Habitat Survey and Mapping of Kilkenny City – Project Summary

Habitats in and around urban areas can provide valuable resources for wildlife and humans. For example, suburban gardens can provide nectar for insects and nesting and foraging for birds, bats can roost in old buildings, and old stone walls can support a diversity of wildflowers, ferns and mosses. Similarly, urban and suburban habitats can provide vital services for humans, such as protecting soil and water quality, regulating surface water and floods, carbon sequestration, and providing space for recreation and relaxation. For these reasons, the Councils of the City and County of Kilkenny have policies relating to conserving and managing habitats, including those of local biodiversity interest that are not protected by law. A critical first step in conservation and management is having the necessary information. For this reason, the Councils of the City and County of Kilkenny have undertaken a habitat survey and mapping project for Kilkenny City and Environs.

The primary aims of this project were to survey, map and assess habitats within Kilkenny City and Environs, to identify Green Infrastructure, and to raise awareness about the natural heritage of the City. These were achieved by:

- Reviewing information that already exists from previous studies
- Discussions with a wide range of experts and local people
- A field-based habitat survey
- Compiling habitat maps and a habitat database

The results were used to provide baseline information on the habitats in Kilkenny City and Environs, to identify areas of key Green Infrastructure, and to develop recommendations for further work in this area.

It is no surprise that buildings and gardens are the most abundant group of habitats in Kilkenny City and Environs, covering 45% of the total study area. These include a wide range of habitats and land-use types, such as private houses and gardens, roads, public buildings and associated landscaping and industrial estates. These vary widely in their value for wildlife. Kilkenny City is rich in old stone walls and buildings that support a diverse range of plant species which provide food and shelter for insects, birds, bats and small mammals. Older housing estates with well developed gardens, ornamental shrubs and mature trees are of higher wildlife value than newer estates dominated by lawns and a few saplings. Weedy, neglected corners can be of great benefit for plants and insects and often suffer from inappropriate tidying.

Intensive agriculture dominates the outskirts of the City Environs, especially to the west, and comprises 31.8% of the total study area. These are improved grassland pastures for livestock and large tillage fields, which are of generally little ecological value.

Amenity grasslands occupy 10% of the study area and comprise another habitat type with limited benefit for wildlife because they are intensively managed and poor in structural and species diversity. Although they can be important for recreation, a large proportion of the public amenity grassland in estates appears to be underused and has great potential to be enhanced through sensitive tree and wildflower planting or even vegetable and herb gardening.

The remaining habitat groups each occupy less than 4% of Kilkenny City and Environs, but are much more important for biodiversity than their area would suggest. These habitats include rivers, semi-natural grassland, woodland, wetlands, lakes and disturbed ground. The River Nore is the most important aquatic habitat in the study area. Semi-natural wet grasslands, wet woodlands and pockets of reed swamp are found along its length and also along the Breagagh and Pococke Rivers. These are some of the most natural habitats to be found in Kilkenny City and Environs and are particularly important for a range of

waterbirds and waders. Less welcome along riverbanks is Himalayan balsam, a pretty but highly invasive non-native plant that outcompetes natural riverbank vegetation. Other wetlands and small lakes are scattered about the study area. These include some of the most ecologically valuable habitats in Kilkenny City and Environs; some of them are proposed for national designation as important natural heritage sites and these are described in more detail below.

Small patches of species-rich calcareous grassland are most common on steeply sloping ground near the River Nore. These are the most valuable habitats for wildflowers, including orchids and the nationally rare nettle-leaved bellflower. Mature woodlands on drier ground also typically cluster about the rivers. These are or were parts of large demesnes and include woodlands in Kilkenny Castle grounds and at the Island to the north of the City. Most of the trees in Kilkenny City woodlands are not native to Ireland, but still provide valuable cover and shelter for mammals and birds and provide habitat for the more common woodland plant and fungi species.

Hedgerows and treelines can be important ecological corridors encouraging the movement of mammals and other wildlife through intensive farmland and suburban areas. They are also valuable as habitats in their own right, especially for nesting birds and foraging bats. Hedgerow structure varies considerably and is strongly influenced by management, such as cutting, replanting and fencing. The more common hedgerow shrubs include hawthorn, elder and blackthorn, often with elm, ash and sycamore trees. Many hedgerows in the City Environs are not actively managed, which leads in time to a change from a tightly planted hedgerow to a gappy line of leggy shrubs and trees. This reduces a hedgerow's value for wildlife and also its value to the landowner as a livestock barrier.

The results of the habitat survey were used to map areas of key Green Infrastructure. Green Infrastructure is a network of interconnected green spaces that conserve biodiversity and provide ecosystem services to people, such as regulating surface water and floods and providing space for recreation and relaxation, as mentioned above. As not all pieces of Green Infrastructure are equally valuable, the most important areas were identified, focusing primarily on their biodiversity value. Also included were habitats that buffer or complement the most important ones, habitats that perform significant ecosystem services, and habitats that act as corridors or stepping stones across the study area. Green Infrastructure areas in Kilkenny City and Environs include:

- *The River Nore and Environs*: This is the most important piece of Green Infrastructure in the area and is already designated as being of international ecological importance. It forms an ecological corridor through the entire City and Environs. A wide range of valuable habitats occur along the river, supporting a diversity of wildlife. The River Nore Walk is an important recreational amenity, and the river floodplains are important for flood control.
- *Lough Macask* and *Newpark Marsh*: These two sites are wetlands proposed for designation as nationally important natural heritage areas. They support a range of wetland plants and birds, and their value is increased by the scarcity of wetland habitats throughout the county. Newpark Marsh is an important amenity area and there is scope for improving the amenity function of Lough Macask.
- *St. Kieran's College and Environs* and *St. Canice's Cathedral and Environs:* These two sites are more urban in nature and consist of a mixture of institutional buildings, older private housing estates, well-developed gardens and mature trees. These areas provide some of the best wildlife habitat in the more built-up parts of the City and function as stepping stones increasing connectivity with the River Nore. The mature trees serve to regulate local climate (shade and shelter) and play a role in carbon sequestration.
- *Breagagh River* and *Pococke River*: These two rivers are tributaries of the River Nore and are less significant than the Nore, but they also support valuable woodlands and semi-natural grasslands along their banks. They are also ecological corridors, with the Breagagh linking the Nore to the west of the study area and the Pococke linking the Nore to the southeast of the study area.

- *Kilkenny Golf Course:* Although of less ecological value, the golf course has a significant recreational function. The wooded areas have some potential for supporting birds and mammals and, if allowed to mature, provide carbon sequestration.
- *Smaller stepping stones:* A number of smaller sites with particular potential to act as stepping stones between the larger sites include St. Maul's graveyard, St. Mary's Church and graveyard, ponds and wetlands at Lakeview Drive, mature trees in the Castlecomer Road area, and a small complex of wet grassland and scrub at Oldpark.

Recommendations were developed following on from the results of the habitat survey and include recommendations for strategic planning of Green Infrastructure, measures to conserve and enhance biodiversity, further research required and raising public awareness of the natural heritage of Kilkenny City and Environs.