Flowing water

Our objective for this habitat is:

Maintain and enhance the biological diversity of rivers, streams and ditches and their associated habitats in Harrogate district.

R. Washburn (E Moss)

Introduction

This habitat type relates to the UKBAP priority 'rivers'and covers watercourses, including rivers, becks, streams, flowing ditches, and goits as well as the mosaic of related habitats along the water channel (very slow flowing waters such as Ripon Canal and slow flowing ditches are treated under the Standing water HAP).

In their natural unmodified condition, rivers and streams are dynamic systems that are continually depositing and eroding a complex of aquatic and bankside habitats. Water courses create a great variety of sub-habitats, depending upon factors such as geography, geology and flow rate. They support a rich diversity of wildlife, although the ecology of some is little known and requires specialist research. Even small streams and ditches add diversity to the landscape and form important wildlife corridors.

In recent years, there has been a dramatic improvement in the quality of water in many rivers, with fish returning to previously polluted rivers. The new EU Water Framework Directive demands much higher standards of water quality and river management, including maintaining water flows and diversity of life.

The Environment Agency (EA) is currently championing the river basin and catchment level land use approach to river management. The rivers of the district fall within the Humber basin and the Ouse catchment (see Humber Basin Management Plan, Ouse Catchment Flood Management Plan and the Swale, Ure Nidd and Upper Ouse Abstraction Management Strategy - all available on the EA website). There are a number of key issues affecting river catchments in the region including flow rates, water abstraction, flood defence, disconnection between the river and its floodplain, land drainage, river engineering, drainage grips, diffuse and point-source pollution, recreation, barriers to fish migration, fish stocking etc. Floodplain wetlands are now recognised for the role that they play in slowing down flood surges.

Main rivers are the responsibility of the EA, while local authorities have responsibility for non-main rivers. A considerable ditch network links waterways and drains both farmland and developed areas. These are maintained by the Highways Authority, individual farmers and Internal Drainage Boards (IDB) where they exist.

A number of important components of the UKBAP priority river habitat are present in the district, including:

- Headwaters: the uppermost reaches of watercourses, characteristically fast-flowing upland brooks.
- Bryophyte communities: many scarce mosses and liverworts are associated with flowing water, especially on upland becks in woodland.
- Active shingle rivers: have significant reaches of mobile gravel or pebble bed material. The River Ure is especially rich in features such as shingle banks and islands. There is a rich invertebrate fauna of shingle beds, sandbars and eroding banks - notably ground beetles, spiders and craneflies.
- Rivers of ecological status - as defined under the Water Framework Directive. Better quality rivers are particularly valuable and support wildlife which is sensitive to pollution such as stoneworts and mayfly species.

National status

Rivers of differing characteristics and qualities are distributed across the UK from torrential mountain streams to meandering lowland rivers, ranging from the near natural and semi-natural to highly modified by people.

Regional status

Most of the major rivers in the region, originate in the pennines, flow NW to SE forming the dales and are ultimately tributaries of the Humber. These include a number of 'near natural' rivers, which are of key importance. Many form important corridors through the landscape, which have been identified by Natural England as Regionally Important Strategic Green Infrastructure Corridors (see 'Local Status' below).

Local status

Key rivers and streams with associated SSSIs and SINCs in the district include those listed below. They have been identified by Natural England (NE) as

Green Infrastructure Corridors at Regional (R), Subregional (S) and district (D) levels and are numbered accordingly (as below. There is a concise description of each corridor and its key features, including biodiversity interest on the NE website.

R. Nidd (R8) **R. Ouse (R9)** **R. Swale (R13)**
R. Ure (R16) **R. Wharfe (R17)** **R. Burn (S2)**
R. Crimple (S9) **R. Skell (S23)** **R. Washburn (S32)**
Oak Beck (D36) **R. Laver (D42)** **R. Tutt (D77)**
Kex Beck (D42 spur**)**

Legal status

The EU Water Framework Directive includes obligations to meet water quality objectives including for ecological water quality.

- The EA, IDBs and local planning authorities have relevant statutory duties.
- All freshwater fish, including salmonids and the Common eel, are protected under the Salmon and Freshwater Fisheries Act 1975.
- The White-clawed crayfish and Depressed river mussel are protected under the Wildlife and Countryside Act 1981 (as amended).

Local priority species:

- **Otter (see SAP)**
- **Daubenton's bat**
- **Little ringed plover**
- **Dipper**
- **Atlantic salmon**
- **River lamprey**
- **Bullhead**
- **Common eel**
- **Depressed river mussel**
- **Water vole (see SAP)**
- **Water shrew**
- **Kingfisher**
- **Sand martin**
- **Sea lamprey**
- **Brook lamprey**
- **Ruffe (a fish)**
- **White-clawed crayfish**
- **Fine-lined pea mussel**
- **Spruce's bristle-moss (a bryophyte)**

Status of priority species

Spruce's bristle-moss (UK BAP) - several recent records from riparian habitats on the Rivers Ure, Nidd and Wharfe.

Otter (UKBAP) - see SAP.

Water vole (UKBAP) - see SAP.

Daubenton's bat - occurs on main rivers, where bridge roosts and riparian feeding habitats are essential - see SAP.

Water shrew - thought to be declining but no local data.

Little ringed plover - it is estimated that there is 1-2 per cent of the UK breeding population just on the river shingles.

Kingfisher - thinly distributed throughout the district where suitable water bodies occur.

Dipper - breeds fairly commonly along the upper reaches of the two main river systems. Reported by some authorities to be declining locally.

Sand martin - some impressive colonies, mostly on the major rivers, but also at some gravel pits.

Atlantic salmon - Salmon once thrived in the River Ure but their numbers declined in the 1940s as a result of industrial pollution in the downstream River Ouse preventing the passage of fish. In recent years, salmon and sea trout have been recorded in a few tributaries and in the main river below Aysgarth, where the falls act as an upstream barrier to their migration. 600 salmon parr were counted by the EA at Jervaulx on the Ure just upstream of the district.

Sea lamprey - breeds in the R. Ure as far upstream as Westwick Lock.

River lamprey - breeds in many of the smaller tributaries. Mainly spawning in main river - nationally important populations in Swale and Ure.

Brook lamprey -

Bullhead (UKBAP) - this fish has been found spawning throughout the whole of the Ure river system. Probably in most freely-flowing watercourses.

Ruffe (a fish) - declining nationally, but spawning confirmed in the district.

Common eel - seriously declining at the international and local level. A species of severe conservation concern.

White-clawed crayfish (UKBAP) - locally distributed in calcareous rivers. Some of the sites are small streams which are not obviously Calcareous.

Depressed river mussel (UKBAP) - present in the R. Ure.

Fine-lined pea-mussel (UKBAP) - an extremely local species associated with muddy substrates in clean, hard water rivers and apparently declining nationally. Recorded from the R. Ure near Masham in 2002 and in the R. Wharfe in the extreme south-west of the district.

Requirements

Rivers, streams and priority species benefit from the following:

- Integrated management planning at River basin level.
- The EA has produced the Humber River Basin Management Plan, which includes actions to: prevent flooding - including opportuinities for floodplain habitat creation; comply with Water Framework Directive regarding water quality targets; reduce urban and transport pollution and control run-off from urban developments e.g. greater use of Sustainable Drainage Systems (SuDS) in new developments; control diffuse pollution - nitrates, phosphates, pesticides and faecal bacteria e.g. from agriculture; maintain availability of water through control of abstraction; and, control the impacts of physical modifications and non-invasive species on wildlife.

Threats

- Point source and diffuse pollution, which may be from agricultural, industrial or domestic sources. Also road run-off.
- Water abstraction direct from rivers.
- Recreational activities which result in damage such as bank erosion from boat-wash; trampling of vegetation and fish spawning habitat, and disturbance to wildlife including breeding birds and otters - particularly sensitive due to linear nature of the habitats.
- Unsympathetic management of watercourses e.g. removal of woody debris, and of bank habitat e.g. mowing.
- Activities such as insensitive forestry operations and moorland gripping can increase silt levels downstream.
- Invasive, non-native species. Problems include American mink, American signal crayfish, Canadian pondweed, Giant hogweed, Japanese knotweed, and Himalayan balsam.
- Stocking of fish into fisheries may affect the natural ecology.
- Potential conflict between anglers and fish-eating predators (e.g. Cormorant, Goosander, Otter).
- Potential conflict between wildlife interest and flood defence.
- Poor dissemination of ecological data to planners and decision makers.
- Development pressures in the floodplain.

Current local action

- Opportunities for habitat creation associated with flood control have been produced by SPROUT.
- Including potential for realignment of levees on the lower Nidd.
- EA funding for schemes for stretches to achieve 'good ecological status' e.g. Yorkshire Dales Rivers Trust's Darley Beck Restoration Project.

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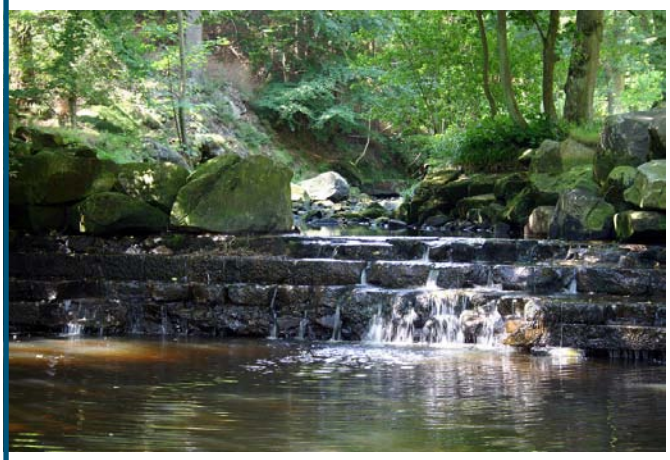
- Ongoing research and monitoring is undertaken and funded by the EA.
- EA produce the Ouse Catchment Flood Management Plan.
- Operations such as water abstraction are licensed by the EA under the Swale, Ure, Nidd and Upper Ouse Catchment Abstraction Management Strategy.
- Ripon Multi-Objective Partnership Project on the Rivers Laver and Skell, managed by Nidderdale Area of Outstanding Natural Beauty (AONB), seeks to reduce flooding through habitat enhancements in the catchment.
- Many rivers are actively managed by angling clubs.
- The Dales Rivers Trust and Ure Salmon Trust are working actively locally to enhance habitats and improve water quality.
- Otter and Water vole work undertaken by the Yorkshire Wildlife Trust (YWT).
- NE, NYCC and Harrogate Borough Council have identified many river corridors as Green Infrastructure Corridors.
- Yorkshire Wildlife Trust have identified the Lower Ure as a 'Living Landscapes' zone.

Opportunities

- Wildlife enhancement associated with flood defence schemes.
- Defra's Environmental Stewardship Scheme (ESS) has appropriate options, e.g. buffer zones between arable land and watercourses, especially for higher risk soils.
- Catchment-sensitive farming grants can include: reduction of grazing adjacent to riverbanks to prevent erosion and allow habitat to develop and fencing to exclude stock from key banks.
- Identification of flood plain areas suitable for wetland restoration and creation, and subsequent delivery.
- Research into natural river movements within floodplains, to inform long-term conservation decisions.
- Re-wetting of agricultural land using existing grants.
- Re-wetting of washlands on former quarry sites.
- Identification of areas suitable for flood water storage and promotion of designs which maximise biodiversity value.
- Research and reduce impacts of pollution, flow rates, physical barriers, re-stocking, etc. on priority fish species.
- Habitat improvements in areas of featureless flows.
- Research, surveys and management to benefit Otter, Water vole, Water shrew and bats.
- Survey of all fish species and their access to required sub-habitats.
- Surveying and research of gravel shoals for invertebrates, fish and breeding birds, and riparian woodlands for birds.



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- Promotion of EA and Defra leaflets on 'Best Farming Practice'
- Investigate and devise control programmes for invasive species.
- Assessment of levels of fish re-stocking and impacts upon wildlife.
- Assessment of abundance of key insect and plant species associated with fish.
- Identification and conflict resolution of adverse recreational impacts.
- Identification of recreational honey-pot sites and collation of all projects planned in the river corridor.
- Dissemination of information and partnership working.
- Accommodation of erosion in dynamic river systems.
- Undertake sympathetic management of riparian trees and woodlands.

LINKS WITH OTHER HDBAP PLANS:

Standing water HAP
Woodland HAP
Lowland meadows and floodplain grassland HAP
Otter SAP
Water vole SAP
Bats SAP

BAP Review 2007 has 'Rivers' as a new UKBAP priority HAP. http://jncc.defra.gov.uk/page-5706

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