



*North York Moors National Park Authority*

*Rivers and streams*

*Habitat action plan*

# North York Moors National Park Rivers and Streams Habitat Action Plan 2008–2012

## Rivers and Streams

### Our objectives for rivers and streams are:

1. To maintain and restore good water quality in the freshwater systems of the North York Moors National Park.
2. Where appropriate, to restore the natural dynamics of river systems in the National Park where they have been altered through land drainage, abstraction or alterations to the bank or streambed.
3. To maintain and restore the full range of riparian species and habitats present in the National Park.

### Introduction

Rivers and streams are by nature dynamic systems, constantly changing course and adapting to alterations in flow, channel blockages or sediment build-up. However, the majority of British rivers have been subject to bank erosion control measures, flood defense and alterations to improve drainage, so their ability to adapt to changing conditions is often much reduced.

Rivers and streams provide a wide variety of wildlife habitats both in-stream and marginal, and can act as important wildlife corridors. As well as providing an important biological resource, they influence the characteristics of the surrounding landscape, supply water for domestic, agricultural and industrial use, disperse pollutants and provide opportunities for recreation.

Many species found in rivers and streams are intolerant of even slight changes in the habitat or water quality.

### National status

There is an estimated 250,000 km of river channel in Britain (Environment Agency, 1999). Approximately 90% of the rivers in Britain have been physically modified in some way, usually with an associated reduction in their natural structural diversity, as a result of canalization, land drainage and flood defense works (Environment Agency, 1999). This has had a serious impact on riparian habitats, which are largely now gone altogether or limited to narrow bands alongside waterways.

The biological and chemical quality of rivers has improved greatly since 1990 (Environment Agency 2006). This is due to a number of factors, including a major clean-up of discharges from industry and sewage treatment works. The Environment Agency has helped in this work by enforcing discharge consents more tightly and focusing more on pollution prevention. Just 6% of rivers tested in 2006 were considered to be significantly chemically polluted, and

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about 5% were of a poor biological quality, as reflected in their invertebrate communities. Around half of rivers, however, still have high levels of phosphates and one third are high in nitrates, nutrients which can lead to algae growth in a process known as eutrophication.

## Local status

The major river systems in the North York Moors National Park are the upper reaches of the Derwent in the south and the Esk catchment in the north. There are also many small becks and rivers draining directly into the North Sea and west into the Leven, Swale and Ure.

The water quality of rivers and streams in the National Park is generally good. The majority of channels have Environment Agency River Ecosystem Class gradings of RE1 (very good) for both chemical and biological indicators. Most of the major channels have diverse invertebrate fauna, characterised by mayflies, stoneflies, caddis flies and other pollution-sensitive groups.

There are also healthy populations of species such as brown trout, dippers and otters. The Esk supports salmon and the freshwater pearl mussel, although the latter population appears to be very small and declining rapidly. The Derwent and Rye support white-clawed crayfish populations that may be of national importance. There are fragmented populations of water vole present in the National Park, although they have undergone a dramatic decline in recent years.

## Legal status

Stretches of several rivers within the National Park lie within SSSIs, although the aquatic interest was not the main reason for their designation. All of the moorland headwaters are included, as are stretches of the Derwent.

## Links to other action plans

Habitat Action Plans:	Species Action Plans:
Lowland wetlands*#	Otter#&
Woodland*#	Bats*#
Farmland*#	Water vole*#
Moorland*#	Salmon and trout#&
Unimproved grassland*#	Fresh water pearl mussel*#
Coastal and marine habitats*#	White-clawed crayfish*#
* = Local Species Action Plan	Northern yellow splinter crane fly #
# = UK Species Action Plan(s)	Rare butterflies and moths*#
& = Environment Agency Plan	

# North York Moors National Park

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### Threats

- Run-off from artificial fertilisers and slurry entering streams causes eutrophication, which results in algal blooms, a decline in biodiversity and a shift in species composition.
- Run-off from sheep dip and pesticides is lethal to aquatic organisms, even at very low concentrations.
- Acidification of waters through afforestation with conifers, acid rain and mining. A preliminary study indicated that some of the watercourses in the upper Derwent catchment and the Esk catchment appeared too acidic to support significant fish stocks.
- Sediment run-off from eroding banks poached by livestock or ploughed as arable fields without a wide buffer strip lowers the clarity of the water, making conditions difficult for plants and animals (such as trout, salmon and pearl mussel, which are adapted to naturally clear upland watercourses) to survive and breed.
- The inappropriate design and construction of roads and tracks can result in the erosion of a considerable sediment load into watercourses.
- Centuries of land drainage for agriculture, moorland shooting estates and villages has caused increased soil erosion, higher flow rates, lower water tables, and a very significant loss of wetland habitat.
- Flood banks built in recent years often exacerbate inappropriate land drainage by increasing flow rates, and damaging and destroying riparian vegetation. Dredging can also be a problem as debris that could provide an important in-stream habitat is often removed.
- Abstraction reduces the volume of water carried in a stream and can affect not only the total available habitat but also the speed of flow, the capacity to dilute pollutants and other important characteristics.
- Alien species such as Himalayan balsam have colonised banks along much of the Sefp, the lower Esk, the Rye and many smaller streams, ousting the native flora. Japanese Knotweed is locally common on the lower Esk.
- Invasion of alien fish and crayfish species, which out-compete native species. Contact EA Fisheries for any proposed reintroductions. (See Craven BAP.)

### Requirements

- Create buffer strips along watercourses in areas of arable farming to prevent soil erosion.
- Fence river banks prone to erosion by livestock
- Encourage the development of belts of semi-natural riparian habitat of varying widths along the rivers' lengths to improve biodiversity.
- Encourage and assist best practise in land drainage, abstraction and erosion avoidance to prevent chemicals, slurry and sediment from running off into watercourses.

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## Local Action

Two completed projects, the River Esk Regeneration Programme (1997–2001) and the Upper Derwent Enhancement Programme (1998–2001), have involved a wide range of projects that have begun to tackle some of the issues facing river systems in the National Park. These include:

- A series of small weirs installed on both rivers to alter the water flow and reduce the effects of sediment deposition.
- Trees pruned and coppiced along some banks to increase the amount of light getting to the river.
- Reinforced stock watering points installed on the Derwent to restrict access to the river along some stretches of bank.
- Riverbanks fenced to exclude stock.
- Surveys carried out for water vole, otter and mink.

In addition, the Environment Agency monitors water quality in all major rivers using chemical and biological methods. Briggswath, on the Esk, is an Environmental Change Network site where regular monitoring provides detailed information on the chemical and biological health of the river.

Agri-environment schemes, such as the Environmental Stewardship Higher Level Scheme and the National Park's Farm Scheme, provide grants for riparian improvements such as stock exclusion and tree management.

## Opportunities

- Catchment Sensitive Farming (Natural England and Environment Agency Initiative) is now being implemented on the River Derwent and the River Esk catchments, thus covering a large area of the National Park. This project is fully supported by the NFU and has a lot of potential to further protect and enhance the Park's waterways.
- Esk Pearl Mussel and Salmon Recovery Project on the Esk aims to improve the water quality in the River Esk by working with owners of adjacent land to prevent agricultural run-off and bank erosion.

## What you can do to help

- Record where you see priority species and let the National Park Authority know by mail or using the online recording form on the National Park's website: [www.moors.uk.net/recording](http://www.moors.uk.net/recording)
- Assist the North York Moors National Park Volunteers with conservation management. Phone the Volunteers Service on 01439 770657 for details.