

Hampshire Magnificent Meadows Species-rich grassland garden survey

The Hampshire Magnificent Meadows project seeks to safeguard the fragments of chalk grassland in and around Highcliffe and Bar End, Winchester, by connecting local residents with the wildlife and ecosystems of the South Downs.



The project has seven strands:

1. Chalk grassland surveys, including local gardens, exploring the use of aerial photo analysis for estimating areas and ecosystem service metrics.
2. A feasibility study of seven chalk grassland fragments and their habitat management options.
3. Community training to make hay by hand (5 days).
4. Community training to make tree hay (1 day).
5. Engagement with the pre-school and primary school (a visit each).
6. Wellbeing in nature sessions (2 half day visits).
7. Evaluation of these pilot activities to explore future funding opportunities to roll out the project more widely across Hampshire.

It is about raising the profile of city edge, species-rich grasslands, their intrinsic value for nature, nature recovery, local food production, carbon sequestration, climate change adaptation and community benefits.

Private gardens provide a personal space in which to connect with nature and the landscape.



Towers of bugle flowers



Short mown turf with flowering Rough Hawkbit

Local stories say that the lawns may have come from 1930s south downs turf.

Many of the garden lawns in Highcliffe contain special communities of wildflowers and grasses that are found on the chalk downs. They are like mini versions of St Catherine's Hill. The lawns are special because they contain plants that have been lost from our local fields with modern herbicides and chemicals.

Familiar flowers such as daisy, buttercup, clover and dandelion provide important nectar and pollen for bees, butterflies and other insects. Many of the garden lawns contain an impressive 35 plus chalk grassland species, such as:

Birds-Foot-Trefoil, *Lotus corniculatus*

Black knapweed, *Centaurea nigra*

Black medick, *Medicago lupulina*

Bulbous buttercup, *Ranunculus bulbosus*

Burnet Saxifrage, *Pimpinella saxifraga*

Bugle, *Ajuga reptans*

Cat's Ear, *Hypochaeris radicata*

Crested Dog's-Tail, *Cynosaurus cristatus*

Daisy, *Bellis perennis*

Dandelion, *Taraxacum spp.*

Fairy Flax, *Linum catharticum*

Field Madder, *Sherardia arvensis*

Fox and Cubs, *Pilosella aurantiaca*

Germander Speedwell, *Veronica chameadrys*

Hedge Bedstraw, *Galium album*

Hoary Ragwort, *Senecio erucifolius*

Lady's Bedstraw, *Galium vera*

Lesser Trefoil, *Trifolium dubium*

Marjoram, *Origanum vulgare*

Meadow Buttercup *Ranunculus acris*

Mouse-ear Hawkweed, *Pilosella officinarum*

Ox-Eye Daisy, *Leucanthemum vulgare*

Quaking Grass, *Briza media*

Ragwort, *Senecio jacobea*

Red Clover, *Trifolium pratense*

Red Fescue, *Festuca rubra*

Ribwort Plantain, *Plantago lanceolata*

Rough Hawkbit, *Leontodon hispidus*

Selfheal, *Prunella vulgaris*

Sweet Vernal Grass, *Anthoxanthum odoratum*

Wild Carrot, *Daucous carota*

Wild Strawberry, *Fragaria vesca*

Yarrow, *Achillea millefolium*

Yellow oat grass, *Trisetum flavescens*

Chalk grassland species which residents have bought and sown to enhance their lawn or meadow

Cowslip, *Primula veris*

Salad Burnet, *Sanguisorba minor*

Yellow Rattle, *Rhinanthus minor*

Species which could be gathered and spread from local meadow areas during hay making:

Agrimony, *Agrimonia eupatoria*

Bee Orchid, *Ophrys apifera*

Bird's Foot Trefoil, *Lotus corniculatus*

Chalk Milkwort, *Polygala calcarea*

Common Spotted Orchid, *Dactorhiza fuchsii*

Crosswort, *Cruciata laevipes*

Dropwort, *Fillipendula vulgaris*

Eyebright, *Euphrasia spp.*

Field Scabious, *Knautia arvensis*

Harebell, *Campanula rotundifolia*

Horseshoe Vetch, *Hippocrepis comosa*

Kidney Vetch, *Anthyllis vulneria*

Lady's Bedstraw, *Galium verum*

Milkwort, *Polygala vulgaris*

Pyramidal Orchid, *Anacamptis pyramidalis*

Rock Rose, *Helianthemum nummularium*

Small Scabious, *Scabiosa columbaria*

Sorrel, *Rumex acetosa*

St John's Wort, *Hypericum perforatum*



Cat's Ear flowering in a front garden in July.

The value of lawns

Plantlife's 'No Mow May', or 'Let it Bloom in June' campaigns are seeking to highlight the value of our backyard lawns. This is because, collectively, gardens across the UK cover a large area and that has a big effect.

- A natural lawn helps with water infiltration, which reduces flooding and sewage outfalls in our rivers.
- Lawns provide important food and shelter for wildlife.
- Green spaces reduce heat spikes during extremes of weather.
- A wildlife rich garden is good for our mental health. Bringing us into contact with awesome slow worms, hedgehogs and humming-bird hawk moths.

Looking after our Chalk Hill Jewels

The Hampshire Magnificent Meadows project surveyed the chalk grassland resource across Bar End and Highcliffe which is at the start of the South Downs Way. By recording the chalk grassland resource and helping people look after their special lawns, species-rich lawns can continue to be part of our local history and a resource for future generations of people and wildlife.

Unfortunately, gardens are at risk of being converted to hard landscaping, such as driveways, which can cause more runoff during high rainfall, and become heat sinks during hot weather. Fake grass can burn bare feet (pets included) and has zero value to wildlife above or below ground.

Advice was available to help residents who want to look after their species-rich lawns. Permission was sought to harvest seed from species rich gardens, to enhance others in the neighbourhood.

Methodology

One street with high species diversity was chosen as a study area. Front lawns were surveyed from the pavement and classified as:

- Semi-improved mainly grass, with herbs such as ribwort plantain, yarrow and selfheal.
- Chalk grassland
- Hedge
- Driveway
- Planted with flowers and shrubs
- Landscaping with paving, slabs or loose stone
- Re-sown grass with no wildflowers.

An article was written for the local parish magazine and garden surveys were carried out. Habitat management advice was provided where requested, such as when to cut and rake.

Results

Front garden habitat	Area	Proportion
Semi-improved grassland	508 sq metres	31%
Chalk Grassland	286 sq metres	17%
Planted beds	271 sq metres	17%
Hard landscaping	214 sq metres	13%
Resown grass	182 sq metres	11%
Driveways	95 sq metres	6%
Hedge	58 m	4%
Artificial grass	23 sq metres	1%
TOTAL AREA	1633 sq metres	

Table 1 Portal Road, Highcliffe, Winchester

The greatest proportion, 508 of 1633 square metres of front garden, was **semi-improved grassland**, characterised by faster growing grasses such as False Oat Grass, Yorkshire Fog and Cocksfoot. Whether this is a result of previous management via fertilisers or richer soil type is not known.

Steeper areas on thin, chalk soil supported wildflower-rich turf. This was classified as **chalk grassland**. There were 286 square metres of chalk grassland, which was maintained through regular mowing. Gardens tend to be cut at different times so there are always plants in flower along the street. Some gardens have a more relaxed mowing regime which enables flowering and seeding. Due to the low fertility with the chalk soil, the height of the lawn is below knee height. A couple of gardens hadn't been cut for over a year and had brambles growing through them, which will cause a loss of the wildflower rich areas.

271 square metres of front garden were **planted beds** with ornamental flowers and shrubs. Many gardeners choose wildlife friendly planting with nectar rich flowers.

Hard landscaping, characterised by crushed stone, paving slabs and gravel, covered 214 square metres. Most of this was highly permeable to rainfall, with no run-off observed.

Bright green, **resown grass** covered 182 square metres. Part of the project's motivation was to celebrate the special value of diverse, species-rich lawns. Some residents have used lawn herbicides and fertilisers to encourage a uniform green lawn, which is more expensive, harder to maintain and has less value to wildlife.

Driveways covered 95 square metres and are noticeable heat sinks in hot weather and cause significant rainwater run-off during rainstorms. The road is 175 metres from the River Itchen.

Hedges lining the pavement covered 58m.

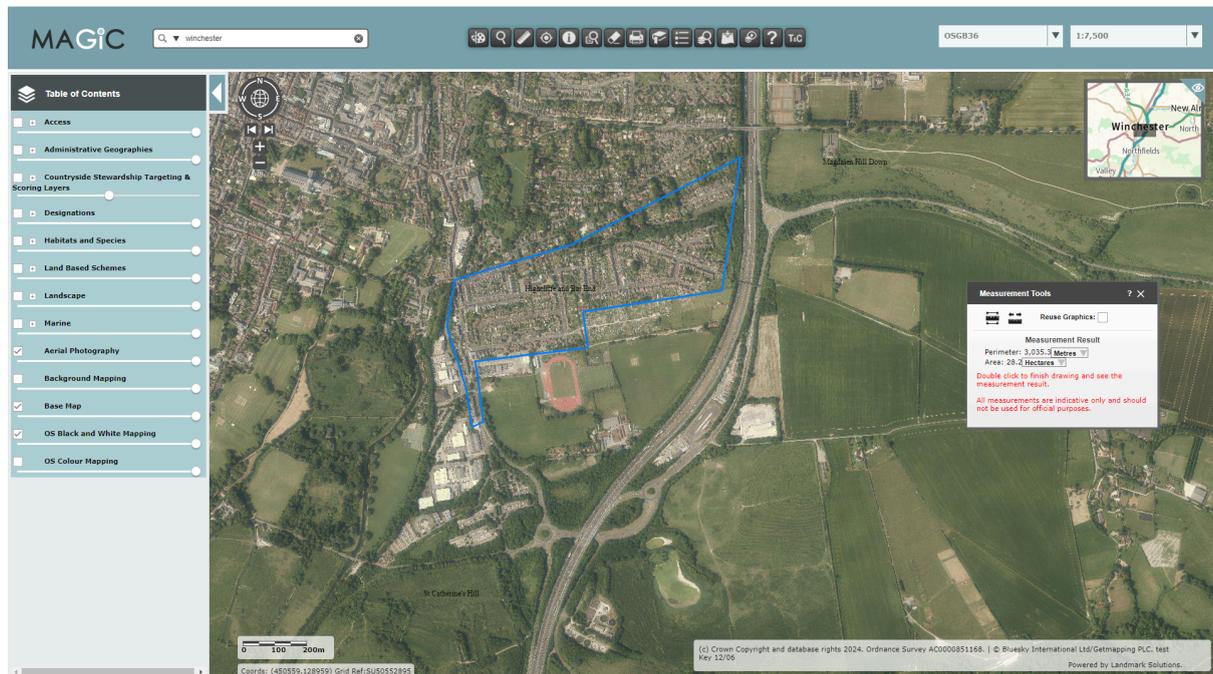
Artificial grass covered 23 square metres.

Discussion

The British mindset for a neat and tidy garden, plus the marketing of 'low maintenance' hard landscaping or artificial grass has encouraged some residents to invest in high cost driveways and artificial grass. These features are not subject to planning control and have negative impacts on the local environment via rainfall run-off, heat sink effects and loss of habitat. After a small amount of encouragement, one resident was willing to try sowing a wildflower meadow for an investment of £24 in seeds, which would require 5 cuts per year, compared with thousands of pounds for installing fake grass.

Branding to celebrate species-rich lawns is in progress, under the banner 'Chalk Hill Jewels'. Ideally some sort of plaque will be displayed on gardens with species-rich lawns, to show that they are intentionally flowery and of high value to the neighbourhood. A celebration certificate was trialled, including the ecosystem services infographic, a species list for the garden and some advice about how to look after the lawn, which fits in with the resident's approach to managing their garden.

Recent changes to parking permits, with costs rising to £55 have frustrated some home owners and led them to build a private driveway. However, the costs for building the driveway and dropping the kerb far exceed the cost of the permits over a decade. An understanding of the wider impacts from water run off, river pollution and high temperature may provide a pause for thought. More permeable and partially vegetated options are also possible, using stone and low growing plants such as thyme.



Map 1, Highcliffe and Bar End residential area.

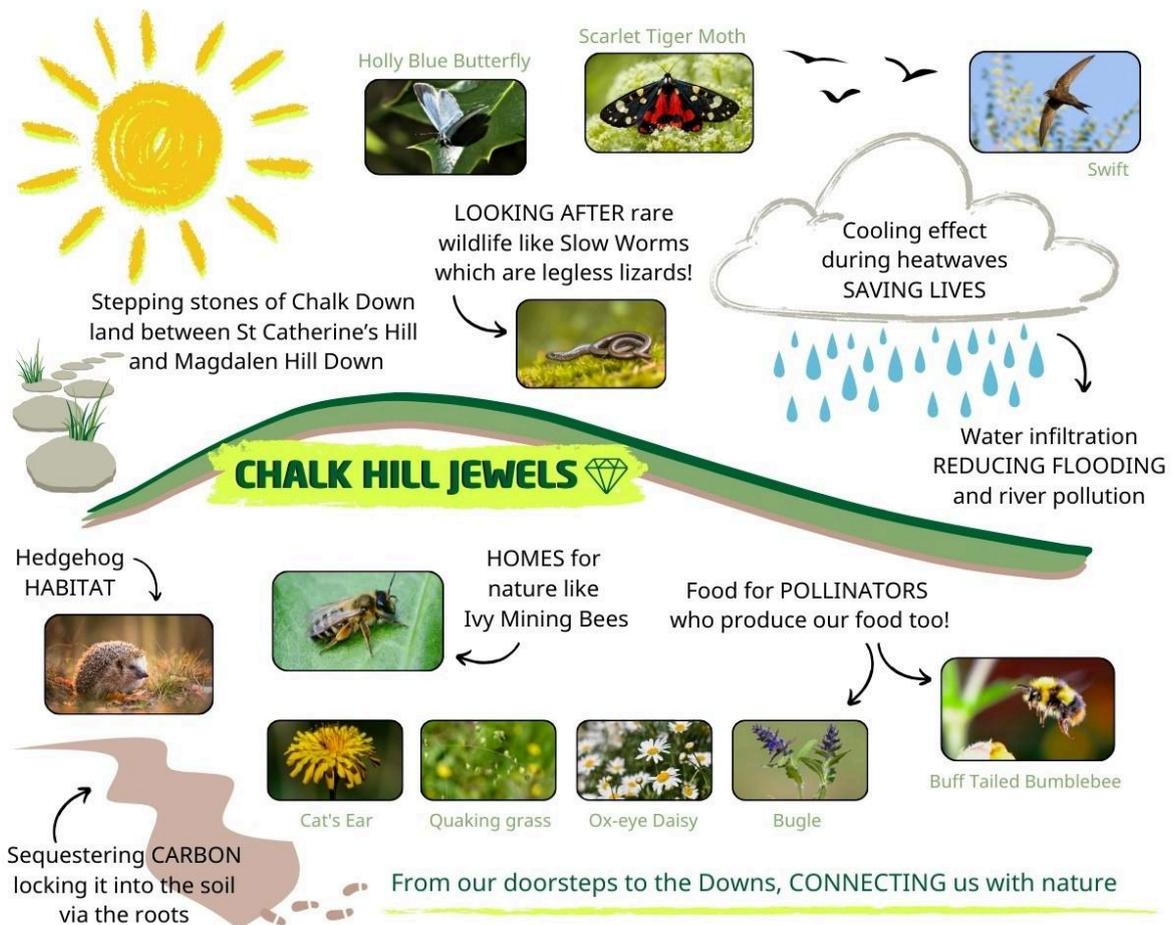
The residential area of Bar End and Highcliffe covers 28 hectares. We would like to trial the use of Artificial Intelligence to map the garden habitats, which can be done using texture from aerial photographs.

Map 1 shows the area of the neighbourhood, which provides important stepping stones of habitat between St Catherine's Hill to the south west, and Magdalen Hill Down to the north east. Both are Sites of Special Scientific Interest and support important populations of chalk downland wildlife. Ensuring that wildlife can move between these spaces is vital. Some residents rarely visit the nature reserves, but can enjoy nature on their doorstep and feel a connection to the south downs via their garden and views from it.



Views towards Cheesefoot Head and Chilcomb from Highcliffe.

Ecosystem services:



Infographic produced for trail Chalk Hill Jewel certificates, with thanks to Laura Jones

Species-rich, High Nature Value (HNV) habitats store organic matter in the soil. Although they are not sequestering significant volumes of CO₂ from the atmosphere, leaving the ground undug, keeps the carbon that is stored in the soil locked away. Therefore there are carbon benefits to maintaining a species rich lawn compared with converting to planted beds.

The different root structures of the different plants, over 20 species per lawn, aid with water infiltration during rainfall events and help prevent run-off into the nearby River Itchen.

The neighbourhood is lucky to have booming populations of Slow Worms, Hedgehogs, Swifts and Sparrows. These are Biodiversity Action Plan (BAP) species due to their decline on a national scale. The patchwork nature of gardens: some neat and tidy, others tall and tussocky, provide a variety of features for feeding, shelter and breeding. The Chalk Hill Jewels branding has been designed to extend beyond lawns, to celebrate wildlife in our gardens and how we can help threatened plants and animals by looking after our spaces in a wildlife friendly way. The resources and encouragement from organisations such as Hampshire Swifts, Winchester City Council, Butterfly Conservation, The Wildlife Trusts and the RSPB all help to inspire people to take action. The Hampshire Magnificent Meadows project and the Chalk Hill Jewels element has provided direct connection with the South Downs National Park and where we live.

By learning what is in our gardens, people are motivated to support projects such as Highcliffe Community Forum for Action (HCFA) wildflower area at Gordon Avenue, and the tussock wildflower strips at the Leisure Centre.



Leisure Centre tussock wildflower strip.

Local Nature Recovery Strategies (LNRS) will be seeking to restore and connect habitats and will require local wildflower seed. The project has sought to connect meadow managers, from garden areas up to field scale so that seed can be harvested and sown by hand to enhance species-richness. In doing so, missing species such as Cowslip and Kidney Vetch can be encouraged in areas managed for nature. It can also provide highly recognisable species to connect people with areas managed for wildflower interest.

The harvesting of seed also provides a sense of pride for the donor site manager. By looking after an area's wildflowers, they can generate an income stream (£600/ha) from harvesting seed or green hay.

Recommendations

1. Promotion of the Chalk Hill Jewel branding via social media and publicity.
2. Carry out further garden visits and provide mowing regime advice as requested. Target unvisited roads to gain understanding of geographical spread of habitat through the neighbourhood.
3. Investigate aerial photograph analysis of chalk grassland resource through the neighbourhood.
4. Seek funding to provide branding for Chalk Hill Jewel front gardens via an artist infographic and laser-cut posts.
5. Harvest seed from gardens and local wildflower patches to enhance less species rich areas, both gardens and non-designated areas in the project, e.g. Chalk Ridge verge.
6. Bring shared use garden spaces, such as Penton Place into Chalk Hill Jewels, if the residents would like to do this.
7. Approach Martin and Co, who let several properties with species-rich lawns.
8. Work with WCC to promote the biodiversity value and low maintenance benefits of species-rich lawns to tenants.
9. Share this information with the University of Winchester and University of Southampton student housing teams.
10. Tap into existing groups, such as coffee mornings, to promote Chalk Hill Jewels.
11. Share links to education resources with All Saints' Pre-School and School ahead of the meadow visits in September.
<https://learning.southdowns.gov.uk/wildlife-habitats/south-downs-species/>

References

[Crazy paving: who'll step up to end front garden loss? - National Park City Front Gardens](#)

http://www.magnificentmeadows.org.uk/assets/pdfs/Calcareous_Grasslands.pdf

Appendix 1

Calcareous Grassland Rapid Assessment table, from Magnificent Meadows.

<http://www.magnificentmeadows.org.uk/advice-guidance/how-can-i-survey-and-monitor-my-grassland/surveying-and-monitoring-grassland-habitats>

This was modified to include characteristic species of the local area, including Black Medick, Bugle, Field Madder, Hedge or Lady's Bedstraw, Marjoram, Mouse-ear Hawk Weed, Ox-eye Daisy.

Site:		Date:	Time for survey:		Surveyors:																													
Sample number	Grid reference	Is the sward height less than 15cm in June/July?	Is the cover of herbs and sedges more than 50%?	Are there any scrub seedlings?	Is there any scrub that is over 50cm high?	Is there less than 5% bare ground in June/July?	Is there less than 33% upright brome?	Positive indicators										Negative indicators																
								Common bird's-foot-trefoil	Common / Black knapweed	Common rock-rose	Dwarf thistle	Fairy-flax	Field scabious	Harebell	Lady's bedstraw	Milkwort sp.	Red clover	Ribwort plantain	Rough hawk's-bit	Sail ad burnet	Self-heal	Thyme	Wild basil	Quaking-grass	Sheep's / Red fescue	Glaucous sedge	Common nettle	Doxies (excluding common sorrel)	Creeping thistle / spear thistle	Ragwort	Is there less than 10% false wood brome and/or tor-grass?			
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