

Bradford on Avon Nature Recovery Report

Towards a wilder town that benefits all

Bradford on Avon: a town rich in ecological potential

Pioneering progress

Bradford-on-Avon is a town with a distinctive heritage and significant green credentials. The town council declared a climate emergency in March 2019, following this up with the declaration of an ecological emergency in July 2020. It is one of the first councils in the UK to take these steps. The council has also recently adopted a biodiversity policy and - as part of a broader action to address these linked emergencies - is now looking to maximise the biodiversity (essentially the variety of all biological life in all its forms and interactions) on the land under its control through rewilding.

Co-creating a wilder town

A wilder, more biodiverse Bradford on Avon can benefit every resident, regardless of age or background, whether that be through cleaner air and water, enhanced health and wellbeing, or improved business opportunities. With the local council playing a guiding role, every resident - from farmers and other land managers to small businesspeople and home owners - can contribute to the realisation of such a town. Rewilding embraces the role of people and their cultural and economic connections to the place where they live. This means building coalitions and providing support based on respect, trust and shared values, connecting people of all backgrounds to co-create innovative ways of rewilding and deliver the best outcomes for communities and wild nature.

Stimulating discussion

As a tool to inform and promote nature recovery, this report is intended to stimulate creative thinking and discussion, rather than provide firm recommendations. It draws on the Ecosulis Natural Asset Framework, which is designed to help those managing land derive higher levels of value from the practice of managing and restoring natural areas. It also takes account of rewilding principles and is underpinned by site surveys and ecological analysis.

Natural asset thinking

Natural assets can be thought of as the interaction between the bio-physical characteristics of an area, and associated infrastructure, institutional, human and cultural assets. Together these enable or constrain forms of engagement with the area - termed "value-generating practices" - which generate different benefits for people, society and nature. An example of a natural asset would be the River Avon, which supports a range of value-generating practices such as angling, paddle boarding, swimming and birdwatching.

What is rewilding?

With such luminaries as Sir David Attenborough and Greta Thunberg declaring themselves passionate advocates, today support for rewilding is growing rapidly. A progressive approach to conservation, rewilding is about letting nature take care of itself, enabling natural processes to shape land and sea, repair damaged ecosystems and restore degraded landscapes. Through rewilding, wildlife's natural rhythms create wilder, more biodiverse habitats.

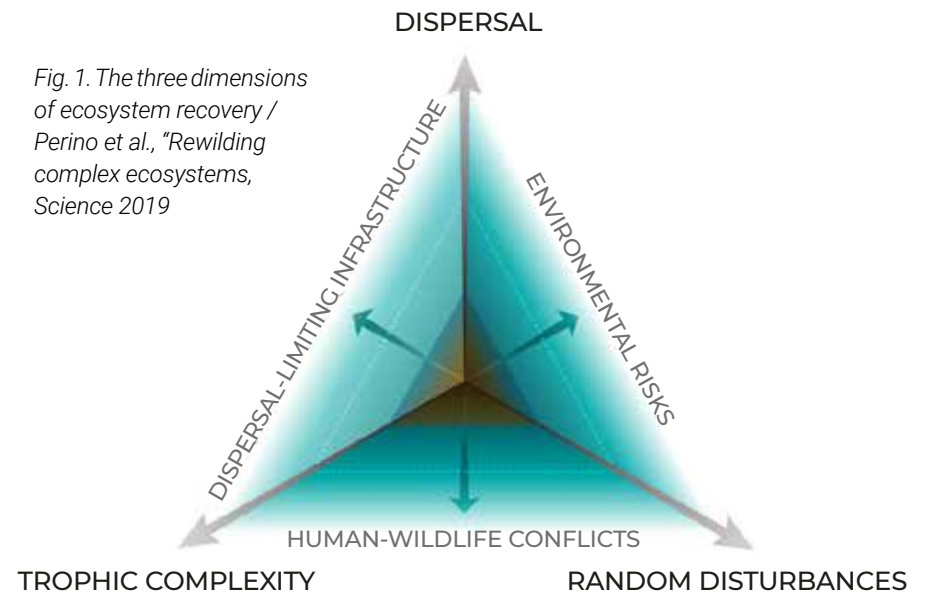
Rewilding is also about people. With its hopeful narrative and pragmatic philosophy, rewilding is both inclusive and inspirational – it aims to reconnect people with wild nature and enable them to benefit from its recovery.

In 2019, a set of rewilding principles were established. These help to define what is different and special about rewilding, providing coherence, inspiration and transparency, and position rewilding in relation to other conservation approaches. In particular, they can be used to shape nature-based solutions that can help to address environmental, social, economic and climatological challenges.

The science of rewilding

On a more scientific level, rewilding means restoring networks of interactions between communities of organisms and their physical environment, along with the ecological processes that emerge from these interactions. Restoring such complexity creates healthier, stronger, more functional ecosystems that are better able to provide people with a wide range of benefits – from clean air and water right through to fertile soil, the locking up of atmospheric carbon and enhanced health and wellbeing.

Practical rewilding involves actions that work to enhance three key processes (see Fig. 1) – trophic complexity (essentially a measure of the complexity of relationships in a food web), random natural disturbance (caused by natural events such as river braiding or natural grazing), and dispersal (how easy is it for species to spread out across landscapes).



Towards a green town that benefits all

Having declared an ecological and climate emergency, Bradford on Avon now has the opportunity to further establish itself as a progressive “green” town with ambitious climate change, biodiversity and sustainability goals and strategies. Interacting with local architectural heritage, strategic investments in the town’s portfolio of natural assets could further enhance its reputation as an attractive place to live, work and visit (the town already attracts many tourists) as well as boost community pride and cohesion.

Our high-level assessment of Bradford on Avon’s natural assets suggests that they could be managed to generate a wide range of enhanced benefits for the town’s residents and visitors.

- The proximity of several natural assets to residential areas creates the opportunity to promote safe, regular walking areas that could enhance the life quality of the elderly and infirm (and their carers). The social benefit of these assets could be enhanced by working with care providers to plan walking routes, developing protocols for use of GPS tracking watches, and investing in infrastructure (e.g. benches).
- With its diversity of natural assets, Bradford on Avon is an ideal town for green prescribing (which essentially involves using exercise in the fresh air to improve people’s health and wellbeing). The public health value of these assets could be enhanced by working with the town’s medical practices to design and develop a green prescribing system.
- Bradford on Avon’s natural assets are already managed to support activities such as rambling, dog walking and jogging. In our view there is scope for enhanced management in some areas. For example, we have proposed some initial changes in management to Barton Farm Country Park which will enhance the river as an asset for riverside picnicking, swimming and paddle boarding and generate demand for improved pollution management linked to a hopeful narrative of river recovery.



A baseline for the future

Bradford-on-Avon has followed a similar ecological trajectory to other UK towns. Ecosystems have been simplified, with landscapes characterised by abrupt woodland edges, closely mown amenity grassland, neatly topped hedgerows and post and rail fencing - all surrounded by intensively modified agricultural fields. At the same time, spatial connectivity between vegetation and habitats has been severely impacted by the expansion of housing, construction of roads, and the modification and channelisation of the river. This has degraded structural diversity and vegetation dynamics and reduced species diversity.

Despite this general trend, there are still some areas within the town that support relatively high biological diversity – these include Barton Farm Country Park North Meadow and Far End, Becky Addy Wood, Poulton Playing Field, parts of the disused golf course, and the banks of the Kennet and Avon Canal. There are also some surprising remnants of historical landscapes that could facilitate rapid natural regeneration. These include the parklands of the Frankleigh House Estate to the north of the town (which supports a number of veteran trees), strips of woodland supporting ancient coppice, and roadside verges supporting orchids and Bath asparagus, as well as pockets of orchard, dry stone walls, and the River Avon and connected floodplain. With the government's new Environmental Land Management (ELM) scheme now being implemented, farmland – some of which is already being managed less intensively - will also be critical to the restoration of biodiversity in and around Bradford on Avon.



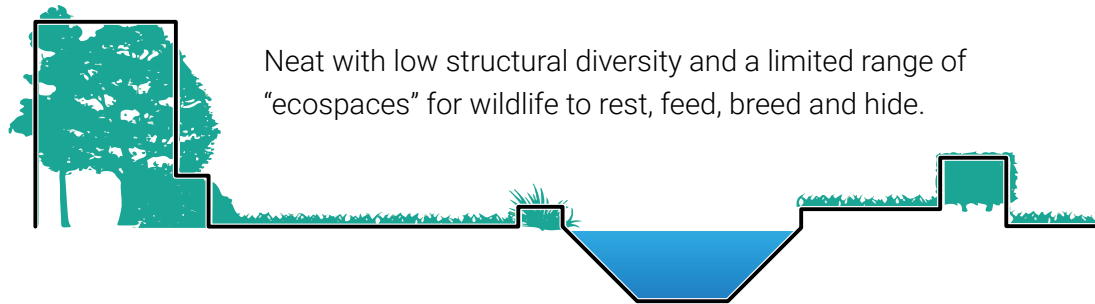
A baseline for the future (cont'd)

Collectively, these oases of biodiversity offer a unique opportunity for Bradford on Avon to improve its current landscape management practices, engage a wide range of local landowners and stakeholders, and become one of the first towns in the UK to effectively tackle its ecological emergency. This can be achieved by creating vegetation structures that are variable, graded and connected, and by potentially expanding the natural assets of the town through strategic partnerships and investment.

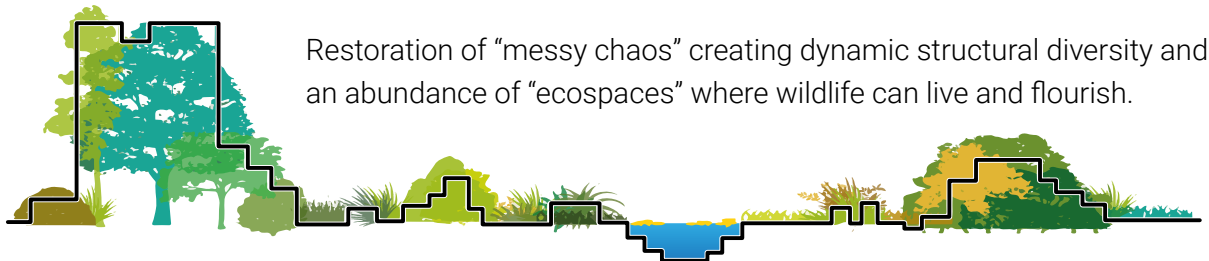
In the UK currently there is a general expectation that urban and rural green spaces should be highly managed and manicured. However, a gradual transition towards “messier” spaces will help to enhance biodiversity and thereby address the ecological emergency. Such a transition will require:

- Public engagement to inform and educate.
- The identification of areas where areas of greater “mess” could be tolerated and embraced.
- Systematic implementation.

Typical countryside management

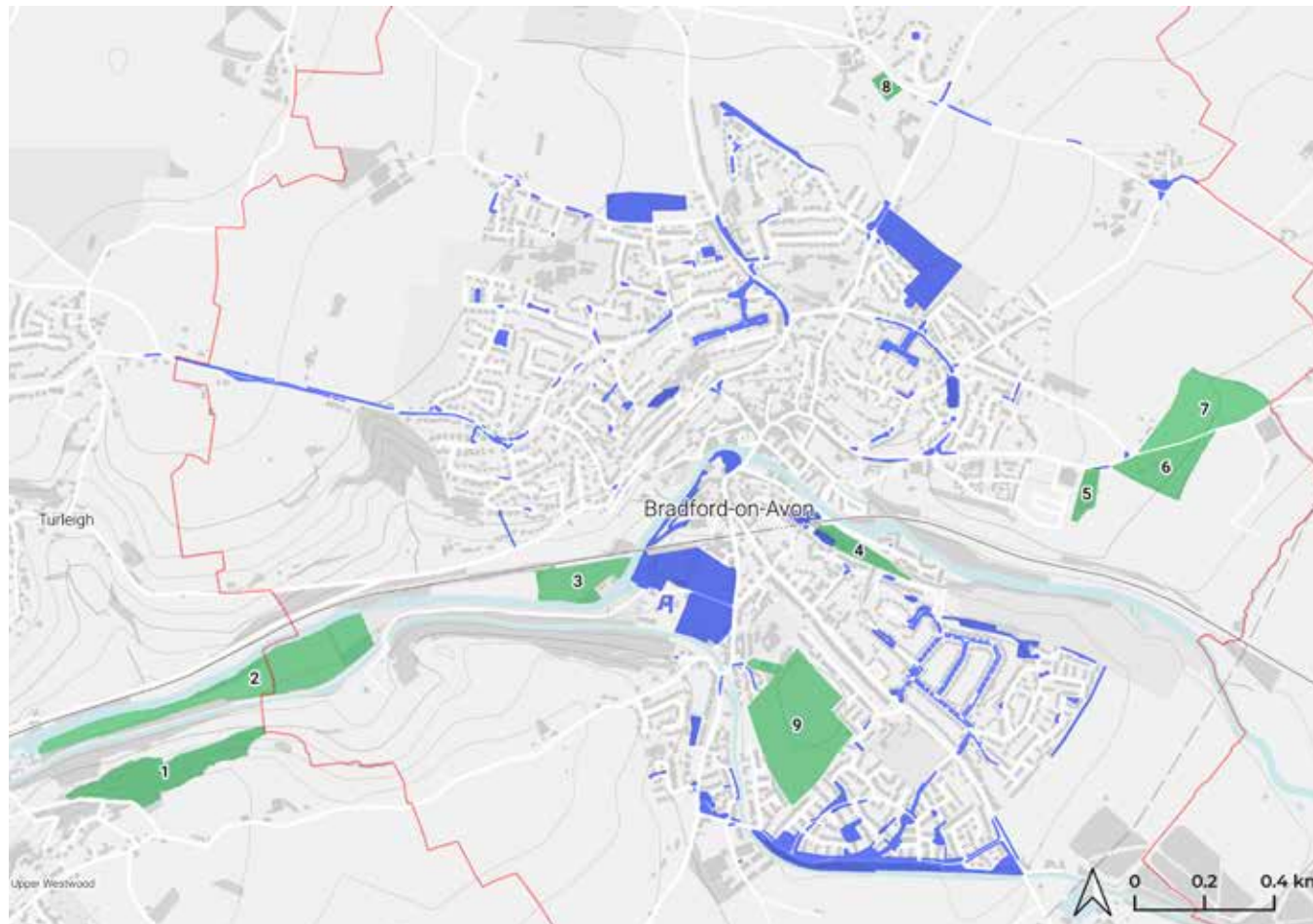


Management guided by rewilding principles




High value natural assets

Bradford-on-Avon Town Council has declared an ecological emergency and are looking to their landholdings to provide biodiversity improvements. We have provided recommendations for how these biodiversity improvements can be made at a range of high value natural sites throughout the town (see map below). In broad terms these recommendations include activities such as mob grazing, soil inversion, seed collection and the formation of corridor ecotones (see Managing Change section for more details and site-specific recommendations).




 Bradford on Avon Civil Parish

Land currently or to be owned/managed by the town council:

 High Value Natural Assets

1. Becky Addy Woods
2. Barton Farm: Far End
3. Barton Farm: North Meadow
4. The Strips
5. Kingston Woods
6. Cemetery
7. Brooklands
8. Arnold's Wood
9. Poulton Meadow and Field

 Other town council owned managed land

Connecting nature

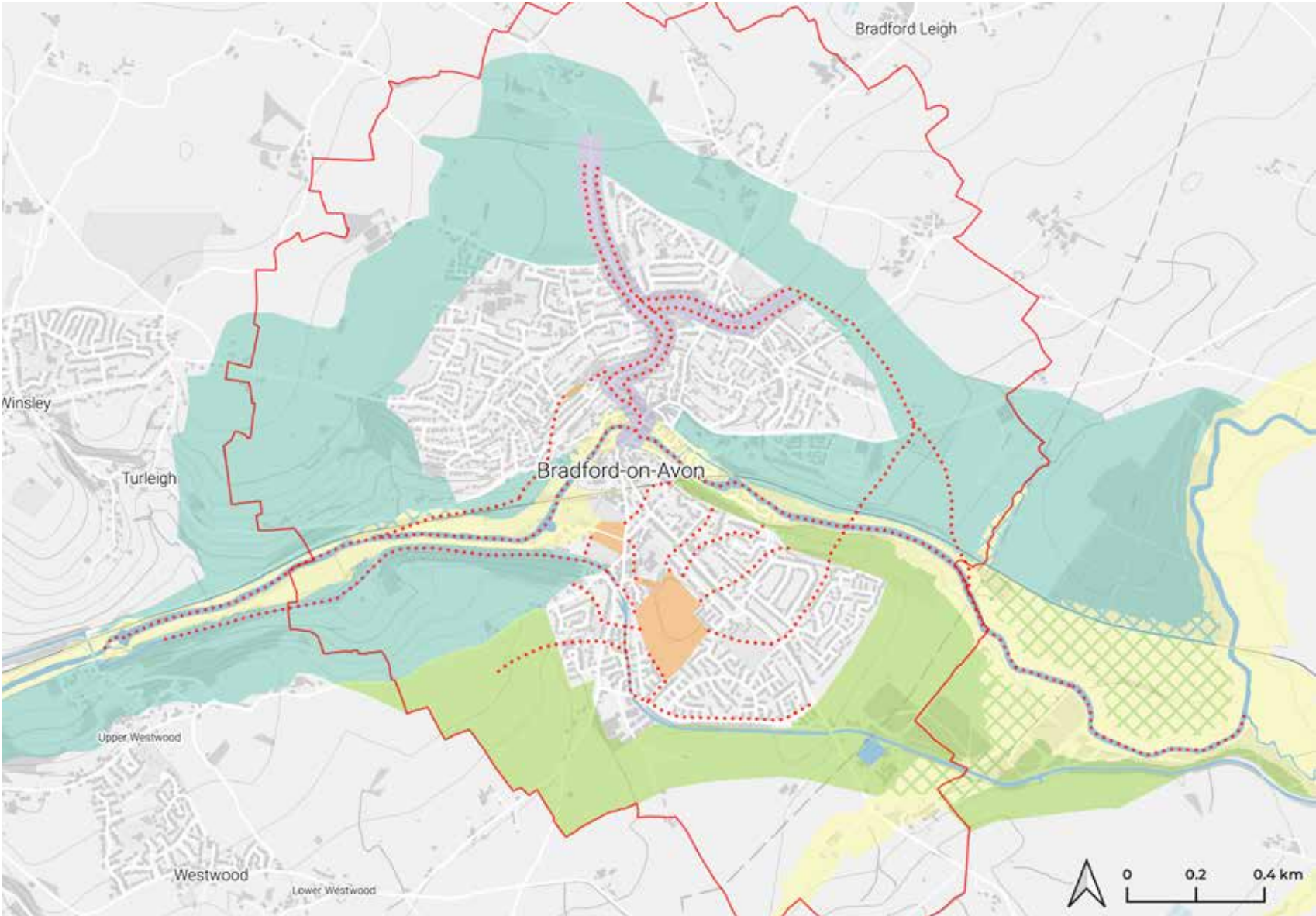
Over the years Bradford on Avon's wild nature has become increasingly fragmented by the development of housing and infrastructure. A nature recovery network is a joined-up system of places where wild plants and animals can thrive, on land and in the water. By allowing plants, animals, seeds, nutrients and water to move from place to place, it enables the natural world to adapt to change. Developing such a network in Bradford on Avon would increase connectivity, allowing wildlife species to recolonise habitats and boosting genetic exchange and climate change resilience. This network would:

- Restore ecotones (transitional areas between two biological communities) and enhance the structural diversity of habitats.
- Restore and/or mimic natural disturbance and features as much as possible.
- Enhance the ability of species to disperse through the town and create larger areas of contiguous habitat.

The map overleaf indicates where the actions of residents and businesses could have the greatest impact in terms of enhancing biodiversity and connecting nature. It is not intended as a statement of planning intent. On a more regional level, such a network could and should fit into nature recovery efforts being carried out in Wiltshire, B&NES and the west of England.



Nature recovery network map



- Bradford on Avon Civil Parish
- ⋯ Light reduction and tree enhancement zones
- Proposed Northern Dark Corridor
- Proposed Southern Nature Recovery Corridor
- Urban stepping stone habitat
- River/canal
- Existing river corridor
- Aspirational restoration (flood plain)
- Proposed nature recovery corridor (flood plain)

Key to proposed actions

Southern nature recovery corridor

Work with farmers to improve habitats and connectivity on their land via the ELMs. The aim is to enable continuation of farming practices, while increasing botanical diversity. This can be achieved through one or more of the following measures:

- Reducing grazing pressure on fields.
- Eliminating or reducing the application of fertilisers, herbicides and pesticides.
- Leaving a margin of vegetation in arable fields.
- Allowing hedgerows to thicken out and cut on rotation.
- Laying hedgerows with gaps.
- Taking green hay cut from fields with richer botanical diversity and overseeding poorer quality grasslands or arable fields.

Existing river corridor

Create greater structural variability within the floodplain to reduce erosion and provide habitat by creating natural flood management features such as withy bunds (stacks of tree trunks and brash) and wetland scrapes, as well as the use of large woody structures to divert flows in the river e.g. leaky dams, berms and riffles. This would require hydrological assessment to determine the most appropriate locations. Remove invasive species such as Himalayan balsam.

Northern dark corridor

Encourage residents to plant trees and explore the feasibility of reducing night light. The latter can be achieved through measures such as the use of downlights and PIR sensors and closing curtains.

Aspirational restoration

Develop a vision and explore the feasibility of creating a contiguous area of wood- pasture connecting the cemetery, old golf course, Kingston Solar Farm, Great Bradford Wood and other areas of woodland to the east of the town, and also in areas to the west. The aim is to create mosaics of grassland and woody vegetation more characteristic of ancient and biodiverse landscapes, supporting a mix of large herbivores. This can be achieved through one or more of the following measures:

- Protecting existing veteran trees to avoid direct damage from livestock.
- Allowing blocks of scrub to form, ideally in proximity to woodlands and hedgerows, thereby creating corridors along which wildlife can travel.
- Collecting seeds from veteran trees, which can then be grown in a local nursery and planted out and protected in fields.
- Reducing grazing pressure on fields.
- Eliminating or reducing the application of fertilisers, herbicides and pesticides.
- Taking green hay cut from fields with richer botanical diversity and overseeding poorer quality grasslands or arable fields.

New and enhanced stepping stones

Create woodland and scrub ecotones on the northern section of Poulton Playing Fields (if not required as sports pitches) and Culver Close Playing Field and plant a hedge along Pound Lane to create additional ecological stepping stones and source habitat adjacent to the river corridor.

Crosshatched (floodplain) areas

Proposed measures here are identical to those in standard Aspirational restoration and Southern nature recovery corridor areas, although the botanical species to be encouraged should be more characteristic of wetter grasslands and habitats.

Managing change on town council land

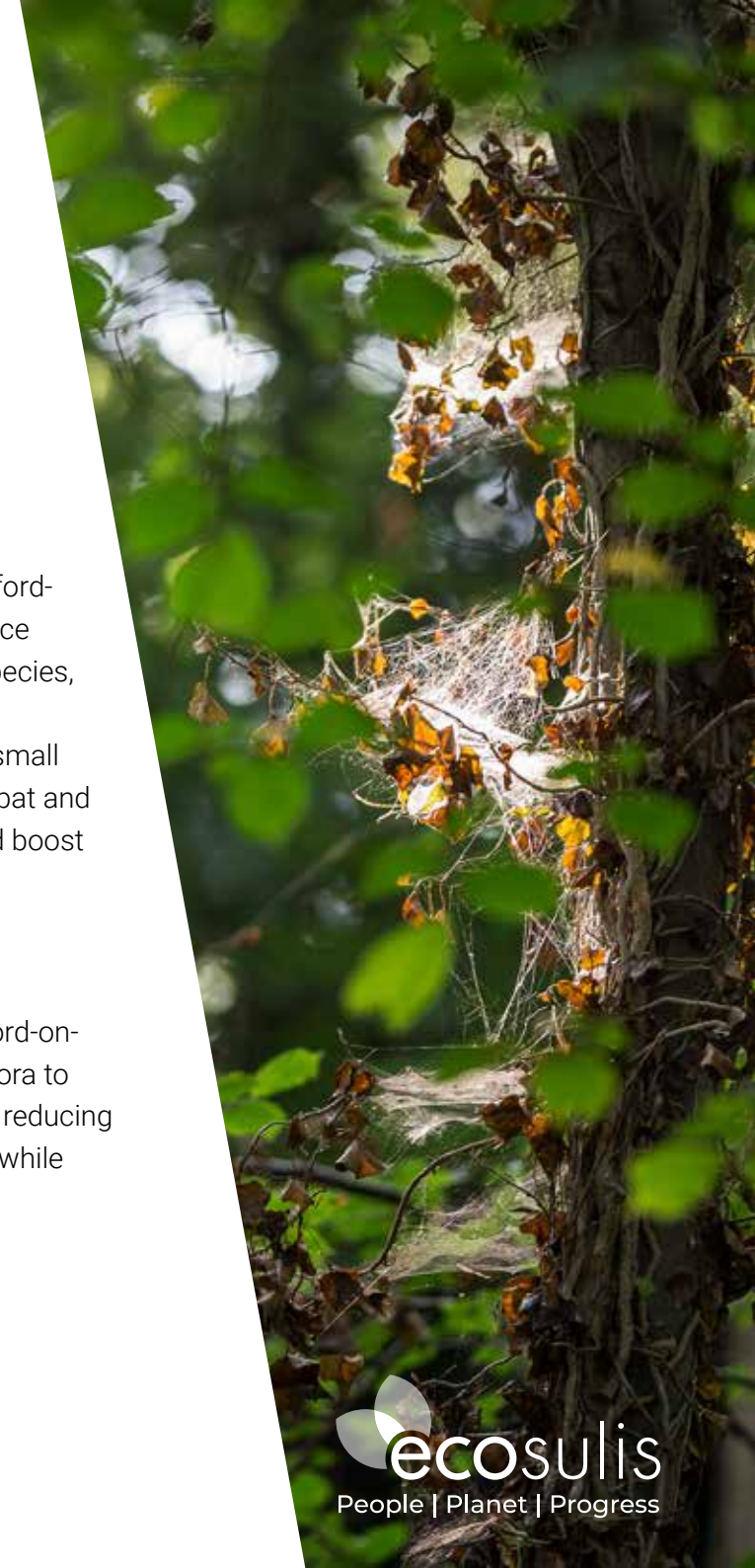
The following sections outline how changes in management practice and specific actions to improve habitat could benefit priority nature enhancement areas in Bradford on Avon.

Arnold's Wood

This 0.4 ha area of broadleaved woodland was once an orchard and is situated on the northern edge of Bradford-on-Avon. The woodland here would benefit from tree thinning in denser, sheltered areas, thereby creating space for trees to grow and improving the diversity of ground flora. It would also create a varied age class of tree species, providing habitat for a wider range of species. Cordwood could be stacked to provide refuge habitat and thin brash placed in areas of natural regeneration. Leaving woodland edges unmanaged would benefit birds and small mammals. Creating a small orchard within the site would support community foraging, while the addition of bat and bird boxes, log piles and hedgehog houses could also enhance biodiversity. Improving hedge/tree lines would boost connectivity with adjacent land.

Becky Addy Wood

This 4.1-ha area of ancient broadleaved woodland in southwestern Bradford-on-Avon was acquired by Bradford-on-Avon Town Council. Thinning areas where there is dense canopy would help to introduce additional ground flora to the site. Signage and/or barriers could be used to prevent access onto the site by vehicles and bikes, thereby reducing potentially damaging disturbance. The installation of bat and bird boxes on trees could enhance biodiversity, while management plans should account for the presence of ash dieback.



Managing change on town council land (cont'd)

Kingston Wood

This 0.6-ha area of woodland in eastern Bradford-on-Avon is primarily used for the local community, meaning the site is subject to high levels of disturbance. There is good connectivity with surrounding habitats, including allotments. Tree thinning would enhance biodiversity by allowing the development of ground flora and creating a more varied vegetation structure. Leylandii should be removed, but native tree species retained, particularly slow-growing beech. Cotoneaster may require future management. New bird and bat boxes could be installed and the position of existing boxes reviewed. Woodland edges could be softened and log piles created to provide a refuge for small mammals and reptiles. Interpretation boards could be added to engage and educate visitors about site nature.

The Strips

The Strips is a narrow area of mixed woodland in the centre of Bradford-on-Avon, close to the River Avon. Used as a walkthrough by many residents, the site is highly disturbed. Tree thinning would improve ground flora, while a targeted felling programme - focusing on non-native and coniferous species - could create woodland glades. The timber generated could be sold to market, although some should be retained and used to create woodpile refuges. Semi-mature native deciduous species or understory could be planted to create a more heterogeneous habitat structure that would attract a wider range of fauna, including insects, birds, bats and small mammals. The site could benefit from reducing the number of pathways that cut across the woods (perhaps by creating a circular walk), while better bird and bat boxes and interpretation boards could also be added.



Managing change on town council land (cont'd)

Cemetery

This 2.4-ha area, which is dominated by heavily managed amenity grassland, is located in eastern Bradford-on-Avon. Areas of the cemetery could be allowed to grow longer and a wildflower cutting regime implemented, particularly in areas less frequently accessed by the public. Messaging and signage could promote positive management (rather than letting these areas appear neglected). Features such as habitat piles, areas cut as meadow grass, and areas left to rewild could benefit a variety of wildlife species such as invertebrates, bats, badgers, birds and small mammals. Allowing the hedgerow north of the site to expand without intensive management would allow species to flower and fruit, providing a year-round resource for local insects, birds and mammals. Birds and bat boxes could be installed and native hedgerows enhanced. Native trees could be planted to augment hedgerows or in small groves.

Brooklands (cemetery extension field)

This site is owned by Bradford on Avon town council and is intended as a cemetery extension - as such the proposed use needs to be retained. It consists mostly of grassland, with an unmanaged northeastern boundary of tall ruderals, and species-rich hedgerows bordering the site. Areas could be left to grow naturally to create small patches of dense vegetation, providing additional refuge for species. An additional option would be to allow the site to naturally regenerate and introduce occasional, low-intensity grazing. Reduced cutting and allowing appropriate margins would enhance the hedgerow on the southern boundary, benefitting species such as dormice and birds and helping to block out road noise. Amphibians would benefit from a pond or other wetland feature. The connectivity of this site would be improved if adjacent areas were ecologically improved.



Managing change on town council land (cont'd)

Barton Farm Country Park, North Meadow

This 2.35-ha area of grassland and woodland is located within Barton Farm Country Park in southwest Bradford on Avon. We recommend that pedestrians are limited to the single path to the north of the site and the second path from the rail line to the east. This will create greater connectivity between the central semi-improved grassland and the tall herb habitat to the south. It will also reduce disturbance in riverside areas, providing greater opportunities for fauna to use the area. Tall ruderals and wetter areas should be cut on a three-year rotation, and blackthorn on a three to five-year rotation. Some trees within the woodland block are now over-mature and would benefit from pollarding, particularly willows. A woodland management strategy could lead to the creation of small glades and retain tree health, which would increase biodiversity. Viewpoints cut into vegetation would improve access to the river and provide potential habitat for riparian species such as water vole. Yellow rattle seed could be collected annually. Interpretation boards could be installed for educational purposes, while litter signage would also be useful. The block of woodland on the east of the site could be better protected from public disturbance by the creation of dead hedges.

Barton Farm Country Park, Far End

Situated in southwest Bradford on Avon, this 6-ha area contains several habitat types, including woodland, grassland, grazed pasture and tall ruderals. Management and monitoring of Himalayan Balsam is recommended to prevent the further spread of this invasive species. Lower density grazing with fewer herbivores than are presently kept at the site could enhance floristic biodiversity – this would require breeds that can tolerate wetter conditions and possibly the use of electric fencing to section off certain areas. Other management interventions could increase diversity, such as the use of scarification, spreading green hay and occasional mob grazing by herbivores (mob grazing could also be used where vegetation has become very overgrown, such as the meadow/tall ruderal areas). Biodiversity in woodland areas could be enhanced by thinning and coppicing. Creating an additional pond or other water features would enhance biodiversity in the middle compartment. Interpretation boards and relocation of the public pathway due to seasonal flooding should also be considered. This may be a good site for a volunteer/conservation base.



CASE STUDY: a vision for Brooklands Field

We imagine the site as a rewilding cemetery

We are all part of the rich cycle of life. Our rewilding vision for the recently acquired Brooklands Field on Holt Road would account for people's varied desire for formal and less formal cemeteries by taking design inspiration from Franz Vera's influential theory of cyclic vegetation turnover. We imagine an avenue of native trees leading into the site, which over time would come to symbolise the process of growth and decay. Cascading off this central pillar would be tear-shaped groves, bushes and trees, growing and developing in uncertain ways and providing an array of ecospace where wildlife could flourish.

These groves will symbolise the dynamic interactions that give rise to thriving societies. The spaces in between would be restored to meadows, either maintained through light management, or - more ambitiously - by grazing with dwarf breeds of horse and cattle. A rewilding cemetery would offer the citizens of Bradford on Avon a wide range of plots for purchase as places for seasonally changing reflections on loved ones, as well as the ups and downs that emerge from the messy chaos of life.

CASE STUDY: improved grassland and roadside verges

Enhancing biodiversity by varying cutting regimes

Where possible, the cutting regimes for Bradford on Avon's grassland areas and roadside verges could be changed to allow vegetation to grow longer and wilder. This would attract pollinators such as bees and butterflies and allow wildflowers to flourish. In some places native wildflower seeds could be sown to accelerate this process. The collection of grass clippings would allow verges in particular to be cut less frequently and also save money.



What can you do for biodiversity?

Everybody who lives and works in Bradford on Avon can contribute to the co-creation of a wilder town (many are already involved), and all rewilding efforts are welcome, regardless of scale. Such efforts benefit everyone, because wilder nature is better able to provide the essential things that we rely on, such as clean air and water and vibrant green spaces where we can relax, have fun and recharge our batteries.

Here are some examples of how the town's wide range of stakeholders could make a difference:

- Landowners could work with the government's new Environmental Land Management Scheme (ELMS), while some may also be willing to put aside part of their land for nature.
- Homeowners could rewild their gardens and reduce light at night.
- Environmental groups could initiate hedgehog streets, which involve people making small, hedgehog-friendly changes in their own gardens.
- Nature loving residents could contribute to regular monitoring and practical rewilding efforts.
- Residents could also ask for memorial trees and bat and bird boxes, rather than benches.
- Town societies could identify and map places where trees could be planted along streets.
- Smallholders and those with allotments could eliminate chemical use, create or install wildlife habitats such as log piles and bee boxes, plant nectar rich flowers and make ponds.
- Companies with large car parks or flat roofs could add trees or green roofs.
- Local groups such as Climate Friendly Bradford on Avon and the Bradford on Avon Preservation Trust could host talks, organise fundraising and volunteer events, promote rewilding on their websites, and support projects such as GROW Bradford on Avon.



Investing in nature recovery

From protection to restoration

The management and enhancement of habitats and green space has traditionally been financed by a mix of local authority service contracts, government agency projects, grants and philanthropy. But a change in narrative from protecting biodiversity for its own sake towards managing and restoring natural assets to generate ecosystem services and nature-based solutions is now leading to new finance mechanisms and opportunities.

Environmental Land Management Scheme (ELMS)

The new Environment Bill (2019-2020) and Agricultural Bill have introduced two new instruments to protect, enhance and finance nature and nature recovery. These are a net-gain requirement in planning and a new Environmental Land Management (ELMS) scheme. The ELMS scheme signifies a major shift from agricultural subsidies to a “public payments for public goods” approach, with trials developing a system to pay farmers for the conservation and enhancement of natural assets.

Funding streams

There is a wide variety of funding available for biodiversity management and restoration associated with the biodiversity net gain requirements of the forthcoming Environment Bill, the ELMS scheme and carbon offsetting. Applications could be considered to the National Heritage Lottery Fund, Tier 2 and Tier 3 funding under the ELMS scheme for farm clusters, and funds potentially available through various catchment support partnerships and grants. We recommend convening a meeting of local farmers to explore interest in collaborating on future applications for ELMS scheme funding, which could support creation of a wood-pasture landscape on the eastern side of the town.



Investing in nature recovery (cont'd)

A blended approach

To generate social, economic and biodiversity value from natural assets it is necessary to generate and “blend” different forms of finance. Progressive local authorities and/or citizen groups are setting up special purpose vehicles (SPVs) to ring-fence funds for green space and natural asset management, mobilise citizens, and open up new options for generating financing and funding, such as crowdfunding, impact investing and impact philanthropy.

Rewilding housing

Stroming Ltd in the Netherlands have developed and delivered a model where new houses are built in a larger rewilding area. The owners of the houses become the collective owners of the new nature reserve and can either take over management themselves or outsource it. When housing is built in or near Bradford on Avon, this could be considered as an option.



Putting nature recovery into practice

Towards a shared vision

Our recommendations for adjustments to the management of land owned and managed by the town council represents the first step towards nature recovery in the town. Going beyond this - to realise the ambition of Bradford on Avon becoming England's first rewilded town - will require the collaborative effort of a wide range of stakeholders, from farmers and other land managers to businesses and local residents. These stakeholders will need to come together to create a shared vision of what the town's nature could become and pool their collective resources to deliver it.

Recommendations

To inspire such stakeholders and facilitate collaboration, we recommend the following activities:

- Organising a series of public talks by progressive nature recovery groups and projects in other towns and cities, perhaps followed up by exchange visits. Local groups such as the museum, Climate Friendly Bradford on Avon, Bradford on Avon Preservation Trust and Wiltshire Wildlife Trust could potentially host such talks.
- Convening a meeting of local farmers and landowners to explore interest in collectively applying for Tier 2 funding for "locally targeted" environmental outcomes under the government's new Environmental Land Management (ELM) scheme.
- Running a regular competition in which local businesses and services providers are invited to develop new and innovative collaborative proposals for sites in and around the town that will recover nature and deliver new social, economic and health benefits for residents and visitors.
- Draw on the outcomes of these activities to prepare a local nature recovery strategy (LNRS) for the town, embedded within a future, Wiltshire-wide LNRS. Organisations such as Wiltshire Council and Natural England have a range of relevant resources available on their websites.
- Liaising with key organisations (e.g. the Environment Agency and Wessex Water) to consider ideas such as river improvement (through, for example, the removal of obstructions and installation of enhancement features such as large woody debris, berms and riffles) and other nature restoration projects.



Monitoring progress

Keeping track

Ecological monitoring can help to evaluate the impact of changes made to the way habitat is managed. The data generated can act as a source of learning and inform future decision making. It also enables those managing change to keep stakeholders updated on ecological outcomes.

We suggest a two-tier approach to biodiversity monitoring in Bradford on Avon:

- Biodiversity monitoring on sites owned by the town council.
- Ecological monitoring of the wider town area (~867 ha).

Vegetation structure and spatial configuration

Conducted by professional ecologists and/or student trainees using drone photogrammetric, monitoring of vegetation structure and spatial configuration would support:

- Regular (five-yearly) updating of broad habitat types.
- Generation of metrics of vegetation structure, which are a proxy for micro-habitat diversity (and hence wider biodiversity).
- Evaluation of above-ground carbon stocks.

Drone photogrammetry is a developing field that is becoming increasingly affordable and analytically powerful. As part of the work we have been commissioned to carry out, Ecosulis has captured a set of baseline orthomosaics for council-owned sites and established the process for obtaining the necessary permissions. Ideally these photogrammetric surveys should be repeated every 3 to 5 years and extended to the wider town council area.

A number of consultancies can provide drone survey and photogrammetric services. A lower cost alternative would be to form a partnership with an agricultural college or university to use Bradford on Avon sites for student training (such techniques are becoming standard in agricultural management). Alternatively, citizen drone enthusiasts in the town could be engaged to voluntarily capture orthomosaics for analysis.

Engaging citizens

Power to the people

Ecological monitoring has traditionally been conducted by trained ecologists and through formal citizen science projects. But it is increasingly recognised that the practice of identifying and recording nature can generate life quality value for everyday citizens. Taking advantage of technological developments, today digital citizen science is removing barriers to participation and enhancing the enjoyability of those involved. Enlisting the support of the Bradford on Avon's residents (many of whom have significant conservation and ecological experience), ecological monitoring in the town could take advantage of these trends to generate community wellbeing, interest, pride and cohesion.



How is the data used?

The submission of data collected through citizen science helps build the crucial evidence base needed to study, protect and restore nature. Around 15 years ago museums, research institutions and conservation groups around the world came together to create an interlinked system for the collation and accessing of biodiversity data called the Global Biodiversity Information Facility (GBIF). This connects with various "nodes" at national and local level (such as the UK's National Biodiversity Network, or NBN). Some citizen science apps (such as eBird) upload data directly to GBIF, while others (such as iRecord) upload it to the NBN. Essentially, whatever app is selected, monitoring data is likely to end up where it is needed.



Monitoring changes in insect and bird populations

Changes in the abundance and biodiversity of insects (such as bees, butterflies and moths) and passerine species (perching birds) are good indicators of biodiversity, and particularly changes in management aimed at the recovery of vegetation structure and dynamics.


A number of UK apps and platforms enable citizens to contribute to biological recording – most notably the iRecord apps and the iSpot platform. However, these are mostly designed to support the needs of researchers and national recording schemes. They offer little return to citizens in terms of fun and community, while the data collected is linked to complex licensing agreements.

iNaturalist, ebird & iRecord

Two American apps and platforms - iNaturalist and ebird - are based on the Google principle of “provide people with services they value”. They use data science to manage and analyse larger, less structured data sets and make all data publicly accessible via the Global Biodiversity Information Facility (GBIF). The iNaturalist app now integrates impressive auto-identification algorithms, while the ebird app enables users to view and locate the observations of fellow citizens. These apps, used in conjunction with a communications strategy and simple sampling framework, would allow ecological change to be monitored and create fun and educational activities for the residents of Bradford on Avon. Another rewarding app for citizens is iRecord from the Butterfly Conservation Society.

We recommend an approach that blends old and new engagement techniques, involving regular “big days” (such as the RSPB’s Big Garden Birdwatch), awards and challenges, and species walks that can be promoted via traditional and social media.



A young woman with a long braid, wearing a light blue sweater, is speaking at a podium. She is holding a microphone and looking slightly to the left. In the background, the European Union flag is visible. The scene is lit with stage lights, including a prominent green light.

“...the moment we start behaving as if we are in an emergency, we can avoid climate and ecological catastrophe. Humans are very adaptable: we can still fix this. But the opportunity to do so will not last for long. We must start today.”



Making your nature restoration ambition a reality

Practical and technology-led delivery

Pushing the boundaries of nature recovery thinking

Thirty years of proven expertise

Concept and content: Paul Jepson and Cain Blythe. Writing, editing and imagery: Daniel Allen. Ecological surveying: Chloe Tustain, Neil Melleney and Joseph Millington. This report has been produced by Ecosulis for Bradford on Avon town council as a resource for discussion only. The recommendations it contains are not legally binding. DOI:10.32071/ES.TD.221020