Create 50ha of chalk grassland and 50ha of limestone grassland with priority given to buffering, linking or expanding sites meeting LWS criteria and sites of particular value to communities.	NE, LWT, LAs	2015
Farmland and grassland	Lowland meadows	LIN3_LME_A01	Complete survey of potential LWSs on roadside verges on neutral soils.	LWT, NE, LAs	2018
Farmland and grassland	Lowland meadows	LIN3_LME_A03	Develop by 2012 and implement by 2015 management regimes for neutral grassland roadside verges which provide positive conservation management for those meeting LWS criteria.	LCC, NLC, NELC, LWT	2015
Farmland and grassland	Lowland meadows	LIN3_LME_A04	Ensure 90% of lowland meadow LWSs are in positive conservation management by providing advice and incentives e.g. via HLS and RNR schemes.	NE, LWT, LAs, FWAG	2020
Farmland and grassland	Lowland meadows	LIN3_LME_A06	Create 40ha of lowland meadow with priority given to buffering, linking or expanding sites meeting LWS criteria and sites of particular value to communities.	NE, LWT, LAs	2015
Heathland and peatland	Heathland and peatland	LIN3_HPL_A05	Where appropriate, implement grazing on nature reserves, SSSIs and LWSs where heathland and peatland habitats are represented.	LWT, FC, NE, NLC, ELDC, WLDC	2015
Heathland and	Lowland dry acid grassland	LIN3_AGR_A05	Where appropriate, implement grazing on nature reserves, SSSIs and LWSs in which acid grassland habitats are represented.	LWT, FC, NE, NLC	2015

Section of BAP	Action plan	Action code	Details	Partners ¹⁴	Action date
peatland					
Heathland and peatland	Lowland dry acid grassland	LIN3_AGR_A09	Develop by 2012 and implement by 2015 management regimes for lowland dry acid grassland roadside verges – ensuring positive conservation management for those meeting LWS criteria.	LCC, NLC, NELC, LWT	2015
Rivers and wetlands	Ponds, lakes and reservoirs	LIN3_PND_A02	Manage SSSIs and LWSs, in conjunction with landowners and managers, to ensure habitat is maintained and enhanced in accordance with each site's primary habitat/species interest.	AW, EA, LAs, LWT, NE, WESG	2015
Rivers and wetlands	Springs and flushes	LIN3_SAF_A02	Through the CAMS and National Environment Programme processes ensure that all LWSs with springs and flushes are identified and their water requirements recognised and addressed. Data should be collected if necessary to inform these processes.	EA, AW, LAs, LWT	2012
Urban	Brownfield	LIN3_BRO_A01	Identify brownfield sites for inclusion in LWS survey/resurvey using the National Land Use Database and Strategic Housing Land Availability Assessment reports.	LBP, LAs	2012
Urban	Brownfield	LIN3_BRO_A02	Evaluate sites identified in A01 and develop a database/map of brownfield land, with an indication of priority for conservation.	Buglife, LBP, LAs	2013
Urban	Brownfield	LIN3_BRO_A06	Develop criteria for selecting brownfield land of conservation value as LWSs.	LWS Panel, LAs, LWT	2012
Urban	Brownfield	LIN3_BRO_A07	Work with owners/managers of LWSs with brownfield habitats to encourage favourable management (e.g. through advice and planning obligations).	LAs, HINCA, LWS Panel	Ongoing
Species	White-clawed crayfish	LIN3_WCC_A02	Progress investigation of designating part or all of the upper Witham system (Cringle Brook/ Wyville Brook and/or main river) as a SSSI for the crayfish and other wildlife and geomorphological interest. In the interim evaluate as an LWS.	NE, EA, LCC, LWT, SKDC	2015

Appendix 2: Survey form

Guidance

- A. This is a double-sided survey form for completion in the field. It is intended for use for baseline surveys, monitoring surveys and full resurveys. One survey form must be completed for each site, or for each recording unit/subsite (if relevant). The form should be read in full before the survey begins, and the relevant habitats/features/choices ticked for each site/recording unit/subsite.
- B. To record the vascular plant species while on site, the GLNP recommends the relevant BSBI checklist¹⁵. If these are submitted on paper to the GLNP (or scanned in) they should be clearly labelled with the site name, subsite name, date and surveyor; though species lists as spreadsheets are generally preferred (see Paragraph 2.3.11).
- C. Where habitats/features/choices have multiple options within them (indicated by a spaced '/'); the correct option must be circled for each, or the incorrect options crossed through. If an option is not indicated, it is assumed that all are present.
- D. All of the boxes in the top section are compulsory, as without them records are invalid.
- Grid references should be either the central grid reference, or start and end grid references for linear sites.
 - Subsite names are not always relevant, but where they are numbers or letter are adequate but another example might be "*South east field*".
 - Dates of return visits to sites should be noted in the 'Notes' section, or a separate survey form should be completed for each visit.
 - Survey type should be known, but consult the party that has commissioned the survey if it is not (or see Paragraph 2.4.15 and Figure 2).
- E. The 'Habitat' section of the form is one of the most important as it tells the Panel which habitats the site should be assessed for.
- The following must be indicated where present to ensure assessment by the Panel (for example because there is no automatic botanical index score generated):
 - Wet woodland / Carr
 - Parkland
 - Wood-pasture
 - Orchard
 - Heathland
 - Sand dune
 - Saltmarsh
 - Mudflat
 - Reedbed / Linear reedbed
 - Grazing marsh – coastal / floodplain
 - Brownfield mosaic
 - Main habitats should be indicated by using 'M' in the adjacent box. Main habitats are simply those that cover the largest area of ground within the site or recording unit/subsite. Additional habitats should be indicated by using 'A', and are those that are also present but only in small amounts.

¹⁵ These can be downloaded from the BSBI website: North Lincolnshire - www.bsbi.org.uk/VC54.pdf, South Lincolnshire - www.bsbi.org.uk/VC53.pdf.

- A couple of blank spaces are included to allow insertion of any habitats that might be missing.
 - Habitats marked with a superscript number relate to the numbered criterion checklists of the reverse side of the form. If any of these habitats are selected the corresponding checklist should be completed.
- F. The 'Other site type' section represents Lincolnshire BAP habitats and other site types that are not strictly habitats in their own right, but are mapped and targeted for biodiversity action in Greater Lincolnshire.
- In addition to selecting habitats in the 'Habitat' section, this section should be checked for relevant overlapping site types. For example if a churchyard is surveyed the chances are at least one grassland habitat should be selected in the 'Habitat' section and 'Churchyard' should be circled and ticked in this section.
 - 'Disused quarry' is included in this section, while 'Active quarrying areas' is in 'Habitat'. This is because a disused quarry might have areas of grassland, lake and other habitats within it while active quarrying areas will not overlap with other habitats because of the high level of disturbance.
- G. The 'Additional habitat features' section should be thoroughly checked for every site or recording unit/subsite, ticking any features that are present.
- Veteran trees (see Paragraph 2.5.3) must be recorded for wood-pasture and parkland, and also for the WD3b criterion that assesses secondary woodland for its habitat features. There is a large space next to this feature, 'Pollarded trees' and 'Coppiced trees' instead of a simple tick box. This is to allow for notes on the number of trees and the species to be recorded, for example "2 oak, 1 lime". In addition, for 'Fruit/nut trees' the average distance between crown edges should be noted in metres to help assess suitability for the traditional orchard criterion WD6.
 - A couple blank spaces are included to allow insertion of any habitat features that might be missing.
 - A few of the features are quite subjective, specifically 'Abundant nectar sources', 'Structural diversity' and 'Educational potential'. Surveyors should use their best judgement to decide, for each site or recording unit/subsite, whether these are relevant.
 - Care should be taken not to duplicate habitats that have already been selected as present, for example by ticking 'Marsh' (in the 'Habitats' section) and 'Seasonally wet/damp areas' here for the same area of habitat.
- H. The 'Veteran tree features' section should be completed if any veteran trees are present (see Paragraph 2.5.3 for the GLNP use of the term 'veteran tree').
- There is not space on the survey form to have a checklist for each veteran tree, so this list should be used for all trees on the site/recording unit/subsite.
- I. The 'Notes' section should be used while on site to jot down notes on the general character of the site or recording unit/subsite.
- The species and number of veteran/pollarded/coppiced trees, planted trees and invasive species could also be noted here if there is not space in the 'Additional habitat features' section.

- The exact location of rare or notable plant species should be recorded if possible (including a grid reference), as this information is important for the county recorder when dealing with large sites and in case someone needs to re-find the species later. They should also be marked on a map if possible.
 - Particular attention should be drawn to species that have been planted and any habitat restoration or recreation that has taken place on site.
 - Detailed description of habitats should be included here, including the most frequent species and any undesirable or invasive species.
 - These notes can then be used to write a more formal site description later.
- J. The 'Condition status' section can be easily confused with the 'Management status' section (see Paragraph L below).
- The condition of the site should be assessed as either 'Good', 'Adequate', 'Poor' or 'Lost', based on the quality of the habitats present at the exact time of survey.
 - This will of course be a product of past management but should not take into account any management that is planned or even that which is already taking place. For example, a site may be in poor condition but the surveyor knows, or has seen evidence, that the site is receiving the management that is likely to improve its condition. This site should still be considered in poor condition at the time of survey, its condition can then be amended at the next survey if necessary.
- K. The 'Evidence of management' section should be thoroughly checked for every site or recording unit/subsite, ticking any choices that are relevant. 'Management comments and evidence' can be recorded in the section of that name, and any of the evidence of positive management choices at the base of this section should be ticked if known about. A lot of this information comes from direct communication with the owner/manager rather than observations on site.
- L. The 'Management status' section is compulsory and informs the Panel's decision on the conservation management status of the site.
- This decision must be based on current management that is known to be happening at the time of survey.
 - The first three choices are for the surveyor's opinion on active management at the time of survey, the fourth choice 'none' should be ticked if no active management is being undertaken at all.
 - If management is only appropriate for part of the site, or one habitat, it must be decided whether that is the main interest or not. An example might be a site that is half drain and half coarse grassland. If a lot of interesting aquatic species are being recorded that would suggest that the main interest of the site is the drain, good drain management at the expense of the grassland might be appropriate.
- M. The 'Constraints' section should be thoroughly checked for every site or recording unit/subsite, ticking any choices that are relevant.
- This section may be important if the site fails to satisfy any of the criteria but the Panel think that it has nature conservation value. If 'Late survey' has been ticked for a woodland site, the Panel might defer their decision and request an earlier survey that would pick up woodland flowering species.

- N. The '1. Woodland criterion checklist' section must be completed if any of the woodland habitats are selected in the 'Habitat' section (indicated with a superscript number one).
- This is a checklist, so while some features may already have been ticked elsewhere on the form it is important to tick them here as well to inform assessment against criterion WD3b.
 - Notes on the features can be found in Table 6 in Section 3.2.
 - The 'Large populations of one or more native ground flora species' feature refers to species indicated in Tables 3 and 4 with an '*'. The species should be recorded on the form in the space provided.
 - When ticking the options for the 'Habitat diversity' feature care should be taken not to record one habitat area as more than one of these options. For instance, if a wide, grassy area is both a glade and part of a ride it must be decided which option best suits the area. However, both options can be ticked if they occur independently of each other on the site; but ticking both for one area creates a duplicate score for that area.
- O. The '2. Grazing marsh criterion checklist' section must be completed if grazing marsh is selected in the 'Habitat' section (indicated with a superscript number two).
- This is a checklist, so while some features may already have been ticked elsewhere on the form it is important to tick them here as well to inform assessment against criterion GM3.
 - Notes on the features can be found in Table 14 in Section 3.8.
 - Guidance on reedbeds can be found in Paragraph 2.5.7.
- P. The '3. Brownfield criterion checklist' section must be completed if brownfield mosaic is selected in the 'Habitat' section (indicated with a superscript number three).
- This is a checklist, so while some features may already have been ticked elsewhere on the form it is important to tick them here as well to inform assessment against criterion BM1.
 - Notes on the features can be found in Table 15 in Section 3.10.
 - Percentages of 'Loose substrate or bare ground' and 'Areas of scrub' must be estimated on the form to inform assessment by the Panel.
 - When ticking the options for the 'Community' feature care should be taken not to record one habitat area as more than one of these options. For instance, if a distinct area within the brownfield mosaic is sparse, short grassland with annual colonisers within it, it must be decided which option best suits the area. However, both options can be ticked if they occur independently of each other on the site; but ticking both for one area creates a duplicate score for that area.

Site name				Grid reference(s)							
Subsite name				Date							
Surveyor(s)				Start	End	Duration		Local Wildlife Site survey form Last updated April 2013			
Survey type:	Baseline	1st monitoring	2nd monitoring	Full resurvey							
Habitat (M = main, A = additional)											
Ancient woodland – mature / regrowth ¹			Parkland			River / Canal					
Semi-natural woodland ¹			Wood-pasture			Drain / Ditch / Stream					
Wet woodland / Carr ¹			Orchard			Spring / Flush					
Native plantation – on ancient / new ¹			Bracken			Blow well / Chalk stream					
Non-native plantation – on ancient / new ¹			Sand dune			Pond / Lake / Reservoir / Pit					
Scrub – scattered / dense			Saline lagoon			Marsh / Fen					
Species-rich hedgerows – ancient / new			Saltmarsh			Reedbed / Linear reedbed – (% reed)					
Neutral grassland – unimp. / semi-imp			Mudflat			Grazing marsh – coastal / floodplain ²					
Calcareous grassland – unimp. / semi-imp			Arable			Coarse or rank grassland					
Acid grassland – unimp. / semi-imp			Ruderal			Improved grassland					
Heathland – (% heather species)			Active quarrying								
Acid peatland			Brownfield mosaic ³								
Other site type (Please tick)											
Churchyard / Cemetery		Garden / Allotment / Park / Greenspace				Lowland meadow					
Road verge		Previously developed land / Disused quarry				Managed arable field margins					
Additional habitat features (Please tick or enter details)											
Veteran trees		Seasonally wet / damp areas				Anthills					
Pollarded trees		Areas with frequent / prolonged flooding				Ridge and furrow					
Coppiced trees		Abundant nectar sources				Rock outcrops					
Fruit/nut trees		m apart	Earthworks / hummocky ground				Steep slopes				
Non-planted trees - scattered / dense		Exposed faces / cliffs / cuttings				South-facing slopes					
Planted trees - scattered / other		Standing / fallen dead wood				Bare ground					
Tussocky vegetation		Open access / common land				Structural diversity					
Dry ditches – shallow / deep		Right of way / permissive path				Educational potential					
Species-poor / patchy hedgerows											
Bryophytes: Diverse / abundant / dense				Lichens: Diverse / abundant				Fungi: Diverse / abundant			
Veteran tree features (Please tick)											
Large girth / apical die-back / trunk hollowing				Limb loss / cavities / water pockets							
Accumulation of dead and dysfunctional woody tissue				Loose bark / wounds / scars / tears / sap runs / rot sites							
Live stubs / shattered branch ends / lightning strikes				Fungal colonisation / epiphytic higher or lower plants							
Notes (Include aspect, rare/notable/most frequent/invasive/planted species with grid refs if possible)											
Condition status (Please tick)		Good		Adequate		Poor		Lost			
Details:											

Figure 3: LWS survey form front page

Evidence of management/non-management (Please tick)					
Non-intervention		Grazing by rabbits		Frequent short mowing	
Scrub encroachment		Other grazing		Game keeping	
Scrub removal		No grazing		Fertiliser / pesticide / herbicide use	
Coppicing / selective felling		Poached ground		Recent / long-term drainage	
Planting (trees) - native / non-native		Controlled burning		Off-road vehicle damage	
Planting (other) - native/non-native		Ride mowing		Fly tipping / pollution / fires	
Large-scale clearance / bulldozing		Silage / hay cutting		Invasive species - mgnt / non-mgnt	
Grazing by cattle / sheep / horses		Cutting and non-removal			
Management comments and evidence (with grid references if applicable)					
Conservation management plan		Advice being followed		WGS / EWGS	ELS / HLS / OELS / CSS
Management status (Please tick)		Survey constraints (Please tick)			
Appropriate (for the majority/whole of the site)		Early survey		Vegetation cut /grazed	
Appropriate (for the main interest of the site only)		Late survey		Terrain / Vegetation	
Inappropriate		Short visit		Public use / Dogs	
None - Appropriate / Inappropriate		Weather		Livestock / Game	
1. Woodland criterion checklist (Please tick)					
Undisturbed, mature, shady broadleaved habitat		Full age range within native tree species			
Veteran trees- ancient / prematurely aged		Frequent standing / fallen dead wood			
Pollarded trees- recent / historic		Habitat diversity:	Glades / grassy areas		
Coppiced trees- recent / historic			Wide / sunny rides		
Diverse / abundant lichen community			Narrow / shady rides		
Diverse / abundant bryophyte community			Running water		
Diverse / abundant fungi community			Standing water / wetland / wet flushes		
Large populations of one or more native ground flora species (please specify):					
No more than small amounts of non-native plants (all layers inc. seedlings, e.g. sycamore, rhododendron)					
No more than moderate amounts of native invasive/undesirable native species (e.g. bracken, nettles)					
2. Grazing marsh criterion checklist (Please tick)					
Low intensity grazing regime		Periodic freshwater flooding - hollows / scrapes / other			
Holds surface water in the winter months		Areas of reedbed as part of the habitat mosaic			
Within an extensive block larger than 10ha		Permanent water-filled ponds			
Variation in sward height or structure inc. tussocks		Complex margins of wetland habitats inc. emergent veg.			
Brackish or freshwater drainage ditches holding water for most of the year including variety of depths and widths					
Evidence of long-term presence of permanent pasture:	Historic ridge and furrow / rills / remnant deserted villages / salterns / other relevant historic earthworks / remnant hedgebanks / anthills / humps and hollows				
3. Brownfield criterion checklist (Please tick)					
Loose substrate or bare ground (%)		Activities that will maintain the bare substrate:		Rabbit activity	
Variation in sward height and structure inc. tussocks				Quarrying / industry	
South-facing / other aspect - slopes / banks / cliffs		Community:		Human leisure activities	
Unmanaged areas of dead and dying plant matter				Annual colonisers	
Areas of scrub (%)				Ruderal colonisers	
Ephemeral wet or damp areas				Flower-rich grassland	
Permanent ponds / pools / wetlands				Sparse, short grassland	
Variation in topography and substrate:	Humps / hollows / depressions / broken-up concrete / broken-up tarmac Piles/mounds of: Rubble / gravel / sand / ash / soil / slag / spoil / brick				

Figure 4: LWS survey form back page

Appendix 3: Baseline (or full) survey procedure

Guidance

- A. May to September is the generally considered the best period for surveying vascular plants, although April, October and November visits may also be acceptable.
- B. Permission for survey should be obtained before the site is visited (see Appendix 6).
- C. Sites should be surveyed as a whole if they are relatively small and homogeneous. Larger and/or more complex sites should be split into multiple recording units; subdivision should be logical and based on management units, major habitat types or variation in wildlife value. Generally, all fields should be surveyed separately, while linear sites should be split into recording units/subsites approximately 1km in length. This approach allows the Panel to assess each subsite on its own merits and prevents the inclusion of areas of less wildlife interest where they do not add value to the site as a whole.
- D. Site and recording unit boundaries must be clearly recorded, ideally on a map or aerial photograph. It is preferable to use boundaries that are obvious both on maps and on the ground, such as fences, hedges, paths and watercourses, so that returning surveyors can repeat the process. If obvious boundaries are not available, care should be taken to describe the boundaries in the site description.

The surveyor has the responsibility of proposing the best boundary for the Panel to consider, and should divide the site accordingly at survey. Final site boundaries should include the main interest features as well as buffer areas where appropriate. Areas of less interest should still be surveyed, but ideally as easily definable units that can be rejected while the rest of the site is selected.

- E. Any relevant information that can be obtained from the owner/manager should be recorded. This includes past and present management, future intentions, and changes in vegetation structure and flora and fauna. If such data is not available, then the surveyor should try to infer management issues from site condition and other evidence while on site. This will help the Panel to decide the conservation management status of the site.
- F. Time spent on site should be noted, as well as any constraints such as torrential rain or intimidating livestock/dogs. This allows the Panel to assess the degree of thoroughness of each survey, so that failure to satisfy selection criteria can be put into context. If there is only a quick or late visit, for example, this might result in deferral and a request for further survey under more appropriate circumstances.
- G. Recording of fauna is not required for most of the criteria outlined in this document; however the surveyor should identify and record as many species as they feel comfortable with. This should include highlighting any additional habitat features that may have potential for individual species or species groups, such as a pond that may support breeding amphibians. Thorough use of the 'Additional habitat features' tick boxes is particularly important.

- H. Surveyor health and safety is the responsibility of the employing organisation. Surveyors must adhere to their organisation's health and safety guidelines and risk assessment procedures. In addition they should act responsibly and in good faith while representing the party that has commissioned the survey.

Procedure

The recommended baseline (or full) survey procedure can be considered in three stages:

Before visiting

1. Identify all owners/managers of the site.
2. Initiate contact, ideally by letter, covering the relevant background information, enclosing a map of the area, and outlining the purpose of the survey (see Appendix 6). Follow up, if necessary, by telephone or possibly a face-to-face meeting.
3. Request permission to visit.
4. If permission is refused¹⁶, inform the local authority and the GLNP when submitting data.
5. If permission is given, agree a visit procedure with the contact(s).
6. If it is feasible, discuss management practices and issues with the contact(s).
7. Record all the above details for future reference and submission to the GLNP.
8. Look at available data about the site and use it as a basis for the forthcoming site visit. This could include citations, previous species lists and maps; these can be supplied by the GLNP where they exist.

On site

The following should be taken to the site:

- A copy of any previous boundary maps, habitat maps and supporting text (if relevant).
- A blank base map.
- An aerial photograph (optional).
- A 1:25,000 OS map of the area.
- Owner/manager contact details and instructions.
- A supply of survey forms, BSBI checklists, pencils and paper, a clipboard with a waterproof covering, evidence of identification, appropriate outdoor clothing, and binoculars. A grappling hook is essential for most sites with running or standing water.

Then:

9. Follow all reasonable requests of the owner, such as meeting beforehand.
10. Assess the appropriate approach to the survey, including division into subsites (if relevant).
11. For sites surveyed as a single unit, or for every recording unit/subsite within a larger site:
 - Complete one survey form (see Appendix 2) as fully as possible.

¹⁶ Some local authorities may choose to use their rights of entry to access sites where permission has been refused (see Paragraph 2.3.4).

- Record all identifiable plant species (BSBI checklists are recommended - see Paragraph B of Appendix 2). Care should be taken to clearly annotate planted species.
 - Annotate the base map to show boundaries, habitat types and important additional features.
 - Assess the condition and conservation management status while walking around, making notes and ticking options on the survey form.
12. Photographs of the site are optional and should only be taken with the owner/manager's express permission.

After the survey

13. Provide the GLNP with the following for every site surveyed:
- A proposed site name.
 - A proposed site boundary map (or boundary on a GIS layer of all sites). This does not have to match the surveyed boundary, but if there is a difference both should be supplied.
 - A map showing fully labelled or numbered recording units/subsites (if relevant).
 - For sites surveyed as a single unit, or for every recording unit/subsite within a larger site:
 - A completed survey form.
 - A species list (flora and fauna together), preferably as a spreadsheet.
 - A BAP habitat map (see Appendix 5 for simplified descriptions of Lincolnshire BAP habitats, and guidance on mapping).
 - A description of the site including rare/notable/most frequent/planted plant species, habitat types and general site condition.
 - Contact details for all owners/managers that were involved and gave permission for survey. Detailed notes of when and how they were contacted, and what they said are also very useful.

Appendix 4: Monitoring survey procedure

Guidance

- A. Monitoring surveys should require only the minimum amount of time on site in order to reduce financial pressure on local authorities and to cause the minimum of inconvenience to the owner/manager. For this reason:
- Full plant lists are not needed. Instead, botanical survey involves noting how many previously recorded scoring species are present.
 - Where a site comprises multiple recording units/subsites, only 50% of these should be botanically surveyed, thus providing a representative sample of the site. However, the entire site should be walked and condition assessed.
- B. The three main aims of the monitoring survey are:
1. To check that the site still qualifies as an LWS when assessed against the current selection criteria.
 2. To assess the condition of the site (in comparison to its condition at the previous survey stage), and to record the reasons for any improvement or degradation.
 3. To identify the conservation management status of the site.
- C. It is important to note that the monitoring survey procedure outlined here can only be undertaken where baseline survey data is adequate. The GLNP and the Panel may find it necessary to request that full survey procedure is followed in place of the first monitoring survey in some cases. An example might be that the baseline survey did not divide a large site into enough small recording units/subsites.
- D. Monitoring surveys provide the opportunity to check that owner/manager contact details and boundaries are still accurate. It should not be assumed that the existing owner/manager information is completely correct or that all of the parties involved in ownership and management are known. Surveyors should always check with the contacts that they have whether anyone else needs to be involved in the consultation process.
- E. Permission for monitoring surveys should be obtained before the site is visited, in the same manner as for baseline surveys.
- F. Efforts should be made to identify and follow the boundaries used at the baseline (or previous) survey stage(s). Proposals can be made to the Panel to amend boundaries, but the reasons for these changes should be adequately recorded. If boundary changes appear necessary, then full baseline survey data (see Appendix 3) is needed for the areas to be added.
- G. Linear sites are generally divided into 1km stretches/subsites for the baseline survey. When monitoring, the 50% sampling technique should be used, whereby alternate subsites are botanically surveyed. This should always include the start and end subsites to ensure that the main interest and wildlife value is still well represented by the boundary. In addition the whole site should be walked and condition assessed.

For large non-linear sites with more than one recording unit/subsite, the 50% sampling technique should be used, concentrating botanical recording on subsites with most wildlife value (which are likely to have higher species index scores). In addition the whole site should be walked and condition assessed.

- H. If evidence from the monitoring survey suggests that a site is degraded or lost, the surveyor should alert the local authority and the GLNP.

Procedure

The recommended monitoring survey procedure can be considered in three stages:

Before visiting

1. Identify all owners/managers of the site.
2. Initiate contact, ideally by letter, covering the relevant background information, enclosing a map of the area, and outlining the purpose of the survey (see Appendix 7). Follow up, if necessary, by telephone or possibly a face-to-face meeting.
3. Request permission to visit.
4. If permission is refused¹⁷, inform the local authority and the GLNP when submitting data.
5. If permission is given, agree a visit procedure with the contact(s).
6. If it is feasible, discuss management practices and issues with the contact(s).
7. Record all the above details for future reference and submission to the GLNP.
8. Look at available data about the site and use it as a basis for the forthcoming site visit.

The GLNP can provide the following information upon request:

- Owner/manager contact details.
- Site boundary.
- Habitat map (if available).
- Site description.
- Scoring species list (for all criteria not just the qualifying ones).
- Selection criteria.
- Site condition (if available).
- Conservation management status.

On site

The following should be taken to the site:

- A copy of any previous boundary maps, habitat maps and supporting text (if relevant).
- A blank base map.
- An aerial photograph (optional).
- A 1:25,000 OS map of the area.
- Owner/manager contact details and instructions.

¹⁷ Some local authorities may choose to use their rights of entry to access sites where permission has been refused (see Paragraph 2.3.4).

- A supply of survey forms, BSBI checklists, pencils and paper, a clipboard with a waterproof covering, evidence of identification, appropriate outdoor clothing, and binoculars. A grappling hook is essential for most sites with running or standing water.

Then:

9. Follow all reasonable requests of the owner, such as meeting beforehand.
10. Assess and repeat (as much as possible) the approach taken for the baseline (or last full) survey, i.e. the same division into recording units/subsites (if relevant).
11. For sites surveyed as a single unit, or for every recording unit/subsite within a larger site:
 - Complete one survey form (see Appendix 2) as fully as possible (focusing on management comments, and activities and practices that may have affected the condition of the site).
 - Annotate the base map to show boundaries, habitat types/extent and important additional features.
 - Assess the condition and conservation management status of the site.
12. For sites surveyed as a single unit, or a 50% sample of the recording units/subsites (see Paragraphs 4.4.1 and 4.4.7):
 - Look for all the scoring species previously recorded, checking them off against the list provided.
 - Note additional species of interest, bearing in mind likely scoring species, notable species and other indicators of the habitats known to be present.
 - For sites with automatically qualifying habitats (parkland, traditional orchard, heathland, land buffering acid peatland, reedbed, saltmarsh, mudflat, sand dune and dune grassland, saline lagoon) there will most likely be no or few scoring species to check for. In such cases, check that the qualifying habitats still comply with the criterion description within these guidelines.
13. Photographs of the site are optional and should only be taken with the owner/manager's express permission.

After the survey

14. Provide the GLNP with the following for every site surveyed:
 - Any proposed amendments to the site name.
 - A map showing any proposed amendments to the site boundary.
 - A map showing fully labelled or numbered recording units/subsites (if relevant).
 - For sites surveyed as a single unit, or for every recording unit/subsite within a larger site:
 - A completed survey form.
 - A BAP habitat map (see Appendix 5 for simplified descriptions of Lincolnshire BAP habitats, and guidance on mapping).
 - Any proposed amendments to the description of the area.
 - Information on major changes to the site condition or conservation management status.
 - For sites surveyed as a single unit, or for a 50% sample of the recording units/subsites (see Paragraphs 4.4.1 and 4.4.7):
 - A completed checklist of the scoring species from the baseline (or last full) survey(s), clearly showing any species that were not seen and any additional scoring/notable/indicator species that were seen.

- Confirmation that any automatically qualifying habitats are still present.
- Contact details for all owners/managers that were involved and gave permission for survey. Detailed notes of when and how they were contacted, and what they said are also very useful.

Appendix 5: Lincolnshire BAP habitats and BAP habitat mapping

Guidance

- Annotate base maps or aerial photography with estimated areas of each habitat (these can be submitted on paper, or preferably as a GIS layer). Efforts should be made to accurately identify the shape and extent of these areas.
- Make clear notes on whether each habitat is BAP quality, as described in Table 19, or a poor example of the habitat. Candidate areas for restoration to BAP quality should also be identified.

Table 19: Simplified Lincolnshire BAP habitat descriptions

Habitat name	Description (of habitat considered to be of BAP quality)	Key points
Coastal sand dunes	Sand dune vegetation forms a number of zones. Embryonic and mobile dunes support very few species, the most characteristic being marram grass. Semi-fixed dunes have marram present with an increasing number of other species as they stabilise. Fixed dune grassland forms largely closed swards, the surface is stabilised and some soil formation takes place. Acid dune grassland or dune heaths may develop on dunes acidified by leaching.	Fixed dunes and dune heath are particularly threatened and regarded as priorities under the EC Habitats Directive. Acid dunes heavily grazed by rabbits may support lichen communities.
Saline lagoons	Natural or artificial bodies of saline water partially separated from the sea, and retaining a proportion of their saltwater at low tide. Can contain a variety of substrata, often soft sediments which in turn may support tasselweeds and stoneworts as well as filamentous green and brown algae. In addition, saline lagoons contain invertebrates rarely found elsewhere.	The presence of certain indigenous and specialist plants and animals make this habitat important to the UK's overall biodiversity.
Coastal saltmarsh	The development of saltmarsh vegetation is dependent on the presence of intertidal mudflats. Saltmarsh vegetation consists of a limited number of halophytic species adapted to regular immersion by the tides. A natural saltmarsh system shows a clear zonation according to the frequency of inundation.	The lower limit of saltmarsh is defined as the lower limit of pioneer saltmarsh vegetation (but excluding seagrass beds) and the upper limit as 1m above the level of highest astronomical tides to take in transitional zones. Sites still displaying a full range of zonation are particularly valuable for nature conservation.
Arable field margins	Four main types – please specify which is present. 1. Cultivated low input margins (including headlands and habitat for annual arable	Herbaceous strips or blocks managed specifically for the benefit of wildlife.

Habitat name	Description (of habitat considered to be of BAP quality)	Key points
	plants). Not sprayed with insecticides or herbicides (except for control of injurious weeds). - Those sown to provide seeds for wild birds. Cereals and/or small seeded, broad-leaved plants or grasses which are allowed to set seed and remain in place over winter. Does not include areas sown with maize. - Those sown as pollen and nectar sources for invertebrates. Agricultural legumes allowed to flower. - Permanent grass strips with mixtures of tussocky and fine leaved grasses. Created by sowing or natural regeneration. Includes beetle banks.	Single payment cross-compliance margins should be mapped separately.
Coastal and floodplain grazing marsh	Periodically inundated pasture, or meadow with ditches that maintain the water levels, containing standing brackish or freshwater. Generally grazed and/or cut for hay or silage. Typically dominated by common grasses of neutral soils; ditches are rich in plants and invertebrates. Particularly important for breeding waders such as snipe, curlew and lapwing, as well as wintering wildfowl.	Defining features are more hydrological and topographical than botanical. Complex habitat with many elements including: grassland, drainage ditches, emergent ditch-side vegetation, fen and reedbed.
Hedgerows	Any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps are less than 20m long. Climbers such as honeysuckle and bramble are integral to many hedgerows but require other woody plants to be present to form a distinct woody boundary feature.	All hedgerows consisting predominantly of at least one woody UK native species.
Lowland calcareous grassland	Grasslands on shallow, lime-rich soil, generally overlying limestone rocks, including chalk. Covers a range of plant communities in which lime-loving plants are characteristic. Also support diverse invertebrate fauna. A small amount of associated scrub and herbs characteristic of acid soils are acceptable.	NVC CG1 To CG9. Include occurrences on roadside verges.
Lowland meadows	Unimproved neutral grassland grazed or cut for hay, generally found in an agricultural setting but can also be found in recreational sites, churchyards, roadside verges etc. May be seasonally flooded.	Meadows and pastures associated with low input nutrient regimes. Can also be grazing marsh. Include occurrences on road verges.
Lowland heathland	Areas of heathland in good condition should consist of an ericaceous layer of varying heights and structures, plus some or all of the following additional features: scattered trees and scrub; bracken; bare ground; acid grassland; lichens; gorse; wet heaths; bogs and open waters.	>25% dwarf shrub cover = heathland; <25% = acid grassland. Dynamic habitat that changes with successional stages. Characteristic birds, reptiles, invertebrates, vascular plants, bryophytes and

Habitat name	Description (of habitat considered to be of BAP quality)	Key points
		lichens are important indicators of habitat quality.
Lowland raised bog	Peatland ecosystems where the accumulation of peat has formed an elevated, gently curving dome. Vegetation is similar to that of wet heaths, but with bog-mosses and cottongrass being more abundant.	Bog-mosses are the principle peat forming species and their dominance in the living layer gives a characteristically spongy surface.
Lowland dry acid grassland	Typically occurs on nutrient-poor, generally free-draining soils overlying acid rocks or superficial deposits such as sands and gravels. Often forms a mosaic with dwarf shrub heath. Can range from relatively species-poor to species-rich.	Include occurrences on roadside verges. Includes NVC U1 to U4.
Lowland fens	Peatlands that receive water and nutrients from the soil, rock and groundwater as well as from rainfall. 'Poor fens' which occur where the water is derived from base-poor rock are often associated with heathland, and are characterised by a high proportion of bog-mosses. 'Rich fens' are fed by mineral-rich calcareous waters.	Dominated by typical marsh plant species.
Ponds	Permanent and seasonal standing water bodies up to 2ha which meet one or more of the following: international importance; support species of high conservation importance; support key species assemblages; high ecological quality; limited geographic distribution e.g. duneslack ponds.	Quality standing open water up to 2ha in size that is not a functional element of another habitat type.
Eutrophic standing waters	Highly productive because nutrients are plentiful either naturally or as a result of artificial enrichment, characterised by having dense, long-term populations of algae in mid-summer, often making the water green. Their beds are covered by dark, anaerobic mud, rich in organic matter. In their natural state eutrophic waters have high biodiversity. Fennel pondweed and spiked water-milfoil are characteristic throughout the UK. The rare ribbon-leaved water-plantain is occasionally present.	Excludes small pools, field ponds and brackish waters. Excludes heavily artificially enriched waters where planktonic and filamentous algae increase rapidly at the expense of other aquatic organisms.
Reedbeds	Dominated by stands of common reed where the water table is at or above ground level for most of the year. Small areas of wet grassland and carr woodland may be associated with them.	Include linear stands of reeds too if capable of supporting associated roosting and/or breeding birds such as Cetti's warbler, bearded tit and bittern.
Blow wells	Chalk water springs occurring where high groundwater pressure has forced a flow path upward through the confining boulder clay and gravel. Characteristic associated flora and fauna.	Extant and inactive blow wells.
Rivers	Natural and near-natural running waters that satisfy at least one of the following: headwaters; SACs; chalk rivers; active shingle rivers; SSSIs; supports a BAP priority	Quality natural and near-natural running waters or those that support priority species.

Habitat name	Description (of habitat considered to be of BAP quality)	Key points
	European protected species; has high hydromorphological/ecological status.	Exclude reaches that are heavily degraded with little scope for improvement and those that are heavily canalised.
Springs and flushes	Non-chalk springs (predominantly arising from limestone strata), which in some cases feed wet flushes and support rare wetland plants, birds and invertebrates.	Mainly alkaline waters. Make a note of modifications e.g. culverts, dredging to create ponds, diverted flow etc.
Lowland mixed deciduous woodland	Woodland where at least 80% of the canopy comprises species that are suited to the site and are within their natural range, taking into account both history and future climate change.	Includes most semi-natural woodland as well as ancient woodland.
Traditional orchards	Habitat structure rather than vegetation type, topography or soil is the defining feature of this habitat. Open-grown trees set in herbaceous vegetation. The trees are or were grown for fruit and nut production, usually achieved through grafting and pruning.	Should be managed in a low intensity way. Grazing or cutting of the herbaceous vegetation is integral to traditional orchard management. Five trees or more. Include newly planted community orchards.
Wet woodland	Occurs on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species. Found on floodplains, as successional habitat on fens, mires and bogs, along streams and flushes, and in peaty hollows. Boundary with dry land woodland may be sharp or gradual.	Predominantly alder/birch/willow woodland on waterlogged soils with marsh indicator species in ground flora.
Wood-pasture and parkland	Product of historic land management systems: large, open-grown or forest trees (often pollards) at various densities, in a matrix of grazed grassland, heathland, and/or woodland.	Long established tradition of grazing, allowing the survival of multiple generations of trees, characteristically with some veteran trees or shrubs. Include parkland converted to other land uses (e.g. arable/amenity) but with surviving veteran trees of nature conservation value.
Open mosaic habitats on previously developed land (brownfield)	Mosaics of bare ground with early pioneer communities; or more established open grasslands with areas of bare ground, scrub and patches of other habitats. Of nature conservation value if: species-rich; structural diversity; bare ground present over extended period of time; last remaining example of habitat formerly present; presence of BAP priority/Red list species; exceptional assemblage of key species groups.	Concentrated in urban, urban-fringe, and large-scale former industrial landscapes. Must show spatial variation. >0.25ha

Adapted from: UK Biodiversity Action Plan- Priority Habitat Descriptions (Maddock, 2010) and the Lincolnshire BAP (LBP, 2011)

Appendix 6: Sample letter requesting permission for baseline survey

Local Wildlife Site surveys

I work for [organisation name] and have been contracted by [local authority] (contact: [contact name] of the [department]) to carry out various wildlife surveys this spring and summer. These surveys will concentrate on recording plants and making a general habitat assessment, although other wildlife will also be noted. In most cases the fieldwork is completed on a single visit.

In order to undertake this survey we need to know who owns/manages/leases the land to be surveyed, and to gain permission to visit. Please could you:

1. Confirm whether you own/manage/lease the area of land indicated on the enclosed maps.
2. Confirm that you give us permission to survey the land.

I would be very grateful if you would please complete the brief form on the reverse of the enclosed Map 2 and return it to me in the stamped, addressed envelope enclosed. Map 1 is for your records.

When conducting wildlife surveys, we always try to follow any instructions or advice given, such as letting people know when we arrive and depart, minimising disturbance to livestock or game, and avoiding hazardous situations. Surveys usually take place May to September and we can visit at a time that is most convenient for you.

The purpose of the survey is to assess if any part of the site satisfies the selection criteria, to allow selection as a Local Wildlife Site (LWS). The guidelines for selection of LWSs can be viewed on the Greater Lincolnshire Nature Partnership (GLNP) website (www.glnp.org.uk). These sites are non-statutory but are used to recognise wildlife rich areas within the planning system. The intention is that monitoring visits will take place every 5-10 years (at which time you will be contacted again).

LWS selection does not restrict the way you choose to use or manage your land, nor does it bestow any additional public right of access; it simply provides recognition of the wildlife value of land.

Information from the survey will be held by the Lincolnshire Environmental Records Centre (LERC), an independent service of the GLNP. There are strict guidelines governing the storage, access to, and use of this information. The data obtained is available for you to use, for example when applying for grants and schemes.

This site is already listed as a Site of Nature Conservation Importance (SNCI)/Site of Important for Nature Conservation (SINC) within the Local Plan. The decision on LWS selection supersedes the SNCI/SINC listing; all SNCIs/SINCs will eventually become LWSs or will be deselected.

The survey data is assessed by a working group of the GLNP known the LWS Panel. After this you will be informed of their decision and given the opportunity to make observations on

the application of the selection criteria. In addition, a citation (including a site description and map) will be sent to you and species lists are made available upon request. The GLNP Steering Group will then decide whether to endorse the LWS Panel's decision, and the GLNP will notify the local authority who will decide whether to include the site within their Local Plan.

If you have any further queries please contact me on [phone number](#) or via email on [email address](#).

Please return this form to us using the SAE enclosed

I (please print name) confirm that I am the:

- ☐ Owner
- ☐ Tenant
- ☐ Manager

Of the land that is outlined in the map on the reverse of this form (or the areas I have indicated):

- ☐ I give permission for a survey to be carried out
- ☐ Please contact me to discuss the most convenient time to visit
- ☐ I give permission for photographs to be taken on site
- ☐ I give permission for the GLNP to use these photographs in publications and media

Signed:

Date:

Telephone:

Email:.....

(Please provide a telephone number and email address so that we can contact you prior to the site visit)

OR:

- ☐ I am not the owner/tenant/manager of this site

I suggest you contact:

Name	Address	Phone number

Appendix 7: Sample letter requesting permission for monitoring surveys and full resurveys

Local Wildlife Site monitoring

I work for [organisation name] and have been contracted by [local authority] (contact: [contact name] of the [department]) to carry out various wildlife surveys this spring and summer. These surveys will concentrate on recording plants and making a general habitat assessment, although other wildlife will also be noted. In most cases the fieldwork is completed on a single visit.

In [year], the site shown on the enclosed citation was surveyed and subsequently selected as a Local Wildlife Site (LWS). For more information on these sites and to see the guidelines for their selection, please visit the Greater Lincolnshire Nature Partnership (GLNP) website (www.glnp.org.uk). These sites are non-statutory but are used to recognise wildlife rich areas within the planning system.

National guidance requires that LWSs are monitored every 5-10 years, and it is for this purpose that we are contacting you now to request permission to visit and resurvey this site. I would be very grateful if you would please complete the brief form on the reverse of the enclosed map and return it to me in the stamped, addressed envelope enclosed.

When conducting wildlife surveys, we always try to follow any instructions or advice given, such as letting people know when we arrive and depart, minimising disturbance to livestock or game, and avoiding hazardous situations. Surveys usually take place May to September and we can visit at a time that is most convenient for you.

LWS selection does not restrict the way you choose to use or manage your land, nor does it bestow any additional public right of access; it simply provides recognition of the wildlife value of land.

Information from the survey will be held by the Lincolnshire Environmental Records Centre (LERC), an independent service of the GLNP. There are strict guidelines governing the storage, access to, and use of this information. The data obtained is available for you to use, for example when applying for grants and schemes.

The survey data is assessed by a working group of the GLNP known the LWS Panel. After this you will be informed of their decision and given the opportunity to make observations on the application of the selection criteria. In addition, an updated citation similar to the one enclosed with this letter will be sent to you and species lists are made available upon request. The GLNP Steering Group will then decide whether to endorse the LWS Panel's decision, and the GLNP will notify the local authority who will decide whether to keep the site within their Local Plan.

If you have any further queries please contact me on [phone number] or via email on [email address].

Please return this form to us using the SAE enclosed

I (please print name) confirm that I am the:

- ☐ Owner
- ☐ Tenant
- ☐ Manager

Of the land that is outlined in the map on the reverse of this form (or the areas I have indicated):

- ☐ I give permission for a survey to be carried out
- ☐ Please contact me to discuss the most convenient time to visit
- ☐ I give permission for photographs to be taken on site
- ☐ I give permission for the GLNP to use these photographs in publications and media

Signed:

Date:

Telephone:

Email:.....

(Please provide a telephone number and email address so that we can contact you prior to the site visit)

OR:

- ☐ I am not the owner/tenant/manager of this site

I suggest you contact:

Name	Address	Phone number

Appendix 8: Template letter informing owners/managers of LWS Panel's decision to select the site

Dear Landowner's name,

Greater Lincolnshire Local Wildlife Sites Review

Site name:

I am writing to thank you for allowing surveyor's name of organisation name to visit this site on behalf of local authority in month year, and also to inform you of the outcome of this survey. Please find enclosed a citation that includes a map and site description for the site.

The reason for the visit was to investigate whether the site could be selected as a Local Wildlife Site (LWS). These are areas that stand out as being of particular value for wildlife, and which are recognised within the planning system. Guidelines for the selection of LWSs were developed by the Greater Lincolnshire Nature Partnership (GLNP) and can be viewed on the website: www.glnp.org.uk.

The LWS Panel has assessed the information from the survey against the guidelines and has found that the site satisfies the selection criteria/on listed at the end of the citation enclosed. A key to the criteria has also been enclosed for your convenience.

This site is already listed as a Site of Nature Conservation Importance (SNCI)/Site of Important for Nature Conservation (SINC) within the Local Plan. The decision on LWS selection supersedes the SNCI/SINC listing; all SNCIs/SINCIs will eventually become LWSs or will be deselected.

The LWS Panel will be informing the GLNP Steering Group of their decision to select this area as an LWS, and deselect the area as an SNCI/SINC. If agreed by the GLNP Steering Group, this recommendation will be passed to the local authority to enable it to update its records and add the site to the list of LWSs included in the Local Plan.

This is recognition of the value of the land for wildlife, and of the past or existing management. It will not affect how you choose to manage your land, and does not bestow any additional public right of access.

Information on the site is held by the Lincolnshire Environmental Records Centre (LERC), an independent service of the GLNP. There are strict guidelines governing the storage, access to, and use of this information. You may request access to the information held at any time, including full species lists from the survey.

As a/n owner/tenant/manager of this site (or part of this site) you are now invited to make observations on factors relating directly to the application of the selection criteria. These observations will be considered by the LWS Panel when they next meet, before their final recommendation is taken to the GLNP Steering Group.

If you wish to make an observation please try to do so within three weeks of receipt of this letter, after which time if we have not heard from you we will continue with the selection of the site.

On behalf of the GLNP, I would like to thank you again and encourage you to continue to manage this site for the benefit of wildlife.

Please be aware that the status of the site will be kept under review and may change in the light of new information. You will be contacted again within the next 5-10 years to request access to resurvey the site.

Yours sincerely,

Information Officer

Appendix 9: Template letter informing owners/managers of LWS Panel's decision to reject the site

Dear Landowner's name,

Greater Lincolnshire Local Wildlife Sites Review

Site name:

Grid reference:

I am writing to thank you for allowing surveyor's name of organisation name to visit this site on behalf of local authority in month year, and also to inform you of the outcome of this survey.

The reason for the visit was investigate whether the site could be selected as a Local Wildlife Site (LWS). These are areas which stand out as being of particular value for wildlife, and which are recognised within the planning system. Guidelines for the selection of LWSs were developed by the Greater Lincolnshire Nature Partnership (GLNP) and can be viewed on the website: www.glnp.org.uk.

The LWS Panel has assessed the information from the survey against the guidelines and has found that unfortunately the site does not satisfy the selection criteria at this time. This does not mean that the site has no value for wildlife; it simply means that other similar sites in the area have been deemed to have more substantive nature conservation value.

This site is already listed as a Site of Nature Conservation Importance (SNCI)/Site of Important for Nature Conservation (SINC) within the Local Plan. The decision on LWS selection supersedes the SNCI/SINC listing; all SNCIs/SINCAs will eventually become LWSs or will be deselected.

The LWS Panel will be informing the GLNP Steering Group of their decision not to select this area as an LWS at this time, and to deselect the area as a SNCI/SINC. If agreed by the GLNP Steering Group, this recommendation will be passed to the local authority to enable it to update its records.

Information on this site is held by the Lincolnshire Environmental Records Centre (LERC), an independent service of the GLNP. There are strict guidelines governing the storage, access to, and use of this information. You may request access to the information held at any time, including full species lists from the survey.

As a/n owner/tenant/manager of this site (or part of this site) you are now invited to make observations on factors relating directly to the application of the selection criteria. Any observations will be considered by the LWS Panel when they next meet, before their final recommendation is taken to the GLNP Steering Group.

If you wish to make an observation please try to do so within three weeks of receipt of this letter.

On behalf of the GLNP, I would like to thank you again and encourage you to continue to manage this site for the benefit of wildlife.

Please be aware that the status of the site will be kept under review and may change in light of new information.

Yours sincerely,

Information Officer

Appendix 10: LWS assessment using existing external data

Guidance

- A. Increasingly, limited resources are affecting the survey and monitoring of LWSs; the 5-10 year monitoring cycle is also proving demanding in an area with so many sites. The following procedure allows the GNLP Team and the Panel to assess candidate LWSs without funding for specific LWS surveys.
- B. Data from external sources (i.e. not acquired during an LWS survey) should only be submitted to the GLNP if it is compatible with the following essential requirements:
 - Species records are collected by individuals of proven botanical skill and reliability.
 - Data is less than 10 years old, but ideally no more than five years old.
 - The data meets all of the requirements described in Section 2.3, or has been approved by the Panel.
 - The landowner is aware that the site is to be assessed as an LWS (though it is envisaged that this data will most commonly come from owners/managers themselves).
 - There is a clear indication that LWS selection is a realistic outcome.
- C. If assessment against the selection criteria produces a near-miss qualification, it may highlight the importance of commissioning an LWS survey of that site or even a larger area. This may be useful for local authorities looking at future funding, and for targeting areas of wildlife value for conservation action.
- D. Submission of data to the GLNP results in that data being made available for LERC purposes, for example for data requests.

Procedure

For the external party submitting the data

1. Large, and long linear, sites may not be assessed by the Panel unless they are subdivided appropriately (see Paragraph C of Appendix 3).
2. The following should be supplied for each site:
 - Proposed site name.
 - Proposed site boundary, which is clear and obvious both on the ground and on maps.

The following should be supplied for sites surveyed as a single unit, or for every recording unit/subsite within a larger site (or c.1km stretch of a linear site):

- Date of data collection.
- Subsite name (where applicable).
- Central grid reference (and start/end points for linear sites).
- Survey/data boundary, which is clear and obvious both on the ground and on maps.
- Observations on the main and additional habitats, additional habitat features and management practices (see survey form in Appendix 2 for guidance).

- A full botanical species list (strictly confined to within the boundary and time-frame stated). Observational comments such as “*seedling*”, “*introduced*”, “*restricted to ditch*” should be included with the relevant species.
- Additional information on the wildlife value of the site (e.g. records of great-crested newts, heronries, bat roosts etc.).
- A written site description.
- A BAP habitat map (see Appendix 5).

Internally

3. Site details are added to the GLNP’s Local Sites database, species lists are entered into Recorder (LERC’s species database) and scores are generated.
4. Scores and information are presented to the Panel for consideration.
5. Owner/manager is informed of the Panel’s decision, and given the opportunity to comment on the application of the selection criteria.
6. GLNP SG is asked for endorsement of the Panel’s decision.
7. Local authority is notified of GLNP’s recommendation and site is designated within the Local Plan (or not).

Appendix 11: All Greater Lincolnshire LWS scoring species

Key to column headings

AW = Ancient woodland (WD2a)

W = Woodland (WD3a)

WW = Wet woodland (WD4a)

NG = Neutral grassland (NG1)

CG = Calcareous grassland (CG1)

HE = Heathland and acid grassland (HE2)

AP = Acid peatland (AP1)

FW = Freshwater (running and standing) (FW2 and FW3)

We = Wetland habitats (We2 and We4)

Table 20: Comparative table of scoring species for all habitats/selection criteria

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>Achillea ptarmica</i>	Sneezewort				✓		✓			
<i>Adoxa moschatellina</i>	Moschatel		✓	✓						
<i>Agrostis canina</i>	Velvet bent						✓	✓		
<i>Agrostis vinealis</i>	Brown bent						✓			
<i>Aira caryophyllea</i>	Silver hair-grass						✓			
<i>Aira praecox</i>	Early hair-grass						✓			
<i>Ajuga reptans</i>	Bugle			✓	✓					
<i>Alisma plantago-aquatica</i>	Water-plantain								✓	
<i>Allium ursinum</i>	Ramsons	✓	✓	✓						
<i>Alnus glutinosa</i>	Alder			✓						
<i>Alopecurus geniculatus</i>	Marsh foxtail				✓					
<i>Alopecurus pratensis</i>	Meadow foxtail				✓					
<i>Anacamptis morio</i>	Green-winged orchid				✓					
<i>Anacamptis pyramidalis</i>	Pyramidal orchid					✓				
<i>Anagallis tenella</i>	Bog pimpernel						✓	✓		
<i>Anchusa arvensis</i>	Bugloss						✓			
<i>Anemone nemorosa</i>	Wood anemone	✓	✓	✓						
<i>Angelica sylvestris</i>	Wild angelica			✓	✓					✓
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass				✓					
<i>Anthyllis vulneraria</i>	Kidney vetch					✓				
<i>Apium nodiflorum</i>	Fool's-water-cress								✓	✓
<i>Arenaria serpyllifolia</i>	Thyme-leaved sandwort						✓			
<i>Arum maculatum</i>	Lords-and-ladies		✓	✓						
<i>Astragalus danicus</i>	Purple milk-vetch					✓	✓			
<i>Athyrium filix-femina</i>	Lady-fern		✓	✓						
<i>Avenula pratensis</i>	Meadow oat-grass					✓				
<i>Avenula pubescens</i>	Downy oat-grass					✓				
<i>Berula erecta</i>	Lesser water-parsnip								✓	✓
<i>Betonica officinalis</i>	Betony				✓		✓			
<i>Betula pendula</i>	Silver birch		✓	✓						
<i>Betula pubescens</i>	Downy birch			✓						

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>Blackstonia perfoliata</i>	Yellow-wort					✓				
<i>Blechnum spicant</i>	Hard-fern		✓	✓						
<i>Brachypodium pinnatum</i>	Heath false-brome					✓				
<i>Brachypodium sylvaticum</i>	False-brome		✓	✓						
<i>Briza media</i>	Quaking-grass				✓	✓				
<i>Bromopsis erecta</i>	Upright brome					✓				
<i>Bromopsis ramosa</i>	Hairy-brome		✓	✓						
<i>Butomus umbellatus</i>	Flowering-rush								✓	
<i>Calamagrostis canescens</i>	Purple small-reed	✓	✓	✓						
<i>Callitriche</i> spp.	Water-starworts (one point maximum)								✓	
<i>Calluna vulgaris</i>	Heather						✓	✓		
<i>Caltha palustris</i>	Marsh-marigold			✓						✓
<i>Campanula glomerata</i>	Clustered bellflower					✓				
<i>Campanula latifolia</i>	Giant bellflower		✓	✓						
<i>Campanula rotundifolia</i>	Harebell					✓	✓			
<i>Campanula trachelium</i>	Nettle-leaved bellflower	✓	✓	✓						
<i>Cardamine flexuosa</i>	Wavy bitter-cress			✓						
<i>Cardamine pratensis</i>	Cuckooflower			✓	✓					✓
<i>Carex acutiformis</i>	Lesser pond-sedge			✓					✓	✓
<i>Carex arenaria</i>	Sand sedge						✓			
<i>Carex binervis</i>	Green-ribbed sedge							✓		
<i>Carex canescens</i>	White sedge							✓		
<i>Carex caryophylllea</i>	Spring-sedge				✓	✓				
<i>Carex demissa</i>	Common yellow-sedge							✓		✓
<i>Carex distans</i>	Distant sedge									✓
<i>Carex disticha</i>	Brown sedge				✓					✓
<i>Carex elata</i>	Tufted-sedge								✓	✓
<i>Carex flacca</i>	Glaucous sedge				✓	✓				
<i>Carex leporina</i>	Oval sedge				✓		✓			
<i>Carex nigra</i>	Common sedge				✓		✓			✓
<i>Carex otrubae</i>	False fox-sedge									✓
<i>Carex pallescens</i>	Pale sedge	✓	✓	✓						
<i>Carex panicea</i>	Carnation sedge				✓			✓		✓
<i>Carex paniculata</i>	Greater tussock-sedge			✓						✓
<i>Carex pendula</i>	Pendulous sedge	✓	✓	✓						
<i>Carex pilulifera</i>	Pill sedge						✓	✓		
<i>Carex pseudocyperus</i>	Cyperus sedge									✓
<i>Carex remota</i>	Remote sedge	✓	✓	✓						
<i>Carex riparia</i>	Greater pond-sedge			✓					✓	✓
<i>Carex sylvatica</i>	Wood-sedge		✓	✓						
<i>Carlina vulgaris</i>	Carline thistle					✓	✓			
<i>Centaurea nigra</i>	Common knapweed				✓	✓				
<i>Centaurea scabiosa</i>	Greater knapweed					✓				
<i>Centaureum erythraea</i>	Common centaury					✓	✓			
<i>Cerastium arvense</i>	Field mouse-ear						✓			

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>Cerastium semidecandrum</i>	Little mouse-ear						✓			
<i>Ceratocapnos claviculata</i>	Climbing corydalis		✓	✓						
<i>Ceratophyllum demersum</i>	Rigid hornwort								✓	
<i>Characeae</i> spp.	Stoneworts (one point maximum)								✓	
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved golden-saxifrage			✓						
<i>Circaea lutetiana</i>	Enchanter's-nightshade		✓	✓						
<i>Cirsium acaule</i>	Dwarf thistle					✓				
<i>Cirsium eriophorum</i>	Woolly thistle					✓				
<i>Cirsium palustre</i>	Marsh thistle									✓
<i>Clematis vitalba</i>	Traveller's-joy		✓	✓						
<i>Clinopodium acinos</i>	Basil thyme					✓				
<i>Clinopodium vulgare</i>	Wild basil					✓				
<i>Comarum palustre</i>	Marsh cinquefoil							✓		
<i>Conopodium majus</i>	Pignut	✓	✓	✓	✓		✓			
<i>Convallaria majalis</i>	Lily-of-the-valley	✓	✓	✓						
<i>Cornus sanguinea</i>	Dogwood	✓	✓	✓						
<i>Corylus avellana</i>	Hazel		✓	✓						
<i>Crataegus laevigata</i>	Midland hawthorn		✓	✓						
<i>Cruciata laevipes</i>	Crosswort					✓				
<i>Cynosurus cristatus</i>	Crested dog's-tail				✓					
<i>Cytisus scoparius</i>	Broom						✓			
<i>Dactylorhiza fuchsii</i>	Common spotted-orchid				✓	✓				
<i>Dactylorhiza incarnata</i>	Early marsh-orchid									✓
<i>Dactylorhiza maculata</i>	Heath spotted-orchid						✓	✓		
<i>Dactylorhiza praetermissa</i>	Southern marsh-orchid				✓					✓
<i>Danthonia decumbens</i>	Heath-grass						✓	✓		
<i>Daphne laureola</i>	Spurge-laurel		✓	✓						
<i>Daucus carota</i>	Wild carrot					✓				
<i>Deschampsia flexuosa</i>	Wavy hair-grass						✓			
<i>Digitalis purpurea</i>	Foxglove						✓			
<i>Dipsacus pilosus</i>	Small teasel	✓	✓	✓						
<i>Dryopteris affinis</i>	Golden-scaled male-fern		✓	✓						
<i>Dryopteris carthusiana</i>	Narrow buckler-fern		✓	✓						
<i>Dryopteris dilatata</i>	Broad buckler-fern		✓	✓						
<i>Dryopteris filix-mas</i>	Male-fern		✓	✓						
<i>Echium vulgare</i>	Viper's-bugloss						✓			
<i>Eleocharis acicularis</i>	Needle spike-rush								✓	
<i>Eleocharis palustris</i>	Common spike-rush								✓	✓
<i>Eleogiton fluitans</i>	Floating club-rush								✓	
<i>Elymus caninus</i>	Bearded couch	✓	✓	✓						
<i>Epipactis helleborine</i>	Broad-leaved helleborine	✓	✓	✓						

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>Equisetum fluviatile</i>	Water horsetail								✓	✓
<i>Equisetum palustre</i>	Marsh horsetail			✓	✓				✓	✓
<i>Equisetum telmateia</i>	Great horsetail			✓						✓
<i>Erica cinerea</i>	Bell heather						✓	✓		
<i>Erica tetralix</i>	Cross-leaved heath						✓	✓		
<i>Eriophorum angustifolium</i>	Common cottongrass							✓		
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass							✓		
<i>Erodium cicutarium</i>	Common stork's-bill						✓			
<i>Erophila verna</i>	Common whitlowgrass						✓			
<i>Euonymus europaeus</i>	Spindle	✓	✓	✓						
<i>Eupatorium cannabinum</i>	Hemp-agrimony			✓						✓
<i>Euphorbia amygdaloides</i>	Wood spurge	✓	✓	✓						
<i>Euphrasia</i> spp.	Eyebrights (one point maximum)					✓				
<i>Festuca ovina</i>	Sheep's-fescue					✓	✓			
<i>Filago minima</i>	Small cudweed						✓			
<i>Filago vulgaris</i>	Common cudweed						✓			
<i>Filipendula ulmaria</i>	Meadowsweet			✓	✓					✓
<i>Filipendula vulgaris</i>	Dropwort					✓				
<i>Fragaria vesca</i>	Wild strawberry	✓	✓	✓		✓				
<i>Frangula alnus</i>	Alder buckthorn		✓	✓						
<i>Galium odoratum</i>	Woodruff	✓	✓	✓						
<i>Galium palustre</i>	Common marsh-bedstraw			✓						✓
<i>Galium saxatile</i>	Heath bedstraw						✓			
<i>Galium uliginosum</i>	Fen bedstraw									✓
<i>Galium verum</i>	Lady's bedstraw				✓	✓				
<i>Genista tinctoria</i>	Dyer's greenweed				✓	✓				
<i>Gentianella amarella</i>	Autumn gentian					✓				
<i>Geum rivale</i>	Water avens			✓	✓					✓
<i>Glyceria declinata</i>	Small sweet-grass							✓		
<i>Glyceria fluitans</i>	Floating sweet-grass								✓	✓
<i>Glyceria maxima</i>	Reed sweet-grass			✓					✓	✓
<i>Glyceria notata</i>	Plicate sweet-grass								✓	✓
<i>Gnaphalium uliginosum</i>	Marsh cudweed				✓					
<i>Groenlandia densa</i>	Opposite-leaved pondweed								✓	
<i>Gymnadenia conopsea</i>	Chalk fragrant-orchid					✓				
<i>Helianthemum nummularium</i>	Common rock-rose					✓				
<i>Hippocrepis comosa</i>	Horseshoe vetch					✓				
<i>Hippuris vulgaris</i>	Mare's-tail								✓	
<i>Hordeum secalinum</i>	Meadow barley				✓					
<i>Hottonia palustris</i>	Water-violet								✓	
<i>Humulus lupulus</i>	Hop		✓	✓						
<i>Hyacinthoides non-</i>	Bluebell	✓	✓	✓						

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>scripta</i>										
<i>Hydrocotyle vulgaris</i>	Marsh pennywort							✓		✓
<i>Hypericum hirsutum</i>	Hairy St John's-wort		✓	✓						
<i>Hypericum humifusum</i>	Trailing St John's-wort						✓			
<i>Hypericum perforatum</i>	Perforate St John's-wort					✓				
<i>Hypericum pulchrum</i>	Slender St John's-wort						✓			
<i>Hypericum tetrapterum</i>	Square-stalked St John's-wort			✓						✓
<i>Hypochaeris glabra</i>	Smooth cat's-ear						✓			
<i>Hypochaeris radicata</i>	Cat's-ear				✓		✓			
<i>Ilex aquifolium</i>	Holly		✓	✓						
<i>Inula conyzae</i>	Ploughman's-spikenard					✓				
<i>Iris foetidissima</i>	Stinking iris		✓	✓						
<i>Iris pseudacorus</i>	Yellow iris			✓					✓	✓
<i>Isolepis setacea</i>	Bristle club-rush							✓		✓
<i>Juncus acutiflorus</i>	Sharp-flowered rush				✓			✓		✓
<i>Juncus articulatus</i>	Jointed rush				✓					✓
<i>Juncus bufonius</i>	Toad rush							✓		✓
<i>Juncus bulbosus</i>	Bulbous rush							✓		
<i>Juncus squarrosus</i>	Heath rush						✓	✓		
<i>Juncus subnodulosus</i>	Blunt-flowered rush									✓
<i>Knautia arvensis</i>	Field scabious					✓				
<i>Koeleria macrantha</i>	Crested hair-grass					✓				
<i>Lamiastrum galeobdolon</i> ssp. <i>montanum</i>	Yellow archangel	✓	✓	✓						
<i>Lathyrus pratensis</i>	Meadow vetchling				✓					
<i>Lemna gibba</i>	Fat duckweed								✓	
<i>Lemna trisulca</i>	Ivy-leaved duckweed								✓	
<i>Leontodon hispidus</i>	Rough hawkbit				✓	✓				
<i>Leontodon saxatilis</i>	Lesser hawkbit				✓					
<i>Leucanthemum vulgare</i>	Oxeye daisy				✓					
<i>Ligustrum vulgare</i>	Wild privet		✓	✓						
<i>Linum catharticum</i>	Fairy flax					✓				
<i>Lonicera periclymenum</i>	Honeysuckle		✓	✓						
<i>Lotus corniculatus</i>	Common bird's-foot-trefoil				✓	✓				
<i>Lotus pedunculatus</i>	Greater bird's-foot-trefoil				✓					✓
<i>Luzula campestris</i>	Field wood-rush				✓					
<i>Luzula multiflora</i>	Heath wood-rush						✓			
<i>Luzula pilosa</i>	Hairy wood-rush	✓	✓	✓						
<i>Luzula sylvatica</i>	Great wood-rush	✓	✓	✓						
<i>Lycopus europaeus</i>	Gypsywort								✓	✓
<i>Lysimachia nemorum</i>	Yellow pimpernel	✓	✓	✓						✓
<i>Lysimachia nummularia</i>	Creeping-Jenny			✓						✓
<i>Lysimachia vulgaris</i>	Yellow loosestrife			✓						✓
<i>Lythrum salicaria</i>	Purple-loosestrife								✓	✓

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>Melica uniflora</i>	Wood melick	✓	✓	✓						
<i>Mentha aquatica</i>	Water mint			✓					✓	✓
<i>Menyanthes trifoliata</i>	Bogbean							✓	✓	✓
<i>Mercurialis perennis</i>	Dog's mercury		✓	✓						
<i>Milium effusum</i>	Wood millet	✓	✓	✓						
<i>Moehringia trinervia</i>	Three-nerved sandwort		✓	✓						
<i>Molinia caerulea</i>	Purple moor-grass			✓			✓	✓		
<i>Myosotis laxa</i>	Tufted forget-me-not								✓	
<i>Myosotis ramosissima</i>	Early forget-me-not					✓	✓			
<i>Myosotis scorpioides</i>	Water forget-me-not								✓	✓
<i>Myosotis sylvatica</i>	Wood forget-me-not		✓	✓						
<i>Myriophyllum spicatum</i>	Spiked water-milfoil								✓	
<i>Myriophyllum verticillatum</i>	Whorled water-milfoil								✓	
<i>Nardus stricta</i>	Mat-grass						✓			
<i>Nasturtium officinale</i>	Water-cress								✓	
<i>Neottia ovata</i>	Common twayblade		✓	✓	✓	✓				
<i>Nuphar lutea</i>	Yellow water-lily								✓	
<i>Odontites vernus</i>	Red bartsia					✓				
<i>Oenanthe aquatica</i>	Fine-leaved water-dropwort								✓	
<i>Oenanthe fistulosa</i>	Tubular water-dropwort								✓	✓
<i>Oenanthe fluviatilis</i>	River water-dropwort								✓	
<i>Ononis</i> spp.	Restharrow (one point maximum)				✓	✓				
<i>Ophioglossum vulgatum</i>	Adder's-tongue				✓					
<i>Ophrys apifera</i>	Bee orchid					✓				
<i>Orchis mascula</i>	Early-purple orchid	✓	✓	✓						
<i>Oreopteris limbosperma</i>	Lemon-scented fern		✓	✓			✓			
<i>Origanum vulgare</i>	Wild marjoram					✓				
<i>Ornithopus perpusillus</i>	Bird's-foot						✓			
<i>Oxalis acetosella</i>	Wood-sorrel	✓	✓	✓						
<i>Paris quadrifolia</i>	Herb-Paris	✓	✓	✓						
<i>Phalaris arundinacea</i>	Reed canary-grass			✓					✓	✓
<i>Phragmites australis</i>	Common reed			✓					✓	✓
<i>Pilosella officinarum</i>	Mouse-ear-hawkweed						✓			
<i>Pimpinella saxifraga</i>	Burnet-saxifrage				✓	✓				
<i>Plantago coronopus</i>	Buck's-horn plantain						✓			
<i>Plantago media</i>	Hoary plantain					✓				
<i>Platanthera chlorantha</i>	Greater butterfly-orchid	✓	✓	✓						
<i>Poa nemoralis</i>	Wood meadow-grass	✓	✓	✓						
<i>Poa pratensis</i>	Smooth meadow-grass				✓					
<i>Polygala serpyllifolia</i>	Heath milkwort						✓			
<i>Polygala vulgaris</i>	Common milkwort					✓				
<i>Polypodium</i> spp.	Polypody ferns (one point maximum)		✓	✓						
<i>Polystichum aculeatum</i>	Hard shield-fern		✓	✓						

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>Polystichum setiferum</i>	Soft shield-fern		✓	✓						
<i>Populus tremula</i>	Aspen	✓	✓	✓						
<i>Potamogeton berchtoldii</i>	Small pondweed								✓	
<i>Potamogeton crispus</i>	Curled pondweed								✓	
<i>Potamogeton friesii</i>	Flat-stalked pondweed								✓	
<i>Potamogeton lucens</i>	Shining pondweed								✓	
<i>Potamogeton natans</i>	Broad-leaved pondweed								✓	
<i>Potamogeton pectinatus</i>	Fennel pondweed								✓	
<i>Potamogeton perfoliatus</i>	Perfoliate pondweed								✓	
<i>Potamogeton polygonifolius</i>	Bog pondweed							✓		
<i>Potamogeton pusillus</i>	Lesser pondweed								✓	
<i>Potamogeton trichoides</i>	Hairlike pondweed								✓	
<i>Potentilla anglica</i>	Trailing tormentil						✓			
<i>Potentilla erecta</i>	Tormentil				✓		✓			
<i>Potentilla sterilis</i>	Barren strawberry	✓	✓	✓						
<i>Poterium sanguisorba</i> ssp. <i>sanguisorba</i>	Salad burnet					✓				
<i>Primula veris</i>	Cowslip				✓	✓				
<i>Primula vulgaris</i>	Primrose	✓	✓	✓						
<i>Pulicaria dysenterica</i>	Common fleabane									✓
<i>Quercus petraea</i>	Sessile oak	✓	✓	✓						
<i>Ranunculus aquatilis</i>	Common water-crowfoot								✓	
<i>Ranunculus auricomus</i>	Goldilocks buttercup	✓	✓	✓						
<i>Ranunculus bulbosus</i>	Bulbous buttercup				✓	✓				
<i>Ranunculus circinatus</i>	Fan-leaved water-crowfoot								✓	
<i>Ranunculus flammula</i>	Lesser spearwort			✓						✓
<i>Ranunculus fluitans</i>	River water-crowfoot								✓	
<i>Ranunculus hederaceus</i>	Ivy-leaved water-crowfoot				✓					✓
<i>Ranunculus peltatus</i>	Pond water-crowfoot								✓	
<i>Ranunculus penicillatus</i>	Stream water-crowfoot								✓	
<i>Ranunculus sardous</i>	Hairy buttercup				✓					
<i>Ranunculus trichophyllus</i>	Thread-leaved water-crowfoot								✓	
<i>Reseda lutea</i>	Wild mignonette					✓				
<i>Rhamnus cathartica</i>	Buckthorn		✓	✓						
<i>Rhinanthus minor</i>	Yellow-rattle				✓	✓				
<i>Ribes nigrum</i>	Black currant		✓	✓						
<i>Ribes rubrum</i>	Red currant		✓	✓						
<i>Ribes uva-crispa</i>	Gooseberry		✓	✓						
<i>Rubus idaeus</i>	Raspberry		✓	✓						
<i>Rumex acetosella</i>	Sheep's-sorrel						✓			
<i>Rumex hydrolapathum</i>	Water dock								✓	
<i>Sagittaria sagittifolia</i>	Arrowhead								✓	

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>Salix caprea</i>	Goat willow			✓						
<i>Salix cinerea</i>	Grey willow			✓						
<i>Sanguisorba officinalis</i>	Great burnet				✓					✓
<i>Sanicula europaea</i>	Sanicle		✓	✓						
<i>Saxifraga granulata</i>	Meadow saxifrage				✓	✓				
<i>Saxifraga tridactylites</i>	Rue-leaved saxifrage						✓			
<i>Scabiosa columbaria</i>	Small scabious					✓				
<i>Schedonorus giganteus</i>	Giant fescue		✓	✓						
<i>Schedonorus pratensis</i>	Meadow fescue				✓					
<i>Schoenoplectus lacustris</i>	Common club-rush								✓	
<i>Schoenoplectus tabernaemontani</i>	Grey club-rush								✓	
<i>Scrophularia auriculata</i>	Water figwort			✓					✓	✓
<i>Scrophularia nodosa</i>	Common figwort	✓	✓	✓						
<i>Scutellaria galericulata</i>	Skullcap								✓	✓
<i>Serratula tinctoria</i>	Saw-wort				✓	✓				
<i>Silaum silaus</i>	Pepper-saxifrage				✓					
<i>Silene flos-cuculi</i>	Ragged-Robin			✓	✓				✓	✓
<i>Silene vulgaris</i>	Bladder campion					✓				
<i>Sorbus torminalis</i>	Wild service-tree	✓	✓	✓						
<i>Sphagnum</i> spp.	Bog-mosses (one point maximum)			✓				✓		
<i>Sparganium emersum</i>	Unbranched bur-reed								✓	
<i>Sparganium erectum</i>	Branched bur-reed								✓	✓
<i>Stachys palustris</i>	Marsh woundwort								✓	✓
<i>Stellaria alsine</i>	Bog stitchwort							✓		✓
<i>Stellaria holostea</i>	Greater stitchwort	✓	✓	✓						
<i>Succisa pratensis</i>	Devil's-bit scabious				✓	✓	✓	✓		✓
<i>Tamus communis</i>	Black bryony		✓	✓						
<i>Teesdalia nudicaulis</i>	Shepherd's cress						✓			
<i>Teucrium scorodonia</i>	Wood sage						✓			
<i>Thalictrum flavum</i>	Common meadow-rue								✓	✓
<i>Thymus polytrichus</i>	Wild thyme					✓				
<i>Tilia cordata</i>	Small-leaved lime	✓	✓	✓						
<i>Trifolium arvense</i>	Hare's-foot clover						✓			
<i>Trifolium fragiferum</i>	Strawberry clover				✓					
<i>Trifolium scabrum</i>	Rough clover						✓			
<i>Trifolium striatum</i>	Knotted clover						✓			
<i>Triglochin palustris</i>	Marsh arrowgrass									✓
<i>Trisetum flavescens</i>	Yellow oat-grass				✓	✓				
<i>Typha angustifolia</i>	Lesser bulrush								✓	
<i>Typha latifolia</i>	Bulrush								✓	
<i>Ulex europaeus</i>	Gorse						✓			
<i>Utricularia minor</i>	Lesser bladderwort								✓	
<i>Valeriana dioica</i>	Marsh valerian			✓						✓
<i>Valeriana officinalis</i>	Common valerian	✓	✓	✓						
<i>Veronica anagallis-</i>	Blue water-speedwell								✓	

Scientific name	Common name	AW	W	WW	NG	CG	HE	AP	FW	We
<i>aquatica</i>										
<i>Veronica beccabunga</i>	Brooklime								✓	
<i>Veronica catenata</i>	Pink water-speedwell								✓	
<i>Veronica montana</i>	Wood speedwell	✓	✓	✓						
<i>Veronica officinalis</i>	Heath speedwell						✓			
<i>Viburnum opulus</i>	Guelder-rose	✓	✓	✓						
<i>Viola canina</i>	Heath dog-violet						✓			
<i>Viola hirta</i>	Hairy violet					✓				
<i>Viola odorata</i>	Sweet violet		✓	✓						
<i>Viola palustris</i>	Marsh violet			✓				✓		✓
<i>Viola reichenbachiana</i>	Early dog-violet	✓	✓	✓						
<i>Viola riviniana</i>	Common dog-violet		✓	✓						
<i>Zannichellia palustris</i>	Horned pondweed								✓	
Total number of scoring species for criterion:		42	86	120	58	63	62	29	72	66

For difficult groups scoring one point maximum, the following are accepted as scoring species (i.e. native):

- *Callitriche* spp.: *C.brutia*, *C.obtusangula*, *C.platycarpa*, *C.stagnalis* and *C.truncata*.
- *Characeae* spp.: *Chara aculeolata*, *C.aspera*, *C.curta*, *C.globularis*, *C.hispida*, *C.virgata*, *C.vulgaris*, *Nitella flexilis* and *N.opaca*.
- *Euphrasia* spp.: *E.arctica*, *E.nemorosa*, *E.officinalis* and *E.pseudokernerii*.
- *Ononis* spp.: *O. repens* and *O. spinosa*
- *Polypodium* spp.: *P.interjectum* and *P.vulgare*.
- *Sphagnum* spp.: *S.capillifolium*, *S.compactum*, *S.cuspidatum*, *S.denticulatum*, *S.fallax*, *S.fimbriatum*, *S.girgensohnii*, *S.inundatum*, *S.palustre*, *S.papillosum*, *S.russowii*, *S.squarrosum*, *S.subnitens*, *S.subsecundum* and *S.tenellum*.

Species in these genera that are not listed here will not be scored, unless otherwise advised by a county expert or county recorder.

Appendix 12: Quick reference- Greater Lincolnshire LWS criteria

WD1	All ancient semi-natural woodland (ASNW) listed in Natural England's Ancient Woodland Inventory ¹⁸
WD1a	All plantations on ancient woodland sites (PAWS) listed in Natural England's Ancient Woodland Inventory ¹⁸
WD2a	Woodland that does not appear in the Ancient Woodland Inventory, but has characteristics of ancient semi-natural woodland <u>and</u> a minimum species index score of eight using Table 3
WD3a	Woodland with a combined minimum species index score of 15 using Tables 3 and 4
WD3b	Woodland with a minimum woodland features index score of six using Table 6
WD4a	Wet woodland with a combined minimum species index score of 15 using Tables 3, 4 and 5
WD5	Parkland or wood-pasture at least 1ha in extent that supports at least one veteran tree
WD6	Traditional orchard with at least five standard fruit and/or nut trees with crown edges no more than 20m apart
NG1	Neutral grassland at least 0.1ha in extent, or linear areas at least 50m long, with a minimum species index score of eight using Table 7
CG1	Calcareous grassland at least 0.1ha in extent, or linear areas at least 50m long, with a minimum species index score of eight using Table 8
HE1	Heathland at least 0.1ha in extent, or linear areas at least 50m long, with at least 25% ground cover of heather species ¹⁹
HE2	Acid grassland and heathland at least 0.1ha in extent, or linear areas at least 50m long, with a minimum species index score of eight using Table 9
AP1	Acid peatland with a minimum species index score of five using Table 10
AP2	Buffer land where sympathetic management of water levels and water quality is essential for the well-being of adjacent acid peatland
FW1	Running or standing water with a minimum Community Conservation Index (CCI) score of 15
FW2	Running or standing water with a minimum species index score of 10 using Table 11
FW3	Running or standing water with a Community Conservation Index (CCI) score of 10-14 <u>and</u> a minimum species index score of six using Table 11
We1	Wet reedbeds at least 0.5ha in extent where the vegetated element comprises at least 90% common reed <i>Phragmites australis</i>
We2	Wetland at least 0.5ha in extent with a minimum species index score of eight using Table 12

¹⁸ Ancient Woodland Inventory datasets can be viewed on the MAGIC website at: <http://magic.defra.gov.uk/>.

¹⁹ These are *Erica cinerea*, *Erica tetralix* and *Calluna vulgaris*.

We3	Wetland at least 0.5ha in extent with a minimum Community Conservation Index (CCI) score of 15
We4	Wetland at least 0.5ha in extent with a Community Conservation Index (CCI) score of 10-14 <u>and</u> a minimum species index score of five using Table 12
GM1	Grassland at least 2ha in extent that is subject to a low intensity grazing regime ²⁰ <u>and</u> holds surface water in the winter months ²¹ <u>and</u> supports a breeding bird population that scores a minimum bird index score of 13 using Table 13 (a)
GM2	Grassland at least 2ha in extent that is subject to a low intensity grazing regime ²⁰ <u>and</u> holds surface water in the winter months ²¹ <u>and</u> supports a wintering/passage bird population that satisfies the threshold count for at least two of the species listed in Table 13 (b)
GM3	Grassland at least 2ha in extent that is subject to a low intensity grazing regime ²⁰ <u>and</u> holds surface water in the winter months ²¹ <u>and</u> supports a minimum grazing marsh features index score of five using Table 14
Co1	All BAP quality saltmarsh at least 0.5ha in extent, or linear riversides at least 50m long
Co2	All BAP quality mudflats at least 0.5ha in extent, or linear riversides at least 50m long
Co3	All BAP quality coastal sand dunes and dune grassland at least 0.5ha in extent
SL1	All BAP quality saline lagoons
BM1	Brownfield mosaic at least 0.25ha in extent with loose substrate or bare ground <u>and</u> at least two of the early successional communities ²² in Table 15 <u>and</u> a minimum brownfield features index score of four using Table 16
Mos1	Areas at least 0.25ha in extent that support a combination of two or more individual habitats, each with a species index score that is no more than three points below the qualifying threshold
Sup1	Areas at least 0.1ha in extent that satisfy any criterion threshold, using a combination of the species index score from that criterion <u>and</u> a notable plant species index score using Table 17
Sup2	Areas that add to the wildlife value of adjacent land of at least LWS quality
Sup3	Linear features that connect, and therefore add to the wildlife value of, adjacent land of at least LWS quality
Sup4	Areas at least 0.1ha in extent with a species index score within 50% of any criterion threshold <u>and</u> a suite of additional habitat features ²³
Sup5	Areas at least 0.1ha in extent with a species index score within 50% of any criterion threshold <u>and</u> a self-sustaining population of a species (or suite of species) of conservation value

²⁰ This is defined as low input grazing over a long period, with relatively few livestock. It should achieve a sward height of roughly 2-10cm by October/November.

²¹ November to May.

²² At least one early successional community should be flower-rich (see Table 15).

²³ From the survey form (see Appendix 2).

Notes:

These guidelines have been endorsed by:



Local Wildlife Site Guidelines for Greater Lincolnshire

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