
Vale of York and Mowbray Natural Area Profile

**Vale of York
and Mowbray**



**English Nature
North and East Yorkshire Team
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1. Introduction

1.1 The Natural Area Concept in relation to the UK Biodiversity Action Plan

In June 1992 the Prime Minister and over one hundred and fifty other Heads of State or governments signed the Convention on Biological Diversity at Rio de Janeiro. They did so to express a shared belief that action must be taken to halt the world wide loss of animal and plant species as well as genetic resources. At the same time they agreed to draw up national plans and programmes and to share resources to help implement them.

This resulted in the first UK Biodiversity Action Plan published in 1994. This was followed by the production of costed action plans for nationally important habitats and species. The production of local biodiversity action plans (LBAP) is advocated as the mechanism to achieve both nationally identified targets and those of more local importance. This approach ensures action for a much wider range of habitats and species by embracing the “Think globally, act locally” philosophy and encouraging wide participation in the development of the Action Plan.

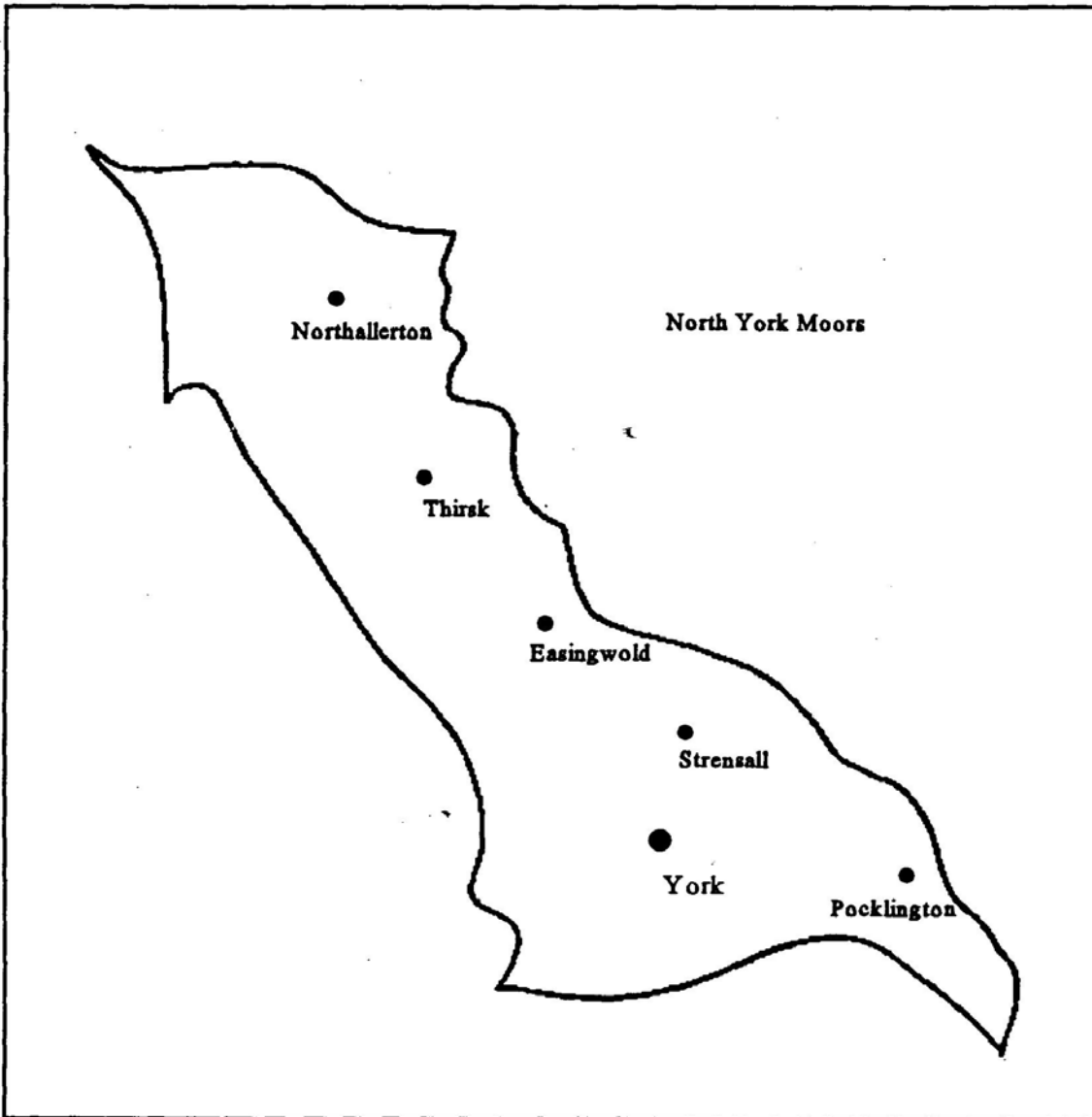
English Nature, as the Government’s statutory advisors on nature conservation in England, have a key role to play in stimulating action. The development of the Natural Areas concept is an important part of that role.

A Natural Area is not a designation but an area of countryside identified by its unique combination of physical attributes, wildlife, land use and culture. These features give a Natural Area a “sense of place” and a distinctive nature conservation character. This concept is based on the premise that, as wildlife rarely pays regard to administrative boundaries, an alternative division of the countryside is necessary for identifying nature conservation priorities and coordinating action.

The use of Natural Areas provides a strategic framework for setting nature conservation objectives across England, as recognised by the Biodiversity Action Plan. Foremost of these are the national targets in the UK Steering Group report and the Action Plan itself. English Nature is using the Natural Area framework to translate national level targets into appropriate local targets which together form a strategic national implementation plan and inform the process of developing local action plan targets.

English Nature encourages those involved in the development of local action plans to use the Natural Areas framework as the context for local target setting.

Vale of York and Mowbray Natural Area Boundaries



1.2 The Role of this Profile

Within this profile important habitats and species within the Vale of York and Mowbray Natural Area are described and objectives are set for their conservation. The draft profile will provide a basis for consultation with our key partners over the priorities for nature conservation within the Natural Area. The final version will be produced, after consultation by April 1998.

2. Description

2.1 Physical features

The Vale of York is essentially a flat, low-lying landscape with most of the variation in relief provided by ridges of glacial moraine. The solid rocks underlying the Vale are divided between two Triassic formations running North to South: Mercia mudstone (Keuper marl) in the east and Sherwood sandstone in the west. These rocks are entirely covered by deep drift deposits, which obscure their influence on the landscape. Soils comprise a mixture of glacial and lacustrine clays, lacustrine and blown sands, alluvium along the river valleys and discrete deposits of boulder clay. In the rain shadow of surrounding uplands, the Vale of York has a low rainfall climate; nonetheless, wetlands have historically been an important part of the landscape due to the effects of river flooding and the impermeable nature of the widespread lacustrine clays.

Rivers are important physical features of the Vale of York, the main rivers being the Ouse and Derwent. These are both large lowland rivers with predominantly calcareous catchments, the Derwent draining south from the North York Moors through the Corallian foothills and the Ouse receiving the Ure, Nidd and Swale which drain the limestone Yorkshire Dales.

The Triassic rocks underlying the Vale of York extend into the Vale of Mowbray, with a narrow intrusion of Jurassic Lias running west to Asenby. The Vale has a rolling landform created by glaciation, and here again the underlying lithology exerts little influence upon the landscape. Soils are a complex mosaic of clayey glacial till, sands and gravels, alluvium and small deposits of fen peat.

The River Swale is a major influence in the west of the Vale, its meandering, spatey middle reaches extending downstream to Morton-on-Swale, from where it acquires the more typical character of a lowland plain river.

2.2 Habitats and species

2.2.1 Rivers

Rivers are one of the most important ecological features of the NA, with a diversity of characteristics which is exceptional in eastern England. The spatey middle reaches of the Swale are characterised by active meandering and extensive shingle beds. In these reaches, the Swale is a dynamic, near-natural river with its hydrology and hydro morphology unaltered by impoundment. Wildlife includes riparian birds such as goosander, common sandpiper, oystercatcher and little ringed plover with plants such as viper's bugloss and

various crucifers colonising the eroding banks and shingles. A number of notable carabid and click beetles are associated with riparian habitats. Riverine insect communities include good suites of mayflies, stoneflies and caddis flies. Aquatic vegetation is dominated by water-crowfoot beds - these are plant communities of European conservation importance.

Other rivers have a more typical lowland character, especially the Ouse and Derwent. The large plain rivers of the NA have been less affected by pollution than many in eastern England and are important for their plant, invertebrate and fish communities.

Widespread river plants include fennel pondweed, unbranched bur-reed, yellow lily, arrowhead, flowering rush and common club-rush. Perfoliate pondweed, shining pondweed and river water-crowfoot occur more locally but are plentiful in the Derwent. There is a distinctly southern element in the river flora of the NA with several species close to the northern edge of their British range. The Lower Derwent and Pocklington Canal are particularly notable for their rich aquatic flora which includes opposite-leaved and flat-stalked pondweeds.

Fish populations are dominated by coarse fish in the flood plain rivers, with small populations of brown trout and grayling in the Ouse tributaries. Characteristic species include roach, chub, dace, perch and pike. A number of fish such as barbel, bleak and ruffe are at or close to the northern edge of their British range in this NA.

Mammals associated with rivers in the NA include Daubenton's bat, otter and, very locally, water vole.

Riparian habitats on the lower Derwent are important for insects such as ground beetles and rove beetles, including several national rarities. The banks of the Ouse are a major stronghold for the nationally-scarce tansy beetle whilst the rare solitary wasp *Argogorytes fargei* occurs much more locally, nesting in sandy cliffs.

The river banks of the NA often have an interesting bulb flora. Sand leek and field garlic, both considered uncommon plants nationally, are widespread and locally abundant along most of the plain rivers. There are also a number of riverside colonies of yellow star-of-Bethlehem, an elusive early-flowering species.

Small rivers such as the Wiske and Foss have been more extensively modified, either by canalisation or by deepening and widening of the existing channel. Pollution from sewage effluent and agricultural run-off together with low summer flows contribute to the ecological impoverishment of these rivers.

Character species

A number of interesting species are widespread in the rivers of the NA and indicative of the generally good water and habitat quality. Amongst these are the banded demoiselle dragonfly, the endemic stonefly *Taeniopteryx nebulosa ssp. britannica* and the localised mayfly *Brachycercus harrisella*.

Kingfisher and sand martin are characteristic riparian birds throughout the NA, with particularly large populations of kingfisher in the Vale of York.

Daubenton's bat is a characteristic mammal of river corridors in the Vale of York, with bridges providing important roost sites.

Special species

Flat-stalked pondweed is a nationally uncommon plant which is widespread but local in the lower Derwent and the Pocklington Canal.

Two invertebrates of international conservation occur in the rivers of the NA. The river mussel *Pseudanodonta complanata* is found in both the Ouse and Derwent whilst white-clawed crayfish occurs in the Lower Derwent and, very locally, in the Swale. Populations of the native crayfish may also be present in the Nidd and Ure within the NA, and this species is currently the subject of survey work by the Environment Agency.

Amongst the nationally scarce insects found in the Vale of York rivers, the mayfly *Heptagenia fuscogrisea* appears to have a stronghold in the River Derwent and the alderfly *Sialis nigripes* has been recorded from several locations on the Ouse and Derwent.

The Ouse system is important for migratory fish, with species of European conservation concern including sea lamprey, river lamprey and Atlantic salmon. The Swale and Ure are particularly important spawning grounds for the two lampreys, both of which have declined seriously in Britain and Europe due to pollution and river engineering. Obstructions such as the barrage at Barmby-on-the-Marsh and weirs at Sutton-on-Derwent and Stamford Bridge inhibit the passage of migratory fish on the River Derwent but river lampreys do occur in good numbers.

After a long period of severe decline, otters are now increasing in the NA. The Lower Derwent and Pocklington Canal remain an important stronghold with some recovery on the Nidd, Swale and Ure.

The tansy beetle has become extinct over much of its British range but remains widespread and locally abundant on the banks of the Ouse. The NA probably holds a large proportion of the British population of this beautiful insect.

Extinct and declining species

Although the River Derwent and Pocklington Canal support rich assemblages of aquatic plants, many species have declined or disappeared elsewhere in the NA. Species such as opposite-leaved pondweed and greater water-parsnip are now absent or extremely localised outside the Lower Derwent Valley.

The burbot, the only freshwater fish to have become extinct in Britain in recent history, was found in the Ouse, Foss and Derwent during the early years of this century. The Lower Derwent remained one of the burbot's last strongholds until around 1970 but the species has not been confirmed since.

2.2.2 Lakes and ponds

A number of ox bows and flooded gravel pits are associated with the plain of the River Swale, the most notable being the Swale Lakes SSSI near Catterick. Here a variety of breeding wildfowl and waders include great crested grebe, shelduck, ringed plover and little ringed plover. Winter visitors include small herds of Bewick's and whooper swans.

Small field ponds are widely distributed throughout the NA but many have been drained, filled-in or neglected. A recent survey of ponds in the central Vale of York showed that one-third of those shown on recent maps had disappeared whilst a further 10% were reduced to dried out hollows. Other surveys suggest a similar pattern over much of the NA.

Old brick ponds were formerly an outstanding habitat in the vicinity of York, renowned for some of the richest assemblages of water beetles in the country. These have now been almost entirely lost.

Acidic, base-poor pools are associated with lowland heaths in the Vale of York and support distinctive communities of flora and fauna.

Character species

The richer field ponds in the Vale of York are characterised by plant communities dominated by broad-leaved pondweed and pond water-crowfoot.

Acidic heathland ponds in the NA are characterised by plants such as bulbous rush and bog pondweed with a specialised invertebrate fauna including a number of dragonflies and water beetles. Within the NA the palmate newt is virtually confined to heathland ponds.

Special species

Although less common than smooth newt, great crested newts are widely but thinly distributed in the NA. This declining species is closely associated with old field ponds, especially in small fields with hedgerows, rough vegetation or scrub nearby. Areas where clusters of such ponds survive, such as in the vicinity of Flaxton village, are particularly important.

Most of the specialised relict fen insects formerly associated with clay ponds on the southwestern outskirts of York have been lost, but Askham Bog remains important for the nationally rare water beetle *Agabus undulatus*.

The drawn-down zone around ponds is an important habitat for invertebrates. The crane fly *Limnophila fasciata* is associated with wet peat and silt around heathland pools at Strensall Common but is known elsewhere in Britain only from two sites in Cheshire.

Extinct species

Many species have been lost from ponds and associated wetlands in the NA. These include the globally-threatened medicinal leech, the rare water snail *Segmentina nitida* and numerous water beetles such as *Hydroporus scalesianus* and *Laccornis oblongus*.

2.2.3 Wetlands

There would once have been extensive wetlands in the Vale of York, centred upon the river floodplains and marshy commons together with occasional valley mires such as Askham Bog. Wetland habitats such as fens and swamps have been greatly diminished but nationally-important areas still exist in the south of the NA, most notably in the Lower Derwent Valley National Nature Reserve.

Fen meadows irrigated by mineral-rich groundwater typically support species such as blunt-flowered rush, ragged robin, meadow-rue and fen bedstraw. On more base-deficient soils, “poor” fens are characterised by marsh cinquefoil, velvet bent, marsh pennywort and marsh violet. Where shallow acidic soils overlie base-rich clay at World's End near Strensall, purple moor-grass fen is characterised by unusual and very species-rich mixtures of heath, meadow and mire flora.

The total area of fen-meadow and associated communities within the NA is estimated to be around 230 to 240 ha. With a few small exceptions, these communities occur within protected sites. The Lower Derwent Valley holds the main concentration of this type of fen, with nearly 200 hectares at Melbourne and Thornton Ings SSSI. Other important sites for fen meadow include Upper Dunsforth Carrs and Askham Bog.

Tall herb fen characterised by robust perennials such as meadowsweet, reed canary-grass and wild angelica is more widespread, though extensive stands are now rare. Associated species include harvest mouse, sedge warbler and reed bunting. At Askham Bog, tall-herb fen communities have strong 'East Anglian' affinities, with characteristic species including purple small-reed and great fen-sedge.

Swamp communities, represented predominantly by stands of reed sweet-grass, are an important habitat on the Ouse and Derwent Ings. On some sites this type of vegetation has spread following the abandonment of traditional agricultural management such as hay-making and grazing. Stands of common reed are more scattered and fragmentary, although important for species such as reed warbler and several wainscot moths.

Drainage dykes form an important component of wetland habitats in the Lower Derwent Valley and, to a lesser extent, in other areas such as the Ouse Ings. The dyke banks support fen flora such as creeping jenny, yellow loosestrife, meadow-rue and various sedges with aquatic species including several pondweeds. Nationally important breeding populations of waterfowl use these dyke networks, including several species rare in Britain.

Where surrounding grasslands have been subject to agricultural improvement, old drainage dykes may provide valuable reserves for wetland flora and fauna.

Special species

Fen habitats in the Vale of York support a richly varied insect fauna including numerous scarce or threatened species. The nationally scarce fen bug *Capsus wagneri* is known from several sites with other specialities including the ground beetles *Dromius sigma* and *Trechus rivularis* and the marsh carpet moth. A wetland in the south of the NA is one of only three known British locations for the strikingly-marked ground beetle *Panagaeus crux-major*. Other notable assemblages include rove beetles, featherwing beetles and marsh flies.

A number of notable plants occur at Melbourne and Thornton Ings including the nationally-scarce marsh pea. Fen woodland at Askham Bog holds what is probably the largest British population of the rare elongated sedge. Other fen carr specialities at this site include fibrous tussock-sedge, marsh fern and royal fern.

Dyke banks and their associated vegetation in the Lower Derwent Valley are of particular importance to a host of species including the rare and declining click beetles *Selatosomus nigricornis* and *Fleutiauxellus quadripustulatus* and the dance fly *Rhamphomyia physoprocta*. These habitats are also of great importance to birds and mammals such as black-necked grebe, garganey, otter and water vole. Nationally uncommon plants found in dykes and drains in the Vale of York include water violet, narrow-leaved water plantain and fine-leaved water-dropwort.

In the southern Vale of York, seasonally-dry drainage ditches with mesotrophic water provide the national stronghold of the rare and declining mud snail *Lymnaea glabra*.

Extensive stands of swamp vegetation in the Lower Derwent Valley are of national importance to water rail and spotted crake. In recent years, 25-40% of the British breeding population of spotted crake has occurred in this area.

Extinct species

Habitat loss and successional changes have resulted in the disappearance of a number of fen species within the NA. These include plants such as marsh helleborine, grass-of-Parnassus and common butterwort, and the marsh fritillary butterfly.

2.2.4 Lowland heath

Heathland sites in the Vale of York are characterised by mosaics of ericaceous heath, humid and dry acidic grasslands, bracken, birch and oak woodland, cotton-grass mire and rush pasture. The total area of heathland sites in the NA is 740 hectares, of which approximately 530 ha. support ericaceous heath and acidic grassland vegetation (the remainder comprising mainly wooded heath). Although the NA holds only 2.3% of England's lowland heath, Pilmoor and Strensall Common represent the most northerly examples in the country. Strensall Common, covering 579 ha., is by far the largest block of heathland remaining in the region. Two classic Vale of York heaths - Skipwith Common and South Cliffe Common - are located just outside the boundaries of the NA.

Loss of lowland heath in the Vale of York has been considerable. Reclamation of heathland began with the break up of the mediaeval moors and commons, accelerating after the Enclosure Awards. More recently, conifer afforestation and the development of secondary woodland on former heaths have resulted in further losses. Within the present-day boundaries of the City of York, 77.3% of heathland and acidic rough grazings have been lost since 1750.

The lowland heaths of the Vale of York are of special importance for wildlife. Characteristic birds include curlew, tree pipit and whinchat but nightjar no longer regularly breeds within the NA. Adder and common lizard occur on the larger heaths at Allerthorpe and Strensall. Invertebrate communities are very diverse, with each element of the habitat mosaic supporting a distinctive group of species. Green tiger beetle, heath assassin bug and the ground beetle *Carabus nitens* are amongst the characteristic insects of the Vale of York heaths. There is a predominantly southern element to this fauna, including many scarce or localised species near their northern limit in Britain. Assemblages of spiders, bugs, ground beetles, flies, bees and wasps are of particular interest.

Areas of coniferised former heathland occur at Allerthorpe Common, Sandburn, Wheldrake Wood and Buttercrambe. In such sites, forest rides may support important relict communities of flora and fauna. Notable plants include heath cudweed, trailing St John's wort, water purslane and round-leaved sundew. Adders and common lizards may also persist along with some typical heathland invertebrates.

In addition to afforested heathland, sizeable areas of acidic birch woodland in the south and centre of the NA have developed on fragments of former heath. The field layer of these woods is often dominated by bracken or purple moor-grass but there are sometimes patchy stands of precursor species like ling, cross-leaved heath and common cotton-grass.

Special species

Numerous scarce and threatened insects have been recorded from the Vale of York heaths. Amongst the most notable of these are the house-fly *Phaonia jaroschewskii*, the thick-headed fly *Myopa vicaria*, the mining bee *Andrena ruficrus*, the nomad bee, *Nomada robertjeotiana* and the dark-bordered beauty moth.

Two nationally scarce and declining plants, pillwort and marsh gentian, were formerly widespread on the Vale of York heaths. Both have disappeared from most of their former stations but survive on Strensall Common.

Extinct species

Many species associated with heaths and commons have been lost from the NA. Plants include pennyroyal, shoreweed, four species of clubmoss and the mosses *Helodium blandowii* and *Palludella squarrosa*, both of which are now extinct in Britain. Former breeding birds included woodlark and dunlin.

2.2.5 Sandy habitats

Open, sparsely-vegetated tracts of sand were formerly widespread in the centre and east of the Vale of York, on agriculturally-marginal land and the more barren commons. This type of habitat has largely disappeared as a result of agricultural reclamation, conifer afforestation and urban development. Remaining fragments are of considerable ecological interest, representing northerly outliers of the steppe-like vegetation of the East Anglian Breckland.

Close affinities with Breckland reflect the influences of low rainfall and infertile, summer-droughted soils. Plant communities are characterised by diminutive annual herbs such as common storksbill, bird's-foot, sheep's sorrel, whitlow grass and small cranesbills. A number of Breckland rarities such as tower mustard, spring vetch, small allison and fingered speedwell have become extinct in the Vale of York, but two nationally-scarce specialities (shepherd's cress and loose silky-bent) occur very locally in the east of the NA. Little is known of the fauna of open sandy habitats in this area, but a number of interesting moths normally associated with sand dunes have been recorded.

2.2.6 Grasslands

Agriculturally-unimproved meadows and pastures are now scarce in the intensively-farmed landscape of this NA. Nonetheless, the Vale of York is nationally-important for its flood meadow grasslands, a habitat of European conservation importance.

2.2.6.1 Flood meadows

'Ings' meadows on the river floodplains of the Vale of York have traditionally been managed by hay-making and aftermath grazing, and many such grasslands have a documented history going back hundreds of years.

The typical plant community of flood meadows is meadow foxtail-great burnet grassland, coded MG4 in the National Vegetation Classification. This is characterised by an abundance of herbs such as great burnet, meadowsweet, meadow buttercup and bistort. Flood meadow grassland is concentrated on the Ouse and Lower Derwent washlands with a few meadows on the banks of the River Wharfe. One small hay meadow adjoining the River Wiske in the Vale of Mowbray may belong to this community. There are approximately 195-200 ha. of MG4 grassland in the NA, representing at least 13% of the UK resource. Extensive areas of winter-flooded hay meadow on the Lower Derwent lie outside the boundaries of the NA.

Destruction of flood meadow grassland has been considerable. Within the City of York, 47% of meadowland on the Ouse Ings has been lost since 1850 and a further 18% seriously damaged in recent years. Agricultural intensification during the past 30 years has been the primary cause, although urban development has also contributed.

Special species

The extensive hay meadows of the Lower Derwent Valley support one of the largest concentrations of breeding quail in Britain, although numbers fluctuate widely from year to year.

The nationally-scarce sulphur water-dropwort is a characteristic plant of winter flooded hay meadows on the Derwent Ings.

2.2.6.2 Wet grassland

Agriculturally-unimproved wet grassland occurs on floodable land, mainly as a component of Ings meadows and riverside grazing marshes. Wet grassland is characterised by plants such as marsh marigold, marsh ragwort, amphibious bistort and brown sedge or low-growing, species-poor carpets of creeping bent and marsh foxtail.

It is difficult to estimate the area of wet grassland within the NA, as it generally occurs in mosaics with flood meadow or fen vegetation. Known examples cover 125 ha. (excluding fragments within improved pastures and linear stands alongside watercourses). The most extensive stands of wet grassland are concentrated on the Ouse and Derwent Ings, with most other sites also in the south of the NA.

Wet grassland, dykes and flood meadow systems in the Lower Derwent Valley are of exceptional importance for their breeding and wintering waterfowl and waders. Wigeon and teal winter in internationally-important numbers, with nationally-important concentrations of wintering whooper swan, gadwall, pintail, shoveler, pochard and golden plover. Species breeding in nationally important numbers in these wetlands include gadwall, pochard and shoveler with significant proportions of the lowland populations of redshank, curlew and snipe. Of particular note are pintail (>20% of the British breeding population), garganey (>10% of the British breeding population) and ruff (one of few regular British breeding areas and ca. 9% of British wintering population).

Away from the Derwent Ings, there is evidence that birds of lowland wet grassland have declined. For example, breeding waders have disappeared from most of their former haunts in flood meadows along the River Ouse.

2.2.6.3 Old meadow grassland

Old, unimproved meadows and pastures on well-drained soils are now rare throughout the NA. In the vicinity of York, these 'old meadow' grasslands are mainly found in small, hedged fields dating back to the 16th or 17th century which bear the ridge-and-furrow imprint of pre-enclosure cultivation. One or two particularly rich stands also occur on the driest ground within flood meadows and fens. The typical plant community (coded MG5 in the National Vegetation Classification) features herbs such as common knapweed, common bird's-foot-trefoil, pignut and betony, along with fine-leaved grasses like red fescue, common bent and sweet vernal grass. The most diverse stands may also include species such as pepper saxifrage, bitter vetch, quaking grass and cowslip which are uncommon in the NA. The fauna of this habitat is not well recorded but includes butterflies and moths such as common blue, chimney sweep and narrow-bordered five-spot burnet.

On the basis of known sites, there may be as little as 35-40 ha. of MG5 grassland remaining within the NA. This is probably an underestimate as small, isolated stands may remain unrecorded (eg in old churchyards and road verges). Additionally, a few hectares of richer semi-improved meadow and pasture in the north may correspond to this community. However, the total area is unlikely to be more than 50 ha (equating to 1.25% of the UK NA 16 Vale of York and Mowbray

resource). Only one third of known examples are within protected sites, reflecting the fragmentary occurrence of this community.

Old meadow grassland is perhaps the most threatened habitat within the NA. Outside of SSSIs, this type of grassland has effectively disappeared from the farmed countryside and many examples are in small fields on the outskirts of settlements. Such sites are often sought after by developers, and building development is probably now the main threat to this habitat. Within the City of York, 32% of old meadow grassland disappeared in 1993-96.

Special species

A number of plants characteristic of old meadows and pastures were formerly widespread in the NA but have declined severely as a result of habitat loss. Amongst these, adderstongue fern and green-winged orchid are now confined to one or two sites such as Newton Mask SSSI.

2.2.6.4 Semi-improved grasslands

Hay Meadows and pastures which have received only modest improvement are now scarce in the NA. In Hambleton District (excluding the NYMNP and Howardian Hills AONB, just 0.77% of grassland was classified as unimproved, marshy or 'rich' semi-improved in 1994. In large parts of the Vale of Mowbray the only examples of herb-rich grassland are scattered stands on road verges and riverside levees.

Some of the larger examples of 'rich' semi-improved grassland are associated with grazed common land. Examples include Hob Moor in York, Sowerby Flats and Flaxton village green. Wildflowers such as bulbous buttercup, meadow buttercup, common sorrel, pignut and lady's smock are characteristic of these old pastures.

2.2.7 Woodland

Woodland in the NA consists mainly of scattered small and medium-sized stands; larger areas such as Landmoth Wood, Sessay Wood and Wheldrake Wood are exceptional. Woodland cover is low throughout the NA: 3.4% of the land area in lowland Hambleton¹, 3.3% in the City of York and 4.0% in Selby district². This compares with an average of 7.7% for England as a whole.

A very large proportion of woodland within the NA is plantation: over two thirds in lowland Hambleton and 72% in the City of York. Much of the remainder is secondary birch woodland of recent origin and ancient semi-natural woodland is very scarce.

In the Vale of York, woodland is largely confined to moderately acidic or neutral soils. The typical community in these conditions is common oak-bracken bramble woodland (NVC W10), which has often been replanted with conifers or sycamore. Field layer vegetation is characterised by broad buckler fern, brambles and sometimes bracken although old-established stands may have colourful displays of bluebells in spring.

¹ ie outside the NYMNP and Howardian Hills AONB

² pre 1996 boundaries

NA 16 Vale of York and Mowbray

Ash-dog's mercury woodland (NVC W8), so typical of adjacent Natural Areas with calcareous soils, is rare throughout the NA. Examples of this community are associated mainly with pockets of boulder clay and tend to be rather impoverished.

Birch woodland is widely distributed on poorer, more acidic soils. This has often developed naturally on formerly open habitats including remnants of heathland. In poorly-drained conditions, downy birch-purple moor grass woodland (NVC W4) is the characteristic community.

Special species

A number of birds of conservation concern are associated with woodland in the NA including woodcock, green woodpecker and marsh tit. Goshawk is now well-established as a breeding bird in larger conifer woods in the NA, albeit in very small numbers.

Bluebell woods are a feature unique to the British Isles and a very restricted area of north-west France and Belgium.

Extinct and declining species

A number of woodland species have become extinct in the NA, including pine marten and red squirrel. Many characteristic herbs of ancient woodland have probably declined as a result of coniferisation and rarer species such as herb Paris are now highly threatened within the NA.

2.2.8 Parkland

Parkland in the NA consists of a mixture of 18th century landscapes associated with country houses, and older examples such as those at Thicket Priory (Thorganby) and Sheriff Hutton Park.

The nature conservation interest of parkland in the NA is poorly documented although characteristic species such as nuthatch, hawfinch and noctule bat have been reported from some localities. Given the intensive management of woodland in the NA, parkland is likely to provide an important reserve for “over-mature” trees and their associated wildlife.

2.2.9 Hedgerows

Hedgerows in the NA have differing origins. Most field boundaries date back to the Parliamentary enclosure period (ca. 1750-1850) and are composed predominantly of hawthorn. Closes of smaller fields near settlements often date back to the 16th or 17th century and contain a greater diversity of species. Some of the finest and oldest hedgerows in the NA can be found along historic lanes or result from asserting - the piecemeal clearance of woodland to create fields. These ancient hedgerows typically contain field maple, hazel, holly, guelder rose and, more locally, dogwood.

No systematic study of hedgerow loss has been made in this region. Gappy hawthorn hedges were found to be by far the most common type of hedgerow in Selby district in the late 1980s and this probably applies throughout the NA.

Special species

Old hedgerow trees provide important nest sites for a number of birds of conservation concern including barn owl, kestrel and tree sparrow.

The nationally scarce small eggar moth has been recorded from a number of locations in the south-east of the NA. This species is associated with hawthorn and blackthorn hedges, where its larvae live in communal webs.

2.2.10 Arable

The flat land of the Vale of York and the fertile, undulating landscape of the Vale of Mowbray have long been predominantly arable areas. 63% of the land area in lowland Hambleton is arable, and the situation is probably similar throughout the NA. This compares with 44% for England as a whole.

Almost all arable land in the NA is now intensively farmed with the loss of important features for wildlife such as winter stubbles, uncropped field margins and boundary habitats. Typical farmland species are probably surviving best where landscape diversity is high (ie where there is a patchwork of arable, grassland and hedgerows) and it would be useful to identify such areas within the NA.

Special species

Species of conservation concern associated with arable land in the NA include grey partridge, turtle dove, skylark, corn bunting and hare. Despite some evidence of decline, corn bunting remains locally frequent in parts of the Vale of York, especially where arable farmland adjoins riverside hay meadows.

Nationally important concentrations of golden plover winter in the southern Vale of York, often utilising arable fields along the river valleys.

Extinct species

As in every area of lowland England, many weeds of arable field margins have disappeared. Species lost from the NA include corncockle, cornflower, corn buttercup, shepherd's-needle and broad-leaved spurge.

3. Influences and Issues

3.1 The physical environment

As drift deposits obscure the influence of the solid rocks underlying the NA, the primary physical influences on the natural environment have been flooding and variations in soil

characteristics. These strongly influenced the historical development of wildlife habitats such as hay meadows on the fertile river washlands and lowland heath on the barren tracts of sandy common. The distribution of woodland reflects the early clearance of clay soils for arable cultivation and the restriction of ancient woodland mainly to less productive, often rather acidic, soils.

Increasingly, modern agricultural methods and drainage engineering have diminished the constraints on land use imposed by the physical environment. Marling and liming have traditionally been used to bulk-up and fertilise the poorer sandy soils for arable cultivation, with spray irrigation and inorganic fertilisers further increasing productivity. Land drainage has greatly reduced the extent of wetlands throughout the NA, with pump drainage used to maintain low water tables in the flat farmland in the south. Although flooding is still extensive along the main rivers, drainage has allowed many areas of former hay meadow and grazing marsh to be converted to arable or improved pasture.

3.2 Traditional land use

Some of the most important semi-natural habitats in this NA are derived from historic land use practices. Moors and commons covered large areas of infertile, sandy or poorly-drained land prior to the Enclosures and were managed as rough grazings with other uses including warrening and the harvesting of gorse for fuel. These areas rapidly diminished following enclosure, being claimed mainly for arable cultivation. Conifer afforestation has also been extensive on the more intractable soils. Lowland heaths and acidic rough grazings, such as those at Strensall Common, thus represent relicts of a formerly much more extensive landscape.

The Ings meadows of the river floodplains have been exploited for hay and grazing since the Anglo-Danish period and probably, in some cases, since Roman times. During the middle ages, these fertile meadowlands were a prime agricultural resource, subject to complex management arrangements administered via the Manorial courts. Individual occupiers were entitled to harvest hay from strips or 'doles' but grazing of the aftermath was by common right. Most of the remaining unimproved flood meadows were never subject to legal enclosure and are still divided between multiple owners, although common grazing rights are no longer exercised. The survival of a relatively large proportion of winter-flooded hay meadows in this NA is thus very much a legacy of traditional land use practices.

Other habitats have also been shaped by past economic uses. Askham Bog was a raised mire which became a fen as the surface was lowered as a result of mediaeval peat cutting. A large proportion of woodland was managed as coppice with standards until around the 18th Century, and evidence of this can be found in the relatively few remaining ancient semi-natural woodlands in the NA although commercial coppice management has long been abandoned.

Mineral extraction has been locally important in the Vale of Mowbray. Laminated lacustrine clays have been dug for brick and tile making on a small scale, with larger-scale extraction of aggregates in the north-west of the NA. Disused gravel workings near Bolton-on-Swale now form the Swale Lakes SSSI and are important for breeding and wintering birds.

Deep mining of coal is an important industry in the south of the NA and may come to have a significant impact upon the landscape if extensive subsidence occurs.

3.3 Issues affecting nature conservation

Water quality and quantity (abstraction, land drainage, water level management). Inter-catchment transfer of water supplies.

Mining subsidence.

Continuing loss of unimproved grassland outside of protected sites.

Biofuel production may threaten unprotected areas of wet grassland.

Hedgerow deterioration and loss of hedgerow trees.

Atmospheric nitrogen deposition exceeds critical loads for sensitive ecosystems such as fens and heaths, and may contribute to deterioration of characteristic communities.

Eutrophication from floodwater or atmospheric deposition (or both) may be a factor in the reduction in species diversity in some semi-natural grasslands (eg on the Ouse Ings).

Obstructions to migratory fish such as locks, barrages and weirs.

Impact of poor water quality in tidal Ouse and Humber estuary on migratory fish.

Possible establishment of feral crayfish.

Persecution of raptors.

Recreational pressure on important wildlife sites (especially in the vicinity of York).

4. Visionary Objectives

The Vale of York and Mowbray Natural Area has experienced dramatic land use changes in the past. These changes have influenced the current nature, location and extent of the wildlife resource. Some of the distinctive character of the Natural Area survives within 'special' sites, for example statutory and non-statutory wildlife designations. Other elements of this character are preserved within the wider countryside, for example in the balance of different land uses, field patterns and the importance of other habitats such as moorland, woodland, and grassland.

Habitat and species losses are a recurring thread throughout lowland England and have been well documented. English Nature seeks to work with other organisations and individuals to maintain the existing wildlife character of the Natural Area and to start the process of restoring the nature conservation resource where this is appropriate.

To this end the following objectives reflect English Nature's view of the nature conservation priorities. We hope that they will assist in the development of a clear 'vision' for the future can be developed in consultation with others and incorporated within documents concerned with delivery of action on the ground such as the Local Biodiversity Action Plans.

Objective 1

Manage characteristic wildlife habitats and species in a sustainable way, and restore them where they have been lost from the Natural Area.

Background: In common with all other Natural Areas, the Vale of York and Mowbray would once have comprised natural and semi-natural habitats in balance within a 'natural' ecosystem. Hundreds of years of population growth linked to agricultural intensification have produced the present fragmented collection of small sites. Left to their own devices, many of these habitats would follow a natural path of succession (eg grassland → scrub) which in a natural ecosystem would be acceptable because new habitats would be arising continually, as a result of natural processes, to take their place. In the absence of these natural processes it is essential to manage the status quo to avoid the permanent loss of the habitats. However, in the long term maintaining what we have is not sufficient, as we are likely to see gradual erosion of habitats and loss of species unless the reasons for the losses are addressed, and habitat losses reversed; habitat creation and species introductions are essential to this process.

Aspirations

- Rivers and river corridors will be managed in a way that is sympathetic to their current and potential nature conservation interest. River banks will not be overgrazed or poached, and all rivers will have a corridor either side with suitable management and no agricultural intensification in this area. Natural river dynamics will be restored to the river system throughout the natural area. Water quality issues will be addressed as part of this process and rivers will support fish species such as grayling and bullhead.
- Fens, swamps and land drains will be managed to preserve their species richness. The current extent of fens and swamps will be increased by reclaiming neglected sites and creating new ones. These habitats will once again support characteristic animals and plants.
- Neutral grasslands (including riverside pastures) will be managed along traditional lines to preserve their species richness. New areas of these grasslands will be created using local, characteristic seed sources.
- Standing water bodies will be managed for nature conservation benefit wherever possible. Particular attention will be paid to the restoration and re-creation of farm ponds, with at least one farm pond in every parish being managed for its wildlife (eg great crested newts).

- A proportion of old sand and gravel workings will be managed to conserve their unique fauna and flora.
- Existing woodlands and hedgerows will be managed along traditional lines to preserve and support species dependant on this management. In woodlands, this management may be active (eg coppicing) or passive (eg minimal intervention), whilst hedgerows will be cut in alternate years only and neglected hedges will be re-laid. Further areas of native woodlands will be replanted using local, native seed sources and particular attention will be paid to expanding existing sites through the use of planting, natural regeneration and linking sites via hedgerows. Willow carr in particular will be allowed to regenerate in the flood plains, where it will provide a valuable wildlife refuge and a natural flood defence. A length of hedgerow equivalent to 10% of the current length within the Natural Area will be replanted.
- Self-sustaining populations of arable weeds (such as corncockle, cornflower and shepherd's-needle) will be established at suitably managed sites.

Objectives 2

Consolidate populations of rare and declining species to a point where they are sustainable. Re-establish extinct species where suitable habitat exists and the reasons for the original loss have been understood and overcome.

Background: Development pressures, intensive agriculture and changing agricultural practices are a few of the main factors contributing to loss of habitats and associated species to a point where they are no longer as common as they once were. Other species have always been rare because the habitats or niches they occupy are of restricted distribution and have never been common within the Natural Area. Habitat fragmentation and species isolation may have contributed to declines in populations. Many species can be maintained by appropriate habitat management, whilst others can thrive if they are re-introduced to appropriate and properly managed habitats within their previous range.

Aspirations

- *Water Vole* The current distribution and abundance of water voles in the Natural Area will be maintained. Populations will be re-established throughout their 1970's range by habitat improvement and translocation.
- *Pipistrelle Bat* The current populations and range of pipistrelle bats will be maintained in the Natural Area, and populations restored to pre-1970 numbers.
- *Skylark* Present breeding and wintering numbers and distribution throughout the Natural Area will be maintained. The decline in populations will be reversed and habitats where they occur will be protected, particularly during the breeding season.
- *Grey Partridge* The current decline in grey partridge numbers will be halted by 2005 and the present range will be maintained and expanded.

- *Song Thrush* Stop the current decline in numbers by the year 2000. The present range and population levels will be maintained, and where possible restored to the 1970's estimate. Priority research aimed at formulating future conservation action will be identified and implemented.
- *Great Crested Newt* The range, distribution and where feasible viability of existing populations will be maintained. Restore self-sustaining populations to 1 unoccupied site each year for the next five years.
- *White Clawed Crayfish* The present distribution of this species will be maintained by attempting to limit the spread of crayfish plague, limiting the spread of non-native species and by maintaining appropriate habitat conditions. Populations will be restored to areas where the species was known to occur in the past and where non-native species are not present.
- *Depressed River Mussel* Key populations will be identified and maintained by 2000. The ecology and habitat preferences of the species will be researched and appropriate management of habitats will take place.
- *Barn Owls* Barn owls will be encouraged by appropriate management of habitats they depend on for food and nesting. Set aside and other rough grassland will be encouraged and managed to provide suitable feeding areas, and suitable nest sites will be protected (or created where necessary).
- *Otters* Otters will be present in rivers, streams and other water bodies throughout the Natural Area. The needs of otters will be taken into account when determining management of rivers.
- *Farmland and Wetland Birds* Those species characteristic of the Natural Area will be restored to former levels (baseline 1950's) and their needs will be taken into account when determining the management of their respective habitats. Birds such as corn bunting, hobby, redshank and snipe will once again be a familiar sight.

Objectives 3

Maintain the diversity of geological interest found within the Natural Area

Background: The geological interest of this Natural Area is largely obscured by more recently deposited sands, gravel and glacial clays. Where exposed by man in gravel pits they represent a valuable resource for study. After-use of excavations is often not sympathetic to their conservation interest and can result in the effective loss of sites

Aspirations

- Access will be maintained to all currently exposed geological sites, to enable current and future scientific study.

- Geology will be promoted by better on-site interpretation and educational use of sites where appropriate, whilst realising the potential for education and study of new exposures.
- Local conservation strategies which include geology will be encouraged, as will the setting up of a local RIGS group.
- Geological interest will be taken seriously when determining after-use of developments such as quarries, with a proportion of sites allocated to a “geological conservation after-use” at the planning stage.

Appendix

Scientific Names of Species

Adder	<i>Vipera berus</i>
adder's-tongue fern	<i>Ophioglossum vulgatum</i>
arrowhead	<i>Sagittaria sagittifolia</i>
ash	<i>Fraxinus excelsior</i>
Banded demoiselle (damselfly)	<i>Calopteryx splendens</i>
barbel	<i>Barbus barbus</i>
barn owl	<i>Tyto alba</i>
Bewick's swan	<i>Cygnus columbianus</i>
betony	<i>Stachys officinalis</i>
birch	<i>Betula pendula/B. Pubescens</i>
birdsfoot	<i>Ornithopus perpusillus</i>
bistort	<i>Persicaria bistorta</i>
bitter vetch	<i>Lathyrus linifolius</i>
black-necked grebe	<i>Podiceps nigricollis</i>
bleak	<i>Alburnus alburnus</i>
bluebell	<i>Hyacinthoides non-scripta</i>
blunt-flowered rush	<i>Juncus subnodulosus</i>
bog pondweed	<i>Potamogeton polygonifolius</i>
bracken	<i>Pteridium aquilinum</i>
bramble	<i>Rubus fruticosus agg.</i>
broad buckler fern	<i>Dryopteris dilatata</i>
broad-leaved pondweed	<i>Potamogeton natans</i>
broad-leave spurge	<i>Euphorbia platyphyllos</i>
brown hare	<i>Lepus europaeus</i>
brown long-eared bat	<i>Plecotus auritus</i>
brown sedge	<i>Carex disticha</i>
brown trout	<i>Salmo trutta</i>
bulbous buttercup	<i>Ranunculus bulbosus</i>
bulbous rush	<i>Juncus bulbosus</i>
burbot	<i>Lota lota</i>
Chimney sweep (moth)	<i>Odezia atrata</i>
chub	<i>Leuciscus cephalus</i>
common bent	<i>Agrostis capillaris</i>
common birdsfoot trefoil	<i>Lotus corniculatus</i>
common blue (butterfly)	<i>Polyommatus icarus</i>
common butterwort	<i>Pinguicula vulgaris</i>
common club-rush	<i>Schoenoplectus lacustris</i>
common cotton grass	<i>Eriophorum angustifolium</i>
common knapweed	<i>Centaurea nigra</i>
common lizard	<i>Vivipera vivipera</i>
common reed	

common sandpiper
common sorrel
common storksbill
corn bunting
corn buttercup
corncockle
cornflower
cowslip
creeping bent
creeping jenny
cross-leaved heath
curlew

Dace

Daubenton's bat
dogwood
dunlin

Eel

elongated sedge

Fairy shrimp

fennel pondweed
fibrous tussock sedge
field garlic
field maple
field pansy
fine-leaved water dropwort
fingered speedwell
flat-stalked pondweed
flowering rush

Gadwall

garganey
golden plover
gorse
goosander
goshawk
grass-of-Parnassus
grayling (fish)
great burnet
great crested grebe
great crested newt
great fen sedge
greater water-parsnip
green tiger beetle
green winged orchid
grey partridge

Phragmites australis
Actitis hypoleucos
Rumex acetosa
Erodium cicutarium
Miliaria calandra
Ranunculus arvensis
Agrostemma githago
Centaurea cyanus
Primula veris
Agrostis stolonifera
Lysimachia nummularia
Erica tetralix
Numenius arquata

Leuciscus leuciscus
Myotis daubentoni
Cornus sanguinea
Calidris alpina

Anguilla anguilla
Carex elongata

Chirocephalus diaphanus
Potamogeton pectinatus
Carex appropinquata
Allium oleraceum
Acer campestre
Viola arvensis
Oenanthe aquatica
Veronica triphyllos
Potamogeton friesii
Butomus umbellatus

Anas strepera
Anas querquedula
Pluvialis apricaria
Ulex europaeus
Mergus merganser
Accipiter gentilis
Parnassia palustris
Thymallus thymallus
Sanguisorba officinalis
Podiceps cristatus
Triturus cristatus
Cladium mariscus
Sium latifolium
Cicindela campestris
Orchis morio

guelder rose

Hair-like pondweed

harvest mouse
hawfinch
hawthorn
hazel
heath cudweed
heath assassin bug
herb Paris
holly

Kingfisher

Lady's smock

lapwing
lesser pond sedge
lesser wintergreen
ling
little ringed plover
loose silky bent

Marsh cinquefoil

marsh fern
marsh foxtail
marsh fritillary (butterfly)
marsh gentian
marsh helleborine
marsh marigold
marsh pea
marsh pennywort
marsh tit
marsh violet
meadow buttercup
meadow-rue
meadowsweet
medicinal leech

Narrow-bordered five spot burnet

narrow-leaved water plantain
noctule bat
nuthatch

Oak

opposite-leaved pondweed
otter
oystercatcher

Perdix perdix
Viburnum opulus

Potamogeton trichoides
Micromys minutus
Coccothraustes coccothrauste
Crataegus monogyna
Corylus avellana
Gnaphalium sylvaticum
Coranus subapterus
Paris quadrifolia
Ilex aquifolium

Alcedo atthis

Cardamine pratensis
Vanellus vanellus
Carex acutiformis
Pyrola minor
Calluna vulgaris
Charadrius dubius
Apera spica-venti

Potentilla palustris
Thelypteris palustris
Alopecurus geniculatus
Eurodryas aurinia
Gentiana pneumonanthe
Epipactis palustris
Caltha palustris
Lathyrus palustris
Hydrocotyle vulgaris
Parus palustris
Viola palustris
Ranunculus acris
Thalictrum flavum
Filipendula ulmaria
Hirudo medicinalis

Zygaena loniceri
Alisma lanceolatum
Nyctalus noctula
Sitta europaea

Quercus robur
Groenlandia densa
Lutra lutra
Haematopus ostralegus

Palmate newt
pepper saxifrage
perch
perfoliate pondweed
pignut
pike
pillwort
pine marten
pintail
pochard
pond water crowfoot
purple moor-grass
purple small-reed

Quail

Ragged robin
red fescue
red squirrel
reed bunting
reed canary grass
reed sweet grass
ringed plover
river lamprey
river water crowfoot
round-leave sundew
roach
royal fern
ruff
ruffe

Sand leek
sand martin
sea lamprey
sedge warbler
sheep's sorrel
shelduck
shepherd's cress
shepherd's needle
shining pondweed
shoreweed
shoveler
skylark
small allison
small eggar (moth)
small pearl-bordered fritillary
snipe
spotted crake

Triturus helveticus
Silaum silaus
Perca fluviatilis
Potamogeton perfoliatus
Conopodium majus
Esox lucius
Pilularia globulifera
Martes martes
Anas acuta
Aythya ferina
Ranunculus peltatus
Molinia caerulea
Calamagrostis canescens

Coturnix coturnix

Lychnis flos-cucculi
Festuca rubra
Sciurus vulgaris
Emberiza schoeniclus
Phalaris arundinacea
Glyceria maxima
Charadrius hiaticula
Lampetra fluviatilis
Ranunculus fluitans
Drosera rotundifolia
Rutilus rutilus
Osmunda regalis
Philomachus pugnax
Gymnocephalus cernua

Allium scorodoprasum
Riparia riparia
Petromyzon marinus
Acrocephalus schoenobaenus
Rumex acetosella
Tadorna tadorna
Teesdalia nudicaulis
Scandix pecten-veneris
Potamogeton lucens
Littorella lacustris
Anas clypeata
Alauda arvensis
Alyssum alyssoides
Eriogaster lanestris
Boloria selene
Gallinago gallinago

spring vetch
stream water crowfoot
sulphur water dropwort

Tansy beetle
teal
tower mustard
trailing St John's wort
tufted sedge
turtle dove

Unbranched bur-reed

Velvet bent
viper's bugloss

Water purslane
water rail
water violet
water vole
white-clawed crayfish
whitlow grass
whooper swan
wigeon
woodcock
woodlark

Yellow lily
yellow star-of-Bethlehem

Porzana porzana
Vicia lathyroides
Ranunculus penicillatus
Oenanthe silaifolia

Chrysolina graminis
anas crecca
Arabis glabra
Hypericum humifusum
Carex elata
Streptopelia turtur

Sparganium emersum

Agrostis canina
Echium vulgare

Lythrum portula
Rallus aquaticus
Hottonia palustris
Arvicola terrestris
Austropotamobius pallipes
Erophilla verna agg.
Cygnus cygnus
Anas penelope
Scolopax rusticola
Lullula arborea

Nuphar lutea
Gagea lutea

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