

## **FENS, MARSHES AND SWAMPS**

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### **Current status**

Wetlands comprise many different habitat types; these often grade into one another, making differentiation difficult. This plan deals with fens, marshes and swamps, but excludes wet grassland, reedbeds and wet broad-leaved woodland, because each of the latter is the subject of separate Habitat Action Plans.

Fens are mires, usually on peat, that 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 acidic (poor fen) or calcareous (rich fen).

Marsh is a variable habitat type, but usually refers to grassland on mineral soil, that has a water table close to the surface for most of the year, but 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; and meadows and pastures with plant communities where forbs, such as marsh-marigold, are dominant over grasses.

Swamp is a habitat typically found in transitional zones between open water and exposed land. It is somewhat similar to marsh habitat, the main difference being that, in swamps, the water level is generally higher (typically above ground level); tall emergent vegetation, such as reed grasses and large sedges, are also dominant.

In general, fen habitats are more species-rich than marshes and swamps, and can support many rare species of plants and invertebrates.

Fens, marshes and swamps are now uncommon in Nottinghamshire, as in much of lowland England. In Nottinghamshire, they are most commonly found on the margins of water bodies (many of which were artificially created), in areas of mining subsidence, and in the more natural environment of floodplains.

There has been a net gain of wetlands associated with surface extraction of gravel, sand and clay in the last 50 years. Initially these were dominated by standing water, but are now starting to reflect other wetland types. Conversion of fens, marshes and swamps to agricultural land was a common occurrence until recently, but now recreational development is a greater threat to these wetlands. However, the partial infilling of quarries can be of considerable benefit for flora and fauna, if carried out sympathetically.

The distribution and extent of floodplain wetlands has diminished markedly in recent decades, due to drainage works associated with agricultural intensification. Development

of floodplains for housing and industry has also taken its toll. There is now increasing awareness amongst planners and land developers that existing fens, marshes and swamps need to be conserved, and others created, because these habitats perform a vital function in regulating water flow and reducing severity of floods. This function will be increasingly important if expected climate change takes place, namely increased rainfall, and more intense rainfall events.

Subsidence has created relatively little wetland in the past century, but important new areas continue to appear from time to time, which may then be under threat from restoration drainage schemes.

Fens in Nottinghamshire range in size from small springs and flushes of less than 0.5 hectares in extent, to larger areas such as Misson Carr nature reserve, a Site of Special Scientific Interest (SSSI) of 85 hectares. Misson Carr is made up of a nationally important mixture of fen with dry, damp and wet woodland, acidic and neutral grassland, reedbed and open water. Key species of Misson Carr include the Marsh Carpet moth and Dentated Pug moth. These nationally scarce insects are dependent upon fen and marsh supporting meadow rue and yellow loosestrife, two plants which themselves are locally uncommon.

All further references to marshes in this document refer to both marsh and swamp.

## **THREATS**

The main factors currently affecting the County's fens and marshes are:

- Falling water tables, due to excessive water abstraction from aquifers and surface waters, drainage works, and disruption associated with mineral extraction.
- Lack of appropriate management, leading to drying, scrub encroachment, and succession to woodland.
- Declining flora and fauna within remaining fragments of fen, because such patches are too small to support a full complement of species in the long term, and are too widely separated to allow recolonisation.
- Agricultural runoff and other enrichment causing increased growth and dominance of vigorous plant species, leading to loss of biodiversity.
- Pollution of freshwater associated with fens and marshes, with potential effects on the flora and fauna.
- Restoration of worked-out gravel pits for recreational or agricultural use.
- Climate change, e.g. spring flooding affecting ground nesting birds
- Creation of ponds and lakes in inappropriate places, e.g. through Agricultural Stewardship.

## **CURRENT INITIATIVES - EXAMPLES**

- A national Habitat Action Plan for Fen was produced in 1995.
- English Nature has notified many fens and marshes as SSSIs. Their staff can provide advice and financial help towards management of these sites.
- Nottinghamshire Wildlife Trust (NWT) currently manages approximately 80ha of fen and marsh on their nature reserves.
- Nottingham City Council has designated the non-SSSI fen habitat at Martin's Pond as a Local Nature Reserve (LNR).

- Local authorities often recognise the importance of protecting fens and marshes for biodiversity reasons, and this is being reflected in the wording of local plans as they are reviewed.
- Selected areas of fen and marsh are managed through agri-environment schemes.
- DEFRA's revised High Level Targets for Flood and Coastal Erosion Risk Management took effect from 1 April 2005. Biodiversity targets include: Ensure no net loss to habitats covered by Biodiversity Action Plans and seek opportunities for environmental enhancements; Create at least 200 hectares of new Biodiversity habitat per annum as a result of flood management activities, of which at least 100 ha should be saltmarsh or mudflat; Review Water Level Management Plans, in consultation with English Nature, for all priority SSSIs that are in unfavourable condition, and submit to the Environment Agency a costed action plan of flood management measures to achieve favourable condition.
- The Environment Agency has specific targets for habitat creation under its Corporate Plan as a contribution to the PSA target on SSSIs and to the England Biodiversity Strategy, reflecting the need to replace habitats that are being lost due to coastal squeeze and other flood management related issues.
- Nottinghamshire County Council (the Mineral Planning Authority) works with Nottinghamshire Wildlife Trust to liaise with aggregate extraction companies in order to maximise the creation and retention of fen and marsh habitat during and after mineral extraction.
- The Forestry Commission is restoring areas of marsh on former forestry land near Rainworth Water and Sansom Wood.
- There are national and regional policies to encourage re-connection of rivers to their floodplains, which may offer opportunities for fen and marsh creation along the Trent and Idle rivers.

## TARGETS

The following targets were agreed by the HAP target review group.

Falling within the UK Broad Habitat type of Fens, marshes and swamps, it includes vegetation that is ground water fed; and permanently, seasonally or periodically waterlogged peat, peaty or mineral soils where grasses do not predominate. It also includes emergent vegetation or frequently inundated vegetation occurring over peat or mineral soils.

This type does not include areas of carr that are greater than 0.25ha which should be included in the "Broadleaved, mixed and yew woodland" broad habitat type, nor wet grassland which should be included in the "Neutral grassland" broad habitat type. Fens are mires, usually on peat, that receive water and nutrients from the soil, rock and ground water, as well as directly from precipitation.

Marsh is a variable habitat type, but usually refers to grassland on mineral soil, that has a water table close to the surface for most of the year, but 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; and meadows and pastures with plant communities where forbs, such as marsh-marigold, are dominant over grasses. Swamp is a habitat typically found in transitional zones between open water and exposed land. It is somewhat similar to marsh habitat, the main difference being that, in swamps, the water

level is generally higher (typically above ground level); tall emergent vegetation, such as reed grasses and large sedges, are also dominant.

Target Type	Target Text	Units	2005 Baseline	2010 Target	2015 Target
Maintain Extent	Maintain the extent of all existing fen, marsh and swamp.	Ha	120	120	220
Achieve Condition	Maintain and improve by management existing fen, marsh and swamp.	Ha	24 (20%, existing habitat in favourable condition)	84 (70% of total habitat resource)	120 (100% of 2005 baseline resource)
Restoration	Improve the condition of relict habitat so that it qualifies as fen, marsh and swamp.	Ha			
Expansion	Encourage the re-establishment and increase the area of fen, marsh and swamp.	Ha		100	100

The 2005 baseline resource was derived from a desktop aerial photograph survey by English Nature, based on a list of around 30 sites from the NBGRC. The sites were listed as:

Site	Grid Ref.
Darnsyke Marsh	855738
Trent Pasture	574373
Cottam Wetlands	823786
Mattersey Hill	672874
Broad Lane	564764
Warsop Rec Ground	565682
Langton Marshy Grassland	471548
Huthwaite Marshy Grassland	474595
Girton Fleet	826655
Bole Ings	802872
Ranskill Gravel Pit	665889
Hoveringham	705487
Beauvale Marsh	474476
Border Marsh	456598
Middle Ashes Fen	583825
Coxmoor	522575
Old Soar Stanford	542218
Oxpasture Plantation	832633
Cuckney Dam	555708
Fairham Brook	563338
Sledder Wood Marsh	497470
Scrooby Sandpit	655903

Brinsley Flash	448501
Potwell Dyke Meadow	704534
Bank Carr Relict Fen	598911
Carlton Lake Marsh	585838
Lodge Farm Thorney	856738
Holme Pit	535388
Stapleford	486380

This included 14ha of habitat protected under SSSI status. A further assumption was made on the amount of resource not covered within the desktop survey.

The restoration and expansion rates were combined, within an overall target to double the existing resource by 2015. This target was based on aspiration and planned restoration schemes at:

- Beckingham
- Holmes
- Tiln North
- Newington

## **PROPOSED ACTION**

### Policy and legislation

1. Ensure the incorporation of relevant (inter-)national law, policies and guidance into all plans and policies relating to the protection, enhancement and management of fen, marsh and swamp habitat.

**ACTION:** Government Agencies, Local Authorities, NGO's.

2. Through planning control or other land use consultation processes, allow no further loss of areas of fen, marsh and swamp habitat and seek opportunities to enhance existing areas and create new areas through approved development.

**ACTION:** Government Agencies, Local Authorities, NGO's.

3. Ensure agri-environment, forestry and other funding schemes include appropriate management options and design measures to suit local nature conservation needs.

**ACTION:** Government Agencies.

### Site safeguard and management

4. Review the extent of SSSI coverage of fen, marshland and swamp habitat and consider notifying further sites as necessary.

**ACTION:** Government Agencies.

5. Designate SINCs and declare Local Nature Reserves on appropriate areas of habitat or instigate other appropriate measures for their protection.

ACTION: Government Agencies, Local Authorities, NGO's.

6. Promote the uptake of positive management with owners of SSSIs, LNRs, SINCs and any other areas of fen, marsh and swamp habitat.

ACTION: Government Agencies, Local Authorities, NGO's.

7. Carry out appropriate habitat management on sites controlled by BAP partners.

ACTION: Government Agencies, Local Authorities, NGO's.

8. Ensure sites containing fen, marsh and swamp habitat have appropriate management plans that are working towards improving site management and condition

ACTION: Government Agencies, Local Authorities, NGO's.

9. Acquire land to ensure good habitat management or to create habitat.

ACTION: NGO's.

#### Advisory

10. Provide formal or informal training in management techniques for fen, marsh and swamp habitat to land managers, site wardens, volunteers, etc.

ACTION: Government Agencies, Local Authorities, NGO's.

11. Establish demonstration sites or projects to demonstrate/publicise good habitat management techniques.

ACTION: Government Agencies, Local Authorities, NGO's.

#### Future research and monitoring

12. Establish and maintain a monitoring programme (a site register) to determine progress towards county HAP targets.

ACTION: Government Agencies, Local Authorities, NGO's.

13. Ensure that areas of fen, marsh and swamp habitat are periodically resurveyed to establish extent and condition. Update resulting habitat inventory every 5 years and revise targets and HAPs if necessary.

ACTION: Government Agencies, Local Authorities, NGO's.

#### Communications and publicity

14. Improve public awareness and appreciation of fen, marsh and swamp habitat by providing appropriate interpretation, education and access (where appropriate).

ACTION: Government Agencies, Local Authorities, NGO's.

15. Improve awareness of the value of, and appropriate management techniques for fen, marsh and swamp habitat among site owners and occupiers.

ACTION: Government Agencies, Local Authorities, NGO's.

### **WHAT YOU CAN DO**

- Join Nottinghamshire Wildlife Trust to find out more about the many areas of fen and marsh that the organisation looks after in the county.
- Take steps to minimise your personal use of water so that more is available for wetland habitats.
- Lobby national and local politicians over the need to retain and reinstate floodplain wetlands to minimise flooding.
- Report wildlife sightings on areas of fen and marsh to Nottingham Biological and Geological Records Centre.

### **SPECIES LIST**

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- Marsh-marigold
- Purple loosestrife
- Dentated pug moth
- Marsh carpet moth
- Waved black moth
- Water rail
- Snipe
- Grasshopper warbler
- Harvest mouse