

# **TREE AND HEDGEROW SURVEY AND REPORT**

FOR

**N2 MONAGHAN TO EMYVALE ROAD**

APRIL 2011

COMMISSIONED BY

**MONAGHAN COUNTY COUNCIL**

Dr Philip Blackstock

# **TREE SURVEY AND REPORT**

On trees growing within 50m of  
**N2, Monaghan to Emyvale Road**

For

**Monaghan County Council**

Terms of reference

**This report was commissioned to establish the health and condition of trees growing at the above site and to provide recommendations for tree works that will ensure, as far as is possible, site safety**

Methodology

**Trees growing on the above site were subject to a visual inspection carried out from the ground. The base of each trunk was 'sounded' to identify significant basal decay. No other methods for establishing the condition of these trees were used.**

Site surveyed on

**5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 11<sup>th</sup>, 14<sup>th</sup> & 14<sup>th</sup> April 2011**

Survey carried out and report compiled by

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## **TREES AT N2 MONAGHAN TO EMYVALE ROAD**







Two views of trees growing on the above site, taken from the N2 .

## **REPORT ON TREES GROWING WITHIN 50M FROM THE N2 MONAGHAN TO EMYVALE ROAD. APRIL 2011**

**Location & visual impact of the trees.** The N2 is a major arterial route that connects Dublin with the far North West of Ireland. It has now been upgraded over much of its length and, generally, functions as a busy through route. That section of the N2 between the towns of Monaghan and Emyvale has not been upgraded. Although this road is well surfaced and maintained, it is no longer either straight or level enough to cope with the amount of traffic now using it. Because of this, it is understood that a proposal to upgrade this section of road is under consideration.

The N2 passes through a rich, mainly agricultural landscape that contains many mature and maturing hedgerow trees. The road itself was bounded for much of its length by a row of beech trees, planted about 7.0m apart. Many of these trees have still been retained and are now imposing mature individuals. Taken together, these mature hedgerow trees should be considered significant in the local landscape. The gardens of the rural houses tend to have smaller garden trees, many of which have been closely trimmed and these trees are not yet as significant in the landscape.

**Historical development of the site.** Most of the mature beech trees growing along the N2 appear to be about one hundred and fifty years old. They appear to have been planted when the road was upgraded and, as such, they form a single unifying feature in the local landscape. The ash and sycamore trees appear to have grown from naturally dispersed seeds, or from coppiced stumps and they range in age up to about one hundred and fifty years old. The old lime and beech trees growing at Legacurry House are also probably about one hundred and fifty years old. The remaining trees are generally much younger and have been planted, or have been allowed to grow on, within the last one hundred years.

**Tree condition & recommendations.** Because of their age, a number of the mature beech trees reported on here are now in a poor condition and these trees should be felled to ensure site safety. There are also a number of tall conifers that are hollow or have died and these trees should also be felled. There is also an over mature conifer plantation (numbered 361 on the attached tree survey report sheets). This plantation is now ready to harvest and will not remain stable if those edge trees closest to the road are removed. Consideration should be given to the harvesting of this timber crop. The remaining trees are younger and are, generally, in a fairly good condition and require mainly minor tree works to ensure site safety. It is understood that plans are being considered for the upgrading of the above road.

To ensure that trees to be retained during construction, the Arboricultural method statements (that are included in this report) relevant to this project should be adopted.

All other recommendations are as per attached tree survey report sheets.

**Dr Philip Blackstock**

## ARBORICULTURAL METHOD STATEMENTS

**Protection of trees.** A protective barrier, 2.3m high and comprising a vertical and horizontal framework of scaffolding, well braced to resist impacts and securely supporting weldmesh panels, (as illustrated in Fig 2 of BS5837:2005) shall be erected around the base of all trees to be retained on site. The line of this fence shall be at least the distance defined in the attached plan, or as otherwise directed by Dr Philip Blackstock. No construction traffic, materials or debris will be permitted within this zone of protection.

**Temporary surfaces within zone of protection.** Where temporary access is to be established within the 'zone of protection' surrounding retained trees, (for example, during demolition of existing buildings), ground surfaces will be protected by a layer of sharp sand, approx. 50 mm thick, overlaid with a geotextile membrane on which a temporary surface of no fines granular material, at least 150 mm thick, is laid. Where traffic is turning on these surface, stout planks will be laid over the geotextile membrane and below the granular material. The trunks of adjacent trees will be suitably protected as indicated on site by Dr Philip Blackstock.

**Scaffolding within zone of protection.** Where scaffolding is to be established within the 'zone of protection' surrounding retained trees, the existing undisturbed ground surfaces will be protected by a layer of sharp sand, approx. 50 mm thick, overlaid with a geotextile membrane. Stout planks, such as closely side-buttet scaffold boards, will be laid over the geotextile membrane and scaffolding will be constructed on these planks (as illustrated in Figure 3 of BS5837:2005). Additional stays, as directed by a competent person, will be considered where scaffolding is constructed on suspect or un-consolidated ground. Adequate protective fencing, as Illustrated in Figure 2 of BS5837:2005, will be maintained between scaffolding and adjacent trees.

**Construction of hard surfaces close to retained trees.** Where permanent surfaces are to be constructed close to retained trees, within the zone of protection as defined by BS5837: Trees in Relation to Construction, carefully remove accumulated organic material and loose soil, leaving existing topsoil in situ. Protect root zone with a layer of sharp sand and, on this, establish a firm sub-base of no-fines granular material supported on a geotextile membrane and a 100mm three dimensional cell product (e.g. Terram's Cellular System). Construct the paved area on this sub-base using established design guidelines (and no-fines granular material) with a porous surface finish such as paviers or porous bitmac.



## HEDGEROW SURVEY

**Background.** A detailed hedgerow survey was commissioned to inform the design of road improvements on the N2 between Monaghan and Emyvale. The methodology used in this survey followed that used in the County Monaghan Hedgerow Survey Report (Foulkes 2010) and produced two detailed datasets, one describing the structural formation of the hedgerows and one detailing their species composition. In variance to Foulkes (2010) all hedgerows lying within 50m of the centre of the N2 were surveyed, with a linear plot 30m long within each hedge surveyed in detail. Data sheets summarising these surveys are attached to this report.

A summary of the principal findings of this survey is given below.

**Structural features.** There was a distinct difference in the construction detail between the roadside hedges and the adjoining agricultural hedges. Along most of the N2, the hedge was established on a level shelf that separated a relatively wide grass roadside verge from a deep, steep sided drainage ditch on its field side. There were no stone walls evident along the road. The minor side roads and agricultural fields were separated by a 'bank and ditch' structure similar to Enclosure Act hedges elsewhere in Ireland. In these it appears that a ditch or drain was dug and the spoil was piled up at its side. A hedge was then established on the drain side of the bank.

A third form of hedge structure was associated with hedges growing at the domestic properties. In these, the hedge was planted on level ground, without either a drain or ditch being evident.

There was only one stone wall associated with a hedge in the surveyed area. This was along the banks of the Mountain Water River in Emyvale and consisted of a well constructed mortared retaining wall that supported a level field and old hedge above the banks of the river.

**History and Land Class.** The first edition Ordnance Survey map of Monaghan does not include the position of the agricultural hedges. Most of the roadside hedges were

evident on this map, as were many surrounding domestic properties. There was, however, no evidence that the presence of hedges on this map indicated that they were, in fact, old. In many instances the hedges recorded on this edition of the Ordnance Survey maps had been replaced with Leyland cypress or cherry laurel.

Most of the Townland boundaries in the surveyed area were marked by small streams, rather than hedges. If hedges did exist on these boundaries, their species composition tended to be associated with damp sites, rather than old planted boundaries.

That part of County Monaghan that surrounds the N2 is dominated by pasture or by domestic gardens. There was no arable land planted this year within the surveyed area. The only semi natural vegetation evident was in the southern end of the surveyed area, where a small area of wet marsh associated with Griggy Lough existed alongside the road. Interestingly, this area was also the only area recorded with infill on adjoining land.

**Hedgerow management.** In general, most of the hedges were well maintained and closely clipped throughout the survey area. There was anecdotal evidence that hedges that separated different farms were generally less well maintained and many of these had not been cut. Where hedges were cut, this was carried out either by flail or by hand tools. Most hedges were dense and animal proof, without the need for wire.

One of the key features of the roadside hedges was the retention of mature trees. Some of these, most notably north of Gortmoney, are clearly marked on the first edition of the Ordnance Survey map. In general, these were beech and had apparently originally been planted about 7.0m apart. This pattern of hedgerow management was being actively maintained by the landowners, with self sown ash and sycamore replacing the original beech trees.

There was very little evidence of hedge laying.

**Species composition.** There were clear patterns of species composition within the surveyed hedges. In general, the roadside hedges between Gortmoney and Monaghan were dominated by a roughly equal mix of hawthorn, blackthorn, common privet and guilder rose. The dominant trees were young or coppiced ash and mature beech. North of Gortmoney, the guilder rose was replaced, first by field maple within the village, and then by snowberry. The mature beech trees were augmented by ash and sycamore, and, in places, by wild cherry. The agricultural hedges were dominated by hawthorn and coppiced ash, with blackthorn also common. Briars and ivy were abundant, while honeysuckle and dog rose were common in both the roadside and field hedges. Alder and goat willow were locally common, particularly near water courses. The domestic hedges were, generally, dominated by either Leyland cypress or cherry laurel.

There was very little oak or hazel present in the surveyed hedges.

The ground flora associated with the surveyed hedges was, generally, fairly species rich. It was, however, mostly dominated by coarse herbs or grasses, indicating that the ground was fertile. This fertility extended to the roadside verges of the N2, where pollution from road traffic appeared to be dominating the ground vegetation. The most species rich ground vegetation was associated with dry banks, particularly along the minor side roads, where grass competition was minimised. In these, typical indicator species of old woodland were common. Again, some of these hedges were clearly not in existence when the first edition Ordnance Survey maps were produced, suggesting that management and ecological conditions, rather than age, was the dominant determining factor in their relative species richness.

Dr Philip Blackstock

## **N2 Monaghan to Emyvale Landscape Plan; relevant information from the tree and hedgerow survey.**

**Background.** It appears that the existing N2 from Monaghan to Emyvale was constructed about one hundred and fifty years ago. It has a distinct design detail of a fairly wide carriageway bounded on both sides by a generous, level grass verge. The grass verge is, itself, bounded by a dense, relatively species rich, hedge dominated by common privet, hawthorn, blackthorn and guelder rose, apparently in roughly equal proportions. This hedge was established on the level top of a deep drain that separates it from the adjoining agricultural lands.

While the construction detail of the road does not change significantly along its length, the species composition of its associated hedges does change north of Gortmoney. Here field maple predominates within the village, while guelder rose is replaced by snowberry between Gortmoney and Emyvale. The road has been improved close to Emyvale and the original hedgerows have been lost. The domestic gardens are, generally, surrounded either by post and rail fences or by Leyland cypress or cherry laurel hedges. A notable feature of the domestic gardens is their generally neat appearance, with mostly heavily pruned garden trees.

The roadside hedges appear to have originally also been planted with beech trees, spaced about 7.0m apart. Many of these trees were allowed to grow on and this now creates a notable feature of the road. These beech trees have been augmented by naturally dispersed ash trees, with some alder in the wetter places.

The agricultural field hedges close to the road are, generally, less species rich and are dominated by hawthorn and ash. There is some alder and willow, again mostly in the damper areas. Oak and hazel (species that would originally have dominated this landscape) were scarce throughout the survey area.

**Design recommendations.** It is recognised that the original design of the carriageway is not likely to be repeated in the proposed road improvements. However, the concept of a robust, species rich hedge with evenly spaced trees separating the road verges from the surrounding agricultural landscape is worthy of consideration. The existing species composition of the hedges, particularly close to Monaghan town, with an equal mix of common privet, guelder rose, hawthorn and blackthorn has the added advantage of being

composed of suitable native species (although the replacement of the blackthorn with hazel would remove a species that may spread aggressively into adjoining, under-utilised lands). The inclusion of some holly (as a minor component) would also provide additional shelter, particularly during the winter.

It is clear from site that the original hedge was marked by beech trees planted at about 7.0m centres. There is considerable merit in including this in the proposed landscape plan. Such trees may be planted as either half standards or feathered with a girth of 6 – 8cms. If it is considered paramount that native species are used in this scheme, common oak would make a worthy substitute. Oak trees also have the advantage of being associated with the original 'Green Wood' that once covered this part of Monaghan.

Where significant cuttings or embankments are created, these would benefit from woodland planting. It is recommended that a grass verge of at least 4.0m wide is maintained in these areas. This verge may be backed by a belt, about 3.0m wide, of native shrubs (in particular, hazel, hawthorn and blackthorn) and this, in turn, can be backed by an intimate woodland mix dominated by common oak and containing (as minor components), hazel, yew and wild cherry.

Finally, there are a few areas where a species rich ground flora has developed on the existing roadside verge. Where individual woodland species are to be lost, these may be transplanted. This is particularly the case with the bluebells north of Hoof Bridge, and the few patches of wood anemone and wild garlic in front of Legacurry House. If it is considered appropriate to replant existing hedges, the two best examples are located on small side roads at Mullabrack (on the eastern side of the N2) and south of Cloughnart (again on the eastern side of the N2). Both of these hedges have a sharp bank that contains a range of typical herbaceous hedgerow species, including the early purple orchid.

It is recommended that all planting details and designs should be finalised by a suitably qualified Landscape Architect. Planting details of trees and shrubs should conform to current horticultural best practice.

Dr Philip Blackstock

## **HEALTH AND SAFETY**

Working with trees is a hazardous occupation. It is important that competent tree surgery contractors are employed to carry out the tree works recommended in the attached tree survey report sheets. These contractors should carry all relevant insurance cover and should comply with the recommendations outlined below.

Notwithstanding the following recommendations, all tree surgeons and accompanying staff should comply with all the requirements contained in the Safety, Health and Welfare at Work Act 1989 (SHWW Act, 1989) and the Safety, Health and Welfare at Work (General Applications) Regulations, 1993 (GAR Regs, 1993) for forestry operations, the Code of Practice for Managing Safety and Health in Forestry Operations and all subsequent legislation made thereunder.

### **Staff qualifications, experience and training**

Only skilled operatives should be employed for all the work specified in the attached tree survey report sheets. These skilled operatives should have a proven expertise and experience in the areas of work specified and should hold all relevant certificates of competence.

Operatives using chain saws to fell trees must have National Proficiency Test Council (NPTC) certificate of competence Units CS 30, 31\*, 32\*, 33\* (\* whichever is appropriate for the size of tree being felled) if they are working from the ground and, in addition, Units CS 38, 39, 40 & 41 if they are climbing.

All operatives undertaking work near underground or overhead electric cables must have attended a Electricity Safety Awareness course. They must comply with the guidelines laid down in FASTCo Safety Guide 804: Electricity at work; Forestry and Arboriculture. Where there is a risk of a climber, equipment or parts of a tree touching or coming close to overhead cables, the advice of ESB must be sought, and adhered to, before work commences.

### **Work wear**

All operatives should wear the appropriate safety clothing for the task being performed as specified in the relevant safety codes. Where operatives are employed on tree work near public roads, or when the available lighting is poor, they should wear high visibility 'florescent' jackets or waistcoats

### **Tools and Equipment**

Tree surgeons should use such tools and equipment deemed suitable to complete the specified task. All bladed tools should be sharp and in a serviceable condition. All plant and machinery operated by the tree surgeon should be tested and certified to comply with all current legislation. All vehicles should be taxed and roadworthy. Machinery and vehicles should carry operational fire extinguishing equipment to the standards required by insurers.

All machinery should be used in accordance with the manufacturers' instructions. These machines should carry warning notices as specified by the relevant Health and safety guide.

Climbing equipment for tree work is subject to the Provision and Use of Work equipment regulations (NI) 1998 (PUWER), the Lifting Operations and Lifting Equipment Regulations (NI) 1998 (LOLER) and is also subject to the Personal Protective Equipment at Work



regulations (NI) 1992 (PPE Regs). Operatives using climbing equipment should be familiar with, and comply with, these and all other relevant regulations.

### **First aid**

All chain saw operatives should have a current First Aid Certificate. No chain saw operative should be left working on site without an additional first aider present. These operatives should be familiar with FASTCo Safety Guide 802: Emergency Planning and First Aid.

All operatives should have immediate access to a first aid kit conforming to SI 1981 No 917 and FSC 34, and, in addition, carry a personal first aid kit which includes a large sterile wound dressing.

### **Site Organisation**

Tree surgeons should ensure that a team of at least three people carry out all tree climbing, pruning and tree felling operations. When undertaking tree climbing work, one of the grounds staff must be competent to perform aerial rescue and be conversant with FASTCo Safety Guide 401: Aerial Tree Rescue. In addition, one of the ground staff must be made responsible for ensuring that there is no trespass into the working zone when tree pruning or felling operations are taking place. Adequate staff should be available during tree work operations to ensure that no unauthorised persons or livestock enter the working area.

Tree surgeons should provide and constantly maintain all necessary warning and direction notices, cones and barriers when carrying out tree works that are adjacent to a road or footpath used by the public. These should conform to the recommendations and directions given in;

- Chapter 8 of the Traffic Signs Manual 1993, published by DRD
- Section 174 of the NI orders of the Highways Act
- Section 65 & 142 of the New Roads and Street Works Act
- Safety at Street Works and Road Works code of practice 1993
- Any other relevant legislation

Where tree works are to be carried out over, or adjacent to, public roads, the contractor should arrange the work to avoid traffic congestion and public inconvenience. They should make arrangements with the Garda Siochana and the local county council as may be found necessary.

## KEY TO TREE SURVEY SHEETS

TITLE	DESCRIPTION
Tree No	The identification number of the tree, as indicated on site by a nylon identification tag attached to the tree
Species	The common English and scientific name of the tree, as used by Alan Mitchell in 'A field Guide to the trees of Britain and Northern Europe' (Collins, London, 1974)
Age	The life-cycle age of the tree, described as Y = young, YM = young-mature, M = mature, OM = over-mature
Condition	The condition of the tree, as assessed by a visual inspection on site
Height	The height of the tree, given in metres
Crown spread	The radial crown spread of the tree for each of the four cardinal points, given in metres
DBH	The diameter of the tree trunk, measured at approximately 1.3 metres above ground level and given in centimetres
Observations	A general description of the tree as seen on site, including distinguishing features and evidence to support the recommendations given
Recommendations	The recommendations for tree works aimed to ensure that the site remains safe and that the tree develops in a safe and satisfactory manner
Category	The category score attributed to each tree, as defined in Table 1 of BS5837:2005 and defined as follows: A = Trees of high quality and value, B = trees of moderate quality and value, C = trees of low quality and value and R = trees not suitable for retention

## **ARBORICULTURAL TERMS**

The following interpretation of the terms used in the attached tree survey report sheets should be adopted when fulfilling their recommendations.

### **Crown clean**

The removal of broken, diseased, dying or dead branches or snags that are either over 50 mm in diameter or are more than 200 mm in length.

### **Remove ivy**

The cutting of ivy stems at their point of entry into the soil, taking care not to damage the tree. All branches, stalks and creepers of both alive and dead ivy should be removed from the crown of the tree.

### **Trim or remove branch stumps**

The cutting of all branch stumps or snags back to just outside the branch collar and branch bark ridge.

### **Remove swing / tree hut / sign etc.**

The removal of structures within the crown or attached to the tree, including nails or other fastenings.

### **Trim / tidy / remove epicormics**

The removal of all soft growth or epicormics growing from the trunk of the tree, up to a height of 2.4 m.

### **Crown lift to above eye level / over footpath.**

The removal of all soft growth, including epicormics and all lateral branches, up to a height of 2.4 m above ground level. When lifting the crown, upright laterals may be retained.

### **Crown lift over carriage / driveway etc**

The removal of all lateral branches and soft growth that are overhanging, or within 1.0 m of, a road or lane, up to a height of 5.2 m.

### **Trim back from building**

The removal of all lateral branches and soft growth growing within 1.0 m from the wall and from within at least 2.0 m from a window and above a roof of a building.

### **Clear overhead cables**

The removal of all branch growth from within, or likely to come within, 1.0 m from overhead telephone cables.

Where overhead electric cables are encountered, the tree surgeon must liaise with engineers from Northern Ireland Electricity and must conform to their recommendations and advice. All staff undertaking work near underground or overhead electric cables should have attended a Northern Ireland Electricity Safety Awareness course and must comply with the guidelines laid down in FASTCo Safety Guide 804: Electricity at work; Forestry and Arboriculture.

### **Reduce / remove competing leaders**

The trimming back or removal of all but one dominant, upright stem in a way that creates an apical crown angle of less than 90°. Competing stems should be trimmed well back to a side branch showing strong horizontal growth patterns or should be removed to just above the branch collar and branch bark ridge.

## **Reduce end weight**

The reduction of the crown of a tree by trimming back the branch tips by the described amount. Branch tips should be trimmed back to a suitable lateral twig or branch (in strict accordance with the recommendations contained in BS3998: 1998, Tree Work, in a way that maintains the general characteristics of the tree and its species. **In all cases, no branch, limb or trunk greater than 100mm shall be cut in the process of reducing end weight.**

## **Re-form Crown**

The carrying out of such trimming and branch removal as is necessary to create (or recreate) a tree crown architecture capable of supporting additional tree growth and that complies with the normal crown form for that species. **In all cases, no branch, limb or trunk greater than 100mm shall be cut in the process of reducing end weight.**

## **Pollard**

The removal of all growth back to the required height. In most circumstances, it will not be possible to trim back to a suitable lateral branch and, because of this; most cuts should be cleanly executed and should produce a sloping surface that will not collect water.

## **Prune as per Belfast Street Tree**

The complete pruning of a tree, which is a combination of crown reduction, crown lifting and crown thinning in a way that preserves the characteristics of the tree and its species. All growth removed during pruning must be taken back to an appropriately sized lateral branch, twin or bud to leave an acceptable crown form. **In all cases, no branch, limb or trunk greater than 100mm shall be cut in the process of reducing end weight.**

## **Fell**

The complete felling of a tree in a safe manner, leaving a smoothly surfaced stump that is cut as close to ground level as is possible

## **Trees not found.**

These trees appear to have been removed since the trees were tagged in 2005.

## **Harvest timber to provide re-planting zones**

These trees contain harvestable timber. These trees will be felled by forestry contractors to provide saw logs and to create re-planting compartments.

## **Any other terms used**

If he is any doubt, the tree surgeon should contact Dr Philip Blackstock (on 02825 821202) for a definition of any other term used in the attached tree survey report sheets.

# HEDGEROW SURVEY

## Structural recording categories

### Context

#### **A ADJACENT LAND USE**

- a tillage
- b dairy
- c cattle
- d sheep
- e mixed stock

- f mixed stock + crops
- g equine
- h other
- I fodder
- j curtilage

#### **B HISTORY**

- 1 infill
- 2 townland boundary
- 3 canal side boundary
- 4 railway line boundary
- 5 farm boundary

#### **B1 HISTORY Road/Stream**

- 1 road NP, NS, Rgnl, Lcl, Un, Frm
- 2 stream
- 3 recently established

#### **B2 HISTORY**

- 1 Boundary present on 1st Edition OS
- 2 Boundary present on 2nd Edition OS
- 3 Boundary connects to feature on SMR
- a Boundary links to woodland on OS1
- b Boundary shown as treeline on OS1

#### **C ADJACENT LAND CLASS &**

#### **D HABITAT LINK CLASS**

- a arable (BC)
- b improved grassland (GA)
- b1 improved grassland reverting (GA)
- c semi-natural grassland (GS)
- d non-native woodland (WD)
- e semi-natural woodland / scrub (WN)
- f scrub/transitional woodland (WS)
- g curtilage/built land (BL)
- h peatlands (P)
- i lake/pond (FL)
- j watercourse (FW)
- k other (target note)
- l. none
- m. hedgerow (WL1, WL2) (no. of links)
- n. earthbank (BL2)
- s. marsh (GM1)
- q. quarry (ED1)
- w. swamp (FS1)

#### **E BOUNDARY FUNCTION**

- 1 hedge redundant
- 2 active boundary

#### **I DRAIN SIZE**

- 1 not present
- 2 small (<0.5m)
- 3 medium (0.5 – 1m)
- 4 large (>1m)

#### **I1 DRAIN WET/DRY**

- a dry ditch / drain
- b wet ditch / drain

### Structure/Condition

#### **J PROFILE**

- a remnant
- b relict (derelict)
- c boxed / A shape
- d overgrown/irregular
- e. top heavy / undercut
- f straight sided
- g wind-shaped

#### **J1 PROFILE, suffix**

- a. losing structure
- b. outgrowths at base

#### **K HEIGHT**

- 1 <1.5m
- 2 1.5 – 2.5m
- 3 2.5 – 4m
- 4 4 – 5m
- 5 5m+

#### **K1 HEIGHT, suffix**

- a overhead wires/cables

#### **L WIDTH**

- a < 1m
- b 1– 2m
- c 2 – 3m
- d 3 m+

#### **M GAPPINESS**

- 1 complete
- 2 < 5 % gaps
- 3 5 – 10 % gaps
- 4 10 – 25 %
- 5 25 – 50 %
- 6 > 50 %

#### **M1 SPECIFIC OR GENERAL**

- a general
- b specific (ind. gap>5m)

#### **N BASE**

- a open / translucent
- b scrawny, semi-translucent
- c semi-opaque
- d dense / opaque

#### **N BASE, suffix**

- a + vegetation

#### **R VERGE / MARGIN**

- a < 1m
- b 1 – 2m
- c 2 – 4m
- d 4m +
- e none

#### **R1 VERGE / MARGIN, DEGR**

- 1. >20% poached within 2m
- 2. >20% ploughed within 2m
- 3. >20% herbicide use

#### **S OVERALL VIGOUR**

- a poor
- b average
- c good
- d poor in part
- e basal decay
- f evidence of disease

### Management

#### **U MANAGEMENT**

- a cut box profile
- b cut 'A' shape
- c cut on one side
- d cut on both sides
- e topped only
- f excavator
- g fully laid
- h laid in part
- i coppiced
- j short term unmanaged
- k long term unmanaged
- l infill planting
- m pruned
- n other (target note)
- p. ivy cut

#### **U1 MANAGEMENT, suffix**

- a. out of season

#### **V MANAGEMENT METHOD**

- 1 flail
- 2 circular saw
- 3 bar cutter
- 4 hand tools
- 5 excavator
- 6 other
- 7 unsure
- 8 not applicable

#### **W EVIDENCE OF LAYING**

- a no evidence
- b past evidence
- c recent evidence

## HEDGEROW SURVEY

### Structural recording categories (continued)

<p><b><u>Construction</u></b></p> <p><b>F OUTLINE</b> a linear b non-linear</p> <p><b>G1 BOUNDARY TYPE</b> 1 Single Line Hedge 2 Double Line Hedge 3 Random Line</p> <p><b>G2 BANK/WALL/SHELF</b> 1 Bank 2 Wall 3 Shelf</p> <p><b>G3 DRAIN</b> a External Drain b Internal Drain c Internal Path, Track-way, etc. 0 none of the above features</p> <p><b>G1 BOUNDARY CLASS</b> 1 WL1 2 WL2</p> <p><b>H BANK/WALL/SHELF SIZE</b> a &lt; 0.5m b 0.5 – 1 m c &gt; 1m d not applicable</p>	<p><b>O BANK /WALL/SHELF DEGRADATION, DEGREE</b> 1 not applicable 2 none 3 severe 4 minor 5 drain blocked/waterlogged</p> <p><b>O1 BANK /WALL/SHELF DEGRADATION, EXTENT</b> a general &gt;10% b isolated</p> <p><b>P TREES</b> a none b few up to 15% c scattered 15 - 30% d abundant 31-75% e line &gt;75%</p> <p><b>Q TREE AGE COMPOSITION</b> 1 all mature 2 predominantly mature 3 predominantly immature 4 mixed age range 5 none</p>	<p><b>X FENCING</b> 1 none 2 fixed to stems 3 electric 4 post &amp; wire 5 sheep wire 6 timber fence</p> <p><b>Y GROUND FLORA</b> a species rich b average c species poor d noxious weeds DAFOR e nutrient rich &gt;20% f use of herbicide g indicator species h. invasive species</p>
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## HEDGEROW SURVEY

### Species abundance list scores

D = Dominant; so common that it dominates the hedge

A = Abundant; common throughout the hedge and defines its species composition

F = Frequent; found throughout the hedge

O = Occasional; occurs as more than one individual plant

R = Rare; occurs only as one small individual plant