Slieverue Local Area Plan
Flora and Fauna Survey

Kilkenny County Council

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Issue		**Prepared by**		**Verified by**
V1	June 05			
		Carmel Brennan		Teri Hayes
		Senior Ecological Consultant		Director
File Ref:				

White Young Green Ireland Apex Business Centre , Blackthorn Road, Sandyford, Dublin 18
Telephone: +353 (0)1293 1200 Facsimile: +353 (0) 1293 1250 E-Mail: Dublin@wyg.com

SLIEVERUE LOCAL AREA PLAN: FLORA AND FAUNA STUDY

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1 INTRODUCTION

The current survey examines the ecological value of the study area of Slieverue, Co Kilkenny and assesses the likely significant impacts of implementing the proposed Local Area Plan. The assessment comprised a desk study and field survey. Likely impacts are identified and recommendations are made to maintain the existing habitats of ecological importance.

The desk study comprised the following elements:

- Identification of all designated sites of nature conservation interest within the study area.
- Consultation with the Heritage Division, Dept. of Environment, Heritage and Local Government.
- Consultation with the Southern Regional Fisheries Board.
- Assessment of fisheries/aquatic value of surface water bodies.
- Review of Ordnance Survey maps and aerial photos where available.
- Review of relevant reports and literature for the areas.

The field survey comprised a habitat assessment of the study area. Habitats were mapped according to *A Guide to Habitats in Ireland* (Fossitt, 2000) and in general accordance with *Draft Habitat Survey Guidelines: a Standard Methodology for Habitat Survey and Mapping in Ireland* (Heritage Council, 2002).

Signs of vertebrate fauna were noted if found however a specific search for fauna was not made. The presence of mammals is indicated principally by their signs, such as dwellings, feeding signs or droppings - though direct observations are also occasionally made. Bird species observed during the survey were recorded. Watercourses within the vicinity of the proposed development were identified and an assessment of the fisheries potential was made.

Plant nomenclature follows Webb *et al*., (1996) for vascular plants excluding grasses, Hubbard (1984) for grasses, Mullarney *et al.,* (1999) for birds and Hayden & Harrington (2000) for mammals. The site visit was conducted on May 5^{ed} and 6th 2005. The weather conditions were fair to good, with long periods of sunshine. There were no seasonal restraints with regards to the survey.

For the purpose of assessing and describing the conservation value of habitats found within the study area, habitats have been categorised into three categorise;

(i) Habitats of high conservation value are those that are designated as being of international, national or regional importance or semi-natural habitats of high biodiversity value.

(ii) Habitats of moderate conservation value are those which are of locally important in maintaining biodiversity.

(iii) Habitats of low conservation value are those which have a limited or poor contribution to local biodiversity.

2 DESCRIPTION OF STUDY AREA

Slieverue is situated approximately 53km south of Kilkenny and 5km north of Waterford on the N25 (Grid Ref S638 150). The surrounding area is undulating lowland and the land use is predominantly agricultural grassland, with some areas of commercial conifer forests. A small stream flows through the northwest of the site and feeds into Lough Cullin pNHA a small lake c. 4.5km north of the site. From there it flows south and empties into the River Suir cSAC.

3 DESIGNATED AREAS OF NATURE CONSERVATION

A review of the Heritage Divisions datasets (www.heritagedata.ie) indicates that there are no designated sites within the boundary of the study area. Two designated sites occur within the vicinity of the site and are detailed below.

Table.1. Designated sites within 5km of the study area.

Site	Designation	Site Code	Description	Approx. distance to study area
002137	Lower River Suir	cSAC	Alluvial wet woodlands, floating river vegetation, Atlantic salt meadows, old oak woodland and eutrophic tall herbs and a number of EU Habitats Annex II species	2.5km
000406	Lough Cullin	pNPA	Lowland lake supporting a diversity of water fowl and rare flowering plant species	4.5km

A full description of each habitat is given in Appendix 1.

4 CONSULTATION

The Heritage Division, Dept. of Environment Heritage and Local Government, was consulted with respect to the Local Area Plan implementation (April, 2005). Apart from noting the presence of the stream, which feeds into the River Suir cSAC, no specific ecological issues were raised with regard to Slieverue (Local Conservation Ranger, pers. comm.).

The Southern Regional Fisheries Board (SRFB) was consulted with respect to the Local Area Plan implementation (May, 2005). They noted that the small stream passing through the west of the site feeds into Lough Cullin NHA, which eventually feeds into the River Suir cSAC.

5 HABITAT ASSESSMENT

A number of wetland habitats are found within the study area. These habitats are not covered by any national or international designations but they support a diversity of plant and animal species and are of high local biodiversity value. As a consequence of their high species diversity and limited distribution, these habitats are considered to be of **high conservation value** and are described in section 5.1.

Grassland habitats of moderate to high species-richness are found frequently throughout the site. These habitats are Wet grassland (GS4) and Dry calcareous and neutral grassland (GS1). Species-rich grasslands are generally limited within the wider landscape. These grasslands occur adjacent to each other to the northeast of the site and the species composition of these grasslands frequently overlaps. They contribute to local biodiversity and are considered to be of **moderate conservation value.** They are described in section 5.2.

Other habitats of **low conservation value** occurring within the Slieverue area are described in section 5.3. Figure 1 presents all the habitats found within the study area.

5.1 Habitats of high conservation value

A wetland complex incorporating a number of wetland habitats is located to the west of the site. Reed and large sedge swamp (FS1) is the dominant habitat type. Areas of Wet willow-alder-ash woodland (WN6) and small areas of Marsh (GM1) occur around the margins. The individual habitats that make up the complex are described below.

- **Reed and large sedge swamps (FS1)**

The swamp is dominated by bulrush (*Typha latifolia*) that formed dense stands towards the centre. Other species that occurred frequently included horsetail (*Equisetum* spp.), starwort (*Callitriche* spp.) and water mint (*Mentha aquatica*). Rushes (*Juncus* spp.) and sedges (*Carex* spp.) form tussocks throughout the area. Ground conditions are very unstable and the water is deep in many areas, making a full investigation of the area difficult for safety reasons.

- **Marsh (GM1)**

This habitat supported a diversity of broadleaved herbs and sedge species including lesser spearwort (*Ranunculus flammula*), marsh-bedstraw (*Galium palustre*), marsh cinquefoil (*Potentilla palustre*), marsh ragwort (*Senecio aquaticus*), marsh thistle (*Cirsium palustre*), greater bird's-foot-trefoil (*Lotus uliginosus*), common sedge (*Carex nigra*), carnation sedge (*Carex panicea*) and rushes (*Juncus* spp). This habitat grades into the adjacent Wet grassland (GS4) and the boundary between the two is frequently difficult to distinguish based on species composition. However, the ground conditions beneath Marsh (PF1) are wetter and less stable, with a high organic matter content derived from decomposing plant material.

- **Wet willow-alder-ash woodland (WN6)**

Patches of wet woodland occur around the margins of the swamp and to the east. The woodland is dominated by willow (*Salix* spp). Alder (*Alnus glutinosa*) oak (*Quercus robur*) and ash (*Fraxinus excelsior*) occur occasionally.

- **Depositing lowland river (FW2)**

A small stream flows from the wetland complex area, through the conifer plantation and exits the site at the northwest boundary. It continues north for c. 4kms and flows into Lake Cullin pNHA. The origin of the stream at the northern edge of the Reed and large sedge (FS1) area is diffuse. This area was flooded at the time of field visit making it difficult to distinguish the boundary of the stream. The vegetation in the vicinity of the stream was similar to Marsh (GM1) habitat. Access to this area was poor and for reasons of safety this area was not fully investigated.

5.2 Habitats of moderate conservation value

- **Wet Grassland (GS4)**

Species-rich Wet grassland (GS4) occurs to the south of the swamp and to the east of the site. These areas are subject to periodic inundation and heavy waterlogging which encourages the occurrence of wet grassland species. The Wet grassland (GS4) south of the swamp is grazed to a short sward c. 5cms. The area to the east of the site was ungrazed at the time of the visit and was c.30cms.

Grasses and rushes are abundant and typically include sweet-vernal grass (*Anthoxanthum odoratum*), red fescue (*Festuca rubra*), creeping bent (*Agrostis stolonifera*), Yorkshire fog (*Holcus lanatus*), common rush (*Juncus effusus*) and *Juncus articulatus/acutifloris*. The broadleaved component of the sward is composed of greater bird's foot trefoils (*Lotus uliginosus*), march cinquefoil *(Potentilla palustris*), silverweed (*Potentilla anserina*), sorrel (*Rumex acetosa*), bush vetch (*Vicia sepium*), creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), lesser spearwort (*Ranunculus flammula*), devil's-bit scabious (*Succisa pratensis*), cuckoo-flower (*Cardamine pratensis*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*) and lesser plantain (*Plantago lanceolata*), all of which occur frequently.

- **Dry Calcareous and Neutral Grassland (GS1)**

This habitat is located to the east of the site, adjacent to the wet grassland area. Although the grassland is not particularly species-rich, it contains a greater number of species than the surrounding intensive agricultural grassland and some species such as Cow slip (*Primula veris*) occurs frequently, which is indicative of areas that have not been intensively improved for agriculture making this area of local interest.

The sward comprises meadow foxtail (*Alopecurus pratensis*), creeping bent (*Agrostis stolonifera*), Yorkshire fog (*Holcus lanatus*) and cock's-foot (*Dactylis glomerata*) which occur abundantly and lesser stitchwort (*Stellaria graminea*), bush vetch (*Vicia sepium*), mouse-ear chickweed (*Cerastium fontanum*), black knapweed (*Centaurea nigra*), dandelion (*Taraxacum officinale* agg.), creeping buttercup (*Ranunculus* repens), white clover (*Trifolium repens*) and ribwort plantain (*Plantago lanceolata*) all occur frequently.

- **Hedgerows (WL1)**

Individual hedgerows were not mapped for the purposes of this study. Hedgerow habitats are widespread within the area and define the boundary of most field parcels. The dominant species are hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), and elder (*Sambucus nigra*). Gorse (*Ulex europaeus*) occurs occasionally. Most are maintained as dense, stock-proof hedges that support semi-mature and mature tree standards of ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*) along their length and a number have drainage ditches at their base. These linear features support a high diversity of plant and animal species in the area and are of local biodiversity value.

5.3 Habitats of low conservation value

A number of other habitats of limited ecological importance or extent were recorded within the study area and are described below.

- **Improved agricultural grassland (GA1)**

The species composition of Improved Agricultural Grassland (GA1) is dominated by grass species including perennial ryegrass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*), meadow-grasses (*Poa* spp.), Meadow fox-tail (*Alopecurus pratensis*) and timothy (*Phleum pratensis*). Sedges (*Carex* spp.) and rushes (*Juncus* spp.) occur occasionally. Broadleaved herbs include creeping buttercups (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*), white clover *(Trifolium repens),* red clover (*Trifolium pratense*), daisy (*Bellis perennis*), willow-herb (*Epilobium* spp.), cuckoo-flower (*Cardamine pratensis*), germander speedwell (*Veronica chamaedrys*), sorrel (*Rumex acetosa*), and thistles (*Cirsium* spp.).

- **Amenity grassland (improved) (GA2)**

The Amenity grasslands comprise a low diversity of grass and herbs, which are similar to the composition of Improved agricultural grassland. The dominant species are creeping bent (*Agrostis stolonifera*)*,* perennial rye-grass (*Lolium perenne*)*,* meadow-grasses (*Poa spp),* Yorkshire fog (*Holcus lanatus*)*,* white clover *(Trifolium repens),* red clover (*Trifolium pratense*), creeping buttercup (*Ranunculus repens),* daisy *(Bellis perennis)*, dandelion (*Taraxacum officinale* agg.) and ribwort plantain *(Plantago lanceolata)*. The sward is maintained at a low height by frequent mowing suitable for recreational and amenity purposed.

- **Mixed broadleaved/ conifer woodland (WD2)**

A small area of mature woodland is enclosed on private land to the south east of the site. Tree species include oak (*Quercus robur*), alder (*Alnus glutinosa*) and conifers.

- **Conifer plantation (WD4)**

An extensive area of commercial mixed conifer plantation is located to the west of the site. Broadleved trees and shrubs occur around the margins including willow (*Salix* spp.), ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*) and gorse (*Ulex europaeus*). The ground flora is sparse and species-poor and comprises ivy (*Hedera helix*), bramble (*Rubus fruticosus*), mosses and ferns.

- **Tilled land (BC3)**

A small area of tilled land is found to the north of the site. The soil was bare with no evidence of any crop at the time of visit.

- **Spoil and bare ground (ED2)**

This area was disturbed and under development. Some ephemeral species were found throughout the area.

- **Recolonising bare ground (ED3)**

Common species typical of disturbed ground were found throughout this area including willow herb (*Epilobium* spp.), red clover (*Trifolium pratensis*), and ribwort plantain (*Plantago lanceolata*), dock (*Rumex obtusifolius*), spear thistle (*Cirsium vulgaris*), dandelion (*Taraxacum officinale*) and ragwort (*Senecio jacobaea*).

- **Buildings and developments (BL3)**

A parcel of land is classified as Buildings and artificial surfaces (BL3) where building has already been initiated on a site. Patches of spoil and bare ground (ED2), Recolonising bare ground (ED3) and grassland types are sometimes incorporated into these areas. However, only the dominant habitat type or land use has been mapped in these areas.

6 OTHER PROTECTED SPECIES

Mammals

A number of mammalian species, including bats, badgers and otter are protected under the Wildlife Act, 1976, and the Wildlife (Amendment) Act, 2000 and it is therefore an offence to wilfully interfere with or destroy the breeding or resting place of these species, though there are exemptions under the Wildlife Act for road and housing developments and other works. The otter is also listed under Annex II and IV of the E.U. Habitats Directive. All bat species are also protected under the E.U. Habitats Directive (Annex IV).

Bats are likely to roost and forage in the area especially at sites close to water. Favourite roosting areas include built structures such as bridges and buildings particularly those with concealed crevices and cavities. Mature trees also provide good roosting potential.

No signs of badger (*Meles meles)* were noted during the visit i.e. no setts, latrines, feeding or rooting signs were found. However, a number of mammal paths were observed and the species is likely to occur within the study area. The main areas for sett construction are patches of woodland and along hedgerows.

Ireland is the European stronghold for the otter. They are found along most rivers and streams and they are known to be present along the River Suir cSAC.

A number of other mammal species found throughout the Irish agricultural landscapes are also likely to occur within the area including house mouse (*Mus (musculus) domesticus*), brown rat (*Rattus norvegicus)*, wood mouse (*Apodemus sylvaticus)*, red fox (*Vulpes vulpes*), pygmy shrew (*Sorex minutus),* hedgehog (*Erinaceous europaeus),* rabbits (*Oryctolagus cuniculus*) and the Irish hare (*Lepus timidus hibernicus*).

Birds

Most bird species are protected under the Wildlife Act, 1976, except those regarded as pest species, and those considered as game species (where they may be hunted under conditions). It is an offence to interfere with the breeding place of protected species, though there are exemptions for developments such as road construction and building works. For the generally common species, best practice provision is made to limit season of removal of vegetation and nesting habitat. Provisions of section 46 of the Wildlife (Amendment) Act, 2000 require that disturbance to vegetation is excluded during the period 1st March to 31st August (with exemptions as above).

A high diversity of bird species is associated with the wetland habitat types. Lough Cullin is located approximately c. 4km to the north of the study area and a number of species are associated with the Lough. It is known to support high populations of snipe (*Gallinago gallinago*) in winter and smaller numbers of curlew (*Numenius arquata*), lapwing (*Vanellus vanellus*) and mallard (*Anus platyrhynchos*). Sedge warbler (*Acrocephalus schoenobaenus*) and reed bunting (*Emberiza schoeniclus*) breed there in summer also (Goodwillie, 1995). The Lower River Suir, located to the south is known for its ornithological importance and supports a diversity of water fowl. The study is intermediate between these designated areas and it is lightly to support small numbers of wetland bird species.

Several common bird species were observed on site. These included rooks (*Corvus frugilegus*), jackdaw (*Corvus monedula*), magpie (*Pica pica*), blackbird (*Turdus merula*), robin (*Erithacus rubecula*), wagtail (*Motacilla cinerea*), chaffinch *(Fringilla coelebs)*, coal tit (*Parus ater*) and house sparrow (*Passer domesticus)*.

Amphibians and Reptiles

The common frog (*Rana temporaria)*, the smooth newt (*Triturus vulgaris*) and the common lizard (*Lacerta vivipara)* are all protected species under the Wildlife Act (1976) and have a widespread distribution in Ireland. Pools, ponds, drainage ditches and wet grasslands provide good habitat for amphibians. The common lizard can be found in a wide range of habitat types. In general it favours open, sunny, undisturbed and well drained habitats (Irish Wildlife Trust, 2005).

7 FISHERIES AND WATER QUALITY

The stream flowing through the site, empties into Lough Cullin. The Smartcastle Stream flows from Lough Cullin south to the River Suir. The EPA website on water quality in rivers (www.epa.ie/rivermap/data/rivmaptop.html) indicates that the Smartcastlle Stream is unpolluted. The Southern Region Fisheries board noted that the stream is not noted for its fisheries potential.

8 OVERALL EVALUATION

The wetland habitats and the adjacent wet grassland area provide a good habitat for a flora and fauna and form a wetland complex of high local biodiversity value. In recent decades, land reclamation and intensive agriculture has severely reduced the extent of wetland habitats and they are now limited within the wider Irish landscape. The area is quiet small, which limits its importance and no rare or protected species were noted. No individual habitat described is designated under any national or international legislation and consequently its conservation status is limited to a local capacity. The surrounding land use is predominantly intensive agriculture which is associated with species-poor habitats. This area offers a significant local refuge for wetland plants and animals and should therefore be protected from the above impacts.

A number of grasslands of local ecological significance occur within the area. These are the Wet grassland (GS4) and the Dry calcareous and neutral grassland (GS1). These grasslands are frequent within the site. Species diversity is moderate to high and the species composition is typical of these habitat types. These grasslands appear to be currently less intensively managed than the surrounding Improved agricultural grassland but are likely to be vulnerable to change from land improvement and drainage. Unimproved and semi-improved grasslands are increasingly uncommon within the wider Irish landscape where Improved agricultural grassland is the common grassland type. Floral species diversity is typically higher in unimproved and semi-improved grasslands and the associated faunal diversity is also typically higher, especially for invertebrates, making them important for local biodiversity.

The extensive network of dense hedgerows is also considered to be of ecological importance because they serve a number of ecological functions. They provide habitat for broadleaved

trees and associated woodland flora, which may otherwise be limited within the area. They provide nesting sites for birds and roosting areas for bats. They may act as corridors along which animal species can move when foraging for food. Bats frequently use hedgerows and treelines for orientation and as commuting corridors when foraging.

9 POTENTIAL IMPACTS AND RECOMMENDATIONS

9.1 Potential Impacts

Impacts on ecology arising from the implementation of the local area plan can be broadly categorised into 3 headings:

(i) **Direct habitat loss**: the removal/destruction of habitats

(ii) **Indirect habitat changes**. This occurs when a habitat not directly affected through development is altered as a consequence of the development through effects such as disturbance, drainage or pollution. The quality or character of a habitat may change as a result of these activities. Example of potential impacts include disturbance from road improvement may cause animals in adjacent habitats to leave. Alteration of drainage can result in significant habitat changes to adjacent wetland habitats and streams. Construction can have potentially negative impacts through the discharge of contaminated water to adjacent surface waters. This can have knock-on effects on associated flora and fauna, such as the protected white-clawed crayfish. Discharges of cement or the washings of tools and equipment can result in dramatic increases in pH of receiving waters, with lethal effects on fish and fish life.

(iii) **Habitat fragmentation**. This involves the break up of a habitat by a development, resulting in one or more smaller habitat areas. A reduction in the size of a habitat may cause a decline in species numbers, where the habitat area becomes too small to support viable populations. Particularly susceptible are those species such as birds and mammals with large ranges, and also short-lived species such as migratory insects and annual plants which need to re-invade each year. Species that use linear features such as hedgerows for movement are also highly susceptible to the effects of habitat fragmentation. In this respect, bat species are vulnerable to removal of hedgerows.

These impacts are relevant to all habitats within the study area but should be regarded as significant in the areas of high conservation value.

9.2 Recommendations

There are no protected habitats within the study area. It is recommended that the potential impacts listed above be completely avoided in the area of wetland complex to the west of the site.

Protected species

Mature trees, especially those showing crevices and hollows, should be checked by a bat specialist immediately prior to felling and should be felled during the spring months of March, April, May or autumn months of September, October or November. Large mature trees should be felled carefully, essentially by gradually dismantling the tree. Bats should be removed by a specialist under licence form NPWS. Branches should not be immediately mulched as bats may be in torpor in the branches.

Specialised bat surveys should be carried out on buildings and structures such as bridges with high bat potential which are to be greatly altered or demolished. Surveys may also be required in area where there is likely to be tree and hedgerow removal due to development. This will establish if bats utilise the site and the areas. Seasonal constraints apply and bat surveys are best conducted from late April to late September.

If works are carried out near a badger sett, professional advice should be sought on protecting the sett. If badger setts are found during the development of an area, a suitably qualified specialist should be employed to evacuate and destroy the sett under licence form NPWS. A badger survey should be carried out where areas of hedgerow and woodland patches are to be altered. Seasonal constraints apply and badger surveys should preferably be carried out between November and March.

Works carried out along watercourses should employ a suitably qualified specialist to assess the area for the presence of otters and the potential impacts on the species through any development.

Cutting of hedgerows and site clearance should take place outside the bird-nesting period which starts on March 1st and ends 31st of August.

Where amphibians or reptiles are found on site**,** it is standard good practice to ensure protection of breeding sites and to make provision for maintenance of the species if possible.

General recommendations

Native trees should be used in planting schemes for new developments. Tree species planted should reflect the local native species composition. The use of herbicide should be

avoided within 1.5m of hedgerows. Native wildflower species mixtures should be used to create wildlife habitat areas where possible.

Networks of hedgerows and treelines should be maintained and incorporated into new developments where possible. Maintaining an unbroken linear corridor is importance for animal species movement in the landscape. Hedgerows should be trimmed so that they are wider at the base and narrower at the top and established hedges should be trimmed every second or third year.

Any development occurring in an area of species-rich grassland of moderate conservation value will result in the loss of that grassland through direct habitat loss. Development within these areas should attempt to incorporate the character of these grasslands into the landscape design. There is potential to re-establish some grassland surrounding the development through maintaining and reusing topsoil, which contains the seed-bank. Fertiliser and herbicide and the use of amenity grassland seed mixes should be completely avoided in these areas. If additional seed is required to improve the sward, a similar seed mixture should be used and sourced locally through local seed suppliers.

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