



Bedfordshire Wet Woodland Strategy

Prepared by
Bedfordshire Wet Woodlands Working Group

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Cover photograph: Wet Woodland at Flitwick Moor

Members of the steering group that delivered the wet woodland strategy for Bedfordshire:
Forestry Commission, The Environment Agency, English Nature (now part of Natural England), Bedfordshire County Council, The Wildlife Trust, The Greensand Trust, BRCC [Ivel and Ouse Countryside Project], The Bedford Group of Internal Drainage Boards, Bedfordshire Farming and Wildlife Advisory Group.



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Bedfordshire Wet Woodlands Project

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Summary

This strategy is the result of a three year partnership project between a variety of bodies that came together to produce a strategy for wet woodland management, creation and understanding in Bedfordshire.

In spite of a number of Sites of Special Scientific Interest (SSSIs), County Wildlife Sites (CWSs) and the national priority afforded to wet woodlands in the national Biodiversity Action Plan (BAP) surprisingly little was known about the extent, structure and species content of wet woodlands in Bedfordshire. Opportunities were taken by the project members to identify the wet woodland resource of the county, to investigate the opportunities for wet woodland management, creation and understanding and to confirm the objectives, targets and actions that relate to both wet woodland as a concept and to individual wet woodland sites.

The strategy reaches a number of conclusions relating to wet woodlands in Bedfordshire and outlines the objectives, targets and actions that will influence future wet woodland work. Further more detailed information is provided in various appendices.

1. Introduction

The extent and importance of the wet woodland resource in Bedfordshire has until recently been little known, and it could be considered to have been a 'Cinderella' habitat, often ignored when considering the management of other woodland and open wetland habitats that it was associated with.

A three year Bedfordshire Wet Woodland Project was established in 2003. This was a partnership project between the Forestry Commission (the main funder), the Environment Agency, English Nature, Bedfordshire County Council, Mid Bedfordshire District Council, the Greensand Trust, the Bedfordshire Farming and Wildlife Advisory Group and the Ivel and Ouse Countryside Project. All partners contributed funds and time to develop and manage a wet woodland project that led to the production of this strategy and to a host of individual actions. The strategy and its detailed conclusions will form the basis of a habitat action plan (HAP) in the Bedfordshire and Luton BAP as it will serve to guide future activities relating to this aspect of the BAP.

The Project

- surveyed through a desk based research study the distribution and range of the existing wet woodland resource in the County
- assessed the opportunities for further wet woodland creation using opportunity mapping and working directly with individual landowners.
- assessed and surveyed wet woodland indicator species.
- produced a preliminary education strategy to raise public awareness about the importance of wet woodland
- developed a series of strategic objectives, targets and actions relating to the wet woodland resource in the county



2. What is Wet Woodland?

Wet woodland occurs on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species, but sometimes including other species such as ash, oak, pine and beech in drier riparian areas. It is found on floodplains, as successional habitat on fens, mires and bogs, along streams and hill-side flushes, and in peaty hollows. These woodlands occur on a range of soil types including nutrient-rich mineral and acid, nutrient-poor organic ones. Wet woodland often occurs in a mosaic with other woodland types and with open wetland habitats such as fens. Many alder woodlands are ancient and have a long history of coppice management which may have impeded succession to drier woodland types.

It has been estimated that there are 50,000 - 70,000 ha of wet woodland in the UK. Wet Woodland is a National Priority Habitat in the UK BAP though the extent of wet woodland has declined nationally due to drainage and improvement of neighbouring land. Wet Woodlands can support a rich, varied and unique community of species including plants, mosses, lichens and invertebrates. Reference is made throughout this report to the National Vegetation Classification (NVC). This is a system of classifying natural habitat types in Britain according to the vegetation they contain. There are seven wet woodland communities, characterised by the presence of alder, birch and willows; W1, W2, W4, W5, W6 and W7. It should be noted that there are only a very small number of sites in the county that have some affinities to W7 .

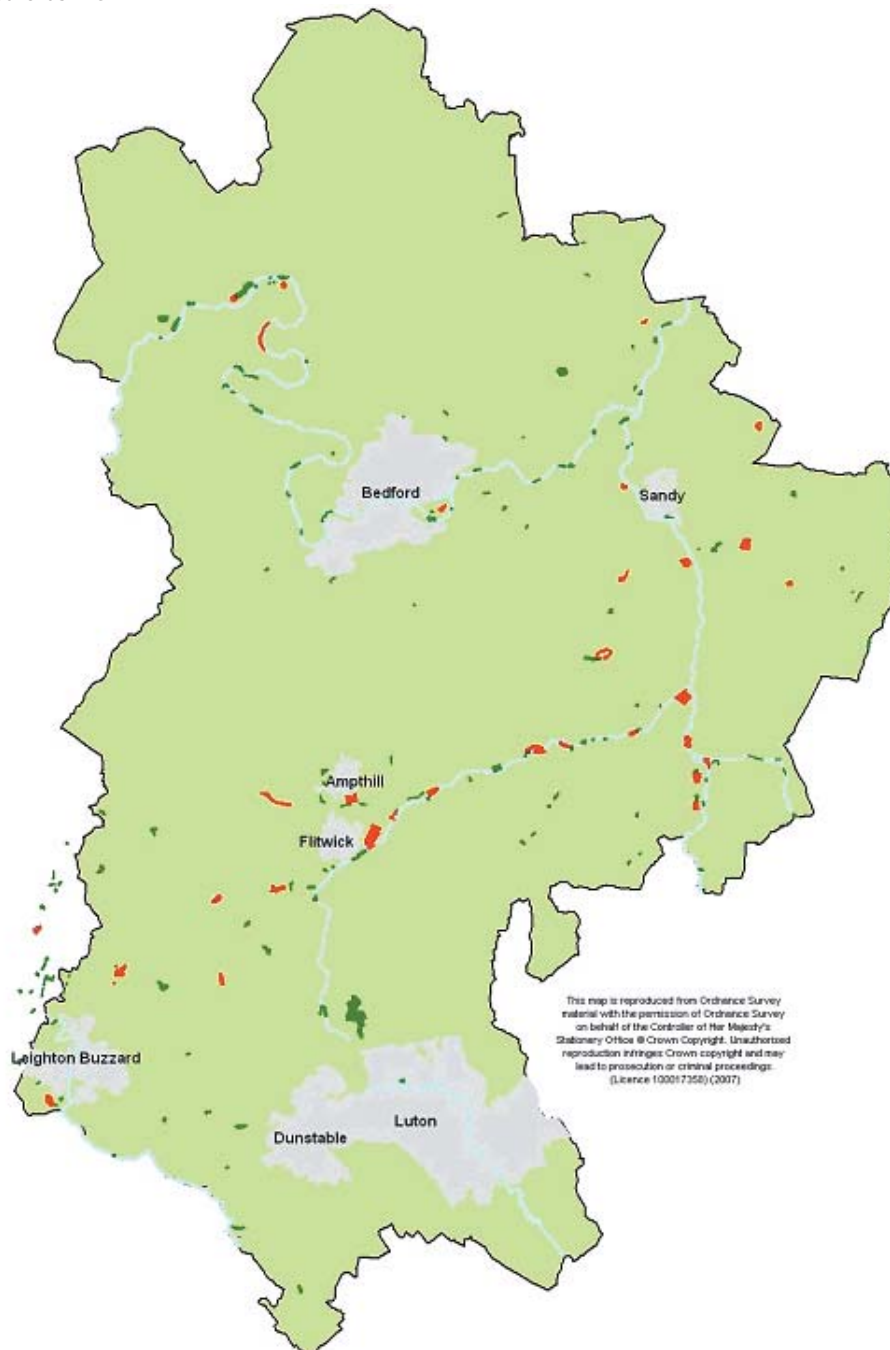
NVC code	Habitat Name
W1	Salix cinerea (Sallow) - Galium palustre (Marsh Bedstraw) woodland (Willow Carr)
W2	Salix cinerea (Sallow) - Betula pubescens (Downy Birch) - Phragmites australis (Common Reed) woodland (Fen Carr)
W4	Betula pubescens (Downy Birch) - Molinia caerulea (Purple Moor Grass) woodland :
W5	Alnus glutinosa (Common Alder) - Carex paniculata (Panicked Sedge) woodland (Alder Swamp Carr)
W6	Alnus glutinosa (Common Alder) - Urtica dioica (Nettle) woodland (Alder Carr)
W7	Alnus glutinosa (Common Alder) - Fraxinus excelsior (Ash) - Lysimachia nemorum (Yellow Pimpernel) woodland (Alder and Ash Carr)



3. The Wet Woodland Resource in Bedfordshire

Location and types of wet woodland

In Bedfordshire wet woodlands are found in two main areas: the floodplains of the major river valleys and spring fed locations on the Greensand Ridge. The map below shows the locations of wet woodland in Bedfordshire.





Floodplain Woodlands

These are mainly present in the Ouse, Ivel and Flit valleys with smaller fragments in other valleys such as the Ouzel and Lea.

The Ouse and Ivel valleys contain areas of W1 *Salix cinerea* - *Galium palustre* scrub along riverbanks and in disused gravel workings as well as stands of mature willow-dominated W6 *Alnus glutinosa* - *Urtica dioica* woodland and W2 *Salix cinerea* - *Betula pubescens* - *Phragmites australis* woodland along rivers and on islands such as at Henlow Park Woods CWS in the Ivel valley and in older pits such as Felmersham Gravel Pits SSSI and Priory Country Park in the Ouse Valley. These river valley woodlands often support wetland plants in the field layer such as marsh marigold (*Caltha palustris*) and yellow iris (*Iris pseudacorus*). Wet woodland and scrub has also developed in some of the disused clay pits in the Marston Vale.



Marsh marigold and yellow iris in wet woodland alongside a stream

The Flit Valley contains more wet woodland than any of the other river valleys in the county. Much of this consists of alder woodland ranging from species-poor W6 communities at Upper Alders and Pennyfathers Moor CWS's to more diverse W5 *Alnus glutinosa* - *Carex paniculata* woodlands at Flitwick Moor SSSI and Moors Plantation CWS supporting locally uncommon plant species such as opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*) and wood club-rush (*Scirpus sylvaticus*). Pennyfathers Moor is of interest in that it supports a population of the nationally rare black poplar (*Populus nigra* ssp. *betulifolia*). Flitwick Moor is the largest and most important wetland site in Bedfordshire and supports a range of wet woodland communities including W2, W4 *Betula pubescens* - *Molinia caerulea*, W5 and W6 woodland as well as drier woodland types and open grassland and mire communities. Many of these more interesting communities in the Flit Valley are present as a result of the influence of low nutrient acidic water from the Greensand aquifer, with the acidic birch woodland at Flitwick Moor supporting a number of species unusual for Bedfordshire including nine species of *Sphagnum* moss and plants such as common cotton-grass (*Eriophorum angustifolium*).

Of the other main river valleys, the Ouzel supports only small fragments of willow scrub and woodland at Old Linslade and around the margins of flooded sandpits such as Tiddenfoot Waterside Park. The Lea Valley also has a very small wet woodland resource; one of the more interesting sites consists of a small stand of alder-dominated woodland at Rotten Corner Spinney on Leagrave Common in Luton.

A further resource in the river valleys associated with wet woodland are the numerous old willows, and other riverside trees such as alders and black poplars. Many of these are old pollards and multi-stemmed specimens of great importance for both wildlife and the landscape. Many are very large and contain micro-habitats such as holes and hollow trunks. When present in large numbers along riverbanks and streams they provide narrow corridors of associated habitat that could be important for linking up areas of wet woodland as well as providing cover for species such as otter.



Spring-fed Woodlands

The Greensand Ridge is almost the sole area for spring-fed wet woodland in the county. The majority of sites are small due to their location along springs-lines and flushes, which by their very nature are restricted in area. They are often part of larger woodland sites such as the small areas of W5 alder woodland in Washer's and Daintry Woods CWS near Woburn, or present as part of a mosaic of other habitats such as at Stockgrove Country Park at Heath and Reach. An exception to this is Sutton Fen CWS near Potton in the east of the county. This site lays just outside of the Ivel floodplain on peaty soils that are fed by Greensand springs. Most of it now consists of predominantly dry birch and alder-dominated woodland but would formerly have been much wetter. There is an extensive 9.4ha of W5 *Alnus glutinosa* - *Carex paniculata* woodland (Phragmites sub-community) at Southill Lake and Woods SSSI which is specifically designated for its wet valley alderwood. A further type of wet woodland on the Greensand Ridge consists of small areas of W1 willow scrub that has developed around the margins of lakes in the disused sandpits on the perched water tables around Heath and Reach such as at Double Arches Pit CWS.



Old willow pollard in Ouzel Valley

What many of these woodlands lack in size they make up for in interest, often supporting unusual communities and rare plant species. Wavendon Heath Ponds SSSI contains a small area of birch woodland typical of a W4 community. This is a particularly rare type of woodland in Bedfordshire, Flitwick Moor SSSI being the other main site. Wavendon Heath Ponds supports locally rare plants typical of wet, acid places such as purple moor grass (*Molinia caerulea*), star sedge (*Carex echinata*) and *Sphagnum* sp.

Recent surveys have shown that an area of wet ash-dominated woodland at part of Coopers Hill SSSI may have some affinities with W7 *Alnus glutinosa* - *Fraxinus excelsior* - *Lysimachia nemorum* woodland more typical of the northwest of England but also present in the Sussex Weald.

Similar areas of woodland are also present in small amounts on the Buckinghamshire section of the Greensand Ridge, with a site in Oak Wood near Stockgrove Country Park supporting the only population of the nationally uncommon marsh fern (*Thelypteris palustris*) in the two counties.

Spring-fed wet woodland is not generally present elsewhere in the county though there is the potential for small areas of willow scrub to develop along spring-lines issuing from the chalk in South Beds and the limestone in the north of the county.



Wet Woodland Site Register

A site register of wet woodland has been created as part of this work and a GIS layer produced. Additional information, such as its status and whether or not it is/was in a conservation grant scheme or woodland grant scheme, is included. The Site Register identifies 181 wet woodland locations that also include a number of spring-fed sites on the Buckinghamshire section of the Greensand Ridge. The site register is included as an appendix to this report. The total area of wet woodland in the county is about 526ha (see table 1 of the spreadsheet dated May 2007). The thirty- two best sites with the greatest variety of habitat are in total about 230ha in extent. These are listed in table 2 of the spreadsheet dated May 2007.

At some sites (e.g. Sundon Chalk Pit) wet woodland occurs as part of an intimate matrix of a range of habitats. A number of sites are included in the site register even though they are substantially degraded but support remnants of wet woodland habitat.



*Birch woodland with
Sphagnum near Little
Brickhill*



Location and numbering of wet woodlands in Bedfordshire based on May 2007 site register





Wet Woodland Species

There are very few plant and animal species in Bedfordshire that could be considered to be wet woodland specialists. A number of bird and mammal species (e.g. Otter, Barbastelle bat, Lesser Spotted Woodpecker and Siskin) are associated with wet woodland but are wide ranging and likely to be found in other habitats as well.

The otter is a flag ship wetland species that uses wet woodland to lie up in during the day. Wet woodland can also provides holt sites for breeding. The wet woodland project paid for four training days for otter monitors which resulted in the setting up of the otter monitor group through which 25 -30 sites are monitored monthly by a team of volunteers. The otter monitoring group volunteers also built two of otter holts as part of the Wet Woodland Project.

In addition a survey to establish the status of the otter in the County was carried out as part of the wet woodland project. The methodology followed national guidelines and was a repeat of a survey carried out in 1996/7. 39% of the survey sites were positive compared with 27% in 1996/7 and the survey also shows a wide distribution of otters in the county and a higher percentage of positive sites than the National Survey 2000-2002, for the Anglian Region. Mink presence was also recorded and showed a reduction from 34.9% to 22% of sites over the two surveys. The full results of this survey are available in a separate report in the appendices.

The monitoring group and the survey results have lead to a much better understanding of the state of the otter population of Bedfordshire.

Some species of invertebrate are known to be more specific in their requirements. Invertebrate surveys of four areas of wet woodland of different types were commissioned to improve knowledge of the invertebrate assemblages found in such woodland and to inform management planning. The four woodlands selected were: Oak Wood, SP906290 Felmersham Gravel Pits SP992585, Double Arches Pit, SP9229 and Lower Alders TL130290

Craneflies were selected as a key target group for invertebrate survey. In an attempt to gather as much useful information as possible in a limited amount of field time, the survey of each site was undertaken on a single day in mid-summer, a peak time for this group. Though the survey was targeted at craneflies a wide range of other invertebrates was captured and identified at the same time.

The full results of this survey are available in a separate report in the appendices. In summary for each of the investigated sites there is a species list, an assessment of site importance and potential and a suggested optimal management regime. There is also a comparative discussion of the four sites.

In summary the numbers of craneflies recorded from the sites seemed to be reasonably well correlated with the wetness of the site and with expectations judged from habitat quality. Oak Wood came out as one of the best sites for craneflies, mostly as a result of the numerous seepages within the site. Of the invertebrate species other than craneflies that were recorded, two generalisations could be made from the records of scarce species:



- Except at Oak Wood, the number of Nationally Scarce and/or Red Data Book species in non-targeted groups exceeded that of craneflies.
- Few of the additional rare species were specifically associated with wet woodland with some being associated more generally with wetland, some generally being associated with wet or dry woodland, and some being associated with open conditions.

Recent research at Flitwick Moor has led to a number of important species of fungi and mosses being found. These will improve our knowledge of the site and inform management decisions.



4. The Constraints and Opportunities affecting Wet Woodlands in Bedfordshire.

A number of issues affect the extent, the quality and the future of wet woodland in the county. There are in turn a number of issues that limit the scope for wet woodland creation in Bedfordshire. There are however some significant opportunities that should be followed to increase both the area of wet woodlands in the county and the area under management.

It should be noted that most if not all of the spring fed woodlands in the county are unmanaged and are generally too small to support extensive management. On the other hand there is the potential in some larger floodplain sites such as Flitwick Moor for limited management such as coppicing and glade creation to create a more diverse structure.

Constraints

- The main issues affecting a number of wet woodlands in the county are land drainage, flood prevention measures and abstraction that has resulted in a lowered water table and led to the woodlands drying out. Lower Alders in the Flit Valley, used to support rare wetland species such as white sedge but is now dry for much of the time. Sutton Fen CWS has also been affected in this way.
- The quality of water is an issue in the Flit Valley as many of the sites in the valley have developed their special interest as a result of low-nutrient acidic water issuing from Greensand springs. Flooding them with river water containing high nutrients and of a different acidity resulting from sewage treatment works and other run-off, changes their character and encourages coarse species such as nettle to dominate the woodland at the expense of more interesting plant species and communities.
- Some of the more recently established wet woodland has developed on former open wetland. This raises conflicts between the conservation interests of these two habitat types, with areas of wet woodland at sites such as Flitwick Moor having been cleared in recent years to restore open fen habitats. When drawing up management plans for sites such as this, a balance needs to be drawn to ensure sustainable areas of all important habitats are maintained.
- Lack of management, particularly in formerly coppiced sites may encourage succession to drier woodland types. Many of the old pollards and other riverside trees in the county are in poor condition and at risk of collapsing due to a lack of recent pollarding or coppicing management.
- Non-native species such as Himalayan balsam *Impatiens glandulifera* alter vegetation composition and out-compete native plant communities. Moors Plantation CWS is an example of a site where this particular plant is invading large areas of the field layer and could threaten some of the more interesting species. Diseases such as Phytophthora root disease of alder could also lead to large-scale die-off of trees that would greatly alter the characteristics of currently heavily shaded and humid sites such as many of the spring-fed alder woods on the Greensand Ridge.
- Existing open semi-natural habitats e.g. grassland and marsh. These habitats are of great ecological importance in their own right and may be County Wildlife Sites or Sites of Special Scientific Interest. They often support distinctive and rare plant and animal species that require open conditions in which to survive. Planting trees on these sites would destroy much of their existing interest.



- Archaeological constraints can cover extensive areas. Planting trees could damage their value due to disturbance from tree roots and affect the viability of carrying out future excavations or other investigatory work.
- The wet conditions that are required by wet woodlands may be constrained by the extent of the floodplain, particularly in smaller, steep-sided valleys. In the case of spring-fed sites the size of the spring limits the potential for expansion of a wet woodland site in this location.
- A particular area may be of landscape value for the open views that are present; extensive planting of new woodland would have a negative impact on this.
- Where the land value is high for the production of arable crops it is unlikely that a change of land use to wet woodland would be economically viable. However grant levels may affect this and allow some planting to take place.

Opportunities

- Improved grassland or arable land may be important for linking existing open habitats and wet woodland. It may be possible to incorporate elements of wet woodland planting on larger sites in line with plans elsewhere to create what is termed 'floodplain forest' such as at Milton Keynes, where a 20-30% tree cover in a mosaic with open wetland communities has been proposed.
- Where the archaeological constraint is the only constraint on an area suitable for wet woodland development then the extent of the archaeological constraint can be investigated further to assess its value and assess opportunities for planting.
- The Environment Agency may in a number of instances consider that the planting of trees in the floodplain could be a major obstacle to flood water flows. The Environment Agency is however actively seeking opportunities to protect and increase areas of wet woodland by incorporating and promoting biodiversity in major projects. The Great Ouse Catchment Flood Management Plan promotes opportunities for habitat creation including wet woodland in the Great Ouse Catchment. In addition the Great Ouse Vision project jointly led with Natural England looks at ways to practically improve the catchment for fish and biodiversity.
- Considerable opportunities for wet woodland creation exist through Mineral extraction and the minerals local development framework. Close working with the planning system and with mineral extraction companies can provide major opportunities for such creation within a floodplain forest. A major opportunity exists with work involved in the development of the Bedford River Valley Park.
- The Marston Vale Surface Water Plan offers considerable opportunities for wet woodland creation. However the developments proposed in the Marston Vale represent very substantial increases in impermeable surface with the potential to increase flood flows. The Surface Waters Plan promotes the provision of strategic surface water control facilities to provide the best opportunities for enhancing the water environment for amenity and ecological gain including offering opportunities for wet woodland creation.
- Climate change and rising global temperatures will amongst other things bring changes in weather patterns and increase in the frequency and intensity of extreme weather events. Planning for the consequences may provide opportunities for wet woodland creation. Whilst some of the consequences may be long term in nature opportunities should be taken as they arise.



5. Wet Woodland Management, Creation and Restoration

Recent activity

In recent years attempts have been made to plant new wet woodland such as at Flitton Moor in the Flit Valley. Many small fragments of wet woodland are scattered along the Flit Valley and have been and remain a priority for connecting up to form larger blocks of woodland. Care needs to be taken to ensure that this is not at the expense of important open wetland and grassland habitats that are also a feature of this area.

A number of poplar plantations have been planted in most of the river valleys in Bedfordshire. These are generally of low biodiversity value but there is the potential to increase their interest by felling stands of poplar and replanting with native species such as willow, alder and black poplar.

As part of the Bedfordshire Wet Woodland Project management plans have been completed for six wet woodlands in the Flit Valley and on the Greensand Ridge. These are Lower Alders, Moors Plantation, Pennyfathers Moor, Swiss Garden, Upper Alders and Washers Wood.

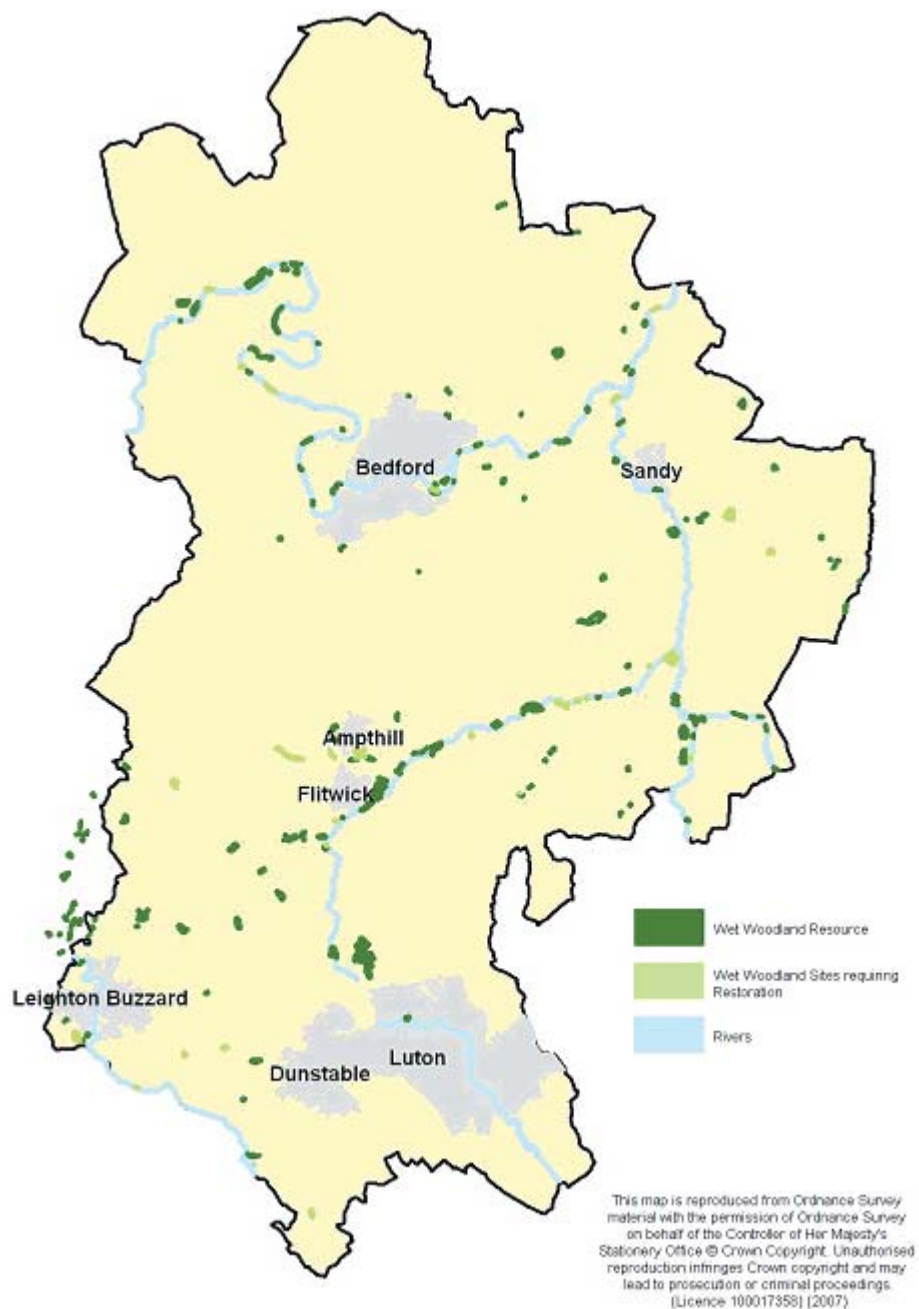
A number of wet woodland owners have been contacted to discuss the management of their sites with them. Some of the management plans that have been written for private landowners, and the purchase of the wet woodland at Upper Alders has been possible as a result of these contacts.

Further work has produced a map showing those areas of wet woodland where efforts need to be made to restore existing wet woodland. The following map shows the existing resource and the areas that are defined on the May 2007 wet woodland site register as requiring restoration.



Map showing location of wet woodlands that are in need of some form of restoration based on the May 2007 site register

Wet Woodlands in Bedfordshire and Luton





Habitat Creation Strategy for Wet Woodland

The potential for creating extensive areas of floodplain woodland in the county will grow with the restoration of extensive mineral workings in the Lower Ouse and the Ivel Valleys, although this will need to be balanced with the need to allow the development of open habitats associated with floodplains.

There is little or no potential for creating new spring-fed woodland as most existing open springs and flushes are likely to already support open wetland communities of existing nature conservation interest. Action with regard to these woodlands should concentrate on ensuring existing sites are conserved and maintained in good condition.

The strategy discusses the potential for creating wet woodland in the main river valleys of Bedfordshire (Great Ouse, Ivel, Flit and Ouzel) and on the Greensand Ridge both by planting and by natural regeneration.

Maps have been produced for all the areas concerned showing existing and potential wet woodland sites and constraints to the planting of new wet woodland.

The Great Ouse Valley

There are major opportunities for the creation of floodplain forests downstream from Bedford. Where mineral extraction is occurring or is likely to occur in the future the development of floodplain forests could be included in restoration agreements. Two areas have the greatest potential in the short term but in the longer term opportunities may exist over a much greater area within the Great Ouse Valley:

- Bedford River Valley Park - This 860ha area to the east of Bedford in the Great Ouse valley has been designated to become a major new greenspace and a strategic masterplan is currently being developed for it. Over the coming ten or more years there are likely to be major habitat creation works undertaken in developing the River Valley Park, and the site has the potential to create wet woodland on an unprecedented scale for the UK, possibly delivering up to 20% of the UK BAP target for wet woodland expansion. Much of this habitat creation is likely to be achieved through the restoration plans associated with the Lafarge's current and future mineral workings throughout this area.
- Land at Black Cat Island, Roxton - Wet woodland is proposed in a mosaic with other habitats.

It is understood that it is unlikely that permission for any large scale wet woodland creation would be granted in the floodplain of the River Great Ouse above Bedford because of floodplain restrictions.

The Ivel Valley

There is little potential for large scale wet woodland creation within the Ivel valley. There are however locations where small scale planting, management or changes in management could lead to an increase in the area of wet woodland within the valley.

- Broom Quarry Extensions. Quarry operations in this area close to the River Ivel and to the Ivel Navigation may provide opportunities for the creation of wet woodland, often as part of a mosaic with other habitats.
- Extension at Warren Villas. The restoration scheme for the southern part of the site requires amongst other matters that 5.5ha floodplain grazing marsh and marshy grassland is created and that overall the site consists of a mosaic of habitats from open water, through wet grassland to woodland making use of locally native tree species. The site is gradually taking the form of a lake and forest sandwiched between intensively farmed land to the west of the A1 and the river Ivel and the grassland of Biggleswade Common to the east.



The Marston Vale

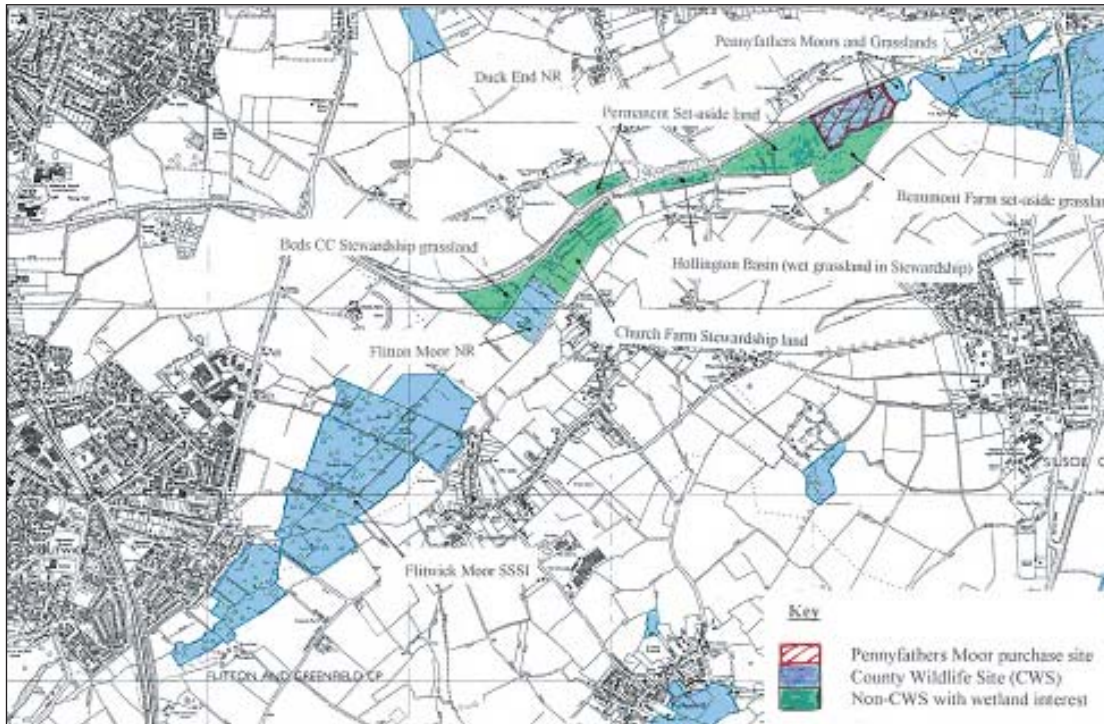
- An integrated Urban Design Pilot Study for the area around the Bedford Southern Gateway developments will see considerable areas of wetland being created to the south and west of Bedford. The wetland expansion will include wet woodland creation. Such creation emanates from the Marston Vale Surface Water Plan that was referred to above as an opportunity for wet woodland expansion.
- Disused clay pits offer opportunities for the creation of a mosaic of wetland habitats including extensive wet woodland such as that already developing at Coronation Pit.

The Flit Valley

Generally there is limited potential for extensive new planting of wet woodland in the Flit Valley. Planting is best limited to scattered groups and individual trees on any areas of new habitat restoration with the aim of creating a mosaic of open wetland with scattered tree cover.

Examples where this may be applicable include:

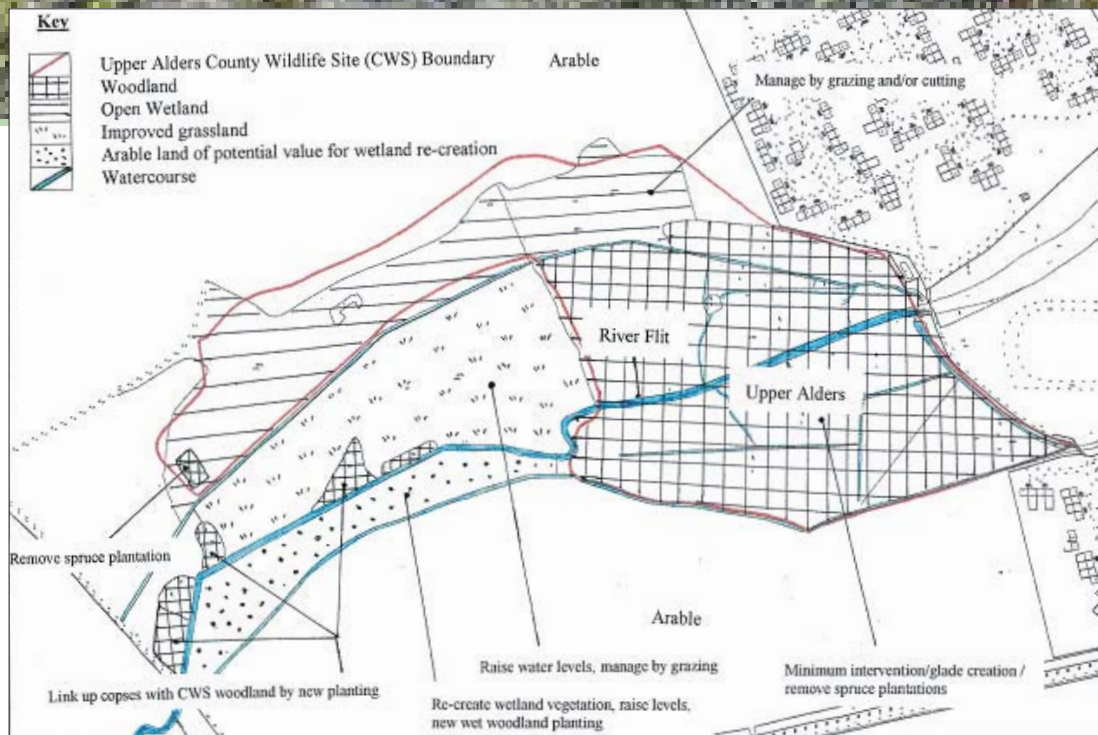
- The area south of Moors Plantation CWS is the former location of Westoning Moor. There is great potential for creation of open wetland habitats in this area which combined with limited planting to provide an element of wet woodland, helps link up Moors Plantation CWS with nearby areas of wet woodland.
- Pennyfathers Moor CWS. The site consists of c. 7 ha of damp woodland and is situated in a strategic location in the Flit Valley, forming part of a larger CWS that includes areas of wet grassland and swamp vegetation in various private ownerships. To the east and west are areas of set-aside land and land in Countryside Stewardship that are developing wet grassland interest. The purchase of Pennyfathers Moor would safeguard an important link in the network of wetland habitats in this section of the Flit Valley and provide a focal point for future land acquisition and wetland management in this section of the valley.



Pennyfathers Moor - Location in relation to other wetland sites

Areas where there is the potential for more extensive wet woodland include:

- The disused Fuller's earth workings at Clophill (TL098376 & TL104382). The majority of the site consists of recently abandoned flooded workings that have great potential for restoration of both wet woodland and open wetland habitats. There may also be the potential for creating wet woodland and wetland on the land to the east of the fuller's earthworks.
- The arable land adjacent to Upper Alders (TL113386). There is potential in this area for creating a larger area of wetland habitats upstream of the wood. The arable land on the wetter, peaty soils would be a high priority for reversion to wet grassland and marsh to increase the area of wetland habitats, and create a buffer with new wet woodland planting to link up existing copses to the west with the main area of woodland.



Upper Alders -Potential Purchase Area andProposed Management

The Ouzel Valley

Due to the limited extent of wet woodland in the Ouzel Valley new planting by extending existing sites is very limited. There is however possibilities to create new areas of wet woodland including:

- The arable land between Old Linslade and Stoke Hammond (SP906276)
- Ledburn Road Pit and Grovebury Quarry south of Leighton Buzzard (SP911235 & SP924230)
- The areas of arable farmland to the southeast of Leighton Buzzard along River Ouzel and Ouzel Brook (SP925220 - SP990230)

Spring-fed woodlands on the Greensand Ridge

The majority of spring-fed wet woodlands are small, isolated sites located in small side valleys usually in association with larger areas of dry woodland or other habitats.

There is very limited potential for creating new spring-fed woodland on the Greensand Ridge as the wet areas are very restricted in size and most existing open springs and flushes are likely to already support open wetland communities of nature conservation interest. Action with regard to these woodlands should concentrate on ensuring existing sites are conserved and maintained in good condition, and on buffering both the woodlands and their water supplies from the effects of adjacent land uses.

Areas where some creation may be possible on a small-scale include:

- The Stockgrove, Oak Wood and Rushmere area (SP916287)
- The small valley north of Woburn (SP941339 - SP957359)
- The area south of Tebworth Marsh SSSI (SP982286)
- The Double Arches complex near Heath and Reach (SP939292)
- The land adjacent to Sutton Fen.(TL202475)

Some existing Flit Valley and Greensand sites such as Lower Alders and Sutton Fen would benefit from raising water levels e.g. by the use of sluices. This should generally aim to retain low-nutrient Greensand spring water on the sites while preventing as much as possible flooding of them with nutrient-rich water from the River Flit. This is not such an issue in other valleys as the field layers in many of these woodlands are already quite eutrophic in character.



6. Wet Woodland Awareness

A Wet Woodland Education Strategy has been produced as part of this project. The aim is to raise the awareness of local wet woodlands in order to afford them greater recognition, appreciation and long term protection. This can be split into three objectives:

1. Identifying wet woodland for education - Establish a database of wet woodland sites to be used for educational purposes.
2. Awareness of wet woodlands - To produce positive information for general distribution in communities close to wet woodland and beyond in order to raise awareness and generate enthusiasm for long term protection.
3. Experiencing the wonders of wet woodlands - To increase opportunities for first hand experience of and involvement in wet woodland habitats in order to raise awareness and generate enthusiasm for long term protection.

7. Objectives and Targets for Wet Woodlands

The extensive work that has gone on over several years that has led to this strategy document and to the various outputs listed in Chapter 9 has resulted in the production of a wet woodland Local Biodiversity Action Plan with the following objectives and targets:

Objectives

- Ensure that all spring fed woodlands are maintained in a good condition
- Encourage the creation of new wet woodland
- Conserve and enhance wet woodland throughout Bedfordshire
- Maintain the present condition of all the wet woodland and thereby ensure that none of the existing resource deteriorates any further.
- Encourage the production and the implementation of management plans for wet woodlands
- Encourage a broader understanding of the opportunities afforded by the wet woodland habitat for education and conservation
- Support and seek opportunities for wet woodland creation as part of mineral and other developments in the county

Targets

- Monitor all spring fed wet woodlands every two years. Where these occur on SSSIs, Natural England will monitor condition through the cycle of the six year Condition Assessment programme, with more frequent monitoring possible through the Wet Woodland group, with landowner permission.
- Create by natural colonisation or planting at least 10ha of wet woodland by 2010
- Bring 40ha of wet woodland into positive management by 2010
- Ensure that there is no reduction in the area of wet woodland in the county



8. References

Forestry Commission (1997) Woodland Creation: Needs and Opportunities in the English Countryside. Forestry Commission/Countryside Commission.

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JNCC (2004) Wet Woodland Habitat Action Plan from: UK Biodiversity Group Tranche 2 Action Plans - Volume II: Terrestrial and freshwater habitats (December 1998, Tranche 2, Vol II, p69)

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N Mott (2006) Managing Woody Debris in Rivers and Streams : Staffordshire Wildlife Trust UK, UK

Rodwell (ed) 1991 British Plant Communities Volume 1 Woodlands and Scrub

Wildlife Trusts Water Policy Team (2001) Wet Woodland in Wildlife Trusts Wetland Restoration Manual Version 1

9. Appendices

The following appendices are available on a CD and as far as possible on the internet site www.bedslife.org

- Wet Woodland Education Strategy
- Woodland Site Register dated May 2007
- Wet Woodland Invertebrate Survey Report
- Bedfordshire Otter Survey Report
- Wet Woodland Management Plans
- Flit Valley Habitat Creation Proposals
- Wet Woodland Leaflet
- The Wet Woodlands Habitat Action Plan