RIVERS

Widespread and diverse priority habitat supporting a range of internationally important species. Most larger scale developments have the potential to impact on this habitat.

UK Priority Habitats covered by this statement:

Rivers

Cumbria Biodiversity Action Plan habitats covered by this statement:

Rivers and streams

The Kingwater © Stephen Hewitt

Contents

Description

Rivers and streams are dynamic systems which, in their natural state, continually modify their form. They have a diverse range of features, such as riffles (faster moving stony sections), shingle banks and pools, which each support a diverse range of plant and animal species. These in-channel features are complemented by bank features, such as earth or rock cliffs, patches of reeds, woodland or flower-rich grasslands.

Individual rivers change along their length, with small, fast-flowing upland streams developing into broad, slow-moving, meandering rivers in their lower reaches. The water chemistry of rivers also varies considerably and is often dictated by the geology underlying the catchment. River water chemistry changes along the length of the river as both the underlying geology changes and as natural and man-made inputs change. River habitat quality is mainly determined by nutrient status and physical structure of the river.

The fluvial (river) processes, such as sediment transport, deposition and flooding, are key features that influence river and stream habitats and maintain diversity.

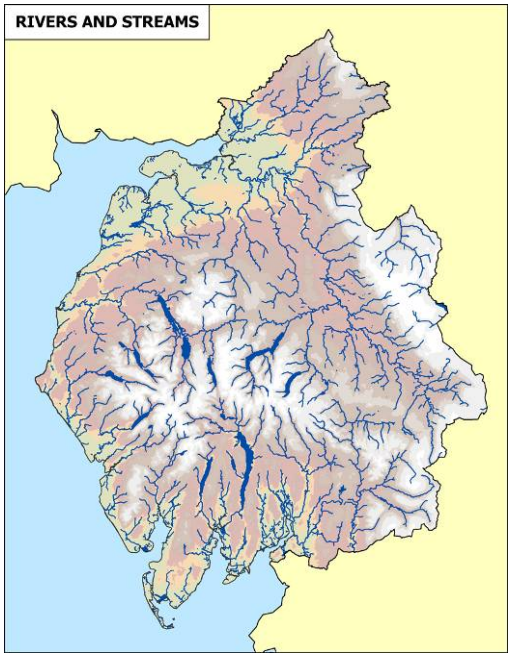
Rivers support a wide range of species, including Otter, Dipper, Grey Wagtail, Kingfisher, Goosander, Sand Martin, Brown Trout, Atlantic Salmon, White-clawed Crayfish, and beds of water crowfoot and other aquatic plants.

A range of specialised and rare invertebrates are associated with a variety of features including riparian landslips, exposed shingle banks and coarse woody debris in running water.

Distribution and Extent

This priority habitat is extensive throughout Cumbria. A high proportion of Cumbria's rivers are considered semi-natural, with characteristic bed, channel and bank features.

There are also many river corridors in Cumbria which retain a significant degree of naturalness, with a diverse range of adjacent habitats; examples include the Brathay between Elterwater and Lake Windermere, River Irthing upstream of Brampton, River Eden through Eden Gorge, the River Duddon, River Lune at Killington, the Rawthey above Sedbergh and the Dee above Dent.



Distribution of rivers and streams in Cumbria (provided for illustrative purposes only)

Conservation Issues

There are a wide range of issues affecting the ecology of rivers. These include water abstraction; artificial regulation of flows; hydroelectric schemes; pollution and nutrient enrichment; intensive grazing of river banks; inappropriate or insensitive bankside maintenance; alterations to river form for flood defence or land drainage; introduction of alien species, e.g. Himalayan Balsam, Mink, Signal Crayfish and non-indigenous fish.

Planning Considerations

- PPS9 states that local authorities should conserve important natural habitat types (priority habitats and habitats of principal importance in England), and identify opportunities to enhance and add to them.
- Any development that may impact upon the habitats of rivers and streams, and their species interests, would require an assessment of the likely effects on the habitat/species and, as necessary, appropriate protection and mitigation measures.
- Any development adjacent to a river or a tributary stream can potentially result in pollution of the river system.
- Developments resulting in abstraction of groundwater or impounding of surface water can reduce flows affecting the ability of the river to support life; this can be particularly significant in times of drought. Such developments can also affect natural river processes of deposition and erosion.
- Roads, car parks and housing, which increase the impermeable surface area, may reduce the potential for rainwater absorption, increasing run off to the catchment and higher flood discharges.
- Development on flood plains reduces their natural flood storage capacity, resulting in higher flood discharges downstream.

- Changes to riverbank morphology, such as installation of hard surfaces in the form of gabions or concrete or metal pilings can result in the transfer of energy, and hence erosion, downstream, often with detrimental and unexpected effects.
- A significant proportion of river systems are included in the SSSI system, all of which are also internationally important as Special Areas of Conservation. Note that many high quality rivers are, however, not covered by the SSSI or non-statutory sites system.
- Any development that may have a significant effect, directly or indirectly, on a Special Area of Conservation would need to be assessed under the Habitats Regulations.

Enhancement Opportunities

- Incorporation of Sustainable Urban Drainage Systems (SUDS, which are also appropriate in rural situations) in developments.
- Use of soft surfaces such as grass in place of hard surfacing wherever possible; also green roofs which absorb rainwater, and 'grasscrete' for necessary hard standings and parking areas to allow water to soakaway.
- Enhancement of riverbanks through appropriate native woodland and scrub planting, and creation of grassland buffer strips by fencing alongside river banks.
- Reduction of pollution and other impacts resulting from existing developments, through new development and design opportunities.

Habitat Targets

- As yet no habitat targets have been prepared

Key Species

The following Key Species could benefit from enhancement of this habitat or be negatively impacted upon by inappropriate developments on or near this habitat:

River Jelly Lichen
White-clawed (freshwater) Crayfish
Freshwater Pearl Mussel
Iron Blue Mayfly
a caddis fly *Glossosoma intermedium*
Oxbow Diving Beetle
a ground beetle *Dyschirius angustatus*
a ground beetle *Bembidion testaceum*
Hairy Click Beetle
Southern Silver Stiletto-fly
Northern Silver Stiletto-fly

Scarce Yellow Splinter
Northern Yellow Splinter
Scottish Yellow Splinter
River-shore Cranefly
European Eel
Bullhead
River Lamprey
Brook Lamprey
Sea Lamprey
Atlantic Salmon
Brown Trout

Kingfisher
Little Ringed Plover
Lapwing
Reed Bunting
Daubenton's Bat
Natterer's Bat
Noctule bat
Otter
Water Vole
Curlew

Further information

UK BAP rivers and streams (pre-2007 review habitat statement)

UK Biodiversity Partnership, Species and Habitats Review 2007, Rivers, Summary Statement p97, Habitat Proposal p124

Habitats of principal importance in England Section 41 NERC Act list

Cumbria BAP rivers and streams

Buglife: sandy river flies

Buglife: freshwater invertebrates

The River Restoration Centre, Manual of river restoration techniques

Environment Agency, Water Framework Directive, information including Spatial Planning and the Directive

National SUDS Working Group, Interim Code of Practice, very useful information

Environment Agency, SUDS

Environmental Stewardship and HLS handbook

Eden Rivers Trust

South Cumbria Rivers Trust

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- **Eden Rivers Trust**, Tel: 01768 866788, office@edenriverstrust.org.uk
- **South Cumbria Rivers Trust**, Tel: 01539 816311, manager@scrt.co.uk

Current Action in Cumbria

- The South Cumbria and Eden Rivers Trusts are undertaking projects and surveys to enhance the ecology of rivers in the areas they cover.
- The Environmental Stewardship Scheme run by Natural England provides financial incentives to manage land in a way that is sympathetic to its nature conservation interest with specific options designed to improve river quality.
- Eden Rivers Trust is working with Natural England, Environment Agency and FWAG on the Restoring Eden Project. The aims of the project are to restore in-stream and bank-side habitats and protect and restore wetland habitats on lowland and moorland to improve water quality.