The Devon Local Sites Manual
Policies and Procedures for the Identification and Designation of Wildlife Sites

Version 1.4 – March 2022

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Changes to the Devon Local Site Manual:

Changes agreed by DBRC Steering Group 11/09/08 (v1.1):
Section 1: Introduction
- p5: Section on Local Wildlife Sites amended
- p10: Deleted sites updated

Section 3: Habitat Guidelines
- p13: Section 3.1.2.1 (b) Non-ancient woodland amended

Appendices:
- p44: Appendix 3 Calcifugous grassland amended

Changes agreed by DBRC Steering Group 08/05/09 (v1.2):
Section 1: Introduction
- p4: Section on proposed County Wildlife Sites (pCWS) amended

Section 2: The Selection of County Wildlife Sites
- p8: Section 2.5 – new list of evidence that can be used in the selection of CWS
- p11: Section 2.11– section on notification of landowners updated

Section 3: Habitat Guidelines
- p15: Section 3.1.5 – parkland criteria now complete

Appendices:
- p41-56: Appendices 2 -7 - IHS categories added to all the NVC community appendices
- p47: Appendix 3 - table for indicator species of neutral grasslands added
- p57-65: Appendix 8 - vascular plant list updated, old status (e.g. DN1) reinstated, references added.

Changes agreed by the DBRC Executive Group and the County Wildlife Site Selection Panel 14/03/2022 (v1.4):

Section 1: Introduction, p2-6 – multiple updates
Section 2: The Selection of County Wildlife Sites, p7-11 – multiple updates
Section 3.2: Grasslands, p18 - additional wording about church yards
Section 3.11: Habitats of Industrial Sites and Habitats Under Restoration, p26-27 - new criteria
Section 3.13: Arable fields and margins p27 - new criteria
Section 4.3: Mammals p30-31 – new seals criteria, and updates to otter, water vole, dormouse, and harvest mouse criteria
Section 4.4: Birds p32-34 – Updating threshold criteria, clarifying proof of breeding, and updating BoCC red and amber list speceis
Section 4.6: Invertebrates p35-37 – Criteria updated and amended
Section 4.7: Reintroduced or reinforced species p38 – Criteria updated and amended
Section 6: Ecological networks p42-45 - Criteria updated and amended
Appendices:
- Appendix 2-7: Addition of overlapping UKHAB catagories

- Appendix 7: Maritime Communities NVC/HIS p64-69 – Update to communities occurring in Devon
- Appendix 8: Notable Plant Species in Devon p70-90 – Update to nomenclature, and Red Data list.
- Appendix 9 - Species rarity scores for breeding bird assemblages p91 – thresholds updated
- Appendix 10 - Non-breeding populations for selected species p92-94 - thresholds updated
- Appendix 11 - Butterflies of County importance in the selection of County Wildlife Sites in Devon p95 – Species list updated
- Appendix 15 - Important Arable Plant Areas Outstanding Assemblages (Criterion B) p127-131 – supplements new criteria
- Appendix 16 - Guidance on UK Biodiversity Action Plan Priority Habitat - Open mosaic habitats on previously developed land p132-134 – supplements new criteria

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Contents:

Introduction

This document forms part of the suite of policy and procedure documents which guide the work of the Devon Biodiversity Record Centre (DBRC).

It updates version 1.3 of the Guidelines for the Selection of County Wildlife Sites in Devon which was used up until March 2022 to guide the selection of County Wildlife Sites in Devon.

The purpose of the document is to provide a robust and consistent set of criteria, policies, and procedures to guide the selection of 'Local Sites' across Devon, on behalf of the partnership which makes up DBRC. In Devon, these 'Local Sites' are known as 'County Wildlife Sites'. This is in line with the expectations of the National Planning Policy Framework (revised 2019), which states in Chapter 15 (Conserving and enhancing the natural environment) that Local Plans should "identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity", and Defra's Local Site Guidance (Local Sites: Guidance on the Identification, Selection and Management, 2006).

Drafting and Adoption of the Manual

The updated guidance contained within the Manual was compiled by a small group, comprising individuals represented on the DBRC Executive Group and the County Wildlife Site Selection Panel. This work commenced in 2020 and brought to conclusion in January 2022. The principal funders of this review, and development of version 1.4 of the CWS guidelines were Devon County Council, Devon Wildlife Trust, and East Devon AONB, and we are grateful for their contributions.

Input and advice was sought from a wide range of organisations and individuals with specialist knowledge of Devon's wildlife, including those specifically listed in Section 2.

Scope of the Manual

As an update to the previous 'Guidelines for the Selection of County Wildlife Sites in Devon', the revised Manual provides a more comprehensive approach to policies and procedures relating to Local Site systems in Devon, and ensures they are contemporary. Its purposes are:

- To define the range of 'Local Site' designations which are applied in a standard manner across Devon through the co-ordination provided by DBRC.

- To set out a detailed set of selection criteria, with related appendices, for the principal 'Local Site' designation: County Wildlife Sites (CWS).

- To set these within the context of a broader network of biodiversity sites (referred to as Ecological Networks and/or the Nature Recovery Network and linked to policy (NPPF 2019, 25YEP 2018) and legislation (Environment Act 2021).

- To explain the procedures which are applied by an independent 'Selection Panel' and operating with the authority of the DBRC Executive Group, as well as the staff of DBRC, in the selection, and de-selection, of such 'Local Sites'.

The policies and procedures relate to the full extent of the Devon's natural environment: terrestrial, aquatic, sub-littoral and marine. However, it should be noted that the contents of this Manual and their application have been much further developed within the terrestrial, than in the marine environment. The section on the marine environment only deals with coasts and estuaries, not the open sea.

The Manual does not currently cover 'Local Sites' in Devon recognised for their geological conservation significance which are referred to as County Geological Sites (CGS), or otherwise known as Regionally Important Geological Sites (RIGS). Instead, the selection of such sites is co-ordinated through the Devon RIGS Group based on the standard, national, criteria established by English Nature (i.e. now Natural England). However, there are clear parallels between these systems and it is hoped, in due course, that their relationship might be properly formalised.

Definitions:

A. Current 'Local Site' Designations
County Wildlife Site (CWS)
A County Wildlife Site is a discrete area of land, water, foreshore or seabed which is considered to be of nature conservation significance for its constituent wildlife (or biodiversity) in, at least, a County context and where this status has been verified by DBRC staff and confirmed by the CWS Selection Panel in accordance with the selection guidelines and procedures set out in this Manual.

Note: On occasion, the necessary evidence may be available to justify selection of an area as a County Wildlife Site, but it may be awaiting the required confirmation by the CWS Selection Panel, or there may be a procedural inconsistency preventing this (e.g. in the event of a justified challenge to the validity of the access permission for the site survey).
In the interim, such sites may, informally, be referred to as Proposed County Wildlife Sites (pCWS), to enable this pending status to be internally recorded by DBRC, pending the resolution of these issues and the formal confirmation of the CWS status.

Unconfirmed Wildlife Site (UWS)
UWS are sites identified as having possible interest but not fully surveyed to be able to assess if it meets any of the CWS criteria. Sites are often identified through surveys of nearby areas or through aerial photography interpretation. Some of these sites will be areas of significant wildlife interest and, likely to meet CWS standard; however, some will not but may still contain priority habitat or high species interest. In this way the term does not denote a type of designation or assign a particular value to an area of land, but flags it as being of potential interest and a priority for survey, where the opportunity arises.

B. Former 'Local Site' Designations
Local Wildlife Site
This designation used to be used for sites of significant wildlife interest within a local context that do not reach the criteria for County Wildlife Sites. However, given the potential confusion with the 'Local Sites' terminology promoted through the Defra guidance, and the lack of any consistent approach to the selection of such sites across Devon, this informal designation has been dropped. This includes the terms - Site of Interest for Nature Conservation (SINC) and Site of Local Interest for Nature Conservation (SLINC) which are now covered by the current classifications set out in this guidance. Since these sites still have some wildlife interest, information will be retained about them within the DBRC Combined Habitat Layer, which is being launched during 2022. Unlike DBRC's previous approach to its habitat data layer, which focused on priority habitat only, this newly created layer will include both priority habitat, and non-priority habitat data. As the new layer now allows DBRC to map non-priority habitats of biological importance, alongside those recognised within the UKBAP definitions, we can simplify the number of classifications previously used within the Local Sites Framework including the removal of the following category.

Other Sites of Wildlife Interest (OSWI)
These are sites that have been surveyed but they do not reach CWS standard. They will include the old designation of Local Wildlife Site (LWS) where relevant. Important note: Within this review these sites have now been incorporated into the DBRC Combined Habitat Layer, which comprises Biodiversity Action Plan (BAP) priority habitat, other semi natural habitats and broad land use data. Sites formally classified as an OSWI will be recorded within that layer, but that term will no longer be used as the primary attribution. This is to reduce the number of active classifications and add clarity for users of the CWS framework.

C. Ecological Networks and the Nature Recovery Network
The Manual also covers previous work on the development of Ecological & Biodiversity Networks within the county and connects these to the current development of a Nature Recovery Network (NRN) for Devon. This initiaitive is being driven by the Devon Local Nature Partnership as part of the 25 Year Environment Plan and Environment Act. The resuting spatial tool will link directly to key elements of the Environment Act, and form the Local Habitat Map within Local Nature Strategies. Those previous terms are now

superceded by the new Nature Recovery Network, but their historic role in identifying nature rich wildlife corridors and areas of biodiversity value, should still be recognised. They have been fundamental to increasing the previous protection afforded to these often fragmented sites in the past, and longside the current NRN are seen as highly complementary to the CWS system, and vice versa. See section 6 for more information.

Site Selection and the 'Ratcliffe Criteria'

The guidelines for selecting County Wildlife Sites are based on the Ratcliffe Criteria (Ratcliffe, 1997*) which is a long established and widely accepted method of determining the nature conservation value of a site, based on the following attributes:

- Size
- Naturalness
- Representativeness
- Rarity
- Diversity
- Position in an ecological unit
- Recorded History
- Fragility
- Potential Value
- Intrinsic Appeal

These criteria are considered to underpin the selection of all 'Local Sites' in Devon and have been used in the establishment of more detailed criteria, which are intended to be of particular relevance to Devon and to help establish which sites might be considered to be of significance at a County scale.

However, the selection of Local Sites is not always a precise science. The Ratcliffe Criteria assist in providing a consistent approach which is used widely across the UK in recognising attributes that contribute to the perceived nature conservation value of a particular site or feature. More detailed criteria can further assist in the establishment of thresholds. However, there will also be borderline cases. For this reason, this Manual recognises that its primary role is to provide detailed and consistent guidance to inform the selection process, but that decision will involve an element of subjectivity, which should be applied by those with a good knowledge and experience of Devon's wildlife.

* Ratcliffe, D.A. (1977). A Nature Conservation Review Volume 1. Cambridge University Press

Relationship with BAP Habitats and Priority Species

The Natural Environment and Rural Communities (NERC) Act (2006). Section 41 of the NERC Act requires the Secretary of State to publish and maintain

lists of habitats and species of principal importance for the conservation of biodiversity in England. These lists are derived from the habitats and species previously known as UK BAP priorities for conservation, and the terminology of habitats and species of principal importance supersedes the UK BAP terminology. There are currently 56 habitat types and 943 species that are listed as being of principal importance; these habitats and species were identified as requiring action in the UK BAP, and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework (published in 2012).

In a Devon context, it is 'The Nature of Devon – A Biodiversity Action Plan' which defines key features of biodiversity significance (see Table 2 of Section D of the Devon BAP) and presents action plans for habitats and species requiring a county-wide approach to their conservation; however, action plans are not presented where these might be more appropriately addressed at a local level (e.g. action plans for upland habitats are confined to the Dartmoor and Exmoor BAPs). Whilst these documents are intended to inform conservation action for these habitats and priority species, they are not sufficient to inform the selection of individual sites of substantive nature conservation importance. Although the BAP terminology has been superceded, the information and objectives contained within the Devon BAP remain relevant and will therefore continue to be taken into account through the Ratcliffe criteria, with some overt reference to BAP priorities within the more detailed criteria. BAP status has been used to inform the range of habitats for which detailed criteria are now presented; for example, it is their BAP status which has prompted the specific inclusion of criteria for 'Coastal and Floodplain Grazing Marsh' and 'Traditional Orchards'. Following on from the Devon BAP an updated list of ~ 1,600 species known to be rare in Devon (Devon Priority Species) and a shortlist of 96 species (Devon's Special Species) for which Devon has a particular responsibility, has also been produced.

Artificial/heavily modified habitats

County Wildlife Sites and Ecological Networks may include artificial habitats that qualify under other habitat or species criteria. These include arable land (and set-aside) and improved grassland that, for example supports important bird wintering grounds; wildlife corridors such as hedgerows, green lanes, dry stone walls, road verges, railway verges, disused railway lines; and areas such as disused airfields, parks, golf courses, gardens, cemeteries, churchyards, tips, sewage works, industrial sites, derelict land and disused buildings that still have value for wildlife, especially in the built environment.

2. The Selection of County Wildlife Sites

The selection of all County Wildlife Sites in Devon, from the full range of habitats present in the County, will be undertaken through the rigorous application of the following Guidelines. The procedure for the confirmation of County Wildlife Sites selection will be carried out by a panel of experts from within the County, who operate as an approved County Wildlife Site Selection Panel. Sites can be selected under habitat or species guidelines or a combination of the two.

Non-Statutory Wildlife Site Selection Procedure

2.1 Introduction:

The National Planning Policy Framework (revised 2019) requires Local Plans to "identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks". Local Sites (in Devon, these being County Wildlife Sites) are considered to be a component of these ecological networks. DEFRA's publication 'Local Sites: Guidance on their Identification, Selection and Management' outlines the importance of clear and transparent procedures for designating Local Sites.

This document outlines the procedure and guidelines adopted by the Devon Biodiversioty Record Centre (DBRC) Executive Group for designating and de-designating County Wildllife Sites. Ecological surveys to inform this process and the, subsequent, site selection work is carried out in line with current best practice and the policies and procedures set out by this document.

Note - The following is an update to the previous guidelines, it is therefore important to remember that it does not supersede any designation scenario pre-March 2022, and the changes set out below only apply from the date these guidelines were adopted.

2.2 Nomination of Sites:

In general, sites will be nominated for selection by DBRC following systematic ecological survey or monitoring programmes. Sites can, however, be nominated for selection by any person or organisation. The person or organisation nominating a site should provide sufficient information to allow the panel to judge the site against criteria set out in this document.

Where DBRC undertakes surveys, written permission for the designation of a site should be obtained from the landowner prior to the site visit. This ensures transparency, and mutual understanding of the purpose of the survey, and of the status of a CWS. However, this may not be strictly necessary in some cases, such as on Open Access Land.

However, where survey information is obtained from, or provided by an external source, it is understood that this will not always be the case. In these situations, DBRC must establish whether the information was gathered in a legitimate manner, including the necessary authority from the relevant landowner where required. In some instances, those

providing the information (e.g. staff with local authorities or certain other public bodies) may have access rights to land, enabling them to conduct ecological surveys. Ecological survey information may also be in the public domain and openly available to all, such as through ecological reports accompanying planning applications.

Both DBRC and external surveyors are strongly encouraged to consult with landowners openly and make them aware of these guidelines prior to their visit, so there is an opportunity to discuss any concerns at that time. This is important as, once designated, a landowner cannot then request de-designation at a future point (See 2.7 for de-designation criteria).

A CWS would not, normally, be designated without advance communication with the relevant landowner. However, there may be occasions where such action is prudent or required. One notable example is where a site of high biodiversity value is believed to be at imminent threat of harm and the designation of a CWS might provide increased recognition and potential protection.

2.3 Written Evidence (environmental data):

Selection must be supported by validated written evidence sufficient to judge a site against the criteria. DBRC can provide guidance on the collection of this information through site surveys or through the collation and provision of environmental data gathered from legitimate sources. All written evidence should be validated by DBRC, and a copy should be held at DBRC for future reference.

The collection, management and presentation of written evidence are dependent on resources being available. Evidence that can be used in the designation of County Wildlife Sites includes, but is not limited to:

- Data from specific CWS survey
- Data from other surveys, where in accordance with the procedures set out in 2.2 above
- Publicly available environmental information such as aerial photos, approved documents such as Environmental Impact Assessments, and ecological records generated through these and other legitimate sources.

In the course of reaching a decision on CWS status, members of the CWS Selection Panel, particularly those involved in the surveying of the site, may add their own personal knowledge and observation to supplement and assist in the interpretation of the available written evidence.

2.4 The Wildlife Site Selection Panel:

County Wildlife Sites in Devon are selected by a panel consisting of:

- A relevant Devon County Council environmental representative
- A relevant Devon Wildlife Trust representative
- Appropriate Local Authority Planning and/or Countryside Officers

- A named local naturalist of known reputation and other specialists as appropriate (e.g. a Bat Group representative when selecting bat sites)
- Relevant Environment Agency and/or Natural England officers
- Devon Biodiversity Records Centre Manager and Survey Officers where possible

Panel meetings should, ideally, be attended by ALL the members above and every effort should be made to set meeting dates which are possible for all members. Members should try and send an appropriate alternative representative where they are unable to attend. The meeting will be quorate when attended by four out of the six categories of member listed above, which must include a DBRC staff member and the relevant local authority representative. The secretariat for the meeting will be provided by DBRC and meetings will be chaired by the DCC representative or, in their absence, by the DWT representative.

2.5 Criteria:

Selection is on the basis of written criteria, as set out in this document. Regular review of the guidance should be carried out by DBRC with detailed consultation with members of the Panel, relevant statutory agencies and appropriate species and habitat specialists. The DBRC Exectutive Group will oversee, input to and, ultimately, adopt any review of and amendment to this document.

The selection process should be documented by DBRC (e.g. reasons for selection, persons involved in the selection process and date selection was made) and this documentation should be held with the written evidence.

2.6 CWS Site Boundaries:

CWS site boundaries are usually chosen to select a boundary which is clearly defined by features on the ground, such as a hedge or fence line. This may mean that the site includes areas which when considered in isolation do not meet the necessary selection criteria (such as areas of poor semi-improved grassland within a field of otherwise unimproved grassland). Sites can also include entire parcels of ground (i.e. individual fields, or blocks within a woodland) which do not clearly meet the criteria, but are justified in the context of an overall site complex (e.g. blocks of conifer of no apparent interest which are isolated within an otherwise semi-natural woodland).

Continuity with an adjoining, related habitat in a SSSI or County Wildlife Site should be a consideration when designating sites, and sites selected as geological SSSIs may also be selected as a County Wildlife Site.

2.7 The CWS Designation Procedure:

The CWS Selection Panel is responsible for ALL additions / deletions / boundary changes to the CWS list. The Panel can meet in person or

virtually (by video or telephone conference) or may communicate and reach decisions in writing (i.e. by e-mail). These processes will be coordinated by DBRC staff or by the CWS Selection Panel Chair. There are three methods of designation:

2.7.1 Full Panel discussion:

For sites where CWS designation is not clear, the CWS Panel members consider each site on an individual basis. Panel members are provided with a copy of the evidence, and summary information (prepared by DBRC and in the form of a table). The summary lists the relevant CWS criteria for each site, and any concerns or problems (e.g. if the site does not easily conform to the CWS criteria, or if only part of the site is of CWS standard). The issues relating to each site are discussed, until agreement is reached on whether the site meets the criteria and what its boundary should be. A vote may be taken where necessary in reaching any decision.

2.7.2 Endorsement:

For clear-cut CWS selection or non-selection cases, the Panel members are specifically informed of ALL sites which are proposed for CWS status and are given summary information about these in the form of a table. The table is compiled by DBRC staff, and includes the reasons for the selection or non-selection of each site. Where a site is to be selected as a CWS, the relevant CWS criteria are listed. The Panel looks at one or two examples of these (or more, if felt to be necessary) to be sure that the interpretation of the CWS guidelines by DBRC staff is correct. The Panel then endorses the remaining recommendations *en bloc* (i.e. adopt these, with the discretion to look in more detail and reverse any recommendations from DBRC staff).

2.7.3 Delegation:

For minor and non-controversial *de minimis* amendments, such as re-digitising sites so that they are correct to the OS Mastermap, correcting mistakes in digitisation and deleting areas where there is clear and irrefutable evidence that they no longer of CWS standard (e.g. part of a site that is now under a housing development) the Panel members have given DBRC staff the delegated authority to take decisions on behalf of the Panel. The list of decisions does not have to be presented to, and specifically approved and adopted by the Panel.

2.8 The CWS De-designation Procedure:

Sites may be de-designated as County Wildlife Sites if it is found that their nature conservation interest has deteriorated to such an extent that they are no longer of CWS standard and where it is considered that there is no scope for their wildlife interest to be appropriately restored

within a reasonable timeframe through management intervention. Where there is clear, current and irrefutable evidence that any site is no longer of CWS standard, the Panel has delegated decisions on the de-designation process to DBRC. Otherwise, cases will be considered directly by the Selection Panel.
Sites may be de-designated if:

- There is no available evidence to support their original selection as CWS
- New evidence clearly shows that the CWS interest has been lost
- The designation took place in clear contravention of the guidelines in place 'at that time' – if there is a balance of doubt then sites will remain as CWS.

Information on sites that have been de-designated will be retained by DBRC on a 'Deleted Sites' layer on the DBRC database. This will cover sites that have been de-designated because there is no evidence to support their selection as CWS, or the CWS interest has been lost. Sites selected in clear contravention of the guidelines in place at the time will be added to the DBRC Combined Habitat Layer, and the reason noted.

2.9 Challenges to decisions:

Owners of sites may challenge the factual basis on which a parcel of land has been selected or not selected as CWS. Such challenges may address an entire CWS or the appropriateness of the selected boundary (including areas that do not meet CWS standard and are not, otherwise, in accord with the provisions set out in section 2.6 of these guidelines).

This procedure will not be used to change the designation of a site because the owner requests this, but will be used to determine whether the selection process has been properly applied. This procedure should be operated by DBRC through the auspices of the Selection Panel and controversial cases will be addressed by the full Panel (by exchange of e-mails, if necessary). However, in some cases, it may be sufficient for the Panel to delegate the consideration of certain issues to DBRC staff.

2.10 Adoption by Local Authority:

After sites are selected, the relevant Local Authority should be formally notified of the sites within their area, and provided with relevant information, through their Service Level Agreement with DBRC.

2.11 Notification to landowners:

After sites are selected or de-designated, landowners shall be notified by either DBRC or the relevant Local Authority.

3. Habitat Guidelines for County Wildlife Sites

Appendices 2-7 provide a list of NVC/IHS community types used in the habitat guidelines in section 3. There is a transition from Phase 1 and IHS to UK Habitat Classification (UKHAB), but at the moment this is still in transition. UKHAB categories are provided for reference, based on the published correspondence tables for converting NVC to UKHAB categories: UK-Habitat-Classification-V1-0-including-Correspondences_3-Oct-2018. Other UKHAB categories not mentioned may also meet CWS guidelines.

3.1 Woodlands

Devon is a relatively well-wooded County, with woodland covering approximately 11.59%[1] of the land area. Of this area, about one third is believed to be of ancient origin, with this third comprising 60% ancient semi-natural woodland and 40% plantations on ancient sites. Ancient semi-natural woodland in the County is characterised by acid oak-birch stands on well-drained slopes with relatively poor ground floras often supplemented by rich assemblages of bryophytes and epiphytic lichens. Gleying of soils leads to rich flushed woodlands in valley bottoms. Clay soils away from the steep valleys support rich oak-ash-maple woods, while the restricted calcareous soils in the south east of the County support distinctly rich woodland communities. The remainder of the woodland resource is made up of amenity plantations on country estates, conifer plantations on former moorland heath and secondary broadleaved woodland which has arisen through natural regeneration on abandoned farmland and heathland.

The following will be selected as County Wildlife Sites:

3.1.1 Ancient Woodland

3.1.1.1 Woodland recorded on the Provisional Devon Inventory of Ancient Woodland (note i) as carrying a semi-natural canopy, unless post-inventory survey has shown this record to be erroneous (note ii), or has revealed severe degradation (note iii).

3.1.1.2 Woodland recorded on the Provisional Devon Inventory of Ancient Woodland as carrying a replanted coniferous or broadleaved crop, which is shown to retain, on the basis of post-Inventory survey, restorable elements of its previous semi-natural character, and other extant features of wildlife interest. These should include all of the following:

(a) the presence of at least 10 ancient woodland indicator species (note iv);
(b) the presence of at least 5 species that are representative of a specific NVC/IHS community type (e.g. acid/base-rich/wet. N.b. Currently lists are only available for W8 & W10) and
(c) significant additional features such as herb-rich rides, glades or pockets of semi-natural canopy.

1. Forest Research (2019). The National Forest Inventory https://data-forestry.opendata.arcgis.com/datasets/67b8a420316940b593c835685388be01_0/about

3.1.1.3 Woodland not recorded on the Inventory of Ancient Woodland but believed, nevertheless, to be ancient because
(a) its location is shown as wooded on the Tithe Maps and recent survey has confirmed the presence of a semi-natural canopy (note v) or
(b) field evidence suggests ancient origin.
(c) Sites should normally be 0.5 ha or larger to qualify.

3.1.2 Non-ancient Woodland

3.1.2.1 Woodland which is not believed to be of ancient origin but which carries a semi-natural canopy (note v) and meets all of the following qualifications:
(a) it has a diverse and well-developed structure (ground flora/shrub, layer/canopy or ride/glade system) and;
(b) it has a flora which is rich in the context of the woodland community concerned (note vi) with the presence of at least five species from the relevant NVC/IHS community and;
(c) it is not degraded by having grazing, poaching, domination by invasive and/or non-native species (notes iii and vii), or other heavy usage for recreation or other purposes: and
(d) the features of value are present in at least 50% of the woodland area.
(e) Sites should normally be 0.5 ha or larger.

3.1.3 Wet Woodland

3.1.3.1 Woodland which has clear affinities with NVC communities W1, W2, W4, W5, W6 or W7 (see note vi and appendix 2 for IHS categories). Sites should normally be 0.5 ha or larger.

3.1.4 Scrub

3.1.4.1 Some scrub communities are common and widespread, and may be considered to be invasive and pose a threat to other habitat types. However, other scrub communities are more restricted in their occurrence and are of conservation value in their own right. Scrub communities can support a wide range of wildlife species, for instance dormice, nesting birds, specialised lichen assemblages and a variety of invertebrates, some of which are partly or wholly dependant on scrub habitats. Scrub is often found as part of a habitat mosaic, where it provides additional valuable niches and micro-habitats (the ‘edge effect’) which significantly increase the overall value and species-richness of a habitat. Scrub will not normally be selected on its own (other than where it clearly meets the species criteria), but the following may be selected as County Wildlife Sites:

3.1.4.2 Scrub which

(a) has clear affinities with NVC communities W21 to W25 (See note vi and appendix 2 for IHS categories), and

(b) is 0.5ha or larger and

(c) is structurally diverse (i.e. has wide range of shrub species with a mixed age structure, has many clearings or glades or an irregular edge and has a well-developed marginal zone with other habitats).

3.1.4.3 Areas of scrub may be included within other habitat County Wildlife Sites, where it forms a valuable complement to these other habitats, by increasing structural and species diversity.

Notes

i. The Provisional Devon Inventory of Ancient Woodland was published by the Nature Conservancy Council in 1986. The definition of Ancient Woodland used in these Guidelines accords with that given in this publication. It should be noted that the Inventory only lists Ancient Woodland of 2ha or larger.

ii. It is recognised that sites shown on the Ancient Woodland Inventory were identified using a variety of techniques and were not all subject to field confirmation at the time of that project. Any such field survey is now more than five years old. Thus although presence on this inventory will be taken as grounds for recognition as County Wildlife Sites, such recognition will usually be confirmed by recent re-survey, and where it is not, recognition will be regarded as provisional pending such survey.

iii. A 'Severely degraded' site in this context is defined as one where, if management were to be changed immediately to the optimum, the previous nature conservation interest would be unlikely to be regained in the foreseeable future. See 3.1.2.1 (c) for examples of causes of degradation.

Ancient woodland indicator species for this purpose are defined as those which appear on the Devon Ancient Woodland Vascular Plants List, given as Appendix 1. This List is based on the Ancient Woodland Indicators for the South West put forward by Francis Rose in British Wildlife April 1999, and on English Nature's 1993 recommendations. Indicator species should occur widely throughout the body of the wood, rather than be confined to boundaries, open rides or small key features. A further list of ancient woodland indicator species that are representative of a specific NVC community type (e.g. acid/base-rich/wet) are also listed here.

iv. Conclusive field evidence will require the presence of 10 or more ancient woodland indicator species (Appendix 1) and physical features such as ditch and bank boundaries, the shape/outline of the woodland, parish boundaries, large ancient trees/coppice stools or historic name.

v. Semi-natural woodland is defined as all woodland stands which do not obviously originate from planting, the distribution of species generally reflecting natural variations in site and soil. For practical purposes semi-natural woodlands are also taken to include woods where true semi-natural stands have been slightly modified by planting, eg. Mixed coppice containing a scattering of ornamental conifers, sweet chestnut etc. and also mature plantations of native species which have attained semi-natural characteristics.

vi. Where NVC data is available, the site should represent a good (typical) example of its community type. Woodland and Scrub NVC and IHS communities occurring in Devon are listed in Appendix 2. Some NVC types are intrinsically poor in species and their lack of richness should not necessarily be taken as an indication of lesser worth.

vii. Major blocks of coniferous plantation should not normally be selected (conifers on ancient woodland sites are covered separately in 3.1.1.2 above). Exceptions will include sites where there are especially rich rides or other features within the plantation which could not practicably be defined without including the adjacent stand, where the planting is in small patches surrounded by semi-natural woodland or where the ground flora beneath the plantation remains exceptionally rich.

3.1.5 Parkland, Wood Pasture and Veteran Trees

Devon contains a large number of parklands – the *Provisional Inventory of Parklands, Wood Pastures and Veteran Tree Sites in Devon* (2007) lists 162 sites of which 43 are assessed as being of at least CWS quality. This assessment is based partly on the number and speceis of veteran trees present and partly on existing knowledge of their specialist wildlife of fungi, lichens and invertebrates which are dependent on concentrations of veteran trees on historic (ancient) sites. Similarly 47 wood pasture sites are listed of which 28 are of CWS quality. There are also miscellaneous sites with concentrations of veteran trees, notably along river floodplains and settlement pollards. The wood pasture sites are almost certainly already covered by woodland CWSs and form part of the data on cover of ancient semi-natural woodland in Devon.

The key feature of these sites – in terms of vegetation – are the populations of open-grown veteran trees. The trees may be within a matrix of other semi-natural vegetation such as grassland or heathland, or within open country under more intensive land-use systems such as improved or semi-improved pastures or even arable. Soil type and hydrology are to a considerable extent irrelevant, although wood pastures tend to occur on land difficult to cultivate and parklands are often on soils which form productive pastures. Some veteran tree sites may have become engulfed within secondary woodland or plantations due to abandonment of grazing or afforestation.

The key features of the trees which make them of significance for specialist wildlife are the characteristics of the wood itself – the bark, sapwood and

heartwood – and so particular tree species are not of the same level of significance as, for example, in ancient semi-natural woodland. Non-native broadleaves can be just as important for their veteran tree biological assemblages as native tree species. Also of great importance is tree form, with open-grown conditions providing the best conditions for the specialist biodiversity.

Small trees and even shrubs can be included. Hawthorn and elder are particularly easily overlooked.

The following will be selected as County Wildlife Sites:

3.1.5.1 Concentrations of 10 or more veteran trees
3.1.5.2 Sites with ancient trees
3.1.5.3 Concentrations of 5 or more trees of more than 1.5m diameter

Notes
viii. Ancient trees are defined in terms of the stage achieved in the life of the particular tree species. Ancient oaks may be 500 years or more in age but an ancient birch less than 100 years. Ancient hawthorns and elder will be small and easily overlooked. Canopy break-up due to age – natural retrenchment - is the key feature and this requires expert recognition. Particular care will be required with historic pollards, trees which have been crown reduced for Health & Safety reasons (retrenchment pruning), and wind-damaged trees.

ix. Veteran trees are defined in terms of their features which mirror natural aging, particularly the extensive presence of dead and/or decaying wood, including heartwood which is often not readily visible to the observer.

x. The *Provisional Inventory of Parklands, Wood Pastures and Veteran Tree Sites in Devon* was produced by Devon County Council in 2007. While most of the larger parklands in the county will be listed, it was recognised that many smaller sites will have been overlooked. The core of the wood pasture sites listed are common land, but sites on private land will be under-represented. The miscellaneous other types of sites with concentrations of veteran trees are especially under-represented as exploration on the ground may be the best way of detecting these.

3.1.6 Traditional Orchards

Traditional orchards have great cultural and landscape importance and can be valuable habitats for a wide range of species including fungi, lichens, invertebrates, birds and mammals. The trunks of old orchard trees are particularly valuable for lichens, saproxylic invertebrates, insectivorous birds, hole-nesting birds and roosting bat species, with the fruit blossom and fallen fruit providing a source of food for further invertebrates, mammals and birds. The wildlife value of such sites is often increased by the presence of unimproved grassland beneath the orchard canopy, and by their enclosure within species rich hedgerows. Orchards are similar to wood pasture and

parkland but the species composition of the trees is different, these being primarily in the family Rosaceae, and the arrangement of trees is usually denser. The trees are usually much smaller, but some still may be veterans. In Devon 6,000 acres of orchards have been lost since 1905, and they were once a characteristic feature of the landscape.

The following will be selected as County Wildlife Sites:

3.1.6.1 Traditional orchards will be selected as County Wildlife Sites if they meet all of the following guidelines:

(a) It is not degraded by heavy grazing, poaching, dominated by scrub or non-native species or receiving heavy usage for recreation or other purposes;
(b) It is stocked with “traditional” varieties of fruit tree (these include apple (for fruit or cider), pear (for fruit or perry), cherry, plum, damson trees or cob nut plantations);
(c) Sites should normally be 0.5ha or larger to qualify, with at least 10 old orchard trees.

3.1.6.2 Or – The site meets any of the species criteria as set out in sections 1-6 of the species guidelines.

3.2 GRASSLANDS

A wide range of grassland communities of wildlife interest are represented in Devon. These include acidic, mesotrophic and calcareous communities on both well-drained and marshy or boggy ground. A characteristic of sites with these communities is the tendency for true grassland components to be adjacent to or mixed with wet or dry heath, bog or secondary woodland. These communities may need to be judged under other sections of these Guidelines. Acid grassland communities occur relatively frequently, particularly as components of wet acid habitats, but their true distribution has been largely overlooked due in part to their inherent lack of species richness. Mesotrophic communities are scattered across the County, represented principally by the NVC community MG5, with a frequency of occurrence which is of at least regional or possibly national significance. Such communities are commonly associated with well-drained valley slopes but also occur on the margins of marshy communities referred to above. Calcareous grassland communities are of restricted occurrence in the County, being largely confined to soils derived from calcareous outcrops in the south and east.

The following will be selected as County Wildlife Sites:

3.2.1 Where NVC/IHS community analysis information is available, all sites, normally of 0.5 ha or greater (except severely degraded examples – note iii) containing those NVC/IHS communities listed in Appendix 3. See also notes xi and xii.

3.2.2 Where NVC/IHS data are not available, mesotrophic/calcareous/calcifugous grassland sites, normally of 0.5 ha or greater, with either:

(a) a high diversity of species (this is measured as the number of different grasses, sedges and herbs over a 1m² area. Specifically for acidic grasslands – 10 species, for neutral grasslands – 15 species & for calcareous grasslands – 20 species) or
(b) an assemblage of species indicative of the above NVC community types or
(c) the presence of at least 5 of the 'indicator species' listed in Appendix 3). Indicator species should occur widely throughout the body of the site. See also notes xi, xii and xiii.

Notes

xi. Where an area of interest constitutes only a part of an otherwise improved or semi-improved enclosure, the site should be considered in the same way as for whole enclosures, ie. on the basis of the size and quality of the area of interest. In such cases, if the area of interest makes up more than one quarter of the enclosure, then the whole enclosure should be regarded as a County Wildlife Site for mapping purposes.

xii. Refer also to mire and fen meadow criteria for Culm Grassland sites.

xiii. Sites should normally be at least 0.5ha to be selected. Churchyards can be as small as 0.25ha, as they can often be important hotspots for wildlife in urban and rural areas.

3.3 Lowland Heath

Lowland heath is considered to be a habitat type of international importance in Britain, with Devon holding a significant proportion of the total resource. While larger areas of heath are present to the west in Cornwall and to the east in Dorset, the Devon heathlands are noteworthy among other reasons for the presence of particular NVC communities which are not common outside of the county. Key concentrations of lowland heath are found on the East Devon Pebblebed Heaths, the Haldon Ridge, the Bovey Basin, the fringes of Dartmoor and Exmoor, and parts of the Blackdown Hills. There is a dry heathland component to the Culm Grasslands of the north and west of the county, though Culm sites will generally be picked out by other sections of these guidelines. Given the significance and restricted occurrence of heathland in the County, the Guidelines seek to include all examples as County Wildlife Sites.

The following will be selected as County Wildlife Sites:

3.3.1 All sites dominated by assemblages of heathland species which have clear affinities to heathland communities defined by the NVC/IHS, and are listed in Appendix 4.
3.3.2 Sites should normally be 0.5 ha or larger (see also note xiii).
3.3.3 Sites should normally contain at least 10% cover of *Calluna* and or *Erica*.
3.3.4 Sites may contain up to 25% scrub, bare ground, grassland or ruderals. More than 25% may be included where there is an intention to manage to increase the area of heathland communities (eg scrub removal).
3.3.5 Remnant heathland under conifer plantations and recovering heathland in clear-felled plantation areas may be included where the conifer crop is failing and/or there is an intention to manage for heathland.
3.3.6 Areas of dense bracken should not be included.
3.3.7 Wet heathland will be assessed under the criteria for Mires in Section 3.5. There is an artificial distinction between lowland heaths and mire and bog communities. The area criteria for both types can be added together on a mosaic site.

3.4 Upland Habitats

Upland habitats are generally defined as being above 300m, although some habitats are present in both upland and lowland areas. Devon possesses a fine range of upland habitats within the two National Parks of Dartmoor and Exmoor. These habitats include large tracts of upland heath, grassland and bracken. The identification of County Wildlife Site Quality essentially mirrors the criteria used in the drawing up of the National Park Section 3 Moor and Heath Maps (Wildlife and Countryside (Amendment) Act 1985), and hence the correlation between the two is recognised by these Guidelines.

The following will be selected as County Wildlife Sites:

3.4.1 All examples of upland heath, mire and acidic grassland NVC/IHS communities listed in Appendices 4, 5 and 6.
3.4.2 All sites with vegetation communities restricted to upland areas, except where severely degraded (see note iii).
3.4.3 Stands of the bracken community, U20, only where they possess a diverse vernal flora including, for example, *Viola* species (see note xiv). Lower altitude examples of NVC U20 community should also be included here.
3.4.4 Any other area defined on Section 3 Moor and Heath Maps that supports upland habitats that are not degraded (see note iii).

Notes
xiv. Stands of bracken which form a component of a wider complex of other habitat types should normally be included within a larger County Wildlife Site boundary defined for the other components.

3.5 Mires, Bogs, Fens and Swamps

Mire and bog communities are especially well represented in parts of Devon, with the County possessing an assemblage of some communities which is of national significance. Of particular note are those wet, acid communities of the Culm Measures, referred to as Culm Grasslands, where rich examples of the NVC mire communities M23, M24, M25 and M27 are represented, with accompanying important invertebrate and other fauna.

Similar communities are also concentrated on the Blackdown Hills in the east of the County. Elsewhere such communities are more restricted. Fen or swamp communities are not well-represented in the County, with most examples occurring as modest components of larger mire or grassland sites, or as marginal communities around open water habitats.

The following will be selected as County Wildlife Sites:

3.5.1 All examples of mire communities as defined by NVC/IHS and listed in Appendix 5.
3.5.2 All examples of fen meadow communities as defined by NVC/IHS and listed in Appendix 5.
3.5.3 All examples of tall-herb fens and swamp communities as defined by NVC/IHS and listed in Appendices 5 and 6.
3.5.4 Where NVC/IHS data are not available, examples should comprise assemblages of species indicative of these community types.

Notes
xv. Examples should normally be 0.5 ha or larger to be selected, except where smaller sites containing particularly rare or threatened communities or species are encountered.

3.6 Standing waters

Standing water communities in the form of lakes, ponds, gravel pits, reservoirs, canals and ditches are at a premium in Devon. Sizeable single areas of open water are particularly scarce, with the most significant concentration of sites occurring in the Bovey Basin area, while other examples are provided by rare natural features such as the lagoon at Slapton Ley and artificial impoundments such as Roadford Lake. Open water sites support particularly important populations of Odonata and other invertebrates, offer important breeding and wintering grounds for waterfowl and are sometimes associated with rich marginal vegetation communities.

The following will be selected as County Wildlife Sites:

3.6.1 Sites with a higher than average number of submerged, floating and emergent plant species for a community type (note xvi), or with individual species that indicate that the site is an especially rich example of its type.

3.6.2 Sites with four or more species of *Potamogeton*.
3.6.3 All mesotrophic open water sites except where severely degraded (note iii).
3.6.4 Sites showing a transition from freshwater to saline conditions, except where severely degraded (note iii).
3.6.5 Sites with associated marginal vegetation communities selected under other criteria, e.g. swamp, wet woodland, reedbed or tall-herb fen.

Notes

xvi. See SSSI Selection Guidelines, Table 12, p.125 for an indication of normal expected numbers of species in a given community.

3.7 Rivers

Devon supports an exceptional range of river systems of high quality, most of which support rich marginal communities along main river corridors and associated tributaries. There is a preponderance of spate rivers and a relative lack of wide, slow-flowing river examples. Most rivers in the county support populations of key species, most notably the otter, which has a stronghold in the north and west of the county.

Given that the great majority of rivers in Devon have substantial importance in nature conservation terms, they will be considered in a different way from other habitat types for the purposes of County Wildlife Site selection.

All rivers in the County will normally be recognised as being of comparable value to County Wildlife Sites. Stretches of river afforded County Wildlife Site status will normally be expected to exhibit a minimum degree of modification to bed and water level and a high proportion of semi-natural habitat on both banks. Blocks of habitat adjacent to river channels will be evaluated on their individual merits, with reference to other sections of these Guidelines. The boundary of a riverine County Wildlife Site will be the top of the bank if there is no contiguous semi-natural habitat.

Rivers are also an important part of Biodiversity Networks, so are also covered in Section 6.

3.8 Coastal and Floodplain Grazing Marsh and lowland ditch systems

Floodplain grazing marsh is very restricted in Devon. It can be defined as periodically inundated pasture or meadow with ditches containing standing fresh water, which regulate or maintain the water levels. These ditches are especially rich in plants and invertebrates. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal water filled pools, or less often, permanent ponds such as old 'ox-bows' containing emergent swamp communities.

This is a diverse category, covering drained and improved grassland and marshy habitats with a high proportion of rush and sedge species or

meadowsweet. All of these habitats are liable to periodic flooding, mainly from October to April. The grasslands are the product of agricultural management and are found on alluvial nutrient-rich soil created by the periodic flooding of rivers and streams. Grazing marsh is also of great importance for breeding waders and wildfowl, as well as rare wetland plants and invertebrates.

The main groups of grazing marsh are:

- Improved grassland, often re-seeded with rye-grass, timothy or clover mixes;
- Fen or marshy grassland with a high proportion of rushes, sedges or meadowsweet;
- Wet pasture with a predominance of tall herbs such as valerian or wild angelica.

3.8.1 All fragments of coastal grazing marsh will be considered for County Wildlife Site status if they meet the following criteria:

(a) All examples of grazing marsh containing those NVC/IHS communities listed in Appendix 5 and Appendix 7. Sites should normally be 0.5ha or greater.
(b) Sites which are of importance for breeding or wintering wildfowl and waders (see Section 4.4).
(c) Sites which are of importance for invertebrates (especially aquatic) or sites with Nationally Notable (Na or Nb) species or Red Data Book species present (see Section 4.6);
(d) Sites which are of importance for vascular plants (see Section 4.1).
(e) Other sites where the coastal or floodplain grazing marsh does not meet a-d above, but where they support natural processes.

Ditch systems will be considered as County Wildlife Sites if they meet any of the following criteria:

(a) Complex interconnected ditch systems (excluding completely shaded ditches) >1 km. in total ditch length where at least 25% of the wet ditches have >= 10 submerged/floating/emergent/wet bank species per 20m length with at least one 20m length per field side sampled. Improved grasslands/arable land between ditches will be included within sites as buffer zone;
(b) Any ditch with a 20m length with at least 15 (brackish ditch 10) floating, submergent, emergent/ wetbank species plus any connecting ditches with at least 10 (brackish ditch 6) of the above species;
(c) Any site sample with either at least 10 different invertebrate orders or at least 35 aquatic invertebrate species.

3.9 Coastal and Marine

A large proportion of Devon's coastline is of high wildlife value, with a large element considered to be of international nature conservation importance. In the coastal context, of particular note are the estuarine complexes on the south and north coasts, and the stretches of rocky coastline, especially the calcareous cliffs of the Torbay and East Devon areas, and the hard granite cliffs of the Exmoor and north Devon coast. Rarer features include the sand dune complexes of Braunton Burrows. Coastal habitats form part of a wider ecological unit, encompassing estuary, sea cliff, saltmarsh, foreshore and the true marine environment, referred to collectively as the coastal zone. This zone overlaps with existing considerations of coastal areas as part of the inland environment, but for the purposes of these guidelines we distinguish between:

- Open coast - including small offshore islands
- Estuaries (note xvii)

and between:

- above high water (above MHWS[1])
- intertidal (MHWS-MLWS[2])
- sub-tidal (below MLWS)

The following table provides a summary of how sites may, or may not, be defined in this zone.

	Above high water	**Intertidal**	**Sub-tidal**
Open coast	Defined in 3.9.1	All, unless modified	N/A
Estuaries	Defined in 3.9.3	Defined in 3.9.4	All

3.9.1 Open coast - above high water

The following will be selected as County Wildlife Sites:

3.9.1.1 All coastal sites which qualify on one or more of the following grounds:

(a) Sites with maritime cliff, maritime heath, scrub or perched saltmarsh, shingle, strandline and dune communities communities as defined by the NVC/IHS and listed in Appendix 7, unless severely degraded (note iii), usually of 0.5 ha or larger.

[1] Mean High Water Springs
[2] Mean Low Water Springs

(b) Sites which show a transition between the above communities and heathland or mesotrophic/calcareous/calcifugous grassland communities (listed in Appendices 3 and 4), usually of 0.5 ha or larger.
(c) Where NVC/IHS data are not available sites with grassland, heath, sea cliff vegetation, scrub or perched saltmarsh, shingle, strandline and dune vegetation usually of 0.5 ha or larger with either a high diversity of herb species or an assemblage of species indicative of the above NVC/IHS community types.

3.9.2 Open coast - intertidal

The following will be selected as County Wildlife Sites:

3.9.2.1 All open coast intertidal sites (note xviii) unless significantly modified (note xix).

3.9.2.2 Intertidal sites which have been significantly modified may be considered and selected on an individual basis if a) the modification has not changed the basic substrate type of the site (e.g. stone construction behind/on rocky intertidal) and b) that the modified areas exhibit natural inter-tidal communities in keeping with adjacent areas of similar substrate.

3.9.3 Estuaries - above high water

The following will be selected as County Wildlife Sites:

3.9.3.1 Blocks of habitat above the high water mark on estuaries will be evaluated on their individual merits, with reference to other sections of the Guidelines.

3.9.4 Estuaries - intertidal

The following will be selected as County Wildlife Sites:

3.9.4.1 All estuary intertidal sites which qualify on one or more of the following grounds:

3.9.4.2 Sites with saltmarsh, coastal floodplain and grazing marsh (note xx) or reedbeds (note xx) as defined by the NVC/IHS and listed in Appendix 7, unless severely degraded (note iii), usually of 0.5 ha or larger.

3.9.4.3 Sites which show a transition between the above communities and heathland or mesotrophic/calcareous/calcifugous grassland communities (listed in Appendices 3 and 4), usually of 0.5 ha or larger.

3.9.4.4 Where NVC/IHS data are not available, sites with saltmarsh, coastal floodplain and grazing marsh or reedbed vegetation, usually of 0.5 ha or larger with either a high diversity of herb species or an assemblage of species indicative of the above NVC community types.

3.9.4.5 All other estuary intertidal sites (note xxii).

3.9.5 Estuaries - sub-tidal

The following will be selected as County Wildlife Sites:

3.9.5.1 All sub-tidal sites in estuaries (note xxii).

Notes

xvii) The inland extent of an estuary is taken to be the tidal limit. The seaward extent of any estuary will be the UK baseline or, if appropriate, the seaward limit of any existing estuary or harbour management areas.

xviii) In contrast to most terrestrial habitats, where variations in natural communities can reflect human management as well as basic natural processes, differences in community richness etc. in the intertidal zone is most often explained by reference to coastal or estuarine processes and substrate type. It is therefore not appropriate to distinguish between intertidal sites except in terms of the amount of human modification they might be subject to.

xix) 'Significantly modified' in this context includes sites where the intertidal zone has been altered by construction of harbour walls, coastal defences, slipways etc.

xx) Criteria for identifying and recognising valuable open water and seabed habitats are being developed though other projects such as the Irish Sea Pilot. Similarly, the need for new marine management frameworks are currently being discussed and so it is unlikely that there will be any future need for incorporating criteria for sub-tidal open coast into any future CWS review.

xxi) NVC communities for broad habitat type as defined in SW NBN Pilot

xxii) The value of estuary intertidal and estuary sub-tidal habitats does not lie solely in the plant and/or animal communities they directly support. Their form, and presence or absence, will also have significant effects upon the physical processes within the estuary as a whole, and therefore influence the wider distribution of habitats and species. As such it is not considered appropriate to distinguish between these sites on any biological or physical grounds.

3.10 Non-montane Rock Habitats

Examples of nature conservation interest include tors, clitter slopes, and small rock outcrops in grasslands, heathlands and woodlands. Detailed information is often lacking on these habitats, so they are assessed on species interest or are included within County Wildlife Sites chosen by other criteria.

3.11 Habitats of Industrial Sites and Habitats Under Restoration

The guidelines here cover habitats developed through natural colonisation of non-natural sites, often in areas of historic industrial activity or urban development. These sites may also be covered by the Regionally Important Geological Sites (RIGS) criteria. These are currently covered by a different system, but the long term aim is to integrate them into the wildlife sites system.
The following artificial or artificially created sites should be considered for County Wildlife Site status:

a) Disused quarries. These will normally be assessed on other criteria, but sites which demonstrate particularly good examples of active succession from bare ground towards wildlife-rich grassland, heathland or woodland communities will be included.

b) Disused mining sites. Sites will be selected which carry good examples of flora showing adaptations to heavy metal-rich soils. Such sites should normally be 0.5 ha or larger.

c) Roadside cuttings and walls (mural habitats). These sites will be assessed on the presence of species adapted to these habitats.

d) Brownfield sites. Abandoned or industrial land with a mosaic of early successional species, meeting the UK Priority Habitat status of Open mosaic habitats on previously developed land.

   i) Sites must meet all the criteria in the table below. Guidance on this criteria is taken from the UK Biodiversity Action Plan Priority Habitat Description, and provided in appendix 16

   ii) Brownfield sites that meet CWS status are under a higher than usual probability of being developed in the future, but CWS status can help in providing additional value to these habitats.

Open mosaic habitats on previously developed land criteria	
1.	The area of open mosaic habitat is at least 0.25ha in size.
2.	Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added.
3.	The site contains some vegetation. This will comprise early successional communities consisting mainly of stress-tolerant species (e.g. indicative

	of low nutrient status or drought). Early successional communities are composed of (a) annuals, or (b) mosses/liverworts, or (c) lichens, or (d) ruderals, or (e) inundation species, or (f) open grassland, or (g) flower-rich grassland, or (h) heathland.
4.	The site contains unvegetated, loose bare substrate and pools may be present.
5.	The site shows spatial variation, forming a mosaic of one or more of the early successional communities (a)–(h) above (criterion 3) plus bare substrate, within 0.25ha.

e) Created grasslands
Sites established through seeding, green haying or other created means, not restored through a change in management
i) Established for at least 10 years, to demonstrate sustainability. Must also meet one of the criteria for grassland sites, section 3.2. However, it should be noted that fluctuations in species composition are likely in the 1st 20 years from initial sowing.
(a) Weight will be given to designation considerations when artificially created grassland functions as a buffer and/or creates ecological networks around existing sites.

3.12 Mosaic Sites

It is recognised that combination sites, where two or more semi-natural habitats occur in close combination or mosaic, may warrant recognition as County Wildlife Sites where individually one or more of the habitats may fail to qualify on single habitat or notable species grounds.

Where mosaics occur, in order to qualify, at least one of the habitats in the mosaic should be considered a borderline County Wildlife Site. This component should constitute a significant proportion of the whole mosaic, usually one quarter or more.

3.13 Arable Fields and Margins:

The plants and animals of arable farmland have shown the greatest declines of any habitat groups in Britain and western Europe. The extreme edges and corners of arable fields are places where some the rarest arable plants are still be found. South Devon, particularly the South Hams, has been found to support good arable plant communities but this may be due to greater survey effort within recent years. Other parts of the county, such as East Devon, which supports more arable and mixed farming may also be important for this suite of species. In addition, there are historical records of arable plants (such as broad-fruited cornsalad *Valerianella rimosa* and annual knawel *Scleranthus annuus*) on the fringes of Dartmoor. Devon has nationally important populations of species including *Valerianella rimosa,* small-flowered catchfly *Silene gallica and* cornflower *Centaurea cyanus*.

Arable plant communities of ecological significance are selected using Plantlife's Important Arable Plant Areas (IAPA) criteria, Wilson & Byfield

(2005). If a site is found to not meet the Arable Field Margins criteria, it might be worth consulting the Vascular Plants criteria 4.1 to see if the site could meet these criteria.

3.13.1 Regularly cultivated fields and margins with an assemblage of plant species that have a IAPA index score of:
- 30 or more points for calcareous soils
- 20 or more points for sands and gravels or heavy clays.

3.13.2 Scores can be cumulative over a 10-year period because of the ability of seed to persist in the soil and the erratic appearance of some species through time.

3.13.3 The scores for plant species may change over time when their conservation status in the UK is reviewed.

3.13.4 Arable sites where reintroductions have taken place may still be designated as CWS but the field IAPA score must exclude species that have been included within the reintroduction.

Byfield, A.J. & Wilson, P. J. (2005). *Important Arable Plant Areas: identifying priority sites for arable plant conservation in the United Kingdom*. Plantlife International, Salisbury, UK.

Species Guidelines for County Wildlife Sites

Sites which meet any of the following guidelines on species grounds should be selected as County Wildlife Sites: There is no minimum or maximum size for sites; species needs will be taken into consideration and each site will be considered on a case by case basis.

4.1 Vascular Plants

4.1.1 Sites where one or more Red Data Book 1, 2 or 3 species (Critically Endangered, Endangered or Vulnerable) or one or more Schedule 8 species with full protection have been recorded within the past five years (see Appendix 8)

4.1.2 Sites where one or more nationally rare or two or more nationally scarce species have been recorded within the last 5 years (see Appendix 8)

4.1.3 Sites where three or more Devon rarities (see Appendix 8) have been recorded in the past five years.

4.1.4 Sites where five or more Devon notable species (see Appendix 8) have been recorded in the past 5 years.

4.2 Non-Vascular Plants

These include lichens, bryophytes, fungi and charophytes.

4.2.1 Sites with 1 or more RDB 1,2,3 (Critically Endangered, Endangered or Vulnerable) or nationally rare, or 2 or more nationally scarce species (see Appendix 13)

4.2.2 Sites with 5 or more Devon notable species. If no published list will use the informed opinion of County Experts

4.2.3 Fungi

4.2.3.1 Waxcap grasslands

Waxcap grasslands are of conservation interest as indicators of semi-natural species-rich grasslands. The species concerned can be associated with unfertilised, unimproved, nutrient-poor grasslands, but are not always associated with botanically rich grassland. They often thrive in short, moss-rich, often highly grazed swards. Waxcap grasslands are under-recorded in Devon, but Exmoor, Dartmoor and the Blackdown Hills hold nationally important populations.

Sites which meet any of the following guidelines will be selected as County Wildlife Sites:

(b) The presence of any of the following UK BAP/RDB species: the pink (Ballerina) waxcap (*Hygrocybe calyptriformis*), the date waxcap (*Hygrocybe spadicea*) or the olive earthtongue (*Microglossum olivaceum*).

(c) The presence of at least 5 species of *Hygrocybe*

(d) Sites with 5 or more Devon Notable species.

4.3. Mammals

Due to the mobile and landscape scale nature of mammals some species do not lend themselves to protection within the CWS system in their own right. However, these guidelines are provided to assist in the selection of sites using supplementary mammal species records, in addition to habitat information.

4.3.1 Otter

4.3.3.1 All confirmed recent holts and hovers recorded in the last 10 years, together with contiguous semi-natural habitat, including all bankside, wetland, scrub, and woodland, usually selected under other criteria. This can include artificial holts as well as natural ones.

4.3.3.2 Sites selection should include the stretch of water 200m either side of the holt or hover, and semi-natural habitat 20m back from the water.

4.3.2 Water Vole

4.3.2.1 Sites with water vole recorded in two out of the last ten years with associated semi-natural habitat selected under other criteria.

4.3.2.2 Site selection should include:

1. The stretch of watercourse or water body within which the colony is situated (recorded at optimum breeding time).
2. Where colonies are 1km or less apart and linked by watercourse/s then all colonies and links should be included within the site.
3. Water voles may also cross land so where colonies are 500m apart or less, even where there is no linking watercourse, they should be included in the same site.

4.3.2.3 Site boundaries should also be set to allow for the inclusion of:

1. All bankside vegetation and associated potential foraging areas.
2. Burrows in current use, feeding signs and latrines.
3. Winter refuge areas (flooding)

4.3.2.4 A buffer zone of at least 50m either side of each colony, with a further buffer zone of 10m either side of the watercourse, should also be included around all such features.

4.3.3 Water Shrew

4.3.3.1 Sites with water shrew recorded in the past five years with associated semi-natural habitat selected under other criteria.

4.3.4 Bats

4.3.4.1 Known recent greater and lesser horseshoe maternity sites, together with contiguous semi-natural habitat, selected under other criteria.

4.3.4.2 Winter roosts where five or more horseshoe bats have been recorded in the past five years.

4.3.4.3 Breeding roosts of barbastelle, Bechstein's, grey long-eared, Natterer's, Daubenton's, whiskered, Brandt's, serotine, noctule and Leisler's bats.

4.3.4.4 Winter roosts of the above species with two or more species or more than 10 animals occupying roost at any one time for at least five years.

4.3.5 Dormouse

4.3.5.1 Sites with dormouse recorded in the past five years, with associated semi-natural woodland, hedgerow and scrub habitat usually selected under other criteria.

4.3.6 Harvest Mouse

4.3.6.1 Sites with harvest mouse recorded in the past ten years, with associated semi-natural habitat.

4.3.7 Common and Grey Seal

4.3.7.1 All haul out sites with at least one annual count of at least 20 in the last 10 years of seals of either species or a combination of species.

4.3.7.2 All sites used for pupping.

4.3.7.3 Sites can include artificial structures, such as platforms.

- Sites should consider incorporating a buffer area to reduce disturbance.

Grey and common seals are protected by the Bern Convention 1979 as a 'vulnerable migratory species '. With 34% of the world's population of grey seals, the UK provides vital habitat and is a 'hotspot' for globally rare grey seals, our national speciality (JNCC 2016a) heritage species. 30% of European common seals are found in the UK with ongoing declines in several populations in Scotland. Common seals are also a Section 41 (NERC) Priority Species in England.

4.4 Birds

4.4.1 Sites with Rare Breeding Species

4.4.1.1 All sites with proof (see Note xxiii) of ideally regular breeding most years by the species in group 1 in Appendix 9.

4.4.1.2 In addition, any sites holding c.1% of the Devon breeding population of cirl bunting (10 pairs); or c.0.5% of the Devon breeding population of cirl bunting (5 pairs) in strategic locations that are considered to be of particular importance to the maintenance or spread of the species' range (see Note xxivi).

4.4.1.3 A number of other rare species, considered to be of National or County importance are occasional, former (e.g. bittern, long-eared owl, red-backed shrike, black redstart, grey partridge) or potential breeding species in Devon (Cattle egret, Great white egret, Red kite). Sites for any such species that establish or re-establish regular breeding should also be selected.

4.4.2 Sites with Important Breeding Assemblages

4.4.2.1 Sites which regularly support outstanding breeding assemblages of the species listed in Appendix 9 (see Note xxvii). County Wildlife Sites will have a total score of at least 12.

4.4.2.2 Sites with colonies of at least 10% of the Devon breeding population (e.g. 10 pairs of cormorants, 13 pairs of grey herons, 35 pairs of sand martins or 13 pairs of shags) should be considered as County Wildlife Sites in their own right.

4.4.3 Sites with Important Non-Breeding Populations

4.4.3.1 Sites which regularly support either:

- 0.5% of the peak British non-breeding population or 10% of the peak Devon non-breeding population of any one of the species listed in Appendix 10 (see Note xxviii), or
- 0.1% of the peak British non-breeding population or 5% of the peak Devon non-breeding population of four or more of the species listed in Appendix 10 (see Note xxviii).

4.4.4 Sites with Non-Breeding Populations of Notable Species

4.4.4.1 Sites which regularly support communal roost sites of the following species:

- Hen harrier
- Merlin
- Hawfinch (at least 5)
- Pied/White wagtail (at least 200)

- Starling (at least 100,000)

4.4.4.2 Sites which regularly support wintering populations of the following species, even where remote from known breeding territories:

- Cirl bunting (at least 20; (see Note xxv)
- Woodlark (at least 5; (see Note xxvi)

4.4.5 Marine Sites

County Wildlife Sites do not address some species of importance that are mainly or wholly associated with sub-tidal marine areas (notably divers, black-necked and slavonian grebes, balearic shearwater, common scoter, eider and roseate tern). Neither do they include sub-tidal areas vital to some coastal breeding species.

Notes

xxiii. Proof of breeding following BTO Breeding Status Codes:

DD Distraction-Display or injury feigning
UN Used Nest or eggshells found (occupied or laid within period of survey)
FL Recently Fledged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g. feeding) is helpful. Be cautious, even if the record comes from suitable habitat.
ON Adults entering or leaving nest-site in circumstances indicating Occupied Nest (including high nests or nest holes, the contents of which can not be seem) or adults seen incubating
FF Adult carrying Faecal sac or Food for young
NE Nest containing Eggs
NY Nest with Young seen or heard

xxiv Sites will be deemed to comprise the breeding territories and those fields or other parcels of land contiguous with, or in close proximity to, these where they provide habitats known, or considered suitable, to support Cirl Buntings or which have the clear potential to provide such conditions through changes in management (in particular, through changes in cropping patterns).

xxv. Such habitats are likely to include unimproved, semi-improved and other rough grasslands, orchards, hedgerows and patchy scrub for nesting; and, especially for wintering birds, areas of arable (particularly where this has conservation headlands or field margins, is subject to rotational set-aside or supports winter stubbles) or market garden cultivation.

xxvi Such habitats are likely to include arable, particularly rotational set-aside or overwinter stubbles, or areas of market garden cultivation; sites will be typically in undulating terrain, have scattered mature trees and may have overhead cables.

xxvii The rarity scores are based on recent surveys and/or data published in Devon Bird Reports, with some amendments in the light of current knowledge or belief. This will need to be updated to account for changes in species populations.

xxviii The national figures in Appendix 10 are based on Musgrove *et al* 2013 (Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 106: 64-100) or from mean Wetland Bird Survey (WeBS) counts; Devon figures are derived from WeBS and other information in recent Devon Bird Reports.

4.5 Reptiles and Amphibians

Amphibians:

4.5.1 Sites with a recently (within 15 years*) confirmed population of great crested newts. *Taking into account the known life span of great crested newts and the likelihood of repeat surveys.

4.5.2 Sites with good populations of smooth newts (NCC SSSI guidelines, 1989 – see note xxix).

4.5.3 Sites supporting widespread amphibian species with score of five or more using the NCC SSSI guidelines (see note xxix).

4.5.4 Both the breeding ponds and a substantial surrounding area (ideally with a radius of at least 300m from the pond) should be included. The site boundary should include substantial semi-natural terrestrial habitat where this occurs contiguous to or near the breeding sites (i.e. structurally diverse mixtures of open, scrub and woodland habitats, and other features such as allotments). Sites should exclude garden ponds. Groups of ponds within 250m of each other may count as a single site.

Notes

xxix. SSSI Guidelines (NCC, 1989)

		Low population Score 1	Good population Score 2	Exceptional population Score 3
Great Crested Newt	Seen or netted in day Counted at night	<5 <10	5-50 10-100	>50 >100
Smooth Newt	Netted in day/counted at night	<10	10-100	>100
Palmate Newt	Netted in day/counted at night	<10	10-100	>100
Common Toad	Estimated Counted	<500 <100	500-5000 100-1000	>5000 >1000
Common Frog	Spawn clumps counted	<50	50-500	>500

NB: Scores have to be for breeding sites observed during the breeding season. Daytime netting should be made during a 15-minute period for sites with less than 50m of water's edge, for 30 minutes for sites with 50-100 m etc. To compute the total score for a site, add the scores for individual species and add one point for four of these species present and two points for five species. If natterjack toads are present, add two more points.

Reptiles:

4.5.5 Sites supporting populations of smooth snakes or sand lizards. NB. As far as we know smooth snakes are not present in Devon at the moment, though they are found in Dorset. Sand lizards have been re-introduced to two sites in Devon. Re-introductions need to follow official guidelines and populations must be shown to be self-sustaining before the site can be considered to be a County Wildlife Site.

4.5.6 Sites with recent (within the last 15 years) records of three or more reptile species, giving a score of five or more (see table). Where there is contiguous, open, semi-natural habitat (i.e. structurally diverse mixtures of open, scrub and woodland habitats, and other features such as allotments) these should be included even though reptiles may not have been recorded in all parts of the site. Suitable man-made structures (e.g. tumuli, embankments and stone walls) should also be included. The site boundary should be drawn around parcels of land use rather than be drawn to narrowly around a specific good habitat. Consideration should also be given to incorporating parcels of adjacent open land, if it provides an essential buffer against future land-use pressures such as housing.

	Score if present on site
Adder	2
Grass snake	2
Common Lizard	1
Slow worm	1
If any of the species are known to be breeding, add one extra point	

4.6 Invertebrates

4.6.1 Sites with one or more records of species that are Critically Endangered (CR), Endangered (EN) or Vulnerable (VU) under IUCN criteria, or RDB1 (Endangered) or RDB2 (Vulnerable) under former assessment system, should be designated CWS. Sites with two or more records of species that are either Near Threatened (NT) or RDB3 (Rare) should be designated. For all such species, the site should provide suitable habitat conditions to provide key resources necessary for survival, to exclude vagrants or wanderers (note xxxiii). Records of these species must have been made in the last 25 years, except for dragonflies where acceptable records must be from the last 10 years

(note xxxii), and butterflies in the past 5 years (including re-introductions, but not introductions or casual records) Status should be assessed on a Great Britain basis. Sites inside Buglife's Important Invertebrate Areas should also be considered for their potential for important invertebrate species.

4.6.2 Records of Nationally Scarce (Na, Nb or Notable), NERC Act Section 41or Devon Special Species (https://www.dbrc.org.uk/devons-special-species) should be a consideration in deciding whether or not to designate a CWS. A key consideration should be whether any such species present is indicative of high quality habitat features. As in 6.1 above, records of these species must have been made in the last 25 years, except for dragonflies where acceptable records must be from the last 10, and butterflies in the last 5.

Notes

xxxii. Firm records more than five years old may be acceptable if the complete loss of the species at the site is in doubt and the necessary habitat conditions remain.

xxxiii. It should be noted that some species such as High Brown Fritillary, Dingy Skipper, Brown Argus, and Grayling can occur away from suitable breeding habitat, and this should be taken into consideration.

xxxiv. See Appendix 11 for a list of Butterflies of importance in the selection of County Wildlife Sites in Devon

xxxv. The selection of sites based on invertebrate records should be informed by the opinion of local experts and records have to be backed up by evidence of the site being used in the life cycle of the species, for example butterflies egg-laying.

4.6.3 Dragonflies

The criteria follow those produced by the British Dragonfly Society in 2007 for the identification of "Key Dragonfly Sites" in the UK. They are determined through evidence, obtained during the last ten years, of species' abundance, persistence and breeding (see definitions and flowchart in Appendix 12 for details). Confirmed and Probable Key Sites should be regarded as County Wildlife Sites, those with RDB species being of SSSI potential.

Key Sites should hold established breeding populations of Nationally Important or Locally Important species, or exceed Vice County species diversity thresholds. For Devon, they are defined as either:

Sites holding abundant breeding populations of any of the following species:

- White-legged Damselfly (*Platycnemis pennipes*)*
- Scarce Blue-tailed Damselfly (*Ischnura pumilio*)

- Southern Damselfly (*Coenagrion mercuriale*)
- Red-eyed Damselfly (*Erythromma najas*)*
- Small Red Damselfly (*Ceriagrion tenellum*)
- Hairy Dragonfly (*Brachytron pratense*)*
- Downy Emerald (*Cordulia aenea*)*
- Scarce Chaser (*Libellula fulva*)
- Ruddy Darter (*Sympetrum sanguineum*)*

or

Sites holding abundant breeding populations of at least 14 species.

Definitions

- Nationally Important species: RDB species, as revised for JNCC by the BDS in 2007.
- Locally Important species (* in the list above): recorded during the last 20 years in 2% or less of the tetrads in Devon from which dragonfly records have been received.
- Abundant: at least 21 individuals for damselfly species (but six in the case of Scarce Blue-tailed Damselfly), at least six for dragonfly species (21 for Migrant Hawker, Four-spotted Chaser, Keeled Skimmer, Black-tailed Skimmer, Common Darter, Ruddy Darter and Black Darter).

4.7 Reintroduced or reinforced species populations

This guidance on CWS designation relates only to species populations which have been established and self-sustaining through planned reintroduction and/or reinforcement programmes.

It does not apply to scenarios where species have become established through natural colonisation, or as a result of ad-hoc releases.

This guidance recognises that the distinction between natural colonisation, and ad-hoc release and/or unlawful reintroduction of species is rarely clear-cut. In these cases, we will rely on expert opinion, drawing on historical species data, to determine if CWS designation is appropriate. In recognition of the biodiversity crisis we face, if there is a balance of doubt, we will err on the side of designation.

Many native species which would have formerly had thriving populations in Devon have become locally extinct. The drivers of extinction are manifold and include habitat loss, fragmentation, degradation, and inappropriate management leading to unsuitable condition. Disease, threats from Invasive Non Native Species (INNS), and climate change are likely to exert significant future impacts.

High profile recent species extinctions include the large blue butterfly which had its last breeding population in the UK on the coastal grasslands of northern Devon. Recent local extinctions include water vole, golden plover and nightingale. The extent of species extinctions over the last 200 years is extremely sobering.

Other species are at very high risk or extinction or functionally extinct – for example white clawed crayfish or the six banded nomad bee.

As concerted efforts are made to restore habitat extent and condition the role that species reintroductions play in restoring natural processes and ecological balance is considered increasingly important. This CWS designation guidance is therefore likely to be referred to frequently in the future.

Sites supporting populations of native (or formally native) reintroduced and reinforced species can qualify for CWS status under any of the specific species guidelines already mentioned, providing both criteria below are met:

4.7.1 The reintroduction has been carried out as part of a formally recognised reintroduction, for example, a species recovery programme.

4.7.2 The population is deemed to be stable and self-sustaining after an appropriate number of years since reintroduction, specific to that species or taxon group, based on published guidelines and/or expert advice.

5. Social and Community Guidelines for County Wildlife Sites

County Wildlife Sites are selected using criteria based on the Ratcliffe Criteria. However, in some areas these criteria need to be adapted slightly, to allow for special circumstances.

In the built environment sites are more likely to be modified (so are less natural) they can be small and isolated, and may not have a high level of diversity or rare species or habitats. However, these sites are still valuable for wildlife and may provide important green space within the built environment. The Social and Community Criteria allow the assessment of sites that may not quite reach the CWS criteria on habitats or species on their own, but are important to local communities. Sites will not be selected on their social and community qualities alone; instead these criteria will be used to 'add value' to a site.

Many wildlife sites are valuable because they give access to the public to see and enjoy wildlife. Our quality of life is enhanced by everyday contact with wildlife. Having access to wildlife sites close at hand increases our opportunities to study and learn about ecology and the natural world.

The importance of wildlife sites for people is recognized in PPS9 which states that *'...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'*

Community criteria apply not only to urban areas, but also to Country Parks, churchyards and any place in the town, countryside or urban fringe where people can experience wildlife. These criteria assess the social value derived from the enjoyment and understanding of wildlife and natural features on site.

These criteria should be seen as contributing to the substantive nature conservation value of a proposed CWS, and be used to in the assessment of sites that do not have a clear justification in terms of habitat or species.

Indicators of a site's social and community wildlife value are assessed at three levels (High, Medium and Low). A quantitative assessment is not possible for all factors. It is important in these instances to collate documentary evidence to support the assessment.

These scores will be used to guide the professional judgments of the CWS selection panel rather than attempting to achieve a specific target or threshold for social or community value. It would be expected that a site would have mostly High or Medium scores for these criteria (see Appendix 14).

5.1 Visual Amenity

Views within, into, and out of, a site should be considered in terms of how they contribute to a visitor's appreciation of wildlife. Features which provide a seasonal high point such as a carpet of bluebells, heather in bloom, autumn colour, winter wetlands

5.2 Accessibility and usage

Accessibility and usage should be assessed by a single site survey looking for evidence of human activity. Use of a site varies according to time of day, season and weather. In addition, activity will increase at the weekend and during holidays. For this reason, only hard evidence in the form of physical features seen on the site should be used; observed use by people is not a reliable indicator because it will be affected by too many factors. A human use map showing the path network, access points, links to other facilities and locations of main features such as areas for informal children's play, should be documented as part of the assessment.

Indicators:
The site is a public open space or freely open to the public most of the time, or a significant proportion of the site can be seen(Visual Access) from adjacent land which is freely open to public access (such as a park, public open space, canal towpath, public right of way or highway).

5.3 Education and awareness

The use of a site for informal education and awareness raising of the general public needs to be considered as well as its formal use by educational establishments.

5.4 Community ownership

Sites of importance to the local community may be 'adopted' by a group of people either informally or by agreement with the owner. It is not necessary for the site to be accessible to a group for them to feel ownership of it.

Indicators:
There is a group of people who have been actively and voluntarily involved in the care and management of the wildlife of the site or actively campaigning for the site for some time.

Group activities may include voluntary wardening, species recording, practical nature conservation management, habitat creation, guided walks and organising events. Groups do not need to be solely responsible for a site, but can be actively involved in a partnership with other agencies.

5.5 History

Sites may be of value to the community because they played an important historic role in natural history or because they are associated with a well-known naturalist. Other sites may continue to play an important role as part of a monitoring scheme.

Indicators:
The site is associated with an historic event of significance to the study of wildlife and the environment. For example, the site may have been featured

in an important publication, studied by a famous naturalist or was a key site in the development of ecological understanding, whether in a local or wider context, or there is an historical record of past management and wildlife on the site. The historical record must be extensive and systematic so that it can provide a genuine and scientific basis for site monitoring.

6. Ecological Networks

Much of England's wildlife is now restricted to certain places, our wildlife sites, consisting largely of semi-natural habitats often shaped by millennia of human-use. These sites are essential for the survival of many plants and animals and will remain important even if the species and habitats within them change (see Section 5.3). Surviving in small, isolated sites is, however, difficult for many species, and often impossible in the longer term, because they rarely contain the level of resources, or the diversity of habitats needed to support sustainable populations (see Section 4.3.2). However, re-creating large expanses of contiguous natural habitat is not a feasible option over most of England. An alternative approach is to secure a suite of high quality sites which collectively contain the range and area of habitats that species require and ensure that ecological connections exist to allow species, or at least their genes, to move between them. It is this network of core sites connected by buffer zones, wildlife corridors and smaller but still wildlife-rich sites that are important in their own right and can also act as 'stepping stones' (see Section 2.2.3) that we call an ecological network. 'Wildlife corridors' do not have to be continuous, physical connections: a mosaic of mixed land use, for example, may be all that is needed – it is the permeability of the landscape to species (or their genes) that matters (Hilty et al. 2006).

NPPF 2019 – ecological networks

170 Planning policies and decisions should contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures

174: To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity[56]; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation[57]; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

Note 56: Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

Note 57: Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.

ODPM Circular 06/2005 – continuous or stepping stone features

88: Article 10 of the Habitats Directive requires Member States (where they consider it necessary) to endeavour to encourage the management of features of the landscape that are of major importance for wild flora and

fauna. These features are those that, because of their linear and continuous structure or their function as stepping-stones, are essential for migration, dispersal and genetic exchange. Examples given in the Directive are rivers with their banks, traditional field boundary systems (such as hedgerows), ponds and small woods. Suitable planning conditions and obligations may serve to promote such management.

UK Government 25 Year Environment Plan – Nature Recovery Networks
Chapter 2: Recovering nature and enhancing the beauty of landscapes
1: We will…. develop a Nature Recovery Network to complement and connect our best wildlife sites (ii) Through changes in the way we manage our land, we will develop a Nature Recovery Network providing 500,000 hectares of additional wildlife habitat, more effectively linking existing protected sites and landscapes, as well as urban green and blue infrastructure. Such a network will deliver on the recommendations from Professor Sir John Lawton: recovering wildlife will require more habitat; in better condition; in bigger patches that are more closely connected.

Environment Act 2021 – Local Nature Recovery Strategies
99: Content of local nature recovery strategies
(1) A local nature recovery strategy relating to an area ("the strategy area") is to include—
(a) a statement of biodiversity priorities for the strategy area, and
(b) a local habitat map for the whole strategy area or two or more local habitat maps which together cover the whole strategy area.

100: Information to be provided by the Secretary of State
(2) The national habitat map must in particular identify—
(a) national conservation sites, and
(b) other areas that in the opinion of the Secretary of State are of particular importance for biodiversity.

Ecological Networks and Nature Recovery Networks (Parr Ferris. (2019) *Devon NRN Draft Strategy*)
The concept of ecological networks has been around for many years (e.g. Forman and Godron 1981) and highlighted in Making Space for Nature 2010*, describing how wildlife require networks of connected habitats in a series of patches and corridors across the landscape in order to remain viable in the long term. Nature Recovery Networks are essentially ecological networks, but they specifically refer to the desperate state of nature and the critical need to restore and recreate large networks of linked habitat across the country.

* Lawton, J.H., Brotherton, P.N.M., Brown, V.K., Elphick, C., Fitter, A.H., Forshaw, J., Haddow, R.W., Hilborner, S., Leafe, R.N., Mace, G.M., Southgate, M.P., Sutherland, W.J., Tew, T.E., Varley, J. & Wynne, G.R. (2010) Making Space for Nature: a review of England's wildlife sites and ecological networks. Report to Defra.

6.1 Identifying Ecological Networks:

When identifying areas that make up an Ecological Network, Lawton's five key approaches to rebuild nature and address the weaknesses of the current series of wildlife sites should be used:

(i) Increase the size of current wildlife sites.

(ii) Improve the quality of current sites by better habitat management.
(iii) Create new sites.
(iv) Enhance connections between, or join up, sites, either through physical corridors, or through ‘stepping stones’.
(v) Reduce the pressures on wildlife by improving the wider environment, including through buffering wildlife sites.

Bigger/Better

(i), (ii) and (v) can all be dealt with, in the context of CWS designation, through looking to designate land which extends or buffers (i.e. is contiguous with) designated nature conservation sites. This should consist of similar habitat to that of the designated site, or habitat which complements or protects the designated habitat (e.g. acid grassland alongside designated heathland, low-input grassland alongside wetland). The habitat to be designated should also meet some of criteria in its own right.

Joined

(iii) represents the main reason for designation within Ecological Networks and consists of:

- Land which links designated nature conservation sites – these areas should link wildlife sites occurring within close, or moderately close proximity to one another by routes likely to be used by wildlife. The useful proximity may vary by habitat type and species but will often be 5 fields or fewer distance.
- Land which links designated nature conservation sites with the wider countryside - priority should be given to routes that support assemblages of ecological/landscape features offering the best potential for the passage of wildlife and where possible form a connection with other significant wildlife habitat and/or recognised wildlife sites within the wider landscape.
- Land which creates a green finger from the wider countryside into the urban area - consideration should be given to habitat features likely to support the movement of wildlife into urban areas.
- Land which may have nature conservation interest that cannot be covered by the CWS guidelines, such as bat foraging areas, bird feeding areas and toad migration routes
- Areas of open water, such as ponds or lakes, especially if they link to other areas of semi-natural habitat
- Linear features such as watercourses, hedges, railway lines and green lanes

More

(iv) represents a more challenging reason for designation of sites, but should be viewed in the context of the Nature Recovery Network as those sites where new habitat is being created. These sites may also fulfil the bigger, better and joined aspects too, although this is not a requirement. These sites should:

- Contain newly created native habitat (or mosaic of habitats) that in time will become native habitats and species assemblages eligible for CWS designation.
- Be established for a sufficient period of time to ensure both the landowner will to retain the habitat, and that the habitat is self-sustaining. This will vary by habitat, e.g. grasslands and wetlands may be eligible at 5 years, while woodlands and heathlands may become eligible at 10 years
- There is some certainty of longevity for the new habitat.

6.1.2 Watercourses

Rivers and streams form an important part of a Biodiversity Network, as they provide vital wildlife corridors and links. Significant watercourses that are selected as part of a Biodiversity Network should have a 50 metre wide (25 metres from each bank) buffer wherever possible

6.1.3 Green lanes and important hedgerows:

A green lane can be defined as an unmetalled track with field boundaries either side. These boundaries may be banks, hedges, woodland edge, stone walls or fences and often features such as ditches or streams are incorporated within the lanes. The combination of the track, its boundaries and associated features create a landscape unit with its own microclimate and ecology. These sheltered conditions within lanes are of great importance to butterfly populations and may be more botanically species-rich than single hedge boundaries. Many green lanes contain ancient hedges with veteran trees and can support declining species such as dormouse, brown hairstreak and many bat species. In Devon there are many hundreds of miles of species-rich hedge, and many green lanes. The South Hams district is particularly well known for its green lanes.

Appendix 1 – Ancient Woodland Vascular Plant Indicators in Devon

90 species which in Devon are typical components of botanically rich ancient woodlands. Uncommon indicators or those that have a strong/strict affinity with ancient woodland are marked with an asterisk.

Scientific Name	Scientific Name
Acer campestre	*L. sylvatica*
*Aconitum napellus**	*Lysimachia nemorum*
Adoxa moschatellina	*Malus sylvestris*
Allium ursinum	*Melampyrum pratense*
Anemone nemorosa	*Melica uniflora*
*Aquilegia vulgaris**	*Melittis melissophyllum**
Asplenium scolopendrium	*Milium effusum*
Betonica officinalis	*Moehringia trinervia*
Blechnum spicant	*Narcissus pseudonarcissus*
Bromopsis ramosa	*Neottia nidus-avis**
*Calamagrostis epigejos**	*Orchis mascula*
*Carex laevigata**	*Oreopteris limbosperma**
*Carex pallescens**	*Oxalis acetosella*
Carex pendula	*Phegopteris connectilis**
Carex remota	*Platanthera chlorantha**
Carex sylvatica	*Poa nemoralis*
Ceratocapnos claviculata	*Polypodium vulgare*
Chrysosplenium oppositifolium	*Polystichum aculeatum**
Conopodium majus	*P. setiferum*
Daphne laureola	*Populus tremula*
*Dryopteris aemula**	*Potentilla sterilis*
D. affinis	*Primula vulgaris*
*D. carthusiana**	*Prunus avium*
Elymus caninus	*Quercus petraea*
*Epipactis helleborine**	*Ranunculus auricomus**
Equisetum sylvaticum	*Ribes nigrum*
Euphorbia amygdaloides	*R. rubrum*
Frangula alnus	*Rosa arvensis*
*Galium odoratum**	*Ruscus aculeatus**
*Geum rivale**	*Sanicula europaea*
*Helleborus foetidus**	*Schedonorus giganteus*
*H. viridis**	*Sibthorpia europaea**
Holcus mollis	*Scirpus sylvaticus*
Hyacinthoides non-scripta	*Solidago virgaurea*
*Hymenophyllum tunbrigense**	*Sorbus* (microspecies)*
Hypericum androsaemum	*Sorbus torminalis*
H. pulchrum	*Tamus communis*
Ilex aquifolium	*Tilia cordata**
Iris foetidissima	*Ulmus glabra*
Lamiastrum galeobdolon	*Vaccinium myrtillus*
*Lathraea squamaria**	*Viburnum opulus*
Lathyrus linifolius	*Vicia sylvatica**
L. sylvestris	*Viola palustris*
Luzula forsteri	*V. reichenbachiana*
L. pilosa	*Wahlenbergia hederacea*

Appendix 1 – Ancient Woodland Vascular Plant Indicators in Devon

Ancient Woodland indicator species are characteristic of:
1) Ash-maple-mercury woodland (W8) on calcareous soils, or of
2) Oak-bracken-bramble woodland (W10) on heavier more acidic soils.

Indicators of base-rich soils (W8 type)	**Indicators of acidic soils (W10 type)**
Acer campestre	*Anemone nemorosa*
Adoxa moschatellina	*Blechnum spicant*
Allium ursinum	*Conopodium majus*
Asplenium scolopendrium	*Epipactis helleborine*
Carex pendula	*Equisetum sylvaticum*
Carex sylvatica	*Hyacinthoides non-scripta*
Daphne laureola	*Ilex aquifolium*
Iris foetidissima	*Lathyrus linifolius*
Lamiastrum galeobdolon	*Lysimachia nemorum*
Lathyrus sylvestris	*Melampyrum pratense*
Neottia nidus-avis	*Orchis mascula*
Platanthera chlorantha	*Oxalis acetosella*
Polystichum setiferum	*Populus tremula*
Ranunculus auricomus	*Solidago virgaurea*
Sanicula europaea	*Vaccinium myrtillus*

Appendix 2 – Woodland NVC/IHS/UKHAB communities present in Devon

Wet Woodland NVC

W1 Salix *cinerea* – *Galium palustre* woodland.
Occasional on water margins on mineral soils.

W2 *Salix cinerea* – Betula pubescens – Phragmites australis *woodland*.
Occasional on topogenous fen-peats on flood plain mires.

W4 Betula pubescens – Molinia caerulea *woodland*.
Occasional on moderately acidic peaty soils.

W5 Alnus *glutinosa* – *Carex paniculata* woodland.
Occasional on base-rich wet or waterlogged organic soils.

W6 Alnus *glutinosa* – *Urtica dioica* woodland.
Occasional on moist, eutrophic mineral soils.

W7 Alnus *glutinosa* – *Fraxinus excelsior* – *Lysimachia nemorum* woodland.
Occasional on moist base-rich, but not eutrophic, mineral soils. Locally common at the base of slope in valley oakwoods, where flushing concentrates nutrients from above.

Wet Woodland IHS

WB34 Wet woodland (Priority Habitat Type) (NVC W1-W7)

WB341 Residual alluvial forests (NVC W5, W6, W7)

WB342 Bog woodland (NVC W4)

WB34Z Other wet woodland (NVC W1, W2, W3, W5, W6)

Potential overlap with the following UKHAB categories

w1d Wet woodland

w1d5 Alder woodland on floodplains

w1d6 Bog woodland

Dry Woodland NVC

W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland.
Widespread and locally common on calcareous mull soils in lowland areas. Can also be considered under wet woodland.

W9 *Fraxinus excelsior* – *Sorbus aucuparia* – *Mercurialis perennis* woodland.
Occasional as the analogue of W8 on moist, free-draining brown earths

derived from calcareous bedrocks, in upland situations subject to high rainfall. May be associated with W7 in valley systems.

W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland. Widespread and common on base-poor brown earthes in lowland areas. Also common in treatment-derived stands or plantations.

W11 *Quercus petraea – Betula pubescens – Oxalis acetosella* woodland. Occasional as the analogue of W10 on moist, free-draining base-poor soils in wetter, cooler upland situations.

W14 *Fagus sylvatica - Rubus fruticosus* woodland. Beech community of base-poor, poorly drained brown earths, sometime under plantations.

W15 *Fagus* sylvatica – Deschampsia flexuosa woodland. Beech community of very acid soils, sometimes derived from W16 where the oak canopy has been replaced.

W16 *Quercus* – Betula – Deschamsia caespitosa woodland. Common oak community of very acidic soils in lowland areas.

W17 Quercus petraea – Betula pubescens – Dicanum majus woodland. Occasional oak community of very acidic soils in upland situations.

Dry Woodland IHS

WB31 Upland Oakwood (Priority Habitat Type) (NVC W11, W17, W16b, W10, W10e)

WB32 Upland mixed ash woodland (Priority Habitat Type) (NVC W8, W9)

WB321 Tilio-Acerion forests of slopes, screes and ravines (upland) NVC W8, W9)

WB32Z Other upland mixed ashwoods (NVC W8)

WB331 Lowland beech and yew woodland (Priority Habitat Type) (W12, W13, W14, W15) n.b. we don't get true beech woodlands in Devon, but some beech dominated woodlands have affinities to these beech communities.

WB3311 Beech forests with Ilex and Taxus, rich in epiphytes (NVC W14, W15)

WB35 Upland birch woodland (PHT) (NVC W11, W17, small patches of W9, W4 & W7)

WB36 Lowland mixed deciduous woodland (Priority Habitat Type) (NVC W8, W10, W16)

WB361 Old acidophilus oak woods with Quercus robur on sandy plains (NVC W10, W16)

WB36Z Other lowland mixed deciduous woodland

WB3Z Other broadleaved woodland (NVC W16)

Potential overlap with the following UKHAB categories

w1a5 Western acidic oak woodland

w1b5 Lime-maple woodlands of rocky slopes

w1b6 Other upland mixed ashwoods

w1c5 Beech forests on acid soils

w1c6 Beech forests on neutral to rich soils

w1e Upland birchwoods

w1f5 Dry oak-dominated woodland

w1f7 Other Lowland mixed deciduous woodland

w1g7 Other broadleaved woodland types

Scrub NVC

W21 Crataegus monogyna – Hedera helix *scrub.*

W22 Prunus spinosa – Pteridium aquilinum *scrub.*

W23 *Ulex europaeus – Rubus fruticosus* scrub.

W24 *Rubus fruticosus – Holcus lanatus* underscrub.

W25 *Pteridium aquilinum – Rubus fruticosus* underscrub

Scrub IHS

WB2 Scrub woodland (NVC W21-25)

Potential overlap with the following UKHAB categories

h3a Blackthorn scrub

h3d Bramble scrub

h3e Gorse scrub

h3f Hawthorn scrub

h3h Mixed scrub

s2a5 Vegetated sea cliffs

Mesotrophic NVC

MG4 *Alopecurus pratensis – Sanguisorba officinalis* flood-meadow.
Scarce on traditionally-managed alluvial meadows.

MG5 *Cynosurus cristatus – Centaurea nigra* meadow and pasture.
Widespread on range of soil types in lowland areas, with affinities to both calcicolous and acid grasslands.

MG8 *Cynosurus cristatus – Caltha palustris* flood pasture.
Scarce on traditional riverside pastures.

MG11 *Festuca rubra – Agrostis stolonifera – Potentilla anserina* inundation grassland.
Occasional in lowland river valleys, and rarely from saltmarsh margins.

MG12 *Festuca arundinacea* coarse grassland.
A coastal community of estuaries and saltmarshes.

MG13 *Agrostis stolonifera – Alopecurus geniculatus* grassland.
Locally common on lowland alluvium soils.

Mesotrophic IHS

GN1 Lowland Hay meadow (Priority Habitat Type) (NVC MG5, MG4, MG8)

GN11 Lowland hay meadows (Alopecurus pratensis- Sanguisorba officinalis) (NVC MG4)

GNZ Other neutral grassland (only NVC that qualifies is MG11-13) all other NVC in this category are not CWS standard (eg. NVC MG6, MG9, MG10 – should be considered if in the context of coastal floodplain and grazing marsh).

Potential overlap with the following UKHAB categories

g3a5 Lowland hay meadows

g3c Other neutral grassland

g3c5 Arrhenatherum neutral grassland

g3c6 Lolium-Cynosurus neutral grassland

g3c8 Holcus-Juncus neutral grassland

s2a Maritime cliff and slopes

Appendix 3 – Grassland NVC/IHS communities of importance in Devon for the selection of County Wildlife Sites

Calcareous NVC

CG1 *Festuca ovina – Carlina vulgaris* grassland.
Occasional on hard limestone outcrops in the south of the county.

CG2 *Festuca ovina _ Avenula pratensis* grassland.
Occasional on limestone in the south.

CG3 *Bromus erectus* grassland.
Rare on calcareous soils.

CG4 *Brachypodium pinnatum* grassland.
Rare on calcareous soils.

CG5 *Bromus erectus – Brachypodium pinnatum* grassland.
Rare on limestone.

CG6 *Avenula pubescens* grassland.
Rare on limestone.

CG7 *Festuca ovina – Hieracium pilosella – Thymus praecox* grassland.
Very occasional on calcareous soils in the south.

Calcareous IHS

GC1 Lowland calcareous grassland (Priority Habitat Type) (NVC CG1-5, CG6, CG7), (*CG8-14 don't get these in Devon*)

GC12 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites) (NVC CG2-CG5)

Potential overlap with the following UKHAB categories

g2a5 Dry grasslands and scrub on chalk or limestone; lowland

g2a6 Dry grasslands and scrub on chalk or limestone; important orchid sites

Calcifugous NVC

U1 *Festuca ovina – Agrostis capillaris – Rumex acetosella* grassland.
Widespread on light, dry soils in lowland areas.

U2 *Deschampsia flexuosa* grassland.
Locally frequent on moist but free-draining base-poor soils in lowland areas.

U3 *Agrostis curtesii* grassland
A locally frequent community based on frequency of *A. curtisii*

U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland. NB this habitat can be agriculturally improved, so only species-rich examples should be chosen as County Wildlife Site.

Calcifugous IHS

GA1 Lowland dry acid grassland (Priority Habitat Type) (NVC U1, U2-U4 - lowland examples)

GA1Z Other lowland dry acid grassland

GAZ Upland acid grassland (NVC U2-U4 – upland examples), *(U5, U6 don't get these in Devon)*

Potential overlap with the following UKHAB categories

g1a6 Other lowland dry acid grassland

s3b5 Perennial vegetation on coastal shingle

g1b6 Other upland acid grassland

Appendix 3 – Grassland NVC/IHS communities of importance in Devon for the selection of County Wildlife Sites

Species indicative of old unimproved neutral/acid/calcareous grassland in Devon

"*" denotes plants which seldom occur outside unimproved grasslands/marshes or are particularly indicative of a long period of traditional grassland management.

Agrimonia eupatoria	Agrimony
Agrostis curtisii	Bristle bent
Anacamptis morio	Green-winged Orchid *
Anacamptis pyramidalis	Pyramidal Orchid
Avenella flexuosa	Wavy hair-grass
Betonica officinalis	Betony
Briza media	Quaking Grass *
Carex caryophyllea	Spring Sedge
Carex nigra	Black Sedge
Carex panicea	Carnation Sedge
Carlina vulgaris	Carline Thistle
Centaurea nigra	Common knapweed
Centaurea scabiosa	Great Knapweed
Conopodium majus	Pignut
Cruciata laevipes	Crosswort
Danthonia decumbens	Heath Grass
Euphrasia officinalis agg.	Eyebright
Galium saxatile	Heath bedstraw
Galium verum	Lady's Bedstraw
Helianthemum nummularium	Common Rock-rose
Inula conyzae	Ploughman’s Spikenard
Juncus squarrosus	Heath Rush
Koeleria macrantha	Crested hair-grass
Lathyrus nissolia	Grass Vetchling
Lathyrus pratensis	Meadow vetchling
Leucanthemum vulgare	Ox-eye daisy
Luzula campestris	Field wood-rush
Molinia caerulea	Purple Moor-grass
Nardus stricta	Mat-grass
Ophioglossum vulgatum	Adder's Tongue Fern
Pedicularis sylvatica	Lousewort
Pilosella officinarum	Mouse-ear hawkweed
Pimpinella saxifraga	Burnet-saxifrage
Potentilla anglica	Trailing Tormentil
Potentilla erecta	Tormentil
Poterium sanguisorba subsp. sanguisorba	Salad Burnet
Primula veris	Cowslip
Rhinanthus minor	Yellow Rattle *
Silaum silaus	Pepper Saxifrage *
Spiranthes spiralis	Autumn Lady's-tresses *

Succisa pratensis	Devil's-bit scabious
Thymus drucei	Wild Thyme
Trisetum flavescens	Yellow oat-grass

Indicators of calcareous grassland	
Anacamptis pyramidalis	Pyramidal Orchid
Briza media	Quaking Grass
Carlina vulgaris	Carline Thistle
Centaurea scabiosa	Great Knapweed
Cirsium acaule	Dwarf Thistle
Filipendula vulgaris	Dropwort
Galium verum	Ladies bedstraw
Helianthemum nummularium	Common Rock-rose
Helictochloa pratensis	Meadow Oat-grass
Hippocrepis comosa	Horseshoe Vetch
Inula conyza	Ploughman's Spikenard
Koeleria macrantha	Crested hair-grass
Picris hieracioides	Hawkweed Oxtongue
Pilosella officinarum	Mouse-ear hawkweed
Poterium sanguisorba subsp. sanguisorba	Salad Burnet
Trisetum flavescens	Yellow oat-grass
Thymus drucei	Wild Thyme

Indicators of acidic grassland	
Agrostis curtisii	Bristle bent
Avenella flexuosa	Wavy hair-grass
Conopodium majus	Pignut
Danthonia decumbens	Heath Grass
Galium saxatile	Heath bedstraw
Molinia caerulea	Purple Moor-grass
Nardus stricta	Mat-grass
Oenanthe pimpinelloides	Corky-fruited Water-dropwort
Peduncularis sylvatica	Lousewort
Potentilla erecta	Tormentil

Indicators of neutral grassland	
Agrimonia eupatoria	Agrimony
Anthoxanthum odoratum	Sweet vernal-grass
Carex sp.	Sedges
Centaurea nigra	Common knapweed
Conopodium majus	Pignut
Cynosurus cristatus	Crested dog's-tail
Euphrasia officinalis agg.	Eyebrights
Lathyrus pratensis	Meadow vetchling

Leucanthemum vulgare	Oxeye daisy
Lotus corniculatus	Common bird's-foot-trefoil
Luzula campestris	Field wood-rush
Oenanthe pimpinelloides	Corky-fruited water-dropwort
Pimpinella saxifraga	Burnet-saxifrage
Polygala vulgaris	Common milkwort
Rhinanthus minor	Yellow-rattle
Scorzoneroides autumnalis	Autumn hawkbit

Dry Heath NVC

H4 *Ulex gallii – Agrostis curtisii* heath.
The commonest community of lowland heathlands in the county.

H7 *Calluna vulgaris – Scilla verna* heath.
Very local on coastal cliffs.

H8 *Calluna vulgaris – Ulex gallii* heath.
Widespread on lowland heath sites.

H10 *Calluna vulgaris – Erica cinerea* heath.
On Dartmoor and Exmoor

H12 *Calluna vulgaris – Vaccinum myrtillus* heath.
Common on the fringes of Dartmoor.

H18 *Vaccinium myrtillus – Deschampsia flexuosa* heath.
Localised - on southwest Dartmoor.

Dry and wet heath IHS

HE0 Dwarf shrub heath

HE1 European dry heaths (Priority Habitat Type) (NVC H4, H7-8, H10, H12, H18) *(H1-H3, H5-6, H11 don't get in Devon)*

HE2 Wet heaths (NVC M14-16)

HE21 Northern Atlantic wet heaths with Erica tetralix (NVC M14-16)

HE2Z Other wet heaths

HE3 Lichen/Bryophyte heath

HEZ Other dwarf shrub heath

Potential overlap with the following UKHAB categories

h1a5 Dry heaths; lowland

h1b5 Dry heaths; upland

h1b6 Wet heathland with cross-leaved heath; upland

g1a6 Other lowland dry acid grassland

s2a5 Vegetated sea cliffs

(See also wet heath NVC communities below).

Appendix 5 – Mire NVC/IHS communities present in Devon

Mire NVC

M1 *Sphagnum auriculatum* – bog pool community.

M2 *Sphagnum cuspidatum* – *Sphagnum recurvum* bog pool community.

M4 *Carex rostrata* – *Sphagnum recurvum* mire.
Rare, confined to bog pools.

M6 *Carex echinata* – *Sphagnum recurvum/auriculatum* mire.
Widespread in soligenous situations.

M13 *Schoenus nigricans* – *Juncus subnodulosus* mire.
Rare in soligenous situations.

M14 *Schoenus nigricans* – *Narthecium ossifragum* mire.
Occasional in east Devon.

M15 *Scirpus cespitosus* – *Erica tetralix* wet heath.
Occasional component of heathland sites.

M16 *Erica tetralix* – *Sphagnum compactum* wet heath.
Common in seasonally waterlogged bases of heathland sites.

M17 *Scirpus cespitosus* – *Eriophorum vaginatum* blanket mire.
Common component of soligenous mires.

M21 *Narthecium ossifragum* – *Sphagnum papillosum* valley mire.

M29 *Hypericum elodes* – *Potamogeton polygonifolius* soakway.

M35 *Ranunculus omiophyllus* – *Montia fontana* rill.

Fen Meadows

M22 *Juncus subnodulosus* – *Cirsium palustre* fen-meadow.
Rare in east of the county.

M23 *Juncus effusus/acutiflorus* – *Galium palustre* rush pasture.
Widespread on a range of moist soils, especially on Culm Measures.

M24 *Molinia caerulea* – *Cirsium dissectum* fen-meadow.
Frequent of peat and peaty-mineral soils, especially the Culm Measures and a speciality of the south west.

M25 *Molinia caerulea* – *Potentilla erecta* mire.
Widespread on Culm Measures and elsewhere on peat or peaty-mineral soils.

Appendix 5 – Mire NVC/IHS communities present in Devon

M27 *Filipendula ulmaria – Angelica sylvestris* mire.
Widespread on circumneutral soils protected from grazing.

M28 *Iris pseudacorus – Filipendula ulmaria* mire.
Rare on coastal fringes.

(Refer also to fen woodland communities W1 – W6 above).

Mire & fen-meadow IHS

EO0 Bog

EO1 Blanket bog (Priority Habitat Type) (NVC M17, M1, M3) *(M18, M2 – don't get in Devon)*

EO2 Lowland raised bog (M17, M1, M3) *(M18, M2 – don't get in Devon)*

EO21 Degraded raised bogs still capable of natural regeneration

EO22 Active raised bogs (NVC M1, M3, M21) *(M18, M2 – don't get in Devon)*

EO2Z Other lowland raised bogs

EOZ Other bogs

EM0 Fen, marsh and swamp (NVC M4, M6, M13-14, M21-22, M24-25, M27-29, M35 S3-S14, S16, S18-S28) *(M5, M7-M12, M26, M30-M34 M36-M38, S1-S2, S15, S17, don't get in Devon)*

EM3 Fens
EM31 Fens (and flushes - lowland) (PHT)

EM314 Transition mires and quaking bogs (lowland)

EM31Z Other lowland fens

EM3Z Other fens, transition mires, springs and flushes (NVC M6, M27, M28) *(M7, M36 don't get in Devon)*

EM4 Purple moor grass and rush pastures (Molinia-Juncus) (PHT) (NVC M22-25) (*M26 don't get in Devon)*

EM41 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinia caeruleae) (NVC M24), (*M26 don't get in Devon)*

EM4Z Other purple moor grass and rush pastures (Molinia-Juncus) (NVC M22, M23, M25)

Potential overlap with the following UKHAB categories

Appendix 5 – Mire NVC/IHS communities present in Devon

f1a Blanket bog

f1b5 Active raised bogs

f1b6 Degraded raised bog

f2a Lowland fens

f2a5 Calcium-rich fen dominated by great fen sedge

f2a7 Calcium-rich springwater-fed fens; lowland

f2a8 Transition mires and quaking bogs; lowland

f2b Purple moor grass and rush pastures

f2b5 Purple moor-grass meadows

f2c7 Calcium-rich springwater-fed fens; upland

f2c8 Transition mires and quaking bogs; upland

f2f Other swamps

h1a5 Dry heaths; lowland

h1a7 Wet heathland with cross-leaved heath; lowland

h1b6 Wet heathland with cross-leaved heath; upland

Appendix 6 – Swamp NVC/IHS communities present in Devon

Swamp NVC

S3 *Carex paniculata* swamp.

S4 *Phragmites australis* swamp and reed beds.

S5 *Glyceria maxima* swamp.

S6 *Carex riparia* swamp.

S7 *Carex acutiformis* swamp.

S8 *Scirpus lacustris ssp. lacustris* swamp.

S9 *Carex rostrata* swamp.

S10 *Equisetium fluviatile* swamp.

S11 *Carex vesicaria* swamp.

S12 *Typha latifolia* swamp.

S13 *Typha angustifolia* swamp.

S14 *Sparganium erectum* swamp.

S16 *Sagittaria sagittifolia* swamp.

S18 *Carex otrubae* swamp.

S19 *Eleocharis palustris* swamp.

S20 *Scirpus lacustris ssp. tabernaemontani* swamp.

S21 *Scirpus maritimus* swamp

S22 *Glyceria fluitans* swamp.

S24 *Phragmites australis – Peucedanum palustre* tall-herb fen.

S25 *Phragmites australis – Eupatorium cannbinum* tall-herb fen.

S26 *Phragmites australis – Urtica dioica* tall-herb fen.

S27 *Carex rostrata – Potentilla palustris* tall-herb fen.

S28 *Phalaris arundinacea* tall-herb fen.

Appendix 6 – Swamp NVC/IHS communities present in Devon

Swamp IHS

EM1 Swamp (NVC S3-14, S15, S16, S18-S28) (*S1-S2, S15, S17, don't get in Devon)*

EM1Z Other swamp vegetation (NVC S3, S5-S14, S16, S18, S19-23) *(S1, S15, S17 don't get in Devon)*

EM2 Marginal and inundation vegetation

EM21 Marginal vegetation (NVC S3, S5-S14, S16, S18S-23) *(S1, S15, S17 don't get in Devon)*

EM22 Inundation vegetation

AS31 Mesotrophic lakes (Priority Habitat Type)

Potential overlap with the following UKHAB categories

f2a Lowland fens

f2a5 Calcium-rich fen dominated by great fen sedge

f2a8 Transition mires and quaking bogs; lowland

f2c Upland flushes, fens and swamps

f2c8 Transition mires and quaking bogs; upland

f2d Aquatic marginal vegetation

f2e Reedbeds

f2f Other swamps

r1a5 Naturally nutrient-rich lakes or lochs

r1a6 Other eutrophic standing waters

r1b5 Calcium-rich nutrient-poor lakes lochs and pools

r1c5 Clear-water lakes or lochs with aquatic vegetation

r1d Aquifer fed naturally fluctuating water bodies

r2a5 Rivers with floating vegetation

Maritime Cliff Communities NVC

MC1 *Crithmum maritimum – Spergularia rupicola* maritime rock-crevice community

MC4 *Brassica oleracea* maritime cliff-ledge community

MC5 *Armeria maritima – Cerastium diffusum ssp. diffusum* maritime therophyte community

MC6 *Atriplex hastata – Beta vulgaris ssp. maritima* sea-bird cliff community

MC7 *Stellaria media – Rumex acetosa* sea-bird cliff community

MC8 *Festuca rubra – Armeria maritima* maritime grassland

MC9 *Festuca rubra – Holcus lanatus* maritime grassland

MC10 *Festuca rubra – Plantago spp.* maritime grassland

MC11 *Festuca rubra – Daucus carota ssp. gummifer* maritime grassland

MC12 *Festuca rubra – Hyacinthoides non-scripta* maritime grassland

Maritime Cliff Communities IHS

SR1 Vegetated maritime cliff and slopes (Priority Habitat Type) (NVC MC1, MC4-MC12) *(MC2, MC3 don't get in Devon)*

SR11 Vegetated sea cliffs of the Atlantic and Baltic coasts (NVC MC1, MC4-MC12, H8) *(MC2, MC3, H6 don't get in Devon)*

SR1Z Other vegetated cliffs and lichen dominated cliffs

Maritime Heath Community NVC

H7 *Calluna vulgaris – Scilla verna* heath

Maritime Scrub Communities NVC

W22 *Prunus spinosa – Pteridium aquilinum* scrub

W23 *Ulex europaeus - Rubus fruticosus* scrub

Potential overlap with the following UKHAB categories

s2a5 Vegetated sea cliffs

s2a6 Soft rock sea cliffs

s3b5 Perennial vegetation on coastal shingle

h1a5 Dry heaths; lowland

See also scrub communities above

The following is based on NVC communities mapped in 'British Plant Communities – vol 5', supplemented with Devon SSSI citation information, or from other evidence known to DBRC on the occurrence or likely occurrence of the community in Devon. Other NVC Maritime communities may also occur in Devon, but not picked up by the sources mentioned.

Perched Saltmarsh Community NVC

SM15 *Festuca rubra* saltmarsh

Shingle, Strandline and Dune Communities (as mapped in British Plant Communities vol 5) NVC

SD4 *Elytrigia juncea* foredune community

SD6 *Ammophila arenaria* mobile dune community

SD7 *Ammophila arenaria – Festuca rubra* semi-fixed dune community

SD8 *Festuca rubra – Galium verum* fixed dune grassland

SD9 *Ammophila arenaria – Arrhenatherum elatius* dune

SD11 *Carex arenaria – Coeloocaulon aculeatum* dune community

SD12 *Carex arenaria – Festuca ovina – Agrostis capillaris* dune grassland

SD13 *Sagina nodosa – Bryum pseudotriquetrum* dune-slack

SD14 *Salix repens – Campylium stellatum* dune-slack

SD15 Salix repens – *Calliergonella cuspidata* dune-slack

SD16 *Salix repens – Holcus lanatus* dune-slack community

SD17 *Phleum arenarium – Arenaria serpyllifolia* dune annual community

Shingle, Strandline and Dune Communities IHS

SS1 Coastal sand dunes (Priority Habitat Type) (NVC SD6-SD7, SD16, H10, M15-16) *(SD2, SD5, SD10, H11 don't get in Devon)*

SS12 Shifting dunes along the shoreline with Ammophila arenaria ("white dunes") (NVC SD6) *(SD5 don't get in Devon)*

SS13 Fixed dunes with herbaceous vegetation ("grey dunes") (NVC SD7)

SS15 Dunes with Salix repens ssp. argentea (Salicion arenariae)

SS17 Humid dune slacks (NVC SD16)

SS3 Shingle above high tide mark

SS31 Coastal vegetated shingle (Priority Habitat Type)

Potential overlap with the following UKHAB categories

s3a Coastal sand dunes

s3a3 Humid dune slacks

s3a5 Embryonic shifting dunes

s3a6 Shifting dunes with marram

s3a7 Dune grassland

t2a7 Atlantic salt meadows

Saltmarsh Communities NVC

SM1 *Zostera* communities

SM2 *Ruppia maritima* saltmarsh

SM3 *Eleocharis parvula* saltmarsh

SM6 *Spartina anglica* saltmarsh

SM7 *Sarcocornia perennis* stands

SM8 Annual *Salicornia* saltmarsh

SM9 - *Suaeda maritima* saltmarsh

SM10 Transitional low marsh vegetation with *Puccinellia maritima*, annual *Salicornia* species and *Suaeda maritima*

SM12 Rayed *Aster tripolium* on saltmarshes

SM13 *Puccinellia maritima* saltmarsh

SM14 *Halimione portulacoides* saltmarsh

SM15 *Juncus maritimus* - *Triglochin maritima* saltmarsh

SM16 *Festuca rubra* saltmarsh

SM17 *Seriphidium maritimum* salt-marsh community

SM18 *Juncus maritimus* saltmarsh

SM20 *Eleocharis uniglumis* salt-marsh community

SM23 *Spergularia marina – Puccinellia distans* saltmarsh

SM24 *Elymus pycanthus* saltmarsh

SM27 Ephemeral salt-marsh vegetation with *Sagina maritima*

Saltmarsh Communities IHS

LS3 Coastal saltmarsh (Priority Habitat Type) (NVC SM1-SM4, SM6, SM14, SM16) *(SM5, SM11, SM19, SM22 don't get in Devon)*

LS31 Salicornia (glasswort) and other annuals colonising mud and sand

LS32 Spartina swards (Spartinion maritimae) (SM6) *(SM5 don't get in Devon)*

LS33 Atlantic salt meadows

LS34 Mediterranean salt meadows (Juncetalia maritima)

LS3Z Other saltmarsh

Potential overlap with the following UKHAB categories

t2a Coastal saltmarsh

t2a5 Glasswort and other annuals colonising mud and sand

t2a6 Cord-grass swards

t2a7 Atlantic salt meadows

t2a8 Mediterranean saltmarsh scrub

t2c Seagrass beds [*Zostera noltii*]

Reedbed Communities NVC (as defined in SW NBN Pilot and mapped in British Plant Communities vol 4)

S4 Phragmites australis swamp and reed-beds

Reedbed Communities IHS

EM11 Reedbeds (NVC S4, S26)

Potential overlap with the following UKHAB categories

f2e Reedbeds

Coastal floodplain and grazing marsh (as defined in SW NBN Pilot and mapped in British Plant Communities vols 2, 3 & 4)

MG6 *Lolium perenne - Cynosurus cristatus* grassland

MG9 *Holcus lanatus - Deschampia cespitosa* grassland

MG10 *Holcus lanatus - Juncus effusus* rush pasture

MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina* grassland

MG12 *Festuca arundinacea* grassland

M22 *Juncus subnodulosus - Cirsium palustre* fen-meadow

M23 *Juncus effusus/acutiflorus - Galium palustre* fen-meadow

M24 *Molinia caerulea - Cirsium dissectum* fen-meadow

M25 *Molinia caerulea - Potentilla erecta* mire

S6 *Carex riparia* swamp

Potential overlap with the following UKHAB categories

g3c Other neutral grassland

g3c5 Arrhenatherum neutral grassland

g3c6 Lolium-Cynosurus neutral grassland

g3c8 Holcus-Juncus neutral grassland

g4 Modified grassland

f2a Lowland fens

f2b Purple moor grass and rush pastures

f2b5 Purple moor-grass meadows

f2f Other swamps

Appendix 8 – Notable Plant Species in Devon

Taxon [1].1	Taxon vernacular name [1]	Rank	GB Red Data List (revised 2021) .[2]	England Red list .[2]	National status.[3]	Native status [4.5]	name used in 2009 list guidelines if different
Aconitum napellus	Monk's-hood	species		WL		NA	
*Adiantum capillus-veneris**	Maidenhair Fern	species	LC	LC	NS	N	
Agrostemma githago	Corncockle	species		WL		AR	
Alchemilla filicaulis subsp. *vestita*	Hairy Lady's-mantle	subspecies	LC	LC		N	
Alchemilla xanthochlora	Intermediate Lady's-mantle	species	LC	LC		N	
*Alisma lanceolatum**	Narrow-leaved Water-plantain	species	LC	LC		N	
*Allium oleraceum**	Field Garlic	species	VU	LC		N	
*Alopecurus bulbosus**	Bulbous Foxtail	species	LC	LC	NS	N	
Ammophila arenaria	Marram	species	LC	LC		N	
Anacamptis morio	Green-winged Orchid	species	NT	VU		N	*Orchis morio*
Anacamptis pyramidalis	Pyramidal Orchid	species	LC	LC		N	
Anagallis arvensis subsp. *foemina**	Blue Pimpernel	subspecies	LC	DD,LC	NS	N	
*Anisantha madritensis**	Compact Brome	species					
Anthemis arvensis	Corn Chamomile	species	EN	EN		AR	
Anthemis cotula	Stinking Chamomile	species	VU	VU		AR	
Anthriscus caucalis	Bur Chervil	species	LC	LC		N	
Apium graveolens	Wild Celery	species		LC		N	
Apium inundatum	Lesser Marshwort	species	LC	VU		N	

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Arabis hirsuta	Hairy Rock-cress	species	LC	NT		N	
Arenaria leptoclados	Thyme-leaved Sandwort	species	LC	LC			*Arenaria serpyllifolia subsp. leptoclados*
Artemisia absinthium	Wormwood	species	LC	LC		AR	
Artemisia maritima	Sea Wormwood	species	LC	NT		N	*Seriphidium maritimum*
Arum italicum subsp. *neglectum*	Italian Lords-and-Ladies	subspecies	NT	LC	NS	N	
*Asperula cynanchica**	Squinancywort	species	LC	LC		N	
Asplenium marinum	Sea Spleenwort	species	LC	LC		N	
Asplenium obovatum	Lanceolate Spleenwort	species	NT	NT	NS	N	
*Asplenium septentrionale**	Forked Spleenwort	species	NT	VU	NS	N	
Atriplex glabriuscula	Babington's Orache	species	LC	LC		N	
Atriplex laciniata	Frosted Orache	species	LC	LC		N	
*Atriplex littoralis**	Grass-leaved Orache	species	LC	LC		N	
Atriplex portulacoides	Sea-purslane	species	LC	LC		N	
Avenula pratensis	Meadow Oat-grass	species	LC	LC		N	*Helictotrichon pratense*
Avenula pubescens	Downy Oat-grass	species	LC	LC		N	*Helictotrichon pubescens*
*Baldellia ranunculoides**	Lesser Water-plantain	species	NT,VU	VU		N	
Berula erecta	Lesser Water-parsnip	species	LC	LC		N	
Bidens cernua	Nodding Bur-marigold	species	LC	LC		N	
Bidens tripartita	Trifid Bur-marigold	species	LC	LC		N	
Blackstonia perfoliata	Yellow-wort	species	LC	LC		N	
Botrychium lunaria	Moonwort	species	LC	VU		N	
Brachypodium pinnatum s.l.	Heath False-brome	species		LC		N	
Brassica oleracea	Wild Cabbage	species	LC	LC	NS	NA	
Bromopsis erecta	Upright Brome	species	LC	LC		N	
Bromus commutatus	Meadow Brome	species	LC	LC		N	
Bromus hordeaceus subsp. *ferronii*	Least Soft-brome	subspecies	LC	LC	NS	N	
Bromus racemosus	Smooth Brome	species	LC	LC		N	

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Bromus secalinus	Rye Brome	species	NT	NT	NS	AR	
*Bupleurum baldense**	Small Hare's-ear	species	EN	EN	NR	N	
Butomus umbellatus	Flowering-rush	species	LC	LC		N	
Cakile maritima	Sea Rocket	species	LC	LC		N	
Calamagrostis epigejos	Wood Small-reed	species	LC	LC		N	
Callitriche obtusangula	Blunt-fruited Water-starwort	species	LC	LC		N	
Callitriche truncata	Short-leaved Water-starwort	species	LC	LC	NS	N	
Calystegia soldanella	Sea Bindweed	species	LC	VU		N	
Campanula rotundifolia	Harebell	species	LC	NT		N	
Campanula trachelium	Nettle-leaved Bellflower	species	LC	LC		N	
Cardamine impatiens	Narrow-leaved Bitter-cress	species	NT	LC	NS	N	
*Carduus pycnocephalus**	Plymouth Thistle	species					
Carex acutiformis	Lesser Pond-sedge	species	LC	LC		N	
Carex arenaria	Sand Sedge	species	LC	LC		N	
*Carex canescens**	White Sedge	species	LC	LC		N	
*Carex dioica**	Dioecious Sedge	species	LC	LC		N	
Carex distans	Distant Sedge	species	LC	LC		N	
Carex disticha	Brown Sedge	species	LC	LC		N	
*Carex divisa**	Divided Sedge	species	VU	LC	NS	N	
Carex divulsa subsp. *leersii**	Many-leaved Sedge	subspecies	LC	LC		N	
Carex extensa	Long-bracted Sedge	species	LC	LC		N	
*Carex lasiocarpa**	Slender Sedge	species	LC	VU		N	
Carex lepidocarpa	Long-stalked Yellow-sedge	species	LC	LC		N	
*Carex montana**	Soft-leaved Sedge	species	LC	LC	NS	N	
Carex oederi	Small-fruited Yellow-sedge	species	LC	LC		N	
Carex pallescens	Pale Sedge	species	LC	LC		N	

Carex pseudocyperus	Cyperus Sedge	species	LC	LC		N	
*Carex punctata**	Dotted Sedge	species	LC	LC	NS	N	
Carex riparia	Greater Pond-sedge	species	LC	LC		N	
Carex rostrata	Bottle Sedge	species	LC	LC		N	
*Carex strigosa**	Thin-spiked Wood-sedge	species	LC	LC		N	
Carex vesicaria	Bladder-sedge	species	LC	VU		N	
Carum verticillatum	Whorled Caraway	species	LC	VU		N	
Catabrosa aquatica	Whorl-grass	species	LC	VU		N	
Catapodium marinum	Sea Fern-grass	species	LC	LC		N	
*Centaurea cyanus**	Cornflower	species	LC	LC		AR	
Centaurium pulchellum	Lesser Centaury	species	LC	LC		N	
*Cerastium arvense**	Field Mouse-ear	species	LC	NT		N	
Cerastium diffusum	Sea Mouse-ear	species	LC	LC		N	
*Cerastium pumilum**	Dwarf Mouse-ear	species	NT	LC	NS	N	
Cerastium semidecandrum	Little Mouse-ear	species	LC	LC		N	
Ceratophyllum demersum	Rigid Hornwort	species	LC	LC		N	
*Ceratophyllum submersum**	Soft Hornwort	species	LC	LC		N	
Chamaemelum nobile	Chamomile	species	VU	VU		N	
Chenopodium bonus-henricus	Good-King-Henry	species	VU	VU		AR	
*Chenopodium ficifolium**	Fig-leaved Goosefoot	species	LC	LC		AR	
*Chenopodium glaucum**	Oak-leaved Goosefoot	species	VU	VU	NS	AR	
Chenopodium murale	Nettle-leaved Goosefoot	species	EN	EN		AR	
*Chenopodium rubrum**	Red Goosefoot	species	LC	LC		N	
*Chenopodium vulvaria**	Stinking Goosefoot	species	EN	EN	NS	AR	
Chrysosplenium alternifolium	Alternate-leaved Golden-saxifrage	species	LC	LC		N	
*Cicendia filiformis**	Yellow Centaury	species	VU	VU	NS	N	

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Cirsium acaule	Dwarf Thistle	species	LC	LC		N	
*Cirsium eriophorum**	Woolly Thistle	species	LC	LC		N	
*Cladium mariscus**	Great Fen-sedge	species	LC	LC		N	
Clinopodium acinos	Basil Thyme	species	VU	VU		N	
Cochlearia anglica	English Scurvygrass	species	LC	LC		N	
Coeloglossum viride	Frog Orchid	species	VU	VU		N	
*Coincya wrightii**	Lundy Cabbage	species	NT	NT	NR	NE	
Comarum palustre	Marsh Cinquefoil	species	LC	NT		N	*Potentilla palustris*
*Corrigiola litoralis**	Strapwort	species	EN	EN	NR	N	
Crambe maritima	Sea-kale	species	LC	LC		N	
Crepis biennis	Rough Hawk's-beard	species	LC	LC		N	
*Cryptogramma crispa**	Parsley Fern	species	LC	VU		N	
Cuscuta epithymum	Dodder	species	VU	VU		N	
*Cynodon dactylon**	Bermuda-grass	species		WL	NR	NA	
Cynoglossum officinale	Hound's-tongue	species	NT	NT		N	
*Cyperus longus**	Galingale	species	NT	NT	NS	N	
Cystopteris diaphana	Diaphanous Bladder-fern	species	LC	VU	NR		
*Cystopteris fragilis**	Brittle Bladder-fern	species	LC	LC		N	
Cytisus scoparius subsp. *maritimus*	Prostrate Broom	subspecies	LC,NT	LC,VU	NR	N	
Dactylorhiza incarnata	Early Marsh-orchid	species	LC	LC,NT, WL		N	
Daphne laureola	Spurge-laurel	species	LC	LC		N	
*Dianthus armeria**	Deptford Pink	species	EN	EN	NS	N	
*Dianthus deltoides**	Maiden Pink	species	NT	VU	NS	N	
*Diplotaxis tenuifolia**	Perennial Wall-rocket	species	LC	LC		AR	
*Dipsacus pilosus**	Small Teasel	species	LC	LC		N	
Draba muralis	Wall Whitlowgrass	species	LC	LC	NS	N	
*Drosera anglica**	Great Sundew	species	NT	EN		N	

Drosera intermedia	Oblong-leaved Sundew	species	LC	VU		N	
Dryopteris aemula	Hay-scented Buckler-fern	species	LC	LC		N	
Dryopteris carthusiana	Narrow Buckler-fern	species	LC	LC		N	
*Elatine hexandra**	Six-stamened Waterwort	species	LC	LC		N	
Eleocharis acicularis	Needle Spike-rush	species	LC	NT		N	
*Eleocharis parvula**	Dwarf Spike-rush	species	LC	EN	NR	N	
*Eleocharis quinqueflora**	Few-flowered Spike-rush	species	LC	LC		N	
*Eleocharis uniglumis**	Slender Spike-rush	species	LC	LC		N	
Eleogiton fluitans	Floating Club-rush	species	LC	LC		N	
Elytrigia atherica	Sea Couch	species	LC	LC		N	
Elytrigia juncea	Sand Couch	species	LC	LC		N	
*Empetrum nigrum**	Crowberry	species	LC	LC		N	
Epipactis palustris	Marsh Helleborine	species	LC	NT		N	
Equisetum sylvaticum	Wood Horsetail	species	LC	LC		N	
*Equisetum variegatum**	Variegated Horsetail	species	LC	LC	NS	N	
Erigeron acris	Blue Fleabane	species	LC	LC		N	
*Eriophorum latifolium**	Broad-leaved Cottongrass	species	LC	LC		N	
Erodium maritimum	Sea Stork's-bill	species	LC	LC		N	
Erodium moschatum	Musk Stork's-bill	species	LC	LC		AR	
Ervilia sylvatica	Wood Vetch	species	LC	LC		N	*Vicia sylvatica*
Ervum gracile	Slender Tare	species	VU	VU	NS	N	*Vicia parviflora*
*Eryngium campestre**	Field Eryngo	species	NT	NT	NR	AR	
Eryngium maritimum	Sea-holly	species	LC	NT		N	
Euphorbia exigua	Dwarf Spurge	species	VU	VU		AR	
*Euphorbia hyberna**	Irish Spurge	species	VU	VU	NR	N	
Euphorbia paralias	Sea Spurge	species	LC	LC		N	
Euphorbia portlandica	Portland Spurge	species	LC	LC		N	

Euphrasia arctica subsp*. borealis*	Eyebright	subspecies	NT	DD,VU		N	
Euphrasia confusa	Confused Eyebright	species	VU	VU		N	
Euphrasia micrantha	Slender Eyebright	species	VU	EN		N	
Euphrasia officinalis subsp. anglica	Eyebright	subspecies	EN,LC	EN,LC		N,NE	
*Euphrasia pseudokerneri**	Chalk Eyebright	species	VU	VU	NS	NE	
Euphrasia tetraquetra	Western Eyebright	species	LC,NT	LC,NT		N	
Euphrasia vigursii	Cornish Eyebright	species	EN	EN	NR	NE	
Festuca arenaria	Rush-leaved Fescue	species	LC	LC	NS	N	
Festuca filiformis	Fine-leaved Sheep's-fescue	species	LC	LC		N	
Filago minima	Small Cudweed	species	LC	NT		N	
Filago vulgaris	Common Cudweed	species	NT	NT		N	
Filipendula vulgaris	Dropwort	species	LC	LC		N	
*Frankenia laevis**	Sea-heath	species	NT	NT	NS	N	
Fumaria bastardii	Tall Ramping-Fumitory	species	LC	LC		N	
Fumaria capreolata	White Ramping-Fumitory	species	LC	LC		N	
Fumaria purpurea	Purple Ramping-fumitory	species	LC	VU	NS	NE	
*Galatella linosyris**	Goldilocks Aster	species	VU	EN	NR	N	*Aster linosyris*
Galeopsis angustifolia	Red Hemp-nettle	species	CR	CR	NS	AR	
Galeopsis speciosa	Large-flowered Hemp-nettle	species	VU	VU		AR	
*Galium constrictum**	Slender Marsh-bedstraw	species	LC	LC	NR	N	
*Galium parisiense**	Wall Bedstraw	species	VU	VU	NS	NA	
*Gastridium ventricosum**	Nit-grass	species	LC	LC	NS	NA	
Genista anglica	Petty Whin	species	NT	VU		N	
Genista tinctoria	Dyer's Greenweed	species	LC	LC,VU	NR	N	
Gentianella amarella	Autumn Gentian,Early Gentian	species	LC,VU	NT,WL		N,NE	

*Gentianella anglica**	Early Gentian	species	VU	WL		NE	
*Gentianella campestris**	Field Gentian	species	VU	EN		N	
Geranium purpureum	Little-Robin	species	LC	LC	NS	N	
Geranium rotundifolium	Round-leaved Crane's-bill	species	LC	LC		N	
Geranium sanguineum	Bloody Crane's-bill	species	LC	NT		N	
Geum rivale	Water Avens	species	LC	LC		N	
Glaucium flavum	Yellow Horned-poppy	species	LC	NT		N	
Glebionis segetum	Corn Marigold	species	VU	VU		AR	
Glyceria maxima	Reed Sweet-grass	species	LC	LC		N	
Gnaphalium sylvaticum	Heath Cudweed	species	EN	EN		N	
*Groenlandia densa**	Opposite-leaved Pondweed	species	VU	VU		N	
Gymnadenia conopsea s.l.	Fragrant-orchid	species	DD,LC	DD,LC			
Gymnadenia densiflora	Marsh Fragrant-orchid	species	DD,LC	DD,LC			
*Hammarbya paludosa**	Bog Orchid	species	LC	VU		N	
*Helianthemum apenninum**	White Rock-rose	species	VU	VU	NR	N	
Helianthemum nummularium	Common Rock-rose	species	LC	NT		N	
Helleborus viridis	Green Hellebore	species	LC	LC		NA	
Hippocrepis comosa	Horseshoe Vetch	species	LC	LC		N	
Hippuris vulgaris	Mare's-tail	species	LC	LC		N	
Honckenya peploides	Sea Sandwort	species	LC	LC		N	
*Hordeum marinum**	Sea Barley	species	VU	VU	NS	N	
Hordeum secalinum	Meadow Barley	species	LC	LC		N	
Huperzia selago	Fir Clubmoss	species	LC	LC		N	
*Hydrocharis morsus-ranae**	Frogbit	species	VU	VU		N	

Hylotelephium telephium	Orpine	species	LC	LC		N	*Sedum telephium*
Hymenophyllum tunbrigense	Tunbridge Filmy-fern	species	LC	LC		N	
Hymenophyllum wilsonii	Wilson's Filmy-fern	species	NT	LC		N	
Hyoscyamus niger	Henbane	species	VU	VU		AR	
Hypericum linariifolium	Toadflax-leaved St John's-wort	species	NT	LC	NR	N	
Hypericum maculatum	Imperforate St John's-wort	species	LC	LC		N	
Hypericum montanum	Pale St John's-wort	species	NT	LC		N	
Hypericum undulatum	Wavy St John's-wort	species	LC	LC	NS	N	
Hypochaeris glabra	Smooth Cat's-ear	species	VU	VU		N	
Hypopitys monotropa subsp. *hypophegea*	Yellow Bird's-nest	subspecies	EN	EN	NS	N	*Monotropa hypopitys* subsp. *hypophegea*
Inula crithmoides	Golden-samphire	species	LC	LC	NS	N	
Isoetes echinospora	Spring Quillwort	species	LC	LC		N	
*Isoetes lacustris**	Quillwort	species	LC	LC		N	
Isolepis cernua	Slender Club-rush	species	LC	LC		N	
Juncus acutus	Sharp Rush	species	LC	LC	NS	N	
Juncus compressus	Round-fruited Rush	species	VU	VU		N	
Juncus gerardii	Saltmarsh Rush	species	LC	LC		N	
Juncus maritimus	Sea Rush	species	LC	LC		N	
Juncus subnodulosus	Blunt-flowered Rush	species	LC	LC		N	
Kickxia elatine	Sharp-leaved Fluellen	species	LC	LC		AR	
Kickxia spuria	Round-leaved Fluellen	species	LC	LC		AR	
Koeleria macrantha s.l.	Crested Hair-grass	species	LC	LC		N	
Lactuca virosa	Great Lettuce	species	LC	LC		N	
Lamium amplexicaule	Henbit Dead-nettle	species	LC	LC		AR	
Lamium hybridum	Cut-leaved Dead-nettle	species	LC	LC		AR	

*Lathraea squamaria**	Toothwort	species	LC	LC		N	
*Lathyrus aphaca**	Yellow Vetchling	species	VU	VU	NS	NA	
*Lathyrus japonicus**	Sea Pea	species	LC	LC	NS	N	
Lathyrus nissolia	Grass Vetchling	species	LC	LC		N	
*Legousia hybrida**	Venus's-looking-glass	species	LC	LC		AR	
Lemna gibba	Fat Duckweed	species	LC	LC		N	
Lemna trisulca	Ivy-leaved Duckweed	species	LC	LC		N	
*Leucojum aestivum**	Summer Snowflake	species		LC	NS	N	
*Leymus arenarius**	Lyme-grass	species	LC	LC		N	
Limonium binervosum agg.	Rock Sea-Lavender agg.,Tall Sea-lavender,Western Sea-lavender	species	LC	LC,WL		N,NE	
Limonium vulgare	Common Sea-lavender	species	LC	NT		N	
Linaria repens	Pale Toadflax	species	LC	LC		AR	
*Linaria supina**	Prostrate Toadflax	species					
*Liparis loeselii**	Fen Orchid	species	EN	EN	NR	N	
Lithospermum arvense	Field Gromwell	species	EN	EN		AR	
Lithospermum officinale	Common Gromwell	species	LC	LC		N	
Lithospermum purpureocaeruleum	Purple Gromwell	species	LC	LC	NR	N	
Littorella uniflora	Shoreweed	species	LC	LC		N	
*Lobelia urens**	Heath Lobelia	species	VU	VU	NR	N	
Lotus angustissimus	Slender Bird's-foot-trefoil	species	NT	NT	NS	N	
Lotus subbiflorus	Hairy Bird's-foot-trefoil	species	LC	LC	NS	N	
Lotus tenuis	Narrow-leaved Bird's-foot-trefoil	species	LC	LC		N	*Lotus glaber*
*Lycopodiella inundata**	Marsh Clubmoss	species	EN	EN	NS	N	
*Lycopodium clavatum**	Stag's-horn Clubmoss	species	LC	VU		N	
*Lysimachia minima**	Chaffweed	species	NT	EN		N	*Anagallis minima, Centunculus minimus*

Appendix 8 – Notable Plant Species in Devon

Lysimachia vulgaris	Yellow Loosestrife	species	LC	LC		N	
Malva arborea	Tree-mallow	species	LC	LC		N	*Lavatera arborea*
Marrubium vulgare	White Horehound	species	LC	LC	NS	N	
Matthiola incana	Hoary Stock	species				AN	
Matthiola sinuata	Sea Stock	species	VU	VU	NR	NA	
Medicago polymorpha	Toothed Medick	species	LC	LC	NS	N	
Melittis melissophyllum	Bastard Balm	species	VU	VU	NS	N	
*Mentha pulegium**	Pennyroyal	species	EN	CR	NS	N	
Mentha suaveolens	Round-leaved Mint	species	DD	NT	NS	N	
*Minuartia hybrida**	Fine-leaved Sandwort	species		EN	NS	N	
Misopates orontium	Weasel's-snout	species	VU	VU		AR	
Moenchia erecta	Upright Chickweed	species	LC	VU		N	
Myosoton aquaticum	Water Chickweed	species	LC	LC		N	
*Myosurus minimus**	Mousetail	species	VU	VU		NA	
Myrica gale	Bog-myrtle	species	LC	NT		N	
Myriophyllum alterniflorum	Alternate Water-milfoil	species	LC	LC		N	
Myriophyllum spicatum	Spiked Water-milfoil	species	LC	LC		N	
Neotinea ustulata	Burnt Orchid	species	EN	EN	NS	N	*Orchis ustulata*
*Neottia cordata**	Lesser Twayblade	species	LC	LC		N	*Listera cordata*
Neottia nidus-avis	Bird's-nest Orchid	species	NT	VU		N	
Nuphar lutea	Yellow Water-lily	species	LC	LC		N	
Nymphaea alba	White Water-Lily	species	LC	LC		N	
*Oenanthe fistulosa**	Tubular Water-dropwort	species	VU	VU		N	
Oenanthe lachenalii	Parsley Water-dropwort	species	LC	NT		N	
Oenanthe pimpinelloides	Corky-fruited Water-dropwort	species	LC	LC		N	
*Ononis reclinate**	Small Restharrow	species	LC	VU	NR	N	
*Ononis spinosa**	Spiny Restharrow	species	LC	NT		N	
Onopordum acanthium	Cotton Thistle	species	LC	LC		AR	

*Ophioglossum azoricum**	Small Adder's-tongue	species	LC	LC	NS	N	
Ophioglossum vulgatum	Adder's-tongue	species	LC	LC		N	
Ophrys apifera	Bee Orchid	species	LC	LC		N	
*Ophrys insectifera**	Fly Orchid	species	VU	VU		N	
Ornithogalum pyrenaicum	Spiked Star-of-Bethlehem	species	LC	LC	NS	N	
Orobanche hederae	Ivy Broomrape	species	LC	LC		N	
Orobanche minor	Common Broomrape	species	LC	LC		N	
Orobanche rapum-genistae	Greater Broomrape	species	NT	VU	NS	N	
Osmunda regalis	Royal Fern	species	LC	LC		N	
Papaver lecoqii	Yellow-juiced Poppy	species	LC	LC			*Papaver dubium subsp. lecoqii*
Parapholis strigosa	Hard-grass	species	LC	LC		N	
Parentucellia viscosa	Yellow Bartsia	species	LC	LC		N	
*Paris quadrifolia**	Herb-paris	species	LC	LC		N	
*Persicaria minor**	Small Water-pepper	species	VU	LC		N	
*Persicaria mitis**	Tasteless Water-pepper	species	VU	VU	NS	N	
Petrosedum forsterianum	Rock Stonecrop	species	LC	LC	NS	N	*Sedum forsterianum*
Petroselinum crispum	Garden Parsley	species	LC	LC		AR	
Petroselinum segetum	Corn Parsley	species	LC	LC		N	
Phegopteris connectilis	Beech Fern	species	LC	LC		N	
*Phleum arenarium**	Sand Cat's-tail	species	LC	NT		N	
*Physospermum cornubiense**	Bladderseed	species	LC	LC	NR	N	
Pilularia globulifera	Pillwort	species	NT	VU	NS	N	
Plantago media	Hoary Plantain	species	LC	NT		N	
Platanthera bifolia	Lesser Butterfly-orchid	species	VU	EN		N	
Platanthera chlorantha	Greater Butterfly-orchid	species	NT	LC		N	
Poa angustifolia	Narrow-leaved Meadow-grass	species	LC	LC		N	

Poa bulbosa	Bulbous Meadow-grass	species	LC	LC	NS	N	
Poa infirma	Early Meadow-grass	species	LC	LC	NS	N	
*Polycarpon tetraphyllum**	Four-leaved Allseed	species	LC	LC	NR	NA	
Polygonatum multiflorum	Solomon's-seal	species	LC	LC		N	
*Polygonum oxyspermum**	Ray's Knotgrass	species	LC	LC		N	
*Polypodium cambricum**	Southern Polypody	species	LC	LC		N	
*Populus nigra subsp. betulifolia**	Black-poplar	subspecies	LC	LC		N	
*Potamogeton alpinus**	Red Pondweed	species	LC	VU		N	
Potamogeton berchtoldii	Small Pondweed	species	LC	LC		N	
*Potamogeton coloratus**	Fen Pondweed	species	LC	LC	NS	N	
Potamogeton crispus	Curled Pondweed	species	LC	LC		N	
*Potamogeton lucens**	Shining Pondweed	species	LC	LC		N	
*Potamogeton obtusifolius**	Blunt-leaved Pondweed	species	LC	LC		N	
Potamogeton pectinatus	Fennel Pondweed	species	LC	LC		N	
Potamogeton perfoliatus	Perfoliate Pondweed	species	LC	LC		N	
*Potamogeton pusillus**	Lesser Pondweed	species	LC	LC		N	
Potentilla argentea	Hoary Cinquefoil	species	NT	NT		N	
Primula veris	Cowslip	species	LC	LC		N	
Puccinellia distans	Reflexed Saltmarsh-grass	species	LC	LC		N	
*Puccinellia fasciculata**	Borrer's Saltmarsh-grass	species	NT	NT	NS	N	
Puccinellia maritima	Common Saltmarsh-grass	species	LC	LC		N	
*Puccinellia rupestris**	Stiff Saltmarsh-grass	species	LC	LC	NS	N	
*Pyrola rotundifolia subsp. maritima**	Round-leaved Wintergreen	subspecies	LC	LC	NS	N	

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*Pyrus cordata**	Plymouth pear	species	EN	EN	NR	NA	
*Radiola linoides**	Allseed	species	NT	VU		N	
Ranunculus aquatilis s.l.	Common Water-crowfoot,Pond Water-crowfoot,Stream Water-crowfoot,Thread-leaved Water-crowfoot	species	LC	LC	NS	N	
*Ranunculus arvensis**	Corn Buttercup	species	CR	EN		AR	
Ranunculus auricomus	Goldilocks Buttercup	species	LC	LC		N	
Ranunculus baudotii	Brackish Water-crowfoot	species	LC	LC		N	
*Ranunculus circinatus**	Fan-leaved Water-crowfoot	species	LC	LC		N	
Ranunculus fluitans	River Water-crowfoot	species	LC	LC		N	
Ranunculus omiophyllus	Round-leaved Crowfoot	species	LC	LC		N	
Ranunculus parviflorus	Small-flowered Buttercup	species	LC	LC		N	
Ranunculus peltatus	Pond Water-crowfoot	species	LC	LC		N	
Ranunculus penicillatus	Stream Water-crowfoot	species	LC	LC	NS	N	
Ranunculus sardous	Hairy Buttercup	species	LC	LC		NA	
Ranunculus trichophyllus	Thread-leaved Water-crowfoot	species	LC	LC		N	
Ranunculus tripartitus	Three-lobed Crowfoot	species	EN	EN	NS	N	
Reseda lutea	Wild Mignonette	species	LC	LC		NA	
*Rhamnus cathartica**	Buckthorn	species	LC	LC		N	
Rhynchospora alba	White Beak-sedge	species	LC	NT		N	
*Rhynchospora fusca**	Brown Beak-sedge	species	LC	LC	NS	N	
*Roemeria argemone**	Prickly Poppy	species	VU	EN		AR	*Papaver argemone*
Roemeria hispida	Rough Poppy	species	LC	LC		AR	*Papaver hybridum*
*Romulea columnae**	Sand Crocus	species	VU	VU	NR	N	
Rorippa amphibia	Great Yellow-cress	species	LC	LC		N	
*Rosa agrestis**	Small-leaved Sweet-briar	species	NT	NT	NS	N	

Rosa micrantha	Small-flowered Sweet-briar	species	LC	LC		N	
Rosa rubiginosa agg.	Sweet-briar	species	LC	LC		N	
Rosa spinosissima	Burnet Rose	species	LC	LC		N	*Rosa pimpinellifolia*
*Rubus saxatilis**	Stone Bramble	species	LC	LC		N	
Rumex hydrolapathum	Water Dock	species	LC	LC		N	
*Rumex maritimus**	Golden Dock	species	LC	LC		N	
*Rumex rupestris**	Shore Dock	species	EN	VU	NS	N	
*Ruppia maritima**	Beaked Tasselweed	species	LC	NT		N	
Sagina maritima	Sea Pearlwort	species	LC	LC		N	
Sagina nodosa	Knotted Pearlwort	species	LC	VU		N	
Sagina subulata	Heath Pearlwort	species	LC	NT		N	
Sagittaria sagittifolia	Arrowhead	species	LC	LC		N	
Salicornia agg.	Glasswort	species	LC	LC		N	
Salix triandra	Almond Willow	species	LC	LC		AR	
Salsola kali subsp. *kali*	Prickly Saltwort	subspecies	VU	LC		N	
Salvia verbenaca	Wild Clary	species	LC	NT		N	
*Sambucus ebulus**	Dwarf Elder	species	LC	LC		AR	
Samolus valerandi	Brookweed	species	LC	LC		N	
Sanguisorba officinalis	Great Burnet	species	LC	LC		N	
*Saxifraga granulate**	Meadow Saxifrage	species	LC	LC		N	
Scabiosa columbaria	Small Scabious	species	LC	LC		N	
*Scandix pecten-veneris**	Shepherd's-needle	species	CR	EN		AR	
Schoenoplectus lacustris	Common Club-rush	species	LC	LC		N	
Schoenoplectus tabernaemontani	Grey Club-rush	species	LC	LC		N	
*Schoenoplectus triqueter**	Triangular Club-rush	species	CR	CR	NR	N	
Schoenus nigricans	Black Bog-rush	species	LC	LC		N	
Scilla autumnalis	Autumn Squill	species	LC	LC	NS	N	

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Scilla verna	Spring Squill	species	LC	LC		N	
*Scirpoides holoschoenus**	Round-headed Club-rush	species	VU	VU	NR	N	
Scirpus sylvaticus	Wood Club-rush	species	LC	LC		N	
Scleranthus annuus	Annual Knawel	species	EN	EN		N	
Scleranthus annuus subsp. *annuus*	Annual Knawel	subspecies	EN	EN		N	
Scrophularia scorodonia	Balm-leaved Figwort	species			NS	AN	
Sibthorpia europaea	Cornish Moneywort	species	LC	LC	NS	N	
Silaum silaus	Pepper-saxifrage	species	LC	LC		N	
*Silene gallica**	Small-flowered Catchfly	species	EN	EN	NS	AR	
*Silene noctiflora**	Night-flowering Catchfly	species	VU	VU		AR	
Silene nutans	Nottingham Catchfly	species	NT	NT	NS	N	
Silybum marianum	Milk Thistle	species	LC	LC		AR	
Sorbus anglica	English Whitebeam	species	NT	VU	NR	NE	
Sorbus devoniensis	Devon Whitebeam	species	VU	LC	NS	NE	
*Sorbus porrigentiformis**	Grey-leaved Whitebeam	species	VU	LC	NS	N,NE	
*Sorbus rupicola**	Rock Whitebeam	species	LC	LC	NS	N	
Sorbus subcuneata	Somerset Whitebeam	species	EN	VU	NR	NE	
Sorbus torminalis	Wild Service-tree	species	LC	LC		N	
Sorbus vexans s.s.	Bloody Whitebeam	species	CR				
Sparganium emersum	Unbranched Bur-reed	species	LC	LC		N	
*Spartina anglica**	Common Cord-grass	species	LC	LC		NE	
Spartina maritima	Small Cord-grass	species	EN	EN	NS	N	
Spergula arvensis	Corn Spurrey	species	VU	VU		N	
Spergularia marina	Lesser Sea-spurrey	species	LC	LC		N	
Spergularia media	Greater Sea-spurrey	species	LC	LC		N	
*Spiranthes romanzoffiana**	Irish Lady's-tresses	species	LC	RE	NS	N	

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Spiranthes spiralis	Autumn Lady's-tresses	species	NT	NT		N	
Spirodela polyrhiza	Greater Duckweed	species	LC	LC		N	
Stachys arvensis	Field Woundwort	species	NT	NT		AR	
Stellaria nemorum	Wood Stitchwort	species	LC	LC		N	
*Stellaria pallida**	Lesser Chickweed	species	LC	LC		N	
Suaeda maritima	Annual Sea-blite	species	LC	LC		N	
Teesdalia nudicaulis	Shepherd's Cress	species	NT	NT		N	
*Teucrium scordium**	Water Germander	species	EN	EN	NR	N	
*Thalictrum flavum**	Common Meadow-rue	species	LC	LC		N	
*Thalictrum minus**	Lesser Meadow-rue	species	LC	LC		N	
*Thelypteris palustris**	Marsh Fern	species	LC	LC	NS	N	
Tilia cordata	Small-leaved Lime	species	LC	LC		N	
Torilis arvensis	Spreading Hedge-parsley	species		EN	NS	AR	
Torilis nodosa	Knotted Hedge-parsley	species	LC	LC		N	
Trichophorum germanicum	Deergrass	species	LC	LC			*Trichophorum cespitosum subsp. cespitosum*
Trifolium fragiferum	Strawberry Clover	species	VU	VU		N	
*Trifolium glomeratum**	Clustered Clover	species	LC	LC	NS	N	
Trifolium incarnatum subsp. molinerii	Long-headed Clover	subspecies	LC	LC	NR	N	
*Trifolium occidentale**	Western Clover	species	LC	LC	NS	N	
Trifolium ornithopodioides	Bird's-foot Clover	species	LC	LC		N	
Trifolium scabrum	Rough Clover	species	LC	LC		N	
*Trifolium squamosum**	Sea Clover	species	LC	LC	NS	N	
Trifolium striatum	Knotted Clover	species	LC	LC		N	
*Trifolium suffocatum**	Suffocated Clover	species	LC	LC	NS	N	
Triglochin palustris	Marsh Arrowgrass	species	LC	NT		N	
*Trinia glauca**	Honewort	species	LC	LC	NR	N	

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Tripolium pannonicum	Sea Aster	species	LC	LC		N	*Aster tripolium*
Typha angustifolia	Lesser Bulrush	species	LC	LC		N	
Ulmus minor subsp. angustifolia	Smooth-leaved Elm	subspecies	LC	LC		N	
Utricularia australis	Bladderwort	species	LC	LC		N	
Valeriana dioica	Marsh Valerian	species	LC	NT		N	
Valerianella dentata	Narrow-fruited Cornsalad	species	EN	EN		AR	
*Valerianella eriocarpa**	Hairy-fruited Cornsalad	species	LC	LC	NR	AN	
*Valerianella rimosa**	Broad-fruited Cornsalad	species	EN	EN	NS	AR	
*Verbascum lychnitis**	White Mullein	species	LC	LC	NS	N	
Verbascum nigrum	Dark Mullein	species	LC	LC		N	
Verbascum virgatum	Twiggy Mullein	species				AN	
Veronica anagallis-aquatica	Blue Water-Speedwell	species	LC	LC		N	
Veronica catenata	Pink Water-Speedwell	species	LC	LC		N	
*Vicia bithynica**	Bithynian Vetch	species	VU	LC	NS	N	
*Vicia lutea**	Yellow-vetch	species	NT	VU	NS	N	
Vicia orobus	Wood Bitter-vetch	species	NT	VU	NS	N	
Viola canina	Heath Dog-violet	species	NT	VU		N	
Viola canina subsp. canina	Heath Dog-violet	subspecies	NT	VU		N	
Viola lacteal	Pale Dog-violet	species	VU	EN	NS	N	
Viola tricolor	Seaside Pansy, Wild Pansy	species	LC,NT	NT		N	
Viola tricolor subsp. tricolor	Wild Pansy	subspecies	NT	NT		N	
*Vulpia ciliata subsp. ambigua**	Purple Fescue	subspecies	LC	LC	NS	N	
*Vulpia fasciculata**	Dune Fescue	species	LC	LC	NS	N	
Vulpia myuros	Rat's-tail Fescue	species	LC	LC		AR	
Wahlenbergia hederacea	Ivy-leaved Bellflower	species	NT	NT		N	

*Zannichellia palustris**	Horned Pondweed	species	LC	LC		N	
Zostera marina	Eelgrass	species	NT	VU		N	
Zostera marina var. stenophylla	Eelgrass	var.	NT	VU		N	
Zostera noltei	Dwarf Eelgrass	species	VU	VU	NS	N	

[1] scientific and common names based on Stace 2019

[2]**'Red Data' categories according to Cheffings and Farrel (2005 [revised 2021]) and Stroh et. al. (2014)**

CR Critically endangered (Red Data Book 1) facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E. Red listing based on 2001 IUCN guidelines.

EN Endangered (Red Data Book 2) not Critically endangered but is facing a very high risk of extinction in the wild in the near future. Red listing based on 2001 IUCN guidelines.

VU Vulnerable (Red Data Book 3) not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future. Red listing based on 2001 IUCN guidelines.

DD Data deficient

LC Least concern

NT Near threatened

WL Waiting list

[3]Key to National status:

NR Nationally rare:
1-15 10 km squares in the Atlas of British Flora, 1962

NS Nationally scarce:
15-100 10km squares in the Atlas of British Flora, 1962

[5]Native status:

N Native (colonised British Isles by natural means, usually long ago and from other native areas)

NE Native endemic (confined to British Isles)

N, NE Native near-endemic (marginally present elsewhere)

AR Archaeophyte (naturalised alien species introduced by humans before AD1500).

AN Neophyte (naturalised alien species introduced by humans since AD1500).

NA Native status doubtful (native or alien)

Devon rarity:

***** Native species recorded from 3 or fewer localities within Devon

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Appendix 9 – Species rarity scores for breeding bird assemblages

Group definition		Species	Score
1	Less than 20 breeding pairs or less than 5 sites in Devon	Common Sandpiper, Curlew, Dunlin, Gadwall, Grey Partridge, Hawfinch, Kittiwake, Lapwing, Lesser Spotted Woodpecker, Little Ringed Plover, Manx Shearwater, Puffin, Razorbill, Ring Ouzel, Shoveler, Teal, Turtle Dove	12
2	20-50 breeding pairs or 5-20 sites in Devon	Crossbill, Firecrest, Goosander, Goshawk, Great Crested Grebe, Greylag Goose, Guillemot, Lesser Whitethroat, Little Egret, Little Grebe, Little Owl, Mandarin, Oystercatcher, Red Grouse, Tufted Duck, Water Rail, Wood Warbler, Woodlark.	6
3	50-100 breeding pairs or 20-50 sites in Devon	Cetti's Warbler, Cuckoo, Hobby, Mute Swan, Peregrine, Willow Tit.	4
4	100-500 breeding pairs in Devon	Barn Owl, Coot, Cormorant, Fulmar, Grasshopper Warbler, Grey Heron, Great Black-backed Gull, Kestrel, Kingfisher, Lesser Black-backed Gull, Lesser Redpoll, Nightjar, Pied Flycatcher, Redstart, Sand Martin, Sedge Warbler, Shag, Shelduck, Snipe, Tree Pipit, Wheatear, Whinchat, Dartford Warbler	3
5	500-1000 breeding pairs in Devon or recorded in a mean of less than 10% of Breeding Bird Survey 1km squares in Devon	Dipper, Green Woodpecker, Marsh Tit, Moorhen, Reed Bunting, Reed Warbler, Rock Pipit, Siskin, Spotted Flycatcher, Stonechat.	2
6	Red List species recorded in a mean of at least 10% of Breeding Bird Survey 1km squares in Devon	Greenfinch, Herring Gull, House Martin, House Sparrow, Linnet, Mistle Thrush, Skylark, Swift, Starling, Willow Warbler, Yellowhammer.	1
7	Amber List species recorded in a mean of at least 10% of Breeding Bird Survey 1km squares in Devon	Bullfinch, Common Whitethroat, Dunnock, Grey Wagtail, Mallard, Meadow Pipit, Rook, Song Thrush, Sparrowhawk, Stock Dove, Swallow, Tawny Owl, Water Pipit, Willow Warbler, Wood pigeon, Wren	1 for 4 species

Appendix 10 – Non-breeding populations for selected species

Species	British Non-breeding Population	0.5% British Non-breeding Population	0.1% British Non-breeding Population	Devon Non-breeding population	10% Devon Non-breeding population	5% Devon Non-breeding population
Mute Swan	50,500	253	51	450	45	23
Dark-bellied Brent Goose	105,000	525	105	2200	220	110
Shelduck	47,000	235	47	1,200	120	60
Mandarin	13,500	68	14	50	5	3
Wigeon	445,000	2225	445	6,000	600	300
Teal	430,000	2150	430	2,500	250	125
Mallard	665,000	3325	665	5,000	500	250
Gadwall	31,000	155	31	120	12	6
Pintail	19,500	98	20	150	15	8
Shoveler	19,000	95	19	140	14	7
Pochard	23,000	115	23	50	5	3
Tufted Duck	130,000	650	130	400	40	20
Goldeneye	18,500	93	19	30	3	2
Red-breasted Merganser	10,500	53	11	100	10	5
Goosander	14,500	73	15	200	20	10
Little Grebe	15,000	75	15	150	15	8
Great Crested Grebe	16,500	83	17	100	10	5
Cormorant	62,000	310	62	500	50	25
Grey Heron	45,000	225	45	1,000	100	50
Little Egret	11,500	58	12	500	50	25
Cattle Egret				80	8	4
Spoonbill	300,000	1500	300	3,000	300	150
Moorhen	200,000	1000	200	700	70	35
Coot	50,500	253	51	450	45	23

Appendix 10 – Non-breeding populations for selected species

Cont.

Species	British Non-breeding Population	0.5% British Non-breeding Population	0.1% British Non-breeding Population	Devon Non-breeding population	10% Devon Non-breeding population	5% Devon Non-breeding population
Water Rail	1,000	5	1	100	10	5
Oystercatcher	285,000	1425	285	4000	400	200
Avocet	8,700	44	9	650	65	33
Ringed Plover	41,500	208	42	500	50	25
Golden Plover	400,000	2000	400	5,000	500	250
Grey Plover	33,500	168	34	500	50	25
Lapwing	620,000	3100	620	6,000	600	300
Knot	265,000	1325	265	150	15	8
Sanderling	20,000	100	20	250	25	13
Dunlin	345,000	1725	345	5,000	500	250
Purple Sandpiper	9,700	49	10	40	5*	2
Jack Snipe	100,000	500	100	50	5	3
Snipe	1,000,000	5000	1000	1,000	100	50
Woodcock	1,400,000	7000	1400	100	10	5
Black-tailed Godwit	39,000	195	39	1500	150	75
Bar-tailed Godwit	50,500	253	51	340	34	17
Whimbrel	3,530	18	4	200	20	10
Curlew	120,000	600	120	2,400	240	120
Redshank	94,500	473	95	1500	150	75
Greenshank	810	4	1	160	16	8
Green Sandpiper	290	1	1	10	5*	1
Common Sandpiper	52	1	1	12	5*	1
Turnstone	40,000	200	40	200	20	10
Mediterranean Gull	4,000	20	4	200	20	10
Black-headed Gull	2,200,000	11000	2200	35,000	3500	1750

Appendix 10 – Non-breeding populations for selected species

Cont.

Species	British Non-breeding Population	0.5% British Non-breeding Population	0.1% British Non-breeding Population	Devon Non-breeding population	10% Devon Non-breeding population	5% Devon Non-breeding population
Common Gull	700,000	3500	700	1,200	120	60
Lesser Black-backed Gull	120,000	600	120	1,200	120	60
Herring Gull	730,000	3650	730	8,000	80	40
Great Black-backed Gull	76,000	380	76	1,200	120	60
Sandwich Tern	12,500	63	13	325	33	17
Common Tern	9,600	48	10	120	12	6

* An arbitrary minimum threshold of 5 is used for 10% of the Devon non-breeding population.

Appendix 11 – Butterflies of County importance in the selection of County Wildlife Sites in Devon

1. Nationally rare species

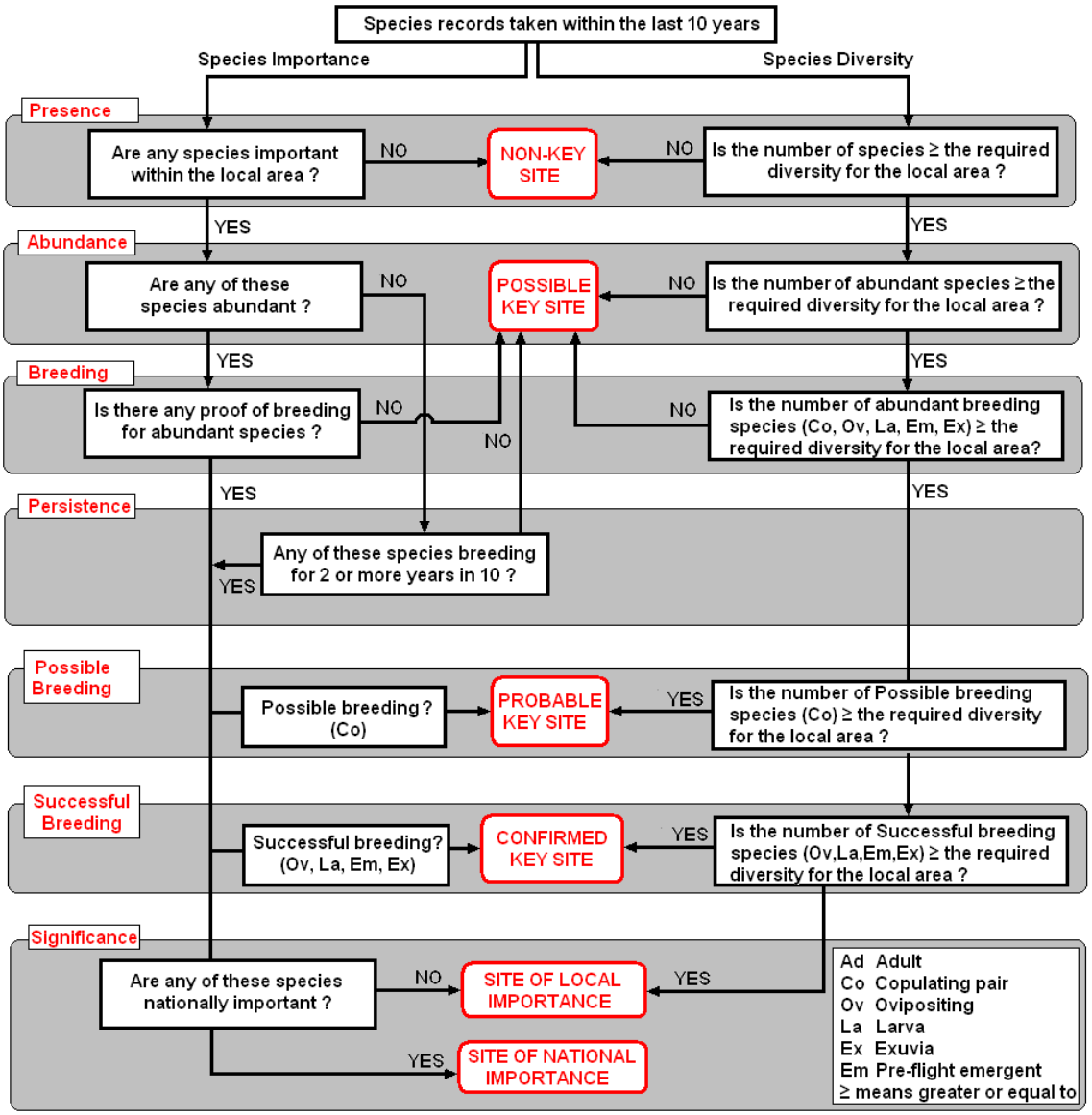
Wood White	*Leptidea sinapis*
Silver-studded Blue	*Plebejus argus*
Adonis Blue	*Polyommatus bellargus*
Pearl Bordered Fritillary	*Boloria euphrosyne*
High Brown Fritillary	*Argynnis adippe*
Marsh Fritillary	*Eurodryas aurinia*
Heath Fritillary	*Mellicta athalia*
Grayling	*Hipparchia semele*
Brown Hairstreak	*Thecla betulae*

2. Species which have suffered substantial local declines

Dingy Skipper	*Erynnis tages*
Grizzled Skipper	*Pyrgus malvae*
White Letter Hairstreak	*Satyrium w-album*
Small Blue	*Cupido minimus*
Chalk-hill Blue	*Polyommatus coridon*
Small Pearl-bordered Fritillary	*Boloria selene*
White Admiral	*Limenitis camilla*

Appendix 12 – Dragonflies of County importance in the selection of County Wildlife Sites in Devon

Dragonflies of Couny importance:



Appendix 13 – Non-Vascular Plants of County importance in the selection of County Wildlife Sites in Devon

Non-Vascular Plants:

Liverworts: (Listings based on 2001 IUCN guidelines and Bryophyte Red List British Bryological Society, 2005 + Preston, C.D. 2006. A revised list of nationally scarce bryophytes. Field Bryology 90: 22-30).

- **NR** **Nationally Rare -** Rare and scarce species occurring in 15 or fewer hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **NS** **Nationally Scarce -** Rare and scarce species occurring in 16-100 hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **CE** **Red Data Book 1 Critically Endangered -** facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E. Red listing based on 2001 IUCN guidelines.
- **E** **Red Data Book 2 Endangered -** not Critically endangered but is facing a very high risk of extinction in the wild in the near future. Red listing based on 2001 IUCN guidelines.
- **V** **Red Data Book 3 Vulnerable -** not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future. Red listing based on 2001 IUCN guidelines.

Scientific Name	Common Name	Status
Acrobolbus wilsonii		NS
Adelanthus decipiens		NS
Adelanthus lindenbergianus		NR, E
Anastrophyllum alpinum		NR
Anastrophyllum donnianum		NS
Anastrophyllum hellerianum		NS
Anastrophyllum joergensenii		NR
Anastrophyllum saxicola		NR; V
Anthelia juratzkana		NS
Athalamia hyaline		NR; V
Barbilophozia kunzeana		NR; V
Barbilophozia lycopodioides		NS
Barbilophozia quadriloba		NR
Bazzania pearsonii		NS
Calypogeia azurea		NS
Calypogeia integristipula		NS
Calypogeia suecica		NS
Cephalozia ambigua		NR; V
Cephalozia catenulate		NS
Cephalozia loitlesbergeri		NS
Cephalozia macrostachya		NS
Cephalozia pleniceps		NS
Cephaloziella baumgartneri		NR; E
Cephaloziella calyculata		NR; V
Cephaloziella dentata		NR, CE

Cephaloziella elachista		NR
Cephaloziella integerrima		NR; V
Cephaloziella massalongi		NR
Cephaloziella nicholsonii		NS; V
Cephaloziella spinigera		NS
Cephaloziella stellulifera		NS
Cephaloziella turneri		NS
Cladopodiella francisci		NS
Cololejeunea rossettiana		NS
Cryptothallus mirabilis		NS
Diplophyllum taxifolium		NS
Dumortiera hirsuta		NR; V
Eremonotus myriocarpus		NS
Fossombronia angulosa		NS
Fossombronia caespitiformis		NS
Fossombronia fimbriata		NR
Fossombronia foveolata		NS
Fossombronia husnotii		NS
Fossombronia incurva		NS
Fossombronia maritima		NS
Geocalyx graveolens		NR; V
Gongylanthus ericetorum		NR
Gymnocolea acutiloba		NR; V
Gymnomitrion apiculatum		NR; V
Gymnomitrion corallioides		NR
Haplomitrium hookeri		NS
Harpanthus flotovianus		NS
Herbertus borealis		NR; V
Jamesoniella autumnalis		NS
Jamesoniella undulifolia		NR; E
Jungermannia borealis		NS
Jungermannia caespiticia		NR; V
Jungermannia confertissima		NS
Jungermannia leiantha		NR, CE
Jungermannia polaris		NR; V
Jungermannia subelliptica		NS
Leiocolea fitzgeraldiae		NR
Leiocolea gillmanii		NR
Leiocolea heterocolpos		NS
Leiocolea rutheana		NR; E
Lejeunea holtii		NR; V
Lejeunea mandonii		NR; E
Leptoscyphus cuneifolius		NS
Lophozia capitata		NS; E
Lophozia herzogiana		NR; V
Lophozia longidens		NS
Lophozia longiflora		NR, CE
Lophozia obtuse		NS

Lophozia opacifolia		NS
Lophozia perssonii		NR
Lophozia wenzelii		NR; V
Marsupella adusta		NS
Marsupella alpine		NS
Marsupella arctica		NR; V
Marsupella boeckii		NR; V
Marsupella brevissima		NS
Marsupella condensate		NR
Marsupella profunda		NR; V
Marsupella sparsifolia		NR; V
Marsupella sphacelata		NS
Marsupella stableri		NS
Mastigophora woodsii		NS
Moerckia blyttii		NS
Moerckia hibernica		NS
Nardia breidleri		NR
Nardia geoscyphus		NS
Nardia insecta		NR; V
Odontoschisma elongatum		NS
Odontoschisma macounii		NR; V
Pallavicinia lyellii		NS
Pedinophyllum interruptum		NS
Petalophyllum ralfsii		NS
Plagiochila atlantica		NS
Plagiochila carringtonii		NS
Plagiochila norvegica		NR
Pleurocladula albescens		NS
Porella pinnata		NS
Radula carringtonii		NR; V
Radula voluta		NS
Riccardia incurvata		NS
Riccia beyrichiana		NS
Riccia bifurca		NR; E
Riccia canaliculata		NR; V
Riccia cavernosa		NS
Riccia huebeneriana		NS
Riccia nigrella		NR; E
Ricciocarpos natans		NS
Scapania aequiloba		NS
Scapania calcicola		NS
Scapania curta		NR
Scapania cuspiduligera		NS
Scapania degenii		NS
Scapania gymnostomophila		NR
Scapania lingulata		NS
Scapania nimbosa		NS
Scapania ornithopodioides		NS

Scapania paludicola		NR
Scapania paludosa		NR
Scapania parvifolia		NR
Scapania praetervisa		NR; V
Scapania uliginosa		NS
Southbya nigrella		NR; V
Southbya tophacea		NR; V
Sphaerocarpos michelii		NS
Sphaerocarpus texanus		NS; V
Sphenolobopsis pearsonii		NS
Targionia hypophylla		NS
Telaranea murphyae		V
Telaranea nematodes		NR; E
Tetralophozia setiformis		NS
Tritomaria exsecta		NS
Tritomaria polita		NS

Mosses: (Listings based on 2001 IUCN guidelines and Bryophyte Red List British Bryological Society, 2005 + Preston, C.D. 2006. A revised list of nationally scarce bryophytes. Field Bryology 90: 22-30).

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- **E** **Red Data Book 2 Endangered -** not Critically endangered but is facing a very high risk of extinction in the wild in the near future. Red listing based on 2001 IUCN guidelines.
- **V** **Red Data Book 3 Vulnerable -** not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future. Red listing based on 2001 IUCN guidelines.
- **WCA** **Legally Protected Mosses:** Wildlife and Countryside Act 1981 Schedule 8 Plants which are protected from: intentional picking, uprooting or destruction; selling, offering for sale, possessing or transporting for the purpose of sale; advertising for buying or selling.

Scientific Name	**Common Name**	**Status**
Acaulon triquetrum		NR; E, WCA
Aloina ambigua		NS
Aloina brevirostris		NS
Aloina rigida		NS
Amblyodon dealbatus		NS
Amblystegium confervoides		NS

Amblystegium humile		NS
Amblystegium radicale		NR
Amphidium lapponicum		NS
Andreaea alpestris		NR
Andreaea blyttii		NR
Andreaea frigida		NR; V
Andreaea megistospora		NS
Andreaea mutabilis		NS
Andreaea nivalis		NS; V
Andreaea sinuosa		NR
Anomodon attenuatus		NR; CE
Anomodon longifolius		NR; E, WCA
Aongstroemia longipes		NR
Aplodon wormskjoldii		NR; CE
Arctoa fulvella		NS
Atrichum angustatum		NS; CE
Atrichum tenellum		NS
Aulacomnium turgidum		NS
Bartramia halleriana		NS
Bartramia stricta		NR; CE; WCA
Blindia caespiticia		NR; V
Brachydontium trichodes		NS
Brachythecium erythrorrhizon		NR
Brachythecium glaciale		NR
Brachythecium reflexum		NR
Brachythecium salebrosum		NS
Brachythecium starkei		NR; E
Brachythecium trachypodium		NR; CE
Bryoerythrophyllum caledonicum		NR
Bryum archangelicum		NR
Bryum arcticum		NR; V
Bryum calophyllum		NR; E
Bryum canariense		NS
Bryum creberrimum		NS
Bryum cyclophyllum		NR; E
Bryum dixonii		NS
Bryum dyffrynense		NR
Bryum elegans		NS
Bryum gemmilucens		NR
Bryum gemmiparum		NR, E
Bryum intermedium		NS
Bryum knowltonii		NR; V
Bryum kunzei		NR
Bryum mamillatum		WCA
Bryum marratii		NR; E
Bryum mildeanum		NS
Bryum muehlenbeckii		NR
Bryum neodamense		NR; WCA

Bryum pallescens		NS
Bryum riparium		NS
Bryum salinum		NR; E
Bryum schleicheri		NR; WCA
Bryum schleicheri var. latifolium		CE
Bryum tenuisetum		NS
Bryum torquescens		NS
Bryum uliginosum		NR; CE
Bryum warneum		NS; V
Bryum weigelii		NS
Buxbaumia aphylla		NS
Buxbaumia viridis		NR; E; WCA
Calliergon trifarium		NS
Campyliadelphus elodes		NS
Campylophyllum calcareum		NS
Campylophyllum halleri		NR; V
Campylopus pilifer		NS
Campylopus schimperi		NS
Campylopus setifolius		NS
Campylopus shawii		NS
Campylopus subulatus		NS
Campylostelium saxicola		NS
Catoscopium nigritum		NS
Ceratodon conicus		NR; CE
Cheilothela chloropus		NR; V
Cinclidium stygium		NS
Cinclidotus riparius		NR; V
Cirriphyllum cirrosum		NR; V
Conardia compacta		NS
Conostomum tetragonum		NS
Coscinodon cribrosus		NS
Cryphaea lamyana		NR; V; WCA
Ctenidium procerrimum		NR; V
Cyclodictyon laetevirens		NR;E; WCA
Cynodontium jenneri		NS
Cynodontium polycarpon		NR; V
Cynodontium strumiferum		NR
Cynodontium tenellum		NR; V
Daltonia splachnoides		NR; V
Dichodontium flavescens		NS
Dicranella crispa		NS
Dicranella grevilleana		NR; V
Dicranodontium asperulum		NS
Dicranodontium uncinatum		NS
Dicranoweisia crispula		NS
Dicranum bergeri		NS; V
Dicranum elongatum		NR; CE
Dicranum flagellare		NS

Dicranum leioneuron		NR
Dicranum polysetum		NS
Dicranum spurium		NS; V
Dicranum subporodictyon		NR
Didymodon acutus		NS
Didymodon cordatus		NR; E; WCA
Didymodon glaucus		NR; CE; WCA
Didymodon icmadophilus		NR
Didymodon mamillosus		NR
Didymodon tomaculosus		NS
Didymodon umbrosus		NS
Discelium nudum		NS
Distichium inclinatum		NS
Ditrichum cornubicum		NR; E; WCA
Ditrichum flexicaule		NS
Ditrichum lineare		NS
Ditrichum plumbicola		NR
Ditrichum pusillum		NS
Ditrichum subulatum		NR; V
Ditrichum zonatum		NS
Drepanocladus lycopodioides		NS
Drepanocladus sendtneri		NS
Drepanocladus vernicosus		WCA
Encalypta alpine		NS
Encalypta ciliata		NS
Encalypta rhaptocarpa		NS
Ephemerum cohaerens		NR; E
Ephemerum recurvifolium		NS
Ephemerum sessile		NS
Eurhynchium meridionale		NR; V
Eurhynchium pulchellum		NR
Eurhynchium pulchellum var. diversifolium		E
Eurhynchium striatulum		NS
Fissidens curvatus		NR; E
Fissidens limbatus		NS
Fissidens monguillonii		NR
Fissidens polyphyllus		NS
Fissidens rivularis		NS
Fissidens rufulus		NS
Fissidens serrulatus		NR; V
Funaria muhlenbergii		NS
Funaria pulchella		NR; V
Glyphomitrium daviesii		NS
Grimmia alpestris		NR; V
Grimmia arenaria		NR; V
Grimmia atrata		NS
Grimmia austrofunalis		NS

Grimmia crinita		NR; CE
Grimmia decipiens		NS
Grimmia dissimulata		NS
Grimmia elatior		NR; V
Grimmia elongata		NR; E
Grimmia incurva		NS
Grimmia laevigata		NS
Grimmia longirostris		NS
Grimmia montana		NS
Grimmia orbicularis		NS
Grimmia ovalis		NS
Grimmia retracta		NS
Grimmia tergestina		NR; V
Grimmia ungeri		NR; E
Grimmia unicolor		NR; V; WCA
Gymnostomum calcareum		NS
Gymnostomum viridulum		NS
Habrodon perpusillus		NS; E
Hamatocaulis vernicosus		NS
Hedwigia ciliata		NR
Hedwigia integrifolia		NS
Herzogiella seligeri		NS
Herzogiella striatella		NS
Heterocladium dimorphum		NR; V
Homomallium incurvatum		NR; CE
Hygrohypnum duriusculum		NS
Hygrohypnum molle		NR; V
Hygrohypnum polare		NR; E; WCA
Hygrohypnum smithii		NR; V
Hygrohypnum styriacum		NR; CE
Hylocomium pyrenaicum		NS
Hymenostylium insigne		NR
Hynum bambergeri		NR
Hypnum hamulosum		NS
Hypnum imponens		NS
Hypnum revolutum		NR; E
Hypnum vaucheri		NR; WCA
Isopterygiopsis muelleriana		NS
Kiaeria falcata		NS
Kiaeria glacialis		NS
Kiaeria starkei		NS
Leptobarbula berica		NS
Leptodontium gemmascens		NR; V
Meesia uliginosa		NS
Microbryum starckeanum		NS
Micromitrium tenerum		NR; CE; WCA
Mielichhoferia elongata		NR; V
Mielichhoferia mielichhoferiana		NR; E; WCA

Mnium ambiguum		NR; V
Mnium spinosum		NR
Mnium thomsonii		NS
Myrinia pulvinata		NS
Myurella julacea		NS
Myurella tenerrima		NR; E
Myurium hochstetteri		NS
Octodiceras fontanum		NS
Oedipodium griffithianum		NS
Oncophorus virens		NS
Oncophorus wahlenbergii		NR
Orthodontium gracile		NR; V
Orthothecium rufescens		NS
Orthotrichum gymnostomum		NR; V
Orthotrichum obtusifolium		NR; V; WCA
Orthotrichum pallens		NR; E
Orthotrichum pumilum		NR; E
Orthotrichum speciosum		NR
Palustriella decipiens		NR
Paraleptodontium recurvifolium		NS
Paraleucobryum longifolium		NR
Philonotis arnellii		NS
Philonotis caespitosa		NS
Philonotis cernua		NR; CE
Philonotis marchica		NR; E
Philonotis rigida		NS
Philonotis seriata		NS
Philonotis tomentella		NR
Physcomitrium eurystomum		NR; CE
Physcomitrium sphaericum		NR
Pictus scoticus		NR
Plagiobryum demissum		NR; E
Plagiomnium medium		NR
Plagiopus oederianus		NS
Plagiothecium cavifolium		NS
Plagiothecium laetum		NS
Plagiothecium piliferum		WCA
Plagiothecium platyphyllum		NS
Platydictya jungermannioides		NS
Platygyrium repens		NS
Pleurochaete squarrosa		NS
Pohlia andalusica		NR
Pohlia crudoides		NR; V
Pohlia elongata polymorpha		NS
Pohlia filum		NS
Pohlia flexuosa		NS
Pohlia lescuriana		NS
Pohlia ludwigii		NS

Pohlia obtusifolia		NR; E
Pohlia proligera sens. strict.		NS
Pohlia scotica		NR; V
Polytrichum sexangulare		NS
Pottiopsis caespitosa		NS
Pseudobryum cinclidioides		NS
Pseudoleskea incurvata		NR; V
Pseudoleskea patens		NS
Pseudoleskeella catenulata		NS
Pseudoleskeella nervosa		NR; CE
Pseudoleskeella rupestris		NR
Pterigynandrum filiforme		NS
Pterygoneurum ovatum		NS
Ptychodium plicatum		NR; V
Pylaisia polyantha		NS
Racomitrium affine		NS
Racomitrium canescens		NS
Racomitrium elongatum		NS
Racomitrium himalayanum		NR; V
Racomitrium macounii		NR
Racomitrium sudeticum		NS
Rhizomnium magnifolium		NS
Rhynchostegiella curviseta		NS
Rhynchostegium alopecuroides		NS
Rhynchostegium rotundifolium		NR; CE; WCA
Rhytidiadelphus subpinnatus		NR; E
Rhytidium rugosum		NS
Saelania glaucescens		NR; V; WCA
Sanionia orthothecioides		NR
Schistidium agassizii		NS
Schistidium atrofuscum		V
Schistidium confertum		NS
Schistidium frigidum		NS
Schistidium papillosum		NS
Schistidium pruinosum		NS
Schistidium robustum		NS
Schistidium trichodon		NS
Scopelophila cataractae		NR; V
Scorpidium turgescens		NR; V; WCA
Seligeria acutifolia		NS
Seligeria brevifolia		NR; V
Seligeria campylopoda		NR; V
Seligeria carniolica		NR; CE
Seligeria diversifolia		NR; V
Seligeria pusilla		NS
Sematophyllum demissum		NR; V
Sematophyllum micans		NS
Sematophyllum substrumulosum		NR

Sphagnum affine		NS
Sphagnum angustifolium		NS
Sphagnum austinii		NS
Sphagnum balticum		NR; E; WCA
Sphagnum flexuosum		NS
Sphagnum lindbergii		NS
Sphagnum majus		NR; V
Sphagnum platyphyllum		NS
Sphagnum pulchrum		NS
Sphagnum riparium		NR
Sphagnum skyense		NR
Sphagnum subsecundum		NS
Splachnum vasculosum		NS; V
Stegonia latifolia		NR; V
Syntrichia norvegica		NR; V
Syntrichia princes		NS
Syntrichia virescens		NS
Tayloria lingulata		NR; E
Tayloria tenuis		NR; CE
Tetraplodon angustatu		NS
Tetrodontium repandum		NR; CE
Thamnobryum angustifolium		NR; CE; WCA
Thamnobryum cataractarum		NR; V
Thuidium abietinum abietinum		NS
Thuidium abietinum hystricosum		NS
Thuidium recognitum		NS
Timmia austriaca		NR; E
Timmia megapolitana		V
Timmia norvegica		NR
Tomentypnum nitens		NS
Tortella densa		NS
Tortella fragilis		NR; V
Tortella inclinata		NS
Tortella inflexa		NS
Tortula atrovirens		NS
Tortula canescens		NS
Tortula cernua		NR; E; WCA
Tortula cuneifolia		NR; E
Tortula freibergii		NR
Tortula leucostoma		NR; V
Tortula solmsii		NR; V
Tortula vahliana		NR; V
Tortula wilsonii		NS; E
Trichostomum hibernicum		NS
Ulota calvescens		NS
Ulota coarctata		NS
Weissia condensa		NS; V
Weissia levieri		NR; E

Weissia multicapsularis		NR; CE
Weissia perssonii		NS
Weissia rostellata		NS
Weissia squarrosa		NS; V
Weissia sterilis		NS; V
Zygodon forsteri		NR; E; WCA
Zygodon gracilis		NR; E; WCA

Lichens: Listing based on A conservation evaluation of British lichens, R.G. Woods & B.J. Coppins. British Lichen Society, London, 2003

- **NR** **Nationally Rare -** Rare and scarce species occurring in 15 or fewer hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **NS** **Nationally Scarce -** Rare and scarce species occurring in 16-100 hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **CE** **Red Data Book 1 Critically Endangered -** facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E. Red listing based on 2001 IUCN guidelines.
- **E** **Red Data Book 2 Endangered -** not Critically endangered but is facing a very high risk of extinction in the wild in the near future. Red listing based on 2001 IUCN guidelines.
- **V** **Red Data Book 3 Vulnerable -** not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future. Red listing based on 2001 IUCN guidelines.
- **WCA** **Legally Protected Lichens:** Wildlife and Countryside Act 1981 Schedule 8 Plants which are protected from: intentional picking, uprooting or destruction; selling, offering for sale, possessing or transporting for the purpose of sale; advertising for buying or selling.

Scientific Name	**Common Name**	**Status**
Absconditella delutula		NS
Acarospora glaucocarpa		NS
Acarospora heppii		NS
Acarospora rhizobola		V
Acarospora subrufula		V
Acarospora umbilicata		NS
Acarospora veronensis		NS
Acrocordia macrospore		NS
Adelanthus lindenbergianus		WCA
Agonimia allobata		NS
Agonimia gelatinosa		NS
Agonimia globulifera		NS
Agonimia octospora		NS
Ainoa mooreana		NS
Alectoria ochroleuca		V; WCA
Alectoria sarmentosa sarmentosa		NS

Alectoria sarmentosa vexillifera		NS
Allantoparmelia alpicola		NS
Amandinea coniops		NS
Amandinea lecideina		NS
Amygdalaria consentiens		NS
Anaptychia ciliaris ciliaris		V
Anaptychia ciliaris mamillata		NS
Anisomeridium viridescens		NS
Arthonia anglica		E
Arthonia anombrophila		NS
Arthonia apotheciorum		NS
Arthonia arthonioides		NS
Arthonia astroidestera		NS
Arthonia cohabitans		V
Arthonia endlicheri		NS
Arthonia fuscopurpurea		NS
Arthonia graphidicola		NS
Arthonia leucopellaea		NS
Arthonia mediella		NS
Arthonia muscigena		NS
Arthonia phaeobaea		NS
Arthonia stellaris		NS
Arthonia varians		NS
Arthopyrenia carneobrunneola		NS
Arthopyrenia cerasi		NS
Arthopyrenia fraxini		NS
Arthopyrenia nitescens		NS
Arthopyrenia saxicola		NS
Arthothelium lirellans		NS
Arthothelium macounii		V
Arthothelium orbilliferum		NS
Arthothelium ruanum		NS
Arthrorhaphis aeruginosa		NS
Arthrorhaphis alpine		NS
Arthrorhaphis grisea		NS
Aspicilia epiglypta		NS
Aspicilia laevata		NS
Aspicilia melanaspis		E
Bacidia absistens		NS
Bacidia beckhausii		NS
Bacidia caesiovirens		NS
Bacidia caligans		NS
Bacidia carneoglauca		NS
Bacidia chloroticula		NS
Bacidia circumspecta		NS; V
Bacidia delicate		NS
Bacidia egenula		NS
Bacidia friesiana		NS

Bacidia fuscoviridis		NS
Bacidia herbarum		NS
Bacidia igniarii		V
Bacidia incompta		V
Bacidia saxenii		NS
Bacidia subincompta		NS; V
Bacidia trachoma		NS
Bacidia vermifera		E
Bacidia viridescens		NS
Bactrospora corticola		NS
Bactrospora dryina		CE
Bactrospora homalotropa		NS
Bellemerea alpina		CE
Belonia incarnate		NS
Belonia russula		NS
Biatora carneoalbida		CE
Biatora chrysantha		NS
Biatora tetramera		V
Biatora vernalis		NS
Biatorella fossarum		E
Biatorella hemisphaerica		V
Biatoridium delitescens		V
Biatoridium monasteriense		E
Brodoa intestiniformis		CE
Bryonora curvescens		V
Bryophagus gloeocapsa		NS
Bryoria bicolor		NS
Bryoria capillaris		NS
Bryoria chalybeiformis		NS
Bryoria furcellata		V; WCA
Bryoria lanestris		NS
Bryoria nadvornikiana		V
Bryoria smithii		CE
Buellia asterella		CE; WCA
Buellia badia		NS
Buellia erubescens		NS
Buellia hyperbolica		V
Buellia insignis		CE
Buellia papillata		CE
Buellia pulverea		NS
Buellia sequax		NS
Buellia stellulata		NS
Byssoloma marginatum		NS
Calicium adspersum		CE
Calicium corynellum		CE
Calicium diploellum		CE
Calicium lenticulare		NS
Caloplaca alociza		NS

Caloplaca aractina		V
Caloplaca arenaria		NS
Caloplaca arnoldii		NS
Caloplaca atroflava		CE
Caloplaca caesiorufella		V
Caloplaca cerina var. chloroleuca		NS
Caloplaca cerinelloides		NS
Caloplaca chalybaea		NS
Caloplaca cinnamomea		E
Caloplaca crenulatella		NS
Caloplaca ferruginea		NS
Caloplaca flavorubescens		NS; E
Caloplaca herbidella		V
Caloplaca littorea		NS
Caloplaca lucifuga		V
Caloplaca luteoalba		NS; V; WCA
Caloplaca maritima		NS
Caloplaca nivalis		WCA
Caloplaca nivalis		CE
Caloplaca obliterans		NS
Caloplaca ochracea		NS
Caloplaca phlogina		NS
Caloplaca scopularis		NS
Caloplaca ulcerosa		NS
Caloplaca virescens		NS; E
Calvitimela aglaea		NS
Calvitimela armeniaca		NS
Candelariella aurella f. smaragdula		NS
Carbonea vorticosa		NS
Catapyrenium cinereum		NS
Catapyrenium daedaleum		V
Catapyrenium lachneum		NS
Catapyrenium michelii		V
Catapyrenium pilosellum		NS
Catapyrenium psoromoides		WCA
Catapyrenium psoromoides		CE
Catapyrenium squamulosum		NS
Catapyrenium waltheri		CE
Catillaria alba		V
Catillaria atomarioides		NS
Catillaria contristans		NS
Catillaria globulosa		NS
Catillaria modesta		V
Catillaria nigroclavata		NS
Catillaria scotinodes		NS
Catillaria subviridis		V
Catinaria neuschildii		V
Catolechia wahlenbergii		WCA

Catolechia wahlenbergii		V
Cavernularia hultenii		NS
Cecidonia umbonella		NS
Cecidonia xenophana		NS
Celothelium ischnobelum		NS
Cetraria ericetorum		NS
Chaenotheca brachypoda		NS
Chaenotheca gracilenta		E
Chaenotheca hispidula		NS
Chaenotheca laevigata		E
Chaenotheca phaeocephala		CE
Chaenotheca stemonea		NS
Chaenotheca xyloxena		V
Chaenothecopsis nigra		NS
Chaenothecopsis pusilla		NS
Chromatochlamys larbalestieri		V
Chrysothrix chlorina		NS
Cladonia azorica		NS
Cladonia botrytis		CE
Cladonia callosa		NS
Cladonia cariosa		NS
Cladonia carneola		NS
Cladonia coccifera s. str.		NS
Cladonia convoluta		WCA
Cladonia convoluta		V
Cladonia cryptochlorophaea		NS
Cladonia cyathomorpha		NS
Cladonia firma		NS
Cladonia incrassata		NS
Cladonia macrophylla		NS
Cladonia maxima		V
Cladonia mediterranea		CE
Cladonia merochlorophaea		NS
Cladonia peziziformis		CE
Cladonia phyllophora		NS
Cladonia symphycarpia		NS
Cladonia trassii		WCA; V
Cladonia uncialis uncialis		V
Cladonia zopfii		NS
Claurouxia chalybeioides		NS
Clauzadea metzleri		NS
Clauzadeana macula		NS
Cliostomum corrugatum		V
Coccotrema citrinescens		NS
Collema bachmanianum		NS
Collema ceraniscum		V
Collema dichotomum		NS; V; WCA
Collema fasciculare		NS

Collema fragile		V
Collema fragrans		NS; E
Collema glebulentum		NS
Collema latzelii		V
Collema limosum		NS
Collema multipartitum		NS
Collema nigrescens		NS
Collema occultatum		NS
Collema parvum		V
Collema polycarpon		NS
Cryptolechia carneolutea		NS; V
Cyphelium notarisii		NS
Cyphelium trachylioides		CE
Cyrtidula hippocastani		NS
Degelia ligulata		V
Dermatocarpon leptophyllodes		NS
Dermatocarpon meiophyllizum		NS
Diploschistes caesioplumbeus		NS
Diploschistes gypsaceus		NS
Diplotomma chlorophaeum		NS
Diplotomma venustum		NS
Dirina massiliensis f. massiliensis		NS
Eiglera flavida		NS
Endocarpon adscendens		E
Endocarpon pusillum		E
Enterographa elaborata		WCA, CE
Eopyrenula avellanae		NS
Eopyrenula grandicula		NS
Epigloea soleiformis		NS
Epilichen scabrosus		NS
Farnoldia jurana		NS
Fellhanera bouteillei		NS
Flavocetraria nivalis		NS
Frutidella caesioatra		NS
Fulgensia bracteata		V
Fulgensia fulgens		E
Fuscidea arboricola		NS
Fuscidea austere		NS
Fuscidea gothoburgensis		NS
Fuscidea intercincta		NS
Fuscidea praeruptorum		NS
Fuscopannaria ignobilis		V; WCA
Fuscopannaria mediterranea		NS
Fuscopannaria sampaiana		NS
Geocalyx graveolens		WCA
Gomphillus calycioides		NS
Graphina pauciloculata		V
Graphina ruiziana		NS

Gyalecta derivate		NS
Gyalecta flotowii		NS
Gyalecta geoica		NS
Gyalecta ulmi		E; WCA
Gyalidea roseola		CE
Gyalideopsis muscicola		NS
Gymnomitrion apiculatum		WCA
Halecania alpivaga		V
Halecania ralfsii		NS
Halecania rhypodiza		V
Halecania viridescens		NS
Herteliana taylorii		NS
Heterodermia leucomela		E; WCA
Heterodermia propagulifera		WCA
Heterodermia speciosa		CE
Hymenelia cyanocarpa		NS
Hymenelia epulotica		NS
Hymenelia heteromorpha		V
Hymenelia melanocarpa		V
Hymenelia prevostii		NS
Hypocenomyce anthracophila		E
Hypocenomyce friesii		NS
Hypogymnia vittata		V
Hypotrachyna endochlora		NS
Immersaria athroocarpa		NS
Ionaspis odora		NS
Jamesoniella undulifolia		WCA
Japewia tornoensis		V
Japewiella tavaresiana		NS
Koerberiella wimmeriana		NS
Lauderlindsaya acroglypta		NS
Lecanactis dilleniana		NS
Lecanactis hemisphaerica		NS; WCA
Lecania aipospila		NS
Lecania atrynoides		NS
Lecania baeomma		NS
Lecania chlorotiza		NS
Lecania cuprea		NS
Lecania cyrtellina		NS
Lecania hutchinsiae		NS
Lecania inundata		NS
Lecania rabenhorstii		NS
Lecania subfuscula		NS
Lecania sylvestris		NS
Lecanographa abscondita		NS
Lecanographa amylacea		NS; V
Lecanographa grumulosa		NS
Lecanora achariana		CE; WCA

Lecanora aitema var. aitema		NS
Lecanora albella		NS
Lecanora andrewii		NS
Lecanora argentata		NS
Lecanora atromarginata		V
Lecanora cadubriae		NS
Lecanora caesiosora		NS
Lecanora campestris dolomitica		NS
Lecanora chlorophaeodes		V
Lecanora cinereofusca		V
Lecanora compallens		NS
Lecanora ecorticata		NS
Lecanora epanora		NS
Lecanora epibryon		V
Lecanora farinaria		NS
Lecanora frustulosa		V
Lecanora handelii		NS
Lecanora horiza		NS
Lecanora leptacina		NS
Lecanora persimilis		NS
Lecanora piniperda		NS
Lecanora praepostera		NS
Lecanora pruinosa		NS
Lecanora quercicola		NS
Lecanora rupicola var. efflorens		NS
Lecanora sambuci		NS
Lecanora stenotropa		NS
Lecanora strobilina		V
Lecanora subaurea		NS
Lecanora subcarnea		NS
Lecanora sublivescens		NS
Lecanora xanthostoma		NS
Lecanora zosterae		NS
Lecidea ahlesii		NS
Lecidea antiloga		V
Lecidea auriculata		NS
Lecidea berengeriana		NS
Lecidea brachyspora		NS
Lecidea confluens		NS
Lecidea diducens		NS
Lecidea doliiformis		NS
Lecidea erythrophaea		V
Lecidea fuliginosa		NS
Lecidea hypnorum		NS
Lecidea hypopta		NS
Lecidea inops		E; WCA
Lecidea lichenicola		NS
Lecidea nylanderi		NS

Lecidea paupercula		NS
Lecidea plana		NS
Lecidea pycnocarpa f. pycnocarpa		NS
Lecidea pycnocarpa f. sorediata		NS
Lecidea sanguineoatra		NS
Lecidea sarcogynoides		V
Lecidea silacea		NS
Lecidea swartzioidea		NS
Lecidella anomaloides		NS
Lecidella meiococca		NS
Lecidella wulfenii		V
Lecidoma demissum		NS
Leiocolea rutheana		WCA
Lempholemma botryosum		NS
Lempholemma chalazanum		NS
Lempholemma polyanthes		NS
Lepraria atlantica		NS
Lepraria eburnean		NS
Lepraria elobata		NS
Lepraria neglecta		NS
Lepraria nivalis		NS
Lepraria umbricola		NS
Leproloma diffusum var. diffusum		NS
Leptogium biatorinum		NS
Leptogium brebissonii		NS
Leptogium britannicum		NS
Leptogium cochleatum		NS; V
Leptogium corniculatum		NS
Leptogium intermedium		NS
Leptogium saturninum		NS; V
Leptogium subtile		NS
Leptogium tenuissimum		NS
Leptorhaphis atomaria		NS
Leptorhaphis maggiana		NS
Lithographa tesserata		NS
Lopadium coralloideum		V
Lopadium disciforme		NS
Macentina stigonemoides		NS
Marsupella profunda		WCA
Megalaria laureri		E
Megalospora tuberculosa		NS
Megaspora verrucosa		NS
Melanelia commixta		NS
Melanelia disjuncta		NS
Melanelia hepatizon		NS
Melanelia septentrionalis		NS
Melanelia stygia		NS
Melanelia subargentifera		CE

Melaspilea atroides		NS
Melaspilea granitophila		NS
Melaspilea ochrothalamia		NS
Melaspilea proximella		NS
Micarea adnata		NS
Micarea assimilata		V
Micarea coppinsii		NS
Micarea crassipes		V
Micarea elachista		E
Micarea incrassata		NS
Micarea lignaria var. endoleuca		NS
Micarea lithinella		NS
Micarea misella		NS
Micarea myriocarpa		NS
Micarea prasina s. str.		NS
Micarea pycnidiophora		NS
Micarea stipitata		NS
Micarea subnigrata		NS
Micarea synotheoides		NS
Micarea tuberculata		NS
Micarea turfosa		NS
Microcalicium ahlneri		NS
Miriquidica atrofulva		NS
Miriquidica complanata f. complanata		NS
Miriquidica garovaglii		V
Miriquidica griseoatra		NS
Miriquidica nigroleprosa var. nigroleprosa		NS
Moelleropsis nebulosa		NS
Mycoblastus affinis		NS
Mycocalicium subtile		NS
Mycoglaena myricae		NS
Neofuscelia delisei		NS
Nephroma arcticum		E; WCA
Ochrolechia inaequatula		NS
Ochrolechia inverse		NS
Ochrolechia microstictoides		NS
Ochrolechia szatalaënsis		NS
Omphalina pseudoandrosacea		NS
Opegrapha corticola		NS
Opegrapha demutata		NS
Opegrapha dolomitica		NS
Opegrapha fumosa		NS
Opegrapha lithyrga		NS
Opegrapha mougeotii		NS
Opegrapha pertusariicola		NS
Opegrapha prosodea		NS
Opegrapha rupestris		NS

Opegrapha saxigena		NS
Opegrapha subelevata		E
Opegrapha thelotrematis		NS
Opegrapha viridis		NS
Opegrapha xerica		NS
Orphniospora moriopsis var. moriopsis		NS
Pannaria hookeri		NS
Parmeliella testacea		NS
Parmelina quercina		NS; V
Parmelinopsis horrescens		NS
Parmelinopsis minarum		V; WCA
Parmentaria chilensis		WCA
Parmotrema arnoldii		NS
Parmotrema robustum		CE
Peltigera Britannica		NS
Peltigera degenii		NS
Peltigera lepidophora		CE; WCA
Peltigera malacea		E
Peltigera neckeri		NS
Peltigera polydactylon		NS
Peltigera scabrosa		V
Peltigera venosa		NS; V
Pertusaria borealis		NS
Pertusaria bryontha		CE; WCA
Pertusaria chiodectonoides		NS
Pertusaria coronata		NS
Pertusaria dactylina		NS
Pertusaria excludens		NS
Pertusaria glomerata		V
Pertusaria lactescens		NS
Pertusaria melanochlora		E
Pertusaria monogona		NS
Pertusaria oculata		NS
Pertusaria ophthalmiza		NS
Pertusaria pustulata		V
Pertusaria velata		NS; V
Pertusaria xanthostoma		NS
Petalophyllum ralfsii		WCA
Phaeographis inusta		NS
Phaeographis lyellii		NS
Phaeophyscia endococcina		V
Phaeophyscia endophoenicea		NS
Phaeophyscia sciastra		NS
Phlyctis agelaea		NS
Phyllopsora rosei		NS
Physcia clementei		NS
Physcia tribacioides		NS; V

Pilophorus strumaticus		NS
Placidiopsis custnani		NS
Placidiopsis pseudocinerea		CE
Placopsis gelida		NS
Placynthiella dasaea		NS
Placynthiella oligotropha		NS
Placynthium flabellosum		NS
Placynthium pannariellum		NS
Placynthium subradiatum		NS
Placynthium tantaleum		NS
Platismatia norvegica		NS
Poeltinula cerebrina		V
Polyblastia agraria		NS
Polyblastia albida		NS
Polyblastia cruenta		NS
Polyblastia cupularis		NS
Polyblastia deminuta		NS
Polyblastia dermatodes		NS
Polyblastia inumbrata		NS
Polyblastia melaspora		NS
Polyblastia sendtneri		V
Polyblastia theleodes		NS
Polyblastia wheldonii		NS
Polychidium dendriscum		V
Polychidium muscicola		NS
Polysporina lapponica		NS
Porina ahlesiana		NS
Porina atlantica		CE
Porina borreri var. borreri		NS
Porina coralloidea		NS
Porina guentheri var. guentheri		NS
Porina guentheri var. lucens		NS
Porina interjungens		NS
Porina rosei		NS
Porocyphus coccodes		NS
Porpidia contraponenda		NS
Porpidia flavocaerulescens		NS
Porpidia hydrophila		NS
Protoblastenia siebenhaariana		NS
Protomicarea limosa		NS
Protoparmelia atriseda		V
Protoparmelia ochrococca		NS
Protoparmelia oleagina		NS
Protothelenella corrosa		NS
Protothelenella sphinctrinoidella		NS
Pseudocyphellaria aurata		CE
Pseudocyphellaria intricata		NS
Pseudocyphellaria lacerata		V; WCA

Pseudocyphellaria norvegica		NS
Psilolechia clavulifera		NS
Psora decipiens		NS
Psora globifera		CE
Psora lurida		NS
Psora rubiformis		V; WCA
Psoroma hypnorum		NS
Psorotichia schaereri		NS
Pterygiopsis coracodiza		NS
Ptychographa xylographoides		NS
Punctelia ulophylla		NS
Pycnora xanthococca		V
Pyrenocollema elegans		NS
Pyrenocollema monense		NS
Pyrenocollema orustense		NS
Pyrenocollema strontianense		NS
Pyrenocollema sublitorale		NS
Pyrenopsis subareolata		NS
Pyrenula dermatodes		CE
Pyrenula hibernica		V
Pyrenula laevigata		NS
Pyrenula nitida		V
Pyrenula occidentalis		NS
Ramalina chondrina		V
Ramalina pollinaria		NS
Ramalina polymorpha		NS
Ramalina portuensis		NS
Ramonia chrysophaea		NS
Ramonia interjecta		NS
Ramonia nigra		CE
Rhaphidicyrtis trichosporella		NS
Rhizocarpon alpicola		NS
Rhizocarpon badioatrum		NS
Rhizocarpon expallescens		NS
Rhizocarpon furfurosum		NS
Rhizocarpon geminatum		NS
Rhizocarpon infernulum f. sylvaticum		NS
Rhizocarpon polycarpum		NS
Rhizocarpon subgeminatum		NS
Rhizocarpon viridiatrum		NS
Riccia bifurca		WCA
Rimularia badioatra		NS
Rimularia gyrizans		NS
Rimularia insularis		NS
Rimularia intercedens		NS
Rimularia limborina		NS
Rimularia mullensis		NS
Rimularia sphacelata		CE

Rinodina beccariana		NS
Rinodina bischoffii		NS
Rinodina colobinoides		V
Rinodina confragosa		NS
Rinodina conradii		NS
Rinodina degeliana		V
Rinodina efflorescens		NS
Rinodina fimbriata		NS
Rinodina griseosoralifera		NS
Rinodina isidioides		NS
Rinodina mniaraea var. cinnamomea		E
Rinodina orculariopsis		NS
Rinodina oxydata		NS
Roccella fuciformis		NS
Roccella phycopsis		NS
Ropalospora viridis		NS
Sarcogyne clavus		NS
Sarcogyne privigna		NS
Sarcosagium campestre var. campestre		NS
Schadonia fecunda		V
Schismatomma graphidioides		V
Schismatomma umbrinum		NS
Sclerophora pallida		NS; V
Sclerophora peronella		NS
Solenopsora holophaea		NS
Solenopsora liparina		V; WCA
Solorina crocea		NS
Solorina spongiosa		NS
Southbya nigrella		WCA
Sphinctrina turbinate		NS
Squamarina lentigera		CE; WCA
Staurothele areolata		V
Staurothele caesia		NS
Staurothele hymenogonia		NS
Staurothele rufa		E
Staurothele rupifraga		NS
Staurothele succedens		NS
Steinia geophana		NS
Stenocybe bryophila		NS
Stereocaulon condensatum		NS
Stereocaulon delisei		NS
Stereocaulon leucophaeopsis		NS
Stereocaulon nanodes		NS
Stereocaulon saxatile		NS
Stereocaulon symphycheilum		E
Stereocaulon vesuvianum var. nodulosum		NS

Stereocaulon vesuvianum var. symphycheileoides		NS
Sticta canariensis independ.green morph		V
Strangospora moriformis		NS
Strangospora pinicola		NS
Strigula jamesii		NS
Strigula stigmatella var. alpestris		NS
Strigula stigmatella var. stigmatella		E
Strigula taylorii		NS
Synalissa symphorea		V
Teloschistes chrysophthalmus		CE
Teloschistes flavicans		NS; V; WCA
Thelenella modesta		CE
Thelidium impressum		NS
Thelidium minutulum		NS
Thelidium pluvium		NS
Thelidium pyrenophorum		NS
Thelidium zwackhii		NS
Thelocarpon epibolum var. epibolum		NS
Thelocarpon impressellum		NS
Thelocarpon laureri		NS
Thelomma ocellatum		NS
Thelotrema macrosporum		NS
Thrombium epigaeum		NS
Toninia coelestina		V
Toninia mesoidea		NS
Toninia physaroides		CE
Toninia rosulata		E
Toninia thiopsora		NS
Toninia verrucarioides		NS
Trapeliopsis glaucolepidea		NS
Trapeliopsis percrenata		NS
Tylothallia biformigera		NS
Umbilicaria crustulosa		V
Umbilicaria deusta		NS
Umbilicaria hyperborean		NS
Umbilicaria spodochroa		E
Usnea glabrescens		NS
Usnea madeirensis		V
Usnea subscabrosa		V
Usnea wasmuthii		NS
Verrucaria amphibia		NS
Verrucaria bryoctona		NS
Verrucaria ditmarsica		NS
Verrucaria dufourii		NS
Verrucaria elaeina		NS
Verrucaria elaeomelaena		NS

Verrucaria funckii		NS
Verrucaria halizoa		NS
Verrucaria internigrescens		NS
Verrucaria murina		NS
Verrucaria pinguicula		NS
Verrucaria prominula		NS
Verrucaria rheitrophila		NS
Verrucaria simplex		NS
Verrucaria xyloxena		CE
Vestergrenopsis elaeina		V
Vezdaea acicularis		NS
Vezdaea leprosa		NS
Vezdaea retigera		NS
Vezdaea rheocarpa		NS
Wadeana dendrographa		NS
Wadeana minuta		NS
Xanthoparmelia tinctina		V
Xanthoria ucrainica		NS
Xylographa trunciseda		NS

Hornworts: Listing based on the Bryophyte Red List British Bryological Society, 2005 + Preston, C.D. 2006. A revised list of nationally scarce bryophytes. Field Bryology 90: 22-30.

- **NR** **Nationally Rare -** Rare and scarce species occurring in 15 or fewer hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.

Scientific Name	Common Name	Status
Phaeoceros carolinianus		NR

Quillworts: Listings based on The Vascular Plant Red Data List for Great Britain - 2006 Cheffings, C. and Farrell, L. Editors and A tool for assessing the current conservation status of vascular plants on SSSIs in England: May 2006, ENRR 690 Leach & Rusbridge.

- **NR** **Nationally Rare -** Rare and scarce species occurring in 15 or fewer hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **V** **Red Data Book 3 Vulnerable -** not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future. Red listing based on 2001 IUCN guidelines.

Scientific Name	Common Name	Status
Isoetes histrix		NR; V

Clubmosses: Listings based on The Vascular Plant Red Data List for Great Britain - 2006 Cheffings, C. and Farrell, L. Editors and A tool for assessing the current conservation status of vascular plants on SSSIs in England: May 2006, ENRR 690 Leach & Rusbridge

- **NR** **Nationally Rare -** Rare and scarce species occurring in 15 or fewer hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **NS** **Nationally Scarce -** Rare and scarce species occurring in 16-100 hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **E** **Red Data Book 2 Endangered -** not Critically endangered but is facing a very high risk of extinction in the wild in the near future. Red listing based on 2001 IUCN guidelines.

Scientific Name	Common Name	Status
Diphasiastrum complanatum		NR
Lycopodiella inundata		NS, E
Lycopodium annotinum		NS

Stoneworts: Listings based on Review of the status of charophytes stoneworts - N Stewart unpublished.

- **NS** **Nationally Scarce -** Rare and scarce species occurring in 16-100 hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.
- **E** **Red Data Book 2 Endangered -** not Critically endangered but is facing a very high risk of extinction in the wild in the near future. Red listing based on 2001 IUCN guidelines.
- **V** **Red Data Book 3 Vulnerable -** not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future. Red listing based on 2001 IUCN guidelines.
- **Legally Protected:** Wildlife and Countryside Act 1981 Schedule 8 Plants which are protected from: intentional picking, uprooting or destruction; selling, offering for sale, possessing or transporting for the purpose of sale; advertising for buying or selling.

Scientific Name	Common Name	Status
Chara aculeolata		NS
Chara curta		NS
Nitella flexilis		NS
Nitella mucronata		NS
Tolypella glomerata		NS
Chara canescens		E
Chara connivens		E
Chara intermedia		E
Nitella tenuissima		E
Tolypella intricate		E

Tolypella nidifica		E
Tolypella prolifera		E
Chara baltica		V
Chara fragifera		V
Nitella gracilis		V
Nitellopsis obtusa		V
Chara canescens		WCA
Lamprothamnium papulosum		WCA

Legally Protected Fungi: Wildlife and Countryside Act 1981 Schedule 8 Plants which are protected from: intentional picking, uprooting or destruction; selling, offering for sale, possessing or transporting for the purpose of sale; advertising for buying or selling.

Scientific Name	**Common Name**	**Status**
Battarraea phalloides		WCA
Boletus regius		WCA
Buglossoporus pulvinus		WCA
Catellaria laureri		WCA
Hericium erinaceum		WCA

Appendix 14 – Indicators for Social and Community guidelines

Criterion	Indicator	Notes
5.1	Features which provide a seasonal high point	e.g. a carpet of bluebells, heather in bloom, autumn colour, winter wetlands
5.2	Proportion of site covered by paths and their level of use	Informal desire lines represent evidence equivalent to formal hard-core paths. Vegetation encroachment, very narrow paths and significant areas of the site with no paths indicate low usage
5.2	Number of formal and informal access points.	
5.2	Ease of access for less able people or wheelchair users.	Positive features include low gradients; good bound surfaces; absence of steps, kerbs, ruts and muddy patches; kissing gates or open access points; seating places; handrails
5.2	Evidence of use by children for informal play using natural features	Positive features include signs of tree climbing; building dens; stream dams; swings
5.2	Proportion of site visible from adjacent land	This indicator is applicable to sites such as lakes, reservoirs and sewage treatment works used by birdwatchers where physical access is not feasible
5.3	Level of use by schools and education establishments for studying wildlife and the environment	High = regularly used for core curriculum Medium = irregularly used for core curriculum.
5.3	Provision at the site of a ranger or warden service whose remit includes helping the public to understand and appreciate the wildlife of the site	High = full-time rota of paid staff or volunteers Medium = part-time or voluntary service.
5.3	Facilities to help visitors understand and appreciate the site's wildlife. These facilities must be available to all sectors of the community	E.g. a visitor centre and interpretative leaflets or panels on site or information provided offsite i.e. leaflets, websites etc High = freely available on site for most of the time Medium = accessible at weekends or off site
5.3	Level of use for community development and training on an environmental theme.	Links with BTCV, Wildlife Trust, RSPB, Forest Schools, Youth groups, Scouts etc High = 3+ events per year Medium = 1+ events per year
5.4	A group of people have been actively and voluntarily involved in the care and management of the wildlife of the site or actively campaigning for the site for some time	e.g. voluntary wardening, species recording, practical nature conservation management, habitat creation, guided walks and organising events.
5.5	The site is associated with an historic event of significance to the study of wildlife and the environment	e.g. the site may have been featured in an important publication, studied by a famous naturalist or was a key site in the development of ecological understanding

Appendix 15 – Important Arable Plant Areas Outstanding Assemblages (Criterion B)

https://www.plantlife.org.uk/application/files/1315/1784/3682/Important_Arable_Plant_Areas_-_Outstanding_assemblages_B.pdf

Common name	Scientific name	UK Score	UK Status
Pheasant's-eye	*Adonis annua*	8	Endangered (RDB status) (234 hectads, change index of -2.19)
Corncockle	*Agrostemma githago*	9	Critically Endangered (RDB status) (815 hectads, change index of -0.75)
Ground Pine	*Ajuga chamaepitys*	8	Endangered (RDB status) (43 hectads, change index of -0.62)
Hairy Mallow or Rough Marsh-mallow	*Althaea hirsuta*	6	Near Threatened (88 hectads, change index of 0.11)
Small Alison	*Alyssum alyssoides*	6	Nationally Scarce (0 hectads, change index of -1.24)
Blue Pimpernel	*Anagallis arvensis ssp. Foemina*	5	Nationally Scarce (no distribution data available)
Small Bugloss	*Anchusa arvensis*	1	Least Concern (RDB status) (1514 hectads, change index of -0.7)
Corn Chamomile	*Anthemis arvensis*	8	Endangered (RBD status)
Stinking Chamomile	*Anthemis cotula*	7	Vulnerable (RBB status)
Annual Vernal-grass	*Anthoxanthum aristatum*	6	Near Threatened (93 hectads, change index of -2.65)
Bur Chervil	*Anthriscus caucalis*	3	Least Concern (RDB status) (659 hectads, change index of -0.16)
Dense Silky-bent	*Apera interrupta*	4	Nationally Scarce (104 hectads, change index of 0.8)
Loose Silky-bent	*Apera spica-venti*	6	Near Threatened (RDB status) (326 hectads, change index of -0.21)
Slender Parsley-piert	*Aphanes australis*	1	Least Concern (RDB status) (1549 hectads, no change index)
Lamb's-succory	*Arnoseris minima*	9	Extinct (RDB status) (83 hectads, change index of -3.72)
Bristle Oat	*Avena strigosa*	5	Nationally Scarce (No RBD status) (270 hectads, change index of -3.01)
Black Mustard	*Brassica nigra*	2	Least Concern (RDB status) (1080 hectads, change index of -0.02)
Lesser Quaking-grass	*Briza minor*	5	Nationally Scarce (RDB status) (92 hectads, change index of 0.28)
Field Brome	*Bromus arvensis*	6	Near Threatened (no distribution, change index of -3.15)
Interrupted Brome	*Bromus interruptus*	6	Nationally Scarce (no distribution, change index of -1.73)
Rye Brome	*Bromus secalinus*	7	Vulnerable (RDB status) (403 hectads, change index of -1.15)
Greater Pignut	*Bunium bulbocastanum*	6	Near Threatened (13 hectads, change index of 0.14)
Thorow-wax	*Bupleurum rotundifolium*	9	Critically endangered (RDB status) (287 hectads, change index of -4.58)
False Flax	*Camelina sativa*	5	Nationally Scarce (RDB Status) (248 hectads, no change index)
Small Bur-parsley	*Caucalis platycarpos*	9	Extinct (RDB status) (no distribution information)
Cornflower	*Centaurea cyanus*	8	Endangered (884 hectads, change index of -0.39)
Small Toadflax	*Chaenorhinum minus*	1	Least Concern (RBD status) (1468 hectads, change index of -0.63)
Fig-leaved Goosefoot	*Chenopodium ficifolium*	2	Least Concern (RDB status) (745 hectads, 1.9)

Appendix 15 – Important Arable Plant Areas Outstanding Assemblages (Criterion B)

https://www.plantlife.org.uk/application/files/1315/1784/3682/Important_Arable_Plant_Areas_-_Outstanding_assemblages_B.pdf

Maple-leaved Goosefoot	*Chenopodium hybridum*	3	Least Concern (RDB status) (285 hectads, -0.32)
Nettle-leaved Goosefoot	*Chenopodium murale*	7	Vulnerable (RDB status) (412 hectads, -1.63)
Many-seeded Goosefoot	*Chenopodium polyspermum*	2	Least Concern (RDB status) (998 hectads, 0.62)
Upright Goosefoot	*Chenopodium urbicum*	9	Critically Endangered (RDB status) (239 hectads, -4.57)
Tansy Mustard or Flixweed	*Descurainia sophia*	3	Least Concern (RDB status) (636 hectads, -0.29)
Purple Bugloss	*Echium plantagineum*	6	Near Threatened (79 hectads, 0.36)
Common Stork's-bill	*Erodium cicutarium*	1	Least Concern (RDB status) (no distribution, -0.11)
Musk Stork's-bill	*Erodium moschatum*	3	Least Concern (RDB status) (338 hectads, 0.47)
Treacle Mustard	*Erysimum cheiranthoides*	2	Least Concern (RDB status) (929 hectads, -0.65)
Dwarf Spurge	*Euphorbia exigua*	6	Near Threatened (RDB status) (1039 hectads, -1.18)
Broad-leaved Spurge	*Euphorbia platyphyllos*	3	Least Concern (RDB status) (248 hectads, -0.24)
Narrow-leaved Cudweed	*Filago gallica*	9	Extinct (RDB status) (21 hectads, 0.01)
Red-tipped Cudweed	*Filago lutescens*	8	Endangered (RDB status) (85 hectads, -0.34)
Broad-leaved Cudweed	*Filago pyramidata*	8	Endangered (RDB status) (132 hectads, -1.14)
Common Cudweed	*Filago vulgaris*	6	Near Threatened (RDB status) (980 hectads, -1.2)
Tall Ramping-fumitory	*Fumaria bastardii*	2	Least Concern (RDB status) (423 hectads, 0.39)
White Ramping-fumitory	*Fumaria capreolata*	3	Least Concern (RDB status) (482 hectads, 0.31)
Dense-flowered Fumitory	*Fumaria densiflora*	3	Least Concern (RDB status) (307 hectads, -0.37)
Common Ramping-fumitory	*Fumaria muralis ssp. neglecta*	7	Vulnerable (RDB status) (no distribution data)
Western Fumitory	*Fumaria occidentalis*	5	Nationally Scarce (31 hectads, 0.04)
Fine-leaved Fumitory	*Fumaria parviflora*	7	Vulnerable (RDB status) (128 hectads, -0.55)
Purple Ramping-fumitory	*Fumaria purpurea*	4	Least Concern (RDB status) (191 hectads, 0.25)
Martin's Ramping-fumitory	*Fumaria reuteri*	6	Near Threatened (13 hectads, -0.62)
Few-flowered Fumitory	*Fumaria vaillantii*	7	Vulnerable (RDB status) (116 hectads, -0.51)
Red Hemp-nettle	*Galeopsis angustifolia*	9	Critically Endangered (RDB status) (616 hectads, -3.31)
Downy Hemp-nettle	*Galeopsis segetum*	9	Extinct (RDB status) (32 hectads, no index)
Large-flowered Hemp-nettle	*Galeopsis speciosa*	7	Vulnerable (RDB status) (999 hectads, -1.82)
False Cleavers	*Galium spurium*	6	Near Threatened (55 hectads, -1.87)
Corn Cleavers	*Galium tricornutum*	9	Critically Endangered (RDB status) (386 hectads, -4.78)
Nit-grass	*Gastridium ventricosum*	5	Least Concern (RDB status) (159

			hectads, -1.48)
Long-stalked Crane's-bill	*Geranium columbinum*	2	Least Concern (RDB status) (887 hectads, -0.34)
Small-flowered Crane's-bill	*Geranium pusillum*	2	Least Concern (RDB status) (1237 hectads, 0.16)
Corn Marigold	*Glebionis segetum*	7	Vulnerable (RDB status) (1682 hectads, -1.8)
Jagged Chickweed	*Holosteum umbellatum*	6	Near Threatened (no distribution data)
Henbane	*Hyoscyamus niger*	7	Vulnerable (RDB status) (796 hectads, -1.38)
Smooth Cat's-ear	*Hypochaeris glabra*	7	Vulnerable (RDB status) (272 hectads, -1.01)
Wild Candytuft	*Iberis amara*	7	Vulnerable (RDB status) (47 hectads, -1.21)
Sharp-leaved Fluellen	*Kickxia elatine*	2	Least Concern (RDB status) (911 hectads, -0.18)
Round-leaved Fluellen	*Kickxia spuria*	3	Least Concern (RDB status) (622 hectads, -0.07)
Henbit Dead-nettle	*Lamium amplexicaule*	1	Least Concern (RDB status) (1485 hectads, -0.22)
Northern Dead-nettle	*Lamium confertum*	3	Least Concern (RDB status) (397 hectads, -0.4)
Yellow Vetchling	*Lathyrus aphaca*	7	Vulnerable (RDB status) (174 hectads, -1.38)
Small Tree-mallow	*Lavatera cretica*	3	Near Threatened (31 hectads, 0.15)
Venus's-looking-glass	*Legousia hybrida*	6	Least Concern (RDB status) (552 hectads, -0.6)
Greater Venus's-looking-glass	*Legousia speculumveneris*	3	Near Threatened (Only 1 site)
Field Pepperwort	*Lepidium campestre*	8	Least Concern (RDB status) (886 hectads, -0.7)
Corn Gromwell	*Lithospermum arvense*	9	Endangered (RDB status) (614 hectads, -1.91)
Darnel	*Lolium temulentum*	8	Critically Endangered (RDB status) (341 hectads, -4.05)
Grass-poly	*Lythrum hyssopifolium*	2	Endangered (RDB status) (112 hectads, -1.12)
Common Mallow	*Malva neglecta*	6	Least Concern (RDB status) (1196 hectads, -0.22)
Field Cow-wheat	*Melampyrum arvense*	6	Nationally Threatened (50 hectads, -0.49)
Corn Mint	*Mentha arvensis*	1	Least Concern (RDB status) (1965 hectads, -1.3)
Annual Mercury	*Mercurialis annua*	2	Least Concern (RDB status) (793 hectads, 0.28)
Perfoliate Penny-cress or Cotswolds Pennycress	*Microthlaspi perfoliatum*	7	Vulnerable (RDB status) (9 hectads, -0.94)
Weasel's-snout	*Misopates orontium*	7	Vulnerable (RDB status) (488 hectads, -0.89)
Mousetail	*Myosurus minimus*	7	Vulnerable (RDB status) (339 hectads, -0.66)
Cat-mint	*Nepeta cataria*	7	Vulnerable (RDB status) (478 hectads, -1.23)
Common Broomrape	*Orobanche minor*	2	Least Concern (RDB status) (800 hectads, -0.2)

Appendix 15 – Important Arable Plant Areas Outstanding Assemblages (Criterion B)

https://www.plantlife.org.uk/application/files/1315/1784/3682/Important_Arable_Plant_Areas_-_Outstanding_assemblages_B.pdf

Prickly Poppy	*Papaver argemone*	7	Vulnerable (RDB status) (874 hectads, -1.78)
Rough Poppy	*Papaver hybridum*	3	Least Concern (RDB status) (357 hectads, -0.35)
Yellow-juiced Poppy or Babington's Poppy	*Papaver lecoqii*	2	Least Concern (RDB status) (no distribution data)
Corn Parsley	*Petroselinum segetum*	3	Least Concern (RDB status) (482 hectads, 0.12)
Four-leaved Allseed	*Polycarpon tetraphyllum*	5	Nationally Scarce (16 hectads, -0.04)
Northern Knotgrass	*Polygonum boreale*	4	Nationally Scarce (RDB status) (109 hectads, no change index)
Cornfield Knotgrass	*Polygonum rurivagum*	3	Least Concern (RDB status) (274 hectads, no change index)
Corn Buttercup	*Ranunculus arvensis*	9	Critically Endangered (RDB status) (824 hectads, -3.77)
Rough-fruited Buttercup	*Ranunculus muricatus*	6	Near Threatened (18 hectads, no change index)
Small-flowered Buttercup	*Ranunculus parviflorus*	3	Least Concern (RDB status) (497 hectads, -0.08)
Hairy Buttercup	*Ranunculus sardous*	3	Least Concern (RDB status) (544 hectads, 0.24)
Wild Radish	*Raphanus raphanistrum subsp. raphanistrum*	1	Least Concern (RDB status) (no distribution data, -1.39)
Greater Yellow-rattle	*Rhinanthus angustifolius*	7	Nationally Threatened (90 hectads, -0.1)
Shepherd's-needle	*Scandix pecten-veneris*	9	Critically Endangered (RDB status) (780 hectads, -3.65)
Annual Knawel	*Scleranthus annuus*	8	Endangered (RDB status) (983 hectads, -2.68)
Field Madder	*Sherardia arvensis*	1	Least Concern (RDB status) (1635 hectads, -0.94)
Small-flowered Catchfly	*Silene gallica*	8	Endangered (RDB status) (455 hectads, -2.78)
Night-flowering Catchfly	*Silene noctiflora*	7	Vulnerable (RDB status) (686 hectads, -2.04)
White Mustard	*Sinapis alba*	2	Least Concern (RDB status) (1082 hectads, -0.9)
Corn Spurrey	*Spergula arvensis*	7	Vulnerable (RDB status) (no distribution data, -2.3)
Field Woundwort	*Stachys arvensis*	6	Near Threatened (RDB status) (1418 hectads, -1.17)
Cut-leaved Germander	*Teucrium botrys*	6	Near Threatened (12 hectads, -0.42)
Spreading Hedge-parsley	*Torilis arvensis*	8	Endangered (RDB status) (389 hectads, -2.56)
Knotted Hedge-parsley	*Torilis nodosa*	3	Least Concern (RDB status) (708 hectads, -0.36)
Narrow-fruited Cornsalad	*Valerianella dentata*	8	Endangered (RDB status) (600 hectads, -1.86)
Hairy-fruited Cornsalad	*Valerianella eriocarpa*	6	Near Threatened (59 hectads, -0.69)
Broad-fruited Cornsalad	*Valerianella rimosa*	8	Endangered (RDB status) (181 hectads, -2.55)
Green Field-speedwell	*Veronica agrestis*	1	Least Concern (RDB status) (1715 hectads, -0.38)
Grey Field-speedwell	*Veronica polita*	2	Least Concern (1237 hectads, 0.07)
Breckland Speedwell	*Veronica praecox*	6	Near Threatened (6 hectads, no change index)

Appendix 15 – Important Arable Plant Areas Outstanding Assemblages (Criterion B)

https://www.plantlife.org.uk/application/files/1315/1784/3682/Important_Arable_Plant_Areas_-_Outstanding_assemblages_B.pdf

Fingered Speedwell	*Veronica triphyllos*	8	Endangered (RDB status) (33 hectads, -0.82)
Spring Speedwell	*Veronica verna*	8	Endangered (RDB status) (7 hectads, -0.64)
Slender Tare	*Vicia parviflora*	7	Vulnerable (RDB status) (136 hectads, -1.05)
Smooth Tare	*Vicia tetrasperma*	2	Least Concern (RDB status) (1159 hectads, 0.45)
Wild Pansy	*Viola tricolor ssp. tricolor*	6	Near Threatened (RDB status) (no distribution data)

Appendix 16 - Guidance on UK Biodiversity Action Plan Priority Habitat Open mosaic habitats on previously developed land

Definition: explanatory notes

The criteria are for guidance but cannot cover all potential scenarios and an element of expert judgement is therefore needed. It is assumed that the user will be able to recognise plant communities and the key component species.

1. The minimum size refers to the potential open mosaic habitat (OMH), which might be a part of a larger site containing other habitats such as woodland or developed land.

2. Disturbance refers to that resulting from major historical industrial use or development.

2.1 Extraneous materials refer to extensive additions of spoil rather than incidental dumping of litter, broken glass, etc.

2.2 There might be evidence of heavy metal contamination but extensive stands of Calaminarian grasslands are specifically excluded as that is a distinct Priority Habitat.

3. Brief descriptions of the early successional communities:

(a) Annual communities are those comprised mainly of stress tolerant ruderals, which are short in stature and suited to low nutrient availability. Typical examples would be *Arenaria serpyllifolia*, *Centaurium erythrea*, *Linum catharticum* or *Trifolium arvense*.

(b) Moss/liverwort communities can contain both acrocarpous (i.e. usually unbranched, tufted) and pleurocarpous (usually branched, carpeted) mosses and are usually relatively open and less luxuriant than in more mature habitats, often with bare ground present in a fine-grained mosaic. They can occur in discrete patches or interspersed in other communities such as open grassland or heathland. Common species are usually present such as the mosses *Brachythecium rutabulum*, *Dicranum scoparium* or *Hypnum cupressiforme*, and the liverworts *Lophocolea heterophylla* or *Ptilidium ciliare*.

(c) Lichen communities are likely to occur in extensive patches or interspersed with other communities such as open grassland or heathland. Species with a range of growth forms might be present, for example foliose (leaf-like), crustose (crust) or fruticose (shrubby and branched).

(d) Ruderal communities are those composed mainly of taller annuals, biennials or short-lived perennials and typical of slightly more nutrient-rich, or less disturbed conditions than the annual communities. Typical examples would be *Daucus carota*, *Linaria vulgaris*, *Medicago lupulina* or *Reseda luteola*.

(e) Inundation communities are comprised of species suited to periodic, often seasonal flooding. Vegetation is usually interspersed with bare areas of mud which can have a caked surface during dry periods and can result in annuals establishing. Typical species would be *Alopecurus geniculatus*, *Juncus bufonius*, *Persicaria maculosa* or *Ranunculus flammula*.

(f) Open grassland is comprised mainly of perennial, stress-tolerant species of short stature with patches of bare ground at very fine-grained scale and often with a significant number of annual species or lichens in the sward.

Typical species would be *Festuca ovina*, *Hypochaeris radicata*, *Pilosella officinarum* or *Rumex acetosella*.
(g) Flower-rich grassland is a more typical, mature community with fewer gaps and characterised by more robust mesotrophic forbs such as *Centaurea nigra*, *Lotus corniculatus*, *Ranunculus acris* or *Trifolium pratense*.
(h) Heathland communities are composed mainly of dwarf shrubs, often interspersed or in mosaics with graminoids, bryophytes or lichens. On OMH they tend to have a more open structure with less plant litter and other organic matter build up on the substrate than in more typical heathlands. Typical species include *Calluna vulgaris*, *Deschampsia flexuosa*, *Festuca ovina* or *Nardus stricta*.
3.1 Annex I shows species of vascular plant known to be associated with, but not confined to, the habitat in certain areas and/or substrates.
3.2 Other plant species associated with the particular edaphic conditions might also be present, for example ericaceous species on acidic sites. Species composition will also vary with geographic location and site age.
3.3 One of the principal reasons for the habitat being a priority is its importance for invertebrates. Many have very precise requirements for habitat 'niches' within their landscape. As well as areas of bare ground and food plants, these may be for sheltered places at various times of the year, or for rough vegetation or cover at others. At any particular site, features such as scrub may be essential to maintain the invertebrate value of the main habitat. Therefore, scattered scrub (up to 10–15% cover) may be present and adds to the conservation value of the site. Other communities or habitats might also be present (e.g. reed swamp, open water), but early successional communities should comprise the majority of the area.

4. 'Loose bare' substrate is intended to separate substrate potentially colonisable by plants from large expanses of sealed surface (concrete, tarmac, etc) where vegetation could only establish if it is broken up or heavily weathered.

4.1 Bare substrate can occur at a range of spatial scales, from unvegetated patches easily seen from a distance, to small, open spaces between individual plants within a community. On some substrates, for example coal spoil, the patches of bare ground may be 10cm across or less. A site with a wide variety of patch sizes could also qualify.
4.2 Bare substrate also implies absence of organic matter accumulation.

5. A mosaic is defined as an area where a range of contiguous plant community types occur in transition with one another, usually with ecotone habitat gradients and repeated occurrences of each community, and often at a small scale.

5.1 The mosaic could comprise either:

- a mixture of one of the habitats (a)–(c) or (e)–(h) plus bare ground together forming a mosaic;
- a mixture of two or more of the habitats (a)–(h) in a mosaic, with adjacent bare ground;
- a mixture of two or more of the habitats (a)–(h) plus bare ground together forming a mosaic.

5.2 Continuous blocks of a closed plant community greater than 0.25ha would be classified as a habitat other than OMH, although those containing very fine-grained mosaics might qualify.