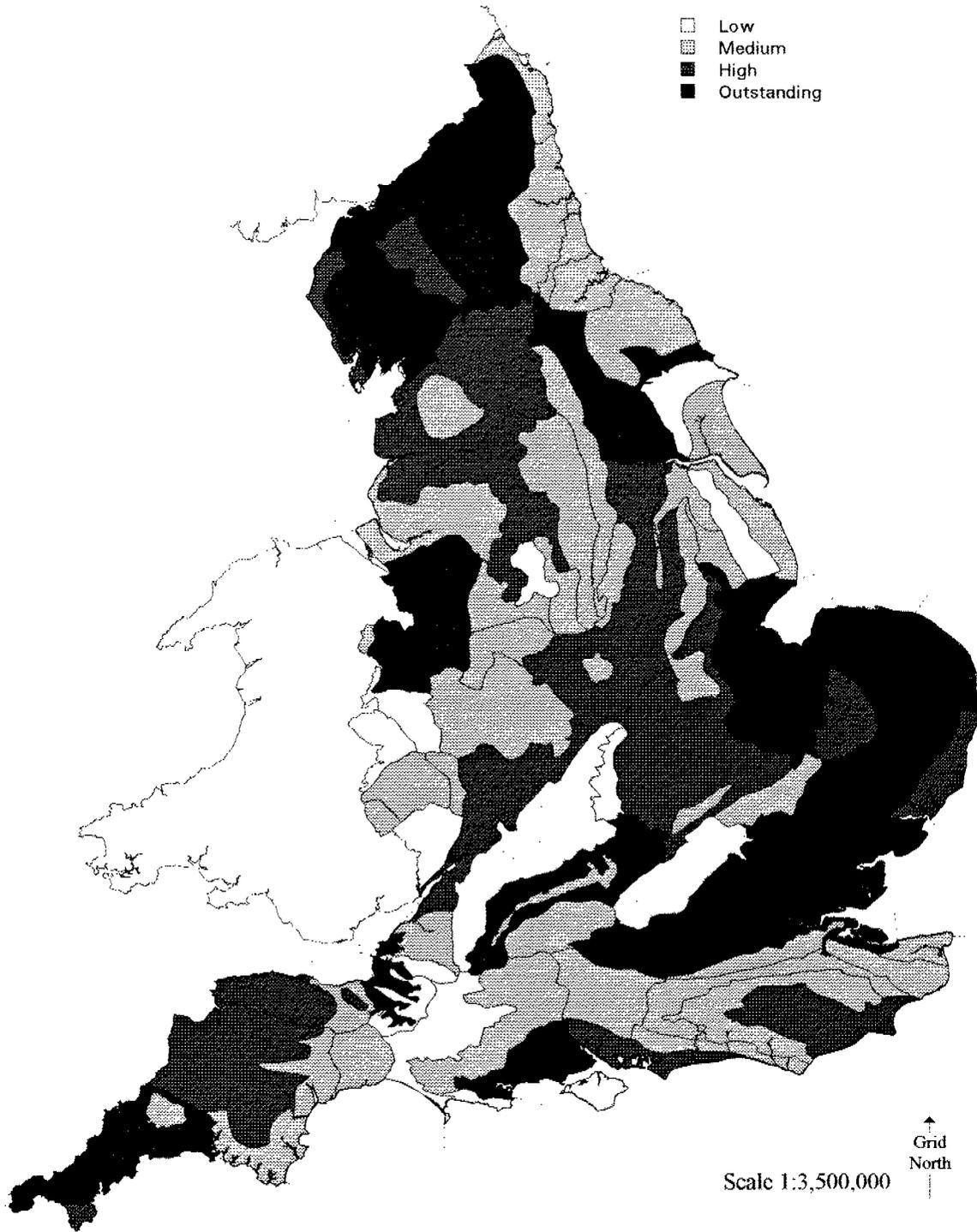




Wetland Significance of Different Natural Areas

Wetland Significance

- Low
- ▒ Medium
- High
- Outstanding



Isles of Scilly have a low wetland significance

- Marine Natural Area
- Natural Area

5. WETLAND PROFILES

The following "Natural Area wetland profiles" summarise the wetland resource pertaining to each Natural Area. The wetland profiles follow a similar format to those used in other Natural Area reports, with the different sections defined below.

5.1 Natural Area Name

The Natural Areas used are those published on the original Natural Areas map (English Nature, 1994). These will be subject to a number of revisions on the publication of the Character Map. However, since the original map was produced, the Northamptonshire Uplands have been amalgamated into the Greater Cotswolds and the Thames Marshes are now called the Greater Thames Marshes.

Coastal sites have been included within the terrestrial Natural Area, except for the Isles of Scilly and Greater Thames Marshes, which are detailed separately as marine Natural Areas. It should be noted that there will be coastal situations where dune slacks or wet grassland for example will technically be part of the marine Natural Area.

5.2 Wetland Significance

The assessment of the wetland significance of a Natural Area was made by taking account of quantitative and qualitative aspects of the wetland resource. Unfortunately, there was little information available on the area of different habitat types, so the judgements are largely site based. The assessment has been made as follows:

- 1) Number of SSSIs within a Natural Area which contain wetland habitats as a proportion of the total number of SSSIs (1 - <25%, 2 - 25-50%, 3 - 50-75%, 4 - >75%). This indicates the relative importance of wetlands within the SSSI series of the Natural Area.
- 2) Number of SSSIs within a Natural Area where a wetland habitat constitutes a dominant element of the site (1 - 1-6, 2 - 7-12, 3 - 13-24, 4 - >24). This indicates in absolute terms the number of most important wetland sites within a Natural Area and compensates for Natural Areas where there is large and varied interest but a relatively small proportion are wetland sites.
- 3) Area consideration to compensate for sites where this is not reflected in the number of wetland SSSIs. Natural Areas where the area of SSSIs containing wetland habitats as a dominant component exceeds 1,000ha are given additional weighting.
- 4) Number of Ramsar and NCR sites where wetland habitats are dominant. This gives an indication of the national and international importance of the wetlands within a Natural Area. On sites where both designations are present, the site is considered once only as a Ramsar site.
- 5) Number of nationally scarce wetland plants recently recorded from the Natural Area. This information has been collated from core profiles and *Scarce Plants in Britain* (see 5.8 for list of species considered).
- 6) Number of Red Data Book wetland plants recorded from the Natural Area. This information has been collated from core profiles and *Red Data Book 1: Vascular Plants* (see 5.8 for list of species considered).

The assessment of rare and scarce plant species, together with the site based evaluation is intended to be indicative of the range of wetland species interest and the overall quality of the wetland habitats.

The overall assessment of wetland significance was made by combining the quantitative and qualitative aspects (see Appendix 1). This was then verified by English Nature's wetland specialists in order that any apparent discrepancies could be identified. The four categories (low, medium, high and outstanding) contain a range of values and should be used alongside the individual criteria when considering the wetland interest of a particular Natural Area.

5.3 Description

This is a brief statement of the geology, landscape and land use of the Natural Area together with a summary of the wetland interest.

5.4 Wetland SSSI Coverage

This information is taken from the wetlands database and includes the number of SSSIs that contain a wetland component as a proportion of the total number of SSSIs; the number of wetland SSSIs where a wetland habitat is dominant; the dominant wetland habitat types represented in the SSSI series; and the nutrient status of the SSSIs. The wetland habitat types were defined for the purposes of the wetlands database and are listed in Table 2. More than one wetland habitat may be dominant on a single site. The nutrient status gives the range of trophic conditions present on SSSIs containing wetland habitats as an indication of the type of wetland systems present in the Natural Area. A single site may contain more than one nutrient status.

Table 2 Wetland Habitat Types used in the Wetlands Database

Open water - lakes	Pond	Raised mire
Open water - pools	Spring fen/ flush	Blanket mire
Open water - reservoirs	Base poor flush	Valley mire
Open water - gravel pits	Base rich flush	Wet heath
Open water - brackish lagoon	Floodplain fen	Wet woodland/ carr
River	Basin fen	Wet grassland
Stream	Valley fen	Flood meadow
Upland gorge	Fen meadow	Grazing marsh
Canal	Marsh	Culm grassland
Ditch	Swamp	Meander cut-off
Borrow dyke	Sewage lagoon	

5.5 Key Wetland Types

This includes all the wetland NVC communities and river types which were listed as significant habitats in the core profiles (Appendix 2). This has been supplemented with information on lowland wet grassland (Jefferson, 1996), wet woodland (Reid *et al.*, 1996) and raised mire (Bogbase, 1996) communities. The term 'mire' is used generically to refer to the NVC communities M1 - M4 and M17 - M21, with 'fen' used for M5 - M14, M22 and M24 - M28, 'wet heath' used for M15 - M16, and 'spring fen/ flush' used for M29 - M38 (NCC, 1989). It gives an indication of the important wetland habitats within a Natural Area (whether this is reflected in the SSSI series or not) and highlights whether it is important for a wide diversity of wetland types, a few key wetland types or has little wetland interest. For some natural areas only the NVC community type was given, where others had listed all sub-communities which were important. Some core profiles gave a wetland habitat as a key nature conservation feature, but gave no information on NVC or river types. This may reflect an absence of important communities or lack of knowledge. Lack of knowledge appeared to be particularly pertinent to aquatic NVC communities, where English Nature tend to use the NCC classification of vegetation types which is more comprehensive than the NVC.

5.6 Key Wetland Sites

This includes all designated and proposed Ramsar, SPA, NCR and SAC sites where wetland habitats are dominant. A single site may be covered by any combination of these designations. This compensates for a lack of knowledge of wetland habitat area by taking account of the largest and most important wetland sites.

5.7 Length of Rivers

This is a calculation using MAPINFO, based on a database developed by the AA derived from satellite imagery captured at 1:100,000 scale, giving the length of rivers within each Natural Area. Although there is no qualitative element, when compared to the size of the Natural Area it is possible to determine the likely significance for rivers and associated habitats.

5.8 Nationally Rare and Scarce Wetland Plant Species

All nationally rare and scarce wetland plants known to be present within a Natural Area from the core profiles, *Red Data Book*, *Scarce Plants in Britain* and the JNCC RDB plant database are listed together with their rarity status. This is a provisional list subject to further revisions, but is considered comprehensive. Table 3 lists all the species considered, which includes plants which rely on permanently or seasonally wet, freshwater or brackish habitats. Some species rely on wetland habitats in part of their range only.

5.9 Associated Interests

This includes significant species or species groups identified on the core profiles as being associated with a particular wetland habitat or group of habitats.

Table 3 Nationally Rare and Scarce Wetland Plant Species

<i>Bogs and Mire</i>			<i>Water Margins and Damp Mud</i>		
<i>Betula nana</i>	Dwarf birch	S	<i>Apium repens</i>	Creeping marshwort	RDB(E)
<i>Carex magellanica</i>	Tall bog-sedge	S	<i>Calamagrostis purpurea</i>		RDB(V)
<i>Crassula tillaea</i>	Mossy stoncrop	S	<i>Corrigiola litoralis</i>	Strapwort	RDB(V)
<i>Deschampsia setacea</i>	Bog hair-grass	S	<i>Cyperus fuscus</i>	Brown galingale	RDB(E)
<i>Eriophorum gracile</i>	Slender cottongrass	RDB(V)	<i>Damasonium alisma</i>	Starfruit	RDB(E)
<i>Gentiana pneumonanthe</i>	Marsh gentian	S	<i>Elatine hexandra</i>	Six-stamened waterwort	S
<i>Hammarbya paludosa</i>	Bog orchid	S	<i>Elatine hydropiper</i>	Eight-stamened waterwort	S
<i>Illecebrum verticillatum</i>	Coral-necklace	S	<i>Eleocharis austriaca</i>	Northern spike-rush	RDB(R)
<i>Juncus alpinoarticulatus</i>	Alpine rush	S	<i>Equisetum ramosissimum</i>		RDB(E)
<i>Lycopodiella inundata</i>	Marsh clubmoss	S	<i>Euphrasia rivularis</i>		RDB(R)
<i>Rhynchospora fusca</i>	Brown beak-sedge	S	<i>Galium constrictum</i>	Slender marsh-bedstraw	RDB(R)
<i>Saxifraga hirculus</i>	Marsh saxifrage	RDB(R)	<i>Juncus filiformis</i>	Thread rush	S
<i>Taraxacum hygrophilum</i>		RDB(R)	<i>Leersia oryzoides</i>	Cut-grass	RDB(V)
<i>Vaccinium microcarpum</i>	Small cranberry	S	<i>Limosella aquatica</i>	Mudwort	S
<i>Viola lactea</i>	Pale dog-violet	S	<i>Lythrum hyssopifolia</i>	Grass-poly	RDB(V)
<i>Neutral/ Acid Wet Grassland</i>			<i>Mentha pulegium</i>	Pennyroyal	RDB(R)
<i>Bupleurum falcatum</i>	Sickle-leaved hare's-ear	RDB(E)	<i>Persicaria laxiflora</i>	Tasteless water-pepper	S
<i>Carex filiformis</i>	Downy-fruited sedge	RDB(R)	<i>Pilularia globulifera</i>	Pillwort	S
<i>Carex flava</i>	Large yellow-sedge	RDB(R)	<i>Pulicaria vulgaris</i>	Small fleabane	RDB(V)
<i>Chamaemelum nobile</i>	Chamomile	S	<i>Ranunculus ophioglossifolius</i>	Adder's-tongue spearwort	RDB(E)
<i>Euphrasia rostkoviana</i>		S	<i>Ranunculus tripartitus</i>	Three-lobed crowfoot	S
<i>Fritillaria meleagris</i>	Fritillary	S	<i>Teucrium scordium</i>	Water germander	RDB(V)
<i>Hypericum undulatum</i>	Wavy St John's-wort	S	<i>Freshwater Aquatics</i>		
<i>Leucojum aestivum</i>	Summer snowflake	RDB(R)	<i>Alisma gramineum</i>	Ribbon-leaved water-	RDB(E)
<i>Lobelia urens</i>		RDB(V)	<i>Callitriche truncata</i>	Short-leaved water-starwort	S
<i>Oenanthe silaifolia</i>	Narrow-leaved water-dropwort	S	<i>Isoetes echinospora</i>	Spring quillwort	S
<i>Scorzonera humilis</i>	Viper's-grass	RDB(V)	<i>Ludwigia palustris</i>	Hampshire purslane	RDB(R)
<i>Spiranthes romanoffiana</i>	Irish lady's-tresses	S	<i>Luronium natans</i>	Floating water-plantain	S
<i>Woods and Scrub</i>			<i>Myriophyllum verticillatum</i>	Whorled water-milfoil	S
<i>Cardamine bulbifera</i>	Coralroot	S	<i>Najas flexilis</i>	Slender naiad	RDB(R)
<i>Corallorhiza trifida</i>	Coralroot orchid	S	<i>Najas marina</i>	Holly-leaved naiad	RDB(V)
<i>Impatiens noli-tangere</i>	Touch-me-not balsam	S	<i>Nuphar pumila</i>	Least water-lily	S
<i>Leucojum vernum</i>	Spring snowflake	RDB(V)	<i>Nymphoides peltata</i>	Fringed water-lily	S
<i>Wet Heath</i>			<i>Potamogeton acutifolius</i>		RDB(R)
<i>Erica ciliaris</i>	Dorset heath	RDB(R)	<i>Potamogeton coloratus</i>	Fen pondweed	S
<i>Juncus pygmaeus</i>	Pygmy rush	RDB(R)	<i>Potamogeton compressus</i>	Grass-wrack pondweed	S
<i>Juncus capitatus</i>	Dwarf rush	RDB(R)	<i>Potamogeton filiformis</i>	Slender-leaved pondweed	S
<i>Other Upland Flushes</i>			<i>Potamogeton nodosus</i>	Loddon pondweed	RDB(R)
<i>Kobresia simpliciuscula</i>	False sedge	RDB(R)	<i>Potamogeton trichoides</i>	Hairlike pondweed	S
<i>Sedum villosum</i>	Hairy stoncrop	S	<i>Stratiotes aloides</i>	Water-soldier	S
			<i>Wolffia arrhiza</i>	Rootless duckweed	S

<i>Fens and Calcareous Flushes</i>			<i>Coastal Habitats</i>		
			<i>Selinum carvifolia</i>	Cambridge milk-parsley	RDB(I)
<i>Althaea officinalis</i>	Marsh-mallow	S	<i>Senecio paludosus</i>	Fen ragwort	RDB(V)
<i>Calamagrostis stricta</i>	Narrow small-reed	RDB(R)	<i>Stium latifolium</i>	Greater water-parsnip	S
<i>Carex appropinquata</i>	Fibrous tussock-sedge	S	<i>Sonchus palustris</i>	Marsh sow-thistle	S
<i>Carex capillaris</i>	Hair sedge	S	<i>Taraxacum pseudo nordstedtii</i>		RDB(R)
<i>Carex elongata</i>	Elongated sedge	S	<i>Thelypteris palustris</i>	Marsh fern	S
<i>Carex vulpina</i>	True fox-sedge	RDB(R)	<i>Viola persicifolia</i>	Fen violet	RDB(F)
<i>Cicuta virosa</i>	Cowbane	S			
<i>Cuscuta europaea</i>	Greater dodder	S	<i>Alopecurus bulbosus</i>	Bulbous foxtail	S
<i>Cyperus longus</i>	Galingale	S	<i>Carex divisa</i>	Divided sedge	S
<i>Dactylorhiza incarnata</i>		RDB(E)	<i>Carex maritima</i>	Curved sedge	S
<i>Dactylorhiza traunsteineri</i>	Narrow-leaved marsh-orchid	S	<i>Carex punctata</i>	Dotted sedge	S
<i>Dryopteris cristata</i>	Crested buckler-fern	RDB(V)	<i>Centaurium littorale</i>	Seaside centuary	S
<i>Lathyrus palustris</i>	Marsh pea	S	<i>Epipactis leptochila dunensis</i>	Dune helleborine	S
<i>Liparis loeselii</i>	Fen orchid	RDB(E)	<i>Equisetum variegatum</i>	Variegated horsetail	S
<i>Luzula pallidula</i>	Fen wood-rush	RDB(R)	<i>Juncus acutus</i>	Sharp rush	S
<i>Lysimachia thyrsiflora</i>	Tufted loosestrife	S	<i>Juncus balticus</i>	Baltic rush	S
<i>Minuartia stricta</i>	Teesdale sandwort	RDB(V)	<i>Ophioglossum azoricum</i>	Small adder's-tongue	S
<i>Myosotis stolonifera</i>	Pale forget-me-not	S	<i>Puccinellia rupestris</i>	Stiff saltmarsh-grass	S
<i>Peucedanum palustre</i>	Milk-parsley	S	<i>Pyrola rotundifolia</i>	Round-leaved wintergreen	S
<i>Primula farinosa</i>	Bird's-eye primrose	S	<i>Ruppia cirrhosa</i>	Spiral tasselledweed	S

5.10 Issues

This lists the issues which were identified in the core profiles as pertaining to wetland sites within the Natural Area. It also includes an assessment of the number of SSSIs containing wetland habitats affected by pollution, water levels issues and recreation as an indication of the severity of these particular issues within each natural area. There is a summary of these issues within the national overview.

5.11 Key Objectives

There are a number of generic wetland objectives which can be equally applied to each Natural Area. These objectives, listed below, have been adapted to address specific issues in individual Natural Areas relating to habitat protection, management and amelioration of detrimental impacts.

- 1) Maintain and enhance the current extent, diversity and condition of wetland habitats through appropriate monitoring and subsequent management.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
- 6) Liaise with the Environment Agency and where appropriate with other government agencies and departments over policy issues and planning.

NATURAL AREA: **1 Northumberland Coastal Plain**WETLAND SIGNIFICANCE: **MEDIUM****DESCRIPTION:**

The Northumberland Coastal Plain is an area of low lying land, overlain by glacial till and locally by blown sands or peat deposits. There is a varied coastal geomorphology, with the extensive dune complexes of Lindisfarne to Amble having some wetland interest. Inland, the open, agricultural landscape is crossed by the river valleys of the Coquet, Aln, Tweed and Till.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	6/16 (37.5%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	1 (6.3%)
<i>SSSI WETLAND DOMINANTS</i>	mire (1)
<i>SSSI NUTRIENT STATUS:</i>	2 mesotrophic, 1 eutrophic, 3 brackish

KEY WETLAND TYPES: dune slacks (SD14, SD16, SD17); swamp (S4, S12, S14, S21); fen (S26, S28); river systems and gill woodland (river type 7); wet grassland (MG11); wet woodland (W2)

LENGTH OF RIVERS: 483 km

KEY WETLAND SITES: Newham Fen, Northumberland dune sites
NCR 1, SAC 4

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Epipactis leptochila</i> var. <i>dunensis</i>	S	<i>Sedum villosum</i>	S
<i>Equisetum variegatum</i>	S	<i>Potamogeton coloratus</i>	S
<i>Liparis loeselii</i>	RDB (E)	<i>Corallorhiza trifida</i>	S
<i>Carex maritima</i>	S	<i>Carex divisa</i>	S
<i>Centaurium littorale</i>	S	<i>Pyrola rotundifolia</i>	S
<i>Persicaria laxiflora</i>	S		

ASSOCIATED INTERESTS: 1) important fish assemblage, including bullhead
2) otter and crayfish associated with river systems
3) breeding bird community

KEY ISSUES: pollution/ water quality, abstraction, salmon fishing, fish-eating birds, grazing, recreation, river engineering

WETLAND SSSI ISSUES: Pollution 1 (17%) Water levels 2 (33%) Recreation 0

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly coastal and riverine wetlands.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly species associated with coastal wetlands and river systems.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning, particularly coastal defence and river management issues.

NATURAL AREA: **2 Border Uplands**WETLAND SIGNIFICANCE: **OUTSTANDING**

DESCRIPTION:

The Border Uplands are drained by the rivers Tyne, Coquet, Till, Beamish, Irthing and Lyne, which have considerable wetland interest. The landscape is dominated by moorland and blanket bog formed by layers of peat and glacial drift overlying the bedrock, giving a large range of mire communities. The Border Mires centred around Kielder Forest have been formed by lenses of peat in the hollows of the undulating topography.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	46/75 (61.3%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	27 (36.0%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (1), open water - quarry pool (1), mire (21), fen (2), rivers (2)
<i>SSSI NUTRIENT STATUS</i>	31 oligotrophic, 14 mesotrophic, 7 eutrophic

KEY WETLAND TYPES: mire (M2, M3, M4, M17, M18, M19, M20); swamp (S4, S9, S10, S12); fen (M6, M10, M25, M27, S27); spring fen/ flush (M37, M38); wet heath (M15); rivers (river types 7, 8, 9); wet woodland (W7); wet grassland (M23)

LENGTH OF RIVERS: 3,222 km

KEY WETLAND SITES: Border Mires, Holburn Lake and Moss, R. Eden
RAM 4, SPA 1, NCR 14, SAC 16

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Eleocharis austriaca</i>	RDB (R)	<i>Vaccinium microcarpum</i>	S
<i>Hammarbya paludosa</i>	S	<i>Euphrasia rostkoviana</i>	S
<i>Myosotis stolonifera</i>	S	<i>Cicuta virosa</i>	S
<i>Carex magellanica</i>	S	<i>Primula farinosa</i>	S
<i>Equisetum variegatum</i>	S	<i>Persicaria laxiflora</i>	S
<i>Betula nana</i>	S	<i>Sedum villosum</i>	S

ASSOCIATED INTERESTS: 1) breeding and wintering wildfowl and waders and other upland birds
2) mire and aquatic invertebrate assemblages
3) important lichen assemblages
4) freshwater pearl mussel, salmon, lamprey species and otter in river systems

KEY ISSUES: afforestation, drainage, agricultural reclamation, mire rehabilitation, military use, river catchment management, over grazing, heather burning, recreation, river engineering, abstraction, water quality/pollution, reservoir releases, fisheries management, eutrophication, water level management, alien species, rush cutting, peat extraction

WETLAND SSSI ISSUES: Pollution 12(26%) Water levels 17 (37%) Recreation 4 (9%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly the mire communities.
2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly relating to the hydrological integrity of the Border Mires.
4) Seek opportunities for habitat creation of wetland habitats.
5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly those associated with the mire communities and river systems.
6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: 3 North Pennines	WETLAND SIGNIFICANCE: OUTSTANDING
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DESCRIPTION:

The North Pennines are characterised by heather moorland dissected by a series of river valleys. Much of the high Pennine area is covered by peat deposits and supports important mire communities.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	40/77 (51.9%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	18 (23.4%)
<i>SSSI WETLAND DOMINANTS</i>	mire (10), wet woodland (2), rivers (1), river shingles (5)
<i>SSSI NUTRIENT STATUS</i>	2 dystrophic, 32 oligotrophic, 13 mesotrophic, 3 eutrophic

KEY WETLAND TYPES: mire (M2, M3, M4, M17, M18, M19, M20); wet grassland (MG8, M23); fen (M6, M7, M8, M10, M25, M25c, M26, M26b); wet heath (M15, M16); wet woodland (W5, W7); spring fen/ flush (M32, M37, M38)

LENGTH OF RIVERS: 2,003 km

KEY WETLAND SITES: Appleby Fells, Moor House - Cross Fell, Upper Teesdale, Tyne and Allen River Gravels, River Eden
RAM 1, SPA 3, NCR 11, SAC 9

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Kobresia simpliciuscula</i>	RDB (R)	<i>Myosotis stolonifera</i>	S	<i>Betula nana</i>	S
<i>Potentilla fruticosa</i>	RDB (R)	<i>Hammarbya paludosa</i>	S		
<i>Saxifraga hirculus</i>	RDB (R)	<i>Thelypteris palustris</i>	S		
<i>Minuartia stricta</i>	RDB (V)	<i>Juncus filiformis</i>	S		
<i>Primula farinosa</i>	S	<i>Equisetum variegatum</i>	S		
<i>Carex magellanica</i>	S	<i>Carex capillaris</i>	S		
<i>Juncus alpinoarticulatus</i>	S	<i>Sedum villosum</i>	S		

ASSOCIATED INTERESTS: 1) important invertebrate assemblages
2) breeding waders and other upland species
3) lichen and bryophyte communities

KEY ISSUES: over grazing, gripping, heather burning, recreation, *Sphagnum* harvesting, wind farms, shooting, stock feeding, acid deposition, river engineering, agricultural improvement, rush cutting

WETLAND SSSI ISSUES: Pollution 6 (15%) Water levels 7 (18%) Recreation 8 (20%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly the mire and river shingle communities.
2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
4) Seek opportunities for habitat creation of wetland habitats.
5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly those associated with the mire communities and river systems.
6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: 4 Northumbrian Coal Measures

WETLAND SIGNIFICANCE: MEDIUM

DESCRIPTION:

The coastal area contains extensive wetland features such as lagoons, dune slacks and swamp communities, particularly important for their wintering and migratory bird populations. The river valleys of the Tyne and Wear are important inland habitats in an intensively managed and industrialised landscape. Ponds, often resulting from mining subsidence provide further wetland features.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	28/ 33 (84.9%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	14 (42.4%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (1), open water - pools (6), open water - gravel pits (1), spring fen/ flush (1), open water - brackish lagoon (1), mire (1), wet woodland (3)
<i>SSSI NUTRIENT STATUS</i>	4 oligotrophic, 15 mesotrophic, 12 eutrophic

KEY WETLAND TYPES: dune slack (SD17); swamp (S4, S5, S12, S14, S19, S20, S21, S23);
fen (M27, S26, S28); wet grassland (MG11); wet woodland (W4, W5, W6, W7);
aquatic (A11); rivers (no data); mire (M18)

LENGTH OF RIVERS: 1,153 km

KEY WETLAND SITES: -

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Centaurium littorale</i>	S
<i>Corallorhiza trifida</i>	S
<i>Myriophyllum verticillatum</i>	S

ASSOCIATED INTERESTS: 1) wintering/ passage waders and wildfowl
2) amphibians
3) invertebrate assemblages of bog, woodland and swamp
4) bats, salmonids and otter associated with the rivers and river valleys

KEY ISSUES: coastal protection, recreation, water quality/ pollution, development, agricultural improvement, drainage, eutrophication, river engineering, alien species in river systems, afforestation

WETLAND SSSI ISSUES: Pollution 10 (36%) Water levels 8 (29%) Recreation 10 (36%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
4) Seek opportunities for habitat creation of wetland habitats.
5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly those associated with the mire communities and river systems.
6) Liaise with the Environment Agency and other government bodies over policy issues and planning, particularly coastal defence and river management issues.

NATURAL AREA: **5 Durham Magnesian Limestone**WETLAND SIGNIFICANCE: **MEDIUM****DESCRIPTION:**

The Durham Magnesian Limestone largely coincides with an outcrop of Permian magnesium-rich limestone and is dominated by mixed agriculture. Wetland habitats are restricted, but include some mire, fen and, swamp and wet woodland communities.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	11/42 (26.2%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	4 (9.5%)
<i>SSSI WETLAND DOMINANTS</i>	fen (1), wet woodland (1), swamp (2)
<i>SSSI NUTRIENT STATUS</i>	1 oligotrophic, 1 mesotrophic, 10 eutrophic

KEY WETLAND TYPES: wet woodland (W6, W7); fen (M10, M27, S28), swamp (S2, S4, S12)

LENGTH OF RIVERS: 318 KM

KEY WETLAND SITES: -

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Pyrola rotundifolia</i>	S
<i>Primula farinosa</i>	S
<i>Dactylorhiza traunsteineri</i>	S

ASSOCIATED INTERESTS: 1) wet woodland invertebrate assemblages, particularly RDB snails and snail-killing flies

KEY ISSUES: dredging, water quality, agricultural improvement, drainage, development pressure, lack of management

WETLAND SSSI ISSUES: Pollution 8 (73%) Water levels 1 (9%) Recreation 2 (18%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly pollution relating to agriculture, mine workings and sewage.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: **6 Lower Tees**WETLAND SIGNIFICANCE: **MEDIUM****DESCRIPTION:**

This Natural Area comprises the River Tees estuary and its associated low-lying land. Much of the wetland interest is found in the coastal wetlands and grazing marsh of Teesmouth. A number of wet woodlands are associated with the Tees and its tributaries and the gills of the escarpment to the south. The remaining fenlands of the River Skerne are important remnants of mire, swamp and fen communities.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	9/16 (56.3%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	5 (31.3%)
<i>SSSI WETLAND DOMINANTS</i>	open water - pool (1), mire (1), flood meadow (1), grazing marsh (1), ditch (1)
<i>SSSI NUTRIENT STATUS</i>	1 oligotrophic, 2 mesotrophic, 5 eutrophic, 2 brackish

KEY WETLAND TYPES: swamp (S2, S4, S20, S21, S22); fen (M5, M22, M24, M27, S26, S27); wet grassland (MG11, M23); mire (M4, M19); wet woodland (W1, W7);

LENGTH OF RIVERS: 572 km

KEY WETLAND SITES: Cowpen Marsh
NCR 1

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Centaurium littorale</i>	S
<i>Puccinellia rupestris</i>	S

ASSOCIATED INTERESTS: 1) invertebrate assemblages of aquatic and fen habitats
2) migratory, wintering and migratory waders and wildfowl associated with coastal wetlands

KEY ISSUES: development, reclamation, fragmentation, coastal processes, water quality/ pollution, recreation, inappropriate wet woodland management, drainage

WETLAND SSSI ISSUES: Pollution 5 (56%) Water levels 2 (22%) Recreation 1 (11%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly industrial and agricultural pollution.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning, particularly coastal defence.

NATURAL AREA: 7 Yorkshire Dales

WETLAND SIGNIFICANCE: HIGH

DESCRIPTION:

A glaciated upland landscape of rounded hills and heather moorland, dissected by broad river valleys cut into the limestone, millstone grit and shale. The wetland habitats are largely associated with the mire communities of the uplands and the swamp and wet grassland habitats of the river systems.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	23/102 (22.5%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	13 (12.6%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (1), open water - reservoir (1), mire (6), fen (2), wet heath (1), river (2)
<i>SSSI NUTRIENT STATUS</i>	7 oligotrophic, 8 mesotrophic, 2 eutrophic, 1 marl

KEY WETLAND TYPES: mire (M18, M19, M20); wet grassland (M23, MG8); wet woodland (W7); spring fen/ flush (M32); wet heath (M15); fen (M10, M25, M26, M27); swamp (S12); rivers, streams and open water (no data)

LENGTH OF RIVERS: 1,981 km

KEY WETLAND SITES: Austwick and Lawkland Mosses, Semerwater, Kilnsey Flush
NCR 2, SAC 1

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Primula farinosa</i>	S	<i>Limosella aquatica</i>	S
<i>Saxifraga hirculus</i>	RDB (R)	<i>Corallorhiza trifida</i>	S
<i>Euphrasia rostkoviana</i>	S	<i>Equisetum variegatum</i>	S
<i>Calamagrostis stricta</i>	RDB(R)	<i>Pyrola rotundifolia</i>	S
<i>Carex appropinquata</i>	S	<i>Myosotis stolonifera</i>	S
<i>Dactylorhiza traunsteineri</i>	S	<i>Juncus alpinoarticulatus</i>	S
<i>Juncus filiformis</i>	S	<i>Sedum villosum</i>	S
<i>Carex capillaris</i>	S	<i>Eleocharis austriaca</i>	RDB(R)

ASSOCIATED INTERESTS: 1) breeding waders and other breeding species of riverine and upland habitats
2) otter and crayfish associated with the river systems

KEY ISSUES: grazing, quarrying, agricultural improvement, drainage, burning, pollution, sewage, flood protection, development

WETLAND SSSI ISSUES: Pollution 7 (30%) Water levels 5 (22%) Recreation 5 (22%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly the mire and riverine communities.
2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly relating to the hydrological integrity of the Border Mires.
4) Seek opportunities for habitat creation of wetland habitats.
5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly those associated with upland and riverine wetlands.
6) Liaise with the Environment Agency and other government bodies over policy issues and planning, particularly river management.

NATURAL AREA: **8 The Vales of Yorkshire**WETLAND SIGNIFICANCE: **OUTSTANDING****DESCRIPTION:**

An area of predominantly flat, open land between the Pennines to the west and the North Yorkshire Moors and the Yorkshire Wolds to the east. The Vales are influenced by widespread glacial deposits and the rivers Derwent, Swale, Nidd, Ure, Wharfe and Ouse, which all ultimately flow into the Humber estuary. The main nature conservation value of the area is in the riverine habitats, particularly the Lower Derwent which is internationally important for its flood meadow grassland and associated breeding and wintering bird populations.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	29/49 (59.2%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	22 (44.9%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (1), mire (2), fen (7), flood meadow (9), canal(1), river (2), swamp (1)
<i>SSSI NUTRIENT STATUS</i>	5 oligotrophic, 23 mesotrophic, 2 eutrophic, 3 unknown

KEY WETLAND TYPES: wet woodland (W1, W2, W4, W5, W6); rivers (no data); fen/ flush (M29)
wet grassland (MG4, MG6, MG9, MG10, MG11, MG13, M23);
w. heath (M16); aquatic (A9, A10, A12, A15, A16); gravel pits (nodata);
fen (S24, S28, M4, M22, M24, M25, M27); swamp (S4, S5, S8, S12, S22)

LENGTH OF RIVERS: 1,614 km

KEY WETLAND SITES: Derwent Valley wetlands, Skipwith Common, Strensall Common
RAM 4, SPA 4, NCR 4, SAC 4

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Lathyrus palustris</i>	S	<i>Cicuta virosa</i>	S	<i>Potamogeton coloratus</i>	S
<i>Oenanthe silaifolia</i>	S	<i>Lysimachia thyrsoiflora</i>	S	<i>Potamogeton trichoides</i>	S
<i>Sium latifolium</i>	S	<i>Primula farinosa</i>	S	<i>Myriophyllum verticillatum</i>	S
<i>Gentiana pneumonanthe</i>	S	<i>Thelypteris palustris</i>	S	<i>Carex divisa</i>	S
<i>Carex appropinquata</i>	S	<i>Persicaria laxiflora</i>	S		
<i>Carex elongata</i>	S	<i>Pilularia globulifera</i>	S		

ASSOCIATED INTERESTS:

- 1) invertebrate assemblages of aquatic, fen/ swamp and mire habitats
- 2) fish assemblage, otter and crayfish associated with rivers
- 3) breeding and wintering waders and wildfowl associated with wet grassland and riverine habitats

KEY ISSUES: water quality, abstraction, river water levels, pollution, eutrophication, development, mining, river engineering, intensive agriculture, siltation, drainage, recreation, grazing levels, lack of management, alien species, fragmentation, afforestation, subsidence, MoD training, gravel pits used for landfill

WETLAND SSSI ISSUES: Pollution 9 (31%) Water levels 6 (21%) Recreation 11 (38%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly the flood meadows, fen, swamp and aquatic communities of the river systems.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly the natural hydrology of the river systems.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly those associated with the river systems.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: 9 North York Moors

WETLAND SIGNIFICANCE: MEDIUM

DESCRIPTION:

The North York Moors is largely made up of sandstones and shales with limestone exposed in the south. It is dominated by heather moorland dissected by numerous river valleys. There are calcareous fens associated with the spring-line on the southern limestone belt.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	22/62 (35.5%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	7 (11.3%)
<i>SSSI WETLAND DOMINANTS</i>	mire (1), fen (1), spring fen/flush (3), wet heath (1), wet grassland (1)
<i>SSSI NUTRIENT STATUS</i>	9 oligotrophic, 13 mesotrophic, 2 eutrophic, 2 unknown

KEY WETLAND TYPES: wet heath (M15, M16); fen (M10, M13, M22, M27); river (river type 10); wet woodland (W7); wet grassland (M23)

LENGTH OF RIVERS: 899 km

KEY WETLAND SITES: -

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Primula farinosa</i>	S
<i>Gentiana pneumonanthe</i>	S
<i>Dactylorhiza traunsteineri</i>	S
<i>Lysimachia thyrsoiflora</i>	S
<i>Myosotis stolonifera</i>	S

ASSOCIATED INTERESTS:

- 1) breeding waders and other upland birds
- 2) invertebrate assemblages associated with moorland, fen and aquatic habitats
- 3) otter, fish assemblage and crayfish associated with river systems

KEY ISSUES: burning, grazing, recreation, pond creation, agricultural improvement, abstraction, development, water quality, fragmentation, siltation, drainage

WETLAND SSSI ISSUES: Pollution 0 Water levels 1 (5%) Recreation 2 (9%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: **10 Yorkshire Wolds**WETLAND SIGNIFICANCE: **LOW****DESCRIPTION:**

The Wolds are underlain by Cretaceous chalk and bordered by Jurassic rocks around the western and northern escarpment. A dip slope runs eastwards with the undulating hills dissected by a large number of dry valleys. Spring-fed flushes are present on the western escarpment and in coastal areas.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	3/31 (9.7%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	3 (9.7%)
<i>SSSI WETLAND DOMINANTS</i>	wet woodland (1); swamp (2); fen (1); spring fen/flush (1)
<i>SSSI NUTRIENT STATUS</i>	3 mesotrophic

KEY WETLAND TYPES: fen (M10)

LENGTH OF RIVERS: 90 km

KEY WETLAND SITES: -

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:**ASSOCIATED INTERESTS:**

KEY ISSUES: eutrophication, agricultural improvement, abstraction

WETLAND SSSI ISSUES: Pollution 0 Water levels 3 (100%) Recreation 1 (33%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly relating to water abstraction.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: **11 Plain of Holderness**WETLAND SIGNIFICANCE: **MEDIUM****DESCRIPTION:**

Holderness is a low-lying plain of boulder clay, interspersed with areas of gravel and sand deposited in late glacial times. The hollows of the hummocky clay once supported many pools and lakes. Only one of the largest lakes, Hornsea Mere, remains. The River Hull, fed by the calcareous springs of the Yorkshire Wolds flows southwards to the Humber estuary. It is nationally important for its wetland habitats and associated wildlife. A number of artificial wetlands provide important refuges. The saline lagoons at Easington and other coastal wetlands are particularly important for breeding and wintering birds.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	7/14 (50.0%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	7 (50.0%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (1), flood meadow (1) fen (2), open water - brackish lagoon (1), canal (1), river (1)
<i>SSSI NUTRIENT STATUS</i>	5 mesotrophic, 1 eutrophic, 1 brackish

KEY WETLAND TYPES: dune slacks (no data); wet grassland (MG4); swamp (no data); fen (M22); River Hull and riparian habitats (river type 3); open water - meres (no data)

LENGTH OF RIVERS: 488 km

KEY WETLAND SITES: The Lagoons, Hornsea Mere
RAM 1, SPA 2, NCR 1

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Carex divisa</i>	S	<i>Alopecurus bulbosus</i>	S
<i>Ruppia cirrhosa</i>	S	<i>Peucedanum palustre</i>	S
<i>Lathyrus palustris</i>	S	<i>Stratiotes aloides</i>	S
<i>Thelypteris palustris</i>	S	<i>Calamagrostis stricta</i>	RDB (R)
<i>Carex appropinquata</i>	S	<i>Sium latifolium</i>	S
<i>Myriophyllum verticillatum</i>	S		

ASSOCIATED INTERESTS:

- 1) breeding and wintering birds associated with open water and wet grassland
- 2) natterjacks associated with dune slacks
- 3) otter and aquatic invertebrates associated with open water and river systems

KEY ISSUES: coastal protection, dredging, pollution, landfill, quarrying, water quality, recreation, development, reclamation, eutrophication, sewage, fish farms, flood defence, river engineering, abstraction, navigation, weedcutting, overgrazing, fragmentation, lack of management

WETLAND SSSI ISSUES: Pollution 2 (29%) Water levels 4 (57%) Recreation 5 (71%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: 12 Southern Pennines

WETLAND SIGNIFICANCE: HGH

DESCRIPTION:

The Southern Pennines are characterised by deeply incised river valleys and flat moorland plateaus. The wetland habitats are predominantly associated with upland mire and wet grassland and aquatic communities of riparian and canal habitats.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	9/15 (60.0%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	5 (33.3%)
<i>SSSI WETLAND DOMINANTS</i>	mire (2), wet grassland (1), wet woodland (1), spring fen/flush (1)
<i>SSSI NUTRIENT STATUS</i>	5 oligotrophic, 4 mesotrophic

KEY WETLAND TYPES: mires (M2b, M4, M19, M20a, b, M21b); wet heath (M16a, M16d); wet woodland (W4b, W7a, b, c); fen (M6, M6c, M10, M11, M25b, M27, S24); spring fen/flush (M32, M37); wet grassland (M23, MG8, MG9, MG10); open water (no data); canals - aquatic (A1, A2, A3, A4); rivers and streams (no data); canals - swamp (S5, S12, S14, S23)

LENGTH OF RIVERS: 1,085 km

KEY WETLAND SITES: South Pennine Moors
SPA 1

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Myosotis stolonifera</i>	S
<i>Luronium natans</i>	S

ASSOCIATED INTERESTS: 1) mire and aquatic invertebrates
2) breeding waders and upland speices
3) breeding and wintering waders and wildfowl of open water, rivers and canals

KEY ISSUES: windfarms, air pollution, moor gripping, recreation, burning, grazing, quarrying, agricultural policy, agricultural improvement, afforestation, horsiculture, drainage, open water - water control, water quality, water quantity, dredging, abstraction, river engineering, flood defence, tipping

WETLAND SSSI ISSUES: Pollution 1 (11%) Water levels 5 (56%) Recreation 2 (22%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly the upland mire and associated communities.
2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly related to water abstraction.
4) Seek opportunities for habitat creation of wetland habitats.
5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly species associated with upland mire communities.
6) Liaise with the Environment Agency and other government bodies over policy issues and planning, particularly abstraction, drainage and river management issues.

NATURAL AREA: 13 Coal measures

WETLAND SIGNIFICANCE: MEDIUM

DESCRIPTION:

The area is characterised by large domestic and industrial development associated with the coal industry. Subsidence wetlands, canals, mill-ponds and natural rivers are important features.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	11/28 (39.3%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	7 (25.0%)
<i>SSSI WETLAND DOMINANTS</i>	open water - brackish lagoon (1), canal (1), fen (1), open water - reservoir (1), wet woodland (3)
<i>SSSI NUTRIENT STATUS</i>	2 oligotrophic, 5 mesotrophic, 4 eutrophic, 1 brackish

KEY WETLAND TYPES:

wet grassland (M23b, MG4, MG8, MG9a, MG10, MG13);
wet woodland (W1, W5a, c, W7a); fen (M22, M27, S26d, S28b);
aquatic (A1, A2, A3, A4, A5, A6, A7, A9, A10, A11b, A12, A13, A15, A16);
swamp (S3, S4a, S5a, b, S6, S8, S12b, S14c, S16, S17, S18, S22a, c);
rivers and streams (no data);

LENGTH OF RIVERS:

1,473 km

KEY WETLAND SITES:

-

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Stratiotes aloides</i>	<i>S</i>	<i>Myriophyllum verticillatum</i>	<i>S</i>
<i>Potamogeton trichoides</i>	<i>S</i>	<i>Nymphoides peltata</i>	<i>S</i>
<i>Potamogeton epihydrus</i>	<i>RDB(R)</i>	<i>Pyrola rotundifolia</i>	<i>S</i>
<i>Luronium natans</i>	<i>S</i>		

ASSOCIATED INTERESTS:

- 1) aquatic invertebrates associated with open water habitats
- 2) breeding and wintering wildfowl and waders associated with wet grassland, open water and swamp habitats
- 3) fish assemblage, crayfish and otter associated with river systems

KEY ISSUES:

agricultural improvement, recreation, quarrying, fragmentation, water quality, industrial/domestic pollution, recreation, fish introduction, interpretation, river engineering, alien species, dredging, abstraction, canal restoration, grazing, water level control

WETLAND SSSI ISSUES: Pollution 4 (36%) Water levels 5 (45%) Recreation 6 (55%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly the range of aquatic, swamp and wet grassland communities and transitions.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly relating to water abstraction.
- 4) Seek opportunities for habitat creation of wetland habitats, particularly relating to the reclamation of industrial sites.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly species associated with open water, swamp, wet grassland and river systems.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning, particularly relating to water abstraction and waterway management.

NATURAL AREA: 14 Southern Magnesian Limestone

WETLAND SIGNIFICANCE: MEDIUM

DESCRIPTION:

The magnesian limestone forms a narrow band, where the soft rock has weathered to form rounded hills ideal for arable cropping. The important wetland habitats include base-rich flushes, rivers and streams.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	28/56 (50.0%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	11 (19.6%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (4), mire (1), fen (1), river (2), wet woodland (2), swamp (1)
<i>SSSI NUTRIENT STATUS</i>	2 oligotrophic, 10 mesotrophic, 16 eutrophic, 1 marl, 2 unknown

KEY WETLAND TYPES: wet woodland (W6, W7, W7a); fen (M10, M22, M27); pond - aquatic (A11); rivers and streams (river type 3)

LENGTH OF RIVERS: 730 km

KEY WETLAND SITES: -

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Primula farinosa</i>	<i>S</i>	<i>Equisetum variegatum</i>	<i>S</i>
<i>Limosella aquatica</i>	<i>S</i>	<i>Myriophyllum verticillatum</i>	<i>S</i>
<i>Persicaria laxiflora</i>	<i>S</i>	<i>Callitriche truncata</i>	<i>S</i>

ASSOCIATED INTERESTS: 1) crayfish, otter, and breeding birds associated with river systems

KEY ISSUES: afforestation, eutrophication, water quality, water quantity, abstraction, grazing, fragmentation, crayfish plague, loss of riparian habitat

WETLAND SSSI ISSUES: Pollution 8 (29%) Water levels 12 (43%) Recreation 8 (29%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly relating to water abstraction, drainage and water quality.
4) Seek opportunities for habitat creation of wetland habitats.
5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: **15 Humberhead Levels**WETLAND SIGNIFICANCE: **HIGH****DESCRIPTION:**

The Humberhead Levels lie between the Rivers Ouse, Trent and Idle, bound on the west by the magnesian limestone and on the east by the Jurassic limestone. Flooding still occurs in places along the Rivers Don and Went. Fen habitats may once have been widespread, but have been lost as drainage and cultivation have advanced. The area around Hatfield Chase and the Trent has important ditch communities. The most important feature of the Natural Area are the peatlands of Thorne, Crowle, Goole and Hatfield Moors and the smaller ones of Epworth and Haxey Turbaries.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	18/19 (94.7%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	16 (84.2%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (1), mire (3), fen (4), ditch (1), wet woodland (1), river (1)
<i>SSSI NUTRIENT STATUS</i>	4 oligotrophic, 11 mesotrophic, 6 eutrophic

KEY WETLAND TYPES: wet grassland (MG4, MG9, MG10, MG11); mire (M3, M18, M20); swamp (S2, S4, S5, S8a, S12, S13, S19a, S22); fen (M26, S24, S25, S26, S28); ponds, lakes, ditches and drains - aquatic (A1, A2, A3, A4, A9, A11, A12, A13)

LENGTH OF RIVERS: 381 km

KEY WETLAND SITES: Thorne, Crowle and Goole Moors, Hatfield Moors
RAM 2, SPA 2, NCR 2, SAC 1

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Fritillaria meleagris</i>	<i>S</i>	<i>Sium latifolium</i>	<i>S</i>
<i>Myriophyllum verticillatum</i>	<i>S</i>	<i>Persicaria laxiflora</i>	<i>S</i>
<i>Thelypteris palustris</i>	<i>S</i>	<i>Callitriche truncata</i>	<i>S</i>
<i>Pitularia globulifolia</i>	<i>S</i>	<i>Potamogeton coloratus</i>	<i>S</i>
<i>Calamagrostis stricta</i>	<i>RDB(R)</i>	<i>Lathyrus palustris</i>	<i>S</i>

ASSOCIATED INTERESTS: 1) invertebrate assemblages associated with mire habitats
2) breeding and wintering waders and wildfowl associated with riverine wet grasslands

KEY ISSUES: river engineering, land drainage, agricultural improvements, peat cutting, abstraction, succession, eutrophication, pollution, ditch maintenance, air quality

WETLAND SSSI ISSUES: Pollution 7 (39%) Water levels 12 (67%) Recreation 7 (39%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly the raised mire communities.
2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly relating to the raised mire sites following peat workings.
4) Seek opportunities for habitat creation of wetland habitats.
5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly species associated with the raised mire communities.
6) Liaise with the Environment Agency and other government bodies over policy issues and planning, particularly in restoring hydrological integrity of the raised mire sites.

NATURAL AREA: **16 Coversands**WETLAND SIGNIFICANCE: **MEDIUM**

DESCRIPTION:

The Coversands are windblown glacial deposits overlying limestones and mudstones, with similar characteristics to the Brecks. Wetland habitats are scarce and declining.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	5/13 (38.5%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	2 (15.4%)
<i>SSSI WETLAND DOMINANTS</i>	open water - quarry pools (1), wet woodland (1)
<i>SSSI NUTRIENT STATUS</i>	1 dystrophic, 2 oligotrophic, 3 mesotrophic, 6 eutrophic

KEY WETLAND TYPES: wet heath (M16); wet grassland (M23); fen (M24, M25, S27); swamp (S12); wet woodland (W4, W7); dune slack (SD13)

LENGTH OF RIVERS: 366 km

KEY WETLAND SITES: -

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Gentiana pneumonanthe</i>	S
<i>Pilularia globulifera</i>	S
<i>Selinum carvifolia</i>	RDB(V)
<i>Potamogeton coloratus</i>	S
<i>Potamogeton trichoides</i>	S

ASSOCIATED INTERESTS: 1) invertebrate assemblages of wet grassland, fen/mire habitats

KEY ISSUES: sand extraction, afforestation, scrub encroachment, drainage, air pollution, eutrophication, fragmentation, grazing

WETLAND SSSI ISSUES: Pollution 0 Water levels 3 (60%) Recreation 3 (60%)

KEY OBJECTIVES: 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
 4) Seek opportunities for habitat creation of wetland habitats.
 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: 17 Sherwood Forest

WETLAND SIGNIFICANCE: **MEDIUM****DESCRIPTION:**

The Sherwood Forest Natural Area covers the Triassic sandstone plateau of western Nottinghamshire. The area is characterised by arable agriculture, coal mining and commercial forestry. There are some important lakes associated with the parkland of the large estates in the area.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	7/11 (63.6%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	4 (36.4%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (3), swamp (1)
<i>SSSI NUTRIENT STATUS</i>	4 mesotrophic, 4 eutrophic

KEY WETLAND TYPES: wet woodland (W5, W6); wet heath (M16); swamp (S3, S4, S6, S12, S14)

LENGTH OF RIVERS: 209 km

KEY WETLAND SITES: -

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

Callitriche truncata S

ASSOCIATED INTERESTS: 1) breeding and wintering wildfowl of open water habitats.

KEY ISSUES: water quality, water quantity, mining pollution, abstraction, succession

WETLAND SSSI ISSUES: Pollution 5 (71%) Water levels 2 (29%) Recreation 6 (86%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition.
- 4) Seek opportunities for habitat creation of wetland habitats.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.

NATURAL AREA: **18 Trent Valley and Levels**WETLAND SIGNIFICANCE: **HIGH**

DESCRIPTION:

A Natural Area dominated by intensive farming. Wetland interest includes some flood plain grassland and open water habitats.

WETLAND SSSI COVERAGE:

<i>SSSIs CONTAINING WETLAND HABITATS</i>	36/75 (48.0%)
<i>SSSIs DOMINATED BY A WETLAND HABITAT</i>	13 (17.3%)
<i>SSSI WETLAND DOMINANTS</i>	open water - natural (1), open water-pools (2), open water - gravel pits (2), swamp (2), flood meadow (1), fen (1), canal (3), wet woodland (1), river (1), grazing marsh (1)
<i>SSSI NUTRIENT STATUS</i>	2 oligotrophic, 5 mesotrophic, 33 eutrophic, 1 brackish

KEY WETLAND TYPES:

wet woodland (W1, W2, W5, W6, W7); fen (M22, M24, M27, S26, S28);
wet grassland (MG4, MG8, MG9, MG10, MG11, MG13);
open water - aquatic (A2, A3, A4, A5, A8, A11);
river - aquatic (A5, A11, A15, A19, A20);
swamp (S4, S5, S6, S7, S12, S13, S14, S15, S17 S19, S20, S23)

LENGTH OF RIVERS:

2,816 km

KEY WETLAND SITES:

River Eye
NCR 1

NATIONALLY RARE AND SCARCE WETLAND PLANT SPECIES:

<i>Oenanthe silaifolia</i>	<i>S</i>	<i>Limosella aquatica</i>	<i>S</i>
<i>Stratiotes aloides</i>	<i>S</i>	<i>Persicaria laxiflora</i>	<i>S</i>
<i>Callitriche truncata</i>	<i>S</i>	<i>Potamogeton coloratus</i>	<i>S</i>
<i>Pilularia globulifera</i>	<i>S</i>	<i>Crassula tillaea</i>	<i>S</i>
<i>Potamogeton compressus</i>	<i>S</i>	<i>Galium constrictum</i>	<i>RDB(R)</i>
<i>Potamogeton trichoides</i>	<i>S</i>		

ASSOCIATED INTERESTS:

- 1) aquatic invertebrates associated with open water and reedbed habitats
- 2) breeding birds associated with open water and reedbed habitats

KEY ISSUES:

water management, water quality, management of wet woods, succession, fragmentation, recreation, grazing, floodplain management, agricultural improvement, gravel extraction, drainage, angling, river engineering, dredging, alien species-crayfish plague, water quantity

WETLAND SSSI ISSUES:

Pollution 14 (39%) Water levels 4 (11%) Recreation 23 (64%)

KEY OBJECTIVES:

- 1) Maintain and enhance the current extent, diversity and condition of the wetland habitats through appropriate monitoring and subsequent management, particularly associated with open water and riverine habitats and their transitions.
- 2) Meet all the requirements of international treaties relating to wetland conservation, namely the Ramsar convention, Birds Directive and Habitats and Species Directive.
- 3) Restore and enhance the hydrology, water quality and management of wetland sites that are currently in sub-optimum condition, particularly associated with agricultural and sewage pollution.
- 4) Seek opportunities for habitat creation of wetland habitats, particularly related to canal and gravel pit sites.
- 5) Maintain and enhance important populations of wetland plants and animals and carry out appropriate monitoring to determine their status, particularly species associated with aquatic and swamp communities.
- 6) Liaise with the Environment Agency and other government bodies over policy issues and planning.