

Appendix 11I – Species Rich Hedgerow and Veteran Tree

Species rich hedgerows and veteran trees are considered potentially significant nature conservation factors for the Proposed Scheme for the following reasons:

- Although species poor hedges are ubiquitous within Northern Ireland (NI) species rich hedgerows are relatively rare;
- Hedgerow and tree conservation are part of the Roads Service Biodiversity Implementation Plan, NI Biodiversity Strategy and associated Plans and UK BAP;
- Planning Policy Statement (PPS) 2 - Planning and Nature Conservation. The Department seek to protect trees, groups of trees, and woodland areas of particular importance because of their nature conservation value; and
- The Woodland Trust (2009) wants PPS 2 to be updated to include further protection for trees and woodland in NI such as recognition of the need to conserve ancient trees and woodland. Northern Ireland has limited woodland cover and its ancient woodland is a finite resource, covering 0.08 per cent of the landscape.

Legislation

Species rich hedgerows and veteran trees do not receive legal protection in NI (unless under a Tree Protection Order (TPO)). However, they do support numerous legally protected species through which these habitats themselves receive some protection. The most likely to be of relevance to the Proposed Scheme are the protections afforded wild bird nests and the protection afforded to bat roosts. These are discussed below and in Appendices 11R and 11K.

Nevertheless, Article 10 of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (“the Habitats Directive”) requires member states to encourage the management of hedges (and other linear features) in their land use planning and development policies and, in particular, with a view to improving the ecological coherence of candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs). This is reflected in The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) which recognises that such linear features are essential for the migration, dispersal and genetic exchange of wild species.

Policy Framework and Guidance Notes

The following policies and guidance documents aim to help conserve and protect ecologically important hedgerows and trees within NI and the study area:

- PPS 2 - Planning and Nature Conservation;
- ENV1.1 in The Regional Development Strategy for Northern Ireland 2025: Shaping Our Future, Chapter 12, Caring for the Environment;
- Northern Ireland Biodiversity Strategy and associated Plans;
- UK Biodiversity Action Plans;
- Roads Service Biodiversity Implementation Plan; and
- Local Biodiversity Action Plans.

National Policy Protection for hedges and trees

PPS2 provides policy guidance seeking to protect trees and groups of trees through planning decisions. The Woodland Trust wants PPS2 to be updated to include further protection for trees and woodland in NI such as recognition of the need to conserve ancient trees and woodland (The Woodland Trust, 2009). PPS2 also contains provisions to encourage planting of new trees as well as replacing any areas of trees of woodlands lost with appropriate numbers and species considering those lost.

UK Biodiversity Action Plans

All hedgerows in the UK consisting predominantly of at least one woody UK native species are covered by the updated UK BAP Priority Habitat (BRIG 2008). This has recently been amended from the species rich/ancient hedgerow BAP published in 1995.

Northern Ireland Biodiversity Action Plans

The Northern Ireland Habitat Action Plan for hedges specifies that it covers only species rich hedges. However as it is also stated to include any priority habitat in the UK BAP, the status of species poor hedges within NI is not clear. The NI BAP aims to maintain the current distribution and extent of species rich hedgerows and aims to maintain overall numbers of hedgerow trees within each county at least at current levels (EHS, 2003).

Draft Road Service Biodiversity Action Plan

Roads Service BAP outlines measures relating to hedges and trees. These encourage the linking of severed hedges through roadside planting and the replacement of areas lost using species of native provenance. Further details are provided in Table 11I.1, which details the recommendations on design, planting and maintenance for trees and hedgerows.

Table 111.1 Roads Service BAP (2008) Summary

Roads Service Action	Supporting Information/ Background
<p>Provide measures for safe passage across roads for local wildlife.</p>	<p>All structures shall be designed and located so as to maximise the opportunity for wildlife crossing whilst not impairing the function of the structure.</p> <p>The provision of alternative planting schemes shall be considered, where appropriate.</p> <p>All opportunities shall be taken for locating dedicated wildlife structures as close as practicable to existing crossing points.</p>
<p>Road Widening or Improvement Scheme to replant hedgerows to maintain continuity in the wildlife corridor.</p>	<p>Use a minimum of five native species for new hedges</p> <p>Refer to DARD Specification 'Hedge Regeneration and Planting'</p> <p>www.ruralni.gov.uk/print/ae_man_boundary_8_1_cmb.pdf</p>
<p>Specify native local provenance trees, shrubs and plants in briefs for contractors. Request certificate of origin for monitoring purposes.</p>	<p>Local provenance or indigenous plant species are critical to the health and vitality of the NI species gene pool; e.g. local provenance plant species are adapted to the life cycle of local insects and birds.</p> <p>Plants grown in other countries may not necessarily provide this.</p>

Local Policy Protection for Hedges and Trees

Omagh District Council LBAP and Londonderry City Council LBAP

The Omagh District Council Biodiversity Action Plan aims to conserve and enhance biodiversity and has specific aims and objectives related to species rich hedgerows. Londonderry City Council encourages the creation and restoration of species rich hedgerows through its Agri-environment schemes. The Omagh and Londonderry LBAPs do not include objectives for veteran trees. The relevant objectives and targets for both are outlined in Table 111.2.

Table 111.2 Omagh District Council and Londonderry City Council LBAP Summaries.

Objectives	Targets
Omagh District Council LBAP	
<ul style="list-style-type: none"> • Improve condition of selected woodlands and hedgerows. • Increase connectivity of woodlands. 	<ul style="list-style-type: none"> • Undertake woodland creation and hedge planting projects. • Increase recording of key woodland and hedgerow species.
Londonderry City Council LBAP	
<ul style="list-style-type: none"> • To deliver Agri-environment schemes administered by Department of Agriculture and Rural Development (DARD). These are crucial in delivering the Government’s commitments in relation to biodiversity. 	<ul style="list-style-type: none"> • To create and restore species rich hedgerows as part of the agri-environment schemes.

Tree Protection Orders (TPOs)

It should be noted that some trees are subject to preservation orders. A TPO provides protection for those trees specified in the order and makes it an offence to cut down, top, lop, uproot or wilfully damage or destroy a tree, or permit these actions, without first seeking the Department’s consent to do so (Northern Ireland Planning Service). The Department may make TPOs for the purpose of:

- Protecting important trees or groups of trees, which are under threat;
- Strengthening a planning condition for the protection of existing trees or trees to be planted as a requirement of a planning condition;
- Protecting trees, considered to be of special value in a particular area, even though there is no direct threat to them; and
- Protecting a woodland area by securing the replanting of trees, which have been felled with the Department’s consent.

Conservation Status of Species Rich Hedgerows in Northern Ireland

Overview and Definition

In order to be considered species rich, a hedge must have at least five native woody species in an average 30m stretch or contain less woody species but have a rich ground flora. Published information for hedges in Northern Ireland suggests that over half are species-poor, dominated by hawthorn *Crataegus monogyna* and ash *Fraxinus excelsior* (Hegarty, 1992). NICS 2000 gathered a large amount of information on hedgerows and estimated that 37% (44,000 km) of NI hedges are species-rich (Cooper & McCann, 2001). Often the best examples are found alongside sunken roads and old tracks where they are likely to be of more ancient origin than those between fields (EHS, 2003). This data represents the entire of NI however, and it is not known whether it is representative of conditions within all parts of the country.

Intrinsic Value

The Northern Ireland Countryside Survey (NICS) report (Cooper & Mc Cann, 2000) indicates there was a 4% loss of hedgerows from 1991-1998. The Northern Ireland Landscape Character Area Assessment Series identified neglect and hedge removal as widespread issues across NI (Environmental Resources Management, 1999). However the hedgerow network is recognised as being denser and the overall decline is not as significant, than many other areas of the UK. It is also recognised that hedges in NI are not a historic feature of the landscape and most were planted within the past few hundred years (NIEA 2003).

Some of the most valuable species rich hedgerows may however derive from earlier planting or woodland clearance. Hence they may also retain ancient woodland indicator species such as wood anemone, *Anemone nemorosa* and primrose, *Primula vulgaris*. Others may have escaped the general grassland improvement and may contain remnants of more natural grassland communities in their basal vegetation. Hegarty (1992) recorded over 170 species of trees, shrubs and wildflowers in hedgerows in NI.

Supporting Value

In addition to their intrinsic flora components hedges can be of value to a variety of fauna. In this respect flora diversity and structural diversity can be equally important. Generally thicker, taller, less intensively managed hedges are better for wildlife as they afford more varied habitats and provide more shelter.

Hedgerows provide valuable nesting habitat and song posts for breeding birds. In NI 36 bird species regularly rely on hedgerows for breeding, shelter and feeding purposes, approximately another ten occasionally use hedges amongst other habitats for various purposes. Many of these are listed as UK Birds of Conservation Concern (Gregory et al, 2002) or Irish Birds of Conservation Concern (Newton, 1999).

Hedgerows over 1m in height are important habitats for most bat species, especially where they create a double linear feature with hedgerow, treeline or woodland (Russ, 1999). Loss of good

quality hedgerows would be detrimental to a number of protected mammal species such as red squirrel, pine martin and badger. Loss of hedgerows is also cited in the Irish hare NI BAP as a probable factor causing decline in the population (DOE, 2000). Relevant baseline reports have been produced by Mouchel (2010) that will assess the requirements of these UK BAP species where necessary.

Butterfly diversity also tends to be greatest along hedgerows that are high and wide, as well as being rich in plant species (Wolton, 1999). Consequently hedgerows support a wide range of species. Hedgerows also act as wildlife corridors for many species, allowing dispersal and movement between other habitats. Several NI BAP habitats are also associated with hedgerows.

Conservation Status of Veteran Trees and Mature Trees

Overview and Definition

Veteran trees are those in the late stages of maturity or with obvious heritage or aesthetic appeal. This includes those trees that are over 1m diameter at 1.3m height, generally with several additional features such as decay holes, bark loss, epiphytic plants and fungal growth (Woodland Trust 2007). Veteran trees are valuable for several reasons:

- They may be remnants of ancient woodland;
- Their supporting value for many plant and animal species; and
- Their landscape and aesthetic qualities.

Intrinsic Value

Veteran trees are of great conservation value as individual trees and are important because of their great size, age or condition; they are recognised throughout the UK as an important habitat with the country supporting 80% of the European total (veteran tree forum website accessed 13th April 2010). They are also included as an integral part of the Parklands BAP where they are noted to be prevalent in former estate gardens. However, it is noted that they are less common in NI than in the rest of the UK. Their conservation status is not specifically known, but factors revolving around poor land management appear to be having adverse effects (NI BAP accessed 13th April 2010).

The previous Mouchel field surveys (Mouchel 2009, 2010) recording the baseline habitats and scoping for trees suitable to support bat roosts found comparatively few mature trees within the survey area and the wider landscape of Co. Tyrone.

Supporting Value

Veteran trees should be regarded as significant for wildlife as are valuable habitats for a range of species such as lichens, fungi, invertebrates and bats (Roads Service, 1998).

Methods

The 2009 field survey area contained 14 target areas that were selected based upon studies conducted in 2008. Where appropriate this was extended to include areas of woodland outside this buffer if hedgerows within it performed important connecting role.

Selection of Field Survey Sites

The 2009 hedgerow surveys are intended to map NI BAP species rich hedgerow habitats, not the general status of the the study area's hedges which was completed during Phase 1 habitat surveys in 2008. Therefore the surveys were targeted on areas which were most likely to support NI BAP hedges using data from the Phase 1 habitat surveys. Veteran Trees do not include all mature trees and as such surveys for these were also targeted on specific areas using information gathered during the Phase 1 habitat surveys. Factors thought to increase the likelihood of the presence of species rich hedges were watercourses, woodlands, trackways, old settlements and unusually dense hedge networks.

Selection of Field Survey Proforma

The methodology employed for the hedgerow surveys draws upon the methods outlined in the Hedgerow Survey Handbook 2nd Ed. (DEFRA, 2007). Definitions of species rich hedgerows follow the NI BAP document NI Habitat Action Plan Species-Rich Hedgerows Final Draft (2003). Other relevant sources have also been drawn upon, including the Woodland Trust ancient woodland indicators for NI (<http://www.backonthemap.org.uk/>) and the UK BAP priority habitat (1995 version) – ancient or species rich hedgerows. The veteran tree assessment draws upon the criteria provided in the Hedgerow Survey Handbook 2nd Ed. It does not specifically follow the more detailed Veteran Tree Initiative Specialist Survey Form (Treework 1996) although this document has been used in the development of the recording form.

Field Survey

The surveys consisted of mapping NI BAP hedges and veteran trees within the 14 targeted areas. All hedges within the target areas were assessed with those fulfilling the required criteria marked on Phase 1 habitat maps, numbered and details recorded on survey forms. Other hedges have not been recorded in more detail than the Phase 1 Habitat maps.

Scrambling species such as bramble were not included, although *Rosa sp.* was included. Other associated features such as banks, ditches, stone walls etc were included in the BAP where they occur with hedges although they do not count toward the assessment of whether it was species rich or not. Recently planted species rich hedges were also included. Additional ground flora categories included those for woodland, diverse grass/flowering plants and less improved grassland indicators. Average dimensions of the hedgerow, condition and management were also recorded as an indicator of its supporting value.

The locations of any BAP hedgerows and veteran trees, and any other amendments to the existing Phase 1 data were marked upon 1:10000 scale maps. The locations of possible veteran trees were also marked using the GPS and a photo was taken of each tree.

Designated sites

There are no sites within the study area that are designated specifically for the presence of species rich hedgerows or veteran trees. However, woodlands at Baronscourt Estate are due to be designated as an ASSI for their mature trees. This is approximately 1km from the study area boundary west of Newtownstewart at OS Grid Ref H355843.

Existing records

Hedgerows

Species rich hedgerows were found to be uncommon across the study area. The south of Section 3 contains the largest number of species rich hedges with higher than average concentrations north and west around Aughnacloy. These areas also contain higher than average, wider and less intensively managed networks which are therefore likely to be of greater supporting value for a variety of fauna. Those networks of hedges that were recognised as of higher value in the 2008 baseline studies are presented in **Error! Reference source not found.**3. Further details of these studies are contained in Habitats and Flora Appendix 11G. The most common woody species in all hedges were ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* and sycamore *Acer pseudoplatanus*, with hazel *Corylus avellana*, elm *Ulmus sp* and holly *Ilex aquifolium* generally restricted to species rich hedges. Most contained a species poor ground flora dominated by grasses and ruderal herbs.

Table 11.3 Summary of Significant Networks of Species Rich Hedges

Name (if applicable)	Eco ID Area / Location	Intrinsic Biodiversity Value	Scheme Section	Other Info
n/a	Eco ID Area 1138 / H345895	Local	2	Extends to the south of the ID Area
n/a	Eco ID Area 664 / H430723	Local	2	Along sunken track and iron age hill fort
North of Aughnacloy	Eco ID Area 9K / H668540, H664529 & H647547	Local	3	Good array of woodland herbs
n/a	Eco ID Area 963 / H676509	District	3	Connects woodland copses with good ground flora along some road verges
	South of Eco ID Area 981 / H6765529	Local	Section 3	Roadside hedges south east of Aughnacloy

Veteran and Mature Trees

Aside from the proposed ASSI at Baronscourt there are very few published records of veteran trees in Northern Ireland. Those that exist appear restricted to country parks in the grounds of former stately homes (ancient tree forum website accessed 16th April 2010, NI Parklands BAP accessed 16th April 2010). The 2009 survey found that mature trees greater than 100 years old were found to be relatively rare within the scheme. Mature trees are most commonly found within woodlands, alongside streams or rivers but they are also found along a few hedgerows. The most commonly found species are beech *Fagus sylvatica*, ash and oak *Quercus sp.*, with particularly good examples alongside the Mourne and Strule. Old Deerpark Wood also has a ring of mature beech around its perimeter. Table 111.4 provides a summary of the significant clusters of mature trees present within the study area.

Table 111.4 Summary of Significant Clusters of Mature Trees

Name (if applicable)	Eco ID Area / Location	Intrinsic Biodiversity Value	Scheme Section	Other Info
Close to Carricklee	Eco ID Area 1S / H333970	Local	Section 1	many non-native tree species.
Alongside River Mourne	Eco ID Area 580a / Various	District	Section 2	Multiple mature oak, ash and beech
Alongside River Strule	Eco ID Area 252a / Various	District	Section 2	Multiple mature oak, ash and beech
Old Deerpark Wood	Eco ID Area 1169	District / Local	Section 2	Fringe of mature beech, although interior is conifer plantation

Field Survey

Overview

Twenty seven species rich hedgerows were recorded during the 2009 surveys. However, high concentrations of connected species rich hedgerows were found at only four locations; close to Sion Mills and three areas around Aughnacloy. Nine veteran trees were also found during the survey. The highest concentration of veteran trees was at H5 close to Old Deerpark Wood Ch.37400 where three veteran trees are present.

Species rich hedgerow survey results

Overview

The species rich hedgerows recorded have an average of eight woody species, above the required five species per 30m to qualify as species rich. Several also have woodland ground flora species, although a wide diversity of woodland species was not recorded. Most had a diversity of ferns, grasses and other flowering species, but only two sites displayed less improved grassland ground flora. The majority of hedgerows have improved grassland species as the dominant ground flora. These results are displayed in Table 11.5 below.

The most abundant 'woodland' ground flora species is herb robert *Geranium robertianum* which is found commonly throughout the survey area. Other more commonly found woodland plants include primrose *Primula vulgaris* and violet sp. *Viola sp.* Typical hedgerow ground flora include fern species, umbellifers, vetches/vetchlings, common nettle *Urtica dioica* and fine grasses. Where less improved grassland flora does occur typical species are wild strawberry *Fragaria vesca* and devil's bit scabious *Succisa pratensis*. None of these are BAP priority species or species of conservation concern in Northern Ireland (NI BAP website accessed 16th April). The associated features recorded are typically stone walls, banks and roadsides. The majority of the species rich hedgerows recorded are over 3m in height, 1-3m thick with dense growth, although most are trimmed to some extent.

Table 11.5 Summary Results per Species Rich Hedgerow From the 13 Target Areas Surveyed.

Hedge Number and Site Location (H)	Number of woody species / 30m	Number of Woodland ground flora sp.	Number of Species indicative of a more diverse ground flora sp.	Number of less improved grassland ground flora sp.	Number of Associated Features
1, H4	10	1	3	0	2
2, H4	7	0	4	0	2
3, H4	6	0	2	0	2
4, H4	9	1	3	0	1
5, H2	7	1	1	0	1
6, H2	9	1	2	0	2
7, H2	6	2	4	0	0
8, H8	5	1	4	0	1
9, H9	7	0	4	0	1
10, H9	4	1	5	0	2
11, H9	7	1	3	0	1
12, H9	8	1	2	0	2
13, H11	7	2	3	0	2
14, 12	10	1	4	1	3
15, H13	6	1	2	0	2
16, H13	7	0	2	0	2
17, H13	5	0	1	0	1
18, H13	7	4	3	2	1
19, H14	8	2	1	0	1
20, H14	10	1	2	0	1
21, H1	9	1	4	0	4
22, H1	5	0	2	0	1
23, H3	8	2	3	0	1
24, H3	6	0	0	0	2
25 *, H3	10	2	4	0	2
26, H3	11	1	2	0	1
27, H3	8	1	2	0	1
Average Number of species/features	8	1	3	0	2

The woody species composition of the hedges shows that diversity of common native species are found in the 2009 survey areas. The most commonly occurring are ash *Fraxinus excelsior*, blackthorn *Prunus spinosa*, gorse *Ulex europaeus*, hawthorn *Crataegus sp.*, holly *Ilex aquifolium*, rose sp. *Rosa sp.*, sycamore *Acer pseudoplatanus* and willow sp. *Salix sp.* Elm *Ulmus sp.* crab apple *Malus sylvestris* and lime *Tilia sp.* were less commonly found. None of the species recorded are NI BAP priority species or species of conservation concern (NI BAP website accessed 16th April, EHS 2004). Table 11.6 indicates the occurrence of each species within the species rich hedges surveyed in 2009.

Table 11.6 Occurrence of Native Woody Species within Species Rich Hedges Surveyed

Hedgerow Species	Total number of hedgerows in which species were found in 2009 field surveys
Alder, common (<i>Alnus glutinosa</i>)	5
Apple, crab (<i>Malus sylvestris</i>)	2
Ash (<i>Fraxinus excelsior</i>)	24
Beech (<i>Fagus sylvatica</i>)	5
Birch, silver (<i>Betula pendula</i>)	5
Blackthorn (<i>Prunus spinosa</i>)	19
Cherry, wild (<i>Prunus avium</i>)	4
Elder (<i>Sambucus nigra</i>)	7
Elm, (<i>Ulmus sp.</i>)	1
Gorse (<i>Ulex europaeus</i>)	12
Guelder rose (<i>Viburnum opulus</i>)	2
Hawthorn (<i>Crataegus sp.</i>)	26
Hazel (<i>Corylus avellana</i>)	8
Holly (<i>Ilex aquifolium</i>)	14
Lime sp. (<i>Tilia sp.</i>)	1
Oak, pedunculate (<i>Quercus robur</i>)	5
Oak, sessile (<i>Quercus petraea</i>)	1
Poplar, sp. (<i>Populus sp.</i>)	1
Privet, wild (<i>Ligustrum vulgare</i>)	8
Rose (<i>Rosa sp.</i>)	16
Rowan (<i>Sorbus aucuparia</i>)	6
Sycamore (<i>Acer pseudoplatanus</i>)	13
Willow sp. (<i>Salix sp.</i>)	12

Higher quality examples

Hedgerow 25 at survey site H3 is a good example of a species rich hedgerow, with a high number of typical native woody species, several woodland ground flora species and a high number of diverse herbs. It also has a stone wall within the hedgerow; another fairly common feature of BAP hedgerows within the survey area. Table 111.7 identifies the field data checklist for Hedgerow 25. An additional important feature is that the hedgerow provides good connectivity between two areas of semi-natural broadleaved woodland. Other good examples of hedges are numbers 1, 20 and 26.

The remaining examples of species rich hedges had slightly fewer native woody species or associated features.

Table 111.7 Field Data for Hedgerow 25 at Site Location H3.

Potential BAP Hedgerow Checklist				
Hedgerow 25			Date	11/09/2009
Location Target Area 3 (Hedge ID 3)			Recorder	
Av. Height	<1m	1-3m	>3m	X
Av. Width	<1m	1-3m	>3m	X
Av. Woody Species / 30m	3	4	5	>5 X
Associated Features	Bank			
	Ditch			
	stone wall	X		
	green lane/hollow			
	Roadside	X		
	mature trees present			
Woodland ground flora	wood anemone		wood sorrel	
	Primrose		wood speedwell	
	Bluebell			
	lords and ladies			
	violet sp	X		
	herb Robert	X		
	false brome			
	wood avens			
Diverse grass/flowering plants GF	Fern species	X		
	Umbellifers	X		
	Vetches/Vetchlings	X		
	Other flowering sp.	X		
	Fine grasses			
	Sedges			

Potential BAP Hedgerow Checklist				
Condition				
Trimmed and dense	X	Untrimmed with outgrowth		
Untrimmed		Recently coppiced		
Intensively managed		recently laid		
Tall and leggy		gappy		
Notes				
Tree species are dominant within hedgerow. Connects two areas of semi-natural broadleaved woodland.				
Hedgerow Species composition	Shrub	Tree		
Ash (<i>Fraxinus excelsior</i>)		X		
Birch, downy (<i>Betula pubescens</i>)		X		
Blackthorn (<i>Prunus spinosa</i>)	X			
Gorse (<i>Ulex europaeus</i>)	X			
Hawthorn (<i>Crataegus</i> sp.)	X			
Holly (<i>Ilex aquifolium</i>)	X			
Poplar, black (<i>Populus nigra betulifolia</i>)		X		
Rose (<i>Rosa</i> sp.)	X			
Sycamore (<i>Acer pseudoplatanus</i>)		X		
Willow sp. (<i>Salix</i> sp.)		X		
Scramblers				
Bramble (<i>Rubus fruticosus</i> agg.)	X			
Honeysuckle (<i>Lonicera periclymenum</i>)	X			
Ivy (<i>Hedera helix</i>)	X			

Locations of Clusters of BAP Hedgerows

Concentrations of species rich hedges were recorded within five areas. The majority of other species rich hedges are scattered along the Proposed Scheme.

Table 11.8 Priority Areas for BAP Hedgerows With Exceptional Connectivity and Links to Important Habitat Features.

Name / Designation	Location	Notes on connectivity
Close to Sion Mills	H3	The area connects several areas of semi-natural broadleaved woodland and marshy grassland. Hedgerow 25 is found on this site.
Mulvin parks	H4	The area connects several areas of semi-natural broadleaved woodland, scattered and dense scrub.
Close to landfill	H11	Contains a dense network of species rich hedgerows with and without trees and connects to an area of semi-natural broadleaved woodland.
North of Aughnacloy	H12	The area connects several areas of semi-natural broadleaved woodland and planted coniferous woodland.

Veteran Tree survey results

Overview

Nine veteran trees were recorded during the field surveys. Five of these are beech with ash, oak and willow sp. also recorded. Six of the nine have trunk diameters indicating that they are ‘truly ancient’ following the survey methodology. They have two to six additional features; the most commonly found are:

- an average of 7% dead wood in the canopy;
- dead wood attached to the tree at least 1m by 8cm diameter;
- tears, splits, scars or lightning strikes more than 30cm long;
- hollow trunks or hollow major limbs; and
- Major rot sites, any more than 15cm across.

Five trees are found within hedgerows, both species rich and species poor. Three trees are within or adjacent to woodland including semi-natural broadleaved woodland. Two of the trees are adjacent or close to a river. A summary of the field survey data is shown in Table 111.9.

Table 111.9 Summary of Results Per Veteran Tree from the 13 Target Areas Surveyed.

Veteran Tree Number and Site Location (H)	Tree Species	Assigned Value (From diameter at 1.3m height)	Number of Additional Features	Surrounding Habitat
4, H2	Willow	Potentially interesting	5	Species rich hedge
5, H5*	Oak	Truly ancient	2	Adjacent to species poor hedge
6, H5*	Beech	Truly ancient	5	Mature tree line, adjacent to dense scrub
7, H5*	Ash	Truly ancient	4	Species poor hedge
8, H8	Beech	Potentially interesting	4	Semi-natural broadleaved woodland, adjacent to river
9, H11	Ash	Truly ancient	4	Species poor hedge, close to semi-natural broadleaved woodland
10, H13	Willow	Truly ancient	6	Species rich hedge, close to river
11, H10	Beech	Valuable	6	Rath
12, H1	Beech	Valuable	4	Semi-natural mixed woodland
Typical features	Beech	Truly ancient	4	Hedgerow (species rich or poor)

Survey Form Example

Veteran Tree 10, at site location H13, is an example of a veteran tree with potential for high conservation value. It is a leaning willow that measured as truly ancient. It has several other important features such as a significant amount of dead wood and bark attached to the tree, a hollow trunk with evidence of saprophytic invertebrate activity and seven epiphytic plant species growing within the trunk. The willow is within a species rich hedgerow connected to species poor and species rich hedgerows, scattered scrub and a river within the surrounding landscape.

Locations of clusters of Veteran Trees

The highest concentration of veteran trees is found at site location H5. This area includes important adjacent habitat features such as a mature tree line, dense scrub and species poor hedgerows. Semi-natural broadleaved woodland and planted coniferous woodland are also within

the surrounding landscape. No other significant clusters of mature/veteran trees were found in the field surveys.

Evaluation

Species rich hedgerows do not receive legal protection in NI, however they are considered to be in widespread decline in recent years, though less in NI than in mainland UK. Due to a number of threats they are listed as priority habitats under the NI BAP, UK BAP and Local BAPs. Veteran trees do not receive legal protection in NI however they are recognised as having high conservation value; trees of importance are recognised in PPS2. Hedgerow and tree conservation is also recognised in the Roads Service NI BAP.

The majority of hedges within the scheme footprint are species poor dominated by hawthorn, ash and gorse. The species rich hedges recorded contain common woody and ground flora species with no rare or priority BAP species found and so their diversity is not of high importance within the national context. However, this must be viewed within the context of the intensively managed landscape within which they are found. This intensive management generally increases their value as wildlife corridors, so those with higher structural diversity linking semi-natural habitats will be of particular importance.

There are scattered examples of more species rich hedges throughout the scheme. However, there are 15 areas where networks of species rich hedges occur. This accounts for approximately 10% of the scheme length. Of these, four form larger networks and link semi-natural habitats and are likely to be of higher value.

BAP Hedgerows

Species rich hedgerows are an uncommon habitat within NI and the study area (NI BAP, 2005). The surrounding habitat is intensively managed farmland with very low flora diversity. Therefore the species rich hedgerows within the proposed scheme, even those occurring individually, are considered to be of intrinsic **biodiversity value at a local scale**. Those areas of dense hedgerow networks or high, thick hedges linking areas of semi-natural habitat listed in Table 4.4 are considered of **biodiversity value at up to a district scale**.

Veteran Trees and Mature Trees outside Woodlands

Veteran trees are relatively rare within the scheme and appear limited to a few hedgerows and alongside some of the rivers. The rarity of veteran trees in NI and the scheme and their high conservation value indicates that they are of notable value where they do occur. The veteran trees recorded are therefore considered of intrinsic **biodiversity value between the local and district level**.

Importance of BAP Hedgerows

Table 11.10 UK BAP Priority Species and Habitats and Other Protected Species That Rely on Hedgerows.

UK BAP Mammals	UK BAP Bird Species	Associated Habitat Features (NI HAPs)	UK BAP Plant Species
Red Squirrel <i>Sciurus vulgaris</i>	Linnet <i>Carduelis cannabina</i>	Lowland meadows	Purple ramping fumitory <i>Fumaria purpurea</i>
Badger <i>Meles meles</i> (Wildlife (Northern Ireland) Order 1985)	Reed Bunting <i>Emberiza schoeniclus</i>	Purple moor grass and rush pastures	
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	Spotted Flycatcher <i>Muscicapa striata</i>	Mixed ashwoods	
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	Tree Sparrow <i>Passer montanus</i>	Wet woodland	
Brown Long-eared Bat <i>Plecotus auritus</i>	Bullfinch <i>Pyrrhulla pyrrhulla</i>	Parkland	
European Hedgehog <i>Erinaceus europaeus</i>	Song Thrush <i>Turdus philomelos</i>		
Irish Hare <i>Lepus timidus hibernicus</i> (NI BAP)	Yellowhammer <i>Emberiza citronella</i>		
	Barn Owl <i>Tyto alba</i>		

Field Survey Recording Forms for Species Rich Hedges and Veteran Trees

Table 11.11 Example of Field Survey Proforma (following 3 forms)

Potential BAP Hedgerow Checklist					
Hedgerow 25			Date	11/09/2009	
Location Target Area 3 (Hedge ID 3)			Recorder		
Av. Height	<1m	1-3m	>3m	X	
Av. Width	<1m	1-3m	>3m	X	
Av. Woody Species / 30m	3	4	5	>5 X	
Associated Features	Bank				
	Ditch				
	stone wall	X			
	green lane/hollow				
	roadside	X			
	mature trees present				
Woodland ground flora	wood anemone		wood sorrel		
	primrose		wood speedwell		
	bluebell				
	lords and ladies				
	violet sp	X			
	herb robert	X			
	false brome				
	wood avens				
Diverse grass/flowering plants GF	Fern species	X			
	Umbellifers	X			
	Vetches/Vetchlings	X			
	Other flowering sp.	X			
	Fine grasses				
	Sedges				
Condition					
Trimmed and dense	X	Untrimmed with outgrowth			
untrimmed		recently coppiced			
Intensively managed		recently laid			
Tall and leggy		gappy			
Notes					
Tree species are dominant within hedgerow. Connects two areas of semi-natural					

Potential BAP Hedgerow Checklist				
broadleaved woodland.				
Hedgerow composition	Species	Shrub	Tree	
Ash (Fraxinus excelsior)			X	
Birch, downy (Betula pubescens)			X	
Blackthorn (Prunus spinosa)		X		
Gorse (Ulex europaeus)		X		
Hawthorn (Crataegus sp.)		X		
Holly (Ilex aquifolium)		X		
Poplar, black (Populus nigra betulifolia)			X	
Rose (Rosa sp.)		X		
Sycamore (Acer pseudoplatanus)			X	
Willow sp. (Salix sp.)			X	
Scramblers				
Bramble (Rubus fruticosus agg.)		X		
Honeysuckle (Lonicera periclymenum)		X		
Ivy (Hedera helix)		X		

Potential Veteran Tree Assessment				
Tree 10			Date	10/09/09
GPS Location IH 67810 52237			Recorder	
			Photo no.	1703- 1708
Locations (surrounding habitat) within species rich hedgerow 17. Marshy/improved grassland.				
Species				
Diameter at 1.3m height (m)				
Form	Species	Potentially Interesting	Valuable	Truly Ancient
Coppice	Oak sp.	0.9	1.3	1.7
Pollard	Beech	0.6	0.9	1.2
Maiden	Ash	0.6	0.9	1.2
Stump	Birch sp.	0.3	0.45	0.6
Unknown	Alder	0.4	0.55	0.7
Standing	Holly	0.2	0.27	0.35
Leaning X	Willow sp. X	0.35	0.5	X 0.7
Fallen	Rowan	0.25	0.37	0.5

Dead	Hawthorn	0.3	0.45	0.6
	Lime	0.7	1	1.5
	Sycamore	0.7	1	1.5
	Scots pine	0.5	0.75	1
	cherry	0.45	0.65	0.9
		diameter at 1.3m	0.9 m	
Other Species				
Percentage of live canopy (To nearest 5%) %	100			
Dead wood attached to the tree, any piece more than 1m long and 8cm in diameter				X
Loose, split, missing and dead bark, any piece more than 30cm x 30cm				X
Bark sap runs				
Tears, splits, scars, lightning strikes more than 30cm long				X
Hollow trunks or hollow major limbs				X
Major rot sites, any more than 15cm across				X
Fungi				
Epiphytic plants				X
Notes				
Several dead logs/wood on the ground surrounding the tree. 7 different epiphytic plant species growing on the trunk. Hollow trunk and evidence of saprophytic invertebrates. Covered in mature ivy surrounding trunk.				