



The Wildlife Trust for
**Birmingham &
Black Country**



Technical Report of the **Birmingham and Black Country Nature Improvement Area Ecological Strategy 2017 - 2022**



**B&BC NIA Ecological Strategy
2017 - 2022**

Technical Report of the **Birmingham and Black Country Nature Improvement Area Ecological Strategy 2017 - 2022**

Produced by The Wildlife Trust for Birmingham and the Black Country with support from **EcoRecord**, The Local Environmental Records Centre for Birmingham and the Black Country.

With thanks to Professor Ian Trueman for his contributions and guidance.



The Wildlife Trust for
**Birmingham &
Black Country**



Birmingham and Black Country Nature Improvement Area

Ecological Strategy 2017-2022

1. The need for a landscape-scale approach to nature conservation in Birmingham and the Black Country

Much of the urban landscape is dominated by intensive and changing human activities where biological diversity can be specialised and fairly limited. Nevertheless, even in urban areas ‘ecological landscapes’ persist, where human influence has been relatively benign and where habitats rich in biodiversity are often found.

The ‘Making Space for Nature’ review, carried out by Sir John Lawton in 2010, found that much of England’s wildlife is now restricted to wildlife sites (both legally protected areas and others) that consist largely of semi-natural habitats. Lawton also found that this collection of wildlife sites does not comprise a coherent and resilient ecological network capable of responding to the challenges of climate change and other pressures, whilst also enabling the reversal of the current trend of biodiversity decline: for many species it is difficult to survive in small, isolated sites, especially in the longer-term, and particularly in the context of a changing climate.

The review concluded that it is only by establishing a resilient ecological network that we will effectively be able to conserve biodiversity and ecosystem services, delivering many benefits to people, whilst also making efficient use of scarce land and resources. Lawton recommended that priorities in England should include more, bigger, better and joined sites for nature.

The solution to halting biodiversity loss will therefore not only require the maintenance of a number of high quality sites which contain the range and area of habitats that species require, but also the establishment and reinforcement of ecological connections that allow species, or their genes, to move between these sites. An ecological network as defined by Lawton is this network of high quality sites, or ‘core areas’, protected by ‘buffer zones’ and linked by ‘landscape corridors’, ‘linear corridors’ and ‘stepping-stone corridors’.

Birmingham and the Black Country’s ‘core areas’ are thus essential for the survival of many plants and animals in the conurbation, and represent a source of solace and enjoyment for urban people. They are, however, typically small and under pressure and rarely contain all the features needed to support their conservation. It is crucial that these areas are protected and their nature conservation value maintained. It is also critical to ensure that ecological connections exist to allow species to move between them.

It is clear, therefore, that to reverse the decline in UK wildlife and biodiversity we need to think differently. Nationally the Wildlife Trusts’ collective response has been to move the focus from individual sites and ‘biodiversity hotspots’ to a more comprehensive landscape-scale approach - an approach that evidence shows is essential for nature’s recovery. The Wildlife Trusts’ call these networks ‘Living Landscapes’, and the ambition is to create strong, resilient and ecologically diverse landscapes where people live their everyday lives. The Birmingham and Black Country Nature Improvement Area (NIA) is our Living Landscape, and since 2012 we’ve developed an ecological strategy built on analysis of data and evidence collected over 17 years to deliver this vision for our urban area.

2. Identifying the ecological network of Birmingham and the Black Country

2.1 Sites designated for their nature conservation value

Many of the individual sites that contribute to the ecological network of Birmingham and the Black Country have been recognised in statutory (Special Areas of Conservation and Sites of Special Scientific Interest) and non-statutory (Sites of Importance for Nature Conservation and Sites of Local Importance for Nature Conservation) designations.

2.2 Using the distribution of habitat quality indicator species to identify core and linking areas

In addition to sites designated for their conservation value it is necessary to understand, recognise, map and evaluate the existing ecological network of the whole landscape. In order to undertake this comprehensive survey data that covers the whole area is required. In Birmingham and the Black Country this was done on the basis of a comprehensive survey of vascular plant diversity which took place between 1995-2012 for the production of the Flora of Birmingham and the Black Country. In that survey a list of species spontaneously present was prepared for every one of the 715 one km squares ('monads') which make up the conurbation. Many of the 1449 mappable species are widely distributed in the landscape and are therefore not appropriate markers of biodiversity. Others may be much scarcer but represent recent incursions from cultivation or other forms of introduction and do not characterise vegetation of nature conservation value. Other relatively uncommon species, designated as 'axiophytes', tend to be associated with sites with nature conservation value and constitute a good surrogate for indicating habitat richness.

2.2.1 Definition of Axiophytes

This concept originated with the Botanical Society of Britain and Ireland (BSBI). It was designed to help in the recognition, evaluation and monitoring of sites of botanical interest by relating their species to those of the whole recording unit within which they occur. For the BSBI the recording unit is a vice-county, roughly equivalent to the counties which existed circa 1850. Vice-counties are ideally surveyed at the 'tetrad' level, i.e. a list is made for each 2km x 2km area on the ordnance survey map.

The objective of an axiophyte list is to identify species which indicate habitat quality within a vice-county. The BSBI has attempted to define axiophytes as follows:

- Species 90% restricted to habitats of nature conservation importance
- Species recorded in fewer than 25% of tetrads in a vice-county
- Very rare species should be considered for omission as chance occurrences
- There is a need to apply these criteria with discretion

See <http://bsbi.org/axiophytes> for more information.

2.3 Use of the axiophyte concept in delimiting the ecological network in B&BC

So far, the BSBI Botanical Recorders of 27 UK and Ireland vice-counties have devised axiophyte lists. Birmingham and the Black Country lies in three vice-counties: Staffordshire, Warwickshire and Worcestershire. Staffordshire and Worcestershire have axiophyte lists, Warwickshire so far does not. Since the three vice counties cover diverse geographical areas they are very different lists, and neither of the ones which exist give a good representation of which species are significant in this way in Birmingham and the Black Country.

The Flora survey of Birmingham and the Black Country has allowed its authors to identify a set of 279 axiophytes for the conurbation, using the BSBI criteria, but at the monad level of differentiation. An existing ecological network for the conurbation is therefore based on a coincidence map of these 279 species, i.e. a map in which each monad is represented by the number of axiophyte species which it contains. This map is thus a surrogate for habitat richness across the conurbation, although it should be understood it is not a site designation, since theoretically habitats of high value and areas of intense human activity can occur in the same monad (a monad is 100 hectares). Axiophytes found predominantly in semi-natural situations and ones found predominately in post-industrial situations in the conurbation have both been used in the definition of the ecological network. The list of the 279 axiophytes is shown in appendix 1.

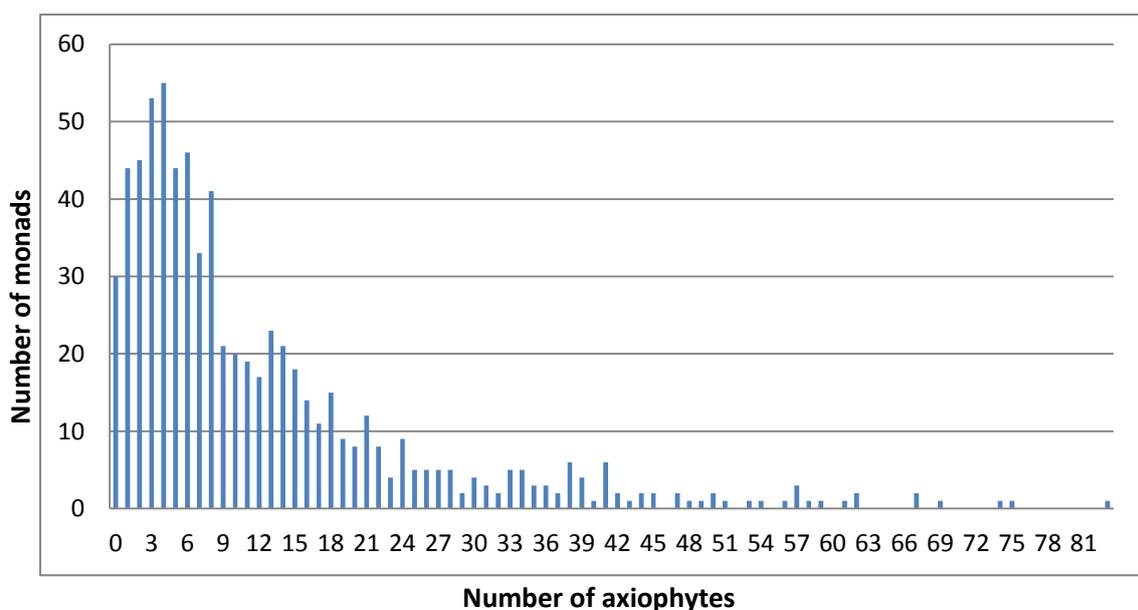
The majority of monads have relatively low numbers of axiophyte species. Just over 390 monads have 8 axiophytes or less (see figure 1). At the other extreme, there are 80 monads which have 28 (90th centile) or more axiophyte species.

2.3.1 Core Ecological Areas in Birmingham and the Black Country are therefore based on monads with 28 or more axiophytes per monad. Not unsurprisingly the core areas encompass the squares which contain our

most celebrated statutory and non-statutory sites. Where monads contain small fragments of statutory sites (SACs and SSSIs) but do not qualify as core monads on the basis of their axiophyte scores, they have been added to the core. Also added to the core are areas adjacent to core squares which contain the continuation of the landscape feature of the core square (these are normally monads which are only partially within B&BC). In both these instances the areas have been added to the core monads using a 250m grid as the unit of representation for mapping purposes.

2.3.2 Ecological Linking Areas are more difficult to delimit since their value can be entirely related to their position, as well as to their biodiversity. The cut-off point to define the linking areas isn't necessarily clear cut but as can be observed in the graph below, grouping the monads according to the number of axiophytes present and plotting their distribution can assist in this. There are a large number of monads with 0-8 axiophytes, corresponding to the areas with fewer remnants of important habitats, followed by a section where the total numbers of monads drops, the 9-27 axiophytes range. The linking areas have therefore been defined as those areas on the map where there are monads in the 9-27 axiophyte range. In addition, where monads contain fragments of non-statutory sites (SINCs and SLINCs) but do not qualify as linking monads on the basis of their axiophyte scores, they have been added to the core (using a 250m grid as the unit of representation for mapping purposes).

Figure 1. Distribution of the numbers of monads for each total axiophyte value



The axiophyte analysis can only be made on the basis of the vascular plants, which are the backbone of biodiversity and have been satisfactorily defined in the Flora project. The use of plants in this way dates back to the identification of the UK's National Nature Reserves by Derek Ratcliffe in the 1970s. Nevertheless, site designation for nature conservation will obviously include other criteria and hence both assessments have been used in the definition of the network. The result of this analysis is shown in the map below.

Summary of how the Core Ecological Areas, Ecological Linking Areas and Ecological Opportunity Areas were identified

The ecological network of Birmingham and the Black Country is based on a coincidence map of 279 axiophyte species - i.e. a map in which each monad (1km²) is represented by the number of these plant species which it contains. Monads or parts of monads containing sites designated for their nature conservation value, or where significant landscape features continue from adjacent core areas, are also variously included in the Core Ecological Areas and Ecological Linking Areas at a 250m x 250m square resolution. The Ecological Strategy map is thus a surrogate for habitat richness across the conurbation.

Core Ecological Areas:

- All monads that contain 28 or more axiophytes.
- Parts of monads (250m x 250m square units) containing Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs).

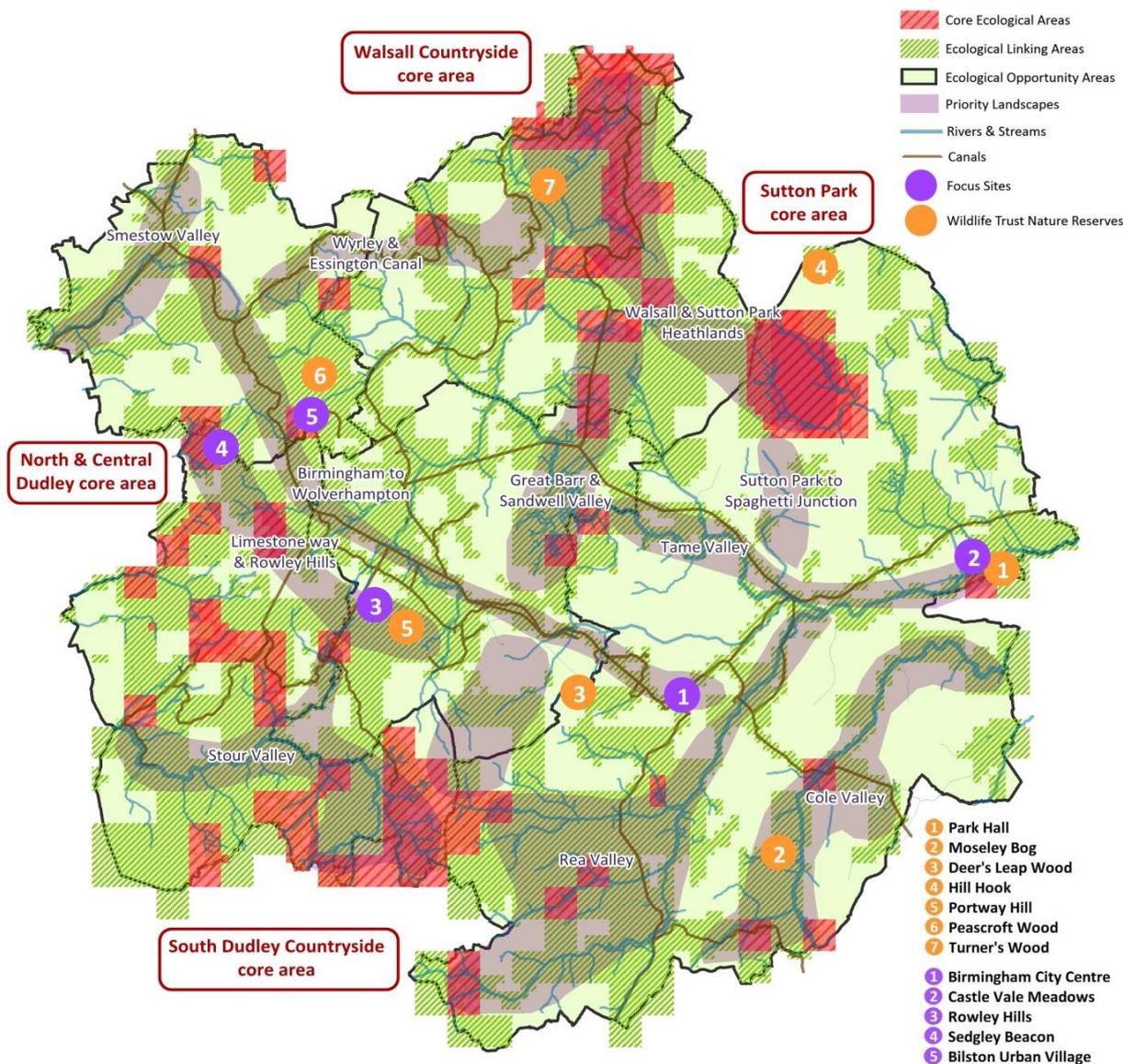
Ecological Linking Areas:

- All monads that contain 9-27 axiophytes.
- Parts of monads (250m x 250 square units) containing Local Nature Reserves (LNRs), Sites of Importance for Nature Conservation (SINCs) and (Sites of Local Importance for Nature Conservation (SLINCs).

Ecological Opportunity Areas:

- All monads and parts of monads that contain fewer than 9 axiophytes and that do not contain sites designated

Figure 2. Birmingham and the Black Country NIA ecological strategy map



Contains Ordnance Survey data © Crown copyright and database right 2016

3. Describing the ecological network of Birmingham and the Black Country

The ecological network of Birmingham and the Black Country has been mapped and all parts of the landscape have been assigned to one of three broad categories:

- a) The '**Core Ecological Areas**' are the areas of the conurbation that are richest in wildlife. As might be expected these include the parts of our landscape least affected by urban development – such as Sutton Park and the countryside in the south of the borough of Dudley - but it also includes areas where wildlife has reclaimed sites that were once at the heart of the industrial Black Country.
- b) Joining the Core Areas and the wider landscape together are '**Ecological Linking Areas**'. These include the majority of our remaining 'natural' open spaces where many of the more frequently encountered species and habitats exist - often in very close proximity to dense human populations. Much of this part of the network is concentrated around key wildlife corridors including the extensive system of rivers, streams and canals.
- c) Outside of the Core areas and Ecological Linking Areas lie the '**Ecological Opportunity Areas**'. These are the most intensively used parts of the landscape where the greenspace is dominated by formal parks, public open spaces, gardens, road verges and productive farmland.

4. Using the ecological network mapping to prioritise action that benefits biodiversity

For each broad category a priority for targeting biodiversity action has been identified:

1. **Protect** Core Ecological Areas through pro-active engagement with the planning of development, advocacy, supporting land-owners to manage land sympathetically and encouraging sustainable land-use.
2. **Enhance** Ecological Linking Areas by restoring habitats and improving existing sites.
3. **Create** new sites in Ecological Opportunity Areas that together form networks of sites that allow wildlife to move through the most developed parts of the conurbation.

5. Wildlife Trust priority landscapes and focus sites

Working with our partner organisations, the Wildlife Trust has used the ecological network mapping to identify locations where we will prioritise the development of new Nature Improvement Area projects. These Focus Sites and Priority Landscapes, along with our own nature reserves, are the current focus of our ecological improvement work.

6. NIA achievements 2012-2016

- 250 sites improved for nature
- 111 hectares of woodland/improved created
- 78 hectares of grassland improved/created
- 6 hectares of heathland improved/created
- 6.5 kilometres of hedgerow habitat improved/created
- 8.5 kilometres of wetland corridor improved/created
- 60 partners organisations involved
- 45,000 volunteer hours contributed to projects
- 46 schools involved
- 150 community groups involved in project delivery

For further information on the Birmingham and Black Country Nature Improvement Area and to view case studies of nature improvement projects undertaken since 2012 see our website bbcwildlife.org.uk/NIA.

References

Lawton, J.H. *et al.* (2010) Making Space for Nature: a review of England's wildlife sites and ecological networks. Report to Defra.

Trueman, I. Poulton, M. Reade, P. (2013). *Flora of Birmingham and the Black Country*. Newbury: Pisces.

Produced by The Wildlife Trust for Birmingham and the Black Country with support from EcoRecord, The Local Environmental Records Centre for Birmingham and the Black Country.

With thanks to Professor Ian Trueman for his contributions and guidance.



The Wildlife Trust for
**Birmingham &
Black Country**



Appendix 1. List of Birmingham and Black Country axiophyte species used in the analysis.

Name	No. sq.				
		<i>Carex dioica</i>	1	<i>Empetrum nigrum</i> agg.	2
<i>Achillea ptarmica</i>	40	<i>Carex disticha</i>	8	<i>Epilobium palustre</i>	41
<i>Adoxa moschatellina</i>	12	<i>Carex echinata</i>	7	<i>Epipactis helleborine</i>	21
<i>Agrimonia eupatoria</i>	25	<i>Carex hostiana + hyb with demissa</i>	2	<i>Epipactis phyllanthes</i>	1
<i>Agrostis canina.</i>	30	<i>Carex laevigata</i>	2	<i>Epipactis purpurata</i>	3
<i>Agrostis vinealis</i>	7	<i>Carex nigra</i>	66	<i>Equisetum fluviatile</i>	56
<i>Aira caryophyllea</i>	33	<i>Carex oederi</i>	31	<i>Equisetum palustre</i>	39
<i>Aira praecox</i>	66	<i>Carex pallescens</i>	5	<i>Equisetum sylvaticum</i>	21
<i>Ajuga reptans</i>	42	<i>Carex panicea</i>	23	<i>Equisetum telmateia</i>	23
<i>Alchemilla filicaulis subsp. vestita</i>	29	<i>Carex paniculata</i>	19	<i>Erica cinerea</i>	9
<i>Allium ursinum</i>	133	<i>Carex pilulifera</i>	12	<i>Erica tetralix</i>	13
<i>Anacamptis pyramidalis</i>	8	<i>Carex pseudocyperus</i>	37	<i>Erigeron acris</i>	45
<i>Anagallis tenella</i>	3	<i>Carex pulicaris</i>	2	<i>Eriophorum angustifolium</i>	11
<i>Anemone nemorosa</i>	93	<i>Carex remota</i>	90	<i>Eriophorum vaginatum</i>	6
<i>Angelica sylvestris</i>	164	<i>Carex riparia</i>	18	<i>Erophila verna s.l.</i>	79
<i>Anthyllis vulneraria</i>	44	<i>Carex rostrata</i>	15	<i>Euphrasia sp.</i>	13
<i>Apera spica-venti</i>	3	<i>Carex strigosa</i>	2	<i>Festuca filiformis</i>	16
<i>Apium inundatum</i>	3	<i>Carex sylvatica</i>	46	<i>Filago minima</i>	3
<i>Arenaria serpyllifolia s.l.</i>	52	<i>Carlina vulgaris</i>	2	<i>Filago vulgaris</i>	9
<i>Asplenium adiantum-nigrum</i>	29	<i>Catabrosa aquatica</i>	2	<i>Filipendula ulmaria</i>	169
<i>Asplenium ceterach</i>	11	<i>Catapodium rigidum</i>	40	<i>Fragaria vesca</i>	78
<i>Athyrium filix-femina</i>	99	<i>Centaurea scabiosa</i>	47	<i>Frangula alnus</i>	34
<i>Betonica officinalis</i>	53	<i>Centaureum erythraea</i>	113	<i>Fumaria muralis</i>	17
<i>Bidens cernua</i>	9	<i>Cerastium semidecandrum</i>	15	<i>Galium album</i>	36
<i>Bidens tripartita</i>	27	<i>Ceratocarpus claviculata</i>	6	<i>Galium odoratum</i>	34
<i>Blackstonia perfoliata</i>	4	<i>Chaenorhinum minus</i>	22	<i>Galium palustre s.l.</i>	88
<i>Blechnum spicant</i>	12	<i>Chaerophyllum temulum</i>	32	<i>Galium saxatile</i>	65
<i>Brachypodium sylvaticum</i>	156	<i>Chenopodium polyspermum</i>	39	<i>Galium uliginosum</i>	3
<i>Briza media</i>	27	<i>Chrysosplenium alternifolium</i>	1	<i>Genista tinctoria</i>	7
<i>Bromopsis erecta</i>	13	<i>Chrysosplenium oppositifolium</i>	47	<i>Gentianella amarella</i>	1
<i>Bromopsis ramosa</i>	104	<i>Cirsium dissectum</i>	6	<i>Geum rivale</i>	4
<i>Butomus umbellatus</i>	92	<i>Cirsium palustre</i>	112	<i>Geum x intermedium</i>	1
<i>Calamagrostis epigejos</i>	16	<i>Clematis vitalba</i>	78	<i>Glyceria declinata</i>	49
<i>Calluna vulgaris</i>	64	<i>Comarum palustre</i>	16	<i>Glyceria notata</i>	34
<i>Caltha palustris</i>	79	<i>Dactylorhiza fuchsii</i>	39	<i>Hordelymus europaeus</i>	1
<i>Campanula patula</i>	2	<i>Dactylorhiza maculata</i>	2	<i>Hydrocotyle vulgaris</i>	17
<i>Campanula rotundifolia</i>	32	<i>Dactylorhiza praetermissa +hybs</i>	58	<i>Hypericum pulchrum</i>	4
<i>Cardamine amara</i>	28	<i>Danthonia decumbens</i>	25	<i>Hypericum tetrapterum</i>	68
<i>Cardamine impatiens</i>	2	<i>Daucus carota ssp. carota</i>	141	<i>Inula conyzae</i>	9
<i>Carex acuta</i>	2	<i>Deschampsia flexuosa</i>	154	<i>Isolepis setacea</i>	22
<i>Carex acutiformis</i>	80	<i>Drosera rotundifolia</i>	2	<i>Juncus acutiflorus</i>	76
<i>Carex binervis</i>	6	<i>Dryopteris affinis s.l.</i>	28	<i>Juncus bulbosus</i>	10
<i>Carex canescens</i>	2	<i>Dryopteris carthusiana</i>	34	<i>Juncus squarrosus</i>	27
<i>Carex caryophyllea</i>	4	<i>Eleocharis palustris</i>	68	<i>Lamias. galeobd. ssp. montanum</i>	91
<i>Carex demissa</i>	17	<i>Eleocharis quinqueflora</i>	2	<i>Lathraea squamaria</i>	6
<i>Carex diandra</i>	2	<i>Eleogiton fluitans</i>	1	<i>Lathyrus linifolius</i>	10

<i>Lathyrus nissolia</i>	12	<i>Poa nemoralis</i>	56	<i>Sherardia arvensis</i>	23
<i>Leontodon hispidus</i>	65	<i>Polygala serpyllifolia</i>	1	<i>Silaum silaus</i>	6
<i>Limosella aquatica</i>	1	<i>Polygala vulgaris</i>	6	<i>Silene flos-cuculi</i>	48
<i>Linum catharticum</i>	35	<i>Polystichum aculeatum</i>	7	<i>Silene vulgaris</i>	136
<i>Lithospermum officinale</i>	2	<i>Polystichum setiferum</i>	29	<i>Solidago virgaurea</i>	1
<i>Lotus pedunculatus</i>	116	<i>Populus nigra ssp. betulifolia</i>	26	<i>Sorbus torminalis</i>	7
<i>Luronium natans</i>	6	<i>Potamogeton berchtoldii</i>	4	<i>Sparganium emersum</i>	118
<i>Luzula multiflora</i>	28	<i>Potamogeton crispus x friesii</i>	5	<i>Spergularia rubra</i>	10
<i>Luzula pilosa</i>	5	<i>Potamogeton friesii</i>	4	<i>Stachys arvensis</i>	23
<i>Lysimachia nemorum</i>	23	<i>Potamogeton lucens</i>	14	<i>Stachys palustris</i>	17
<i>Lysimachia vulgaris</i>	20	<i>Potamogeton obtusifolius</i>	3	<i>Stellaria alsine</i>	44
<i>Lythrum portula</i>	6	<i>Potamogeton perfoliatus</i>	46	<i>Stellaria holostea</i>	140
<i>Malus sylvestris sens.str.</i>	65	<i>Potamogeton polygonifolius</i>	4	<i>Stellaria pallida</i>	5
<i>Melampyrum pratense</i>	1	<i>Potamogeton pusillus</i>	7	<i>Succisa pratensis</i>	45
<i>Melica uniflora</i>	64	<i>Potentilla anglica</i>	6	<i>Tamus communis</i>	95
<i>Mentha arvensis</i>	20	<i>Potentilla erecta</i>	87	<i>Taraxacum sect. Celtica</i>	18
<i>Menyanthes trifoliata</i>	13	<i>Potentilla sterilis</i>	51	<i>Taraxacum sect. Erythrosperma</i>	1
<i>Mercurialis perennis</i>	173	<i>Potentilla x mixta</i>	24	<i>Taraxacum sect. Naevosa</i>	1
<i>Milium effusum</i>	55	<i>Poterium sanguisorba subsp. sanguisorba</i>	5	<i>Taraxacum sect. Spectabilia</i>	1
<i>Moehringia trinervia</i>	32	<i>Pulicaria dysenterica</i>	37	<i>Teucrium scorodonia</i>	64
<i>Molinia caerulea</i>	34	<i>Quercus petraea</i>	84	<i>Thalictrum flavum</i>	3
<i>Montia fontana</i>	4	<i>Ranunculus aquatilis s.l.</i>	40	<i>Thlaspi arvense</i>	36
<i>Myosotis secunda</i>	1	<i>Ranunculus auricomus</i>	9	<i>Tilia cordata</i>	33
<i>Nardus stricta</i>	43	<i>Ranunculus circinatus</i>	9	<i>Torilis japonica</i>	59
<i>Odontites vernus</i>	117	<i>Ranunculus flammula</i>	45	<i>Trifolium arvense</i>	132
<i>Oenanthe fistulosa</i>	2	<i>Ranunculus hederaceus</i>	9	<i>Trifolium medium</i>	165
<i>Ononis repens</i>	20	<i>Ranunculus omiophyllus</i>	2	<i>Trifolium micranthum</i>	25
<i>Ophioglossum vulgatum</i>	5	<i>Ranunculus penicillatus</i>	25	<i>Trifolium striatum</i>	9
<i>Ophrys apifera</i>	29	<i>Reseda lutea</i>	110	<i>Triglochin palustris</i>	7
<i>Oreopteris limbosperma</i>	1	<i>Rhamnus cathartica</i>	5	<i>Ulex gallii</i>	57
<i>Ornithopus perpusillus</i>	11	<i>Rhinanthus minor agg.</i>	62	<i>Utricularia sp.</i>	2
<i>Orobanche minor</i>	4	<i>Sagina nodosa</i>	3	<i>Vaccinium myrtillus</i>	25
<i>Oxalis acetosella</i>	51	<i>Sagittaria sagittifolia</i>	72	<i>Vaccinium oxycoccos</i>	3
<i>Parentucellia viscosa</i>	2	<i>Salix aurita + hybrids</i>	18	<i>Vaccinium vitis-idaea</i>	8
<i>Parnassia palustris</i>	2	<i>Sambucus ebulus</i>	4	<i>Valeriana dioica</i>	3
<i>Pedicularis palustris</i>	2	<i>Sanguisorba officinalis</i>	91	<i>Valeriana officinalis</i>	14
<i>Pedicularis sylvatica</i>	4	<i>Sanicula europaea</i>	12	<i>Veronica beccabunga</i>	158
<i>Persicaria bistorta</i>	56	<i>Saxifraga granulata</i>	1	<i>Veronica catenata</i>	7
<i>Persicaria hydropiper</i>	47	<i>Scabiosa columbaria</i>	4	<i>Veronica montana</i>	47
<i>Persicaria minor</i>	3	<i>Schedonorus giganteus</i>	124	<i>Veronica officinalis</i>	14
<i>Phleum bertolonii</i>	32	<i>Schoenoplectus lacustris</i>	64	<i>Veronica polita</i>	15
<i>Picris hieracioides</i>	12	<i>Scirpus sylvaticus</i>	5	<i>Veronica scutellata</i>	5
<i>Pilosella praealta</i>	3	<i>Scutellaria minor</i>	1	<i>Vicia tetrasperma</i>	82
<i>Pimpinella saxifraga</i>	21	<i>Senecio aquaticus</i>	45	<i>Viola hirta</i>	1
<i>Pinguicula vulgaris</i>	2	<i>Senecio erucifolius</i>	34	<i>Viola palustris</i>	4
<i>Plantago media</i>	21	<i>Senecio sylvaticus</i>	7	<i>Viola reichenbachiana</i>	30
<i>Poa angustifolia</i>	5	<i>Senecio viscosus</i>	65		
<i>Poa compressa</i>	26	<i>Serratula tinctoria</i>	1		