

# Alder and willow wet woodland

## 1. A Definition

In Devon, alder and willow wet woodlands (from hereon simply referred to as 'wet woodland') exist as rather small or localised patches of habitat in river valleys, on ground surrounding bogs or mires, on the transition between open water and drier ground, and beside small streams, but always on wet and waterlogged soils. Nationally this is a rather scarce habitat, but the moist climate and often heavy soils of Devon make wet woodland a characteristic feature in the landscape and a home to a diversity of specialised wildlife.

Devon's wet woodlands tend to be of more recent origin than other types of semi-natural woodland in the County, often having been established following a change of land use or the change of course of a stream. Alders and willows (and birches, which often grow with them) are trees which respond quickly to fluctuations in their environment, both from natural changes and changes in man's use of the land. Indeed in most situations where this type of woodland occurs in Devon it is a rather transitory feature, which in many instances originated on open ground within the last century. In time, most wet woodlands become drier through accumulation of sediment, and trees which favour such conditions, such as hazel, hawthorn and eventually oak and ash, take over.

On the damp soils of the Carboniferous 'Culm' of mid and north-west Devon wet woodlands occur along valley bottoms within the intimate mosaic of grasslands, hedgerows and heathland which characterises this area of the County. On the Blackdown Hills wet woodlands are found on the spring lines at the junction between Triassic and Jurassic mudrocks and the overlying Cretaceous 'Upper Greensand'. In situations where groundwater maintains the wetness of soils over long periods of time, wet woodlands may perpetuate in one place rather than undergo succession to drier habitats. Wet woodlands are characteristic on the fringes of Dartmoor, either in association with oakwoods or on the edge of wet, rushy grassland. Throughout Devon small patches of wet woodland occur along the margins of rivers and streams, especially the headwater streams, on land which is not intensively farmed. Small areas are also present within old flooded quarries and other artificially created pits.

## 2. Why an Action Plan?

Wet woodland is often a neglected habitat, and has been viewed by conservationists and land managers as something unwanted or difficult to manage. This perception has arisen in part because, in the process of natural succession, wet woodland encroaches onto open wetland habitats such as fens or reedbeds which are considered of higher conservation value than woodland. Alders and willows may be removed to prevent succession, and this presumption against wet woodland has undermined its importance as a wetland habitat in its own right.

Since wet woodland often occurs on sites which are difficult to farm, it may be the only form of woodland that has escaped removal in a particular area. Therefore, in areas such as the Culm Measures, it provides a woodland habitat in a landscape otherwise relatively lacking in trees.

Wet woodland is known to provide the ideal habitat for a great variety of wildlife, yet it is a habitat that is undoubtedly under-recorded, both in terms of the animals and plants that occur there and in terms of the location and extent of the best example of it in the County. This type of woodland deserves our heightened attention and it is the purpose of this Action Plan to ensure that this happens as a priority.

## 3. Characteristic wildlife

The dominant trees in this woodland type are alder and willow, especially grey, goat and crack willow, but in drier situations downy birch, ash, oak, hazel and hawthorn may be encountered. A diverse ground flora includes marsh marigold, opposite-leaved golden saxifrage, marsh violet, angelica, marsh valerian, marsh pennywort. Other plants such as broad buckler fern, lady fern, scaly male fern and the aptly-named greater tussock sedge are also characteristic of wet woodland in Devon.

Wet woodlands support a rich lichen flora, especially *Parmelia* and *Usnea* species and the conspicuous tree Lungwort *Lobaria pulmonaria*.

Insect life is especially abundant and varied in wet woodlands. For example, the number of species of moths supported by willows is second only to the oak. The habitat holds a variety of beetles which thrive in shaded damp environments, either in small pools of water or in decaying standing or fallen limbs.

Such an abundance of insect food attracts a rich assemblage of breeding birds, including the willow tit, which has its south-west England stronghold in wet woodlands on the Culm. Siskins and redpolls visit the habitat in autumn and winter to feed on alder cones.

## 4. Special species

The following species of conservation concern are associated with wet woodland in Devon. Species marked (p) are 'Species of Principal Importance in England' (NERC Act, S.41).

It should be noted that although there are few particular rarities known to be associated with the habitat in Devon, this almost certainly is a reflection of under-recording, rather than the true picture, especially for invertebrate groups and the lower plants and fungi.

- **Birds**: willow tit (p), Cetti's warbler, siskin, redpoll, woodcock
- **Mammals**: otter (p), dormouse (p)
- **Beetles**: water beetle *Agabus melanarius*
- **Other insects**: a crane fly *Limnophila abdominalis*, a fly *Palloptera scutellata*
- **Snails**: Mud snail *Lymnaea glabra*
- **Vascular plants**: Greater tussock sedge, remote sedge
- **Bryophytes**: Bog mosses *Sphagnum palustre*, *S. recurvum*
- **Lichens**: *Stenocybe pullatula* (occurs only on alder), *Sticta fuliginosa*, *S. sylvatica*, *S. limbata*, *Peltigera horizontalis*, *Cetrillia olivetorum*, *Catillaria pulvereae*, *Micraria alabasterites*, *Lobaria pulmonaria*, *Parmelia quercina* (p), *Menegazzia terebrata*
- **Fungi**: *Piploporus beluninus*, *Agrocybe cylindracea*, *Naucoria bohemica*, *N. sclecina*, *Laccaria proxima*, *Lactarius obscuratus*, *Mycena tortuosa*

## 5. Current extent

The total amount of wet woodland in Devon has not been quantified, since the resource is scattered in small fragments across the County. Indeed small size characterises these woodlands in Devon where most areas are under 5 hectares in extent.

However, the habitat is not a common one in England as a whole, and the total resource is probably less than 10,000 hectares.

Wet woodland is often a riparian element of other woodland types.

## 6. Current problems for wet woodlands in Devon (1998)

**Lack of appreciation of the habitat:** as a valuable resource for wildlife. Very often wet woodland of alder and/or willow is cleared to make way for more open wetland habitats such as reedbeds or fens, which are seen as having higher conservation value. Indeed, wetlands are now so small and fragmented, especially in agricultural districts, that great effort is expended to resist encroachment of woodland or scrub onto open wetlands.

Infill of flooded quarries and other excavations, for instance to reduce a perceived hazard, can also lead to a loss of wet woodland. In addition, the restoration of more recently active quarry sites without sufficiently shallow water areas for the development of wet woodland can result in missed opportunities for habitat creation.

**Grazing levels:** Heavy grazing by stock within wet woodland causes two main problems; poaching of the wet ground destroys the ground flora and adversely changes microhabitats for many invertebrates; too high a grazing pressure inhibits natural regeneration of trees within the woodland. Very often, patches of wet woodland are used as shelters for cattle, which results in similar problems. That said, carefully controlled grazing is a useful management technique for wet woodland and offers opportunities to enhance diversity and maintenance of the woodland structure.

**Agricultural improvements:** Drainage of land is a potential problem, although most losses of wet woodland to this probably occurred in the first half of this (i.e. the 20<sup>th</sup>) century or before. Change of ownership of a particular farm may result in a change to more intensive agricultural use of available land. Increased nutrient levels from fertiliser/slurry run-off may cause eutrophication of plant communities within wet woodlands.

**River Management:** Changes of the course of rivers and streams for the purposes of flood prevention reduces the potential of the river to change course over time, and hence reduces the potential for wet woodland development. Clearance of bankside alders and willows, often for the sake of "tidiness," results in only a few standard trees remaining. This degrades the habitat by reducing moisture and humidity within the woodland, and may make it impossible for populations of some animals to be maintained.

**Invasion of exotic plants:** The presence of species such as Himalayan balsam, snowberry, Japanese knotweed and, on drier sites, rhododendron, degrade the quality and naturalness of the habitat.

**Lack of information:** Lack of existing biological surveys of Devon's wet woodlands, particularly for invertebrates, lower plants and fungi, perpetuates our ignorance of their true value as a resource for biodiversity. Paucity of comprehensive information on the distribution and extent of high quality wet woodlands in the County hampers efforts to conserve the existing resource.

## 7. Recent changes in extent (1998)

No quantitative information is available on the changes in the wet woodland resource in Devon. The picture is likely to be one of gains as well as losses, and any assessment of changes in the area of wet woodland should be viewed in light of a natural succession of changes.

## 8. Current site protection (1998)

Wet woodlands are represented in the proposed Culm Grassland Special Area of Conservation, a designation under the EC Habitats Directive, though the main reason for the SAC is the presence of purple moor grass communities (a habitat listed in Annex 1 of the Directive).

Numerous Sites of Special Scientific Interest in Devon include areas of wet woodland, including those at Arlington, Killerton, Bovey Valley, Holne Woods, Sampford Spiney, Shaugh Prior Woods, Slapton Ley, Braunton Burrows, Andrew's Wood, Dunsdon Farm, Dunsland Park, Hense Moor, Ashculm Turbary, Southey and Gotleigh Moor and Blackdown, Sampford Common and Wolborough Fen.

Five of the above SSSIs are also National Nature Reserves, namely Slapton Ley, Andrew's Wood, Bovey Valley Woodlands and Yarner Wood and Dunsdon Farm.

Several Devon Wildlife Trust Nature Reserves contain areas of wet woodland, including Wolborough Fen, Lickham Common, Ashculm Turbary, Bystock, Halsdon, Hawkswood, Knowstone and Rackenford, Swanpool Marsh, Tod Moor, Venn Ottery, Volehouse. Important areas of wet woodland are found on National Trust properties, such as at Dunsland.

## 9. Biodiversity planning context

The Devon Biodiversity Action Plan forms a key link in the chain of biodiversity planning, running from the National UK Plan, through regional guidance, to local delivery. Existing elements of that chain which refer to wet woodlands are reviewed here.

### National BAP Context

Habitat of principal importance in England (NERC Act, S.41):

- Wet woodland

Current national BAP targets can be viewed on the [Biodiversity Action Reporting System](#) (BARS).

## Regional BAP Context

Regional targets for priority BAP habitats can be found on the website of [Biodiversity South West](#).

Associated Action Plans within the Devon BAP:

- Lowland heath
- Pits, quarries and cuttings
- Rhôs pasture
- Oak woodland
- Rivers, streams, floodplain and fluvial processes
- Dynamic coastal landforms and habitats
- Freshwater reedbed

## 10. Biodiversity objectives and targets for wet woodland in Devon

Please note: objectives and targets require review.

### Objective 1

To ensure there is no further loss of area of wet woodland in Devon.

Targets:

- No absolute loss of larger wet woodland sites.
- No net loss of smaller wet woodland sites.
- Ensure 50 hectares of priority wet woodland is protected and managed to maintain or enhance its wildlife value, by 2005.

### Objective 2

To gain a fuller knowledge and understanding of the extent and conservation value of the wet woodland resource in Devon.

Targets:

- Assess the approximate extent of the Devon resource by 2000.

- Undertake sample surveys of the invertebrate fauna, lower plant flora and fungi in 10 wet woodlands in the County by 2005.
- Investigate, by 2000, the desirability and potential for expanding the area of wet woodland in Devon as part of a floodplain woodland project. (Refer to target in Action Plan for rivers, streams, floodplain and fluvial processes).

### Objective 3

To raise the profile of the value and importance of wet woodland to the biodiversity of Devon.

**Target:** By 1999 produce a popular leaflet on wet woodland, its wildlife interest and methods for its management, and promote to the public and to landowners.

## 11. Wider benefits from pursuing these objectives

The pursuit of the objectives and targets set out in this plan will not only benefit the biodiversity of wet woodland. Conservation has wider benefits and advantages for society, by providing a resource which is the basis of many aspects of the local economy, and by adding to the quality of life of the people of Devon in ways which are beyond financial measure. Thus enhancing the interests of biodiversity will also enhance the interests of society as a whole.

Retention of areas of wet woodland on farms has benefits for the farmer by providing shelter for stock. A buffer zone of wet woodland between a stream and agricultural land can also have important benefits to water quality, by soaking up leaks of slurry and other waste before it reaches the watercourse.

Wet woodlands are of great interest to the archaeologist, since the habitat is now one of the few places where significant deposits of peat occur in the County outside of the moorlands and heathlands. Analysis of ancient pollen and artefacts found in peat deposits from within wet woodlands in the Blackdowns has provided an insight into the lives of people who dwelt in Devon thousands of years ago.

## 12. Priority or indicative actions for alder and willow wet woodland in Devon

Action	Key Partners
1. Ensure that wet woodlands and their conservation requirements are recognised in relevant strategic plans (e.g. Catchment Flood Management Plans and Forest Design Plans).	FC; EA
2. Ensure areas of wet woodland are maintained and enhanced through suitable management (funding under agri-environment schemes, WES and Woodland Grant Schemes) including control of over-grazing and maintenance of the water table.	Defra; FC; FWAG; DWT
3. Give consideration to designating wet woodlands as County Wildlife Sites to help protect them from inappropriate developments and management (e.g. draining).	DWT; LAs; NE; EA; DBRC
4. Ensure that the importance of wet woodland and its management is not neglected in existing advisory mechanisms.	FC; NE; FWAG; DWT; EA
5. Seek opportunities to expand areas of wet woodland in Devon.	EA; FC; DEFRA; NFU; CLA
6. Monitor wet woodlands farm visits and surveys to ensure that the true extent and condition of the habitat in Devon is known.	DWT; NE; CCMS; DBRC
7. Promote wet woodland to landowners as a buffer strip to soak up polluting discharges such as slurry from agricultural land.	FWAG; DWT; NFU; EA; CLA
8. Raise the profile wet woodland as an important element in the biodiversity of Devon using articles in appropriate newsletters, newspapers and journals and public events such as guided walks and open days.	DWT; NE; NFU; CCMS

Alder and Willow Wet Woodland Action Plan Champion - South West Forest

### Abbreviations used in text and table

BAP	Biodiversity Action Plan
CCMS	Coast and Countryside Management Services of Local Authorities
CLA	Country Land & Business Association
CS	Countryside Stewardship
DBRC	Devon Biodiversity Records Centre
DCC	Devon County Council
DEFRA	Department of Environment, Food and Rural Affairs
DIF	Devon Invertebrate Forum
DWT	Devon Wildlife Trust
EA	Environment Agency
ESA	Environmentally Sensitive Area
FC	Forestry Commission
FWAG	Farming and Wildlife Advisory Group
LAs	Local Authorities
NE	Natural England
NFU	National Farmers Union
NPA	National Park Authority
NT	National Trust
RSPB	Royal Society for the Protection of Birds
SSSI	Site of Special Scientific Interest
WT	Woodland Trust



