

2009 - 2019

Woodbury Roadside Wildflower Survey



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Woodbury Roadside Wildflower Survey 2009 - 2019

“700 species of wild flower grow on road verges – nearly 45% of our total flora – but there has been a 20% drop in floral diversity due to poor management and nutrient pollution”¹

Foreword

Flower-rich lanes and verges are a quintessential feature of Devon. When I think of Devon, I think of green lanes, with hedge banks on either side, full of primroses and other spring wildflowers. This study documents the amazing wildflower diversity that can be found along the verges and lanes in the Parish of Woodbury. It shows us that these verges provide a relic of a countryside before large-scale intensification of agriculture: how wildflowers that only grow in grassland that hasn't been 'improved' for agriculture can still be found, even though they are gone from many of the surrounding fields; how woodland wildflowers, such as wood anemone, sweet woodruff and dog's mercury, are still widespread along Woodbury's roadside hedge banks, even though there are few areas of woodland remaining in the Parish.

It's easy to overlook or take for granted this amazing biodiversity resource. This is why this study is so special. It reminds us how important and valuable these habitats are, but also that they are under threat, with evidence that the number of wildflowers has declined over the last decade, with management practices, nutrient enrichment and other factors the probable cause. I hope this important study will encourage others to record, monitor and enjoy the wildlife in their local areas and promote good management of our roadside verges.

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Ecologist and resident of the Parish of Woodbury

¹ Bromley J; McCarthy, B; Shellswell C (2019). [Managing Grassland Road Verges](#). Plantlife

Introduction

In 2008, two Woodbury residents, Sylvia Wickenden and Sally Elliott, started [recording wildflowers on the roadsides and verges of the lanes in Woodbury parish](#), East Devon. Records were taken throughout the year, and in subsequent years up until the end of 2011.

The survey was prompted by an apparent lack of wildflower records in Woodbury parish and to provide records of any loss or change of species due to climate warming and changes in human activity. The intention was to encourage people to record and monitor wildflowers in their neighbourhoods, and in this way help to reconnect them with nature. Sylvia, Sally and Susie Culhane who joined the survey team in 2019, are enthusiastic amateur botanists, lovers of the countryside and familiar with most local flowers, and used a collection of reference books for species identification².

The roadside wildflower survey resonated with [Woodbury Wide Awake's 2019 commemoration of William Keble Martin's death](#) in Woodbury 50 years ago. Martin was the primary editor of *Flora of Devon* published in 1939 (the first of its time), and recorded wildflowers all his life. He was a keen botanist and believed strongly in the preservation of places of natural beauty. In 1965, Martin's lifelong wildflower records and drawings were published in the *Concise British Flora in Colour*.



During 2019, Sally Elliott and Susie Culhane began recording wildflowers in the parish again and were subsequently able to compare the results with those of a decade ago. The survey was featured on Radio Devon during the week of Keble Martin's anniversary (Nov 2019) and the results shared with wildflower charity [Plantlife](#); East Devon AONB and Devon Biodiversity Record Centre; Devon County Council and East Devon District Council.

² Martin, W K (1965). *The Concise British Flora in Colour*. London: Ebury Press and Michael Joseph
 Nicholson, B E; Ary, S and Gregory, M (1960). *The Oxford Book of Wild Flowers*. Oxford University Press
 Sterry, P (2006). *Collins Complete Guide to British Wild Flowers*. HarperCollins Publishers Ltd.

Methodology

For practical reasons, four 30 metre stretches of road or lane at different heights in the parish, from the crest of the common at 170 metres (550 feet) down to the Exe Estuary, were selected for survey (see map below). Each month in 2019 (bi-monthly in 2008-11), each of the sites were visited and different species in flower were recorded. Rudimentary soil tests were also carried out in 2008 and again in 2019 using a basic Soil Tester. The survey essentially recorded the presence of each species seen

The results from 2019 were then compared to those in 2009 to show the change in roadside floral diversity over a decade.



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- 1 The Beacon – edge of Woodbury Common, junction with Castle Lane and B3180
- 2 'Flower Lane' near Cannonwalls, Woodbury
- 3 Stony Lane, NW from Coniger Cross, Woodbury
- 4 Porter's Lane, near to junction with Toby Carvery, Lymptone A376, Exton

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³ Elliott, S and Wickenden, S (2011). [A Flower Study in Woodbury Parish 2008-2011](#) page 9

⁴ Map created by Sylvia Wickenden

Recording Sites

Site 1: The Beacon, Woodbury Common

The site chosen for recording results is a 30m stretch of verge adjacent to the road junction with Castle Lane on both east and west side of the B3180 which crosses Woodbury Common. Exeter County Council has confirmed that the site falls partly within a visibility splay and therefore the verges are cut twice a year - earliest April, latest September. In 2019, the verges were cut in May.

The site is surrounded to the east and south west by Woodbury Common⁵ which is predominantly heathland, and to the north and north west by woodland and the entrance to Woodbury Park Hotel, Golf and Country Club. Woodbury Common is part of the East Devon Area of Outstanding Natural Beauty⁶ and is a Site of Special Scientific Interest⁷.

Soil test results were as follows:

	2009	2019
EAST SIDE SOIL PH	6.0 pH	6.7 pH
WEST SIDE SOIL PH	7.5 pH	6.5 pH

The west side soil shows a reduction in pH, which is consistent with increased nitrogen deposits caused by traffic exhausts and air pollution. Conversely, the east side shows an increase in pH.



B3180 on Woodbury Common [cc-by-sa/2.0](https://creativecommons.org/licenses/by-sa/2.0/) - © [Derek Harper](https://www.geograph.org.uk/p/1959533) - [geograph.org.uk/p/1959533](https://www.geograph.org.uk/p/1959533)

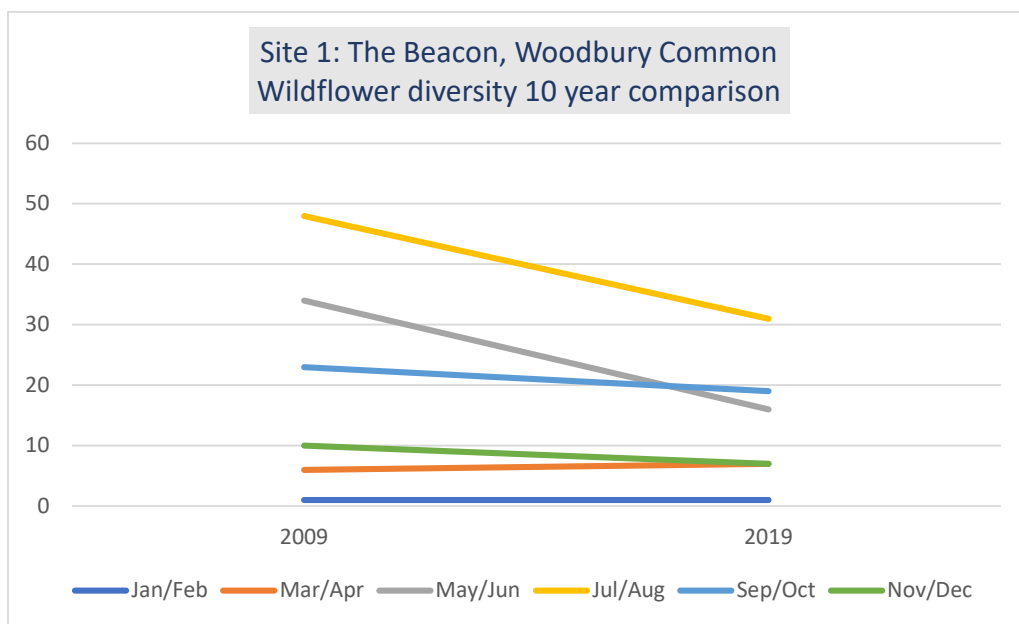
⁵ [Woodbury Common, Devon. Wikipedia](https://en.wikipedia.org/wiki/Woodbury_Common), extracted Feb 2020.

⁶ [Area of Outstanding Natural Beauty. Wikipedia](https://en.wikipedia.org/wiki/Area_of_Outstanding_Natural_Beauty), extracted Feb 2020.

⁷ [Site of Special Scientific Interest. Wikipedia](https://en.wikipedia.org/wiki/Site_of_Special_Scientific_Interest), extracted Feb 2020.



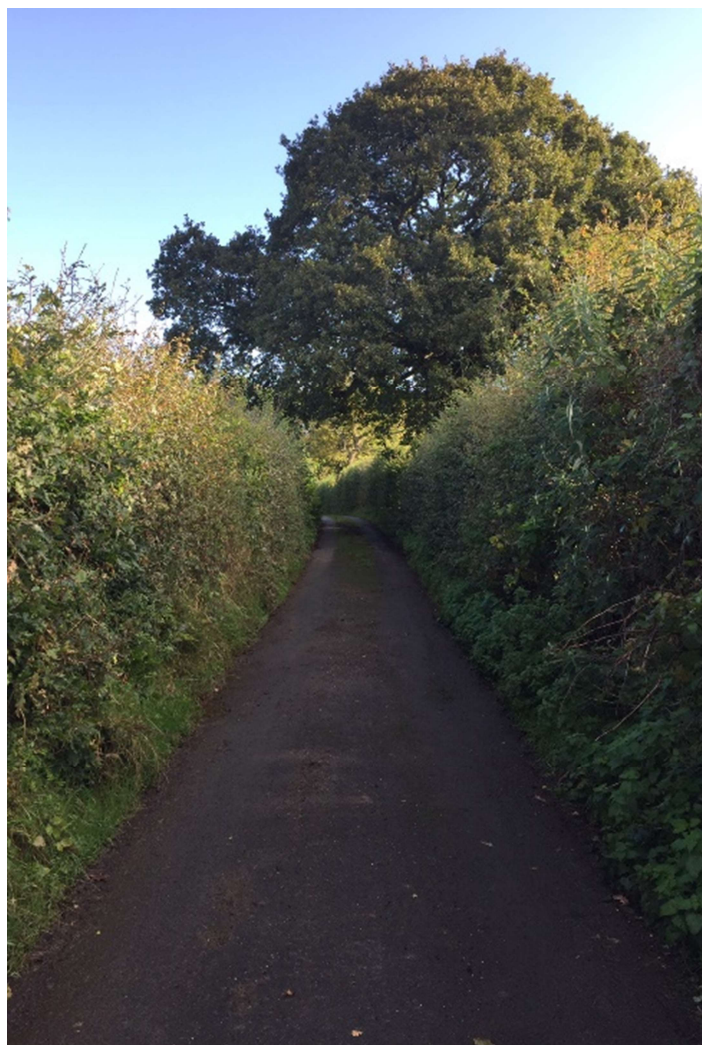
Map above supplied by Exeter County Council, Nov 2019



Results showed a **drop of 30%** in wildflower diversity between 2009 and 2019. One new species, Field Mouse-Ear (*Cerastium arvense*), was recorded in flower here in 2019. Less of a decline in later season plants (Sept/Oct and Nov/Dec 2019) may be due to verges having been cut early in May.

Site 2: Flower Lane, Woodbury

This lane is unmarked but known colloquially as 'Flower Lane' due to the multitude of wildflowers regularly seen on the verges in the 1970s and 1980s. It is a very quiet lane located near Cannonwalls, to the north of Woodbury, in between Toby Lane and Dog Lane. There are crop fields on one side of the lane, and paddocks on the other. The site includes the verges in a small woodland copse where a stream passes underneath the road.

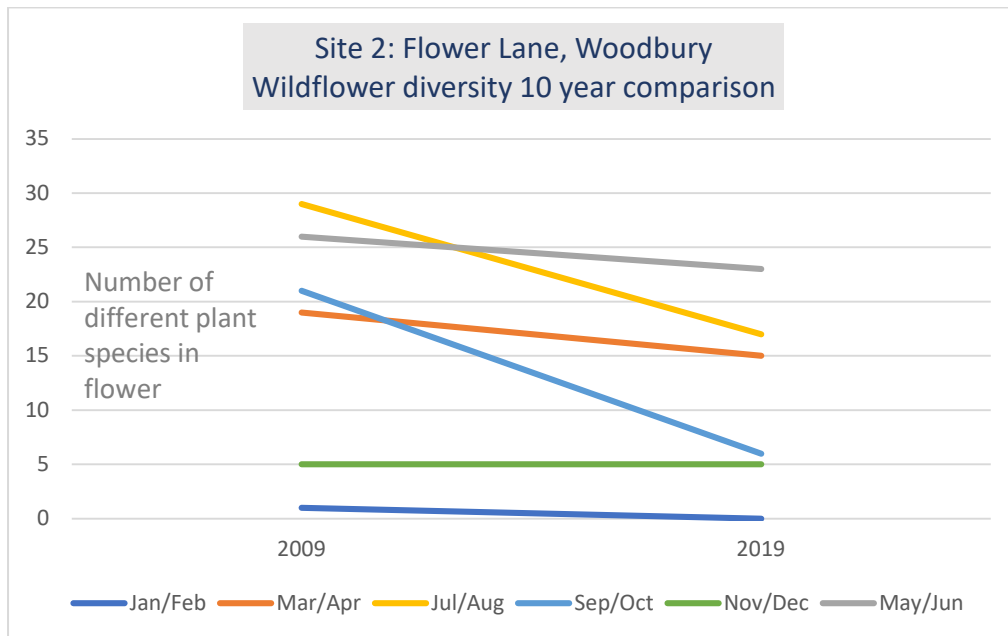


Two new species were recorded here in 2019: Yellow Archangel (*Lamium galeobdolon*) and Woodruff (*Gallium odoratum*). Soil test results showed the soil had become more alkaline.

	2009	2019
FLOWER LANE SOIL PH	5.5 pH	6.0 pH

In the past 10 years, this site has seen a **21% decrease** in terms of floral diversity. In particular, woodland plant species such as Wood Anemone and Dog Violet have decreased in number.

Of the four recording sites, this site has suffered the most in terms of inappropriately timed hedge cutting or 'flailing'; general verge erosion from large farm vehicles, and in the hollow by the stream, the practice of clearing ditches and heaping the debris on top of the verge, which smothers more delicate wildflower species. The steep decline in species recorded in Sept/Oct may be attributable to the timing of these operations.

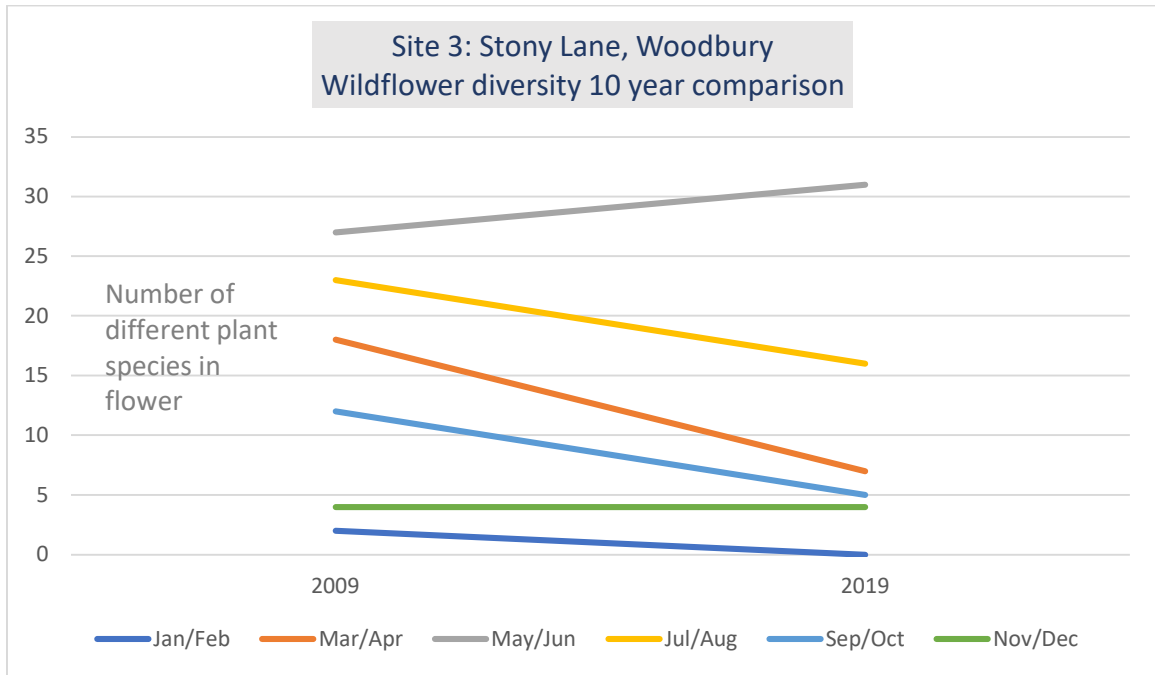


Site 3: Stony Lane, Woodbury

This is a steeply banked lane descending from Conigar Cross to Exmouth Road, to the south of Woodbury. On either side of the lane are paddocks where horses are kept, and one crop field.



Here there was less of a decline in diversity – **a drop of 15%**, and two new species were recorded in 2019 – Rape (*Brassica napus*) and Field Madder (*Sherardia arvensis*). Soil test results showed the soil had become more alkaline.



	2009	2019
STONY LANE SOIL PH	5.5 pH	6.5 pH

Site 4: Porter’s Lane, Exton

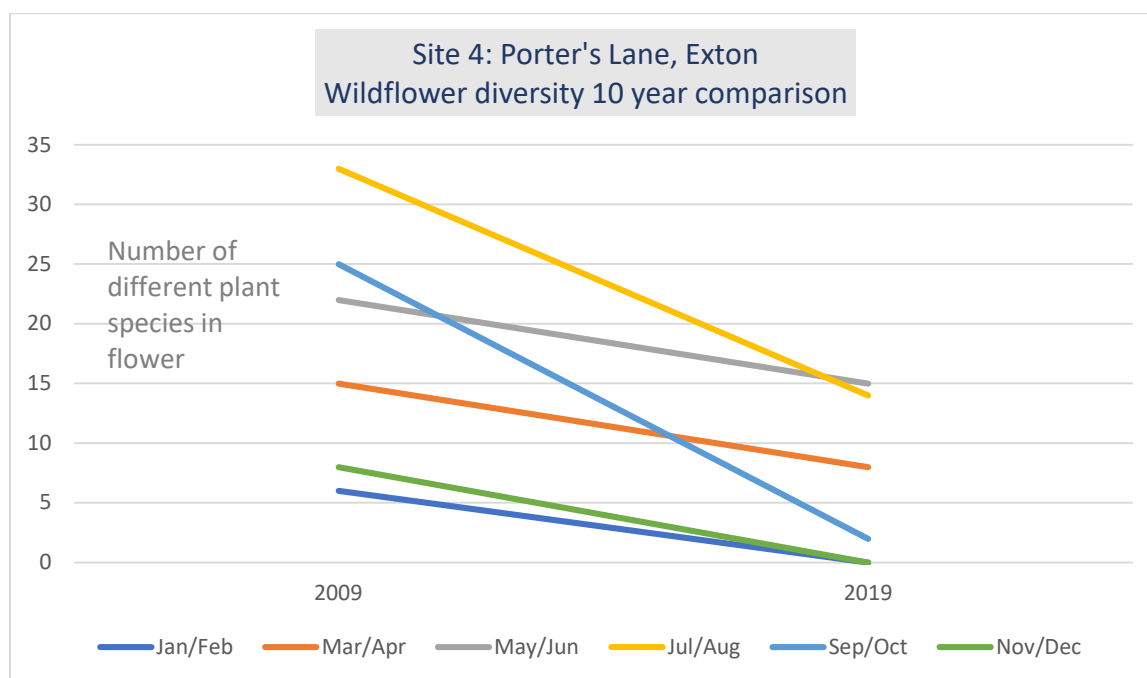
This is a little used lane which crosses Exmouth Road (A376) near to The Toby Carvery in Lymington. The survey site is to the east of the A376. The lane is bordered by crop fields.



This site saw the greatest decline of all four sites over the past decade, **-48%**. However, this drop was partly due to no plants being recorded in flower in January 2019 when the site was inaccessible due to flooding. In addition, the verges were cut in May, thereby lessening any likelihood of flowers later in the summer, which is illustrated by the line representing Sept/Oct on the line graph below.

Soil tests showed greater acidity in 2019 than 2009:

	2009	2019
PORTER'S LANE	7.5 pH	5.7 pH



Results and Analysis

Overall, **wildflower diversity dropped by 29%** between 2009 and 2019. Compared with Plantlife's survey figures, this is 9% more than the national average.

There are several possible factors contributing to the decline in floral diversity:

- Climate change: milder, wetter winters and hotter, dryer summers (Met Office reported 7% increase in rainfall between 2009 and 2019, and 7% increase in top temperatures in both January and July 2019), and exceptional weather events, for example, floods and storms.
- Loss of insect, bird and animal species⁸.
- Verge management: cutting before wildflower seeds can set, and not collecting the cuttings. This can lead to increased nutrients leaching into the soil as the cuttings degrade over time.
- Nutrient pollution caused by an increase in road use by fossil-fuelled vehicles and large farming machinery.
- Verge erosion: many of the single-track rural lane verges are increasingly being eroded by more frequent vehicle use, and larger vehicles such as caravans; farm machinery, and SUVs⁹.

⁸ [UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'. May 2019](#)

⁹ [SUVs make up third of cars sold in the UK. Jack Healy, 17 April 2018 <https://www.carkeys.co.uk/news/suvs-make-up-third-of-cars-sold-in-the-uk>](#)

- Industrialised agricultural practices such as monocultural crop production, and spraying or liming the soil for increased harvest. Spraying often drifts onto nearby plants, and artificial soil treatments leach on to the verges during rainy periods. Fertilisers containing high nitrogen content encourage vigorous plants such as Hogweed, Dock, Nettle and Bramble at the expense of smaller more delicate species
- Ditch clearing, whereby the debris from the ditch is piled on top of the verges, smothering small plants and seeds.

The list above is not exhaustive, and much research is now being undertaken to look at the links between human activity and biodiversity. A research paper published in late 2019 by the Public Library of Science (PLOS), in which the relative importance of different human activities and how they drive changes in species populations was analysed over the period 1970 – 2012, found that agricultural management practices and climate change caused the biggest impact on diversity. *“We found that species’ population change (~1970–2012) has been most strongly impacted by intensive management of agricultural land and by climatic change. The impact of the former was primarily deleterious, whereas the impact of climatic change to date has been more mixed.”*¹⁰

Benefits of Wildflowers on Roadsides

*“Wildflowers are part of the interconnected web of life, the ecosystem. As such, the ecological implications of their loss are huge.”*¹¹

It is well documented that a decline in floral diversity leads to a decline in pollinating insects, which in turn impacts food production and natural ecosystems. *“Insect pollinators are vital for the maintenance of ecosystem health and for global food security, with 75% of crop species, 35% of global crop production, and up to 88% of flowering plant species being dependent on insect pollinators to some extent.”*¹²

Meadows and other species-rich grasslands now cover less than 1% of the UK¹³, so verges are fast becoming one of the last refuges for some of our rarest and endangered wildflowers. In addition, verge habitats provide an important ‘green corridor’ for wildlife, thereby reducing the impact of human encroachment.

In conclusion, with the cumulative effects of global warming, extreme weather events, increased human activity and industrialised agriculture, the impact on wildflowers, particularly those on verges, needs to be closely monitored.

Appendices

- I. Results – list of plants in flower by site by year
- II. Comparison of flowering plant data
- III. Soil test results – all 4 sites

¹⁰ Burns F, Eaton MA, Barlow KE, Beckmann BC, Brereton T, Brooks DR, et al. (2016) [Agricultural Management and Climatic Change Are the Major Drivers of Biodiversity Change in the UK](#). PLoS ONE 11(3): e0151595. doi:10.1371/journal.pone.0151595

¹¹ Joanna Ward (2018) "[Wildflower Diversity in the Hedgerows and Verges of the Woodbury Salterton Area - Then and Now](#)". Woodbury Wide Awake website.

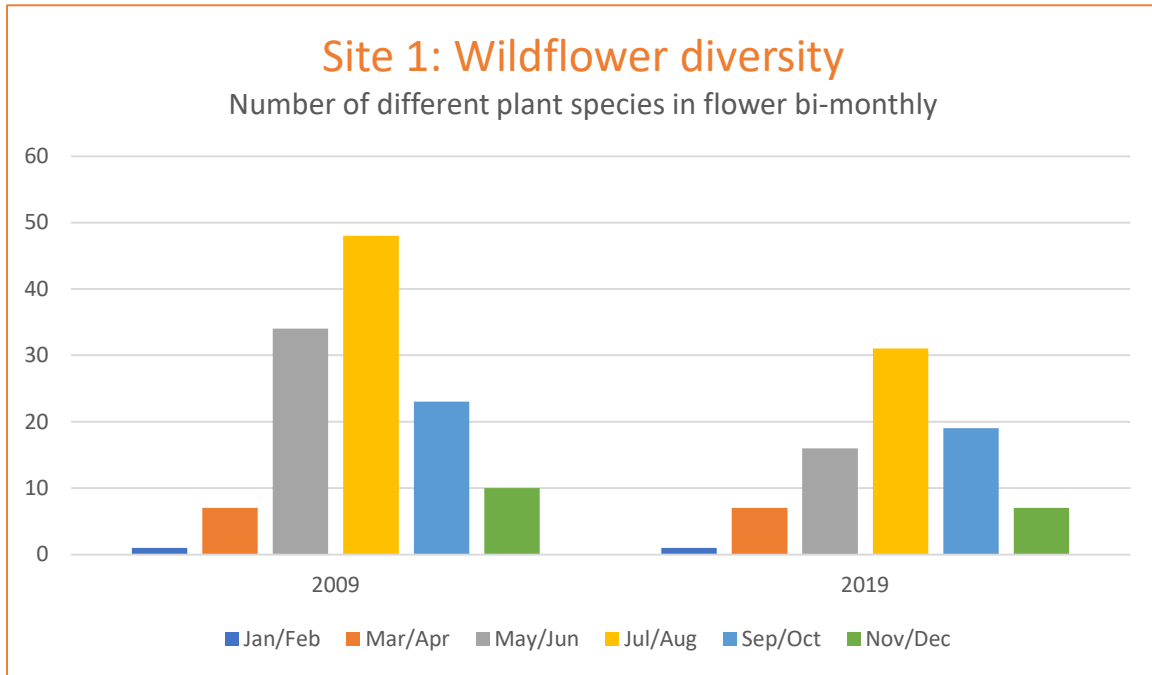
¹² Powney, G.D., Carvell, C., Edwards, M. et al. (2019) [Widespread losses of pollinating insects in Britain](#). Nat Commun 10, 1018 (2019).

¹³ Plantlife [Making Meadows](#)

Appendix I: Results – list of plants in flower

Site 1: The Beacon, Woodbury Common

	2009	2019
Jan/Feb	Dandelion	Dandelion
Mar/Apr	Gorse, Dandelion, Dog Violet, Scurvy Grass, Common Chickweed, Sweet Violet, Mouse-ear	Common Violet, Germander Speedwell, Hairy Bittercress, Dandelion, Hairy Rockcress, Field Mouse-ear, Chickweed
May/Jun	Buttercup, White Clover, Herb Robert, Yarrow, Ribwort Plantain, Pale Flax, Birdsfoot Trefoil, Red Campion, Tormentil, Hop Trefoil, Hogweed, Hawkweed, Mouse-ear, Common Sorrel, Lesser Hawkbit, Gorse, Dandelion, Greater Plantain, Sweet Violet, Cow Parsley, Common Vetch, Wild Strawberry, Bluebell, Daisy, Lesser Stitchwort, Hawksbeard, False Strawberry, Cinquefoil, Milkwort, Wavy Bittercress, Hairy Bittercress, Germander Speedwell, Milkweed, Honeysuckle	Buttercup, Sweet Violet, Red Campion, Bluebell, Cow Parsley, Red Clover, Birdsfoot Trefoil, Cinquefoil, Herb Bennet, Daisy, White Clover, Dandelion, Lesser Stitchwort, Hawkbit, Black Medic, Hogweed
Jul/Aug	Buttercup, White Clover, Red Clover, Ragwort, Wood Sage, Hemp Agrimony, Herb Robert, Yarrow, Agrimony, Ribwort Plantain, Pale Flax, Fairy Flax, Birdsfoot Trefoil, Self Heal, Red Campion, Slender St John's Wort, Stinging Nettle, Hawkweed, Bramble, Heath Bedstraw, Mouse-ear, Common Sorrel, Hawkbit, Hogweed, Black Medick, Bell Heather, Tormentil, Hop Trefoil, Cow Parsley, Upright Chickweed, Knapweed, Creeping Thistle, Scurvy Grass, Dandelion, Greater Plantain, Lesser Stitchwort, Scentless Mayweed, Ling Heather, Smooth Hawkbit, Annual Pearlwort, Rough Hawkbit, Scarlet Pimpernel, Meadow Vetchling, Wood Dock, Spear Thistle, Mugwort (Artemisia), Cornflower, Nipplewort	Hawkbit, Self-Heal, Red Clover, Red Campion, Tormentil, Birdsfoot Trefoil, Greater Plantain, Groundsel, Yarrow, Hogweed, Pale Flax, Scentless Mayweed, Fairy Flax, White Clover, Medic, St John's Wort, Hemp Agrimony, Woundwort, Scarlet Pimpernel, Tufted Vetch, Knapweed, Agrimony, Bell Heather, Hawkweed, Gorse, Nipplewort, Ragwort, Mugwort, Smooth Sowthistle, Chickweed, Creeping Thistle
Sep/Oct	Red Clover, Ragwort, Hemp Agrimony, Yarrow, Agrimony, Pale Flax, Ribwort Plantain, Red Campion, Slender St John's Wort, Bell Heather, Mouse-ear, Common Sorrel, Lesser Hawkbit, Knapweed, Gorse, Dandelion, Creeping Thistle, Daisy, Lesser Trefoil, Montbretia, Knotgrass, Pearlwort, Rough Hawkbit	Gorse, Pale Flax, Knapweed, Birdsfoot Trefoil, Yarrow, Red Campion, Red Clover, Sowthistle, Hemp Agrimony, Ragwort, Hedge Parsley, Scentless Mayweed, Nipplewort, Creeping Thistle, Self-Heal, Hawkweed
Nov/Dec	Red Clover, Yarrow, Buttercup, Red Campion, Lesser Hawkbit, Gorse, Dandelion, Greater Plantain, Mouse-ear, Rough Hawkbit	Hedge Parsley, Dandelion, Gorse, Lesser Hawkbit, Lesser Stitchwort, Mugwort, Red Campion

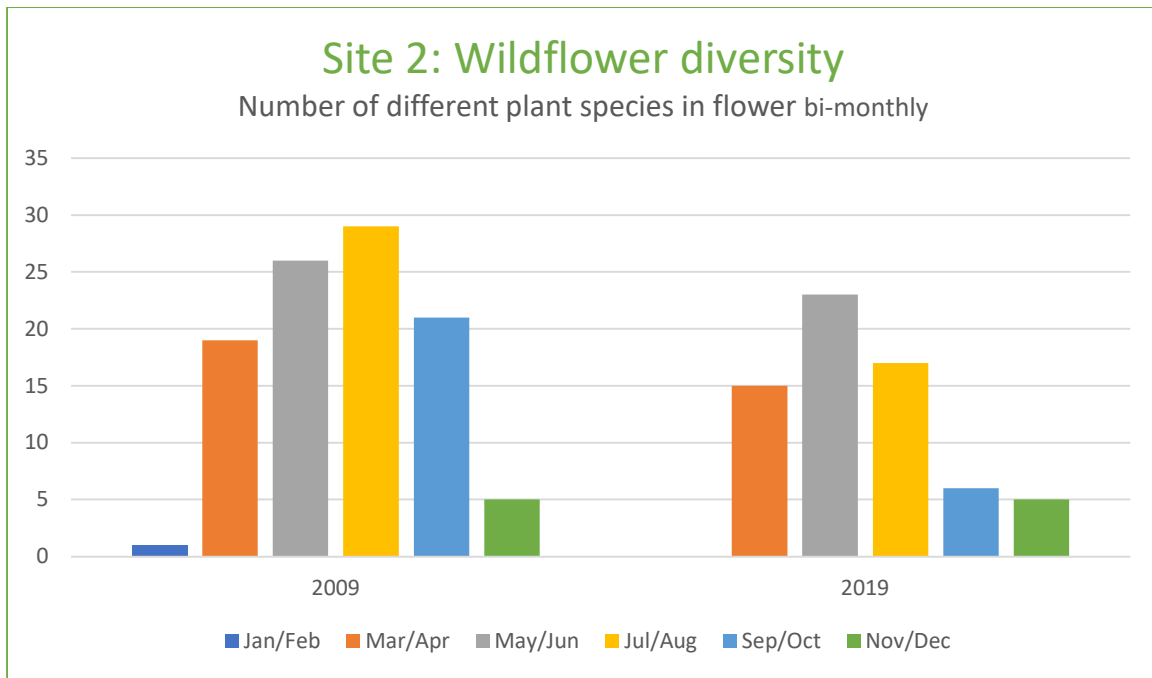


Site 1: The Beacon	2009	2019	% change
Total number of different plant species in flower recorded bi-monthly	123	81	-34%
Total number (de-duped)	71	49	-31%

Appendix I: Results – list of plants in flower

Site 2: Flower Lane, Woodbury

	2009	2019
Jan/Feb	Celandine	-
Mar/Apr	Dandelion, Germander Speedwell, Bittercress, Primrose, Celandine, Dog's Mercury, Wood Anemone, Ground Ivy, False Strawberry, Dog Violet, Cow Parsley, Bluebell, Stitchwort, Herb Robert, Bush Vetch, Red Campion, Garlic Mustard, Pink Purslane, Shining Leaved Cranesbill	Yellow Deadnettle, Bluebell, Celandine, Common Violet, Dandelion, Dog's Mercury, Greater Stitchwort, Hairy Bittercress, Hedge Bedstraw, Hedge Parsley, Herb Robert, Primrose, Red Campion, Red Deadnettle, Wood anemone
May/June	Dandelion, Germander Speedwell, Celandine, Dog's Mercury, Stitchwort, Wood Anemone, Ground Ivy, Buttercup, Bluebell, Herb Robert, Goose Grass, White Deadnettle, Red Campion, Cow Parsley, Wild Carrot, Red Deadnettle, Pink Purslane, Bush Vetch, Stinging Nettle, Herb Bennet, Pennywort, Brooklime, Garlic Mustard, Fool's Parsley, Hemlock Water Dropwort, Dock	Bluebell, Buttercup, Cleavers, Common Vetch, Cow Parsley, Dock, Dog rose, Garlic Mustard, Germander Speedwell, Greater Stitchwort, Ground Ivy, Hawkbit, Hedge Parsley, Hemlock Water Dropwort, Herb Bennet, Herb Robert, Pennywort, Nettle, Pink Purslane, Red Campion, Sorrel, Sweet Woodruff, Wood Anemone
Jul/Aug	Buttercup, Herb Robert, Red Campion, Cow Parsley, Pink Purslane, Common Sorrel, Meadow Vetchling, Bramble, Hedge Bedstraw, Bush Vetch, Honeysuckle, Stinging Nettle, Herb Bennet, Nipplewort, Bramble, Lesser Willowherb, Smooth Hawkbit, Fat Hen, Self Heal, Meadowsweet, Prickly Sowthistle, Woody Nightshade, Common Hawkweed, Hedge Woundwort, Wood Avens, Tormentil, Creeping Cinquefoil, Bistort, Knotgrass	Bramble, Broadleaf Willowherb, Bush vetch, Buttercup, Common Vetch, Cow Parsley, Germander speedwell, Hedge Bedstraw, Hedge Parsley, Herb Robert, Honeysuckle, Meadow Vetchling, Meadowsweet, Nipplewort, Red Campion, St John's Wort, Woody Nightshade
Sep/Oct	Cow Parsley, Herb Robert, Red Campion, Dandelion, White Deadnettle, Pink Purslane, Bush Vetch, Honeysuckle, Stinging Nettle, Common Sorrel, Nipplewort, Greater Willowherb, Pale Persicaria, Bramble, Hogweed, Herb Bennet, Hedge Bedstraw, Meadowsweet, Greater Burnet Saxifrage, Greater Plantain, Prickly Sowthistle	Broadleaf Willowherb, Common vetch, Field Bindweed, Hedge Parsley, Herb Robert, Red Campion
Nov/Dec	Herb Robert, Red Campion, White Deadnettle, Bush Vetch, Nipplewort	Common vetch, Hedge Parsley, Herb Robert, Ivy, Periwinkle



Site 2: Flower Lane, Woodbury	2009	2019	% change
Total number of different plant species in flower recorded bi-monthly	101	66	-35%
Total number (de-duped)	56	44	-21%

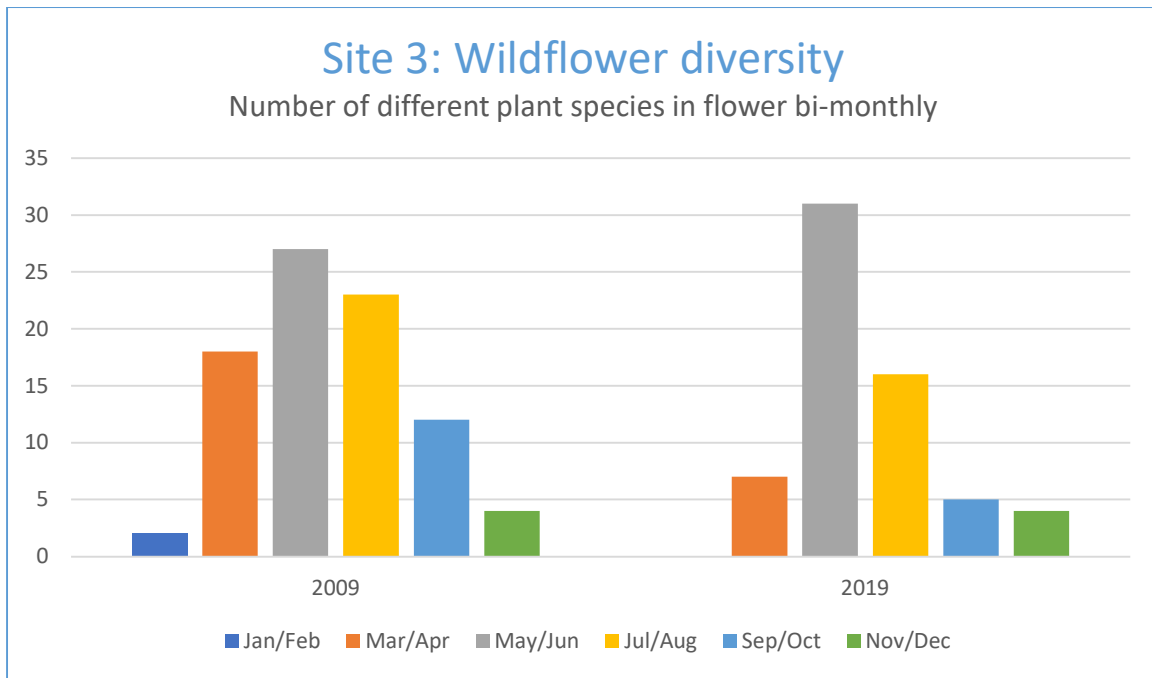
Note:

2019 Visibility splay cut by Highways Agency twice in between April and September

Appendix I: Results – list of plants in flower

Site 3: Stony Lane, Woodbury

	2009	2019
Jan/Feb	Dandelion, Buttercup	-
Mar/Apr	Dandelion, Periwinkle, Stitchwort, Cow Parsley, Bush Vetch, Primrose, Celandine, False Strawberry, Bittercress, Bugle, Bluebell, Ground Ivy, Sweet Violet, Garlic Mustard, Germander Speedwell, Dogs Mercury, Lesser Stitchwort, Common Chickweed	Bluebell, Common vetch, Germander speedwell, Greater Stitchwort, Ground ivy, Primrose, Shining Cranesbill
May/June	Bramble, Honeysuckle, Herb Robert, Nipplewort, Common Sorrel, Red Campion, Stinging Nettle, Meadow Vetchling, Goose Grass, Hogweed, Buttercup, Field Rose, Pennywort, Bush Vetch, Dandelion, Stitchwort, Cow Parsley, Hedge Bedstraw, Ground Ivy, Bluebell, Herb Bennet, Crosswort, Germander Speedwell, Hawkbit, Garlic Mustard, Foxglove, Ribwort Plantain	Black Briony, Bluebell, Bramble, Bush Vetch, Buttercup, Cleavers, Common Fumitory, Common Mouse-Ear, Common Vetch, Crosswort, Cut-leaf Cranesbill, Dandelion, Dog rose, Garlic Mustard, Goatsbeard, Greater Stitchwort, Ground Ivy, Hawkbit, Hedge Bedstraw, Hedge Parsley, Hedge Woundwort, Herb Bennet, Herb Robert, Honeysuckle, Pennywort, Nettle, Periwinkle, Prickly sowthistle, Rape, Red Campion, Tufted Vetch
Jul/Aug	Hypericum-Pulchrum (Slender St John's Wort), Hedge Bedstraw, Bramble, Honeysuckle, Wood Sage, Herb Robert, Nipplewort, Common Sorrel, Red Campion, Stinging Nettle, Meadow Vetchling, Goose Grass, Hogweed, Buttercup, Dog Rose, Pennywort, Bindweed, Trailing St John's Wort, Herb Bennet, Garlic Mustard, Groundsel, Yarrow, Scentless Mayweed	Bramble, Cow Parsley, Dandelion, Field Bindweed, Field Madder, Field Rose, Hedge Bedstraw, Hedge Woundwort, Herb Bennet, Herb Robert, Honeysuckle, Pennywort, Meadow Vetchling, Nettle, Nipplewort, Red Campion
Sep/Oct	Hedge Bedstraw, Bramble, Honeysuckle, Herb Robert, Nipplewort, Stinging Nettle, Hogweed, Dandelion, Stitchwort, Prickly Oxtongue, Prickly Sowthistle, Black Nightshade	Creeping buttercup, Field bindweed, Hedge woundwort, Herb Robert, Nipplewort
Nov/Dec	Bush Vetch, Herb Robert, Bramble, Red Campion	Hedge Parsley, Herb Bennet, Herb Robert, Red Campion



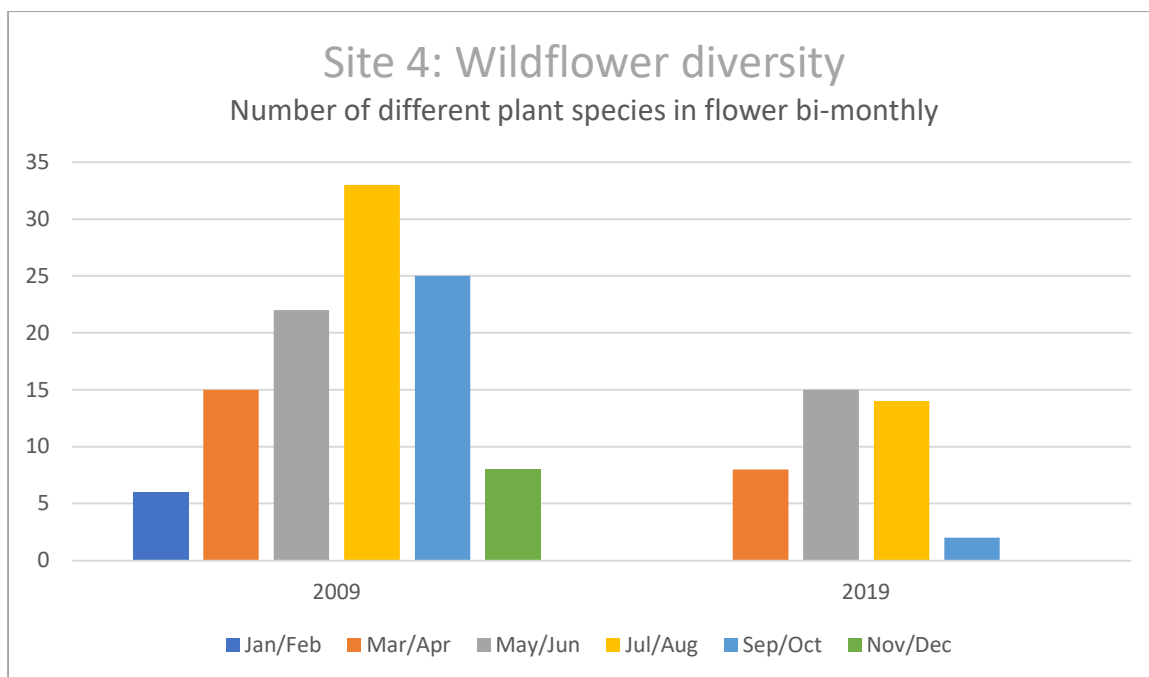
Site 3: Stony Lane, Woodbury	2009	2019	% change
Total number of different plant species in flower recorded bi-monthly	86	63	-27%
Total number (de-duped)	48	41	-15%

Appendix I: Results – list of plants in flower

Site 4: Porter's Lane, Exton

	2009	2019
Jan/Feb	Hogweed, Red Deadnettle, Dandelion, Celandine, Snowdrop, Ground Ivy	-
Mar/Apr	Stitchwort, Herb Robert, Red Campion, Buttercup, Red Deadnettle, Dandelion, Celandine, White Deadnettle, Cow Parsley, Snowdrop, Garlic Mustard, Dock, Periwinkle, Common Wintercress, Ground Ivy	Red Deadnettle, Celandine, Greater Stitchwort, Dandelion, Red Campion, Shiny Cranesbill, Common Fumitory, Hedge Bedstraw
May/Jun	Common Sorrel, Herb Robert, Stitchwort, Red Campion, Red Clover, Hogweed, Stinging Nettle, Buttercup, Hedge Woundwort, Crosswort, Hedge Bedstraw, Cow Parsley, Wild Carrot, Goose Grass, Garlic Mustard, Dock, Water Dropwort, Fumitory, Dandelion, Forget-me-not, Shepherd's Purse, Cut-leaved (Geranium) Cranesbill	Red Campion, Greater Stitchwort, Cow Parsley, Crosswort, Buttercup, Hemlock Water Dropwort, Nettle, Hogweed, Cut-leaf Cranesbill, Sorrel, Cleavers, Herb Robert, Hedge Parsley, Dog Rose, Hedge Bedstraw
Jul/Aug	Slender St John's Wort, Sorrel, Hedge Bedstraw, Bramble, Hedge Woundwort, Herb Robert, Hawkweed, Stitchwort, Tufted Vetch, Crosswort, Red Campion, Bindweed, Red Clover, Hogweed, Cut-leaved Cranesbill, Stinging Nettle, Nipplewort, Buttercup, Creeping Thistle, Lesser Stitchwort, Herb Bennet, Hogweed, Fat Hen, Prickly Sowthistle, Cow Parsley, Dandelion, Teazle, Bindweed, Scentless Mayweed, Yarrow, Greater Plantain, Common Wintercress, Spear Thistle	Creeping Thistle, Red Campion, Herb Robert, Nettle, Nipplewort, Hedge Bedstraw, Wood Sage, Hedge Parsley, Hedge Bindweed, Hogweed, Prickly Sowthistle, Periwinkle, Yarrow, Deadly Nightshade
Sep/Oct	Hedge Bedstraw, Bramble, Hedge Woundwort, Herb Robert, Red Clover, Red Campion, Stinging Nettle, Nipplewort, Dandelion, Fumitory, Clematis, Lesser Willowherb, Bistort, Forget-me-not, Teazle, Fat Hen, Upright Goosefoot, Smooth Sowthistle, Red Deadnettle, White Deadnettle, Bindweed, Honeysuckle, Scentless Mayweed, Pearlwort, Groundsel	Red Campion, Hedge Parsley
Nov/Dec	Hedge Woundwort, Red Campion, Bramble, Herb Robert, Cow Parsley, Red Deadnettle, Dandelion, White Deadnettle	-

Appendix I: Results – list of plants in flower

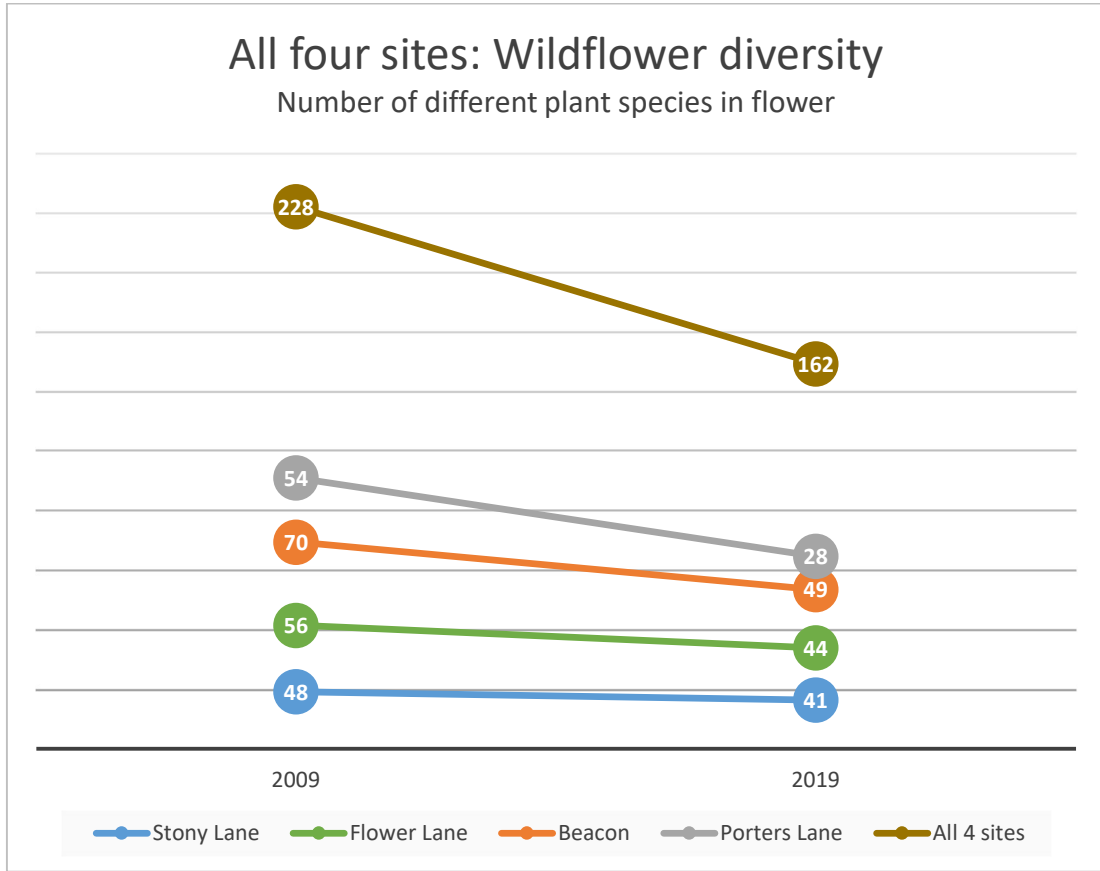


Site 4: Porter's Lane, Exton	2009	2019	% change
Total number of different plant species in flower recorded bi-monthly	109	39	-64%
Total number (de-duped)	54	28	-48%

Note:

2019 Site inaccessible due to flooding in Jan/Feb; verges strimmed in May

All four sites



# plant species in flower	2009	2019	% change
Site 1: The Beacon	71	49	-31%
Site 2: Flower Lane	56	44	-21%
Site 3: Stony Lane	48	41	-15%
Site 4: Porter’s Lane	54	28	-48%
All 4 sites	228	162	-29%

Appendix II: Comparison of flowering plant data

Site 1: The Beacon

Recorded in flower in 2009, but not in 2019	Recorded in flower in 2019, but not in 2009
Annual Pearlwort	Field Mouse-ear
Bramble	Groundsel
Common Sorrel	Hairy Rockcress
Common Vetch	Hedge Parsley
Cornflower	Herb Bennet
False Strawberry	Smooth Sowthistle
Hawksbeard	Sowthistle
Heath Bedstraw	St John's Wort
Herb Robert	Tufted Vetch
Honeysuckle	Woundwort
Hop Trefoil	
Knotgrass	
Lesser Trefoil	
Ling Heather	
Meadow Vetchling	
Milkweed	
Milkwort	
Montbretia	
Mouse-ear	
Pearlwort	
Ribwort Plantain	
Rough Hawkbit	
Scurvy Grass	
Slender St John's Wort	
Smooth Hawkbit	
Spear Thistle	
Stinging Nettle	
Upright Chickweed	
Wavy Bittercress	
Wild Strawberry	
Wood Dock	
Wood Sage	

Site 2: Flower Lane

Recorded in flower in 2009, but not in 2019	Recorded in flower in 2019, but not in 2009
Bistort	Broadleaf Willowherb
Bittercress	Common Vetch
Brooklime	Dog rose
Common Hawkweed	Field Bindweed
Creeping Cinquefoil	Greater Stitchwort
False Strawberry	Hairy Bittercress
Fat Hen	Hawkbit
Fool's Parsley	Hedge Parsley
Greater Burnet Saxifrage	St John's Wort
Greater Plantain	Sweet Woodruff
Greater Willowherb	Yellow Deadnettle
Hedge Woundwort	
Hogweed	
Knotgrass	
Lesser Willowherb	
Pale Persicaria	
Prickly Sowthistle	
Self-Heal	
Shining Leaved Cranesbill	
Smooth Hawkbit	
Stitchwort	
Tormentil	
White Deadnettle	
Wild Carrot	

Site 3: Stony Lane

Recorded in flower in 2009, but not in 2019	Recorded in flower in 2019, but not in 2009
Bindweed	Black Briony
Bittercress	Common Fumitory
Black Nightshade	Common Mouse-Ear
Bugle	Common Vetch
Celandine	Creeping buttercup
Common Chickweed	Cut-leaf Cranesbill
Common Sorrel	Field bindweed
Dogs Mercury	Field Madder
False Strawberry	Goatsbeard
Foxglove	Greater Stitchwort
Groundsel	Hedge Parsley
Hogweed	Hedge Woundwort
Hypericum-Pulchrum (Slender St John's Wort)	Nettle
Lesser Stitchwort	Rape
Prickly Oxtongue	Shining Cranesbill
Ribwort Plantain	Tufted Vetch
Scentless Mayweed	
Stinging Nettle	
Stitchwort	

Sweet Violet Trailing St John's Wort Wood Sage Yarrow	
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Site 4: Porter's Lane

Recorded in flower in 2009, but not in 2019	Recorded in flower in 2019, but not in 2009
Bistort	Common Fumitory
Bramble	Deadly Nightshade
Clematis	Dog Rose
Common Sorrel	Greater Stitchwort
Common Wintercress	Hedge Parsley
Dock	Shiny Cranesbill
Fat Hen	Wood Sage
Forget-me-not	
Fumitory	
Garlic Mustard	
Greater Plantain	
Ground Ivy	
Groundsel	
Hawkweed	
Hedge Woundwort	
Herb Bennet	
Honeysuckle	
Lesser Stitchwort	
Lesser Willowherb	
Pearlwort	
Red Clover	
Scentless Mayweed	
Shepherd's Purse	
Slender St John's Wort	
Smooth Sowthistle	
Snowdrop	
Spear Thistle	
Stitchwort	
Teazle	
Tufted Vetch	
Upright Goosefoot	
White Deadnettle	
Wild Carrot	

Appendix III: Soil Test Results

Soil test results measured in pH

Soil tests (pH measurement)	2008	2019
Site 1: The Beacon, east side	6.0	6.7
Site 1: The Beacon, west side	7.5	6.5
Site 2: Flower Lane	5.5	6.0
Site 3: Stony Lane	5.5	6.5
Site 4: Porter's Lane	7.5	5.7
Average all 4 sites	6.4 pH	6.3 pH

Acknowledgements

With many thanks to Sally Elliott and Sylvia Wickenden who started the Wildflower survey back in 2008 and continued collecting data through to the end of 2011. Their foresight in capturing this valuable information has allowed me to make the comparison, and consequently show the impact of a decade of change on our wildflowers in the Woodbury parish.

Sally and Sylvia's original report [*A Flower Study in Woodbury Parish 2008 – 2011*](#) is available on the [Woodbury History Society website](#).

A FLOWER STUDY IN WOODBURY PARISH

2008 - 2011



SALLY ELLIOTT
AND
SYLVIA WICKENDEN