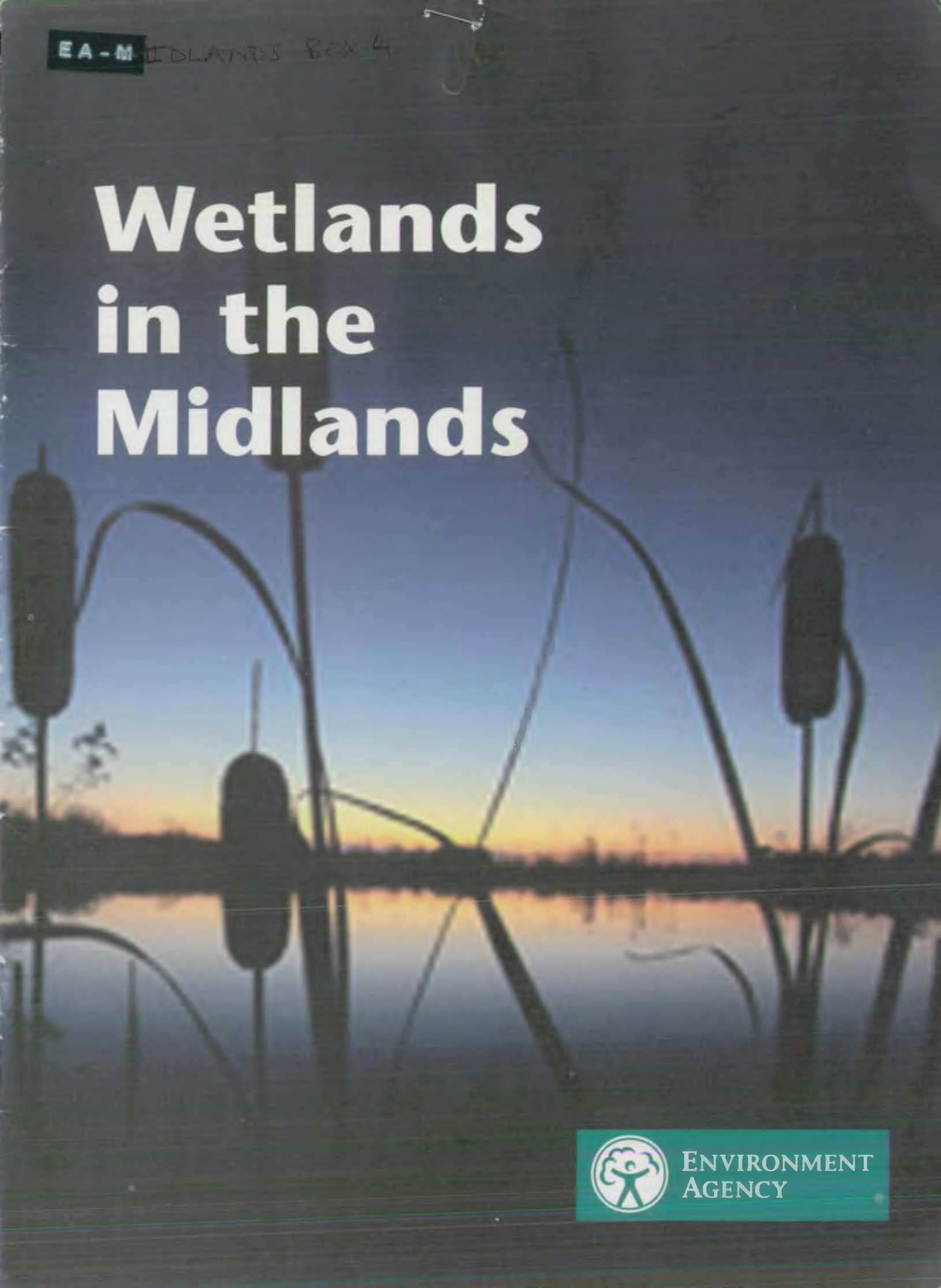
Wetlands in the Midlands



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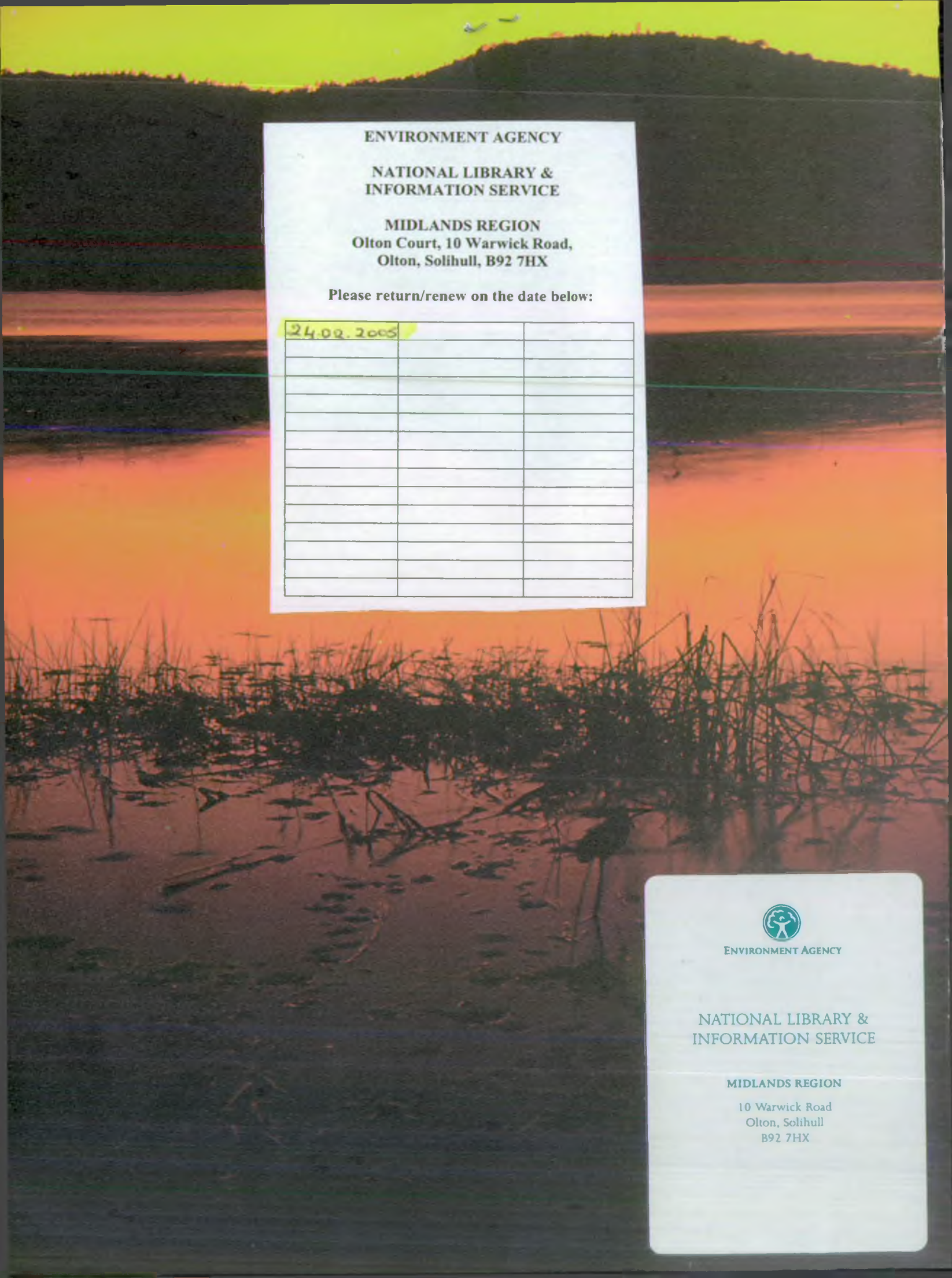

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The geography of the Environment Agency Midlands Region is very varied, from the uplands of the Peak District and Mid-Wales, through fertile agricultural areas and large urban conurbations, to the extensive lowlands of the Humberhead Levels and the Severn Vale. This variety of landscape is reflected in a great diversity of wildlife habitats - and this is demonstrated no better than in the wetlands - habitats dependent upon a regular supply of water. Peatlands, marshes, open water and saltmarsh are all to be found here. This booklet describes the different types of wetlands (apart from running waters) to be found in the Midlands Region, and details the Environment Agency's involvement with their conservation.

RIVER VALLEY WETLANDS

Before intensive agriculture and widespread land drainage, most lowland rivers would have flowed through extensive wetland areas taking up the valley bottom. Now, only remnants remain - which is why such habitats are so precious.

The Stour Valley wetlands in Worcestershire provide an indication of what such areas would once have been like. Now fragmented by the urban development of Kidderminster and degraded by drainage works, these still form a string of marshy sites along the Stour. The marshland areas remaining are dominated by tall species such as reed sweetgrass, reed canary grass, marsh horsetail and various sedges and rushes. Amongst them grow attractive flowers such as valerian, great hairy willowherb, meadowsweet and yellow iris, together with less common species such as southern marsh orchid and great water dock.

Another area of valley marsh is to be found at Doxey and Tillington Marshes, on the edge of Stafford, beside the River Sow. This site, partly owned by the Environment Agency, displays a similar range of species amongst its reed-sweetgrass marshland. It also encompasses a range of other wetland types, notably reedbeds, and wet grassland, on which nest and feed the snipe for which the site is noted.

Marshland, although wet, may dry out at certain times of the year. Other valley wetlands are even more dependent upon a continuing depth of water. In reedswamp, usually dominated by Norfolk reed, the plants stand with their roots and lower parts in a depth of water all the year round. In fens, the marshy vegetation is growing on a layer of alkaline peat. Such habitats are rare in Midlands Region, confined to small and isolated pockets, such as around the meres of Shropshire and Staffordshire, or occasional sites such as Narborough Bog – this, the only area of peatland remaining in Leicestershire, has a notable reed bed, supporting species such as reed and sedge warblers and the wainscot moths, a group largely confined to wetland sites.

Mottey Meadows

Wet grassland sites are important for ground-nesting

waders such as lapwing and redshank as well as snipe, and for a variety of plants. A good example of a wet grassland site is Mottey Meadows in Staffordshire. Here, a series of hay meadows is managed in the traditional way, with the grass cut for hay in July (and used to feed police horses in Wolverhampton), followed by grazing by cattle and sheep. This maintains the conditions necessary for successful growth and flowering by such attractive plants as great burnet, ragged robin and the snake's-head fritillary. This last species in particular, a member of the lily family, is a real rarity nowadays. The great majority of lowland hay meadows where it thrives have been destroyed by drainage, artificial fertilisers or herbicides.

Carr is the name given to wet woodland, where the trees, usually alder or willows, grow in an intimate mixture with fen vegetation. All across Europe, wet river valley woodlands have been lost, and it is one of the most threatened habitats. In the Midlands, only pockets remain, such as at Ulverscroft Valley in Charnwood Forest and Morton Pool in Shropshire. It is the destruction of such wet woodlands that has led to black poplar becoming one of Britain's rarest trees.

Doxey Marshes

ENVIRONMENT AGENCY ACTION FOR RIVER VALLEY WETLANDS:

- producing Water Level Management Plans for the Stour Valley wetlands
- producing the first comprehensive management plan for Doxey Marshes; erection of bird hides and assistance with other aspects of management
- bringing in an additional feed of water to Narborough Bog
- preventing over-abstraction from affecting Morton Pool

PEATLANDS

As well as fens, the Midlands Region has a number of extremely important acidic peat bog sites. The best preserved lowland peat bogs are to be found in the mosses of Shropshire and Staffordshire, part of a series, together with the 'meres' (small lakes), of internationally important wetland sites. Here, in hollows of impeded drainage formed after the last Ice Age, Sphagnum bog-mosses and other vegetation have grown and their partly-decayed remains have built up to form the peat.

Fenn's Whixall and Bettisfield Mosses, on the border of Shropshire and Wales, is a lowland raised bog, a dome of peat formed by Sphagnum growth. Despite drainage and peat extraction in the past, it retains a wide variety of wildlife, especially wetland insects, notably a rich collection of dragonfly species and a number of rarities such as the bog bush-cricket. A different type of bog is seen at Chartley Moss, Staffordshire, where a floating raft of peat has grown out over an underground lake, forming a "skin" of vegetation, which supports, amongst the bog-mosses, plants such as cottongrass, cranberry, round - leaved sundew and bog rosemary.

The Humberhead Peatlands of South Yorkshire and North Lincolnshire, consisting of Hatfield Moors, Thorne, Goole and Crowle Moors, and a few other small sites, form the largest complex of lowland raised bog in Britain. They have been much degraded by peat cutting and drainage, but where the abandoned peat cuttings are sufficiently wet, they are reverting back to a rich bog habitat, with a similar, though reduced, range of wetland plants as the Mosses, and animals such as large heath butterfly. On drier areas, heather and bracken are more common, and here can be found adders, lizards and significant numbers of breeding nightjars.

Thorne Moors

Plynlimon

The upland areas of the Midlands Region have yet another type of peat bog - blanket bog, which clothes the tops of the hills. The source of the Severn, on Plynlimon, arises in blanket bog, and the Berwyn uplands around Lake Vyrnwy are covered by blanket bog dominated by heather, hare's-tail cottongrass and bog-mosses, together with other plants like cloudberry, deergrass, cross-leaved heath and bilberry. Upland breeding birds include hen harrier, merlin and golden plover. The blanket bogs of the Peak District have been degraded by air pollution from the surrounding industrial areas, which combined with overgrazing has led to widespread erosion, but nevertheless they still support nationally important breeding populations of golden plover and dunlin, together with significant numbers of other birds such as curlew, red grouse and short-eared owl.

ENVIRONMENT AGENCY ACTION FOR PEATLANDS:

- extensive groundwater studies at Thorne and Hatfield, and production of Water Level Management Plans
- scrub removal, sluice construction and other management of Fenn's, Whixall and Bettisfield Mosses and at Loynton Moss, Staffordshire

LAKES AND PONDS

There are very few natural lakes in the Midlands Region. Most of them are to be found in the NW Midlands series of mosses and meres; after the Ice Age, whilst some of the hollows left in the landscape filled up with peat, others remained as open water sites, the "meres".

These meres are rich in plant life, though many of them have suffered in recent years from eutrophication (ie: over enrichment with nutrients), leading to domination by algae at the expense of flowering plants. The meres are also generally fringed by other important wetland habitats such as fen and carr. The largest of these lakes is Aqualate Mere in Staffordshire. The mere holds a large and varied fish population, which in turn supports a large heronry. It also attracts numbers of waterfowl, especially in winter, when the visitors may include pintail, goldeneye and shoveler amongst the more common ducks. Otters also use the site. Aqualate Mere is a National Nature Reserve managed by English Nature.

There are several examples of lakes which were created for ornamental purposes in the grounds of large country houses. Coombe Abbey lake, part of a Capability Brown landscape, now forms the centrepiece of a country park to the east of Coventry. The lake and surrounding woodland support a great variety of bird life, including the largest heronry in Warwickshire. Hewell Park lake, near Redditch, lies in the grounds of Hewell Grange and is now owned by HM Borstal. The lake's extensive marginal reedbeds hold a large colony of reed warblers together with breeding waterfowl including great crested grebe, and the lake margins are noted for the numbers of grass snakes present.

Ponds can be found widely scattered across the Midlands, with particular concentration in pastoral areas such as Shropshire. Unlike lakes, ponds have rarely been given protection as nature reserves in their own right, usually being part of a larger agricultural system. An exception is Badgeworth nature reserve in Gloucestershire, a tiny site established solely to protect the rare adder's - tongue spearwort, a colourful yellow flower of the buttercup family known from only two sites in Britain.

Coombe Abbey

Aqualate Mere

ENVIRONMENT AGENCY ACTION FOR LAKES AND PONDS:

- tackling water quality and abstraction problems at Aqualate Mere.
- funding a remote camera unit looking at nesting herons at Ellesmere.
- dealing with water supply problems at Hewell Park Lake.
- creating many new ponds all across the Region.
- involvement in the planning system to protect ponds from development and encourage the creation of new ponds.

ARTIFICIAL WETLANDS

Deliberately or otherwise, human activities in both the countryside and urban areas have created large numbers of new artificial wetland habitats, and many of these have acquired a wildlife value equivalent to that of natural wetlands. Perhaps the most obvious are the water supply reservoirs which provide extensive open waters in both upland and lowland areas.

Lake Vyrnwy

Lake Vyrnwy, in mid-Wales, was built to supply water to Liverpool, but it now forms the focus not only of a water supply operation but also a nature reserve run by the RSPB. Goosander breed here, at one of the few Welsh sites, as do common sandpiper, grey wagtail and occasional great crested grebe. The lake is surrounded by woodland, heather moorland and blanket bog, the latter supporting wetland species such as tall bog sedge and the large heath butterfly. The Derwent reservoirs in the Peak District have a similar mix of open water, woodland and moorland and a similar range of species. In more lowland situations, the Charnwood Forest reservoirs (Swithland, Blackbrook, Cropston) form an important complex of habitats with the surrounding woodland and heathland, harbouring interesting plant communities as well as breeding birds and crayfish, whilst the extensive open water of Blithfield Reservoir and Draycote Water attracts many wildfowl.

Mineral workings have also created artificial wetlands. Because gravel beds are largely laid down by the action of rivers, commercial gravel pits tend to be in river valleys, where the high water table often means that gravel diggings remain flooded, with potential to develop into artificial lakes of high wildlife interest. A number of gravel pit nature reserves around the Region have been successfully managed in this way. Attenborough, near Nottingham, where the Erewash joins the Trent, is one example. With woodland and scrub (including a great variety of willow species) sheltering the many pools and lakes, and the creation of new reedbeds, conditions are ideal for aquatic species such as dragonflies, diving beetles and marshland plants, whilst garganey, shelduck and common terns are amongst the breeding birds.

Brandon Marsh, near Coventry, is another example where conservation management of former gravel diggings has led to a nature reserve of high wildlife importance. Again, the creation of reedbeds has encouraged birds such as reed bunting, reed and sedge warblers and water rail, whilst less common visitors have included bearded tit, spotted crake and great reed warbler. Such sites tend not to be in isolation; there are

strings of wetlands formed by gravel winning along many of our major rivers, and strategies are being put in place along the Tame and the Trent, for example, to ensure that their after-care, when commercial use has finished, provides the maximum environmental benefits. Artificial wetlands now stretch along the Tame over a distance of 16 kilometres (10 miles).

Elsewhere, the exploitation of coal reserves has led to the development of subsidence ponds, where the excavated ground has dropped away. Examples are found at Alvecote Pools in Warwickshire and along the River Poulter in Nottinghamshire, where the resulting pools and wet woodland have quickly gained significant wildlife interest. Even more unusually, there are a few instances in the Midlands of inland saltmarsh, a habitat more normally found in estuaries, formed where brine extraction from salt deposits underground has caused subsidence. At Upton Warren, near Droitwich, and Pasturefields Saltmarsh in Staffordshire, plants which are typically coastal, such as reflexed saltmarsh-grass, spear-leaved orache and sea-spurrey, are found far from the sea.

Modern approaches to flood defence in urban areas have included the use of balancing areas where floodwaters can be held back, and these are often allowed to develop into wetland features. The prime example of this is Sandwell Valley, where the lake and surrounding marsh was designed not only to take water from the Tame to prevent Birmingham from flooding, but also as a wildlife reserve. It has now developed a high wildlife interest – breeding grebes, wintering teal and snipe, and waders such as dunlin on migration - at the centre of the Region's largest urban area.

Brandon Marsh

Canals, although originally built for transport purposes, now also serve as linear wetlands, often supporting significant wildlife interest. In Leicestershire, the Ashby Canal has a rich community of submerged plants, especially pondweeds, as well as dragonflies, crayfish and water shrews. The Chesterfield Canal is also notable for its aquatic plant community, characteristic of the nutrient-rich water, whilst the Cannock Extension Canal supports a large population of the internationally scarce floating-leaved water-plantain. This species, as well as other rarities such as grass-wrack pondweed and autumnal water-starwort, is also to be found in the Montgomery Canal, currently disused but undergoing restoration. Many disused canals have acquired a significant flora and fauna, and restoration proposals need to take careful account of their conservation interest.

ENVIRONMENT AGENCY ACTION FOR ARTIFICIAL WETLANDS:

- creating important bird habitat at South Staffordshire Water's Chelmarsh reservoir
- tackling water quality problems at Attenborough Gravel Pits
- creating reedbeds and other wetland habitats at Brandon Marsh
- assisting Worcestershire Wildlife Trust with the management Upton Warren nature reserve
- Sandwell Valley is an integral part of the Birmingham flood defences
- dealing with water quality issues on the Chesterfield Canal
- creating wetland habitats at Llyn Coed y Dinas, a borrow pit near Welshpool
- management plan prepared for the mining subsidence wetland at the Agency's Wilford Lane site in Nottingham
- using the planning system to encourage mineral companies to create extensive areas of wetland

ESTUARIES

The rivers of the Midlands Region drain to two major estuaries – the Severn Estuary, and the Humber, which the Trent feeds into. Each of these forms a large and important wetland complex, encompassing a range of habitats and species which are able to tolerate the harsh and changeable environment of tides and brackish water.

The Severn Estuary has the second greatest tidal range in the world, and this, due to its funnel shape, accounts for the phenomenon of the Severn Bore. At low tide, vast areas of mud and sand flats are exposed, and the numerous invertebrates which live in them provide food for large numbers of birds in winter and on migration – species such as dunlin, shelduck and curlew occur in internationally important numbers. The presence of large numbers of wildfowl – notably white-fronted geese, but also Bewick's and whooper swans, wigeon, mallard and many other ducks – led to the establishment of the first Wildfowl Trust reserve at Slimbridge. Around the shores of the estuary, there are other habitats – small areas of shingle, and fairly extensive saltmarsh, including such plants as sea clover, sea barley, corn parsley and slender hare's-ear.

The Humber forms the estuary not only of the River Trent, but also the Ouse, Aire and other smaller rivers. Like the Severn Estuary, the Humber has extensive mud-flats, attracting numerous migratory wading birds, notably dunlin, redshank and bar-tailed godwit. Near the mouth of the Trent, there is rather little true saltmarsh, but the RSPB reserve at Blacktoft Sands has the most extensive reedbed in the Midlands Region. This saltwater-influenced reedbed is an important stronghold for nesting bearded tits, and also provides a breeding site for water rails, grasshopper warblers and occasional marsh harriers.

Blacktoft Sands

Severn Estuary

ENVIRONMENT AGENCY ACTION FOR ESTUARIES:

- creating a reedbed and other wetland habitats at Slimbridge.
- assisting with reedbed management at Blacktoft Sands.
- all tidal defence works around estuaries are undertaken in a environmentally sympathetic way, and opportunities are sought for the creation of new saltmarsh

CONSERVATION

Wetlands are important for many reasons, not just for their wildlife value, significant though that may be. Wetlands can act as water storage areas, which alleviate the effects of flooding; they may act to intercept, and clean up, polluted water as it runs off from fields or roads; they may help to preserve archeological features; they may provide recreational benefits, or be important simply for their amenity value, as part of the landscape. For all these reasons, it is vital that wetlands are valued, protected and managed so that they can provide these benefits into the future.

Some wetland sites are given protection through official designation - in particular, many wetlands are Sites of Special Scientific Interest, showing that they are amongst the most important conservation sites in Britain. A few of the most significant are given additional recognition as National Nature Reserves - Fenn's Moss and the Humberhead Peatlands are examples. Some sites are recognised as being important not only for Britain but in a European context. These are Special Protection Areas for birds (such as Walmore Common in Gloucestershire, important for its wintering wildfowl) and Special Areas of Conservation for other animals and plants (Cannock Extension Canal and Mottey Meadows are SACs). Perhaps most significantly, a number of Midlands sites are recognised under the international Ramsar

Doxey Marshes

Thorne Moors

Convention on the Conservation of Wetlands - the Midlands Mosses and Meres and the Severn and Humber estuaries are all Ramsar sites.

Many wetland habitats and species have been identified as of particular importance in the Local Biodiversity Action Plans that are being produced. These highlight the fact that, to conserve the full range of wetland species, it is important not just to protect wetlands but also to manage them in an appropriate way. The majority of the wetlands mentioned above are managed by conservation bodies, and in many instances the Environment Agency has assisted with that management.

Given that wetlands are, by definition, dependent upon water, it is vital that the Environment Agency takes heed of wetlands in everything it does or regulates that affects the water cycle. All the Agency's flood defence works are given thorough environmental assessment to ensure that they are not causing adverse impacts on wetlands. Similarly, before the Agency grants abstraction licences or discharge consents, they are considered carefully to ensure that they are not adversely affecting the water supply or water quality of near-by wetlands. In fact, the Agency is looking carefully at wetland sites to see whether problems caused by authorisations given in the past can be put right. Wetlands are such an important part of our biodiversity resource that all opportunities must be taken to conserve and enhance them.

ENVIRONMENT AGENCY ACTION:

- the Agency is developing a wetland strategy to ensure conservation of important wetlands around the Region.

WETLAND SITES IN THE MIDLANDS

WETLANDS TO VISIT

Note that a charge may be made for entrance to some of these sites.

A. Lake Vyrnwy
RSPB
Upland Reservoir, heather moorland

B. Llyn Coed y Dinas
Montgomeryshire Wildlife Trust
Lake, scrape, reed bed

C. Fenn's, Whixall and Bettisfield Mosses
English Nature/Countryside Council for Wales
Lowland raised bog

D. Upton Warren
Worcestershire Wildlife Trust
Subsidence ponds, fen, inland saltmarsh

E. Brandon Marsh
Warwickshire Wildlife Trust
Flooded gravel pits, reed beds

F. Slimbridge Wildfowl Reserve
Wildfowl and Wetlands Trust
Severn Estuary, saltmarsh, mudflats, meadows

G. Doxey Marshes
Staffordshire Wildlife Trust
Marshland, pools

H. Sandwell Valley
RSPB
Flood defence balancing lake

I. Kingsbury Water Park
Warwickshire County Council
Flooded gravel pits

J. Attenborough Gravel Pits
Nottinghamshire Wildlife Trust
Flooded gravel pits

K. Humberhead Peatlands
(Thorne Moors)
English Nature
Lowland raised bog

L. Blacktoft Sands
RSPB
Humber Estuary, mudflats, saltmarsh, reed beds

M. High Peak Estate
National Trust
Upland blanket bog

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