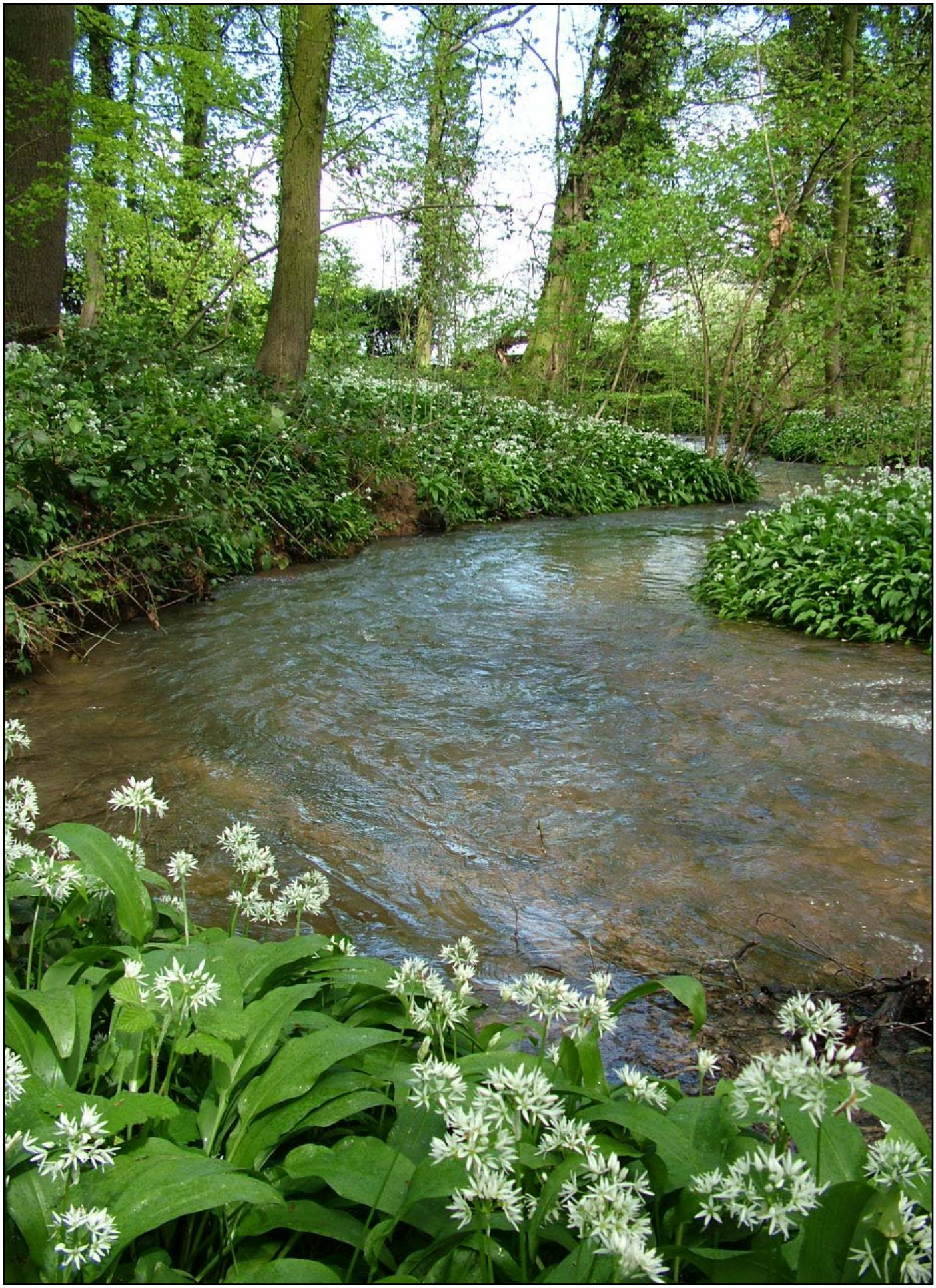

Rotherham Biodiversity Action Plan 2012
Wetland Habitat Action Plan

Contents

Contents....1
List of habitats included....2
Habitat Descriptions....2
Current status....6
Key Factors and Influences....8
Associated Habitats and Species....8
Key Sites of Good Quality....8
Sites of Concern....9
Specific Actions for Key Associated Species....9
Scale of Potential Biodiversity Action....9
Objectives and Targets....11
Appendix One – Rotherham Local Wildlife Sites with Open Water or Wetland Interest....13
Appendix Two – List of those England Priority Species that are associated with Wetland Priority Habitats and have been recorded in Rotherham....15
Appendix Three: UK Biodiversity Action Plan – Criteria for identification of BAP priority habitat ...17

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List of habitats included

National Priority Habitats
- Rivers and Streams
- Ponds (< 2ha)
- Eutrophic standing water
- Lowland fens
- Reedbeds
- Floodplain grazing marsh

Local Priority Habitats
- Ditch networks
- Wader scrapes
- Fishing ponds
- Subsidence flashes
- Sustainable Drainage Systems (SuDS)

N.B. local habitats are included in the general Standing Water description

Habitat Descriptions

Standing and flowing water and habitats that result from temporary or permanent water levels support a wide diversity of plants and animals. They include natural and man-made systems but the key feature defining wetland ecology is the dynamic hydrologic regime, which dictates the chemical and physical character of each wetland feature. Water level fluctuations produce a cycle of disturbance and successional growth. Linear water features act as corridors for dispersal and larger streams and rivers will pass through different areas that produce different characteristics and nature conservation values. The following descriptions present the key characteristics of the individual habitat types that demonstrate nature conservation value; defining criteria is noted where this is provided at a national level.

Rivers and Streams (excludes canals and ditches)
Rivers and streams are major linear features of the landscape supporting a wide diversity of plants and animals. They act as corridors for the dispersal of both aquatic and terrestrial animals such fish, birds and mammals such as otter. Numerous factors influence the ecological characteristics of a watercourse, for example geology, topography, substrate, gradient, flow rate, altitude, channel profile, climate, catchment features (soil, land use, vegetation, etc.); human activities add to this complexity. The different stretches of a river may support different in-channel features which in turn influence the waterside habitats. Marginal and bankside vegetation is an integral part of a river, supporting a range of river processes, as well as acting as habitat in its own right for a diverse flora and fauna, and as a migration corridor.

The principal river catchments affecting Rotherham are the Don and Trent catchments. These catchments include the rivers Don, Rother and Dearne as well as a number of smaller rivers and streams such as Anston Brook, Whiston Brook, Maltby Dike, Ulley Brook and Hooton Brook. Much of the River Don and River Rother areas are densely populated and industrialized although the River Rother is of significant wildlife value, particularly for its ornithology, and its concentration of wetland sites and associated species. The River Don flows east from its headwaters in the Pennines down through Sheffield and is joined by the River Rother in Rotherham centre and the River Dearne at Conisborough before joining the River Ouse near Goole which flows into the upper part of the Humber Estuary.

Nationally river ‘water bodies’ (sections of a river corridor that have predominantly uniform characteristics such as underlying geology, slope or size) may qualify as BAP priority habitat either because they are considered to be near-natural, or because they fulfil one or more specific criteria relating to BAP priority species or to particular habitat types. The detailed criteria, as agreed by the UK Biodiversity Reporting and Information Group 19/07/2010, are provided in appendix three. Further work will be needed to identify local river water bodies that meet the criteria.

Standing Water
Standing water includes natural systems, for instance lakes and pools, as well as man-made waters such as lakes, reservoirs, ponds and gravel pits; this plan includes seasonal ponds which dry out during in dry conditions but are ecologically important. When levels fall in standing water, previously submerged parts of

the banks are exposed to the air. This causes a dramatic change in these locations from an aquatic to a terrestrial environment and has a major influence on the animal and plant life found there. This process is commonly termed drawdown, and the part of the shoreline that is exposed below the top water line is termed the drawdown zone. The drawdown zone provides valuable habitat for a range of fauna, in particular invertebrate species and shoreline birds; over 85% of wetland plant species growing in ponds occur in the drawdown zone, and many are restricted to this area.

Types of standing water in Rotherham include:

- Natural lakes – lakes formed within a natural basin. Many such lakes will have been modified or altered by human activities e.g. dams.
- Oxbow ponds – Oxbow ponds develop after a river cuts a new path leaving behind the former meander which over time becomes isolated.
- Field ponds – Constructed on farms for watering stock and often associated with the Enclosure Acts.
- Dew ponds – Originally intended as a method of watering stock in areas with little above ground drainage. They were designed so as to create a basin to capture rainfall and surface runoff. Today many are no longer used for stock and have been colonised by a variety of wetland species.
- Reservoirs – Constructed for irrigation and water storage. Often of significant ornithological interest although some support a specialised flora associated with drawdown zones. Examples include Thrybergh and Ulley Reservoirs and Firsby Reservoirs.
- Mineral extraction sites – clay pits, gravel pits, sandpits, brickpits and limestone quarries. These sites are very variable ranging from large deep gravel pits and flooded quarries to relatively small wetlands in brickpits and limestone quarries. These sites become more natural in time through natural colonisation of plants and animals. Many sites are relatively isolated and free from human impacts such as pollution and recreational disturbance. This can be very beneficial for plants, birds and mammals.
- Flashes – standing water bodies created through subsidence of land over former coal workings. An example is Catcliffe Flash.
- Mill lodges and ponds – Originally constructed to store water to power mills. Nature conservation interest can be very variable. Some sites are associated with rare aquatic flora and fauna.
- Ornamental lakes – Often associated with large estates or a parkland landscape. These sites can be of significant biological interest. They are usually eutrophic and can support submerged, floating and marginal wetland vegetation, diverse invertebrate assemblages and wetland birds. Some sites are also important for water voles. Examples include Wentworth Lakes.
- Fish ponds – Historic fishponds may support a range of features such as rich marginal vegetation, areas of relic fen, swamp or secondary wet woodland. They are often present as a series of interconnecting ponds. An example would be Ravenfield Park.
- Canals – The canals in Rotherham include both disused canals and those still in use/restored. There are four canals or remnants thereof in Rotherham. The Don Navigation, or Sheffield and South Yorkshire Canal, comprises several sections which by-pass un-navigable reaches of the River Don. It is almost entirely urban in character. A short spur off the Don Navigation forms the Fitzwilliam Canal at Parkgate, whilst further north-east a tiny remnant of the Barnsley Canal remains at Swinton. Rotherham's most rural canal is the Chesterfield Canal, entering the borough at Norwood in the south-west and leaving it east of Thorpe Salvin as it enters Shireoaks on the Nottinghamshire border.
- Ditches – Artificially created and maintained drainage channels usually associated with local agricultural land drainage. Depending upon their location they may be permanently watered or may become dry at different times of the year. Drains tend not to be named in Rotherham unlike in the eastern counties where such drains are the result of major engineering. However, especially in the eastern area of Rotherham there are a great many drains often connecting other water courses and they are an important part of the semi-natural water network.
- Balancing ponds and lagoons and wader scrapes – These can develop interest for both fauna and flora.
- Garden ponds – Garden ponds can support a range of flora and fauna and in some areas make a significant contribution to local wildlife. However, garden ponds are excluded from these guidelines.

Open water NVC communities in Rotherham include the *Lemna gibba* community (A1), the *Nymphaea alba* community (A7), *Potamogeton natans* community (A9), *Polygonum amphibium* community (A10), *Callitriche stagnalis* community (A16) and the *Elodea canadensis* community (A15). Swamp NVC communities include *Carex paniculata* swamp (S3), *Phragmites australis* swamp and reedbeds (S4), *Glyceria maxima* swamp (S5), *Carex riparia* swamp (S6), *Scirpus lacustris* spp. *lacustris* swamp (S8), *Typha latifolia* swamp(S12), *Sparganium erectum* swamp (S14) and *Glyceria fluitans* water-margin vegetation (S22) and *Carex otrubae* swamp (S18).

Typical NVC communities found in drawdown zones: A10 *Polygonum amphibium,* OV30 *Bidens tripartita - Polygonum amphibium* community, MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina* grassland, MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina* grassland, OV31 *Rorippa palustris - Filaginella uliginosa* community, OV29 *Alopecurus geniculatus - Rorippa palustris* community, OV28 *Agrostis stolonifera - Ranunculus repens* community, OV21 *Poa annua - Plantago major* community, OV32 *Myosotis scorpiodes - Ranunculus sceleratus* community, MG13 *Agrostis stolonifera - Alopecurus geniculatus* grassland, OV33 *Polygonum lapathifoilum - Poa annua* community, OV35 *Lythrum portula - Ranunculus flammula* community and S22 *Glyceria fluitans* water-margin vegetation.

The transition between open water and land is often occupied by tall emergent vegetation called swamp, reedbed or carr woodland. In practice these communities often form a continuum. Swamp habitats are considered with standing water because of their association with open water. Some sites in Rotherham support good macrophyte flora including yellow water lily *Nuphar lutea*, spiked water milfoil *Myriophyllum spicatum*, water violet *Hottonia palustris*, pondweeds *Potamogeton* spp. and pillwort *Pilularia globulifera*, a nationally scarce water fern.

Standing waters are often further classified according to their size and nutrient status; in some cases the national BAP groups have produced additional criteria to identify priority sites. Nutrient status varies from low to high and intermediates occur, although water bodies in Rotherham are usually more eutrophic (nutrient-rich), i.e. containing at least 0.035mgl-1 total phosphorus (including phosphorus bound up in plankton) and 0.5mgl-1 or more total inorganic nitrogen (mainly in the form of dissolved nitrates).

National Priority Ponds

Ponds, for the purpose of UK BAP priority habitat classification, are defined as permanent and seasonal standing water bodies up to 2 ha in extent that meet one or more quality criteria, provided in appendix three. Ponds are widespread throughout the UK, but high-quality examples are now highly localised, especially in the lowlands.

National Priority Lakes and open water over 2ha

Within Rotherham the majority of larger water bodies reflect a eutrophic nutrient status. Eutrophic standing waters are highly productive because plant nutrients are plentiful, either naturally or as a result of artificial enrichment, they include natural and man made still waters such as lakes, reservoirs and gravel pits but exclude small pools, field ponds and brackish waters. In their natural state eutrophic waters have high biological diversity; planktonic algae and zooplankton are abundant in the water column, submerged vegetation is diverse and numerous species of invertebrate and fish are present.

Lowland Fens

Fens, or mires, are usually on peat; they receive water and nutrients from the soil, rock and ground water, as well as directly from precipitation. Classification of fens is quite complicated, depending upon the direction of water movement through the peat or soil, and whether the water is base-poor / acidic (poor fen) or is mineral-enriched / calcareous (rich fen). Topogenous fens are those where water movements in the peat or soil are generally vertical. They include basin fens and floodplain fen. Soligenous fens, where water movements are predominantly lateral, include mires associated with springs, rills and flushes in the uplands, valley mires, springs and flushes in the lowlands, trackways and ladder fens in blanket bogs and raised bogs lags (a discrete lens-shaped dome of peat with flat or imperceptibly sloping topography with a halo of fen vegetation in the zone where water draining the bog meets that from adjoining mineral soils).

Poor-fens, where the water is derived from base-poor rock such as sandstones and granites occur mainly in the uplands, or are associated with lowland heaths. They are characterised by short vegetation with a high proportion of bog mosses *Sphagnum* spp. and acid water (pH of 5 or less). Rich-fens, are fed by mineral-enriched calcareous waters (pH 5 or more) and are mainly confined to the lowlands and where there are localised occurrences of base-rich rocks such as limestone in the uplands. Fen habitats support a diversity of plant and animal communities. Some can contain up to 550 species of higher plants, a third of our native plant species; up to and occasionally more than half the UK`s species of dragonflies, several thousand other insect species, as well as being an important habitat for a range of aquatic beetles.

Reedbed and rich-fen NVC communities in Rotherham include the *Phragmites australis- Urtica dioica* tall-herb fen (S26), the *Phalaris arundinacea* tall-herb fen (S28), the *Filipendula ulmaria-Angelica sylvestris*

mire (M27) and the *Juncus subnodulosus-Cirsium palustre* fen meadow (M22). Lowland poor-fen / acid mires are rare in Rotherham and are not easily categorized by the NVC methodology.

Reedbed

Reedbeds are classified as wetlands dominated by stands of the common reed *Phragmites australis*, where the water table is at or above ground level for most of the year. They tend to incorporate areas of open water and ditches, and small areas of wet grassland and carr woodland. Reedbeds are amongst the most important habitats for birds in the UK. They support a distinctive breeding bird assemblage including 6 nationally rare Red Data Birds the bittern *Botaurus stellaris*, marsh harrier, *Circus aeruginosus*, crane *Grus grus*, Cetti`s warbler *Cettia cetti*, Savi`s warbler *Locustella luscinioides* and bearded tit *Panurus biarmicus,* provide roosting and feeding sites for migratory species (including the globally threatened aquatic warbler *Acrocephalus paludicola*) and are used as roost sites for several raptor species in winter. Five Red Data Book invertebrates are also closely associated with reedbeds including red leopard moth *Phragmataecia castanaea* and a rove beetle *Lathrobium rufipenne*.

Floodplain Grazing Marsh

Marsh is a variable habitat type, but usually refers to pasture or meadow grassland with ditches on mineral soil that is periodically inundated or waterlogged or has a water table close to the surface for most of the year, although it is not normally above ground level. It occurs on predominantly level areas and includes grasslands with a high proportion of rush species, sedge species or meadowsweet. Traditionally the marsh is managed by grazing and in some cases hay or silage cutting. The ditches may support richly diverse communities of plants and invertebrates, even though the pasture may have been agriculturally improved. The defining characteristic is the interlinking of wet grassland and ditch communities. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of tall fen or reed species; although they may abut with fen, reed and swamp communities.

Grazing marshes are particularly important for the number of breeding waders such as snipe *Gallinago gallinago*, lapwing *Vanellus vanellus* and curlew *Numenius arquata* they support. Internationally important populations of wintering wildfowl also occur including Bewick swans *Cygnus bewickii* and whooper swans *Cygnus cygnus.*

Swamp is a habitat typically found in transitional zones between open water and drier land. It is similar to marsh habitat except the water level is generally higher (typically above ground level) and tall emergent vegetation, such as reed grasses and large sedges, are dominant. In these guidelines swamp habitat is included in the open water section.

Current status

The **rivers and streams** in Rotherham fall within the Humber River Basin Management area (Environment Agency); lakes and groundwater are also classified within the plan with all waters being divided into 'water body' units. The Water Framework Directive (WFD) has set targets of achieving 'good' status in all water bodies by 2015. Water body status has ecological and chemical components; status classifications have been assessed for all water bodies to produce a baseline from which the 'no deterioration in status' WFD objective will be measured. The status of the principle water bodies that occur in Rotherham are summarised below:

Water Framework Directive ecological potential of the **Rother from Doe Lea to the River Don** water body (GB104027057770) was poor in 2009, and is currently expected to remain poor in 2015. Failing elements are: invertebrates, (poor 2009, predicted moderate 2015); phytobenthos (poor 2009, predicted poor 2015); Phosphate (poor 2009, expected poor 2015); Ammonia (moderate 2009, expected good 2015); Benzo (ghi) perelyene and indeno (123-cd) pyrene (moderate 2009, expected moderate 2009); and mitigation measures (moderate 2009, expected moderate 2009). A number of potential mitigation measures have been identified for this water-body including 'increase in-channel morphological diversity' and 'improve floodplain connectivity' that are not yet in place.

Flooding of properties in this area has meant that measures have been implemented historically to reduce water levels in the stretch of the Rother near Catcliffe. Flood banks/defences separate the river from its floodplain and the river sits within an artificial straightened channel for much of its length, with natural pool-riffle sequences being absent. There are issues associated with over-deepening and consequent excessive siltation problems in the reach. The ground and river bed levels may have subsided by more than 2m locally due to deep coal mining activity. The severe flooding in the Rother corridor has lead to local concerns about any action associated with the river corridor that may be perceived to exacerbate flood risk.

Lower catches of fish in this stretch have been reported by the local angling club, compared to upstream and downstream sections, which contain more typical riverine features such as pools, riffles and glides. There is limited species diversity in the riparian habitat in this stretch and there is little vegetation overhanging the river or on bank toes to provide shelter for fish. Otters and water voles have been recorded in the vicinity of the River Rother.

The River Don from **Greasbrough Dyke to River Dearne** water body (GB104027057452) is a heavily modified water body (HMWB) and current has a status of moderate. Investigations have not yet been completed for this site. However the biodiversity value of key sites owned by the Environment Agency, RMBC, Tata Steel and Yorkshire Water have the potential to be improved with land use change and improved management.

Nationally the extent of the standing water resource is unknown. The UK HAP for **Eutrophic Standing Water** estimates 1785km^2, with approximately 540 km^2 being in England (this excludes small pools, field ponds and brackish waters). Over 800 standing water bodies are recorded for Rotherham with a combined area in excess of 300ha but this largely excludes garden ponds that are known to be widespread and common. **Ponds** are widespread throughout the UK, but high-quality examples are now highly localised, especially in the lowlands.

In intensively farmed lowland areas **fens** occur less frequently, are smaller in size and more isolated than in other parts of the UK. In some lowland areas such as the Scottish borders and southern Northern Ireland there are concentrations of small fens of particular importance.

There are about 5000ha of **reedbeds** in the UK, but of the 900 or so sites contributing to this total, only about 50 are greater than 20ha, and these make a large contribution to the total area.

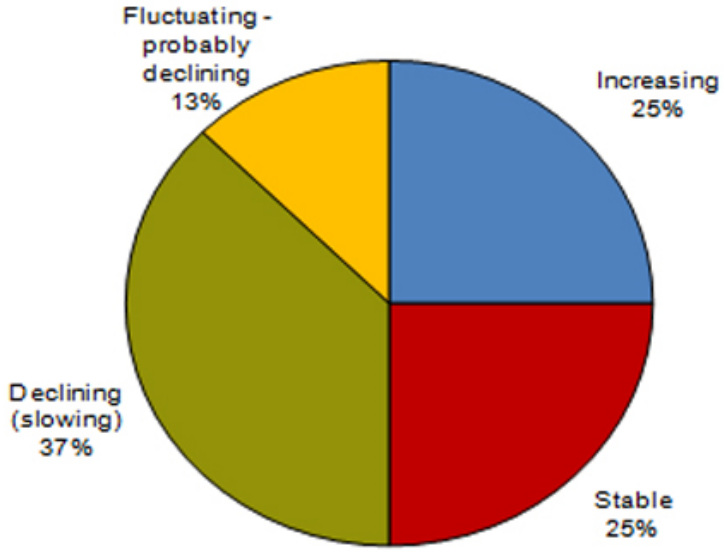
The exact extent of **grazing marsh** in the UK is not known but it is possible that there may be a total of 300,000 ha. England holds the largest proportion with an estimate in 1994 of 200,000 ha. However, only a small proportion of this grassland is semi-natural supporting a high diversity of native plant species (5,000 ha in England, an estimated 10,000 ha in the UK). Historically the River Rother and the lower Don and Dearne catchments consisted of wide valleys with flat alluvial floors that were subject to frequent and widespread flooding. This supported large areas of grazing marsh and associated wetlands but only tiny fragments of this formerly extensive area remain. Information from an aerial survey carried out in

Rotherham in 1981 identified approximately 18ha of marshland although It is unclear how much of this can be described as grazing marsh. Important sites include the Rother valley, Langold, Firbeck, Ravenfield, Rawmarsh and Kilnhurst and small fragments remain in the upper reaches of some local catchments.

Locally available mapping provides the following estimates of habitat area in Rotherham:

Habitat	Source	Area
Ponds and Lakes	BAP Habitat Mapping 2003/04	308.2ha
Fen	BAP Habitat Mapping 2003/04	1.20ha
Reedbed	BAP Habitat Mapping 2003/04	6.34ha

In terms of current quality status the following diagram is taken from the Defra (2011) document 'A Biodiversity Strategy for England – Measuring Progress: 2010 Assessment' and shows the assessed status of water and wetland priority habitats as at 2008.



Key Factors and Influences

The following are considered to be the key issues affecting Rotherham's wetland habitats; they are not in any order of priority.

- Lack of appropriate management causing a decline in open water habitats due to successional development and siltation into drier habitats such as wet woodland or wet grassland
- Changes in land-use and agricultural practices e.g. in-filling of farm ponds due to agricultural intensification, loss of buffer zones along feeder watercourses and increased land drainage
- Pollution and enrichment by excessive nutrient input (eutrophication). Anthropogenic nutrient inputs include industrial and sewage effluent, point and diffuse sources associated with agriculture and forestry and accidental spillages (e.g. slurry)
- Introductions of fish leading to the alteration of the natural integrity of water bodies e.g. altering competition, species composition, nutrient mobilization enrichment and turbidity
- Recreational impacts such as wave erosion, increased water turbidity and disturbance, including damage to emergent vegetation
- In-filling of amenity ponds due to Health and Safety concerns
- Introduction of alien, invasive and inappropriate non-native plant species
- Changing climatic patterns
- Industrial and residential development leading to increasing pressure for land for development
- Increasing demand for flood defence mechanisms and on water resources
- Agricultural intensification and neglect; inappropriate management of grazing marshes, increased drainage and abandonment of traditional grazing patterns
- Eutrophication and pollution resulting from the increased use of fertilizers, herbicides, pesticides and other pollutants within any catchment area will disrupt the nutrient and pollutant balance of wetland habitats
- Habitat fragmentation and the small size of the sites contributing to the pressure exerted on wetland habitats and their associated plants and animals.
- Pollution from sewage treatment works and other commercial discharges, of which there are many on Rotherham's semi-natural watercourse network
- Losses due to Culverting or Piping
- Litter and tipping
- Recreational pressures having a negative effect on ornithological interests

Associated Habitats and Species

Open water and wetland habitats can be associated with any of the other priority habitats; habitat mosaics will depend on ground and soil conditions, hydrology and management activity.

The list provided in Appendix Two contains England Priority species that are associated with wetland habitats **and** that have been recorded in Rotherham. The list has been prepared by the Biodiversity Integration Groups, established to bring together habitat and associated species interests at an England level as part of Natural England led research.

Key Sites of Good Quality

There are 25 Local Wildlife Sites that meet the selection guidelines for at least one of the running water, standing water, fen or wet grassland selection criteria; these are listed in appendix one. Of these sites 13 are listed as having evidence of positive management in the 2011 national indicator assessment and could be considered to be 'of good quality'.

A number of these sites have management plans or agreements in place or about to be reviewed, including the country parks, Woodhouse Washlands and Treeton Dyke. These sites receive appropriate and regular management, both for visitor features and for biodiversity. The aim should be to continue to resource management action at these sites to prevent deterioration. Monitoring of habitats can be undertaken to ensure the biodiversity management objectives are being met.

Chesterfield Canal has undergone significant restoration in recent years with great success; the section within Rotherham is the final section for restoration.

Sites with ecological designations, including SSSI and LWS, form the basis of sites of known quality. Where these sites are believed to have open water or wetland interest they should be monitored to guide management action and resources should be identified and focused on delivering appropriate management actions.

Sites of Concern

The key river systems that occur in Rotherham are subject to many influences and it is not possible to impose management at a river-wide scale. There is a Living Don Project area and steering group that is working to the protection and conservation of river sections and associated habitats from the headwaters of the Don Catchment through the urban centres of Sheffield and Rotherham and out towards Doncaster; the project aim is to improve the ecological condition of a number of key sites along the River Don and its tributaries in the Sheffield and Rotherham districts. As part of this project a focus is being developed on the River Rother as this corridor has significant biodiversity interest and a high number of associated sites of various designations, many of which are neglected or receive only minimal management. The River Rother Restoration (RRR) project, in connection with the Living Don in Rotherham, has identified approximately 15 key sites which will be prioritised for habitat restoration and creation, water quality improvements, management programmes, natural flood storage assessment and access improvements.

The South Yorkshire and Sheffield Navigation is recognised as previously being a low priority for its owners, the Canal and Rivers Trust (formerly British Waterways), but South Yorkshire is to be the new focus for the north-east waterways region and elements including freight potential, tourism, access and navigation hotspots will be reviewed with an emphasis on making and maintaining improvements through adoption, legacy and partnership working.

Specific Actions for Key Associated Species

Appendix Two contains a list of all national priority species that have been recorded in Rotherham that are associated with priority wetland habitat types. The majority of species associated with water and wetland habitats will benefit from the delivery of habitat restoration and management activity. Certain species or species groups may benefit from additional measures, for example fish passes, artificial otter holts and rest spots or in-channel works to enhance water movement. The list of associated species should be consulted on a site by site basis when developing projects and management plans to ensure that supporting habitats and features can be retained, created and managed.

Scale of Potential Biodiversity Action

The different types of open water, standing water and wetland habitats occurring in Rotherham will be influenced by their location, hydrological systems, adjacent land uses and geomorphological conditions as well as by management taking place for biodiversity, flood risk, water extraction and storage and recreation. This makes it difficult to generalise management and action planning or scales of intervention needed to conserve sites and habitats; however, the following points may be considered when making site based decisions:

River naturalisation – the Environment Agency categorise the River Rother and the River Don within Rotherham as heavily modified water bodies, as many section have been historically straightened or affected by industry and development; the ecological potential of the water bodies is categorised as poor and mitigation measures are recommended to address floodplain connectivity and in-channel morphological diversity. Action can be taken in the form of in-channel work to increase flow diversity and the creation of features such as ox-bows, ditches, scrapes, reedbeds, backwaters and connected wetland habitats.

Reedbed management – reedbeds are extremely valuable habitats both in terms of water quality and in supporting the nesting and overwintering of specialist bird species; however, they require regular management to prevent the build up of vegetation litter and to prevent total domination of the available open water.

Siltation – within water courses siltation from surface water drainage, soil erosion and riverbed movement can build up and, historically, would lead to changes in the route of the watercourse. In straightened or constrained watercourses this can lead to the build up of material that is then dominated by invasive weeds and fast growing self-set vegetation. In ponds, especially those connected to streams or ditch networks, siltation can happen very quickly and can result in the drying out of the pond on a seasonal or permanent basis; where these ponds are used by amphibian or invertebrate species dependant on open water this can have a drastic impact on species populations. The nature of siltation often means that the silt material contains toxins or compounds inappropriate for disposal other than as special waste requiring licence and significant resources to enable removal. Measures to prevent or minimise silt entering drainage and water courses are necessary. Some sites with significant silt problems may need to consider allowing open water habitats to succeed to marsh or even to wet woodland as an alternative to resourcing the removal of silt.

Water supply – development, climate change and water use will continue to have an increasing impact on water supply and hydrological systems, which are beyond the scope of this action plan. Water habitats are dynamic but need to be robust enough to counter and react to external changes over time; this robustness can come from the availability of suitable adjacent land and habitats or connection to the wider catchment. Sustainable urban drainage elements should be encouraged in new development and the impact on connected watercourses and wetlands should be considered when changes to existing drainage systems are proposed.

Litter / obstruction clearance – litter and tipping in or near rivers, streams and wetlands is unsightly but can also cause localised blockages and flooding. Regular maintenance is needed to reduce these risks but can be restricted by access and health and safety requirements.

Invasive species work – rivers and streams act as corridors for species dispersal; alien and invasive species, with their rapid growth, seed distribution and dominating nature, spread quickly and out-compete native vegetation. They often require specialised treatment and disposal and, especially where land ownership and responsibility is varied or unknown, eradication can be viewed as an unfeasible and impossible task. Coordinated, catchment wide action is needed.

Associated habitat management – management options for grassland and woodland habitats are given in the relevant action plans.

Objectives and Targets

The England Biodiversity Strategy 2011 includes a priority to establish more coherent and resilient ecological networks on land that safeguard ecosystem services for the benefit of wildlife and people. It also proposes the protection of water ecosystems through a river basin approach, flood and erosion management that will conserve the natural environment and improve biodiversity and reformation of the water abstraction regime.

The Yorkshire & Humber Regional Biodiversity Strategy lists the following Water Objectives:

- Promote the value of all ecosystem services provided by water and wetland habitats in relation to climate change, water resource management, flood risk, recreation, tourism and economic development. Highlight the cost benefits of functional wetland habitats in reducing flood risk and support further cost benefit analysis of ecosystem services.
- Support Local Planning Authorities in protecting floodplains from unsuitable development, and promote a strategic approach to assessing the cumulative effects of inappropriate development on the function of floodplains both in terms of flood alleviation and biodiversity value.
- Maximise the contribution of Catchment Flood Management Plans to the restoration of floodplain wetlands (including the managed realignment of flood defences) to deliver better water management and enhance biodiversity. Integrate catchment flood management plans with wider spatial planning and the work of Internal Drainage Boards (IDB).
- Use priorities for large scale habitat restoration identified by the Yorkshire & Humber Wetland Vision, the England Wetland Vision Project and the Yorkshire and Humber Wetland Feasibility Study to develop the funding of detailed, site-specific feasibility studies to take forward individual wetland restoration projects both in the uplands and lowland flood and coastal plains.
- Incorporate Sustainable Drainage Systems (SuDS) into all new development and develop protocols for their management. Support the understanding and development of sustainable agricultural drainage systems.
- Develop an effective programme of measures as part of Water Framework Directive delivery to bring additional benefits to the region's biodiversity, beyond current planned activity, and ensure that a suitable funding package is in place to deliver it.
- Ensure opportunities are taken to benefit biodiversity during planning for the water sector in the region including schemes submitted under the PR09 process and water resource planning (including Catchment Abstraction Management Strategies, Drought Plans etc).
- Support the development of IDB biodiversity action plans and ensure these are properly integrated with LBAPs.

The Yorkshire and Humber Biodiversity Delivery Plan sets the following targets:

	Yorkshire Humber Target	**Target still to be met 2010-2015**
Eutrophic Water (achieve condition)	364 sites	-
Fen (restoration)	450 ha	70 ha
Reedbed (expansion)	225 ha	97.6 ha
Coastal & Floodplain (restore)	800 ha	491 ha
Coastal & Floodplain (expand)	250 ha	105 ha

Achieve condition: Maintain or improve condition within existing resource.
Aim: to maintain the condition (where it is good), and improve the condition (where it is poor) of the existing BAP habitat resource, compared to the baseline i.e. the amount of the resource in good condition at plan publication or currently, whichever is greater.

Restoration: Improve the condition of relict habitat so that it qualifies as BAP habitat.
Aim: to restore areas of degraded habitat or remnant elements to a state where it is considered to be BAP habitat in good condition. This leads to an expansion of the extent of the BAP habitat and ultimately an increase in the area in good condition.

Expansion: Increase the extent of the resource

Aim is to establish BAP habitat on land where it is not present and where no significant relicts of the BAP habitat currently exist. The targets should be set for the total amount of expansion to be achieved since plan publication.

In order to support the delivery of national and regional objectives and targets the following are the proposed objectives for the Rotherham Wetland Biodiversity Action Plan:

Conserve the existing water and wetland resource by:

- Producing a new baseline dataset of water and wetland sites of high quality and ensure these are prioritised for conservation action and sustained management
- Using national priority habitat criteria to assess major watercourses to identify key sites and water bodies
- Producing a spatial biodiversity action plan for the Rivers Rother and Don within Rotherham
- Undertaking an appropriate level of habitat management on sites that are in the control of Rotherham BAP partner organisations
- Providing support and advice to other landowners to encourage suitable management at sites not in our control
- Supporting the delivery of wider projects that involve water and wetland habitats in Rotherham, e.g. YH Wetland Vision, the Living Don, the Dearne Valley Green Heart Nature Improvement Area

Expand the existing water and wetland resource by:

- Identifying waterbodies and wetland habitats in poor quality and agree priorities for restoration action
- Identifying new areas for open water and wetland habitat creation; these can be temporary or permanent but should result in an overall increase in habitat of priority quality by 2025
- Seeking to reduce the biological isolation of vulnerable ponds and ponds supporting sensitive species
- Supporting the incorporation of sustainable drainage schemes into development
- Identifying new areas for semi-natural flood storage and water management

Connect the water and wetland resource by:

- Prioritising new habitat creation that connects to existing wetland systems
- Identifying opportunities to link wetlands to other semi-natural habitats, via planting and habitat creation
- Identifying opportunities to remove culverts and restore open water channels
- Supporting programmes to deliver invasive species control

Promote the special interest of the water and wetland resource by:

- Providing a rolling programme of habitat monitoring at accessible wetland sites
- Producing and sharing site based management plans that have biodiversity action as a key principle
- Identifying water and wetland sites that meet Local Wildlife Site selection criteria
- Ensuring that water, wetlands and hydrological systems are fully recognised within development plans and decision making
- Investigating the potential for water based renewable energy technology

Rotherham Biodiversity Forum, and other partners, will prepare a prioritised programme of action that will guide delivery across Rotherham over the plan period, i.e. to 2020.

Appendix One – Rotherham Local Wildlife Sites with Open Water or Wetland Interest

Site	Site Name	RI1	SW1	SW2	FE1	FE2	FE3	FE4	G2	2011 +ve Management
4	Chesterfield Canal		T							No
5	Nor Wood and Locks	T		T					T	No
6	Rother Valley Country Park								T	Yes
7	Nickerwoods & Ponds	T	T							No
11	Lindrick Common						T			Yes
16	Dinnington Colliery Tip			T						Yes
26	Dinnington Marsh		T				T	T	T	No
29	Ulley Country Park		T						T	Yes
32	Treeton Dyke		T		T					Yes
33	Woodhouse Washlands		T						T	Yes
34	Catcliffe Flash LNR		T		T					No
35	Old Flatts Farm Marsh		T						T	No
36	Whiston Meadows	T	T							Yes
39	Wickersley Gorse								T	Yes
49	Wood Lee Common							T	T	No
50	Roche Abbey		T							Yes
55	Maltby Commons & Woodlands				T	T			T	Yes
57	Greenland Plantation								T	No
75	New Stubbin Colliery & Stubbin Incline				T					No
80	Thrybergh Country Park		T				T	T	T	Yes
81	Ravenfield Park & Firsby Reservoirs	T	T							Yes
84	Kilnhurst Ings		T						T	Yes
88	Flatts Valley								T	No
108	Sheffield & South Yorkshire Navigation		T							No
113	Kilnhurst Riverside		T						T	No

Rotherham Local Wildlife Site Selection – Criteria Summary

(For full details please see Rotherham Local Wildlife Site System: Part 2 Site Selection Guidelines for Rotherham 2010)

Flowing Water Selection Guidelines

RI1 A stretch of river or similar watercourse that supports 1 or more of the following:

- Supports a high and/or near natural (class A and B) water quality as determined by Biological General Quality Assessment methodology used by the Environment Agency.
- A suite of 3 or more of the following natural river habitat features in the stretch of watercourse being evaluated:
    - cascades
    - islands
    - oxbows
    - pools
    - rapids
    - riffle and run systems
    - sand, mud, shingle or gravel banks
    - unmodified bank profiles
    - unvegetated point bars
    - vegetated point bars
- A score of 10 or more from the from the indicative species list (Table 16).

Standing Water Selection Guidelines

SW1 Any nutrient-rich standing water site that scores 10 or more from the from the indicative species list (Table 18) with at least one species recorded from two of the habitat zones of submerged, floating and swamp habitat.

SW2 A standing water site that supports seasonal draw down zones and open vegetation of inundation habitat characterised by one or both of the following:

- the presence of 1 or more of the specialist species in bold in Table 19 and 1 or more of the other characteristic species shown in Table 19.
- one of the following National Vegetation Classification communities:
    - OV29 Alopecurus geniculatus – Rorippa palustris
    - OV30 Bidens tripartita - Persicaria amphibia
    - OV31 Rorippa palustris – Gnaphalium uliginosum
    - OV35 Lythrum portula – Ranunculus flammula

Fens Mire and Reedbed Selection Guidelines

FE1 Lowland mire sites greater than 0.1 ha that support either of the following NVC community types:
M22 Juncus subnodulosus-Cirsium palustre fen meadow
M27 Filipendula ulmaria-Angelica sylvestris mire

FE2 Stands of tall-herb fen and/or reedbed that are greater than 2ha in area and are predominantly comprised of one or more the following NVC communities:

- S4 Phragmites australis swamp and reed-beds
- S25 Phragmites australis-Eupatorium cannabinum tall herb fen
- S26 Phragmites australis-Urtica dioica tall-herb fen
- S28 Phalaris arundinacea tall-herb fen

FE3 Rich-fen sites greater than 0.5 ha that score 12 or more from the from the indicative species list (Table 21).

FE4 Poor-fen and acid mire sites greater than 0.25 ha that score 8 or more from the from the indicative species list (Table 22).

Grassland Selection Guidelines

G2 Areas of semi-natural grassland of at least 0.25ha in size or 50 metres in length that score 10 or more from the indicative wet grassland plant species list (Table 5).

Appendix Two – List of those England Priority Species that are associated with Wetland Priority Habitats and have been recorded in Rotherham

Scientific name	Common name	Classification	Habitat
Austropotamobius pallipes	White-clawed crayfish	crustacean	ponds
Blysmus compressus	Flat-sedge	vascular plant	ponds
Carex vulpina	True Fox Sedge	vascular plant	ponds
Mentha pulegium	Pennyroyal	vascular plant	ponds
Oenanthe fistulosa	Tubular Water-dropwort	vascular plant	ponds
Pilularia globulifera	Pillwort	vascular plant	ponds
Potamogeton acutifolius	Sharp-leaved Pondweed	vascular plant	ponds
Pulicaria vulgaris	Small Fleabane	vascular plant	ponds
Stellaria palustris	Marsh Stitchwort	vascular plant	ponds
Bufo bufo	Common Toad	amphibian	ponds
Triturus cristatus	Great Crested Newt	amphibian	ponds
Cygnus columbianus bewickii	Bewick's Swan (Tundra Swan)	bird	ponds
Anguilla anguilla	European Eel	fish - bony	ponds
Arvicola terrestris	Water Vole	mammal	ponds
Nyctalus noctula	Noctule	mammal	ponds
Pipistrellus pygmaeus	Soprano Pipistrelle	mammal	ponds
Natrix natrix	Grass Snake	reptile	ponds
Austropotamobius pallipes	White-clawed crayfish	crustacean	lakes
Blysmus compressus	Flat-sedge	vascular plant	lakes
Oenanthe fistulosa	Tubular Water-dropwort	vascular plant	lakes
Bufo bufo	Common Toad	amphibian	lakes
Cygnus columbianus bewickii	Bewick's Swan (Tundra Swan)	bird	lakes
Anguilla anguilla	European Eel	fish - bony	lakes
Arvicola terrestris	Water Vole	mammal	lakes
Lutra lutra	Otter	mammal	lakes
Nyctalus noctula	Noctule	mammal	lakes
Pipistrellus pygmaeus	Soprano Pipistrelle	mammal	lakes
Natrix natrix	Grass Snake	reptile	lakes
Chrysolina graminis	Tansy Beetle	beetle	Rivers (banks)
Austropotamobius pallipes	White-clawed Crayfish	crustacean	Rivers (and streams)
Blysmus compressus	Flat-sedge	vascular plant	Stream borders
Carex vulpina	True Fox Sedge	vascular plant	River (edge)
Oenanthe fistulosa	Tubular Water-dropwort	vascular plant	Rivers (floodplain)
Scleranthus annuus	Annual Knawel	vascular plant	River (shingle)
Anguilla anguilla	European Eel	fish - bony	Rivers
Salmo salar	Atlantic Salmon	fish - bony	Rivers
Arvicola terrestris	Water Vole	mammal	River edges; islands
Lutra lutra	Otter	mammal	Rivers
Nyctalus noctula	Noctule	mammal	Riverine habitat
Pipistrellus pygmaeus	Soprano Pipistrelle	mammal	Riverine habitat
Natrix natrix	Grass Snake	reptile	Rivers and streams
Blysmus compressus	Flat-sedge	vascular plant	Grazing Marsh
Oenanthe fistulosa	Tubular Water-dropwort	vascular plant	Grazing Marsh
Potamogeton acutifolius	Sharp-leaved Pondweed	vascular plant	Grazing Marsh
Bufo bufo	Common Toad	amphibian	Grazing Marsh
Triturus cristatus	Great Crested Newt	amphibian	Grazing Marsh
Alauda arvensis arvensis	Sky Lark	bird	Grazing Marsh
Anser albifrons albifrons	European Greater White-fronted Goose	bird	Grazing Marsh

Branta bernicla bernicla	Dark-bellied Brent Goose	bird	Grazing Marsh
Crex crex	Corn Crake	bird	Grazing Marsh
Cuculus canorus canorus	Common Cuckoo	bird	Grazing Marsh
Cygnus columbianus bewickii	Bewick's Swan (Tundra Swan)	bird	Grazing Marsh
Emberiza schoeniclus schoeniclus	Reed Bunting	bird	Grazing Marsh
Limosa limosa limosa	Black-tailed Godwit	bird	Grazing Marsh
Locustella naevia naevia	Grasshopper Warbler	bird	Grazing Marsh
Motacilla flava flavissima	Yellow Wagtail	bird	Grazing Marsh
Numenius arquata arquata	Curlew	bird	Grazing Marsh
Vanellus vanellus	Lapwing	bird	Grazing Marsh
Anguilla anguilla	European Eel	fish - bony	Grazing Marsh
Arvicola terrestris	Water Vole	mammal	Grazing Marsh
Lutra lutra	Otter	mammal	Grazing Marsh
Nyctalus noctula	Noctule	mammal	Grazing Marsh
Pipistrellus pygmaeus	Soprano Pipistrelle	mammal	Grazing Marsh
Natrix natrix	Grass Snake	reptile	Grazing Marsh
Boloria selene	Small Pearl-bordered Fritillary	butterfly	Lowland Fen
Euphydryas aurinia	Marsh Fritillary	butterfly	Lowland Fen
Cossus cossus	Goat Moth	moth	Lowland Fen
Blysmus compressus	Flat-sedge	vascular plant	Lowland Fen
Dactylorhiza incarnata subsp. ochroleuca	an early marsh-orchid	vascular plant	Lowland Fen
Oenanthe fistulosa	Tubular Water-dropwort	vascular plant	Lowland Fen
Stellaria palustris	Marsh Stitchwort	vascular plant	Lowland Fen
Bufo bufo	Common Toad	amphibian	Lowland Fen
Emberiza schoeniclus schoeniclus	Reed Bunting	bird	Lowland Fen
Locustella naevia naevia	Grasshopper Warbler	bird	Lowland Fen
Anguilla anguilla	European Eel	fish - bony	Lowland Fen
Arvicola terrestris	Water Vole	mammal	Lowland Fen
Nyctalus noctula	Noctule	mammal	Lowland Fen
Pipistrellus pygmaeus	Soprano Pipistrelle	mammal	Lowland Fen
Natrix natrix	Grass Snake	reptile	Lowland Fen
Vipera berus	Adder	reptile	Lowland Fen
Zootoca vivipara	Common Lizard	reptile	Lowland Fen
Botaurus stellaris stellaris	Bittern	bird	Reedbed
Circus cyaneus	Hen Harrier	bird	Reedbed
Cuculus canorus canorus	Common Cuckoo	bird	Reedbed
Emberiza schoeniclus schoeniclus	Reed Bunting	bird	Reedbed
Locustella naevia naevia	Grasshopper Warbler	bird	Reedbed
Sturnus vulgaris vulgaris	Starling	bird	Reedbed
Arvicola terrestris	Water Vole	mammal	Reedbed
Lutra lutra	Otter	mammal	Reedbed
Micromys minutus	Harvest Mouse	mammal	Reedbed
Nyctalus noctula	Noctule	mammal	Reedbed
Pipistrellus pygmaeus	Soprano Pipistrelle	mammal	Reedbed
Natrix natrix	Grass Snake	reptile	Reedbed

Appendix Three: UK Biodiversity Action Plan – Criteria for identification of BAP priority habitat

UK Biodiversity Action Plan – Rivers (Updated December 2011)

Features qualifying BAP priority river habitat

River water bodies will qualify as BAP priority habitat either because they are considered to be near-natural, or because they fulfil one or more specific criteria relating to BAP priority species or to particular habitat types. BAP actions and targets will be part of local biodiversity strategies. Where a stretch of river is near-natural, the aim will be to maintain this quality and, where possible, to increase the naturalness of other parts of the river system. There are various ways of defining what is meant by 'near-natural' but, to increase consistency, only the relatively few river water bodies defined as being at 'high status' under the WFD are included in this category. Where a river qualifies on grounds other than naturalness, improvements in habitat quality may also form part of the objectives for maintaining the interest of its BAP features. As a significant proportion of the running water resource in the UK is likely to qualify, achievable priorities will need to be set for action, to improve the extent, habitat connectivity or quality of BAP priority rivers.

The list of qualifying criteria is as follows:

1. Riverine water bodies of high hydromorphological/ecological status. The Environment Agency, the Northern Ireland Environment Agency and the Scottish Environmental Protection Agency have developed criteria and rules to identify such water bodies;
2. Headwaters: to qualify as a priority habitat for 'Rivers' under the criterion of 'headwaters' a stream must be a watercourse within 2.5 km of its furthest source as marked with a blue line on Ordnance Survey (OS) maps at a scale of 1:50,000. Note that each tributary of a river will have its own headwater, so there will be more than one (sometimes many more) per catchment. Headwaters which have been significantly altered from their natural state are however not included.
3. Occurrence of the EC Habitat Directive Annex I habitat (H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation). The definition will include (but not be confined to) all river SACs designated for the feature.
4. Chalk Rivers as given in the existing BAP definition.
5. Active shingle rivers. Data for this can come from River Habitat Surveys (Environment Agency 2003) or indicator species of invertebrate (see criterion 7).
6. A/SSSIs (Areas/Sites of Special Scientific Interest) designated for river species, riverine features or fluvial geomorphology.
7. Species including:
    - Annex II Habitats Directive species
    - BAP priority species
    - Invertebrate species which are strongly indicative of river shingle

    See the list of qualifying species, Annex 1. To qualify, an ECS or WFD water body needs to have either:
    - records of any one species from criterion levels A (BAP priority species strongly dependent on river habitat quality) or C (non-BAP priority species, indicative of shingle rivers), or
    - from criterion level B (widespread BAP priority species which are less dependent on river habitat quality alone), records of 6 or more species. This threshold has been selected by looking at available records for all criteria and identifying a level which returns a manageable proportion of the rivers network.
8. Where the English, Northern Irish, Scottish or Welsh country biodiversity groups have signed off their own lists of BAP priority species, including species which are not in the UK list, then rivers can qualify for these species using criteria agreed at country level.

Level	NBN current scientific name	Common name	Classification level	Annex II	BAP	Shingle	limits to criterion/notes
A	*Acipenser sturio*	common sturgeon	bony fish		√		There are few sites
A	*Alosa alosa*	allis shad	bony fish	Ann II	√		There are few sites
A	*Alosa fallax*	twaite shad	bony fish	Ann II	√		There are few sites
A	*Cobitis taenia*	spined loach	bony fish	Ann II	√		There are few sites
A	*Osmerus eperlanus*	smelt (sparling)	bony fish		√		Only 6, ephemeral populations left
A	*Salvelinus alpinus*	Arctic charr	bony fish		√		Only records where breeding in rivers
A	*Collema dichotomum*	river jelly lichen	lichen		√		There are few sites
A	*Endocarpon adscendens*	a lichen	lichen		√		There are few sites
A	*Peltigera lepidophora*	ear-lobed dog-lichen	lichen		√		There are few sites
A	*Phaeophyscia endococcina*	a lichen	lichen		√		There are few sites
A	*Andreaea nivalis*	snow rock-moss	bryophyte		√		There are few sites
A	*Bryum gemmiparum*	Welsh thread-moss	bryophyte		√		There are few sites
A	*Bryum schleicheri*	Schleicher's thread-moss	bryophyte		√		There are few sites
A	*Bryum uliginosum*	cernuous bryum	bryophyte		√		There are few sites
A	*Cryphaea lamyana*	multi-fruited river moss	bryophyte		√		There are few sites
A	*Dumortiera hirsuta*	Dumortier's liverwort	bryophyte		√		There are few sites
A	*Fissidens serrulatus*	large Atlantic pocket-moss	bryophyte		√		There are few sites
A	*Pohlia scotica*	Scottish pohlia	bryophyte		√		There are few sites
A	*Rhytidiadelphus subpinnatus*	scarce turf-moss	bryophyte		√		River-bank records only
A	*Seligeria carniolica*	water rock-bristle	bryophyte		√		There are few sites
A	*Thamnobryum angustifolium*	Derbyshire feather-moss	bryophyte		√		There are few sites
A	*Thamnobryum cataractarum*	Yorkshire feather-moss	bryophyte		√		There are few sites
A	*Agabus brunneus*	Sharp's diving beetle	beetle		√		There are few sites
A	*Bembidion testaceum*	pale pin-palp	beetle		√	√	
A	*Bidessus minutissimus*	minutest diving beetle	beetle		√	√	
A	*Donacia bicolora*	two-tone reed beetle	beetle		√		There are few sites
A	*Hydrochus nitidicollis*	brass necked beetle	beetle		√	√	
A	*Meotica anglica*	shingle rove beetle	beetle		√	√	
A	*Thinobius newberyi*	Newbery's rove beetle	beetle		√	√	
A	*Lophopus crystallinus*	a bryozoan	bryozoan		√		There are few sites
A	*Glossosoma intermedium*	small grey sedge	caddisfly		√		There are few sites
A	*Hydropsyche bulgaromanorum*	scarce grey flag	caddisfly		√		There are few sites
A	*Ironoquia dubia*	scarce brown sedge	caddisfly		√		There are few sites
A	*Austropotamobius pallipes*	white-clawed crayfish	crustacean	Ann II	√		recent records only
A	*Coenagrion mercuriale*	southern damselfly	damselfly	Ann II	√		Restricted & threatened

A	*Cliorismia rustica*	southern silver stiletto-fly	fly		√		
A	Empis limata	the borders dance-fly	fly		√		There are few sites
A	*Lipsothrix ecucullata*	Scottish yellow splinter	fly		√		There are few sites
A	*Lipsothrix nigristigma* (*L. nobilis*)	scarce yellow splinter	fly		√		There are few sites
A	*Rhabdomastix japonica*	river-shore cranefly	fly		√	√	
A	*Nigrobaetis niger*	southern iron blue mayfly	mayfly		√		
A	*Potamanthus luteus*	yellow mayfly	mayfly		√		There are few sites
A	*Gyraulus acronicus*	Thames ram's-horn snail	mollusc		√		There are few sites
A	*Margaritifera margaritifera*	freshwater pearl mussel	mollusc	Ann II	√	√	
A	*Myxas glutinosa*	glutinous snail	mollusc		√		There are few sites
A	*Pisidium tenuilineatum*	fine-lined pea mussel	mollusc		√		Intermediate between 'few sites' and widespread
A	*Sphaerium solidum*	Witham orb mussel	mollusc		√		There are few sites
A	*Brachyptera putata*	northern february red	stonefly		√	√	
A	*Isogenus nubecula*	scarce yellow sally	stonefly		√		There are few sites
A	*Illecebrum verticillatum*	coral-necklace	vascular plant		√		River records only (ie only Cornish records)
A	*Luronium natans*	floating water plantain	vascular plant	Ann II	√		River records only (only Gwynedd and Ceredigion)
A	*Potamogeton compressus*	grass-wrack pondweed	vascular plant		√		River records only
A	*Schoenoplectus triqueter*	triangular club-rush	vascular plant		√		There are few sites
B	*Anguilla anguilla*	European eel	bony fish		√		
B	*Cottus gobio*	bullhead	bony fish	Ann II	√		English or Welsh records only
B	*Salmo salar*	Atlantic salmon	bony fish	Ann II	√		
B	*Salmo trutta*	brown/sea trout	bony fish		√		
B	*Lampetra fluviatilis*	river lamprey	jawless fish	Ann II	√		widespread
B	*Lampetra planeri*	brook lamprey	jawless fish	Ann II	√		widespread
B	*Petromyzon marinus*	sea lamprey	jawless fish	Ann II	√		
B	*Lipsothrix errans*	northern yellow splinter	fly		√		
B	*Pseudanodonta complanata*	depressed (compressed) river mussel	mollusc		√		Fairly widespread, may be under-recorded
B	*Arvicola terrestris*	water vole	terrestrial mammal		√		
B	*Lutra lutra*	otter	terrestrial mammal	Ann II	√		
B	*Pipistrellus pygmaeus*	soprano pipistrelle	terrestrial mammal		√		River records only
B	*Oenanthe fistulosa*	tubular water-dropwort	vascular plant		√		River records only
B	*Sium latifolium*	Greater Water Parsnip	vascular plant		√		River records only
B	*Stellaria palustris*	marsh stitchwort	vascular plant		√		River-bank records only
B	*Emberiza schoeniclus**	reed bunting	bird		√		only records of breeding near rivers
C	*Dyschirius angustatus*		beetle			√	
C	*Lionychus quadrillum*		beetle			√	
C	*Perileptus areolatus*		beetle			√	

UK Biodiversity Action Plan – Ponds

Criteria for identification of BAP priority ponds – Features qualifying BAP priority river habitat

Ponds, for the purpose of UK BAP priority habitat classification, are defined as permanent and seasonal standing water bodies up to 2 ha in extent, which meet one or more of the following criteria:

- Habitats of international importance: Ponds that meet criteria under Annex I of the Habitats Directive.
- Species of high conservation importance: Ponds supporting Red Data Book species, UK BAP species, species fully protected under the Wildlife and Countryside Act Schedule 5 and 8, Habitats Directive Annex II species, Nationally Scarce wetland plant species, or three (or more) Nationally Scarce aquatic invertebrate species.
- Exceptional assemblages of key biotic groups: Ponds supporting exceptional populations or numbers of key species. Based on (i) criteria specified in guidelines for the selection of biological SSSIs (currently amphibians and dragonflies only), and (ii) exceptionally rich sites for plants or invertebrates (i.e. supporting ≥30 wetland plant species or ≥50 aquatic macro-invertebrate species).
- Ponds of high ecological quality: Ponds classified in the top PSYM category ("high") for ecological quality (i.e. having a PSYM score ≥75%). [PSYM (the Predictive SYstem for Multimetrics) is a method for assessing the biological quality of still waters in England and Wales; plant species and / or invertebrate families are surveyed using a standard method; the PSYM model makes predictions for the site based on environmental data and using a minimally impaired pond dataset; comparison of the prediction and observed data gives a % score for ponds quality].
- Other important ponds: Individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context e.g. pingos, duneslack ponds, machair ponds.

Notes: