

Neutral and Wet Grassland (NWG)

Habitat Action Plan

Doncaster Local Biodiversity Action Plan
January 2007



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Doncaster
Biodiversity
Action Partnership

A graphic element of the Doncaster Biodiversity Action Partnership logo, featuring a stylized red and orange flower or leaf shape.

1. Description

1.1 The low-lying clay and alluvial soils of the Humberhead Levels provide excellent conditions for intensive agricultural production. This landscape tends to be dominated by arable cultivation, improved grazing pastures and ryegrass leys, but some small pockets unimproved and semi-improved neutral grassland still survive.

1.2 The most diverse of these neutral grasslands are typically flower-rich hay meadows or pastures with a diversity of grasses and sedges such as common bent (*Agrostis capillaries*), sweet vernal-grass (*Anthoxanthum odoratum*), quaking grass (*Briza media*), crested dog's-tail (*Cynosurus cristatus*), red fescue (*Festuca rubra*), Yorkshire fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*), spring sedge (*Carex caryophylla*), glaucous sedge (*Carex flacca*), and varying proportions of perennial ryegrass (*Lolium perenne*).

1.3 A colourful display is created by variety of flowering herbs such as yarrow (*Achillea millefolium*), black knapweed (*Centaurea nigra*), lady's bedstraw (*Galium verum*), field scabious (*Knautia arvensis*), ox-eye daisy (*Chrysanthemum leucanthemum*), cowslip (*Primula veris*), bulbous buttercup (*Ranunculus bulbosus*), yellow rattle (*Rhinanthus minor*), great burnet (*Sanguisorba officinalis*), pepper saxifrage (*Silaum silaus*), betony (*Stachys officinalis*), common sorrel (*Rumex acetosa*), meadow vetchling (*Lathyrus pratensis*), lesser stitchwort (*Stellaria graminea*), devil's-bit scabious (*Succisa pratensis*), germander speedwell (*Veronica chamaedrys*), clovers (*Trifolium spp*), self-heal (*Prunella vulgaris*), common cat's-ear (*Hypochoeris radicata*), sweet vernal grass (*Anthoxanthum odoratum*), pignut (*Conopodium majus*) and common spotted orchid (*Dactylorhiza fuchsia*). Some sites also support populations of the much scarcer adder's tongue fern (*Ophioglossum vulgatum*) and **snake's-head fritillary** (*Fritillaria meleagris*), bitter vetch (*Lathyrus montanus*), dyers greenweed (*Genista tinctoria*) and **green winged orchid** (*Orchis morio*).

1.4 In areas of damper or deeper soils, floodplains or in areas of low lying poorly-drained soils are fragments of flood-plain grazing marshes and damp grasslands, often with areas of wet woodland and scrub. These tend to have less diversity of flowering herbs and are dominated by tall, and tussock-forming, grasses such as cock'-s foot (*Dactylis glomerata*), **tufted hairgrass** (*Deschampsia caespitose*), meadow foxtail (*Alopecurus pratensis*) and reed canary grass (*Phalaris arundinaceae*).

1.5 The food plants of certain butterfly species, such as the common blue (*Polyommatus icarus*), occur in flower-rich neutral grassland sites, where its caterpillars feed on trefoils and other legumes. Less diverse tussocky grasslands also support butterflies such as the small skipper (*Thymelicus sylvestris*). The small copper (*Lycaena phlaeas*) lays its eggs on sorrels and other plants of the dock family in pasture and rough grasslands. The orange tip (*Anthocharis cardamines*) caterpillars feed on hedge garlic (*Alliaria petiolata*), cuckoo flower (*Cardamine pratensis*) and other crucifers, which are common plants in neutral grasslands and also along the bottom of damp hedgerows. The specked-wood's (*Pararge aegeria*) larvae feed on broad-leaved grasses such as cock's-foot (*Dactylis glomerata*) and couch grass (*Agropyrum repens*). The caterpillars of some of our most spectacular moth species, such as the elephant hawkmoth (*Deilephila elpenor*) larvae feed on bedstraws (*Galium spp*) and rosebay willowherb (*Epilobium angustifolium*), plants which are often found in the more 'untidy' or unmanaged grasslands such as on railway embankments. The adult butterflies, moths and a variety of other insects also rely on the nectar source provided by flower-rich neutral grassland.

1.6 Mammals such as the **harvest mouse** (*Micromys minutus*), more often associated with arable farmland, can also be found in areas of tall tussocky grassland, particularly damp unmanaged grasslands with dense stands of reed canary grass (*Phalaris arundinaceae*). This type of habitat is commonly found around the edges of lowland marshes, ponds, lakes and ditches. The dense tussocks of unmanaged grasslands also support good populations of other small mammals such as mice, shrews and voles. These in turn are prey for birds such as **barn owl** (*Tyto alba*) and **kestrel** (*Falco tinnunculus*). Bigger mammals, such as rabbits (*Oryctolagus cuniculus*) can also be prey for red fox (*Vulpes vulpes*).

1.7 Lowland neutral grassland sites are also vital feeding, nesting and roosting areas for birds such as **meadow pipit** (*Anthus pratensis*), **skylark** (*Alauda arvensis*), **lapwing** (*Vanellus vanellus*), **curlew** (*Numenius arquata*), **snipe** (*Gallinago gallinago*) and **redshank** (*Tringa tetanus*). Wet grasslands and low lying grasslands, especially those near to seasonal washlands are also important wintering grounds for a diversity of waterfowl such as **Bewick** (*Cygnus columbarius*), **whooper** (*Cygnus Cygnus*) and **mute** (*Cygnus olor*) swans, **pochard** (*Aythya farina*), **teal** (*Anas crecca*), **wigeon** (*Anas Penelope*) and a diversity of wading birds.

1.8 Doncaster's unimproved neutral grasslands have strong affinities with the following National Vegetation Classification (NVC)¹ community types:

- MG1 *Arrhenatherum elatius* grassland is a ubiquitous ungrazed grassland on neutral soils throughout lowland Britain. It is commonly found on road verges, motorway embankments, and railway embankments.
- MG4 *Alopecurus pratensis-Sanguisorba officinalis* grassland is a river floodplain grassland community typical of areas of hay meadow management on seasonally inundated land on alluvial soils.
- MG5 *Cynosurus cristatus-Centaurea nigra* grassland is typical grassland of lowland grazed hay meadows. It is becoming increasingly rare due to agricultural improvement but areas do survive within farm fields, in churchyards, road verges, railway embankments and disused quarries.
- MG6 *Lolium perenne-Cynosurus cristatus* grassland is the common type of permanent lowland grassland on moist but free draining soils. It is an almost ubiquitous community type in dairy farm pastures, fattening pastures and also for hay or silage. This grassland type is also widespread on recreational grounds, and other amenity areas.
- MG7 *Lolium perenne* leys and related grassland are generally highly productive short-term agricultural grasslands use for grazing or silage. Most examples tend have been created by sowing cultivated soils but some may have arisen from over sowing into pre-existing meadows or pastures.
- MG9 *Holcus lanatus-Deschampsia cespitosa* grassland is a plant community, which is characteristic of, permanently moist or periodically inundated neutral soils in flat lowland areas. It occurs typically in pasture, meadows, woodland rides and clearings, road verges, churches and around ponds and lakes.
- MG10 *Holcus lanatus-Juncus effusus* rush pasture is characteristic of permanently moist sites, mostly on sites which are grazed but also on abandoned agricultural land, road verges and around pools and fens.

¹ Rodwell, J.S. (1992), British Plant Communities (Volume 3) Grasslands and montane communities. Cambridge

2. National status

2.1 Improved grasslands account for the great majority of all grassland found in rural and urban parts of the UK². It is estimated that there are less than 15,000ha of species-rich neutral grassland in the UK. Wet grasslands, including floodplain and coastal grazing marshes are estimated at 300,000ha³ but only a small proportion of this grassland supports a high diversity of native plant species. Many areas of pasture-dominated agriculture have been improved by more efficient land drainage which has allowed conversion to arable cultivation; however, pockets of grassland survive within farms, on railway embankments, in old quarries, churchyards and along ancient rights of way, and as road verges. Unimproved neutral grasslands are also a feature of large country estates. Most areas of unimproved grassland are small fields, often associated with a landscape of hedges, green lanes and small woodlands, and are relict of a former pre-Enclosure landscape. In the past few decades the change from hay to silage production has also encouraged increased agrochemical use on grasslands, further degrading their biodiversity.

² UK Biodiversity steering group (1995). Biodiversity: the UK steering group report. Volume 2: action plans. HMSO. London

³ *ibid*

3. Local status

3.1 This type of habitat is represented in the Doncaster Borough as a part of 4 Biological Sites of Special Scientific Interest (SSSIs), Owston Hay Meadows (MG5), Went Ings Meadows (MG5), Shirley Pool, River Idle Washlands, and in over 70 Sites of Scientific interest (SSIs)⁴. Particularly diverse neutral grassland sites include small fields in the pre-Enclosure landscapes of Fishlake and Sykehouse.

3.2 Many sites listed in English Nature's 1996 Grassland Inventory were found to be semi-improved or improved grasslands, including many parts of Bentley Ings (SSI 3.30) and Arksey Ings (SSI 3.29) and Little Fen Fields (SSI 9.6). A small area of species-rich grassland at Dock Hills (part of Bentley Common SSI 3.31) has been ploughed since the Inventory was produced, highlighting the pressures on the few remaining areas of species-rich grassland.

3.3 MG1 typically occurs as a mosaic with other habitat types on a variety of substrates, often in unmanaged edges of woodlands and railway embankments: sites such as Edlington Brick Pond (SSI 2.7), Church Lane Railway Embankments (SSI 2.11), Huxter Well Plantation (SSI 2.23), St Catherine's Railway Embankments, Delves and Cuttings (SSI 2.24), Roman Ridge, North and South (SSI 3.4a+b), Conisbrough North Cliff (SSI 5.8), Windgate Pasture (SSI 4.4), Hampole Hall Pasture (SSI 6.13), Skelbrooke Park (SSI 6.17), Green Hills, Pickburn (SSI 6.21), Bentley Tilts and Course of Old Ea Beck (SSI 7.25a), Barnby Dun Old Don Oxbows (SSI 8.7a & 8.7b) and Barnby Dun Borrow Pits (SSI 8.9a & 8.9b), Clay Bridge Field (SSI 9.4), Westfield Ings (SSI 9.5), Thorne Ashfields (SSI 9.13a & 9.13b), Jone's Cable (SSI 9.18), Clownes Drain (SSI 9.41) and Middle Ring Drain (SSI 9.43). This habitat is also present on many un-designated roadside verges, embankments and cuttings.

⁴ DMBC, Re-survey of Sites of Scientific Interest in the Doncaster Metropolitan Borough 1996/97, Volumes 1-9

3.4 Doncaster's remaining areas of MG4 grassland are now only found as small fragments of the river floodplains which have escaped agricultural improvement or which have remained unaltered by river straightening, navigation works or land drainage works. The most extensive areas existing in Doncaster are those found in the River Idle Washlands on the very southeastern edge of the Borough. The Went Valley has some small wet grassland patches and Low Ings Lane Meadows (SSI 9.9) is also MG4 grassland with areas of improved sward and damper areas of Yorkshire fog-tufted hairgrass. Fen Carr (SSI 9.7), Steward's Ings Lane Meadow (SSI 9.10) and Geeseness Lane Meadows (SSI 9.8) also have elements of MG4 grassland.

3.5 Castle Hills, Scawthorpe (SSI 3.17) has a surprising diversity of habitat including MG5 neutral and damp grasslands, including a large population of adder's tongue fern (*Ophioglossum vulgatum*), green hellebore (*Helleborus viridis*) and brown sedge (*Carex disticha*). Other sites with elements of species-rich MG5 grassland are Owston Hay Meadow and Went Ings Sites of Special Scientific Interest (SSSIs) and Steward's Ings Lane Meadow (SSI 9.10), Thorpe Marsh Area (SSI 7.25b), Wrancarr Drain and Braithwaite Delves (SSI 7.29), Fen Carr (SSI 9.7), Oak Moor and Chadwick Dyke Area (SSI 9.17), Hopyard Hay Meadow (SSI 9.32), Edlington/Dearne Valley Railway Embankment (SSI 2.9), St Catherine's Railway Embankments, Delves and Cuttings (SSI 2.24), small sections of Bentley Ings (SSI 3.30) and Arksey Ings (SSI 3.29), Bentley Railway Embankments and Ponds (SSI 3.32), Norton Priors, Mill Stream and Fields (SSI 7.6), Fenwick Churchyard (SSI 7.21), Bentley Tilts and Course of Old Ea Beck (SSI 7.25a), Northfield Lane (SSI 8.5), Went Valley (near Sykehouse) (SSI 9.2a), Jone's Cable (SSI 9.18) and Thorne Ashfields (SSI 9.13a & 9.13b).

3.6 Shirley Pool SSSI includes areas of MG6 and MG7 and wet grasslands. Otter Island (SSI 6.63) at Sprotbrough also includes areas of improved grassland but areas of greater diversity. MG6 grassland is also associated with old parkland at Wheatley Park and Old Don Oxbows (SSI 2.30 & 2.31), Campsall Country Park (SSI 7.8), Cowick Road Pasture and Pond (SSI 9.11), Wyndthorpe Hall (SSI 9.35) and Hesley Park (SSI 4.23). Improved and semi-improved grass leys are typical of the many miles of riverside flood embankments alongside the rivers of the Doncaster Borough, such as the River Went, the Ea Beck, the Don, Dearne, Torne and, in the south of the Borough, the River Idle.

3.7 Fen Carr (SSI 9.7) and Low Ings Lane Meadows (SSI 9.9), have elements of MG9 in damper areas. Small areas of MG9 and MG10 wet grasslands occur as a transition zone around ponds and marshes, and no longer as entire pastures or flood meadows.

3.8 An interesting grassland feature in the Borough is the 'land tops' or locally named 'rig and fur,' which superficially looks like ridge and furrow formation, hence the local name. These lines of high and low land are created to aid land drainage, but also consequently create wet and dry areas in close proximity, thus increasing botanical diversity.

4. Legal status

4.1 Sites identified as SSSIs and SSIs have a presumption against developments that would have an adverse effect on their conservation value.

4.2 The Defra Environmental Impact Assessment Regulations apply to the conversion of uncultivated land or semi-natural areas for intensive agricultural purposes and therefore apply to neutral and wet grassland habitats.

5. Links to associated habitats & species

5.1 The Neutral and Wet Grassland Habitat Action Plan is linked to the following Habitat Action Plans:

- Parkland, Wood Pasture and Veteran Trees (PWV)
- Wet Woodland (WW)
- Rivers, Canals, Oxbows, Major Streams and Subsistence Flashes (RCF)
- Marshes and Swamps, Lakes and Ponds, Ditches and Drains (MLD)
- Greenways (GW)
- Ancient and Species Rich Hedgerows (ASH)
- Arable Field Margins (AFM)
- Limestone Grassland (LG)
- Minor Streams, Springs, Fens, Flushes, Mires and Fenny Fields (SFM)
- Reedbeds (RB)
- Urban Greenspace (UG)

5.2 **'A Species Audit of Doncaster Borough'** has been produced as part of the Doncaster Local Biodiversity Action Plan. Species highlighted in bold within the Habitat Action Plans are identified within Doncaster's Species Audit and are conservation priorities. The Audit identifies **79** species associated with Neutral and Wet Grassland.

6. Current factors causing loss or decline

6.1 Continued improvements in land drainage allow a move to intensive arable agriculture on the fertile soils in many parts of the Humberhead Levels. However, pumped drainage systems have the potential to have greater control over water level management, and therefore could be used to the advantage of biodiversity, particularly with those systems with a higher summer water level, which can provide favourable habitat.

6.2 Drainage schemes have been constructed to rectify the effects of mining subsidence, leading to the loss of much of the wet grassland habitats that had become established after the land subsided. However, mining subsidence remediation falls under the remit of the Coal Mining Subsidence Act 1992 and the Doncaster Drainage Act 1929, which require that land returns to a state that existed prior to the onset of mining subsidence.

6.3 Water abstraction from the Sherwood Sandstone aquifer, underlying the eastern parts of the Borough, has lowered ground water levels from 'at the surface' to several metres below ground.

6.4 Structural flood defence works undertaken in the mid-to-late 1900s has deprived the floodplain grasslands of their natural cycle of flooding. This has exacerbated the effects of historic drainage engineering by Vermuyden in the early 17th Century, which re-routed the courses of rivers, and the creation of the Dun Navigation, Stainforth and Keadby Canal and New Junction Canal which diverted the 'River' into its present day channel.

6.5 Agricultural intensification and the use of artificial fertilisers leads to a reduction of diversity in many grasslands. The use of farm slurry rather than light application of farmyard manure is detrimental to floristic richness. Other grasslands have been over-sown with ryegrass or, in some cases pastures have been ploughed and the area sown as a rye grass ley. Agricultural intensification has been reactive to production demands, subsidies, changes in food shopping habits and the resultant unprofitable nature of small scale and low intensity farming. Significant changes nationally are needed to reverse this trend and support farmers in environmentally positive farming. Defra's Environmental Stewardship Scheme has seen a number of improvements from Countryside Stewardship, and is now much more accessible for a wider range of farmers.

6.6 There is a lack of traditional management in some sites, leading to reversion to rank grassland (MG1) and scrub. Hay making with aftermath grazing has become much less common. There are often problems of getting graziers interested in low intensity grazing of small species-rich meadows. Expertise and machinery able to cope with the mowing of small meadows, with their narrow turning spaces and restricted access (often narrow hedge-lined green lanes) means that maintaining the traditional hay cropping management in isolated meadow sites is economically impractical.

6.7 The transition from hay to silage making results in earlier and more-frequent cutting of grasslands, making such grasslands unsuitable for ground nesting birds. It also prevents flowering herbs from setting seed, resulting in their decline and eventual loss from the grassland.

6.8 There is also a trend from mowing management to spring and summer grazing. Plants, which can survive the periodic un-selective cutting, may not survive the selective grazing by animals, coupled with increased trampling and risk of nutrient enrichment.

6.9 Because of production pressures and small profit margins, there are fewer mixed farms and therefore fewer grazing herds available. Modern breeds tend to be poorly suited to the poor grazing provided by unimproved grasslands. In some situations, the only viable grazing stock is horses and these are often grazed year-round at relatively high grazing intensity and with use of supplementary feeding. These problems can seriously degrade grasslands, leading to significant nutrient enrichment and a destruction of sward structure.

6.10 Un-official grazing of grassland site by traveller horses can assist with management of otherwise neglected sites but can be inappropriate in hay meadows.

6.11 Unsympathetic management of roadside verges and salting of roads causes loss of species diversity and changes in habitat type.

6.12 Fragmentation and loss caused by development, such as infill development on old pastures in rural settlements and conversion to other land uses (mainly arable agriculture) or by agricultural intensification. Site-specific issues include the threat of large-scale industrial developments on the M18 corridor, particularly in the Hatfield area. In particular it will be important to ensure the protection of Hopyard Hay Meadow (SSI 9.32) and prevent its isolation from a wider habitat mosaic of grassland, hedgerows and drains.

6.13 Small fields with narrow entrances are difficult to manage as modern machinery cannot get into the gateways, and consequently become neglected.

7. Current local action

Research & Monitoring

7.1 Natural England (formerly English Nature) has compiled an inventory of the larger grassland sites in South Yorkshire and is currently reviewing this process.

7.2 Funding from the Big Lottery's Transforming Your Space initiative has enabled the further development of the Biological Records Centre at Doncaster Museum. The biological data collected as part of the project, particularly botanical information for local sites, species and habitats has enhanced the modern dataset. Historical biological information has also been transferred to the database.

7.3 The borough has a diverse series of Sites of Scientific Interest (SSIs), illustrating the variety of species and habitats that are represented on sites throughout Doncaster. All SSIs were surveyed in 1996/1997 and again in 2004/2005, when additional candidate sites were also identified. Many known semi-improved Neutral or Wet Grassland sites have been identified as SSIs or as candidate SSIs.

7.4 The Doncaster Naturalists' Society holds regular field meetings and has carried out detailed surveys of many neutral and wet grassland sites. The Society routinely submit biological records to the Local Record Centre at Doncaster Museum.

Safeguarding & Management

7.5 Funding from the Big Lottery's Transforming Your Space initiative has enabled the development of a range of biodiversity initiatives, including the resurvey of the Borough's SSI's, research projects, production of site management plans and the provision of resources (equipment, educational, activity and promotional materials) to help raise awareness and encourage participation in the management and enhancement of local biodiversity. A number of management plans have also been produced.

7.6 Sites such as Owston Hay Meadows, Shirley Pool and Rushy Moor Area, Denaby Ings Area, Inkle Moor, River Idle Washlands and Went Ings Meadows are Sites of Special Scientific Interest, several of which are managed by the YWT. Reedholme at Thorpe Marsh, Old Denaby LNR, Windgate Pasture, and fields at Rushy Moor are SSIs; and other SSIs, Fen Carr and Hopyard Hay Meadows are managed by the YWT. A large number of smaller species-rich grasslands are designated as SSIs. Several small meadows and pasture in the Sykehouse and Went Lows are owned or leased and managed by small Trusts such as the Carstairs Countryside Trust and the Burnet Trust.

7.7 Highfields Country Park and Campsall Country Park (SSI 7.8) are both owned and managed by the local authority, and have areas of grassland of biodiversity value.

7.8 The Environment Agency is reviewing Flood Management in the Don Catchment and is considering re-instatement of natural (uncontrolled) washlands by removing, or setting back, sections of flood embankment and by creating new washland areas. The Environment Agency owns and manages, or advises its tenants on the management of an area of wet grassland at Fishlake known as Thorne Watersides, Oxbows and Ings (SSI 9.12), which stretches over 70ha.

7.9 Natural England has a cutter and bailer run by a contractor that can be used on important grassland conservation sites.

7.10 There are a number of small species rich grassland sites in the borough that are sensitive to disturbance, but that are sensitively managed by wildlife organisations or bodies.

Funding & Resources

7.11 The new Environmental Stewardship Scheme provides funding for maintenance of field boundary features such as hedges (stock-proof boundaries may enable reinstatement of traditional grazing management). The higher-level scheme also targets the creation of new habitat on land adjacent to, buffering, or linking SSSIs or UK BAP habitats. It also targets the maintenance and restoration of habitats in Sites of Importance for Nature Conservation, known locally as SSIs.

Advisory

7.12 DMBC has introduced a programme of continuous professional development based on planning related issues, including 'Protected species' and 'Trees and Hedgerows'. The Environmental Planning Team has produced a suite of Supplementary Planning Documents, providing guidance on: Planning for Trees and Hedgerows, Nature, Sustainable Construction and Landscape Planning on Development Sites in Doncaster.

8. Objectives, targets & proposed actions

Please refer also to the Generic Actions in the LBAP Introduction & Overview document

Objective	Target	Ref	Action	Lead Partners	Costs	Category
1) To ensure the protection and maintenance of existing Neutral and Wet Grassland sites.	Continuous.	1.1	<p>Prevent depletion of Neutral & Wet Grassland resulting from development and/ or the delivery of statutory functions by:</p> <p>1) Having regard to the protection and enhancement of habitats when considering the allocation of sites, in line with the approach set out in PPS9 and the priorities set out in the LBAP.</p> <p>2) Having regard to the assessment, retention and enhancement of habitat types when formulating and making Development Control Policies and decisions, in line with the approach set out in PPS9 and the priorities set out in the LBAP.</p>	DMBC, Natural England (NE)	Staff costs	Advisory/ Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
			<p>3) Providing advice to Development Control and Developers on appropriate types of survey i.e. ecological and/or hydrological, the interpretation of survey results and methods of incorporating habitat retention and enhancement into development proposals (for both designated sites and non-designated features of biodiversity value, as identified in the LBAP).</p> <p>4) Having regard to the priorities set out in the BAP in the interpretation of UDP/LDF policies (and any supporting SPGs/SPDs).</p> <p>5) Providing technical advice on the severity, implications and nature of suspected breaches in planning control (either conditions or unauthorised development).</p>			

Objective	Target	Ref	Action	Lead Partners	Costs	Category
			<p>6) Awarding appropriate site protection through designation, based upon routine environmental monitoring and assessment.</p> <p>7) Ensuring that all Partners and relevant landowners, service providers and operational contractors are informed of the existence and importance of Neutral and Wet Grasslands (both designated and non-designated sites).</p>			
	Continuous.	1.2	Continue to collect and maintain up-to-date, standardised, biological data using the Museum's Local Record Centre. Promote and initiate appropriate management, monitoring and the exchange of environmental data, to ensure the maximum level of site protection is awarded and habitat condition is maintained.	DMBC, NE, Doncaster Naturalists' Society (DNS), Yorkshire Wildlife Trust (YWT)	Staff costs and volunteer time. Other costs to be evaluated	Future Research & Monitoring

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	By 2008.	1.3	Expand DMBC's Environmental Planning protected species protocol to include LBAP habitats and species.	DMBC	Staff costs	Advisory
2) To restore degraded sites and ensure appropriate management of Neutral and Wet	6 sites with management plans by 2010.	2.1	Develop and implement grassland management plans for grassland in public ownership. Review existing plans to ensure compatibility with HAPs and SAPs.	Environment Agency (EA), DMBC	£1000 per plan = £6000	Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
Grasslands.	5 sites with active management by 2010.	2.2	<p>Identify landowners of existing SSI Neutral and Wet Grasslands. Provide assistance to owners seeking funding and/or assistance for appropriate nature conservation and grassland management operations, including:</p> <ul style="list-style-type: none"> • Reintroduction of grazing or mowing management (where appropriate). • Removal of invasive scrub considered to be detrimental to the preservation of grassland species diversity. • Cessation or reduction of fertiliser and herbicide input. <p>Monitor the effectiveness of the management, by regular assessment of critical habitat features and selected key or indicator species, and review the management regime as necessary.</p>	EA, British waterways (BW), DMBC, Farming and Wildlife Advisory Group (FWAG), NE, Private landowners	£225 per site for 5 sites =£1125 Management costs to be evaluated	Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	5 sites by 2010.	2.3	Identify all grassland sites where Priority Species are present and implement appropriate specialist management schemes to benefit these species.	DMBC, NE, FWAG, Private landowners	To be evaluated	Species Management & Protection
	Continuous.	2.4	Investigate the acquisition (where necessary, and feasible) of Neutral & Wet Grasslands of local significance, in order to ensure their future management for the benefit of biodiversity.	YWT, DMBC, local Trusts	£5,000 per ha	Safeguarding & Management
	2008.	2.5	Develop and implement sympathetic grassland management for species-rich verges. Review existing plans/maintenance regimes to ensure compatibility with HAPs and SAPs.	DMBC, Highways Agency (HA)	£727 per annum	Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	2 SSI grassland sites by 2010	2.6	Prevent disturbance to the wildlife of grasslands by the control of recreational access and prevention of inappropriate and damaging activities. Produce action plans in conjunction with SY Police where necessary.	NE, DMBC, SY Police	To be evaluated	Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	By 2008.	2.7	<p>1) Research the requirements, practicalities, costs and potential participants for the setting up of a local grazing scheme which identifies local graziers with stock which can be hired out for management of grassland sites and which offers sources of expertise and advice to land owners on the management of grassland.</p> <p>2) Maintain a directory of specialist contractors with cutting and baling machinery and expertise able to manage smaller hay meadow sites. Highlight problem sites such as those with access difficulties.</p>	NE, DMBC, FWAG, YWT	Staff costs	Safeguarding & Management/ Advisory

Objective	Target	Ref	Action	Lead Partners	Costs	Category
3) To create 2 ha of neutral grassland, linked to existing marsh, ponds grasslands, woodland and scrub habitats within the Humberhead Levels and Coal Measures Natural Areas.	By 2010.	3.1	Work with landowners to find sites where new grassland can be created without loss of other priority habitats. Encourage landowners to revert to grassland, arable land that surrounds or is adjacent to marshland fen, swamp and other aquatic sites.	DMBC, NE, YWT, Private Landowners	Staff costs	Advisory/ Habitat Creation & Restoration
	By 2010.	3.2	Promote the inclusion of species-rich grassland in the restoration of mineral extraction sites, specifying the use of seed from local grassland sites, where possible. Use plant plugs grown on from seed gathered from local grasslands to augment diversity of species-poor previously restored sites. Encourage low-level restoration, which incorporates seasonally inundated or wet grassland.	DMBC	Staff costs	Advisory/ Habitat Creation & Restoration

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	2 ha by 2010.	3.3	Use new grassland to link existing marsh, fen, woodland, and scrub habitats.	DMBC, NE (ESS) FWAG, Private landowners	£6000	Safeguarding & Management/ Habitat Creation & Restoration
	Continuous.	3.4	Incorporate areas for species-rich neutral grassland creation in new semi-urban and rural planting schemes in the Humberhead Levels and low-lying areas of the Coal Measures Natural Area. Promote the creation of species-rich grasslands (on nutrient poor substrates) in suitable low-maintenance areas.	DMBC	Staff costs	Advisory/ Policy & Legislation

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	Continuous.	3.5	Re-create floodplain grasslands by creating new washland areas as part of the flood management on Doncaster's rivers and sustainable management of flood water on development sites close to the river.	EA	£1500 per ha to create grazing marsh. This does not include land purchase or long term management	Habitat Creation & Restoration
	Continuous.	3.6	Research the establishment and running costs and operational requirements of a native seed project with existing nurseries to grow on seed gathered from local grasslands. Pursue opportunities to implement feasible initiatives.	DMBC, YWT, DNS, NE, British Trust for Conservation Volunteers (BTCV)	To be evaluated	Habitat Creation & Restoration / Species Management & Protection
4) Raise public awareness of the importance and special characteristics	Continuous.	4.1	Continue to provide interpretive leaflets, organise walks, and run practical grassland management events.	DMBC, NE, BTCV	To be evaluated	Communications & publicity

Objective	Target	Ref	Action	Lead Partners	Costs	Category
of Neutral and Wet Grassland.	1 per year.	4.2	Run species survey and identification workshops open to the general public.	DNS	£256	Communications & publicity
	1 leaflet by 2010.	4.3	Provide interpretive leaflets to explain the special value of Neutral and Wet Grassland and include a map showing the location of more accessible sites.	DMBC, NE	£1000	Communications & publicity
	1 demonstration on neutral/wet grassland by 2009.	4.4	Promote good management practice through the use of demonstration sites and workshops.	DMBC, NE, Linking the Environment and Farming (LEAF), YWT, BTCV	£2640	Advisory/ Communications & Publicity
	By 2008.	4.5	Offer support for Undergraduate/ Post Graduate research project to investigate the rate of loss of grassland habitats. Review historic Land use maps, old (WWII) aerial photographic coverage to compare with present day land-use surveys.	DMBC, Yorkshire Naturalists' Union (YNU), Doncaster College, Local Universities (Nottingham/ Sheffield).	£640	Future Research & Monitoring

