

Community Environmental Toolkit

March 2021



Wiltshire Council



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Break time- north meadow project landscape group community day

© Kate Nicholls David Parsons



Introduction

Welcome to the Wiltshire Community Environmental Toolkit

It is packed with information, ideas, and helpful resources to enable you and your community (including town and parish councils, community groups and schools) to respond positively to key national and local policy and legislation.

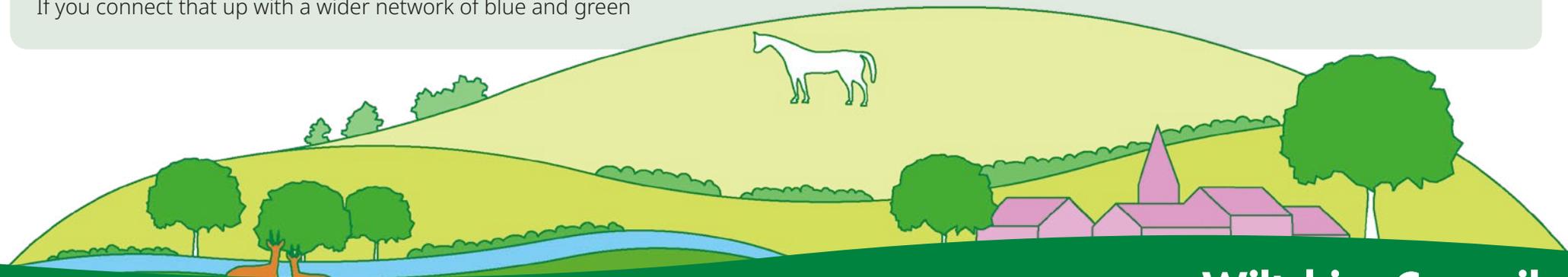
Our communities can make a real difference to their own local areas that, when joined up, will help create a landscape scale network of habitats rich in biodiversity that will support nature recovery and all of the essential and varied benefits and services that our natural environment provides. The [Wiltshire Council Green and Blue Infrastructure Strategy](#) provides the county level structure and a starting point for how your community can realise its role in restoring nature with the widest benefits.

This toolkit is designed to provide you and your community with information that, when combined with your enthusiasm, skills and energy, could deliver projects that will have the greatest environmental benefits. The landscape around you is already home to plants and animals that could be vital to the local ecosystem, so understanding what you have already is the first step to knowing how best to improve it. Even the smallest project in the right place, that improves things for local species and important habitats, could make a huge difference. If you connect that up with a wider network of blue and green

infrastructure the benefits could expand right across Wiltshire and beyond. Much has been done by Wiltshire communities already, and this toolkit is designed to both build on existing work and help communities to start from scratch.

This Community Environmental Toolkit will help you to create a **community environmental plan** and deliver it. You should consider the following when developing your plan:

- **Survey:** gather key information on the environment to inform your environmental plan; map habitats and areas of environmental interest in your community.
- **Consult:** share ideas on the scope of work you could carry out and set up a group to manage your community environmental plan
- **Plan:** prioritise those actions that will deliver the greatest benefits from the resources available that are achievable.
- **Deliver:** carry out your plan, monitor the results and report back your successes.
- **Determine:** what habitats in your area can assist with helping to naturally capture and store carbon from the atmosphere.





Understanding your local environment

Geology, Soils and Landscape

The landscape is influenced by its underlying soils, the rocks that form it and the processes by which the rocks and landforms have been changed over the course of time through erosion, deposition and/or weathering.

The geology of Wiltshire is predominantly chalk with areas of limestone, sand and clay deposits, which have been used as raw materials for a wide range of products. The influence of local geology can be seen in our older houses and structures and is a key influence on the diversity of soils in the county. These soil types and topography underpin the landscape character of an area (See [Wiltshire Landscape Character Assessment](#)) which is a unique blend of landform, habitat, local farming practice, and other human influences.

Many of these landscapes are particularly special and have been given protection as Areas of Outstanding National Beauty and Areas of Great Landscape Value. Geological features can also be protected as Sites of Special Scientific Interest or Regionally Important Geological Sites. The sixteen landscape types found in Wiltshire include: open and wooded downland, chalk plains, chalk river valleys, greens and valleys and hills, limestone ridges, valleys and lowlands, clay vales and forest-heathland mosaic.

Soils are hugely valuable, supporting a wide array of biodiversity – often referred to as ‘the factory of life’. Healthy soils play a vital role in mitigating climate change, storing and purifying water, providing antibiotics and preventing erosion. The well-being of plants and land based animals depend on the complex processes that occur in soils.

Did you know?

A variety of bees and wasps nest in the soil, often making burrows 10-20cm deep with entrances surrounded by small mounds of spoil. These include mining bees, furrow bees and digger wasps. Most require light and well-drained soil. Many bumblebees like to nest in old underground rodent burrows, and this requires ground that is not prone to flooding.



Chalk quarry landscape



Rock and soil samples

© Fiona Elphick

© Johns Associates Ltd.



Biodiversity

Wiltshire is a county of contrasting biodiverse habitats including downland, woodlands, river valleys and clay vales. These support a wide range of species and ecosystems (see Chapter 4 Wiltshire Landscape Character assessment). Some of these are particularly special, are legally protected (e.g. Special Area of Conservation, Special Protection Area, Site of Special Scientific Interest, Local Nature Reserve, County Wildlife Site), and of regional, national and international importance (e.g. Salisbury Plain is the largest area of chalk grassland in Northern Europe).

Hedgerows, rivers, streams, and canals are all important linking elements of green infrastructure in your community that by reinforcing helps to build a 'nature recovery network' across communities and regions, creating wildlife corridors to isolated habitats, and boosting biodiversity

There are, however many areas of the County that, due to modern management practices, neglect, and pollution, have lost much of their rich biodiversity, with once common wild plant and animal species in decline. By highlighting areas in your community of poor biodiversity through your environmental plan you can concentrate on improving areas that will do most good, whilst protecting existing important habitats.

Biodiversity underpins a wide range of nature-based (or ecosystem) services that provide and support our communities, regulate environmental systems and offer huge cultural value.



Wiltshire Woodland with Bluebell
– *Hyacinthoides non-scripta*



Grass Snake – *Natrix helvetica*

© Johns Associates Ltd.



Understanding your local environment

Water

Wiltshire supports a wide range of wonderful wet habitats including rivers, streams and ditches, lakes and ponds, wet grasslands and woodlands, reedbeds, fens and bogs. Wiltshire watercourses such as its rivers (including the Bristol Avon, Hampshire Avon, & Kennet) and streams, through the way they shape and erode the underlying bedrock and deposit silts onto adjacent flood plains, have a big influence on local landscape character and biodiversity. Groundwater levels, ponds, and lakes as well as artificial water bodies such as canals (Kennet and Avon, Berks and Wilts) and reservoirs can also heavily influence the biodiversity of our landscape.

With the rise of chemical use in modern agriculture, the drainage of land and the filling in of ponds for agriculture and development, as well as the careless release of pollutants into watercourses our water habitats are much depleted and their biodiversity much reduced. Modern management methods and developments have also increased flood risk and problems of soil erosion.

Whilst Wiltshire's watercourses are protected through statutory and non-statutory designations such as the internationally important chalk streams of the Hampshire Avon and Kennet; local community groups and organisations also have a role to play in the protection, rehabilitation and creation of water based habitats in their areas.



Wet woodland

© Johns Associates Ltd.



Great Crested Newt - *Triturus cristatus*

© Johns Associates Ltd.



People

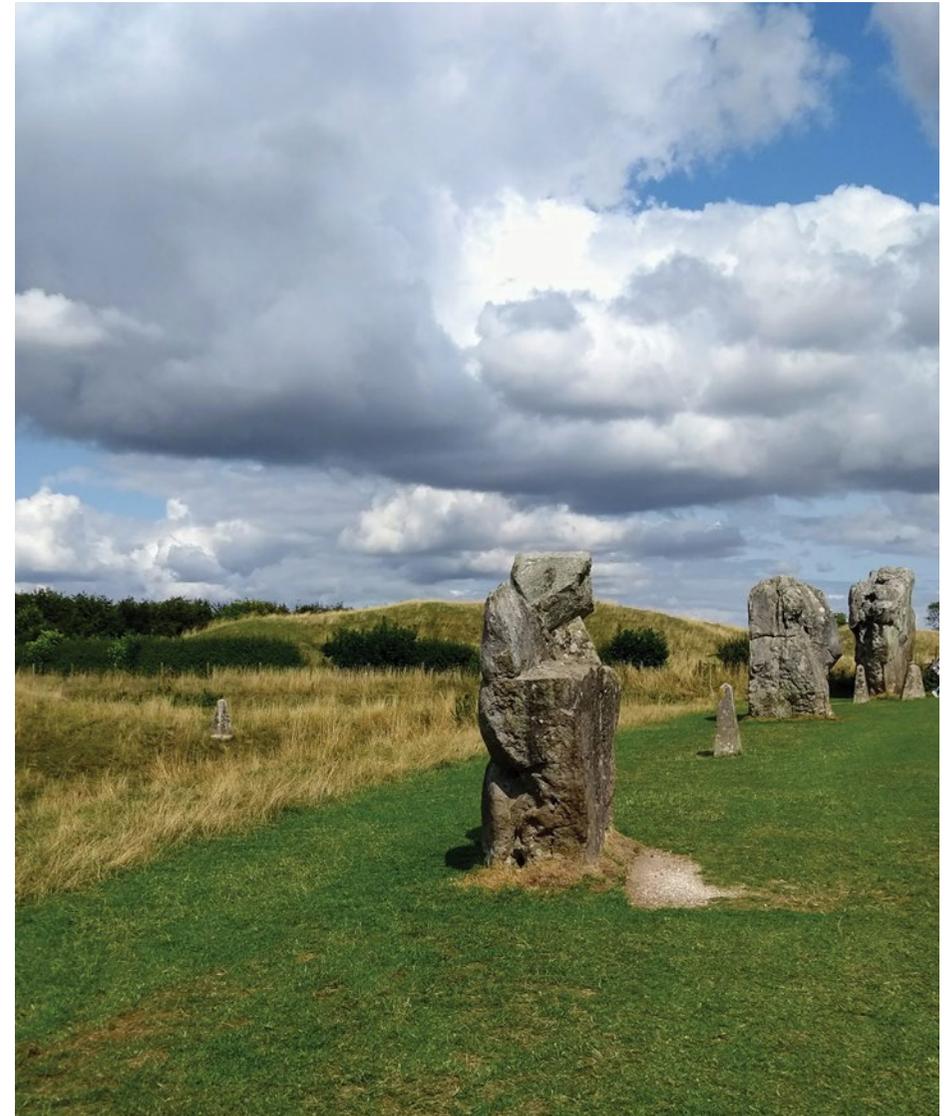
Human activity in Wiltshire has been discovered as far back as 8000 years ago. The modern landscape in Wiltshire has been heavily influenced by human activities such as farming and settlement.

Today, the county encompasses rural areas, villages, small towns and major urban settlements. There are cultural and historic attractions such as Stonehenge and Avebury World Heritage Sites, Areas of Outstanding Natural Beauty and Special Areas of Conservation.

Now more than ever, we recognise the importance of the environment, the services it provides to us, our intrinsic links to it and our impact on it. We are working collaboratively – globally, regionally and locally to ensure the recovery, protection and improvement of our natural world, our cultural heritage and the complex interrelated systems that rely on it for a sustainable future.

Did you know?

People are a key influencer on the environment and the services it provides to us. By developing and implementing your environmental plan you will help make a positive difference to both people and nature.



Avebury World Heritage Site

© Johns Associates Ltd.



Understanding your local environment – the services nature provides



© Johns Associates Ltd.

Supporting: Ecosystems are underpinned by supporting services without which they could not function. These include the nutrient cycle, soil formation and habitat provision, forming the basis of the other three services.

Provisioning: These are physical elements that can be extracted from the environment including food, water, fuel, wood and fibre.

Regulating: These are services that occur to benefit the ecosystem by keeping a balance of factors such as pollution, water filtration and flood management.

Cultural: This service includes ways that a person's health and wellbeing is affected by their environment. The natural environment can improve mental as well as physical health, provide recreation and support education and learning.

Biodiversity underpins all these services. An ecosystem approach to the way we manage land, freshwater and sea, requires reference to the ecosystem services and an understanding of the connections between them.



Case study

Edington Village

Edington is a Wiltshire village located on the northern scarp of Salisbury Plain. The Parish Council and the community have carried out a number of small environmental schemes over the years including; tree planting and management, pond restoration, footpath management and improving outdoor play areas.

It is now embarking on a comprehensive review of opportunities to restore biodiversity, support improved access to the countryside with all of the associated health and wellbeing benefits. It is working with a local environmental consultant to help gather information on the environment at Edington.

The initial stage is a desk top mapping and research exercise that will develop a strong understanding of what the local environment comprises:

- What is important?
- What needs protecting?
- What needs enhancing?
- Who owns what land?
- Where projects could be carried out?

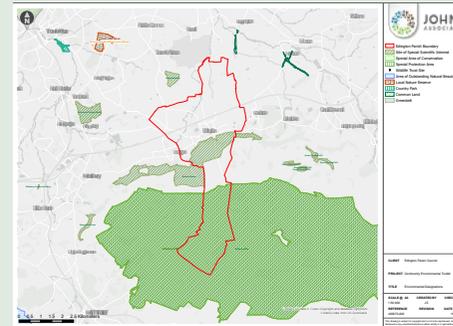
This initial stage will identify: surveys needed to bridge gaps in knowledge; environmental projects the Council and the community can help to deliver, and; how the community can be supported or funded to carry these out.

Edington Parish Council welcomes Wiltshire Council's Community Environment Toolkit and sees this as a key tool to help manage and enhance Edington's environment and enable its residents to be actively involved in ensuring it has a sustainable future.

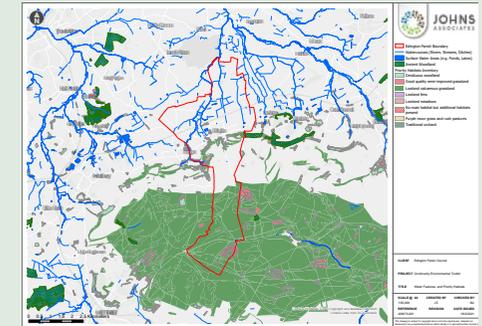


© Johns Associates Ltd.

Edington Village



Environmental designations



Water features and priority habitats

All images © Johns Associates Ltd.



Surveying your community area

Why we need to survey

Being able to identify existing natural assets you want to conserve is key before you plan any future habitat creation. In this way, already valuable habitats, buildings and heritage, archaeology, landscape and views, soils and water features can be preserved, and efforts focused onto improving areas that are less biodiverse. Having baseline data will also help you to build evidence if you want to feed your Community Environmental Plan into your Neighbourhood Plan.

This part of the toolkit helps you to better understand what things you should look to survey in your community as well as the tools and resources that are freely available to assist you in this.

Already have some areas to enhance - why not...

- make suitable native wild plant seed bombs and deploy them
- pick up litter when you are out and about
- make mammal, bug or bee homes
- plant native shrubs to infill gaps in hedgerows or create new ones
- create a community orchard
- find a small corner of land you already own and plant some trees

Agree these actions and get permissions where needed in advance



Fieldwork day

© Johns Associates Ltd.



Pond survey

© Johns Associates Ltd.



How to Survey

A wide range of free resources are available on the internet which will provide an assortment of information to support your plans. Online maps (see resources section) are a good place to start and will show you the existing features in your area.

Once the internet-based research is complete, you can conduct walking surveys from roads and public rights of way. You should seek permission and involvement from local landowners to visit other features of interest and areas that might become opportunities for nature recovery projects.

It is also important to understand who owns the land. Some will be in public ownership (Wiltshire Council or Town and Parish councils), you may have Common Land, but most will be in private ownership.

Permission is important to survey wider areas. [The Land Registry](#) can help with finding out more on who owns what piece of land in your area. It is important to try and confirm who owns what and then get in touch with them to see how partnerships can be formed. Often there are grants available for environmental improvements or conservation, and by working together, applications are usually more successful.

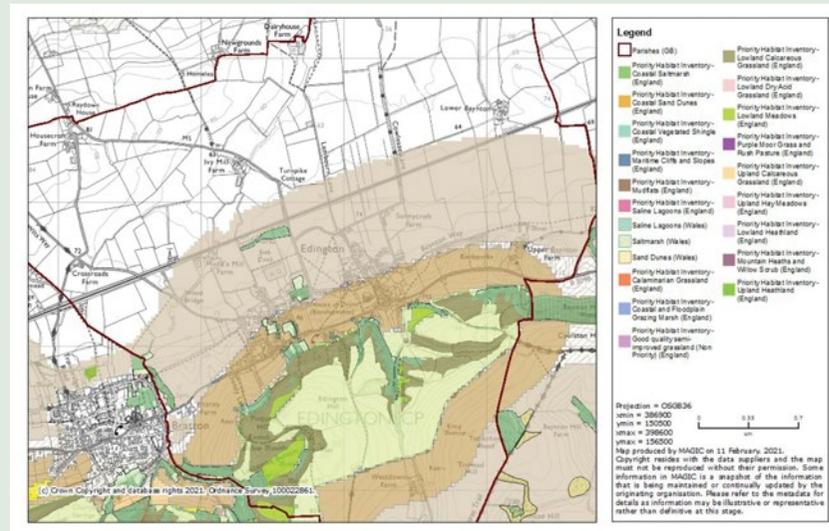
Form an environmental group to help co-ordinate, plan, manage and carry out your activities. This could be linked to an existing organisation (e.g. Parish Council, Friends of group) or why not create a new one?

Being able to record, map and communicate what you find is also important. The following are good examples of free tools:

- [Google Earth Pro](#) – view areas, map features, measure areas, import and export data

- [QGIS](#) – a free web-based fully functional geographical information system
- [Survey 1,2,3](#) – free phone-based app to record environmental information
- [Backcountry Navigator](#) – Android app for mapping features

The best plans and results come from sharing ideas and talking. You can hold online (e.g. [Zoom](#), [Teams](#), [Messenger](#), [Facetime](#)) or face to face meetings, use survey tools (e.g. [Survey 123](#), [Survey Monkey](#)), promote initiatives and results on websites and in local magazines (e.g. Parish News).



Magic Map showing Ecology Features in Edington

© Johns Associates Ltd.



Case study

North Meadows Project – Bradford-on-Avon

The North Meadow Project (part of Barton Farm Country Park) is a long-term project underway since 2009 and is delivered by local groups and individuals that have come together to help, plan, support, deliver and monitor progress.

Since its inception, an ever-increasing number of wildflowers, butterflies, dragonflies and other invertebrate species have been recorded, thanks to community efforts which have created a place for people to enjoy nature in their community.

North Meadows Project Timeline:

2009 – A survey showed that the meadow had become increasingly dominated by rank grasses with very few wildflowers. Bradford-on-Avon Preservation Trust and Countryside Access Officers decided to improve diversity through a change in management for the benefit of wildlife and the community.

2009 – Cutting the meadow began in the autumn, the cuttings collected and removed and the grass then scarified to remove the built-up thatch of dead leaves creating areas of bare ground for sowing a wildflower mix including yellow rattle, a hemiparasitic plant which helps suppress grasses allowing more wildflowers to grow.

2012 – A local botanist was engaged to help record and run wildflower walks and a notable increase in wildflower species was recorded including; common sorrel, cut-leaved crane's-bill, ox-eye daisy, common knapweed, meadow crane's-bill, meadowsweet and purple loosestrife.

2015 – Further wild flower seeds were sown throughout the meadow.

2017 – Survey work showed that the management of the grassland was becoming effective and even more diverse with a great range of wildflowers including; scabious, goatsbeard, lady's bedstraw, and musk mallow. The meadow survey also recorded a range of dragonflies, damselflies, carder bees, crickets and several butterflies.

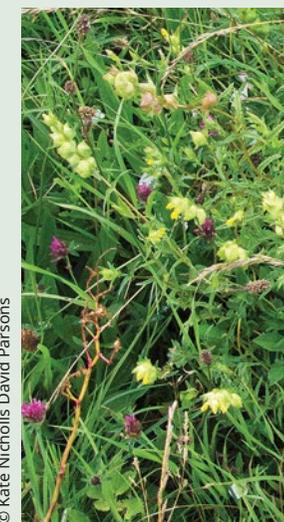
2019 – Butterfly transects carried out by the Wiltshire Butterfly Conservation from April to the end of September found 22 different butterfly species using the meadow with 262 butterflies recorded in total, including; meadow brown, small white and the common blue but there was also records of brown Argus, holly blue, small and large skippers.



Meadow cutting



Wildflower walk



Species-rich meadow



Implementing your community environmental plan

What habitats and species are most appropriate to encourage in your area?

After you have surveyed areas of land identified in your community, it is important to consider which habitats need to be retained and protected, and which areas, if enhanced, could provide the greatest benefits for wildlife. You should refer to the Landscape Character Assessment for your area and consider which types of habitats are present in local protected sites to understand what habitats you should be aiming to protect, enhance and create.

Use the outputs of your surveys to help confirm:

- Current ecological values.
- What actions could be taken to maintain, improve or enhance an area.
- Which species are you trying to encourage.
- What are their preferred habitats.

For example, your survey may have located a species poor neutral grassland field which could be turned into wildflower meadow to encourage butterflies and other invertebrates. Consider how different habitats can help to naturally store carbon especially where this role can be enhanced (e.g. converting heavily managed grass to wetland).

It is important to remember when embarking on a habitat creation project that it takes time and appropriate management for habitats to develop and it will take time to notice changes. It is also important to identify which landowners you could encourage to get involved as this is key to being able to deliver effective plans.

Your surveys will map the landscape and habitats surrounding your site enabling you to see the relationships between areas of value for biodiversity. For example, woodlands may be separated from each other by large areas of cultivated land, long sections of rivers may have straightened banks with few trees and wetland plants, or you may find hedgerow networks in poor condition perhaps because they have wide gaps between shrubs or because they are unmanaged with heavy ivy growth which threatens to cause shrubs and trees to collapse.

By providing connected, suitable and diverse habitats, we are counteracting habitat loss and habitat fragmentation. There are benefits to increasing the overall size of a habitat enabling it to support a greater number of species.

You may want to consider creating a variety of habitat types on your site as a habitat mosaic which will help maximise biodiversity. For example, you may have a field that borders a woodland with a gappy hedgerow running along one edge. You could plant up the hedgerow with native species to increase its structure and connectivity and create an area of species rich grassland with a pond.



© Johns Associates Ltd.

Field-edge set-aside habitat



© Johns Associates Ltd.

Harvest mouse –
Micromys minutus



© Kate Nicholls David Parsons

Common Chichory –
Cichorium intybus



Implementing your community environmental plan

Linking your plan to Regional Networks

Your Community Environmental Plan will form part of a wider county level, regional and national plan to restore and enhance the environment and support a sustainable future for ourselves and nature. A wide range of resources are available on the internet to help you understand these links further.

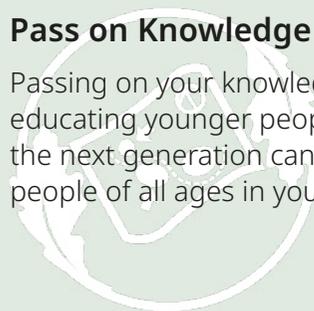
We recommend reading a range of plans and policy documents and links to these are provided at the end of this document. Refer to existing mapped data and look at the Wiltshire Green and Blue Infrastructure Strategy to make the most beneficial connections between your plans and the existing network of green spaces and habitats.

In particular look at:

- The government's 25 Year Environment Plan (Our Green Future: Our 25 Year Plan to Improve the Environment).
- Wiltshire Council, Green Blue Infrastructure Strategy.
- Relevant Area of Outstanding Natural Beauty management plans.

Pass on Knowledge and Experience

Passing on your knowledge and experience, involving, enthusing and educating younger people about the environment is essential to ensure the next generation can make an even bigger difference. Involve people of all ages in your environmental plan to help achieve this.



How can you reinforce your plan to make it effective?

After all of the hard work put into creating and delivering your plan, it is essential that it becomes established within a formal document that helps to ensure it is recognised and supported. This is a key way in which local communities can help identify and protect their local environment.

It could provide evidence to inform the development of your Neighbourhood Plan by, for example identifying local green infrastructure to be protected, enhanced or integrated into the delivery of development proposals. Policies in such plans must be evidence based and justifiable. To help with this, your environmental plans need to be based on evidence from valid surveys, maps and public datasets and consultation where you can demonstrate you have taken feedback into account.

It is good practice to review your environmental plans periodically, say every 5 years, and update them with new information such as monitoring data or revised actions.



Example neighbourhood plan

© Corsham Town Council



Making your plan long-lasting

As with everything worthwhile, it is the ability to sustain momentum, enthusiasm and continuing to deliver and measure the key elements of any community environmental plan in the long-term that will ensure its meaningful success. This requires leadership, a willing group of participants and ongoing availability of other resources, including money.

A range of opportunities are available to help achieve long-term viability. Funds could be available through formal management or operational obligations by certain organisations (e.g. at a county, town or parish level, organisations such as Wessex Water, the MoD, environmental charities and trusts as well as private landowners who have a legal duty or interest in managing protected environmental resources.

See [further information and links section](#) at the end of this document.

Voluntary activities, sponsorship and donations of materials, training resources and equipment can really help to make limited finances stretch much further and can often be sufficient to maintain effective annual delivery of community environmental plans and projects.

Ask around your community to see who has skills and equipment that could make a difference and encourage them to help. Community groups need a range of roles and skills including leaders, communicators as well as those who prefer a more practical role.



Local community group work party

© Johns Associates Ltd.



Mature oak - *Quercus robur*

© Johns Associates Ltd.



Implementing your community environmental plan

Balancing Space for Nature and People

Studies have shown that spending time outdoors and in particular in areas full of wildlife, beautiful landscapes and treasured heritage features contribute to our physical and mental health and wellbeing. An increasing number of people and medical specialists are prescribing time being active in the great outdoors as a treatment for a wide range of illnesses both mental and physical. As we seek solutions to reduce carbon emissions, there is an increasing demand for sustainable transport links including for cycling and walking. These provide new green corridors to help link people and places and provide a wonderful opportunity to experience our local environmental features at the same time.

A balance needs to be struck, however, between improving access and the numbers of people enjoying nature and the outdoors and protecting sensitive habitats and species. Many species of wild plants and animals are particularly sensitive to disturbance from human activity and domestic animals.

As part of developing community environmental plans and projects, efforts need to be made to highlight sensitive areas (including dark wildlife corridors) and then design and locate new or improved footpaths and cycleways (and any associated lighting) so key areas are avoided and the maximum positive effects can be achieved for people and wildlife.



Access to nature

© Johns Associates Ltd.



Countryside recreation

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Case study

Bradford on Avon Town Council

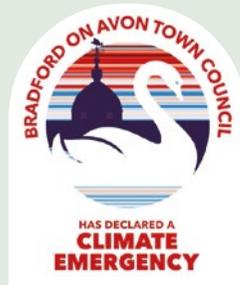
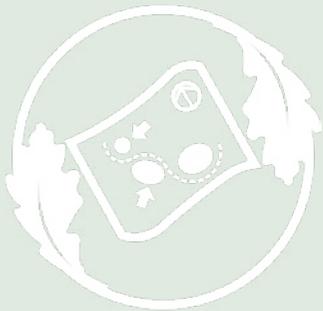
In March 2019, Bradford on Avon Town Council declared a Climate Emergency, further adding to this commitment in July 2020 with the declaration of an Ecological Emergency.

Working with Climate Friendly Bradford on Avon, Refill.org and Plastic Free BoA, the council is building on an existing track record of positive achievements and partnerships.

Recent initiatives to help the delivery of a joined up strategy for the town include:

- Climate and Ecology pages on the Council's website to communicate and engage with the community and partners, including links to local groups and events of interest.
- An increase in the areas of woodland that it manages, alongside future opportunities to manage other woodland and grassland areas around the town.
- Hosting specific events to raise awareness, encourage participation and encourage project delivery.

- Setting up GrowBoA to encourage growing our own food – especially in light of the Covid-pandemic.
- Appointing a dedicated Green Spaces Officer to promote biodiversity, liaise with local groups and advise on practical delivery of measures.
- Promote leaving small areas to become more wild and support biodiversity as patches within the town.
- Commissioning a biodiversity survey to provide baseline data on habitats and species around the town, looking at key sites and the town as a whole. This will inform the Town Council's land management and nature stewardship practices.
- Adopting of a Wildlife Protection Policy Statement.



Owl box

© Chris Hogg



Woodland management

© Chris Hogg



1 – Woodlands

What are they?

Woodland habitats are dominated by trees forming a closed canopy. Different types of woodland develop naturally depending on various factors such as geology, soil type, topography and hydrology.

Woodlands are made up of distinct layers:

- The canopy layer, which are the mature trees creating the overarching canopy of the woodland
- The understory, which is made up of the younger trees and scrub such as hazel and hawthorn; and
- The field layer and ground layer, which include ferns, grasses, flowering plants and mosses. Glades and other open areas offer great value to wildlife.

Mature woodland is an important habitat because of the range of plants, animals, birds, invertebrates, and fungi it can support. Woodlands that have existed since 1600 are known as 'Ancient Woodlands', and areas of ancient woodland near you can be found using an online tool called Magic Maps, which is included at the end of this document.

Natural regeneration occurs when trees develop naturally from seeds that have fallen from a nearby woodland. It is essential for re-establishing and extending our precious ancient and existing woodlands. Allowing trees to grow from the natural seed bank in the ground will encourage trees that are native to the local area, preserving local woodlands into the future.

Types of woodland include:

- **Broadleaved** – Broadleaved woodlands in Wiltshire mainly comprise oak with an understory of hazel or are dominated by Beech. Ash and sycamore are also frequently present as their seeds germinate freely in open glades.



© Dave Green

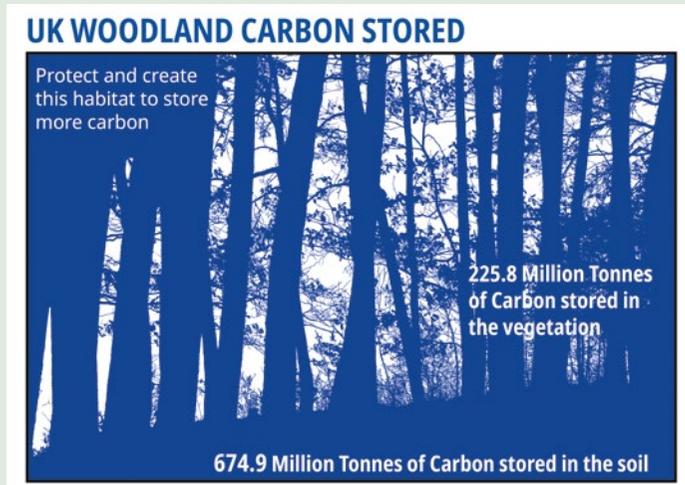
Wiltshire Broadleaf Woodland - Springtime

- **Coniferous** – Native conifer woodland in Wiltshire is exceptionally rare, comprising a few yew woodlands on chalk soils. However non-native conifers occur frequently and are often found in blocks of one species type such as Douglas fir.
- **Wet Woodland** – Is found on soils that are seasonally wet due to poor drainage or from flooding, and they occur on riverbanks, floodplains and lake edges and on the margins of bogs and mires. Wet woodland occurs on all soil types and in Wiltshire lowland habitats are characterised by willows, birches, alder and has an array of tussocky sedges, ferns, nettles and meadow sweet growing in the understory.
- **Wood Pasture and Parkland** – These are often a mosaic of habitats including scrub, grasslands, heathlands and stands of individual scattered trees which are generally managed by grazing. Wood pasture often has mature/ veteran trees that have decaying and rotting wood which are important for a range of species, including rare invertebrates.



Ecological benefits of woodland habitats

- **Ancient woodlands** - A single mature oak tree can support up to 2,300 species, not including fungi or bacteria!
- **Diverse Species** – Those often found in woodlands include;
 - Badger
 - Deer
 - Dormice
 - Woodland specialist bat species
 - Birds (including wood warbler, woodpeckers, crossbills, pied flycatcher and hawfinches).
- **Invertebrate-rich habitats** – Woodlands often support legally protected, rare or notable species.



Source: Office of National Statistics 2016: UK Natural Capital: Experimental carbon stock accounts, preliminary estimates

Woodlands: Did you know...

- Trees help fight climate change by acting as carbon 'sinks'.
- Woodlands can absorb carbon and lock it away for centuries in the soil and timber.
- Existing mature woodlands develop large carbon stores in their soil and in large trees. New plantations take time to be effective.
- Woodlands can help prevent flooding and soil erosion
- Woodlands reduce pollution and improve air quality.

How can we improve this habitat?

More information on the management of woodlands can be found at the end of this document.



Wiltshire wet woodland



Common Toad – *Bufo bufo*



Deciduous Woodland and Hedgerow



Dormouse – *Mus avellanarius*



2 – Grasslands

What are they?

Grasslands come in two basic forms:

- **Species poor grasslands** – which have been fertilized and improved for agriculture or planted for amenity use (e.g. grass sports pitches or parks).
- **Species rich grasslands** – which although mown or grazed, are managed with little or no inputs of fertilisers or herbicides.

Species-rich grasslands may have been planted relatively recently in order to attract wildlife or may be very long established. Soil organisms including insects, fungi, mycorrhizae and bacteria are abundant and they usually have a high number of flowering plants in addition to grass species.

The type of grassland depends on soil type and can be:

- **Neutral grassland** – occurs on soils that are neither strongly acidic nor lime-rich, with a pH between 5.5 - 6.5. Typical species include common knapweed, yellow rattle, birds foot trefoil, common spotted orchid, crested dogs' tail, sweet vernal grass and Yorkshire fog. This is the most commonly found grassland habitat type across the country including Wiltshire.
- **Calcareous grassland** – occurs on soils that have a pH higher than 6.5. Typical species include common rock rose, eyebright, ladies bedstraw, wild thyme, marjoram, small scabious, quaking grass, tor grass and upright brome. This is a common habitat in Wiltshire on chalk and limestone soils.
- **Acid grassland** – occurs on soils with a pH less than 5.5 and usually has a higher abundance of sedges, grasses, moss and lichen and fewer flowering herb species. Typical species include tormentil, sheep's sorrel, heath bedstraw, sheep's fescue, bristle bent and wavy hair grass. Heather is also often found growing throughout acid grassland, creating a valuable mosaic habitat of herbs and scrub. This habitat type is comparatively rare in Wiltshire.
- **Wet grassland** – occurs on low-lying land often within river floodplains that are seasonally flooded. Typical species include meadow foxtail, crested dogs' tail, marsh marigold, meadowsweet, ladies smock and rarities such as snake's head fritillary and great burnet.

Management – can alter the structure and shape of the grassland, neglect and infrequent cutting can lead to species poor tussocky grassland which will over time become encroached with scrub.

UK GRASSLAND CARBON STORED

Protect and create this habitat to store more carbon

4.2 Million Tonnes of Carbon
stored in the vegetation

324.1 Million Tonnes of Carbon
stored in the soil

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Source: Office of National Statistics 2016: UK Natural Capital: Experimental carbon stock accounts, preliminary estimates



Ecological benefits of grassland habitats

All species rich grassland supports a range of species:

- Important and rare plant species
- Invertebrates
- Pollinators such as bees and flies
- Butterflies and moths
- Reptiles including common lizard and slow worm
- Amphibians including frogs, toads and newts
- Small mammals including field mouse and voles
- Bats
- Birds

Did you know species rich grassland can:

- Help with water storage and retention, acting as flood mitigation
- Help prevent erosion of soils
- Lock away pollutants
- Contribute to carbon sequestration

How can we improve this habitat?

More information on the management of grasslands can be found at the end of this document.



Kidney Vetch - *Anthyllis vulneraria*

© Johns Associates Ltd.



Wiltshire Chalk Grassland

© Johns Associates Ltd.



Wiltshire Species-rich Grassland

© Johns Associates Ltd.



Musk Mallow – *Malva moschata*

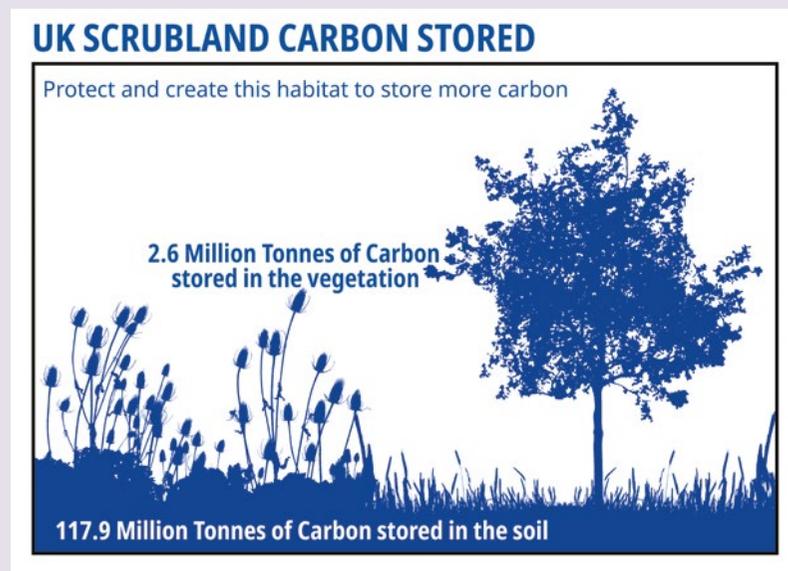
© Kate Nicholls David Parsons



3 – Scrublands

What are they?

Scrub habitats are made up of shrubs and bushes and are considered to be 'successional' habitats, meaning they are in transition from one habitat type to another e.g. grassland into woodland. Scrubland habitats come in a range of forms from blackthorn thickets, and dense bramble to gorse growing over heathland. Very different scrub communities will be present, depending on factors such as soil type, topography, grazing pressure and drainage. Glades and other open areas within scrub often offer significant value to wildlife.



Source: Office of National Statistics 2016: UK Natural Capital: Experimental carbon stock accounts, preliminary estimates

Lowland scrub on dry soils – depending on the geology of the soils a range of scrub habitats will develop on dry soil types:

- **On neutral soils** – Typical species include hawthorn, blackthorn, elder, elm, hazel and bramble.
- **On calcareous soils** – Typical species include hawthorn, blackthorn, dog rose, wayfaring tree and dogwood. Wiltshire has a high percentage of the southern UK extent of Juniper scrub which occurs on chalk downland or limestone grassland in southern England which is a rare and declining habitat
- **On acid soils** – Typical species include gorse, broom, bramble, bracken and the non-native invasive rhododendron

Lowland scrub on wet soils – depending on the geology of the soils a range of scrub habitats will develop on wet waterlogged soils. Typical species include grey willow, downy birch, alder, hawthorn, alder buckthorn.

Scrub is often considered to look messy and there is a tendency to want to tidy it up. However, it is an important transition habitat and also provides valuable areas for species including badger, dormice, small mammals (such as hedgehog), invertebrates (including butterflies) and birds, as it provides cover and protection from disturbance and predators.



Ecological benefits of scrub habitats

- Nationally, there are over 450 rare and threatened species of plant, insect and bird which are associated with scrub habitat.
- Scrub is used by an extremely wide range of bird species and its dense structure is important for nesting birds including the following species, which are considered to be 'Birds of Conservation Concern' in the UK:
- Early-stage succession scrub can support breeding linnets and meadow pipits.
- Mature scrub can support turtle doves and bullfinches.
- Nightingales require dense blackthorn or bramble stands for nesting.
- Scrub edges support a rich diversity of flowering plants.
- Supports many invertebrate species which provide food for insectivorous birds and bats.
- Provides refuge habitat for reptile and amphibian species.
- Provides a source of food for small mammals including hazel dormouse.
- Scrub can be considered to be a 'nursery' for naturally regenerating woodland.



How can we improve this habitat?

More information on the appropriate management of scrub habitat can be found at the end of this document.



Scrub Habitat

© Johns Associates Ltd.



Scrub Habitat – Winter

© Johns Associates Ltd.



4 – Wetlands

What are they?

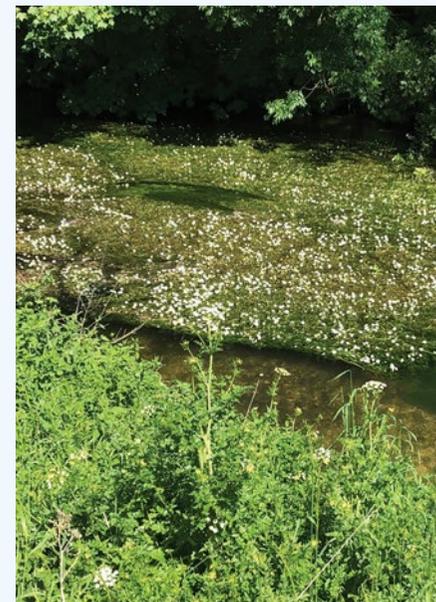
Wetlands can be split into two main groups:

- **Vegetated areas of land** – where the water table stands at or near the land surface for a long enough period each year to support wetland plants.
- **Freshwater open waterbodies** – where the underlying geology influences the water chemistry and physical characteristics of the waterbody whether it is a lake, pond, river or stream.

Wetland habitats can be heavily impacted by the effects of nutrient runoff, ground- and surface-water pollution, water extraction and river engineering that can alter flooding regimes. Wetland fen and bog habitats are very rare habitats in Wiltshire.

- **Open water** – These habitats can be split into standing water, such as lakes and ponds and flowing water, which includes rivers and streams. Standing water habitats are those that lack a directional flow and can be either permanent or seasonal. Flowing waterbodies are heavily influenced by topography, underlying geology and activities such as agriculture or urbanisation within their catchment areas.
- **Reedbeds** – Reedbeds are essentially a transitional habitat between open water and dry land. They are dominated by tall stands of common reed that grow in waterlogged conditions for most or all of the year. Reedbeds occur around lakes, alongside rivers, ditches and streams and as part of complex wetland habitat. It is a highly valuable habitat to a range of bird species such as bittern, bearded tit and reed warbler to name a few. They are also very important for a range of invertebrate species including the reed leopard moth.

- **Peat bogs** – These are wetland habitats that are rainwater fed and that accumulate peat as the conditions are too waterlogged for vegetation to decompose fully, so as a result this builds up into a layer of organic matter. Species that live in these habitats are capable of tolerating both the waterlogged conditions and low nutrient status: sphagnum moss is usually abundant in these habitats.
- **Lowland Fens** – Fens are also peat forming wetland habitats that are found in floodplains, open water transitions and in basins predominantly fed by groundwater. They are recognisable for their tall stands of reeds, sedges and rushes and waterlogged ground conditions with limited drainage. They can support a rich diversity of both plant and animal communities, with around 550 species of plants and more than half the UK dragonfly species being found in lowland fen habitats.



Wiltshire chalk stream

© Dave Green

All wetlands are particularly important for conserving biodiversity, slowing the flow of water and naturally storing carbon.



Ecological benefits of wetland habitats

Wetlands, including rivers, streams, ditches, lakes, ponds and wet grassland and woodlands support a diverse range of species including:

- Large numbers of waterfowl
- Water voles
- Otters
- Fish
- Dragonflies, damselflies and other invertebrates
- Amphibians
- A range of rare and important plant species such as sphagnum mosses

How can we improve this habitat?

More information on the management of wetlands (including ponds) can be found at the end of this document.



© Johns Associates Ltd.

Wetland dominated by soft rush with soft rush – *Juncus effusus*



© Johns Associates Ltd.

Reed bed with purple loosestrife – *Lythrum salicaria*

Did you know that wetlands can also help with:

- Water purification
- Water storage
- Processing of carbon and other nutrients
- Prevention of flooding by slowing the flow of rainfall reaching urban areas

UK WETLANDS CARBON STORED

Protect and create this habitat to store more carbon



© Johns Associates Ltd.

Source: Office of National Statistics 2016: UK Natural Capital: Experimental carbon stock accounts, preliminary estimates



5 – Urban Habitats

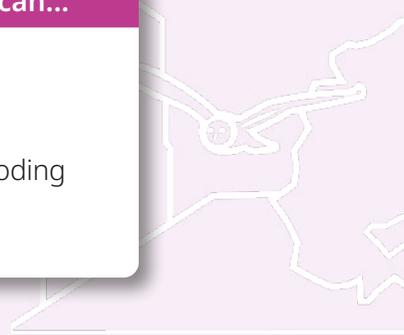
What are they?

Urban habitats are those developed and shaped by humans and are generally found in towns and cities. Urban habitats can be ecologically diverse, and examples include private gardens, parks and other greenspaces, churchyards, golf courses, allotments and derelict sites such as brownfield land. These habitat types are highly susceptible to change based on social and economic influences.

- **Private Gardens/Allotments** – These are the greenspaces on our doorstep, offering refuges for wildlife in the urban environment and providing stepping-stones into less urbanised habitats. It is estimated that around 87% of homes in the UK have a garden which if enhanced to benefit wildlife can increase biodiversity in our urban areas.
- **Amenity Grassland/ Open Greenspaces** – These are types of grassland that are closely mown and used primarily for recreational purposes e.g. sports pitches and parks. Amenity grasslands are generally species poor due to fertiliser/ herbicide use and intensive management regimes that discourage species diversity.

Urban Habitats: Improving biodiversity can...

- Enhance urban landscapes and provide health benefits
- Reduce surface water runoff, reduce flooding and can help lower pollution levels



- **Roadside Verges** – These can act as important habitat corridors which help connect and restore larger habitat areas by allowing a range of species, from rare plants to butterflies and reptiles, to disperse and colonise new areas. Roadside verges could be managed as essentially grassland meadows that could support over 700 wildflower species in the UK, approximately 45% of our total flora. They can also be turned into ‘raingardens’ soaking up water and helping improve its quality.
- **Brownfield** – Brownfield land is often described as open mosaic habitat on previously developed land that has become derelict. It is an important habitat in the UK because it constitutes early-stage successional habitat and is important to some rare invertebrate species such as the shrill carder bee.



© Johns Associates Ltd.

Flowering plants support pollination



© Johns Associates Ltd.

Allotments can be great for biodiversity, food and wellbeing



Ecological benefits of urban habitats

- Sustain biodiversity in heavily modified areas.
- If well designed and enhanced, urban areas have significant potential to enhance biodiversity.
- Provide connectivity by creating 'stepping-stone' habitats or habitat corridors (including dark corridors) that are important for maintaining connectivity and biological interactions, such as plant-pollinator interactions and plant-seed dispersal interactions.
- Support species such as hedgehogs, foxes, badgers and crevice dwelling bat species. These species are frequently seen in gardens and greenspaces with low levels of artificial lighting.
- Improve air quality including helping to regulate temperature.
- Reduce surface water runoff, reduce flooding and can help lower pollution levels.

URBAN CARBON STORED

Carbon can be stored in the soil (if left undisturbed) and vegetation. By protecting and introducing new green and blue spaces in our urban areas (e.g. allotments, gardens, parks, lakes, ponds, verges woodlands, orchards, grasslands) we can dramatically improve their value, with many different benefits.



© Johns Associates Ltd.



© Johns Associates Ltd.

Kennet and Avon Canal Near Devizes



© Johns Associates Ltd.

Urban Amenity Greenspace

How can we improve this habitat?

Small scale changes in these habitats can have positive overall effects on biodiversity.

- Stopping the use of pesticides such as slug pellets and the application of herbicides.
- New development provides a unique opportunity to manipulate soil types and create conditions that can be exploited by a large variety of pollinator larvae.
- Creating garden ponds, wildflower areas, bug, butterfly and bee hotels, log piles, installing bird feeders, bird and bat boxes and allowing access to hedgehogs through residential areas.
- Managing of amenity/ urban greenspaces/ roadside verges by reducing the frequency of cutting/ mowing or reducing cutting in designated areas. This will help increase plant diversity and help contribute to carbon sequestration when compared to frequently mown, short-cropped grassland.
- Create roadside 'rain gardens' to store and treat water runoff, whilst increasing biodiversity. Planting trees to increase carbon sequestration, improve air quality and reduce pollutants from the air reaching the human population.

More information on the management of urban habitats can be found at the end of this document.



6 – Farmland Habitats

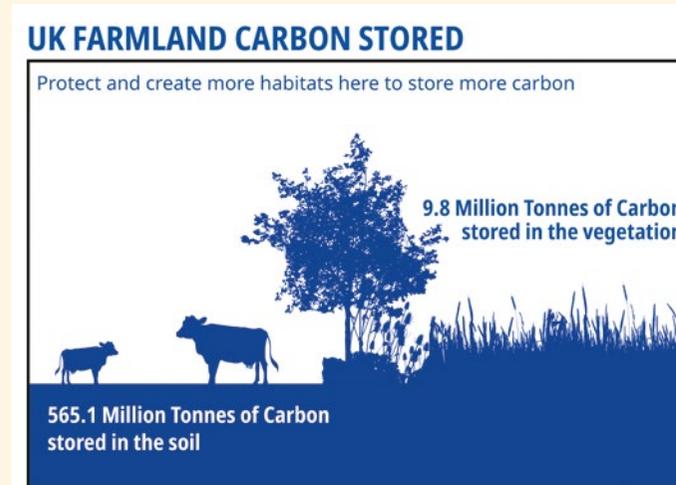
What are they?

Farmland habitats vary but are heavily modified where intensive practices exist. Habitats can be rich in wildlife although some modern agricultural practices have caused a decline in biodiversity.

- **Arable** – Arable habitat is cultivated land used to grow short term crops such as cereals and potatoes and it makes up approximately 25% of the farmland in Britain. Modern farming techniques involve the use of agrochemicals and intense management methods, which has been the cause of a significant decline in cornfield flower species such as corncockle, cornflower and corn marigold as well as many other rare and vulnerable species. Arable margins or wildlife strips provide areas that aren't treated with pesticides or fertilizers, allowing arable plants to grow and providing habitat for invertebrates, small mammals and farmland birds.
- **Pasture** – Pasture is enclosed grassland fields used to graze domesticated livestock throughout the year. Pasture is often 'improved' especially in the lowlands by applying fertilisers and sowing species such as perennial rye grass that are robust and tolerant of grazing and trampling. This reduces grassland species diversity. This habitat makes up more than 20% of the total UK land area, so by encouraging changes to farming practices can have considerable benefits to nature.
- **Hedgerows** – Hedgerows are linear, man-made landscape features that are similar to woodland edges, acting as wildlife corridors between isolated patches of woodland, scrub and grasslands. It is estimated that England has approximately 420,000km of hedgerows, although many are negatively affected by intensive management practices. Ancient hedgerows are particularly

important for biodiversity as they are typically species rich, with evidence of traditional management such as hedge laying and old coppice stools, and a rich ground flora similar to that found in woodland edges.

- **Orchards** – Traditional orchards typically require low-intensity management with low density planting which results in space between the crowns of the trees allowing grazing or hay cutting of the grassland underneath. Tree species are mainly in the Rosaceae family, such as apples and plums but walnuts and hazelnuts are often grown in traditional orchards. Trees in traditional orchards often show a range of decay as the trees mature which can support a number of species including birds, bats, mosses, lichens and fungi.



© Johns Associates Ltd.

Source: Office of National Statistics 2016: UK Natural Capital: Experimental carbon stock accounts, preliminary estimates



Ecological benefits of farmland managed for wildlife

- Environmental benefits of farmland managed for wildlife.
- Levels of pollination will increase
- Increases the diversity of mammals, including harvest mouse in arable margins, dormouse in hedgerows, brown hares in open grassland areas and foraging and commuting bats.
- Supports specialised farmland bird species such as skylark, yellow-hammer, corn bunting, yellow wagtail, grey partridge and barn owl.
- Allows rare annual arable weeds to grow, including Venus’s looking glass, ground pine, pheasant’s-eye and shepherd’s needle.
- Supports rare invertebrates such as necklace ground beetle and set-aside downy-back beetle.

Traditional orchards have been found to support large numbers of rare and scarce plant and animal species – around 1,800 species have been recorded in these habitats.

Did you know?

- Hedgerows can help tackle climate change by helping to capture and store carbon
- Restoring and managing extensive habitats on farmland helps stop soil erosion, support pollination, and regulate air and water quality through intercepting pollutants.



A mosaic of grassland and hedgerow habitats increases habitat diversity in the landscape and provides important links to other areas of habitat including rivers/ streams, ponds and woodlands.

Well managed field boundaries, including hedges, long grass and other vegetation and wetlands, help alleviate flooding and trap soil and farm chemicals before they enter streams and rivers.

By restoring intensive arable land to permanent grassland, soil erosion can be effectively managed, and natural soil fertility, drainage, structure and biodiversity can be restored

How can we improve this habitat?

More information on the management of farmland can be found at the end of this document.



Wiltshire arable and pasture farmland



Dairy cattle



Field edge habitat



Case study: Bringing it All Together

The [Salisbury Area Greenspace Partnership \(SAGP\)](#) is a community-led initiative formed in 2012. It has evolved into an proactive organisation with partners and supporters that represent a wide-range of interests in greenspace in the local area.

Led by a steering group, it is supported by a range of organisations including Wiltshire Council, local parish councils, Salisbury City Council, Salisbury Business Improvement District, Wiltshire Wildlife Trust, significant landowners, Friends of groups, the local community, volunteers and local specialist interest groups.

Vision Statement

“Our Vision is for good quality, well connected and managed green infrastructure which provides a range of benefits for the growing community in the Salisbury area, including valuable amenity areas, safer alternative routes for people, corridors for wildlife, environmental regulation and ecosystem service delivery, and the unique and distinctive character which makes this a special place”

SAGP carry out a wide range of projects to help protect, enhance and create greenspace in the local area including:

- greenspace asset mapping and transforming the data into an interactive map, to inform a local green infrastructure strategy, decision making, initiating habitat management and practical projects and the development of neighbourhood plans. This project has been supported and funded by Wiltshire Council, Salisbury City Council and other parties.
- contributing to the Salisbury Neighbourhood Development Plan, monitoring and responding to planning applications and appeals and wider consultations, to ensure the natural environment and green infrastructure is adequately provisioned for and enhanced.
- practical conservation work including scrub management of chalk grasslands at Lime Kiln Down, management and maintenance of footpaths along the Bishops Walk to maintain accessibility and community connectivity to greenspaces and habitat management in Middle Street Meadow (an old water meadow) by the River Nadder.



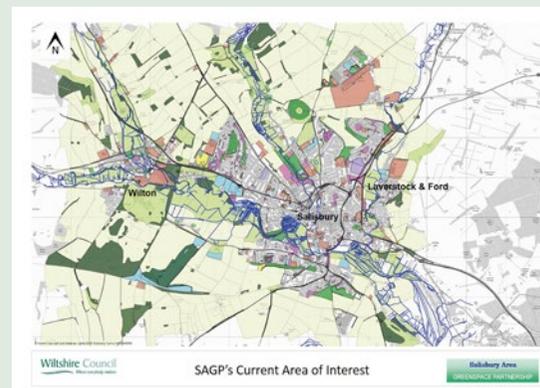
© Pam Rouquette

Middle Street Meadow Pond



© Les Lipscombe

Orchids on Lime Kiln Meadow



SAGP's Current Area of Interest

© SAGP



Further information and links

Surveying your community resources

A wide range of free resources are available on the internet. The following are good examples that can be used to capture a wide range of information and inform surveys to verify details and record local features of interest:

- [Google Earth Pro](#) – stunning aerial imagery to explore, including historic information and ability to view at ground level from roads
- [Ordnance Survey Maps](#) – high quality free mapping resource highlighting key features and topography
- [Google Maps](#) – this provides an alternative to OS and allows comparison to aerials and often reveals additional features and organisations
- [National Biodiversity Network](#) – Atlas of biodiversity records and opportunities to share data
- [MAGIC](#) – a fantastic interactive mapping and measuring tool for all key themes
- [Soilscape](#) – map and information of broad regional soil types, characteristics and uses
- [UK Soil Observatory](#) – further information on soils
- [Geology of Britain Viewer](#) – maps and information on geology
- [Catchment Explorer](#) – key information on the water environment
- Groundwater Maps – providing information on hydrogeology
- [Wiltshire Planning Explorer](#) – mapping of environmental resources, protections and planning
- [Heritage Gateway](#) – reference source and mapping for local and national heritage resources
- Gov.uk – [Natural England](#) and [Environment Agency](#) – resources/ advice from National Agencies

There are other organisations that will be able to provide background datasets (often free of charge) including:

- [Wiltshire Council](#)
- [Environment Agency](#)
- [Wiltshire Wildlife Trust](#)
- [Bristol Avon Rivers Trust](#)
- Town and parish councils
- [Wiltshire and Swindon Biodiversity Records Centre](#)
- [Wiltshire Archaeological and Natural History Society](#)
- [Wessex Water](#)
- Local wildlife groups such as the [Wiltshire Bat Group](#), [Wiltshire Mammal Group](#) and [Botanical Society of the British Isles](#).



Further information and links

Linking your plan to wider networks

- [25 year Environment Plan \(Our Green Future: Our 25 Year Plan to Improve the Environment\)](#) – A nationwide plan to improve the UK’s air and water quality and protect the many threatened plants, trees and wildlife species.
- [Area of Outstanding Natural Beauty Management Plan 2018-2023 – Cotswolds](#) – sets out the vision, outcomes and policies for the management of the Cotswolds AONB 2018-2023.
- [Area of Outstanding Natural Beauty Management Plan – 2019-2024 – Cranborne Chase & West Wiltshire Downs AONB](#) – a plan which presents objectives and policies that can be applied to help conserve and enhance the AONB
- [Area of Outstanding Natural Beauty Management Plan 2019-2024 – North Wessex Downs](#) – a plan which presents objectives and policies that can be applied to help conserve and enhance the AONB
- [Wiltshire Council – Climate Change Adaptation Plan](#) – which focuses on well-being, public health, financial and economic, environmental, civil contingencies and emergency planning and infrastructure resilience in the context of climate change adaptation
- [Neighbourhood Plans](#) - neighbourhood planning advice in Wiltshire
- [Wiltshire Core Strategy 2015](#) – which provides a positive and flexible overarching planning policy framework up to 2026
- [Wiltshire Council Groundwater Management Strategy 2016](#) – a living document which discusses the challenges caused by ground water and how Wiltshire Council is aiming to identify areas at risk, and who can help in a partnership approach
- [Wiltshire Climate Strategy Discussion Document](#) – which details Wiltshire’s approach to meeting the climate change challenge and the transition to a carbon reduced future
- [Wiltshire Green and Blue Infrastructure Strategy](#) – which provides a vision and framework for improvement of the green and blue infrastructure in Wiltshire
- [Wiltshire Open Space Strategy](#) – a forthcoming document to complement the Wiltshire Green and Blue Infrastructure Strategy



Useful organisations

- [Wiltshire Council](#)
- [Wiltshire climate alliance](#)
- [Friends of the earth](#)
- [Peoples trust for endangered species](#)
- [Centre of Ecology and Hydrology](#)
- [Buglife](#)
- [Bat conservation society – managing habitats for bats](#)
- [Wildlife trusts](#)
- [RSPB](#)
- [The mammal society](#)
- [Centre for sustainable energy](#)
- [The conservation volunteers](#)
- [Keep Britain tidy](#)

Funding

- [Wiltshire Council, area boards, local parish councils](#) – to help direct you to a funding scheme
- [Sustainable Farming Incentive](#)
- [The grants hub](#)
- [NBN](#) – link to funding organisations
- [Countryside stewardship schemes](#)
- Local Businesses may offer funding or sponsorship



Further information and links

Habitat resources

Grasslands

- [Magnificent meadows](#)
- [Plantlife](#)
- [Farming for Nature](#) – information on species rich grassland creation/restoration
- [Floodplain meadows](#)

Woodland

- [Woodland trust](#)
- [Forestry Commission](#) – pdf – improving your woodland
- [Wildlife Trust](#)

Farmland

- [Hedgeline](#)
- [CPRE](#) – Hedgerows and Landscapes
- [Wildlife Trust pdf](#) – guidance on grassland for farmers and landowners
- [Wildlife Trust](#)
- [Farm Wildlife](#) – Support wildlife on farms
- [Farming for Nature](#)
- [Agricology](#) – sustainable farming with articles on habitat management

Wetlands

- [Scotland's Rural College \(SRUC\) pdf](#) – Wetland maintenance, improvement and guidance
- [WWT](#) – Wetland creation and management
- [Freshwater habitats](#) – links to pond creation
- [The Rivers Trust](#)

Urban

- [RSPB](#) - Urban environments general guidance
- [CEH PDF on Habitat Creation and Management for Pollinators](#)



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Bradford on Avon
Preservation Trust



Community Environmental Toolkit

