

Creating Meadows on Urban Streets

a toolkit by Really Wild Lockleaze

Residents have been creating wildflower meadows on the urban streets of Lockleaze, a North Bristol neighbourhood. Lockleaze Neighbourhood Trust, the local community hub, supported them to do this through their Really Wild Lockleaze project. This toolkit tells you how we did it.

Why Wildflower meadows?

Wildflower meadows are one of the best habitats to create to support the web of life. They are vital in terms of providing food sources for a huge number of insect species, which go on to feed other animals including birds, bats, and amphibians. They also provide cover and refuge for creatures such as slow-worms, and hedgehogs. They are great for people too, brightening up the streets of Lockleaze, and making the area feel more cared for.

Really Wild Lockleaze is a Lockleaze Neighbourhood Trust project. It started in partnership with Avon Wildlife Trust, and was part of the Community Climate and Nature Action Project, coordinated by Bristol Climate & Nature Partnership. In this phase it was funded by the National Lottery.

www.lockleazent.co.uk/project/really-wild-lockleaze/ Really Wild Lockleaze



Planning your Meadow

Consultation:

Consult everyone who cares about the greenspace in planning your meadows. Our community plans for nature were made with local residents. For more information on how we did this, and got council permission, see our "Wild Streets of Lockleaze" Toolkit.

Size, shape and placement:

Where? We sowed meadows on housing greens, verges, and marginal land around sports fields.

Do you want to use the whole space, or part of the space? On verges, you often can plant the whole space with wildflowers. However, on housing greens, our resident groups wanted to sew only along the edges to retain space for children playing, and other community uses.



A whole verge



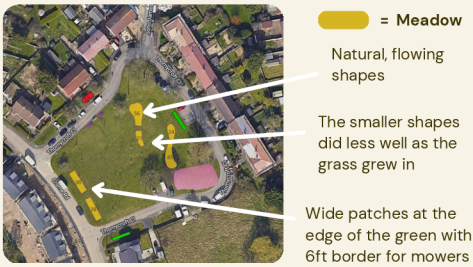
A wide strip at the edge of a green



A smaller patch leaving space to play.

What shape should wildflower patches be? Sweeping natural shapes are easier to mow, and pleasing on the eye. Make your patches as wide as possible reduces grass growing in from the edge.

Mowing around your meadows Mow the margins so it looks intentional and doesn't obstruct pavements. Council mowers need at least 6ft to manoeuvre. For narrow in-pavement verges, our residents mowed the margins themselves as the council mowers were too big to get through. Make sure you have an agreement with whoever will be mowing.



"Wildflower meadows have brought life to an area that has been deprived and run down"
Lockleaze Resident.



Ground Preparation

Preparing the ground properly is fundamental to the success of your meadow. We tried several different methods.

Mattocks

Scuff up the ground with mattocks and spades to expose bare soil, & then plant plug plants and seed.



- Can be used on stony ground
- May work if land is less fertile

- In urban settings grass will creep in after one season.

Turf Cutting and Removal

For areas with few existing wild flowers and many dominant grasses, like most parks and housing greens, removing turf achieves bountiful flower rich meadows.

Removing the mat of shallow rooted grasses removes competition from grasses, removes nutrients and expose the soil underneath. We raked the soil to create a fine 'tilth' – with a breadcrumb like consistency - into which the newly germinated wildflower's roots can easily take hold.



- Gives the best results, especially for areas with few existing wildflowers
- Turf is a great resource: use it to fill raised beds or holes, or grass bare areas. You can also compost it to make great top soil, or make mounds in situ to create a fantastic nature habitat.

- Try not to move turf too far as this has a carbon cost.
- Make sure everyone is happy with creating mounds, as it changes the character of a greenspace.
- Requires turf-cutter hire, and it can be heavy and noisy to use.

Flipping soil with spade

For smaller areas, such as small verges in pavements, we used spades to cut cubes of turf a spade deep, and flip them over until we had no grass showing at all. We then raked the undersides of the turf cubes to create the fine tilth for seed sowing.



- Great results with minimal equipment
- Hard and time-consuming work so less suitable for large areas.

Turf Cutting and Flipping

This was our least successful method. It did not work well on steep or rocky ground, and the germination rate was poor.
In some areas we had to flip the turf without removing it, and sow into the underside. We cut as deeply as the turf cutter would allow, and flipped it over tucking the grass away, and raked the underside as best we could to get a fine tilth.

We had mixed results which we are still monitoring:

- From a spring sowing, the only place the seed initially germinated was between the gaps where loose soil was exposed, and away from the root zone of the grasses. A good flush of annual germination then happened in the autumn, but we are concerned about the low level of perennials. We tried to counter this with some resowing in autumn.
- Autumn sowings on flipped turf were quickly taken over by grass, and we would not recommend this method.



Uneven germination and grass coming through in the gaps between strips of turf.



A meadow that was sown in autumn, taken over by grass in early spring, and the resultant meadow in late spring.



A meadow in a similar location planted using the turf cutting and removal method.

- Use for large areas if you cannot remove turf.
- Works best if the area is level, with soft, stoneless soil.
- Techniques could improve results, such as filling the cracks with bowling green soil (which is low in nutrients), which could stop the regrowth of grass.

- Difficult to cut turf deep enough on steep or rocky ground.
- Germination rate is poor as seeds are competing with the dry root zone of the dying grass.
- Grass grows back strongly in between the turfs, meaning the grass will be able to take over much more quickly.



Seeds and Sowing

Getting good quality seeds is also fundamental to ensuring success when making wildflower meadows. Not all seed mixes are the same, and many are not based on native wildflowers.

Our Seed Mix Recipe:

- **2g/m² full meadow mix with grasses:** a complete mixture, with grasses to feed butterflies
- **1.5/m² meadow mix flowers only:** to boost perennial flowers
- **2g/m² cornfield annuals:** to ensure a good show of colourful flowers in the first year

Choose seeds to suit your soil: We used Emoresgate seeds throughout the project, choosing mixes EM4 and EM4F to suit our clay soil. Find out your soil type to get the best mix.

Annuals, perennials and grasses:



A year 1 meadow featuring cornfield annuals

Consider the appearance and the long term success of your meadow. Annuals come up fast in the first year, but may not return, while perennials like yarrow, knapweed and oxeye daisy are slower growing, creating longevity in the meadow. Grasses are important for feeding different insect species, but lead to a wilder looking meadow.



The same meadow in year 2 favouring perennials

We added annuals (seed mix EC1, with cornflowers, corn cockles, corn marigolds, corn chamomile and poppies) which provided a cacophony of colour and pollination opportunities. Growing the annuals also held the space for the slower to establish perennial species to grow, preventing grasses and coarse weeds from moving in.

Using local seed: We collected and used local seed where we could as it is the best way to create a meadow tailored to your area. It is important to use the Botanical Society of Britain and Ireland's code of conduct when collecting seed from the wild.

Sowing Technique



Achieving an even spread: We mixed the seed together with vermiculite to sow it. Vermiculite is an inert, absorbent mineral which helps bulk the seed out, meaning an even spread is easier to achieve. It also makes it easier to see where you have seeded.

Sowing with lots of people: we show participants the size of handful that covers 1m2, and the technique to scatter it evenly, taking into account wind direction. If the meadow area was large, we divided it up into sections, and gave the right amount of seed for each section in a bowl. We then lightly raked the seed in, and walked over the area to embed the seeds in the ground.

Seasonal Sowing and Stratification

Seeds can be sown in autumn or spring. If sowing in spring, we 'stratified' the seeds by damping the seed and vermiculite mixture, and putting it in the fridge for 10 days to mimic the cool, damp, dark conditions of winter, which some seeds require to germinate.

Boosting with plug plants

Plug plants are young seedlings or cuttings that are already grown past germination.

These are ideally added in the autumn (for perennials), and spring (for annuals). You might wish to use them if:

- You want to ensure certain species grow- we planted kidney vetch plugs in areas where we wanted to support the small blue butterfly.
- Your meadow is a few years old and needs sprucing up
- You have harvested local seed and want to make sure it succeeds- we grew on local seed in seed trays to make sure it germinated and then planted it out.



Plug plants grown from local seed

Meadows without sowing

If an area has strong biodiversity, you may choose to just let it grow long, allowing the species already there to flower and go to seed.

When we did this, we gave the areas a boost by cutting and flipping patches with spades to create bare soil, into which we planted plug plants. This allowed the plugs to get established without immediate direct competition from grasses and other plants. Many of these plants flourished, adding to the variety.



A meadow created in this way.

"I have seen a big increase in insect life due to the amazing wildflower planting that has happened. New areas of wildflowers have attracted lots of new pollinators that were not seen before"
Lockleaze Resident.

Using bulbs

Bulb planting is the easiest way to create basic wildflower meadows, providing vital early nectar for pollinators, as well as long grass providing cover and habitat.



We planted bulbs without permission from the council as it does not change the landscape, although it is safer to tell them where they are with a sign to avoid disappointment.

Where to plant? Plant bulbs in the drip line under the branches of trees, as they have evolved to make the most of the light coming through the canopy in early spring. This is also where the council's mowers look out for bulb planting, as it is a method Bristol City Council are already adopting.

Designing your meadow: We planted native or naturalised species where possible, with a few non-native, non-invasive species for extra colour. We planted both spring and summer bulbs to ensure a long season, but if you are planting late (eg January) stick to daffodils and tulips for a good success rate. You can plant at high density for the wow factor or low density for a natural meadow look

Species: Winter Aconites, Wood Anemone, English Bluebell, Crocus, Wild Cyclamen, Wild Daffodils, Snakeshead Fritillary, Snow drops, and Wild Tulips.

Monitoring

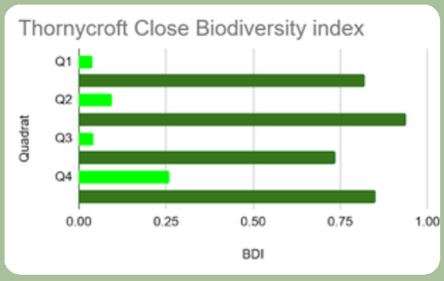
Keeping an eye on plant diversity enables you to ensure and prove your impact.



A quadrat of sticks and string.

We surveyed plant diversity before we created the meadows and yearly afterwards in spring. We placed 1m x 1m quadrats in defined spots across the area, identified all species within the quadrats and gave them an abundance rating using the Domin Scale. We saw a near 500% increase in floral biodiversity in the first year, compared with what was there before, which remained stable in the second year.

If diversity is decreasing, you can dig out coarse weeds and dominant grasses, and replace them with desired plug plants, or resow.



Biodiversity Index of an urban meadow, with four 1m x 1m quadrats. We used a version of Simpson's Diversity Index that is suitable for use with the domin scale.

= before meadow creation

= first year of meadow



Maintenance

It is important to have a plan for how you will look after your meadow and who will do it.

Watering

Meadows sown in autumn or early spring should get plenty of rain and not need watering, but dry springs might make watering necessary.

Plants that have recently germinated are small and shallow rooted, and likely to just wilt away if it is very dry. Once watering has been started, it should be carried on at least every 3 days until regular rainfall arrives, or the plants are big enough to have deep roots.



New shoots which need watering

Scything or Mowing

In August/September each year, we scythe our meadows with local residents. Tell the council you intend to do this, so that they don't mow them first.

Why scythe?

It's important to cut and remove dead flowers and grasses, as the material can over-fertilise the soil, causing grass to flourish and overpower wildflowers. It also keeps things looking trim.

Scythes are the fastest, quietest method, and allow you to not cut too short. You can use shears for small areas or a mower/strimmer.

What do do with the grass cuttings?

- Get the most out of your flowers by scattering seeds on the cut meadow, or use the 'green hay' technique – leaving the cut wildflowers over the meadow area for a few weeks, allowing the seed to drop.
- After this, you can mulch trees or bushes, or just compost them directly.



Scything and collecting arisings



A year-old hedgerow mulched with arisings