

RIVERS AND STREAMS

Nationally

This habitat type includes a very wide range of types, encompassing all natural and near-natural running waters in the UK. These range from torrential mountain streams to meandering lowland rivers.

Numerous factors influence the ecological characteristics of a watercourse, for example geology, topography, substrate, gradient, flow rate, altitude, channel profile, climate, and catchment features. In addition most river systems change greatly in character as they flow from source to sea or lake. Although various classifications and typologies for rivers exist, none is considered adequate for identifying a discrete but comprehensive series of specific priority types against the criteria. Consequently a broad 'rivers' priority habitat has been adopted by the UK BAP, which includes the existing priority habitat, chalk rivers. Work to refine the criteria to identify the priority habitat was carried out by a partnership group. The qualifying criteria, briefly, are:



1) Riverine water bodies of high hydromorphological/ecological status. **2)** Headwaters. **3)** Occurrence of the EC Habitat Directive Annex I habitat (H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation). **4)** Chalk Rivers as given in the existing BAP definition. **5)** Active shingle rivers. **6)** A/SSSI (Areas or 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.

As a minimum the rivers priority habitat would be defined as extending to the top of the adjacent banks, recognising that (a) it may be desirable to restore a river to a previous course, and (b) a river's floodplain (present or historical) may be essential to its ecological functioning. Areas of adjoining priority habitats may form an integral component of river systems for the purposes of conservation and management, but are excluded from the definition of this habitat. Adjacent ponds would be included within the River habitat if they have been formed as a result of river dynamics (e.g. oxbows), but not if they are artificial or formed by an unrelated process (e.g. pingos).

The plant and animal assemblages of rivers and streams vary according to their geographical area, underlying geology and water quality. Swiftly-flowing upland, nutrient-poor rivers support a wide range of mosses and liverworts and relatively few species of higher plants. The invertebrate fauna of upland rivers is dominated by stoneflies, mayflies and caddisflies, while fish such as salmon and brown trout will almost certainly be present. In contrast, lowland nutrient-rich systems are dominated by higher plants, and coarse fish such as chub, dace and roach. Exposed sediments such as shingle beds and sand bars are important for a range of invertebrates, notably ground beetles, spiders and craneflies. 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.

**Extent in UK:
unknown**

In the Peak District

Rivers and streams within the Peak District are a very varied resource. Small upland streams draining the blanket bog of the South West and Dark Peak moorlands or starting as springs at the interface between the grits and shales, fall quickly through wooded cloughs to the shale valleys. The lower reaches of the rivers flow more slowly through broad valleys and are commonly tree-lined. Aquatic higher plants are infrequent but lower plants, invertebrates, fish including bullheads and brook lamprey, and birds including goosander and common sandpipers are of importance.



Water vole © Paul Shaw

White Peak rivers by contrast commonly support a rich plant life with carpets of watercress and water crowfoot amongst others. Seasonal in their upper reaches, they form an integral part of the White Peak dales. Animal life is similarly diverse and, in the River Dove, once included the native white-clawed crayfish. Fish populations include bullheads, brook lamprey and also distinctive populations of both brown trout and grayling. Amongst the birdlife, dippers and little grebes are characteristic.

All three Natural Areas are considered to be of high importance for their water vole populations which are dependent not only on the aquatic environment but also on a

rich and diverse riparian habitat. At its best this includes a mosaic of tall and short vegetation with scattered trees and shrubs.

In the upper reaches of streams and scattered within the lower valleys, wetlands extend either side of the watercourse over the floodplain. These are very variable in character including flood meadows, sedge and rush dominated marshes, and wet grasslands. Wetlands are also present as spring-heads, flushes and as areas of poorly draining ground on valley-sides. Very locally they also exist high on the White Peak plateau.

In the floodplain of rivers and streams where the water table is near the surface and drainage has not occurred, rush pasture rich in a colourful display of wetland flowers such as ragged robin and marsh marigold can be found. This may be accompanied or replaced locally in the White Peak by small areas of fen dominated by pond sedges. The wettest areas support quaking mats of sweet-grass or, particularly in small relic oxbow marshes along parts of the Dove and Manifold, poor-fen with bottle sedge and marsh cinquefoil. These mosaics of flood-plain wetlands support a rich invertebrate fauna and can be of importance locally for breeding birds such as lapwing, snipe, curlew and reed bunting. Tall fen vegetation is very scarce in the Peak District, but where it does occur meadowsweet, common valerian, great willowherb and reed canary-grass tend to dominate.

River corridors are of importance in providing habitats for a range of different plants and animals to live, and to move through. They are also crucial in the landscape with a sensitively managed system supporting an intimate mosaic of habitats linked to the watercourse, including marshes, flood meadows, wet grasslands, field boundaries and wet woodland. They are also of importance in providing attractive and diverse landscapes for recreation.

Extent in PD:
unknown

Current Factors Affecting the Habitat & Habitat Condition

Riparian habitat has declined nationally in quality as a result of agricultural intensification. The rivers themselves have undergone more limited losses but water quality and habitat variability has been affected by industrial discharges, agricultural run-off and by deepening and straightening the water channel. The latter has happened in only a limited manner within the lower reaches of the rivers, particularly where they pass through towns and villages. Smaller streams have, however been modified as an aid to drainage of the surrounding agricultural land. Historically water courses have been altered in the vicinity of water powered mills and for fisheries management. Groundwater abstraction and loss of water to soughs and mineshafts continue to be problems.

Water quality generally in the Peak District is good although locally it is affected by agricultural run-off, sheep dip and high silt levels. There is also some deterioration in built-up areas particularly where sewage works discharge. The trend, however, is for improvements in these areas. Water quality is also affected by erosion of the moorland areas with peat contributing to problems of water acidity and siltation.

Recent Work

The importance of riverside habitats to flood alleviation is increasingly being recognised in the Peak District. Work by Staffordshire and Derbyshire Wildlife Trusts, Trent Rivers Trust and various angling clubs has included the installation of woody debris into river channels.

Associated BAP Species in the Peak District

Otter	<i>Lutra lutra</i>
Water vole	<i>Arvicola terrestris</i>
Noctule	<i>Nyctalus noctula</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
White-clawed crayfish	<i>Austropotamobius pallipes</i>

Atlantic salmon	<i>Salmo salar</i>
Brown trout	<i>Salmo trutta</i>
European eel	<i>Anguilla anguilla</i>
Northern Yellow Splinter	<i>Lipsothrix nervosa</i>
Southern iron blue mayfly	<i>Nigrobaetis niger</i>
Flat sedge	<i>Blysmus compressus</i>

NVC Communities

The principal vegetation types (and their associated sub-communities) included in this habitat are:

A2 - *Lemna minor* community; **A8** - *Nuphar lutea* community; **A9** - *Potamogeton natans* community; **A11** - *Potamogeton pectinatus* - *Myriophyllum spicatum* community; **A12** - *Potamogeton pectinatus* community; **A13** - *Potamogeton perfoliatus* - *Myriophyllum alterniflorum* community; **A14** - *Myriophyllum alterniflorum* community; **A15** - *Elodea canadensis* community; **A16** - *Callitriche stagnalis* community; **A17** - *Ranunculus penicillatus* ssp. *pseudofluitans* community; **A18** - *Ranunculus fluitans* community; **A19** - *Ranunculus aquatilis* community; **A20** - *Ranunculus peltatus* community; **S4** - *Phragmites australis* swamp; **S5** - *Glyceria maxima* swamp; **S6** - *Carex riparia* swamp; **S7** - *Carex acutiformis* swamp; **S8** - *Scirpus lacustris* ssp. *lacustris* swamp; **S9** - *Carex rostrata* swamp; **S11** - *Carex vesicaria* swamp; **S12** - *Typha latifolia* swamp; **S13** - *Typha angustifolia* swamp; **S14** - *Sparganium erectum* swamp; **S16** - *Sagittaria sagittifolia* swamp; **S17** - *Carex pseudocyperus* swamp; **S18** - *Carex otrubae* swamp; **S19** - *Eleocharis palustris* swamp; **S22** - *Glyceria fluitans* water-margin vegetation