

Ecology of Kilcurry and Environs

2011/12



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Introduction

Kilcurry is a village and townland lying at the foot of Slieve Gullian in north County Louth (see appendix 1). The village and surrounding area have a number of interesting species, habitats and other natural features including wetlands, two rivers, drumlins, mature woodland, and old buildings, and is surrounded by rich agricultural land in a village setting (see appendix 2). The present study was undertaken at the behest of the Kilcurry Tidy Towns committee and aims to describe the village and surrounding habitats and species of interest, to make some suggestions as to how biodiversity in the village could be improved, both in terms of biodiversity and in terms of biodiversity awareness, and suggest a possible nature trail around the area.



Holly blue butterfly – several in the Kilcurry area in May

Methodology

Prior to undertaking field work, a brief meeting with local residents and members of the Tidy Towns committee was organised and suggestions as to possible areas of interest were solicited. This resulted in the maps provided in appendix 3. The NPWS ranger, Kieran Buckley and local heritage officer, Brendan McSherry, were also consulted. Following this a desktop study was undertaken to review all existing literature relating to the area including

County Council documents and surveys, Development Plans, Environmental Impact Assessments, Natura 2000 documents, Bird Atlas, fishing club material, old maps, EPA documents, press and journals. A list of documents consulted is provided in the references section. Finally, several sites in the area were visited and surveyed during late summer, early autumn, and spring of 2011 and 2012. Surveying involved identification of flora and fauna, characterisation of habitats, collection of specimens, photography and identification of potential enhancements and conservation measures. Surveying involved undertaking transects through areas of interest as well as visiting areas of potential interest identified in maps or other documents.

Date	Site	Survey type
15 December 2010	General	Overwintering birds*
27 May 2011	General overview	Breeding birds
26 July 2011	River and associated habitats	Birds, flora fauna
28 August 2011	Drumgooley bog and Cully	Habitats
22 January 2012	General	Winter bird survey
15 May 2012	Wetland	general
17 June 2012	Crilly	Flora, breeding birds

*Bird Atlas tetrad

The author also organised a Dawn Chorus event in the area and gave a presentation to the local national School presenting results to both students and teachers.



Robin in song

Results

Desktop Survey

The following section describes the results of a survey of literature, maps and other documents of relevance to the study

Maps

The map below, dated 1610, shows Ireland at that time.



Ireland circa 1610 from the Camden' Britannia.

Kilcurry is not specifically mentioned but the Kilcurry area may be identified by the pattern of rivers shown below. The map also shows a number of bodies of apparently open water; some of these may represent bogs. In any case, most are long reclaimed for human use.



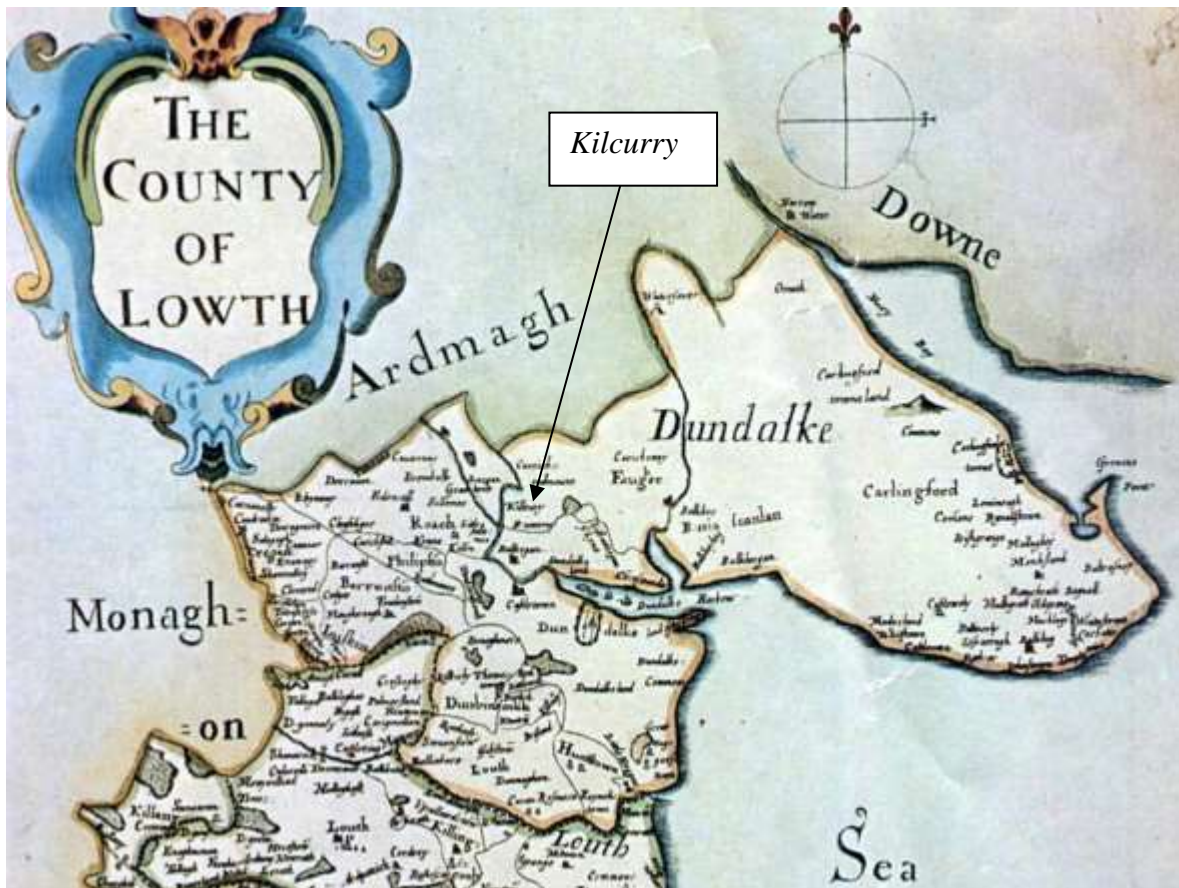
Extract from Camden's Britannia 1610

Kilcurry is referenced in a number of later maps, notably the 1614 map of the Barony of Upper Dundalk and the County Down survey of 1654.



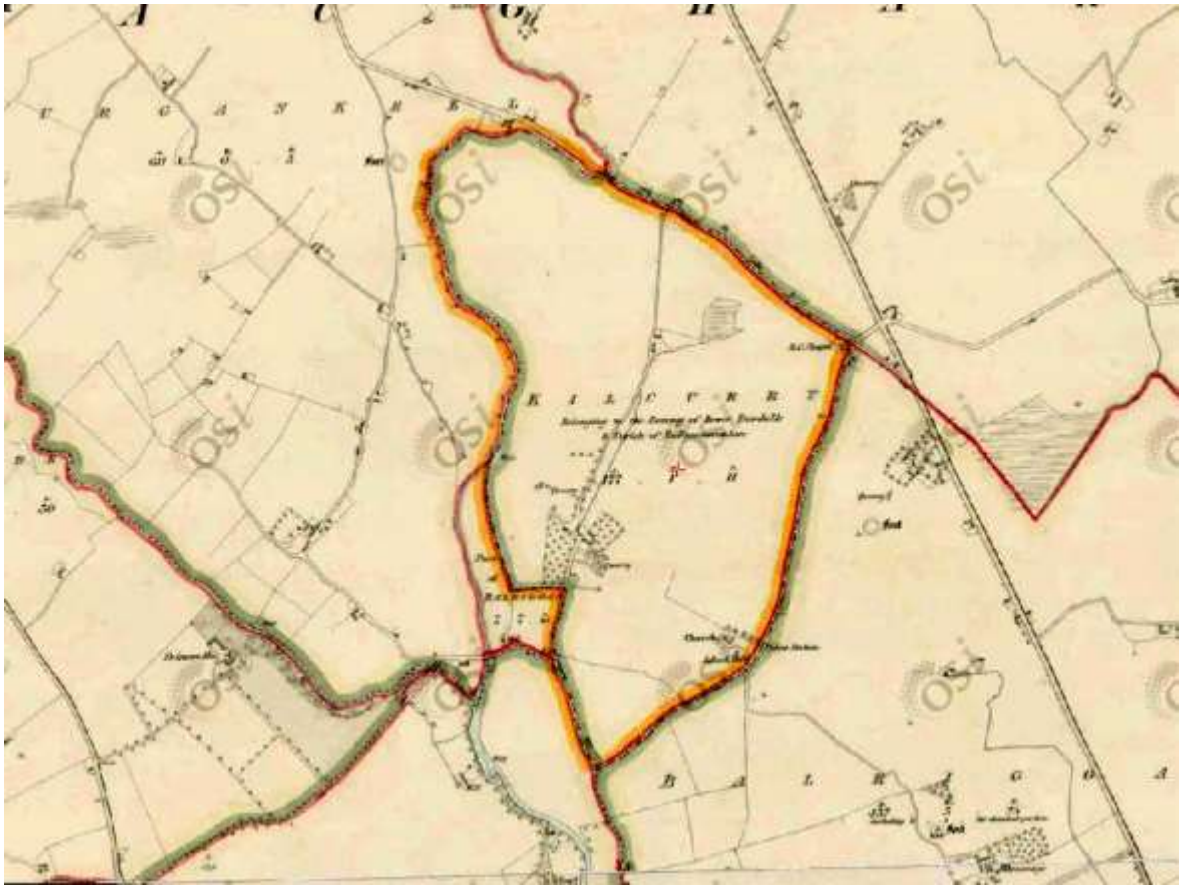
1614 map showing Kilcurry as part of the Barony of Lower Dundalk

However these maps do not provide any useful information in relation to the ecology of Kilcurry, though the Down survey shows what appears to be a body of open water immediately to the east of Kilcurry. It was not possible to find any trace of this in more recent maps. It is possible that the area was drained and reclaimed during the 18th century because it is not shown on the 1828 OS map.



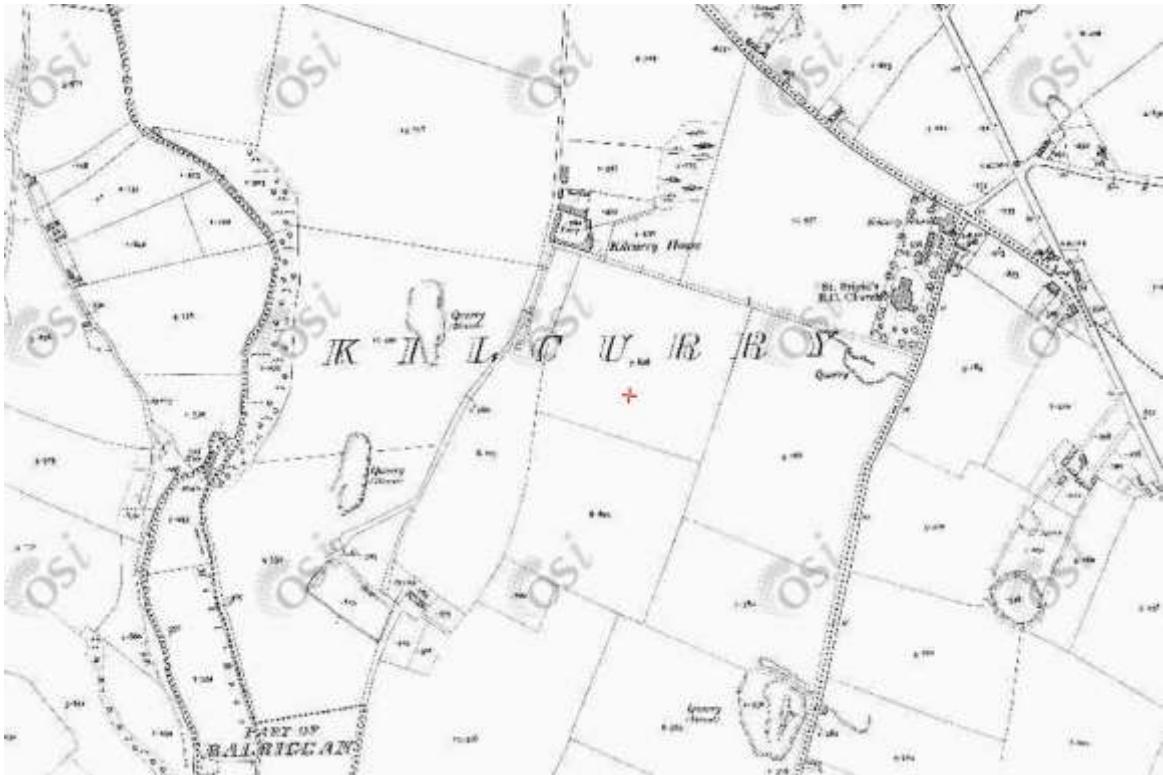
1654 *The Down Survey - Barony of Dundalk*

The oldest reliable map showing the Kilcurry area and providing useful ecological information is from the ordinance survey of Ireland from 1828 to 1842. This map shows many of the best ecological features of Kilcurry are still present and substantially intact including woodlands, bogs, rivers and hedgerows. The most significant difference is that several of the wetlands present at that time have since been drained and rivers have probably been channelled. A significant increase in roads and dwellings is also evident since the survey.



Ordinance survey of Ireland from 1828 to 1842

A second ordinance survey of Ireland was undertaken between 1898 and 1914 which also covers the Kilcurry area in greater detail.



Ordnance survey of Ireland 1898 and 1914

By comparing these maps with modern maps and surveys, it is possible to understand how the landscape has changed over the years, and to identify some of the more valuable aspects of it from an ecological point of view. This is discussed in greater detail below. Reference was also made to the Geological Survey of Ireland and a map of soils of County Louth provided by Teagasc.



A view of Dundalk area circa 1850 – source JB Hall 2006

Literature

Most of the literature concerning ecological and related aspects of Kilcurry stem from surveys of the two rivers, the Cully Water and the Kilcurry River, and the ecological and archaeological work done in association with the excavation of the Dundalk bypass in 2001-2. Some other useful references were found in the archives of the Dundalk Historical Society and Journal of the County Louth Archaeological Society, as well as references from Teagasc, Louth County Council and various other planning applications. Reference was also made to the Irish Bird Atlas 1988, Online Atlas of the British and Irish flora, Irish Butterfly Atlas and other surveys. A detailed list of literature references is provided in appendix.

Planning

Kilcurry is classified as a Level 4, Category II Settlement under the Louth County Development Plan. According to the development plan: “Category II (a) Settlements are settlements that have the potential of being provided with public waste water treatment facilities. These settlements have identified core areas which are zoned for residential development subject to the provision of public foul drainage. These settlements also contain areas which are not capable of being economically serviced. Therefore permitted residential development in such areas will be on the basis of individual waste water treatment systems. It is also considered that, given the extent of the development boundaries of many of these settlements, it would not be in the interest of proper planning and sustainable development to permit significant levels of residential development.” The CDP also develops sets Density per hectare limits of 20 and minimum site sizes as 0.2 hectares. Kilcurry is immediately surrounded by Zone 4 (light green), which represents a green belt area around Dundalk, the

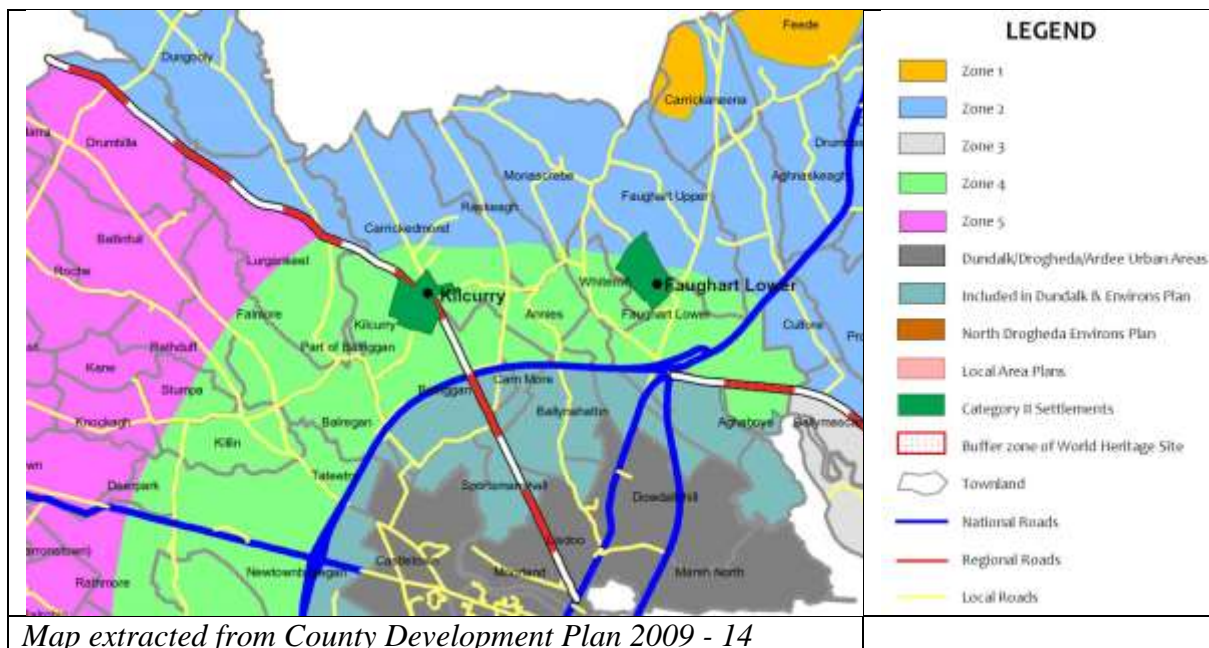
policy for which is “to preserve a clear distinction between the built up areas of settlements and the surrounding countryside”. Policy are:

RD 38: To permit limited one-off housing, extensions to existing authorised uses and farmyards, institutional and educational facilities, sports and recreation, tourism, (excluding holiday homes), leisure and recreation related projects and renewable energy schemes.*

RD 39: Multi-unit residential, large scale industrial and commercial developments, or other developments of similar scale or nature, would not be considered appropriate within this zone.”

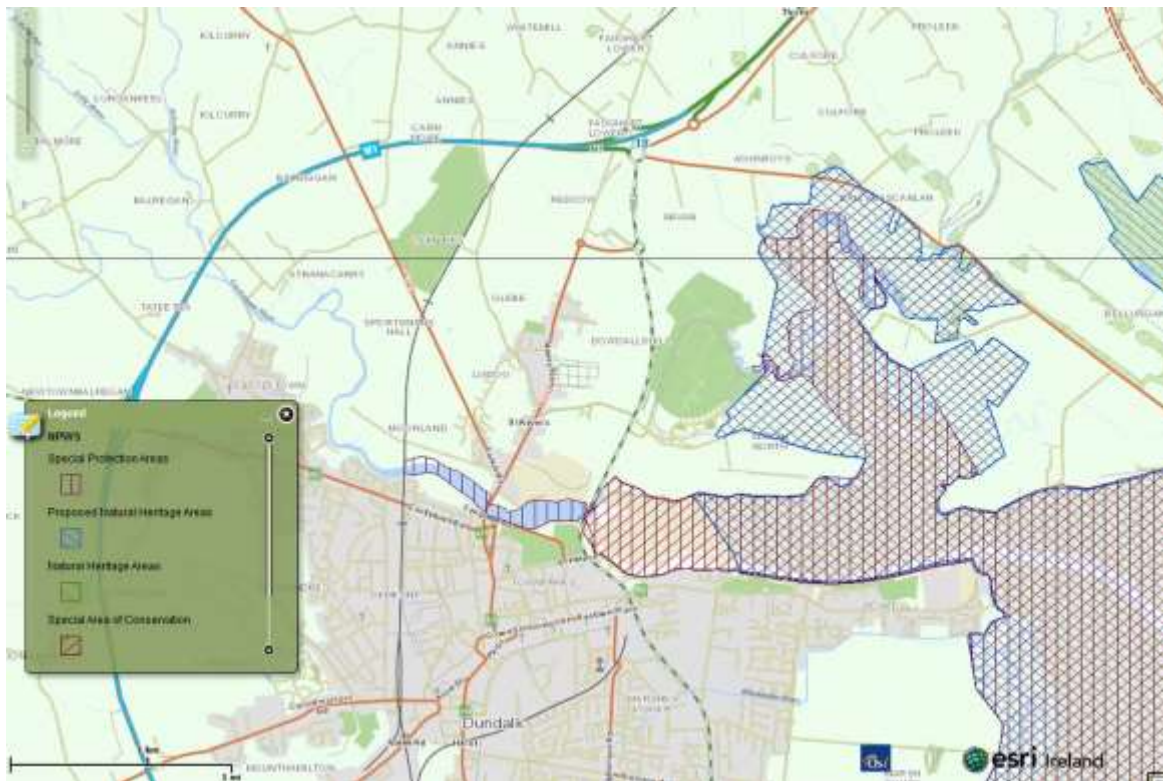
To the north is zone 2 (in light blue) and to the north west is zone 5 (in purple). Zone 2 is defined to “protect the scenic quality of the landscape” which provides for a high degree of ecological protection. Zone 5 is defined “To protect and provide for the development of agriculture and sustainable rural communities and to facilitate certain resource based and location specific developments of significant regional or national importance. Critical infrastructure projects of local, regional or national importance will also be considered within this zone.”

Therefore the Kilcurry enjoys a high degree of environmental protection under the CDP.



Designations

There are no designated sites near Kilcurry. The nearest designated sites are at the Castletown River estuary stretching up into Dundalk. Other nearby designated sites include Slive Gullion and the Cooley mountains.



Designated sites north Louth

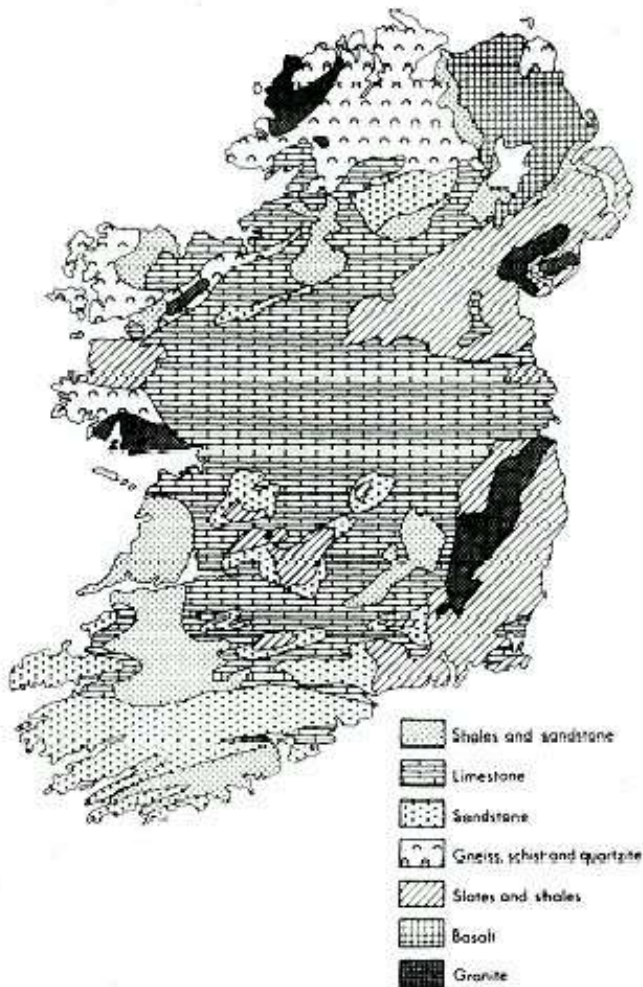
Geology

The Kilcurry area geology consists of three main types: Silurian metasediments Longford - Down Inlier formed during the Silurian epoch 440 million years ago, Carboniferous Limestone formed during the Carboniferous 354 million years ago, and the Paleocene, 58 million years ago when the Atlantic ocean rifted and Slieve Gullion was formed from volcanic eruptions. The final and present character of the landscape was formed through glacial processes during and at the end of the last ice age.

The Kilcurry area is dominated by Slieve Gullion, a few miles to the north across the border to Northern Ireland. The Slieve Gullion Complex was intruded about 58-56 Ma ago into Silurian metasediments and the granodiorite of the Newry Igneous Complex to the northeast. The complex is composed of three distinct units, the earliest of which forms an almost complete ring 11km in diameter comprised of high level intrusive rocks (porphyritic felsite and fine-grained granite as well as vent agglomerate). These form the distinctive Ring of Gullion. The second phase of activity is represented by the 573m high mountain, Slieve Gullion, which is in the centre of the Ring of Gullion and consists of interbedded mafic and felsic rocks. The final phase led to the emplacement of the granites of the south-eastern part of the complex.



Part of the Ring of Gullion



About three million years ago the ice ages started, caused by a combination of variations in the Earth's rotation and tilt (Milankovitch Cycles) and the closing of the Isthmus of Panama. A succession of cold or glacial periods was interspersed by warmer interglacial periods. The last glacial maximum (maximum extent of the ice) was 22,000 years ago when the Kilcurry area was covered with about 1.5 kilometres of ice and snow. As the ice retreated over the following 8,000 years, depositing sediments, it formed the landscape of drumlins and valleys that we see today as depicted in the map on the left.

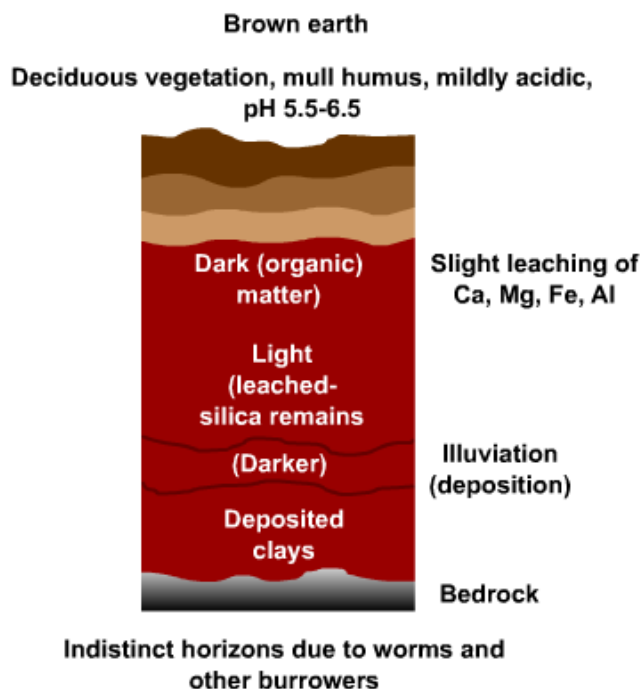
The subsequent warming gave rise to a succession of species climaxing in the Temperate Deciduous Forest biome that dominated Ireland before the landscape was transformed by the arrival of man and agriculture.

Therefore the Kilcurry area has four major geological events represented in its landscape. The nearby Ring of Gullion is an Area of Outstanding Natural Beauty (AONB) and since it owes its existence and form to its complex volcanic geology it is also designated as an Area of Special Scientific Interest (ASSI).

Soil

Soil formation is the combined effect of physical, chemical, biological, and human processes on the soil parent material. The parent material may be residual material that is weathered in place from primary bedrock; material transported by water, wind, ice or gravity; or organic material developed and accumulated in place. The original minerals are transformed by physical and chemical action into soil. Climate is the dominant factor in soil formation. Other important factors are topography, plants, animals, fungi, bacteria and humans.

In the case of Kilcurry the soil derives from the deposition of sediments as the ice retreated during the last ice age. The principal soil types in the area are Acid Brown Earths in association with Gleys and Brown Podzolics. The parent material of Ordovician-Silurian-Cambrian shale glacial till reflects the local geology. Immediately to the north and east are areas of coarser texture associated with granite or rhyolite glacial till. These are derived from the Newry and Gullion Igneous Complex. The acid browns in association with the limey water make for high quality soils suitable for agriculture, in particular pasture for cattle (source National Soil Survey). This is also consistent with the CORINE land Character Assessment for County Louth which identifies the Kilcurry area as principally pasture.



Brown Earths are important, because they are permeable and usually easy to work throughout the year, so they are valued for agriculture. They also support a much wider range of forest trees than can be found on wetter land. They are freely drained soils which often develop

over relatively permeable bedrock of some kind. Brown earths are common through southern Britain and much of continental Europe.

Water

Rivers and ponds

The two main rivers running through the area, the Kilcurry and the Cully Water were surveyed by the EPA in 2002 and water quality was found to be “continuing satisfactory” for the former while the latter was found to be “continuing satisfactory for the moment. Moderate growths of the green, blanket-weed *Cladophora* sp. at Dungooly Bridge (0100) indicate increasing eutrophication in the upper reaches”. These rivers may be defined as FW2 - Depositing/lowland rivers Annex 1 habitats under the EU Habitats Directive and may be defined as “watercourses, or sections of these, where fine sediments are deposited on the river bed”. Normally these rivers erode their banks and meander across floodplains. Because of their lowland location and agricultural activities, these rivers have been modified to control water flow, facilitate navigation, prevent flooding and erosion.



Kilcurry river at Barleycorn – bank considerably channelled

Vegetation includes floating and submerged aquatics, with emergents in shallow water or margins or overgrowing onto the banks. The main threats to these rivers are nutrient enrichment arising from agricultural practices, human developments along river banks and the introduction of invasive alien species, and utilization for sport and leisure activities. The

impact of more nefarious activities such as dumping of rubbish or sludge from illegal decolouration of agricultural diesel is also a significant threat.



Kilcurry river at Dungooly bog

Fresh water pearl mussels were found in the upper reaches of the Kilcurry river circa 1900; though, given their great longevity (up to 120 years), it is still possible, though unlikely given the factors mentioned above, that they may still be present (pers comm. M Eakin, NPWS).

Both rivers are mentioned in the Lough Wetlands Survey 2011, though for some reason the Dungooley bog is excluded: “FW2 - Depositing/lowland rivers Annex 1 habitat under the EU Habitats Directive. Watercourses, or sections of these, where fine sediments are deposited on the river bed. Depositing conditions are typical of lowland areas where gradients are low and water flow is slow and sluggish. These rivers vary in size but are usually larger and deeper than those above. In a natural state these rivers erode their banks and meander across floodplains. Plant and animal communities are influenced by numerous factors including substratum type, water force, nutrient status, water quality, channel size, water depth, human impact, disturbance and shade. Within a river channel there may be deep pools, backwaters, banks or midchannel bars of gravel, sand or mud, in addition to vegetated islands and fringing reed beds. The substratum of depositing/lowland rivers comprises mainly fine alluvial or peaty sediments. Vegetation may include floating and submerged aquatics, with fringing emergents in shallow water or overgrowing the banks.

Due to their location in lowland areas, where agricultural activities are prevalent and with increased population pressures, most of these rivers have been modified to some extent to

control water flow, facilitate navigation or prevent flooding and erosion. Canalised or walled sections of rivers, dredged or deepened sections, and artificial earth banks may occur. These activities all alter the natural river bank and adjacent vegetation occurring along such rivers. The principal threats to these rivers include nutrient enrichment arising from agricultural practices, human developments along river banks and the introduction of invasive alien species, and utilization for sport and leisure activities.

There are some examples of this habitat occurring in county Louth such as the Fane, Kilcurry and Boyne River systems.”

A small pond is visible on old maps of the area near the Barleycorn Pub but appears to have disappeared from the most recent OSI map (see below).

Groundwater

Residents of the area who abstract groundwater from wells report the water to be of a limey quality in some areas, while apparently soft in others. This may be due to the fact that the underlying geology alternates between Silurian shale and limestone. In any case the presence of the mountain and rivers would suggest that Kilcurry is unlikely to have suffered from significant drought in the past.

Settlement History

The earliest confirmed records of human habitation in county Louth date from approximately 5500 years ago, though it is likely that people inhabited the area prior to that, possibly following the retreat of the glaciers at the end of the last ice age. Nationally the earliest records date from 7000 BC and appear to be centred on peoples crossing the sea from Scotland to north Antrim. Recent genetic evidence suggests that there may have been an earlier arrival of people genetically related to modern Basques, which explains the presence of species such as the strawberry tree, the pygmy shrew and the Kerry slug, all closely related to species in the north west of Spain and not present in Britain. These Mesolithic hunter-gatherers would have moved along the coast, foraging on food resources such as periwinkles, oysters and other shellfish, as well as birds, hares, nuts, roots, berries and even fish; fish traps made of hazel have been found dating from 6100 – 5700 BC. Generally the evidence suggests that these people remained for the most part on the coast, in bays and estuaries, sometimes venturing up large rivers. There would have been little reason for them to venture inland; at that time the interior of Ireland would have been heavily wooded while low-lying areas would have been bogs. Furthermore the food resources inland would have been less reliable and more difficult to obtain. The closest Mesolithic site to the Kilcurry area is at Rockmarshal, on the north of Dundalk Bay, where ash in the vicinity of a kitchen-midden was dated at 5500 years ago.

At about this time the Mesolithic hunter-gatherer people were slowly displaced by Neolithic people in a period referred to as the Mesolithic-Neolithic transition, seen as the transition from a hunting and gathering lifestyle to that of farming. It is likely that at this time people would have started moving inland, up the Castletown River initially, and subsequently up along its tributaries so that in all probability, Neolithic farmers were the first settlers of the

Kilcurry area, possibly as early as 3000 or 4000 years ago. These people would have initially cleared the woodland along the banks of the rivers for the cultivation of crops and animal husbandry. Typically they would have used hawthorn and blackthorn to make stock-proof fencing; some of these may have evolved into what we call hedgerows today.



A church ruin and graveyard Kilcurry – a haven for biodiversity!

Evidence of middle and late Neolithic settlements in the vicinity of Kilcurry were recorded at Balregan, a townland immediately to the south west of Kilcurry and associated with the rivers that feed the Castletown river at this location. According to excavations undertaken by the NRA in association with the Dundalk bypass, “in particular the ceremonial enclosure with its associated Grooved Ware assemblage has provided potentially the best context for Late Neolithic monument construction that has yet been identified in Ireland. Balregan is at the centre of a distinctive Neolithic settlement cluster on the fringes of Dundalk Bay while both Early and Middle Iron Age activity suggest that the site remained at least episodically important into later prehistory.” The report goes on to state that “while the selective and comminued nature of the Balregan bone hints at a Middle to Late Bronze Age date (Grogan

2004). The potential significance of the burial (of a young adult woman) certainly warrants further investigation and, in particular, radiocarbon dating.” The sites at Balregan within an archaeological complex identified by the Record of Monuments and Places (LH007:001). Within this area Wright (1758) illustrated a complex including two cairns, three standing stones, a stone alignment, two or possibly three stone circles and a tower. The only archaeological feature still visible above ground today is the ruined tower house.

In Kilcurry itself there is a record of a fort at the present location of an ancient church a kilometre or so south of the present church described as “a fort on the site of the church in Kilcurry (LH004-060001-). Referred to as 'Beul teine' or place of Druidical fires. No visible remains.” (CLAJ 2, 1908, 37) About 500 metres to the south of the church is a ring fort identified as LH004-059, described by the national monuments service as a “Large, sub-circular enclosure enclosed by earthen bank best preserved at N and S.” Several simple enclosures are also to be found in the general area. Finally from nearby Newtownbalregan, a brooch, glass beads and a stick-pin typical of the early medieval were found following excavation for the construction of the Dundalk bypass.

From the above we can conclude that the area was settled through the bronze and iron ages, into early Christian times. The land would have been cleared for agriculture at this time, bringing about the landscape of fields, hedgerows, small copses, small wetlands and drainage ditches that we see today; there is some evidence that pasture predominated at that time, just as it does today. Subsequent invasions of Vikings (there is recent evidence of a long-term settlement at Annagassan), Normans, and various planters would probably have continued the removal of any woodland left in the area. According to McCracken (1971) Louth was very poorly wooded and extensively boggy by 1600 AD. It is likely that during the little ice age (1650 - 1850 AD), any remaining woodlands would have not thrived and would have been extirpated for firewood.

The area, being well drained by its rivers, was probably little affected by the Irish land reclamation and drainage activities during the early 20th century, the persistence of Kilcurry bog bearing evidence for this.

An examination of historical maps dating from surveys during 1828-35 and circa 1900 shows a moderate increase in occupation of the area in terms of the number of dwellings. Modern maps show a significant increase in housing, in particular one-off housing over the last 20 or so years. The increase in one-off housing has a significant impact on the landscape, not just visually, but also in terms of ecology. Indeed, the increase in niche habitats that well-tended gardens brings is doubtless of benefit to several species, in particular passerine birds, and to some extent offsets the adverse environmental impact of exotic species, septic tanks and other phenomena associated with increased human habitation.



Modern Kilcurry settlement

Physical Survey

The following section describes the findings from several visits to the area undertaken in the late summer and autumn of 2011 and spring 2012.

Habitats

The following habitats were identified in Kilcurry and environs

Habitat	Location	Comment
FW2 Depositing/lowland rivers	Kilcurry and Cully Water	Recently improved to reverse effects of channelling
FW4 Drainage ditches	Several	
FP2 Non-Calcareous springs	Several	
FS1 Reed and large sedge swamps	Dungooley Bog	Superb wetland area
PF2 Poor fen and flush	Near Dungooley bog	Small pond transitioning to quaking bog/scrub
GM1 - Marsh	Dungooley bog	
WN6 Wet willow-alder-ash woodland	Dungooley Bog	
GA1 Improved agricultural grassland	General	Mainly pasture
GA2 Amenity grassland (improved)	General	
GS2 Dry meadows and grassy verges	General, roadsides	
GS3 Dry humid acid grassland	General	
GS4 Wet grassland	A few patches at the base of drumlins	
BC3 Tilled land	Patches	Mainly cereal
BC4 Flower beds and borders	Housing associated	
BL1 Stone walls and other stonework	General	
BL3 Buildings and artificial surfaces	General	
WN5 Riparian woodland	Along river banks	Particularly rich in places
WD1 (Mixed) broadleaved woodland	A few isolated copses	
WS1 Scrub	A few scattered areas	
WL1 Hedgerows	widespread	Some excellent examples of mature hedgerows
WL2 Treelines	widespread	

Hedgerows, Treelines and Grasslands

Hedgerows are typically composed of three layers: a tree layer, a woody shrub layer and a field or herbaceous layer. Added to this may be a ditch layer and a grassy verge, particularly at a roadside.



Hedgerow with Gullion in the background

The Kilcurry area boasts some spectacular hedgerows, several of which may be approximately dated to at least 200 years based on the diversity of species and maturity of trees (though it should be noted that dating hedgerows is fraught with uncertainty). Indeed some of the hedgerows to the north of Kilcurry are not just stock-proof hedges, and property delineators. Some represent boundaries of townlands, parishes, counties, provinces, and even sovereign states. Kilcurry's hedgerows are dominated by hawthorn, blackthorn, bramble, willow, alder, ash and elderberry.

Wetlands

Bogs and Swamps

Dungooley bog is tentatively classed as a “reed and large sedge swamp” following Fosset’s description: “This category includes species-poor stands of herbaceous vegetation that are dominated by reeds and other large grasses or large, tussock-forming sedges. Most reed and large sedge swamps are overwhelmingly dominated by one or a small number of species, as in the case of reedbeds. Stands of vegetation can range from very dense to open. Typical components include Common Reed (*Phragmites australis*), Common Club-rush (*Schoenoplectus lacustris*), Reed Sweet-grass (*Glyceria maxima*), Branched Bur-reed (*Sparganium erectum*), Reed Canary-grass (*Phalaris arundinacea*), Great Fen-sedge (*Cladium mariscus*), Greater Tussock-sedge (*Carex paniculata*), Bulrush (*Typha latifolia*) and Water Horsetail (*Equisetum fluviatile*).” In this case the swamp is dominated by Common Reeds with fairly extensive Bulrush but only small patches of Fan-sedge.. However further work will be needed during spring and early summer months to better describe the habitat. It is

likely that more detailed surveying will find a mosaic of other habitats in the vicinity of the bog. The wetland to the north west of Dungooley bog may have a more peat like character but is more difficult to access.



Dungooley bog – Kilcurry river on the right flowing south

Wet Woodland

An attractive area of wet willow-alder-ash woodland is located adjacent to Kilcurry bog dominated by alder and willow. The area is rich in lichens and mosses. The field layer is dominated by horsetail (*equisetum* sp) and grasses. Purple loosestrife may be seen in the photo below.



Dungooley bog wet woodland

Equisetum is a “living fossil” in that its gigantic ancestors dominated the forests of the Carboniferous, 350 million years ago. Several species are common in Ireland, typically growing in wet boggy areas.



Cryptic wood white butterfly posed on Equisetum

Watercourses

The two main rivers that flow through the area are the Kilcurry River and its tributary, the smaller Cully Water. A 2003 assessment describes the former as “continuing satisfactory.” and the latter as “continuing satisfactory for the moment. Moderate growths of the green, blanket-weed *Cladophora* sp. at Dungooly Bridge indicate increasing eutrophication in the upper reaches”. Surveying both rivers finds some algal growth throughout but also areas with health aquatic vegetation including stream or river crows-foot (*ranculus* sp). Kingfishers, dippers and Daubenton’s bats are regular along both rivers.



Kilcurry river – rich sub-aquatic vegetation

These rivers are primarily known for brown trout, sea trout and salmon. Further downstream on the Castletown River into which the Kilcurry flows, salmon have been caught at the Toberona Bridge, which is the first bridge downstream of the M1 Bridge, on the outskirts of Dundalk. Evidence of considerable work to improve the quality of the river for fish may be seen particularly below the meeting with the cully water. In particular gravel and stone has been added to assist to spawn – this material restores the river to a more natural oxygenated state that facilitates spawning and hatching of trout and salmon eggs. A particular threat to the river is the risk of pollution, particularly from dumping hydrocarbon pollutants upstream; indeed an event several years ago resulted in a major fish kill from which the river is now only recovering (pers comm. Mal McEneaney).

A record from circa 1900 describes fresh water pearl mussels as being present in the upper reaches of the Kilcurry River. It is generally considered that they are unlikely to persist given extensive agricultural runoff into the river, as well as more recent problems with dumped sludge contaminated with green diesel.

In relation to the Kilcurry River the following actions were identified as part of the Northern Ireland Environment Agency Carlingford And Newry Local Management Area Action Plan 2009 – 2015 dated March 2012:

- Carry out monitoring and assessment to establish extent of dissolved oxygen suppression.
- Carry out compliance assessment on discharge from Forkhill WWTW.
- Assess forestry operations in Slieve Gullion forestry management unit.
- Engage with forestry technical staff to ensure appropriate mitigation measures are included in felling plans to reduce impacts on water quality.
- Assess sources of organic pollution from agriculture and sewage discharges in liaison with Louth County Council as water body fails to achieve good status for dissolved oxygen.
- Assess sources of oil contamination in river stretch downstream of Forkhill village due to recurrent pollution reports.
- Liaise with ROI organisations to develop specific actions to deliver objectives for this cross-border water body.

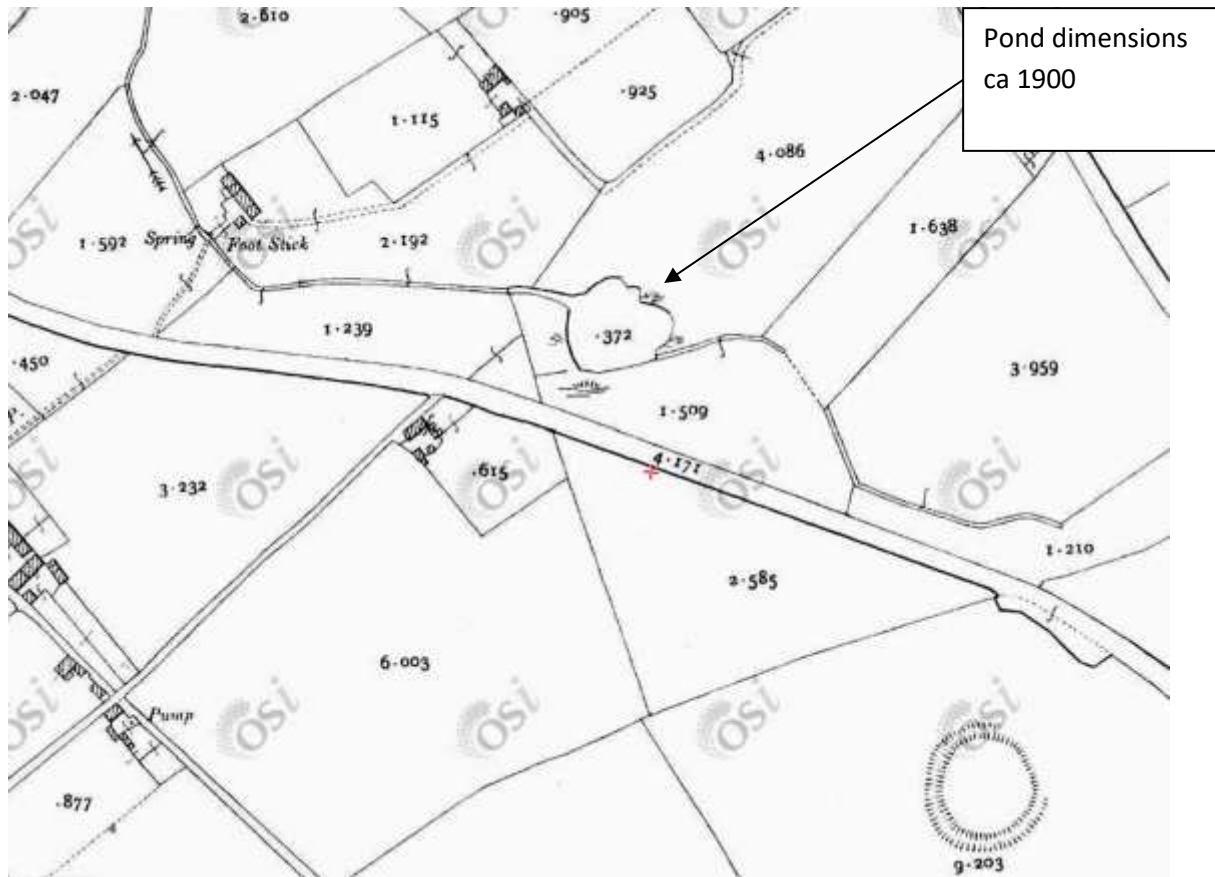
Ponds

Apart from a few drainage ditches there are no lakes, ponds or significant bodies of still water in the study area with the exception of a groundwater fed pond located 500 metres west of Drumgooley bog. This area is indicated as a pond in the 1828 map at a location about 100 metres to the east (this is probably a cartographic mistake though it's possible that the pond "moved" through infilling or blocking of its source). The area consists of a small section of open water about 10 x 15 metres. This is being colonised by a variety of grasses, bog cotton and sedges with small patches of bulrush. Extensive reeds are absent. Several common blue damselfly and a blue-tailed damselfly were seen along with several orange-tip butterflies.



Pond east of Dungooley bog – bog cotton and mixed grasses

The area is interpreted as a transitional poor fen fed by groundwater immediately to the east. Currently the open water is being colonised by grasses, sedges, sphagnum moss and bog cotton. A few shrubs and trees are starting to invade. A single common spotted orchid was found on the site.



Pond near Dungooley 1900

The pond is identified on the 1900 map with an area of 0.372 acres (1500 m sq). The stream exiting to the west has since been blocked, possibly leading to its present transitional state.

Near where the Cully Water and Kilcurry River meet, there is a backwater connected to the river which has many of the habitat features associated with ponds. An old mill race near the same area, though smaller, has similar characteristics.



Backwater pond on Kilcurry river

Woodland

Ireland is notable for its lack of extensive woodlands in contrast to Britain and particularly continental Europe. The reason is because Ireland's forests were successively extirpated for the wood harvesting and land clearance. However, small woodlands and copses survive, many due to plantations made and protected by landlords during the 18th century.

There are two sections of substantial woodland in the Kilcurry area: the Crilly, about a kilometre to the west of Kilcurry church, is probably the best in that it contains more native species. It is absent from the 1842 map but present on the 1900 OS map. Two other wooded areas to the south of the Crilly (Balragan) and Lurgankeel are also significant. The latter appears on the 1842 OS map of the area.



The Crilly riparian woodland on the left

The Crilly is an area of riparian woodland through which the Kilcurry River flows. At the Crilly the river cuts through several drumlins making a hidden valley about 1km in length and covering several hectares consisting of alder, ash, willow, elderberry, hawthorn, blackthorn, and hazel with a rich understory. This is a particularly attractive area with a good degree of naturalness. The maturity of the trees and diversity of the hedgerows suggest that it is at least 100 years old and indeed it features in the 1900 map. The area is not shown as wooded in the 1828 map but another area, just to the south is shown as such. Given that the area is separated from any road by some distance, it is possible that the woodland was not marked at that time. A good variety of woodland birds were observed in the area including long-tailed tit, blue tit, great tit, blackbird and jay.

The land form at the Crilly suggests that the water course may have become modified in the past, through natural or human induced processes.

A line of pines adjacent to Kilcurry church hosts a small rookery of about 40 mixed jackdaws and rooks.

South of the Crilly along the Kilcurry river is an area with extensive mature trees. These are for the most part beech with some sycamore, oak, willow, holly, horse chestnut, copper beech and the like. These would appear to have been planted since 1900.

A few oaks were found along the rivers but oak, a species that supports extensive biodiversity in terms of insects, epiphytes and birds, is generally poorly represented in the Kilcurry area.

Several mature osier willows were recorded in the general area. Osier was probably introduced to Ireland and planted locally for basket weaving, hurdles, wattle and the like.



Mature willows on the left background, reeds, hawthorn and ragwort in the foreground

Stone Walls

The flora of old stone walls in the area is worth a study of their own. In many of the older stone walls and other masonry (eg ancient grave stones) a fantastic array of algae, fungi, lichens, mosses, ferns and herbaceous plants can be seen:

Algae

Trentepohlia sp

Euglena sp

Lichen

A variety of crustose, leprose, foliose and other species.



Lichens and mosses growing on a crack willow.

Moss

Marchantia polymorpha and other spp

Many species of the Bryopsida group (land mosses).

Ferns

Common Polypody (Polypodium vulgare)

Maidenhair Spleenwort (Asplenium trichomanes)

Hartstongue (Asplenium scolopendrium)

Hard Fern (Blechnum spicant),

Wall Rue (Asplenium ruta-muraria)



Hard fern on a stone wall

Birds

Birds are the most important category of wildlife in Ireland in terms of their numbers, diversity and conservation value, and the Kilcurry area has a rich diversity of terrestrial species with over 60 species recorded, with some highly iconic species such as the buzzard, spotted flycatcher, dipper and kingfisher.

Swans, Ducks and Geese

Small numbers of whooper swans and greylag geese visit the fields to the west of Kilcurry to graze on grass during the winter. These birds migrate from their breeding grounds in Iceland and Scandinavia to overwinter in Ireland. Mallard occur year round with at least one pair nesting in the vicinity of Dungooley bog. The habitat is not suitable for other duck species such as diving and dabbling ducks.



Whooper (in background) and pair of mute swans

Grebes, Cormorants and other Divers

A single little grebe was seen on the Kilcurry river in autumn – this probably a dispersing juvenile. A single cormorant was also seen on the Kilcurry river.



Cormorant in flight

Birds of Prey

At least two pairs of buzzards nest in the immediate area of Kilcurry and were observed on every visit, one pair of birds calling loudly to one another during August, probably an adult and juvenile.



Buzzards often sit quietly on a post watching for rodents

Sparrowhawks and kestrels were also observed hunting in the area, the former along the river and the latter along near the M1 by-pass. No direct evidence of long eared owl was found but it is likely that the area is visited by this species for hunting. In spring 2010 a pair of breeding barn owls was found in the vicinity of nearby Feede Mountain. Barn owls are declining at an alarming rate and as of 2012 there are no known pairs in the county. Peregrine falcons were seen in the area in 2006/7 but there are no records of them being present since – these may have been birds breeding in the Cooley mountains, now alas departed.



Several sparrowhawks hunt along the rivers

Pheasants, Partridges and Rails

Pheasants are common in the fields and hedgerows around Kilcurry. Water rail is all but certain in Dungooley bog, where several moorhens were observed. Species such as grey partridge, quail, corncrake and the like are possible but were not observed. Corncrakes were heard in the vicinity of Dunaney in mid-Louth in the summer of 2009.

Waders and Gulls

Several over-wintering snipe flushed from wet grassland beside Dungooley bog during a winter visit. It is possible that snipe breed in this area. Other waders are unlikely though green sandpiper, common sandpiper and redshank are possible. Grey herons were seen along the banks of the river on several occasions. Little egrets may also be occasional, though none were seen.

Common and black-headed gulls commonly fly inland and follow the plough in search of earthworms; several of both were seen around Kilcurry.



Snipes lurking in the stubble

Pigeons, Doves and Cuckoos

Woodpigeons and collared doves are common all over the area and are resident breeders. A possible stock dove was seen in a farmyard. A small flock of feral pigeons frequents the area of Kilcurry church. Cuckoo was reported calling during may 2011 in the area to the north of Kilcurry (towards Slieve Gullion).

Swifts, Kingfishers and Woodpeckers

At least two pairs of kingfisher breed along the Kilcurry River and possibly the Cully Water and were observed on every visit. A great-spotted woodpecker was seen in Dromin and the area of Castlebellingham in 2009 and area know to now be breeding in Down, Dublin, and Wicklow at least. It is likely that they will spread countrywide over time.

Passerines (Songbirds)

All of the common countryside birds are regular in the Kilcurry area, testimony to the high quality hedgerows and doubtless the efforts of local gardeners and bird feeders.

Skylarks were heard singing at several locations.

Swallows and house martins were seen throughout during august, with large numbers flying over Dungooley bog where they were doubtless also roosting in the reeds.



Pipits and Wagtails

Meadow pipits common in the fields with dozens of breeding pairs in the area; pied wagtails are also regular, though tending to inhabit farmyards, courtyards, gardens and roadsides rather than the meadows. A pair of grey wagtails was found with recently fledged young at the intersection of the Cully Water and Kilcurry river.

Wrens Waxwings and Accentors

Wrens were seen throughout the area, often nesting in old stone walls. Waxwings are a Scandinavian species that occasionally migrates or irrupts to Ireland in large numbers, notably when the berry crop fails in Scandinavia – several were reported in the area during the last major irruption in December 2008.



Waxwing eating red berries

The discreet dunnocks are common resident breeders in the countryside hedgerows.

Thrushes, Robins and chats

Blackbirds, song thrushes, mistle thrushes are all common resident breeders.

In winter both fieldfares and redwing thrushes may be seen in the fields. Like waxswings, during some years, there are huge influxes fo these birds from eastern Europe. In the very cold winter of 2010/11 thousands of these birds arrived from the freezing continent, only to find the situation in Ireland not much better.



Redwings, winter visitors from Scandinavia, are regular in winter

The ubiquitous robins are common all over the area.



A pair of stonechats were seen in the vicinity of Dungooley bog.

Warblers and Flycatchers

Willow warblers and chiffchaffs, summer breeding migrants, are regular especially following the riparian vegetation along the rivers in search of flies. Their close cousins, blackcaps, are also regular, though preferring the taller trees. Whitethroats were seen on several occasions, again along the hedgerows away from populated areas. Several sedge warblers occupy Dungooley bog.

In August a family of the regionally scarce spotted flycatchers was seen on the fringe of Dungooley bog.



Spotted flycatcher – several pairs breeding around the bog

Tits

Great, blue and coal tits were seen throughout the area. Long-tailed tits were not seen but there can be no doubt that they are at least occasional in the area given the habitat which is right for this often elusive species.



Long-tailed tit

Tree creeper

Tree creepers were heard near the Crilly woodland and are likely to be regular in the riparian vegetation.

Crows

There is a small rookery of jackdaws and rooks beside Kilcurry church. The shy grey or hooded crow and magpies were also seen lurking around farms and in the fields and hedgerows. A raven was seen flying high overhead in winter, perhaps searching for carrion.



Juvenile rook

Starlings

A large wintering flock of about 1000 starlings was seen in winter around the church area. This species is a resident breeder in the area.

Finches, buntings and Sparrows

Green finch, goldfinch, chaffinch and linnet were seen on every visit, as were house sparrows. Tree sparrows were seen on two occasions, both in the vicinity of a farm on to the south of the village. There is evidence from the latest bird atlas that this species is increasing in Ireland.

A pair of reed buntings were seen in Dungooley bog, apparently feeding on *Tymphanum* (bulrush).



Bulrushes in phragmites reedbed Dungooley bog.

Bird species Recorded in Kilcurry area

Grey Heron	Ardea cinerea
Whooper Swan	Cygnus cygnus
Mallard	Anas platyrhynchos*
Little Grebe	Tachybaptus ruficollis
Sparrowhawk	Accipiter nisus
Common Buzzard	Buteo buteo
Kestrel	Falco tinnunculus
Pheasant	Phasianus colchicus*
Moorhen	Gallinula chloropus*
Black-headed Gull	Larus ridibundus
Feral Pigeon	Columba livia*
Wood Pigeon	Columba palumbus*
Collared Dove	Streptopelia decaocto*

Cuckoo	<i>Cuculus canorus</i>
Swift	<i>Apus apus</i>
Kingfisher	<i>Alcedo atthis</i>
Skylark	<i>Alauda arvensis</i> *
Swallow	<i>Hirundo rustica</i> *
House Martin	<i>Delichon urbica</i> *
Meadow Pipit	<i>Anthus pratensis</i> *
Pied Wagtail	<i>Motacilla alba yarrellii</i> *
Wren	<i>Troglodytes troglodytes</i> *
Dunnock	<i>Prunella modularis</i> *
Robin	<i>Erithacus rubecula</i> *
Stonechat	<i>Saxicola torquata</i>
Blackbird	<i>Turdus merula</i> *
Fieldfare	<i>Turdus pilaris</i>
Song Thrush	<i>Turdus philomelos</i> *
Redwing	<i>Turdus iliacus</i>
Mistle Thrush	<i>Turdus viscivorus</i> *
Whitethroat	<i>Sylvia borin</i> *
Blackcap	<i>Sylvia atricapilla</i> *
Chiffchaff	<i>Phylloscopus collybita</i> *
Willow Warbler	<i>Phylloscopus trochilus</i> *
Goldcrest	<i>Regulus regulus</i>
Long-tailed Tit	<i>Aegithalus caudatus</i>
Coal Tit	<i>Parus ater</i>
Blue Tit	<i>Parus caeruleus</i> *
Great Tit	<i>Parus major</i> *
Treecreeper	<i>Certhia familiaris</i>

Magpie	<i>Pica pica</i> *
Jackdaw	<i>Corvus monedula</i> *
Rook	<i>Corvus frugilegus</i>
Grey Crow	<i>Corvus cornix</i> *
Raven	<i>Corvus corax</i>
Starling	<i>Sturnus vulgaris</i> *
House Sparrow	<i>Passer domesticus</i> *
Chaffinch	<i>Fringilla coelebs</i> *
Greenfinch	<i>Carduelis chloris</i> *
Goldfinch	<i>Carduelis carduelis</i> *
Linnet	<i>Carduelis cannabina</i> *
Bullfinch	<i>Pyrrhula pyrrhula</i>
Yellowhammer	<i>Emberiza citrinella</i>
Reed Bunting	<i>Emberiza schoeniclus</i> *



Yellowhammer calling from furze bush

Changes in Bird Species

Every couple of decades the BTO in collaboration with Birdwatch Ireland undertake a major survey of birds resulting in the publication of a bird atlas. The last one was undertaken during 1988-91 and a comparison with the current Atlas (completed in 2011) shows several changes in species recorded in the area. Most notable is the complete disappearance of corncrake, grey partridge and quail, all of which were present, if not common, in the area just 20 years ago. On the other hand blackcaps have become more abundant over that period, probably pushed by global warming, and it can only be a matter of time before great spotted woodpeckers arrive in the area given their current expansion.



Female blackcap at garden feeder

Mammals

Ireland has a relatively impoverished range of mammal species with a total of just 25 terrestrial species recorded (compared with about 60 terrestrial species in Britain). Of these nine are bats. Evidence of all the common mammals including red fox, badger, brown rat, wood mouse, pygmy shrew, hedgehog, rabbit, hare and the like were found. Otter spraints were found in several locations through both rivers, suggesting a healthy population of otters in the area.



Otter – Lutria lutria

No evidence of pine martins was found however the woodland areas are likely refuges for these shy creatures. Grey squirrels were seen on several occasions suggesting that red squirrels are unlikely, despite their presence in nearby Slieve Gullion forest (conservation measures are undertaken to preserve red squirrels in the forest). Furthermore evidence suggests that red squirrels are more likely to thrive in coniferous forest, a habitat that is largely absent from the area.

Mammals are treated systematically below:

Insectivores

Pygmy Shrew

This is the smallest of our mammals, at just three grams, and are present in all suitable habitats in Ireland. Pygmy Shrews are thought to have been brought to Ireland by stone-age mariners from the north of Spain around eight thousand years ago, probably by accident. Genetic studies have shown that all Irish pygmy shrews are related to this initial pioneer population. They are generally active in the litter under hedges and other vegetation where they feed on insects and other invertebrates – several were detected in the vicinity of the stables and undergrowth at the Barleycorn.



Red-toothed pygmy shrew

Hedgehog

Hedgehogs are present throughout Ireland in suitable habitat and were probably brought here by the Vikings. The trail of several was observed in the dew in the fields near Dungooley.

Rodents

Wood Mouse

Wood mice are also present in almost all habitats in Ireland, from dunes to blanket bogs – in Kilcurry are doubtless common in the hedgerows and grassland. Wood mouse was the main prey species of long-eared owls and kestrel falcons.

House Mouse

In Ireland almost always associated with human habitation living in houses, factories, shops, stores, farm outhouses etc; it may be distinguished from the wood mouse by its greyer pelage.

Brown Rat

The Brown Rat has largely displaced the Black Rat in Ireland and, like other parts of Ireland, Brown Rats are just as big a pest in Kilcurry as they are in other parts of the country. In times past Brown Rats would have been significant prey of Barn Owls, however for unknown reasons Barn Owls are declining in Ireland and have not been confirmed breeding in the Louth for many years. This may be related to the secondary poisoning of the owls from rat poison, as well as the impact of motorways. In 2009 a family of barn owls was reported in the Feede mountain area.

Grey Squirrel

Grey squirrels were introduced from the USA around 1900 and several individuals were observed in the vicinity of Kilcurry, particularly in gardens near the church. They out-compete red squirrels where they share habitat, however it seems that they are predated by

pine martins. Grey squirrels are bigger than the red, have light brown pelage and lack the ear tufts that are characteristic of red squirrels.



Grey squirrel – an invasive American species

Red Squirrel

Red Squirrels are thought to have been present in Ireland up until around 1600 AD when they died out, possibly due to climate change (the Little Ice Age) and deforestation. They were reintroduced around 1815 at nearby Ravensdale from English stock, and subsequently occupied all suitably wooded habitats in Ireland.



Around the turn of the century a number of Grey Squirrels, an American species, were deliberately introduced, and these have since competed with reds resulting in a reduction of the Red Squirrel population.

However, possibly due to the presence of the Pine Martin, Reds seem to be holding their own in Ireland, apparently particularly successful in primarily coniferous forestry.

Red Squirrels have been recorded in the forest at Slieve Gullion woods. However they are extremely shy and elusive and so populations are hard to assess.

Ironically Red Squirrels are now effectively extinct in England and it has been suggested that the current Irish stock is the last remnant of the English race (*Sciurus vulgaris leucorus*), identified by their white tail as the example on the left, photographed in Slieve Gullion forest.

Carnivores

Red Fox

Red Fox tracks, scat and fur briars was observed in fields and hedgerows around Kilcurry. Several “mammal paths” also testify to their presence.



Stoat

No stoat was observed during the study though they are certainly present. The Irish stoat is probably one of the few species with a legitimate claim to be native, in that genetic studies

have revealed that the Irish population is distinct from the British and continental populations, and so it probably survived the last ice age in Ireland, though it would have probably sported white fur at that time, unlike its modern ancestor who is chestnut brown above and yellowish white below, with a black tip on the tail.

Otter

As previously mentioned, Otter spraints were found at several locations around the river.



Otter spraints or droppings showing fish scales and parts of crayfish

Pine Marten

The attractive Pine Martins, with its chocolate coloured pelage and creamy throat bib, is an extremely elusive and shy mammal that lives in woodland making a living by predated birds and small mammals and also feeding on berries, mushrooms, and insects. No spraints were found but they are likely to be present, particularly in the tall trees to the south of Kilcurry.

Badger

The shy and mainly nocturnal Badger is common and widespread throughout Ireland. There are very high population densities of Badger in Ireland because the permanently damp, soft soil is good for digging for worms, which are to be found loose to the surface, thereby making this country heaven for them. Traces of badger were found around fields (scat and tracks) in July and August, apparently foraging on blackberries.

Lagomorphs

Irish Mountain Hare

Like the stoat, the Hare seems to have survived the Ice Age in Ireland, being genetically separated from British and European populations for 30 to 60,000 years, and as such possibly deserves full species designation. Hares are common around Carlingford both in upland areas and in the agricultural fields to the south, though none were seen in the study area itself.



Irish Mountain Hare

Rabbit

Rabbits, originally an Iberian species, were introduced to Ireland in the 12th century by the Normans for food and fur and have since expanded to all suitable habitat in Ireland. Rabbits are common in the area and were observed along the hedgerows on many occasions, where they were also keenly observed by the local buzzard population, on whom they prey.

Deer

Deer were not observed. Sika/Red Deer type hybrids were reported in the slieve Gullion area.

Bats

Bats are beyond the scope of the study but other work has confirmed a significant bat presence in the area. Doubleton's bats were recorded on the Kilcurry river.

Amphibians and Reptiles

Several frogs were observed in the area of the Kilcurry bog, particularly in the area of wet woodland. No evidence of newts was found, though they may be present. A possible location in a pool connecting to the Kilcurry River near the M1 where the old mill race used to be may be suitable. Ireland's only other amphibian, the Natterjack toad, is confined to some areas of Kerry and Wexford.

No evidence of viviparous lizards was seen, though they are probably present on the drier rocky upland areas to the north.



Common frog

Invertebrates

No systematic search for invertebrates was undertaken however butterflies, moths, damsel flies and dragon flies were noted when observed.



Four-spotted chaser – several in the bog area

Lepidoptera (Butterflies and Moths)

The following butterfly species were observed during the study period:

Peacock

Large White

Small white

Tortoiseshell

Ringlet

Speckled wood

Meadow brown

Holly blue

Silver Y, a day-flying moth, was recorded around Dungooley bog and several silver-ground carpet moths were seen – a specific survey of moths was not undertaken.



Silver-ground carpet moth on a blade of grass

Odonata

Odonata is an order of insects, including dragonflies (Anisoptera) and damselflies (Zygoptera). They spend most of their life as juveniles in or on the water, some taking over a year to mature through egg, instar, nymph and, after several moults, adult. They are carnivorous predators throughout their life cycle feeding voraciously on other smaller aquatic insects (hence their name derived from the Greek odonto or tooth).



Common blue damselfly

During the surveys in July and August a few species were noted as individuals including, Blue-tailed Damselfly, Common Darter and Common Hawker. A possible Large Red Damselfly was noted in August, though had lost many of its identification features through age. All were noted in the area of Kilcurry bog. A possible Emerald Damselfly was seen in the vicinity of the lower Cully Water.



Ragged robin Dungooley bog

Flora

Meadow Buttercup	Ranunculus acris
Creeping Buttercup	Ranunculus repens
Common Poppy	Papaver rhoeas
Common Fumitory	Fumaria officinalis
Stinging Nettle	Urtica dioica
Fat Hen	Chenopodium album
Ragged Robin	Lychnis flos-cuculi
Common Chickweed	Stellaria media
Hedge Woundwort	Stachys sylvatica
Broad-leaved Dock	Rumex obtusifolius
Curled Dock	Rumex crispus
Common Sorrel	Rumex acetosa

Knotgrass	<i>Polygonum aviculare</i>
Common Dog Violet	<i>Viola riviniana</i>
Watercress	<i>Rorippa nasturtium-aquaticum</i>
Shepherd's Purse	<i>Capella bursa-pastoris</i>
Common Scurvygrass	<i>Cochlearia officinalis</i>
Cuckooflower	<i>Cardamine pratensis</i>
Winter-cress	<i>Barbarea vulgaris</i>
Primrose	<i>Primula vulgaris</i>
Common Milkwort	<i>Polygala vulgaris</i>
Scarlet Pimpernel	<i>Anagallis arvensis</i>
Dog Rose	<i>Rosa canina</i>
Bramble	<i>Rubus fruticosus</i> agg.
Yellow Rattle	<i>Rhinanthus minor</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Silverweed	<i>Potentilla anserina</i>
Barren Strawberry	<i>Potentilla sterilis</i>
Common Vetch	<i>Vicia sativa</i>
Tufted Vetch	<i>Vicia cracca</i>
Birdsfoot Trefoil	<i>Lotus corniculatus</i>
Celery-leaved Buttercup	<i>Ranunculus sceleratus</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Red Clover	<i>Trifolium pratense</i>
White Clover	<i>Trifolium repens</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Rosebay Willowherb	<i>Chamerion angustifolium</i>
Herb Robert	<i>Geranium robertianum</i>

Yarrow	<i>Achillea millefolium</i>
Hogweed	<i>Heracleum sphondylium</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Wild Carrot	<i>Daucus carota</i>
Field Bindweed	<i>Convolvulus arvensis</i>
Hedge Bindweed	<i>Calystegia sepium</i>
Red Dead-nettle	<i>Lamium purpureum</i>
Sticky Mouseear	<i>Cerastium glomeratum</i>
Foxglove	<i>Digitalis purpurea</i> (nominated and alba forms)
Thale's Cress	<i>Arabidopsis thaliana</i>
Common Field Speedwell	<i>Veronica persica</i>
Cleavers	<i>Galium aparine</i>
Lady's Bedstraw	<i>Galium verum</i>
Hairy Tare	<i>Vicia hirsute</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Red Valerian	<i>Centranthus ruber</i>
Wild Teasel	<i>Dipsacus fullonum</i>
Daisy	<i>Bellis perennis</i>
Upright Hedge-parsley	<i>Torilis japonica</i>
Common Ragwort	<i>Senecio jacobaea</i>
Groundsel	<i>Senecio vulgaris</i>
Coltsfoot	<i>Tussilago farfara</i>
Common Knapweed	<i>Centaurea nigra</i>
Creeping Thistle	<i>Cirsium arvense</i>
Marsh Thistle	<i>Cirsium palustre</i>
Dandelion	<i>Taraxacum officinale</i>
Smooth Sow-thistle	<i>Sonchus oleraceus</i>

Corn Sow-thistle	<i>Sonchus arvensis</i>
Mouse-ear Hawkweed	<i>Pilosella officinarum</i>
Bluebell	<i>Hyacinthoides non-scriptus</i>
Ramsons	<i>Allium ursinum</i>
Yellow Iris	<i>Iris pseudacorus</i>
Cowslip	<i>Primula veris</i>
Early Marsh orchid	<i>Dactylorhiza incarnata</i>
Yellow rattle	<i>Rhinanthus minor</i>
Common Spotted Orchid	<i>Dactylorhiza fuchsia</i>
Lords-and-Ladies	<i>Arum maculatum</i>
Bulrush	<i>Typha latifolia</i>
Annual Meadow-grass	<i>Poa annua</i>
Meadow Fescue	<i>Festuca pratensis</i>
Red Fescue	<i>Festuca rubra</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Wild Oat	<i>Avena fatua</i>
Hard Rush	<i>Juncus inflexus</i>
Perennial Ryegrass	<i>Lolium perenne</i>
Cocksfoot	<i>Dactylis glomerata</i>
Bracken	<i>Pteridium aquilinum</i>
Field Horsetail	<i>Equisetum arvense</i>
Bottle Sedge	<i>Carex rostrata</i>



Hedgerows and drumlins Kilcurry area.

Trees and Shrubs of the area

The following species were noted in the area:

Species	Scientific Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Aspen	<i>Populus tremula</i>
Beech	<i>Fagus sylvatica</i>
Blackthorn	<i>Prunus spinosa</i>
Buddleja	<i>Buddleja davidii</i>
Elder	<i>Sambucus nigra</i>
Escallonia	<i>Escallonia macrantha</i>
Fuchsia	<i>Fuchsia magellanica</i>
Gorse	<i>Ulex europaeus</i>
Hawthorn	<i>Crataegus monogyna</i>

Holly	Ilex aquifolium
Ivy	Hedera helix
Rowan	Sorbus aucuparia
Scots Pine	Pinus sylvestris
Sessile Oak	Quercus petraea
Silver Birch	Betula pendula
Sycamore	Acer pseudoplatanus
Willow sp	Salix sp
Osier	Salix viminalis

Discussion and Conclusions

Kilcurry village and the surrounding countryside offer both locals and visitors an excellent example of typical Irish countryside and habitats in a picturesque setting. The best features are the two rivers, their riparian vegetation, particularly at the Crilly, and the area around Dungooley bog. The proximity of Slieve Gullion adds another dimension.

Enhancement of Biodiversity

During the ice age very few species could survive in Ireland. Stoat and mountain hare are two examples of species that did. The species that subsequently colonised Ireland from about 10,000 years ago are considered to be native species. Because these species have been living in close proximity to one another for thousands of years they have developed a significant level of interdependence. So for example Irish willow species are capable of supporting hundreds of Irish invertebrates, the latter having adapted to specialise on the willow. Exotic, non-native species, on the other hand, support very few native species of invertebrates. This is why we say that planting native species inherently increase biodiversity.

The numbers of plant-feeding invertebrates associated with various tree species in Britain are:

<u>Native Irish tree species</u>	<u>Invertebrates</u>
Willows	450
Native oaks	423
Birch	334

Hawthorn	209
Poplar/aspen	153
Blackthorn	153
Alder	141
Elm	124
Apple	118
Hazel	106
Ash	68
Rowan	58
Holly	10

Native to Britain, introduced to Ireland

Scots pine	172
Elm	124
Beech	98

Introduced to Britain and Ireland

Southern Beech	78
Spruce	70
Sycamore	43
Larch	38

Source: Key, R.S. (1995). Invertebrate conservation and new woodland in Britain

Louth as a county lacks significant bodies of open water and the Kilcurry area is no exception; indeed it may be that where small ponds existed in the past they were in-filled, as was often the practiced in the last 30 or 40 years, partly for safety reasons and partly as a result of a culture that was strongly inclined to reclaim land whenever possible. A major enhancement to the biodiversity in the area would be the establishment of a pond, even on a small scale.

Another suggestion would be to plant more hawthorn and blackthorn hedgerows, particularly in public areas (road verges etc). Other native species that would significantly enhance biodiversity and are not present in significant numbers are oak and holly.

Nesting boxes, a bird feeding area, bat boxes, insect hotels (for overwintering insects) and the like would be of benefit.

Many of the gardens in the area are extremely rich and well tended. By adding a greater component of native species, garden biodiversity could be improved.

Planting night-scented flowers may promote moths and their predators, bats. Examples

Nottingham catchfly (*Silene nutans*)

Night-scented catchfly (*Silene noctiflora*)

Bladder campion (*Silene vulgaris*)

Night-scented stock (*Matthiola bicornis*)

Sweet rocket (*Hesperis matronalis*)

Evening primrose (*Oenothera biennis*)

Tobacco plant (*Nicotiana affinis*)

Cherry pie (*Heliotropium x hybridum*)

Soapwort (*Saponaria officinalis*)

Mint (*Mentha* sp)

European honeysuckle (*Lonicera caprifolium*)

Italian honeysuckle (*Lonicera etrusca superba*)

Japanese honeysuckle (*Lonicera japonica halliana*)

Native honeysuckle (*Lonicera periclymenum*)

White jasmine (*Jasminum officinale*)

Dogrose (*Rosa canina*)

Sweetbriar (*Rosa rubiginosa*)

Fieldrose (*Rosa arvensis*)

Ivy (*Hedera helix*)

Bramble (*Rubus fruticosus* agg.)

Reducing the cutting of grassy verges and hedges during the summer months can also have a significant impact on biodiversity because grasses and herbaceous plants are allowed to go to seed and complete their lifecycle, thereby benefitting the invertebrates, small mammals and birds which depend on them.

Communicating Biodiversity

The author would recommend setting out a biodiversity trail covering the area, bogs, woodland, marsh, river and hill. This would have to be done in consultation with landowners, the tidy towns committee and the county council. A number of possible routes suggest themselves but further study would be required to ensure that access is not a problem. There are several spots along potential walks where panels explaining and interpreting local wildlife could be erected.

Recommendations

- Village duck pond. It is important to place mud at the bottom of a plastic pond to provide a basic ecosystem. Tadpoles require living vegetation such as algae.
- Planting of more native species and night scented species. Wild flower seeds may be obtained from Wildflowers.ie and other sources.
- Planting hedgerows of hawthorn, blackthorn and other native species along roadsides, particularly where there is chain link fencing
- Cleaning up of incidents of dumping and littering
- Explore possibility of creating a nature trail, ideally cross country, avoiding roads
- Letting the grass and wild flowers grow to seed in public spaces and roadsides – these provide important food for birds in winter, as well as habitat for invertebrates in summer.

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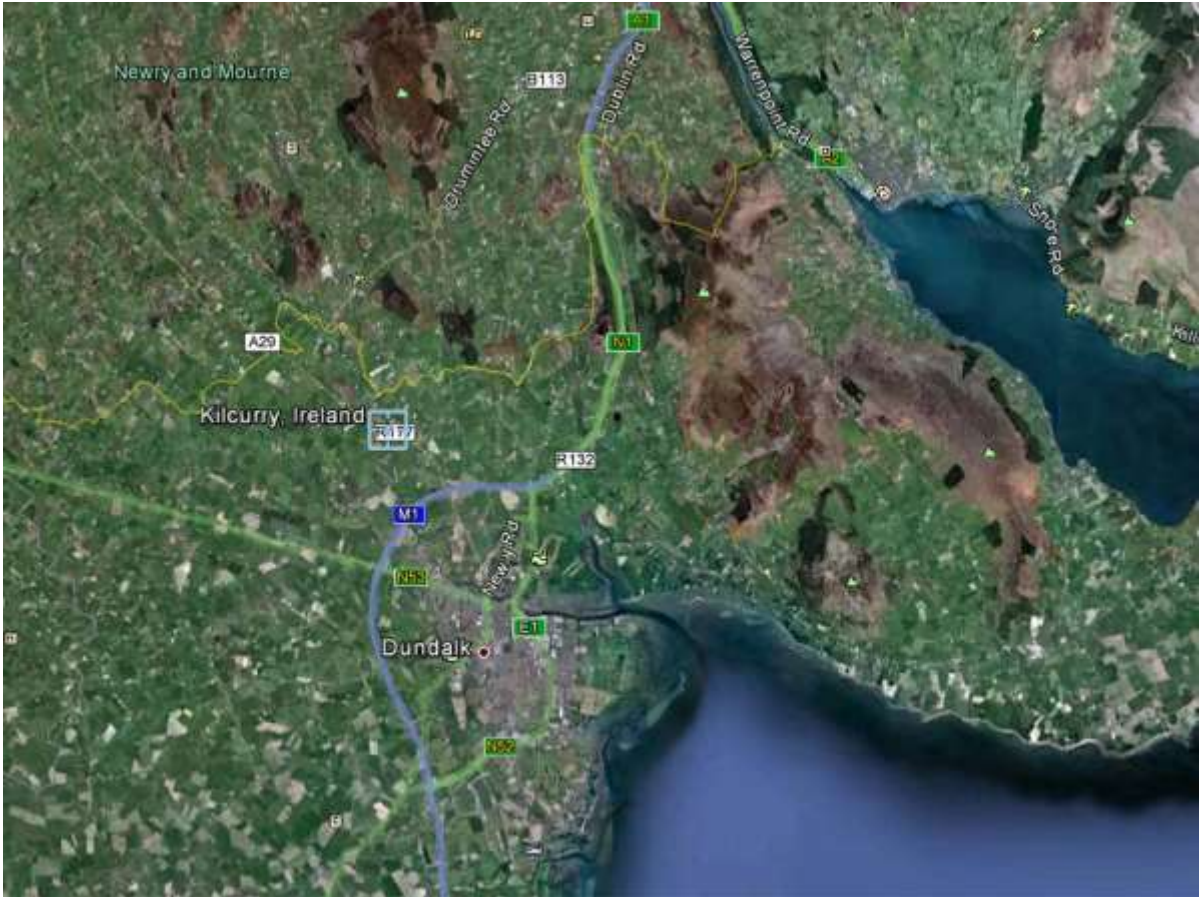
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Appendices

Appendix 1





Appendix 2



Appendix 3

