

Biodiversity Action Plan for Exmoor's Rivers and Streams

FIRST DRAFT

1. Introduction

Exmoor supports two main river systems, the Exe and the Lyn. The Exe which includes the River Barle rises in the Exmoor Forest and drains south into the English Channel, whilst the River Lyn and tributaries drain north into the Bristol Channel. Other important rivers include the River Bray, Yeo (north Devon), Heddon, Homer Water and Avill. These rivers, with the exception of the Avill, owe their nature to the underlying geology and topography of the area. Thus they are acidic, steep and fast flowing, with a speedy response to rainfall. This rapid rise and fall leads to their classification as torrent rivers.

This action plan aims to cover all rivers and streams within the National Park which also includes floodplains and fluvial processes. Given that most rivers within Exmoor flow into the sea via steep-side valleys, there is a limited area of true floodplain, but where they occur they form important associated habitat. For example the mid reaches of the River Barle around Withypool are bordered by areas of ground which are regularly flooded in winter, whereas elsewhere along the river the ground generally slopes more abruptly to the river channel. The vegetation of the floodplain is predominantly a mixture of various mesotrophic grassland and mire communities. Fluvial processes are the physical means by which rivers and their floodplains are formed and which drive their constant evolution, by deposition and erosion of sediments and rocks and are fundamental to any holistic consideration of these environments.

Key Exmoor species present are otter and Atlantic salmon. Objectives and actions for these species are included in this plan. Otters are recovering well from the decline of the 1960s and are now found on all Exmoor rivers. They are fully protected under the Wildlife and Countryside Act and listed in Annex II and IV of the Habitats Directive. In contrast, salmon (also Annex II of the Habitats Directive) are declining here, as elsewhere, due to a variety of causes, possibly including netting at sea and climate change as well as changes to their riverine habitat. Other typical species of conservation value include dipper and grey wagtail, both found in good numbers on most rivers, often nesting under bridges. Nationally, goosander have spread south over the last thirty years and now breed in small numbers on the Barle. The floodplain provides habitat for grasshopper warbler and reed bunting both of which are increasing in numbers on Exmoor.

The status of the water vole on Exmoor is currently unknown although it is likely to have suffered from similar decline if not extinction as with the Southwest population. Whilst the majority of Exmoor rivers do not apparently provide the type of habitat water voles require, namely, slow flowing watercourses with relatively steep earthbanks with stands of luxuriant vegetation, some of the rivers to the east of the National Park probably offer most potential. These include the River Avill, the Homer Water, the Washford River and the Donniford Stream. Water voles have also been recorded historically on the River Barle and Bale Water, and there is the potential that they are using upland headwaters where vegetation such as *Molinia* and *Deschampsia cespitosa* are common.

Bats, particularly Daubentons and Natterers, rely heavily on wooded river valleys for feeding and use bankside trees as roosts. Other species such as Barbastelle are known to use river valleys such as the Horner Water and have recently been discovered in the Barle Valley.

Migratory and non-migratory trout are present even in very small streams and the upper reaches of some Exmoor rivers support important genetically pure populations of wild trout. Other important species of fish include brook lamprey and bullhead (which are both included in Annex IIa of the Habitats Directive), grayling, stone loach and eel.

Exmoor's rivers and streams support a diverse invertebrate fauna, many of which are characteristic of swift flowing rivers and streams with stony substrates. These include the beautiful demoiselle and golden-ringed dragonfly. The water beetle fauna too, shows a characteristic suite of species for south-western rivers including *Oreodytes sanmarki*, *Platambus maculatus* and *Hydraena gracilis*. Three nationally rare species occur on the river Barle: *Laccobius atratus* and *L. atrocephalus*, both water beetles found in acidic conditions at the margins of rivers, and *Hydrocyphon deflexicollis*, which has an aquatic larva and terrestrial adults most often found on willow bushes.

Exmoor rivers do not provide good habitat for aquatic flowering plants, but the splash zone and valley sides provide an excellent humid environment for mosses, lichens and ferns. The bryophytes *Scapania undulata* and *Racomitrium aciculare* are common on rocks whilst *Pellia epiphylla* is widespread on moist banks. Where the river bed has frequent large submerged rocks, these are generally clothed with bryophytes including *Rhynchostegium lusitanicum*, *R. riparioides*, and *Thamnobryum alopecurum*. The lichen communities present are those associated with clear, unpolluted upland streams. Wholly submerged crustose species of *Verrucaria* are abundant on the river bed rocks and *Dematacarpon luridum* and *Collema flaccidum* are abundant species on partially submerged rocks. Occurring throughout the middle to lower reaches, attached to submerged rock or to tree roots exposed by the erosion of the river banks, is the nationally scarce liverwort *Porella pinnata*.

Also of note is the presence of river jelly lichen (*Collema dichotomum*) which is a rare European endemic with only a few known sites in England. River jelly lichen is protected under Schedule 8 of the Wildlife and Countryside Act 1981 and is categorised as vulnerable in the Red Data book. It was formerly only known on 2 sites in the River Barle but recent survey work in 2002 revealed it to be present at 46 sites on this river between Great Bradley Wood to the north of Tarr Steps to the National Park boundary at Brushford. This includes one of the most luxuriant and continuous populations of river jelly lichen in Britain and is one of the finest examples of its habitat.

Links to other BAPs

Blanket bog
Upland oakwoods
Farmland
Bats

2. Current Status

The River Barle is designated as a SSSI given that it is the best example of acidic upland river grading into a richer sandstone river in Britain. It is a natural river of very high quality which has hardly been modified at all by pollution, water abstraction or river engineering. The upper reaches are oligotrophic, flowing off moorland, and these gradually change to a typical upland sandstone type, with mesotrophic plant communities. The River Lyn contains a geological SSSI. Most other Exmoor rivers run through SSSIs.

All rivers within both the Somerset and Devon parts of the National Park are recognised as County Wildlife Sites with a seven-metre buffer each side of the river included within these sites.

UK Biodiversity Action Plans have been prepared for rivers and streams, European otter, water vole, reed bunting, white-clawed crayfish. Other species are listed on the Long List of species of less immediate priority in the Report of the UK Steering Group. *The Devon Biodiversity Action Plan* includes a Habitat Action Plan for Rivers, Streams, Floodplains and Fluvial Processes and Species Action Plans for Otter, Atlantic salmon, water vole and white-clawed Crayfish. *Action for Biodiversity in the South-West* also includes plans for rivers and streams, white-clawed crayfish and water vole. This action plan for Exmoor incorporates relevant actions from these plans and sets local objectives, targets and actions.

Key sites: *All rivers and streams on Exmoor*

3. Current factors affecting rivers and streams on Exmoor

- Increasing diffuse and point source agricultural pollution (for example, by livestock poaching and ploughing riverside pasture) causing clogging of clean river bed gravels, leading to changes in the habitat of invertebrates and fish.
- Ditches dug to improve drainage on blanket bog have led to these areas being more rapidly drained and potentially to flashier rivers.
- Water quality issues relating to high levels of nitrates and phosphates on the River Barle.
- Unsympathetic consideration of natural fluvial processes, e.g. use of hard engineering solutions to solve erosion problems which often have repercussions downstream.
- Spread of invasive and non-native plant species such as Japanese and Himalayan knotweed, Japanese balsam and other pernicious weeds.
- Over management of rivers and associated riparian habitat for fishing purposes, e.g. coppicing large lengths of riverbank, channel manipulation, clearing of trash dams and 'stoppers'.
- Inappropriate management of bankside vegetation and trees, e.g. planting up areas; felling good lichen trees.
- Lack of easily available guidance on specific management requirements for key species.
- Increasing use of rivers and associated flood plain as areas for recreation leading to localised problems of bank erosion, litter, disturbance of wildlife.

4. Current action for rivers and streams on Exmoor

- Defra's Exmoor ESA Scheme and Countryside Stewardship Scheme contribute to the protection and enhancement of rivers.
- ENPA, EA, EN, Defra and FWAG offer general advice of management and enhancement of riverine habitat and key species.
- The Environment Agency has statutory powers over activities affecting rivers and their flood plains through consents to discharge to land or water, Land Drainage Consents for works in rivers and the issuing of licences to abstract water.
- English Nature has designated the River Barle a SSSI and has prepared a Conservation Strategy.
- Any watercourses which are not SSSI are recognised as County Wildlife Sites which affords a degree of protection from the adverse effects of development.
- The Environment Agency has produced good practice guidelines on coppicing bankside trees and a guide on *Best Farming Practices: profiting from a good environment*.
- The MIRE Project is working to block drainage ditches on blanket bog on the headwaters of some of Exmoor's watercourses.

- ENPA and English Nature comment on woodland operations likely to damage the interest of riparian trees through Woodland Grant Scheme and felling licence applications and input into long term Forest Design Plans.
- ENPA, English Nature, the Environment Agency and the National Trust are working together on a joint knot weed eradication initiative particularly on the Lyn, Heddon and Barle catchments.
- The Devon Biodiversity Records Centre (through 'Operation Otter') and Somerset Otter Group carry out regular monitoring of otters on many watercourses.
- A comprehensive survey of river jelly lichen was completed in 2002 on the River Barle and Exe.
- The Exmoor Natural History Society has just completed a survey of dipper, kingfisher and yellow wagtail.
- The Environment Agency carry out regular monitoring of water quality, biological monitoring (such as at Simonsbath Sawmill) and fish surveys.

5. Action Plan objectives and proposed targets

The objective of the Exmoor Rivers and Streams Biodiversity Action Plan is : to maintain the full range of characteristic wildlife of Exmoor's rivers and streams in particular through ensuring, as far as climate permits, adequate flows and high water quality. This will be achieved through the following actions:

RIVERS AND STREAMS ACTION PLAN

Policy and legislation

- Seek to ensure that prescriptions within agri-environment schemes protect rivers, streams and other water bodies: Defra, EA, EN, ENPA Ongoing
- Include policies to protect watercourses in all statutory plans when they are developed or reviewed: ENPA, EA Ongoing
- Ensure Forest Design Plans include prescriptions for positive management of rivers and streams and the riparian zone particularly in relation to conifer plantations. FC, ENPA, EN, EA Ongoing
- Encourage review of air pollution legislation to deal more effectively with effects of traffic pollution : ENPA, EN, EA Ongoing

Site safeguard and management

- Ensure that Conservation Plans for ESA agreements protect and enhance rivers and streams and their adjacent habitat: Defra, ENPA, EN, EA 2010
- Ensure that Woodland Grant Scheme applications take into account the management of the riparian zone and associated rivers and streams: FC, FE, ENPA, woodland managers 2010
- Replace conifer plantations with native broadleaves or open ground in riparian strips : FC, FE, ENPA, CE, NT, other woodland managers 2005
- Manage grazing stock to avoid excessive poaching of riverbanks: Landowners and graziers, ENPA, Defra, EN Ongoing
- Encourage reduced use of fertilisers in areas without an ESA agreement: Defra, EA, ENPA 2005
- Promote good practice by practical examples, for instance on ENPA-owned land, ENPA Farm Conservation Scheme or through ESA agreements: ENPA, Defra Ongoing
- Implement schemes to improve bankside cover: Defra, ENPA, EA, EN 2008

- Protect, enhance and encourage the establishment of more riparian trees where appropriate: ENPA, EN, Defra, FC 2008

Key species management and protection

- Encourage creation or retention of riparian refuge areas free from disturbance by humans or dogs: ENPA, EA 2005
- Continue to manage paths to reduce recreational pressure on riverbanks in key wildlife areas : ENPA, riparian landowners 2005
- Where possible, limit significant public access to one bank of watercourse: ENPA, riparian landowners 2008
- Safeguard existing populations of river jelly lichen by guarding against developments such as outdoor river pursuits that might compromise conservation of the species in these areas, e.g. recreational canoeing, river walking etc.: ENPA, EA, BCU 2010
- Encourage positive management of trees next to watercourses which support good lichen communities: ENPA, EA, FC 2008
- Discourage and explain why dams and on-line ponds in rivers and streams should not be built: EA, ENPA Ongoing
- Ensure that restoration of bridges is sympathetic and avoids damage to wildlife interest, e.g. dipper nesting sites, bat hibernation sites, plant/fern assemblages: ENPA, Defra, Highways Authority Ongoing
- Ensure canoe access does not adversely affect salmonid populations, river jelly lichen and other key species; consider impact of location and timing: BCU, Riparian owners, ENPA, EA ongoing
- Manage educational visits to avoid damage or disturbance to spawning gravels: ENPA, schools, universities Ongoing
- Identify and publicise appropriate sites for educational use: ENPA 2008
- Discourage erection of otter proof fencing between catchments: ENPA, EA, DWT 2008

Advisory

- Provide habitat and species management advice on request: ENPA, DWT, EN, EA, Defra Ongoing
- Provide advice on management/disposal of farm waste: Defra, EA Ongoing
- Provide advice to all existing fish farm owners particularly in relation to predation of fish by otters and discourage new fish farms: ENPA, EA, DWT 2008
- Provide positive management advice of riparian and river County Wildlife Sites and encourage uptake of ENPA Conservation Grant Scheme: ENPA, SWT, DWT 2008
- Provide training for ESA, National Trust and other staff delivering advice to landowners and farmers: ENPA, EA 2006

Future research and monitoring

- Collate species and habitat records to establish baseline data for measuring change: ENPA, SERC, DBRC 2006
- Gain improved understanding of current otter distribution in all catchments: ENPA, EA, DBRC, DWT, Riparian owners, Fisheries Associations 2008
- Carry out survey of historical and potential water vole sites, both on lowland and upland riparian habitats: ENPA, DBRC, SERC 2006
- Continue to monitor effects of MIRE project on water quality and quantity: ENPA, EA, EN 2006

Communication and publicity

- Include relevant articles in ESA newsletters, Park Life, Exmoor Visitor, etc. : EN, Defra Ongoing
- Inform landowners and general public of presence, rarity and international importance of river jelly lichen : ENPA, EA 2006
- Disseminate information leaflet on cormorants: ENPA, EA, Fisheries Associations 2006
- Promote wise use of water; link public supply with effect on natural environment: EA, ENPA Ongoing
- Identify key riparian owners and interests and improve links/liaison: ENPA, EN 2006
- Seek opportunities to involve riparian owners and fisheries associations in practical conservation work and surveys: DBRC, SERC, ENPA 2008
- Involve the public in recording schemes: ENPA, DBRC, SERC 2008