A HEDGE SURVEY OF COLWALL PARISH

Sponsored and co-funded by:

Colwall Parish Council

Malvern Hills Area of Outstanding Natural Beauty



October 2023

Project Contractor – Mr David Lovelace

Project Officer – Sheila Wren, formerly a Colwall Parish Councillor

1. INTRODUCTION TO COLWALL PARISH[1]

1.1 Colwall Parish is located on the eastern boundary of Herefordshire, about halfway between the towns of Malvern to the northeast and Ledbury to the southwest. It lies on the western slopes of the Malvern Hills in the centre of the Malvern Hills Area of Outstanding Natural Beauty (MHAONB). A map showing the Parish boundary is here www.colwallneighbourhoodplan.org.uk/Webmap/index.html#13/52.0576/-2.3666 .
The Parish extends over 1,551 hectares and in 2011 had a population of 2,400. The main settlement is known as Colwall Stone. Colwall Green lies to the south of the railway line and Upper Colwall lies to the northeast on the upper slope of the Malvern Hills.

1.2 Colwall Stone contains community and recreational facilities, a Village Hall and sports grounds. The Green itself is a well-defined and prominent feature, bounded by a mature drive of lime trees and beyond them views to the west across the surrounding farmland and rolling hills. Upper Colwall is a scattered grouping of buildings set on steeply sloping land. Beyond the village, settlements in the wider Parish comprise scattered farms, smallholdings and individual houses, set in a rural landscape of woodland, orchards, pasture and arable fields.

1.3 In addition to being located wholly within the MHAONB, Colwall has a Site of Special Scientific Interest (Malvern Hills SSSI), 11 Special Wildlife Sites, 3 Local Geological Sites, 24 areas of Ancient Woodland and 2 Registered Parks and Gardens. There is also a conservation area (Colwall Stone/Upper Colwall).

1.4 By the mid-16th century, the area in which Colwall is situated was a patchwork of arable, meadow, common grazing, wood pasture, parkland and worked woodland. Patterns of land tenure and estate management remained relatively unchanged for centuries, and the remains of an essentially ecclesiastical landscape were further shaped by Victorian landscape development and 20th century agricultural modernisation[2].

2. WHY ARE HEDGEROWS IN GENERAL SO IMPORTANT?[3]

Themes

2.1 Hedgerows were usually planted to show ownership boundaries and provide shelter for livestock, while also being stock-proof barriers between fields. Some have older origins and may be the remnants of ancient woodland carved out for farmland[4]. Nowadays, however, the value these precious habitats provide to nature and, by the same token, people, extends beyond their original purpose.

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[1] Source for paras 1.1-1.5: *Colwall Neighbourhood Development Plan 2011-2031.*
[2] Taken from *Veteran Tree Survey of the Malvern Hills Area of Outstanding Natural Beauty in the parishes of Colwall, Mathon and Cradley* (April 2009).
[3] Source for Section 2 – The People's Trust for Endangered Species – *'The value of hedgerows'.*
[4] Source: The Wildlife Trusts

Benefits to people and land use

2.2 Reduced wind damage. Hedgerows can shield crops from wind and reduce damage such as crop lodging (bending over of the stems near ground level making crops difficult to harvest), premature flower and fruit shedding, shoot damage and chilling injuries.

2.3 Reduced pesticide use. Hedgerows increase populations of predator and parasitic species which are the natural enemies of crop pests. Farmland birds and predatory invertebrates such as spiders, beetles and wasps all feed on, and therefore limit, pest species.

2.4 Pollinator habitat. Hedgerows support diverse pollinators, essential for crop pollination and crop yields. They provide food for pollinators throughout the year when crops are not in flower, as well as places to nest.

2.5 Soil improvement. Hedgerows reduce soil erosion by: reducing surface wind speeds; acting as a barrier to water runoff; and stabilising the soil surface through their root systems. Tree and shrub roots grow further than crops to access nutrients deeper in the soil. This process cycles nutrients into the topsoil. The shelter provided by hedges also creates warmer soils, extending the growing season.

2.6 Shelter and shade for livestock. Livestock without shelter have a higher mortality rate and require more food. Shelter increases lamb survival rates, reducing the effect of wind chill and hypothermia. In the summer months, the shade hedges provide helps reduce heat stress which can reduce milk yield in dairy herds and affect fertility, growth rates and disease resistance.

2.7 Diet diversity. Supplementary feeding on native hedgerow plants can increase livestock gut microbial diversity, helping immune function, and improving feed conversion efficiency.

2.8 Biosecurity. Thick, stock-proof hedges can create barriers to the spread of disease such as bovine TB by reducing animal-to-animal contact between farms.

2.9 Parasitic load. Livestock may self-medicate by browsing on common species found in hedgerows. Some leaves have anti-parasitic properties, rough surfaces that act as a rasping plug or can cause a purging response.

2.10 Water and flood control. Plant roots help soils absorb water faster. This enables the soil to act like a sponge soaking up flood water, rather than allowing it to run off the surface. Tree and hedgerow roots run deep, allowing a larger, deeper area of the soil profile to absorb more water. The soil under a hedge stores water quickly, preventing and delaying its movement downslope. Much of the silt in our waterways is field run off, but hedges and hedgerow trees help prevent soil erosion and stop sediment reaching streams and rivers. By slowing water flows, they also reduce the impact of flooding, allowing more time for soil infiltration, and time to respond to flood warnings.

2.11 Sustainability. Hedgerows store carbon above and below ground, so can help mitigate the effects of climate change. They reduce the amount of fertiliser, pesticide and sediment that reach watercourses. They act as a physical barrier, increasing infiltration to the soil, and recycle nutrients through trees, shrubs and other plants. They also improve air quality by capturing pollution particles. Hedges and hedgerow trees can provide sustainable wood fuel, without losing land from production, which can be used or sold as fuel or timber.

2.12 Sense of place. Hedgerows can act as a screen and protect privacy, shielding assets and buildings from public sight, but their significance to people goes much further. They are a defining feature of our countryside, with deep and significant cultural and historical importance, telling our story over many centuries and adding to regional distinctiveness.

Structural value



2.13 The structure of a hedge can have a huge impact on how useful it is to wildlife. From the herbaceous vegetation at the bottom, to the woody shrubs that make up the structure and the trees that tower above the hedge canopy, all the parts that make up a hedge play a role for wildlife.

2.14 As well as providing more habitat space, larger, more complex hedges can accommodate a wider range of wildlife. More mature hedgerows are also similar to some types of woodland, so can offer a safe corridor for animals.

2.15 Large hedges support a greater abundance of small mammals and plant eating insects, which benefit many other species up the food chain. Tall hedges support a greater diversity of bird species and butterflies. Dense vegetation at the base of a hedge increases the number of nesting birds it can support. The bottom layer of vegetation in a hedge is also important to insects, small mammals and reptiles.

Connectivity value

2.16 Individual hedgerows provide valuable habitat for wildlife, but at landscape level they also help to link habitats together. Habitat fragmentation limits and even threatens the survival of some species. Populations that are isolated are at risk of local extinction, and without corridors linked to other habitats they cannot recover. The wildlife corridors provided by hedgerows can alleviate the negative impacts of this fragmentation.

2.17 Flying insects like butterflies need sheltered conditions to gain, and retain, the heat necessary to fly. Many protected species require well connected networks of hedgerows. For example, dormice travel from one patch of woodland to another, and hedges provide an important link between copses that are too small to support viable dormouse populations on their own. Bats use hedges to commute between roosting and feeding sites. The shelter they provide makes it easier for them, and their insect prey, to fly on windy nights.

2.18 ‘Gappy’ hedges, which are often the result of poor hedgerow management, are detrimental to several farmland birds. Gaps can occur as a result of:

- over-trimming to the point where individual shrubs die;
- ploughing too close and killing off the roots of the hedge;
- disease;
- spray drift (which can hasten the demise of any shrubs that are already struggling with any of the above);
- under management, if a hedge is left to gradually develop into a line of trees which will shade out the shrubby growth below.

Species value



2.19 Variety. The more plant types that are found in a hedge, the greater the number of animal species it can support. Many plant eating insects, for example, depend on one particular plant species, so the greater the variety of plants, the more potential for insect diversity. Since different plants flower and fruit at different times, a good spread of species extends the flowering and fruiting period, which is beneficial to nectar and pollen feeding invertebrates, and their predator species. Some species require the presence of just one shrub species to survive but others need several for different roles throughout their life. A good example is the thrush which nests in the shrubby structure of the hedge, sings from hedgerow trees, and hunts snails in the base of the hedge before swapping to berries later on in the season.



2.20 Hedgerow Trees. Over half the animal species associated with hedgerows are dependent on hedgerow trees. Old trees in particular offer nesting sites for birds, bats and bees. They also contain rare deadwood habitat that supports thousands of invertebrate species, many of which are rare or threatened, and they provide leaf, flower and fruit forage. Oak and willow trees can support over 400 plant eating insect species each, which then go on to support a large part of the local food chain. Whilst undoubtedly mature and ancient hedgerow trees offer more for wildlife than young trees, it is essential that new generation of trees is encouraged. It is all too easy for a mechanical flail to strim the top of a potential new sapling tree, so these need protection and care if they are to become the mature hedgerow trees of the future.

2.21 Wildflowers. This project did not encompass a survey of wildflower species in Colwall's hedges, but it should be noted that any area that has had high levels of nutrient enrichment will be less likely to support a diverse wildflower layer for a number of reasons. Some wildflowers cannot tolerate higher nutrient levels, some will lose their fungal root associations, and others may just be shaded out by the presence of plants that thrive in a high nutrient soil, such as nettles, cleavers and docks. Our wildflowers also need space to thrive, and a margin of unploughed and unsprayed land at the base of the hedge will not only provide this space for nature, but also act as a buffer which can protect the hedge from damage.

3. COLWALL PARISH HEDGE SURVEY STATEMENT OF REQUIREMENT

Background

3.1 Despite the effects of changing land use, Colwall still has a significant network of mature hedgerows which, collectively, are a major part of the character of the village. Over the years, however, many hedges have been lost through old age and disease, but also due to development and the replacement of perceived 'high maintenance' hedging with fencing. Such has been the loss of hedgerows that parts of the village have taken on an urban feel.

3.2 Hedgerows are protected under the Hedgerows Regulations 1997[5]. The regulations state that hedgerows which meet certain criteria for length, location or importance are protected. This means they cannot be removed or cut back without permission, and even then only at certain times of the year. Many of Colwall's hedges fall into these categories.

3.3 The Parish needs to have a picture of the current state of its hedges, in order to: enable proper monitoring; inform planning decisions; and help to identify where repair work is needed. Collectively, these measures should help to leave a rich legacy of beautiful hedges for the benefit of nature and the enjoyment of future generations.

3.4 Colwall Parish Council (CPC) therefore decided to commission a survey covering all roadside hedges in the Parish, including information about hedge composition[6]. The MHAONB co-sponsored and co-funded the Project and asked that significant hedgerow trees be included. Amongst other things, the report is intended to be a key reference document when considering planning applications, as well as enabling linear comparisons to be made in the future.

3.5 The survey objectives, scope, deliverables ((a) to (e)) and timescale are set out at Annex A. It should be noted that, thanks in large part to the Colwall Orchard Group, volunteers and residents, Colwall has a wealth of orchard trees; however, these do not fall within the scope of this survey.

Survey Methodologies

3.6 The Project Contractor was landscape historian and digital survey and mapping specialist expert Mr David Lovelace, who has extensive experience of land surveying, much of it focused on the natural environment.

3.7 The programme used to support the geodatabases created by the contractor was QGIS Project ; an internet version has now been uploaded onto the Colwall Parish Council website.

4. DELIVERABLE A – HEDGEROWS THAT SHOULD BE PROTECTED UNDER THE HEDGEROW REGULATIONS 1997

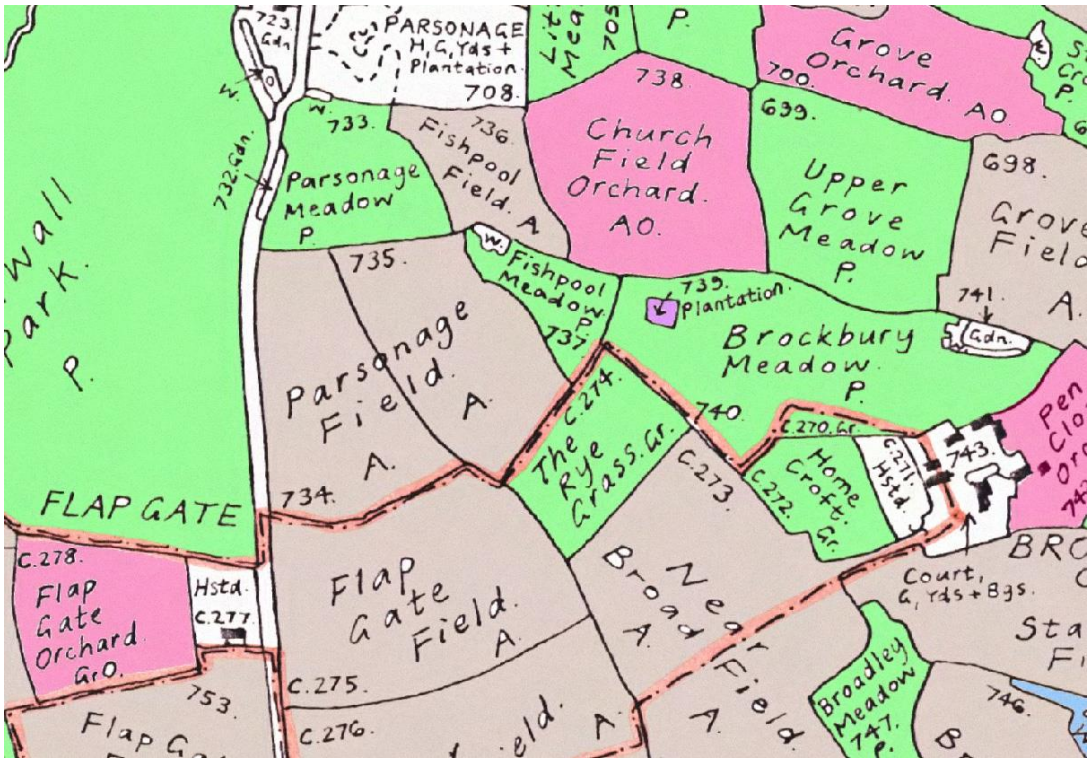
4.1 The Hedgerow Regulations 1997 provide a legal basis to secure the retention of important hedgerows. The criteria for protection are as follows:

- The hedgerow is not domestic.

[5] The Hedgerows Regulations 1997 https://www.legislation.gov.uk/uksi/1997/1160/contents/made
[6] See para 5.3.

- The hedgerow is more than 20 m long (gaps of 20 m or less are treated as part of the hedgerow), or less than 20 m long but meets another hedgerow at each end.
- The hedgerow is located on or next to: common land; protected land (such as a local nature reserve, a site of special scientific interest, special area of conservation or special protection area); land used for agriculture or forestry; land used for breeding or keeping horses, ponies or donkeys; a village green; or land belonging to the state.
- The hedgerow has existed for 30 years or more and meets at least one of the criteria in the Regulations[7] (ie archaeology and history, wildlife and landscape).

4.2 Hedges that are important for historical reasons, because they form an integral part of the pre-1845 field system pre-dating the Inclosure Acts[8] [9], can be identified using Tithe mapping. Accordingly, a colour-coded 1842 Tithe Map[10] was digitally uploaded over a Streetview version of the Parish map. This was provided to the sponsors on a data stick. All the mapping was then uploaded onto the Colwall Parish Council website.



Any present-day hedgerow which can be traced back to a Tithe Map field boundary will fall under this important criteria regardless of other value considerations. Anyone reviewing a planning application may zoom into the appropriate boundary and then overlay the tithe map to see if the boundary was also present on the tithe map.

4.3 The wildlife aspects of hedgerow importance include the number of 'woody species' growing in a sample of sections, usually 30m, of the hedge in question.

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[7] Schedule 1 to The Hedgerows Regulations 1997 (legislation.gov.uk) – Additional Criteria for determining important hedgerows.

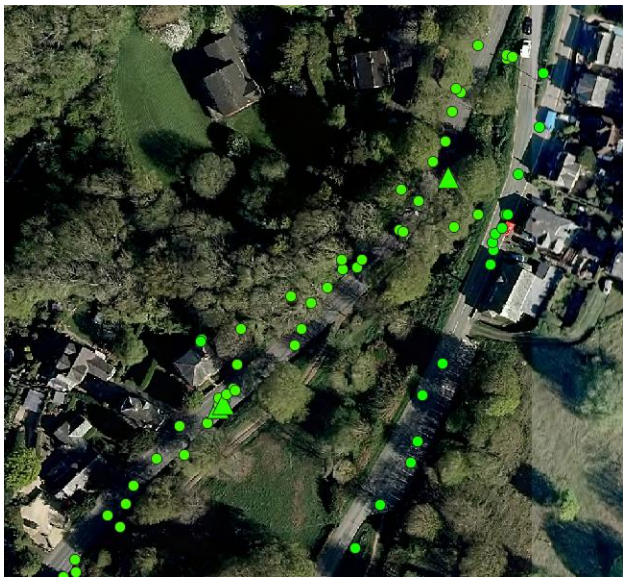
[8] Short Titles Act 1896 (legislation.gov.uk).

[9] NB Section 5a of the Hedgerow Regulations only stated: *'(a) is recorded in a document held at the relevant date at a Record Office as an integral part of a field system pre-dating the Inclosure Acts(36);'* however in May 2002 there was a further Judicial Review which clarified the position; this can be read at Tiff2PDF (publishing.service.gov.uk)

[10] Use of colour-coded Tithe mapping courtesy of Mr Geoff Gwatkin

5. DELIVERABLE B – RECORD OF COLWALL'S ROADSIDE HEDGES

The disposition of Colwall's roadside hedges



5.1 The disposition of roadside hedges was shown by surveying all roadside hedgerows on foot, taking digital photographs approx. every 10m. The photos were then uploaded onto an overlay of the Parish map and provided to the sponsors on a data stick. This data has also now been uploaded onto the Colwall Parish Council website .

5.2 Green circle markers denote 10m lengths of hedges[11]; red circles link to photos of hedgerow trees; dark blue circles link to landscape views; and light blue circles link to photographs along roads.

Species composition

5.3 There is also a small number of brown 'line features', denoting approx. 250m lengths of hedgerow, that the viewer can 'click' onto and bring up a data table summarising the species content representative of that length of hedgerow[12].

	A	B
1	**Evendine FP**	
2	**27-Jul-22**	
3	**woody species**	
4		
5	Apple (crab)	
6	Ash	
7	Cherry	
8	Field Maple	
9	Hawthorn	
10	Hazel	
11	Holly	
12	Oak	
13	Willow (alba)	

5.4 The survey focused on woody composition. A wide range of common species was identified including ash, hawthorn, blackthorn, hazel, holly, field maple, oak, willow and elm plus rarer species such as wild service and yew. Dogwood predominated in hedges growing on calcareous (lime-rich) soils.

5.5 Hedgerow trees (not including garden exotics) identified included oak, ash, beech, sycamore, field maple and lime.

[11] If the circle has a cluster number in it, the viewer will need to zoom in or click on the marker. When at maximum zoom, clicking on the marker will open up to show individual markers.

[12] The contracted surveyor was able to provide only limited species analysis. More in-depth analysis is being undertaken by volunteers, starting with footpath-side surveys.

6. DELIVERABLE C – COMPARISON WITH PREVIOUS YEARS

6.1 A comparison with previous years[13] was made possible by the provision of aerial photography, digitally uploaded onto a copy of the Parish map. This aerial photography has been uploaded onto the Colwall Parish Council website.

6.2 The default aerial photography is from 2021 The viewer can also select an overlay of the aerial photography from the RAF (1946) and English Nature (2000).

2021



1946



2000



6.3 The contractor was asked to give a view on the state of Colwall's hedges in 2022: are they getting worse, or better, or staying the same?; are there any trends? what problems are we seeing? (It should be noted here that the survey only covered woody hedge plants, not other flora at the base of the hedges and adjacent verges).

'Rural' hedges

6.4 Having walked and photographed all the Parish's roadside hedges, and scrutinised the aerial photography from 2000 and 2021, the contractor's opinion is that in the more rural

[13] In the original SOR the requirement was for a comparison with 2009 Google street view, however, the Contractor has provided considerably more imagery enabling comparisons to be made from 1946, 2000 and 2021.

parts of the village, there has been little overall change in the Colwall's roadside hedges in the past 20 years. There are some examples of over-zealous cutting and flailing, which has unfortunately resulted in poor structure and hedgerow trees 'disappearing' as they are constantly reduced to the same height as the rest of the hedge, but on the whole 'rural' hedges are in a reasonable condition.

6.5 Continued vigilance is needed by those involved in reviewing planning applications to ensure Hedgerow Regulations are complied with and rural hedges are retained where possible. In addition, if the opportunity arises for discussions with landowners about hedgerow management, they could be invited to consider enabling hedgerow trees to grow normally by labelling them prominently so that hedge-cutting contractors know which areas to avoid. Current funding sources which could be used to pay for hedge repairs and new planting are listed at para 7.14.

'Domestic' hedges

6.6 In the more populated parts of the village, there has been an increase in hedgerow loss in recent years. As highlighted in the statement of requirement of this project, in early 2020, volunteers conducted a survey of Colwall's hedges in order to promote debate about the visual character of the village and the consequences to wildlife due to loss of habitat. It was confined to three main streets in the Colwall Stone area and was conducted by comparing current roadside boundaries with September 2009 pictures of roadside boundaries on Google Street view. Overall, it revealed a significant decline.

Features	2009	2020	Notes
Hedges	1,193m	935m	Loss of about 250m or 20% of roadside hedges in just over 10 years
Fences	605m	825m	Most of the hedges were replaced with fences ie an increase of 220m
Gaps	628m	657	Increase of approx. 30m

6.7 'Domestic' hedgerows are just as important as those in the more rural parts of the village, helping to provide all the benefits set out in Section 2, not least habitats and 'green corridors' for wildlife. Unfortunately, though, hedgerows that provide 'curtilage' do not come under the protection of Hedgerow Regulations[14], which makes it all the more important to raise awareness amongst parishioners of the importance of retaining, and maintaining, their hedgerows, where possible. In addition, those involved in scrutinising planning applications involving domestic hedge removal are encouraged to observe on the importance of maintaining hedges where possible or, where removal is unavoidable, to encourage homeowners to offset the loss by planting other hedgerow trees, ideally in a way that will improve connectivity with green corridors.

7. DELIVERABLE D – PROPOSAL ON HEDGE REPAIRS[15]

7.1 In addition to the proposals in paras 6.4 - 6.7 above, further suggestions for improving structure, connectivity and species diversity are set out below.

[14] The Hedgerow Regulation 1997 – Guide to the Law and Good Practice PCSSCANWKS4-24/10 10:52:12 (publishing.service.gov.uk) para 3.7.

[15] Source for Section 8 background information – The People's Trust for Endangered Species – *'The Value of Hedgerows'.*

Structure

7.2 Detailed guidance on hedge structure[16] is provided by the People's Trust for Endangered Species, courtesy of Nigel Adams Countryside Management.

7.3 As covered in Section 2 of this report, different hedge structures are beneficial to different plants and animals, and each species may have its own preferred hedge type. The more variation in the hedge architecture within the network, the more species will be supported.

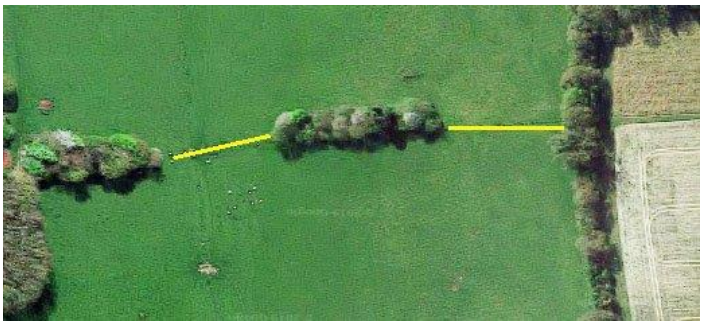
7.4 A diversity of habitats within the hedgerow network in turn supports wildlife diversity, and hedgerows should ideally be managed in in a cycle to ensure their structure in the future. The additional benefit of rotational management and longer cutting cycles is that overall, there is less hedge management to do each year; e.g. if 'dense and well managed' hedges (see Footnote 10) are managed on a 2 or 3 year cutting cycle, this may mean only 1/3 of them need to be cut each year.

7.5 The following structural features are important to note:

- Taller wider hedges are better for wildlife than short thin ones.
- Vegetation at the base is very important generally; thinning base vegetation is a sign the hedge will need rejuvenation and/or protection.
- Hedgerow trees will increase the number and the variety of species in most hedges.
- A strip of a few meters next to and along the hedge will help to develop a species corridor and allow the hedgerow itself to expand. A hedge margin will also protect the hedge from root damage, and the wildlife from drifting sprays, as well as providing a possible habitat for wildflowers.

Connectivity

7.6 Hedgerows in the countryside form a network, with many hedges linked together. They provide both a physical home for wildlife and connect up the landscape so that animals can travel. Both of these important roles are affected by how well an individual hedge is connected to the other hedges in a network, and to the wider landscape.



7.7 Gaps in hedgerows are often due to poor management, eg: over-trimming to the point where individual shrubs die; ploughing too close and killing off the roots; disease; spray drift; or undermanagement, where a hedge gradually develops into a line of trees, shading out the shrubby growth below.

7.8 Gaps in hedgerows can be filled by:

- Planting new stems as long as there is no risk of them being shaded out. This can be an opportunity to increase the variety of shrub species present.

[16]People's Trust for Endangered Species – Hedge Structure Hedge Structures (ptes.org) courtesy of Nigel Adams Countryside Management.

- Laying the hedge if it is in an appropriate condition (see image on back page). Stems can also be 'layered' into the gaps[17] to establish new root stock.

- Planting a hedgerow tree in a small hedge gap, although this will need to be marked and care taken when the hedge is trimmed.

- Identifying and retaining saplings in order to provide natural regeneration.

7.9 At landscape level, increasing connectivity could mean planting new hedges, extending current hedges to re-form lost connections, or extending hedgerows to help them connect to other habitats in the wider landscape such as any patches of woodland. The Nature Recovery Network, and recently launched Severn Treescapes, a Wildlife Trusts' initiative to create a 60-mile corridor of enhanced tree cover from the Forest of Dean in the South to the Wyre Forest in the north, and encompassing Colwall in its path, provide the ideal context.

7.10 Often, a hedgerow with few or no connections at one or both ends is a sign that this was once part of a larger hedgerow that has become fragmented. Reconnecting these hedge fragments would bring these hedges back into the network and make them more valuable.

Wildlife

7.11 The more plant species found in a hedge, the greater the number of other species the hedge can support. According to the RSPB *'the best hedges are made up of several different species which come into leaf, flower and fruit at different times. This gives them year-round value for animal visitors'.* It follows that when repairing gaps and planting new hedges a variety of native plants should be used.

7.12 Hedges can be managed to maximise the flower and fruit they provide. For example, cutting every 3 years means a hedge can provide 3.4 times the mass of berries than if it is cut annually. When cutting is required, a hedge should be cut at the end of winter, enabling it to be a larder for wildlife over the long winter months.

Further information

7.13 A wealth of further information about hedge management and repair is available from the People's Trust for Endangered Species (PTES).

Funding

7.14 Currently available grants for hedge planting and management include:

Countryside Stewardship: Countryside Stewardship: get funding to protect and improve the land you manage - GOV.UK (www.gov.uk)

Countryside Stewardship Capital Grants Capital Grants 2023: Countryside Stewardship - GOV.UK (www.gov.uk)

[17] Where a pleacher (interwovern branch) is bent over and dug into the ground.

Farming in Protected Landscapes (FIPL) is a grant programme for farmers, land managers and people in National Park and AONBs. The local FiPL grant is administered by Malvern Hills AONB.

COG, Colwall Parish Council, Colwall St James church and CofE primary school have also received hedge plants from: Free Trees for Schools and Communities - Woodland Trust.

7.15 During a transition period from 2021 to 2027, the UK will move from the Common Agricultural Policy Basic Payment Scheme to the Environmental Land Management Scheme (ELMS)[18]. ELMS is intended to support the rural economy while achieving the goals of the 25 Year Environment Plan and a commitment to net zero emissions by 2050. It broadly comprises 3 schemes that will reward environmental land management:

- Sustainable Farming Incentive
- Local Nature Recovery
- Landscape Recovery

At the time of writing, pilots and initial ELMS had started in 2022 and were expected to be expanded through the transition period. For up to date advice about funding schemes it is advisable to contact MHAONB.

Good practice in Colwall

7.16 Colwall Orchard Group has taken advantage of a number of grant schemes including Environmental Stewardship, the Countryside Stewardship capital grant and the Woodland Trust hedge plant scheme in order to improve the hedgerows across the land it manages. This is a great example to others of what can be achieved in a short time. They have undertaken extensive hedge planting at their sites using a wide variety of native species including birch, willow, hazel, cherry, hawthorn, blackthorn and field maple and have so far created over 700m of new hedging. At several locations they have allowed trees to grow on as standards at a level much higher than the rest of the hedge line. Their management regime allows their hedges to blossom, berry up and burgeon before they are regenerated after a decade or so using traditional arts of coppicing and hedge laying, which are the best long-term approaches to sustainable hedge management.

8. DELIVERABLE E - METHODOLOGY FOR FURTHER, RELATED SURVEYS USING VOLUNTEERS

8.1 The Project Contractor and Officer attended Great British Hedgerow Survey Training Course provided by PTES and The Herefordshire Wildlife Trust (HWT), and deemed this to be an appropriate methodology for further, related Parish surveys (eg alongside footpaths) using volunteers, which is now the next phase of the Project. A copy of the PTES survey form is at Annex B.

9. RECOMMENDATIONS

9.1 It is recommended that:

[18] Environmental Land Management schemes: overview - GOV.UK (www.gov.uk)

- CPC and MHAONB use this report as a reference document when commenting on planning applications that have an impact on hedgerows.
- CPC uses this report to develop a parish hedgerow policy, aimed at protecting and enhancing Colwall's hedges, and includes it in future iterations of its Neighbourhood Development Plan.
- CPC and MHAONB continue to encourage landowners, when opportunities arise, to better protect and enhance their hedges through good management, repair and restoration, taking advantage of funding schemes as appropriate.
- MHAONB encourages other parishes within its remit to undertake similar geo-spatial surveys to inform wider, landscape-scale work such as the Nature Recovery Network and Severn Treescapes, and to provide a benchmark against which future surveys can be compared.
- CPC and MHAONB use this survey as a benchmark and consider repeating it in approx. 10 years' time, to identify changes and areas for action.

10. ACKNOWLEDGEMENTS

10.1 We are extremely grateful to a wide range of organisations and individuals, listed at Annex C, who kindly lent their support and assistance to the completion of this report

Annexes:

A. Survey objectives, scope, deliverables and timescale.

B. People's Trust for Endangered Species survey sheet.

C. Acknowledgements.

Annex A

Survey objectives, scope, deliverables and timescale

(as per project statement of requirement)

1. Objectives. Colwall Parish Council commissioned this survey in order to: identify hedges that should be protected under The Hedgerow Regulations 1997; better inform deliberations about planning applications; provide a benchmark against which the state of our hedges can be monitored, and key losses identified; identify potential sites for hedge repair or new planting in order to protect nature and inter-connect similar habitats and landscape types; raise awareness amongst parishioners of the vital importance of protecting and enhancing our hedgerows, for the benefit of nature and people.

2. Scope. The scope of the survey covered **all roadside hedges** within the Parish.

3. Outputs and deliverables. The deliverables required, which were to be presented in both hard copy and electronic format, were:

(a) a schedule of **hedges that should be protected under The Hedgerow Regulations.1977**. This should be in a format that can, *inter alia*, be used by Parish Councillors when reviewing planning applications.

(b) a map showing the **disposition of roadside hedges,** with accompanying schedules detailing their general composition (mixed native/conifer/other domestic garden) and condition; and any individual ancient/veteran/notable hedgerow trees. The map should be capable of being loaded onto the Colwall Parish Council website as an interactive map.

(c) where possible, a linear **comparison with previous years** summarising any losses/changes.

(d) A proposal identifying **where hedge repairs are needed** and suitable areas in the parish for new hedge planting.

(e) A **simple methodology** for hedge surveys that could be used when conducting further, related surveys (eg alongside footpaths, field boundaries) using volunteers.

4. Project timescales. The project was to be completed during FY2022/23 and the following deadlines were agreed:

Date(s) 2022	Event
31 Oct 22	Fieldwork to be complete
31 Dec 22	Analysis to be complete
24th Jan 22	Draft report to CPC reps for comment
1st Feb 22	Final report completed

Annex B

PEOPLE'S TRUST FOR ENDANGERED SPECIES VOLUNTEER SURVEY SHEET

The Great British Hedgerow Survey

people's trust for endangered species

Please visit www.hedgerowsurvey.ptes.org for survey guidance and to upload your results
The website will automatically generate a score for hedgerow health and tailored management advice

Survey details

By submitting this form you confirm that you have landowner permission to survey and share hedge details.

Is the hedgerow that you are surveying, owned or managed by yourself?				y/n	
Date	DD	MM	YYYY	Surveyor(s)	
Hedge Location	Lat/Long for start/end of hedge, OR a map reference to locate on map when adding to the website				
Both sides surveyed? y/n		*If only one side surveyed complete as side A			

WHOLE HEDGEROW

Length (m)	Total length between nodes or intersections with other hedgerows		
		End 1	End 2
Connection	Number of other hedgerows connected to each end of this hedgerow		
Integrity	Number of access gates/openings > 2m		
	Estimate of % vegetative gaps in whole hedge		
	Number of vegetative gaps > 5m		
	Is there any evidence that any gaps have been replanted?	y/n or n/a	

30M SURVEY SECTION

Size	Average height (m) of the woody component of the hedge	
	Average width (m) at the widest point of the woody component of the hedge	
	Average height (m) of the base canopy of the woody component of the hedge	
Which cross-section illustration and description most closely resembles hedgerow?		
Is there a hard 'knuckle' formed where frequently trimmed to the same point? (y/n)		
What % of the woody structure of the hedge is dead?		

	Side A	Side B
Adjacent land use. (Please try to answer this question for both sides of the hedge). Chose from Arable, Water, Road/Route, Pasture/Grass or Woodland		
If road/route or Arable:		
Average width (m) of undisturbed ground from base of woody component		
Average width (m) of perennial herbaceous vegetation from edge of hedge		

		Side A	Side B
Estimate % cover of following species within a 2m wide band alongside the hedgerow in 30 m section	Nettles		
	Cleavers		
	Docks		
If invasive non-native species present, please specify which and estimate % cover			

	Side A	Side B
Is there a bank or wall along at least half its length? Y/N		
If yes, what is the average height of this bank? (m)		
Is there a ditch along at least half the length of the hedgerow? Y/N		
Is there a fence along the outside of the hedgerow? Y/N		

Woody Species		30m sample			Whole hedge	
		Shrubs present (y)	% coverage of top 5 dominant species.		# mature trees > 20cm dbh	# young trees < 20cm dbh
Alder, common (Alnus glutinosa)						
Apple, crab (Malus sylvestris)						
Ash (Fraxinus excelsior)						
Aspen (Populus tremula)						
Beech (Fagus sylvatica)						
Birch, downy (Betula pubescens)						
Birch, silver (Betula pendula)						
Blackthorn (Prunus spinosa)						
Broom (Cytisus scoparius)						
Buckthorn (Rhamnus cathartica)						
Butcher's Broom (Ruscus aculeatus)						
Cherry, wild (Prunus avium)						
Dogwood (Cornus sanguinea)						
Elder (Sambucus nigra)						
Elm, English (Ulmus procera)						
Elm, wych (Ulmus glabra						
Elm - not sure which (Ulmus sp.)						
Gorse (Ulex sp.)						
Guelder rose (Viburnum opulus)						
Hawthorn (Crataegus sp.)						
Hazel (Corylus avellana)						
Holly (Ilex aquifolium)						
Hornbeam (Carpinus betulus)						
Horse Chestnut (Aesculus hippocastanum)						
Lime, large-leaved (Tilia platyphyllos)						
Lime, small-leaved (Tilia cordata)						
Maple, field (Acer campestre)						
Oak, pedunculate (Quercus robur)						
Oak, sessile (Quercus petraea)						
Pear, (Pyrus communis sensu lato)						
Pine, Scots (Pinus sylvestris)						
Plum, wild (Prunus domestica)						
Poplar, black (Populus nigra betulifolia)						
Privet, wild (Ligustrum vulgare)						
Rose, dog- (Rosa canina)						
Rose, field- (Rosa arvensis)						
Rose - not sure which (Rosa sp.)						
Rowan (Sorbus aucuparia)						
Spindle (Euonymus europaeus)						
Sycamore (Acer pseudoplatanus)						
Wayfaring-tree (Viburnum lantana)						
Wild service (Sorbus torminalis)						
Willow, grey (Salix cinerea)						
Willow, goat (Salix caprea)						
Willow - not sure which (salix sp.)						
Other (please specify)						
Climbers	Bramble (Rubus fruticosus agg.)					
	Honeysuckle (Lonicera periclymenum)					
	Ivy (Hedera helix)					
	Traveller's-joy (Clematis vitalba)					
Other (pls specify)						

Annex C

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