

Reedbeds (RB)

Habitat Action Plan

Doncaster Local Biodiversity Action Plan
January 2007



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

1. Description

1.1 Reedbeds are fen or swamp habitats dominated by stands of common reed (*Phragmites australis*), where the water table is at, or above, the ground level for most of the year. They can support distinctive breeding bird assemblages including Red Data Book birds such as **marsh harrier** (*Circus aeruginosus*), **bearded tit** (*Panurus biarmicus*) and **bittern** (*Botaurus stellaris*) but the biodiversity of a reedbed tends to be greatly influenced by its area. Reedbeds are very important roosting sites for birds such as **swallows** (*Hirundo rustica*) and **starlings** (*Sturnus vulgaris*) and support diverse invertebrate assemblages. Sedge warbler (*Acrocephalus schoenobaenus*) and reed warbler (*Acrocephalus scirpaceus*) can typically be found feeding and singing amongst the dense reeds. Reedbed habitats are often closely associated with areas of open water, ditches and areas of wet grassland and carr woodland. Common reed is one of the commonest components of transition zones between land and water and this species can occur with a wide variety of other plants.

1.2 Reedbed habitats include a number of National Vegetation Classification (NVC) plant communities. These communities comprise single-species stands such as S4 *Phragmites australis* (common reed), or more-diverse S25 *Phragmites australis* – *Eupatorium cannabinum* and S26 *Phragmites australis* – *Urtica dioica* tall herb fen communities.

1.3 The S4 community is a vegetation community that is overwhelmingly dominated by common reed. It occurs in permanently wet or periodically waterlogged habitats. Common reed is able to tolerate a wide variety of environmental conditions and stands of reed-dominated vegetation are common around lakes and ponds, in flood-plain mires and also in estuaries, along dykes and drains, canals and lowland rivers and peat cuttings.

1.4 The S25 community is notable for the diversity of herbs such as hemp agrimony (*Eupatorium cannabinum*), wild angelica (*Angelica sylvestris*), purple loosestrife (*Lythrum salicaria*) and valerian (*Valeriana officinalis*). It tends to occur in moderately nutrient-enriched situations where there are springs and seepages from limestone bedrock.

1.5 The S26 community typically includes tall herbs such as nettle (*Urtica dioica*), greater willow herb (*Epilobium hirsutum*), meadowsweet (*Filipendula ulmaria*), scrambling plants such as common cleavers (*Galium aparine*), bittersweet (*Solanum dulcamara*) and hedge bindweed (*Calystegia sepium*), reed sweet-grass (*Glyceria maxima*) and hemlock water dropwort (*Oenanthe crocata*) together with scattered tussocks of false oat-grass (*Arrhenatherum elatius*), and reed canary-grass (*Phalaris arundinacea*). It tends to occur in nutrient-enriched situations, particularly where ground waters are contaminated by agricultural run-off, sewage or some industrial effluents and is commonly the only fen vegetation that survives in improved lowland agricultural areas.

2. National status

2.1 In 1995 the total area of UK reedbeds was estimated to be about 5000 ha¹. This figure has increased due to the many recent projects to create new areas of this important habitat, run by conservation charities, trusts, government agencies and Local Authorities. Few sites were initially more than 20 ha in size and much work has been done to increase the amount of Reedbed habitat by extending existing areas. This has created much more robust and extensive areas of habitat.

3. Local status

3.1 The low-lying 'wet' nature of much of the Doncaster Borough means that common reed and Reedbeds are found in many areas within the Borough. The majority of larger Reedbed sites are designated as Sites of Special Scientific Interest (SSSIs) and local Sites of Scientific Interest (SSIs)², although many smaller patches of Reedbed are found in non-designated sites.

3.2 Extensive areas of Reedbed are the primary subject of this Habitat Action Plan, since the extent of a given Reedbed is critical in determining the range of biodiversity that it can support.

¹ Selman, Dodd & Bayes, 1999, A Biodiversity Audit of Yorkshire & The Humber

² DMBC, Re-survey of Sites of Scientific Interest in the Doncaster Metropolitan Borough 1996/97, Volumes 1-9

3.3 Large areas of Reedbed or reed-swamp occur in subsidence wetlands at Denaby Ings SSSI, Sprotbrough Flash SSSI and Potteric Carr SSSI (all of which are YWT Nature Reserves) and also at Old Denaby Ings and River Oxbow (SSI 5.2) and Local Nature Reserves. Water levels fluctuate throughout the year at Old Denaby Ings and River Oxbow and Old Denaby Area (SSI 5.3), which provides excellent habitat for a number of species of water bird, including goosander (*Mergus merganser*), **gadwall** (*Anas strepera*), **shoveler** (*Anas clypeata*) and comorant (*Phalacrocorax carbo*). A heronry is also present at Old Denaby Wetlands. Smaller Reedbeds are also found at Shirley Pool SSSI, which is a valley mire in the Humberhead Levels. Many of the drainage ditches of Thorne and Hatfield SSSI, SAC and SPA support linear stands of reed. The watercourses and flooded pits on the western edge of Thorne Moors (including Bell's Pond) are notable for the presence of brackish Reedbeds and salt-marsh plants. Adjacent areas also include drier reed habitats where there is also an abundance of **purple small-reed** (*Calamagrostis canescens*).

3.4 Reedbeds occur at Size Ings (SSI 3.3) and Bentley Tilts and Course of Old Ea Beck (SSI 7.25a) alongside the Ea Beck. Fishing lakes such as Willow Garth Fish Ponds (SSI 3.22) at Arksey, Mexborough Low Pasture (SSI 5.5) and ornamental lakes such as those at Campsall Country Park (SSI 7.8) and Cusworth Hall (SSI 3.10) also support some quite extensive areas of reed habitat (although recent landscape restoration removed a large proportion of reed habitat from the lakes of the latter site, and a new Reedbed was created with the translocated reeds as compensation for the habitat lost).

3.5 Frequent flooding from the mine-water pumping station at Markham Main Colliery at Armthorpe, and a high water table also resulted in the development of reed-fen on the eastern edge of Sandall Beat SSSI (Part of Pot Hill SSI 2.36a). This area of Reedbed differs from those mentioned above in that the area is generally only waterlogged on a seasonal basis and is therefore more closely-associated with the true 'fen' habitats described in the Habitat Action Plan for Minor streams, Springs, Fens, Flushes, Mires and Fenny fields.

3.6 Reedbed habitat also occurs at some sewage works and restored colliery sites, where they have been planted to clean water before it is discharged into watercourses. Reedbeds filter polluted water by absorbing the pollutants into the plants. For this reason the reeds within Reedbed filtration systems require replacement every few years. Whilst Reedbed filtration systems provide additional wildlife benefits, they should not be included in Reedbed habitat creation targets because of their function and reed replacement requirements.

4. Legal status

4.1 Sites identified as SSSIs and SSIs have a presumption against developments that would have an adverse effect on their conservation value. However there is no protection of SSIs against operations that do not require planning consent.

4.2 Modifications to waterbodies may require Environment Agency or Internal Drainage Board consent. Discharges and abstractions require Environment Agency Consent. Water Companies and Internal Drainage Boards also have duties to protect biodiversity.

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

5. Links to associated habitats & species

5.1 The Reedbeds Habitat Action Plan is linked to the following Habitat Action Plans:

- Rivers, Canals, Oxbows, Major Streams and Subsidence Flashes (RCF)
- Minor Streams, Springs, Fens, Flushes, Mires and Fenny Fields (SFM)
- Marshes and Swamps, Lakes and Ponds, Ditches and Drains (MLD)
- Neutral and Wet Grassland (NWG)
- Wet Woodland (WW)
- Lowland Raised Mire (LRM)

5.2 '**A Species Audit of Doncaster Borough**' has been produced as part of the Doncaster Local Biodiversity Action Plan. Species highlighted in bold within the Habitat Action Plans are identified within Doncaster's Species Audit and are conservation priorities. The Audit identifies **43** species associated with Reedbeds.

6. Current factors causing loss or decline

6.1 Development pressures threaten to damage Reedbeds and wetland sites and sever links between open water, drains and other habitats in the surrounding countryside. Potteric Carr SSSI is an important wetland reserve that is steadily being surrounded by large retail outlets, warehouses and other developments. The Potteric Carr Internal Drainage Board leases Potteric Carr to Yorkshire Wildlife Trust. Many of the lakes, ponds and Reedbeds have been designed specifically by the IDB for flood attenuation purposes. The surrounding areas cover the catchment that feeds clean water into the open water and Reedbed habitat of the Reserve. A good quality source of water has been a major problem for the Reserve since a drainage scheme in the area resulted in the Reserve being reliant on surface drains to top-up the waterbodies. The poor quality of the water draining from the Doncaster Carrs catchment following major expansion of built developments has led to need to pre-treat drainage water in Reedbed filtration systems before the water can be used on the Reserve.

6.2 Excessive water abstraction and land drainage causes loss of Reedbed habitat and conversion to fertile arable land. Re-wetting of Reedbeds is needed in order to preserve open water and Reedbed habitats at Shirley Pool SSSI. Current land drainage regimes may not allow adequate water levels to be maintained on Reedbed sites. Cessation of mine water pumping at Thorne Colliery may affect the brackish Reedbeds and salt marsh communities that are present in the adjacent Bell's Pond, as it is believed that the saline conditions may be due to salinity of the mine water.

6.3 Flooded fields created by subsidence are valuable habitats that would develop into Reedbeds, however under the Coal Mining Subsidence Act 1992 and the Doncaster Drainage Act 1929, opportunities for such are restricted. The Acts require that such areas are remediated and returned to a state that existed prior to the onset of mining subsidence.

6.4 Many Reedbeds are of small size and support critically small populations of key species that are dependent on this kind of habitat. The creation of new areas of Reedbed is only likely to be valuable if it is on a large scale. National guidance generally advises that a Reedbed needs to be at least 0.5 ha in size in order to function as a viable and significant wildlife habitat. The RSPB maintain that if Reedbeds are being created specifically for bittern, they need to be 20 ha in size in order to attract and accommodate breeding pairs. This can however be to the detriment of other species that benefit from a wetland mosaic.

6.5 Water quality can be adversely affected by some agricultural, industrial and quarrying operations and nutrient enrichment can change the botanical composition of Reedbeds. Fertiliser application and excessive manuring of fields around ponds and Reedbeds can also cause nutrient enrichment. Excessive enrichment is believed to cause reed death. Pollution of water supplies can lead to accumulation of poisons in food chains.

6.6 Lack of management leads to a build-up of leaf litter, nutrient enrichment and speeds up the process of terrestrialisation. Active Reedbed management is uncommon due to the decline in the economic value of reed products. Any new reed-cutting management regimes must, however, take into account the needs of invertebrate species. Recreational use such as water sports of reed-fringed waterbodies causes disturbance to Reedbed habitat.

7. Current local action

Research & Monitoring

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

7.2 The borough has a diverse series of Sites of Scientific Interest (SSIs), illustrating the variety of species and habitats that are represented on sites throughout Doncaster. All SSIs were surveyed in 1996/1997 and again in 2004/2005, when additional candidate sites were also identified. Reedbeds and reed-dominated communities have been identified as SSIs or as candidate SSIs.

7.3 The Doncaster Naturalists' Society holds regular field meetings and has carried out detailed surveys of many of the borough's pond and reedbed habitats. The Society routinely submit biological records to the Local Record Centre at Doncaster Museum.

7.4 The Environment Agency has commissioned surveys of drains in the Hatfield Chase Area, some of which support linear Reedbeds.

Safeguarding & Management

7.5 Important Reedbed sites such as Shirley Pool, Denaby Ings, Potteric Carr, Sprotbrough Flash and Sandall Beat and Thorne and Hatfield Moors are SSSIs. Management plans and water level management plans have been prepared and implemented for these SSSIs. Sandall Beat Wood is also an LNR and several sites with open water and Reedbed habitats are SSIs managed by DMBC. Hexthorpe Ings (SSI 2.16) has areas of Reedbed and a management plan has recently been produced for this site.

7.6 The Local Authority owns and manages Local Nature Reserves (Sandall Beat Wood) and candidate LNRs (Campsall Country Park), which have Reedbed habitats.

Communications & Publicity

7.7 Potteric Carr Nature Reserve is run by Yorkshire Wildlife Trust and is one of the most important wetland sites in the country and is open to visitors to come and learn from the considerable amount of interpretation material available.

Funding & Resources

7.8 The new Environmental Stewardship Scheme (entry level and higher level) provides funding for the maintenance, restoration and creation of Reedbeds. The higher-level scheme also targets the creation of new habitat on land adjacent to, buffering, or linking SSSIs or UK BAP habitats. It also targets the maintenance and restoration of habitats in Sites of Importance for Nature Conservation, known locally as SSIs.

Habitat Creation & Restoration

7.9 The Environment Agency is completing Catchment Flood Management Plans and Flood Risk Management Strategies, which include objectives to create more washlands and to seek opportunities for creation of new ponds, marshes and wetlands, including Reedbeds.

7.10 Statutory bodies and Wildlife Trusts are undertaking projects to preserve, restore and create Reedbeds.

- English Nature's national Action for Bittern Project is implemented at Potteric Carr
- The Royal Society for the Protection of Birds has provided advice and publication on the management of Reedbeds and
- The Yorkshire Wildlife Trust has carried out a major habitat management and Reedbed creation scheme at Potteric Carr to extend the reserve eastwards. This significant extension will take a few years to establish, but will eventually be a major addition to the national resource of this important biodiversity action plan habitat.

Advisory

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

8. Objectives, targets & proposed actions

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

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

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

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

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	By 2008.	1.3	Expand DMBC's Environmental Planning protected species protocol to include LBAP habitats and species.	DMBC	Staff costs	Advisory
	By 2008.	1.4	Draw up a list of habitat quality 'indicator' species for reedbed habitat, using locally held records. This can then be used to assess site quality.	DMBC, YWT staff and volunteers	Staff costs and volunteer time	Future Research & Monitoring
	By 2008.	1.5	Implement a policy of no further development on catchments of reedbed sites that support priority species, based on the above list.	Environment Agency (EA), Internal Drainage Boards (IDBs), DMBC	Negligible	Safeguarding & Management / Policy & Legislation
	By 2008.	1.6	Research and list the top 10-reedbed sites with water quality problems. Produce a site inventory and the actions necessary to remediate the pollution problems, in preparation for future action.	All DBAP partners	Staff costs and volunteer time	Future Research & Monitoring

Objective	Target	Ref	Action	Lead Partners	Costs	Category
2) To restore degraded sites and ensure appropriate management of reedbeds and reed-lined watercourses.	Implement active habitat management on 2 sites by 2008 and a further 2 sites by 2010.	2.1	<p>Aim to get farmland close to reedbed habitats under Higher-Level ESS, particularly as a buffer zone of habitat creation and to reduce diffuse pollution as a result of nutrient run off and soil erosion.</p> <p>Provide advice and encourage management techniques in order to implement the following appropriate management:</p> <ul style="list-style-type: none"> • Traditional reedbed management including ditch management, reed cutting, reed/litter burning or scrub removal. • Management of water levels, and use of water level control structures. • Control and management of recreational uses including water sports on reed-fringed lakes. 	NE, Farming and Wildlife Advisory Group (FWAG), DMBC, Royal Society for the Protection of Birds (RSPB), Private landowners, EA	To be evaluated	Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
			Undertake quantitative assessment of the target by recording the number of higher-level Environmental Stewardship schemes in place within the Borough.			
	Identify and implement improved management on 2 reedbed sites by 2008, through landowner liaison.	2.2	Data search to produce a list of all reedbed sites that host priority species. Implement appropriate specialist management schemes to benefit these species, as a result of landowner liaison.	DMBC, landowners	To be evaluated	Future Research & Monitoring / Safeguarding & Management
	1 reedbed restored with reconnection to water sources (e.g. river flood waters) by 2009.	2.3	Prioritise EA biodiversity project work in areas where reedbeds are isolated from water sources and are reliant upon surface water or perched water tables.	EA	To be evaluated	Safeguarding & Management
	By 2008.	2.4	Data search to highlight reedbed habitat that historically supported populations of bittern.	DMBC	Staff costs	Future Research & Monitoring

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	1 reedbed restoration project initiated on a historic bittern site by 2009.	2.5	Target restoration of reedbeds towards a site, which historically supported populations of bittern.	YWT, EA, IDB, DMBC, NE, Private landowners	To be evaluated	Species Management & Protection
3) To create new reedbeds, including working towards one block of no less than 20ha, by habitat restoration to join up isolated sites or on a new site where habitat restoration is required. Create further reedbed habitat on smaller sites wherever possible.	By 2008.	3.1	Prepare and submit a funding bid for a reedbed project officer to facilitate the progression of reedbed monitoring, creation and restoration targets, and in particular liaise with minerals extraction companies to achieve larger scale reedbed creation schemes as part of minerals restoration. Include in the funding bid an initial assessment of mineral site restoration for reedbed schemes.	DBAP and partners	Staff costs and volunteer time	Safeguarding & Management/ Communications & Publicity/ Future Research & Monitoring
	Continuous.	3.2	Set up and maintain a directory of specialist contractors with cutting machinery and expertise able to manage reedbed sites.	NE, DMBC, FWAG, YWT	Staff costs	Safeguarding & Management
4) Raise public awareness of the importance and	1 workshop by 2008.	4.1	Run a reedbed species survey and identification workshop open to the general public.	DNS, YWT	£256	Communications & Publicity

Objective	Target	Ref	Action	Lead Partners	Costs	Category
importance and special characteristics of open-water/reedbed habitats.	1 demonstration by 2009.	4.2	Promote good management practice through the use of a demonstration site hosting a workshop on reedbed management and reedbed biodiversity.	YWT, British Trust for Conservation Volunteers (BTCV), RSPB, Linking the Environment And Farming (LEAF), NE, EA, FWAG	To be evaluated	Advisory/ Communications & Publicity
	By 2010.	4.3	Offer support for Undergraduate/ Post Graduate research projects to carry out research into the ecology of reedbed species, the effects of reed burning on species composition, the reasons for extinction of some invertebrate species. The biodiversity and long-term future for saline/brackish reedbeds at Bell's Pond SSI.	DMBC, Yorkshire Naturalists' Union (YNU) Doncaster College, Local Universities (Nottingham/Sheffield)	£640	Future Research & Monitoring

9. Indicative Habitat distribution & Opportunities map

The map for Reedbeds shows known locations of reedbeds within the Borough. Each individual reedbed is shown as a dot indicating comparative size, rather than showing the exact area covered by the habitat. This therefore means that in some instances the locations appear to overlap where there are a number of reedbeds in a small area. The areas of reedbeds are shown as follows:

- Small
- Medium
- Large

