

Guidance Sheet on the Management, Restoration, and Creation of Rivers and Streams

This good practice sheet is intended as a basic guide for riparian owners and riparian managers (e.g. those people who own property adjacent to a river or watercourse) to maintain or enhance their sections of river or watercourse for wildlife. Rivers and Streams has been identified as a priority habitat in both the UK Biodiversity Action Plan and Local Biodiversity Action Plan for Blaenau Gwent as it has suffered serious declines both nationally and locally.

Biodiversity quite simply means 'all living things'. It is the rich variety of wild plants and animals around us together with the habitats that support them.

Local Biodiversity Action Plan Priority Species associated with this Habitat include:

Barbastelle bat	Beautiful demoiselle dragonfly
Lesser horseshoe bat	Golden-ringed dragonfly
Otter	Red-eyed damselfly
Pipistrelle bat	Scarce blue-tailed damselfly
Water vole	Southern damselfly
Reed bunting	Variable damselfly
Brown trout	White clawed crayfish



Otter

© Michael Hammett-EN

Habitat Description

Rivers and Streams are the life-blood of our biodiversity, feeding wetlands, and defining our landscapes as well as

providing valuable wildlife corridor links between fragmented habitats in urban areas and intensively farmed areas. They support a mosaic of features that in turn support a diverse range of wildlife. For example, riffles and pools are home for a range of aquatic species; exposed sediments such as shingle beds and sand bars are important for invertebrates; and marginal and bank-side vegetation supports an array of wild flowers and animals.

Sadly, most of our rivers and streams have been modified by man, resulting in the loss of many important features. The engineering of banks, and removal of tree cover and vegetation has resulted in problems of flooding and eutrophication (high nutrient levels) that have had detrimental effects on valuable floodplain habitat. However, in recent years, there has been a strong shift away from hard river engineering to more sympathetic options such as restoration of the river channel and its associated floodplain habitat, providing many opportunities for wetland habitat creation.

Factors Affecting Habitat

- Pollution including eutrophication (high nutrient levels) caused primarily by nitrates or phosphates in sewage or fertiliser run-off.
- Excessive ground water and surface water abstraction leading to rivers and streams drying up.
- Land drainage and flood defence works that if not carried out sensitively can destroy the biodiversity value in Rivers and Streams.
- Inappropriate bank management, including overgrazing of marginal and bank-side vegetation.
- Loss of floodplain habitat as a result of industrial or housing development.



Pollution and water abstraction leading to fish deaths

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Good Practice

Protect, maintain, and enhance the biodiversity value of any Rivers and Streams on your land by:

- Confine any work on rivers and streams to between September and December when the breeding season for birds and aquatic animals is over, and aquatic plants will have died back.
- Conserve riffles and pools when undertaking any work to channels. Riffles oxygenate the water and enhance conditions for fish and invertebrate spawning. Deep pools provide fish with shelter and give shade during the summer.
- Conserve meanders. These are naturally formed curves and bends along a watercourse. If meanders are removed, the rich diversity in river structure will be greatly reduced. Meanders should never be in-filled with spoil or other material. Old abandoned meanders alongside a new river channel could be managed to provide excellent habitat for wildlife.
- Promote channel diversity by conserving natural bays, fencing off steep sided banks, regrading banks to a more shallower gradient to prevent erosion, widening channels, and creating ledges at varying water levels. These will become colonised by marginal plants that will provide shelter and food sources for many invertebrates and fish.
- When undertaking de-silting works, minimise disturbance to wildlife. This can be done by working on small stretches at a time, returning in following years to work on the next sections, or leaving some areas untouched. In addition, ensure that work is only carried out from one side of the bank of the watercourse at a time. This will allow vegetation on the opposite bank to remain relatively undamaged. Only remove vegetation from the central portion of the channel leaving at least one third of the channel untouched. This will allow the survival of river and streamside communities from bank top to river bottom. Try and deposit any dredgings away from banks and on areas of low wildlife value such as adjacent arable fields.
- Promote the sustainable management of bankside trees. Willow in particular could be pollarded or coppiced. Pollarding differs from coppicing as it involves cutting back the main trunk of the tree to a height of about 2m instead of near the ground level. This should only be carried out on young trees under 50 years. Coppicing is preferable on

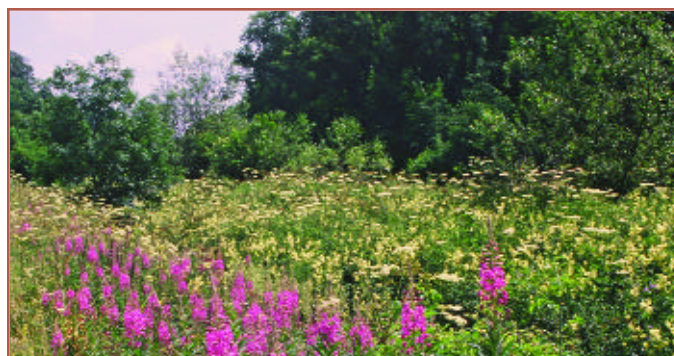
areas that have been coppiced in the last 40-50 years. Coppicing can be carried out on a 5-7 year cycle.



Old willow pollards

© Peter Wakely-EN

- Look for opportunities to create areas of wet woodland such as common osier beds, alder, and willow carr. Such areas will provide important wind-breaks, protection from erosion, and enhance the natural environment. These areas can later be coppiced and harvested for use in fencing etc.
- Prevent loss and damage to marginal and bankside vegetation by grazing stock, invasive species such as canadian geese, and human trampling, by fencing off banks where appropriate, allowing areas for stock to drink from. Fences should be sited up to 10m back from the crest of the bank. Remember, fences within the floodplain will require land drainage consent from the Environment Agency.
- Retain buffer strips alongside your watercourse. These are vegetated strips of land from 5-50m in width and can consist of meadow grassland, wetland, reedbed, or scrub. Buffer strips can reduce pollution by intercepting run-off from agricultural land or spray drift, and create new wildlife habitats. These areas will require sensitive management. Further advice should be sought on the management and aftercare of these areas.



Riverside vegetation

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- Help Otters! Look at constructing artificial otter holts at appropriate locations such as in scrub or woodland, next to a side-stream or ditch, and where there is no easy access.
- Help water voles! Do not lay traps. Do not put down any poisoned bait for rats as this may also kill water voles which are protected by law. Further advice should be sought first.



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River engineering - poor river practice



© A Harrington

Water vole

- Help birds and bats by erecting nest boxes and roosting sites on existing structures such as bridges. Ledges, cracks, and holes can also be incorporated when carrying out repair work or constructing new bridges.
- Keep rivers and streams free from rubbish. Support your local River Care Group that can assist you with regular clearance of rubbish.

Do not carry out any of the following operations without first seeking further advice:

- Carry out any River and Stream engineering and desilting works.
- Carry out any water abstraction.
- Carry out any method of bank stabilisation or protection.
- Apply herbicides or pesticides within 10m of Rivers and Streams unless spot treating notifiable weeds. Environment Agency approval will be required on herbicide use on or close to watercourses.
- Apply any inorganic or organic fertiliser such as farmyard manure, slurry, sewage sludge, chicken manure, or fishmeal within 10m of Rivers and Streams.
- Lay rat traps or poisoned bait on any watercourse.



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Ideal wildlife habitat for water voles & other wildlife

Further Advice






Blaenau Gwent Biodiversity Partnership
Provides advice on the restoration of priority habitats and species within the County Borough.
Tel. 01495 355702

Blaenau Gwent County Borough Council
Administers the Biodiversity Action Grant Scheme that offers landowners and community groups small grants up to £2k for biodiversity projects.
Tel. 01495 356070

Countryside Council for Wales (CCW)
Administers the Tir Gofal Agri-Environment Scheme where grants are available for a wide range of habitat management work on farms.
Tel. 02920 772400

Environment Agency Wales
Administers herbicide consents near watercourses **Tel. 08708 506506** and runs the Pollution Hotline **Tel. 0800 807060**

Please note, the recommendations contained within this sheet are for guidance purposes only. Due to the complexity of individual watercourses and the interactions occurring within them, it is advisable to seek specialist advice with relevant organisations from the early stages. This sheet can also be downloaded from the Blaenau Gwent Biodiversity Partnership website called 'The Web of Life'. This can be accessed through www.blaenau-gwent.gov.uk.