



Ulster Wildlife Trust

An Audit
of the
Habitats and Species
within
Banbridge District Council Area

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Banbridge Biodiversity Audit

General Introduction

What is biodiversity?

Biodiversity is the short term used for 'biological diversity', which is 'the total variety of all living plants and animals, and the habitats in which they live'. It embraces all living plants and animals and the ecosystems on which they depend. It encompasses the entire range of mammals, birds, reptiles, amphibians, fish, insects and other invertebrates, plants, fungi and micro-organisms.

Although biodiversity is often understood in terms of differences between species, to appreciate the full extent of it's meaning it should be regarded as a three tier structure:

- 1) The diversity of genes within a species. For example, we can look at, albeit an extreme example, but one that shows the point well, the domestic dog, *canis familiaris*. Suppression, selection, and mixing within the wolf gene pool have yielded hundreds of breeds of domestic dog. The variation they show in morphological traits such as height, weight, mass, shape, and behavior, all controlled by various genes, is enormous, yet individuals from nearly any breeds can be mated to yield fertile offspring.
- 2) The diversity of species within a habitat. This is generally what people envisage by the term biodiversity. An example could be an old woodland. The range of species could include; oak tree, ash tree, bluebell, wood anemone; a number of mosses, fungi, beetles, flies, and spiders; as well as robin, blue tit, goldfinch, hedgehog and badger.
- 3) The diversity of habitats within an area. For example, a particular area may contain mature oak woodland, wet woodland, fen and lake habitats.

The biodiversity we see today is the result of millions of years of evolution, shaped by natural processes and, increasingly, by the influence of humans. It forms the web of life of which we are an integral part and upon which we so fully depend.

Policy Context/Framework

Convention on Biological Diversity

The United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 (Commonly referred to as the Rio Earth Summit), gathered together nearly 200 world leaders to address global concerns about the environment and loss of biodiversity. Over 150 countries including the UK and Ireland, signed the Convention on Biological Diversity. By signing the treaty, these governments pledged to help stop the global loss of habitats, species and genetic resources by conserving and enhancing the biodiversity within their respective countries. More specifically, it called for the creation and enforcement of national strategies and action plans to conserve, protect and enhance biodiversity. The treaty entered into force on 29 December 1993 and it was the first treaty to provide a legal framework for biodiversity conservation.

The UK Biodiversity Action Plan (UKBAP) and Northern Ireland Biodiversity Strategy

As a response to the Biodiversity Convention the UK Government produced a report 'Biodiversity: The UK Action Plan 1994'. The overall goal of this plan is to conserve and enhance biological diversity within the UK and to contribute to the conservation of global biodiversity through all appropriate mechanisms. The overarching aim of this document is to halt biodiversity loss in the UK by 2010. As a result of the UK Action Plan, the UK Biodiversity Steering Group was set up and produced Biodiversity: The UK Steering Group Report (1995). This report detailed a series of actions which should be implemented in order to ensure that the objectives of the UK Action Plan are achieved.

In Northern Ireland a Biodiversity Group (NIBG) was established in 1996 to oversee the development of a biodiversity strategy for Northern Ireland. Consequently, the Northern Ireland Biodiversity Strategy was published in 2000. It is intended to inform policy and promote action on biodiversity conservation in Northern Ireland by:

- Describing the main features of biodiversity in Northern Ireland.
- Identifying the main issues affecting biodiversity, including institutional, political and legal issues.
- Proposing measures to support the conservation of biodiversity for the period 2001 – 2016.

This document forms the blueprint for conserving and improving biodiversity in Northern Ireland. The strategy contains 76 recommendations for the conservation of biodiversity in Northern Ireland. Successful implementation of the Northern Ireland Biodiversity Strategy requires some means of ensuring that this strategy is translated into effective action at the local level. Local Biodiversity Action Plans are seen as the means by which this can be achieved.

Banbridge District Local Biodiversity Action Plan (LBAP) project

The aim of the Banbridge District LBAP project is three fold;

- 1) To conserve and enhance the rich biodiversity of Banbridge District for both current and future generations;
- 2) Educate and raise awareness of the importance and variety of biodiversity found within the Banbridge District; and
- 3) Encourage local ownership/guardianship of Banbridge District's biodiversity.

The Banbridge District LBAP project is supported by representatives from a variety of governmental, non-governmental, community, and voluntary organisations as well as individuals with an interest in Banbridge District's natural environment.

The creation of the Biodiversity Audit represents the first major milestone in the Biodiversity Action Plan process and this will be used as the basis from which the Banbridge District Local Biodiversity Action Plan (LBAP) will be created. The Banbridge District LBAP will ensure that the biodiversity of Banbridge is maintained and enhanced through the preparation and implementation of individual action plans, covering a range of habitats and species, which reflect both national and local priorities. The Banbridge District LBAP will be based largely on the targets set out in the Northern Ireland Biodiversity Strategy.

What is a Biodiversity Audit and why is it important?

A biodiversity audit is a piece of desktop research which will produce, in its simplest form, a list of the main habitats and species that are found in a particular area (both of national and local importance). It brings together the best available information on the state of the local biodiversity resource.

The audit is important, as it is vital to establish what habitats and species occur in a particular area. This will enable an assessment to be made as to what is most important at a UK, NI and local level before priorities for local action can be set, i.e. this baseline information is needed to select Habitat Action Plans and Species Action Plans.

A biodiversity audit will contain two main sections, namely habitats and species. It can highlight where there are gaps in information, which through the LBAP process can stimulate new data collection and research.

Banbridge District

Banbridge District is situated to the north west of County Down, and covers a total of 180 square miles. It stretches from Dromore in the north to Rathfriland in the south and from Gilford in the west to Ballyward in the east. The main town is Banbridge, followed by Dromore, Rathfriland and Gilford. The District has 4 villages and 19 small settlements. The population of the area is just over 41,000.



Banbridge District has a rich natural and built heritage with a range of diverse habitats, from Slieve Croob (1,775 feet) in the east to the River Bann valley in the west. Many ancient archaeological sites dot the area and add to its appeal. With its beautiful drumlin landscape and abundance of natural and built assets, it is the main gateway to the Mourne Mountains. The River Bann and River Lagan flow through the District. Its quality landscape has resulted in several statutory designations, such as the Lackan Bog Area of Special Scientific Interest and the Mourne and Slieve Croob Area of Outstanding Natural Beauty.

Banbridge District



Banbridge District's Natural Environment

The landscape patterns that we see today are the culmination of millions of years of rock formation, alteration and erosion. Moulded by ice, rivers and the sea, the underlying rock is covered by a mantle of green vegetation which has been continually cleared, farmed and settled by man. People are by far the most recent influence in this vast sequence of geological time, but they have had a great impact on the visual appearance of the District's landscape.

Over the years, Man's use of the land has been adapted to suit local conditions. They usually reflect basic contracts in topography, climate and soils and remain closely related to underlying variations in geology.

Three main rock types form the bedrock in the area:

1. Basalt lavas – The youngest rocks in the area, tertiary in age, occur in two small and separate patches in the west of the District. Surface layers of the basalt are characteristically friable due to weathering, but inside this layer the rock is quite fresh and extremely hard.
2. Greywackes, sandstones and slates – These lithologies of Lower Palaeozoic age, form the major NE-SW trending belt of rocks across the upper two thirds of the District. Typically they comprise an alternation of thickly bedded, hard, coarse grained greywackes, and thin laminae of hard splintery slate. At many localities, the beds are steeply inclined or vertical, and are arranged with alternation of thick and thin ribs. Due to the uneven nature of the surface of these vertically arranged beds, the boulder clay cover is often not sufficiently thick to conceal bedrock so that large areas of solid rock appear across the area.
3. Granite – Forms part of the Newry Granite Complex, a large igneous intrusion of late Caledonian age which occurs in the south of the area. These rocks form mountains, such as Slieve Coob, Cratlieve, Slievegarran and Slievenaboley Mountain. The commonest lithology in this area is a light grey fine grained biotite granodiorite. The intrusion's contact with the enclosing greywackes and slates is steeply inclined. These rocks are thermally metamorphosed at the edge of the intrusion. It is assumed that the granite magma was intruded at temperatures high enough not only to metamorphose the country rock but to cause their melting and assimilation at their contact. A swarm of Lamprophyre dykes are associate with the intrusion of the granite and can be found in many areas showing a consistent NW-SE orientation.

Virtually all of the District is covered by a thick layer of boulder clay that was deposited by the last glaciers of the Pleistocene period and which was moulded into drumlins during passage of these glaciers. These small hills abound in this area and form part of a more extensive drumlin field occurring also in Armagh and east County Down. There is a lack of detailed field data for this area, but it is probable that sand and gravel deposits occur within or on top of the boulder clay. Recent river and lake alluvium infills the inter-drumlin hollows.

The influence of geology and the drainage pattern have been of prime importance in the formation of the present day topography, particularly glacial erosion and deposition during the Pleistocene Ice Age. The result is an interesting and varied relief form which has affected the settlement pattern, communication network and general land use of the area.

Banbridge District forms a transitional zone between the Mourne Mountains to the south and the lowlands leading to Lough Neagh in the north. The major feature linking the two is the Upper Bann Valley which extends across the area from the south to the north west. To the east the outliers of the Mournes slope westwards to the River Bann, and northwards to the River Lagan. Lower outliers of the Mournes located south of and parallel to the River Bann form another divide to the Newry/Portadown corridor. This corridor parallels the western boundary of the District. Between the more rugged and sometimes desolate upland areas and the confines of the river valley is an ill-defined area of finer grained topography.

The transitional nature of the area is seen on examination of the areas of upland. These hills are benches running along the northern rim of the Mourne Mountains which so dominate the landscape. The granite outcrops that form the outliers of the Mournes in the area have been much eroded but form local areas of scenic attraction. The largest area of upland lies in the east and is that associated with the intrusion of Slieve Croob. Three other peaks of 1000 feet or more lie to the south and west of this mass and offer small upland areas (Slievegarran, Slievenaboley and Deehommed Mountain). This eastern upland area slopes down to the north and west and is drained by the Lagan, whose source lies on Slieve Croob.

The Bann valley is a distinctive topographic feature in the area, particularly the sharply incised section between Banbridge and Gilford. Like the mid-section of the upper Bann, the Lagan is closely adjusted to underlying glacial deposits, but is of less significance in the area.

The western boundary of the area follows the mid-section of the Portadown-Newry Corridor, which was formed as an outflow channel during glacial times. This natural feature provides topographic definition to the south western boundary of the area.

Throughout the central area the dominant landscape features are related to the effects of glaciation, particularly glacial deposition. There are many drumlins ranging in height from 30m to 150m. These low streamlined hills consisting of sorted glacial deposits were left as glaciers retreated and have resulted in the characteristic 'basket of eggs' landscape. Local relief frequently consists of pleasant hillocks and horizons broken by the repetition of drumlin features. Drainage around the base of the drumlin is often partially impeded and this has given rise to ill defined stream channels, marshy areas and inter-drumlin wetlands and loughs of particular importance to the area.

Soils within Banbridge District can be divided into three broad physiographic divisions, in the main derived from the boulder clay drift.

1. Mountain type – In the Slieve Croob area where high rainfall predominates and the parent material is relatively free draining, peaty podzols have developed with associated climatic peat and lithosols. Leaching of the soil constituents contributes to its poor nutrient status.
2. Drumlin type – caused by the glacial deposit of boulder clay, characterises most of the area and creates local variations in soil types. A sequence of soils occurs from the tops of the drumlin hills to the inter-drumlin basins, with drainage normally deteriorating as the drumlin slope is descended. The heavier soils to the north of the area may be considered as ‘surface water’ gleys with acid brown earths only on the tops and upper slopes of the drumlins. Drier mineral soils are found in the more open drumlin topography in the centre and west of the District.
3. Rolling lowland type – located to the north west and south east where there are moderately steep slopes not extensively covered by drumlins. Light acid brown earths associated with sandy brown podzolics and regosols cover most of this area. These are mainly granite and tend to become acid unless regularly dressed with lime. They may also be low in other bases (magnesium and potassium) but with adequate manuring their light texture makes them highly regarded for arable farming.

Throughout the district there are local variations in soil type and quality, but generally the poorer land is found in the east where the elevation, rock outcrops, thin acid soils and high rainfall give way to areas of impeded drainage and liability to flooding below the foothills. Land quality improves towards the west, giving rise to generally good quality lowland type farmland over most of the area.

Agriculture is the major land using economic activity in the District. The majority of the area in the centre and west is principally livestock with beef cattle dominating dairy herds. Green pasture and larger hedgerows occur here, diminishing notably as the land rises towards the east. The Slieve Croob foothills are devoted to beef, while in the uplands hill cattle and sheep predominate with sparse or exclusively stone hedges.

Historical changes in agricultural enterprises have often dramatically changed the appearance of the landscape in the District. Flax was once grown in quantity for the linen industry, and similarly grass seed production for seed houses in Banbridge has now ceased. Seed potato production is also in decline with the uptake in winter crops, both of which will change the future appearance of the landscape.

Diversity of plant and animal habitats is not a general characteristic of the area. Pasture dominates the drumlin topography that occupies most of the area, except for the Slieve Croob granite uplands and the Upper Bann river valley in the east and west respectively. Nevertheless, these two exceptions with a number of inter-drumlin loughs and wetlands combine to provide an important if not unique natural habitat resource. The different types of habitat are discussed in the habitats section of the audit.



Ulster Wildlife Trust

Banbridge Biodiversity Audit

Habitats Section

Introduction

Why the Habitat Audit is Important

The Biodiversity Audit represents the first major milestone in the Biodiversity Action Plan process and this will be used as the basis from which the Banbridge District Local Biodiversity Action Plan (LBAP) will be created.

This audit will provide information on the main habitats that are found in Banbridge District (both of national and local importance).

It is important, as it is vital to establish what habitats occur in Banbridge District. This will enable an assessment to be made as to what is most important at a UK, NI and local level before priorities for local action can be set, i.e. this baseline information is needed to select Habitat Action Plans and Species Action Plans.

Banbridge District

The landscape patterns within Banbridge District are the culmination of millions of years of rock formation, alteration and erosion. Coupled with this, the ground has been continually cleared, farmed and settled by man. This has had a huge influence on the visual appearance of the District's landscape, and the habitats that exist within it.

Banbridge District has a range of diverse habitats, from Slieve Croob in the east to the River Bann valley in the west. Its drumlin landscape leads to the foothills of the Mourne. The River Bann and River Lagan flow through the District.

Pasture dominates the drumlin topography that occupies most of the area, except for the Slieve Croob granite uplands and the Upper Bann river valley in the east and west respectively. Nevertheless, these two exceptions with a number of inter-drumlin loughs and wetlands combine to provide an important natural habitat resource. The different types of habitat that are present in the District can be seen in the table below:

Broad Habitat	Priority Habitat	Banbridge District
Acid grasslands	Lowland dry acid grassland	Found in east of District
Arable and horticulture	Cereal field margins	Found in western side of District
Bogs	Lowland raised bog	Lacken Bog ASSI
	Blanket bog	Not in District
Boundary and linear features	Ancient and/or species-rich hedgerows	Good examples throughout
Bracken		Not in District
Broadleaved, mixed and yew Woodland	Lowland wood-pasture and parkland	Found throughout District
	Upland mixed ashwoods	Scattered throughout District
	Oakwood	Small pockets throughout
	Wet woodland	Scattered throughout District
Built up areas and gardens		Areas throughout but not Priority Habitat
Calcareous grassland	Upland calcareous grassland	Not in District
Coniferous woodland		2 areas present
Continental shelf slope		--
Dwarf shrub heath	Lowland heathland	None in District
	Upland heathland	Around Slieve Croob
Fen, marsh and swamp	Fens	Fairly common throughout associated with inter-drumlin wetlands
	Purple moor grass and rush pastures	
	Reedbeds	
Improved grassland	Coastal and floodplain grazing marsh	Some floodplain along rivers
Inland rock	Limestone pavements	Not in District
Inshore sublittoral rock	Littoral and sublittoral chalk	--
	Modiolus modiolus beds	--
	Sabellaria spinulosa reefs	--
	Tidal rapids	--
Inshore sublittoral sediment	Maerl beds	--
	Mud habitats in deep water	--
	Saline lagoons	--
	Seagrass beds	--
	Sublittoral sands and gravels	--
Littoral rock	Littoral and sublittoral chalk	--
	Sabellaria alveolata reefs	--
Littoral sediment	Coastal saltmarsh	--
	Mudflats	--
	Seagrass beds	--
	Sheltered muddy gravels	--
Montane habitats	Montane heath	Not in District
Neutral grassland	Lowland meadows	Scattered throughout District
Offshore shelf rock		--
Offshore shelf sediment		--
Rivers and streams	Crowfoot rivers*	Bann, Lagan & tributaries although crowfoot not present
Standing open water and canals	Aquifer fed naturally fluctuating water bodies	Ponds & lakes fairly common throughout District
	Eutrophic standing waters	
	Mesotrophic lakes	
	Marl lakes*	Not in District
Supralittoral rock	Maritime cliff and slopes	--
Supralittoral sediment	Coastal sand dunes	--
	Coastal vegetated shingle	--
Urban		Areas throughout but not Priority Habitat

* not a UK priority habitat

-- indicates marine/coastal habitat, not found in Banbridge District

Habitat Types

Broad Habitat: Broadleaved, mixed and yew woodland.

Ecosystems undergo changes in their structure and function as time passes. Succession is the result of these changes and is defined as a series of progressive changes in an area with one community replacing another until a climax community is created. This is normally seen as the ultimate development of the ecosystem. Woodland is the climax vegetation community over much of Europe. Woodlands in NI can be divided into two categories; 1) coniferous woodland and 2) broadleaved and mixed woodland. The bulk of woodland cover of NI is planted coniferous woodland which currently extends to over 50,000ha. Broadleaved and mixed woodlands make up the remainder of the woodland cover. This broad habitat type contains four priority woodland habitat types; parkland, mixed ashwoods, oakwoods and wet woodland. These different woodland types are influenced by a range of different conditions; soil moisture, underlying geology (which determines soil acidity) and past management. All four of these priority habitats can be found in Banbridge District.

Priority Habitat: Parkland

Priority Type	Parkland	
	Main Locations	<ul style="list-style-type: none"> • Loughbrickland Estate • Gilford Castle (no access) • Scarva House (no access) • Ballyward Lodge (no access)
Associated Priority Habitats	<ul style="list-style-type: none"> • Heathland • Acid grassland • Lowland meadows • Oakwoods • Mixed ashwoods • Wet Woodland 	
Associated Priority Species	<ul style="list-style-type: none"> ▪ Red squirrel ▪ Pipistrelle bat ▪ Song thrush ▪ Spotted fly-catcher ▪ Tree sparrow ▪ Starling ▪ Barn Owl 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> ▪ Loss of veteran trees – ageing population. ▪ Underplanting -Lack of younger trees/overgrazing ▪ Loss of deadwood ▪ Changes to groundwater levels ▪ Use of fertilisers, herbicides and pesticides ▪ Damage to roots through soil compaction 	

Current status, extent and distribution:

Parklands are the products of historic land management systems, and represent a vegetation structure rather than being a particular plant community. Parklands typically consists of large, open-grown or high forest trees at various densities, which are contained in a matrix of grazed grassland, heath land and/or woodland floras. Many of the trees are ancient or veteran (of interest biologically, culturally or aesthetically, because of their age, size or condition), and oak is often considered the typical and most desirable tree of parkland in NI. However, a variety of other tree species do occur such as beech, ash and sycamore. A boundary feature such as a fence, wall or ditch usually defines the area of the parkland. These are essentially designed landscapes and are associated with old estates and demesnes. Other habitats such as streams, rivers and constructed or natural lakes and ponds are also common features of this landscape. This mosaic of habitats, the presence of ancient trees and often a long history of management form the basis of the biodiversity interest of this habitat (Davidson, 2004 and EHS, 2005).

In the UK there are no reliable statistics on the extent of the overall parkland resource. However, the UK Biodiversity Steering Group report (1998) estimates that there is between 10,000ha and 20,000ha of parkland in the UK and only 1,100ha of this resource is present in NI. The parkland resource within NI is not well documented and in particular, little information exists about the condition of parkland in NI. In addition, of the estimated 1,100ha in NI, approximately 1000ha is in private ownership, (EHS unpublished estimate, based on Graham, 1975) and 100ha occurs within Forest Nature Reserves (FS Records). However, this figure is likely to be an under-estimate.

Significance and local distribution:

Parklands are rich habitats for wildlife, including vascular plants, birds, mammals and insects. The large mature trees typical of parkland habitats provide a valuable habitat for specialist invertebrates, lichens, hole-nesting birds and bats.

Beech and oak are common constituents of these woodlands, with sycamore and ash; alder is frequent alongside the rivers. In almost all of these estate woodlands, occasional conifers were inter-planted - often Scots pine and larch - and also specimen trees nearer the house. Some estate woodland may have been planted in existing woodland and scrub; patches of hazel, rowan and ash can be found within the woods and these tend to have a more diverse ground flora. Elsewhere, estate woodlands are grazed and the ground flora is poorer.

Other notable species which are thought to be associated with parklands in NI include barn owl, starling, spotted fly catcher, tree sparrow and song thrush all of which are NI Priority Species. Parkland is also important for historic, cultural and landscape reasons.

There are a number of excellent examples of this habitat within Banbridge District. Many of the old 'estates' and a number of the various houses and former mill grounds in the area, contain woodland and parkland habitat, generally associated with late eighteenth and nineteenth century planting. These are generally under private ownership and have no or limited access to the public. However, an example where access is permitted to certain areas is at Loughbrickland Estate.

Priority Habitats: Oak woodland, mixed ashwoods and wet woodland

Collective information on status, extent & distribution:

The Northern Ireland Countryside Survey (NICS) indicates that between 1988 and 1998 broad-leaved semi-natural woodland (which includes both oakwood and mixed ashwoods, in addition to some wet woodlands) increased by 1,249ha and now covers 1.7% (23,027ha) of NI. (Cooper *et al*, 2002).

Woodlands in the Banbridge District account for a small percentage of the land cover, with almost all in broadleaved or mixed woodland. Much is in the large estates and various houses and former mill grounds along the River Bann. Outside of these estates, woodlands in valleys have been 'landscaped' by the addition of beech and occasional conifers. Wet woodland, as alder and willow carr, is quite common in the District, and is usually associated with cut-over bogs and with fens in inter-drumlin hollows where they help form a diversity of wetland habitats.

Forest Service NI owns and manages two areas of forest within the District. The largest is Castlewellan Forest Park which falls partially within District boundary and the other holding is the planting at Slievegarran.

Priority Habitat: Mixed ashwoods

Priority Type	Mixed ashwoods	
	Main Locations	<ul style="list-style-type: none"> • Chinauley Wood • Edenderry Wood
Associated Priority Habitats	<ul style="list-style-type: none"> • Purple moor-grass and rush pasture • Lowland meadow • Oakwood • Wet woodland 	
Associated Priority Species	<ul style="list-style-type: none"> • Bullfinch • Starling • Several bat species 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Grazing, browsing and bark stripping by domestic and feral stock • Invasive species ▪ Lack of appropriate woodland management 	

Current status, extent and distribution:

Mixed ashwoods include all woodlands dominated by ash regardless of altitude. Ash is generally the dominant species in the woodland canopy, although locally oak, downy birch and even hazel maybe the most abundant species where ash is absent from the woodland canopy. Hawthorn and other calcicolous shrubs may also occur in the understory. Mixed ashwoods typically occur on base rich soils but, can also be found on more poorly-drained acid soils where there is flushing of nutrients. Often the latter are just small fragments of woodland with irregular margins or narrow strips along flushes, riparian tracts, outcrops and steep banks. Ash is a vigorous colonist of open ground. In NI, the habitat tends to be dominated by a canopy of ash and hazel, often with frequent goat willow. Despite the variation in woodland canopy composition, mixed ashwoods typically have a ground rich flora. In addition, mixed ashwoods can occur as a mosaic of two or more habitat types, these are generally wet woodlands and oakwoods. Mixed ashwoods are the main woodland type in NI on base-rich soils.

There is no precise data on the total extent of mixed ashwoods in the UK, but a crude estimate places the total area at 67,500ha (JNCC, 2001). Within NI, it is estimated that mixed ashwoods occupy a minimum of 3,430ha, with an estimated 3,300ha in private ownership and 130ha in public ownership (EHS unpublished estimates, based upon Graham, 1975). However, it is likely that only a proportion of mixed ashwoods in NI could be described as mature (i.e. less than 1,000ha dates from before 1900).

Significance and local distribution:

Mixed ashwoods support a wide variety of invertebrate species and provide cover and breeding sites for a number of notable mammals and birds. This habitat type is renowned for its species rich ground flora, rich in spring flowering herbs such as wood anemone, bluebell, primrose and ramsons. In addition, some rare native trees are found in ashwoods, including the whitebeams *Sorbus hibernica* and *Sorbus rupicola*.

The mixed ashwoods found within Banbridge District are those that are associated with poorly-drained acid soils where there is flushing of nutrients. Often these are small fragments of woodland with irregular margins or narrow strips along flushes, riparian tracts, outcrops and steep banks. Some of the best examples in the District are to be found along the Bann River, and have been designated as Sites of Local Nature Conservation Importance (SLNCI). These include; Edenderry Wood and Chinauley Wood.

Priority Habitat: Oakwood

Priority Type	Oakwoods	
	Main Locations	• Within Castlewellan Forest Park
Associated Priority Habitats	<ul style="list-style-type: none"> • Upland Heathland • Lowland dry acid grassland • Purple moor-grass and rush pastures • Lowland meadows • Mixed ashwoods • Wet woodland • Woodland pasture and parkland 	
Associated Priority Species	<ul style="list-style-type: none"> • Red squirrel • Pipestrelle bat • Song thrush • Spotted flycatcher 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Grazing, browsing and bark stripping by domestic and feral stock • Invasive species • Lack of appropriate woodland management ▪ Habitat loss and fragmentation 	

Current status, extent and distribution:

Oakwood is characterised by a dominance of sessile oak, pedunculate oak and downy birch in the canopy, with varying amounts of holly, rowan and hazel as the main understory species. Some woods have been invaded by beech, sycamore and rhododendron. The range of plants found in the ground layer varies according to the underlying soil type and degree of grazing; from bluebell, bramble, and fern communities, through grass, bracken or moss dominated areas. Oakwoods tend to occur on moist free draining sites. These are associated with a variety of soil types from base-poor brown earths to very thin highly acidic soils. In many cases oakwoods may be comprised of a mosaic of two or more habitat types, typically, wet woodland and mixed ashwoods. However, the species composition of much semi-natural deciduous woodland is diverse. Ash, willow, hazel, birch, hawthorn, alder and to a lesser degree oak, rowan and sycamore are often found in association. Therefore, categorising woodlands into an appropriate priority habitat can sometimes be difficult.

There is no precise data on the total extent of oakwood in the UK, but a crude estimate places the total between 70,000ha and 100,000ha (JNCC, 2001). It is estimated that oakwood occupies 2,350ha in NI, with an estimated 2,000ha in private ownership and 350ha in public ownership (EHS unpublished estimates, based upon Graham, 1975). However, it is likely that this figure maybe an underestimate. This figure of 2,350ha in NI includes all oakwood irrespective of age and conditions.

Significance and local distribution:

Oakwoods support a diverse range of lower plants i.e. algae, fungi, lichens, liverworts and mosses. The ferns, mosses and liverworts found in these woods are particularly rich and these contain rare species such as the mosses *Hylocomium umbratum* and *Leucobryum juniperoideum* and the liverwort *Anastrophyllum hellerianum*. A number of rare fungi are associated with oakwoods including *Inonotus dryadeus* and *Psylloporus pelletieri*. In addition, the lichen communities associated with these habitats are extremely diverse.

Much of the Oakwood found in the district is highly fragmented and distributed in small pockets. The main location within the District with public access is at Castlewellan Forest Park.

Priority Habitat: Wet woodland

Priority Type	Wet woodland	
	Main Locations	<ul style="list-style-type: none"> • Around Lacken Bog • Ballyward Lake
Associated Priority Habitats	<ul style="list-style-type: none"> • Fens • Lowland raised bogs • Reedbeds • Mesotrophic lakes • Oakwoods • Mixed ashwoods 	
Associated Priority Species	<ul style="list-style-type: none"> • Otter • Various bat species • Spotted flycatcher • Song thrush 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Inappropriate grazing regime • Invasive species • Habitat loss and fragmentation • Water level changes • Nutrient enrichment ▪ Lack of appropriate woodland management 	

Current status, extent and distribution:

Wet woodland is the term used to describe a type of woodland and scrub that occurs on poorly drained or at least seasonally drained waterlogged soils. Wet woodland within NI is diverse in composition and structure, however typically these are dominated by either willow, alder or downy birch, but also sometimes includes ash or oak on the drier riparian areas or margins of flushes. Wet woodland habitats occur on a range of soil types including nutrient-rich mineral and acid soils and nutrient-poor peaty soils. They occur on the margins of water bodies along lowland and upland streams, on hill-side flushes and as successional habitat on fens and bogs. Wet woods frequently occur in a mosaic with other woodland habitats e.g. with mixed ashwood or oakwoods and with wetland habitats. Boundaries with other woodland types can sometimes be sharp but are often gradual transitions. The type of wet woodland may change over time through succession, depending on the hydrological conditions and the management of the wood and surrounding habitat.

Within NI, wet woodland encompasses a range of plant communities that are similar to those identified in the National Vegetation Classification (NVC) of Great Britain (Rodwell, 1991). NVC descriptions and codes are given to associations of plants that are characteristic of particular environmental and management conditions. Seven NVC communities, (W1-W7) have been described within the wet woodland resource.

Willow scrub woodland (W1) is the most widespread wet woodland community in NI often occurring as an early pioneer wet woodland habitat prior to the development of mature wet woodland. The distribution of the two other scrub willow wet woodland types, (W2 and W3) is currently uncertain. Scrub woodland (W2) is often associated with wetland sites dominated by a combination of open water and fen. In these circumstances the expansion of wet woodland can sometimes be viewed as undesirable as it reduces the area of other priority habitat types, such as reedbed. The combination of wet woodland and fen often enhances the nature conservation value of a site and in these circumstances, striking the correct balance between apparently competing priority habitats is difficult to determine.

Alder woodland (W5) occurs throughout NI, but is not extensive and is characteristic of permanently wet nutrient-rich peats. Alder woodland (W6) is associated with the margins of the large eutrophic lakes subject to flooding. W7 Alder woodland is characteristic of the base-rich flushes and valley sides, often occurring in larger mixed ashwoods and oakwoods. Wet woodland dominated by birch (W4), is common throughout NI occurring on nutrient-poor peat soils. Most examples of W4 scrub woodland have recently developed on drying peats such as those associated with cut-over bogs, where they are often seen as being undesirable in terms of bog restoration. This community does develop naturally on the margins of peatland sites and the mosaic of wet woodland and ombrotrophic bog can enhance the site's nature conservation value. In these circumstances striking the correct balance between open bog habitats and wet woodland can be difficult to determine. W4 scrub woodland also occurs on lake shores within other woodland types where the soils are acidic. Throughout Ireland, small areas of natural downy birch dominated wet woodland occur within wetland/peat bog complexes where there is mineral water influence from flushes or soaks (Cross, 1997).

There is no precise data on the total extent of wet woodland in the UK, but a crude estimate places the total between 50,000 – 70,000ha (JNCC, 2001). The historical large scale clearance of woodlands in NI means that much of the current wet woodland resource is largely secondary and of relatively recent origin (less than 100 years old) (Paul Corbett, pers. comm.). Wet woodlands are now a scattered habitat, tending to be small stands 3-5 ha in size (Cabot, 1999). It is estimated that wet woodland occupies in the region of 2,600 ha in NI (EHS unpublished estimates, based upon Graham, 1975). This figure may represent something of an underestimate given that the habitat has a scattered distribution and has been under recorded in the past. For example, a more recent estimate of the extent of fen carr is 3,265 ha (Cooper and McCann, 2002), but this will not include Downy Birch regeneration on cut-over bogs which is considered to make up a significant percentage of the total wet woodland resource.

Significance and local distribution:

Wet woodland can be of significant value for flora and fauna. Species such as bog mosses *Sphagnum* spp, sedges, marsh marigold, bottle sedge and common Marsh-bedstraw are frequently associated with wet woodlands. Typically, these are usually relict species from either the former open wetlands or ground flora in old woodlands. Few rare plant species depend on wet woodland *per se*, although a specific type of alder dominated woodlands supports rare species such as elongated sedge and large bitter-cress. Standing and fallen wood are important elements of wet woodland. The association with water provides a series of specialised habitats which are not found in dry woodland types. The high humidity found in wet woodland also favours bryophyte growth (EHS, 2005). To date wet woodland fauna has been poorly recorded, however, it is widely known that a large number of invertebrate species are associated with alder, downy birch and willow woodlands. Otters exploit a range of wetland habitats including wet woodland which provides cover and breeding sites. In addition wet woodlands are also important for a number of bat species and breeding birds.

Wet woodland typically occurs throughout much of Banbridge District in the inter-drumlin hollows where they help form a diversity of wetland habitats. They are generally associated with willow and alder colonising fens and former cut over bogs and around lakes. The largest areas are found around Lacken Bog and Ballyward Lake and consist of mainly birch and willow. Other smaller areas are found around Bannfield bog, Ballyronee Lake and Hunshigo Lake.

Broad Habitat: Boundary and Linear Features

Priority Habitat: Ancient and/or species rich hedgerows

Priority Type	Ancient and/or species rich hedgerows	
	Main Locations	<ul style="list-style-type: none"> • Common throughout District although best examples are generally close to areas of unimproved pasture. • Along Newry Canal
Associated Priority Habitats	<ul style="list-style-type: none"> • Lowland meadows • Purple moor grass and rush pastures • Lowland wood-pasture and parkland • Mixed ashwoods • Oakwood • Wet woodlands 	
Associated Priority Species	<ul style="list-style-type: none"> ▪ Linnet ▪ Yellowhammer ▪ Reed bunting ▪ Spotted flycatcher ▪ Tree sparrow ▪ Bullfinch ▪ Song thrush ▪ Barn owl ▪ Irish hare ▪ Bat species ▪ Real's wood white 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> ▪ Hedgerow removal ▪ Lack of appropriate management – cutting regime ▪ Lack of appropriate management – loss of hedgerow trees ▪ Use of pesticides right up to hedge base 	

Current status, extent and distribution:

Hedges are defined as any linear boundary comprised of planted shrubs (Murray *et al*, 1992). This definition is taken to include associated features such as banks, walls, ditches, trees or verges. It does not include earth or stone banks or walls where they exist in the absence of trees or shrubs. The UK Habitat Action Plan (HAP) defines species-rich hedgerows as those which contain five or more native woody species on average in a 30 metre length (UK Steering Group, 1995). Hedges which contain fewer woody species, but have a rich basal flora of herbaceous plants such as primrose, wood anemone, lords-and-ladies, bluebell, herb-robert and common dog-violet, are also included in the UK plan.

Hedges in Ireland are generally much younger than hedges in Great Britain, the majority being planted between 1750 and 1850, and often with mixed species (Robinson, 1977).

Town land hedges are considered the oldest, most ancient, hedge types in Ireland. They generally have a greater tree and shrub species diversity and are associated more with woodland herbs. They also have a greater structural diversity and are often associated with a ditch. Due to the relatively small amount of ancient hedgerows, all are considered to be species-rich.

The proportion of hedgerows which are species-rich in NI is not accurately known. The Northern Ireland Countryside Survey (NICS) 2000 (Cooper & McCann, 2001) gathered a large amount of information on hedgerows which included the number of woody species in a 30 metre length of hedgerow. However, these woody species included Bramble and non-native species both of which are excluded from the UK Habitat Action Plan definition. Bramble is ubiquitous in species-rich hedges in NI but alien species are usually not present. Therefore, species-rich hedgerows can be taken as those which include six or more native woody species in a 30m length (NICS 2000). Using this criterion, it is estimated that 37% (44,000 km) of NI hedges are species-rich.

NI has the highest density of field boundaries in the UK with an average of 17 km per km² (Cooper *et al*, 2002). Between 1986 and 1991 the NICS estimated there were a total of 125,000 km of hedgerows in NI. By 1998, 119,000 km of hedgerows were estimated in NI (NICS 2000) which represents a 4% loss in hedges between the two surveys.

Significance and local distribution:

It is recognised that hedges are important not just for biodiversity, but also for farming and landscape reasons. They act as property boundaries, provide shelter for stock, help protect against soil erosion and may also offer protection against disease. Hedgerows also act as wildlife corridors for many species, allowing dispersal and movement between other habitats. The large number of animals and plants found in hedgerows reflects the complexity of the habitat. Hegarty (1992) recorded over 170 species of trees, shrubs and wildflowers in hedgerows in Northern Ireland. 36 bird species regularly rely on hedgerows for breeding, shelter and feeding purposes, approximately another 10 occasionally use hedges amongst other habitats for various purposes. Mammals found in, or which utilise hedges include fox, badger, rabbit, stoat, hedgehog, Irish hare and several species of bats. (Russ & Montgomery, 2001).

Hegarty (1992) demonstrated that, in NI, species-rich hedges are associated with less intensively farmed areas on soils with low nutrient status. These hedges tended to be unmanaged, tall and wide.

Hedgerows are very common throughout the district forming the boundaries of the small to medium sized fields that dominate the area. Many of these hedgerows appear to be of reasonable quality, and generally managed well.

Broad Habitat: Bogs

Peat bogs form one of the most characteristic features of Ireland (Praeger, 1972). The climate in NI, RoI and north-western regions of Britain is particularly well suited to peat formation with high rainfall, cool summers and high atmospheric humidity. In NI and the RoI there are three distinct types of peatland ecosystems, lowland raised bogs, blanket bog and fens. The main difference being that the fens obtain their nutrients from groundwater and are therefore minerotrophic. This broad habitat type includes wetlands that support vegetation that is usually peat forming and receive nutrients from precipitation (ombrotrophic) that is, lowland raised bog and blanket bog.

Priority Habitats: Lowland Raised Bog and Blanket Bog

Collective information on status, extent & distribution:

The NICS indicated that wet bog (which includes both lowland raised bog and blanket bog) was the main habitat type of both uplands and lowlands in NI with approximately 3.5% cover overall. The survey revealed that between 1991 and 1998 the area of wet bog in the lowlands (areas less than 150m in height and are therefore lowland raised bogs), in NI decreased by 1,044ha or 8%. The findings for the area of wet bog in the uplands (areas greater than 200m in height and are therefore blanket bogs), decreased by 11,803ha or 25%.

Blanket bog is not extensive or deep on the Slieve Croob mountain mass on account of only limited height and wetness and the steep slopes. It is confined to the summit of Slieve Croob and small pockets on the eastern side (not within district). Easy access on all sides explains why this area of peatland is cut-over. Due to the limited amount and the very poor state of what little there is in the area, it could be suggested that there is no Blanket Bog within the District. Those bogs that do exist are classified as either lowland raised bog, or where these have been cut over have developed into fen/fen-carr.

Priority Habitat: Lowland Raised bog

Priority Type	Lowland raised bog	
	Main Locations	<ul style="list-style-type: none">• Lacken Bog ASSI• Hunshigo Lake
Associated Priority Habitats	<ul style="list-style-type: none">• Wet woodland• Fen• Purple moorgrass and rush pasture	
Associated Priority Species	<ul style="list-style-type: none">• Curlew• Irish Hare• Marsh Fritillary• Irish Damselfly	
Main threats/Local Issues/Comments	<ul style="list-style-type: none">• Peat cutting – by hand and mechanised• Drainage both direct and indirect• Agricultural improvement<ul style="list-style-type: none">▪ Scrub encroachment▪ Dumping / infilling	

Current extent, status and distribution:

Lowland raised bogs develop primarily in lowland areas, which are generally below 150m in height, most notably in river valleys, lake basins and between drumlins. They can develop by peat formation directly onto bare soil. However, this only occurs if the climate is sufficiently wet. More commonly these develop above the fen peat which is located in many old lowland lake basins. They are known as lowland raised bogs because the bog is raised in the middle like a dome and this dome develops and increases in size as the lowland raised bog grows upwards from the surface. In many cases this domed effect is often exaggerated when the margins of a bog are damaged by turf cutting or drainage, and associated drying out. Peat depth is variable but, has been known to exceed 12m in some lowland raised bogs found within NI. In a natural state, this dome may be totally or partly surrounded by an area of shallow peat or soil which may be subject to ground water influence or periodic flooding known as the 'lagg'. In a natural state, lowland raised bogs are circled by a wetland fringe which is subject to ground water influence, known as the lagg zone. This area is usually characterised by fen communities namely purple moor-grass with scattered scrub dominated by willow and it is important to note that purple moor-grass and rush pasture is also an NI priority habitat. In NI and in the RoI, most lagg have been lost through drainage and land reclamation and any remnants should be classified separately on the basis of the habitats present (EHS, 2003 and Fossitt, 2000). The dome obtains its nutrients solely from rainfall and is therefore termed ombrotrophic. The surface of an intact lowland raised bog is therefore, waterlogged, acidic and deficient in plant nutrients. It is also a mixture of pools, raised mossy hummocks and flatter lawns, and is colonised by plants and animals adapted to the acidic conditions with low levels of nutrients. *Sphagnum* mosses are the principal peat forming species on lowland raised bogs. Other typical plant species include cottongrasses, heathers, bog asphodel and a variety of sundews.

As elsewhere across north-west Europe, there has been a dramatic decline in the extent of lowland raised bog since the start of the nineteenth century. The area of lowland raised bogs in the UK which possesses a relatively undisturbed surface is estimated to have diminished by approximately 94% from 95,000ha to 6,000ha and within NI a decline from 25,000ha to 2,000ha has been recorded (EHS, 2003).

Significance and local distribution:

A limited range of plant species occur on lowland raised bogs due to the waterlogged, acidic and low nutrient conditions, however, some are specific to them. *Sphagnum* mosses are the keystone species of all bogs; it is these which give the bog its characteristically 'spongy' surface. Some of these *Sphagnum* mosses are becoming rarer, such as, *Sphagnum pulchrum*, *Sphagnum austinni* and *Sphagnum fuscum*. In addition it supports a number of higher plants which have become increasingly scarce in NI, including great sundew, cranberry and bog rosemary. The invertebrate fauna is characterised by a dominance of acid tolerant species such as the water beetles *Hydroporus spp.* The large heath butterfly is also found on some lowland raised bog sites as well as numerous different dragonfly species. These also support a distinctive range of animals including breeding waders such as curlew, skylark and snipe. (Brown *et al*, 1997 and EHS, 2003).

As has been stated previously, lowland raised bogs within NI are formed on old lakebeds and waterlogged depressions. The topography of Banbridge District lends itself to the formation of bogs over a wide extent of the area along the meanders of the Rivers Bann and Lagan and in the numerous inter-drumlins hollows. However, the once extensive lowland bogs have been largely lost through past cutting, drainage and reclaimed to pasture. Most of these are now in fen, wet woodland or damp grassland.

A few areas of old bog in the District include those at Hunshigo Lake, Ballyward Lake and the largest which is Lacken Bog. This bog represents one of the largest single blocks of lowland peat left in Co. Down. This site has been designated an ASSI and is home to species such as bogbean, cinquefoil, sphagnum mosses and bottle sedge. The site also contains areas of open water and scrub woodland of birch and willow. The site is important for a range of wildlife including the Irish damselfly and the marsh fritillary butterfly. Fourteen of the twenty two species of dragonfly found in Ireland have been recorded on this site.

Broad Habitat: Fen, Marsh and Swamp

This is a group of wetland habitats which support a significant proportion of NI's Biodiversity. The majority of species considered to be wetland species are found within these habitats. Within NI there are a large number of sites containing this habitat type, but, the total area present at each site is relatively small. There are approximately 1600 lakes above 0.25ha in area, throughout NI and most have at least one of these three habitats i.e. fen, marsh or swamp associated with them (Brown *et al*, 1997). This broad category contains three NI priority habitats; fens, purple moor grass and rush pastures (fen meadow), and reedbeds.

Priority Habitat: Fen

Priority Type	Fens	
	Main Locations	<ul style="list-style-type: none"> • Lough Moss • Blue Road Bog • Rowantree Moss • Glass Moss • Big Bog
Associated Priority Habitats	<ul style="list-style-type: none"> • Reedbeds • Purple moor grass and rush pastures • Wet woodland • Mesotrophic lakes • Eutrophic standing waters 	
Associated Priority Species	<ul style="list-style-type: none"> • Curlew • Lapwing • Grasshopper Warbler • Marsh Fritillary 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Drainage • Fly tipping • Inadequate grazing regime • Scrub encroachment • Eutrophication ▪ Peat-cutting 	

Current status, extent and distribution:

Fens are the third type of peatland ecosystem which occurs in Ireland. Fens are peat-forming systems that differ from bogs in that they are fed by groundwater or moving surface waters, i.e. they are mineorotrophic. They occur in river valleys, poorly-drained basins or hollows, and beside open stretches of water (lake margins or river floodplains). Fens may also be associated with the fringes or other parts of acid bogs where the water supply has been enriched. Many fens in NI have been created on former raised bog through peat cutting down to a level where it is influenced by ground water (Fossitt, 2000). Fens can be classified in two ways. Firstly, according to the direction of water flow; topogenous fens are those where water movements in the peat or soil are generally vertical. They include basin fens and floodplain fens. Whereas soligenous fens are those where water movements are generally lateral, and these include those found in association with fens, springs and flushes (EHS, 2005). Secondly, according to the nature of the inputting water as either poor fen (on acid rocks, usually in uplands) or rich fens (inputs of base-rich water, generally a lowland habitat) (Brown *et al*, 1997). In a similar fashion, fen vegetation has been traditionally classified into three basic types poor-fens, rich-fens and transition mire and quaking bog. In general however, the vegetation of these areas is rich in plant species and this occurs for two reasons. Firstly, the fen is continuously fed by surface or ground water both of which are rich in minerals and secondly, a number of distinct habitats are found within and surrounding some fens, standing open water, marsh and swamp, raised and blanket bog and wet woodland or 'fen carr' as it is also known, are commonplace. As the habitat is varied, up to two hundred different plants can be found on Irish fens (O'Connell, 1987). Consequently, distinguishing fen from a range of closely associated priority habitats can therefore be problematic. However, typical fen plant species include black bog rush, carnation sedge, common sedge, saw sedge, fen thistle and orchids such as early marsh orchid, fly orchid and broad-leaved helleborine. Large branched 'brown' mosses such as *Scorpidium scorpioides*, *Drepanocladus revolvens*, *D. aduncus* and *Calliergon giganteum* also occur. Other plants that are often found on fens include, grass of parnassus, devil's-bit-scabious, common reed, bulrush, rushes and purple moor-grass (IPCC, 2006). The definition of fen used here relates solely to lowland areas and encompasses all three vegetation classification types. However, in addition it also includes swamp vegetation which is species poor and dominated by a mixture of species including bulrush, reedmace, reed canary grass, branched bur reed, flowering-rush and tall sedges. Tall fen and associated marshy grassland vegetation on deep peat dominated by meadowsweet, tall grasses and rushes is also included.

No comprehensive inventory of fens has been carried out in NI. A number of surveys have however, been carried out to identify potential ASSI's. However, the NICS (2000) provided an estimate for a range of land cover types in NI including fen. It was estimated that fen in the lowlands in NI occupies 2,950ha (comprising 2,075ha of the fen land cover type and 875ha of the swamp land cover type). The NICS 2000 suggests a decrease of 18% (484 ha) lowland fen land cover type between 1988 and 1998 with no change in the area of swamp (Cooper & McCann, 2001). The main loss was to reedbed (8%, 212 ha) and mixed agricultural grassland (4%, 75 ha).

Significance and local distribution:

Fens are a diverse habitat which support a very wide range of plant and animal species including well recognised species such as the European frog and smooth newt as well as many NI species of conservation concern. The latter include breeding birds of taller vegetation e.g. reed bunting; birds of open areas e.g. breeding waders; and birds of open water e.g. shoveler. NI fens are particularly important for invertebrates several of which are absent or threatened in GB. These include dragonflies such as the Irish damselfly, beetles such as whirligigs, water beetle, pond skater, and the carabid beetle, and butterflies and moths such as the marsh fritillary. A number of locally rare plant species are associated with fens, such as the NISoCC fen bedstraw, greater water-parsnip, holy grass, Irish lady's-tresses, marsh helleborine and marsh pea.

Fens are widely distributed throughout Banbridge District. Although most individual sites are small, they are a significant landscape feature and account for much of the biodiversity. In some parts, the drumlins are widely spaced and the fens more extensive, as for example at Corbet Fen. As previously mentioned, many originated mainly from cut-over lowland bogs. The removal of the layers of acid peat has enabled the sites to develop under the influence of more basic surface waters with their higher levels of nutrients. Some are being colonised by willows and alders and may eventually form carr woodland. There is evidence in the pattern of large fields and drainage ditches that fens have been drained for pastureland, whereas others have been used for tipping.

Many of the specific sites where fens occur have been designated as Sites of Local Nature Conservation Importance (SLNCI). Of the 45 proposed SLNCIs in the District no less than 14 have been classified as fen. Examples include; Corbet Fen; Knocknagore Fen; Big Bog; Ballysallagh Fen; Mullabrack Fen; Glass Moss; Blue Road Bog. However, for some of these sites, the presence of fen is not the primary reason for this designation, but rather the fact that a mosaic of priority habitats occur in association with the fen. (eg open water, marsh, wet woodland or species rich grassland).

Priority Habitat: Purple moor-grass and rush pastures

Priority Type	Purple moor-grass and rush pastures	
	Main Locations	<ul style="list-style-type: none"> • Loughran's Lane • Slievenaboley Road
Associated Priority Habitats	<ul style="list-style-type: none"> • Lowland dry acid grassland • Lowland meadow • Fens • Coastal floodplain and grazing marsh 	
Associated Priority Species	<ul style="list-style-type: none"> • Irish lady's tresses • Blue-eyed grass • Curlew • Skylark • Reed Bunting 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Agricultural improvement • Inadequate grazing regime • Abandonment ▪ Habitat fragmentation 	

Current status, extent and distribution:

Purple moor-grass and rush pastures occur on poorly drained, usually acidic soils in lowland areas of high rainfall in Western Europe. In Britain and Ireland, this habitat is found mainly in the west, and NI contains a large proportion of both the UK and European resource. The habitat is found fragmented in farmland as part parcels, often as wet hollows or field corners, and also as unenclosed larger areas. Purple moor-grass and rush pastures often occur in complex mosaics with other communities and habitats such as wet heaths, dry grassland, swamp, scrub and flushes and consequently transitions are often very common. They frequently grade into marsh and there are many similarities in the range of species present in both.

Purple moor-grass and rush pasture in NI is difficult to define as it comprises a wide range of species assemblages determined by a range of local factors including soil condition, aspect and management practices. In general they are defined as being grasslands which: are dominated by purple moor-grass and/or tall rushes, predominantly sharp-flowered rush; include a suite of characteristic plant species, e.g. glaucous sedge, carnation sedge, flea sedge, devil's-bit scabious, meadow thistle, tormentil, butterfly orchid, orchids of the *Dactylorhiza* genus, primrose, ragged robin and creeping jenny, whilst rush-dominated sites may include marsh bedstraw and wild angelica; have < 25% cover of scrub or dwarf shrub. There is a need to distinguish the species-rich priority habitat, outlined above, from species-poor *Molinia* grassland and rush pastures which are not a priority habitat. These include species-poor modified wet grasslands, characterised by Yorkshire fog and soft-rush, and species-poor acid flushes dominated by sharp-flowered rush and sphagnum mosses.

NI holds responsibility for a large portion of the European resource and is thought to contain about a third (18,700 ha) of the estimated UK total. This equates to approximately 1.2% of the total land area. The best estimate of the area of purple moor-grass and rush pasture is based on the NICS which conducted extensive investigations between 1987 and 1992 (Cooper & Murray, 1987, 1987a; Cooper *et al*, 1988). The NICS provides the baseline for an assessment of habitat change over time and originally estimated a total of around 26,000 ha of what was defined as 'fen meadow' and 'species-rich wet grassland' (Murray *et al.*, 1992). The NICS was repeated in 2000 (NICS 2000) and showed a rapid decline in fen meadow and species rich wet grassland between 1991 and 1998. The comparable figure from NICS 2000 is an estimate of 18,919 ha. This equates to an overall net loss of about a third of the NI purple moor-grass and rush pastures resource between 1991 and 1998.

Significance and local distribution:

Purple moor-grass and rush pastures are a priority for nature conservation because they are highly susceptible to agricultural modification and reclamation throughout their range (UK Biodiversity Steering Group, 1995)

Purple moor-grass and rush pasture supports a wide range of plant and animal species. In addition to the typical plant species, this habitat also includes the rare plants Irish lady's-tresses orchid and blue-eyed grass. The skylark, curlew and reed bunting, Irish hare and ground beetle *Carabus clatratus*, all of which are NI priority species are associated with this habitat.

Within Banbridge District there appears to be a lack of sites recorded as 'Purple moor-grass and rush pasture' type grassland. Due to the topography of the district, there are areas of 'unimproved' or 'rough' grassland which would probably fall under these pasture types. On the slopes of Slieve Croob there are extensive tracts of acid grassland which contain areas that could be described as purple moor-grass. In the inter drumlin hollows and damp valley bottoms throughout the district, ground that had been previously reclaimed, but now managed less intensively has enabled purple moor-grass and rush pasture habitats to develop within complex mosaics with other communities and habitats such as wet heaths, dry grassland, swamp and scrub.

As is the case in NI, for many of the sites designated for nature conservation importance, the presence of purple moor grass and rush pasture has not been a primary selection feature. Instead the fact these form a mosaic with a variety of other priority habitat types has been the main reason for selection. The proposed SLNCs at Loughran's Lane and Slievenabley Road are two such examples.

Priority Habitat: Reedbeds

Priority Type	Reedbeds	
	Main Locations	<ul style="list-style-type: none"> • Corbet Lough • Skilyscolban Lake • Altnadua Lake
Associated Priority Habitats	<ul style="list-style-type: none"> • Fens • Coastal floodplain and grazing marsh • Lowland raised bog • Wet woodland • Mesotrophic lakes • Eutrophic standing waters 	
Associated Priority Species	<ul style="list-style-type: none"> • Otter • Reed bunting 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Alteration of water level • Eutrophication 	

Current status, extent and distribution:

The term reedbed is used to describe a range of common reed *Phragmites communis* dominated wetland vegetation communities where the water table is at or above ground level for most of the year. Reedbeds are widely distributed on the margins of water bodies, along lowland and upland streams, reservoirs, sewage treatment works and as a successional habitat on fens and bogs. Reedbeds can originate in one of two ways. As mentioned previously, they can originate naturally as a part of a serial succession of open water or they can develop through human activity, for example when agricultural practices (such as peat cutting) have ceased, or where grazing and water control have been abandoned on low-lying land.

Reedbeds are essentially swamp communities. These are species poor and dominated by common reed and other large grasses or large sedges, typically, only one or a small number of different plant species are present. The dominance of common reed is used to indicate the presence of a reedbed habitat.

Reedbeds often occur as discrete stands but can also occur in a complex mosaic with other habitat types such as lakes, fen, wet woodland, coastal and floodplain grazing marsh and in modified examples of lowland raised bog. In these cases it may be difficult to distinguish reedbeds from other wetland vegetation. Generally, significant blocks of reedbeds such as occur on mineral soils in a coastal and floodplain grazing marsh context can be considered as reedbed habitat. However, more fragmented mixed blocks such as occur within a dominant matrix of bog and fen are best treated as an integral component of the lowland raised bog and fen habitats respectively (Jones *et al.*, 2003).

To qualify as the priority habitat, the reedbed should meet the following criteria: tall herbaceous wetland vegetation with >30% cover of *Phragmites*; reedbed area >0.5 ha and reedbed width over the whole area of at least 5m.

No comprehensive inventory of reedbeds has been carried out in NI. EHS unpublished estimates, based on the NICS 2000 suggest that reedbed occupies in the region of 3228 ha in NI. This would appear to be a significant proportion of the UK reedbed area estimated at 5000 ha (UK Biodiversity Steering Group, 1998). However, the England and Wales resource was estimated at 12400 ha in 2002 with an estimated additional 1138 ha in Scotland (UK BAP online report, 2002). It should be noted that reedbeds in NI tend to occur in relatively small stands and this figure may include a significant proportion of stands less than 0.5 ha or less than 5m in width which should be treated as part of other habitats such as fens.

Reedbeds in NI are especially associated with lowland wetlands around the large lakes and inter-drumlin wetlands. Several large stands (>10 ha) occur around Lough Neagh and in the Lough Erne catchments. There are also a significant number of stands greater than 2 ha including an estimated 40 sites in Down and Armagh (Shaw *et al.*, 1996).

The extent of these reedbeds is governed by water-levels, nutrient enrichment and succession. Murray *et al* (1991) revealed that reedbeds occur around the inundated sheltered sites, usually inlets, channels and bays of Upper Lough Erne and outlying small lakes in the lowlands. Reedbeds occur as a transition from open water to terrestrial habitats. Typically, the habitats visible are open water, swamp, reedbeds, fen and finally, species rich wet grassland and/or wet woodland. Therefore it is hardly surprising that those sites which have been designated for nature conservation interest typically contain a mosaic of wetland habitat types and in many cases the presence of reedbeds is not the primary selection factor.

Historically there has been significant loss of reedbeds in the UK which may be as high as 40% between 1945 and 1990 (Hawke & José, 1996). It is likely that similar losses also occurred in NI during this period. However, NICS 2000 indicates that there was little overall change in the area of swamp and reedbed in NI between 1988 and 1998 (Cooper *et al.*, 2002).

Significance and local distribution:

Reedbeds are typically dominated by common reed and are species-poor. Therefore few rare plants are associated with reedbeds. Plant species diversity does increase towards the edges of the reedbed and plants such as cowbane, greater water parsnip, marsh fern and marsh pea can be found. Greater water parsnip is a NI priority species. A rare moss *Fissidens monguillonii* is associated with reedbeds. Reedbeds are of importance to a range of specialist bird species. Characteristic breeding birds of reedbeds in NI include reed bunting, water rail, sedge warbler. These also provide nesting cover for a number of species of waterfowl such as great-crested grebe. A wide range of other wetland animals use reedbeds especially where it is close to fen or open water including the otter and the reed-beetle *Donacia aquatic* both of which are NI priority species.

Within Banbridge District there are a number of reedbeds. These are particularly associated with the numerous lakes throughout the District. Skillyscolban Lake and Big Bog SLNCI contains an extensive swamp and fen habitat with a diversity of wetland plants. Although one of the smaller lakes in the area, Drumaran Lake has a good reedbed community. Corbet Lough which supports locally important wildfowl populations also has a good reedbed habitat. Altnadua Lake supports reedbed habitat that is generally narrow, but unspoilt. Other areas of reedbed occur at Ballyrone Lake, Hunshigo Lake and Katesbridge Wetland.

Broad Habitat Type: Standing open water and canals

This broad habitat type includes natural systems such as lakes and pools, as well as man-made waters such as reservoirs, ponds, canals and gravel pits. It includes the open water zone which may contain submerged, free floating or floating leaved vegetation, and water fringe vegetation. This is one of NI's most extensive habitats. There are more than 1,600 lakes in NI, ranging in size from little more than small ponds to Lough Neagh, the largest freshwater lake in the British Isles. These lakes are however, spread unevenly, with fewest in County Londonderry and North Antrim and most occurring in Counties Armagh, Fermanagh and Central Down. In comparison to other lowland parts of the UK the number of natural water bodies in NI is very high relative to the land area (Brown *et al*, 1997).

Water is an essential element for these sites and it can vary considerably in its chemical make-up. It is therefore possible to classify lakes based on the amount of nutrients which they contain. Oligotrophic lakes contain a low level of nutrients, mesotrophic lakes contain moderate levels of nutrients and eutrophic lakes contain high levels of nutrients. Mesotrophic lakes are potentially the most diverse systems. However, mesotrophic and eutrophic lakes often have similar biotic and physio-chemical characteristics and as a result it is difficult to classify lakes at the middle to upper end of the nutrient gradient as mesotrophic or eutrophic. This can be further complicated by seasonal biotic effects on the water body chemistry which may extend the nutrient status of a particular body beyond its normal range. Trophic status can also change over time due to man's influences, so that a currently mesotrophic or eutrophic lake may be the result of the enrichment of a previously oligotrophic lake. Therefore trophic state is a continuum between oligotrophic and eutrophic. Both eutrophic standing waters and mesotrophic lakes are NI priority habitats (NIBG, 2000).

Priority Habitat: Eutrophic standing waters

Priority Type	Eutrophic standing waters	
	Main Locations	<ul style="list-style-type: none"> • Loughbrickland • Lough Shark • Corbet Lough • Hunshigo Lake
Associated Priority Habitats	<ul style="list-style-type: none"> • Fen • Wet woodland • Coastal and Floodplain grazing marsh • Purple moor-grass and rush pasture • Lowland raised bog • Reedbed 	
Associated Priority Species	<ul style="list-style-type: none"> • Otter • Pollan • Curlew 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Eutrophication • Drainage • Invasive species ▪ Changes in land use 	

Current extent, status and distribution:

Lakes are characterised by their concentration of nutrients, the main indicators being inorganic nitrogen (N) and total phosphorus (P). In spite of the difficulties in defining trophic status outlined above, eutrophic standing waters have been defined as those having nutrient levels of > 0.035 mg per L total phosphorus (which includes phosphorus bound up in plankton) and >0.5 mg per L total inorganic nitrogen (mainly in the form of dissolved nitrates). This definition is in line with the UK Eutrophic Standing Waters HAP (UK Biodiversity Steering Group, 1998).

The majority (72%) of NI lakes have a surface area of less than 2 ha and represent only 1.2% of the total water surface in NI. The five largest lakes represent less than 0.3% of the total lake numbers but between them contribute 89% of the total surface area. The total surface area of all lakes represents about 4.5% of the total surface area of NI, compared to approximately 1% for the rest of the UK. The average number of lakes per km² is only one third of that in the rest of the UK, indicating a much greater average lake size in NI. Over 60% of NI's lakes occur at altitudes of less than 100m (Wolfe-Murphy *et al.* 1992).

Many naturally eutrophic standing waters are grossly polluted waters and are thus defined as hypertrophic e.g. Lough Neagh. As well as high levels of nutrients within the water column of the lough and its inflowing and outflowing rivers there has also been a considerable build up of nutrients in sediments, which may slow down any recovery of the system, due to nutrient release and recycling. Another feature of these waters is that they have dense, long-term populations of algae in mid-summer, often making the water green. The beds of these hypertrophic standing water bodies are covered by dark anaerobic mud, rich in organic matter.

The trophic status of a water body dictates which species of plants are able to survive, the species-richness of a lake and its overall biological productivity. In their natural state, eutrophic standing waters have high biodiversity. Algae and zooplankton are abundant, the submerged vegetation is diverse and numerous species of invertebrates and fish are present. The characteristic aquatic plants of eutrophic lakes and ponds vary with geographical area, nutrient concentrations and exposure. However, typical species include duckweeds, white water lily, yellow water-lily and spiked water-milfoil. There are obviously, interactions between the eutrophic standing waters and the surrounding wetland and terrestrial habitats such as fens, reedbeds, floodplain grazing marsh and wet woodland. Therefore, maintaining the quality of these transitional habitats is an important part of maintaining the biodiversity interest of these lakes. There is no size cut-off for eutrophic standing waters and some sites as small as 1ha are included in this definition (EHS, 2005).

The total area of still inland water in GB is estimated as 675 km² in England, 125 km² in Wales and 1604 km² in Scotland. Current work suggests that over 80% of this resource in England, some 40% in Wales and approximately 15% in Scotland is eutrophic. On this assumption, the area of eutrophic standing water in GB would be about 845 km². Measurements made by EHS put the area of eutrophic standing water in NI at approximately 940 km² or slightly over 52% of the total UK resource. NI therefore contains a high proportion of the UK resource especially in the east and west lowlands (NIBG 2000). Elsewhere in the UK the resource is widely scattered. The UK Biodiversity Steering Group (1998) therefore considered the total UK resource to cover 1785 km² acknowledging that this figure is not an accurate estimate owing to problems with definitions and measurement methods.

Significance and local distribution:

In addition to the characteristic aquatic plant species associated with eutrophic lakes and ponds, there are a number of notable species that have been identified. Cowbane can be found at Islandderry Lough, Skillyscolban Lake, Kernan Lake and Drumaran Lake.

Eight-stamened waterwort can be found at Lough Brickland and Lough Shark. Other eutrophic lakes within the District are; Hunshigo Lake and Ballyroney Lake, both with nationally important numbers of mute swan; and Corbet Lough with a range of waterfowl occurring in numbers of national importance. Lough Shark is important for wintering wildfowl and rare passage bird species.

In general fish communities in eutrophic standing waters are a mix of coarse and salmonid species. However, today there are few lakes with truly natural 'mixtures' due to mixing with introduced coarse fish species such as roach, perch, bream and pike. The marginal habitats of eutrophic lakes are important habitat for a number of different wader and wildfowl populations including priority species such as snipe, redshank, lapwing and curlew. Some important groups of macro invertebrates such as dragonflies, water beetles, stoneflies and mayflies are well represented in eutrophic lakes. Bottom dwelling invertebrates such as snail, and the larval stages of dragonflies, stoneflies, mayflies and water beetles are abundant.

Priority Habitat: Mesotrophic Lakes

Priority Type	Mesotrophic lakes	
	Main Locations	<ul style="list-style-type: none"> • Begny Lake • Altnadua Lake
Associated Priority Habitats	<ul style="list-style-type: none"> • Fen • Wet woodland • Coastal and Floodplain grazing marsh • Purple moor-grass and rush pasture • Lowland raised bog • Reedbed 	
Associated Priority Species	<ul style="list-style-type: none"> ▪ Otter ▪ Curlew 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Eutrophication • Changes in land use • Invasive species ▪ Drainage 	

Current extent, status and distribution:

Mesotrophic lakes occur in marginal upland areas and are characterised by a relatively narrow range of nutrients lying between nutrient poor oligotrophic lakes typical of uplands and nutrient rich eutrophic lakes typical of lowlands (Davidson, 2004). Typically, mesotrophic lakes in NI and the UK have nutrient levels of 0.3-0.65mg⁻¹ of inorganic nitrogen and 0.01-0.03mg⁻¹ of phosphorus. This illustrates their sensitivity to increased levels of nitrogen and phosphorous and explains why these are an increasingly rare type of lake (UK BSG 1998).

Mesotrophic waters are capable of supporting a diverse macrophyte flora (i.e. aquatic plants that grow in or near water) but, with relatively clear water reflecting limited growth of planktonic and filamentous algae. However, on some occasions the water can be discoloured by algae. Macrophyte communities will include at least some plants which are intolerant of nutrient enrichment, particularly of nitrogen and phosphorus.

As well as having the greatest potential macrophyte diversity of any lake type, mesotrophic lakes contain a high proportion of nationally scarce and rare aquatic plants. Characteristic aquatic plants in mesotrophic lakes include white water-lily, yellow water-lily and several pondweeds. Stoneworts may also be present. The fringing and aquatic plant communities are typically lusher than those associated with oligotrophic lakes (Fossitt, 2000). Plants with a restricted distribution in the British Isles also occur in mesotrophic lakes. Similarly to eutrophic standing waters, there are interactions between these mesotrophic lakes and the surrounding wetland and terrestrial habitats such as fens, reedbeds, floodplain grazing marsh and wet woodland and once again maintaining the quality of these transitional habitats is an important part of maintaining the biodiversity interest of these lakes.

According to the UK HAP mesotrophic lakes are relatively infrequent in the UK being largely confined to the margins of uplands in the north and west (UKBSG 1998). There are around 600 known mesotrophic or potentially mesotrophic lakes listed on the UK mesotrophic lakes inventory. NI contains a high proportion of the UK resource (NIBG 2000). The two largest mesotrophic lake sites in NI are Lough Melvin, and Upper Lough Macnean.

Significance and local distribution:

In addition to the characteristic plant species listed earlier, mesotrophic lakes also contain a high proportion of nationally scarce and rare aquatic plants such as chaffweed, globeflower and several species of *Potamogeton*.

Similarly, to eutrophic standing waters the fish communities in mesotrophic lakes are a mix of coarse and salmonid species, but currently there are few true natural fish populations as these have been affected by mixing with introduced species. In most NI lakes, several introduced fish species have been established and become an accepted part of the biodiversity in these lakes (EHS, 2005).

Macroinvertebrates are well represented in mesotrophic lakes and particularly important groups include dragonflies, water beetles, stoneflies and mayflies. They are noted for diverse macrophyte communities with several rare species and rich aquatic invertebrate communities.

Many of the lakes found in the District are either in connection with the inter drumlin hollows or along the valley bottoms. Run off containing nutrients from the surrounding countryside has resulted in many of the lakes in the District being nutrient rich and classified as eutropic and hypertrophic. There are however a couple of examples of mesotrophic lakes to be found. Altnadua Lake is an unspoilt example of a mid-altitude lake with alternate leaved water milfoil, reddish pondweed and white water lily – all species that are sensitive to nutrient enrichment. Water lobelia, a rare species usually confined to upland lakes is also recorded here. Begny Lake is a relatively large and isolated example of a mesotrophic lake with otter and breeding curlew found in the damp grassland around the lake.

Broad habitat: Improved grassland.

This is the most extensive broad habitat in NI. It is formed from semi-natural grasslands that have been made more productive for livestock or 'improved' by intensive treatments. At its most radical, this process entails the complete replacement of the original sward i.e. ploughing and reseeded (NIBG, 2000).

Priority Habitat: Coastal and floodplain grazing marsh

Priority Type	Coastal and Floodplain grazing marsh	
	Main Locations	<ul style="list-style-type: none"> • Upper Bann Floodplains • Dromore Lowlands • Ballyrone Basin
Associated Priority Habitats	<ul style="list-style-type: none"> • Purple moor-grass and rush pastures • Lowland raised bog • Fens • Reedbeds • Wet woodland 	
Associated Priority Species	<ul style="list-style-type: none"> • Irish lady's tresses orchid • Curlew • Lapwing • Redshank • Black tailed godwit 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> • Drainage • Agricultural improvement • Inadequate grazing regime • Fragmentation 	

Current status, extent and distribution:

Coastal and floodplain grazing marsh is defined in the UK HAP as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. Grazing marsh can be divided into two main types. Coastal grazing marshes occur in flat coastal areas usually behind coastal defenses or natural barriers like sand dunes and are characteristically drained by a network of ditches containing standing water throughout the year. They have often been derived from reclaimed saltmarsh or mudflats. Floodplain grazing marsh can be associated with larger slow-flowing rivers as well as lakes where it can also be drained by a network of ditches. Much of this habitat was formerly swampy woodland, fen or reedbed. Inland floodplain grazing marshes are more widespread in NI. The habitat occurs on flat low-lying areas where it frequently occurs as a mosaic with other wetland habitats such as lakes and fens. The predominately drumlin dominated lowlands of NI result in a lack of the more extensive areas of this habitat associated with other parts of GB and elsewhere in Ireland. The vegetation is mostly a mixture of rush-dominated pasture and semi-improved and improved grassland often over peaty ground.

In areas with higher water-tables and less intensive grazing rushes and sedges predominate together with grasses such as creeping bent and marsh foxtail. The proportion of broadleaved herbs is often high, including marsh thistle, silverweed, meadowsweet, water mint, marsh bedstraw, lesser spearwort, and cuckooflower. Floristically this vegetation can be very similar to the purple moor grass and rush pasture which is found on sloping ground not subject to regular flooding. In areas with lower water-tables and intensive grazing semi-improved and improved grasslands predominate. The most improved examples are used for silage or intensive grazing and have a high cover of perennial ryegrass with few other grasses or herbs. Semi-improved wetter grassland on more peaty ground contains soft rush, Yorkshire fog, creeping bent and a few herbs such as creeping buttercup. On semi-improved drier alluvial soils a range of neutral grassland species characterized by crested dog's-tail occur.

Drainage ditches, rivers, pools and lake edges are an integral part of grazing marsh. These can have a diverse range of wetland vegetation and be very rich in wildlife. There are differences in the species composition based on water level management, maintenance type, timing and intensity and trophic status. Many drainage ditches in NI have little conservation interest due to eutrophication, fluctuating water levels or too frequent or inappropriate timing of maintenance operations.

Coastal and floodplain grazing marsh in NI is difficult to define as it comprises a wide range of species assemblages determined by a range of local factors including soil condition, aspect and past and current management practices.

The exact extent of coastal and floodplain grazing marsh in the UK is not known, but, it is possible that there may be a total of 300,000ha. NI is thought to contain an important proportion of the UK resource of floodplain grazing marsh based on the number of lowland grassland sites containing breeding wader populations. Important sources of habitat survey information for other terrestrial and freshwater habitat such as the NICS (2000) and EHS surveys do not readily identify coastal and floodplain grazing marsh. However, the NICS (2000) does provide an estimate of the area of species rich wet grassland which roughly equates to floodplain grazing marsh. It revealed that in 1998 there were 13,808ha of species rich wet grassland in NI.

Significance and local distribution:

Although much of the NI grazing marsh resource tends to be relatively species poor, several notable species, that have a restricted distribution in lol, do occur within the ditches of some designated areas. These species include water violet, flowering rush, marsh pea and Irish lady's-tresses orchid.

The habitat has been the subject of surveys over the past few decades because of the number of breeding waders such as snipe, lapwing, redshank and curlew they support. These species have exhibited historic population declines which have been a result of loss of wet and regularly flooded grassland due to drainage schemes and related agricultural improvement (Donaghy & Mellon, undated).

Within Banbridge District grazing floodplain marsh occurs within the Upper Bann and Lagan River floodplains, and Landscape Character Areas - Ballyroney Basin and Dromore Lowlands. There are also examples along the Newry Canal.

Broad Habitat Type: Dwarf Shrub Heath

Dwarf shrub heath or heathland vegetation occurs widely on mineral soils and thin peats (less than 0.5m deep) throughout the uplands and moorlands of the UK and the RoI. Dwarf shrub heaths are recognised as being of international importance because they are largely confined within the British Isles and the western seaboard of mainland Europe. NI has a range of heathland communities which have developed under the oceanic climate (mild and wet without extremes of temperature). This broad habitat type is generally dominated by a variety of different species of heather, in particular *Calluna vulgaris*, and other related small shrubs, such as bilberry. Trees and larger shrubs may be present but should not be abundant; low-growing western gorse and juniper are exceptions as they may be components of heath.

Heathlands in NI have been divided into three priority habitat types; lowland heathland, generally found below 300m in altitude; upland heathland, lying above the upper edge of agricultural land (generally around 300m) and below the alpine of montane zone (at about 600m); and montane heath, generally above 600m. Two of these priority habitats are included in the dwarf shrub heath habitat type; lowland and upland heathland.

Priority Habitat: Upland Heathland

Priority Type	Upland heathland	
	Main Locations	• Around Slieve Croob
Associated Priority Habitats	<ul style="list-style-type: none">• Montane Heathland• Blanket bog• Lowland heathland• Lowland dry acid grassland	
Associated Priority Species	<ul style="list-style-type: none">• Red Grouse• Hen Harrier• Irish Hare	
Main threats/Local Issues/Comments	<ul style="list-style-type: none">• Lack of management• Overgrazing▪ Invasive species	

Current extent, status and distribution:

Upland heathland occurs on mineral soils and thin peats (less than 0.5m deep) in upland areas above the upper edge of enclosed agricultural land (generally about 300m altitude). In NI, blanket bog covers much of the upland landscape, therefore upland heathland is restricted to the steeper slopes in upland areas. Typically, the vegetation cover is characterised by dwarf shrubs such as heather, bilberry, crowberry, bell heather and cross leaved heath and although the vegetation cover of blanket bogs may also contain substantial amounts of these same dwarf shrubs, it is distinguished from heathland by its occurrence on deep peat (greater than 0.5m deep) and presence of hare's-tail cotton grass. However, two distinct plant communities can be distinguished within upland heathland; wet heath and dry heath. Wet heaths are the most common type in NI and these are dominated by a mixture of heather, cross-leaved heath, deer grass and purple moor-grass with an understory of mosses often including several of the bog moss *sphagnum* species. Wet heaths can support a dwarf shrub cover as low as 25% or as high as 90%, however, a dwarf shrub cover of 50-75% is typical of wet heaths in good condition. Dry heath, which is a lot scarcer, is dominated by dwarf shrubs such as

heather, bell heather, bilberry and crowberry will generally comprise over 75% dwarf shrub cover where the heath is in good condition. Both of these plant communities are included in this definition of upland heathland (Davidson, 2004 and EHS, 2003). In addition, within NI, high quality upland heathlands are usually structurally diverse, consisting of a heather layer of varying heights and structures representing different stages of growth including areas of mature heather. Although heathland tends to be less rich in species than some other habitats, it often occurs as part of an intricate mosaic with acid grassland, fen and bog, bracken, woodland and freshwater and rock habitats, and this additional diversity increases its value for wildlife (NIBG, 2000).

The total upland heathland resource in the UK amounts to between 2 and 3 million ha, with an estimated 58,500ha in NI. To date there has been no comprehensive assessment of the extent, distribution or condition of the upland heathland resource in NI. Cooper and McCann (1995) estimated that heath and grass heath occupied 1.8% of the land area in NI (upland 5.5% and lowland less than 1%), therefore it would appear that upland heathland is slightly more abundant than lowland heathland in NI, but, that overall heathland is a relatively scarce resource. Currently, the NICS (2000) provides the best estimate, of upland heathland (which comprises of dry heath mosaic, dry heath, wet heath mosaic and wet heath habitat types) in Northern Ireland to be approximately 58,500ha (Cooper and McCann, 2002). However, this figure is likely to be an over-estimate as this figure is based on upland land classes, which are defined in this survey as land over 500 feet (approximately 150m) that is, at a lower level than the 300m figure adopted in this definition (EHS, 2003).

Significance and local distribution:

There are few rare or notable plant species, which are associated with upland heathlands in NI. However, some types of upland heathland do have a significant lower plant interest including assemblages of rare and local mosses and liverworts. In general, heathlands tend to be less rich in species than some other habitats. However, it often occurs as part of an intricate mosaic with acid grassland, fen and bog, bracken, woodland and freshwater and rock habitats, and this additional diversity increases its value for wildlife (NIBG, 2000). Upland heathlands do support a wide range of vertebrates and invertebrates. Some of these are widespread and common, some are much more local and several are of international interest for either their rarity or for the densities of their breeding populations. For example, red grouse and hen harriers, (NI Priority Species), and merlin are all associated with upland heathland. The sword-grass moth and the argent and sable moths are both closely associated with upland heathlands and again both are NI Priority Species. Upland heathlands have also been known to support substantial populations of Irish hares.

Some upland heathland loss within NI is attributed to agricultural intensification and afforestation, the majority is due to the gradual degradation of the heath communities as a consequence of heavy grazing by sheep and occasionally cattle and the Banbridge District is not likely to be any different. In 2005, within the approximately 6,600ha of heather moorland (which includes upland heathland) was under agri-environment agreement (DARD, 2005) and this land is being managed sympathetically. However, it is important to note that the majority of heather moorland in these schemes is likely to be blanket bog. Within Banbridge District there is limited heathland, and this is confined to the slopes of Slieve Croob.

Broad Habitat Type: Neutral Grassland

Neutral grasslands are one of the three main types of semi-natural grasslands which occur within NI. Neutral grasslands are intermediate in character between calcareous and acid grasslands. This broad habitat type includes one priority habitat; lowland meadows.

Priority Habitat: Lowland Meadows

Priority Type	Lowland Meadows	
	Main Locations	<ul style="list-style-type: none">• Gargarry• Ballyward• Balleny
Associated Priority Habitats	<ul style="list-style-type: none">• Lowland dry acid grassland• Purple moor grass & rush pastures• Floodplain grazing marsh• Fen	
Associated Priority Species	<ul style="list-style-type: none">▪ Corncrake▪ Skylark▪ Irish Hare▪ Pink Meadow Waxcap	
Main threats/Local Issues/Comments	<ul style="list-style-type: none">▪ Change in practice from hay to silage cutting▪ Increase in nutrient input▪ Overgrazing▪ Seeding of more vigorous grasses from adjacent land.▪ Abandonment	

Current extent, status and distribution:

Lowland meadow is defined in general terms as unimproved neutral grassland found on enclosed land. The substrate is generally a well-drained mineral soil and the habitat is characteristically herb-rich. The habitat has typically survived as hay meadow, but increasingly it is also characterised by unimproved neutral pastures where livestock grazing is the main land use. In non-agricultural settings, lowland meadow-type communities may be found in recreational sites, churchyards, roadside verges and a variety of other localities. There are no large areas of lowland meadow in NI. The habitat is typically fragmented, even in areas where it is relatively frequent. It is often restricted to those small parts of field parcels where agricultural operations are difficult. The habitat is thus often found on relatively steep slopes and is often only a part of fields that are otherwise largely devoted to intensive grass production. It often occurs as part of a transition or habitat mosaic – for example, around the upland fringes, where it often grades into species-rich examples of acid grassland. Field boundaries that incorporate an earth bank may act as refuges for lowland meadow communities.

The plant species associated with hay meadows vary with soil wetness and chemistry and its character is intimately bound with low input agricultural practices, characterised by exclusion of stock during the early growing season, little or no fertiliser application and generally only a light dressing of farmland manure.

Lowland meadow characteristically has high but variable species richness. The most characteristic herb species, such as meadow vetchling, common knapweed, common bird's-foot-trefoil, yellow-rattle and bulbous buttercup, may occur at low frequency. A number of scarce and declining plant species occur in lowland meadow habitats, including greater butterfly-orchid. Fine-leaved grasses, in particular common bent and red fescue are major constituents of the sward and crested dog's-tail is frequent and may be abundant. A slightly more acid type contains species such as heath bedstraw and tormentil as well as mosses, wetter types contain various sedges and rushes while dryer types generally contain abundant white clover and ribwort plantain. Recognition of the habitat is therefore dependent not only on the presence of a restricted number of indicator species, but also on the presence of a range of species, not all of which will be found in a particular parcel of the habitat. Taking this variability into account, lowland meadow in NI is defined, as grasslands which have:-

- a high percentage cover (>30%) of fine-leaved grasses;
- absence or very low percentage (<5%) cover of *Lolium* species;
- a minimum of 10 higher plant species in a representative 4m² quadrat;
- <25% cover of scrub or dwarf shrub.

Lowland meadow has undergone considerable contraction and degradation within the UK over the past century, almost entirely due to changing agricultural practices. Since 1930, over 95% of lowland grasslands of conservation value in GB have been lost (Hopkins & Hopkins, 1993), and around 11500ha of lowland meadow is estimated to exist currently in Britain (Burke & Critchley, 2000). The area of lowland meadow in NI represents a large proportion of the UK resource. However, traditional species-rich hay meadows may have declined in NI by as much as 97% over the last 50 years (NIBG 2000). The area of species-rich dry grassland in NI was estimated at approximately 5900ha in 1998, of which an estimated 4655ha was in the lowland land classes. From data in Murray *et al.*, (1992) it has been estimated that only 13% of full-field parcels of this habitat type are of high quality in NI. Overall, it is estimated that there has been a reduction of 20% in the total species-rich dry grassland resource since 1991 (Cooper & McCann, 2001). This figure masks a more severe reduction in some areas, for example a 56% loss in the Mourne lowlands (Cooper & McCann, 2002).

Significance and local distribution:

Typically, lowland meadows have high but, variable species richness. In addition to the characteristic plant species listed earlier, a number of scarce and declining plant species occur in lowland meadows such as meadow cranes-bill, pink meadow waxcap, and greater butterfly orchid. It also supports a range of terrestrial vertebrates and invertebrates. Some of these are widespread and common, some are much more local in their distribution and some are of national importance for their rarity. An example of this last category is the corncrake, which has historically used hay meadows as a breeding habitat. The reduction in meadow management for hay production has been paralleled by the virtual disappearance of this species from NI. Skylark is a characteristic species of this habitat and lowland meadow contributes to the habitat mosaic favoured by the Irish hare. In agriculturally improved lowland landscapes, lowland meadows can hold outlying populations of typical upland species.

Within Banbridge District, grassland is by far the largest landscape character accounting for 70-80% of the land cover. The majority of this is in improved pasture. These fields are intensively managed; often sown pastures and receive heavy inputs of fertilizer and slurry. Biodiversity within these areas is usually poor and related to the boundary hedgerows.

There are examples of lowland meadow around Gargarry, Ballyward and Balleny regions.

Broad Habitat Type: Acid Grasslands

Priority Habitat: Lowland dry acid grassland

Priority Type	Lowland dry acid grassland	
	Main Locations	• Towards East of District
Associated Priority Habitats	<ul style="list-style-type: none"> • Lowland heathland • Purple moor grass & rush pastures • Lowland Meadow 	
Associated Priority Species	<ul style="list-style-type: none"> ▪ Linnet ▪ Skylark ▪ Irish Hare ▪ Pink Meadow Waxcap 	
Main threats/Local Issues/Comments	<ul style="list-style-type: none"> ▪ Increase in nutrient input ▪ Reseeding for agricultural improvement ▪ Overgrazing ▪ Abandonment 	

Current extent, status and distribution:

Lowland dry acid grassland typically occurs on nutrient-poor, mainly free-draining soils overlying acid rocks or superficial deposits such as sands and gravels. In NI it is often a species poor derivative of former heathland. However, if strictly defined, lowland dry acid grassland is differentiated from such acid grassland derived from degraded heathland by having a past or present species richness, which suggests it, should be retained as grassland rather than restored to heathland. There are no large areas of lowland dry acid grassland in NI. Those examples of the habitat that are of intrinsic nature conservation value tend to be scattered in distribution, small in extent and generally occur on rocky knolls as a minor component of larger habitat mosaics alongside 'lowland heathland,' 'lowland meadow' and 'maritime cliff and slopes'. Lowland dry acid grassland is most likely to be found in very small patches in a matrix of other grassland types. Individual parcels would seldom account for more than 0.25 ha (Corbett, 2003). The habitat also occurs as lawns associated with old gardens, church yards and other amenity areas where regular cutting and absence of nutrient inputs has resulted in very leached and as a result, relatively acid soils.

The lowland dry acid grassland in NI is defined as grasslands which:-

- are species rich (generally > 20 species/4m² quadrat)
- include a suite of characteristic calcifuge plant species, which vary according to the underlying geology and location.
- average < 25% cover of scrub or dwarf shrub
- includes both enclosed and unenclosed acid grassland below the upland limit of enclosure (generally c300m) that is managed within enclosed field units (UK BSG 1998).

It excludes swards in old and non-functional enclosures in the upland fringes, which are managed as free-range rough grazing in association with unenclosed tracts of upland.

Significance and local distribution:

Lowland dry acid grassland is characterised by a range of plant species such as heath bedstraw, sheep's fescue, common bent, sheep's sorrel, pill sedge and tormentil. Dwarf shrubs such as heather and bilberry can also occur but at low abundance. Lowland dry acid grassland can also have a high cover of bryophytes and parched examples of this habitat can be rich in lichens (UK BSG 1998). A number of rare and notable fungi such as crimson waxcap are also associated with lowland dry acid grassland.

Lowland dry acid grassland has undergone substantial decline over much of Britain and Ireland over the past century. The decline has been mostly due to agricultural intensification, although there have been local significant losses to forestry. However, data for the total extent of lowland dry acid grassland across the UK is currently not available.

In NI, the area of the habitat is difficult to estimate because it is so restricted and fragmented in its distribution. The best estimates are based on the NICS which originally conducted investigations into extensive areas of Northern Ireland between 1987 and 1992 (Cooper & Murray, 1987, 1987a; Cooper *et al.*, 1988). The NICS provides the baseline for an assessment of habitat change over time and originally estimated a total of just over 1000 ha of what was defined as 'hill pasture' within the lowland land classes (Murray *et al.*, 1992), which equates closely to the lowland dry acid grassland priority habitat. However, it is likely that a proportion of this occurs in marginal land adjoining unenclosed uplands, so may not be within the strict terms of the definition.

Much of this marginal land is likely to be degraded heath resulting in a large proportion of the acid grassland likely to be species-poor grassland. Conversely, the more species-rich examples have probably been classified by Murray *et al.* (1992) as 'species-rich dry grassland', which is now generally regarded as the 'lowland meadow' priority habitat (Corbett, 2003). The relative importance of these two factors, acting in opposing directions, is not known.

Despite these disparities in definition, the NICS provides the best estimate of the lowland dry acid grassland resource in NI. The NICS was repeated in 2000 (NICS 2000) and estimated that between 1991 and 1998 the area of 'hill pasture' declined by 26% (Cooper & McCann, 2001). Based on this decline, the lowland dry acid grassland resource in NI is therefore estimated at 674 ha, with small concentrations of the habitat occurring in Counties Down and Armagh.

One priority habitat occurs within Banbridge District, which, as yet does not have a Northern Ireland Habitat Action Plan prepared. As such, there has been difficulty in gathering the relevant information on this habitat in the timescale for this draft audit. It is envisaged that as and when more information becomes available, this section can be completed. There are a few brief notes on the habitat.

Broad Habitat: Arable and Horticulture

Priority Habitat: Cereal Field Margins

<u>Priority Type</u>	Cereal Field Margins	
Extent & Distribution	Area Present	
	Main Locations	•
Associated Habitats	Priority	<ul style="list-style-type: none"> • Lowland meadows • Purple moor grass and rush pastures • Lowland wood-pasture and parkland
Associated Species	Priority	<ul style="list-style-type: none"> ▪ Linnet ▪ Yellowhammer ▪ Spotted Flycatcher ▪ Tree sparrow ▪ Bullfinch ▪ Song thrush ▪ Barn Owl ▪ Irish Hare
Main threats/Local Issues/Comments		▪

Current status, extent and distribution:

Significance and local distribution:

Throughout the District, there are areas of concentrated arable land, for example between Loughbrickland and Banbridge; between Tullylish and Seapatrick; and Cappagh to Tullintanvalley – where soils tend to be better drained. Other areas can be found on the deeper soils of the lower lying land between Ballyrone and Rathfriland. Around Gilford, and south of Donaghcloney, the arable areas tend to coincide with larger farms and estates on better soils. It can also be found in a belt around Dromore on higher ground above the lower lying damp pastures and fens.



Ulster Wildlife Trust

Banbridge Biodiversity Audit

Species Section

Introduction

Why the Species Audit is Important

This audit will provide information on the species that are found in Banbridge District (both of national and local importance). It would be impossible to list all of the species that occur within the District so the emphasis has been put on those species that have been designated as Priority Species or Species of Conservation Concern at a Northern Ireland level. It does however include a number of species that local people feel are important to them that may not be under threat at a national level. It brings together the best available information on the state of the species. It can highlight where there are gaps in information, which through the LBAP process can stimulate new data collection and research.

It is important, as it is vital to establish what species occur in Banbridge District. This will enable an assessment to be made as to what is most important at a UK, NI and local level before priorities for local action can be set, i.e. this baseline information is needed to select Habitat and Species Action Plans.

Banbridge District

Obviously the range of species that will be found within Banbridge District is greatly influenced by the habitats that occur. A number of species are quite adaptable and can be found in a variety of habitats, while other species can only be found on one particular habitat. Therefore the landscape patterns of the District, and the influence of man's activities have a huge influence on the species that are likely to be found.

Banbridge District has a range of diverse habitats, from the upland areas around Slieve Croob in the east to the low lying pasture along the River Bann valley in the west, provide a variety of places for both specialist and generalist species to inhabit. The drumlin landscape has created a variety of inter-drumlin wetlands each creating valuable habitats for specialist species. The lakes and ponds along with the River Bann and River Lagan provide open water habitat for a further range of species. Even the pasture dominated drumlins provide open ground and hedgerows for a further variety of species.

The species that can be found in Banbridge District are listed in the following sections of the audit. It must be noted at this stage that this list is not complete, and there are undoubtedly many more Priority Species and Species of Conservation Concern in the District, It is just they that have not been recorded. It is hoped that over the duration of the LBAP project these lists will be added to, to provide a more comprehensive and accurate assessment of the species in the District.

Priority Species Section

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
BIRDS						
Barn owl <i>Tyto alba</i>		X	X	Scarce distribution with only a few possible pairs in the Banbridge area. Occurs in rough grassland and unimproved farmland.	60-80 pairs in NI. Widespread but rare across the country with very few sightings each year. Max. of 200 pairs in lol.	General farmland intensification has reduced suitable habitat. Less spilt grain means fewer rodents and so less food.
Bullfinch <i>Pyrrhula pyrrhula</i>	X	X		Widespread. Associated with thick hedges and woodland edges. Feeds on seeds, buds and insects.	A rough estimate suggests 8000 pairs in NI. Has declined across the UK but not so much in lol.	A lack of insects, or reduction in older, mature hedgerows could reduce the available breeding habitat of the Bullfinch.
Corncrake <i>Crex crex</i>	X	X	X	Extinct in Banbridge. However, as a couple of birds occur in NI each year, there is a slight possibility that it could be recorded. Preferred habitat is unimproved grassland and hay meadows.	A few calling males arrive in NI each year but breeding is rare. Populations still persist in Donegal, Rol west coast islands and Shannon Callows.	Birds winter in Africa. Intensive grassland production for silage has removed most of the suitable habitat. Numbers have been increasing in Rol and Scotland so more birds may return in the future.
Curlew <i>Numenius arquata</i>		X	X	Curlew may frequently be seen in coastal areas in winter, but the breeding population is much lower. Wet marshy unimproved land is the preferred habitat where there is a good supply of invertebrates.	Around 2000 pairs breed in NI with just over 100,000 in the UK. In UK and Rol the population has been declining rapidly, with declines of 58%. A loss of breeding habitat is the main cause for the declines.	A reduction in the areas of marginal and unimproved farmland through intensification and drainage has caused large-scale declines.
Grasshopper warbler <i>Locustella naevia</i>	X	X		Associated with young scrub fen, and young plantation this species is reasonably widespread but uncommon in Banbridge area. Occurs in wet pasture with some bramble, rush and scattered scrub.	Widespread but uncommon in NI and Rol. Is showing signs of declines especially in England.	Low scrub, gorse young plantation and brambles are good habitats for the species. Removal of these through agricultural intensification are problems.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
Hen Harrier <i>Circus cyaneus</i>	X	X	X	Restricted to uplands & new plantations. May occur around the Slieve Croob areas and marginal uplands, though breeding has not been recorded in these parts.	Increasing in NI with 63 pairs. However, some parts of the UK are experiencing declines and others increase. lol has around 200 pairs, UK has around 750 pairs.	Wind farms can affect territories. A lack of new plantations reduces suitable habitat. Moorland needs properly managed to create better habitat. Persecution may still be a problem.
Herring gull <i>Larus argentatus</i>		X		As breeding is usually restricted to coastal and larger urban areas, it doesn't breed in Banbridge. However, it is frequently found inland in poor weather. Common at refuge tips especially in winter.	700 breeding birds in NI, with just over 6,200 in Rol. Mostly restricted to coastline.	Botulism has been a common problem due to the birds feeding habits. Reduction in raw sewage pumped into sea has also reduced numbers.
House Sparrow <i>Passer domesticus</i>		X		Common bird in many gardens. Numbers have dropped in certain areas due to a lack of insect food in summer and seed in winter.	Exact number unknown but estimated at 180,000 in NI. Widespread throughout UK and Rol but has rapidly declined (>-25%) in some areas recently.	Lack of seed and grain in the winter and insects in urban gardens. Common in gardens and on bird tables. Colonial nesters.
Lapwing <i>Vanellus vanellus</i>		X	X	Lapwing breed on open, wet grassland farmland where there is a short sward and abundant invertebrates. Often will nest in tilled land for cereals.	Numbers of lapwing have been plummeting across NI. Around 1,700 were last estimated. They are also declining steeply across the UK and Rol.	A loss of lowland wet grassland is the main problem. Under-grazing by farmers and land being drained are the biggest threats.
Linnet <i>Carduelis cannabina</i>	X	X		Linnets occur frequently in the Banbridge district. In winter they depend on the stubble fields where they can feed on the weed seeds. In summer they nest in hedges of mixed farmland and continue to feed on weed seeds.	Numbers of linnets have been declining in the UK as with the rest of the farmland birds. Around 21,000 pairs are in NI.	Linnets depend on seed and so gorse, hay meadows, unmanaged field edges and roadside verges, are important. Herbicide use reduces seed available.
Redshank <i>Tringa totanus</i>		X	X	May winter in wet areas and spend time around the bogs. However, the species does not breed in the district.	Like the other waders redshank have also been declining dramatically across NI (180 pairs) and in the UK and Rol.	A loss of lowland wet grassland and drainage of farmland are the biggest problems.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
Red grouse <i>Lagopus lagopus</i>		X	X	A bird of the uplands it can be found in areas of moorland, especially in areas of good heather cover. It may occur in the district where heather cover is present. Several pairs occur on S. Croob.	Only around 200 birds live in the uplands of NI. They have been declining steadily across Rol also.	Poor upland management and overgrazing have caused the loss of suitable habitat.
Reed bunting <i>Emberiza schoeniclus</i>	X	X		This species is widespread and can be found throughout Banbridge district. Suitable breeding areas are always close to water or wet areas.	16-18,000 breeding pairs in NI. In winter, they are also associated with stubble fields. Across the UK, they have been declining with other farmland birds.	Declines have been caused by a reduction in stubble fields, weed seeds and grain in the winter and a lack of insects in the summer. Drainage on farmland has caused a lot of suitable wet habitat to be lost.
Short-eared owl <i>Asio flammeus</i>		X	X	Rare visitor, if it has occurred at all.	Only rarely does this species breed in NI. A few birds winter in NI. They have been regularly present for a number of years now.	Open areas and wetland areas where small mammals are available are suitable habitats for this daytime flier.
Skylark <i>Alauda arvensis</i>	X	X		The species is common in the open farmland and uplands close to Banbridge. It appears to be declining on lowland farms.	Common across NI on farmland, open areas and coastal regions. 85,000 pairs breed annually. As a farmland bird, it has been declining in UK and Rol.	General farmland intensification has caused declines. High frequency of silage cutting, high grass density and lack of stubble fields in the winter.
Song thrush <i>Turdus philomelos</i>	X	X		Common garden bird. Occurs in gardens, farmland and woodland edges. Thrives in small wet pastures that are abundant in much of Banbridge.	Common across NI with around 114,000 pairs. Has declined in UK as less wet areas have been available.	Good cover of thick hedges, and dense field margins provide good nesting and feeding opportunities. A mosaic of long and short grass is often popular.
Spotted flycatcher <i>Muscicapa striata</i>	X	X		Occurs in Banbridge but becoming much less common. A bird of the woodland edge and gardens. Depends on insects.	Fast declining across the UK and now NI. Less than 5000 breed in NI. Some problems in migration may be a problem.	A lack of insects and suitable cover for nests could be limiting factors on the population.
Starling <i>Sturnus vulgaris</i>	X	X		Common throughout the district and NI. Plentiful food of leatherjackets occur in fields. Modern intensive agriculture suits them.	Common through NI and Rol. However, they are declining across the rest of the UK.	Grassland fields and grazing practices appear to suit them in NI. Nesting holes or medium nest boxes should be plentiful.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
Tree sparrow <i>Passer montanus</i>	X	X	X	Occurs in Banbridge. A bird of mixed farmland and arable areas, especially close to water. Occurs throughout Co. Down. Birds often found near water.	Several thousand pairs breed in NI. Another seed eating bird in decline across the UK but not yet in Rol.	Lack of cereal grain in the winter with fewer stubble fields left and fewer cereals grown. Fewer thick hedges. Less large insects in summer.
Yellowhammer <i>Emberiza citrinella</i>	X	X	X	Occurs frequently in arable and mixed farming areas in the Banbridge district. Birds feed on grain and seeds in winter time and invertebrates in the summer breeding season.	Population is under threat in NI from intensive farming and the loss of mixed and arable farmland. Population is estimated at 5000 pairs, which occur especially in Co. Down. Declines are widespread across lol.	Farming practices to provide a winter food source, such as the retention of a winter stubble or the cultivation of a wild bird cover crop is essential to hold on to this bird. Targeted agri-environmental prescriptions will help in the medium term.
FISH - No records of Priority Species within Banbridge District						
REPTILES - No records of Priority Species within Banbridge District						

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
MAMMALS						
Whiskered Bat <i>Myotis mystacinus</i>		X	X	Recorded at Huntly Wood on the outskirts of Banbridge town. Forages in parks, meadows, over flowing water, woodland and gardens. They are often found along woodland paths where they forage in dense areas such as the tree crowns.	Currently there are approx 20 sites recorded in NI. Most of these lie in a band from Counties Fermanagh to Down, south of Lough Neagh. Possibly only a few thousand whiskered bats, at most, in NI. Found throughout Rol, probably in England and Wales but not recorded, as yet, in Scotland. NI is thought to be the north-western limit of its range.	Factors affecting the population include; Reduction in the amount of woodland. Loss or disruption of flight line features such as hedgerows. The use of pesticides and insecticides has reduced the amount of prey insects available to bats.
Natterer's Bat <i>Myotis nattereri</i>		X	X	Recorded at least once within the District, but believed to be more widespread than this would suggest. Bat roosts are commonly found in spacious stone-built barns and the large open roof voids of old stone-built houses, bridges, caves and forested areas.	Found throughout most of NI, especially in a band from County Fermanagh to County Down and north into County Antrim. There are just over 50 records for this species spread over 30 sites, many of which have only single bats present.	Land drainage schemes, felling of old trees, use of insecticides, medication of farm animals and use of pesticides all contribute to the decline in numbers. Renovation of old barns and stone built houses limits roosting places.
Daubenton's Bat <i>Myotis daubentonii</i>		X	X	Probably more frequent throughout the District than records suggest, due to suitable habitat. Have been recorded feeding over pools along the River Bann. Daubentons' bats roost under stone bridges, in ruins, roof voids and damp caves. Often called the 'water bat' as they hunt over water, skimming insects such as small flies, midges, mayflies etc from just above the surface.	In NI, only a few hundred individuals have been recorded. However, the general feeling is that Daubenton's bats are fairly widespread but not seen very often. No exact figures for NI exist. This species is not threatened in the UK but, is listed as internationally important in the Irish red data book.	Indiscriminate repairs to bridges, deterioration in water quality, and removal of waterside trees and vegetation are all threats.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
Leisler's Bat <i>Nyctalus leisleri</i>		X	X	Roosts of 30-50 individuals mostly found at the gable ends of buildings, between slates or tiles and the felt. Forage over open woodland and scrub, but can be seen in parkland and other urban areas. There are a few records fairly widely distributed throughout the District.	This bat is much more common and widespread in lol than in England or Wales, and it is not recorded in Scotland apart from the odd vagrant. NI is thought to be the UK stronghold for these bats. It is the second most recorded bat species in NI and population is estimated to be approximately 18,000.	Exclusion requests from domestic buildings. Loss or fragmentation of habitat, including the removal of linear landscape features e.g. hedgerows, walls etc. and as with all species of bat the use of pesticides limiting prey are typical threats.
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	X	X	X	This bat is general in habitat preference has been recorded in farmland, open woodland, gardens, lakes and large hedgerows. Tends to avoid very open habitat. Also found in towns and cities. There are a few confirmed records for the District but thought to be more widely distributed than these records would suggest.	Most abundant and widespread bat species in the UK, but, has undergone significant decline in numbers this century. Estimates from the National Bat Colony Survey suggest a population decline of approximately 70% between 1978 and 1993. The UK population estimate in 1995 was approximately 2,000,000. Widespread throughout Britain expect some Scottish offshore Islands and North Wales. Most abundant bat species in NI.	Disturbance and use of toxic timber treatments results in a reduction of roosts. Loss of flight lines such as hedgerows and tree lines and again the widespread use of pesticides all contribute to the reduction in numbers.
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>		X		Habitat is generally similar to the common pipistrelle. However, it prefers riparian habitats and will tend to avoid open habitat. There are a few confirmed sightings for the District, and again thought to be more widespread than these records would suggest.	Widely distributed though Britain except in North Scotland and some Scottish offshore Islands and North Wales. Second most abundant bat species in NI.	Threats include; disturbance and use of toxic timber treatments causing a loss of roosts. Loss of flight lines such as hedgerows and tree lines, widespread pesticide use and pollution of water bodies are further threats to this species.
Brown Long-eared Bat <i>Plecotus auritus</i>		X	X	These forage in open deciduous and coniferous woodland, parkland and gardens not very far away from their roosts. There are a few confirmed records for Banbridge District, but is probably more numerous than these records suggest.	Found throughout UK except northern Scotland and some offshore islands. The UK pre-breeding population was estimated at 200,000 in 1995 (Harris <i>et al.</i> , 1995). These are at low risk of extinction world-wide (IUCN status, 2001).	Threats are similar to other bat species and include; water pollution, destruction of hollow trees, and toxic timber treatment in domestic buildings.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
Irish Hare <i>Lepus timidus hibernicus</i>		X	X	Found in a range of habitats from well-managed pasture land through to upland bogs, golf courses, and forestry plantations. There are a number of records throughout the District.	Found only in lol. Once widespread and common, but, have declined significantly in lol since the 1970s. In 2005 the NI population was estimated between 35,000-54,400.	Habitat fragmentation, loss of refuge areas e.g. rushes and hedgerows, along with increased disturbance by livestock and increased predation of leverets have contributed to the decline in numbers.
Otter <i>Lutra lutra</i>	X	X	X	Found in aquatic habitats such as rivers, streams and lakes. Widely distributed throughout Banbridge District, and can be found on both Bann and Lagan Rivers, as well as a number of their tributaries. Can also be found around the many lakes within the District.	Formerly widespread throughout the UK, underwent a rapid decline in numbers from the 1950s to 1970s . Populations remain in Wales, south-west England and much of Scotland, where sea loch and coastal colonies comprise one of the largest populations in Europe. UK decline is believed to be halted. There is a significant population of otters in NI.	Threats to the population include; pollution of watercourses, insufficient prey associated with poor water quality, and impoverished bank side habitat features needed for breeding and resting. Incidental mortality e.g. road deaths and drowning in eel traps are other hazards.
Red Squirrel <i>Sciurus vulgaris</i>	X	X		Prefer woodland habitat especially coniferous woodland. Only been recorded at one location within the Banbridge District. This is at Castlewellan Forest Park. Due to the lack of suitable habitat it is unlikely that there would be any other populations in the area.	Found throughout NI in suitable habitat. In 2003 the area with the largest number of red squirrel only (that is, no greys) sites in NI is within north-east Antrim. They are also still present throughout Fermanagh, Tyrone and Londonderry, but grey squirrels are also widespread in these areas. In Britain, in 1998 the population was estimated to be only 160,000, having undergone a steep decline here too.	The decline in numbers has been discussed at great length, along with the part the grey squirrel has played in it. Competition from Grey's is without doubt a factor along with disease and loss of habitat.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	RoI			
BEETLES						
<i>Donacia aquatica</i> The Zircon Reed beetle	X	X		Old records for County Down exist, although now only found in County Fermanagh. It is found on sedges at the margins of open water.	NI is the IoI stronghold and there are old records for Counties Armagh and Down. There has been a 67% loss in NI (but based on only three sites) and 41% loss in the RoI. In Scotland, Wales and England, distributional data indicate an 81% loss of sites up to 1980.	Eutrophication of loughs, succession e.g. encroachment of water margins by reedbeds and carr contribute to the threats faced. Excessive lake management may result in loss of sedge beds. Excessive numbers of waterfowl will destroy vegetation and increase the risk of algal blooms.
<i>Pterostichus aterrimus</i> A ground beetle	X	X		Recorded at a couple of sites within the District in the inter drumlin fens that are characteristic of the area. Habitat data suggests that this is an extremely hygrophilous species and is confined to particular kinds of wet humus soils in eutrophic or mesotrophic fens.	Widespread but extremely local and rare in IoI. However, common in correct habitat in NI. Recorded at 12 sites in IoI. Recently discovered to be widespread in the inter-drumlin fens in County Down and County Armagh Formerly found only in the East Anglian fens but, is now considered extinct in Britain.	Threats to this species include: Water pollution, illegal dumping of farm and household waste, drainage and any development which affects the integrity of wetland system.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
BUTTERFLIES						
Real's wood white <i>Leptidea reali</i>		X		The wood whites are colonial species found in sheltered grassy sites at the margins of scrub and woodland. They appear to have a widespread distribution throughout the District although only locally recorded	Recorded from most of NI, especially common in Counties Armagh, Down and Fermanagh and considered local in Antrim, Londonderry and Tyrone. This butterfly is found nowhere else in the UK and in Rol is confined solely to the Burren, Co.Clare. In NI pre-1950 the species was considered very rare and an increase was noted in the 1960's. This may have stopped or even reversed in recent years.	Loss of habitat is a major concern.
Marsh fritillary <i>Eurodryas aurinia</i>	X	X	X	A colonial species found in damp grassland, modified bogs, calcareous grassland, dunes and machair with its food plant Devil's-bit-scabious. It has been recorded on 4 sites within the District since 1992 – Lacken Bog, Cloghskeit, Katesbridge and Blue Bog Road although more recent reports are scarce.	This is a local species in NI. It has been recorded at some time in most lowland parts through all counties. However colonies are often sporadic and short-lived. Currently this species seems to be restricted to just a few sites in Down, Antrim, Armagh and Fermanagh. The marsh fritillary is considered one of the most threatened species in Europe and one which has undergone severe declines in most countries	Loss of suitable habitat is the major concern for the decline of this species. It is also believed that the isolation of suitable sites, combined with the natural fluctuation in population, and the fact that they are not distant fliers, results in suitable areas not being re-colonised after a population crash.

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
DRAGONFLIES						
Irish damselfly <i>Coenagrion lunulatum</i>		X		Colonies exist on mesotrophic lakes and fens. Recorded at Lacken Bog ASSI over a number of years.	In 2000 minimum of 30 colonies throughout NI. Recorded from all six counties, with the majority of records from Counties Armagh, Fermanagh, and Tyrone. Absent from Britain and NI is the lol stronghold for this species (c40% of lol population).	The major hazards facing this species are the loss of habitat and nutrient enrichment of lakes.
FLIES - No records of Priority Species within Banbridge District						
MOLLUSCS - No records of Priority Species within Banbridge District						

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
MOTHS						
Cloaked pug <i>Eupithecia abietaria</i>	X	X		Spruce plantations are its preferred habitat. There is one record from 2000 from Castlewellan Forest Park. Due to the lack of plantations throughout the rest of the District, it is unlikely to occur anywhere else.	This species was widely recorded in the early part of the nineteenth century. It then seemed to undergo a dramatic decline both here and in Britain, with no reports in NI for many years. In 1999 a single specimen was taken at Bohill near Ballynahinch, Down. Since then several other specimens have been taken in the same locality during 2000. There is also one record from 2000 in Castlewellan Forest Park.	The causes of decline are unknown.
Narrow-bordered bee hawk moth <i>Hemaris tityus</i>	X	X		Found on damp moorland or unimproved calcareous grassland where its food plant, devil's-bit scabious, occurs. There are a couple of pre 1970 records from the west of the District.	Formerly widespread in the UK, has declined severely and now appears to have retreated to western Britain, recorded in south-west England from Cornwall to Wiltshire. There are also scattered records from west Wales and the west coast of Scotland. In NI, outside the County Fermanagh stronghold, records are sporadic.	Agricultural improvement and change of management practices of unimproved grassland, heathland and bogs have contributed to the decline

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
FUNGI						
Pink waxcap <i>Hygrocybe calyptriformis</i>	X	X		Found in unfertilised grasslands including domestic lawns and churchyards and semi-natural grasslands. A number of records from Dromore Motte & Bailey date from 1997/98	Common throughout NI. The UK is its stronghold as it is a scarce species on the European continent. Recorded in 22 countries across Europe, but 509 of the 632 sites quoted in a European report for the Berne Convention were from the UK.	Agricultural intensification and loss of appropriate habitat are the issues responsible for its decline.
LICHENS - No records of Priority Species within Banbridge District						
LIVERWORTS - No records of Priority Species within Banbridge District						
MOSSES - No records of Priority Species within Banbridge District						
STONEWORTS - No records of Priority Species within Banbridge District						

Priority Species	Priority Status			Local Distribution / Number / Habitat	Regional/National/International Distribution / Number / Habitat	Local Issues / Information
	UK	NI	Rol			
VASCULAR PLANTS						
Purple ramping-fumitory <i>Fumaria purpure</i>	X	X		Typically it grows on arable ground (including, for example, potato fields), gardens, waste ground, in hedge banks, on old earth-core field walls, and occasionally sea cliffs. Recorded at Lenaderg in 1904, but now believed to be locally extinct.	An annual weedy climber not only regarded as a native, but is considered one of a very few plants whose whole distribution is confined to Britain and Ireland.	It is not understood why, or to what extent, this weedy species is declining. However, as with so many of our arable weeds, the likely cause is changes in farming practices, including the widespread use of agrochemicals and the cessation of crop rotation practices.
Heath cudweed <i>Gnaphalium sylvaticum</i>		X	X	A rare native perennial found in dry, open situations including heath, woods, dry pastures and forestry tracks. Within Banbridge District, recorded at Gillhall, Coolsallagh pre- 1888.	First noted before 1863 and was formerly frequent, being recorded throughout east Down from Carlingford Lough to north of Strangford Lough. In recent years only recorded from 3 sites, near Newry, Tollymore and near Newtownards.	Endangered and further losses due to lack of habitat are likely.

Species of Conservation Concern

Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			lol	GB	
BIRDS					
Arctic tern <i>Sterna paradisaea</i>	R ~ S	L ~ S	L ~ S	L ~ S	May pass through
Barn owl <i>Tyto alba</i>	R - R	R - R	R - R	R - R	See Priority Species Table for more information.
Black-headed gull <i>Larus ridibundus</i>	W - R	W - R	W - R	W - R	
Bullfinch <i>Pyrrhula pyrrhula</i>	L ~ R	L ~ R	L - R	L - R	See Priority Species Table for more information.
Common gull <i>Larus canus</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Common tern <i>Sterna hirundo</i>	R ~ S	L ~ S	L ~ S	L ~ S	May pass through
Coot <i>Fulica atra</i>	W + R	W + R	W + R	W + R	
Cormorant <i>Phalacrocorax carbo</i>	W + R	W + R	W + R	W + R	
Cuckoo <i>Cuculus canorus</i>	W ~ S	W ~ S	W ~ S	W ~ S	
Curlew <i>Numenius arquata</i>	R - R	L - R	L - R	L - R	Important in Banbridge. See Priority Species Table for more information.
Dunnock <i>Prunella modularis</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Gadwall <i>Anus strepera</i>	R ~ W	L ~ W	L ~ W	L ~ W	
Goldcrest <i>Regulus regulus</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Golden plover <i>Pluvialis apricaria</i>	L - R	L - R	L - R	L - R	

Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			lol	GB	
Goldeneye <i>Bucephala clangula</i>	L ~ W	L ~ W	L ~ W	L ~ W	
Grasshopper warbler <i>Locustella naevia</i>	L - R	W - R	W - R	W - R	Important in Banbridge. See Priority Species Table for more information.
Great crested grebe <i>Podiceps cristatus</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Grey wagtail <i>Motacilla cinerea</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Hen harrier <i>Circus cyaneus</i>	L + R	L + R	L + R	L + R	Important in Banbridge. See Priority Species Table for more information.
Herring gull <i>Larus argentatus</i>	L - R	L - R	L - R	L - R	See Priority Species Table for more information.
House martin <i>Delichon urbica</i>	W - R	W - R	W - R	W - R	
House sparrow <i>Passer domesticus</i>	W ~ R	W ~ R	W - R	W - R	See Priority Species Table for more information.
Jack snipe <i>Lymnocyptes minimus</i>	R ~ R	R ~ R	R ~ R	R ~ R	
Kestrel <i>Falco tinnunculus</i>	L - R	W - R	W - R	W - R	
Kingfisher <i>Alcedo atthis</i>	W ~ R	W ~ R	W ~ R	W ~ R	

Key for Status of Bird Species – Occurrence : Population trend : Status

Occurrence:

R = Rare –

Less than 300 pairs UK, 100 pairs NI, 10 pairs Banbridge

L = Localised-

Over 50% population in the region is limited to less than 10 sites

W = Widespread –

Occurs in many sites and has an abundant population

General population trend:

~ = Stable >-10 <10%

- = Declining <-10%

+ = Increasing > 10%

Status:

S = Summer - Occurs during summer months only

W = Winter - Occurs during winter months only

R = Resident - Occurs all the year round

Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			IoI	GB	
Lapwing <i>Vanellus vanellus</i>	W - R	W - R	W - R	W - R	Important in Banbridge. See Priority Species Table for more information.
Lesser black-backed gull <i>Larus fuscus</i>	L - R	L - R	L - R	L - R	
Lesser redpoll <i>Carduelis cabaret</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Linnet <i>Carduelis cannabina</i>	W ~ R	W ~ R	W - R	W - R	See Priority Species Table for more information.
Long-tailed duck <i>Clangula hyemalis</i>	R ~ W	L ~ W	L ~ W	L ~ W	
Meadow pipit <i>Anthus pratensis</i>	W + R	W + R	W + R	W + R	
Merlin <i>Falco columbarius</i>	R ~ R	R ~ R	R ~ R	R ~ R	
Mistle thrush <i>Turdus viscivorus</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Mute swan <i>Cygnus olor</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Oystercatcher <i>Haematopus ostralegus</i>	W ~ R	W ~ R	W ~ R	W ~ R	
Peregrine <i>Falco peregrinus</i>	R ~ R	R ~ R	R ~ R	R ~ R	
Pintail <i>Anus acuta</i>	L - W	L - W	L - W	L - W	
Pochard <i>Aythya farina</i>	L ~ W	W ~ W	W ~ W	W ~ W	
Red grouse <i>Lagopus lagopus scoticus</i>	R - R	R - R	R - R	R - R	Several pairs in uplands. See Priority Species Table for more information.
Red-breasted merganser <i>Mergus serrator</i>	R + R	L + R	L + R	L + R	May not occur
Redshank <i>Tringa tetanus</i>	R - R	L - R	L - R	L - R	May not occur. See Priority Species Table for more information.

Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			lol	GB	
Reed bunting <i>Emberiza schoeniclus</i>	W ~ R	W ~ R	W - R	W - R	See Priority Species Table for more information.
Ringed plover <i>Charadrius hiaticula</i>	R ~ R	L ~ R	L - R	L - R	
Sand martin <i>Riparia riparia</i>	W ~ S	W ~ S	W ~ S	W ~ S	
Sandwich tern <i>Sterna sandvicensis</i>	R + S	L + S	L + S	L + S	May pass through.
Short-eared owl <i>Asio flammeus</i>	R ~ R	R ~ R	R ~ R	R ~ R	See Priority Species Table for more information.
Shoveler <i>Anus clypeata</i>	R - W	L - W	L - W	L - W	
Skylark <i>Alauda arvensis</i>	W - R	W - R	W - R	W - R	See Priority Species Table for more information.
Snipe <i>Gallinago gallinago</i>	W - R	W - R	W - R	W - R	
Song thrush <i>Turdus philomelos</i>	W - R	W - R	W - R	W - R	See Priority Species Table for more information.
Spotted flycatcher <i>Muscicapa striata</i>	W - R	W - R	W - R	W - R	See Priority Species Table for more information.
Starling <i>Sturnus vulgaris</i>	W + R	W + R	W - R	W - R	See Priority Species Table for more information.
Stonechat <i>Saxicola torquata</i>	W + R	W + R	W + R	W + R	

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Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			lol	GB	
Swallow <i>Hirundo rustica</i>	W ~ S	W - S	W - S	W - S	
Teal <i>Anus crecca</i>	W - W	W - W	W - W	W - W	
Tree sparrow <i>Passer montanus</i>	L ~ R	L ~ R	L - R	L - R	See Priority Species Table for more information.
Tufted duck <i>Aythya fuligula</i>	W - R	W - R	W - R	W - R	
Turnstone <i>Arenaria interpres</i>	L - W	L - W	L - W	L - W	
Water rail <i>Rallus aquaticus</i>	R ~ R	R ~ R	R ~ R	R ~ R	
Whimbrel <i>Numenius phaeopus</i>	L ~ W	L ~ W	L ~ W	L ~ W	
Whooper swan <i>Cygnus cygnus</i>	R ~ W	L ~ W	L ~ W	L ~ W	
Wigeon <i>Anus penelope</i>	W - W	W - W	W - W	W - W	
Willow warbler <i>Phylloscopus trochilus</i>	W - S	W - S	W ~ S	W ~ S	
Woodcock <i>Scolopax rusticola</i>	L - R	L - R	L - R	L - R	
Yellowhammer <i>Emberiza citrinella</i>	L - R	L - R	L - R	L - R	Important in Banbridge See Priority Species Table for more information.

Key for Status of Bird Species – Occurrence : Population trend : Status

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S = Summer - Occurs during summer months only
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Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			lol	GB	
FISH					
Atlantic salmon <i>Salmo salar</i>	D N S	E L D	U U U	F N D	Numerous records from throughout District.
Brown trout <i>Salmo trutta</i>	D N S	F U U	U U U	F N D	Numerous records from throughout District.
MAMMALS					
Bats	E L U	F L D	F U U	F U U	See Priority Species Table for more information.
Irish hare <i>Lepus timidus hibernicus</i>	E L D	D H D	U H D	A - -	See Priority Species Table for more information.
Otter <i>Lutra lutra</i>	E N S	F L D	F C C	F L D	See Priority Species Table for more information.
Red Squirrel <i>Sciurus vulgaris</i>	A L D	F H D	U H D	F H D	See Priority Species Table for more information.
REPTILES					
					No records of SoCC species within Banbridge District.

Key for Status of Species – Rarity : Threat : Decline

Rarity: (Number of sites)

A = 0-5
 B = 6-10
 C = 11-20
 D = 21-50
 E = 51-100
 F = 101+

Threat:

H = High magnitude –
 Considerable direct threat in short/medium term .
 (5-10 years) unless significant conservation effort
 L = Low magnitude –
 Threatened directly or indirectly by general trends
 could become extinct or rare unless trends ameliorated
 N = No immediate threats identified

Decline:

D = Species currently declining or
 declined within the last 25 years.
 S = Stable or increasing

Please note – ‘U’ indicates that data is currently unknown.

Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			lol	GB	
ANTS					No records of SoCC species within Banbridge District.
BEES					No records of SoCC species within Banbridge District.
BETTERLES					
A ground beetle <i>Pterostichus aterrimus</i>	A L U	B N U	C U U	E U U	See Priority Species Table for more information.
A reed beetle <i>Donacia aquatica</i>	A H D	A L D	A L D	A L D	See Priority Species Table for more information.
A water beetle <i>Gyrinus natator</i>	A U U	U U U	U U U	U U U	Recorded at Lacken Bog.
BUTTERFLIES					
Green hairstreak <i>Callophrys rubi</i>	A L U	D N U	A U U	E U U	Recorded at Lacken Bog.
Marsh fritillary <i>Eurodryas aurinia</i>	A H D	? H D	A U U	A U U	See Priority Species Table for more information.
Real's wood white <i>Leptidea reali</i>	B L U	D L C	A U U	A U U	See Priority Species Table for more information.
CRUSTACEANS					No records of SoCC species within Banbridge District.
DRAGONFLIES					
Irish Damselfly <i>Coenagrion lunulatum</i>	A L U	D L D	B U U	A - -	See Priority Species Table for more information.
FLIES					No records of SoCC species within Banbridge District.

Species of Conservation Concern	Status				Local Issues / Information / Comments
	Banbridge	N. Ireland	National		
			lol	GB	
MOLLUSCS					
Freshwater pearl mussel <i>Margaritifera margaritifera</i>	A H D	U H D	U U U	U U U	There is currently a reintroduction scheme in the Bann.
MOTHS					
Cloaked pug <i>Eupithecia abietaria</i>	A U U	A U D	U U U	U U U	See Priority Species Table for more information.
Narrow-bordered bee hawk moth <i>Hemaris tityus</i>	A U U	C L D	C U U	C L D	See Priority Species Table for more information.
TRUE BUGS					
A pond skater <i>Limnoporus rufoscutellatus</i>	A U U	U U U	U U U	U U U	Recorded at Kernan Lake (One Record 1999)

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Decline:

D = Species currently declining or
 declined within the last 25 years.
 S = Stable or increasing

Please note – 'U' indicates that data is currently unknown.

FUNGI					
Pink waxcap <i>(Hygrocybe calyptriformis)</i>	A L D	B L D	U U U	U U U	See Priority Species Table for more information.
LICHENS					
					No records of SoCC species within Banbridge District.
LIVERWORTS					
					No records of SoCC species within Banbridge District.
MOSSES					
					No records of SoCC species within Banbridge District.
STONEWORTS					
					No records of SoCC species within Banbridge District.
VASCULAR PLANTS					
Six-stamened waterwort <i>Elatine hexandra</i>	A H D	B H D	U U U	U U U	Recorded at Loughbrickland and Castlewellan Lake.
Eight-stamened waterwort <i>Elatine hydropiper</i>	A H S	B H S	U U U	U U U	Recorded at Loughbrickland and Lough Shark.
Heath Cudweed <i>Gnaphalium sylvaticum</i>	A H D	A H D	U U U	U U U	See Priority Species Table for more information. Now believed to be extinct in District.
Purple ramping-fumitory <i>Fumaria purpurea</i>	A H D	U H D	U U U	U U U	See Priority Species Table for more information. Now believed to be extinct in District.

Key for Status of Species – Rarity : Threat : Decline

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Ulster Wildlife Trust

Banbridge Biodiversity Audit

Acronyms

&

Acknowledgements

USEFUL ACRONYMS

BAP	Biodiversity Action Plan
EHS	Environment & Heritage Service
FS	Forest Service
GB	Great Britain
HAP	Habitat Action Plan
IoI	Island of Ireland
JNCC	Joint Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
NI	Northern Ireland
NIBG	Northern Ireland Biodiversity Group
NICS	Northern Ireland Countryside Survey
NVC	National Vegetation Classification
PS	Priority Species
RoI	Republic of Ireland
SAP	Species Action Plan
SoCC	Species of Conservation Concern
SLNCI	Site of Local Nature Conservation Importance
UK	United Kingdom
UKBAP	United Kingdom Biodiversity Action Plan
UKBSG	United Kingdom Biodiversity Steering Group

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Ulster Wildlife Trust

Banbridge Biodiversity Audit

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Information accessed via <http://www.habitas.org.uk/groundbeetles>

Invertebrate Ireland – Terrestrial and Freshwater Invertebrate Checklists:

Information accessed via <http://www.habitas.org.uk/invertebrateireland>

Northern Ireland's Mammals, Amphibians & reptiles:

Information accessed via <http://www.habitas.org.uk/nimars>

Priority Species in Northern Ireland:

Information accessed via <http://www.habitas.org.uk/priority>

Northern Ireland Fungus Group:

Information accessed via <http://www.nifg.org.uk/home>