# Wallingford's Biodiversity Action Plan





December 2024

#### **Overview**

Biodiversity or biological diversity is the variety and variability of life on Earth from bacteria and microscopic fungi in soils to whales and giant redwood trees. Biodiversity underpins the ecosystem services that make our planet fit to inhabit and delivers much of our quality of life. Access to nature improves our health and well-being. WWF's global living planet index of biodiversity shows a decline by 69% in the past 50 years, so the United Nations has designated 2021-2030 as the International Decade on Ecosystem Restoration. This is not just about the Amazon rainforest or Great Barrier Reef but every local park or town square. England is one of the most nature-depleted countries in the world with 1 in 6 species (that are monitored) at risk of extinction due to fragmentation and loss of habitats. The UK government has committed to biodiversity recovery as part of the 25 year Environment Plan of 2018. This should be in green spaces (such as parks and gardens, woodlands, arable and pasture land), in blue spaces (rivers and ponds) and in grey spaces (town squares that have pots, planters and beds).

The Environment Act 2021 requires Wallingford Town Council to consider what it can do to conserve and enhance biodiversity and more specifically to produce an action plan containing policies and specific objectives to conserve and enhance biodiversity. This plan should cover actions that the Council will take itself and its support for the actions by other Councils, community groups, businesses and organisations in the town. Any actions in the town should link with broader initiatives, such as the Local Nature Recovery Strategy being formulated by Oxfordshire County Council taking the Ecosystem Approach adopted by the Convention on Biological Diversity. This Plan provides actions produced by following the four steps to nature recovery proposed by Wild Oxfordshire: (1) discover what's in your area; (2) protect the most value areas; (3) create and connect habitats; (4) manage areas to maintain and enhance biodiversity.

Wallingford is in the Local Character Assessment Area 4: River Thames Corridor. The town is sited on the Thames floodplain, fairly flat land on river gravel terraces a few metres above river level. This setting dominates the ecosystem that is likely to have existed historically with oak and beech woodland on higher ground, willow and alder in wetter areas and some grassland wet meadows, reedbeds and marsh, plus freshwater habitats of the Thames and its tributaries. Significant alteration of the area probably started with forest clearance during the neolithic period, up to 6500 years ago. Significant management of our environment has increased ever since.

Wallingford is a classic English market town, founded in the 9th century, and was the site of a large medieval castle. The old town is laid-out on a Saxon grid, a burh with embankments and moats, now designated as a Conservation Area. The moats were supplied with water from the Mill Brook. Wallingford has 9.4 ha of green space (2% of the parish) including parks, gardens, allotments, cemeteries and other amenity sites. These spaces have multiple purposes, including sport, recreation, visual attraction, livestock grazing and historical conservation; much of the green space is Scheduled Monument for which management is highly prescribed. Some residents prefer traditional management, such as mown grass and annual flowers and object to some plant species, such as nettles.

Green spaces within the town are owned and/or managed by a variety of governmental bodies (Town, District and County Councils), non-governmental organisation (e.g. wildlife groups) and private bodies or individuals (e.g. care homes, Cholsey & Wallingford Railway, Wallingford Sports Trust). Wallingford Town Council only has direct control over limited areas so collaboration with others is essential to deliver significant increases in biodiversity.

Most nature spaces in Wallingford are designated as Local Green Spaces but are separate from each other and lack connectivity required by some species. The Neighbourhood Plan<sup>1</sup> proposes the creation of a Green Network of existing and new green corridors to improve connectivity between Local Green Spaces, informal and formal public amenity areas and the countryside beyond Wallingford. Other effective actions include, for example, planting hedgerows, enhancing roadside verges, and making holes in garden fences in residential areas to allow hedgehog movement.

The largest publicly accessible green space is the Castle Meadows managed as traditional hay meadows by cattle grazing. The site is already rich in wildlife, supporting wildflowers, butterflies, birds (e.g. little owl) and mammals (e.g. water vole and otter) and has Green Flag and Green Heritage Site accreditation. Actions planned to increase biodiversity include planting trees and undergrowth and adding deadwood piles.

The Castle Gardens were part of the castle grounds and contain the Motte. The area was landscaped as a Victorian garden and a large house was built in 1840. The Gardens are now managed for quiet recreation with areas of mown grass and specimen trees. The site of the house is now a wildflower area in which 78 species were recorded in 2023. New shrubs are being planted to increase biodiversity and hazel trees coppiced. Plans are in place to use goats to clear undergrowth on the Motte.

The next largest green spaces are the Kine Croft (also known as the Kinecroft<sup>2</sup>) and Bull Croft, which are Scheduled Monuments containing remnants of the Saxon fortifications (embankments and moats). These are largely mown grass areas with a few individual trees to maintain a vista of the monuments and to support recreation and fairs. Land management restrictions present a challenge for wildlife but areas of wildflowers, lowmow, allowing plants such as nettles to grow, are increasing biodiversity.

A large green space to the southwest of the town is home to Wallingford Sports Park, owned by Wallingford Sports Trust that provides a range of sports including tennis, hockey, football and rugby for which there are grass and astroturf areas rent.

Smaller green spaces exist around the town. Those at Radnor and Wilding Roads have been designated Local Green Spaces and have become community orchards, have areas of low mowing and have been planted with hedge rows. The space between Glyn

<sup>&</sup>lt;sup>1</sup> https://www.southoxon.gov.uk/wp-content/uploads/sites/2/2021/07/Wallingford-NP-Adopted-Version-160721.pdf

<sup>&</sup>lt;sup>2</sup> The land was registered in 1972 as the 'Kine Croft' under Commons Registration Act 1965. Historically it was known as the 'Canecroft' and 'Kenny Croft' and is currently also known as the 'Kinecroft'.

Road and Shillingford Road has plan to replace cherry trees, plant bulbs and implement a low mow regime. A biodiversity garden in St Georges Road includes a pond, wildflower meadow, hedging and beds for cultivation.

Small, formal and informal gardens occur around the town, such as the Senses Garden, Rest Garden, Market Place and Cattle Market. Plans for biodiversity increase include more pollinator-friendly perennial plants, small trees, shrubs and bug hotels.

Wallingford has two allotments areas: Fir Tree and Highcroft. Most are individually managed but some are community spaces, such as at Wallingford Public Library. Additional community allotments are planned in the new Winterbrook Meadows development.

Several road junctions in Wallingford have small green spaces. Plans are developing to re-vitalise those on Sinodun/Andrew Road, Sinodun/St Nicholas Road. Trees on road verges have been mapped and new planting is being planned.

The River Thames is the major freshwater habitat in Wallingford. Water quality has generally improved over past decades and an application has been made to designate the Thames at Wallingford beach as a bathing water, which could help further.

The Mill Brook, which flows into the Thames at Wallingford via its distributary, Bradford's Brook, has some pollution issues from storm sewer overflows. Surveys in 2016 identified otter and water vole, but also mink. The Mill Brook formerly brought water to the moats and mills in the town. Plans are being developed to address water quality, shading and physical habitat issues to restore biodiversity in the Mill Brook, demonstrating the strong link between heritage and environment.

Pond creation is being encouraged in the allotments and the Castle Gardens.

Perhaps the greatest opportunity for biodiversity increase is on the two new housing developments (Highcroft and Winterbrook Meadows). They aim to achieve a biodiversity net gain of at least 10%, which is equivalent to a 1% increase in biodiversity for the town as a whole. So far more than 8000 trees have been planted and some other wildlife enhancements installed, such as swift boxes.

The town has no officially designated sites for nature conservation that offer legal protection<sup>3</sup>. The Neighbourhood Plan includes an Oxfordshire Conservation Target Area (a Biodiversity Opportunity Area within Oxfordshire's Ecological Network) on the Thames floodplain in the south of Wallingford, This area could be restored to a floodplain grazing marsh and designated as a Local Nature Reserve; it would provide connectivity to floodplain habitats downstream in Cholsey and Goring.

<sup>&</sup>lt;sup>3</sup> National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA), Ramsar sites, Special Areas of Conservation (SAC)

The Oxfordshire Local Nature Recovery Strategies is identifying biodiversity priorities and a local habitat map that identifies opportunities for recovering or enhancing biodiversity that can help with future plans and proposals for Wallingford. These could be on agricultural land within or adjacent to Wallingford Parish. Opportunities to work with landowners/managers on biodiversity-sensitive farming should be identified.

Many of the nature spaces in Wallingford are separate or have limited connectivity. Enhancing and creating corridors and linking habitats to establish ecological networks is a future priority for achieving additional biodiversity recovery.

Awareness raising, education, training and offering community and volunteer activities are all vital parts of enhancing knowledge of biodiversity, so that everyone understands the purpose of actions and hopefully joins-in to further improve all our well-beings.

In 2012, South Oxfordshire District Council recognised the poor air quality in parts of Wallingford and installed an air quality monitoring system in the High Street. In 2020, Wallingford Town declared a climate emergency in response to the UK government's declaration and commitment to net zero carbon emissions by 2050 to avoid the worst effects of climate change. In July 2024 signed-up to the 'Heritage Declares' initiative that integrates environmental conservation and the conservation of historic assets. The 'Vision for Wallingford' requires the town "to enhance and protect our outdoor spaces through sustainable practices and environment-led strategies". The 2024 Neighbourhood Plan has an action to enable and encourage new appropriate tree and hedgerow planting. Achieving these commitments and addressing climate change, air quality and degraded habitats require a set of actions to recover and enhance biodiversity.

# Summary of actions

Торіс	Action	Target areas
Trees	Plant new trees	Castle meadows, High Croft and
		Winterbrook Meadows developments,
		Market Place, Feathers Yard
	Re-plant trees	Kine Croft
	Coppice hazel	Castle Gardens
Grassland	Implement low mow	Road verges, Kine Croft
	Reduce undergrowth	Castle motte
	Retore floodplain meadow	CTA Thames floodplain, south of
		Wallingford
Watercourses	Designate as bathing area.	River Thames at Wallingford bridge
	Reconnect reaches, restore	Mill Brook
	channel form and reduce	
	shading	
Ponds	Create new ponds	Allotments, Castle Gardens
	Enhance existing ponds	Castle Meadows
Flowers and shrubs	Plant perennials	Market Place, Rest garden, Senses garden,
		Тасо
Mammals	Remove American mink	River Thames, Bradford's Brook and Mill
		Brook
	Create hedgehog corridors	Highcroft and Winterbrook Meadows
		developments
Birds	Install swift boxes	Highcroft and Winterbrook Meadows
		developments
Invertebrates	Install bug hotels	Senses garden, library garden, Taco
Monitoring	Undertake additional	All areas
	biodiversity monitoring	
Connectivity	Identify opportunities to	With Wallingford and with neighbouring
	connect habitats	parishes.
Agricultural land	Identify opportunities for	Agricultural land in and around Wallingford
	biodiversity friendly farming	
Awareness raising	Put-up signage	All areas
Education	Offer schools locations in	Throughout Wallingford
	for wildlife education	
Talks and training	Support further talks and	Wallingford Town Hall
-	training course on wildlife	_
Wildlife tours	Support guided wildlife tour	Wallingford's parks and gardens
Volunteering	Encourage volunteers	Throughout Wallingford
Community activities	Establish further community	Winterbrook Meadows
-	allotments	

## Acknowledgements

This Biodiversity Action Plan was compiled by Councillor Professor Mike Acreman. The following organisations and individuals were consulted and provided advice or input to the Plan.

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# Contents

0	verviev	vii	
Sı	ummar	y of actions vi	
A	cknowl	edgementsvii	
1.	Bac	kground1	
2.	. Introduction		
	2.1	Wallingford2	
2.2		The need for a Biodiversity Action Plan3	
	2.3	How the action plan was produced4	
	2.4	Who is the action plan for?4	
3.	Lan	d owned by Wallingford Town Council and the Bull Croft Trust5	
	3.1	Castle Gardens5	
	3.2	Kine Croft6	
	3.3	Bull Croft (Bull Croft Trust)7	
	3.4	Rest Garden9	
	3.5	Senses Garden9	
	3.6	Market Place	
	3.7	St Leonard's Square roundabout10	
	3.8	St Johns Green	
	3.9	Castle Street, 'the Hotdog' 11	
	3.10	Fir Tree and Highcroft allotments 11	
	3.11	Moorings12	
4.	Lan	d owned by South Oxfordshire District Council	
	4.1	Castle meadows	
	4.2	River Thames beach area	
	4.3	Radnor Road Local Green Space14	
	4.4	Wilding Road Local Green Space15	
	4.5	Wallingford Sports Park	
	4.6	Cemetries	
	4.7	Cattle Market car park	
5.	Lan	d owned by Oxfordshire County Council	
	5.1	Wallingford Public Library17	
	5.2	Road verges	
	5.3	Land adjacent to Millington Road	
	5.4	Land at junction of Wantage Road and Sinodun Road, the 'Taco'	

Ę	5.5	Land at junction of High Street and Croft Road	19
6.	Lan	d owned by the National Health Service	19
7. Land		d owned by community groups	20
-	7.1	Ayres House	20
7	7.2	Housing estate public areas	20
-	7.3	Wigod Family Centre	21
8. Land owned by private organisations			21
8	8.1	Land owned by Cholsey & Wallingford Railway	22
8	8.2	Land owned by South Oxfordshire Housing Association (SOHA)	22
8	8.3	Land on the Thames floodplain	23
8	8.4	Wallingford School (Merchant Taylor Trust)	24
9.	Lan	d under housing development	25
ę	9.1	Highcroft	25
ę	9.2	Winterbrook Meadows	26
10.	. V	Vaterways	26
-	10.1	River Thames	26
-	10.2	Mill Brook and Bradford's Brook	28
11.	. A	wareness raising and knowledge building	28
-	11.1	Monitoring and surveys	29
-	11.2	Signage and information boards	29
-	11.3	Education	30
-	11.4	Talks and training courses	30
-	11.5	Walking tours	30
-	11.6	Volunteering	31
-	11.7	Community activities	31
12.	. F	uture priorities	32
-	12.1	Improve the quality of current sites by better management for nature	32
-	12.2	Increase the size of current wildlife sites	32
-	12.3	Enhance connections between nature sites	33
-	12.4	Create new nature sites	33
-	12.5	Reduce the pressures on wildlife by improving the wider environment	33
-	12.6	Improve knowledge and understanding	34
13. Local plans and strategies			
	13.1	Wallingford Neighbourhood Plan	34
	13.2	Local Climate Emergency Plan	35

13.3	Oxfordshire Local Nature Recovery Strategy
13.4	South Oxfordshire Green Infrastructure Strategy
13.5	Oxfordshire County Council Nature Recovery Strategy
13.6	Nature Recovery Networks
14.	Specialist groups related to biodiversity working in and around Wallingford . 38
14.1	Oxfordshire Local Nature Partnership
14.2	Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) 38
14.3	Wild Oxfordshire
14.4	Community Action Groups Oxfordshire
14.5	South Chilterns Catchment Partnership
14.6	Wild about Wallingford
14.7	Wallingford Allotments and Gardens Society
14.8	Tree Working Group40
14.9	Thames Valley Environmental Record Centre
14.10	D Hogs Haven
14.1 <sup>-</sup>	1 OX10
14.12	2 Earth Trust
14.13	3 Wallingford Green Gym
14.14	4 Thames 21 41
14.1	5 Trust for Oxfordshire's Environment (TOE)
14.10	6 Royal Horticultural Society
15.	References
16.	Annex of maps of green spaces in Wallingford

#### 1. Background

Biodiversity or biological diversity is the variety and variability of life on Earth from bacteria and microscopic fungi in soils to whales and giant redwood trees. Biodiversity under pins the ecosystem services that make our planet fit to inhabit and delivers much of our quality of life (Acreman, 2001; Mace et al., 2012). The World Health Organization has demonstrated the benefits of access to blue and green spaces, particularly in urban areas, for our physical and mental health and well-being including physical health (WHO, 2023). First used in 1916, adopted by UNEP in 1988, the term biodiversity now synonymous with wildlife or species. Biodiversity is measured at various scale; genetic, species and ecosystem level. "I saw six types of bird in my garden" is a measure of species diversity. Genetic diversity is important to maintain a sufficient gene pool to sustain viable populations, which can be expressed as a minimum number of individuals. The "50/500 rule" is an often-used benchmark for a minimum viable population, where a population needs 50 individuals to prevent inbreeding depression, and 500 individuals to guard against genetic drift at-large, though this is not applicable to all taxa (Frankham et al., 2014). Ecosystem biodiversity is vital with a mix of habitats and landscape types, such as hills, woodlands, grassland, rivers and wetlands, to support a wide range of species with sufficient populations.

The number of species on Earth was estimated at 8.7 million (Sweetlove, 2011). Coleoptera (beetles) is the largest of all orders, with 400,000 species constituting 25% of all known animals. However, the WWF living planet index of biodiversity shows a decline by 69% in the past 50 years (Westveer et al., 2022). England is widely considered to be one of the most nature-depleted countries in the world following historic and ongoing declines. Some 1 in 6 species (that are monitored) in England are at risk of extinction. Around 97% of species-rich semi-natural grasslands were lost in England and Wales between 1930s and 1980s, although Oxfordshire still has some of the rarest and finest grasslands in the country. Generally, Oxfordshire's rivers are much cleaner than they were 30 years ago, and targeted action has helped the recovery of local populations of threatened species, such as water vole and otter. However, over 90% of our waterways are only at best in "moderate ecological status" as defined by the Water Frameworks Directive. Long term declines in farmland and woodland biodiversity continue in Oxfordshire with some associated species at serious risk of extinction, such as the turtle dove. The area of woodland recorded in the county over the last 30 years has increased, but between 1911 and 2016 over 80% of orchards disappeared (Wild Oxfordshire, 2017). Fragmentation and loss of connectivity of habitats is a major cause of biodiversity loss (Lawton, 2010); woodlands in Oxfordshire have become fragmented with increases farm size and larger areas of developed land.

The need to halt the decline and to restore biodiversity is recognised worldwide; 2021-2030 is the United Nations' International Decade on Ecosystem Restoration (UNEP, 2021), in which we can all play a part. Between now and 2030, the aimed restoration of 350 million hectares of degraded terrestrial and aquatic ecosystems could generate US\$9 trillion in ecosystem services and restoration could also remove 13 to 26 gigatons of greenhouse gases from the atmosphere. Biodiversity recovery is not just about the Amazon rainforests or Great Barrier Reef, or about designated sites, such as nature reserves, but about action in every space from farmland to local park, town square or street corner. We need to consider all types of nature spaces: green spaces (such as parks, church yards and gardens), in blue spaces (rivers and ponds) and in grey spaces (own squares that have pots, planters and beds).

## 2. Introduction

#### 2.1 Wallingford

Wallingford is a quintessentially English market town, originally built by King Alfred in the 9th century and was the site of one England's strongest medieval castles. There are 4 Scheduled Monuments, 143 Listed buildings and many others designated as Buildings of Local Interest. The whole of the old town, laid out on a Saxon grid, is a Conservation Area. Wallingford Town Council (WTC) has responsibility for managing various open spaces in the parish including parks, gardens, allotments, cemeteries and other amenity sites within the town some of which are sited within and around Scheduled Monuments, but many of which are designated Local Green Spaces in the Neighbourhood Plan.

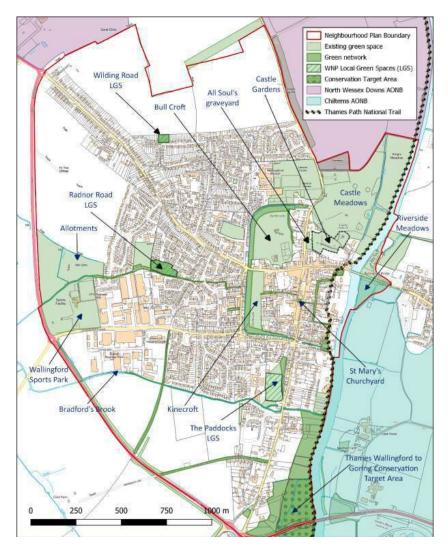


Figure 1. Green and blue spaces in Wallingford (from Neighbourhood Plan, 2021)

The principal green spaces in and around Wallingford are shown in Figure 1 (from Neighbourhood Plan Review, 2024). These spaces are multi-purposes, including sport, recreation, visual attraction (as judge by residents and visitors) and historic preservation. The challenge is how to increase biodiversity whilst meeting these aims. Figure 1 also shows blue spaces; the River Thames, Bradford's Brook and Mill Brook.

Wallingford has many residents and visitors who are passionate about wildlife and want to learn more, or are already experts in various environmental fields. Some wish to get help implement actions or just feel part of a community that cares about our biodiversity. Others would appreciate improved understanding of why biodiversity actions are needed and what form they take.

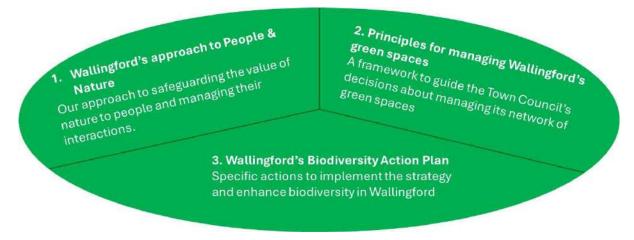
#### 2.2 The need for a Biodiversity Action Plan

The Environment Act 2021 requires Wallingford Town Council to consider what it can do to conserve and enhance biodiversity and more specifically to produce an action plan containing policies and specific objectives to conserve and enhance biodiversity. This plan should cove actions that the Council will take itself and its support for the actions by others. Any actions in the town should link with broader initiatives, such as the Local Nature Recovery Strategy being formulated by Oxfordshire County Council.

Government guidance of 17 May 2023 states that that the Council must:

- review what biodiversity (or nature) recovery plans are already in place
- make contact with local voluntary nature groups
- carry-out biodiversity audits of council land
- gathering expert advice on possible actions in support of biodiversity

Through current and future proposed actions, Wallingford Town Council is already meeting these requirements. This document draws these activities together into a plan.



#### Figure 2. Strategy for nature in Wallingford

Wallingford Town Council has developed a *Strategy for Nature* that recognises the importance of good green and green infrastructure in keeping Wallingford a great place to live as it grows. The Strategy for Nature has three elements: an Approach to people

and nature, a Framework of Principles for managing nature spaces and this complementary Biodiversity Action Plan.

#### 2.3 How the action plan was produced

This Biodiversity Action Plan was produced following the 2023 Government guidance and Wild Oxfordshire's (2024) Community Town and Parish Guide to Nature Recovery, which recommends four steps: (1) discover what's in your area; (2) protect the most value areas; (3) create new habitats for wildlife; and (4) manage areas to maintain and enhance biodiversity. It takes the Ecosystem Approach (Maltby *et al.*, 1999) adopted by the UN Convention on Biological Diversity <u>https://www.cbd.int/</u>.

The first step was to collate and review nature spaces occurring in Wallingford and the biodiversity (or nature) plans already in place to protect or enhance them or to create new spaces. An inventory of nature spaces (green, e.g. parks; blue e.g. River Thames; grey e.g. Market Place,) was produced and categorised according to ownership both public (Town, District and County Councils) and private (e.g. South Oxfordshire Housing Association, Cholsey & Wallingford Railway). These are presented in sections 3-10 below. However, it does not include private gardens and farmland, which are very important for biodiversity. Where available, proposed actions that influence biodiversity were captured and are provided. Awareness raising and knowledge building are covered in Section 11. Future priority actions are suggested in Section 12. Strategies at District and County scale that can guide our Plan our described in Section 13. Many of the nature spaces are managed by local nature groups many using voluntary labour, so they were all contacted to gather their aims and actions. These are listed in Acknowledgements section. Also where available, results of biological surveys were assembled. Finally, advice from experts was sought on actions in support of biodiversity.

The above approach can be considered as bottom-up, starting with individual spaces that require assimilation to produce an integrated action plan. Wallingford has detailed knowledge of its environment to support this method. A complementary approach is top-down where broad-scale data and maps and strategies, such as the Neighbourhood Plan and Oxfordshire Local Nature Recovery Strategy, provide the overall picture and actions are developed to fill gaps or produce greater synergy. This is important to produce connectivity between habitats. Details of strategic approaches are given in Section 11. The long-term aim of the Plan is to create an Ecological Network that links spaces, such that the whole is more than a sum of its parts.

#### 2.4 Who is the action plan for?

The Plan is intended to support all organisations, specialist and nonspecialist, statutory, commercial, and voluntary, whose endorsement and support are essential to enhance our environment through increases in biodiversity. The Plan is also intended to be of general interest to Wallingford residents and visitors who want to understand how organisations in the Town are restoring and enhancing nature.

# 3. Land owned by Wallingford Town Council and the Bull Croft Trust

Wallingford Town Council owns parks, gardens, allotments and open spaces throughout the town, which it manages with a dedicated team. These spaces are a vital resource for its residents and are used for a variety of informal and formal recreational purposes as indicated in the Council's *Approach to People and Nature* e.g. walking, dog walking, running, creative play, sports, enjoyment of wildlife, growing food and relaxation. They are therefore of prime importance for the population's mental and physical health and contribute to reducing poor health. Enhancing biodiversity as one of the multiple benefits of nature spaces underpinning the Council's *Strategy for Nature*. The Council's parks team grows plants for borders, hanging baskets and other displays throughout the Town using water harvested from the Council's yard. Where possible, the use of chemicals and pesticides will be avoided, except where essential such as chemical treatment of plants are a threat to human health e.g. Giant Hogweed.



Figure 3. Plant nursery in the Council's yard

In 2023 Wallingford Town Council entered the RHS Britain in Bloom competition and was awarded 'Silver' in the town category, as well as winning the regional award for 'Community Involvement'. <u>https://www.wallingfordtowncouncil.gov.uk/</u>

#### 3.1 Castle Gardens

The Castle Gardens are part of the Wallingford castle lands. They were purchased by Sir John Hedges, who built a large house on the site in 1840 and the surrounding area was landscaped as a Victorian garden. The house became dilapidated and was demolished in 1972. The descendants of the Hedges family gifted the grounds to Wallingford Town Council in 1977, enabling them to be used as a quiet public amenity.

Much of the site is mown grass with large specimen trees, but new shrubs are planted every year. An avenue of cherry trees is to be enhanced. The site of the house is managed as a wildflower meadow, in which 78 species have been recorded in 2023 and added to the Thames Valley Environmental Records Centre database, including the pyramidal orchid (*Anacamptis pyramidalis*).



Figure 4. Castle Gardens



Figure 5. Castle Motte

The Castle Gardens also contains the remains of St Nicholas' chapel, which have been recently restored, and the Castle Motte, which has been closed to the public for 10 years due to erosion and is currently on Historic England's register of Scheduled Monuments 'at risk'. A management plan including use of goats to remove undergrowth is being prepared. The Gardens formerly included a concrete-lined pond and grotto, but the pond was drained in 2010. There are proposals to re-instate the pond.

Action for WTC. Continue to plant new trees and shrubs to enhance botanical diversity. Re-establish the cherry tree avenue. Coppice the hazel within St. Nicholas' chapel. Manage the Motte to enhance habitat diversity and re-establish public access. Create a new pond to provide an aquatic habitat for the Gardens.

#### 3.2 Kine Croft

The Kine Croft is an open area of about 3 hectares surrounded on the south and western sides by ancient Saxon earthworks that formed defensive fortifications of the town when it was an important Burh in the kingdom of Wessex. The Kine Croft is predominantly mown grass to facilitate family recreation, fairs and public events and afford a vista of the earthworks as required under its Scheduled Monument Status by Historic England.

The northern and eastern boundaries have lines of mature trees; two dead horse chestnut trees and one windblow Norway maple were felled in 2024 and replanting is being planned, which is subject to approval by South Oxfordshire District Council and

Historic England. Low mow areas have been designated under the trees along its eastern boundary. The Saxon embankments are also rich in cow parsley.

The earthworks are covered with trees and undergrowth. The trees represent a windthrow risk, where uprooting by strong winds might damage the earthworks. A landscape management plan for schedule monuments, including the Saxon town banks has been produced (Colvin & Moggridge, 2020). This recommends a range of actions, such as retaining mature trees (e.g. horse chestnut) but cutting and removing woody vegetation <=8 cm diameter from the banks.



Figure 6. Kine Croft (general vista with Agatha Christie statue)

The eastern boundary of the Kine Croft is maintained as a low mow area and has been seeded with wildflowers. Wild about Wallingford has raked the area.



Figure 7. Kine Croft Saxon fortification

Action for WTC. Continue with low mow areas and wildflower sowing. Replace feature trees. Establish a low mow zone under the canopies of feature tree to aid water retention for the trees.

#### 3.3 Bull Croft (Bull Croft Trust)

The Bull Croft is an open area within the town's Saxon defences and is a Scheduled Monument. During the Saxon period the Parish Church of the Holy Trinity stood in the southwestern part and became part of the new Wallingford Priory. When the Priory was torn down in 1525, the area was used for farming. The Bull Croft was gifted to the town in trust by Powyss Lybbe in 1912. The Town Council is the sole Trustee, which makes Councillors members of the Bull Croft Trust by default. The area is managed by Town Council team, so it is considered in this Plan as part of Town Council land.



Figure 8. Bull Croft (general vista)

The terms of the endowment require the Bull Croft to be a public park for recreation, so it is dominated by mown grass for recreation, including football pitches. This also affords uninterrupted views of the Saxon banks favoured by Historic England. There is also a children's play area and tennis courts. The mown grass area is used as football pitches by local teams. There are hard surface tennis courts and a children's play area.



Figure 9. Bull Croft bank and moat



Figure 10. Bull Croft north gate footpath

The earthworks are covered with trees and undergrowth for which a management plan is being developed. The trees represent a windthrow risk, where uprooting by strong winds might damage the earthworks (Colvin & Moggridge, 2020). A landscape management plan for schedule monuments, including the Saxon town banks has been produced (Colvin & Moggridge, 2020). This recommends a range of actions, such as retaining mature trees (e.g. ash, elm, holly) and shrubs (e.g. box) but cutting and removing woody vegetation <15 cm diameter from the banks.

A dilapidated wooden building has been removed and given over to a wildflower meadow, with raking and seeding undertaken by Wild about Wallingford. The remaining wooden pavilion is also due for demolition and potential replacement but is currently the subject of bat roosting surveys as part of the planning application. Wallingford Green Gym has previously cleared vegetation from the banks and moat and may do further work in late 2024. Action for WTC. Dependent on permission from Historic England, remove non-native species from Saxon banks and replace feature trees. Remove unwanted species (thistle and nettle). Maintain a wildflower area. Rehouse bats if required.

#### 3.4 Rest Garden

In the town centre, near the Market Place, is a small rest garden, with a single tree and raised beds of annual flowers.



Figure 11. The Rest Garden

A 3-dimensional art installation is being commissioned to commemorate the coronation of King Charles III and his love of the environment, particularly trees. The formal planting of annuals in the flower border is being augmented with perennials to improve biodiversity.

Action for WTC. Plant more perennials in the flower bed.

#### 3.5 Senses Garden

The senses garden was created by Wallingford Town Council in 2023 to provide sensual stimulation to residents. It has trees, bushes, borders planted with perennial species to attract pollinators such as butterflies and bees. A bug hotel is planned.



Figure 12. The Senses Garden

Action for WTC. Install a bug hotel in the Garden.

#### 3.6 Market Place

Wallingford is a traditional market town. The Market Place houses a weekly Charter Market and additional themed markets throughout the year.



Figure 13. Market Place

The Market Place is a key grey space currently dominated by hard surfaces - tarmac, cobbles and paved areas underlain by dense services such as pipes and cable. The area in front of the Town Hall has small, raised beds around a War Memorial and hanging baskets providing some biodiversity. At recent Town Meetings, residents have recommended greening the town centre. Proposals have been developed to consider installing small trees or shrubs in planters or pots in the Market Place, but these would need to avoid obstructing other activities, such as the market stalls.

Action for WTC. Develop proposals for trees/shrubs in planters.

#### 3.7 St Leonard's Square roundabout

This is a small roundabout in the centre of St Leonard's Square. This site has limited potential and is isolated but could benefit from planned new planting of perennials and shrubs.



Figure 14. St Leonards Square roundabout

Action for WTC. Plant with perennial plants and shrubs.

#### 3.8 St Johns Green

St Johns Green is an area on the corner of St Johns Road and Reading Road. It is predominantly mown grass with a feature tree surrounded by a bench,



Figure 15. St Johns Green

Action for WTC. Plant native bulbs.

#### 3.9 Castle Street, 'the Hotdog'

The Hotdog is the name given to a long thin area of land between Castle Street and Glyn Road dominated by a line of trees with hedgerow plants beneath. Several cherry trees have died and will be replaced, with some branches being used for a bug hotel. Over 320 crocuses were planted in late 2023 by Wild about Wallingford.



Figure 16. Castle Street/Glyn Road - the 'Hot dog'

Actions for WTC. Manage hedgerow, plant more native bulbs, replace trees

#### 3.10 Fir Tree and Highcroft allotments

Wallingford Town Council owns 50 allotments that are rented to residents. Allotment holders have to conform to a new policy that prohibits removal or cutting of existing trees but allows planting of new small fruit trees. Only commercially available products from garden or horticultural suppliers are permitted for the control of pests, diseases or

vegetation. A wildflower area has been sown. Several allotments have small ponds. On Fir Tree, one allotment has been allocated as a community space managed by Sustainable Wallingford.



Figure 17. Fir Tree allotments

On Highcroft development, allotments have been adopted by Wallingford Town Council from the developers (Berkeley Homes). The space provides individual allotments. Including raised beds for disabled gardeners. Similar policies to those for Fir Tree allotments have been drawn-up. Allotments may be planted with dwarf fruiting and/ or fruiting bushes; only commercially available products from garden or horticultural suppliers shall be used for the control of pests, diseases or vegetation. Community allotments are being planned on the Winterbrook Meadows housing development.



Figure 18. Highcroft allotments

Action for WTC. Replace walnut tree, encourage water harvesting, ponds and low use of pesticides, plant small fruit trees. Develop community allotments to enhance well-being of residents.

#### 3.11 Moorings

Wallingford Town Council owns moorings on the west bank of the Thames. The area is predominantly grass surrounding the Thames Path National Trail and benches for public use. As if often floods from the River Thames, planting of flood-tolerant species would be appropriate.



Figure 19. Town Council moorings

Actions for WTC. Plant native flower bulbs.

# 4. Land owned by South Oxfordshire District Council

#### 4.1 Castle meadows

The green banks and valleys to the north of Wallingford were once the site of the one of the strongest and most important castles in England. The building of the castle began in 1067 on the direct instructions of William the Conqueror who had crossed the River Thames at Wallingford on his way to London to take the throne. The castle was demolished at the end of the Civil War (1652). The castle site and floodplain along the River Thames were subsequently adopted by South Oxfordshire District Council and managed as Wallingford Castle Meadows.



Figure 20. Castle Meadows

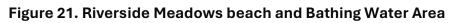
The Earth Trust has managed the site on behalf of South Oxfordshire District Council since 2000, supported by Earth Trust volunteers and Wallingford Green Gym. The Meadows are predominantly pasture with numerous feature trees and areas of longer grass and deadwood piles. A pond provides habitat for amphibians and water voles. In 2022 Wallingford Castle Meadow was awarded its 15th Green Flag and Green Heritage site accreditation for the 9th year in a row. They also conduct annual butterfly surveys to be feed into the national butterfly data base.

Actions for WTC. Support SODC and the Earth Trust to enhance biodiversity on the Meadows.

#### 4.2 River Thames beach area

The parish boundary of Wallingford extents across the River Thames and includes the beach area, meadows, car park and splash zone adjacent to the town bridge. The beach and some of the meadow is owned by the Bridge Estates Charity whilst other areas are owned by South Oxfordshire District Council, so it is considered in this Plan as part of District Council land. This area is heavily used for recreation, including the beach that provides easy access to the River Thames for swimming and boating. In 2024 the Department of Environment, Food, and Rural Affairs designated the Thames at Wallingford as Bathing Water Status following an application made in 2023 by Thames 21, South Oxfordshire District Council and Wallingford Town Council.





Action for WTC. Protect the banks around the beach from erosion.

#### 4.3 Radnor Road Local Green Space

This is one of three Local Green Spaces designated in the Wallingford Neighbourhood Plan 2021 to enable the areas to be improved for biodiversity. Wild about Wallingford and local residents planted a community orchard, plus rowan and other trees, reduced mowing under trees. Wild about Wallingford also facilitated the creation of footpaths using S106 funding, which has increased accessibility dramatically across what could be a very wet grassland in winter months. A local resident manages the east of the Space as a garden. Wild about Wallingford has plans to make flower beds with planting for pollinators. This orchard played a key role in Wallingford winning the prize for community engagement (Thames and Chilterns section) as part of Royal Horticultural Society's Britain in Bloom competition in both 2023 and 2024.



Figure 22. Radnor Road Local Green Space community orchard

Action for WTC. Support planting of pollinator friendly borders along rail

#### 4.4 Wilding Road Local Green Space

Wild about Wallingford and local residents planted a hedgerow along back fence, 10 heritage fruit trees, plus other trees (rowan). The Space also features reduced mowing and wildflower areas.



Figure 23. Wilding Road Local Green Space

Action for WTC. Support Wild about Wallingford in management of low mow and wildflower areas.

#### 4.5 Wallingford Sports Park

Wallingford Sports Park Wallingford Sports Park occupies 10.5 ha on the outskirts of Wallingford. It is owned by South Oxfordshire District Council and leased to and managed by the Wallingford Sports Trust for the benefit of its member clubs, who each give an annual donation to the Trust to maintain the facilities. The majority of the area is short grass for hockey, football and rugby pitches. There is also an astroturf area, car parks and a club house. The Park includes mature hedgerows. There are opportunities to further enhance these habitats with more tree and hedgerow planting. Plans to develop with Park, e.g. new astroturf pitches, will require Biodiversity Net Gain of at least 10%, which may be achieved by restoring the Mill Brook that runs through the site. The Park was serious flooded in January 2024 and blocked drainage pipes may have contributed.



Figure 24. Wallingford Sports Park

Action for WTC. Support management that increases biodiversity on the site with hedgerow and tree planting and restoring the Mill Brook freshwater ecosystem.

#### 4.6 Cemetries

St Mary's churchyard, St Leonard's churchyard and All Hallows cemetery are the responsibility of South Oxfordshire District Council, but currently managed by Wallingford Town Council. Each contains wildlife areas running family friendly wildlife discovery events. The churches have volunteer working parties with support from Wallingford Green Gym. In 2020, they became a Silver Eco Church.



Figure 25. St Mary's churchyard

Action for WTC. Support pollinator-friendly planting

#### 4.7 Cattle Market car park

The Cattle Market car park contains a raised bed managed as a wildlife garden by local residents. It was entered to the 2023 and 2024 RHS Britain in Bloom competition and help Wallingford win the Community Involvement award.



Figure 26. Cattle Market car park

Action for WTC. Support local residents to increase biodiversity on the site

# 5. Land owned by Oxfordshire County Council

Oxfordshire County Council owns several small areas and the majority of roadside verges and footpaths in Wallingford. The Council has a county-wide Tree Policy and completed an audit and map of all trees growing on their land in Wallingford. It also

has a Community Tree and Woodland Opportunity team looking at possibilities for future planting projects over the next few years, with a strong focus on community involvement and benefit.

#### 5.1 Wallingford Public Library

The entrance yard to the Wallingford Library is predominantly paved. There are several raised beds growing food produce, run by Sustainable Wallingford as part of its 'Incredible Edible' community food initiative, to help isolated people work and socialise with others outdoors and connect with nature.



Figure 27. Wallingford Library entrance raised beds

Wild about Wallingford is working with the Library staff to improve the garden behind the Library, create a pollinator-friendly space for children to enjoy story-time and local people to access at events and activities during Library opening hours.



Figure 28. Wallingford Library rear garden

Action for WTC. Support management that increases biodiversity on the site

#### 5.2 Road verges

The road verges are owned by Oxfordshire County Council but managed by Wallingford Town Council. A Tree planting strategy has been developed by the County Council. Some areas are mown by residents in conjunction with Wild about Wallingford.



Figure 29. Verges along Station Road

Action for WTC: Work with Oxfordshire County Council to plant trees, maintain low mow areas and manage verges for enhance biodiversity.

#### 5.3 Land adjacent to Millington Road

Oxfordshire County Council owns the green space next to Millington Road that used to be sports pitches/playing fields. It is retained as green space for the public benefit of the local community.



Figure 30. Green space at Millington Road

Action for WTC: Work with Oxfordshire County Council to enable the local community to access this space and improve it for biodiversity.

#### 5.4 Land at junction of Wantage Road and Sinodun Road, the 'Taco'

This area has been nicknamed 'The Taco' due to its semi-circular shape. It is managed by Wild about Wallingford. It is predominantly mown grass with flower borders and a feature trellis that mimics the telephone box that used to be located here. A bug hotel has also been installed. Planting is being extended to wildflowers and perennials. The Taco was awarded level 4 (out of a maximum of 5) by Royal Horticultural Society judges in the 2024 Britain in Bloom (Thames and Chilterns section). Judges were particularly impressed by the red trellis that mimics the phone box that used to stand on the site.



Figure 31. Land at the junction of Wantage and Sinodun Roads - the 'Taco'

Action for WTC. Support Wild about Wallingford to plant pollinator friendly plants, install and establish a low mow regime.

#### 5.5 Land at junction of High Street and Croft Road

This corner adjacent to the Kine Croft is owned by Oxfordshire County Council but they are in discussion with Wallingford Town Council which has offered to manage it. A survey has been proposed assessing such issues as age distribution of trees, vertical structure, amount of deadwood, ground flora and invasive plant species, that would provide the basis of a management plan.



Figure 32. Land at the junction of High Street and Croft Road

Action for WTC. Work with OCC to produce a management plan for the site that could include bug areas and native species planting.

# 6. Land owned by the National Health Service

The Oxford Health NHS Foundation Trust recognises the importance of nature spaces and contact with the natural environment to our welfare and patient recovery. The Trust's Green Plan includes a biodiversity strategy, part of which is increasing native hedging across the Trusts sites. NHS Forest have kindly donated 1,300 mixed whips for three sites, with most (approx. 130m) at Wallingford Community Hospital. Wild about Wallingford provided volunteers to help with planting.



Figure 33. Planting hedgerows at Wallingford Community Hospital

There is also a plan to create a wildlife garden at the back of the hospital next to the maternity unit with the possibility of opening up the space for the local schools to use for green space/outdoor sessions.

Action for WTC. Work with NHS to manage the hospital site to increase biodiversity.

#### 7. Land owned by community groups

#### 7.1 Ayres House

The garden of Ayers House Studios, a former rectory, is a community space for local artists and makers. It has a back yard/community garden for working containing a wild area with a mix of rooted and self-seeding plants. The users are undertaking a 'Habits and Habitats' research study. The Studio has exhibitions often with nature themes.



Figure 34. Ayres House garden

Action for WTC. Encourage community groups to consider biodiversity enhancement in management of land.

#### 7.2 Housing estate public areas

Residents of housing estates, such as Atwell Close and Habitat Way, pay an annual maintenance charge to ground management companies who manage public spaces on the estate.



Figure 35. Green space in Habitat Way

Action for WTC. Encourage, financial support, community groups to consider biodiversity enhancement in management of land.

#### 7.3 Wigod Family Centre

The Family Centre is a community project and has been a charity since June 2017. The Centre brings together local families with young children age 0-5 years, professionals and the wider community with the mutual aim of supporting young children and new parents to achieve their potential, regardless of background. The Centre recognises the importance of nature spaces to well-being and manages a small garden. Wild about Wallingford is working with the Centre to enhance the garden for wildlife and to increase opportunities for children and parents attending the centre to experience nature.



Figure 36. Wigod Family Centre garden

Action for WTC. Increase biodiversity in the Centre's garden.

#### 8. Land owned by private organisations

The majority of private houses and establishments, such care homes (e.g. Waterside Court), in Wallingford have gardens or patios. These can be havens for wildlife and contribute significantly to biodiversity in the town. Well-managed farmland is all crucial for biodiversity However, a full assessment of all private gardens and farmland is beyond the scope of this Plan. Funds could be raised to support individual actions in private gardens. such as installing bat boxes, bug hotels or hedgehog houses, and planting wildflowers and re-establishing hedgerows in field margins.

#### 8.1 Land owned by Cholsey & Wallingford Railway

The railway line was built by the Wallingford and Watlington Railway Company in 1864 but closed as a commercial business in 1981. The Cholsey and Wallingford Railway Preservation Society took over the line for tourists and ran its first public train in 1985. The railway track-bed is owned by Wallingford Town Council.



Figure 37. Cholsey & Wallingford railway

This 4 km heritage railway line between Wallingford and Cholsey forms a 4 km corridor between the settlements. Biodiversity priorities of the Society are to fill gaps in hedgerows along the line, consider wildflower planting, where they have space and continue to have flower displays at Wallingford station, enhanced with the addition of some shrubs or dwarf fruit trees. Advise on planting is being given by Wild about Wallingford. Flower display are managed by volunteers.

Actions for WTC. Encourage and support the Railway to plant hedgerows along line and add to containers within the station.

#### 8.2 Land owned by South Oxfordshire Housing Association (SOHA)

Soha Housing is a community-based mutualised housing association working in and around Oxfordshire, with properties in Wallingford. SOHA owns land at several road junctions including Sinodun Road/Andrew Road, which has raised shrub beds, and Clapcot Way/St Nicholas Road which is mown gras with a feature tree.



Figure 38. Land at the junction of Sinodun Road and Andrew Road

SOHA plans remove existing plants and replace them with small fruit trees and bee friendly plants and have consulted Wild About Wallingford, as part of Fruit for All project, with 'help yourself' signage. The grounds will be maintained by contractor will look after it and pick up any uncollected fruit.



Figure 39. Land at the junction of Clapcot Way and St Nicholas Road

The land at the corner of Croft Road and Station Road is mainly paved but has two several wooden flower tubs with native species and pollinator plants that are tended by residents in Station Road. A local nursery provided plants. The tree has died and needs a replacement.



#### Figure 40. Land at the junction of Croft Road and Station Road

Action for WTC. Support SOHA to manage areas to increase biodiversity. Replant dead trees.

#### 8.3 Land on the Thames floodplain

The floodplain meadows, to the south of Wallingford before the by-pass bridge, are privately owned grazing marsh containing notable flora and butterflies. This area has been identified as having great potential for habitat enhancement as a grazing marsh, as part of the Thames Wallingford to Goring Oxfordshire Conservation Target Area with potential to be designated as a Local Wildlife Site. This is one of 37 CTAs in Oxfordshire that aim to create landscape-scale networks of habitats that connect small, isolated reserves. Through the CTA, the Wallingford site would link to the fen, swamp, wet woodland and reedbed further downstream, particularly the Cholsey Marsh. Despite the embankment of the Wallingford by-pass, connectivity is delivered by the passage under the bridge along the floodplain, through the air and via the river.



Figure 41. Thames floodplain Conservation Target Area

**Actions for WTC.** Support Oxfordshire Community Action Groups to enhance biodiversity on the meadows.

#### 8.4 Wallingford School (Merchant Taylor Trust)

Wallingford School is currently developing the Pat Granados biodiversity garden which is on land on St Georges Road provided for the school by the Walter Bigg foundation and owned by the Merchant Taylor Trust. The area includes a pond, wildflower meadow, hedging and beds for cultivation. This work has been in collaboration with Green Art, the Chiltern Rangers and Wild About Wallingford. The project is still in the early stages, having begun about 18 months ago but it is intended to become a valuable resource for the school, the local community and wildlife. Recent work there included planting scrub, a copse, some larger trees – Oak and Field Maple, along with cutting and raking the meadow in preparation for the new season.



Figure 42. Pat Granados biodiversity garden

At Wallingford School, there is a committed student body who want to develop a sustainable approach to life and are actively looking to develop green spaces and environmentally sound initiatives on the school site. They also have a thriving garden club and are regenerating the Courtyard Garden using organic principles to grow produce for the school kitchen and native plants to encourage pollinators.

Action for WTC. Support management that increases biodiversity on the site.

# 9. Land under housing development

From 2024 developers in England will have to deliver at least ten per cent Biodiversity Net Gain (BNG) when building new housing, industrial or commercial developments (threshold 5 x 5 m). Biodiversity lost in the development must be replaced, plus an additional 10 per cent by creating habitats either on-site of elsewhere. Baseline survey required. South Oxfordshire District Councils has been working with local nature organisations such as the Trust for Oxfordshire's Environment (TOE) and Buckinghamshire, Berkshire and Oxfordshire Wildlife Trust (BBOWT) to create new habitats that can be made available to developers who require biodiversity offsets

New developments at Highcroft and Winterbrook Meadows, which cover around 0.6 km<sup>2</sup> or 7.5% of Wallingford parish area of 8 km<sup>2</sup>, aim to achieve a net biodiversity gain of at least 10% (with Winterbrook aiming to achieve 16%). A gain of 10% is equivalent to a 1% increase in biodiversity for the town as a whole.

Wallingford Town Council is statutory consultee on planning applications in the town.

#### 9.1 Highcroft

The Highcroft is a housing development owned by Berkeley Homes. Although planning permission was granted before statutory requirement for Biodiversity Net Gain, it is part of Berkeley Homes commitment to deliver on existing developments. New developments at Highcroft aim to achieve a net biodiversity gain of at least 10%. Over 8000 trees have been planted, boxes for bats, swift and starlings installed, and bug hotels and bee bricks have been spread across the site in line with recommendations from ecological advisors (Greengage, 2023).



Figure 43. Highcroft housing development, drainage retention pond

The allotments developed at Highcroft have been transferred to Wallingford Town Council. Similar management policies to those for Fir Tree allotments have been drawn-up. Allotments may be planted with dwarf fruiting and/ or fruiting bushes; only commercially available products from garden or horticultural suppliers shall be used for the control of pests, diseases or vegetation. Action for WTC. Encourage biodiversity net gain on all developments and installation of hedgehog corridors to enhance connectivity between habitats.

#### 9.2 Winterbrook Meadows

Winterbrook Meadows is a housing development owned by Berkeley Homes (Oxford & Chilterns). Although planning permission was granted before the statutory requirement for Biodiversity Net Gain, it is part of Berkeley Homes' commitment to deliver at least a 10% Biodiversity Net Gain on all sites. At Winterbrook Meadows, Berkeley Homes have committed to delivering a 16% net gain. This net gain will be delivered planting of mature trees, hedgerows and species-rich wildflowers. Berkeley Homes are working closely with Wallingford Town Council and Wild about Wallingford to deliver community gardens and allotments to benefit the future residents of Winterbrook Meadows and the wider Wallingford community.



Figure 44. Winterbrook meadows housing development

Action for WTC. Encourage biodiversity net gain on all developments

# 10. Waterways

UK waterways are not owned by any particular business or local council in the UK, instead falling to ownership of a government funded bodies. Most are the responsibility of the Environment Agency, whilst some, such as the River Kennet and Kennet & Avon Canal, are the responsibility of the Canal and River Trust.

#### 10.1 River Thames

The Thames, its tributaries and the land that surrounds these rivers and streams support a diversity of habitats and species including 115 species of fish, floodplain water meadows with rare flowers, wet woodlands, ponds and numerous bird species. Many organisations work to restore and enhance the biodiversity of the Thames including Thames 21, the Thames River Trust and The River Thames Society compiled a guide to exploring natural environment along the Thames.



Figure 45. River Thames

Water flows and water quality of the Thames at Wallingford depend on activities upstream of Wallingford. High nutrients concentrations from sewage treatment works and agricultural runoff enter the river system (Environment Agency 2019a). Phosphorus concentrations have dramatically reduced since the 1990s (Bowes *et al.*, 2014), but untreated sewage can reach the Thames during wet weather from storm sewer overflows at sewage treatment works, such as at Benson. Overflows from private septic tanks can also create pollution hots spots in streams. More recently high concentrations of other pollutants, such as microplastics and anti-biotics and endocrine disruptors (causing sex changes in fish) have been recorded.

Climate change will alter flows and water quality. The Thames is increasing in temperature at an average of 0.2°c each year, which can damage ecosystems and wildlife stocks by causing creatures to adapt their habits and ranges (Wild Oxfordshire, 2017). Climate change projections suggest an increase of 36% in the once in 20-year flood by the 2080s (with a possible range of –11% to +68%), which is broadly in line with recent government guidance for the Thames Basin (Bell *et al.*, 2012).

Fish ladders have been installed at many of the 45 locks along the Thames to enable migratory species to pass weirs along the river, including eels that were once common, but are now critically endangered. A fish pass will be built at Benson as part of the weir refurbishment.

A consortium of organisations, led by Thames 21, applied in 2023 to Department of Environment, Food, and Rural Affairs to designate the Thames at Wallingford as a bathing water. Whilst designation does not guarantee high water quality, it would result in regular water quality monitoring by the Environment Agency, with an overall classification from 'Excellent' to 'Poor' displayed on site, river users to make informed choices about the condition of the river and its suitability for use. Designation would also put pressure on Thames Water to investigate and address poor water quality to ensure the site meets bathing water standards. Water quality samples were taken from the Thames in August 2024 as part of an independent assessment of Bathing Waters led by Surfers against Sewage.

**Actions for WTC.** Support the Environment Agency and other organisations to improve the condition of the River Thames and enhance its biodiversity including reducing storm sewer overflows into the river. Support implementation bathing water designation.

#### 10.2 Mill Brook and Bradford's Brook

The Mill Brook rises in Blewbury, Upton and Didcot and flows across the Moreton Plain west of Wallingford, where it splits into two, the Mill Brook and Bradford's Brook. Water courses paths have been altered over the centuries with water historically brought into the town to drive mills and supply the moat around the Saxon embankments. Much of the stream network through the town was culverted during housing developments. such as Fir Tree Avenue. The flow direction was reversed so that excess water flowed west along the Mill Brook and into Bradford's Brook. After the Wallingford by-pass road and its highway drainage pipes were built, flow paths were altered further to direct flood water from the Sports Park via drainage pipes to Bradford's Brook. These pipes and the culvert under the by-pass appear to be blocked.

The banks of the Mill Brook have become very overgrown despite previous clearance projects. Residents have reported an oily surface and bad smell from the Mill Brook in past summers. Oxfordshire County Council is planning to re-surface the footpath along the Mill Brook from Fir Tree Avenue to the Sports Park and wants to integrate this with Brook restoration. Wallingford Town Council is leading an initiative with the Chilterns Catchment Partnership, the Environment Agency, Oxfordshire County Council and the Sports Park Trust to restore the Mill Brook, its water flow functions and its biodiversity and recover the lost cultural heritage of the stream.

BBOWT's Water Vole Recovery Project surveys and monitors local water vole populations (currently present on Bradford's Brook and Mill Brook) and works with landowners and volunteers to monitor and control American mink and enhance habitat for water voles. The water vole population on the Mill Brook was last surveyed in 2022 and is currently stable but needs more mink monitoring and control measures. Bradfords Brook will be surveyed in 2024.



#### Figure 46. Hithercroft sluice – where Mill Brook is diverted to Bradford's Brook

Action for WTC. Develop plans to restore the Mill Brook and install mink rafts to monitor and trap American mink.

## 11. Awareness raising and knowledge building

In addition to direct intervention in a site, such as planting, or maintenance, it is important to raise awareness and build knowledge amongst residents and visitors so

that they understand what is being done and why and their quality of life will benefit from actions being taken. This raises awareness, increases appreciation of the efforts of those responsible for nature areas and encourages people to care for wildlife and take steps to enhance biodiversity, perhaps in their own gardens.

## 11.1 Monitoring and surveys

Knowing how much biodiversity you have and how effective biodiversity interventions are, is an essential element of any plan. Monitoring biodiversity can be at many levels from professional surveys of wildflowers, butterflies (such as those undertaken by the Earth Trust) or bats, identification of nuisance invasive species, such as Japanese knot weed, to household recording of garden birds. Data collected should be submitted to the Thames Valley Environmental Records Centre, our local ecological information hub.



Figure 47. Monitoring butterflies

Action for WTC. Support new surveys of wildlife and submission of records to TVERC.

## 11.2 Signage and information boards

Wildlife-rich areas can appear scruffy and abandoned and unsightly to some people, especially at specific times of the year. Signage is important to inform people of activities being carried-out such as seeding of wildflower areas, so that they understand the longer-terms aims. For example, Wild about Wallingford has put signs in newly sown wildflower meadows, whilst Wallingford Town Council has produced a map of the different tree species in the Castle Gardens. A photo that indicates what the site will look like is useful, plus information on who to contact, either to make comments or more hopefully to volunteer to help.



Figure 48. Tree map (central display panel) in the Castle Gardens

Action for WTC. Support and produce signage and information boards

#### 11.3 Education

Teaching young people about the importance of biodiversity for their future is a key part of their education. This can be a formal part of schooling, following the curriculum or extra-curricular as part of events such as Wallingford Carnival. Wallingford has many excellent locations close to schools that provide a real-life outdoor experience of biodiversity and nature space management.

Action for WTC. Work with schools to offer locations in Wallingford for environmental education.

#### 11.4 Talks and training courses

Evening talks on wildlife topics are popular as people want to increase their knowledge of environmental issues. The OX10 Community has run scientific talks under the 'café scientifique' title on diverse topics such as Thames bathing water status, wasps and climate emergency. Specialist training courses enable people to enhance their skills, gain certification and take part in activities such as species surveys and maintenance. For example, Wallingford Town Council organised a training course in March 2024 on The Maintenance, History and Ecological Principles of Wildflower Meadows.



Figure 49. Training

Action for WTC. Support further talks and training course on wildlife and environmental management.

#### 11.5 Walking tours

Having an expert guide people around nature areas and explain habitats and species, management techniques and implications for biodiversity and other benefits can be a great way to build knowledge amounts residents and visitors. Examples include guided tours through wildflower meadows and evening walks to observe moths or bats organised by Wild about Wallingford.



#### Figure 50. Wild about Wallingford's guided walk in Castle Garden

Action for WTC. Support guided wildlife tours of Wallingford.

#### 11.6 Volunteering

Volunteering is important for people with free time who are enthusiastic to make a difference to their local environment and increases their sense of purpose and ownership of local nature spaces. A group of volunteers working for a few hours can make a major difference to biodiversity recovery and enhancement. Many organisations in Wallingford offer opportunities for volunteers, including Wild about Wallingford, Earth Trust, Wallingford Green Gym. Volunteer can also be joining specialist advisory groups such as the Tree Working Group of Wallingford Town Council.



#### Figure 51. Chiltern Rangers volunteering at Pat Granados biodiversity garden

Action for WTC. Support local organisation to engage volunteers.

## 11.7 Community activities

Allotments can provide a vital role in connecting people to the process of food production, enabling them to be physically and mentally active, grow fresh food, whilst reducing food miles, and share knowledge, information and food. They help to improve the environment and preserve rare and unique varieties. Whilst many allotments in Wallingford are rented by individuals, community allotments provide opportunities to meet and work with other people, build knowledge and confidence and a sense of achievement. Wallingford Town Council has established a community allotment on the Fir Tree allotments, run by Sustainable Wallingford, and planned further plots on new housing developments, such as Winterbrook Meadows.



Figure 52. Community allotments

Action for WTC. Establish further community allotments.

## **12. Future priorities**

Wallingford has a range of nature spaces including parks, gardens, street corners and waterways but many are small and isolated. Lawton's review of England's wildlife sites and ecological network, *Making Space for Nature* (Lawton *et al.*, 2010), concluded that to enhance the resilience and coherence of England's nature spaces, they is a need for: "more", "bigger", "better" and "joined", with actions taken in collaboration between local authorities, local communities, statutory agencies, the voluntary and private sectors, farmers, landowners and other land-managers and individual citizens. Sections 12.1 to 12.5 suggest how this can be achieved through five approaches defined in the Lawton report.

#### 12.1 Improve the quality of current sites by better management for nature

There are many green areas in Wallingford. Many areas are Scheduled Monuments that restrict options for better management for biodiversity. These are largely mown grass areas with a few individual trees to maintain a vista of the monuments, which present a challenge for wildlife. However, management for nature is improving with increasingly areas of wildflowers, low-mowing regime and allowing plants such as nettles to grow, all of which are enhancing biodiversity.

The River Thames is the focus of attention, but its ecological status is determined largely on activities in the catchment upstream. Other freshwater habitats in Wallingford have received less attention, such as Bradford's Brook, Mill Brook and Castle Meadows pond; the quality of these habitats could be improved.

Action for WTC. Establish a working group on freshwater habitats and develop restoration plans, for example, for the Mill Brook.

## 12.2 Increase the size of current wildlife sites

Whilst it is difficult to increase the overall size of current nature spaces, areas within them dedicated to biodiversity are being expanded such as larger areas for wildflowers

and pollinators. Green patches in the Market Place could be expanded by adding shrubs in planters.

Action for WTC. Continue to expand natural areas within existing spaces.

## 12.3 Enhance connections between nature sites

Many nature areas within Wallingford are isolated from each other and from nature areas outside the Parish. There is a pressing need to reduce fragmentation by connecting nature spaces as ecological networks. Road verges provide rich wildlife habitats that form corridor linking different parts of the town. Potential areas for develop include the hedges in the Sports Park, the Railway corridor between Wallingford and Cholsey. Smaller scale actions should include encouraging Wallingford residence to have small holes (radius 6 cms) in their garden fences settlements to allow hedgehog migration. Restoration of the Mill Brook would enhance it as a river corridor connecting various riparian habitats. Opportunities to improve connectivity with wildlife sites beyond Wallingford can be identified in broader-scale initiatives such as the SODC Green Infrastructure Strategy and Oxfordshire Local Nature Recovery Strategy. Some opportunities could be on current agricultural land where biodiversity-sensitive farming is or could be developed.

Action for WTC. Support Cholsey-Wallingford Railway, launch a hedgehog campaign and examine the feasibility of restoring the Mill Brook.

## 12.4 Create new nature sites

Most land in Wallingford is already allocated to specific uses, so creating new nature spaces is challenging. The large housing developments at Highcroft and Winterbrook Meadows provide an excellent opportunity and biodiversity net gain is a fundament aim of the developers.

Some opportunities could be on current agricultural land where biodiversity-sensitive farming is or could be developed. The floodplain meadows, to the south of Wallingford before the by-pass bridge, provide another opportunity both as a nature area, of grazing marsh, in themselves and also to link habitats in Wallingford with those in Cholsey and Goring.

Action for WTC. Support developers in establishing new nature areas and achieving high biodiversity net gain. Support the establishment of a Conservation Target Area as a Local Wildlife Site and part of the Thames Wallingford to Goring green network.

## 12.5 Reduce the pressures on wildlife by improving the wider environment

A key approach to biodiversity enhancement and recovery is improving the wider environment, particularly reducing air soil and water pollution. Here there is a strong link to other activities and policies of Wallingford Town Council including the Climate Emergency Plan, sustainable transport, tightening usage of artificial fertilisers and pesticides both in their own practice and on allotments. This action also integrated with wider strategies and actions of organisations outside Wallingford (see Section 12).

Actions for WTC. Development and implement policies to improve the wider environment, reduce energy usage, encourage low pollution transport.

#### 12.6 Improve knowledge and understanding

Increasing knowledge and understanding is crucial for biodiversity conservation and recovery. Action is required at many levels from interested individuals, community groups, professions and at all ages from small children to senior adults.

**Actions for WTC.** Increase knowledge through monitoring, training, awareness raising by providing information to residents and visitors.

## 13. Local plans and strategies

It is essential that the Biodiversity Action Plan for Wallingford is complementary to and helps implement actions from other plans and strategies. In return many of the wider datasets provide scientific evidence to develop and implement Wallingford's Biodiversity Action Plan.

#### 13.1 Wallingford Neighbourhood Plan

Neighbourhood Plans are part of the Government's approach, introduced in the Localism Act 2011, to giving local people a greater say in the future development and growth of their local area. The National Planning Policy Framework (NPPF) 2019 states in para 29 that 'Neighbourhood planning gives communities the power to develop a shared vision for their area. Neighbourhood plans can shape, direct and help to deliver sustainable development, by influencing local planning decisions as part of the statutory development plan.

Wallingford's Neighbourhood Plan was produced in 2021 to be consistent with the South Oxfordshire Local Plan 2011-2035 and is now under review. The vision of the Plan includes making Wallingford a greener and healthier town through the creation of a Green Network of existing and new green corridors where people enjoy walking and cycling, and wildlife thrives. The three key objectives are to:

- create the Wallingford Green Network.
- secure measurable net biodiversity gains
- ensure all new development respects the natural environment

The Wallingford Green Network will enable the connectivity of Local Green Spaces, public amenity spaces (e.g. churchyards, Castle Gardens, Castle Meadows, Kine Croft, Bull Croft and allotments), with the River Thames, Riverside Meadows, the Thames Path National Trail and the countryside of the Chilterns and the North Wessex Downs National Landscapes. The Green Network will also improve and extend the biodiversity of the Thames along the Wallingford to Goring Conservation Target Area by improving habitats as part of a Conservation Target Area for floodplain meadows.

**Actions for WTC**. Help connect existing amenity spaces with the Wallingford Green Network to benefit wildlife.

#### 13.2 Local Climate Emergency Plan

In 2019 the UK Parliament declared a Climate Emergency and committed to net zero carbon emissions by 2050 to avoid the worst effects of climate change. Following this lead, Wallingford Town Council declared a climate emergency in May 2020.

The Town Council is aware of the significant implications of climate change and aims to ensure that sustainability a key part of decisions. The 'Vision for Wallingford' includes an objective for the Environment & Sustainability, ie. "To enhance and protect our outdoor spaces through sustainable practices and environment led strategies".

Over the last year, the Council has hosted three public events focusing on climate action, with Housewarming & Energy Efficiency, Reduce, Reuse & Recycle and Sustainable Travel and Transport.

**Actions for WTC**. Improve the sustainability and resilience of Wallingford's environment to climate change.

## 13.3 Oxfordshire Local Nature Recovery Strategy

Local Nature Recovery Strategies (or LNRS) are featured in the 2021 Environment Act. Each LNRS will include a statement of biodiversity priorities for the area covered by the strategy and a local habitat map that identifies opportunities for recovering or enhancing biodiversity. The aim should be to make existing patches of habitat bigger and better, increase the number of valuable habitat patches, improve connectivity, and restore natural processes. The LNRS highlight areas of priority where nature focus can add most value to the Nature Recovery Network. Extending and linking existing sites are key aims. LNRS address issues such as:

• What actions by farmers would be most locally beneficial and attract payment under new post Brexit environmental land management schemes

- Where biodiversity lost to development should be replaced
- Which areas should be prioritised to be kept clear of development altogether

• How the targets for habitat creation and the Nature Recovery Network can be met most sustainably

Oxfordshire Local Nature Recovery Strategy is being produced by OCC working with Wild Oxfordshire, BBOWT and TVERC. Several public workshops were held in spring 2024. Feedback from those events and online consultation will contribute to the development of the draft strategy later this year. There will be another public consultation period during the summer 2024, with the aim of publishing the Strategy in spring 2025. The Oxfordshire Local Nature Recovery Strategy will be delivered by the Oxfordshire Local Nature Partnership.

**Actions for WTC**. Develop the Wallingford Green Network to implement Local Nature Recovery Strategy with other groups in the Oxfordshire Local Nature Partnership.

#### 13.4 South Oxfordshire Green Infrastructure Strategy

The South Oxfordshire Green Infrastructure Strategy of 2017 proposes retention, creation, maintenance and potentially extension of existing green infrastructure assets and natural green spaces as well as improving access from the two AONBs, the National Trail and National Cycle networks within Wallingford.

**Actions for WTC**. Develop the Wallingford Green Network to support the South Oxfordshire Green Infrastructure Strategy.

#### 13.5 Oxfordshire County Council Nature Recovery Strategy

Oxfordshire County Council is one of 48 responsible authorities that will produce nature recovery strategies as part of the Government's legally-binding commitments to end declines in biodiversity and for nature to recover. This charges OCC to work with other organisations and partners in their area to produce a written statement of biodiversity priorities by 2025. Expected actions include creation of wetlands and planting of trees and hedgerows whilst removing invasives. The Strategy aims to meet the three recommendations of the Lawton report (Lawton, 2010) with bigger, better and more connected nature spaces, identifying opportunities that address local priorities from following public consultation.

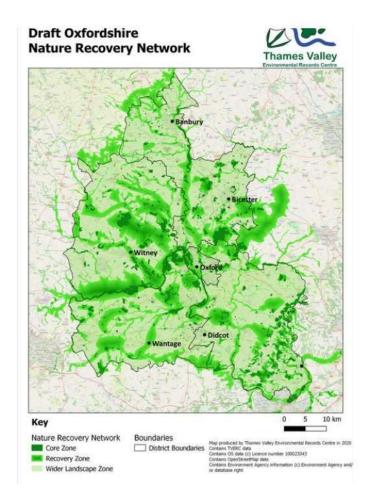
Actions for WTC. Develop the nature spaces to help implement the Oxfordshire County Council Nature Recovery Strategy.

#### 13.6 Nature Recovery Networks

Defra's 25 Year Environment Plan 2018 (updated 2023) included the establishment of Nature Recovery Networks as a joined-up system of places needed to allow nature to recover and thrive, expanding and connecting the remaining fragments of nature. These form a national network covering all kinds of area; urban and rural, defining places where wildlife is more abundant, and places where habitats need to be restored or created. Networks in Oxfordshire will aid implementation of the Oxfordshire County Council Nature Recovery Strategy.

Core zones shown in Figure 54 connect existing nature sites (based on TVERC data). These are the highest level of biodiversity protection, management and enhancement. Development should be avoided in these habitats. Any changes should be part of agrienvironment and biodiversity net gain (BNG) schemes. Recovery zones in Figure 55 buffer and link existing habitat patches. They are based on habitat connectivity analysis for woodland and grassland, and freshwaters developed by the Freshwater Habitats Trust. These are priority areas for habitat creation and restoration and a focus for

- Off-site BNG
- Creating accessible natural green spaces near settlements
- Nature after minerals extraction
- Natural-capital investment and carbon offsets
- Rewilding areas of low agricultural value
- Establishing 'big nature areas' of 50 km<sup>2</sup> or more
- Avoiding major development



#### Figure 53. Draft Oxfordshire Nature Recovery Network

Wider landscape zones in Figure 55 cover all of the County and retains good scope for

- Nature-friendly farming
- Accessible natural greenspace
- Natural flood management
- New woodlands
- Developments that can deliver BNG

# 14. Specialist groups related to biodiversity working in and around Wallingford

#### 14.1 Oxfordshire Local Nature Partnership

The Oxfordshire Local Nature Partnership (OLNP) is an organisation of key partners working together to radically enhance nature, its positive impact on our climate and the priority it is given, helping to make Oxfordshire a county where people and nature thrive. Wild Oxfordshire worked alongside partners to set up the OLNP. The OLNP will work towards its purpose by developing strategies and plans; influencing relevant local and national government policy and legislation; establishing voluntary working groups and task and finish groups as required. https://www.olnp.org.uk/

#### 14.2 Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT)

BBOWT is one of 46 Wildlife Trusts working for wildlife across the UK. Using a scienceled approach, they protect and restore natural habitats, which are home to some of our most precious wildlife. BBOWT's Water Vole Recovery Project was set up in 1998 covering the three counties and is the longest standing project in the UK dedicated to water vole conservation. <u>https://www.bbowt.org.uk/</u>

#### 14.3 Wild Oxfordshire

Wild Oxfordshire helps catalyse change by identifying conservation needs and supporting nature recovery action across the County. It collaborates with over 60 Community Groups working across Oxfordshire, plus numerous individuals and organisations, offering expertly curated and inspiring information, bespoke advice, and nature-based solutions. our projects, collaborations and impact. Wild Oxfordshire's Biodiversity Advisory Group provides a coordinated delivery of Nature's Recovery in Oxfordshire and has published a *Community Town and Parish Guide to Nature Recovery*. As part of Oxfordshire's Biodiversity Action Plan Targets, the floodplain fields on the west bank of the Thames upstream of the by-pass bridge are Conservation Targets Areas for floodplain habitat. <a href="https://www.wildoxfordshire.org.uk/">https://www.wildoxfordshire.org.uk/</a>

## 14.4 Community Action Groups Oxfordshire

CAG is partnering with Natural England on a project exploring best approaches to understanding and using Nature Recovery Networks for maximum benefits. The Oxfordshire Nature Project, part of CAG Oxfordshire, is group of ecologists, project managers, community advocates, and nature recovery experts supporting parish and community groups with effective nature recovery planning and action. https://www.cagoxfordshire.org.uk/

#### 14.5 South Chilterns Catchment Partnership

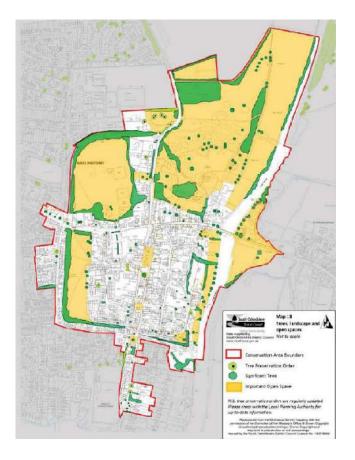
The South Chilterns catchment partnership is part of the national Catchment Based Approach initiative. It brings together a wide range of stakeholders to identify and facilitate better environmental outcomes across the South Chilterns Catchment Partnership area. The Partnership is hosted by Thames21, Action for the River Kennet and Chilterns Chalk Streams Project. It has some funding for training people in the 'Mudspotter' citizen science survey, which maps locations where sediment enters rivers, and also for some modelling work on sediment pathways. <u>https://www.thames21.org.uk/catchment-partnerships/south-chilterns/</u>

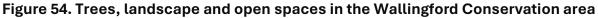
#### 14.6 Wild about Wallingford

Wild about Wallingford is the working name of the local community-led charity Friends of Wallingford and Cholsey Green Spaces that was founded in 2020 and took-on the activities of Wallingford Wildlife Group when that group closed in 2022. Its mission is to empower local communities and promote social action so residents have access and the opportunity to contribute to quality green spaces. Key recent projects include establishing community orchards, supporting children's events to learn about nature and giving away swift boxes. https://www.facebook.com/WildAboutWallingford/

#### 14.7 Wallingford Allotments and Gardens Society

Wallingford Allotments and Gardens Society is affiliated to the Royal Horticultural Society and is non-profit-making. It helps local gardeners and allotment holders get the most out of their plots. In doing this it brings together and influences the management of many green spaces around Wallingford.





#### 14.8 Tree Working Group

The Wallingford Tree Working Group was constituted by Wallingford Town Council to advise on the survey, management and replacement of trees in Wallingford. The Group includes specialist arboriculturists with in depth experience of tree and woodland management. The Group has been advising on management and replanting of trees in the Kine Croft and Castle Gardens, and potential shrubs for planters in the Market Place.

#### 14.9 Thames Valley Environmental Record Centre

The Thames Valley Environmental Records Centre (TVERC) is a comprehensive ecological information hub acting as the regional delivery node of the National Biodiversity Network. TVERC provides organisations in Berkshire and Oxfordshire with critical knowledge to support scientific research and responsible decision-making. TVERC holds over 4.5 million records of flora and fauna in Berkshire and Oxfordshire plus information about Local Wildlife and Geological Sites, NERC Act S41 Habitats of Principal Importance (previously called UK Biodiversity Action Plan (BAP) habitats) and Ecological Networks (Conservation Target Areas and Biodiversity Opportunity Areas) https://www.tverc.org/cms/content/about-us.

#### 14.10 Hogs Haven

Hogs Haven is a wildlife sanctuary in Wallingford for rehabilitation of injured hedgehogs. It also provides advice such as links to building wooden hedgehog houses for gardens. <u>https://www.facebook.com/wallingfordhedgehogrescue/</u>

## 14.11 OX10

OX10 Community Centre Ltd is a not-for-profit Community Benefit Society set up address social inequality. It comprises a group of local 40 members and over 160 subscribers to a newsletter distribution list, building community resilience and mutual support in the face of great uncertainty. OX10 aims to build a more resilient and sustainable community particularly by creating a new community space in Wallingford Town Centre. OX10 recognises the importance of green spaces and contact with nature to people's well-bring and community resilience. The Group has run scientific talks under the 'café scientifique' banner on diverse topics such as Thames bathing water status, wasps and climate emergency <u>https://ox10.org.uk/</u>.

#### 14.12 Earth Trust

The Northmoor Trust for Countryside Conservation was established in 1967 with an endowment from Sir Martin and Lady Audrey Wood. The Trust acquired Little Wittenham Wood in 1982 and was rebranded as the Earth Trust in 2011. Its mission is to support wildlife habitats whilst also providing access to the countryside for local communities. In 1984, the Trust acquired the Wittenham Clumps and surrounding farmland. In 2000 it took on the management of Wallingford Castle Meadows and

Riverside Meadows in Wallingford. In 2010 it acquired 500 acres of farmland adjacent to Little Wittenham Wood and the River Thames and created the River of Life project.

During the 1980s and 1990s the Trust developed its education, research and farming programmes, playing a pioneering role in developing agri-environment schemes.

The Earth Trust's mission is to address climate, biodiversity and wellbeing with the power of natural green spaces. It champions access and engagement with natural green spaces for everyone, so that together we take action for people and planet. https://earthtrust.org.uk/

#### 14.13 Wallingford Green Gym

The Green Gym is a health initiative offering individuals an outdoor alternative to conventional gyms and the opportunity to increase their physical activity levels through direct involvement in practical conservation activities. Local people identify problems and solutions deliver and sustainable environmental improvements. Providing the appropriate support and training, the Green Gym equips people with knowledge, skills and confidence to achieve their vision of a better environment.

For over 20 years Wallingford Green Gym has been working in and around Wallingford to enhance local nature sites, to keep fit and to have fun together as a group. They have worked on local sites managed by Earth Trust (such as Wallingford Castle Meadows and Riverside) and in the local area such as planting trees in Benson and Dorchester, laying hedges in Cholsey and Little Wittenham and helping to manage the watercress beds in Ewelme. <u>https://www.wallingfordgreengym.org.uk/</u>

## 14.14 Thames 21

Thames21's vision is to put healthy rivers at the heart of community life – and taking a four-pronged approach to get there. Through its education programme, Thames21 is empowering people; our environmental enhancement work is transforming rivers; meanwhile its pioneering research and advocacy work are paving the way for sustainable change. All of this is achieved with the direct engagement and support from a wide network of dedicated volunteers. https://www.thames21.org.uk/

#### 14.15 Trust for Oxfordshire's Environment (TOE)

The Trust for Oxfordshire's Environment identifies sites that are aligned to the draft Local Nature Recovery Strategy (LNRS). Since 2020 (i.e. in a pre-mandatory market), TOE has delivered 7 projects with Biodiversity Net Gain funding, creating approx. 100 hectares of high-quality habitat. <u>https://www.trustforoxfordshire.org.uk/</u>

#### 14.16 Royal Horticultural Society

The Royal Horticultural Society supports the Britain in Bloom competitions that encourages community groups in towns, cities and villages to make positive changes to their local environment through horticultural, environmental and community action. <u>https://www.rhs.org.uk/get-involved/britain-in-bloom</u>

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# 16. Annex of maps of green spaces in Wallingford



Figure 55. Existing woodland in Wallingford

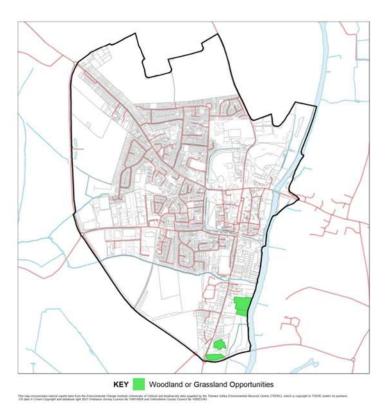


Figure 56. Woodland and grassland opportunities in Wallingford

The map shows areas of the parish that are suitable for either new woodland or species-rich grassland. These total 2.8 hectares and 1% of the parish. Both grade 1 and 2 land and unsuitable sites are excluded. You might consider selecting smaller areas from within the mapped area that are less productive, such as wet or awkward corners for grassland, woodland copses or shelter belts. Pasture that has had few inputs could be restored to species -rich grassland, but if it has been intensively used for a long time it may be better as woodland

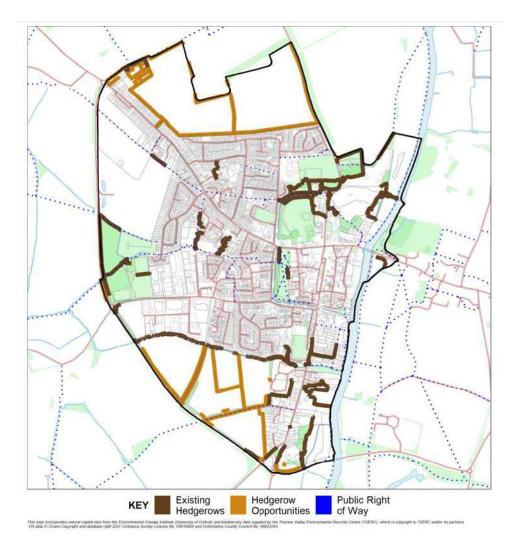


Figure 57. Existing hedgerow and opportunities for new hedgerows

The map shows both the hedgerows currently in the parish and the opportunities for new hedges. (Please note that this data may not be as accurate as we would like and the hedge opportunities may be overstated). We have assumed that all field boundaries can become hedges, however some may not be suitable. For instance, stone walls are a typical feature in the Cotswolds and especially so within the AONB. These hedge opportunities total 8.4 kilometres and 43% of all field boundaries.

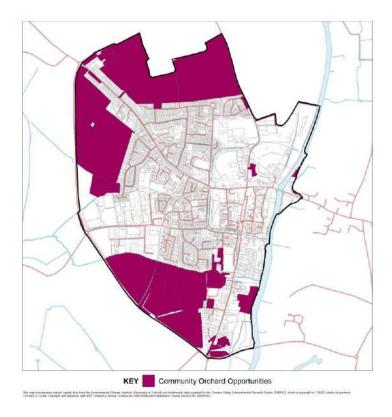


Figure 58. Opportunities for community orchards