Fens

Our objective for this habitat is:

to increase the fen resource through habitat creation, while maintaining existing fens in a favourable ecological condition.

Introduction

This Habitat Action Plan covers the UKBAP priority habitats Lowland Fen and Upland Flushes, Fens and Swamps, the latter is a new UKBAP priority habitat adopted following the review in 2007. Fens are areas of wet ground often overlying peat but sometimes overlying mineral soils. Fens receive water and nutrients from groundwater as well as from rainfall. They are dominated by sedges, tall herbs and occasionally scrub. Fens may be balanced between wetter reed swamp and generally drier wet woodland. They often form part of a complex of such wetland habitats. Changes in water levels or in management such as grazing, can change fen habitat in either direction.

Fen habitat includes different types, such as basin and floodplain fens, valley mires and mires associated with springs, rills and flushes.

Fens may be described as 'poor-fens' or 'rich-fens'. Nutrient-poor fens are characterised by short vegetation with a high proportion of mosses and occur mainly in the uplands but can occur in the lowlands as basin fens, as at Upper Dunsforth Carrs. Nutrient-rich fens are mainly confined to the lowlands but may also occur in the uplands over Calcareous substrates.

Fens support a diverse range of plant and animal communities, including a higher proportion of UKBAP species than any other wetland habitat. Some East Anglian fens can contain up to 550 species of plant and several thousand insect species, including dragonflies and aquatic beetles. Fens in northern England are less well researched and likely to be less species-rich, due to greater fragmentation and for climatic reasons. Yet they still remain very rich habitats. These habitats are important for flood management and as carbon sinks, as well as having an intrinsic wildlife value.

Some fens are relicts of the last ice age, around 10,000 years ago, but most originate from the post-glacial period when the Vale of Mowbray, for example, was covered with extensive wetlands including lakes, fens and reedbeds. Over the last few centuries, they have declined from dominating some landscapes to surviving as isolated pockets within it.

Debris from the ice sheets is now quarried by sand and gravel companies for use in construction and gives an opportunity for new wetland creation. Unfortunately, of all the UK BAP habitats, fens are one of the most challenging to recreate. Some types of fen require a supply of unpolluted water and an underlying layer of peat but Hammond has demonstrated that other types of fen could be recreated on mineral soils. The vision of the Swale and Ure Washlands Project (SUWP) is to replace a significant variety and quantity of wetland habitats, including fen where possible, in the landscape by working with the gravel companies and others.

National status

The UK once had vast tracts of fens, long since converted to rich farmland. However, the UK is still thought to hold a large proportion of the EU resource. 80 fen sites are listed in the UKBAP Action Plan.

Regional status

The regional audit (Selman) only has data for fen vegetation on SSSIs. It lists 78 sites distributed across the region with concentrations in the Yorkshire Dales, the North York Moors and the Humberhead levels.

About 15,000 years ago over 60 per cent of the SUWP area (see SUWP restoration strategy for a plan of this) was covered by water and by 8,000-10,000 years ago many of these lakes had silted up forming extensive reedbeds, fens and acid bogs. Vegetated wetlands have declined massively since and research indicates that at least 91 per cent of historically vegetated wetland has been lost through human activity in the last 250 years - with around 76 per cent since the first Ordnance Survey maps were produced (The Swale - Ure Washlands, Landscape History and Human Impacts, 2004 superseded by Hammond, Habitat Loss in the Swale & Ure Washlands since 1700, with an analysis of extinctions from the local flora, SUWP, 2005).

Local status

The Regional Audit gives a figure of eight Harrogate SSSIs as having herbaceous fen vegetation, including Marfield Fen, Upper Dunsforth Carrs, Cow Mires, Bishop Monkton Ings, Farnham Mires and Fox Covert at Ripon Parks.

This habitat occurs within several Sites of Importance for Nature Conservation (SINCEs), with 5.7ha of habitat classed as basin mire on eight sites. (Additionally, 17.8ha of swamp occurs across 18 sites, SINC Panel), SINC sites with fen vegetation include Marton cum Grafton Carr, Sharow Mires and Staveley Nature Reserve.

Local priority species:

- **Great fen sedge**
- **Common meadow rue**
- **Fen invertebrates**
- **Bird's-eye primrose**
- **Reed bunting**

Status of priority species

Great fen sedge - known from two SINC sites.

Bird's-eye primrose - probably extinct at two historic known sites (SSSIs) but discovered recently at a Calcareous seepage in the eastern AONB.

Common meadow rue - known from one or two sites.

Reed bunting (UK BAP) - a local breeding bird, resident, passage migrant and winter visitor.

Fen invertebrates - several Red Data Book or very scarce species are associated with fens in the Harrogate district.

Requirements

Fens benefit from the following:

- Sustainable hydrological conditions.
- Regular cropping of fen plants to slow the growth of peat and delay succession.
- Creation of new areas of open water within drying fen systems.

Threats

- Excessive water abstraction or drainage lowers the water table, dries peat and affects the balance between ground and surface water.
- Inappropriate flooding leading to water levels too high for fen plants to tolerate.
- Pollution, particularly nutrient enrichment especially from farmland.
- Cessation of management leads to the succession of woodland carr.
- Most fens are small and isolated. Their fragmentation has led to much local extinction.
- Small total area of habitat and critically small population sizes of several key species.
- Invasion of invasive non-native species such as Himalayan balsam and introduced varieties of dogwood.

Current local action

- Delivery of the Water Framework Directive, which targets 'unnatural processes', such as over-efficient drainage and soil erosion caused by active moorland grips.
- Some fens in Harrogate district are designated SSSIs and their favourable condition status is actively sought by Natural England.
- A Lower Ure Conservation Trust potential project to create fen habitat on a former mineral extraction site near Ripon racecourse.
- Lower Ure Conservation Trust-led restoration of historic fen at Sharow Mires.

Opportunities

- Habitat creation through mineral restoration schemes including undertaking research and seeking opportunities to re-create fen.
- Continued delivery of the vision of the Swale and Ure Washlands Mineral Restoration Strategy 2004, with one long-term aim being to encourage eco-tourism, based on a rich mosaic of wetland habitats with the potential for breeding species such as common crane, bittern and other specialist birds.
- Follow up the Wetland Feasibility Study for North Yorkshire which identifies opportunities for the creation of wetland (produced by the Environment Agency, RSPB and English Nature).
- Conservation options in the Environmental Stewardship Scheme (ESS).

Key local references

(Hammond, 2005, Habitat Loss in the Swale and Ure Washlands since 1700, with an analysis of extinctions from the local flora, SUWP.)

Hammond, 2007, The potential for wetland restoration in the Swale and Ure Washlands, SUWP.

LINKS WITH OTHER HDBAP PLANS:

Standing water HAP
Flowing water HAP
Reedbed HAP
Lowland meadows and floodplain grassland HAP
Otter SAP
Water vole SAP

The UKBAP Link: UKHAP definition http://jncc.defra.gov.uk/page-5706

- Fens 'Upland flushes, fens and swamps' - a new UKBAP priority HAP, BAP Review 2007