



REVISED PLAN NOVEMBER 2021

LOWLAND NEUTRAL GRASSLAND

1. INTRODUCTION

This plan includes most forms of unimproved neutral grassland across the enclosed lowland landscapes; also semi-improved grasslands i.e. those that have had some improvement, but still retain a suite of old grassland species, a frequent situation in this area. Unimproved neutral grassland is associated with neutral clays and alluvial soils which have not been subject to alteration through the use of fertilizers, slurry and herbicides. Characteristically, it is botanically species-rich and supports many birds and insects.



Green-winged orchid
© Steven Cheshire

The grasslands are managed either as hay meadows or pastures and intensive agricultural practices are the main threat. The Habitat Statement in the [UK Steering Group Report on Biodiversity](#) (1995) estimated that less than 15000ha of species-rich neutral grassland survived in the UK; this sub-region is likely to have lost in excess of 95% of this habitat resource over the past 100 years. Meadows are usually small (1-3ha) and occur singly, or in small groups, where they may be separated by established hedgerows, in an otherwise intensively farmed landscape.

Most are traditionally cut for hay in late June or early July with the aftermath grazed in the autumn. It has been shown grasshopper density is significantly higher in meadows not cut before mid-July; also that a mosaic of sward height created by leaving some less regularly mown strips is beneficial for the completion of their life cycles (RSPB, 2014).

In non-agricultural settings, neutral grasslands are less frequent, but additional examples may be found in old industrial sites, quarries and spoil-heaps, urban green-space, churchyards, roadside verges, active and disused railways and a variety of other localities.

Disused railways have supported in the past some of the richest plant communities in the county (200+ species) though now are suffering from loss of grassland habitat due to scrub encroachment on approximately 90% of sites. They are also some of the best sites for invertebrates in the Midlands, with many nationally rare species. One of these, the bloody-nosed beetle (*Timarcha tenebricosa*), has suffered a very serious decline in the county in the last hundred years or so and it is currently confined to localised areas in the Lawford Heath area west of Rugby ([Bloody-nosed beetle Action Plan](#)). One of these sites, the Cawston Greenway, now a designated Local Wildlife Site (LWS), is the railway cutting due west of Cawston Grange Farm where the beetle was discovered in 1975. Disused railway lines can also act as wildlife corridors and public walkways, often passing through intensive farmland or heavily built-up areas though their effect is now limited due to loss of grassland.

In terms of [National Vegetation Classification](#) plant communities, local examples comprise mainly crested dog's-tail (*Cynosurus cristatus*) – common knapweed (*Centaurea nigra*)

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MG5 grassland, great burnet (*Sanguisorba officinalis*) - meadow foxtail (*Alopecurus pratensis*) MG4 floodplain meadow and crested dog's tail - marsh marigold (*Caltha palustris*) grassland MG8 flood-pasture. Important plants of this habitat category in the sub-region include dyer's greenweed (*Genista tinctoria*), green-winged orchid (*Anacamptis morio*), pepper saxifrage (*Silaum silaus*), saw-wort (*Serratula tinctoria*) and adder's-tongue fern (*Ophioglossum vulgatum*). Lowland meadows and pastures are important habitats for a number of farmland birds including skylark (*Alauda arvensis*), meadow pipit (*Anthus pratensis*) and linnet (*Carduelis cannabina*).

Many sorts of bees, flies, wasps, beetles, bugs and moths need neutral grassland, though the fauna will vary according to the management and history of a site and whether it lies close to other habitats such as wetlands or woodlands.

General grassland butterfly species would include small skipper (*Thymelicus sylvestris*), Essex skipper (*Thymelicus sylvestris*), common blue (*Polyommatus icarus*), meadow brown (*Maniola jurtina*), ringlet (*Aphantopus hyperantus*), small heath (*Aphantopus hyperantus*) and orange tip (*Anthocharis cardamines*). The marbled white butterfly (*Melanargia galathea*) is a useful indicator species for assessing the quality of grassland, also small heath (*Coenonympha pamphilus*), small copper (*Lycaena phlaeas*), common blue (*Polyommatus icarus*) and brown argus (*Aricia agestis*); the presence of all 5 species breeding on a site puts it in the top 5% of grasslands in Warwickshire (Mike Slater, pers.comm.2021).

Day-flying grassland moths such as Chimney Sweeper (*Odezia atrata*), Narrow-bordered Five-spot Burnet (*Zygaena lonicerae*), Six-spot Burnet (*Zygaena filipendulae*), Mother Shipton (*Callistege mi*), Burnet Companion (*Euclidia glyphica*) and Latticed Heath (*Chiasmia clathrata*) are indicators of good quality unimproved grassland generally (K.Warmington, pers.comm. 2015).

Any rough grassland associated with this habitat would be valuable for barn owls (*Tyto alba*). Flood plain meadow and flood pasture habitats are particularly important for the number of waders such as snipe (*Gallinago gallinago*), lapwing (*Vanellus vanellus*) and curlew (*Numenius arquata*) they support. These habitats are much scarcer in Warwickshire, Coventry and Solihull, and are mainly confined to the valleys of the rivers Avon, Anker, Blythe and Tame.

2.	OBJECTIVES	TARGETS
Associated Action Plans are: 'Open Mosaic Habitats on Previously Developed Land', 'Quarries & Gravel Pits', 'Traditional Orchards', 'Churchyards & Cemeteries', 'Parks & Public Open Spaces', 'Roadside Verges', 'Bats', 'Barn Owl', 'Farmland Birds', 'Lapwing', 'Snipe', 'Great Crested Newt', 'Small Blue', 'Black Poplar', 'Bloody-nosed Beetle' and 'Rare Bumblebees'		
PLEASE CONSULT THE 'GENERIC HABITATS' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR OBJECTIVES COMMON TO ALL HABITAT PLANS		
A.	To restore the 3566ha of degraded unimproved and semi-improved lowland neutral grassland above 0.25ha that are currently in unfavourable condition, to favourable or recovering, giving priority to those holding UK Priority Species* & Red Data Book species. *The UK BAP was succeeded by the 'UK Post-2010 Biodiversity Framework (2012-2019)' in July 2012. The UK list of priority species, however, remains an important reference source.	2030

B.	To expand the extent of the habitat by 663ha. Target has been reset from 200ha in view of progress 2011-2016	2030
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3. NATIONAL BAP OBJECTIVES AND TARGETS

Lowland Neutral Grassland is one of the UK Biodiversity Action Plan (BAP) Broad Habitat type ([Joint Nature Conservation Council](#), 2007). The targets and objectives for the UK Priority BAPs [Coastal and Floodplain Grazing Marsh](#) and [Lowland Meadows](#) BAPs may be seen online.

4. CURRENT STATUS

Although once widespread in lowland Britain, the traditional hay meadow has been the grassland community most affected by modern farming practices. It is estimated that by 1984 such semi-natural grassland had declined in the UK by 97% over the previous 50 years to less than 200,000ha, mainly through ploughing, re-seeding and fertilising of old grasslands. Losses have continued during the 1980s and 1990s, at a national rate of between 2–10% per annum. Unimproved seasonally-flooded grasslands are less widely distributed nationally and have lower overall cover but there are still a few quite large stands.

The [Floodplain Meadows Partnership](#) has compiled a list of all known floodplain meadow sites, including all known areas of MG4 grassland. In 1997 the English Nature Lowlands Team identified 92 sites of this community covering a maximum area of 1543.35 ha, in scattered sites from the Thames valley through the Midlands and Welsh borders to the Ouse catchment in Yorkshire. The high nature conservation value of these meadows stems from their species richness and in exceptional circumstances they can support up to 40 species of plant per sq.m. The high floral diversity in turn leads to a high diversity of invertebrates and birds that are dependent upon them.

Where the water table is kept higher in the summer (for example on groundwater fed systems) the MG8 community replaces MG4; this flood-pasture, or kingcup meadow, is also now scarce and localised, with <500ha of MG8 in England (English Nature, 1996).

Baseline data from the 1998-2001 Habitat Biodiversity Audit recorded that about 185ha of unimproved neutral grassland existed in Warwickshire, Coventry and Solihull. The figure from the HBA in 2017 for this habitat is 174ha and for semi-improved neutral grassland 6169ha, giving a total of 6343ha. By 2016 an expansion of the habitat by almost 400ha had been achieved through the uptake of Natural England agri-environment options and by local organisations and by landowners, giving a total of 6735ha.

The total resource on [Sites of Special Scientific Interest](#) (SSSI) is 173.49ha on 22 sites (2019 data, see chart below):

SSSI	Unimproved neutral grassland area (ha)	Grassland types	District
Bickenhill Meadows	4.3 (4 fields)	Flood meadow & Hay meadow	Solihull

Birches Barn Meadows	10.74 (2 fields)	Flood meadow	North Warwickshire
Brook Meadow	1.73	Flood meadow	Warwick
Calcutt Locks Meadows	4.14 (3 fields)	Hay meadow	Stratford
Draycote Meadows	5.04 (2 fields)	Hay meadow	Rugby
Drybank Meadow	4.6	Hay meadow	Stratford
Lobbington Hall Farm Meadow	4.4	Hay meadow	Stratford
Loxley Church Meadow	3.09	Hay meadow	Stratford
Merriman's Hill Farm Meadows	2.8 (2 fields)	Hay meadow	Stratford
Midsummer Meadow	2.92	Hay meadow	Stratford
Monkspath Meadow	0.9	Hay meadow	Solihull
Oak Tree Farm Meadows	2.51 (2 fields)	Flood meadow, Hay meadow	Stratford / Warwick
Racecourse Meadow	1.65	Flood meadow	Stratford
Railway Meadow, Langley	0.76	Flood meadow	Stratford
Sherbourne Meadows	19.16 (8 fields)	Flood meadow, Hay meadow	Stratford
Ullenhall Meadows	2.62 (2 fields)	Hay meadow	Stratford
Welford Field	2.13	Flood meadow	Stratford
Total area	73.49		

The dryer MG5 hay meadow community is found scattered across the Natural Areas of Warwickshire, but there are particular concentrations in the Arden landscape of the Midlands Plateau Natural area. In sub-urban areas and on the urban fringes, more farms have remained outside mainstream agriculture and have become hobby farms or gone into horse paddocks, so the grassland has survived. The meadows are scarce, whereas at the end of the Second World War they were ubiquitous in the Midlands. The largest known concentration is near Birmingham airport, although the area at Rugby Radio Mast may be bigger this site needs further investigation.

The MG4 and MG8 flood meadow and pasture communities are very much scarcer, having been lost, mainly to agricultural improvement or mineral extraction. They are found on alluvial soils in river valleys of the Blythe, Anker and Avon. The largest concentrations are on the Sherbourne Brook near Warwick, on the Blythe in Solihull and on the Anker near Polesworth.

Many neutral grassland sites have been designated as Local Wildlife Sites (LWS), too numerous to list.

4.1 Legal and Policy Status

A wide range of species and habitats are protected under international and domestic laws, including the [Wild Birds Directive](#) (1979), the [Wildlife and Countryside Act](#) (1981), the [Conservation Regulations](#) (1994) and [EC Habitats Directive](#) (1992). Protection of sites is afforded nationally through SSSI, [Special Areas of Conservation](#) (SAC) and [Local Nature Reserve](#) (LNR) statutory status. Other sites are offered recognition of their value through Local Wildlife Site status (LWS), Local Character Areas and identified Landscape Scale Areas. The [National Planning Policy Framework](#) (2012) chapter/section 11 states conditions with regard to any development negatively affecting biodiversity, including

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protected sites, ancient woodland and other irreplaceable habitats (paragraph 118). The Wildlife & Countryside Act and schedule 2 of the [Conservation of Habitats & Species Regulations](#) (2010) make it an offence to intentionally kill, injure, take, possess, sell, buy or transport a range of species.

There are 22 meadows on SSSIs, approximately 40% of the total area of unimproved neutral grassland in Warwickshire, Coventry & Solihull. These are often single fields or in twos and threes, or occasionally larger groups as at Sherbourne where there is over 20ha of flood and hay meadow. Work within the LBAP area continues to classify other neutral grasslands as Local Wildlife Sites (LWSs) which will afford them policy protection within the planning system. This has already been achieved in Coventry and much of Solihull.

Outside the SSSI series, the neutral grassland picture of scattered isolated small fields is the same, with three noteworthy exceptions. In Solihull, there are two large concentrations, one on the River Blythe near Dorridge (which includes three LWS: Floodgate Meadows, Widney Manor Golf Club Hay Meadow and Box Tree Farm Rush Pastures), and the other near Birmingham Airport; in Warwickshire there is a large area near Bishop's Itchington. Neutral grasslands have been identified as a priority habitat for sustainable management in the Midlands Plateau, Midland Clay Pastures, Severn & Avon Vales, Trent Valley & Rises Natural Areas.

4.2 Current Factors Affecting the Habitat

In the past neutral grassland was lost across England primarily to agriculture, and to a lesser extent development. The factors affecting neutral grasslands, as detailed below, reduce the quality and decrease the quantity of the habitat, and its fragmentation brings increased risk of species extinction in small remnant areas. Experience shows that when land changes hands, it is under greatest threat from loss or damage by one or more of the factors listed below. However, [agri-environment schemes](#) administered by NE for old meadows and pastures, including neutral grassland as part of larger farm schemes, meet the combined objectives of enhancing wildlife, history and landscape. Higher Level (HLS) options in 2016 are:

- HK2/15: maintenance of species-rich, semi-natural grassland / grassland for target features
- HK7/16: restoration of species-rich, semi-natural grassland / grassland for target features
- HK8/17: creation of species-rich, semi-natural grassland / grassland for target features
- HE10: floristically enriched grass margin

The main factors affecting the habitat in our area are:

- **Agricultural improvement.** Agricultural operations such as intensive fertilizer and herbicide application.
- **The negative effect of pesticides,** in particular the systemic [neonicotinoids](#) used to dress seed, on pollinating insects.
- **Changes in management from cutting to year round grazing** (often by ponies or horses) resulting in floristic change, over-grazing and poaching. As a consequence sites may become invaded by weed species such as ragwort, dock and thistles.

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- **Abandonment and neglect** leading to a reversion to rank grassland (e.g. with over-dominant tufted hair-grass) and scrub.
- **Built development and road construction** leading to isolation and the removal of sites from agricultural management.
- **Small, isolated character of sites over a large number of small holdings** in the county make sites ineligible for current agri-environment schemes which are designed to cover larger farm areas with combined objectives of wildlife, history and landscape.
- **Lack of recognition of the MG5 type grassland** in the EC [Habitats Directive](#).
- **Perception of low agricultural value of species-rich pasture** and hay in intensive farming practices.

5. LOCAL ACTION

- An accurate digitised database of neutral grassland in the sub-region has been established by the Habitat Biodiversity Audit (HBA) and is annually updated.
- The existing management of most SSSIs is known; however, information on LWSs is less complete. The principal action on the various SSSIs is currently the scrub control programmes supported by NE.
- The Natural England [Grazing Animals Project](#) (GAP) is a partnership of farmers, land-managers and organisations that are committed to promoting the benefits of grazing with the natural environment and our cultural heritage in mind. It is part of the [Rare Breed Survival Trust](#), based at Kenilworth.
- In the past some road verges have been identified to the County Council highways division for special treatment.
- The [River Leam Project](#) has a target to try to appropriately manage, enhance and recreate damp unimproved meadows in the floodplain of the rivers Leam and Itchen.
- The [Tame Valley Wetlands Partnership](#) led by WWT has been active since 2004 involving a wide range of partners in conserving and enhancing habitats and water quality along Tame, Cole and Blythe river valleys.
- The survey of species has included work by the Habitat Biodiversity Audit (HBA) and Local Wildlife Sites Project (LWSP), staff of [Warwickshire Museum](#) and amateur recorders such as the [Warwickshire Flora Group](#), [Butterfly Conservation Warwickshire](#) (BCW), etc.
- Restoration work has been completed at all SSSIs (pers.comm. Anton Irving, 2012)
- At [Bubbenhall Meadows](#) (owned by Warwickshire Wildlife Trust, WWT) part of the quarried farmland has been restored to grassland (MG4/5) using local provenance hay seed (in 2013 from Ryton Meadow) and is being grazed with Dexter cattle (pers.comm. MS, 2014).
- The [Warwickshire Barbastelle Project](#), using SITA Trust funding, has carried out landscape enhancement for barbastelle bats, including creation of 1ha of wildflower meadow (2014).

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- The [Canal & River Trust](#)'s Ten Year Strategy included the creation of a wildflower meadow at Nelson Wharf (pers.comm .Steve Vaughan, 2015)
- [Sun Rising Natural Burial Ground](#) – 16 acre of set aside bought in 2006 to turn improved grassland into a number of different habitats, funded by the burial ground business, including semi-improved grassland. Within the 4 acres currently used for burial, a half-acre wildflower meadow has been sown, and by 2017 another 1-2 acres will become more meadow. In 2015 18 people attended the volunteer day for the hay cut and raking in August/September. In 2016 the hay will be baled and passed to other people; areas around graves will be cut and raked by hand.
- [Compton Verney](#) – in 2004 the 28.7ha meadow was taken back under the wing of Compton Verney House Trust and put into an Environmental Stewardship scheme, re-sown with a wild flower/grass mix agreed at the time with NE. Hay is cropped in late July/early August each year, and sheep graze the area each autumn. Paths are mown to increase/allow access to visitors, and a public right of way passes through the centre.
- Butterfly Conservation Warwickshire:
 - has restored 9.65ha of grassland near Dorsington and at Paget's Pool (Ryton Country Park), 20ha of wheatfields near Dorsington have been returned to meadows and 0.05ha of scallops created at Bilton.
 - the planting of meadow vetchling (*Lathyrus pratensis*) in Ryton Wood Meadows in 2018 is encouraging the wood white (*Leptidea sinapis*) population in Ryton Wood. The BCW reserve (in HLS agreement since 2013 with successful grazing with Longhorn cattle) shows an increase in the number of butterflies by 22% (pers.comm. Mike Slater, 2014).
- [Heart of England Forest](#), a new native species forest in Worcestershire and Warwickshire, designs open ride networks into its woodlands and the improvement of its grassland areas for butterflies.
- [Warwickshire Wildlife Trust](#):
 - has restored 2.85ha of Dunchurch meadow with green hay from Draycote Meadow and enhanced areas of grassland at Polesworth through scarifying and reseeded (2012-2015)
 - from 2017 the Trust will pursue opportunities for support from Highways England to manage neutral grassland on roadside and motorway verges sympathetically for wildlife and to enhance habitat connectivity across the sub-region.
- **Rugby Borough Council:** Brinklow Castle meadow enhancement 0.4ha and Ryton on Dunsmore meadow restoration 1ha (2017)
- **Warwick District Council:** Lillington Meadow creation in 2017
- **Coventry City Council:** Coombe Abbey Neutral Grassland Conservation Project 2018:
 - enhancement of the wild flower meadow by green haying; monitoring the sward for desirable species & problem species was used as a training session for volunteers.
 - management of the neutral grassland involves controlling scrub invasion of wet grassland community mosaics, as well as stubbing, coppicing &

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pollarding willows along a ditch line letting in more light & allowing these communities to expand.

- thistle control and green hay removal from 0.4ha of MG5 grassland for strewing on other sites.

6. PROPOSED LOCAL ACTIONS

ACTION	Lead	Partners	By
PLEASE CONSULT THE 'GENERIC HABITATS' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR ACTIONS COMMON TO ALL HABITAT PLANS			
Policy, Legislation & Protection			
PL1. Ensure that any site meeting the relevant criteria is considered for designation as an SSSI.	NE	LWSP WWT SMBC WCC CCC	ongoing
PL2. Continue to select all qualifying lowland neutral grassland sites as LWSs and enter onto database.	LWSP	NE HBA WCC SMBC CCC	ongoing
PL3. Ensure that the protection of all designated neutral grassland is included in Local Development Plans, Neighbourhood Plans and any other relevant strategies.	WCC	NE WWT LAs	ongoing
PL4. Ensure that new minor or major developments aim for net biodiversity gain through adherence to the mitigation hierarchy.	WCC	NE WWT LPAs NBBC NWBC	ongoing
Site / Species Safeguard & Management			
SM1. Maintain the 3169ha of unimproved and semi-improved neutral grassland already in favourable condition by ensuring appropriate management of all sites.	CSG	NE WWT CFE HEng LOs	ongoing
SM2. Continue restoration of 1585ha of existing unimproved and semi-improved neutral grassland in unfavourable condition by 2025 and a further 1981ha by 2030, by appropriate management, including at least one flood meadow or flood pasture.	CSG	NE LOs SRNBG	2025 - 2030
SM3. Continue restoration of degraded unimproved and semi-improved neutral grassland at the SSSIs and any sites in agri-environment schemes.	NE	WWT LAs LOs	ongoing
SM4. Continue to expand the area of species-rich neutral grassland by 300ha by 2025, including 4 sites of at least 5ha, and a further 363ha by 2030 including 4 more sites of at least 5ha.	CSG	WCC WWT LOs LAs	2025- 2030

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SM5. Work at a landscape scale, focusing effort on identified important clusters of neutral grassland to maximise benefit, 'rewilding' the wider countryside and restoring the range of the habitat to build resilience to climate change. Target areas are: <ul style="list-style-type: none"> • Tame Valley Wetlands floodplain meadows • West Arden landscape area: Earlswood cluster • Major roadside verges and embankments 	WWT WWT WWT	LOs SDC HoEF SMBC NWBC HEng	WCC CFE BC	2026
Advisory				
A1. Inform landowners of their neutral grassland resource and provide advice on management, sources of machinery etc.	NE	LWSP WWT		ongoing
A2. Signpost Best Practice Guidelines to appropriate landowners via agri-environment schemes.	NE	WWT	CFE	ongoing
Research & Monitoring				
RM1. Map digitally the remnant areas of unimproved and semi-improved neutral grassland.	HBA	LWSP WWT LAs	WCC LOs	ongoing
RM2. Identify sites for potential expansion of neutral grassland and restoration of water meadows.	HBA	NE WWT	WCC WFG	ongoing
RM3. Identify plant indicator species to establish criteria for assessing the quality of neutral grassland habitat.	HBA	NE BCW SRNBG	WCC LWSP	Achieved
RM4. Use indicator species criteria for monitoring neutral grassland condition and expansion every 5 years, particularly on LWSs.	HBA	NE BCW LWSP	WWT	5 yearly
Communication, Education & Publicity				
CP1. Inform and advise on the management of lowland neutral grassland to land owners in order to illustrate best practice, at relevant events.	NE	WWT LOs	CFE SRNBG	ongoing

Abbreviations: BC – Butterfly Conservation, Warwickshire, CCC - Coventry City Council, CFE – Campaign for the Farmed Environment, CSG – Core Steering Group, HEng – Highways England, HBA – Habitat Biodiversity Audit partnership, HoEF – Heart of England Forest, LAs – Local Authorities, LOs – Landowners, LPAs – Local Planning Authorities, LWSP – Local Wildlife Sites Project, NE:- Natural England, NWBC – North Warwickshire Borough Council, SDC – Stratford District Council, SRNBG - Sun Rising Natural Burial Ground, SMBC – Solihull Metropolitan Borough Council, WCC – Warwickshire County Council, WFG - Warwickshire Flora Group, WWT – Warwickshire Wildlife Trust,

7. PROGRESS WITH ACTIONS

From 2015–2020 there will be a rolling programme of reporting on progress, of 10 action plans per year with an annual summary of results. Progress with this plan up to 2016 can be seen at <https://www.warwickshirewildlifetrust.org.uk/LBAP>

8. BIBLIOGRAPHY

- Kirby, P. (1992). [Habitat management for Invertebrates](#): a Practical Handbook. RSPB.
- English Nature (1996) Lowland grassland: wildlife value and conservation status. Report No.169.
- English Nature (1997) Distribution, status and conservation of *Alopecurus pratensis* - *Sanguisorba officinalis* flood-plain meadows in England . Research Report No. 249.
- Falk, S.J. (2009) Warwickshire's Wildflowers - provides habitat-specific species lists, and explanations of habitats from a botanical viewpoint.
- Treweek Environmental Consultants (2009) Regional Spatial Strategy (R.S.S.) Phase 3 Regional Habitats Targets Review, Technical Report pp.71-94, prepared for the W. Midlands Regional Assembly.
- Lawton, J.H. (2010) [Making Space for Nature](#): a review of England's wildlife sites and ecological network. Report to Defra, advocating a landscape-scale approach guided by four key principles, summarised as '*more, bigger, better and joined*'.
- DEFRA (2011) [Biodiversity 2020](#): A strategy for England's wildlife and ecosystem services.
- Natural England (2006). [Priority Habitat Inventory \(England\)](#) - habitat surveillance pilots and inventory updates are part of the ongoing monitoring projects carried out by Natural England.
- Peterken ,G. (2013) [Meadows](#). British Wildlife Publishing.
- HBA (2013) The State of the Habitats of Warwickshire, Coventry and Solihull.
- RSPB (2014) Habitat Management News, British Wildlife, vol.25, no.4, p246.
- [Task Force on Systemic Pesticides](#) (2014) – the response of the scientific community to concern about the impact of systemic pesticides on biodiversity and ecosystems.
- Canal & Rivers Trust (2014) Our Ten Year Strategy: a guide to the new Operations & Asset Management Structure.
- Rothers, E., Lake, S. and Gowing, G. (2016) Floodplain meadows – beauty and utility. Floodplain Meadows Partnership, Nature Bureau, Newbury.
- RSPB (2016) [State of Nature](#) – a stocktake of all our native wildlife by over 50 wildlife organisations.
- Natural England (2016) [Conservation Strategy for the 21st Century](#). Sets out how NE will help deliver DEFRA's ambitions for the environment to reverse biodiversity loss, sustain distinctive landscapes and enhance engagement with nature.
- Worldwide Fund for Nature (2018) [The Living Planet Report](#): aiming higher. Published in collaboration with the Zoological Society of London.
- Shellswell, C.H. and Squire, V. (2019) [Can species-poor grassland be diversified?](#) A case study of lowland hay meadow restoration. Conservation Evidence 16, 1-5.

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9. FURTHER INFORMATION

Habitat Biodiversity Audit (HBA) for Warwickshire, Coventry & Solihull – mapping data set and associated information. Phase 1 ([JNCC](#)) 1996-2002 and Phase 2 (Local Wildlife Sites) ongoing.

Biodiversity Planning Toolkit - a new online resource to help incorporate biodiversity and geodiversity into the planning system and new development.

[Buglife](#) - the Invertebrate Conservation Trust – provides information on the habitat-management requirements of key invertebrates.

Natural England (2005). The Importance of Livestock Grazing for Wildlife Conservation.

The [Grasslands Trust](#) was established in 2002 to address the crisis facing our wildflower-rich grasslands but closed in 2012 due to lack of funding.

[Plantlife](#) - a charity which carries out plant species and habitat conservation, owns and manages nature reserves, campaigns, and raises awareness through education. The [Save our Magnificent Meadows](#) project aims to save the UK's remaining wildflower-rich meadows and grasslands.

[Nature After Minerals](#) provides advice on creating and managing different grassland habitats.

[Wildflower Turf Limited](#) developed the concept in 2003 and now produces a range of innovative turf products that have considerable benefits to specifiers, installers, estate managers and landowners.

10. CONTACT

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