



Helmsley Walled Garden

The Grass Meadow and Annual Cornfield Flower Meadow

A grass meadow filled with wildflowers is a part of our pre-industrial farming heritage. Yet attempts are regularly made to recreate them, or for the very few remaining, to save them, often under the supervision of bodies such as Local Wildlife Trusts or The National Parks.

But why did these idyllic meadows exist in the first place and why did we lose them? In the first part of the twentieth century the scale of farming was considerably smaller with people individually farming around 300 acres or less and the few artificial fertilisers available were too expensive for many. These farmers lacked the money needed to buy more modern machinery and often were still using horses. Britain's population then was considerably smaller so demand for food production was correspondingly less. Additionally, Britain still had an Empire from which cheap food could be sourced. The Second World War changed all that.

With the loss of easy access to Western Europe and the Empire, it became essential to increase food production in this country. Tractors were imported from the USA alongside tanks: grassland that had previously been marginal for crops was brought into production and fertiliser use became more widespread. More people could be fed well from growing cereal crops than by raising animals on the same acreage of grassland so many fields were given over to cereal crops. Increased use of fertilisers on remaining grassland allowed for greater hay production and much traditional grassland that had previously been untouched by fertiliser was lost. Where the Second World War introduced the need for increased food self-sufficiency, post-war agricultural policy continued to maximise food production, albeit with some marginal conservation.

Now, within the gardening and environmental communities, attempts have been made to recreate grass meadows. The most common approach has been to strip the top layer of fertile soil from the ground, removing its holding of fertilisers. This action also removes the stronger growing rye grasses which smother traditional wildflowers and meadow grasses. Wildflowers thrived in traditional hay meadows by co-existing with these weaker grasses such as Common Bent (*Agrostis capillaris*), Crested Dog's-tail (*Cynosurus cristatus*), Slender-Creeping Red Fescue (*Festuca rubra*) and Smaller Cat's-Tail (*Phleum bertolonii*).

Such attempts to recreate a meadow may initially have some success but to develop successfully, they need a maintenance programme that replicates pre-industrial methods of managing hay meadows. This involves two principle actions. The first is to allow grasses and wild flowers to grow to maturity and produce seed heads. When the meadow is cut, the grass and wild flowers must be allowed to dry before being collected as hay. Collecting in this way is less efficient than modern

mechanisation, and allows some seed to fall on the land, reseeding the meadow; the meadow is then allowed to recover.

In the autumn after the grass has recovered animals are returned for final grazing before coming indoors for the winter to be fed off the hay. This is the second key management principle. As autumn moved on and the weather deteriorated; animals would disturb and churn up the land in places taking it back to soil. It was in these churned up areas that seeds that had fallen in the early part of the year would be buried, germinate and grow. Annual wildflowers such as Corn Cockle (*Agrostemma githago*), Corn Chamomile (*Anthemis arvensis*), Common Poppy (*Papaver rhoeas*) or Corn Marigold (*Glebionis segetum*) flourished. But this action also allowed for the spread of perennial wildflowers such as Greater Knapweed (*Centaurea scabiosa*), Oxeye Daisy (*Leucanthemum vulgare*) or Red Campion (*Silene dioica*).

For the recreated meadow, the strimmer often replaces the scythe and in some areas animals were borrowed and allowed to graze. But these are not actions easily repeated in the urban or rural garden of today. So how do we create the grass meadow and the annual cornfield you can see today?

The Grass Meadow

Here at the Walled Garden, the grass in the meadow is still the original strong rye grass. We cut the grass in September and allow it to grow out during the year. The majority of the planting is bulbs, particularly spring bulbs. These include Great camas (*Camassia leichtlinii*), snake's head fritillary (*Fritillaria meleagris*), Snowdrops (*Galanthus nivalis*), plus a range of daffodils and tulips. All of these are capable of competing with the strong grasses and often repeat each year. However we also add new bulbs each year in autumn and this disturbance of the soil is particularly helpful in allowing yellow rattle seed to spread.

We introduced Yellow Rattle (*Rhinanthus minor*), an annual plant that is semi-parasitic on grass. It takes nutrients from the grass roots which help to weaken it, allowing other species to develop and thrive. We also have to manage the yellow rattle which grows most strongly in the summer stopping grass cutting until such time as the rattle has produced ripe seed, usually by the end of August. We cut the grass in September just in time to help with the collecting of the fruit from the orchard. The grass is cut first by a strimmer; the herbage produced is allowed to dry before being collected and the lawn mower run over the area.

Whilst the area is particularly attractive in the spring with a colourful display of flowers, summer brings the different attraction of ripe, bright yellow rattle and myriad grass seed heads. It is after the yellow rattle has flowered but seed has not yet ripened and grasses may be falling over that the area can look 'untidy'. However, this is an essential period of time in the development of a sustainable meadow and you must resist the urge to tidy it or cut the grass.

We are now starting to see wild flowers such as Tufted vetch (*Vicia cracca*) and Bird's-foot trefoil (*Lotus corniculatus*), appear of their own accord in this area. Maintaining the same timing each year of grass cutting will encourage this further.

The one area of intervention we do undertake is the control of undesirable flowers, or in gardening terms weeds: nettles, docks and creeping thistle. These are the strong growing perennials that can become invasive. Where they are few in number, we can dig them out of the grass, if growth is heavy; we apply a glyphosate weed killer directly on to the growing plant. It is important to be able to recognise these and tackle them whilst they are just developing. They will always appear in some form because the seed will be blown in and land disturbance at bulb planting will allow them to establish.

The Cornfield Flower Meadow

Here we sow annuals, seeds of plants that complete their life cycle within one year. We choose plants that are in flower from mid June through to late August, plants that you may see growing occasionally amongst a field of cereal.

There is a belief amongst gardeners that you only need sow the seed once. After flowering and cutting down, the seed that falls to the ground will be sufficient to re-seed the area for the following year. It is often quoted as being an easy method of gardening with some even suggesting that you can sow seed directly onto grass to achieve your purpose. This is not true.

Starting in April as the land is drying out, we remove any plant material by hand, be that perennials or annuals that have grown up over winter. This involves a garden fork and a lot of labour but it means we can be sure that the vast majority of perennial plant material has been removed. Once the area has been cleared we allow the land to recover, the soil warms up and seed starts to germinate. What grows will be a mix of seed from last year's cornflower mix and perennial weed seed such as nettle, docks and thistles. We allow all this seed to grow a few leaves and then on a hot dry day we hoe everything off. This kills them without greatly disturbing the land.

We then sow our mix of fresh cornfield mix seed and lightly rake it in. There is now little to do unless we have a problem with a perennial weed such as creeping thistle. If we have an unacceptably high level of weeds, we will either remove them by hand or treat with glyphosate.

At the end of the year usually in October we will dig up the plant material and compost or burn it. The land is then dug over and left for the winter frosts.

So why can't we sow the once? The reason is that as any perennial seeds and develops, each year they will take over a larger part of the area; this colonisation together with no land disturbance ensures the dominance of the perennials. Ultimately, if no clearance is undertaken, the perennials themselves will be overpowered by shrubs and ultimately trees as scrub reclaims the land.

Conclusion

Having a cornfield flower area is more closely related to the traditional annual flowerbeds of the 1960's and 70's. The only difference is that seed is sown instead of planting annual bedding such as geraniums and lobelia. But it is a style that can be applied to small beds or even containers and it becomes easier to remove the undesirable plants.

For the grass meadow, you do gain time by not having to mow and trim edges each week but you do still have to weed. Above all else, you must be able to maintain the same cutting regime and timing every year and some may feel it is not an appropriate style of gardening for close to the house.

If you want to visit a grass meadow maintained as a nature reserve, then some of the best can be viewed at the reserves managed by the Yorkshire Wildlife Trust within the North York Moors National Park this would include the reserves at Ellerburn Bank, Harland Mount and outside the Park area at Wharram Quarry.

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