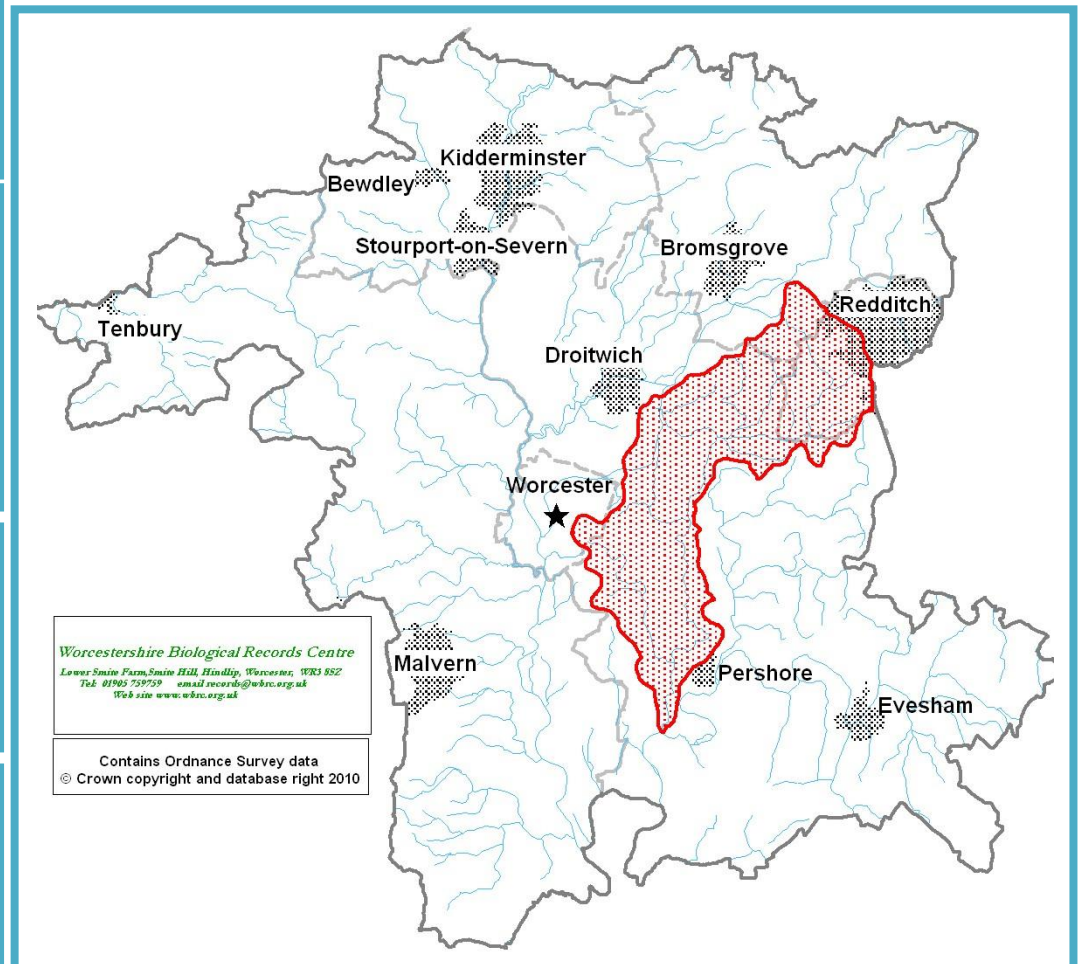


The Biodiversity Delivery Areas were agreed by the Worcestershire Biodiversity Partnership in 2009 revised and endorsed by the Local Nature Partnership in 2016 to indicate, spatially and strategically, where according to current knowledge and resource, priority areas for the delivery of the Worcestershire Biodiversity Action Plan.



## Why is the Bow Brook a biodiversity priority?

The Bow catchment was once dominated by wet pasture meadows and extensive areas of marshland, supporting breeding snipe, redshank and marsh warbler. Habitat fragmentation, begun post-WWII by drainage, the conversion of land to arable use and the ongoing intensive management of grassland, has led to an overall decline in biodiversity value whilst presenting wide-spread opportunities for restoration. Diffuse and point source pollution from agricultural and urban sources is also a significant issue for parts of the watercourse today. The Bow has been identified by the Environment Agency as failing to meet 'good ecological status' as required by the Water Framework Directive. Urgent action is needed to address this failure.

## Bow Brook: meeting the local criteria for a Biodiversity Delivery Area

<p>Delivering Local Biodiversity Action Plan targets</p> <p>.. ability to deliver significantly towards achieving the targets and actions for multiple BAP habitats and species</p>	<p>Priority LBAP habitats: rivers and streams; fen and marsh; wet grassland; lowland meadows; wet woodland; wood pasture, parkland and veteran trees; ancient/species-rich hedgerows; traditional orchards</p> <p>Priority LBAP species: arable flora; brown hairstreak; farmland birds; water vole</p>
<p>Addressing socio-economic factors</p> <p>.. links to delivery of health, tourism, economic, rural regeneration, flood alleviation or other sector agenda</p>	<p>Addressing diffuse and point source pollution results in cost-saving further down the water treatment and supply chain; the brook and catchment area have the potential to be a significant resource for community recreation and a key element of 'sense of place'</p>
<p>Practical delivery opportunities</p> <p>.. landowner and community support, projects already in preparation or existence, delivery partnership identified</p>	<p>A strong partnership is emerging for taking delivery forward; project partners are forging positive links with landowners through training and workshop events</p>
<p>Availability of resources</p> <p>.. policy or legislative drivers, existing funding streams, commitment of time and resources from partners</p>	<p>English Woodland Grant Scheme focus on woodland creation; Higher Level Stewardship targeting for Grafton and Severn and Avon Vales; opportunity to focus on Bow Brook for delivery of Water Framework Directive objectives; the Bow Brook is situated within the Wye, Severn and Avon Vales Integrated Biodiversity Delivery Area</p>

### What needs to be achieved within this Biodiversity Delivery Area?

<ul style="list-style-type: none"> <li>Establish and maintain an effective delivery partnership for the Bow Brook project with multi-sector representation and community and landowner involvement</li> </ul>	<p>Meeting objectives for:</p> <p>Partnership working ✓</p>
<ul style="list-style-type: none"> <li>Incorporate adaptation for climate change into project planning to increase the ecological resilience of habitats and species within the brook catchment</li> </ul>	<p>Climate change adaptation ✓</p>
<ul style="list-style-type: none"> <li>Restore habitat functionality and connectivity of this floodplain grassland ecosystem by securing funding for management, restoration and creation of lowland meadows, hedgerows, ancient semi-natural woodland, wet grassland, fen and marsh, traditional orchards, arable plants</li> </ul>	<p>Biodiversity ✓</p> <p>Economy ✓</p> <p>Green infrastructure ✓</p>
<ul style="list-style-type: none"> <li>Demonstrate cost effective delivery of Water Framework Directive objectives, with a focus on promoting adoption of good farming practices to reduce diffuse pollution and working with partners to address point source pollution issues</li> </ul>	<p>Biodiversity ✓</p> <p>Economy ✓</p>
<ul style="list-style-type: none"> <li>Stimulate and support grassland restoration and management through grazing animal schemes, landowner co-operatives and the provision of training to increase skills in habitat management, surveying and monitoring</li> </ul>	<p>Biodiversity ✓</p> <p>Community ✓</p> <p>Economy ✓</p>
<ul style="list-style-type: none"> <li>Manage and promote key nature reserves or appropriate Local Sites as 'flagships' to demonstrate best practice to other landowners and encourage recreation and volunteering</li> </ul>	<p>Access &amp; recreation ✓</p> <p>Biodiversity ✓</p> <p>Health ✓</p>
<ul style="list-style-type: none"> <li>Secure funding for restoration and management of strategic sites such as the Redditch settling ponds and small sites ineligible for Higher Level Stewardship</li> </ul>	<p>Biodiversity ✓</p> <p>Economy ✓</p>
<ul style="list-style-type: none"> <li>Secure ongoing funding for a project officer post to deliver advice, training and engagement activities for landowners, communities and volunteers</li> </ul>	<p>Community ✓</p> <p>Economy ✓</p>

BAP Targets for key habitats within the Bow Brook Biodiversity Delivery Area		Target Type	Worcestershire Habitat Targets 2017	West Mids Habitat Targets 2015	Proportion of West Mids target to be delivered in Worcs
Fen and Marsh	Feckenham Wylde Moor nature reserve remains as the last fragment within the Bow Brook catchment of a once much more extensive area of marsh.	Maintain extent	112ha	250ha	44%
		Restore	8ha	38ha	15%
		Create	0	0	n/a
Lowland wet grassland	Much of the historic wet grassland resource within the floodplain has been subject to drainage and agricultural improvement. Huge potential exists for restoration.	Maintain extent	860ha	7342ha	11%
		Restore	112ha	800ha	9%
		Create	22ha	100ha	15%
Rivers and streams	The Bow Brook is a significant tributary of the River Avon.	Maintain extent	2007km	12500km	16%
		Restore	10km	63km	11%
		Create	0	0	n/a
Neutral grassland (lowland meadow)	Found throughout the area as small scattered and isolated fragments. A number of sites are in conservation ownership. Resource includes the Eades Meadow and Foster's Green NNR.	Maintain extent	1225ha	2926ha	41%
		Restore	300ha	469ha	45%
		Create	66ha	202ha	23%
Wet woodland	Areas of wet woodland are frequent along parts of the brook.	Maintain extent	224ha	Included in Woodland target	
		Restore	112ha		
		Create	5ha		
Wood pasture, parkland and veteran trees	Veteran trees, including hedgerow trees, streamside trees and in-field trees, are found scattered throughout the area.	Maintain extent	25 sites	Unknown	n/a
		Restore	4 sites	25 sites	15%
		Create	1 site	15 sites	6%
Hedgerows	Strong hedgerow networks provide priority habitat for key species including brown hairstreak butterfly.	Maintain extent	1543km	No net loss	n/a
		Restore	20km	49km	29%
		Create	5km	99km	3%
Traditional orchards	Found throughout the area with a concentration in the south. Many sites are now small and fragmented. A number of Worcestershire orchards support noble chafer populations.	Maintain extent	2300ha	8224ha	27%
		Restore	87ha	157ha	39%
		Create	120ha	232ha	37%

## Contributing projects

Worcestershire Wildlife Trust Living Landscapes project which includes the Forest of Feckenham, with the Bow Brook catchment within it.

Worcestershire Wildlife Trust Bow Brook project, funded by the Environment Agency and working in partnership with University of Worcester has delivered enhancements to 5.5km of the Bow Brook, including 3.9ha of arable grassland, 14725m<sup>2</sup> of wetland habitat creation, diffuse pollution remediation in 8 locations and 6 fish habitat schemes.

Promotion of traditional orchard management and restoration through a small grant project funded through Natural England and promoted by Worcestershire County Council.

The Grafton Higher Level Stewardship target area extends into the central part of the Bow Brook catchment. The Severn and Avon Vales Higher Level Stewardship target area extends up into the southern part of the Bow Brook catchment.

Butterfly Conservation brown hairstreak project - 'Hedgerows for Hairstreaks: conserving the Brown Hairstreak at a landscape level'.

Restoration of the parkland and veteran trees at Hanbury Hall by National Trust.

Love Your River, Bromsgrove, funded by The Environment Agency and delivered by Worcestershire Wildlife Trust, improving water quality in the Battlefield and Spadesbourne Brooks, tributaries of the Bow Brook.

## Taking a multi-sector approach: linking biodiversity to other agendas

Access and recreation	Significant opportunities to promote access to sites in the brook catchment for recreational purposes using the existing Rights of Way network and nature reserves. Desire to increase community's perceived value of the brook and its catchment and its role in sense of place.
Biodiversity	Significant potential to deliver county Biodiversity Action Plan targets for fen and marsh, wet grassland, lowland meadow, wet woodland and hedgerows and for farmland and wet grassland birds, brown hairstreak, arable flora and water voles.
Climate change adaptation	Habitat creation and restoration will increase habitat connectivity and buffering of key sites and facilitate species movements.
Community	Opportunities for direct community involvement in managing sites along the brook, contributing to species recording and taking part in organised events and volunteering activity. Worcestershire Wildlife Trust,

	Worcestershire County Council and Wychavon District Council all offer a range of volunteering opportunities on their sites, including habitat management, walks and talks to raise awareness of the importance of this habitat.
Economy	Habitat restoration will contribute to flood management and help to reduce damage to property along the brook. Improving water quality will reduce costs associated with water treatment.
Green Infrastructure	The Feckenham wetlands, falling within the Bow Brook BDA, have been identified as being of Very High GI value. The county GI strategy can help deliver habitat enhancement that re-connects the urban centres and urban fringe with the countryside, particularly to the south west of Redditch, and which restores functionality to the ancient wetlands.
Health	Activity to promote access to the countryside and volunteering can make a major contribution to the health and well being agenda.
Partnership working	A broad and inclusive partnership must be established and maintained to deliver the multi-sector priorities identified for this area. Gaining involvement from community interest groups and landowners to steer project delivery needs to be addressed urgently.

## Integrating habitat and species needs

Key Worcestershire LBAP species whose needs must be integrated into habitat management and conservation within the Bow Brook Biodiversity Delivery Area are:

- Arable flora: this part of Worcestershire is important for its arable flora communities. Habitat restoration and creation undertaken must consider the survival and expansion of important arable plant populations.
- Brown hairstreak: hedgerow and woodland management, restoration and creation within the area must have the conservation of brown hairstreak and expansion of its range as a core objective. Establishment and management of hedgerow trees, particularly ash, should also be carried out in such a way as to benefit the species.
- Farmland birds: the variety and type of habitats present with the area has the potential to benefit species using both arable field margins, hedgerows and cropped habitats and also species using wet grassland habitats.
- Water vole: habitat restoration and creation to benefit the species should be considered in any bankside and channel management works on both the Bow and the Worcester and Birmingham canal. Mink control must be carried out in conjunction with any habitat improvement or re-introduction project.



## Further sources of information

Earth Heritage Trust [www.earthheritagetrust.org](http://www.earthheritagetrust.org)

Worcestershire Biodiversity Action Plan [www.worcestershire.gov.uk/biodiversity](http://www.worcestershire.gov.uk/biodiversity)

Worcestershire Landscape Character Assessment [www.worcestershire.gov.uk/landscape](http://www.worcestershire.gov.uk/landscape)

Worcestershire Biological Records Centre [www.wbrc.org.uk](http://www.wbrc.org.uk)

Worcestershire Habitat Inventory - see Worcestershire Biological Records Centre

Worcestershire Historic Environment Record [www.worcestershire.gov.uk/archaeology](http://www.worcestershire.gov.uk/archaeology)

Severn and Avon Vales National Character Area objectives [www.naturalengland.org.uk](http://www.naturalengland.org.uk)