

# Longford Hedgerow Appraisal Survey 2025



## Acknowledgements

Many thanks to Longford County Council's Biodiversity Officer Adam Mulvihill for making this project possible.

Many people have contributed their time and support to this project. This project was led by qualified Ecologists from Flynn Furney Environmental Consultants. The main surveying team members for this project were Claudia Pascali, Jennifer Mc Aree, Christopher Doyle and Ashley Maggy, supported by Martyna Leane, Róisín McDonnell and Seraphina Emerson.

Initial GIS mapping and analysis was completed by Erin Mc Crudden in an interim report for Longford Biodiversity Office in 2024. The data for this project was analysed by Neale McKenna and the report was prepared and written by Claudia Pascali, Jennifer Mc Aree and Martyna Leane.

Finally, we extend our sincere gratitude to the farmers and landowners of County Longford for granting us permission to survey their land and for sharing valuable background information that aided our study.

This project has been jointly funded by Longford County Council, the Heritage Council, and NPWS under the Local Biodiversity Action Fund 2025. The local authority Biodiversity Officer Programme is supported by the Heritage Council.



**NPWS**

An tSeirbhís Páirceanna  
Náisiúnta agus Fiadhúlra  
National Parks and Wildlife  
Service



**Ceangal**

Clár den Chomhairle Oidhreacht  
A Heritage Council programme



**FLYNN  
FURNEY**

ENVIRONMENTAL CONSULTANTS

# Contents

Acknowledgements.....	
1. Introduction .....	1
2. Executive Summary.....	3
3. Background .....	5
3.1 Role of Local Authorities .....	5
3.2 The History of Hedgerows in Longford .....	5
3.3 The Value of our Hedgerows .....	6
3.4 Threats to Hedgerows.....	10
4. Survey Rationale .....	12
4.1 Need for Hedgerow Surveys .....	13
4.2 Aims and Objectives.....	14
4.2.1 Objectives.....	14
4.2.2 Aims.....	14
4.3 National and International Hedgerow Protection Policies and Legislation .....	15
4.3.1 International Legislation .....	15
4.3.2 National Legislation.....	16
4.3.3 Local Policy.....	18
5. Methodology and Field Survey .....	19
5.1 Baseline Hedgerows Surveyed.....	19
5.1.1 Defining Hedges .....	19
5.1.2 Selecting the Sample Hedgerows.....	20
5.1.3 Structural Recordings of Hedges.....	21
5.1.4 Floristic Recordings of Hedgerows.....	22
5.1.5 Maps and Aerial Photographs.....	23
5.1.6 Period of Fieldwork.....	24
5.1.7 Target notes .....	24
5.1.8 Data Recordings .....	24
5.2 Townland Boundary Hedges .....	24
6. Results.....	24

6.1 The Extent of Hedgerows and Hedgerow Removal in Longford.....	24
6.2 Composition of Hedgerows in County Longford.....	27
6.3 Shrub Layer .....	28
6.4 Hedge Species Diversity .....	31
6.4.1 Species Diversity Figures.....	31
6.5 Townland Boundary Hedges .....	32
6.6 Species Rich Hedges.....	33
6.6.1 Climbers and Woody Non-hedge-forming Shrub Species.....	33
6.7 Tree Layer.....	34
6.7.1 Tree Species Diversity .....	37
6.7.2 Ash Dieback Disease.....	38
6.8 Ground Flora .....	40
6.9 Adjacent Land .....	44
6.9.1 Farm / Land Use .....	44
6.9.2 Adjacent Land Class.....	46
6.9.3 Historical context of sampled hedges.....	48
6.10 Construction of Hedgerows in County Longford .....	49
6.11 Structure and Condition of Hedges in County Longford.....	51
6.11.1 Hedge Height .....	51
6.11.2 Hedge Width .....	52
6.11.3 Percentage of Gaps .....	53
6.11.4 Basal Density .....	55
6.11.5 Hedge Profile (cross section) .....	56
6.11.6 Hedgerow Trees.....	57
6.11.7 Tree Age Composition.....	58
6.11.8 Bank/Wall/Shelf Degradation .....	59
6.11.9 Margins .....	60
6.11.10 Vigour.....	62
6.12 Management of Hedgerows in County Longford .....	62
6.12.1. General Management, Stages and Methods .....	62
6.12.2 Fencing.....	63

6.13 Appraisal of Hedges in County Longford .....	64
6.13.1 Hedgerow Significance.....	64
6.13.2 Condition Assessment.....	65
6.14 Local Wildlife.....	68
7. Discussion.....	72
7.1 Species Composition .....	72
7.1.1 Shrubs .....	72
7.1.2 Woody Climbers.....	74
7.1.3 Trees.....	74
7.1.4 Ground Flora .....	75
7.2 Ash Dieback.....	77
7.3 Nutrient Rich Hedges .....	78
7.4 Hedge structure and construction .....	80
7.4.1 Height and Width .....	80
7.4.2 Gaps .....	83
7.4.3 Profile .....	84
7.4.4 Hedgerow Margins and Banks .....	85
7.5 Impacts of Hedge Removal and Hedgerow Loss.....	85
7.6 Hedgerow Management .....	88
7.7 Creation of New Hedges .....	91
7.8 Agri-Environment Schemes.....	92
7.9 Local Wildlife.....	93
7.10 Townland Boundary Hedgerows.....	95
8. Recommendations .....	97
9. Conclusion.....	99
References .....	104
Appendix 1: Maps of the Survey Areas.....	108
Appendix 2: Floristic Recordings: Target Species .....	115
Appendix 3a: Hedgerow Significance Criteria.....	118
Appendix 3b: Hedgerow Condition Assessment.....	119

# 1. Introduction

Hedgerows are a defining feature of the Irish landscape, serving for centuries as natural field boundaries and acting as living fences that shape the rural environment. Teagasc estimates that Ireland is home to approximately 689,000 kilometres of hedgerows and associated linear features such as treelines and earth banks. These habitats are valued not only for their historical significance but also for their vital ecological role in a landscape increasingly fragmented by intensive agriculture and urban expansion.

Though not explicitly recognised under Brehon Law, hedgerow trees in Gaelic Ireland were often protected based on their economic value—particularly those bearing fruit or providing timber. Hedgerows have existed in Ireland long before English colonisation, used to enclose fields and protect early settlements. Trees such as Oak, Hazel, Rowan, Birch, and Elm were commonly planted on raised banks to enhance security and demarcate territory (Hickie, 2004). The widespread establishment of hedgerows accelerated during British rule, particularly from the 17th century onward, when English landlords enforced land enclosures to mark private property. This shift replaced communal land systems with individual plots, transforming the Irish countryside and embedding hedgerows into the fabric of rural life.

The Agricultural Revolution of the 18th and 19th centuries further consolidated hedgerow use, as landowners adopted improved techniques to manage livestock and delineate property. Roadside hedgerows also became common during this period, accompanying the development of Ireland’s road network and contributing to the familiar patchwork landscape seen today.

By the time of Irish independence in 1922, much of the country’s native woodland had been cleared to make way for agriculture. Hedgerows, in many cases, became the last remnants of these lost forests. Ireland now has one of the lowest forest covers in Europe, with just 11.4% of land under tree canopy—and only 1.25% of that considered native woodland (Cross, 2012). In this context, hedgerows have taken on a critical ecological role, acting as biodiversity corridors that connect fragmented habitats and support a wide range of species.

Hedgerows provide a suite of ecosystem services. These include provisioning services such as food and fuel; regulating services like air purification, climate moderation, water filtration, and soil erosion control; cultural services including aesthetic, educational, and recreational value; and supporting services such as nutrient cycling, soil formation, and photosynthesis (Land Use Consultants, 2009). Their importance in maintaining ecological balance and supporting wildlife is increasingly recognised in national and local conservation strategies.

In County Longford, hedgerow conservation has become a priority under the county’s Biodiversity Action Plan (BAP) and through the implementation of the Hedgerow Appraisal System (HAS). The fourth National Biodiversity Action Plan 2023-2030 sets out ambitious goals for enhancing Ireland’s natural heritage. One of its key objectives is to improve understanding of biodiversity and identify gaps in habitat protection. Hedgerow surveys are central to this effort, providing data on the extent, condition, and ecological value of these habitats.

Longford County Council has committed to this national agenda by launching a new hedgerow biodiversity survey in 2025, covering 10.35 square kilometres of the county’s hedgerow network. This initiative aims to assess species composition, structural integrity and connectivity, using refined methodologies developed by Foulkes and Murray (2006) and adopted across more than 21 counties. The HAS methodology, first piloted in County Monaghan in 2010 and later finalised with support from the Heritage Council and Woodlands of Ireland, enables consistent and detailed appraisal of hedgerow quality. It evaluates hedgerows based on ecological function, historical significance, and landscape contribution, guiding conservation priorities and informing local planning policies.



*Image 1 Surveying a roadside hedgerow in Co. Longford, June 2025*

The Longford survey builds on earlier work and aligns with broader environmental goals outlined in the County Development Plan and Climate Action Plan. By integrating hedgerow data into these frameworks, Longford aims to protect and enhance its green infrastructure, ensuring that hedgerows continue to serve as vital biodiversity corridors and cultural landmarks.

The focus of this study was to determine the extent, composition, structure, condition, and management of hedgerows in County Longford, following up on the baseline study conducted by Foulkes and Murray in 2006 - *County Longford Hedgerow Survey Report*. The 2025 study can be used in the future to assess any significant deviations, with the aim of understanding the changes in the state and composition of hedges in the county and assess environmental trends for these habitats and their adjoining land usage. Hedgerow policies in local plans such as the County Development Plan and Climate Action Plan were examined, and recommendations have been made to guide future improvements for the protection of these biodiversity corridors and inform future iterations of hedgerow policies.

## 2. Executive Summary

Longford County Council, in partnership with the Heritage Council, commissioned the Longford Hedgerow Appraisal Survey to Flynn Furney Environmental Consultants in 2024. The aim was to assess the extent, composition, structure, condition, and management of hedgerows across the county. An initial Interim Report was completed in 2024, which was a desktop assessment that included updated maps of the sample squares and a GIS overview of the extent of County Longford's hedgerows in contrast with the 2006 survey. The field surveys were undertaken in June 2025 using the Hedgerow Appraisal System (HAS) methodology (Foulkes *et al.*, 2012), consistent with approaches adopted nationally. The study builds upon the findings of the County Longford Hedgerow Survey carried out and published in 2006. This project supports the objectives of the Longford County Development Plan and the emerging County Biodiversity Action Plan.

A total area of 10.35km<sup>2</sup> was assessed, representing approximately 1% of the county. GIS analysis indicates that since 2006, approximately 5.44 km of hedgerows have been removed from within the sample square, equating to a loss of 5.56% of the hedgerows in Longford. This corresponds to an estimated annual removal rate of 0.31% over an eighteen-year period since 2006. Extrapolated to a county-wide scale, this suggests a reduction in hedgerow length from approximately 10,326 km in 2006 to 9,751 km in 2024, representing a loss of approximately 575 km. The annual rate of loss in Longford is at the higher end of national estimates published by the EPA and highlights ongoing pressures on hedgerows in the county.

Agriculture was identified as the primary driver of hedgerow removal, accounting for 69% of losses, followed by scrub encroachment (21%) and housing development (9%). The greatest extent of hedgerow removal occurred in the Granard area, and it is largely associated with agricultural intensification. These findings highlight the vulnerability of hedgerows in intensively managed agricultural landscapes. It was notable in the 2025 survey that there was a 20% increase in improved agricultural grassland since 2006, while simultaneously there has been a reduction of 20% in semi-natural grasslands in that same time period. This significant change in land use may explain some of the decline in the extent and condition of hedgerows in County Longford in the past two decades. It also means less habitat and food sources are now available for wildlife, in addition to a dramatically transformed landscape.

In terms of flora, the survey recorded a total of 26 woody shrub species within the sampled hedgerows, of which 19 are native to Ireland. Hawthorn was the dominant shrub species, occurring in 86% of hedges, followed by blackthorn (57%) and Elder (31%). Overall shrub species composition has remained widely consistent since 2006, however the frequency of several shrubs has declined, notably Wild Privet, Hazel, Spindle, Willow, Elder and Wild Plum, in addition to Crab Apple, Birch and Rowan. There has also been a decline in Ash as a shrub species and a slight increase in the non-native Sycamore shrubs since the previous survey. In the case of Ash and Willow shrubs, their decline could be explained by their growth into trees over the years, while Sycamore is an opportunist, filling many available hedgerow gaps. The decline of the other shrub species is more difficult to explain, though it may be simply down to the gradual decline in health of many hedgerows over time. Three low-impact invasive shrub species were recorded, Snowberry, Lilac and Wilson's Honeysuckle, with Snowberry showing a slight increase since 2006. Lilac

has not increased since 2006, while Wilson's Honeysuckle appeared for the first time in the 2025 survey. None of these invasive plants feature on the First Schedule list under the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374 of 2024).

Shrub species diversity across the county was moderate, with an average of 3.41 shrub species per 30m sample strip, which decreases to 2.95 shrub species when only considering native shrubs. Approximately 36% of hedges met the criteria to be classified as "species-rich hedgerow", which is defined as containing four or more native woody species per 30m strip. This represents an increase from the 2006 survey, indicating some positive trends in hedgerow diversity. However, it is still notable that the frequency of many shrub species is in decline, as described above. Townland boundary hedges accounted for 13% of surveyed hedges and, while slightly less diverse than other hedgerows, they are still considered valuable features of the landscape both for their heritage and ecological value.

A total of 20 tree species were recorded within hedgerows, 15 of which were native. Ash was the most frequently recorded tree, present in 72% of hedges, followed by Hawthorn and Sycamore. While Ash remains a defining component of Longford's hedgerows, the presence of Ash dieback poses a significant long-term risk to hedge structure, continuity and biodiversity value. A decline in Rowan was also noted when compared with earlier surveys and neighbouring counties.

Ground flora diversity was variable, with an average of 1.87 target species per 30m, placing Longford hedgerows within the "moderately significant" category under the HAS methodology. Only 12 of the 32 indicator herbaceous species were recorded during the survey, while nutrient-rich herb species featured heavily (with the proliferation of Cleavers and Nettles and Docks especially apparent). Fern species were recorded less frequently than in wetter counties such as Monaghan and Cavan.

Structurally, many hedgerows in County Longford were found to be in unfavourable condition, primarily due to a high proportion of gaps, inadequate basal density, nutrient enrichment and evidence of bank and/or margin degradation. Only a small percentage of hedges were classified as being "complete" (8%), and the increase in remnant hedgerows since 2006, suggests a growing trend towards under-management. This is further reflected in the increasing development of hedgerows into treelines, indicating that hedgerows are being allowed to grow out without intervention, rather than being actively managed through an appropriate rotational cutting regime. This pattern contrasts with counties such as Kildare, where the unfavourable hedge condition was more commonly associated with over-trimmed hedgerows with poor basal structure and a short box-shaped profile.

Overall, the survey identifies County Longford as supporting an important, but increasingly pressured, hedgerow network. While shrub species diversity has shown some general improvement since 2006, continued hedgerow degradation to undermanagement, as well as structural decline, and nutrient enrichment, present significant challenges. These findings emphasise the need for targeted conservation measures, improved management practices, and the prioritisation of heritage and species-rich hedgerows to safeguard the ecological and cultural value of Longford's hedgerows.

## **3. Background**

### **3.1 Role of Local Authorities**

In the formulation of development plans, local authorities are committed to designating landscapes and their associated characteristics, under the Planning & Development Act, 2000. Through the planning process local authorities can also ensure that hedgerows are given due regard with respect to hedgerow conservation. In recent years many local authorities have been creatively managing roadside verges to ensure a diversity of plants can survive, which has been guided by the All-Ireland Pollinator Plans. This ideal can be broadened to include hedgerows abutting roads. Under Section 70 of the Roads Act 1993, landowners and occupiers in Ireland must ensure that roadside hedges, trees, and shrubs do not pose a danger to road users or obstruct visibility. Local authorities can serve notices requiring maintenance, with failure to comply potentially leading to prosecutions. Each local authority has a responsibility to road users and their safety on public roads. However, while regular maintenance is required at certain locations, every effort must be made to ensure that best practice is exercised in this regard to ensure that over-management of hedgerows is not taking place. This also must include abiding by Section 40 of the Wildlife Act 2000, which prohibits vegetation cutting between 1<sup>st</sup> March and 31<sup>st</sup> August each year, to protect nesting birds. Certain exceptions to the latter are permitted, e.g. where a hedge poses an immediate, serious safety risk, it may be cut, but caution should be used to protect nesting birds.

### **3.2 The History of Hedgerows in Longford**

Hedgerows are long-lasting features of the Irish landscape. In County Longford, these living boundaries have shaped the region's agricultural, ecological, and cultural identity for centuries. Far more than field dividers, hedgerows are repositories of biodiversity, historical memory, and rural craftsmanship. Their story in Longford reflects broader patterns of land use and conservation in Ireland, from prehistoric field systems to modern biodiversity initiatives.

The origins of hedgerows in Ireland can be traced back to the Neolithic period, when early farmers began enclosing land with stone walls to manage livestock and delineate territory. Though these early boundaries were not hedgerows in the modern sense, they laid the foundation for a tradition of field division. As peat accumulated and landscapes changed, some of these ancient enclosures were gradually colonised by vegetation, forming hedgerows that blended natural growth with human intention.

Landholding patterns in Longford became more formalised in the 12<sup>th</sup> century as manorial estates introduced boundary-making, often combining earthen banks, ditches, and planted hedges. These structures served both practical and symbolic purposes, marking property lines, controlling livestock, and asserting ownership. While many of these medieval hedgerows have been altered or lost, their influence persists in the layout of Longford's rural landscape.

The most significant expansion of hedgerows occurred during the 18th and 19th centuries, driven by the Enclosure Acts and the rise of estate agriculture. As common lands were divided into individual plots, landlords and tenant farmers planted hedgerows systematically to define field boundaries and improve land management. These hedges were often composed of native species such as Hawthorn, Blackthorn, and Holly, chosen for their resilience and ability to form dense, stock-proof barriers. However, the 20th century brought challenges to the survival of hedgerows. Agricultural intensification, mechanisation, and the drive for larger, more efficient fields led to widespread removal and neglect.

In 2006, Longford undertook its first comprehensive hedgerow survey, supported by the Heritage Council and informed by methodologies developed by the Hedgerow Council and Foulkes & Murray (2006). This survey documented the density, species composition, condition, and management practices of hedgerows across the county. It revealed both the richness of Longford's hedgerow heritage and the urgent need for conservation. The findings provided a baseline for future efforts and highlighted the importance of hedgerows not only as historical features but as key habitats for birds, insects, and small mammals.

### 3.3 The Value of our Hedgerows

Hedgerows are more than simple boundaries: they are living corridors intertwining fields, woodlands and waterways together. Composed of native shrubs and trees, these linear habitats provide essential refuge and foraging for birds, bats, butterflies and small mammals. Under Article 10 of the European Habitats Directive, hedgerows are designated as green infrastructure, indispensable for species movement and genetic exchange throughout the countryside.



*Image 2 Cattle by a hedgerow on commonage land near Lough Ree, Co. Longford*

Beyond biodiversity, hedgerows offer an abundance of ecosystem services. Their dense root systems stabilise soils, reducing wind and water erosion, while trapping sediment before it can silt rivers and lakes. By intercepting and slowing surface runoff, they mitigate flooding. They are also recognised as effective carbon sinks.

Hedgerows are an important cultural resource, and many mark old routeways, or green roads, form part of townland boundaries or are remnants of ancient woodlands. They play important roles in agriculture, acting as stock barriers, providing shade and shelter, boosting pollination, and playing host to many beneficial species of invertebrates. All of the above benefits are only relevant, however, when a hedgerow is healthy, robust and maintained in an ecologically sensitive manner.

### **Landscape**

Patchworks of fields and hedgerows endow the Longford countryside with a distinctive and attractive landscape. These hedges flower and fruit in the summer to give colour and fragrance to the countryside. They frame the passage through most of the countryside by lining the roads and giving the impression of a wooded landscape in some areas.

### **Agriculture**

Culturally, hedgerows are tangible markers of Ireland's pastoral history. Many date to 18th- and 19th-century while others trace their lineage back to medieval townland boundaries and the edges of once-extensive woodlands. The Heritage Council highlights that these ancient boundaries encapsulate local craftsmanship, geology, and land-use practices, granting each county and parish a distinct sense of place and memory.

In agricultural landscapes, well-managed hedges serve farmers and wildlife alike. They function as robust stock barriers, provide summer shade and winter shelter, and support pollinators by hosting pollen-rich shrubs. Fields adjoining diverse hedgerows often yield higher crop productivity, thanks to enhanced insect pollination and natural pest regulation by predatory insects harboured in hedge bases.

### **Folklore**

Many of our native shrubs are important in Irish folklore. The Hawthorn (Sceach Gheal) features widely throughout our own native Irish myth and legend, with many references to the tree and its connection to the little folk – the fairies. These trees were often left alone and ploughed around to avoid disturbing the inhabitants. It was widely believed that disaster would befall those who harmed the Hawthorn tree. To this day, Hawthorn trees are often seen standing alone in a field. Rowan trees can also be seen scattered throughout the landscape. Known as the 'Witch tree', its bright red colour was associated with magical powers. Often placed at entrances and livestock, it was believed to protect and ward off malevolent sorcery.

## Climate

Following the European Green Deal and its ambitions of bringing Europe to climate neutrality by 2050, Ireland has pledged to transition to net zero emissions by 2050, using the framework provided in the Climate Action and Low Carbon Development Amendment Act of 2021. Hedgerows, as residuals of native woodland, represent a great asset to achieve such ambitious goal, although assessing how much carbon is sequestered can prove challenging. Murray and Foulkes (2005) estimated that if the average hedgerow width is two metres, then the hedgerow resource covers an approximate area of 764km<sup>2</sup> of Ireland.

A previous assessment by Black *et al.* (2014) has indicated hedgerows have the potential to sequester between 0.5–2.7 tCO<sub>2</sub>/ha/year. On the other hand, a 2019 EPA report estimates that hedgerows, together with non-forest woodland and scrub, can remove up to 1.4 Mt CO<sub>2</sub> per hectare per year – even after accounting for emissions used from equipment or machinery in the process of maintenance works (EPA, 2019). A follow up project run by Teagasc (the Farm Carbon research project), is aiming to add to the findings of the EPA study in order to quantify the carbon stock of biomass from selected hedgerows using 3D digital surface models, and accounting for soil organic, deadwood and litter carbon stock. While the findings of such studies are yet to be published, the project aims to develop an integrated scorecard for hedgerow assessment along with best practice management advice for the delivery of ecosystem services such as carbon and biodiversity.

More recently, the Hedgerow Carbon Project (O’Sullivan *et al.*, 2019) sought to determine the relationship between management and carbon stock changes (CSC), by grouping hedgerows into two categories: a) narrow, regular-shaped, intensively managed hedgerows; and b) irregular, wider, less intensively managed hedgerows. The study indicated that the most significant increase in CSC was observed in recently planted hedgerows and unmanaged irregular hedgerows, which showed an increase of 3.69 tC/ha/year, and 2.87 tC/ha/year respectively, while the most substantial losses in biomass were recorded when irregular hedgerows were permanently eliminated. The study estimated that during the period from 2015 to 2019, despite the net carbon increases in unmanaged hedgerows, the intensive management and removal of hedgerows across the country actually resulted in net emissions and concluded that policies are needed in order to incentivise less intensive management of hedgerows, which would result in net carbon sequestration.

## Flora and Fauna

The vast majority of Longford is covered in intensively managed farms; due to this, hedgerows are one of the only remaining wildlife habitats and refuges. They offer homes to a variety of native flora and fauna. Of the 110 species regularly recorded during the breeding season in the Countryside Bird Survey in Ireland, 55 use hedgerows. Of these, 35 species nest in hedgerows, while the remaining 20 depend on them as a key food source. Birds of prey often use hedges as hunting grounds, as they can provide habitats for small mammals such as mice. The Irish State is legally obliged to ensure there is no deterioration of bird habitats under EU law, and the state has already faced legal repercussions in what became known as the ‘Birds Case’ in 2007. The diversity of flora in hedgerows can support species such as butterflies, moths, bumblebees, beetles, and hoverflies. Bats are also protected by the Wildlife Act 1976 and depend on

hedgerows for shelter, for food in the form of insects, and for roosting. The National Roads Authority outlines the importance of hedgerows for bats in their best practice guidelines for the treatment of bats during the construction of national road schemes (NRA, 2005a) and guidelines for the conservation of bats in the planning of national road schemes (NRA, 2005b). Hedges can support substantial breeding Badger (*Meles meles*) setts, one of Ireland's most recognisable animals which is protected under the Wildlife Act, as well as internationally, as a listed species in the Bern Convention (to which Ireland is a signatory). Hedges support many other species such as Fox (*Vulpes vulpes*), Hare (*Lepus timidus hibernicus*), Rabbit (*Oryctolagus cuniculus*), Stoat (*Mustela erminea*), Field Mouse (*Apodemus sylvaticus*) and Pygmy Shrew (*Sorex minutus*).



*Image 3 Honeysuckle in a hedge in Co. Longford*

### **Hedges as Habitat Corridors for Biodiversity**

Improved agricultural grasslands have little to offer for most flora and fauna, as they lead to habitat fragmentation and nutrient enrichment. However, well-managed, dense, tall hedges and wildflower verges can provide links and enable the movement of species such as bats, birds, and insects through ecological corridors. A recent survey from the European Commission's Joint Research Centre found that planting hedgerows is one of the best ways to combat ecosystem fragmentation in intensively farmed landscapes. It is also important to ensure the continued pollination of crops.

## Water Quality

Hedges play a role in helping to maintain and improve water quality. The root systems of hedgerow shrubs and trees regulate the movement of water through the landscape, absorbing and recycling nutrients, thus reducing the risk of pollution, whilst also reducing the potential for flooding. Hedges also help to reduce sediment from moving down slope, preventing excessive siltation in waterways. 'Siltation' is the clogging up of riverbeds with fine grained particles like soil. It contributes to the deterioration of aquatic habitats, preventing Wild Salmon (*Salmo salar*) and Trout (*Salmo trutta*) from spawning and smothering vulnerable invertebrates who depend on clean water and riverbeds for survival, e.g. Mayfly species (*Ephemeroptera*), Stonefly species (*Plecoptera*), and molluscs, e.g. the Freshwater Pearl Mussel (*Margaritifera margaritifera*).

### 3.4 Threats to Hedgerows

The Heritage Council has laid out the following threats to hedgerows in Ireland:

- Hedges need regular maintenance in order to provide effective boundaries and shelter. Neglected hedges grow tall and gappy, so that they cease to function as effective barriers. A gappy hedge is bad both for wildlife and for farming.
- Neglected hedges may become overgrown with bramble so that they encroach on fields or roadways and become inaccessible for maintenance.
- Inappropriate management can damage hedges. This includes frequent (annual) cutting and cutting during the bird nesting period.
- Building developments in which all hedgerows are removed are a major threat to the hedgerow network.
- Road-widening programmes may threaten hedges. Although the removal of hedges may be necessary for public safety, in many cases, it is possible to preserve the original boundary by moving it back from the road to a safer position.
- Disturbances of roadsides to lay and maintain services such as telecommunications, sewage, and water can disrupt hedgerow root systems, or hedges may be completely removed. This can be avoided with proper planning.
- Poor roadside drainage can threaten hedges by rotting their root systems. It can also endanger road users. It is important to maintain drains, particularly to prevent blockage with plastic.
- Hedges may be removed because there is a wish to open up views from roads in scenic areas. This is usually unnecessary if proper hedge maintenance is practiced.
- Field enlargement is a threat to hedges. Farmers need to remove hedges in some cases, but should be encouraged to retain and maintain hedges, particularly along roadsides, as vital links in wildlife corridors.

Additionally, fungi, bacteria and invasive species have been known to be causes of concern for Irish hedgerows.

Fungi like *Ophiostoma novo-ulmi* or *Hymenoscyphus fraxinaea* are known to fatally affect Elm and Ash trees respectively. The former causes Dutch Elm Disease, and it is spread by elm bark beetles which carry the fungal spores to weakened Elm trees, causing the trees to wilt from the tip and bending their twigs in a “shepherd’s crook” shape, eventually dying. Wych elm (*Ulmus glabra*) is the only native elm species in Ireland and is susceptible to Dutch Elm Disease. Once a very abundant tree in the Irish landscape, it is uncommon to find healthy, living Elm trees nowadays.

*Hymenoscyphus fraxinea*, the culprit behind Ash Dieback, causes the shoots to discolour and wilt, leading to the characteristic crown dieback. In advanced stages, excessive epicormic branching, lesions on stems and branches and a complete discolouration of bark can also occur. The disease was first detected in the Republic of Ireland in 2012. The disease is now prevalent throughout most of Ireland and is projected to cause the demise of the majority of the ash trees over the next two decades. Only a small percentage seem to be able to resist the disease.



Image 4 Severe Ash Dieback along a hedge in the Ardagh area

Bacterial infections can also be problematic: the bacteria *Erwinia amylovora* is linked to the disease Fireblight, which causes the withering of shoots and leaves (‘Shepherd’s Stick’), cankers, and bacterial ooze. Hawthorn, Cotoneaster, Apple, Pear, and Rowan shrubs/trees are commonly affected. The disease was only recently introduced into Ireland from infected crops, with 17 outbreaks reported across 11 counties in 2023.

Invasive plant species can be particularly insidious when found in hedgerows. Most are visually appealing, as they were introduced into Ireland as ornamental plants due to their beauty. However, when met with the right climatic conditions they can spread easily, creating dense stands which can out-shade, out-

compete and displace native species. Each species comes with its own challenges, but of particular importance are those listed in the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374 of 2024). Species such as Rhododendron (*Rhododendrum ponticum*), Japanese Knotweed (*Fallopia japonica*) and Three-cornered Leek (*Allium triquetrum*) amongst the others, aggressively take over the landscape and are difficult to eradicate.

## 4. Survey Rationale

Hedgerows are dynamic, living structures woven into the Irish countryside, continually evolving in response to ecological processes, land-use shifts, and management practices. Their slow transformation over decades fills them with layers of ecological, agricultural, heritage, and landscape value. Yet maintaining every hedge at its optimal condition is neither financially nor logistically feasible: skilled operators are scarce, budgets are limited, and competing development pressures often downgrade hedgerows. Recognising these constraints, conservation efforts must focus on prioritising individual hedges and networks according to their multifunctional significance. A targeted, data-driven survey is therefore essential to guide finite resources toward the hedgerows of greatest value and vulnerability.

Beyond their role as field boundaries, hedgerows deliver an array of indispensable services. In agriculture, they shelter livestock, buffer crops against wind and erosion, and serve as natural stockproof fencing. Ecologically, they form corridors that can sustain numerous bird species, pollinators, and small mammals, preserving genetic connectivity across fragmented landscapes. Environmentally, hedges capture carbon, moderate flood risk, and enhance water quality by filtering runoff. Culturally, many Irish hedgerows trace their origins to medieval field systems or even earlier land divisions.

Despite their immense benefits, hedgerows in Ireland face accelerating threats. Agricultural intensification and infrastructure projects have led to widespread removal, often outpacing any protective legislation. This practice can weaken hedgerows' structural integrity and diminish their wildlife value. At the same time, enforcement of existing hedgerow protection laws is hampered by understaffed conservation agencies (e.g. namely the NPWS) and voluntary uptake of agri-environment schemes, leaving many valuable hedges unmonitored or overlooked.

To address these challenges, a systematic survey must first map and characterise the hedgerow resource in immense detail. Field assessments should document hedgerow species composition, age, structure, and overall condition, identifying stretches of high ecological, agricultural, or heritage significance. By ranking hedgerows according to their multifunctional value and condition, funding can be allocated to help preserve those in need.

Such a survey also aligns seamlessly with evolving policy frameworks. The current Common Agricultural Policy (CAP) reform emphasises results-based biodiversity programming, rewarding farmers for measurable environmental outcomes. Ireland's National Biodiversity Action Plan recognises hedgerows as semi-managed habitats critical to pollinators and wildlife. Local authorities, through County Development Plans, Biodiversity Action Plans, Heritage Plans and hedge-management guidelines, further support best practices in planting, coppicing, and laying. By giving policymakers and land managers robust,

spatially explicit data, the survey will inform incentive schemes, enforcement efforts, and training initiatives that together strengthen hedgerow conservation.

## 4.1 Need for Hedgerow Surveys

Any attempts to promote hedgerow conservation need to be based on an accurate and meaningful assessment of the current resource. The more data we have for important habitats like hedgerows, the easier they are to monitor, manage and protect. The Hedgerow Survey provides useful information in a variety of ways:

- It gives a snapshot of the quantity and character of the hedgerows in the county. This information serves as a benchmark for future surveys.
- Repeat surveys (using the same samples) will provide a useful tool in monitoring environmental change.
- It is possible to identify current and potential future threats facing the resource by assessing the results in light of current best practice in hedgerow conservation.
- The survey identifies plant life local to the county.
- Comparisons can be drawn between hedgerows under different management regimes.
- Detailed information collated as part of the County Longford Hedgerow Survey can complement data collated from other habitat related studies, e.g. the Countryside Bird Survey (Birdwatch Ireland, ongoing study).
- The County Longford Hedgerow Survey can be placed in its national context when viewed alongside other surveys based on the same methodology.
- Surveys provide valuable baseline data which will be essential in planning and implementing County Biodiversity Action Plans and Heritage Plans.
- The survey results and conclusions will also provide a useful tool for decision makers, advisory bodies and educational institutions.

The survey results and conclusions will also provide a useful tool for decision makers, advisory bodies and educational institutions, including:

- Local Authority Planners
- National Roads Authority
- Road Engineers
- Landscape Planners
- Environmental Consultants, particularly in drawing up Environmental Impact Statements
- Department of Agriculture, Food and the Marine
- Department of Housing, Local Government & Heritage
- Department of Communications, Climate Action & Environment
- National Biodiversity Data Centre (and its All-Ireland Pollinator Plan)

- The Heritage Council
- County Longford Heritage Office
- Longford County Council Environment Section
- Teagasc
- Farmers, landowners and estate managers
- Foresters
- Schools, Colleges, and Universities
- State Bodies – EPA, National Parks and Wildlife Service, CIE, Waterways Ireland, etc.
- Local Communities, Tidy Towns and Development groups

An EPA study using aerial photography estimated a net removal of hedgerows of between 0.16% and 0.3% per year between 1995 and 2015. This suggests hundreds of kilometres of hedgerows are being removed per year in Ireland. Recent County HAS Reports, including the Longford HAS Report 2025, suggest this estimation is correct or even being exceeded in some circumstances. Keeping a record of hedgerow removal and overall condition will help to emphasise further the need to retain and protect the hedgerow network we still have, while also encouraging the replacement, rejuvenation and extension of hedgerows where possible. This could occur through means such as a conservation policy for the county, training courses (e.g. on ecologically sensitive hedge cutting) and planting schemes/incentives.

## 4.2 Aims and Objectives

### 4.2.1 Objectives

To gain an overview of hedgerows in County Longford in terms of extent and condition from a biodiversity, historical and cultural perspective, in order to inform conservation priorities and assess any changes that have occurred in the last decade.

### 4.2.2 Aims

- To carry out a detailed field survey of hedgerows in County Longford, quantifying extent, composition, structure, condition and management.
- To identify any rare or vulnerable species that may be present.
- To compile a species list, including ground flora.
- Identify areas of the county which may have ancient hedgerows or hedgerows which are remnants of old woodlands.
- To compare townland boundary hedgerows with non-townland boundary hedgerows.
- To compare the survey data collected in the current assessment with data from 2006 to analyse trends and identify changes over time in the specified parameters.
- To establish criteria to aid the identification of potential ancient hedgerow locations and composition.
- Collate and map the data in accordance with best practice.

- To provide recommendations on conservation and management priorities for hedgerows in County Longford.
- To raise awareness of the ecological and cultural importance of hedgerows.

### 4.3 National and International Hedgerow Protection Policies and Legislation

The importance of hedgerows is recognised in national and international environmental policies and legislation. Various legislative Acts, Directives, and Guidelines (International, European, and National) reflect the importance of the hedgerow resource and its management. These are listed below with a summary given for those which have the most direct relevance.

#### 4.3.1 International Legislation

**The Paris Agreement (or Paris Accord COP 21):** This is a legally binding international treaty on climate change. Under the Paris Agreement, all countries of the world agreed to reduce global warming to well below 1.5-2 degrees Celsius, compared to pre-industrial levels. The signatories committed themselves to national climate and CO<sub>2</sub> reduction targets that they themselves came up with. As hedgerows and non-forest woodlands can sequester 1.4 Mt CO<sub>2</sub> per year CO<sub>2</sub>/ha/year (EPA, 2019), hedgerows have the potential to play a key role in helping to reduce carbon emissions.

**(EU) Habitats Directive (1992):** Article 10 of the Directive states that, "Member States shall endeavour in their land-use planning and development policies, to encourage the management of features of the landscape which are of major importance for wild flora and fauna." Special Areas of Conservation (SACs) are designated under the Habitats Directive. Restrictions apply to hedgerows that fall within SACs.

**(EU) Birds Directive (1979):** Article 3 of the Directive states that "Member States shall take the requisite measures to preserve, maintain, or re-establish a sufficient diversity or area of habitats for all the species of birds referred to in Article 1" - i.e. -all species of naturally occurring birds in the wild state. Special Protection Areas (SPAs) are designated under the Birds Directive. Restrictions apply to hedgerows that fall within SPAs.

#### (EC) Council Regulations

##### **Council Regulation (EEC) No 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside:**

Since 1994, it has been compulsory for each EU state to have agri-environmental schemes in place. These have included various schemes in Ireland, such as the Rural Environment Protection Scheme (REPS 1,2,3 & 4), the Agri-Environment Options Scheme (AEOS 1, 2 and 3) and the Green Low Carbon Agri-Environment (GLAS). The 'bridge' agri-environmental scheme between the old and new Common Agricultural Policy (CAP), called REAP (Results Based Environment Agri-Pilot Programme, had several specifications on hedgerow maintenance and enhancement (DAFM, 2021). The new Agri-Climate Rural Environment Scheme (ACRES) was launched in the latter part of 2022 and took effect from January 2023. It aims to be a 'farmer-friendly scheme to help address biodiversity decline while delivering an income

support for up to 50,000 farm families in Ireland' (DAFM, 2022). Specifications in each of these schemes have set down the conditions by which participant farmers in the Scheme must manage their hedgerows. With more focus on biodiversity and results-based outcomes in ACRES, there has been relatively more focus on hedgerow maintenance since the scheme launched in 2023.

**Water Framework Directive (2000):** The protection and enhancement of surface water and groundwater will be achieved through the application of the WFD's environmental objectives whereby hedgerows act as buffer zones to remove nutrients from entering waterbodies.

**Nitrates Directive (1991):** In order to reduce or prevent pollution of watercourses one of the objectives of the Nitrates Directive is to limit the losses of nitrates linked to agricultural activities. To this end the Nitrates Directive promotes the "Buffer" effect of non-fertilised grass strips and hedges along watercourses and ditches.

### 4.3.2 National Legislation

**The Wildlife Act, (1976), as amended by the Wildlife (Amendment) Act, 2000:** The purpose of Section 40 of the original Act, as amended by Section 46 of the Amendment, is to protect breeding birds during the nesting season by establishing a prohibition on the cutting of hedges during the period from 1st March to 31st August (inclusive) each year.

**Heritage Act 2018:** In addition to The Wildlife Act, restrictions on cutting hedgerows are set out in the Heritage Act 2018. These Acts also stipulate that it is an offence to destroy vegetation on uncultivated land between the 1st of March and the 31st of August each year. While there were proposals, prior to 2018, to extend the cutting period under Ministerial powers, these have not been enacted.

**The Roads Act, (1993):** Under Section 70 of this Act, owners or occupiers of land are obliged to take all reasonable steps to ensure that any roadside hedge is "not a hazard or potential hazard to persons using a public road and that it does not obstruct or interfere with the safe use of a public road or the maintenance of a public road". Also, under this Act, a road authority must prepare an Environmental Impact Statement (EIS) for motorways and dual carriageways over 8km in rural areas.

**Planning and Development Act (2000):** Architectural Conservation Areas (ACAs) are designated under the Planning and Development Act. Development plans for ACAs may contain objectives and policies for any hedgerows within the ACA. Local Authorities can also make Tree Preservation Orders (TPOs), but currently there are no TPOs designated in respect of hedgerows (Hickie, 2004).

**National Biodiversity Plan (2023-2027):** Ireland's 4<sup>th</sup> National Biodiversity Action Plan (NBAP), which follows the 2017-2021 NBAP, sets an ambitious agenda for preserving and enhancing nature, ensuring awareness is spread with regard to biodiversity and the threats it faces. The plan hinges on five objectives, illustrated below:

Objective 1 - Adopt a Whole of Government, Whole of Society Approach to Biodiversity

Objective 2 - Meet Urgent Conservation and Restoration Needs

Objective 3 - Secure Nature's Contribution to People

Objective 4 - Enhance the Evidence Base for Action on Biodiversity

Objective 5 - Strengthen Ireland's Contribution to International Biodiversity Initiatives

This plan provides a framework to track and assess progress towards Ireland's Vision for Biodiversity over a seven-year timeframe from 2023 to 2030.

**Heritage Ireland 2030:** The National Heritage Plan 2030 includes prominent sections on biodiversity conservation. The previous National Heritage Plan (2002) recognised hedgerows as prominent and important features in terms of their ecological, archaeological and landscape values. For instance, Action 32 (Heritage in the Countryside) ensured the "protection and enhancement of hedgerows as a natural and archaeological heritage resource through the use of regulatory, educational and financial measures, as appropriate."

Action 20 of Heritage Ireland 2030 is to 'Review the protection (including enforcement of relevant legislation) of our natural heritage, including hedgerows, native woodland and wetlands.'

**European Communities (Environmental Impact Assessment) (Agriculture) Regulations 2011:** These cover: the Restructuring of rural land holdings; Commencing to use uncultivated land or semi-natural areas for intensive agriculture and Land drainage works on lands used for agriculture. This includes several stipulations, including that a screening assessment must be carried out where hedgerows are planned for removal to create a field of over 5 hectares, or if field boundary hedgerows are to be removed over a length of 500 metres.

**Nitrates Derogation:** Since 2020, Derogation farms have a Biodiversity Option on Hedgerow Management. They can choose one of two options, which are:

- Leave at least one whitethorn or blackthorn tree within each 300 metres of hedgerow, **OR**
- Maintain hedgerows on a minimum 3-year cycle, by cutting just one-third of the hedges each year. This is because annual cutting inhibits flowering and fruiting.

**Cross Compliance Rules:** Since 2009, hedgerows cannot be removed unless a replacement hedge of similar length is planted at a suitable location on the holding in advance of the removal of the hedge. If farmers have removed hedges since 2009, they can be penalised at any stage.

**Electricity Supply Act (1927):** Article 98 of the above Acts permits any "authorised operator" to "lop or cut any tree, shrub or hedge which obstructs or interferes" with electric wires.

**Communications Regulations Act (2002):** Article 58 of the above Acts permit any "authorised operator" to "lop or cut any tree, shrub or hedge which obstructs or interferes" with the physical infrastructure of the network.

**The Forestry Act (2014):** Under the Forestry Act 2014, it is an offence to uproot or cut down trees without a felling licence issued by the Department of Agriculture, Food and the Marine (DAFM). Licences are

generally required for trees in forests or trees in hedgerows, with specific exemptions, e.g. for trees that are deemed “dangerous”, trees within 30m of buildings, etc.

**Sustainable Rural Housing Guidelines (2005):** The guidelines on Roadside Boundaries state that “The removal of existing roadside boundaries, except to the extent that this is needed for a new entrance, should be avoided where at all possible except where required for traffic safety purposes.” The guidelines also state: “Planning authorities should also seek to protect and preserve existing hedgerows and to encourage hedgerow formation/regeneration using native species. Such interventions can have an important role to play in maintaining linkages between natural and semi-natural habitats”.

### 4.3.3 Local Policy

**County Longford Biodiversity Action Plan 2025-2030:** Launched in September 2025, the Longford Biodiversity Action Plan places a lot of emphasis on the conservation and enhancement of habitats across County Longford, as well as promoting biodiversity awareness and engagement, training and monitoring schemes, and promotion of biodiversity within county plans and strategies. The hedgerow network is recognised in the plan as one of County Longford’s most significant habitat types, as well as a wildlife corridor. During the public consultation process, tree and hedgerow removal were cited as some of the main threats to biodiversity in the county. Several actions are specific to hedgerows in the plan, as follows:

- A8: LCC will support the planting of trees and hedges, with an emphasis on trees of Irish provenance.
- C2: LCC will develop a policy for tree and hedgerow retention in proposed developments.
- D3: Training will be delivered to the agricultural community and other groups to improve hedge laying and hedgerow quality.
- D9: Biodiversity Awareness training will be provided to staff and contractors for the appropriate maintenance of hedgerows.
- E15: LCC will promote hedgerow biodiversity and natural services awareness.

**County Longford Heritage Plan 2019 – 2024:** The Heritage Plan for County Longford encompasses measures for all tangible heritage for the county, including not only archaeological and architectural objects and monuments, but also flora, fauna and wildlife habitats, as well as landscape, geology and heritage parks. Actions for biodiversity are varied and include:

- Active management of Council owned lands for biodiversity enhancement
- Promotion of the All-Ireland Pollinator Plan
- Supporting recording and submitting of all wildlife records
- Control of invasive species.

**Longford County Development Plan 2021-2027** - Objectives for biodiversity are included in Chapter 12 of the document and include actions pertaining to various aspects of biodiversity such as waterways, all Ireland pollinator plan, geology, and the commitment to the Strategic Green Infrastructure. In particular, under the heading **Trees, Forestry and Hedgerows** the following relative objectives are listed below:

- **CPO 12.73:** Preserve and enhance the amenity and biodiversity value of the County, by promoting the protection of trees, groups of trees and ancient woodlands, of significant amenity value, especially native and broadleaf species.
- **CPO 12.74:** Undertake a survey of trees and woodlands within the County in order to identify individual trees and or, groups and stands of trees of value worthy of protection, including those in Demesne landscapes.
- **CPO 12.75:** Protect trees subject to Tree Preservation Orders and seek to designate additional Tree Preservation Orders, where appropriate.
- **CPO 12.77:** Discourage the felling of mature trees and hedgerow, particularly species rich roadside and townland boundary hedgerows to facilitate development and seek Tree Management Plans to ensure that trees are adequately protected during development and incorporated into the design of new developments.
- **CPO 12.80:** Protect and preserve existing hedgerows in new developments, particularly species rich roadside and townland boundary hedgerows, and where their removal is necessary during the course of road works, or other works, seek their replacement with new hedgerows of native species indigenous to the area.
- **CPO 12.81:** Investigate the potential of completing a review of the Hedgerow Survey 2006.

## 5. Methodology and Field Survey

The County Longford Hedgerow Survey (2025) was carried out using the methodology of the Hedgerow Appraisal System (HAS) by Foulkes *et al.* (2012). The objective of the HAS methodology is to record the extent (i.e. quantitative survey), and floristic composition, context, physical structure, condition, and management of hedgerows (i.e. qualitative survey) in any given locality, county or region of Ireland using a semi-random sample selection. The HAS methodology was largely based on the original methodology devised by Murray and Foulkes (2006) with a number of additions, modifications and refinements over the years, to ensure compatibility with other elements of HAS.

### 5.1 Baseline Hedgerows Surveyed

#### 5.1.1 Defining Hedges

For the purpose of this survey hedges are defined as “Linear strips of woody plants with a shrubby growth form that cover more than 25% of the length of a field or property boundary. They often have associated banks, walls, ditches (drains), or trees”. Sampled hedgerows were a minimum of 60m in length. The terms ‘hedge’ and ‘hedgerow’ are used inter-changeably throughout this report. In accordance with the methodology, garden hedges and those bordering curtilage (BL3 as fully defined by Fossitt, 2000) are not to be recorded unless they also border agricultural land.

### 5.1.2 Selecting the Sample Hedgerows

The original hedgerow locations from the County Longford Hedgerow Survey in 2006 were available and marked for surveying. Thus, details below explain the methodology used behind the random sample selection.

The south-western (or “bottom left hand”) 1km<sup>2</sup> area of each of the Ordnance Survey ten-kilometre National Grid squares of the country was chosen for the Hedgerow Survey, in accordance with the sampling procedure used for the Badger and Habitats Survey of Ireland (Smal, 1995) and subsequently the Countryside Bird Survey (Birdwatch Ireland, ongoing study). This placement gives the potential for some joint assessment of these data sets in the future. Sample areas are 1 km<sup>2</sup>, with some squares falling on the county boundary (in which case only the areas in County Longford were surveyed).

A total of 12 samples were selected in 2006 for the original County Longford Hedgerow Survey. The sample area is approximately 1% of the total area of the County. The 1km<sup>2</sup> areas are presented in Figure 1 below, while Ordnance Survey National Grid references and townland details for each survey square are presented in Table 1 of this report. Within each sample square, a maximum of 10 hedges were selected for detailed study using randomly generated points on a transparent overlay. The points on the overlay were selected at random using a random number generator and an appropriately scaled, numbered grid marked by subdividing the square and then matching the randomly chosen numbers with points on this grid. The overlay was then placed on top of the relevant aerial photograph of each square, and the hedge nearest to each point on the overlay was chosen for detailed investigation. If there was no hedge within a fixed radius (equating to approximately 175m) of the randomly selected point, the number of sampled hedges was reduced by one. This was to ensure that the sample would not be skewed by a higher sampling density in certain areas.

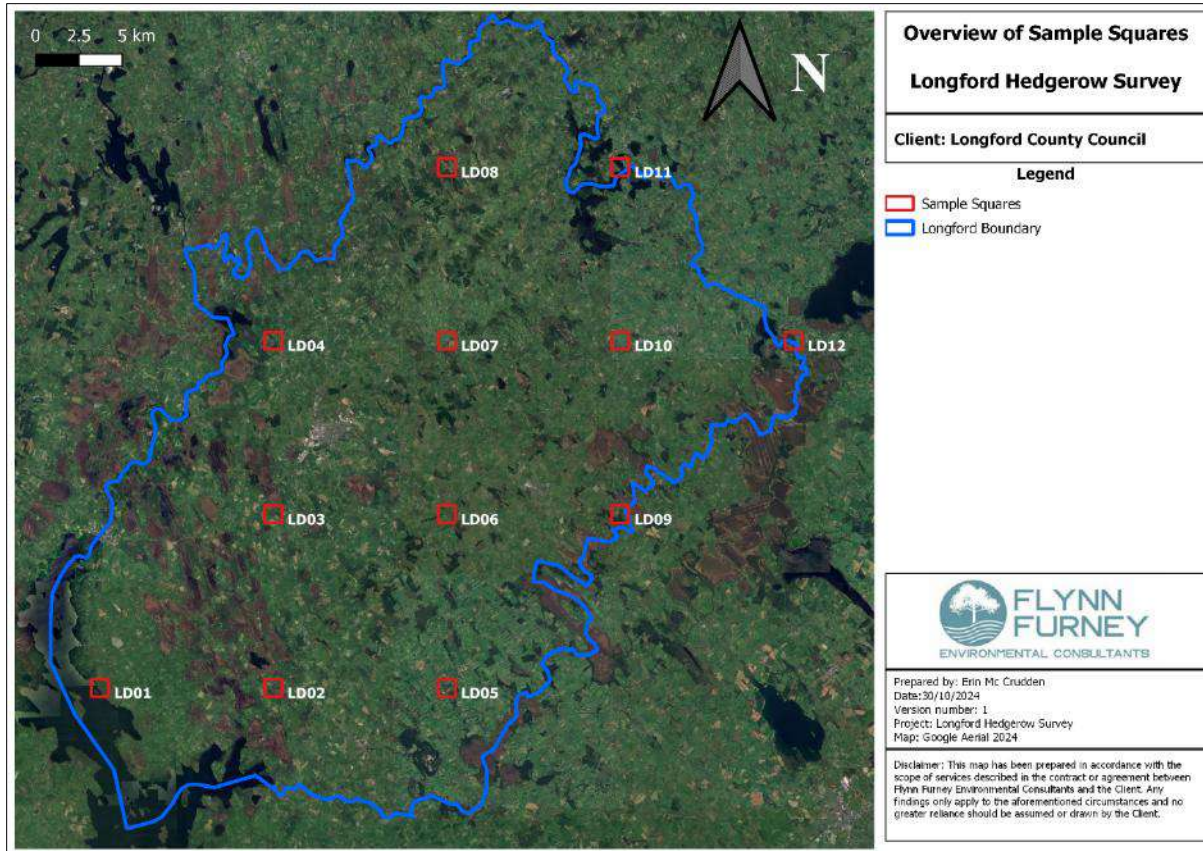


Figure 1. The 12 sample squares covered in the County Longford Hedgerow Survey 2025, based on 2006 locations.

Where the ‘hedge’ chosen on the aerial photograph was discovered on the ground to be something other than a hedge (e.g. a tree line, a colonised drain, a vegetated bank, or a wall covered in vegetation), the next hedge nearest to the relevant point on the overlay sheet was recorded instead, provided that it fell within the specified radius of the random point. Each hedge chosen for detailed investigation by the random selection process was clearly marked and labelled with a number on a copy of the relevant vector map, with beginning and end points also marked. A length of hedge was generally taken as one side of a field or enclosure. Endpoints were identified as the junction between adjacent sides of a field, or where three or more hedge lengths meet. In a few instances, endpoints were marked where the construction, management, or character of a hedge changed suddenly and conspicuously along its length, or where a clear and obvious difference in the origin of the hedge was apparent, but where no junction was evident. This was normally a result of boundary removal, where the two portions of a linear hedge once bounded separate fields.

### 5.1.3 Structural Recordings of Hedges

For each hedge selected (a maximum of 10 hedges per sample square, as described above), two end points were marked on the map. End points were generally identified as field corners or by junctions with other

hedges or boundary features (i.e., one side of a field). Each selected hedge was subjected to a detailed investigation along its whole length. Recordings were made in 25 categories grouped under the following headings: Context, Construction, Structure/Condition, and Management. Each category field has a corresponding code that is entered into the appropriate box on the data recording grid.

### **Context**

Each hedge is placed in its 'context': noting the type of farm on which it is located, and the wider physical environment, in terms of adjacent land classification and links with other habitats. The data recorded is consistent with The Heritage Council's habitat classification 'A Guide to Habitats in Ireland' (Fossitt, 2000). Any potential indicators of hedgerow antiquity are also noted.

### **Construction**

The basic 'construction' of the hedge relates to the linearity of the woody shrubs (single, double or random line) and the presence or absence of features such as drains, banks, walls or shelves (a 'shelf' is where there is a difference between the land height on either side of the hedge).

### **Structure/Condition**

The 'structure' relates to the physical dimensions of the hedge (height, width, cross section, percentage of gaps, etc.). Condition is gauged by an assessment of the vigour of the hedgerow shrubs, and a record of the quantity and age profile of hedgerow trees. Any degradation to the basic construction is also noted.

### **Management**

'Management' covers the type and method of hedgerow management, past and present. The nature of any fencing is also recorded.

## **5.1.4 Floristic Recordings of Hedgerows**

Floristics (from 'flora') is a subdomain of botany and biogeography that studies distribution and relationships of plant species over geographic areas. Two 30-metre strips were measured along each hedge from two randomly chosen points along the hedge. An average of these two strips was taken. The 30-metre strip is a generally accepted as an adequately representative sample size for recording woody species in a hedge. By recording woody species along a standardised length, the comparison of hedges of different lengths is possible. As there can be much variation in species from one end of a hedge to the other, two strips are recorded. This increased sampling intensity for each hedge gives a more accurate picture of the overall species of each hedge.

The methodology used for this survey was the Hedgerow Appraisal System: Best Practice Guidance on Hedgerow Surveying, Data Collation and Appraisal (Foulkes et al., 2012). The Floristic target species list is presented in Appendix 2. Each native and non-native woody shrub species present within the length of each strip was allocated an appropriate value of abundance (i.e. percentage cover) using the DOMIN scale.

<b>Domin Value</b>	<b>Abundance Cover</b>
10	91-100%
9	76-90%
8	51-75%
7	34-50%
6	26-33%
5	11-25%
4	4-10%
3	<4% frequent
2	<4% occasional
1	<4% rare

Each native tree, climber and ground flora species present within the length of each strip was allocated an appropriate value of abundance (i.e. percentage cover) using the DAFOR scale.

<b>Dominant</b>	50-100%
<b>Abundant</b>	30-50%
<b>Frequent</b>	15-30%
<b>Occasional</b>	5-16%
<b>Rare</b>	<5%

### 5.1.5 Maps and Aerial Photographs

Comprehensive GIS mapping was used. This included the following layers – Aerial Photographs (2022), First Edition Ordnance Survey (6" to 1 mile), Second Edition Ordnance Survey (6" to 1 mile), Townland Boundaries, Sites and Monuments Records, and Vector maps. Datasets including the protected Sites and Monuments Records and Natura 2000 sites were downloaded from the EPA website. These datasets were used to identify features in the field and to record connecting features such as National Heritage Areas and protected Sites and Monuments. The second edition six-inch Ordnance Survey maps were used primarily for the identification of townland boundaries. Digital maps of the hedgerows within the sample areas were produced using ArcGIS Pro using aerial maps as a base. Aerial maps were used to attain the

length of removed hedgerows since 2006 inside 1km<sup>2</sup> grid squares. Reasons for removal were also obtained from overlaying data and visually inspecting up to date maps.

### 5.1.6 Period of Fieldwork

Fieldwork began on the 16<sup>th</sup> of June 2025 and ceased on the 20<sup>th</sup> of June 2025.

### 5.1.7 Target notes

Where appropriate, notes were made of irregularities, special features, or notable characteristics within the sample square or with regard to specific hedges.

### 5.1.8 Data Recordings

Structural field data was recorded directly into an Excel spreadsheet using the Documents ToGo application on an iPad Touch. Floristic data was recorded manually onto specially designed field recording sheets. At the end of each recording session this data was transferred to an Excel spreadsheet. All data was backed up on a daily basis. Target Notes were referenced to the data in the spreadsheet. Digital photographs were uploaded, referenced, and stored in electronic folders relating to each sample square. Grid references were obtained in the field using Google My Maps.

## 5.2 Townland Boundary Hedges

In order to try and identify areas which may have hedgerows of high ecological value, recording of hedgerows was made in connection with Townland Boundaries. All hedges which overlapped with townland boundaries were noted on QGIS.

## 6. Results

### 6.1 The Extent of Hedgerows and Hedgerow Removal in Longford

Due to the lower quality of aerial imagery from 2006, hedgerows surveyed in 2025 were identified independently of the 2006 data. As a result, direct comparisons of hedgerow lengths between the two datasets are not feasible. The data gathered from GIS analysis in 2024 may differ somewhat from the on-the-ground surveys carried out in 2025, which should be considered when presenting the figures presented in this report on hedgerow removal. The total area studied via GIS was 10.35km<sup>2</sup> which is approximately 1% of the total of the study area (1,091 km<sup>2</sup>). Sample squares contained 77 hedgerows. Hedgerow lengths from 2006 were estimated from maps on Geohive.

Overall, the total hedgerow length in County Longford was estimated to be 10,326km in 2006, but reduced to 9,751km in the 2024 GIS study. These estimates were found by dividing the total hedgerow lengths of 2006 and 2024 by the total area of the grid squares and multiplying by the area of the county. Our estimates suggest around 575km of hedgerow has been removed across Longford in the last eighteen years. This is the equivalent approximate straight-line distance of Cork to London!

Total hedgerow extent has reduced by 5.57% and this does not include hedgerows which have been deemed remnant or relict which in many instances equates to the same thing. An EPA study (2019) using aerial photography estimated a net removal of hedgerows of between 0.16% and 0.3% per annum between 1995 and 2015 (EPA, 2019). Based on our data, the net removal of hedges in Longford is 0.31% per annum, meaning it slightly exceeds EPA’s recent estimates.

In comparison with other county HAS studies, County Longford’s rate of hedgerow removal is higher than some counties such as Cavan, where 6.58km (4.2%) was removed over 17 years (0.25%/year equivalent) and Offaly, where 3.15km (2.88%) over 19 years (0.15%/year equivalent). However, Longford is not faring as badly as some other counties, e.g. Monaghan, where 10.753km (9.7%) was removed in a period of 11 years (0.88%/year equivalent) and Kildare, where 9.6km (8%) was removed over 16 years (0.5% per year equivalent).

The length of hedgerows in County Longford’s sample squares varies from 0km near Finnea (LD12) up to 17.2km in square LD07 (Ballinalee). Squares LD11 and LD12 currently contain no hedgerows and are on a county boundary line. A few sample squares overlapped with areas of intensive cutover bog and or conifer plantation. Table 1 below shows a breakdown of the lengths of hedgerow removed at each location within the sample squares between 2006 and 2024 (detected using GIS).

*Table 1 Locations of 1km<sup>2</sup> Sample Squares in the County Longford Hedgerow Survey*

<b>OS Grid ref.</b>	<b>Square ref.</b>	<b>Location</b>	<b>Area km<sup>2</sup></b>	<b>No. sample hedge recorded</b>	<b>Length of Hedgerow 2006 (km)</b>	<b>Length of Hedgerow 2024 (km)</b>	<b>Length of Hedgerow removed (km)</b>
N 00 60	LD01	Newtown Cashel	1	4	2.91	2.57	0.342
N 10 60	LD02	Ballymahon	1	6	8.65	7.86	0.789
N 10 70	LD03	Killashee	1	9	10.66	10.47	0.190
N 10 80	LD04	Newtown Forbes	1	5	1.95	1.95	0.000
N 20 60	LD05	Taghshinny	1	10	12.40	12.15	0.253
N 20 70	LD06	Ardagh	1	10	15.90	15.31	0.589
N 20 80	LD07	Ballinalee	1	10	17.54	17.20	0.342

N 20 90	LD08	Ballinamuck	1	8	8.78	8.21	0.566
N 30 70	LD09	Edgeworthstown	0.94	7	8.23	7.24	0.997
N 30 80	LD10	Granard	1	8	10.94	9.57	1.376
N 30 90	LD11	Lough Gowna	0.14	0	0	0	0
N 40 80	LD12	Finnea	0.27	0	0	0	0
<b>Totals</b>			<b>10.35</b>	<b>77</b>	<b>97.96</b>	<b>92.51</b>	<b>5.443</b>

The largest extent of hedgerows was removed in the Granard area (LD10) (1.376km), primarily due to agriculture. See Figure 2 below for reference.

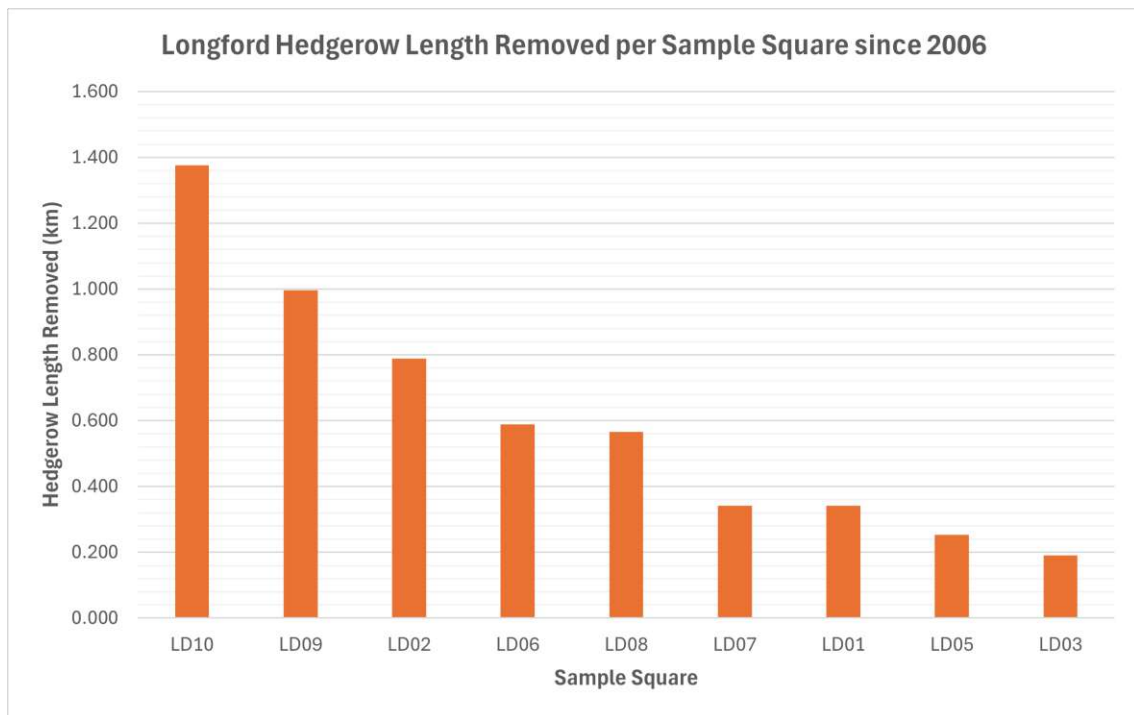


Figure 2 Length of hedgerow removed in each grid square.

The most significant cause for hedgerow removal in County Longford was found to be Agriculture (69.3%), followed by Scrub Encroachment (21.3%) and Housing (9.4%). This correlates with other recent county hedgerow surveys in terms of Agriculture being the main driver of hedge removal, e.g. Monaghan, Cavan and Offaly. Results are similar to County Offaly, though to somewhat different extents, where Agriculture was responsible for removal in 88% of cases, Scrub Encroachment in 2% and Housing in 10.3% of cases. In Cavan, by contrast, Agriculture was responsible for a similar 63% of hedge removal, while Housing was responsible for a much greater proportion (24%), followed by Road development (7%) and Scrub Encroachment (6%). Kildare was slightly different than other counties in that Absorption by Forestry/Conversion to Forestry was a large factor in hedgerow removal, at a combined 41%. Figure 3 below offers a visual representation of the breakdown of reasons for hedgerow removal in County Longford.

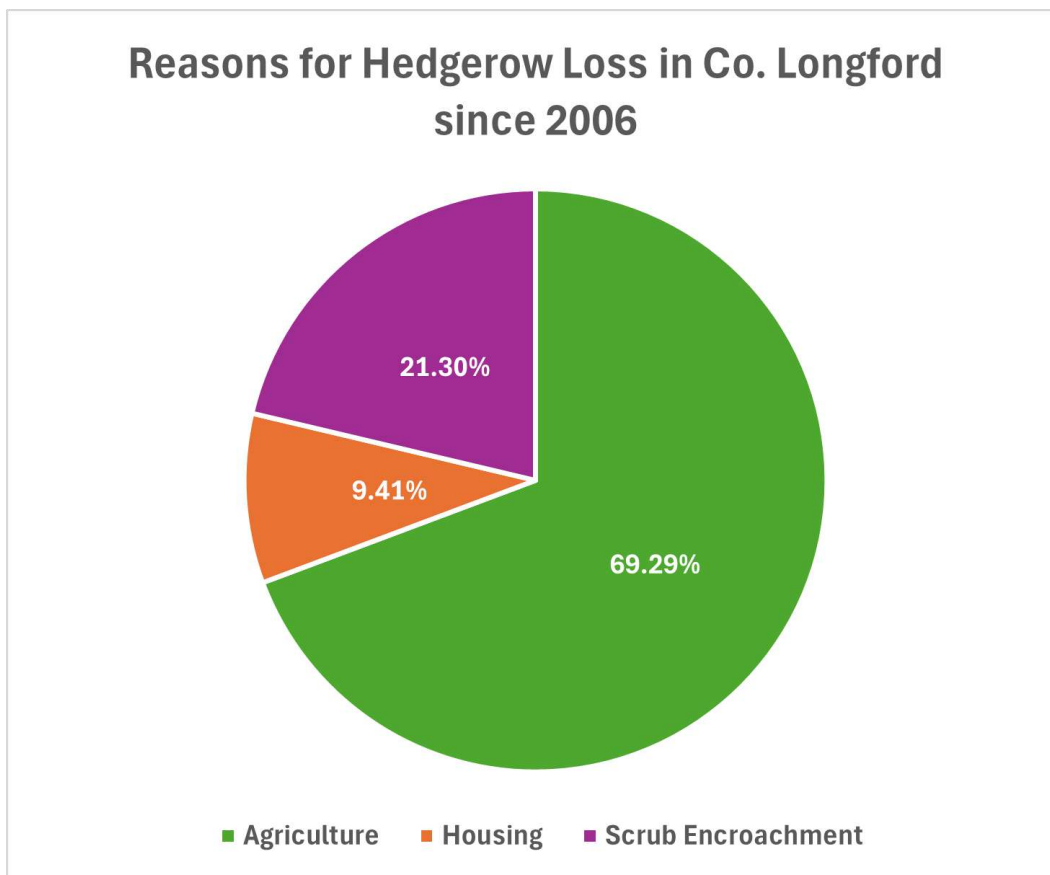


Figure 3 Reasons for the removal of hedges in County Longford.

## 6.2 Composition of Hedgerows in County Longford

The 'species composition' of hedgerows was individually examined in respect of

- I. The shrub layer;
- II. The tree layer, and;

### III. The ground flora or herb layer.

The shrub layer included shrubs such as thorns, woody climbers and tree species that had a shrubby growth form. The tree layer included any trees that had deliberately or incidentally allowed to grow distinct from the shrub layer of the hedge. The ground flora layer was investigated for the presence of 31 herbaceous ground flora species and height species of ferns (and allies) listed in the Hedgerow Appraisal System (see Appendix 2).

## 6.3 Shrub Layer

This category encompasses shrub species found in the hedge layer. A total of 26 distinct species were recorded within the sampled hedges' shrub layer. Amongst these species 19 are native to Ireland, with the exception of Wild Privet, which despite being indigenous to southern Britain, it is now considered naturalised in specific counties in Ireland, namely Dublin, Galway, Tipperary, and Waterford. The diversity of species is a little lower than other county hedgerow surveys, with the total species to native species ratio being 30:26 in Monaghan, 27:22 in Cavan and 30:22 in Offaly, for instance.

In Longford hedgerows, Hawthorn (*Crataegus monogyna*) was found to be the dominant species within the shrub layer as it was present in 86% of sample hedges. Blackthorn (*Prunus spinosa*) was the second most frequent occurring species, recorded in 57% of hedges. Elder (*Sambucus nigra*) occurred in a third of hedgerows (31%). Hawthorn and Blackthorn are the most common two hedgerow shrubs in most other counties also. Elder is the third most common species in Longford, which correlates with Offaly. Gorse (*Ulex europaeus*) and Holly (*Ilex aquifolium*) are present in approx. a quarter of hedgerows (28% and 26% respectively) in County Longford. Gorse, Holly, Ash and Wild Privet are the next most frequent shrubs, which is similar to some extent with Counties Monaghan, Cavan and Offaly. However, Hazel was noticeably very scarce in Longford compared to most other counties, at just 1% (which has reduced by 12% since 2006). In contrast, Hazel features in the top six shrub species for Counties Cavan and Offaly.



Image 5 Elder along a hedgerow between Newtowncashel and Lough Ree.

Willow species were frequent in Longford, cumulatively occurring in 24% of hedgerows across the county. Of these 2% were non-native Willow species. Several other native shrubs were recorded at lower frequencies, but nonetheless contribute important ecological value, for instance Broom (*Cytisus scoparius*), Guelder Rose (*Viburnum opulus*) and Crab Apple (*Malus sylvestris*).

Overall, the main composition of hedgerows has not changed significantly since the previous survey in 2006, with Hawthorn, Blackthorn and Elder remaining the main three species to dominate this habitat across the county. However, several shrub species have declined in frequency to varying extents – i.e. Wild Privet, Hazel (as mentioned earlier), Spindle, Elder, Rowan and Crab Apple. The 2006 survey also noted 5 species (Field Maple, Leylandii, Birch, Dwarf Box, and Wild Plum), which have not been recorded during the latest survey. Notably, there was a decline of 10% in Ash shrubs and a slight increase of 2% in non-native Sycamore since 2006. It is likely many of the Ash shrubs recorded in 2006 have grown into mature Ash trees, while Sycamore has taken advantage of the increasing incidence of gaps and the proliferation of Ash Dieback in the intervening years.

Finally, three invasive species were recorded in the shrub layer of the surveyed hedges. **Non-native species Application based Risk Analysis (NAPRA)** is a computer-based tool that undertakes a score-based risk assessment for non-native species, developed by the European and Mediterranean Plant Protection Organisation (EPPO) and adapted for Ireland and Northern Ireland by Invasive Species Ireland. Snowberry, identified as a 'low impact' invasive with a risk assessment score of 9, was present in 8% of hedges, a 3% increase in this species since 2006. Lilac (*Syringa vulgaris*) recorded once, is categorised as a 'low impact' invasive with a risk assessment score of 8. Wilson's is also generally considered to be a 'low impact' invasive species.

Snowberry was recorded in all hedgerow surveys, with Wilson’s Honeysuckle and Lilac appearing in small quantities. A small amount of Cherry Laurel was recorded elsewhere, e.g Cavan, Wexford and Offaly. A stand of Three-Cornered Leek (*Allium triquetrus*) was recorded in Offaly, while Japanese Knotweed (*Fallopia japonica*) was found in Wexford (both (First Schedule invasive plants). Other invasives such as Cotoneaster, Buddleia and Dogwood were only recorded in the Kildare Hedgerow Survey so far. It is likely that most of these invasives are present in hedgerows across Ireland and they all remain a threat to our native hedgerows. However, the low quantity recorded in Longford’s 2025 hedgerow survey is positive, in addition to the fact that none were First Schedule species.

Table 2. Percentage of woody shrub species occurrence in sampled hedges, 2025 v 2006.

Species name	Common name	Frequency of occurrence in 2025	Frequency of occurrence in 2006
<i>Crataegus monogyna</i>	Hawthorn	86%	99%
<i>Prunus spinosa</i>	Blackthorn	57%	73%
<i>Sambucus nigra</i>	Elder	31%	37%
<i>Ulex europaeus</i>	Gorse	28%	32%
<i>Ilex aquifolium</i>	Holly	26%	28%
<i>Fraxinus excelsior</i>	Ash	25%	35%
* <i>Ligustrum vulgare</i>	Wild Privet	19%	36%
* <i>Acer pseudoplatanus</i>	Sycamore	12%	10%
<i>Salix spp.</i>	Willow	8%	13%
* <i>Symphoricarpos albus</i>	Snowberry	8%	5%
<i>Salix caprea</i>	Goat Willow	5%	//
<i>Salix cinerea</i>	Grey Willow	5%	//
<i>Sorbus aucuparia</i>	Rowan	4%	6%
<i>Salix aurita</i>	Eared Willow	4%	//
<i>Viburnum opulus</i>	Guelder Rose	4%	3%
<i>Cytisus scoparius</i>	Broom	4%	4%
<i>Malus sylvestris</i>	Crab Apple	2%	5%
<i>Taxus baccata</i>	Yew	2%	3%

<i>*Ulmus x hollandica</i>	<i>Dutch Elm</i>	2%	//
<i>*Non-native Salix spp.</i>	<i>Willow (non-native)</i>	2%	//
<i>Fagus Sylvatica</i>	<i>Beech</i>	2%	1%
<i>Corylus avellana</i>	<i>Hazel</i>	1%	13%
<i>Euonymus europaeus</i>	<i>Spindle</i>	1%	6%
<i>Ulmus spp.</i>	<i>Elm</i>	1%	1%
<i>*Syringa vulgaris</i>	<i>Lilac</i>	1%	1%
<i>*Lonicera ligustrina</i>	<i>Wilson's Honeysuckle</i>	1%	//
<i>**Acer campestre</i>	<i>Field Maple</i>	//	1%
<i>**Cupressocyparis leylandii</i>	<i>Leylandii</i>	//	1%
<i>**Betula spp.</i>	<i>Birch</i>	//	3%
<i>**Lonicera nitida</i>	<i>Dwarf box</i>	//	3%
<i>**Prunus domestica</i>	<i>Wild Plum</i>	//	6%

\* denotes non-native species; \*\* denotes species recorded during the 2006 survey, but not the 2025 survey.

## 6.4 Hedge Species Diversity

The 'species diversity' of an individual hedge is defined as the number of shrub species found in a representative sample strip (usually 30 metres) of a hedge. In cases where two strips were recorded (hedges over 100m in length), the average number of species from the two strips was considered to be the representative figure for species diversity for these sampled hedges.

### 6.4.1 Species Diversity Figures

The number (or average number) of shrub species per 30m strip was calculated. The breakdown of percentages for the different levels of species diversity found in the sample hedges is shown in Table 3 below.

Table 3. Average number of shrub species per 30m strip.

No. of target shrub species per sample of hedge	All species (% of hedges)	Native species only (% of hedges)
0	2%	2%
1	7%	11%
2	25%	27%

3	19%	25%
4	25%	23%
5	12%	11%
6	7%	2%
7	4%	0%
8	0%	0%
9	0%	0%
10	0%	0%

The average number of shrub species per 30m strip was 3.41 (2.95 for native species only). 7% of hedges contained only 1 species. The majority of hedges (48%, cumulative) contained 3 or 4 native shrub species.

## 6.5 Townland Boundary Hedges

13% of all hedges surveyed in County Longford were townland boundary hedges. The average species diversity of the townland boundary hedges was also calculated.

Table 4. Average shrubs in baseline and townland boundary hedges in 2025 and 2006.

Hedge Types	All Shrubs	Native Shrubs
<i>All hedges</i>	3.41	2.95
<i>Townland boundary hedges</i>	2.62	2.38
<i>1<sup>st</sup> ed. OS maps</i>	3.24	2.92
Hedge Types	All Trees	Native Trees
<i>All hedges</i>	1.89	1.61
<i>Townland boundary hedges</i>	2.62	2.38
<i>1<sup>st</sup> ed. OS maps</i>	2.00	1.67

Hedges present in 1st edition OS maps were most species diverse when considering all species. However, townland boundary hedges were more species diverse when accounting for native species only. This is in line with the national trend where townland boundary hedges are usually found to be more diverse.

## 6.6 Species Rich Hedges

*“In the UK a species rich hedge is defined as one that contains five or more native woody species on average in a 30m strip.” (UK Biodiversity Action Plan).*

In the UK a species rich hedge is defined as one that contains five or more native woody species on average in a 30m strip (UK Biodiversity Action Plan). In northern England, upland Wales, or Scotland the presence of four or more native species qualifies as being species rich. As Ireland’s native flora overall is less diverse than that of England, Wales and Scotland, four species per 30m length is considered species rich here. To maintain consistency with most other County Hedgerow Surveys, Roses (*Rosa spp.*) were omitted from the count.

In 2006, 15% of hedges had four or more species and would be classified as species-rich by this logic. This number has increased to 36% of hedges classified as species-rich in 2025. Despite this, the frequency of many shrub species has declined in the past two decades, for species such as Wild Privet, Hazel, Elder, Wild Plum, Spindle and Rowan.

### 6.6.1 Climbers and Woody Non-hedge-forming Shrub Species

Climbers and woody non-hedge-forming species were recorded separately from the shrub layer. Bramble (*Rubus fruticosus agg.*) and Dog rose (*Rosa canina*) are widespread, thorny hedgerow shrubs which provide abundant nectar and fruit for animals which live in and visit the hedgerows. Bramble is an early coloniser of hedgerows, while Dog rose is often associated with those long-established. Bramble (*Rubus fruticosus agg.*) was recorded as being present in a total of 95% of the sample 30m strips in County Longford hedges surveyed. Dog rose (*Rosa canina*) was recorded in 37% of hedges, with a pink form of Dog Rose noted in 23% of hedges, (a total of 60%).

Honeysuckle (*Lonicera periclymenum*) occurred in 29% of the County Longford 30m sample strips. Frequencies of Bramble and Dog Rose were similar for Counties Longford, Monaghan, Cavan and Kildare, while Offaly scored higher for Dog Rose (78%). Honeysuckle was more common in Monaghan (42%) and Cavan (53.7%) than Longford, but less common in Offaly (11%) and Kildare (7%). Other climbers recorded in Longford included Hedge Bindweed (*Calystegia sepium*, 8%), Bittersweet Nightshade (*Solanum dulcamara*, 2%) and



Image 6 Pink Dog Rose (*Rosa canina agg.*) noted in the survey

Raspberry (*Rubus idaeus*, 1%). Recordings of Climbers and Woody non-hedge-forming shrub species are presented in Table 5 below.

Table 5. Frequency of occurrence of climbers and woody non-hedge-forming species in sampled hedges.

Species Name	Common Name	Frequency of occurrence (%)
<i>Rubus fruticosus</i> spp.	Bramble	95%
<i>Rosa canina</i> agg.	Dog Rose	37%
<i>Lonicera periclymenum</i>	Honeysuckle	29%
<i>Rosa canina</i> agg.	Dog Rose (Pink)	23%
<i>Calystegia sepium</i>	Hedge Bindweed	8%
<i>Solanum dulcamara</i>	Bittersweet Nightshade	2%
<i>Rubus idaeus</i>	Raspberry	1%

## 6.7 Tree Layer

"Hedgerow trees" refer to any trees within a hedge that have been intentionally or incidentally allowed to grow separately from the hedge's shrub layer. A total of 20 tree species were recorded, 15 of which were native. The most common hedgerow tree in County Longford is Ash (*Fraxinus excelsior*), found in 72% of all hedges. This is similar to Co. Monaghan (71%), but higher than Offaly (60%), Cavan (54%) and Kildare (50%). Hawthorn (*Crataegus monogyna*, 39%) and Sycamore (*Acer pseudoplatanus*, 24%) are the next most common tree species in County Longford. This correlates with other counties such as Offaly and Kildare, though Willow species still outnumber Sycamore in the wetter counties of Cavan and Monaghan. The Longford 2025 results for Ash and Sycamore mirror closely the findings of the previous survey, in which Ash was recorded in 75% of hedges. In 2006, Sycamore was reported to be the next most common occurring tree species, at a frequency of 17%. Hawthorn was not included as a tree species in 2006 but due to its distinct growth upwards from the shrub layer since then, it was recorded as a tree in the 2025 survey.



Image 7 One of the many hedgerows dominated by Ash trees in Co. Longford.

Notably, the 2006 survey highlighted Rowan (*Sorbus aucuparia*) as a distinctive element of the Longford hedgerow landscape, occurring in 6% of hedges and noted as occurring more frequently than any other county at the time. In 2025, Rowan was recorded at a lower frequency (3%) and is now below levels observed in recent surveys in Cavan (7%) and Monaghan (5.6%). As with the Hazel shrub, the Hazel trees were lower in frequency in Longford than in most other counties. A small number of Oak trees were recorded in the 2006 hedgerow survey; however, no Oak species (*Quercus spp.*) were recorded in the 2005 survey at all. This contrasts with results from other counties, where Oaks were recorded in recent years to varying extents. Table 6 lists the tree species recorded in 2025 and their frequency of occurrence.

Table 6. Frequency of occurrence of tree species occurrence in sampled hedges.

Species Name	Common Name	Frequency of occurrence (%)
<i>Fraxinus excelsior</i>	European Ash	72%
<i>Crataegus monogyna</i>	Hawthorn	39%
<i>Acer psedoplatanus</i>	Sycamore	24%
<i>Sambucus nigra</i>	Elder	9%
<i>Ilex aquifolium</i>	Common Holly	8%
<i>Salix cinerea</i>	Grey Willow	8%
<i>Corylus avellana</i>	Hazel	8%
<i>Salix spp.</i>	Willow spp.	4%
<i>Sorbus aucuparia</i>	Rowan	3%
<i>Salix caprea</i>	Goat Willow	3%

<i>Betula spp.</i>	Birch spp.	2%
<i>Fagus sylvatica</i>	Beech	2%
<i>Picea sitchensis</i>	Sitka Spruce	2%
<i>Ulmus glabra</i>	Wych Elm	1%
<i>Alnus glutinosa</i>	Black Alder	1%
<i>Betula pendula</i>	Silver Birch	1%
<i>Malus sylvestris</i>	European Crab Apple	1%
<i>Pinus sylvestris</i>	Scots Pine	1%
<i>Juglans regia</i>	English Walnut	1%
<i>Populus alba</i>	White Poplar	1%

Overall, in Longford, hedgerow trees were present in 83% of the hedges surveyed, with only 17% of hedges having no trees at all. 32% of hedges had few trees (up to 15% canopy cover), while a quarter of sampled hedges (25%) were classified as a line of trees, where over 75% of the canopy is dominated by trees. This represents a significant increase in this category (17% increase) since 2006, which could be attributed to lack of management, allowing hedges to transition into treelines over time. In fact, a further 7% of surveyed hedges contained abundant trees (30-75% tree composition). This is 11% lower than in 2006, indicating that many hedges previously supporting abundant trees have now become dominated by trees, shifting into the “treeline” category in the last 19 years. This proved to be a similar trend in hedgerows across several recent county hedgerow surveys.

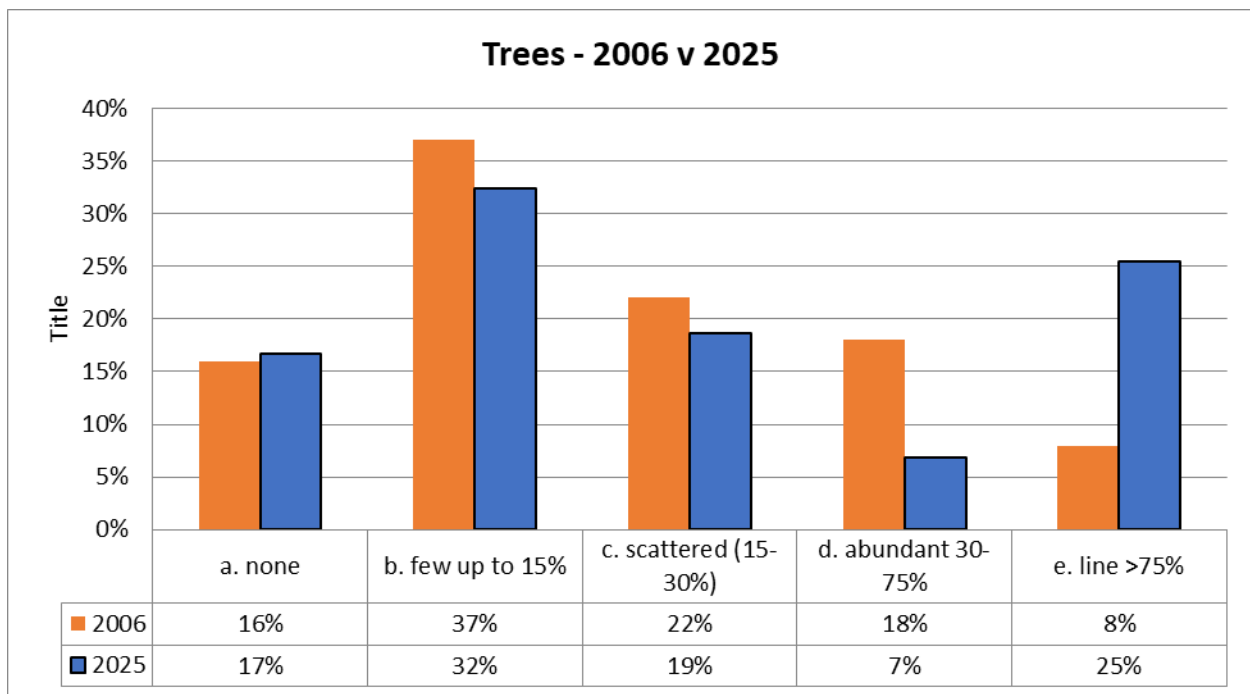


Figure 4 Comparison of trees for hedges surveyed in 2006 vs 2025.

### 6.7.1 Tree Species Diversity

Tree species diversity has remained stable within the last 19 years. Although 20 tree species were recorded in 2025 compared with 16 species in the 2006 survey, this reflects a difference in how species were categorised rather than an actual increase in diversity. The current survey differentiates between individual Willow species, and separates conifers into Sitka Spruce and Scots Pine, whereas the 2006 results grouped all Willows together and reported all conifers under one heading. The total number of species therefore has remained constant between surveys.

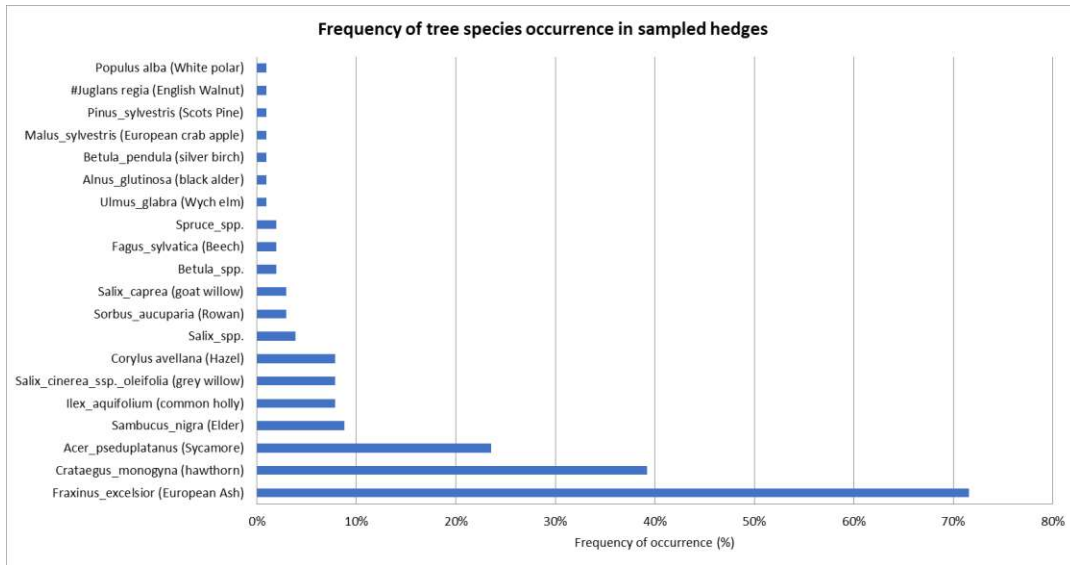


Figure 5. Percentage occurrence of tree species in sampled hedges in 2025.

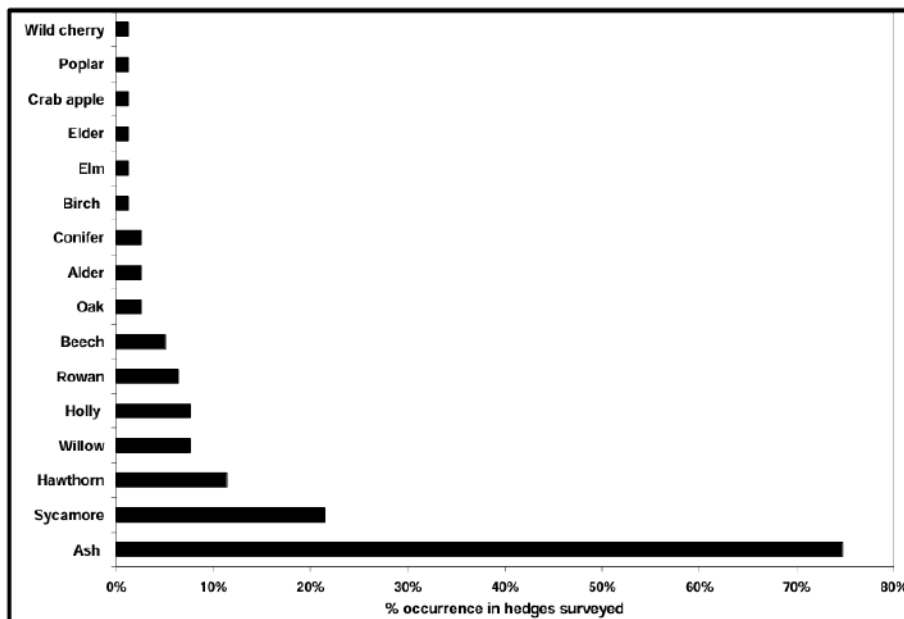


Figure 6. Percentage occurrence of tree species in sampled hedges in 2006.

47% of the hedges where trees were recorded had just one tree species in 2006. This reduced to 24% in 2025, showing a decrease in hedges which contain only one tree species. This could be connected with Ash Dieback, with the reduction in Ash canopy allowing other tree species to proliferate. A further 28% contained two tree species, 21% had three species and 11% had four species or more. This is an increase of 8% from 2006 when only 3% had four or more species. The average number of tree species per 30m strip was 1.89 (1.61 for favourable species only<sup>1</sup>).

### 6.7.2 Ash Dieback Disease

Ash Dieback disease is a highly destructive disease caused by the invasive fungal pathogen *Hymenoscyphus fraxineus*. It was first detected in the Republic of Ireland in October 2012 on plants imported from continental Europe. The disease is now prevalent throughout most of the island of Ireland and is likely to cause the death of the majority of Ash trees over the next two decades. This will be significant for Longford hedgerows as Ash trees occurred in 72% of the hedgerows surveyed in 2025.



*Image 8 An Ash tree badly affected by Ash Dieback disease*

Where Ash trees occurred in the hedge, four categories were used which identify the progress of the disease in the tree. Where there were multiple trees within the 30metre stretch, the category of the tree which has most progressed with the disease was recorded. Categories used are as follows:

---

<sup>1</sup> As referred to in Appendix D of the Hedgerow Appraisal System Best Practice Guidance on Hedgerow Surveying, Data Collation and Appraisal.

**Category 1 (T1)** - 0-25% dieback - A healthy tree with a good healthy leaf coverage. There may be minor signs of disease e.g. early leaf fall, some leaf browning.

**Category 2 (T2)** - 25-50% dieback - A tree starting to show signs of disease. Reduced leaf coverage/crown density with some other indicators: some leaf browning, lesions or brown keys.

**Category 3 (T3)** - 50-75% dieback - A tree which is clearly diseased - Significantly reduced leaf coverage/crown density. Tips of branches showing die back, brown keys evident and foliage becomes 'clumpy'.

**Category 4 (T4)** - 75-100% dieback - A tree which is clearly in terminal decline. Extremely sparse or no leaf coverage/crown density. Large dead branches may be present.

Only 5.9% of treelines were recorded as having healthy trees (i.e. no signs of Ash Dieback). This equates to just four hedgerows where Ash trees were recorded – near Ballinamuck (LD0803 and LD0809), Killashee (LD0301) and Newtownforbes (LD0406a). Just 9.8% of treelines with Ash trees surveyed showed only minor signs of the disease. It is worth noting that several of the Ashes recorded with only minor signs were located in the 1km<sup>2</sup> sample square (LD01) by Lough Ree. Ash trees observed within this sample square in general, were noted to be healthier and more robust than in most other parts of County Longford. It is notable that this area is more remote than most of the county. It is also linked to the Lough Ree SAC, with less intensively managed commonage land, mostly grazed by cattle and sheep. Other pockets where 'minor' signs were recorded were located outside Ballymahon (LD0201, LD0203), near Ardagh (LD0604, LD0608) and near Taghshinny (LD0510).

Unfortunately, the majority of Ash trees recorded in hedgerows were noted as having significant Ash Dieback (23.5%), while 22.5% were recorded as containing trees which are in terminal decline with severe Dieback present. In contrast with other counties, while Longford is faring slightly better than Cavan in terms of 'Healthy' trees or those with 'Minor' Ash Dieback, it is behind Counties Cavan, Wexford and Offaly in terms of Ash trees with 'Significant' and 'Severe' Ash Dieback. Results for Ash Dieback in County Longford (2025) are shown in the graph below.

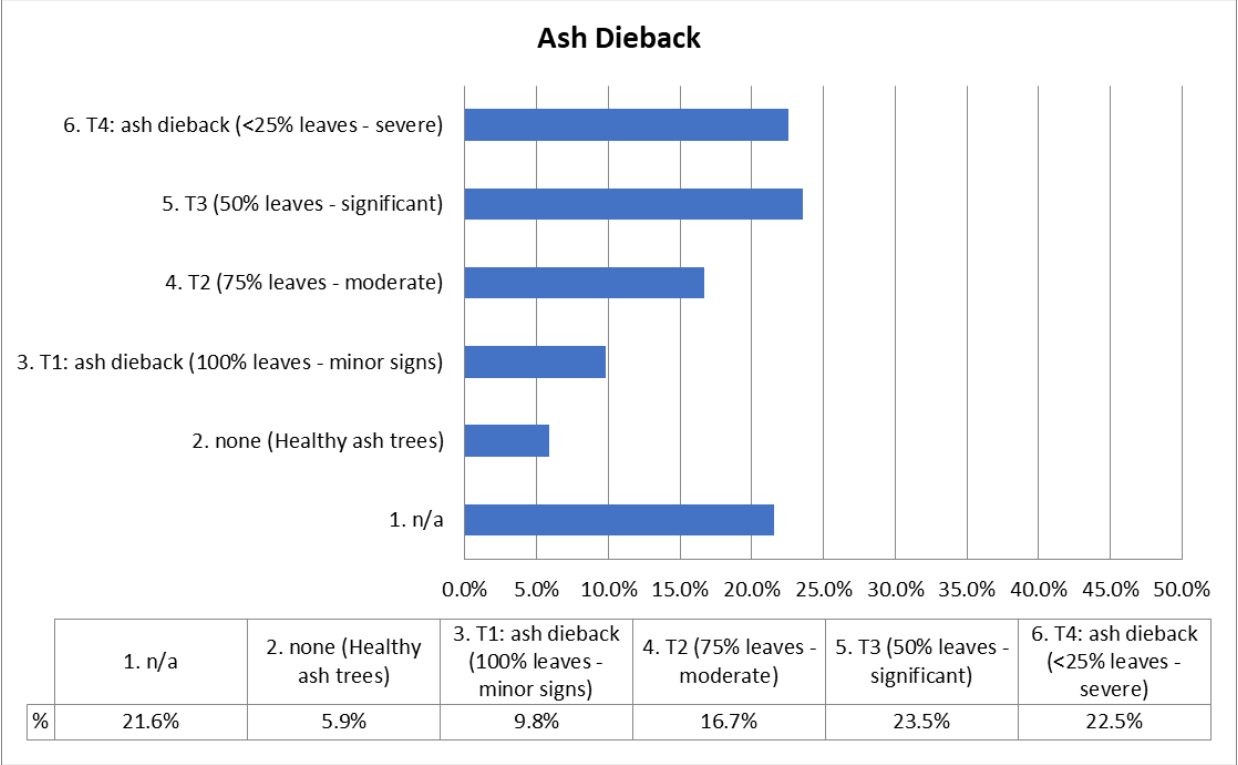


Figure 7. Stages and extent of Ash Dieback in County Longford.

### 6.8 Ground Flora

The ground flora of each 30m sample strip was investigated for the presence of 32 herbaceous ground flora species and eight species of ferns (and allies) listed in the Heritage Council’s Hedgerow Appraisal System by Neil Foulkes et al. (2012). These are indicator species which may suggest a greater age and links to old, established woodland. Nutrient-rich flora species (N Nettles, Docks and Cleavers) and noxious weeds (Common Ragwort, Spear/Creeping/Field Thistle and Curled/Broad-leaved Dock) were also recorded. A comprehensive assessment of all ground flora is considered too time consuming for most hedgerow surveys. Species counts form part of the Ecological Significance criteria in the Appraisal System. Just 12 of the 32 indicator herbaceous species were recorded during the survey. The frequency of occurrence of each herb species recorded is detailed in Table 7 below.



Image 9 Herb Robert - most frequent indicator species

Table 7 Frequency of occurrence of herb species in County Longford

<b>Botanical name</b>	<b>Common name</b>	<b>Frequency of occurrence (%)</b>
<i>Galium aparine</i>	Cleavers	54%
<i>Geranium robertianum</i>	Herb Robert	50%
<i>Urtica spp.</i>	Nettle	50%
<i>Veronica spp.</i>	Speedwell	33%
<i>Anthriscus sylvestris</i>	Cow Parsley	25%
<i>Rumex spp.</i>	Dock	23%
<i>Sonchus spp.</i>	Sow Thistle	23%
<i>Glechoma hederacea</i>	Ground Ivy (wildflower)	13%
<i>Arum maculatum</i>	Lords and Ladies	12%
<i>Stachy sylvatica</i>	Hedge Woundwort	11%
<i>Viola spp.</i>	Dog violet	8%
<i>Digitalis purpurea</i>	Foxglove	7%
<i>Geum urbanum</i>	Wood avens	7%
<i>Lapsana communis</i>	Nipplewort	5%
<i>Primula vulgaris</i>	Primrose	5%
<i>Fragaria vesca</i>	Wild Strawberry	4%
<i>Hypericum androsaemum</i>	Tutsan	4%
<i>Potentilla sterilis</i>	Barren Strawberry	2%
<i>Hyacinthoides non-scripta</i>	Common Bluebell	1%
<i>Lysimachia nemorum</i>	Yellow Pimpernel	1%
<i>Iris pseudacorus</i>	Yellow Flag Iris	1%
<i>Vicia sativa agg.</i>	Common Vetch	1%

Three nutrient-rich species featured in the top six flora species recorded in the hedgerows surveyed in County Longford. Cleavers were very abundant, featuring in 54% of hedgerows, as were Nettles (50%) and to a somewhat lesser extent, Docks (23%). The indicator flora species which occurred most was Herb

Robert, by far, which was found in 50% of hedgerows surveyed. This was followed by Speedwell sp. (33%) and Cow Parsley (25%). There were just three invasive plant species recorded in the 2025 Longford hedgerow surveys – Snowberry, Lilac and Wilson’s Honeysuckle – which are considered ‘low’ impact’ and are not First Schedule invasives. The graph below gives an overall visual breakdown of herb species occurrence.

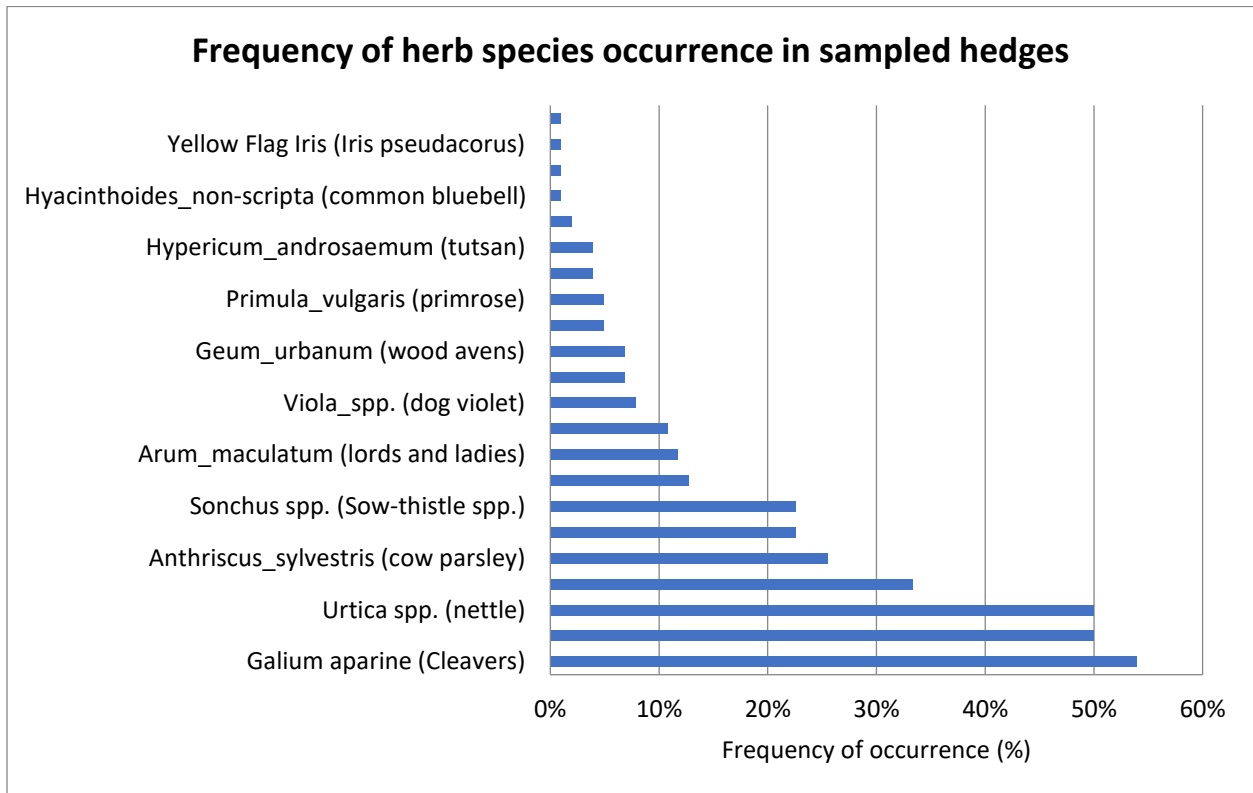


Figure 8 Graph showing the frequency of herb species occurring in Longford’s sample hedges.

The average number of indicator or ‘target’ herb species per hedge emerged as 1.87, which is deemed of ‘Low Significance’ in the context of ground flora, and is relatively low compared with other county hedgerow surveys, such as Cavan (which scored 2.53), Monaghan (2.43) and Offaly (2.37). However, Longford fared slightly better than Kildare and Wexford (each scored an average of 1.4). The average for target herb species in Longford rose to 2.92 for Townland Boundary hedgerows, however, which is deemed ‘Significant’, and 2.02 for hedgerows which existed on the 1st Edition OSI maps, which is classed as ‘Moderately Significant’. In terms of target nutrient-rich species, the average number recorded per hedge was 1.9, which slightly exceeds the average figure for indicator flora and shows the extent of nutrient-rich growth along hedgerows in the county.

Just 9% of sample hedgerows contained 4 or 5 herb species, meaning they are classed as 'Moderately Significant', while 3% contained 6 or 7 indicator herb species ('Significant'). There were 2 to 3 herb species in 43% of hedgerows surveyed, classed as 'Slightly Significant'. There was zero or just 1 indicator herb species present in 46% of hedgerows surveyed, which denotes 'Low Significance' for herbs.

In the category 'Ferns and Allies', 10 fern species are included on the Ground Flora species list, along with the Horsetail varieties Great Horsetail (*Equisetum telematia*) and Wood Horsetail (*E. sylvaticum*). Only 1% of hedgerows surveyed in Longford could be deemed 'Significant' for Ground Flora regarding ferns and allies, as they contained three fern species. The majority of hedges surveyed contained 1 or 2 fern species (69%), while 30% contained none. This contrasts with wetter counties such as Cavan (where 28% of hedgerows surveyed had 3-4 fern species) and Monaghan (where 12% of hedgerows had 3 fern species). However, Longford did fare better in this category than counties such as Kildare, Offaly and Wexford, where over 75% of sample hedges had no ferns at all. Table 8 shows the average number of target Herb and Fern Species recorded in Co. Longford during the 2025 hedgerow surveys.



Image 10 Nipplewort - a less frequent herb species



Image 11 A wet ditch with an abundance of Male Ferns in Co. Longford.

Table 8 Average number of target Herb and Fern Species in Co. Longford

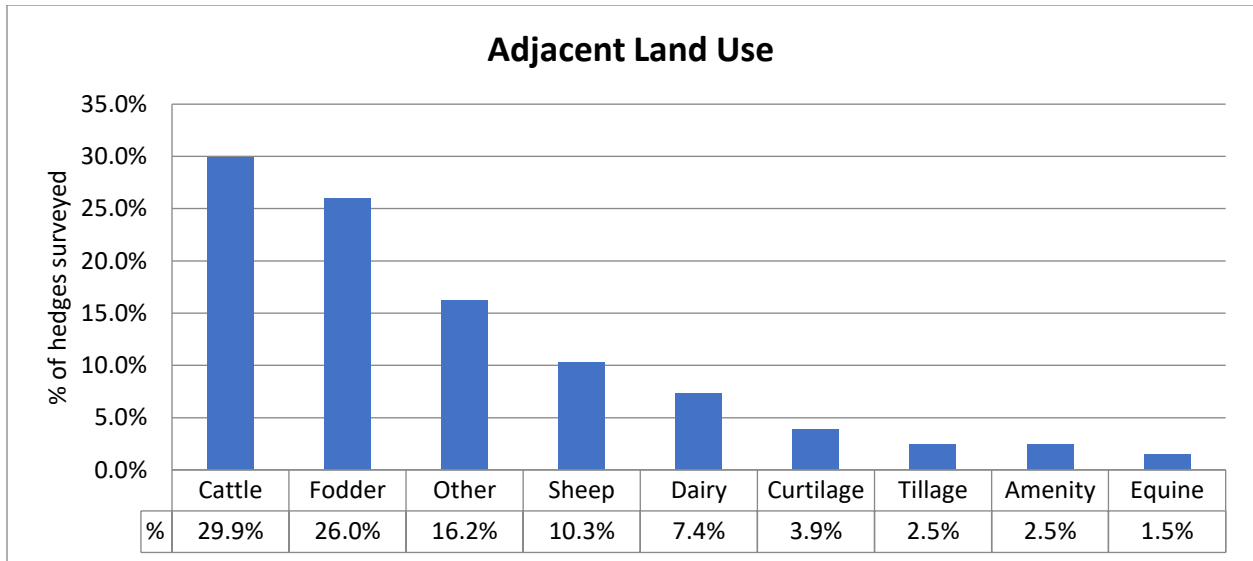
<b>Average no. of target species</b>	<b>Herbaceous species</b>	<b>Ferns and allies</b>
0	20%	30%
1	26%	44%
2	28%	25%
3	15%	1%
4	3%	0%
5	6%	0%
6	2%	0%
7	1%	0%

## 6.9 Adjacent Land

The biodiversity value of hedges is related to the general ecology of an area and their connection with other natural and semi-natural habitats. In order to examine the overall ecological context of County Longford’s hedgerow resource, a record is made of both the habitat classification of land adjacent to the sampled hedge and any link the hedge makes with other habitat types. Farming types on adjacent land was recorded and habitats were classified to level II Fossitt classification (Fossitt, 2000).

### 6.9.1 Farm / Land Use

To provide agricultural context for the sampled hedgerows, the type of farming or land use adjacent to each hedge was recorded. The results are shown in Figure 9.



*Figure 9 Graph showing adjacent land use recorded for the sampled hedgerows.*

The most common adjacent land use recorded was agricultural at 94.6% (cumulative). Cattle farming was the predominant type, accounting for 29.9%, followed by fodder at 53%. A total of 16.2% of adjacent land was classed as 'Other', while Sheep farming accounted for 10.3% and Dairy farming at 7.4%. Tillage comprised just 2.5%, while Equine was recorded at 1.5%. Curtilage and Amenity were the remaining land uses recorded, at 3.9% and 2.5% respectively.



*Image 12 Cattle farming was the most common land use in Co. Longford in 2025.*

## 6.9.2 Adjacent Land Class

The predominant land class type adjacent to the surveyed hedges in 2025 was improved grassland, accounting for 76.5% of habitats recorded. This result shows that improved grassland cover has increased by just over 20% in the past two decades in Co. Longford, which is a significant figure. Improved grassland represents the most prevalent form of grassland in the country, as it constitutes a sizeable portion of Ireland's productive agricultural land. This type of grassland is characterised by low species diversity and intensive management, with the grassland regularly reseeded, fertilised, and often subjected to heavy grazing, leading to a reduction in species diversity. Semi-natural grassland also encompasses grass leys that are incorporated into arable rotations, as well as areas of amenity grassland that are enhanced and maintained specifically for recreational, amenity, or sporting purposes, rather than for agricultural use.

Curtilage was the second most recorded adjacent habitat type at 10.8%. This category includes all buildings, ornamental flower beds and borders, and areas of land that are covered with artificial surfaces such as tarmac, cement, or astroturf.

Semi-natural grasslands were observed in 7.4% of the fields adjacent to hedges. This shows that semi-natural grasslands have reduced by 20% since 2006. This would also align with the 20.5% increase in improved grassland as mentioned above. Semi-natural grasslands have declined considerably over the past two decades across all counties, which has been reflected in recent county hedgerow surveys. Longford is now on par with Counties Kildare (7%) and Cavan (8%) in terms of



*Image 13 Common Spotted Orchids in a semi-natural grassland at Ledwithstown*

remaining semi-natural grassland but is doing marginally better than Counties Offaly (3.9%) and Wexford (2.7%). Only County Monaghan is faring relatively better than other counties in this regard, with 14% Semi-natural grassland remaining. However, its semi-natural grassland extent has declined substantially in the past two decades too. Semi-natural grasslands generally contain a higher diversity of herb species when compared with improved grassland. They may receive some fertilisation, but they are not subject to intensive management and are not regularly reseeded. The level of improvement and grazing can influence sward composition, leading to reduced species diversity and increased representation of

‘agricultural’ herbs, rather than the natural flora that would appear with less interference. Low fertiliser input and carefully managed grazing generally leads to best results with regard to greater species diversity.

The least common types of land class recorded for the sample hedgerows in County Longford were Non-native woodland (2.9%) and Arable crops (2.5%). Arable crops include a variety of cereals and root vegetables or energy crops – this category has increased by over 2% since 2006, when no arable land was recorded adjacent to hedgerows surveyed. Non-native woodland recorded at the sample sites was composed of a mix of conifer plantation, mixed conifer woodland and mixed broadleaved/conifer woodland. This land class type has increased by 1% in the past two decades. Semi-natural woodland or Scrub were not recorded at any of the survey sites in 2025, a reduction of 1% since 2006. A graph showing the comparison of adjacent land class types between 2006 and 2025 is shown in Figure 10 below.

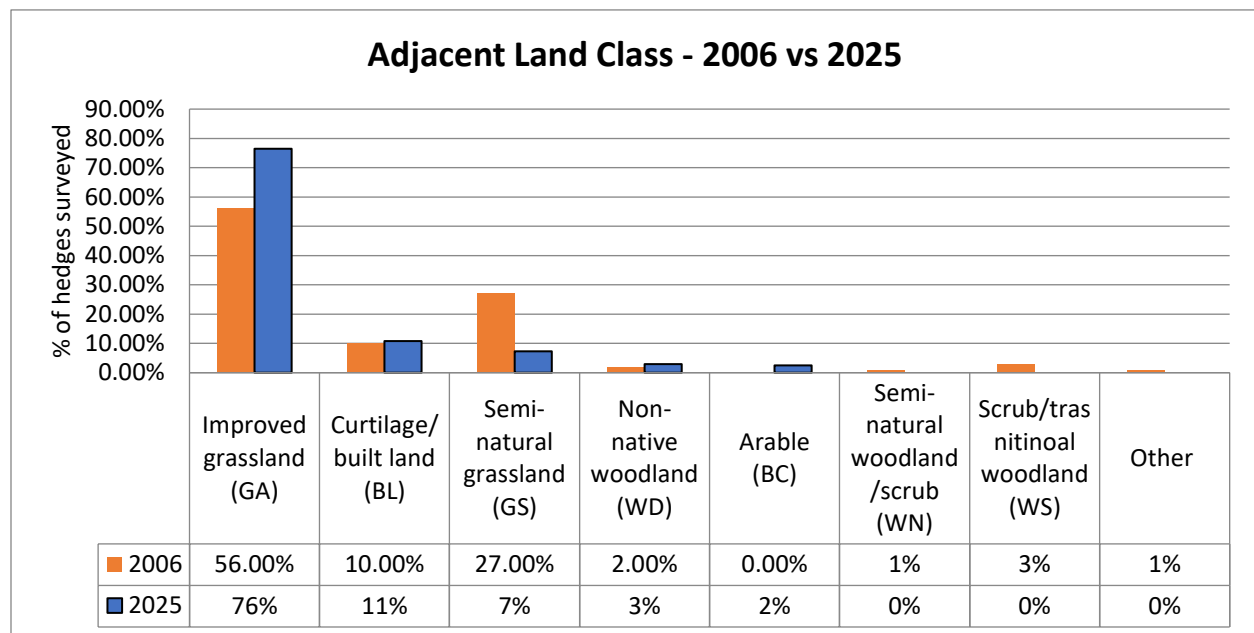


Figure 10 Graph showing comparison on adjacent land class types between 2006 and 2025.

### Links with Other Habitat Types

One of the primary reasons hedgerows are highly regarded for their ecological value is due to their role as wildlife corridors. They facilitate the movement and distribution of wild flora and fauna across the landscape, and their connectivity can vary considerably, depending on the habitats they link. Hedgerows that are well-connected to a wider network of hedges or other semi-natural or natural habitats are thought to support greater biodiversity. During the survey, observations were made regarding how each hedgerow is interconnected with surrounding habitat types. In County Longford, the sampled hedgerows were found to connect to seven distinct basic habitat types, primarily consisting of other hedgerows and treelines (86%).

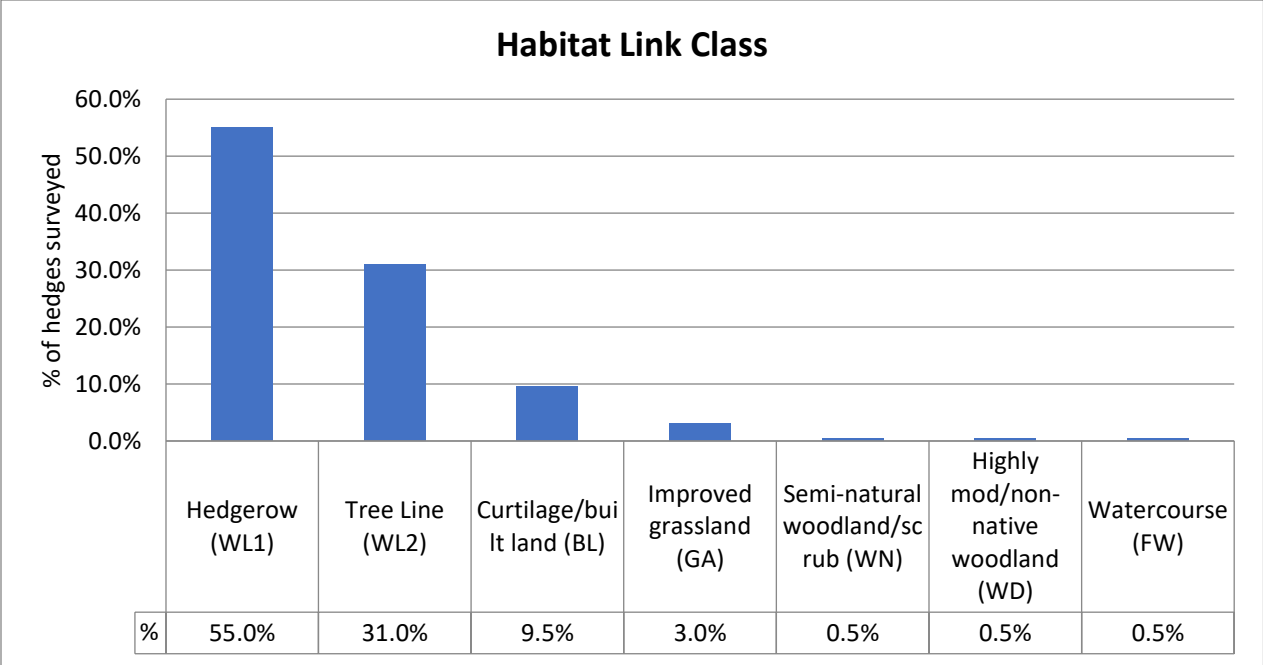


Figure 11 A breakdown of the habitats linked with the hedgerows surveyed in Co. Longford.

The remaining linked habitats consisted of Curtilage/built land (9.5%), improved grassland (3%), woodlands (native and non-native) and scrub (1%) and watercourses (0.5%). The comparison of results is shown visually in Figure 11 above. While curtilage/built land is less of an issue in Co. Longford than in some other counties surveyed to date (e.g. Kildare, Offaly), it is important to be mindful of keeping fragmentation of hedgerows to a minimum in the years ahead. This should also be kept in mind when considering that large gaps have formed, or have been purposely created in some cases, on agricultural land. The importance of connecting existing natural habitats may be as critical, if not more so, than the expansion or creation of new habitats.

### 6.9.3 Historical context of sampled hedges

An examination of the first and second edition maps (6" to the mile) produced by the Ordnance Survey can give an indication as to the period of origin of individual hedgerows (Geohive, 2021).

#### Hedgerow History

In order to try and assess the period of origin for sampled hedgerows, all sample hedges were compared with boundaries marked on the first and second edition Ordnance Survey maps (6" to 1 mile) dating from 1834-35 and 1909-10 respectively. It cannot be known for certain if the boundaries marked on these maps were hedgerows, but the absence of any boundary marking would most likely indicate the absence of a hedgerow at that period. Hedges that do not present on the first edition maps from 1834-35 can safely be assumed to be less than 200 years old (Foulkes, 2010). 63% of Longford hedges were present on 1st edition OS maps, 34% were present on 2nd edition maps and 5% of hedges in the survey were not present

on either 1st (1834-35) or 2nd edition OS maps. Four hedges were linked to features on the Records of Monuments and Places (RMP), established under the National Monuments Amendment Act 1994.

### Townland Boundary Hedges

The data.gov townland boundary dataset (shapefile) was used to identify townland boundary hedges in GIS. Townland boundary hedges accounted for 13% of the surveyed hedgerows.

## 6.10 Construction of Hedgerows in County Longford

‘Construction’ relates to the physical infrastructure of the hedge. This survey recorded details of:

- whether the hedgerow was still functioning as a boundary i.e. stock proofing
- the outline of the hedge (with “linear” representing more or less straight lines and “nonlinear” covering any that were irregular, zig-zag or curved);
- the linearity of the hedgerow shrubs (single line of plants, double line or irregular pattern),
- Whether the hedgerow should be classified as a treeline or not, and;
- the details and dimensions of any associated features such as banks, walls and drains.

This survey found that the main form of hedgerow construction was a linear (75%), single line of shrubs upon an earthen bank (61%). Nearly half of the hedgerows have an associated internal drain (46%).

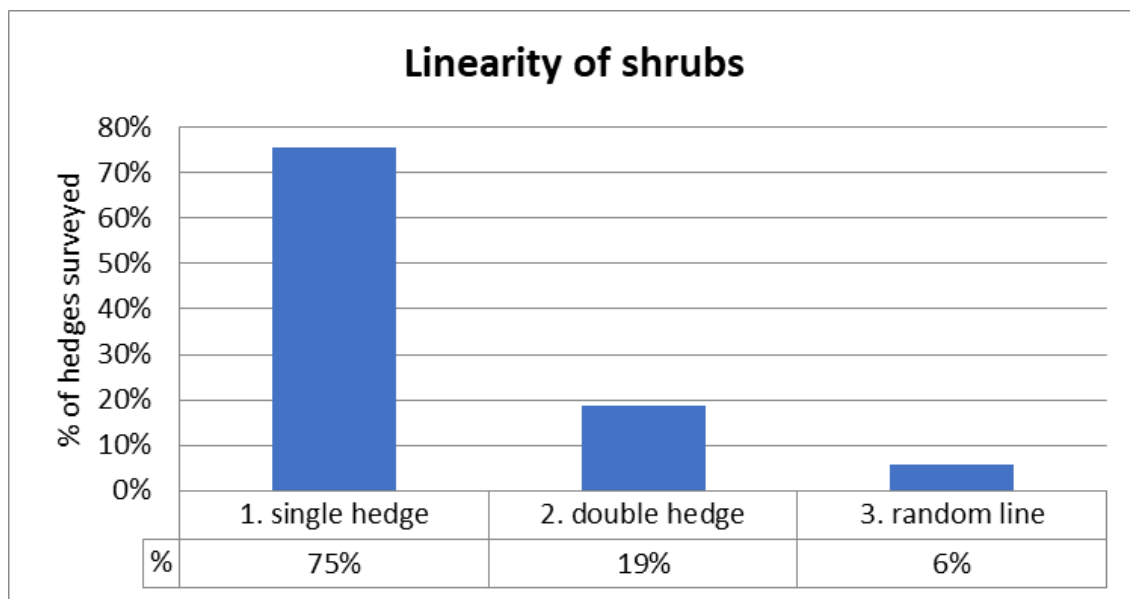


Figure 12. Linearity of shrubs within sampled hedgerows.

A single or double line of shrubs is generally an indicator of a planted origin for hedgerows and indeed most of the sampled hedges fell into these two categories, with a much greater proportion (75%) being of a single line. Less common was a double hedge, providing a more complex habitat which supports a wider range of wildlife, recorded in 19% of sampled hedges. A random line can be a sign that the hedge

may have originally been woodland or scrub that was cut back over time into a narrow strip, though these were in the minority (6%). The data showed similar results for both years within the sample areas.

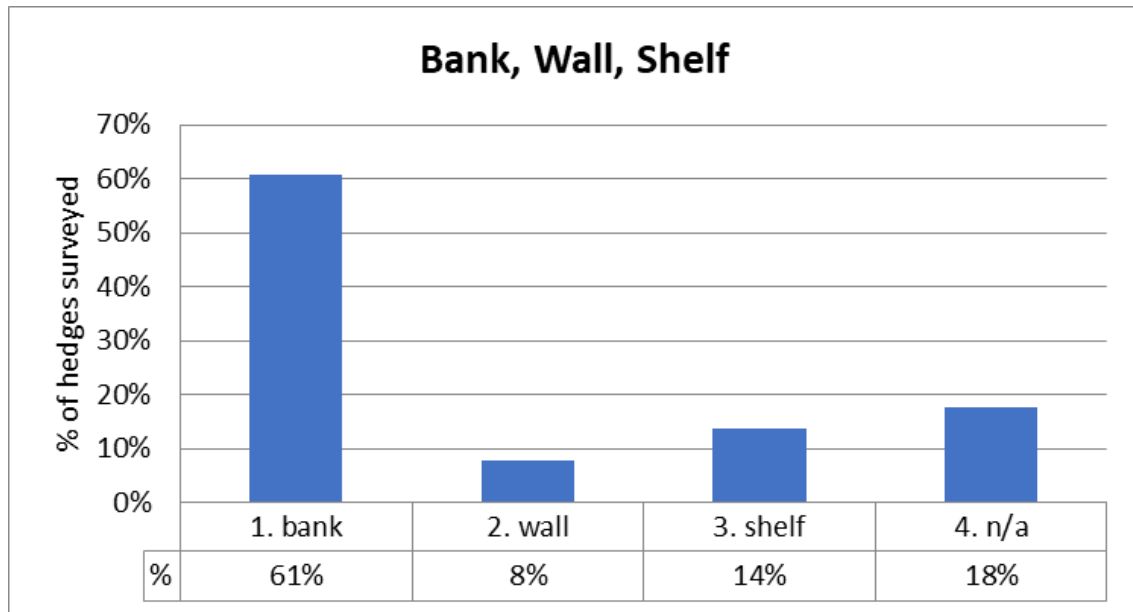


Figure 13. Sampled hedgerows with an associated bank, wall or shelf.

More than half of the sampled hedges were associated with an earth bank, while a further 14% were associated with a shelf, a similar feature to a bank, but occurring where there is a change in ground level between the adjoining fields. Only 8% of the hedgerows occurred on a stone wall. In some cases, these may represent former boundary walls where maintenance was discontinued and gradually trees and shrubs became established. Stone walls were recorded most frequently towards Lough Ree and the Southwestern part of the county. Approximately 18% of hedgerows occurred on flat ground with no evident bank or wall. The height of the bank/wall/shelf was also recorded, with most (40%) being less than 0.5 m, 29% being greater than 0.5 m but less than 1 m and 15% being greater than 1 m. 16% were not applicable due to lack of a bank etc. This figure differs slightly from the 16% indicated above, however this is likely due to observer error, with some very small banks potentially being recorded as “n/a”.



Image 14 Remnant hedge along a stone wall near Lough Ree

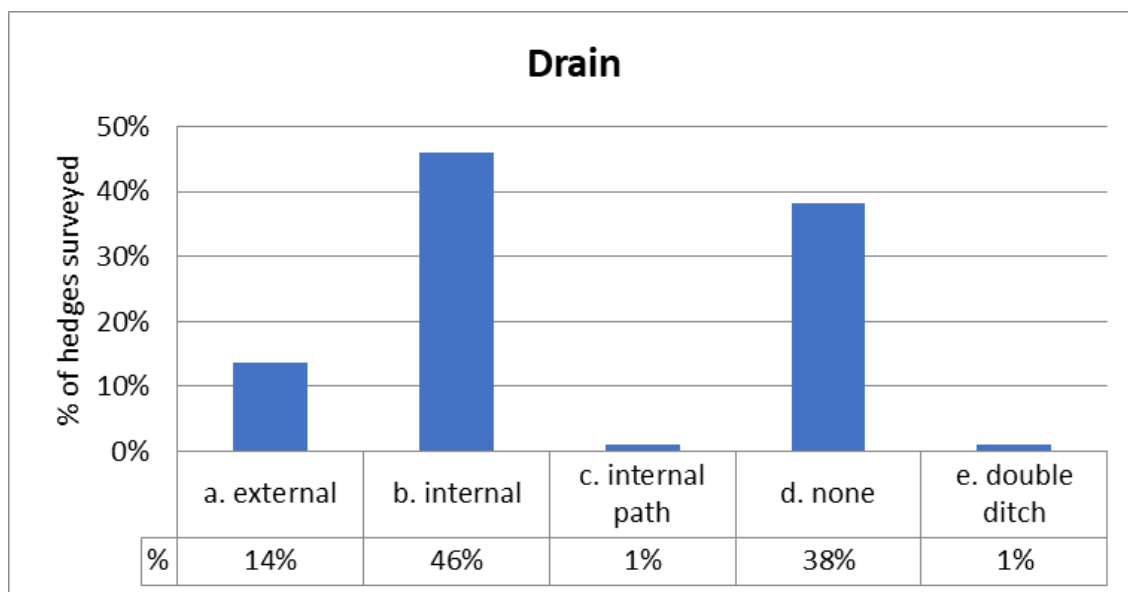


Figure 14. Sampled hedgerows with an associated drain.

Approximately 60% of the surveyed hedgerows were associated with a drain, either external (14%) or internal (46%) to the hedgerow. Only one hedgerow featured an internal pathway, and another was associated with a double ditch. Drains were also categorised by size, although no strict definitions were applied and classifications were based on the surveyor’s discretion. Overall, 11% of drains were recorded as small, 29% as medium, and 23% as large. Of these, 18% were dry at the time of survey, while 45% contained standing or flowing water.

## 6.11 Structure and Condition of Hedges in County Longford

Detailing the ‘structure’ of the sampled hedgerows involves recording information on the average height, the average width, the cross-sectional profile, the percentage of gaps, the woody structure of the hedge base, and the presence of hedgerow trees. These features are indicators of the agricultural, ecological and landscape status of the hedge. Assessing the ‘condition’ of the hedge involves considering qualities such as bank/wall degradation, tree age composition, and overall vigour. These factors can be indicators of the long-term viability or sustainability of the hedge.

### 6.11.1 Hedge Height

Research indicates that taller hedges are better from a wildlife perspective. Hedgerow height is largely determined by management methods, but height can also be influenced by altitude, exposure and soil quality. Figure 15 below compares hedge height from 2006 and 2025. To facilitate comparison with the 2006 data, the categories 4 – 5m and 5.5m+ were merged.

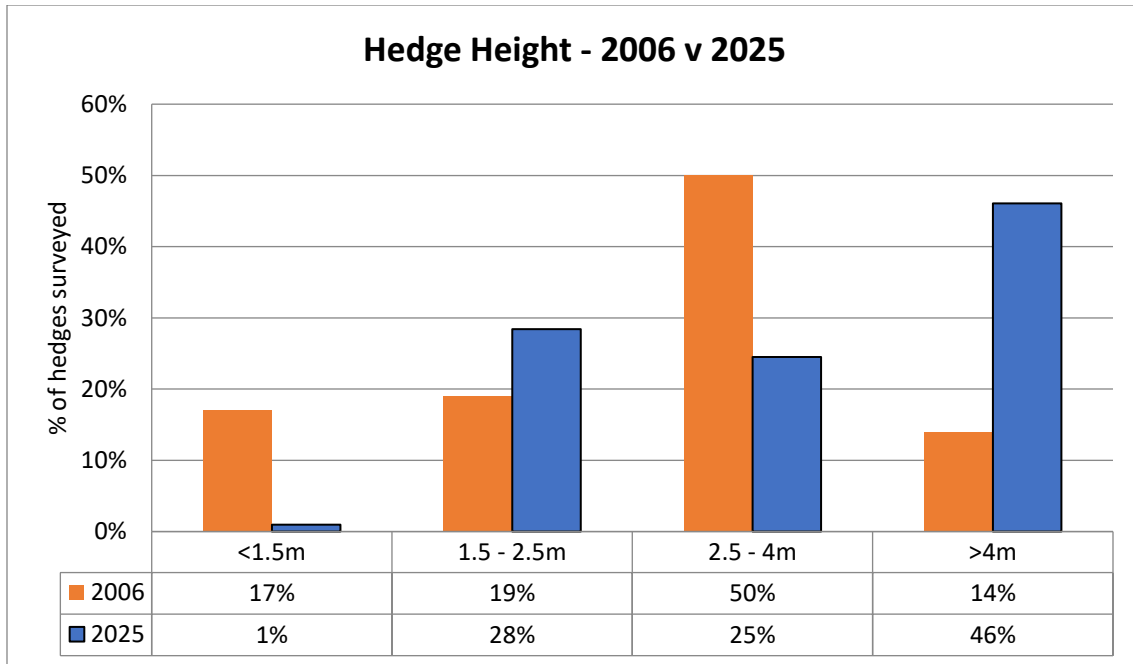


Figure 15 Graph showing height differences in hedgerows surveyed in 2006 vs. 2025.

In 2025, only 1% of sampled hedges in County Longford were recorded in the lowest height category (<1.5 m), a decrease of 16% since 2006. This demonstrates a positive trend as Teagasc advises letting hedges grow to at least a height of 1.5m to be able to support biodiversity. In 2025, 28% were between 1.5 and 2.5m, which is an increase of 9% on 2006. The most significant changes arose in the final two height categories. 25% had an average height of between 2.5 and 4 m in 2025, which is half of the figure recorded in 2006, while 46% of hedges were over 4m in height, a significant increase of 32% over the past 19 years. Overall, this shows hedges in Co. Longford are increasing in height and becoming treelines rather than hedgerows, indicating a lack of hedgerow management. While greater vegetation height and treelines are better for biodiversity, a balance is needed, where hedgerows are maintained and sustained as effective stockproof barriers and ecological corridors, long into the future. The recommended height for maintaining hedgerows varies according to adjacent land use. However, for supporting biodiversity, the ideal figure is between 2 to 4m.

### 6.11.2 Hedge Width

Increasing width correlates with improved biodiversity in hedgerows, allowing more space for wildlife to move within them and creating more microhabitats due to increased light, shelter and density. As can be seen in Figure 16, the results of the survey show that 93% of hedges surveyed in County Longford are over 1 m wide (cumulative). Approx one-third of hedgerows (31%) are in the largest width category of 3m+, which is an increase of 25% since 2006. 38% were recorded as between 2 to 3 m wide, which is an increase of 11% since 2006, while approx. a quarter (24%) were between 1 and 2 m wide, which is an increase of 4% in the past two decades. Just 7% of hedgerows were less than 1 m wide, a decrease of only 1% since

2006. Results for this category show that the width of sampled hedgerows has increased over the past 19 years, which in many ways is positive. It is also promising that there has been little change in the number of hedgerows measuring less than 1m in width. However, like height, a balance is required in terms of management so that hedgerows don't become too 'scrubby' and overgrown at the base, nor too top heavy at the canopy (the latter of which is more akin to a treeline). The results showing increased width (as with the height category), suggest that lack of management is likely to be a key factor.

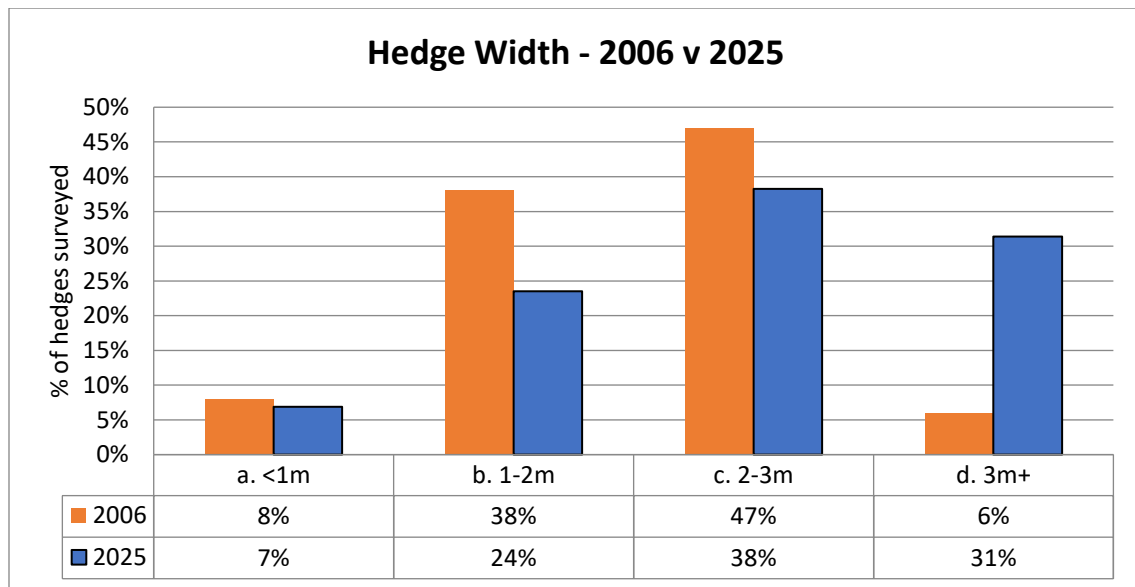


Figure 16 Graph showing comparison in the width of sampled hedgerows between 2006 and 2025.

### 6.11.3 Percentage of Gaps

'Gappiness' is an assessment of the percentage of the whole length of the hedge that no longer has a cover of hedgerow shrubs. Gaps are indicative of weakened hedgerow integrity and are frequently associated with the decline of the hedge as a result of inadequate management, aging or disease. Some hedges have very well-defined individual 'specific' gaps; others have a low stocking density of shrubs and trees that result in a lateral weakness in the structure, referred to as 'general gaps'. A specific gap is defined as one that is at least 3m in length. Figure 17 illustrates the breakdown of the sample in terms of percentage gaps over the length of the hedge.

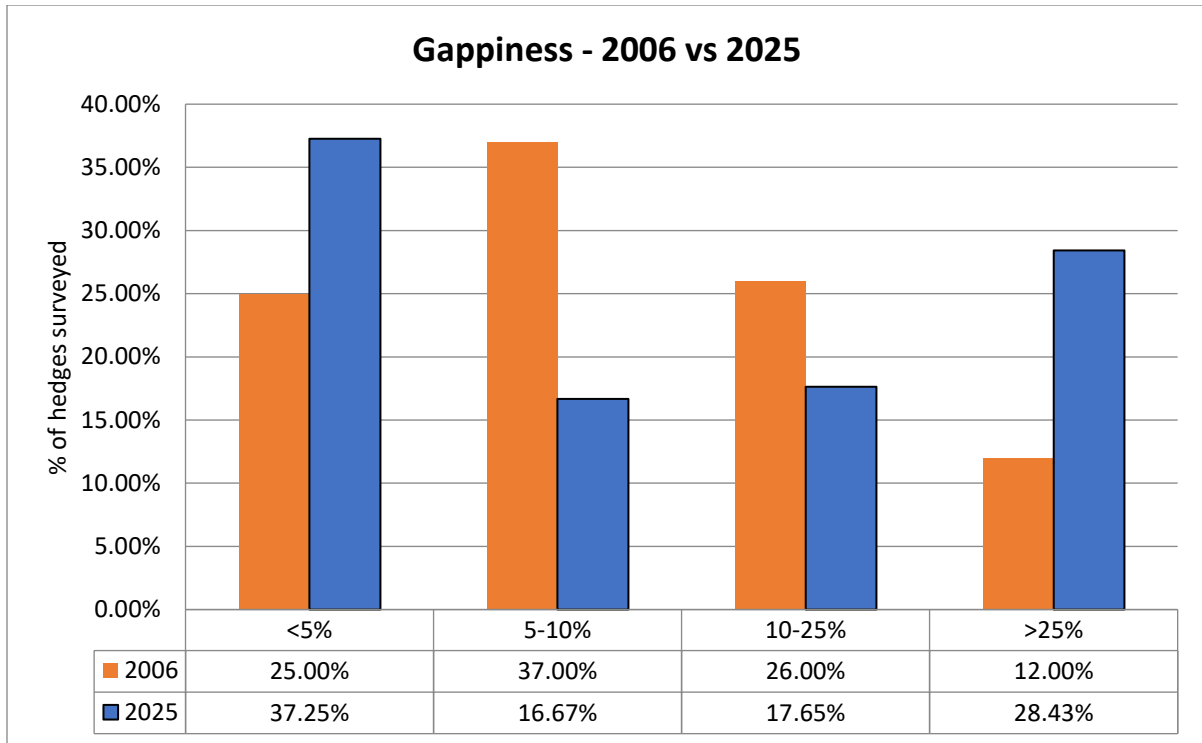


Figure 17 Graph showing comparison of ‘gappiness’ extent of sampled hedges between 2006 and 2025.

Only 8% of the surveyed hedges in Co. Longford were “complete”, displaying none or negligible gaps over the lengths assessed. Just over 37% of hedges had fewer than 5% gaps, an increase of approx. 12% since 2006. Just under 17% of sample hedgerows had between 5 and 10 % gaps, which is a decrease of around 20% in the past two decades, while just under 18% had between 10 to 25% gaps, a decrease of approx. 8% since 2006. Hedgerows with >25% gaps recorded in 2025 made up just over 28% of those surveyed, compared with 12% in 2006, showing an approx. 16% increase.

These statistics are a ‘mixed bag’, suggesting some possible improvements but also a few declines in terms of hedgerow ‘gappiness’. For instance, there is a significant decrease in terms of hedgerows with 5% to 25% gaps (34.3%, cumulative). However, on the other hand, there has been a noticeable increase in the <5% gaps trend, suggesting more instances of general, randomly occurring gaps due to lack of management and rejuvenation. In addition, the marked increase in hedgerows with >25% gaps might suggest more incidences of large, specific gaps because of the removal of large sections of hedgerow in the past two decades, or simply from shrinkage due to a significant decline in health, or from consistent, severe cutting practices.



*Image 15 Hedgerow with a large 'specific' gap in Co. Longford*

#### 6.11.4 Basal Density

Recording how dense the growth of woody hedge shrubs is in the lower metre of the hedge is an important indicator of the hedge structure, both environmentally and agriculturally. A hedge where the woody shrub growth is dense at the base is better from a stock control perspective, but it is considered beneficial for the hedge's ability to support wildlife. Figure 18 below shows the breakdown of how the sampled hedges in 2006 and 2025 fared in terms of the hedge base categories. Notably, since 2006 there has been changes in categories, with the addition of 'semi-opaque'. To facilitate comparison the categories "scrawny/semi-translucent" and "semi-opaque" were merged into one category. Porosity to light can be a useful indicator of basal density. The current HAS methodology has four categories:

- open/translucent;
- scrawny/semi-translucent;
- semi-opaque, and;
- dense opaque.

Open/translucent hedges allow almost 100% of light through. Many of these are redundant as field boundaries and have either grown into treelines or become sparse from mismanagement. Semi translucent is recorded where there is more light than woody hedge growth in the base of the hedge, though less than 75%. Semi-opaque is where there is more hedge growth than light, again less than 75%, though this was not an exact measure, more of an approximation. Dense/opaque hedges allow almost no light through. 63% of sampled hedgerows showed some degree of translucence in the lowest 1 m of growth. 12% of the hedgerows surveyed were classed as being open/translucent. Hedge vegetation often

'buffered' light penetration and was noted as scrawny in 17% of hedgerows, while 34% were recorded as semi-opaque. Completely dense opaque hedgerow bases were identified in 37% of cases. However, this density disregards the gaps outlined above and thus shows that with correct management of gaps, healthy hedgerows can form.

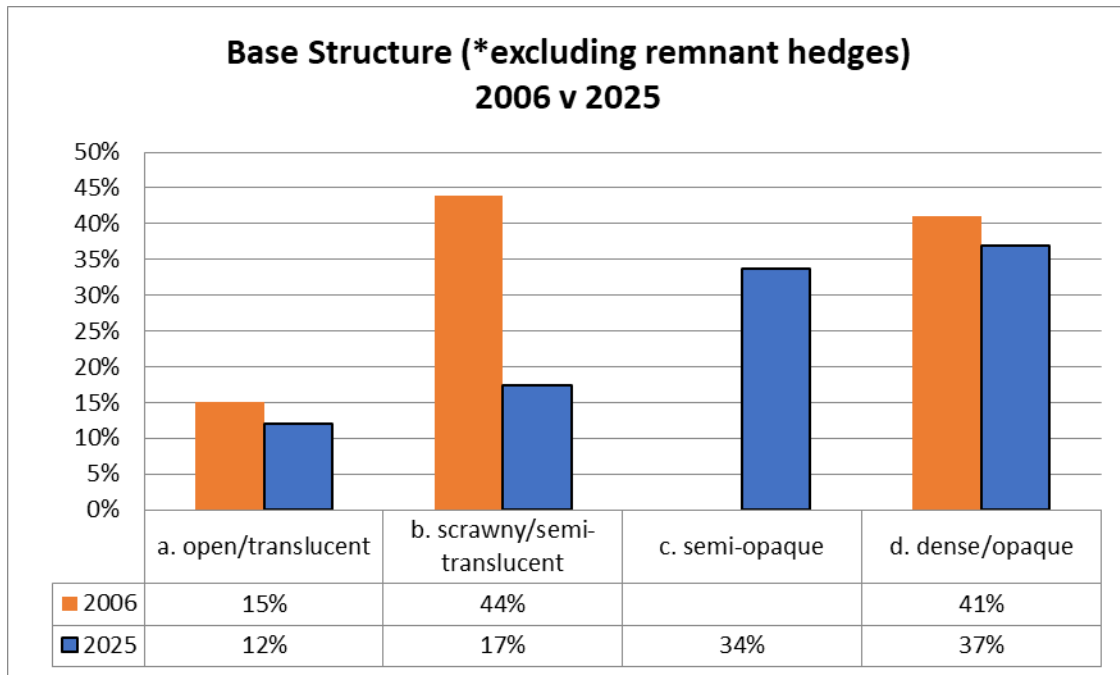


Figure 18. Basal density, 2006 v 2025.

### 6.11.5 Hedge Profile (cross section)

The basic cross-sectional profile of each sampled hedgerow was recorded based on a number of defined categories. As hedgerow shrubs mature, growth near to the base generally declines as the plant is no longer threatened by browsing. This process is recorded as 'losing structure', and without management intervention, plants can revert to their natural tree form with a scrawny or open base. Assessing the profile or cross-sectional area of a hedge can be a good indicator of this process and the hedge's potential need for rejuvenation. Hedgerows that contain a high proportion of spreading shrubs like blackthorn and gorse can eventually spread to a point where they are no longer considered to be hedges and are re-classified as other habitat types, most commonly scrub/transitional woodland. The findings of the profile for the sample hedges are shown in Figure 19 below.

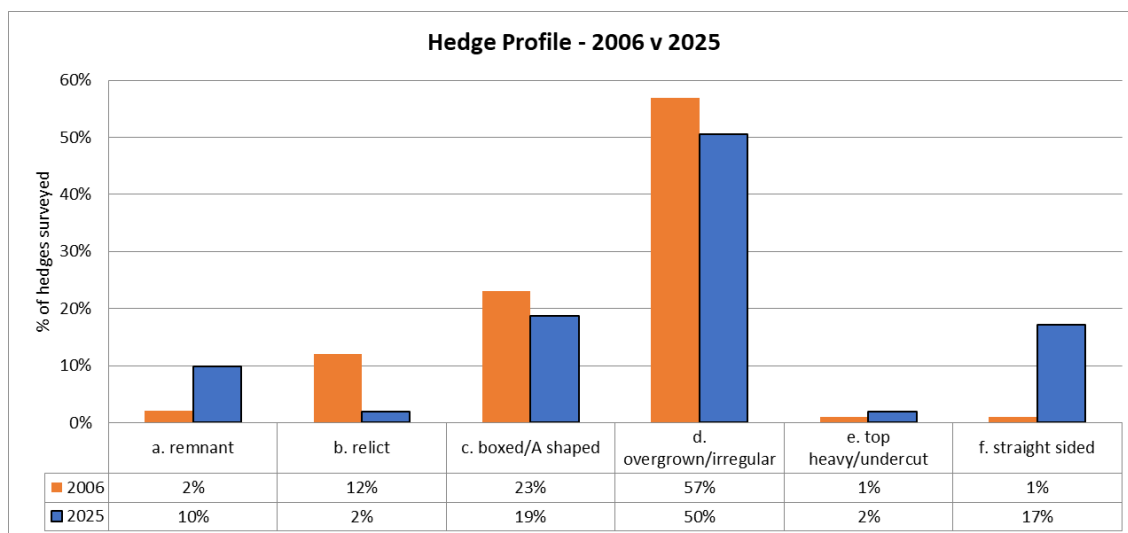


Figure 19. Profile/shape of hedges surveyed. 2006 vs 2025

Half of the hedgerows in County Longford were deemed to have an overgrown/irregular profile, with exactly 50% of hedgerows placed in this category. Of the remaining hedgerows, about 38% appeared to have been managed at some stage, with 19% of them assessed as boxed or A-shaped profile, 17% of them being straight sided, and only 1% of them considered to be top heavy or undercut. Of the remaining hedgerows, 10% of hedges were recorded as remnant hedges, and 2% were classed as relict hedges. While similar, remnant and relict hedgerows differ in that a remnant hedgerow is generally indicated by a (broken) line of mature or senescent plants in tree, rather than shrub form, while a relict hedge is one where shrubs and thorns have mostly grown up into trees, but plants still have potential for rejuvenation. Comparing the results from the most recent survey to those collected in 2006, it is noted that there has been a decline of approximately 10% in relict hedges, but an increase of approximately 8% in remnant hedges, which suggests many hedgerows deemed relict in 2006 have now become remnant and past the point of rejuvenation.

### 6.11.6 Hedgerow Trees

This survey looked at both the abundance of trees in hedges (Figure 20) and the age composition of the trees. Hedgerow trees can contribute significantly to the overall biodiversity of a hedgerow. Hedgerow trees can sometimes have been planted intentionally, or young (self-sown) trees have been purposefully allowed to grow and mature as part of a management regime. Alternatively, they can also be a consequence of lack of management. The proportion of hedgerow trees is assessed by their impact on the canopy of the hedge and the sample hedges were classified into four categories based on this. The HAS methodology categorises hedgerow trees as 'None', 'Few' (up to 15%), 'Scattered' (15-30%), 'Abundant' (30-75%) and 'Line' (>75%). In the 2025 survey, the proportion of sample hedgerows with no trees was 17%, similar to 2006. There was a 5% decrease in hedgerows with only a 'few' trees and a 3% decrease in 'scattered' trees in the past two decades, while the 'abundant' category decreased by 11%.

The most significant change was in the 'line' category, which saw an increase of 17% since 2006. It is likely the decreases in the initial four categories are showing up as an increase in the treeline category, whereby many hedgerows could now be classed as treelines instead of hedgerows, due to long-term lack of management.

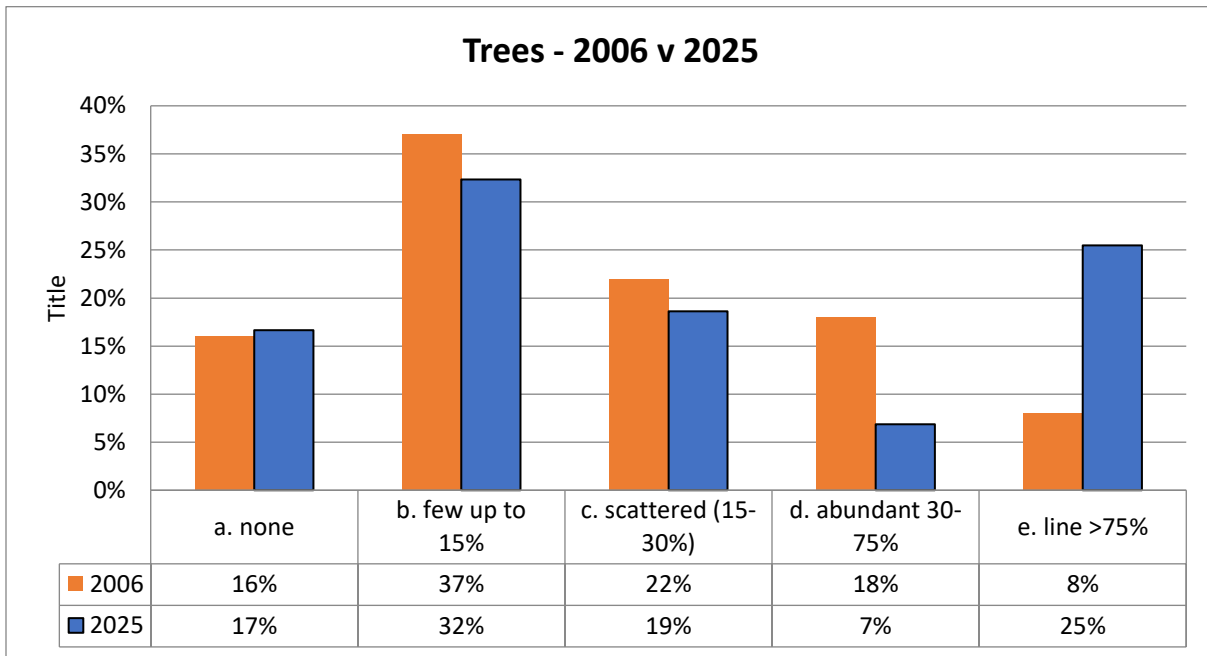
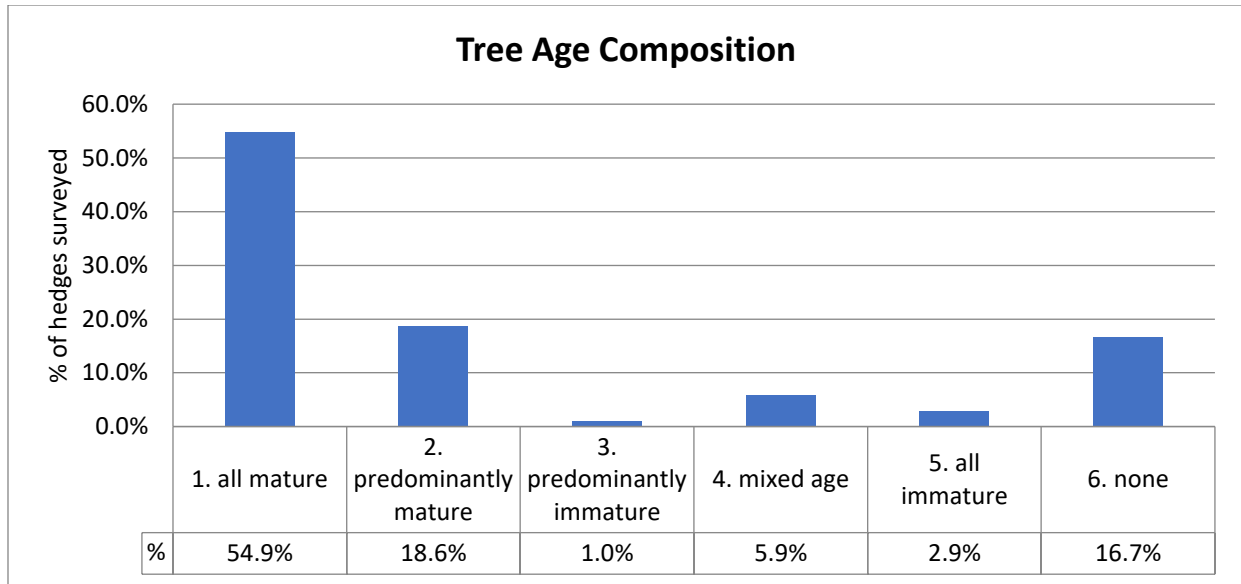


Figure 20 Graph showing tree abundance in sample hedgerows between 2006 and 2025.

### 6.11.7 Tree Age Composition

It is generally considered that to achieve sustainable levels of hedgerow, a balance between young, medium and older trees needs to be maintained. Young trees are defined as having a diameter at breast height of no more than 8 cm. In 73.5% of sampled hedgerows in Co. Longford, trees were either exclusively 'mature' or 'predominantly mature', while 16.7% had no trees recorded. Of the remainder, 5.9% were of 'mixed age', while only 2.9% were classed as 'all immature' and 1% as 'predominantly immature' trees.

Figure 21 below shows a graph displaying tree age composition for the hedgerows surveyed in 2025. However, there is no direct comparative data for each of these figures provided in the 2006 study. The only information given for tree age composition in 2006 was "74% of County Longford hedges which had hedgerow trees recorded young trees as being present". If we take the same approach for the 2025 study and extract from the relevant categories, it transpires that just 9.8% of the hedgerows with trees surveyed contained young trees.



*Figure 21 Breakdown of tree age composition in Co. Longford's hedgerows (2025)*

### 6.11.8 Bank/Wall/Shelf Degradation

Where hedgerow shrubs are established in hedge banks, the viability of the hedge can be threatened if the bank is degraded. Bank degradation can expose roots to damage, drying and infection, potentially compromising the overall stability of the hedgerow itself. Ground flora abundance and diversity is also compromised. The bank degradation of the sample hedgerows was recorded, and results are shown in Figure 22. The damage was classed as minor where there were only small sections of bare earth recorded along the hedge bank, while the damage was considered severe where there was significant erosion of the bank or wall. Furthermore, if the degradation extended to areas greater than 10% of the length of the sample hedges it was considered as general, otherwise it was recorded as isolated.

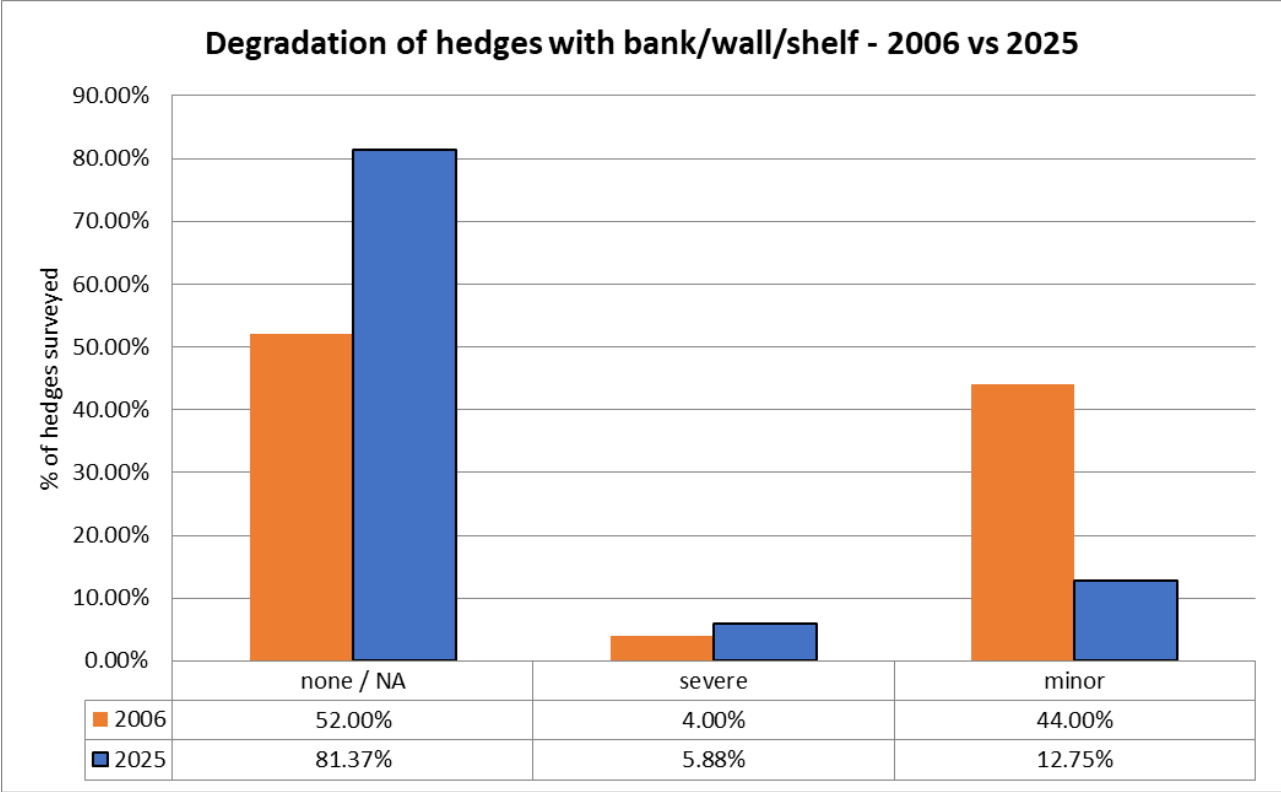


Figure 22. Bank degradation 2025 v 2006.

Approximately 81% of the hedgerows had no visible degradation of the banks, while 13% displayed only minor damage. This is diametrically opposed to many other counties surveyed thus far, in which bank degradation represented a significant feature of hedgerows. For instance, in Wexford, nearly half of the hedgerows presented some degree of bank degradation with approximately 11% of this exhibiting severe damage. Likewise, in Offaly a quarter of the hedgerows presented some degree of damage, with 13% of hedges recorded to have severe degradation. This may be attributed to an overall less intensive land use compared to other counties, however it is worth noting that in 2006, 44% of banks were indicated to have minor degradation, suggesting that this disparity may be due to surveyor errors in identifying the presence of a bank, with some very small banks potentially being recorded as “n/a”.

### 6.11.9 Margins

The presence of a verge or margin was recorded for each sample hedge. A verge/margin is a permanent strip of undisturbed vegetation. It refers to an uncultivated strip alongside the hedge. In grassland situations a verge is where the edge of the field is clearly not seeded, managed, or utilised like the rest of the field, such as where grazers are excluded by a fence. A fenced off area 1m in from a hedge would count as a verge, but a 1m strip left after mowing for hay/silage does not. Margins are particularly important for the ground flora component of the hedgerow, so any impacts on the margin which could compromise ground flora were recorded. This included poaching and the use of herbicide.

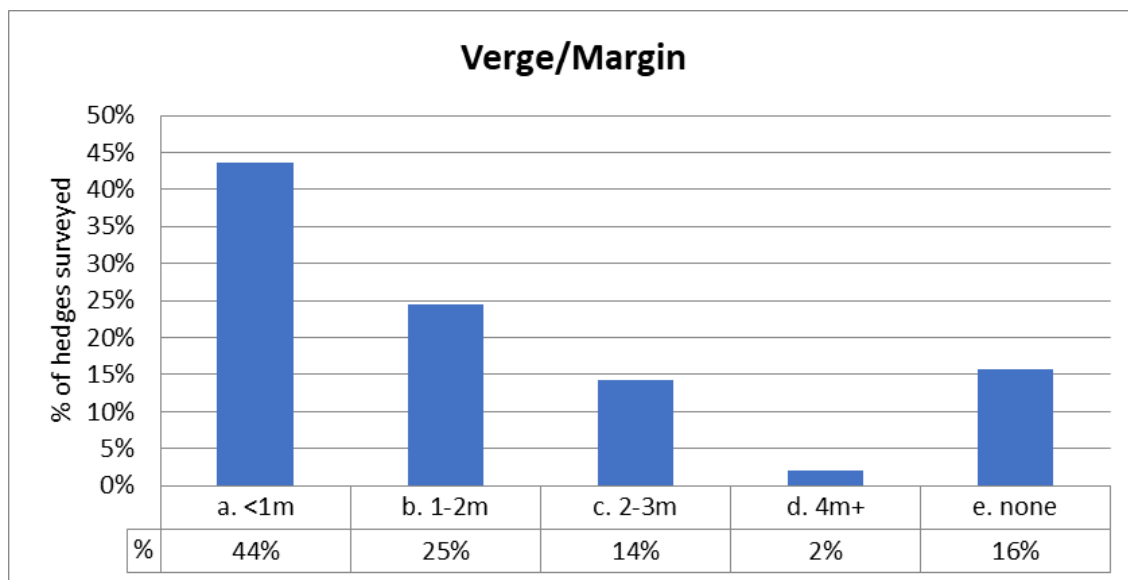


Figure 23. Verge/margin width along hedgerows in Co. Longford.

Both sides of each hedgerow were examined for the presence and condition of verge margins. In County Longford, the majority of the sampled hedges had an associated margin, with only 16% lacking one entirely. Approximately 44% of margins were less than 1m in width, 25% measured between 1m and 2m, 14% ranged from 2m to 3m, and finally only 2% exceeded 3m. Overall, margins showed little evidence of degradation, with around 74% assessed as intact. Around a fifth (21%) were recorded as poached within 2m of the hedgerow, while herbicide use affecting more than 20% of the margin was noted in just 1% of cases.

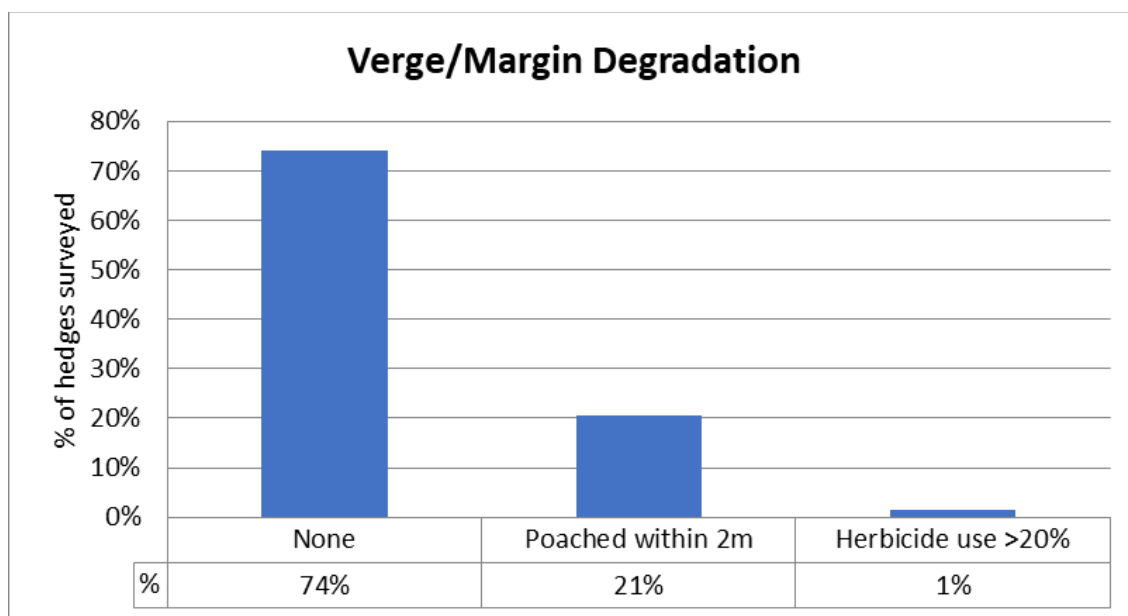


Figure 24. Verge/margin degradation along hedgerows in Co. Longford.

### 6.11.10 Vigour

Vigour was assessed based on observations of the annual growth of new shoots within the shrub layer. Results indicated that 9.8% of sampled hedgerows exhibited poor vigour, while 11.8% were classed as having “poor vigour in part”. In contrast, almost 40% (39.2%) displayed average vigour, and 32.4% were classed as having good vigour. These findings suggest that the majority of hedgerows in Longford are in moderate health and remain responsive to appropriate management practices.

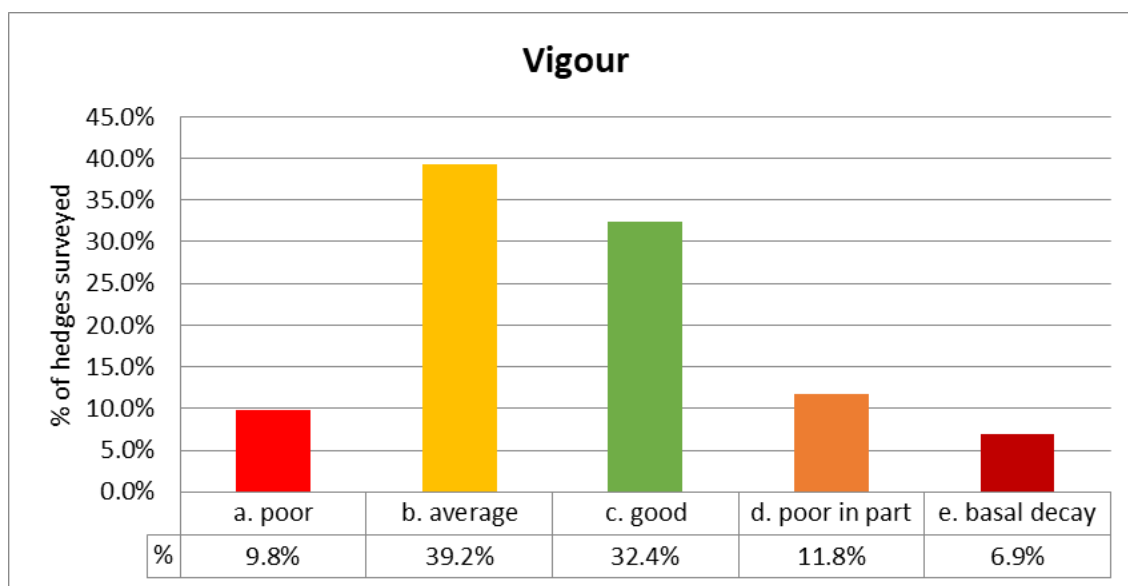


Figure 25. Vigour of hedges surveyed in Co. Longford.

## 6.12 Management of Hedgerows in County Longford

### 6.12.1. General Management, Stages and Methods

The management of hedges affects the hedge structure, condition and sustainability, which in turn impacts on functional, biodiversity and aesthetic values. Three different sections of management were assessed:

- General management style, which describes the shape of the hedgerow as a result of the management (or lack thereof);
- The current stage of the hedgerow as a result of management (number of stems, height, health etc.), and;
- The apparent method of management (tools).

Also recorded were evidence of laying, rejuvenation and whether the hedge appeared to have been cut out of season, i.e. within the bird nesting season (March 1<sup>st</sup> - August 31<sup>st</sup>).

## General Management

Most sample hedges (38%) were recorded as being long-term unmanaged (no evidence of management in last 5+ years). The next most common (23%) was short-term unmanaged (no evidence of management in the past 3-5 years). Following that, 14% of hedges surveyed in Co. Longford were 'cut one side' and 12% were 'cut both sides'. Only 9% of hedges were recorded as 'cut box' shape, which is a positive result compared with other counties, e.g. Wexford (21%), Cavan (17%) and Offaly (15%). A minority were 'topped' (3%) or cut into the more ideal A-shape (2%).

While no management over the long-term could be viewed positively in one sense, as it leads to the formation of treelines that are beneficial for nature, the original hedgerow structure is being lost.

### 6.12.2 Fencing

Historically, hedges served the primary purpose of functioning as barriers to keep livestock contained. The Hedgerow Appraisal System evaluates the degree to which existing hedgerows are supplemented with additional fencing to preserve their effectiveness in retaining stock. Each side of the hedge was assessed for the presence of fencing, as far as possible. The findings are illustrated in Figure 26 and reveal that 38% of hedgerows surveyed had some kind of fencing, with post and wire fencing being the most widely used type (21%), followed by electric fencing (15%). Only 3% of the hedgerows had sheep fencing, while none had timber or concrete post and rail fencing. Within the fencing types, it was found that 12.7% were 'fixed to stems', meaning the wire was fixed to a tree trunk. This is not good practice as it can cause damage to trees. 62% of the hedgerows surveyed in Co. Longford had no fencing, which indicates there is notably less fencing recorded in Longford than in most other county hedgerow surveys in recent years.

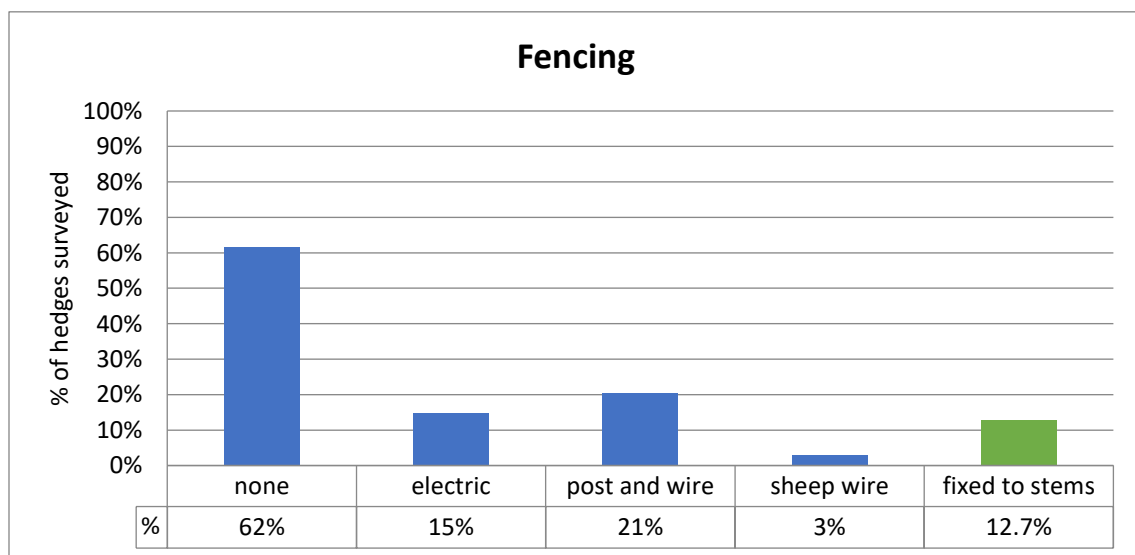


Figure 26 Graph showing types and extent of fencing along hedgerows in Co. Longford.

## 6.13 Appraisal of Hedges in County Longford

A hedgerow sub-group of the Woodlands of Ireland (Wol) project developed a system using criteria based on data recorded to identify hedgerows of ecological, historical and landscape significance (termed Heritage Hedgerows). This hedgerow appraisal system was first piloted in County Monaghan in 2010. The system includes criteria for assessing the Favourable Condition status of individual hedges. In 2012, Wol secured funding from the Heritage Council to finalise the project, develop the database and publish the HAS. The Sub-Group further refined the methodology, reviewing the interpretation criteria to ensure consistency and compatibility between the various elements of the HAS. Compass Informatics were engaged to develop a database for the HAS.

### 6.13.1 Hedgerow Significance

The system is based on ranking the significance of hedges on a scale of 0-4 (0 being lowest) in five categories: Historical Significance, Species Diversity Significance, Structure, Construction and Associated Features, Habitat Connectivity Significance and Landscape Significance. A score of 4 in any category indicates a hedge of high significance (Heritage Hedgerow). Hedges can also be considered of high significance (Heritage Hedgerows) if they record a cumulative score of 6 or greater in the Historical, Species Diversity or Structural Categories, or a cumulative score of 16 or greater over the five categories. See Appendix 3 for scoring sheets. These hedges should be considered as high priority in terms of retention, management action, etc. Hedges recording lower scores may still be of value depending on the context.

14.7% of hedges scored as highly significant due to their historical context by virtue of hedgerows being connected to features recorded on Sites and Monuments Records or to woodlands present on 1st Edition O.S. map. 9.8% were found to be significant due to their species diversity. Only 2.9% of hedges scored highly significant based on structure, construction and associated features. Another 3.9% of hedges were significant hedges based on their habitat connectivity value, indicating connection to a designated site such as an SPA, SAC, NHA or pNHA. No hedges in Longford scored as Significant based on their landscape connectivity value.

*Table 9. Percentage of baseline hedgerows scoring as Highly significant hedgerows.*

<b>% of Surveyed Hedgerows achieving Highly Significant Status</b>	
<b>Scoring category</b>	<b>Percentage (%)</b>
Historical Significance	14.7
Species Diversity	9.8
Structure, Construction & Associated Features	2.9
Habitat Connectivity Significance	3.9
Landscape Significance	0.0

*\*See Appendix 3 for significance scoring criteria.*

The same was conducted for only townland boundary hedges, which fared better in all categories. Townland boundary hedgerows are 14.7% more species diverse and 5.9% have better connectivity significance. 22.1% of hedges were historically significant, based on their overlap with old boundaries on OS maps. The results are detailed in Table 10 below.

Table 10. Percentage of townland boundary hedgerows scoring as Highly significant hedgerows.

<b>% of Townland Boundary Hedgerows achieving Highly Significant Status</b>	
<b>Scoring category</b>	<b>Percentage (%)</b>
Historical Significance	22.1
Species Diversity	14.7
Structure, Construction & Associated Features	4.4
Habitat Connectivity Significance	5.9
Landscape Significance	0.0

### 6.13.2 Condition Assessment

For a qualitative assessment of hedgerow condition, criteria have been set for desirable and undesirable attributes. These criteria are open to amendment based on further research. Hedgerows are ranked from 0-3 (0- unfavourable to 3- highly favourable) in 3 categories representing Structural Variables, Continuity and other Negative Indicators. The higher the recorded score, the more favourable the condition. A score of 0 in any category represents a hedgerow in Unfavourable Condition.

Table 11. Condition Assessments.

<b>Condition Assessment</b>				
<b>Structural Variables</b>	<b>Unfavourable</b>	<b>Adequate</b>	<b>Favourable</b>	<b>Highly favourable</b>
<b>Height</b>	1.0%	28.4%	24.5%	46.1%
<b>Width</b>	6.9%	23.5%	38.2%	31.4%
<b>Profile</b>	11.8%	34.3%	23.5%	30.4%
<b>Basal density</b>	15.7%	15.7%	33.3%	35.3%
<b>Continuity</b>				
	<b>Unfavourable</b>	<b>Adequate</b>	<b>Favourable</b>	<b>Highly favourable</b>
<b>% gaps</b>	46.1%	16.7%	19.6%	17.6%
<b>Negative indicators</b>				
	<b>Unfavourable</b>	<b>Adequate</b>	<b>Favourable</b>	<b>Highly favourable</b>
Bank/Wall degradation	5.9%		12.7%	81.4%
% ivy in canopy	61.8%			
Unfavourable species (>10%)	8.8%			
Ground Flora (nutrient rich >20%)	39.2%			
Verge/Margin Poached within 2m	20.6%			

Verge/Margin Ploughed within 2m	0.0%			
>20% evidence of herbicide use	2.9%			
Alien Invasive Species	0.0%			
Noxious weeds	13.7%			
<b>Positive indicators</b>				
Grassy margin (>2m 1 side)			20.6%	
Grassy margin (>2 both sides)				4.9%

In county Longford, 91.2 % of hedgerows were assessed as being in Unfavourable condition based on the combined criteria of structure, continuity and other negative indicators. Amongst the structural variables, height was the strongest attribute with 70.6% of hedges scoring as favourable or highly favourable. Width and profile also scored positively, with 31.4% and 30.4% respectively recorded as highly favourable. The category basal density scored 68.6% as favourable or highly favourable; however, 15.7% were considered inadequate, indicating that thinning at the base is an issue for some hedges.

In terms of continuity, the presence of gaps was the main issue recorded. Nearly half of the hedges (46.1%) were classified as unfavourable under this criterion, which is relatively similar to most other county hedgerow survey results. The analysis of the negative indicator highlighted several other recurring issues. Ivy in the canopy was recorded at high levels in 61.8% of Longford hedges, though this is no longer considered inherently negative as ivy represents a valuable habitat for bats and invertebrates, and its increase throughout the country is associated to the spread of Ash Dieback. Nutrient enrichment of the ground flora was recorded in 39.2% of hedgerows, which suggests the influence of adjacent intensive agricultural activities. While nutrient enrichment in Longford scored lower than some counties such as Offaly and Kildare, and County Monaghan scored similarly, Cavan and Wexford fared better in this regard.



*Image 16 A hedgerow in very poor condition (including herbicide use) during the 2025 Longford survey.*

Poaching within 2 m was recorded as Unfavourable in 20.6% of sample hedgerows. This is higher than some counties (e.g. Kildare and Wexford), but relatively lower than others, such as Cavan, Monaghan and Offaly. Varying agriculture types would have a key bearing on the results between counties.



*Image 17 Example of poaching along a hedge, observed during the surveys.*

Herbicide use in more than 20% of the hedgerow also contributed to the Unfavourable score at 2.9% in Longford. This was lower than most other counties (by a significant degree in some cases), except for County Cavan. Noxious weeds were recorded as Unfavourable in 13.7% of hedges. This is higher than Counties Offaly (9.7%) and Cavan (0.75%), but considerably lower than the figure for County Monaghan (42.9%).

On a positive note, 25.5% of hedgerows in Longford had grassy margins wider than 2m on one or both sides, and 81.4% of hedgerows showed no bank degradation. The extent of bank/wall/shelf degradation was noticeably lower than that recorded in hedgerow surveys for other counties. The incidence of invasive species was also low, and no First Schedule invasive plants were recorded in the sample hedgerows.

Overall, while most of Longford's hedgerows were classed as Unfavourable under the current criteria, the results reflect much of the same issues encountered in other counties, with gappiness, localised poaching, and nutrient enrichment representing the main reasons for this assessment. In general, however, structural variables such as height, width and basal density indicate that many hedges in Longford remain viable and could be restored to favourable conditions with the appropriate management.

## 6.14 Local Wildlife

With a view to the biodiversity potential of hedgerows in County Longford, an assessment was made on the overall animal evidence. Mammal evidence was noted where relevant, for species like Fox, Rabbit, Badger, Stoat, Field Mouse and Pygmy Shrew. Bird species seen and heard during each individual hedgerow survey were also noted. Butterflies seen either side of the 30m strip of hedgerow were recorded during the surveys.

Evidence of mammals living in setts/burrows along hedgerows in Co. Longford was quite rare. While general mammal trails were observed at many of the hedgerows surveyed, the only evidence of mammal dens/burrows/setts recorded in sampled hedgerows was in the form of Rabbit burrows, occurring in only 2% of cases. Other species observed during the surveys were recorded, in and around sample hedgerows in the study. Mammals included the Red Squirrel (*Sciurus vulgaris*), recorded in a small, wooded area near LD0103 (Lough Ree area), and Deer tracks at LD0504 (Taghshinny) and LD0605 (Ardagh).

In terms of invertebrates, Common Blue Damselflies (*Enallagma cyathigerum*) were abundant near LD0104 (Lough Ree area) and at LD0208 (outside Ballymahon), in addition to a Cinnabar Moth (*Tyria jacobaeae*). Nesting solitary bee banks were noted in just one hedgerow bank LD0603 (near Ardagh). Unsurprisingly, invertebrates were often more numerous where hedge flora was relatively abundant, or in species-rich grassland, in combination with the dry, sunny days during the surveys.



Image 18 Cinnabar Moth observed during the Longford hedgerow surveys

Bird species observed interacting with hedgerow habitat during this study were recorded. Birds were relatively abundant across the sample hedgerows (and their vicinities), with 38 avian species recorded. The most frequently recorded bird species in County Longford was by far the Wren (*Troglodytes troglodytes*), at 64%, followed by the Blackcap (*Sylvia atricapilla*) (24%), and the Willow Warbler (*Phylloscopus trochilus*) (19%). Following that, were the Chiffchaff (*Phylloscopus collybita*), Blackbird (*Turdus merula*) and Swallow (*Hirundo rustica*). In terms of comparison with other counties, there was a similar number of bird species recorded in the

2024 Co. Offaly hedgerow survey (40). The Wren also came out on top in the Co. Offaly hedgerow survey, though to a lesser extent (44%), followed by the Chaffinch (*Fringilla coelebs*) (27%) and Rook (*Corvus frugilegus*) (18%). All bird species recorded during the Co. Longford hedgerow survey, and their frequency, are listed in Figure 27 below.

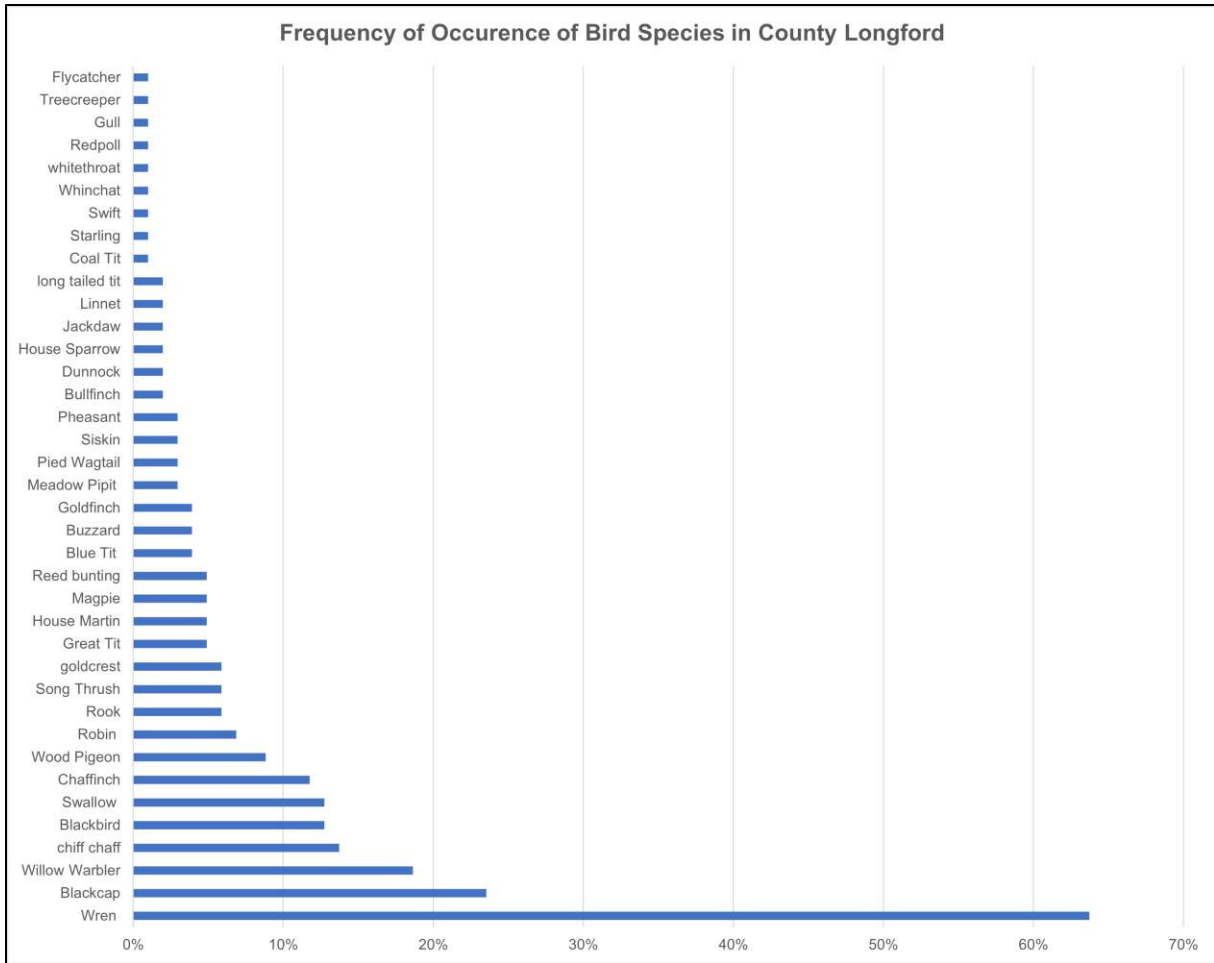


Figure 27 All 38 bird species recorded during the 2025 Longford Hedgerow Survey, and their frequency of occurrence.

As for butterflies, nine species were found throughout the hedgerows across Co. Longford, generally occurring at a relatively low frequency. While this is not a significant figure, it is higher than the number of species recorded in the Co. Offaly hedgerow survey (2024), in which only five species were recorded. Of the butterflies encountered in Co. Longford, the Meadow Brown (*Maniola jurtina*) was most widespread by far at 35%. Following that, the Ringlet (*Aphantopus hyperantus*) was recorded at a frequency of 5%, while the Green-veined White (*Pieris napi*), Small Tortoiseshell (*Aglais urticae*) and Speckled Wood (*Pararge aegeria*), were recorded at 4% each. In contrast, frequency for all butterfly species was relatively lower in the Co. Offaly hedgerow survey (2024), with the Speckled Wood being most 'abundant', at only 9%, while the Meadow Brown was recorded at only 1% frequency. All butterfly species recorded during the Co. Longford survey, plus their frequency, are laid out in Figure 28 below.



Image 19 A Small Tortoiseshell on Bramble in a Longford hedgerow.

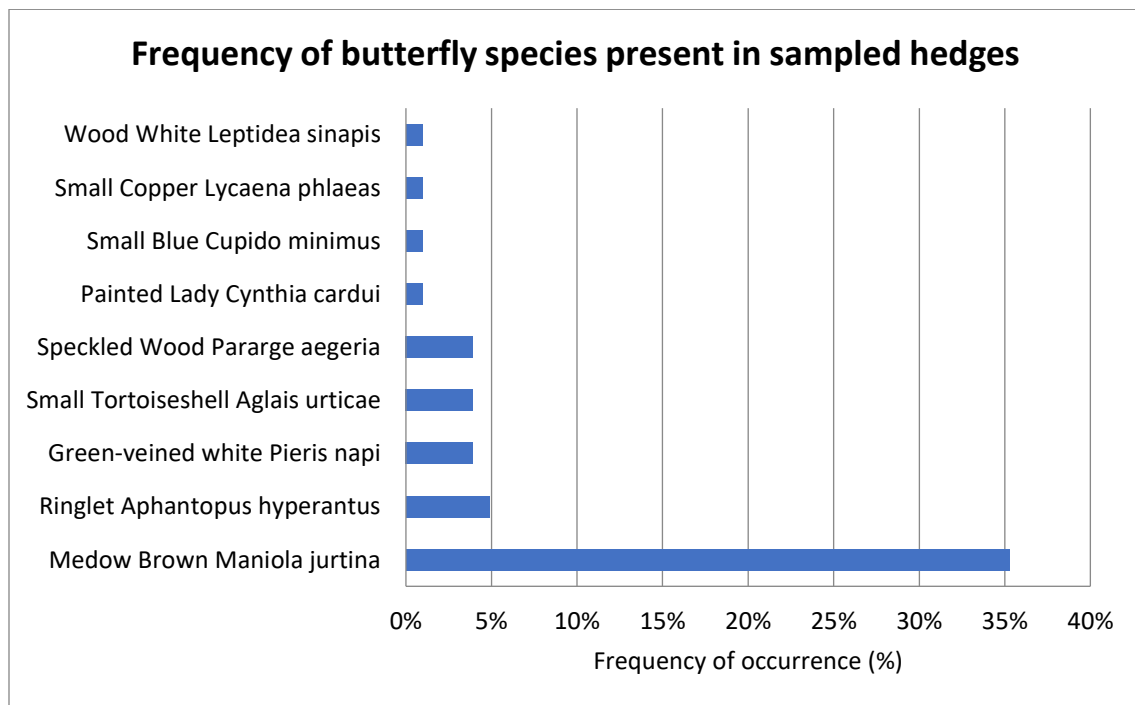


Figure 28 Butterfly species and their frequency of occurrence recorded during the Longford Hedgerow Survey (2025).

## 7. Discussion

This section presents the key findings from the results and highlights the main factors contributing to hedgerows in Longford failing to be deemed in favourable conditions. In 2006, 6.4% of the hedgerows in Longford met all criteria to be deemed in favourable or highly favourable conditions. In 2025, this figure declined to just 2%, with an additional 8.8% considered to be in only adequate condition. The previous survey report identifies gappiness and basal structure as the two most significant factors for the assessment. In 2025, the prevalence of gaps remains an important issue, with nearly half (46.1%) of hedgerows receiving an unfavourable score. However, basal density appears to have generally improved since the previous assessment, with most of the hedgerows reported to be in either favourable or highly favourable conditions. Issues associated with gappiness and basal density will be discussed in section 7.4. In contrast, nutrient enrichment of the ground flora has now emerged as one of the most pressing issues, recorded in 39.2% of the hedgerows. This will be further explored in section 7.3.

Ivy in the canopy has become an issue and 61.8% of hedges failed to meet favourable conditions in this category. This may be related to the prevalence of Ash Dieback. Other issues associated with the disease are outlined in Section 7.2.

Hedge profile was deemed Unfavourable in 11.8% of hedges and some aspects of this will be laid out in Section 7.4. Other significant issues are also examined in this section such as hedge loss and removal (Section 7.5.), and the management (7.6) and creation (7.7) of hedgerows.

### 7.1 Species Composition

#### 7.1.1 Shrubs

Hawthorn, Whitethorn, or '*Sceach gheal*' in Irish, continues to define the character of hedgerows in County Longford. It was recorded in 86% of sampled hedgerows, making it by far the most dominant shrub species in the county, in line with other county hedgerow surveys which also confirmed hawthorn as being the most common species in hedges. Hawthorn is easily identified by its thorny branches covered in white flowers in May, and its abundant red haws in Autumn. Hawthorn is a hardy plant, thriving in different soil types, withstanding coastal conditions as well as strong winds. Importantly, hawthorn is a valuable plant for wildlife as it serves as a vital habitat for birds, mammals and even insect species, of which it supports over 149 species. Its dense, thorny growth also creates an effective livestock barrier, reinforcing its historic importance as a boundary-forming species.

Blackthorn, or '*Draighean*' is the second most common shrub recorded, present in 57% of Longford hedges. Blackthorn is often found in association with hawthorn, forming dense, stock-proof boundaries that offers shelters for birds. It generally flowers earlier than hawthorn, usually in April, providing a valuable source of nectar when few other hedgerows species are in bloom. The sloes that develop in late Summer constitute feed for birds such as thrushes, while the foliage supports a range of moth caterpillars.

Elder or ‘*Tromán*’, was recorded in 31% of hedgerows. A highly adaptable shrub, it produces white flowers in early summer and purple berries in Autumn. Elderberries in particular are a great source of Vitamin C, and have long been used to make wines, jams and syrups. Elder has great folkloristic importance, perceived historically as an unlucky plant, as burning its wood was thought to bring misfortune. Elder supports a wide variety of wildlife, with its leaves being particularly important for moth caterpillar such as the Swallowtail, the White-spotted Pug, and the Buff Ermine.

Willows or ‘*Saileach*’ occurred cumulatively in 24% of Longford hedgerows, with approximately 2% of this total comprising of non-native species. Willows are exceptionally important for biodiversity: their early catkins are amongst the first sources of pollen available each spring, supporting pollinators emerging from their winter dormancy. They also contribute to structural diversity within wetter or low-lying hedgerow stretches. A small number of hedgerows contained less common but ecologically valuable native shrubs. Broom or ‘*Giolcach shléibhe*’, a species usually associated with lighter, free-draining soils, was recorded in 4% of hedges. Guelder Rose or ‘*Caor chon*’, also recorded in 4% of hedges is an indicator of richer moist soils, and produces showy white flowers and nutritious berries, supporting a wide range of birds and invertebrates.



Image 20 Wild Privet was relatively common but has declined since 2006.

Overall, when compared to the 2006 survey, the 2025 dataset suggests that the overall shrub layer composition has remained broadly similar. However, the distribution of shrub diversity across the hedgerows has changed. Specifically, while Hawthorn and Blackthorn continue to dominate, a greater proportion of hedges now support higher numbers of native woody species within one singular 30m strip. In 2025, 36% of hedgerows met the criteria for “species-rich hedgerows”, representing an increase of 21% since 2006. In addition, nearly half of the hedges contained three or four native shrub species within the sample length (48%). However, it was noticeable that several shrub species have declined in frequency to varying degrees – e.g. Wild Privet (down 17%), Hazel (12%), Elder (6%), Wild Plum (6%), Spindle (5%), Crab Apple (3%) and Rowan (2%).

Like several other counties, Longford’s hedges are dominated by Hawthorn and Blackthorn. While species richness has increased overall, the frequency of many shrub species has declined since 2006. While the county’s hedgerows still support a mixture of native shrubs that enhance ecological value, ensuring a diverse mix for both conservation and new planting schemes will be key to the health of the county’s hedgerows into the future.

### 7.1.2 Woody Climbers

Bramble (*Rubus fruticosus agg.*) and Dog Rose (*Rosa canina*) are the two most widespread woody climbers, recorded in a total of 95% and 60% of the sampled hedgerows respectively. This shows a notable increase for Dog Rose compared with the previous survey, in which it was recorded in 35% of hedges. Honeysuckle (*Lonicera periclymenum*) was the third most frequently occurring climber, and its presence has remained relatively constant over time, with only a marginal increase since 2006 (29% in 2025 v 28% in 2006). While Bramble typically occurs at very high frequencies across all counties surveyed thus far, the



Image 21 Bramble was the most common climber in Longford's hedgerows.

occurrence of Dog Rose varies more regionally, with the figure for Longford for this species being lower than in Offaly (78%), but slightly higher than in Monaghan (58%). In contrast, Honeysuckle was more frequent in Co. Longford than in both Co. Offaly and Co. Kildare, where they were reported in 11% and 6.8% of hedges respectively. All three species are valuable to wildlife, providing food and shelter to many species of birds, pollinators and even small mammals. Bramble is a coloniser of disturbed ground, and one of the first plants to colonise hedgerows, while Dog Rose is more frequently found in long-established hedgerows. The fragrant flowers of Honeysuckle draw nocturnal insects such as the Elephant Hawk-moth (*Deilephila Elpenor*) and the Hummingbird Hawk-moth (*Macroglossum stellatarum*), which are subsequently preyed upon by bats.

### 7.1.3 Trees

The 2006 report remarked that trees constitute a defining structural element of hedgerows in County Longford, as the county had the “highest proportion of hedges containing hedgerow trees of any county surveyed to date”. This statement remains somewhat true to date, with Co. Monaghan being the only county surveyed to date with a higher percentage of trees (87%) when compared to Longford (83%). It is clear that trees remain a significant feature of the hedgerows, particularly when considering that a quarter of the hedgerows now are classified as treelines. This figure represents a marked increase compared with the 2006 results. Over the same period, the proportion of hedges with abundant tree cover (30-70%) decreased, while that of treelines increased. This suggests that many hedgerows have transitioned to the next stage of their ecological succession. Similar trends have been documented in Counties Cavan, Monaghan and Offaly, where unmanaged hedges are progressing into treeline structures.

From an ecological perspective, hedgerow trees offer substantial ecosystem benefits, acting as carbon stores, providing shade, supporting groundwater recharge and increasing habitat diversity. Native species such as Rowan, Hazel, and Willow support a wide range of insects, mammals and birds. In contrast, species such as Sycamore and Sitka Spruce, while providing structure, have limited understory diversity and support fewer invertebrates than native trees.

Overall tree species composition in Longford has not changed significantly within the last 19 years. A total of 20 tree species were recorded in 2025, 15 of which are native. Although this appears higher than the 16 species recorded in 2006, the difference is attributed to a difference in the way data was categorised, as for instance, individual *Salix* species and conifer species were recorded under different headings. Effectively, the tree species composition has remained stable for the last two decades. Ash has remained the most frequent hedgerow tree, recorded in 51% of hedges in 2025. Hawthorn, although primarily a shrub species, also occurs frequently as a tree (39%). Sycamore has continued to increase in canopy, reflecting a trend seen nationally where non-native broadleaves take advantage of gaps in the canopy to establish. Elder, Willow, Holly and Hazel also occur to a lesser extent, contributing to species diversity.

A noteworthy change since 2006 is the decline in Rowan, which was highlighted in the previous survey as a distinctive feature of Longford hedges, more frequently occurring than in other counties. In 2025, Rowan was only recorded to occur in 3% of hedgerows, much lower than other counties such as Monaghan (5.6%) and Cavan (7%) and marking a considerable decline in Longford since 2006. Also of note, although a small number of Oak trees were recorded in the 2006 County Longford hedgerow survey, none were recorded in 2025.

#### 7.1.4 Ground Flora

As hedgerows were not surveyed for ground flora in 2006, a direct comparison with previous results for County Longford cannot be drawn. However, it can be deduced that with an average number of target herb species of 1.87, the average hedgerow in the county can be categorised as having 'low significance' according to the Hedgerow Appraisal System methodology (<2 species / 30m strip). This became higher for Townland Boundary hedgerows, with an average of 2.92, which is deemed 'Slightly Significant' (2-3 species/30m strip) and for 1st Edition OS map hedges at 2.02 – also 'Slightly Significant'. Only 9% of hedgerows had 4-5 herb species, which would be deemed 'Moderately Significant' (4-5 species/30m strip) and only 3% would be deemed 'Significant' (6-7 species / 30m strip). A significant proportion of sampled hedgerows (20%) contained no target herb species at all, while 26% contained just one target herb species, while a total of



Image 22 Hedge Woundwort abundant along a hedge.

43% of hedgerows contained 2-3 target species. Just 12 of the 32 indicator herbaceous species, as outlined in the HAS, were recorded during the Longford hedgerow survey. The indicator flora species which occurred most, by far, was Herb Robert, which was found in 50% of hedgerows surveyed. This was followed by Speedwell sp. (33%) and Cow Parsley (25%). In contrast with other counties, e.g. Offaly, Longford has more abundance of certain species, namely Speedwell, Foxglove, and Hedge Woundwort. However, Offaly had notably more frequency of several species such as Lords and Ladies, Ground Ivy, Violet spp. and Wood Avens.

Presence and abundance of ferns and allies were also investigated, with the average number of ferns per 30m strip recorded to be only 0.96. Ferns were not common in Longford hedges, with a total of 69% containing only one or two species. Just 1% contained 3 species of fern. The reason for the scarcity of herbaceous species across Co. Longford hedgerows may be down to a few factors. Firstly, the size of hedge margins may have an effect: 44% were less than 1m wide, 25% fell between 1 and 2 m wide, and only 14% were between 2-3m. Just 2% were recorded as 3m or above, while a total of 16% of hedgerows were recorded as having no margin at all. With most margins being quite narrow, there simply might not be enough space for biodiversity – including flora - to develop and thrive. Field margins represent an easy opportunity to increase space for biodiversity in the landscape. A well-managed field margin not only provides nectar to pollinators and seeds to birds, but also provides shelter to small mammals such as shrews, mice and voles, which in turn create an optimal hunting environment for owls. Margins promote the movement of wildlife and contribute to the establishment of seed banks for native plant species that may thrive at the base of the hedgerow. Only 14% of the margins in county Longford were reported to be between 2-3m, which is the recommended width for biodiversity to thrive.



*Image 23 Yellow Flag Iris in wet ground along a hedge.*

Herbicide use and poaching are other causes of low flora diversity in some cases. Herbicide use (present in >20% of the margin) was recorded in 2.9% of hedgerows, while poaching (within 2m) was evident in over 20% of cases. On a positive note, ploughing within 2m of hedgerows and alien invasive species were not a major issue in any of the sampled hedgerows in Co. Longford, in contrast to other counties. The prevalence of nutrient richness was high, however, which would also have a negative effect on herb diversity as species like Nettle, Cleaver and Dock proliferate and outcompete other flora. This will be discussed further in Section 7.3.

## 7.2 Ash Dieback

Ash (*Fraxinus excelsior*) is the most common hedgerow tree species in County Longford, recorded in 72% of sampled hedgerows as a tree, and a further 25% as part of the shrub layer. However, Ash Dieback (*Hymenoscyphus fraxineus*) is now widespread and firmly established. Nearly all Ash recorded (94.9%), displayed symptoms of the disease. Of the affected trees, 72.5% were in moderate to severe decline, and these were located across the county.

Only 5.9% of Ash trees recorded (that is, in just four hedgerows) were classified as healthy, showing no visible signs of infection. These were located in Ballinamuck (LD0803 and LD0809), Killashee (LD0301) and Newtownforbes (LD0406a). Minor signs of Ash Dieback indicate that trees are infected but could be more successful at fighting the disease - just 9.8% of Ash trees recorded in the sample hedgerows were recorded as such. Ash trees in all sample hedgerows in the Lough Ree area (LD01, LD02, LD03 & LD04) were recorded as having 'Minor' Ash Dieback, which is notable. The trend for these and other mature Ashes observed in the vicinity were positive, with healthier, more robust specimens observed in general compared with most other areas. The remote location, extensive commonage-based grazing methods and proximity to Lough Ree SAC could be factors here, which might be investigated further. Other pockets where 'minor' signs were recorded were located outside Ballymahon (LD0201, LD0203), near Ardagh (LD0604, LD0608) and Taghshinny (LD0510).

The rapid decline of Ash within hedgerows has implications that extend beyond the loss of individual trees. Ash is one of the most characteristic species of the Irish countryside. It is a defining feature of Irish hedgerows and treelines, it is deeply embedded in folklore, and holds significant economic value, particularly as its wood is the traditional material for hurley manufacturing. As Ash trees die back, hedgerows may develop gaps, lose their dense base or transition into fragmented treelines. Moreover, the gaps left within the canopy give way for less desirable species such as Sycamore to establish in these vacant spaces, ultimately supporting fewer species of insects, mammals and birds. This pattern has been noted in other counties such as Wexford and Cavan, which also have similar proportions of severe dieback to the trees in Co. Longford (at 20%, 22.1% and 22.5% respectively).



*Image 24 A healthy, mature Ash tree near Lough Ree.*

Safety and legal obligations of Ash Dieback must also be considered. Under the Road Act 1993, landowners are required to ensure that vegetation on their property is not a hazard to road users. As Ash Dieback progresses, infected trees become more prone to uprooting or branch loss, especially where they are associated with dense ivy, which increases the risk of structural instability.

Despite the severity of the decline, clear-felling is not ecologically desirable in most hedgerows. Dead and declining trees have inherent biodiversity value, providing standing habitat for insects, birds, and fungi. In this context, top-down removal is recommended, removing all possible wind shear risk and leaving a stable trunk to rot away over time. This approach maintains habitat value and helps reduce some of the visual impacts of clear felling.

To safeguard the long-term integrity of hedgerows in Longford, infill planting is also recommended, prioritising native species of local provenance.

Suitable replacements that can support structural diversity include Oak, Hazel, Spindle, Holly and Rowan. Native Alder, Downy Birch and Willow varieties are best suited for wetter soils. These should be planted into developing gaps, allowing natural regeneration to occur alongside strategic planting.

### **7.3 Nutrient Rich Hedges**

Nutrient enrichment constitutes one of the reasons for the poor condition of hedgerows across Co. Longford, with hedgerows in Counties Offaly, Monaghan, Wexford and Kildare all failing on this criterion. County Longford was no different, with 39.2% of the hedgerows sampled judged to be nutrient rich, based on the presence of >20% nutrient rich species.



*Image 25 One of many examples of a nutrient rich verge along a hedgerow in Co. Longford (June 2025).*

Three nutrient-rich species featured in the top six flora species recorded in the hedgerows surveyed in Co. Longford – these were Cleavers (featured in 54% of hedgerows), followed closely by Nettles (50%) and to a somewhat lesser extent, Docks (23%). Sow Thistle (*Sonchus* spp.), considered a ruderal species, was also relatively abundant, at 23%. These species thrive in soils where phosphate and nitrate levels are high. Nutrient-rich species are not inherently negative, and in fact in low quantities they do contribute to biodiversity in their own way: for instance, nettles are the larval foodplant of many species of butterfly such as the Peacock, Red Admiral, Comma, Painted Lady and Small Tortoiseshell. Similarly, cleavers provide food to several butterflies and moths, including the Hummingbird Hawk-moth and the Barred Straw Moth. However, in soils that are particularly rich in nitrate and phosphorus, these species can easily outcompete less vigorous plants, creating large stands, and reducing the space available for other species to emerge.

Nitrogen can be easily depleted from agricultural soils, particularly when it is not regularly replenished or fixed from the atmosphere by nitrogen-fixing plants. Its high mobility allows for rapid absorption by crops and grasses, resulting in a gradual reduction of nitrogen levels in the soil over time. As a result, farmers often resort to applying fertilisers to their fields to ensure high crop yields. However, nitrates not only promote the growth of problematic plants, but are also prone to leaching from the soil during rainfall, which can lead to adverse effects such as eutrophication.

Due to the detrimental impacts to our aquatic environments, nitrogen runoff is regulated by EU Law through The Nitrates Directive (91/676/EEC). However, Ireland currently has a derogation which provides farmers an opportunity to farm at higher stocking rates when they meet a number of clauses. Ireland's current derogation limit was reduced to 220kg per hectare on 1 January 2024 in certain areas. However, the latest water quality results have consistently not shown sufficient improvement. The derogation was due to expire on 1 January 2026, however after much pressure from farming organisations and the Irish Government, it has been extended for a further three years, with a number of conditions. Ireland is now the only remaining member state with a derogation, which allows farmers to exceed the standard limits for nitrogen fertilisers and animal manure applications set by the European Union's Nitrates Directive. Prior to Brexit, Northern Ireland also had a nitrates derogation, allowing the legal limit to be breached. Lough Neagh, Ireland's largest lake and the source of 40% of Northern Ireland's drinking water, has made headlines in recent years due to a resurgence of toxic blue-green algal blooms, which has been linked to high levels of nitrates.

With almost 40% of the hedgerows in Longford reported to be nutrient-rich, a parallel can be drawn between nutrient-intensive land use practices, and the overwhelming presence of these nutrient-loving plants. In fact, recordings for adjacent land use found that around 37.3% of the adjacent land use is for Cattle and Dairy combined, with fodder being the second highest land use type at 26%. Cattle rearing and dairy both result in high nutrient input arising from animal waste, while fodder relies on high quantities of fertiliser to ensure correct soil fertility and optimize nutrition. In this context the necessity for more conscious use of fertiliser becomes apparent and represents a critical step towards healthier hedgerows.

After a couple of years of reduced fertiliser use on farms due to spiraling costs, the latest available figures show that Nitrogen (N) use increased by 10.6% between 2023 and 2024, while Phosphorus (P) fell by 6.6% in the same period (Plunkett & Kavanagh, 2024). It is crucial to minimise fertiliser usage on agricultural lands and to increase hedgerow margins to 2-3m wide to protect biodiversity and conserve ecological corridors. This can be achieved by applying only what is essential and shutting off the spreader disc on the hedgerow side of the tractor to prevent fertiliser from reaching the field margins.

## **7.4 Hedge structure and construction**

### **7.4.1 Height and Width**

Research indicates that most wildlife generally prefers taller, wider, denser, and structurally intact hedgerows, including small woodland plants (Hegarty and Cooper, 1994; Corbit and Marks, 1999; Murray 2001); invertebrates (Burel, 1989), and hedgerow birds (Chamberlain et al., 2001, Arnold, 1983, and Lysaght, 1990). Maintaining hedges below 1.5 m in height is not considered a desirable feature from a biodiversity perspective and has been shown to be least beneficial to nesting birds (Foulkes, 2007).

Average height characteristics were relatively favourable in Longford hedgerows, with a large proportion of hedges (46%) being over 4m tall which is a significant increase of 32% since 2006. 25% (50% in 2006) have an average height greater than 2.5m, while 28% (19% in 2006) are between 1.5 m and 2.5 m in height. Only 1.5% were recorded as less than 1.5m, a decrease of 16%, which is quite a positive result. Overall,

however, over the past two decades, there has been a trend of hedgerows getting taller, with many growing into treelines (above 4m). While treelines are good for biodiversity, they have lost their original hedgerow properties and associated functions (e.g. active livestock boundaries). Taller hedgerows also become harder to maintain and manage – therefore, the optimum hedge height for a functioning, biodiversity-rich hedge is considered to be between 2 and 4m.

In terms of basal density, Longford’s hedgerows are faring quite well, in that 71% are either dense/opaque or semi-opaque. This suggests that despite hedgerows growing taller and gradually becoming treelines, the density of associated lower vegetation is relatively high. However, the type of basal vegetation for this aspect is not specified – meaning it is unclear exactly what the dense vegetation is composed of.



*Image 26 A box-cut hedge along a field boundary in Co. Longford.*

Regarding management types, most of Longford's sampled hedgerows are either short-term or long-term unmanaged (61%, cumulatively). This is a decrease of 8% since 2006. In terms of profile, half were deemed 'overgrown/irregular' (a decrease of 7% since 2006), while 19% were recorded as 'Boxed/A-shaped' (a decrease of 4% on 2006). There was a notable 16% increase in hedges being 'straight-sided' in the past 19 years. The number of 'remnant' hedgerows increased by 8%, while 'relict' hedgerows decreased by 8%.



*Image 27 A hedgerow that has transitioned into a treeline, dominated by Ash.*

'Remnant' hedgerows are those that have developed into lines of trees which no longer display a shrubby growth form, with no consistent profile and have a high percentage of gaps. These are not considered suitable for rejuvenation, which is worrying if the trend continues. 'Relict' or 'derelict' hedgerows occur where shrubs and thorns of the hedge component have mostly grown up into trees, no longer displaying shrubby, dense growth form in the bottom 1-2m of the hedge. These hedges are still considered to have the potential for rejuvenation. The gradual decrease of relict hedgerows and increase of remnant hedgerows is concerning, considering there is little likelihood of the latter type being revived.

In general, the wider the hedge, the better it is for biodiversity. Although regular cutting can be necessary to keep a hedge thick, if it is cut back to the same point every year it will produce fewer flowers or berries. Hedges should be cut just once every two or three years, each time letting the hedge grow out and up a little. Larger hedges, with greater total areas of foliage, will generally support larger populations of phytophagous (plant-eating) insects. This should, consequently, have benefits for species higher in the food chain. The average width of Longford hedges fared adequately, with 31% recorded as 3m+, a significant increase of 25% since 2006. Longford hedge widths of less than 1m have decreased slightly by 1% over the past 19 years. Overall, hedges in Longford are more likely to be in the mid-range, with 62% (cumulative) measuring between 1 and 3 m wide, a 23% decrease since 2006. It is likely that the increase in taller hedgerows and treelines has contributed to the substantial rise in hedgerows measuring 3m plus in width over the past two decades, as larger leaf/branch canopies and outgrowths needed to be considered during the 2025 surveys.

Most hedges in County Longford are 'single' hedges (75%), with 19% recorded as 'double' and 6% as a 'random line'. Most hedges are located on earthen banks (61%), while 14% were recorded as being on a 'shelf' and almost 8% along a stone wall. More stone walls were recorded towards Lough Ree and the Southwestern part of the county. The remainder (17%) had no bank/wall/shelf. 60% of hedgerows have a drain, which correlates with counties like Monaghan and Cavan.

### 7.4.2 Gaps

The vast majority of hedgerows in Longford presented some level of gappiness, with only 8% of hedgerows in the county deemed "complete," meaning they presented no noticeable gaps. In particular, it was found that just over 28% of hedgerows exhibited gaps exceeding 25%, which is over double the figure recorded in the 2006 survey. However, it would seem that hedgerows with <5% gaps have increased in the last two decades by just over 12%, while hedgerows with gaps between 5 and 25% has decreased by 29%. It is difficult to account for this 'mixed bag' of changes. While it is clear that bigger gaps are more commonplace, it would seem that the number of hedgerows with smaller gaps has decreased. Perhaps this can be linked to the progression of hedgerows into treelines (4m plus in height), where larger gaps are forming between trunks and stems, as opposed to random, smaller gaps that might naturally form in a more regular, managed hedge below 4m.



*Image 28 Example of a 'gappy' hedge, Co. Longford.*

Although some gaps serve specific purposes, such as gates and entrances, which are vital for providing access to the fields separated by the hedgerows, it is noteworthy that the majority of these gaps were general in nature rather than serving a specific function. This large quantity of general gaps highlights the potential for infill planting in hedgerows across County Longford, which is similar to other counties surveyed. Infill planting or coppicing should be prioritised over the establishment of new hedgerows and should be emphasised within agri-environmental schemes. The tightly interwoven branches of hedges offer secure nesting and roosting habitats for smaller bird species such as Thrushes, Finches, Robins, Hedge Sparrows, and Wrens, whereas more open hedges tend to draw in larger birds like Magpies,

Crows, and Pigeons (Hickie *et al.*, 2004). Certain species, such as Holly, serve as excellent hedging plants, creating compact and dense bushes that provide substantial protection during the winter months.

### 7.4.3 Profile

Hedgerow profiles provide an indication of management history and structural condition. In both the 2006 and 2025 surveys, the dominant profile type was found to be “overgrown/irregular”, accounting for 57% of hedges in 2006 and 50% of hedges in 2025. Overgrown/irregular profiles can be indicative of prolonged periods without management, during which stems extend outwards, creating the dense misshapen profile that characterises this category. The high proportion of overgrown profiles in Longford suggests that key management practices such as hedge laying, coppicing, or even simple regular trimming, are often overlooked. The slight reduction since 2006 indicates some improvement, though the overall picture is still one of undermanaged hedgerows rather than active rejuvenation.

Changes in the proportion of relict and remnant hedges create another interesting picture. Relict hedges (hedgerows that have deteriorated through neglect but retain enough living structure to allow for rejuvenation) have decreased from 12% in 2006 to 2% in 2025. In contrast, remnant hedges (where only isolated senescent plants remain, often with little rejuvenation potential), have increased from 2% to 10%. This shift implies that more hedgerows may be progressing to the next stage of their natural succession. This highlights that loss of this habitat through neglect and deterioration is a serious issue that warrants both thoughtful consideration and direct actions in order to reverse this trend.



*Image 29 A bank dominated by Gorse along a remnant hedge.*

At the opposite end of the spectrum, straight-sided hedges have increased sharply, from 1% in 2006 to 17% in 2025, suggesting an increase in use of mechanical trimming. There was also a slight decline in boxed/A-shaped hedges, which are considered the ideal profile for long-term structural stability, indicating that a proportion of these may be either becoming overgrown or cut into straight sides.

When compared to other counties, Longford hedges reflect a national trend of under-management. Monaghan and Offaly both recorded a similar high proportion of overgrown profiles, while Kildare recorded a much higher proportion of tightly trimmed, straight-sided profile, likely due to more intensive agricultural practices. Overall, across all counties the pattern indicates that hedges are not rejuvenated, with Ireland likely to see fewer relict hedges, but a gradual increase in remnant hedges in the future.

#### 7.4.4 Hedgerow Margins and Banks

84% of hedgerows in Longford had a verge present. A significant proportion of these margins (44%) were less than 1m wide, a further 25% fell between 1 and 2 m wide, and 14% was wider than 2 m. A total of 16% of hedgerows lacked a verge entirely. The width was not recorded in the 2006 survey, so direct comparison is not possible, however the current results show that margins are present along the majority of hedgerows. As for the condition of banks, walls and shelves, a general improvement was noted since 2006. In 2006, 48% of hedgerows showed some degree of degradation, with 44% exhibiting minor erosion and 4% showing severe damage. In 2025 more than 81% of hedgerows displayed no evidence of bank, wall or shelf degradation, with minor damage only recorded in 12.7% of hedges, and severe degradation remaining low in 5.8% of banks. This change suggests either reduced poaching, improved fencing and stock managing practices, or land use practices that do not impact banks or verge integrity.

In comparison, in Monaghan over 70% of hedges exhibited bank degradation, driven primarily by land use, as cattle farming was identified as a significant pressure. In Kildare, where tillage agriculture was more prevalent, roughly half of the hedges displayed bank degradation. Similarly, Offaly reported bank degradation in nearly half of its hedgerows. In this context, Longford's hedgerows appear to have healthier banks and margins compared to other counties.

### 7.5 Impacts of Hedge Removal and Hedgerow Loss

From the desktop survey of Longford hedgerows completed in 2024, the average hedgerow density was 8.98 km per km<sup>2</sup>, down from 9.5 km/km<sup>2</sup> in 2006, a reduction of 0.52 km/km<sup>2</sup>. A total of 5.4 km of hedgerow has been removed from each of the sample squares since the 2006 survey, based on GIS analysis of aerial imagery. This equals approximately 5.57% of the total hedgerow extent within the study area and does not include hedgerows which have been deemed remnant or relict, which in many instances equates to the same thing. This would suggest that approximately 0.31% of hedgerows are being removed annually in County Longford. Total hedgerow length in 2006 was estimated to be around 10,326km, supposing the sample squares are accurate representations of the entire county area. Our study estimates the current hedgerow extent to be in the realm of 9,751km, meaning around 575km of hedgerow has been removed across Longford in the last eighteen years. This is the

equivalent approximate straight-line distance from Cork to London! A study by the EPA (2019) using aerial photography estimated a net removal of hedgerows between 0.16% and 0.3% per annum between 1995 and 2015. Based on this data, Co. Longford is at the highest end of the national average for hedge removal.



*Image 30 Removed hedgerow near Ballymahon, June 2025.*

The most significant cause for hedgerow removal was found to be agriculture; this contributed to the majority of hedge removal overall. Housing and scrub encroachment were also with the removal of hedgerows in Longford. Additionally, 92.2% of the sampled hedges were located on agricultural land, emphasising their role as vital wildlife corridors in intensive agricultural landscapes. Hedgerows are frequently removed for agricultural purposes due to several driving factors. Farmers often opt to eliminate these natural boundaries to expand their fields, optimising land use and increasing agricultural productivity. The absence of hedgerows simplifies some farming practices, making it easier to operate large machinery, thus reducing labour and time requirements. However, loss of hedgerows also means the loss of many positive attributes: a reduction in active livestock boundaries, a barrier against the spread of disease, a windbreak and extreme weather shield, in addition to a means of runoff absorption and flood defence.

According to the Department's guidance, if a proposed newly created field will be over five hectares after hedge removal, or if a farmer wants to remove more than 500 metres of hedgerow, they must apply for an Environmental Impact Assessment screening. These Regulations were introduced following a 2008 European Court of Justice (ECJ) ruling against Ireland for using uniform, unqualified size thresholds to assess the effects of projects on the environment. However, these thresholds continue to be

unqualified given the average length of hedgerow in Longford is 120m (based on this study), far shorter than 500 metres, meaning most hedges are removed without the need to screen for an EIA. The national regulations have been in place since 2011 to ensure that farmers apply to the Department of Agriculture for screening to determine if permission and an environmental impact assessment (EIA) is needed to remove a hedge of over 500m are not adequate to prevent and dissuade hedgerow removal in the country. By contrast, in the UK it is illegal to remove over 20m of hedge without approval. Additionally, an EPA analysis of EIA screening applications for “field boundary removal” from 2011 to 2017 shows that 93.5% of applications were “approved”. This means that removal could proceed without the need for a full EIA.

Cross Compliance regulations in place since January 2023 under the Good Agricultural and Environmental Condition (GAEC) requires farmers to replant twice the length of the hedgerow they remove. To receive a payment under the Single Payment Scheme farmers must comply with these Statutory Management Requirements (SMRs), set down in EU legislation Directives and Regulations. Farmers’ compliance with these requirements can now be checked through inspection visits. Failure to meet the requirements may result in payments being withheld, either partially or fully.

At one point, over 80% of Ireland was forested, but now our forest cover is one of the lowest in Europe at just 11.4% (with only 1.25% of this being native woodland). Our hedgerows are our linear forests and deserve our protection. These hedgerows provide essential ecosystem services, including habitat for wildlife, soil erosion control, and carbon sequestration. They also serve as important genetic reservoirs for native plant species and contribute to the overall biodiversity of the landscape. Hedgerows are important for the genetic integrity of many bird species who use them as conduits. The removal of hedges results in isolating bird species where there is no longer a genetic interflow which causes inbreeding; thus, genetic diseases follow. The regulations around hedgerow removal must be reassessed and strengthened to help tackle our current biodiversity crisis. We should be looking to increase our hedgerow stock, as well as halting its loss. The removal of hedges, particularly in agricultural contexts, not only reduces species diversity but also disrupts the interconnected network of hedgerows essential for wildlife movement and genetic exchange.

In 2020, An Taisce made an official complaint to the Department in relation to the removal of several kilometres of hedgerow on farms in Cavan, Monaghan and Tipperary, in which no permission had been sought. The complaint was redirected to the NPWS were not able to follow up on this due to ‘operational reasons’ (Noteworthy, 2021). An Taisce ecologist Elaine McGoff has stated ‘Ireland has one of the lowest levels of habitat connectivity in Europe’ (Noteworthy, 2021). Our hedgerows are the most important links to natural and semi-natural habitat in the country. Our biodiversity is in severe decline with around 1,050 species of vertebrates, invertebrates and plants either Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Regionally Extinct (RE) and Near Threatened (NT) (NPWS, 2019). Some species are at significant risk if this rate of removal continues.

No natural landscapes (e.g. scrub/transitional woodland, watercourses or native woodland) were recorded adjacent to hedgerows in Co. Longford – the closest being ‘semi-natural’ in the form of semi-natural grassland. Semi-natural grasslands were noted as the land class in only 7.4% of the fields next to hedges. Semi-natural grasslands across Ireland are considerably threatened due to conversion to intensive

farmland or development. Intensively farmed grasslands are incredibly species-poor with little potential to support biodiversity. When healthy hedgerows are linked with semi-natural grasslands and species-rich meadows, they are a haven for pollinators, birds, bats and other mammals.



*Image 31 Semi-natural, species-rich grassland (including Yellow Rattle), near Ledwithstown (2025).*

Protecting and enhancing hedgerow corridors and their verges, along with promoting their expansion, will improve wildlife habitat connectivity and strengthen wildlife populations. Prioritising hedgerow conservation and growth will help Ireland address its biodiversity crisis and create a more resilient, sustainable environment for future generations.

## **7.6 Hedgerow Management**

Hedgerows are primarily man-made structures, and as such they require a certain level of management to maintain their integrity. In fact, without appropriate management, these hedgerows can deteriorate, leading to gaps that compromise their stock-proof function, diminishing their ecological potential and landscape significance. The manner in which hedges are managed directly influences their structure, condition, and long-term viability.

Overall, the majority of the hedgerows in County Longford were recorded as unmanaged (61%) – either short term or long term – with an overgrown profile being the tell-tale sign of this condition. This was 8% less than the 2006 survey (69%). There has been a 10% increase in managed hedgerows compared to 2006, which includes all types of management – e.g. box-cut, A-shaped, cut one side/cut both sides. In 2025, 10% of hedgerows are now remnant, an 8% increase on 2006. Remnant hedgerows are defunct and almost

impossible to rejuvenate. It is possible that those hedgerows deemed 'relict' in 2006 have now become 'remnant' in the past 19 years. This means the opportunity to resurrect such hedgerows has passed.

There has been a significant rise in gaps, with >25% gappiness rising 16.4% over the past two decades. The number of smaller but more frequent gaps (<5%) has also risen substantially, by just over 12%. The increase in remnant hedgerows, hedgerows that exhibit extensive gaps, plus the increase in treelines, shows the consequences of the lack of management within the last 19 years. Of those hedgerows being managed, only 2% are being appropriately maintained in an A-shape form. The broad base of an A-shaped hedgerow creates the ideal habitat for many species of insects, ground nesting birds, and small mammals, while the narrow top allows light to reach the base, encouraging a dense growth at ground level.

Amongst the managed hedgerows, cutting on one/both sides appeared to be the most popular choice (25%, cumulative). While not as favourable as an 'A-shaped' hedge, cutting on one/both sides is preferable to a 'box-cut' hedge and has the potential for enhanced growth along the sides at least. However, it is telling that only 3% of hedges were topped, as the majority of hedgerows surveyed have now progressed into becoming treelines, at over 4m tall.

In terms of 'box-cut', 9% of hedgerows were found to be managed in this way. Many of the box-cut hedges recorded (in addition to a few that were deemed 'remnant' or 'relict'), were located along roadsides. These hedgerow types are short and overmanaged, and often so roughly cut they resemble wooden 'shards' that are susceptible to disease and are also of little value to wildlife. Box cut hedges can also promote unhealthy, twiggy, lateral growth that sometimes encroaches on roads and paths and often results in requests from the public for hedge cutting.



*Image 32 Example of a box-cut roadside hedgerow in Co. Longford.*

'shaped' hedgerows are not an option, 'top-heavy' hedgerows, which occurred in just 2% of hedgerows in Longford, are preferred to low, box-cut hedges. They allow more opportunities for healthy ground flora to develop, while providing perching posts and nesting sites for birds. Overall, depending on the function of the hedgerow and its requirement for providing shelter or as a stock proof fence, under-management is likely to be a better result for biodiversity than over-management.

No hedgerows were found to have been managed by laying in Co. Longford. Laying is considered to be a heritage feature, and the technique entails partially cutting the stems near to the ground and bending them over to form a living barrier, which continues to grow. This provides vital habitat and gives shelter to wildlife, while promoting the lifespan of a hedge, particularly as a method to rejuvenate hedgerows. The 2006 survey reported that just 7% of the hedgerows surveyed had evidence of either past or recent

laying. As noted in the 2006 survey report, detecting evidence of historical laying can prove challenging, particularly in dense hedges or areas with thick ground vegetation. Therefore, the lack of laying encountered in the 2025 survey should be considered as conservative.

As per the HAS methodology, the type of fencing was also noted during the survey. Fencing is paramount in protecting the integrity of hedgerow margins and bases, which constitute important wildlife habitats in their own right. In dairy and beef farming, for instance, fencing prevents livestock from poaching the area adjacent to the hedgerows, minimising bank degradation. Fencing was present in 38% of hedgerows surveyed, which comprised either post/wire, electric or sheep wire. This is a relatively low figure when compared with several other counties. To maximise the space available for biodiversity within farming operations, fencing should be kept at least 2m from the base of the hedgerow. This practice fosters the development of a grassy, meadow strip along field margins that is vital for small mammals and pollinators.

Of the fencing recorded in Longford, 12.7% was 'fixed to stems' – in other words – the wire was attached directly into tree trunks/stems. Wire embedded within the hedge poses a risk of damaging hedge-cutting equipment and introduces potential hazards during maintenance activities. Furthermore, the attachment of wire to hedgerow stems can facilitate the onset of bacterial and fungal infections, compromising the structural integrity of the plants and endangering their health. Additionally, the presence of wire complicates the restoration process, as it must be removed prior to any safe and effective restoration work being conducted.

Interestingly, bank degradation was not recorded in 81.4% of cases, which is almost a 30% reduction since 2006. Of the degradation recorded, just under 6% was deemed 'severe' while almost 13% was 'minor'. While there was a slight increase in 'severe' degradation (up 2%), there was just over 30% decrease in 'minor' degradation. These figures are surprising given that nearly half of adjacent land use in Co. Longford was recorded as being actively grazed for livestock, added to the fact that the extent of fencing was relatively low. In contrast, nearly half of the hedgerows in Co. Wexford presented some degree of bank degradation with approximately 11% of these exhibiting severe damage. Likewise, in Offaly, a quarter of the hedgerows presented some degree of damage, with 13% of hedges recorded to have severe degradation. This may be attributed to an overall less intensive land use in Longford compared to other counties. The disparity between the 2006 and 2025 surveys may also be down to surveyor error, with some very small banks potentially being recorded as "n/a", thus perhaps skewing results somewhat.

### **Key Summary Points for those Managing Hedgerows**

- Cut hedges on rotation every 2-4 years
- Maintain 2-3m wide verge as a habitat area in and of itself
- Minimum height should be 1.5m but should be incrementally increased
- Cut into an 'A-shaped' profile, with a bushy top if the hedge is tall and overgrown
- Mature trees should be allowed to grow up within the hedge
- Maintenance activities must be avoided between 1<sup>st</sup> March to 31<sup>st</sup> August due to bird nesting season. It is against the law to intentionally harm or destroy the nests of any wild bird species (Section 40 of the Wildlife Act 1976, as amended 2000)
- Trim hedges during the winter months, preferably between late Autumn and early February
- Incremental cutting is crucial. This is cutting slightly higher and wider (by 10cm) for each cut. This allows for increased flowering and fruiting and encourages more hedgerow density.
- Stock exclusion is important to maintain an undermanaged hedge. When animals have unfettered access to a hedgerow, the health of shrubs, trees and understorey flora is negatively affected.

## **7.7 Creation of New Hedges**

A recent survey from the European Commission's Joint Research Centre found that planting hedgerows is one of the best ways to combat ecosystem fragmentation in intensively farmed landscapes. This is important to ensure the continued pollination of crops (Dondina *et al.*, 2018). Designing and planting a new hedgerow should be done with consideration of the long-term outcomes and with the purpose of the hedgerow in mind. Hedgerows should be sited based on how livestock is moved around the farm or with consideration for machinery access. The following steps should be followed for rapid growth and establishment and for the greatest benefits to biodiversity. If being planted for biodiversity as the main objective, try and achieve at least 2 metres in width with 2 metres of a grassy verge on at least one side.

### **Ground preparation**

Ground preparation should be carried out prior to tree establishment. The ground should firstly be dug up with a digger or ploughed and harrowed to break up the soil. This creates the best conditions for rapid root growth. If digging a drain, consider creating an open drain instead of a piped drain with the hedge then established on a bank made from the excavated material.

### **Mulching**

Add a mulch material of old straw, wood chip or mature compost. This will help insulate the trees from drought conditions, introduce a range of fungal and invertebrate species to the area and act as a slow-release nutrient source. Avoid farmyard manure and hay as the former is too high in nitrogen while the latter will introduce too much grass into the area. If possible, ground preparation and mulching should be done in late summer or autumn with trees, then planted in the winter or the following spring.

## Planting

Plant a diverse range of trees and shrubs. Aim to plant at least 10 species including Hawthorn, Oak, Hazel, Wild Cherry, Crab Apple, Holly and Guelder Rose. Plant density is an important consideration. Aim for at least 3 trees/m<sup>2</sup>. This encourages competition between the trees above ground and the establishment of interconnected root systems below ground.

## 7.8 Agri-Environment Schemes

ACRES (Agri-Climate Rural Environment Scheme) is Ireland's new agri-environment climate scheme proposed as part of Ireland's draft CAP Strategic Plan. This new €1.5 billion agri-environment scheme to help address biodiversity decline while delivering an income for farmers. ACRES provides a 3-tiered system that includes basic payments for results-based actions in priority areas that include: Natura 2000 sites, sensitive waterways and catchments and areas where semi-natural grasslands and on all other farms. This scheme provides for a number of annual payments for a range of Hedgerow and grassy verge maintenance and establishment practices, including<sup>2</sup>:

Table 12. Hedgerow and grassy verge actions and associated payments under the new ACRES Scheme

<b>Action</b>	<b>Margin width</b>	<b>Payment €per metre/year</b>	<b>€per unit/year</b>
<i>Grass margin arable</i>	3m	0.38	
	4m	0.51	
	6m	0.76	
	8m	1.01	
<i>Grass margin grassland</i>	2m	1	
	3m	1.1	
	6m	1.37	
<i>Coppicing of Hedgerows</i>		2.87	
<i>Laying of Hedgerow</i>		5.47	
<i>Planting a new hedgerow</i>		5.29	
<i>Tree Planting</i>			6.21

<sup>2</sup> gov.ie - Agri-Climate Rural Environment Scheme (ACRES) ([www.gov.ie](http://www.gov.ie))

## 7.9 Local Wildlife

Hedgerows are considered essential habitats for numerous animal species, particularly as they frequently serve as one of the limited semi-natural habitats within an often heavily altered landscape. Mammals use the base of hedgerows for shelter, forming a network of burrows that can support entire generations, as well as surviving on the fruits and berries they produce. Pollinators benefit from the nectar and pollen offered by the diverse flowers that colour hedgerows throughout the year. Birds feed on hedgerow fruits and find perching posts or sheltered areas to establish their nests, while bats forage on the various insects which rely on vegetation for sustenance. A well-maintained hedgerow is teeming with life; however, as the threats and pressures on this habitat increase, so too do the risks faced by the wildlife that inhabits them.

Bird and butterfly species were recorded formally at the sample hedgerows, while other invertebrates and mammal signs were recorded informally where they were observed. For instance, a Red Squirrel was recorded in a small, wooded area near LD0103 (Lough Ree area), and Deer tracks at LD0504 (Taghshinny) and LD0605 (Ardagh). Common Blue Damselflies were abundant near LD0104 (Lough Ree area) and at LD0208 (Ledwithstown), in addition to a Cinnabar Moth in the vicinity. Solitary bee banks were noted in just one hedgerow bank LD0603 (near Ardagh). It was unsurprising that invertebrate records were often more frequent where flora was relatively diverse/abundant, or where semi-natural grassland was present. The warm, sunny weather experienced during the surveys was also favourable to invertebrates, especially where food plants were readily available.

Mammal evidence was quite rare, with only 2% of sampled hedgerows showing evidence of dens/setts/burrows, in the form of Rabbit burrows. Mammal trails were present along many hedgerows surveyed, though markers to suggest certain species were often absent. This data in itself does not tell us much, however it may indicate that many of the hedgerows in their current condition, along with hedgerow banks and verges, are not capable of supporting substantial numbers of mammals that would traditionally have used hedgerows for foraging and living in. There are no figures to compare with the 2006 survey, however that report did suggest that high levels of bank degradation could be down to a “very high density of Rabbits”. Very few sightings nor evidence of Rabbits were noted in the 2025 survey. It would be interesting to survey for mammal evidence in future surveys to build on current data.

A total of 38 bird species were recorded during the Longford hedgerow surveys. A similar number (40) was recorded in the 2024 Offaly hedgerow survey. The majority of bird species recorded during the Longford hedgerow surveys were small garden birds such as the Wren, Blackcap and Blackbird. The Wren was by far the most frequent at 64%, followed by the Blackcap at 24%. It was a positive sign that summer visitors such as the Chiffchaff, Willow Warbler and Swallow were among the top six species recorded during the surveys, at 19%, 24% and 13% respectively. Hedgerow height, width, and the abundance of trees, are positively correlated to the abundance of avian species. The relatively tall, wide hedgerows across the county are still able to support a wide array of bird species. However, the deteriorating condition of hedgerows and their gradual removal, would undoubtedly have a negative effect on bird species diversity, abundance and numbers. This also applies to mammals and pollinators. As no data is available on bird species for the 2006 Longford hedgerow survey, the two cannot be compared in this

respect. It would be interesting to further explore the relationship between bird distribution and hedgerow characteristics in future surveys.



*Image 33 Ringlet in a Longford hedgerow.*

A total of nine butterfly species were recorded in County Longford hedgerows during ground surveys, in relatively low frequency. The top three species recorded were the Meadow Brown (35%), Ringlet (5%) and Green-veined White (4%). While the frequency for most species was quite low, the results for species number and frequency are still better than those recorded in the 2024 Offaly hedgerow survey, where just five species were recorded, with the highest frequency being for Speckled Wood at 9%. Butterfly counts are highly impacted by weather conditions, temperatures, and

time of day, all factors that can vary greatly during surveys, possibly resulting in skewed results. While a more systematic approach to recording butterflies may lead to different records, the low butterfly numbers recorded in Longford are not an isolated result.

It is important to note that 2024 was the lowest year on record for Butterflies across Ireland and the UK, primarily due to poor summer weather conditions for two consecutive years. The Big Butterfly Count UK 2024 reported a decline in the numbers of 81% of butterfly species for the year. The Irish Butterfly Monitoring Scheme survey in 2024 (IBMS, 2025) found that there was a 66% decline in butterfly populations since 2008. The latter study also found that the Meadow Brown was the most common species recorded, followed by the Speckled Wood and Ringlet. However, while butterfly numbers are struggling in general, there was a surge in populations during the summer of 2025. While official 2025 figures have not yet been released, observations showed that butterfly numbers rose dramatically, partly due to higher temperatures and less intense rainfall (Harding, 2025). This may partly explain why the frequency of recordings in the County Longford survey was higher than the Offaly survey carried out in 2024.

In addition to changing weather patterns, herbicide can have serious detrimental effects on butterfly populations. It directly affects the availability of food for butterflies, but it may also result in the alteration of butterflies' life cycle and the emergence of morphological anomalies. Reduction of herbicide use is critical for the survival of not only butterflies, but many other pollinators and insects. In addition, the creation of meadow strips via wider verges (2m or more) along hedgerows allows a greater diversity and abundance of wildflowers to grow. This in turn greatly supports pollinators and other wildlife, e.g. birds, and mammals (e.g. Stoat, Hare, Badger and Fox). Again, comparison cannot be made for butterfly

numbers between 2025 and 2006, as there is no data available for the latter survey. It is advised to gather similar data for future surveys to monitor trends.

## 7.10 Townland Boundary Hedgerows

Hedgerow significance analysis has indicated that there is still a relatively low proportion of highly significant hedgerows, also known as ‘heritage hedges’, remaining in County Longford. This analysis was conducted on all sample hedges but additionally on townland boundary sample hedgerows specifically. This was to further investigate the ecological value and role often associated with these older hedgerows. Townland edge hedges were established to delineate boundaries. They frequently have larger banks and ditches and were often planted with a higher diversity of shrub species, making them some of the most ecologically diverse hedges in the landscape. There are no specific figures to compare with in the 2006 survey report in terms of the class ‘Highly Significant’ – this concept was developed later in the HAS Guidelines (Foulkes *et al.*, 2012). However, it was stated that 11% of the hedgerows surveyed were Townland Boundary hedgerows in 2006, which is similar to the extent surveyed in 2025 (13%).

In the 2025 assessment of all of County Longford’s sample hedgerows, 14.7% were of “Historical Significance”. This is noticeably lower than Co. Offaly, for instance, which was 27.2%. Highly significant features include: overlapping townland boundaries, connectivity to woodlands identified in a 1<sup>st</sup> edition OS Map and Sites and/or Monuments Record. Unsurprisingly, townland boundary sample hedges had a value of 97% for this category. Just under 10% of Longford’s hedges were considered highly significant for “Species Diversity”. This increased to 14.7% when considering sample hedges overlapping townland boundaries. This means that they contained ‘10+ species / 30m strip’.

Only 2.9% of all hedgerows assessed were highly significant based on “Structure, Construction and Associated Features”. Double ditches and adjacent watercourses are features indicating high significance. Of all hedgerows assessed, only 3.9% were highly valued for “Habitat Connectivity”. This figure increased slightly for townland boundary hedgerows (5.9%). When compared with other counties, e.g. Offaly and Wexford, Longford is not faring well. Offaly scored 10.4% and 19.4% respectively, with Wexford scoring 9.2% and 15.1, respectively. The results for ‘Highly Significant’ hedgerows are relatively poor in Co. Longford overall, though townland boundary hedgerows are faring a little better in this regard. Therefore, it is even more important to conserve the heritage hedgerows that are left. It is important to prioritise these hedgerows for conservation as they offer more diversity, connectivity and microhabitats for wildlife.

As stated in the 2006 survey: *“The higher species diversity found for townland boundary and roadside hedges makes them candidates for particular care and attention in their management and measures should be taken to avoid their degradation and removal wherever possible”*. It is interesting that roadside hedgerows were also considered more species diverse compared with other hedgerow types in 2006.

Heritage hedgerows serve as important biodiversity hotspots and wildlife corridors within both areas of agricultural and urban nature. Preserving these hedgerows is vital for maintaining local biodiversity and protecting habitats that are increasingly rare due to urbanisation and agricultural

development. Recognising 'Heritage Hedgerows' in planning, promoting native species planting in all new developments, and prioritising hedgerow translocation over removal could help support long-term conservation of these types of hedgerows. Additionally, a 'Hedgerow and Tree Conservation Policy' for County Longford would be beneficial. It would emphasise the ecological and historical value of townland boundary hedges and support their long-term preservation and integration into development plans.



*Image 34 View of the landscape near Lough Ree, Co. Longford.*

## 8. Recommendations

A list of recommendations is proposed below based on the results of this survey and in light of current best conservation practice.

- All relevant stakeholders need to commit to eliminating the cutting of hedges during the period laid down in the Wildlife Amendment Act (2000) (1st March to 31st August) except where absolutely necessary for safety reasons.
- The public could be encouraged to report damage to, and removal of, hedgerows, including out-of-season cutting to the NPWS.
- Stakeholders should ensure all relevant staff (and any contractors used) have the necessary skills and data sources to implement or evaluate best practice hedgerow conservation.
- Longford County Council could produce and adopt a 'Hedgerow and Tree Conservation Policy'.
- The concept of "Heritage Hedgerow" could be introduced for hedgerows which have notable historical, structural, or species composition characteristics. This should be taken into account when planning infrastructure and could be incorporated into new developments and landscaping.
- Local groups and individuals could be encouraged to carry out local hedgerow surveys.
- National legislation and policies could be put in place to protect hedgerows and there is a need for stricter monitoring in County Longford, including:
  1. Wildlife (Amendment) Act 2000 and Heritage Act 2018, which stipulate that hedgerow must not be cut between 1<sup>st</sup> March and 31<sup>st</sup> August (unless in specific circumstances such as road safety), to avoid harm to wildlife.
  2. EIA (Agriculture) Screening Regulations 2011 are adhered to for removal of large sections of hedgerows for farming purposes across County Offaly
  3. CAP Cross Compliance requirements, which mean that since January 2023, hedges cannot be removed unless a replacement hedge of double the length is planted at a suitable location on the holding in advance of the removal of the hedge. If farmers have removed hedges, they can be penalised any stage.
  4. Nitrates Derogation, where a Biodiversity Option includes either leaving at least one mature blackthorn/whitethorn tree within each 300m of hedgerow or maintaining hedgerows on a three-year cycle (that is, cutting a third of hedgerows each year on a rotational basis).
  5. Liaise with the Forest Service of the Department of Agriculture, Food and the Marine on forestry requirements in relation to a habitat setback (5 metres minimum).

- A review of roadside hedge cutting practices, in regard to the necessity and the manner in which hedges are cut annually. Many of the 'box-cut' hedgerows recorded in County Longford were along roadsides, with some now classed as remnant or relict.
- While local authorities have a responsibility to road users and their safety regarding hedgerow maintenance for hedgerows under their remit, more effort must be made to ensure best practice is exercised. Only experienced hedge cutters who adhere to a set of agreed, ecologically sensitive standards, should be contracted to manage hedgerows under the local authority's remit.
- Local advertising campaigns and projects (e.g. with community groups & schools) could be launched to highlight the importance of hedgerows and their benefits for nature, farming and as beautiful landscape features. Existing resources can be utilised, e.g. via 'Farming for Nature' and Teagasc.
- Guidelines could be produced for planners and road engineers dealing with hedgerows in planning applications. Ideally this should be a mandatory set of standards or policy.
- The use of local provenance native plant species should be specified for any hedgerow planting (including hedgerow trees). Encouraging a diversity of native hedge species consistent with the findings of this survey is recommended.
- A few showcase sites of best practice covering different aspects of conservation and management should be developed around County Longford. This could be done in conjunction with Hedgerows Ireland and Teagasc, for instance.
- It is desirable that a repeat hedgerow survey for County Longford be carried out no later than 2035.
- Additional funding for the development of local nurseries across County Longford (and Ireland as a whole) is needed to ensure trees and shrubs of local provenance are available to conserve hedgerows, whether that be planting new hedgerows, replanting/replacing old or removed hedgerows, or infilling gaps.
- A county-wide programme to address the growing issue and devastation caused by Ash Dieback should be established. As well as health & safety priorities, this should include ecologically sensitive methods for diseased Ash tree management, with a focus on partial rather than full removal where possible. Top-down removal is recommended, removing all possible wind shear risk and leaving a stable trunk to rot away over time. This approach maintains habitat value and helps reduce some of the visual impacts of clear felling. Where there are 'vacuums' left from Ash tree removal, other species should be encouraged to fill the gaps naturally, or native species can be planted in their place, e.g. Oak, Hazel, Spindle, Holly and Rowan. Native Alder, Downy Birch and Willow species are recommended for wetter soils.

## 9. Conclusion

The County Longford Hedgerow Appraisal Study 2025 assessed the condition of a representative sample set of hedgerows within the county against baseline data collected in 2006. The findings of this study suggest that the landscape of County Longford has undergone significant changes in the last 19 years. The total length of hedgerows in the county decreased from approximately 10,326km in 2006 to an estimated 9,751km in 2025 (as per the GIS study conducted in 2024). This equates to 5.443km (or 5.57%) of the total hedgerow area within the study region during this timeframe. This corresponds to an annual removal rate of roughly 0.31%, which translates to more than 575km of hedgerows over 18 years, the straight-line distance from Cork to London! This would suggest that approximately 0.31% of hedgerows studied have been removed annually in County Longford over the past two decades. This means County Longford slightly exceeds the estimated EPA figure for average removal of hedgerows per annum in Ireland, which is estimated at between 0.16 and 0.3%. Agriculture has been identified as the predominant factor behind hedgerow removal, responsible for 69.29% of the recorded losses. Residential expansion (9.41%), and scrub encroachment (21.3%) have also contributed to this change since 2006.

In terms of shrub diversity in hedgerows, County Longford is faring relatively well, however the frequency of several shrub species is declining. The 2025 survey recorded a total of 26 woody shrub species within the sampled hedgerows, of which 19 are native to Ireland. The average number of shrub species per 30m strip was 3.41 (2.95 for native species only). 7% of hedges contained only one species. The majority of hedges (48%, cumulative) contained 3 or 4 native shrub species. Approximately 36% of hedges met the criteria to be classified as “species-rich hedgerow”, which is defined as containing four or more native woody species per 30m strip. This represents an increase from the 2006 survey, indicating some positive trends in hedgerow diversity.

Hawthorn was the dominant shrub species, occurring in 86% of hedges, followed by Blackthorn (57%) and Elder (31%). However, each of these has reduced in frequency, by 13%, 15% and 6% respectively. Overall, shrub frequency has reduced across most other shrub species too, with a reduction in certain species being more pronounced, e.g. Wild Privet frequency has declined by 17%, Hazel by 12% and Ash by 10%, while Elder is down by 6%, Spindle by 5% and Crab Apple by 3%. Birch and Wild Plum shrubs did not feature in the 2025 survey at all, though they were present in the 2006 survey.

Some of the decline in frequency of shrub species could be explained by lack of management, meaning that certain shrubs, e.g. Ash and Hawthorn, have grown from shrubs into trees since the 2006 survey. The number of treelines has risen noticeably since 2006 (17%). However, the reduction in frequency of other shrub species is more difficult to understand – it may simply be down to the decline in management and health of hedgerows overall. The rise in Sycamore shrubs and trees indicates that it may be filling the void where Ash Dieback has affected Ash trees and where other shrub species have receded.

Just three invasive shrub species were recorded - Snowberry, Lilac and Wilson’s Honeysuckle - which are currently considered ‘Low Impact’ invasive species. Snowberry showed a slight increase since 2006, Lilac remained the same, while Wilson’s Honeysuckle was not recorded in 2006. It is very encouraging that no First Schedule invasive species were found in the sample hedgerows, and long may this trend continue.

Townland boundary hedges accounted for 13% of surveyed hedges. Surprisingly, these were slightly less diverse than other hedgerows surveyed, as the opposite case would generally be expected. However, they are still considered valuable features of the landscape, both for their heritage and ecological value.

A total of 20 tree species were recorded within Longford's hedgerows, 15 of which were native. Ash was the most frequently recorded tree, present in 72% of hedges, followed by Hawthorn and Sycamore. The presence of Ash dieback poses a significant long-term risk to hedge structure, continuity and biodiversity value. Only 5.9% of hedgerows were recorded as having healthy Ash trees (i.e. no signs of dieback), while 9.8% of hedgerows with Ash trees surveyed showed minor signs of the disease. Many hedgerows with Ash trees were noted as having significant Ash dieback (23.5%), while 22.5% were recorded as containing trees which are in terminal decline with severe dieback present. The findings suggest that Ash trees in the Lough Ree area are healthier and more robust than most other areas in the county (with 'Minor' signs), while other small pockets of the county also showed 'Minor' signs near Ardagh, Ballymahon and Taghshinny. 'Healthy' Ash specimens were recorded in just four hedgerows; these were near Ballinamuck, Killashee and Newtownforbes.

An Ash Dieback management programme for the county would be most effective in addressing the devastation being caused by the disease. In many cases, especially where road safety is not an issue, affected Ash trees do not have to be entirely removed, but their upper canopies/stems or branches can be cut away, leaving standing wood to gradually decay. This ensures food and habitat is still available for wildlife for decades to come. Other options include encouraging native shrub species already established in the hedgerow to grow upwards, while in some instances, the best option is infill planting, using locally sourced saplings. This could present opportunities for both increasing the species richness of Longford hedgerows while supplementing the significant ecological role of the Ash.

Three nutrient-rich species featured in the top six flora species recorded in the hedgerows surveyed in County Longford, Cleavers were very abundant, featuring in 54% of hedgerows, as were Nettles (50%), and to a somewhat lesser extent, Docks (23%). The indicator flora species which occurred most was Herb Robert, by far, which was found in 50% of hedgerows surveyed. This was followed by Speedwell spp. (33%) and Cow Parsley (25%).

Ground flora diversity in Longford was variable, with an average of 1.87 target species per 30m, placing Longford hedgerows within the "low significance" category under the HAS methodology. However, it is worth noting that almost half (46%) of hedgerows surveyed contained zero or just one indicator herb species, denoting a sizeable number of hedgerows with "Low Significance" for herbs. Fern species were relatively infrequent when compared with other (wetter) counties such as Monaghan and Cavan, but higher than counties like Wexford and Kildare, reflecting the landscape context of the different regions.

In terms of hedgerow health, the majority of hedgerows (91.2%) surveyed in County Longford were found to be in 'unfavourable' condition, primarily due to a high proportion of gaps, inadequate basal density, nutrient enrichment and evidence of bank and/or margin degradation. Only 8% of hedges were classified as being "complete" and the increase in remnant hedgerows since 2006 suggests a growing trend towards under-management. This trend can also be seen in the transition of hedgerows into treelines, with almost half of hedgerows now over 4m, an increase of one-third since 2006. While taller hedgerows are more

beneficial for biodiversity, there is a 'tipping point', where they grow to over 4 to 5m, becoming a treeline as opposed to a traditional, managed, healthy hedge, with all its own excellent attributes for wildlife. Width and profile scored relatively well, though thinning at the base is an issue for a significant proportion of hedgerows (almost 17%), probably due to lack of management and rejuvenation. Gappiness is now becoming an apparent issue in nearly half of Longford's hedgerows (46%). Ivy is becoming more abundant across all hedgerows due to the spread of Ash Dieback disease, as the plant capitalizes on the extra light on offer, in the absence of canopy cover. This is not inherently negative, however, as Ivy is a valuable habitat for bats and invertebrates; however, it may become an issue where the Ivy becomes so abundant it weighs down the tree or catches in high winds.

The most common adjacent land use recorded was agricultural at 94.6%, of which the majority was used for Cattle and Fodder (83%), with Sheep, Dairy and 'Other' making up much of the remainder. The predominant land class type adjacent to the surveyed hedges in 2025 was improved grassland, accounting for 76.5% of habitats recorded. There has been an increase in improved grassland of just over 20% in the past two decades in Co. Longford, and this correlates with a simultaneous reduction of 20% in semi-natural grassland. This reflects a significant change in the county's land use, available wildlife habitat and landscape character in a relatively short time period.

Nutrient enrichment has also become an issue along County Longford's hedgerows, which reflects the increase in improved grassland for more intensive agricultural practices. Nutrient-rich herbs (Cleavers, Nettles and Docks) are abundant in just under 40% of hedgerows, which suggests the influence of adjacent intensive agricultural activities. Poaching within 2m was an issue for over 20% of hedgerows, indicating some livestock pressure. Noxious weeds were observed in 13.7% of hedges (e.g. Ragwort and certain Thistle/Dock species). On a positive note, 25.5% of hedgerows in Longford had grassy margins wider than 2m on one or both sides, and 81.4% of hedgerows showed no bank degradation. In addition, herbicide use was relatively low at just under 3%.

The level of fencing along hedgerows was relatively low in County Longford, with 62% having no fencing. Those that were fenced comprised mainly of electric/post & wire with a small fraction being sheep wire. A higher extent of fencing would be expected, considering the increase in intensive agriculture within the county over the past two decades alone. By installing suitable fencing (ideally 2m out from the hedge), key threats to hedgerows such as poaching and bank degradation will be reduced, while slurry/fertiliser spreading will be limited. The latter would ensure less nutrient buildup and may encourage an increase in ground flora diversity. When installing fencing, wire should never be fixed to stems/trunks as it can negatively affect shrub/tree health.

Most hedges in County Longford are 'single' line hedges (75%), with the remainder being 'double' (19%) or 'random line' (6%). Most hedges are located on earthen banks (61%), while a relatively smaller portion were recorded as being either on a 'shelf' (14%) or along a stone wall (8%). The remainder (17%) have no visible bank/wall/shelf. Notably, stone walls were more frequent towards Lough Ree and the Southwestern part of the county. 60% of hedgerows have a drain, which correlates with counties like Monaghan and Cavan.

Most hedgerows in County Longford were recorded as unmanaged (61%) in the 2025 survey (either short-term or long-term), which was 8% less than the 2006 survey. There has been a 10% increase in managed hedgerows compared to 2006, which includes all types of management – e.g. box-cut, A-shaped, cut one side/cut both sides. In 2025, 10% of hedgerows are now remnant, an 8% increase on 2006. This is a worrying trend as remnant hedgerows are defunct and almost impossible to rejuvenate. Box-cutting hedgerows should be avoided as this can stunt their growth, limit flowering fruits and berries and leave them vulnerable to disease. It was noted that many of the ‘box-cut’ hedgerows recorded in the 2025 survey were located along roadsides. Cutting lightly on one/both sides is a better approach; however, the ideal hedge is ‘A-shaped’.

The 2006 survey stated that “Many of the County Longford hedgerows recorded would be well suited to laying and many would benefit structurally from this type of management as it would improve base structure and reduce the number of gaps, the two most significant factors in the failure of County Longford hedges to meet favourable condition criteria”. While the situation has become more challenging in the last two decades, this statement is still relevant in 2025. The opportunity for hedge-laying as a maintenance and rejuvenation technique can be very effective.

In terms of wildlife recorded, signs of mammal activity were common, though dens/warrens were very rare, with only 2% of hedgerows containing evidence of habitation in the form of Rabbit burrows. However, birds were recorded as being relatively abundant across the 2025 hedgerow survey with 38 avian species recorded. The most frequently recorded species was by far the hardy Wren (64%), followed by the Blackcap (24%), and the Willow Warbler (19%). Following that, the Chiffchaff, Blackbird and Swallow were the next most frequently recorded bird species. It is encouraging that three of the top six bird species recorded were summer residents (Willow Warbler, Chiffchaff and Swallow), indicating that hedgerows are just as important to them as our permanent residents.

In terms of butterflies, nine species were found throughout the sample hedgerows across Co. Longford, generally occurring at a relatively low frequency. The Meadow Brown was by far the most common butterfly recorded (35%), followed by the Ringlet (5%), Green-veined White (4%), Small Tortoiseshell (4%) and Speckled Wood (4%). Only a tiny number of the remaining species were recorded (1%). While the diversity and numbers are not high, it is an improvement on the results of the County Offaly survey (2024), which only yielded five butterfly species and all in low frequencies. The increased numbers in 2025 reflect an overall improvement in butterfly populations compared with a dismal UK/Ireland count in 2024, however there is an overall downward trend for most butterfly species due to a combination of factors – less available natural grassland habitat, lack of food plants and climate change.

Healthy, robust hedgerows are best for shrub longevity and for wildlife. While hedgerows remain excellent corridors for biodiversity, their gradual demise means they are less able to support a large range of bird, mammal and flora species. The results of the 2025 Longford Hedgerow Survey show that while the hedgerow network remains extensive and still offers an excellent ecological corridor, the quality is declining noticeably in terms of condition, flora and shrub diversity and lack of management. In addition, intensive agriculture over the past two decades has led to a 20% increase in improved agricultural grassland, replacing what was once semi-natural grassland. While this trend is concerning, there is much

potential to reverse the decline and begin to strengthen the County Longford hedgerow network to ensure its rejuvenation and longevity. County Longford has several positives in its favour compared with other counties, which might make it easier to launch hedgerow conservation projects, e.g. a much higher proportion of Cattle rearing versus Dairy, as well as a limited extent of sheep and tillage farming. Cattle rearing often lends itself well to agri-environmental schemes when compared with other farming types, e.g. more opportunities for enhanced and selective grazing management, potential for reduced nutrient input and less emphasis on hedge removal to create larger fields.

Overall, the data collected in this study reflect the impact of the evolving Longford landscape, with factors such as the intensification of agricultural practices, and the absence of suitable management strategies, resulting in the decline and eventual loss of hedgerows, and associated wildlife. It is hoped that the information gathered here will not only guide Longford County Council in its future decisions regarding biodiversity actions, but also stakeholders and the public across County Longford. Targeted, appropriate responses are required to manage hedgerows, and it is hoped that the study's findings and recommendations will raise awareness on the importance of hedgerows, encouraging proactive measures to safeguard this critical habitat.



*Image 35 Last day of the Longford Hedgerow Survey (June 2025).*

## References

- All-Ireland Pollinator Plan (2016). *Hedgerows for Pollinators*, How-to-guide 3. National Biodiversity Data Centre Series No.7, Waterford.
- Arnold, G.W. (1983) "The Influence of Ditch and Hedgerow Structure, length of Hedgerows, and area of Woodland and Garden on Bird numbers on Farmland." *Journal of Applied Ecology* 20, 731-750.
- Barker (2016). *Recently flailed blackthorn hedge*. Hedge Britannia.
- Burel, (1989). *Landscape structure effects on Carabid beetles' spatial patterns in Western France*. *Landscape Ecology*, 2, 215- 226.
- Cauble, K., & Wagner, R. S. (2005). *Sublethal Effects of the Herbicide Glyphosate on Amphibian Metamorphosis and Development*. *Bulletin of Environmental Contamination and Toxicology*, 75(3), 429-435. doi:10.1007/s00128-005-0771-3
- Chamberlain, D.E, Vickery, J.A, Marshall, E.J.P., & Tucker, G.M. (2001). *The effects of hedgerow characteristics on the winter hedgerow bird community*. *Hedgerows of the World: Proceedings of the 2001 Annual IALE (UK) Conference*. 197-206.
- Corbit, M. and Marks, P. and Gardescue, S., (1999). *Hedgerows as Habitat Corridors for forest herbs in central New York, USA*. *Journal of Ecology*, 87, 220- 232.
- DAFM (Department of Agriculture Food and Marine) (2021). *Results based Environment Agri Pilot Scheme*
- DAFM (Department of Agriculture Food and Marine) (2022) *Forest Statistics Ireland 2022*, Department of Agriculture, Food & the Marine, Johnstown Castle Estate Co. Wexford
- Dondina, O., Kataoka, L., Orioli, V., & Bani, L. (2016). *How to manage hedgerows as effective ecological corridors for mammals: a two-species approach*. *Agriculture, Ecosystems & Environment*, 231, 283-290.
- Dondina, O., Saura, S., Bani, L. et al. (2018). *Enhancing connectivity in agroecosystems: focus on the best existing corridors or on new pathways?* *Landscape Ecol.*
- EPA (2014). *Carbon Sequestration by Hedgerows in the Irish Landscape*. The Environmental Protection Agency. Wexford.
- EPA (2019). *BRIAR: Biomass Retrieval in Ireland using Active Remote sensing*. Report No. 305. Prepared for the Environmental Protection Agency by Teagasc.
- European Union (2000). *Water Framework Directive*. Council Directive 2000/60/EC.
- Feehan, J. (2003). *Farming in Ireland: History, Heritage and Environment*. University College Dublin Press. Dublin.
- Forest Europe (2020): *State of Europe's Forests 2020*.

- Fossit, J. (2000). *A Guide to the Habitats of Ireland*. The Heritage Council, Kilkenny.
- Foulkes and Murray (2005a). *County Laois Hedgerow Survey Report*. The Heritage Council Laois.
- Foulkes, N. (2006) *County Longford hedgerow survey report*. Available at: <https://hedgerows.ie/wp-content/uploads/2019/11/County-Longford-Hedgerow-Survey-Report.pdf> (Accessed: 05 February 2026).
- Foulkes, N. (2007). *County Mayo hedgerow Survey Report*. Mayo County Council.
- Foulkes, N. (2008). *County Sligo Hedgerow Survey Report*. Sligo County Council, unpublished
- Foulkes, N. (2018). 'Assessment of Environmental Impact Assessment (Agriculture) Regulations on Field Boundary Removal'.
- Foulkes, N. and Murray, A. (2005b). *County Roscommon Hedgerow Survey Report*. The Heritage Council Roscommon.
- Foulkes, N. and Murray, A. (2006). *A Methodology for the recording of hedgerow extent, species composition, structure and condition in Ireland*. *Tearmann*, 5, 75-89.
- Foulkes, N. (2006). *County Wexford Hedgerow Survey Report*. Wexford County Council.
- Gelling, M., Macdonald, D. W., & Mathews, F. (2007). *Are hedgerows the route to increased farmland small mammal density? Use of hedgerows in British pastoral habitats*. *Landscape Ecology*, 22, 1019-1032.
- Gonçalves, B. B., Giaquinto, P. C., dos Santos Silva, D., de Lima, A. A., Darosci, A. A. B., Portinho, J. L., ... & Rocha, T. L. (2019). *Ecotoxicology of glyphosate-based herbicides environment*. *Biochemical toxicology-heavy metals and nanomaterials*, 1-24.
- Government of Ireland (1976) "Wildlife Act. No. 39/1976" Department of Lands, Dublin.
- Graham, L., Gaulton, R., Gerard, F., Staley, J.T. (2018). *The influence of hedgerow structural condition on wildlife habitat provision in farmed landscapes..* *Biol. Conserv.* 220, 122–131. <https://doi.org/10.1016/j.biocon.2018.02.017>
- Guerrero-Gatica, M., Aliste, E., Simonetti, J.A., (2019). *Shifting gears for the use of the shifting baseline syndrome in ecological restoration*. *Sustain.* 11, 1–12.
- Harding, J. (2025). *Why are we seeing so many butterflies in Ireland this year?* <https://www.rte.ie/brainstorm/2025/0821/1529363-butterflies-ireland-2025-weather-conditions-population-growth-breeding-conditions/>
- Hegarty, C.A. and Cooper, A. (1994). *Regional variation of Hedgerow Structure and composition in Northern Ireland in relation to management and land use*. *Biology and Environment: Proceedings of the Royal Irish Academy*, 94 B, 223-236
- Hickey, D. (2004). *Irish Hedgerows: Networks for Nature*. Environmental Publications Ltd. Dublin.

- Hickey, D. (2004). *Irish Hedgerows: Networks for Nature*. Environmental Publications Ltd. Dublin.
- Irish Butterfly Monitoring Scheme (IBMS) (2025): *2024 was a very poor year for butterflies*. [https://biodiversityireland.ie/app/uploads/2025/06/IBMS\\_2025\\_Newsletter\\_v2.pdf](https://biodiversityireland.ie/app/uploads/2025/06/IBMS_2025_Newsletter_v2.pdf)
- Lack, P.C (1987). *The effects of severe hedge cutting on breeding bird populations*. Bird Study 34, 139-146
- Land Use Consultants (2009). *Provision of Ecosystem Services through the Environmental Stewardship Scheme*. DEFRA (Research Contract NR0121).
- Larkin, J. et al. (2022) '*Field margin botanical diversity, composition and quality on intensively managed farming systems*', Irish Journal of Agricultural and Food Research, 61(2). doi:10.15212/ijafr-2022-0102.
- Lysaght, L. (1990). *An Investigation of Habitat Selection in hedgerow nesting birds in mid-west Ireland*. Department of Geography, Trinity College Dublin
- Mac Elwain et al., (2021). *Monaghan Hedgerow Appraisal survey 2021- A decade of change*.
- Mac Elwain et al., (2022). *County Kildare Hedgerow Appraisal Survey*.
- Mac Elwain et al., (2022). *Wexford's Hedgerow Appraisal Survey*.
- Mc Crudden et al., (2023). *County Cavan Hedgerow Appraisal Survey*.
- McCourt, S. & Kelly, D. L. (2007) *Fingal Hedgerow Survey Report*. Report prepared for Fingal County Council.
- Montgomery, I., Caruso, T. and Reid, N. (2020) '*Hedgerows as ecosystems: Service delivery, management, and restoration*', Annual Review of Ecology, Evolution, and Systematics, 51(1), pp. 81–102. doi:10.1146/annurev-ecolsys-012120-100346.
- Murray, A. (2001). *The Comparative Ecological Wealth of Townland Boundary and more modern Hedgerows in County Wexford*. Irish Wildlife Trust, Dublin. NBDC, 2024.
- National Invasive Species Database. The Heritage Council. Available at [www.nbdc.ie](http://www.nbdc.ie) (Accessed 05/09/25).
- Noteworthy (2021). *Whole ditches disappearing overnight': hedgerows falling foul to larger farms*. The Journal.ie.
- NPWS (2019). *Checklists of protected and threatened species in Ireland*. Irish Wildlife Manuals 116.
- NRA, 2005a. *Guidelines for the Treatment of Bats During the Construction of National Road Schemes*. Dublin: National Roads Authority.
- NRA, 2005b. *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes*. Dublin: National Roads Authority.
- O'Sullivan, L., Lanigan, G., ÓhUallacháin, D., Rahimi-Tanha, S., and Black, K. (2019). *Farm-Carbon: Hedgerows and Non-forest Woodland (Hedgerow Carbon Project)*. EPA Research Report, Teagasc and Forest Environment Research and Services Ltd, Johnstown Castle, Wexford.

Pascali, C. & Mc Crudden, E. (2025). *Offaly Hedgerow Appraisal Survey*

Pelletier-Guittier, C., Théau, J., & Dupras, J. (2020). *Use of hedgerows by mammals in an intensive agricultural landscape*. *Agriculture, Ecosystems & Environment*, 302, 107079. doi:10.1016/j.agee.2020.107079

Perrin, P.M. et al., (2008). *National Survey of Native Woodland in Ireland 2003-2008*. National Parks and Wildlife Service. Dublin.

Plunkett, M and Kavanagh, S (2024). *Fertiliser use changes, impacts and key recommendations*. Teagasc. Available at <https://teagasc.ie/news--events/daily/fertiliser-use-changes-impacts-and-key-recommendations/>

Smal, C. (1995). *The badge and habitats survey*. The Department of Agriculture. Ireland.

Teagasc (2005). *Mapping Hedgerows*. Webinar. Stuart Green

Teagasc (2011). *The Irish Hedge Map-Version 1.0*.

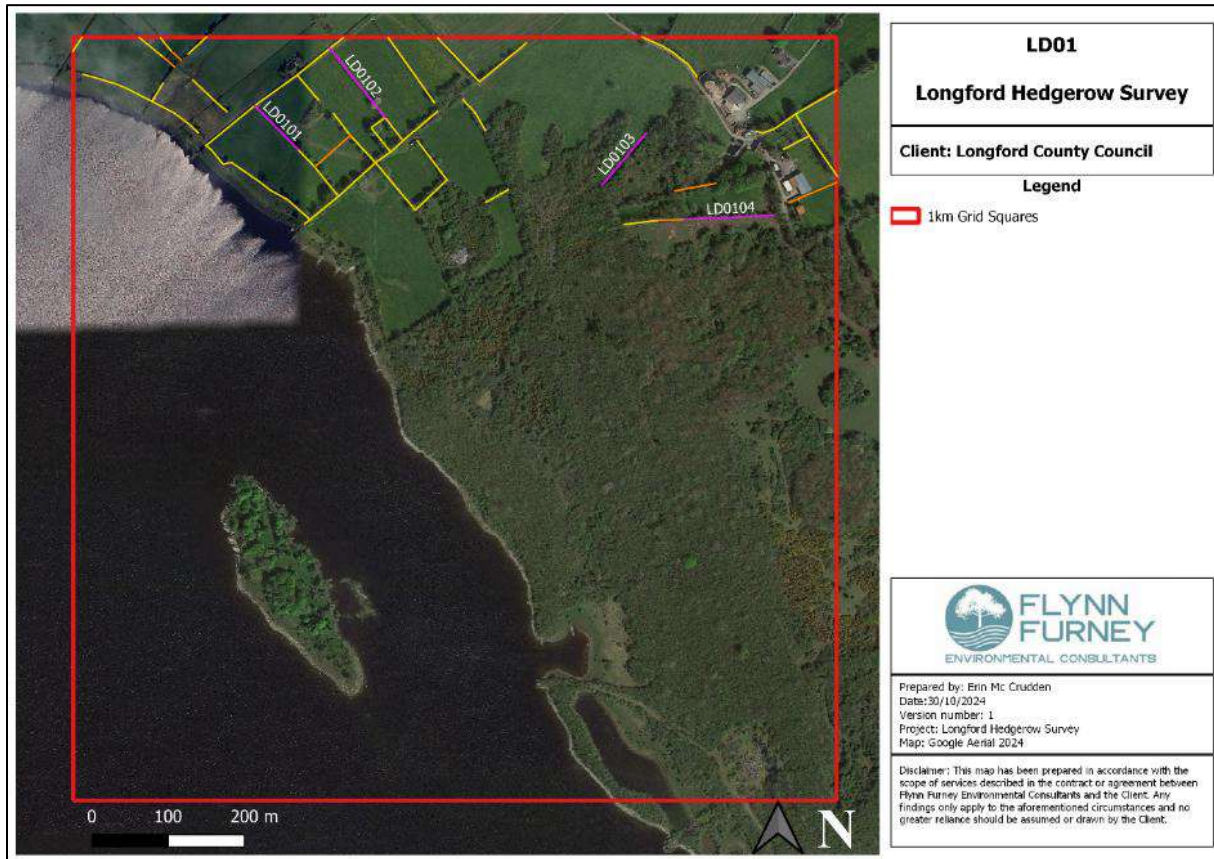
Teagasc (2019). *Finding and understanding resistance to ash dieback*.

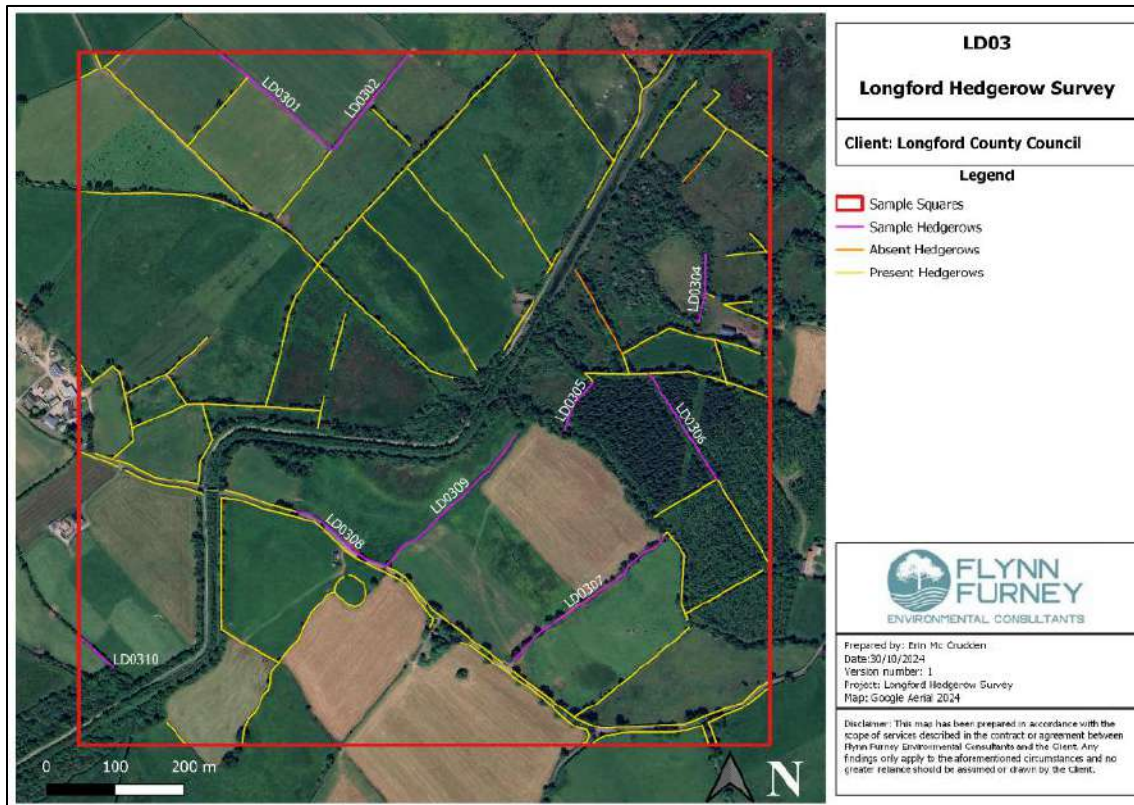
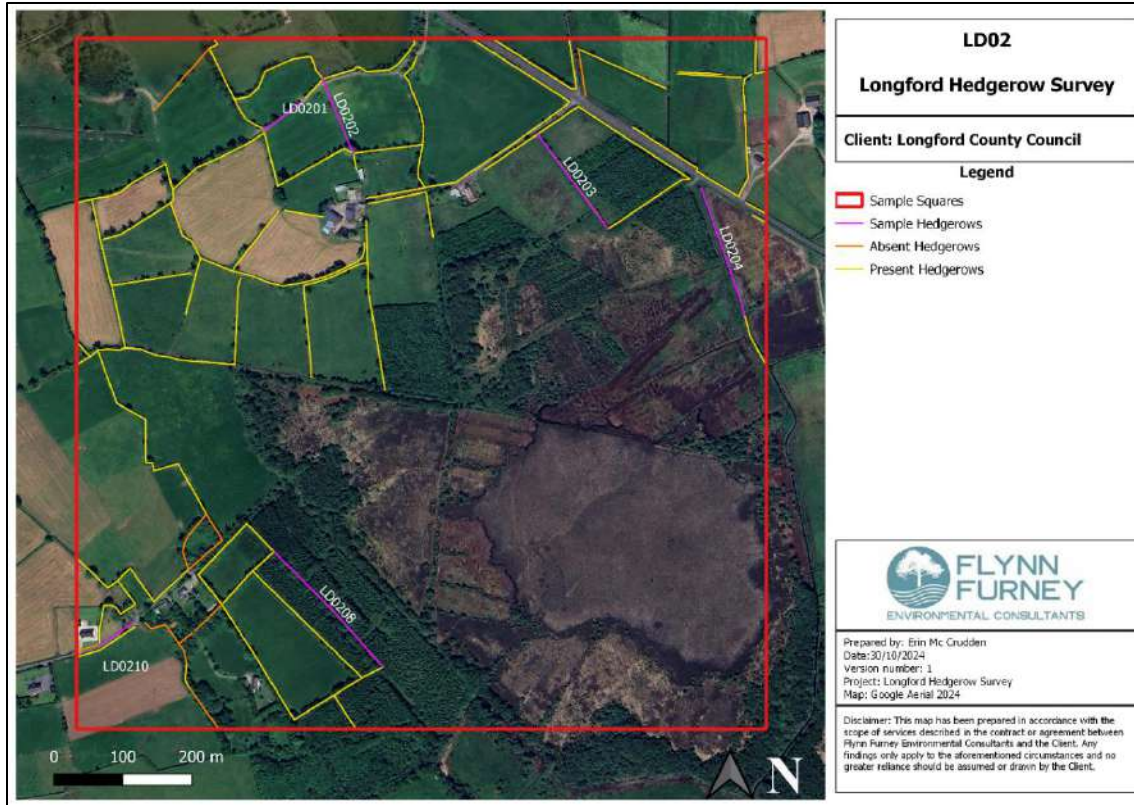
Teagasc (2020). *Hedges for rejuvenation*. Teagasc Agriculture and food Authority.

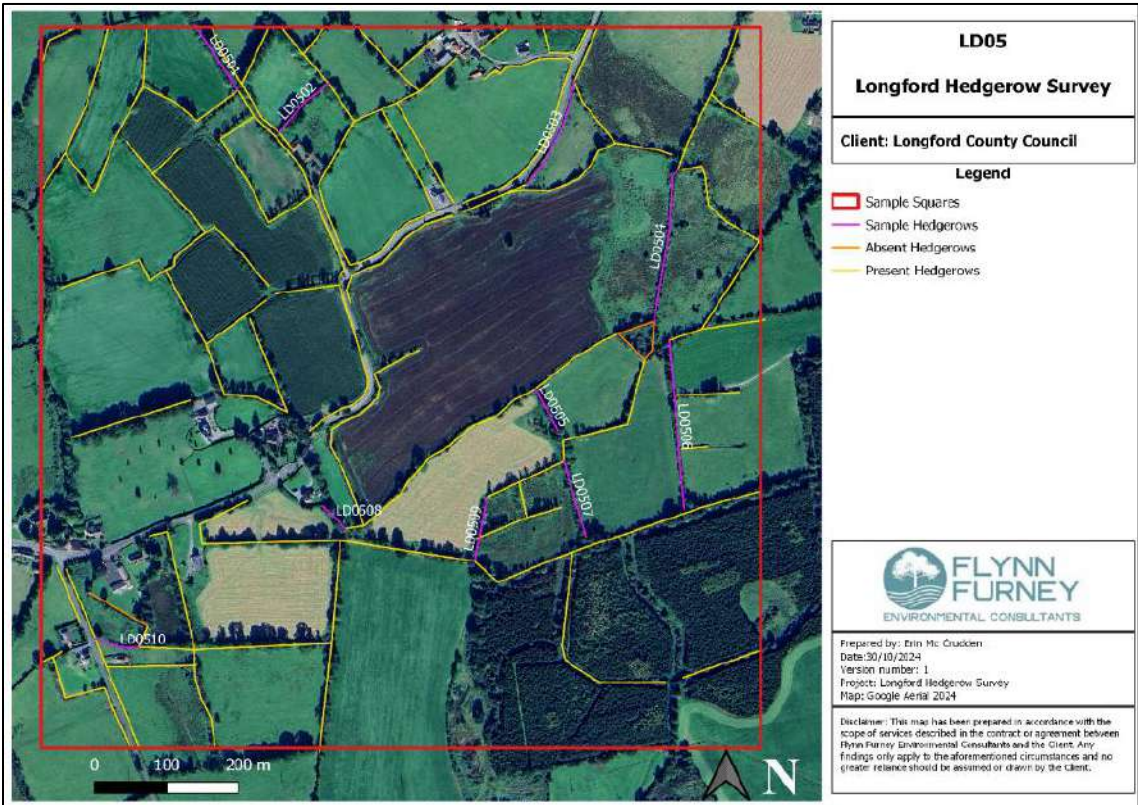
Teagasc (2023). *Managing Ash Dieback*.

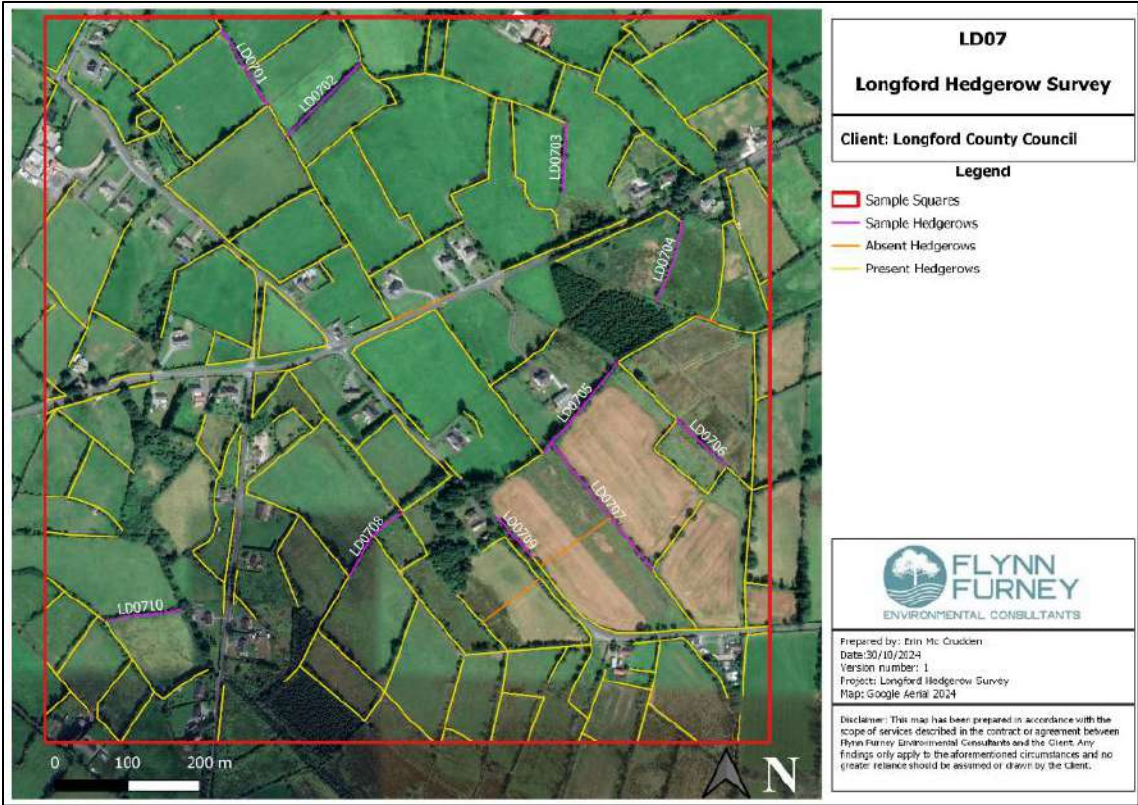
Teagasc (2024). *Ash Dieback Disease*. [https://www.teagasc.ie/crops/forestry/advice/forest-protection/ash dieback/](https://www.teagasc.ie/crops/forestry/advice/forest-protection/ash%20dieback/) (Accessed 5/09/2025).

## Appendix 1: Maps of the Survey Areas



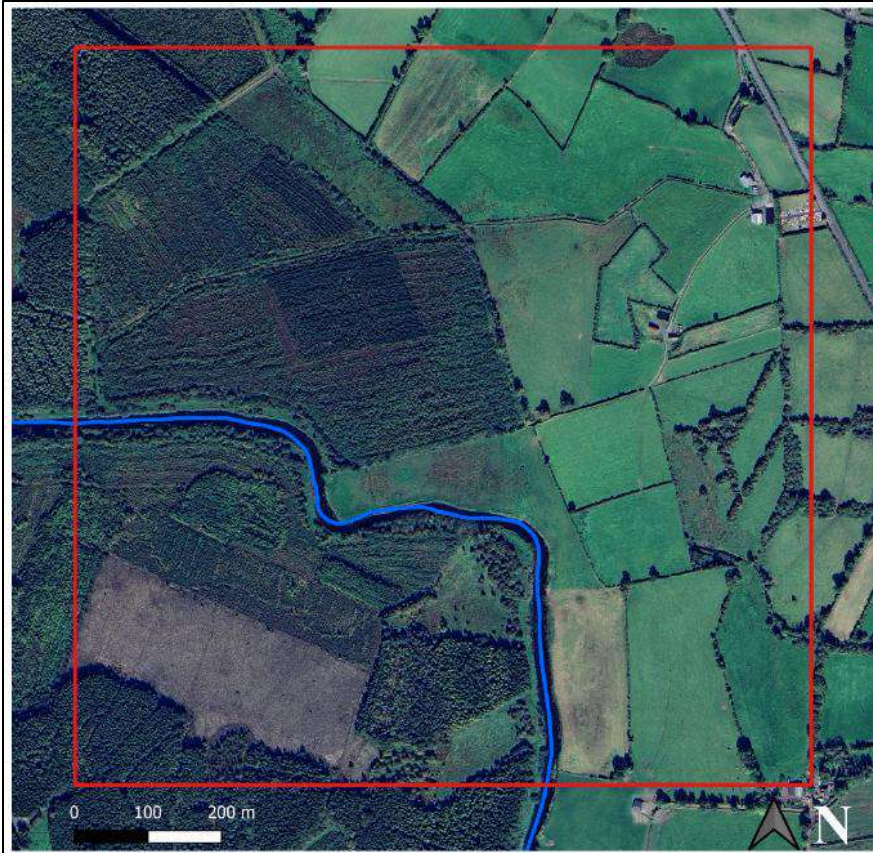












**LD12**

**Longford Hedgerow Survey**

---

**Client: Longford County Council**

**Legend**

▭ Sample Squares  
▭ Longford Boundary

---



**FLYNN  
FURNEY**  
ENVIRONMENTAL CONSULTANTS

---

Prepared by: Erin Mc Crudden  
 Date: 30/10/2024  
 Version number: 1  
 Project: Longford Hedgerow Survey  
 Map: Google Aerial 2024

---

Disclaimer: This map has been prepared in accordance with the scope of services described in the contract or agreement between Flynn Furney Environmental Consultants and the Client. Any findings only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client.

## Appendix 2: Floristic Recordings: Target Species

From The Hedgerow Appraisal System (Foulkes *et al.*, 2012).

Favourable tree, shrub and woody climber species		Unfavourable tree, shrub and woody climber species	
Scientific Name	Common Name	Scientific Name	Common Name
* Native		* Native	
^ Naturalised		^ Naturalised	
# Non-native		# Non-native	
* <i>Alnus glutinosa</i>	Alder		All coniferous species (except Scots pine)
* <i>Betula pendula</i>	Silver birch	# <i>Acer campestre</i>	Field Maple
* <i>Betula pubescens</i>	Downy birch	^ <i>Acer pseudoplatanus</i>	Sycamore
# <i>Castanea sativa</i>	Spanish Chestnut	^ <i>Aesculus hippocastanum</i>	Horse Chestnut
* <i>Cornus sanguinea</i>	Dogwood	^ <i>Carpinus betulus</i>	Hornbeam
* <i>Corylus avellana</i>	Hazel	^ <i>Clematis alba</i>	Clematis
* <i>Crataegus monogyna</i>	Hawthorn	^ <i>Fagus sylvatica</i>	Beech
* <i>Cytisus scoparius</i>	Broom	# <i>Fuchsia magellanica</i>	Fuchsia
* <i>Euonymus europaeus</i>	Spindle-tree	# <i>Laburnum anagyroides</i>	Laburnum
* <i>Fraxinus excelsior</i>	Ash	# <i>Ligustrum ovalifolium</i>	Japanese Privet
* <i>Hedera helix</i>	Ivy	^ <i>Lonicera nitida</i>	Dwarf Box
* <i>Ilex aquifolium</i>	Holly	# <i>Populus alba</i>	White Poplar
# <i>Juglans regia</i>	English Walnut	^ <i>Prunus laurocerasus</i>	Cherry laurel
^ <i>Ligustrum vulgare</i>	Wild Privet	^ <i>Rhododendron panticum</i>	Rhododendron
* <i>Lonicera periclymenum</i>	Honeysuckle	^ <i>Salix alba</i>	White willow
^ <i>Malus domestica</i>	Wild Apple	^ <i>Salix fragilis</i>	Crack willow
* <i>Malus sylvestris</i>	Crab Apple	^ <i>Symphoricarpos albus</i>	Snowberry
* <i>Myrica gale</i>	Bog Myrtle	# <i>Syringa vulgaris</i>	Lilac
* <i>Pinus sylvestris</i>	Scots pine	# <i>Tilia spp.</i>	Lime
* <i>Populus nigra</i>	Black poplar	^ <i>Viburnum lantana</i>	Wayfaring tree
* <i>Populus tremula</i>	Aspen		
* <i>Prunus avium</i>	Wild cherry		

<i>^Prunus cerasus</i>	Sour Cherry		
<i>^Prunus domestica</i>	Wild Plum		
<i>*Prunus padus</i>	Bird Cherry		
<i>*Prunus spinosa</i>	Blackthorn, sloe		
<i>#Pyrus communis</i>	Wild Pear		
<i>*Quercus petraea</i>	Sessile oak		
<i>*Quercus robur</i>	Pedunculate oak		
<i>*Rhamnus cathartica</i>	Purging Buckthorn		
<i>*Rosa spp.</i>	Wild Rose		
<i>*Rubus idaeus</i>	Raspberry		
<i>*Salix aurita</i>	Eared willow		
<i>*Salix caprea</i>	Goat willow		
<i>*Salix cinerea subsp. oleifolia</i>	Rusty willow		
<i>*Salix pentandra</i>	Bay Willow		
<i>^Salix triandra</i>	Osier		
<i>*Sambucus nigra</i>	Elder		
<i>*Solanum dulcamara</i>	Bittersweet		
<i>*Sorbus aria, S. hibernica</i>	Whitebeam		
<i>*Sorbus aucuparia</i>	Rowan		
<i>*Taxus baccata</i>	Yew		
<i>*Ulex europaeus</i>	Gorse		
<i>*Ulmus glabra</i>	Wych Elm		
<i>^Ulmus procera</i>	English Elm		
<i>*Viburnum opulus</i>	Guelder rose		

<b>Scientific Name</b>	<b>Common Name</b>
<i>Ajuga reptans</i>	Bugle
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Allium ursinum</i>	Ramsons
<i>Anemone nemorosa</i>	Wood Anemone
<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Arum maculatum</i>	Lords-and-Ladies
<i>Chrysoplemium oppositifolium</i>	Opposite Leaved Golden Saxifrage
<i>Conopodium majus</i>	Pignut
<i>Digitalis purpurea</i>	Foxglove
<i>Epipactus helleborine</i>	Broad-leaved Helleborine
<i>Fragaria vesca</i>	Wild Strawberry
<i>Galium odoratum</i>	Sweet Woodruff
<i>Geranium robertianum</i>	Herb Robert
<i>Geum urbanum</i>	Wood Avens
<i>Glechoma hederacea</i>	Ground Ivy
<i>Hyacinthoides non-scripta</i>	Bluebell
<i>Hypericum androsaemum</i>	Tutsan
<i>Lapsana communis</i>	Nipplewort
<i>Lathraea squamaria</i>	Toothwort
<i>Luzula sylvatica</i>	Great Woodrush
<i>Lysimachia nemorum</i>	Yellow Pimpernel
<i>Neottia nidus-avis</i>	Birds-nest Orchid
<i>Oxalis acetosella</i>	Wood Sorrel
<i>Potentilla sterilis</i>	Barren Strawberry
<i>Primula vulgaris</i>	Primrose
<i>Ranunculus ficaria</i>	Lesser Celandine
<i>Sanicula europaea</i>	Wood Sanicle
<i>Stachy sylvatica</i>	Hedge Woundwort
<i>Stellaria holostea</i>	Greater Stitchwort
<i>Veronica Montana</i>	Wood Speedwell
<i>Viola spp. (V. riviniana, V. reichenbachiana)</i>	Dog Violets

### **Ferns and Allies**

<b>Scientific Name</b>	<b>Common Name</b>
<i>Athyrium filix-femina</i>	Lady Fern
<i>Blechnum spicant</i>	Hard Fern
<i>Dryopteris filix-mas</i>	Male Fern
<i>D. dilatata</i>	Broad Buckler Fern
<i>D. affinis</i>	Scaly Male Fern
<i>D. aemula</i>	Hay-scented Buckler Fern
<i>D. carthusiana</i>	Narrow Buckler Fern
<i>Phyllitis scolopendrium</i>	Hart's Tongue Fern
<i>Polystichum setiferum</i>	Soft Shield Fern
<i>Polypodium spp.</i>	Polypody Fern
<i>Equisetum telmateia</i>	Great Horsetail
<i>Equisetum sylvaticum</i>	Wood horsetail

## Appendix 3a: Hedgerow Significance Criteria

From The Hedgerow Appraisal System (Foulkes *et al.*, 2012).

**Table 1: Criteria for assessing Hedgerow Significance (historical, ecological and landscape)**

	0	1	2	3	4
<b>Historical Significance</b>	<b>Low Significance</b>	<b>Slightly Significant</b>	<b>Moderately Significant</b>	<b>Significant</b>	<b>Highly Significant</b>
Period of Establishment (B,B1,B2,B3,B4,F,W)	Recently Established (0-25 years)	Internal Field Boundary	Roadside / Rail / Canal Boundary: Farm Boundary, March ditch*, Mearing* *old terms for farm boundaries	Boundary appears on 1 <sup>st</sup> Edition O.S.	Townland Parish / County Boundary: Area shown as, or connected to, woodland on 1 <sup>st</sup> Edition O.S. map: Connects to feature recorded on Sites and Monuments Record
				Non-linear (excluding roadside)	
		Past evidence of laying or coppicing			

	0	1	2	3	4
<b>Species Diversity Significance</b>	<b>Low Significance</b>	<b>Slightly Significant</b>	<b>Moderately Significant</b>	<b>Significant</b>	<b>Highly Significant</b>
Tree / Shrub / Climber Species Count (Floristic) (All species)	(1-3 species / 30m strip)	(4/5 species / 30m strip)	(6/7 species / 30m strip)	(8/9 species / 30m strip)	(10+ species / 30m strip)

Table 1 [continued]

	0	1	2	3	4
<b>Ground Flora Significance</b>	<b>Low Significance</b>	<b>Slightly Significant</b>	<b>Moderately Significant</b>	<b>Significant</b>	<b>Highly Significant</b>
Species type (Y)	Dominated by ruderal species* - nettles / docks / thistles / cleavers				
Species Count (from list) (Floristic)	(<2 species / 30m strip)	(2-3 species / 30m strip)	(4-5 species / 30m strip)	(6-7 species / 30m strip)	(>7 species / 30m strip)
Pteridophytes (Ferns) (from list) (Floristic)				3-5 species	>5 species

\*Ruderal species - Weedy vegetation that shows a preference for growing on compacted, ploughed, or otherwise disturbed ground.

	0	1	2	3	4
<b>Structure, Construction &amp; Associated Features</b>	<b>Low Significance</b>	<b>Slightly Significant</b>	<b>Moderately Significant</b>	<b>Significant</b>	<b>Highly Significant</b>
Wall / Bank (G1,G2,G3,H)	None	Wall / Bank < 0.5m (height / depth)	Wall / Bank 0.5 - 1m	Wall / Bank > 1m	Double Ditch
Drain / Ditch (B,I,I1)			Dry Ditch	Wet Ditch / Drain	Stream / River
Other (Target Notes)			Badger Set		
Other (G3)			Green Lane		

Table 1 [continued]

	0	1	2	3	4
<b>Habitat Connectivity Significance</b>	<b>Low Significance</b>	<b>Slightly Significant</b>	<b>Moderately Significant</b>	<b>Significant</b>	<b>Highly Significant</b>
(C1,C2,D1,D2,D3)	No connection with other semi-natural habitat	Single link with semi-natural habitat including hedgerow	Multiple links with semi-natural habitats, including other hedgerows	Link with woodland / forest habitat	Link with designated area, particularly woodland
<b>Landscape Significance</b>	<b>Low Significance</b>	<b>Slightly Significant</b>	<b>Moderately Significant</b>	<b>Significant</b>	<b>Highly Significant</b>
(J, P,Q, Desk study)		Wind shaped	Mature Hedgerow Trees		Area covered by Landscape designation (Landscape Conservation Order, TPO, Amenity Area Order)
<b>Other Factor/s of Significance</b>	Record any other factors of significance which are not included above, e.g. upland hedgerow with landscape significance.				

## Appendix 3b: Hedgerow Condition Assessment

From The Hedgerow Appraisal System (Foulkes *et al.*, 2012).

Table 2: Criteria for assessing condition assessment of hedgerows.

<b>Structural Variables</b>	0	1	2	3
Dimensions	<b>Unfavourable</b>	<b>Adequate</b>	<b>Favourable</b>	<b>Highly favourable</b>
Height (K)	<1.5m	1.5 – 2.5m	2.5 – 4m	>4m
Width (L)	<1m	1 – 2m	2- 3m	>3m
Profile (J,J1)	Remnant; Derelict;	Wind shaped; Losing Base Structure	Boxed / A-shaped; Straight sided	Overgrown; Top heavy/ undercut; Outgrowths at base
Basal density / porosity to light of woody shrubs? (N)	Open	Semi-translucent	Semi-opaque	Opaque / Dense
<b>Continuity</b>	0	1	2	3
	<b>Unfavourable</b>	<b>Adequate</b>	<b>Favourable</b>	<b>Highly favourable</b>
% gaps (M)	>10%	5-10%	<5%	Continuous
Specific gaps (M1)	Individual Gap > 5m	Individual gap <5m	No gaps	No gaps

Table 2 [continued]

Negative Indicators/ Degradation / Issues affecting long-term viability	0	1	2	3
	Unfavourable	Adequate	Favourable	Highly favourable
Bank / Wall (O,O1)	>20% of the length of the hedge degraded	<20% of the length of the hedge degraded	Minor degradation	No degradation
% of canopy dominated by Ivy (Floristic)	>25%			
Unfavourable species composition (from list) (Floristic)	>10% of woody growth volume comprised of unfavourable species			
Ground Flora / Hedge Base (Y)	> 20% of ground layer showing evidence of Herbicide Use			
Ground Flora / Hedge Base (Y)	Contain Noxious weeds */ > 20% Dominated by Nutrient Rich Species			
Ground Flora / Hedge Base (Y)	Presence of alien invasive species <sup>a</sup>			
Degraded Margin (R2,R4)	Ploughing up to base of hedge shrubs or Poaching/erosion		(grassy) margin (2 m or greater on one side of the hedge)	(grassy) margins (2 m or greater on both sides of the hedge)

\* Noxious Weeds - Native plants of disturbed ground that impact adversely on agriculture. They may compete for space with tillage or forage crops, harbour pests or diseases, or be injurious to livestock or human beings. These are: Common ragwort (*Senecio jacobea*), Spear thistle (*Cirsium vulgare*), Creeping or field thistle (*C. arvense*) and two species of dock, i.e. the curled dock (*Rumex crispus*) and the broad-leaved dock (*Rumex obtusifolius*).

<sup>a</sup>Alien invasive species – see Table 1: 'Problematic Plant Species: Top 39' at <http://invasives.biodiversityireland.ie/> Those listed as occurring in woodland, hedgerows, demenses and on roadsides often occur in hedgerows. Cherry laurel (*Prunus laurocerasus*) can be added to this list.