

Managing more green space for nature

Introduction

In the UK nature has suffered significant losses over recent decades. The latest State of Nature report shows that over half our wild species are in decline. If we are to reverse these declines, we need to restore what habitats remain and we need to create new spaces for nature. We need to re-establish the ecological processes that support thriving and resilient ecosystems and move from a patchwork of isolated habitats to a connected ecological network. Growing concern about the biodiversity crisis led to Bristol City Council declaring an Ecological Emergency and together with partners, producing the One City Ecological Emergency Strategy (OCEES). The Strategy included a goal of, 'at least 30% of land in Bristol to be managed for the benefit of wildlife by 2030'. This goal has been determined as a priority for the council, which has outlined how it proposes to contribute to the goal, through actions in the BCC Ecological Emergency Action Plan. These actions include:

- Identify locations for habitat creation and enhancement as part of Bristol Local Nature Recovery Network that contributes to the West of England Nature Recovery Network and green infrastructure functions, and Biodiversity Net Gain offsetting.
- Change operational management of parks, green spaces and amenity areas to benefit nature, where appropriate, and contribute to the Nature Recovery Network
- Verge management as part of Grounds Maintenance Review -nature conservation management, will consider baseline, priority areas, logistics and costs.

The Framework

The first stage in addressing these actions has been mapping work to identify existing ecological value and opportunities for enhancement. To ensure that decisions on changes to green spaces are informed by the best available and up-to-date ecological data, we are using a combination of habitat survey data, and habitat data generated from detailed satellite imagery. Habitat surveys have been carried out on most parks-managed Sites of Nature Conservation Interest (SNCIs), and in green spaces with a natural or informal typology that are located within the West of England Nature Recovery Networks ([Nature Recovery Network - WENP](#)). The habitat information obtained from highly detailed satellite imagery was generated as part of a separate piece of work carried out by consultants in the process of mapping a Bristol Ecological Network.

Using the habitat data, green spaces managed by the parks Service were given a value based on the habitat's distinctiveness as used in the Natural England Biodiversity metric. The distinctiveness value for habitats has been determined by Natural England using the following criteria ([taken from Natural England's 'Biodiversity metric 3.1: Auditing and accounting for biodiversity – Technical Supplement', 2022](#)):

- Total amount of remaining habitat in England (it's rarity)
- Proportion of habitat protected in SSSI. Where less is protected in SSSIs, it is considered of higher distinctiveness.

- UK Priority Habitat Status. Priority Habitats are classed as High or Very High distinctiveness.
- European Red List Categories.

Applying this information spatially enables us to identify, protect and enhance sites with a habitat distinctiveness value of very high, or high, and to seek opportunities to enhance sites with a medium or low distinctiveness.

To prioritise where changes are made to benefit nature, spatial information about ecological networks in Bristol is being used. This supports the concept of developing a Nature Recovery Network set out in the Government's 25 year Environment Plan, based on the recommendations from Professor Sir John Lawton: recovering wildlife will require more habitat; in better condition; in bigger patches that are more closely connected, in order to create a coherent and resilient ecological network. Each green space is given a value based on its location and spatial importance with regards to connectivity. The SNCIs score the highest as they represent the core sites within the ecological network. The next highest are non-SNCIs that are located within the West of England Nature Recovery Network (WoE NRN). Below that are sites located outside the WoE NRN, but within the Bristol Ecological Network; and then below that any sites that fall outside of the regional or local mapped networks.

In addition to using information about habitat value and ecological connectivity, we also want to hear from our stakeholders, to understand where they want to see land managed for nature, and how they think it should be managed.

Identifying locations for habitat creation in the Nature Recovery Network

To address the first Ecological Emergency action listed above, an initial piece of work has been carried out looking at green spaces that fall within the West of England Nature Recovery Network. The work focused on green spaces which have a natural or informal typology, but aren't designated as SNCIs. Habitat creation proposals were developed for a lot of these sites, making use of the habitat survey information, and being informed by which habitat network the green space was located in. These proposals will be consulted on prior to being taken forward, and delivery and maintenance would be dependent on being able to secure external funding.

Changes to current operational maintenance regimes

As well as taking a spatial approach to prioritising change in managing for nature, and looking at specific opportunities for habitat creation in the WoE NRN, we have also considered more generally what managing a green space for nature might look like: what maintenance regimes would be better for nature, and where and how they can be applied in a way which is both ecologically sound whilst also taking into consideration constraints relating to the recreational use of green spaces.

There are several ecological principles which have informed the proposed maintenance regimes. These include:

Succession and disturbance – without any disturbance or active management nearly all habitats in Bristol would change over time until they became woodland. If there is too much or too little disturbance then the diversity of species will be low. In an urban environment without the disturbance that would historically have been caused by wild herbivores (large wild animals that graze the vegetation), to completely stop some form of management over time would result in a decrease in the diversity of wildlife present.

Fertility – in a completely natural ecosystem fertile areas would be scarce, and restricted to sites such as flood-plains. The few native species that are adapted to high fertility grow and spread quickly which results in less opportunities for other species, and therefore low diversity. Most species of British flora are adapted to surviving in relatively infertile conditions, so reducing soil fertility is key to creating and maintaining certain habitats such as grassland.

Habitat mosaics – species that make use of the same broad habitat type can often have slightly different requirements, and therefore it can be beneficial not to manage the whole of a habitat in the same way. There are also quite a few species that have different habitat requirements at different stages of their lives and therefore having areas of different habitat in close proximity to each other can be valuable.

Structure – The diversity of some groups of animals is often related to the structural diversity of the vegetation, i.e. vegetation of different heights or age, as this provides a greater variety of conditions. The physical structure of the ground is also important, and features such as banks, or old ant hills often have plant species not found elsewhere on a site.

In addition to these ecological principles, for green spaces to be successfully managed for nature and people, we also need to take into consideration constraints to the type of management. With our summers getting increasingly hot and dry there is a greater risk of areas of long grass, or piles of cut grass, catching fire. We need to consider the risk to any adjacent housing when we're looking at changes that will increase the amount of long grass. Areas of longer grass can also trap litter and make it harder for people to find and remove their dog's mess. This can cause problems then when it comes to cutting the grass, with a risk to both the operatives and of damage to machinery. We therefore need to consider how much of an issue this is likely to be on a site.

One of the biggest challenges in implementing some of the new maintenance regimes are around disposing of the cut grass (which is needed to reduce the soil fertility). If the area of grass is big enough and with wide enough access for the machinery, then it can be cut for hay. However, that hay can't be used as animal feed if there is contamination from litter or dog faeces, which is often the case in public open spaces. It's value as animal feed reduces the later the grass is cut, as from the end of June onwards the nutrients start to be taken back into the roots of the plants, therefore hay made in August or later is often not considered good enough as animal feed. However, cutting before the middle of July

reduces the number of flowers able to set seed before being cut, and removes the provision of nectar and pollen when it would otherwise still be used by pollinators. For smaller sites where it can't be baled and used as hay, the cut material is considered 'waste' by the Environment Agency. It either needs to be taken to an appropriate waste processing centre or managed under an exemption. There is an exemption for aerobic composting, but it requires the cut material to be managed to maintain the right conditions to prevent the treatment becoming anaerobic. This would require regular turning and mixing with other organic materials. There isn't the space or resources to do this on most green spaces, so the material will need to be removed and taken to a waste facility. This is both time consuming for staff and costly as we have to pay to dispose of it. Therefore, although green spaces may be cut less often when being managed for nature, the costs can be higher.

The final constraint is around the machinery needed to allow us to implement the new maintenance regimes. As part of this work we are looking into what machinery would be best for the new maintenance regimes, so that we know what we need and how many. However at the moment there is quite a long lead-in time for some new machinery, so we will need to programme when changes can be implemented and consider how things might change over multiple years.

The proposed maintenance regimes which we're looking to increase include:

Species-rich grassland (sometimes referred to as wildflower meadow) cut and collect using machinery

- removal of the cut material lowers nutrients in the soil which then enables wildflowers to compete with the more vigorous grasses, leading to a more species-rich/flower-rich grassland. This increases the local provision of nectar and pollen for pollinators to feed on.
- There would be a 'creation phase' regime which would be focussed on areas which are currently dominated by grasses with few wildflowers. The creation phase would last two or three years and would require the grass to be cut several times a year with the cut material being removed, to sufficiently reduce the nutrient levels and therefore limit the vigour of the grasses. Once the vigour of the grass has been reduced it would be moved to the maintenance regime which would involve an annual cut in late summer, and potentially an early spring cut.

Species-rich grassland hand cut and collect

- working with volunteers using traditional meadow management (scything and raking) to increase the species-richness of smaller sites where access for machinery is restricted.
- This would involve an annual cut in late summer, with the cut material raked off.

Tussocky grass

- reducing the frequency of cutting to every other year, or every three years, creates a more varied grassland structure. This provides overwintering habitat for invertebrates such as butterflies, as well being a key habitat for many reptiles, amphibians, and small mammals. Flowering plants within the grassland can provide

a valuable pollen and nectar source for pollinators and provide seed for birds and small mammals.

- This regime would be applied along boundaries between grassland and scrub/woodland, where it will create a valuable transitional habitat providing more opportunities for wildlife to find shelter, hunt for food or nest. It will also be applied on some south-facing banks where the conditions can be particularly beneficial for invertebrates.

Flowering Lawn

- To provide a greater supply of pollen and nectar from amenity grass
- On areas of grass with higher levels of use, which need cutting more regularly, the frequency may be slightly reduced and the timing of the cuts adjusted to allow more flowering of species that can tolerate regular mowing, such as clovers and bird's-foot trefoil.

We will be looking to implement these changes in a way that doesn't significantly affect the accessibility of green spaces. Where areas of grass are left to grow longer we will seek to maintain edges adjacent to footpaths more regularly, and keep desire lines open through the grass.

We are in the process of modelling the extent to which we can implement the proposed maintenance regimes across the city without increasing the overall costs for managing parks. This will also be dependent on the outcome of the Full Council budget setting meeting in February. We will use the prioritisation mapping discussed above, along with feedback from stakeholders, to inform final decisions on which sites should be managed for nature going forward. Implementation of any changes will need to be phased and will be dependent on having funding in place. Most new habitat creation will require external funding to enable delivery.

To enable us to do more than we can within current budgets, we are investigating the potential for external sources of funding. This includes funding for the creation of biodiversity offset sites through biodiversity net gain (BNG), and funding from potential new Countryside Stewardship schemes.